LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 11

2018

Bate Stamp Numbers
00850366 - 00852215

Prepared for

Department of the Army
Longhorn Army Ammunition Plant

1976 – 2018

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

VOLUME 11

2018

A. Title: Report (cont'd) – Quarterly Evaluation Report, 1st Quarter (January-March) 2017, Groundwater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: August 2017
Bate Stamp: 00850366 – 00852215

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608824	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2017-04-11 12:22:41

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608824	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608824	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608824	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608824	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608824	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
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	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2017-04-11 12:23:15

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031689
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/24/2017 21:41
Workgroup #:	WG608588	**Analyst:**	ADC	**Run Date:**	04/03/2017 23:19
Collect Date:	03/29/2017 15:00	**Dilution:**	50	**File ID:**	11M17261
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1-Trichloroethane	71-55-6	25.0	U	50.0	25.0	12.5
1,1,2-Trichloroethane	79-00-5	25.0	U	50.0	25.0	12.5
1,1-Dichloroethane	75-34-3	7.73	J	25.0	12.5	6.25
1,1-Dichloroethene	75-35-4	55.6	J	100	50.0	25.0
1,2-Dichloroethane	107-06-2	31.6	J	50.0	25.0	12.5
Acetone	67-64-1	250	U	500	250	125
Benzene	71-43-2	12.5	U	25.0	12.5	6.25
Carbon tetrachloride	56-23-5	25.0	U	50.0	25.0	12.5
Chloroform	67-66-3	12.6	J	25.0	12.5	6.25
Ethylbenzene	100-41-4	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	3950		50.0	25.0	12.5
m,p-Xylene	179601-23-1	50.0	U	100	50.0	25.0
o-Xylene	95-47-6	25.0	U	50.0	25.0	12.5
Styrene	100-42-5	12.5	U	25.0	12.5	6.25
Tetrachloroethene	127-18-4	25.0	U	50.0	25.0	12.5
Trichloroethene	79-01-6	4920		50.0	25.0	12.5
Toluene	108-88-3	25.0	U	50.0	25.0	12.5
Vinyl chloride	75-01-4	212		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	104	70	120	
4-Bromofluorobenzene	112	75	120	
Dibromofluoromethane	103	85	115	
Toluene-d8	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3520C	**Prep Date:**	04/03/2017 09:30
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	03/21/2017 13:29
Workgroup #:	WG608809	**Analyst:**	SCB	**Run Date:**	04/05/2017 12:27
Collect Date:	03/29/2017 15:00	**Dilution:**	5	**File ID:**	15M20980
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	22.5	J	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	486	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO4
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 12:02
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	04/04/2017 14:05
Workgroup #:	WG608728	**Analyst:**	KKB	**Run Date:**	04/04/2017 16:58
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	T4.040417.165852
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.463		0.200	0.200	0.100
Selenium, Total	7782-49-2	0.0200	U	0.0200	0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO4
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 12:02
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	04/05/2017 15:01
Workgroup #:	WG608728	**Analyst:**	KKB	**Run Date:**	04/05/2017 16:15
Collect Date:	03/29/2017 15:00	**Dilution:**	2	**File ID:**	T4.040517.161554
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	12.1		0.200	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 15:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	04/04/2017 11:44
Workgroup #:	WG608658	**Analyst:**	JYH	**Run Date:**	04/04/2017 13:04
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	NI.040417.130410
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00487		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00165		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0436		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0277		0.00200	0.00100	0.000500
Lead, Total	7439-92-1	0.00161	J	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0500		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Vanadium, Total	7440-62-2	0.00191	J	0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 15:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	04/06/2017 10:24
Workgroup #:	WG608658	**Analyst:**	JYH	**Run Date:**	04/06/2017 12:47
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	NI.040617.124739
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Thallium, Total	7440-28-0	0.000141	J	0.000400	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 15:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	04/04/2017 11:44
Workgroup #:	WG608658	**Analyst:**	JYH	**Run Date:**	04/04/2017 13:41
Collect Date:	03/29/2017 15:00	**Dilution:**	10	**File ID:**	NI.040417.134151
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.921		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.57		0.0400	0.0200	0.0100
Zinc, Total	7440-66-6	0.726		0.500	0.250	0.125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	9056	**Prep Date:**	04/03/2017 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	12/01/2016 17:22
Workgroup #:	WG608568	**Analyst:**	LJH	**Run Date:**	04/03/2017 18:44
Collect Date:	03/29/2017 15:00	**Dilution:**	10	**File ID:**	I3_040317-11
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	61.8		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	9056	**Prep Date:**	04/03/2017 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	12/01/2016 17:22
Workgroup #:	WG608568	**Analyst:**	LJH	**Run Date:**	04/03/2017 19:05
Collect Date:	03/29/2017 15:00	**Dilution:**	100	**File ID:**	I3_040317-12
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1110		40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	V-1200
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	METHOD	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	410.4 MOD	**Cal Date:**	02/27/2017 11:47
Workgroup #:	WG608824	**Analyst:**	TMM	**Run Date:**	04/05/2017 11:10
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	00.1704051110-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chemical Oxygen Demand	COD	44.2		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	HORIZON
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	1664A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	1664A	**Cal Date:**	
Workgroup #:	WG608382	**Analyst:**	AWE	**Run Date:**	03/31/2017 09:19
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	ON.1703310919-19
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Hexane Extractable Material (HEM)	OILGREASE	2.80	U	5.60	2.80	1.40

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/24/2017 21:41
Workgroup #:	WG608588	**Analyst:**	ADC	**Run Date:**	04/03/2017 21:20
Collect Date:	03/29/2017 00:01	**Dilution:**	1	**File ID:**	11M17257
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	0.500	0.250	0.125
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	0.500	0.250	0.125
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chloroform	67-66-3	0.250	U	0.500	0.250	0.125
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
m,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
Styrene	100-42-5	0.250	U	0.500	0.250	0.125
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	104	70	120	
4-Bromofluorobenzene	112	75	120	
Dibromofluoromethane	102	85	115	
Toluene-d8	107	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/24/2017 21:41
Workgroup #:	WG608588	**Analyst:**	ADC	**Run Date:**	04/03/2017 23:19
Collect Date:	03/29/2017 15:00	**Dilution:**	50	**File ID:**	11M17261
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1-Trichloroethane	71-55-6	25.0	U	50.0	25.0	12.5
1,1,2-Trichloroethane	79-00-5	25.0	U	50.0	25.0	12.5
1,1-Dichloroethane	75-34-3	7.73	J	25.0	12.5	6.25
1,1-Dichloroethene	75-35-4	55.6	J	100	50.0	25.0
1,2-Dichloroethane	107-06-2	31.6	J	50.0	25.0	12.5
Acetone	67-64-1	250	U	500	250	125
Benzene	71-43-2	12.5	U	25.0	12.5	6.25
Carbon tetrachloride	56-23-5	25.0	U	50.0	25.0	12.5
Chloroform	67-66-3	12.6	J	25.0	12.5	6.25
Ethylbenzene	100-41-4	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	3950		50.0	25.0	12.5
m,p-Xylene	179601-23-1	50.0	U	100	50.0	25.0
o-Xylene	95-47-6	25.0	U	50.0	25.0	12.5
Styrene	100-42-5	12.5	U	25.0	12.5	6.25
Tetrachloroethene	127-18-4	25.0	U	50.0	25.0	12.5
Trichloroethene	79-01-6	4920		50.0	25.0	12.5
Toluene	108-88-3	25.0	U	50.0	25.0	12.5
Vinyl chloride	75-01-4	212		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	104	70	120	
4-Bromofluorobenzene	112	75	120	
Dibromofluoromethane	103	85	115	
Toluene-d8	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/24/2017 21:41
Workgroup #:	WG608588	**Analyst:**	ADC	**Run Date:**	04/03/2017 21:20
Collect Date:	03/29/2017 00:01	**Dilution:**	1	**File ID:**	11M17257
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	0.500	0.250	0.125
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	0.500	0.250	0.125
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chloroform	67-66-3	0.250	U	0.500	0.250	0.125
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
m,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
Styrene	100-42-5	0.250	U	0.500	0.250	0.125
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	104	70	120	
4-Bromofluorobenzene	112	75	120	
Dibromofluoromethane	102	85	115	
Toluene-d8	107	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 112916
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD78962 Surrogate Standard: STD78963
CCV: STD79185 LCS: STD79186 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG593075

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M15410	WG593075-01 BFB 50ng 8260	NA	1	1	STD78474	11/29/16 14:38
11M15411	RINSE	NA	1	1		11/29/16 15:02
11M15412	RINSE	NA	1	1		11/29/16 16:35
11M15413	WG593075-02 5ug/L ICAL A9	NA	1	1	STD79185	11/29/16 17:04
11M15414	WG593075-03 20ug/L ICAL A9	NA	1	1	STD79185	11/29/16 17:33
11M15415	WG593075-04 50ug/L ICAL A9	NA	1	1	STD79185	11/29/16 18:02
11M15416	WG593075-05 100ug/L ICAL A9	NA	1	1	STD79185	11/29/16 18:30
11M15417	WG593075-06 200ug/L ICAL A9	NA	1	1	STD79185	11/29/16 19:00
11M15418	WG593075-07 300ug/L ICAL A9	NA	1	1	STD79185	11/29/16 19:29
11M15419	WG593075-08 400ug/L ICAL A9	NA	1	1	STD79185	11/29/16 19:58
11M15420	WG593075-09 500ug/L ICAL A9	NA	1	1	STD79185	11/29/16 20:28
11M15421	RINSE	NA	1	1		11/29/16 20:57
11M15422	WG593075-10 100ug/L ALT SRC A9	NA	1	1	STD79186	11/29/16 21:26
11M15423	RINSE	NA	1	1		11/29/16 21:55
11M15424	RINSE	NA	1	1		11/29/16 22:24

Approved: December 01, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 032417
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 25 / 0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 1
Maintenance Log ID: 54102

Internal Standard: STD80956 Surrogate Standard: STD80957
CCV: STD80847 LCS: STD80765 MS/MSD: STD80765

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607620 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M17011	WG607620-01 50ng BFB	NA	1	1	STD80989	03/24/17 13:48
11M17012	RINSE	NA	1	1		03/24/17 14:20
11M17013	RINSE	NA	1	1		03/24/17 14:49
11M17014	WG607620-02 .3 ug/L ICAL 8260	NA	1	1	STD81106	03/24/17 15:18
11M17015	WG607620-02 .3 ug/L ICAL 8260	NA	1	1	STD81106	03/24/17 15:48
11M17016	WG607620-03 .4 ug/L ICAL 8260	NA	1	1	STD81106	03/24/17 16:20
11M17017	WG607620-04 1 ug/L ICAL 8260	NA	1	1	STD81106	03/24/17 16:49
11M17018	WG607620-05 2 ug/L ICAL 8260	NA	1	1	STD81106	03/24/17 17:18
11M17019	WG607620-06 5 ug/L ICAL 8260	NA	1	1	STD81106	03/24/17 17:47
11M17020	WG607620-07 20 ug/L ICAL 8260	NA	1	1	STD81106	03/24/17 18:16
11M17021	WG607620-08 50 ug/L ICAL 8260	NA	1	1	STD81106	03/24/17 18:45
11M17022	WG607620-09 100 ug/L ICAL 8260	NA	1	1	STD81106	03/24/17 19:14
11M17023	WG607620-10 200 ug/L ICAL 8260	NA	1	1	STD81106	03/24/17 19:44
11M17024	WG607620-11 300 ug/L ICAL 8260	NA	1	1	STD81106	03/24/17 20:13
11M17025	RINSE	NA	1	1		03/24/17 20:42
11M17026	RINSE	NA	1	1		03/24/17 21:11
11M17027	WG607620-02 .3 ug/L ICAL 8260	NA	1	1		03/24/17 21:41
11M17028	RINSE	NA	1	1		03/24/17 22:11
11M17029	WG607620-12 50 ug/L ICV/ ALT SRC 8260	NA	1	1	STD81038	03/24/17 22:40

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4				
File ID: 11M17014				
	WG607620-02 DNR FALSE INJECTION, RINSE WATER ONLY.			
5				
File ID: 11M17015				
	WG607620-02 DNR			

Approved: March 29, 2017

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 040317
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01/OVAP MSV01 Rev: 24/0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01/OVAP PAT01 Rev: 18/1
Maintenance Log ID: 54113

Internal Standard: STD80956 Surrogate Standard: STD80957
CCV: STD81194 LCS: STD81253 MS/MSD: STD81253

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG608588

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M17243	WG608584-01 50ng BFB	NA	1	1	STD80989	04/03/17 14:51
11M17244	WG608584-01 50ng BFB	NA	1	1	STD80989	04/03/17 15:05
11M17245	WG608584-01 50ng BFB	NA	1	1	STD80989	04/03/17 15:43
11M17246	WG608584-01 50ng BFB	NA	1	1	STD80989	04/03/17 15:55
11M17247	WG608584-02 50ug/L CCV 8260	NA	1	1	STD81194	04/03/17 16:20
11M17248	WGXXXXXX-01 50ug/L CCV 826-A9	NA	1	1	STDXXXXX	04/03/17 16:55
11M17249	WG608588-01 BLANK 8260	NA	1	1		04/03/17 17:24
11M17250	WG608588-02 20ug/L LCS 8260	NA	1	1	STD81253	04/03/17 17:54
11M17251	WG608588-03 20ug/L LCS2 8260	NA	1	1	STD81253	04/03/17 18:23
11M17252	L17031468-02 B 5X 826-SPE	<2	1	5		04/03/17 18:53
11M17253	L17031468-01 B 2X 826-SPE	<2	1	2		04/03/17 19:23
11M17254	L17031577-02 B 5X 826-SPE	<2	1	5		04/03/17 19:52
11M17255	L17031577-03 B 5X 826-SPE	<2	1	5		04/03/17 20:22
11M17256	L17031676-01 B 826-SPE	<2	1	1		04/03/17 20:51
11M17257	L17031689-02 A 826-SPE	<2	1	1		04/03/17 21:20
11M17258	L17031515-02 A 826-SPE	<2	1	1		04/03/17 21:50
11M17259	L17040024-11 A 826-SPE	<2	1	1		04/03/17 22:20
11M17260	L17031515-01 A 200X 826-SPE	<2	1	200		04/03/17 22:50
11M17261	L17031689-01 A 50X 826-SPE	<2	1	50		04/03/17 23:19
11M17262	L17031708-01 A 8260	<2	2	1		04/03/17 23:48
11M17263	L17040019-01 A 826-SPE	<2	1	1		04/04/17 00:18
11M17264	L17040019-02 A 826-SPE	<2	1	1		04/04/17 00:48
11M17265	L17040019-03 A 826-SPE	<2	1	1		04/04/17 01:18
11M17266	L17031695-02 A 826-SPE	<2	1	1		04/04/17 01:48
11M17267	L17031695-03 A 826-SPE	<2	1	1		04/04/17 02:18
11M17268	L17031695-01 A 826-SPE	<2	1	1		04/04/17 02:48
11M17269	L17031695-04 A 826-SPE	<2	1	1		04/04/17 03:18
11M17270	RINSE	NA	1	1		04/04/17 03:47
11M17271	RINSE	NA	1	1		04/04/17 04:16
11M17272	RINSE	NA	1	1		04/04/17 04:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: April 04, 2017

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 040317
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01/OVAP MSV01 Rev: 24/0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01/OVAP PAT01 Rev: 18/1
Maintenance Log ID: 54113

Internal Standard: STD80956 Surrogate Standard: STD80957
CCV: STD81194 LCS: STD81253 MS/MSD: STD81253

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG608588

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1				
File ID: 11M17243				
	WG608584-01 FAILURE			
2				
File ID: 11M17244				
	WG608584-01 FAILS, RR and change liner+septa.			
3				
File ID: 11M17245				
	WG608584-01 fails, reinject.			
20	X	100	Over Calibration Range	
File ID: 11M17262				
	L17031708-01			
21	X		Carry-over contamination	
File ID: 11M17263				
	L17040019-01 DNR			
22	X		Carry-over contamination	
File ID: 11M17264				
	L17040019-02 DNR			
23	X		Carry-over contamination	
File ID: 11M17265				
	L17040019-03 DNR			
24	X	10	Over Calibration Range	
File ID: 11M17266				
	L17031695-02			
26	X	10	Over Calibration Range	
File ID: 11M17268				
	L17031695-01			
27	X	10	Over Calibration Range	
File ID: 11M17269				
	L17031695-04			

Approved: April 04, 2017

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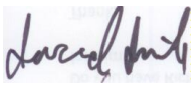
Microbac Laboratories Inc.

Data Checklist

Date: 29-NOV-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 78972
Analytical Workgroups: WG593075

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-NOV-2016



Secondary Reviewer:
01-DEC-2016



CHECKLIST1 - Modified 03/05/2008
Generated: DEC-01-2016 16:10:41

Microbac Laboratories Inc.

Data Checklist

Date: 24-MAR-2017
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 81227
Analytical Workgroups: WG607620

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	NA
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-MAR-2017

Secondary Reviewer:
29-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-29-2017 18:26:48

Microbac Laboratories Inc.

Data Checklist

Date: 03-APR-2017
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 81335
Analytical Workgroups: WG608588

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
04-APR-2017

Secondary Reviewer:
04-APR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: APR-04-2017 16:44:48

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B **AAB#:** WG608588

Login Number: L17031689

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP140-7428-GRAB	01	03/29/17					04/03/2017	5.3	14		04/03/17	5.3	14	
TRIP BLANK	02	03/29/17					04/03/2017	5.9	14		04/03/17	5.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5230087
Report generated 04/06/2017 11:36

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L17031689
Instrument Id: HPMS11
Workgroup (AAB#): WG608588

Method: 8260
CAL ID: HPMS11-24-MAR-17
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L17031689-01	50.0	DL01	104	103	112	106
L17031689-02	1.00	01	104	102	112	107
WG608588-01	1.00	01	101	99.9	111	106
WG608588-02	1.00	01	105	104	109	109
WG608588-03	1.00	01	101	101	104	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 5230095
Report generated: 04/06/2017 11:36

METHOD BLANK SUMMARY

Login Number: L17031689
Blank File ID: 11M17249
Prep Date: 04/03/17 17:24
Analyzed Date: 04/03/17 17:24
Analyst: ADC

Work Group: WG608588
Blank Sample ID: WG608588-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608588-02	11M17250	04/03/17 17:54	01
LCS2	WG608588-03	11M17251	04/03/17 18:23	01
TRIP BLANK	L17031689-02	11M17257	04/03/17 21:20	01
LH18/24-SP140-7428-GRAB	L17031689-01	11M17261	04/03/17 23:19	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5230088
Report generated 04/06/2017 11:36

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L17031689 Prep Date: 04/03/17 17:24 Sample ID: WG608588-01
Instrument ID: HPMS11 Run Date: 04/03/17 17:24 Prep Method: 5030B/5030C/503
File ID: 11M17249 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG608588 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-24-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	0.500	0.125	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	0.500	0.125	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chloroform	0.125	0.500	0.125	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
Methylene chloride	0.250	1.00	0.250	1	U
m,p-Xylene	0.500	2.00	0.500	1	U
o-Xylene	0.250	1.00	0.250	1	U
Styrene	0.125	0.500	0.125	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dichloroethane-d4	101	70 - 120	PASS
4-Bromofluorobenzene	111	75 - 120	PASS
Dibromofluoromethane	99.9	85 - 115	PASS
Toluene-d8	106	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5230089
06-APR-2017 11:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031689 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG608588 Units: ug/L
QC Key: DOD4 Lot #: STD81253

Sample ID: WG608588-02 LCS File ID: 11M17250 Run Date: 04/03/2017 17:54
Sample ID: WG608588-03 LCS2 File ID: 11M17251 Run Date: 04/03/2017 18:23

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1-Trichloroethane	20.0	24.2	121	20.0	23.5	118	2.89	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.8	109	20.0	21.7	109	0.641	75 - 125	30	
1,1-Dichloroethane	20.0	23.7	119	20.0	23.2	116	2.06	70 - 135	30	
1,1-Dichloroethene	20.0	23.9	120	20.0	23.3	116	2.78	70 - 130	30	
1,2-Dichloroethane	20.0	22.3	112	20.0	22.3	111	0.442	70 - 130	30	
Acetone	20.0	18.0	89.8	20.0	20.1	100	11.1	40 - 140	30	
Benzene	20.0	23.6	118	20.0	23.2	116	1.71	80 - 120	30	
Carbon tetrachloride	20.0	24.5	123	20.0	23.6	118	4.00	65 - 140	30	
Chloroform	20.0	21.6	108	20.0	21.2	106	1.92	65 - 135	30	
Ethylbenzene	20.0	23.0	115	20.0	22.3	112	3.24	75 - 125	30	
m,p-Xylene	40.0	48.0	120	40.0	47.1	118	1.96	75 - 130	30	
Methylene chloride	20.0	22.0	110	20.0	21.5	107	2.31	55 - 140	30	
o-Xylene	20.0	23.1	116	20.0	22.3	112	3.55	80 - 120	30	
Styrene	20.0	25.1	126	20.0	24.6	123	1.94	65 - 135	30	
Tetrachloroethene	20.0	23.8	119	20.0	23.0	115	3.65	45 - 150	30	
Toluene	20.0	23.9	120	20.0	23.5	117	1.90	75 - 120	30	
Trichloroethene	20.0	21.9	110	20.0	21.7	109	0.810	70 - 125	30	
Vinyl chloride	20.0	21.6	108	20.0	20.7	104	3.91	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	105	101	70 - 120	PASS
Dibromofluoromethane	104	101	85 - 115	PASS
4-Bromofluorobenzene	109	104	75 - 120	PASS
Toluene-d8	109	103	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 5230090
Report generated: 04/06/2017 11:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031689
Instrument: HPMS11
Analyst: JDS
Workgroup: WG593075

Tune ID: WG593075-01
Run Date: 11/29/2016
Run Time: 14:38
File ID: 11M15410
Cal ID: HPMS11-29-NOV-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.9	10170	PASS
75.0	95.0	30.0	60.0	50.2	18975	PASS
95.0	95.0	100	100	100	37813	PASS
96.0	95.0	5.00	9.00	6.54	2474	PASS
173	174	0	2.00	0.358	114	PASS
174	95.0	50.0	100	84.1	31818	PASS
175	174	5.00	9.00	7.62	2425	PASS
176	174	95.0	101	95.8	30490	PASS
177	176	5.00	9.00	6.21	1892	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG593075-02	STD	01	11/29/2016 17:04	
WG593075-03	STD	01	11/29/2016 17:33	
WG593075-04	STD	01	11/29/2016 18:02	
WG593075-05	STD-CCV	01	11/29/2016 18:30	
WG593075-06	STD	01	11/29/2016 19:00	
WG593075-07	STD	01	11/29/2016 19:29	
WG593075-08	STD	01	11/29/2016 19:58	
WG593075-09	STD	01	11/29/2016 20:28	
WG593075-10	SSCV	01	11/29/2016 21:26	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5230092
Report generated 04/06/2017 11:36

BFB

Login Number: L17031689
Instrument: HPMS11
Analyst: JDS
Workgroup: WG607620

Tune ID: WG607620-01
Run Date: 03/24/2017
Run Time: 13:48
File ID: 11M17011
Cal ID: HPMS11-24-MAR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.1	13277	PASS
75.0	95.0	30.0	60.0	47.9	28850	PASS
95.0	95.0	100	100	100	60181	PASS
96.0	95.0	5.00	9.00	6.57	3955	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.1	45818	PASS
175	174	5.00	9.00	7.91	3624	PASS
176	174	95.0	101	99.2	45474	PASS
177	176	5.00	9.00	6.72	3056	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG607620-03	STD	01	03/24/2017 16:20	
WG607620-04	STD	01	03/24/2017 16:49	
WG607620-05	STD	01	03/24/2017 17:18	
WG607620-06	STD	01	03/24/2017 17:47	
WG607620-07	STD	01	03/24/2017 18:16	
WG607620-08	STD-CCV	01	03/24/2017 18:45	
WG607620-09	STD	01	03/24/2017 19:14	
WG607620-10	STD	01	03/24/2017 19:44	
WG607620-11	STD	01	03/24/2017 20:13	
WG607620-02	STD	01	03/24/2017 21:41	
WG607620-12	SSCV	01	03/24/2017 22:40	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5230092
Report generated 04/06/2017 11:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031689
Instrument: HPMS11
Analyst: ADC
Workgroup: WG608584

Tune ID: WG608584-01
Run Date: 04/03/2017
Run Time: 15:55
File ID: 11M17246
Cal ID: HPMS11-24-MAR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.7	7532	PASS
75.0	95.0	30.0	60.0	50.9	16180	PASS
95.0	95.0	100	100	100	31800	PASS
96.0	95.0	5.00	9.00	6.65	2115	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.5	24336	PASS
175	174	5.00	9.00	8.44	2054	PASS
176	174	95.0	101	97.4	23714	PASS
177	176	5.00	9.00	6.22	1475	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG608584-02	CCV	01	04/03/2017 16:20	
WG608588-01	BLANK	01	04/03/2017 17:24	
WG608588-02	LCS	01	04/03/2017 17:54	
WG608588-03	LCS2	01	04/03/2017 18:23	
L17031689-02	TRIP BLANK	01	04/03/2017 21:20	
L17031689-01	LH18/24-SP140-7428-GRAB	DL01	04/03/2017 23:19	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5230092
Report generated 04/06/2017 11:36

Calibration Table Report
Method: A9FOOW.M
Title: Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Calibration: Wed Nov 30 09:30:53 2016
Curve: WG593075
Calibration Files

		5	20	50	100	200	300	400	500				
		11M15413.D	11M15414.D	11M15415.D	11M15416.D	11M15417.D	11M15418.D	11M15419.D	11M15420.D				
	Compound									Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.050	0.054	0.054	0.054	0.055	0.059	0.057	0.057	0.055	5.040		
T	3-Chloro-1-propene	0.742	0.811	0.773	0.805	0.838	0.841	0.818	0.794	0.803	4.135		
T	2-Chloro-1,3-butadiene	0.561	0.648	0.619	0.662	0.703	0.705	0.685	0.674	0.657	7.309		
T	Methacrylonitrile	0.274	0.298	0.302	0.299	0.312	0.324	0.315	0.310	0.304	5.013		
T	Isobutyl Alcohol		0.013	0.013	0.014	0.014	0.016	0.016	0.016	0.015	8.489		
T	1-Butanol				0.005	0.005	0.006	0.006	0.006	0.006	11.030		
T	Cyclohexanone			0.009	0.010	0.011	0.013	0.013	0.013	0.012	15.277	0.995	
T	2-Nitropropane			0.103	0.104	0.119	0.125	0.124	0.125	0.117	9.019		
T	Ethyl Acetate	0.341	0.384	0.396	0.397	0.421	0.439	0.427	0.422	0.403	7.714		
T	Methyl methacrylate	0.313	0.355	0.374	0.384	0.409	0.425	0.415	0.410	0.386	9.754		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											

Wed Nov 30 09:43:07 2016

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Calibration: Sat Mar 25 12:46:14 2017
Curve: WG607620
Calibration Files

Compound		0.3 11M17027.D	0.4 11M17016.D	1 11M17017.D	2 11M17018.D	5 11M17019.D	20 11M17020.D	50 11M17021.D	100 11M17022.D	200 11M17023.D	300 11M17024.D	Avg	%RSD	R^2 Linear	 Quadratic
Fluorobenzene	ISTD														
Dichlorodifluoromethane				0.295	0.283	0.342	0.456	0.477	0.442	0.388		0.383	20.480	0.992	
Chloromethane				0.618	0.535	0.460	0.492	0.465	0.443			0.502	13.036		
Vinyl Chloride			0.501	0.404	0.388	0.386	0.473	0.429	0.389	0.341		0.414	12.536		
1,3-Butadiene					0.325	0.231	0.258	0.201	0.164	0.157		0.223	28.453		0.990
Bromomethane				0.221	0.257	0.193	0.185	0.210	0.218	0.227		0.216	10.943		
Chloroethane				0.234	0.256	0.244	0.269	0.290	0.279	0.268		0.263	7.448		
Trichlorofluoromethane			0.397	0.402	0.403	0.446	0.479	0.514	0.489	0.466		0.449	9.989		
Diethyl ether				0.334	0.346	0.323	0.332	0.337	0.313		0.307	0.327	4.274		
Isoprene			0.425	0.348	0.407	0.436	0.501	0.526	0.512	0.485		0.455	13.505		
Acrolein				0.046	0.056	0.052	0.057	0.061	0.060		0.058	0.056	8.998		
1,1,2-Trichloro-1,2,2-Trifluoroet				0.172	0.224	0.242	0.263	0.282	0.274	0.270		0.247	15.687	1.000	
Acetone					0.115	0.098	0.093	0.102	0.100	0.101	0.096	0.101	7.004		
1,1-Dichloroethene			0.477	0.483	0.476	0.535	0.540	0.584	0.551	0.509		0.519	7.601		
Tert-Butyl Alcohol				0.034	0.033	0.033	0.032	0.035	0.036		0.039	0.035	6.370		
Dimethyl Sulfide			0.335	0.395	0.413	0.398	0.444	0.450	0.431	0.407		0.409	8.860		
Iodomethane					0.156	0.230	0.351	0.386	0.371	0.354		0.308	30.134	0.998	
Methyl acetate					0.269	0.276	0.290	0.297	0.287	0.276		0.282	3.706		
Methylene Chloride			0.344	0.323	0.336	0.343	0.335	0.349	0.337	0.319		0.336	3.102		
Carbon Disulfide				0.840	0.859	0.866	0.944	0.957	0.868	0.736		0.867	8.394		
Acrylonitrile				0.116	0.130	0.131	0.141	0.150	0.146		0.138	0.136	8.384		
Methyl Tert Butyl Ether			0.897	0.841	0.893	0.879	0.890	0.936	0.878	0.798		0.876	4.708		
trans-1,2-Dichloroethene			0.273	0.272	0.273	0.283	0.300	0.321	0.312	0.298		0.291	6.537		
n-Hexane					0.383	0.443	0.528	0.557	0.545	0.511		0.494	13.697		
Diisopropyl ether				1.421	1.426	1.323	1.305	1.297	1.071		0.932	1.254	14.700		
Vinyl Acetate					0.630	0.641	0.681	0.761	0.678	0.599	0.523	0.645	11.509		
1,1-Dichloroethane			0.641	0.622	0.668	0.669	0.681	0.714	0.664	0.593		0.657	5.675		
Ethyl-Tert-Butyl ether				1.268	1.287	1.186	1.178	1.180	0.994		0.878	1.139	13.071		
2-Butanone					0.152	0.154	0.156	0.175	0.167	0.162	0.165	0.161	5.061		
Propionitrile				0.048	0.051	0.049	0.050	0.055	0.053		0.055	0.051	5.184		
2,2-Dichloropropane			0.414	0.381	0.421	0.441	0.486	0.508	0.481	0.444		0.447	9.501		
cis-1,2-Dichloroethene			0.327	0.326	0.345	0.338	0.352	0.372	0.359	0.336		0.344	4.687		
Chloroform		0.651	0.715	0.570	0.604	0.574	0.565	0.587	0.556	0.499		0.591	10.383		
1-Bromopropane												0.000	0.000		
Bromochloromethane			0.153	0.172	0.174	0.184	0.199	0.209	0.206	0.200		0.187	10.550		
Tetrahydrofuran				0.117	0.115	0.110	0.111	0.117	0.114		0.112	0.114	2.611		
Dibromofluoromethane					0.279	0.240	0.262	0.271	0.247			0.260	6.273		
1,1,1-Trichloroethane			0.420	0.445	0.443	0.472	0.492	0.528	0.505	0.470		0.472	7.538		
Cyclohexane			0.665	0.588	0.581	0.644	0.707	0.728	0.690	0.632		0.654	8.124		
1,1-Dichloropropene			0.387	0.356	0.387	0.406	0.425	0.457	0.436	0.403		0.407	7.834		
Carbon Tetrachloride			0.301	0.353	0.341	0.383	0.411	0.447	0.428	0.407		0.384	12.817		
Tert-Amyl-Methyl ether				0.943	0.981	0.928	0.922	0.932	0.797		0.716	0.88837	10.7049		
1,2-Dichloroethane-d4					0.361	0.313	0.338	0.338	0.308			0.33155	6.48957		
1,2-Dichloroethane			0.448	0.45	0.513	0.482	0.489	0.505	0.473	0.426		0.4732	6.34375		
Benzene			1.371	1.195	1.347	1.28	1.276	1.282	1.121	0.893		1.22045	12.6484		
Trichloroethene			0.274	0.277	0.302	0.291	0.302	0.329	0.312	0.296		0.2978	6.02568		
Methylcyclohexane			0.495	0.45	0.446	0.483	0.538	0.557	0.536	0.498		0.50021	8.19921		
1,2-Dichloropropane			0.342	0.38	0.403	0.4	0.393	0.418	0.399	0.37		0.38819	6.12585		
1,4-Dioxane						0.003	0.003	0.003	0.003		0.003	0.00299	7.58907		
Bromodichloromethane			0.373	0.367	0.417	0.405	0.426	0.457	0.439	0.407		0.41159	7.46869		
Dibromomethane			0.192	0.164	0.192	0.179	0.189	0.202	0.198	0.191		0.18828	6.30646		
2-Chloroethyl Vinyl Ether				0.151	0.201	0.195	0.218	0.242	0.23	0.221	0.216	0.20934	13.2904		
4-Methyl-2-Pentanone						0.117	0.129	0.147	0.142	0.143	0.144	0.13702	8.38812		
cis-1,3-Dichloropropene			0.4	0.409	0.478	0.484	0.507	0.554	0.525	0.464		0.47775	11.1427		
Dimethyl Disulfide						0.226	0.297	0.327	0.327	0.32		0.29936	14.2774		
Chlorobenzene-d5	ISTD														
Toluene-d8					1.582	1.365	1.475	1.404	1.172			1.39965	10.8365		
Toluene			1.873	1.81	1.937	1.864	1.908	1.867	1.563	1.2		1.75287	14.3489		
Ethyl Methacrylate				0.411	0.463	0.493	0.591	0.602	0.578	0.535		0.52469	13.7298		
trans-1,3-Dichloropropene				0.469	0.56	0.604	0.665	0.709	0.654	0.58		0.606	13.1291		
1,1,2-Trichloroethane			0.316	0.365	0.4	0.396	0.401	0.417	0.394	0.37		0.38214	8.29015		
2-Hexanone						0.287	0.331	0.368	0.35	0.333	0.33	0.33308	8.11959		
1,3-Dichloropropane			0.672	0.626	0.71	0.695	0.705	0.715	0.658	0.581		0.67017	7.00593		
Tetrachloroethene			0.299	0.292	0.328	0.341	0.355	0.371	0.354	0.339		0.33455	8.21581		
Dibromochloromethane			0.341	0.338	0.402	0.393	0.44	0.476	0.455	0.431		0.40951	12.3577		
1,2-Dibromoethane			0.237	0.263	0.356	0.342	0.366	0.389	0.371	0.353		0.33463	16.2544	0.999	
1-Chlorohexane			0.407	0.405	0.466	0.514	0.604	0.638	0.598	0.553		0.52338	17.2206	0.997	
Chlorobenzene			1.093	1.101	1.229	1.172	1.188	1.199	1.059	0.871		1.11422	10.2913		
1,1,1,2-Tetrachloroethane			0.288	0.356	0.407	0.403	0.442	0.46	0.443	0.42		0.40226	13.9869		
Ethylbenzene				0.557	0.622	0.639	0.655	0.691	0.654	0.596		0.63041	6.97396		
m-,p-Xylene			0.743	0.685	0.75	0.753	0.786	0.788	0.678	0.531		0.71433	11.8159		
o-Xylene			0.708	0.666	0.788	0.737	0.79	0.82	0.764	0.679		0.74401	7.51943		
Styrene			0.913	0.929	1.121	1.157	1.301	1.348	1.211	0.989		1.12108	14.734		
Bromoform				0.18	0.226	0.238	0.279	0.315	0.314	0.308		0.26568	19.7194	0.999	
Isopropylbenzene			1.793	1.754	1.852	1.865	1.987	1.96	1.651	1.252		1.76421	13.2313		
1,4-Dichlorobenzene-d4	ISTD														
1,1,2,2-Tetrachloroethane			0.647	0.923	0.976	0.975	1.017	1.049	0.975	0.872		0.92937	13.5518		
p-Bromofluorobenzene					1.127	0.94	1.095	1.07	0.95			1.03624	8.30465		
1,2,3-Trichloropropane				0.195	0.264	0.262	0.286	0.291	0.279	0.266		0.26338	12.1768		
trans-1,4-Dichloro-2-Butene				0.118	0.266	0.255	0.326	0.347	0.348	0.342		0.28594	29.2641	1	

n-Propylbenzene		4.082	4.207	4.493	4.559	4.813	4.517	3.583		4.32217	9.35747
Bromobenzene	1.17	0.804	0.923	1.04	0.958	1.034	1.066	0.992	0.891	0.98647	10.8863
1,3,5-Trimethylbenzene		2.569	2.872	3.186	3.057	3.3	3.242	2.744	2.073	2.88033	14.3654
2-Chlorotoluene		2.723	3.053	3.092	2.89	3.021	2.915	2.434		2.87545	8.01951
4-Chlorotoluene		2.007	2.779	2.934	2.861	2.942	2.886	2.434		2.69212	12.971
a-Methylstyrene					1.509	1.8	1.835	1.699	1.41	1.65053	11.2138
tert-Butylbenzene		0.681	0.595	0.64	0.672	0.703	0.738	0.707	0.652	0.67345	6.6162
1,2,4-Trimethylbenzene			3.263	3.265	3.231	3.423	3.353	2.802		3.22282	6.75597
sec-Butylbenzene			3.619	3.856	3.908	4.197	4.052	3.329		3.82675	8.14594
p-Isopropyltoluene			3.006	3.147	3.16	3.465	3.448	2.871		3.18274	7.43857
1,3-Dichlorobenzene		1.763	1.816	1.904	1.852	1.91	1.938	1.763	1.426	1.79647	9.10548
1,4-Dichlorobenzene		1.835	1.783	1.952	1.807	1.879	1.949	1.758	1.408	1.79636	9.61275
n-Butylbenzene		2.437	2.646	2.787	2.861	3.279	3.346	2.831		2.88378	11.3112
1,2-Dichlorobenzene	2.015	1.614	1.854	1.929	1.78	1.867	1.904	1.723	1.381	1.7852	10.7737
1,2-Dibromo-3-Chloropropane			0.139	0.15	0.16	0.174	0.2	0.195	0.187	0.17209	13.4946
1,2,4-Trichlorobenzene		1.071	1.101	1.219	1.167	1.311	1.38	1.288	1.132	1.20873	9.09076
Hexachlorobutadiene		0.54	0.482	0.505	0.552	0.622	0.662	0.654	0.61	0.57851	11.7769
Naphthalene		2.74	2.505	2.911	2.865	3.108	3.099	2.565	1.975	2.72094	13.7311
1,2,3-Trichlorobenzene	1.401	0.953	1.088	1.192	1.2	1.262	1.347	1.24	1.121	1.20044	11.3063

Wed Mar 29 10:40:49 2017

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L17031689 Run Date: 03/24/2017 Sample ID: WG607620-12
Instrument ID: HPMS11 Run Time: 22:40 Method: 8260B
File ID: 11M17029 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG607620 Cal ID: HPMS11 - 24-MAR-17

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,1-Dichloroethene	CCC	50.0	53.2	ug/L	0.553	6.50	20	
Chloroform	CCC	50.0	48.8	ug/L	0.577	2.40	20	
Ethylbenzene	CCC	50.0	52.5	ug/L	0.662	5.10	20	
Toluene	CCC	50.0	50.2	ug/L	1.76	0.400	20	
Vinyl Chloride	CCC	50.0	43.7	ug/L	0.362	12.6	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.922	0.800	20	
Chloromethane	SPCC	50.0	52.8	ug/L	0.530	5.50	20	
Bromoform	SPCC	50.0	46.1	ug/L	0.283	7.70	20	
Chlorobenzene	SPCC	50.0	50.7	ug/L	1.13	1.40	20	
1,1-Dichloroethane	SPCC	50.0	52.2	ug/L	0.686	4.40	20	
1,1,1-Trichloroethane		50.0	55.7	ug/L	0.526	11.4	20	
1,1,2-Trichloroethane		50.0	50.2	ug/L	0.383	0.300	20	
1,2-Dichloroethane		50.0	50.3	ug/L	0.476	0.700	20	
Acetone		50.0	47.2	ug/L	0.0950	5.70	20	
Benzene		50.0	50.9	ug/L	1.24	1.80	20	
Carbon Tetrachloride		50.0	57.0	ug/L	0.437	13.9	20	
Methylene Chloride		50.0	50.1	ug/L	0.337	0.300	20	
m-,p-Xylene		100	104	ug/L	0.744	4.10	20	
o-Xylene		50.0	52.2	ug/L	0.777	4.40	20	
Styrene		50.0	57.3	ug/L	1.28	14.6	20	
Tetrachloroethene		50.0	53.6	ug/L	0.359	7.20	20	
Trichloroethene		50.0	54.2	ug/L	0.323	8.40	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 5230091
Report generated 04/06/2017 11:36

Login Number: L17031689 Run Date: 04/03/2017 Sample ID: WG608584-02
Instrument ID: HPMS11 Run Time: 16:20 Method: 8260B
File ID: 11M17247 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG608588 Cal ID: HPMS11 - 24-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,2-Dichloropropane	CCC	50.0	46.7	ug/L	0.362	6.69	20	
1,1-Dichloroethene	CCC	50.0	48.9	ug/L	0.509	2.11	20	
Chloroform	CCC	50.0	41.8	ug/L	0.494	16.4	20	
Ethylbenzene	CCC	50.0	45.9	ug/L	0.579	8.20	20	
Toluene	CCC	50.0	44.8	ug/L	1.57	10.4	20	
Vinyl Chloride	CCC	50.0	42.3	ug/L	0.350	15.5	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.0	ug/L	0.818	12.0	20	
Bromoform	SPCC	50.0	41.0	ug/L	0.251	18.0	20	
Chlorobenzene	SPCC	50.0	44.4	ug/L	0.989	11.3	20	
Chloromethane	SPCC	50.0	41.8	ug/L	0.420	16.4	20	
1,1-Dichloroethane	SPCC	50.0	47.2	ug/L	0.619	5.70	20	
Xylenes		150	138	ug/L	0.670	8.17	20	
1,1,1-Trichloroethane		50.0	46.2	ug/L	0.436	7.52	20	
1,1,2-Trichloroethane		50.0	43.6	ug/L	0.333	12.8	20	
1,2-Dichloroethane		50.0	44.5	ug/L	0.421	11.1	20	
Acetone		50.0	46.6	ug/L	0.0938	6.83	20	
Benzene		50.0	44.4	ug/L	1.08	11.1	20	
Carbon Tetrachloride		50.0	48.9	ug/L	0.376	2.15	20	
Methylene Chloride		50.0	44.1	ug/L	0.296	11.9	20	
m-,p-Xylene		100	91.7	ug/L	0.655	8.25	20	
o-Xylene		50.0	46.0	ug/L	0.685	8.00	20	
Styrene		50.0	49.8	ug/L	1.12	0.398	20	
Tetrachloroethene		50.0	47.1	ug/L	0.315	5.88	20	
Trichloroethene		50.0	44.8	ug/L	0.267	10.5	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 5230093
Report generated 04/06/2017 11:36

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031689
Instrument ID: HPMS11
Workgroup (AAB#): WG608588

ICAL CCV Number: WG607620-08
CAL ID: HPMS11-24-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607620-08	NA	NA	158955	305247	432286
Upper Limit	NA	NA	317910	610494	864572
Lower Limit	NA	NA	79478	152624	216143
L17031689-01	50.0	DL01	121203	256183	371364
L17031689-02	1.00	01	120895	255500	374634
WG608588-01	1.00	01	116822	251654	367965
WG608588-02	1.00	01	129531	256914	368188
WG608588-03	1.00	01	131472	264199	375878

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 5230094
Report generated 04/06/2017 11:36

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031689
Instrument ID: HPMS11
Workgroup (AAB#): WG608588

ICAL CCV Number: WG607620-08
CAL ID: HPMS11-24-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607620-08	NA	NA	16.98	14.17	10.54
Upper Limit	NA	NA	17.48	14.67	11.04
Lower Limit	NA	NA	16.48	13.67	10.04
L17031689-01	50.0	DL01	16.98	14.18	10.55
L17031689-02	1.00	01	16.98	14.18	10.55
WG608588-01	1.00	01	16.98	14.17	10.55
WG608588-02	1.00	01	16.98	14.18	10.55
WG608588-03	1.00	01	16.98	14.18	10.55

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 5230096
Report generated: 04/06/2017 11:36

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040317\11M17261.D Vial: 15
Acq On : 3 Apr 2017 23:19 Operator: ADC
Sample : L17031689-01 A 50X 826-SPE Inst : hpms11
Misc : 1,50 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 04 11:55:00 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

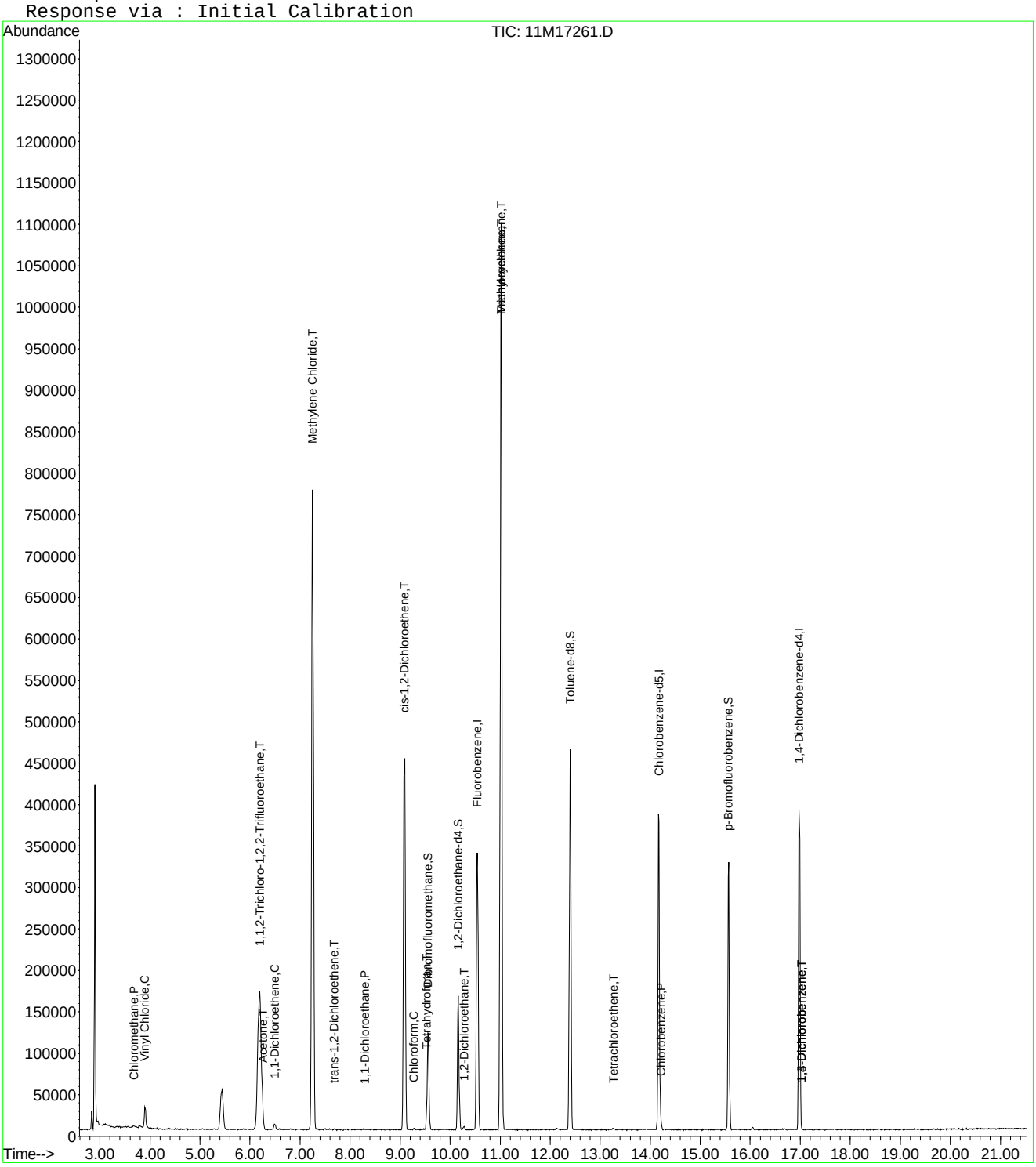
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.55	96	371364	25.00	ug/L		0.01
56) Chlorobenzene-d5	14.18	117	256183	25.00	ug/L		0.01
76) 1,4-Dichlorobenzene-d4	16.98	152	121203	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	9.55	111	99147	25.6867	ug/L		0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.76%				
43) 1,2-Dichloroethane-d4	10.16	65	127933	25.9763	ug/L		0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.92%				
57) Toluene-d8	12.40	98	380650	26.5397	ug/L		0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.16%				
78) p-Bromofluorobenzene	15.56	95	140547	27.9763	ug/L		0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.92%				
Target Compounds							Qvalue
3) Chloromethane	3.68	50	2419	0.3244	ug/L		89
4) Vinyl Chloride	3.90	62	26035	4.2369	ug/L		98
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	180616	44.8740	ug/L		98
13) Acetone	6.26	43	1056	0.7059	ug/L	#	46
14) 1,1-Dichloroethene	6.49	61	8579	1.1119	ug/L		95
19) Methylene Chloride	7.25	84	394342	79.0438	ug/L		89
23) trans-1,2-Dichloroethene	7.68	96	666	0.1538	ug/L		93
27) 1,1-Dichloroethane	8.29	63	1508	0.1546	ug/L	#	50
32) cis-1,2-Dichloroethene	9.09	96	234493	45.8476	ug/L		89
33) Chloroform	9.27	83	2211	0.2518	ug/L		77
36) Tetrahydrofuran	9.53	42	407	0.2409	ug/L	#	41
44) 1,2-Dichloroethane	10.28	62	4446	0.6325	ug/L		94
46) Trichloroethene	11.02	130	435120	98.3603	ug/L		99
47) Methylcyclohexane	11.02	83	5473	0.7366	ug/L	#	1
64) Tetrachloroethene	13.27	164	424	0.1237	ug/L	#	55
68) Chlorobenzene	14.22	112	5602	0.4906	ug/L		97
91) 1,3-Dichlorobenzene	17.03	146	1968	0.2260	ug/L	#	1
92) 1,4-Dichlorobenzene	17.03	146	1968	0.2260	ug/L	#	1

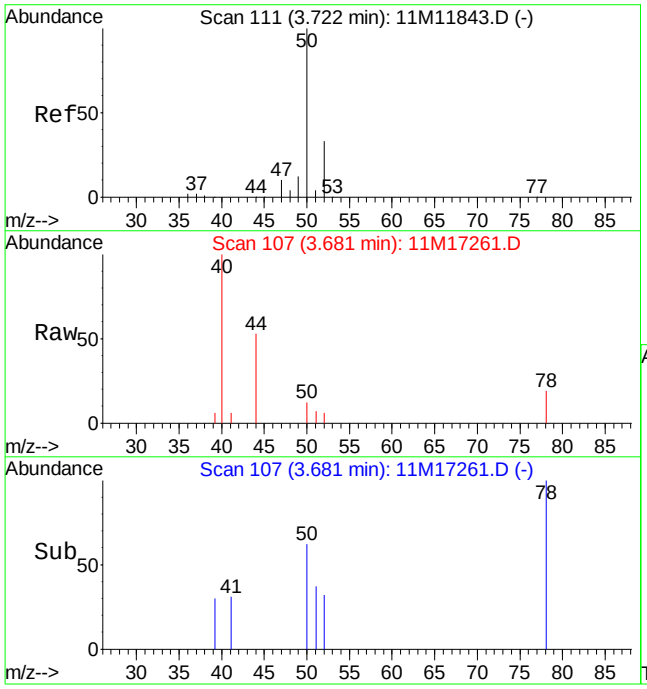
(#) = qualifier out of range (m) = manual integration
11M17261.D 8260WT.M Tue Apr 04 11:55:01 2017 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040317\11M17261.D Vial: 15
Acq On : 3 Apr 2017 23:19 Operator: ADC
Sample : L17031689-01 A 50X 826-SPE Inst : hpms11
Misc : 1,50 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 4 11:55 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration

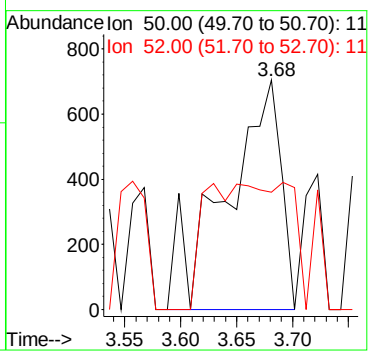


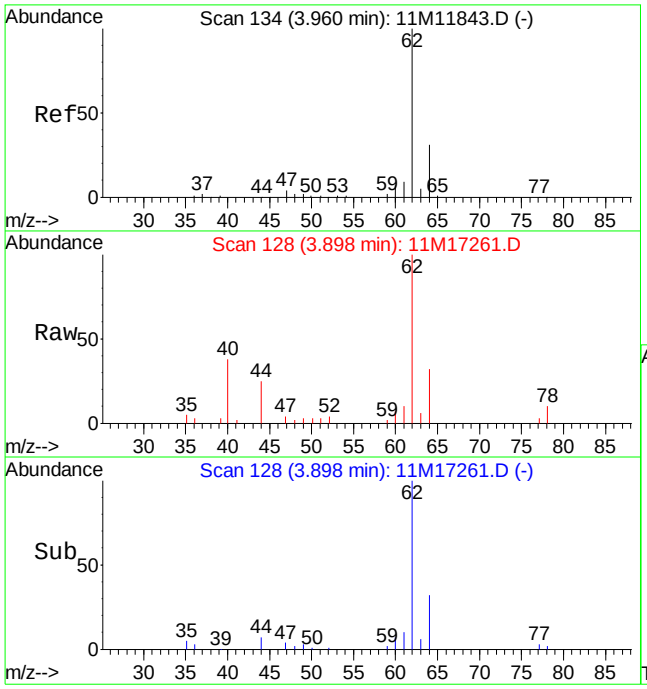


#3
Chloromethane
Concen: 0.32 ug/L
RT: 3.68 min Scan# 107
Delta R.T. 0.01 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 50 Resp: 2419

Ion	Ratio	Lower	Upper
50	100		
52	27.6	20.3	47.3

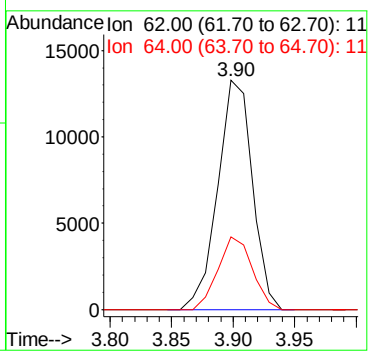


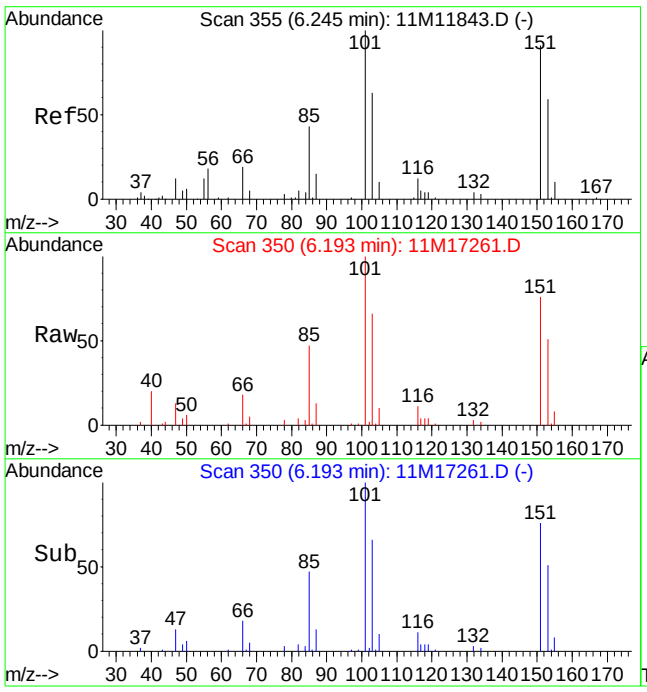


#4
Vinyl Chloride
Concen: 4.24 ug/L
RT: 3.90 min Scan# 128
Delta R.T. -0.00 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 62 Resp: 26035

Ion	Ratio	Lower	Upper
62	100		
64	31.3	19.3	45.1

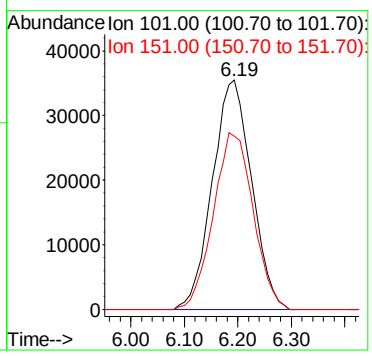


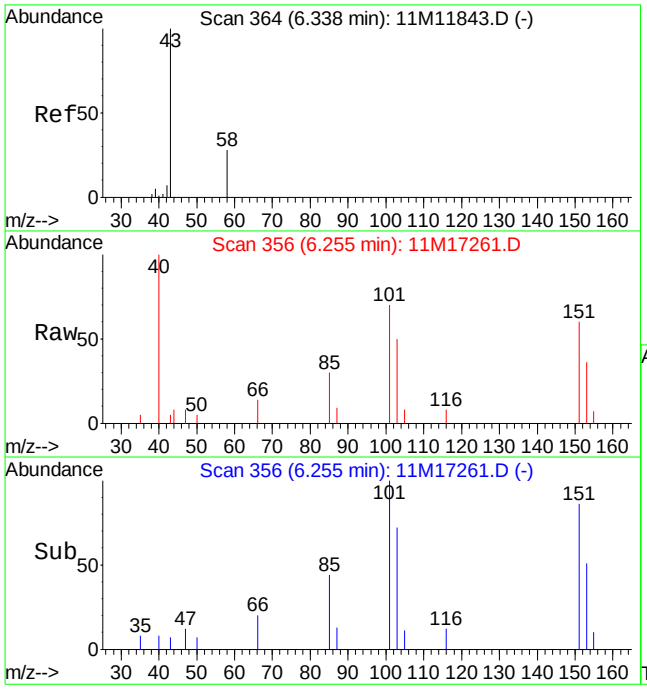


#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 44.87 ug/L
RT: 6.19 min Scan# 350
Delta R.T. 0.01 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion:101 Resp: 180616

Ion	Ratio	Lower	Upper
101	100		
151	78.0	39.9	119.9

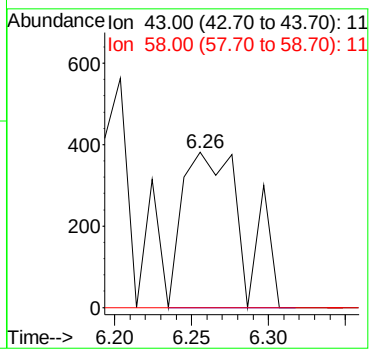


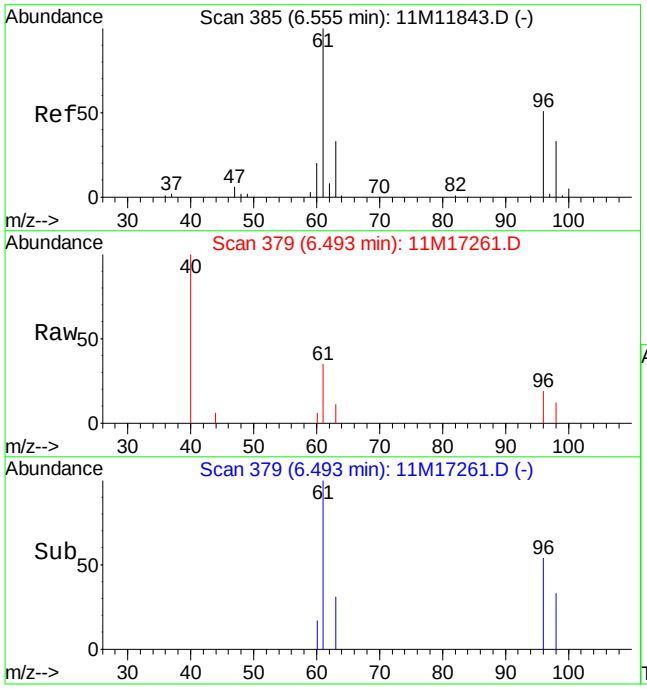


#13
Acetone
Concen: 0.71 ug/L
RT: 6.26 min Scan# 356
Delta R.T. -0.01 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 43 Resp: 1056

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.5	40.7#

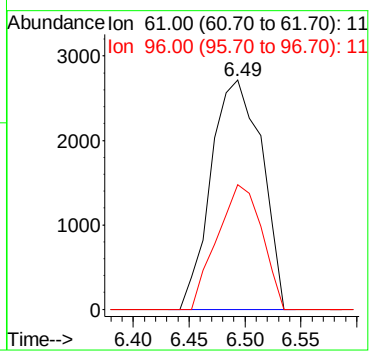


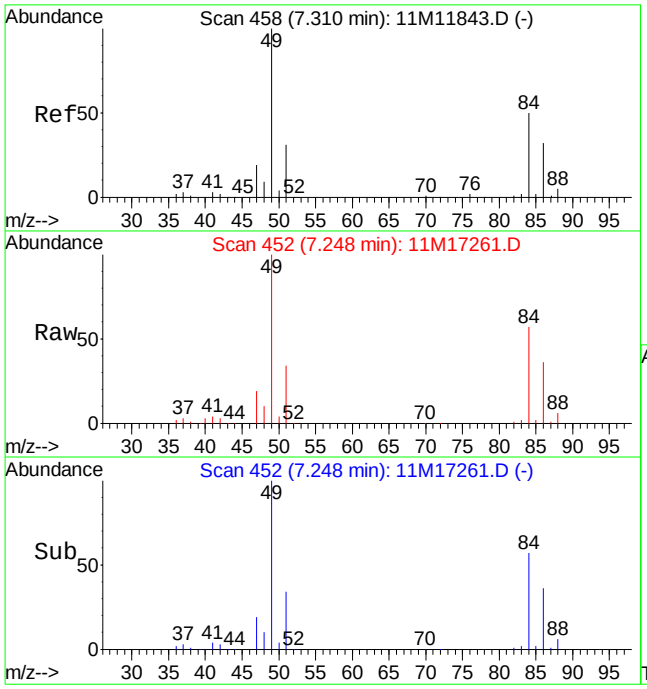


#14
1,1-Dichloroethene
Concen: 1.11 ug/L
RT: 6.49 min Scan# 379
Delta R.T. 0.01 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 61 Resp: 8579

Ion	Ratio	Lower	Upper
61	100		
96	47.9	31.0	72.2

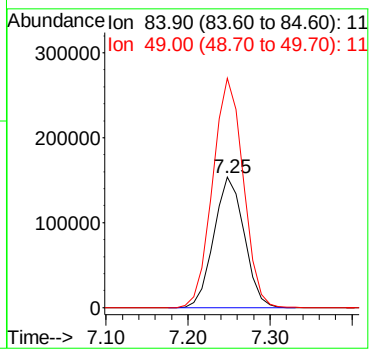


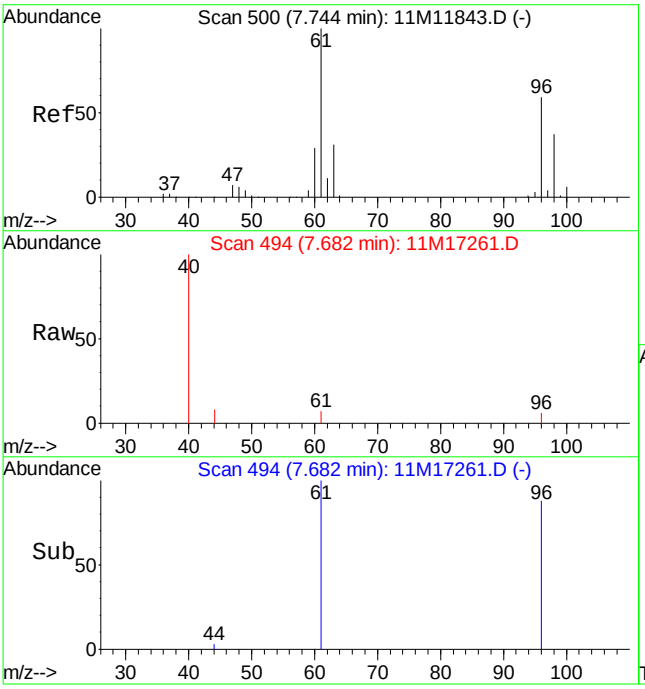


#19
Methylene Chloride
Concen: 79.04 ug/L
RT: 7.25 min Scan# 452
Delta R.T. -0.00 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 84 Resp: 394342

Ion	Ratio	Lower	Upper
84	100		
49	177.3	97.7	228.1

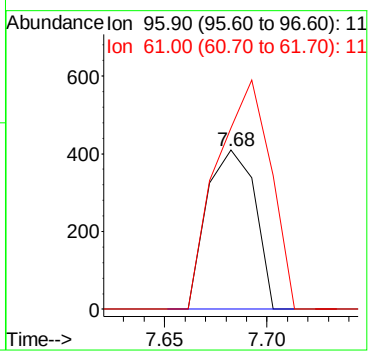


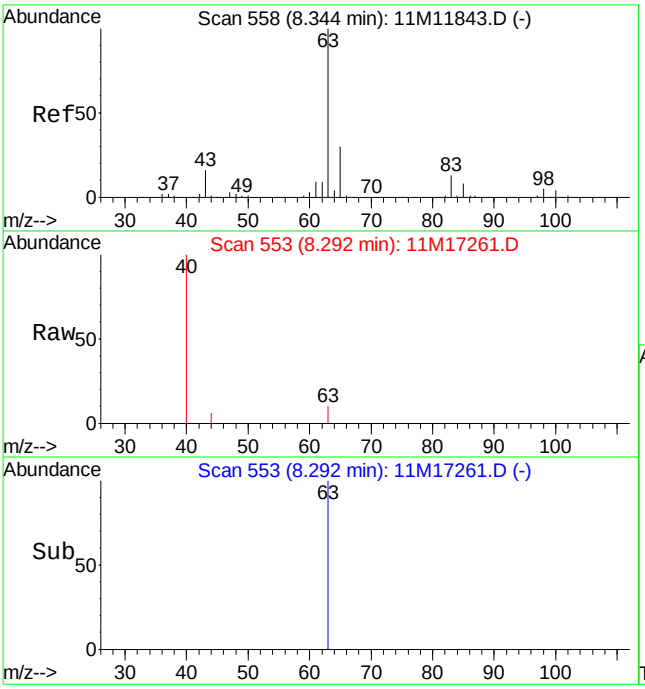


#23
trans-1,2-Dichloroethene
Concen: 0.15 ug/L
RT: 7.68 min Scan# 494
Delta R.T. -0.00 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 96 Resp: 666

Ion	Ratio	Lower	Upper
96	100		
61	161.4	102.4	239.0

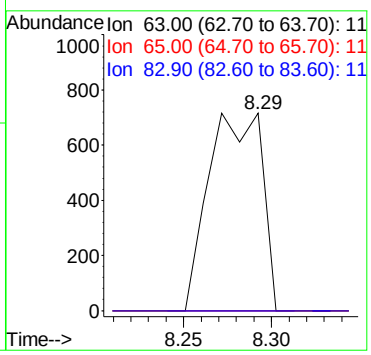


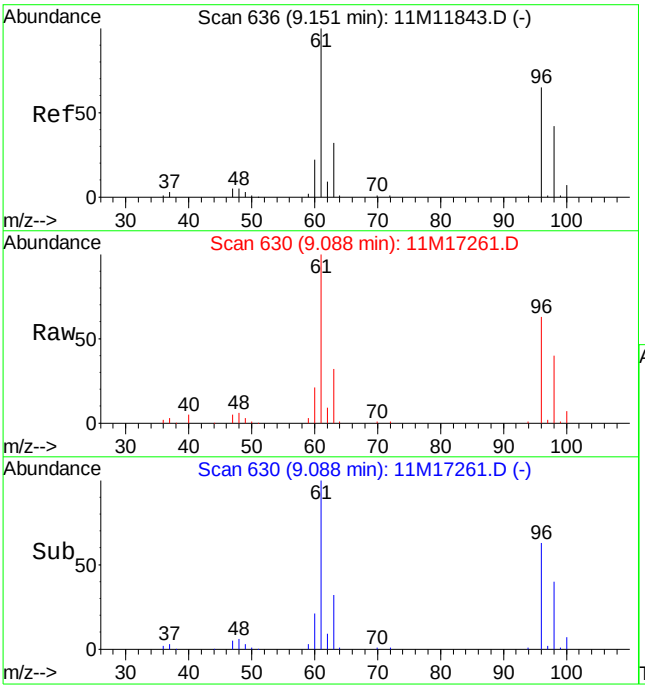


#27
1,1-Dichloroethane
Concen: 0.15 ug/L
RT: 8.29 min Scan# 553
Delta R.T. 0.01 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 63 Resp: 1508

Ion	Ratio	Lower	Upper
63	100		
65	0.0	19.0	44.2#
83	0.0	7.1	16.5#

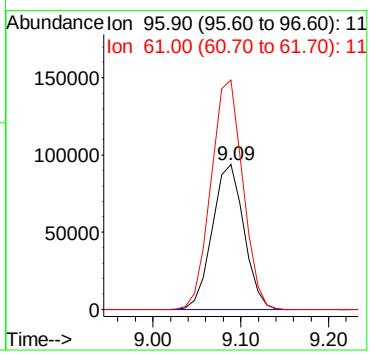


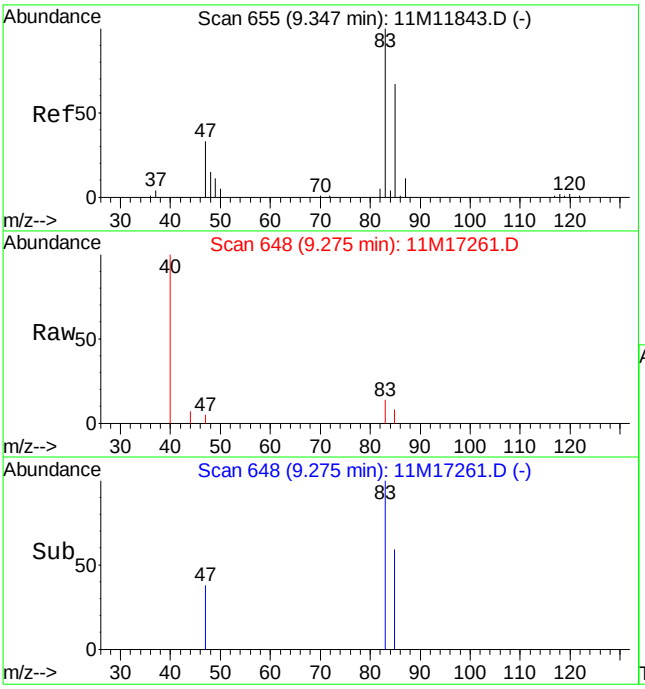


#32
cis-1,2-Dichloroethene
Concen: 45.85 ug/L
RT: 9.09 min Scan# 630
Delta R.T. 0.01 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 96 Resp: 234493

Ion	Ratio	Lower	Upper
96	100		
61	159.4	104.6	244.2

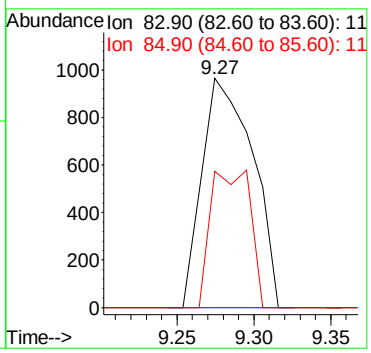


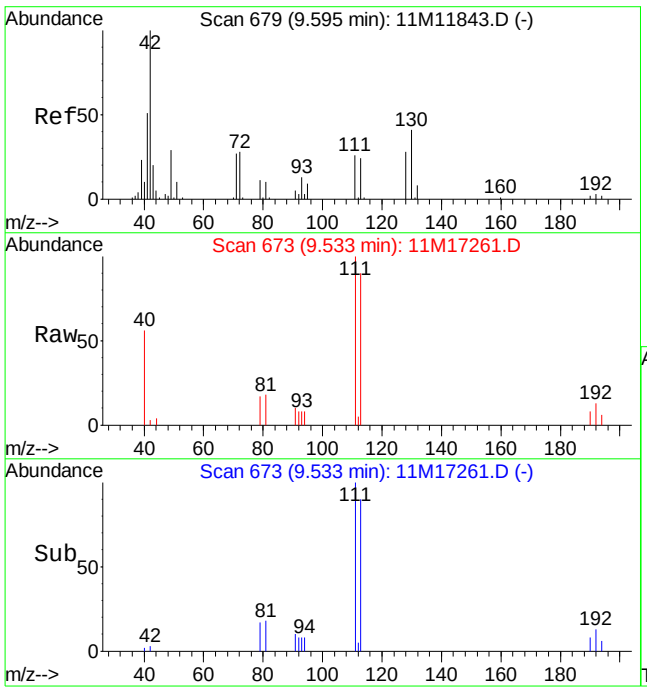


#33
Chloroform
Concen: 0.25 ug/L
RT: 9.27 min Scan# 648
Delta R.T. -0.00 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 83 Resp: 2211

Ion	Ratio	Lower	Upper
83	100		
85	46.9	39.2	91.6

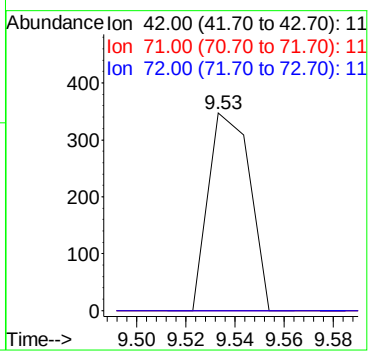


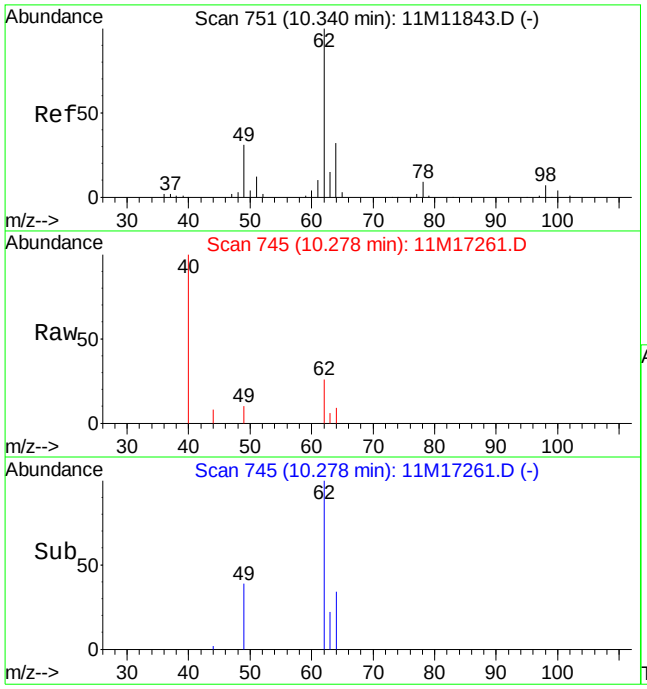


#36
Tetrahydrofuran
Concen: 0.24 ug/L
RT: 9.53 min Scan# 673
Delta R.T. 0.01 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 42 Resp: 407

Ion	Ratio	Lower	Upper
42	100		
71	0.0	19.9	46.3#
72	0.0	21.0	49.0#

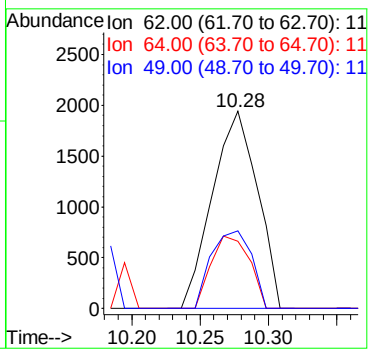


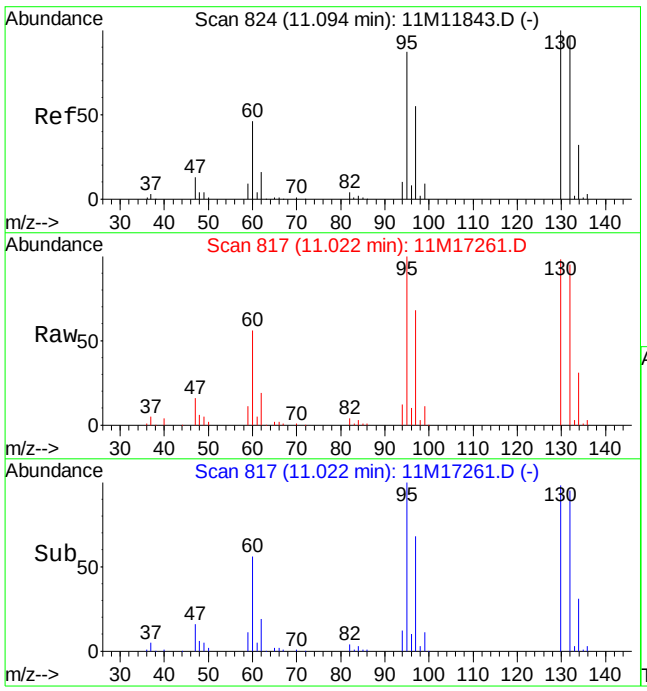


#44
1,2-Dichloroethane
Concen: 0.63 ug/L
RT: 10.28 min Scan# 745
Delta R.T. 0.01 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 62 Resp: 4446

Ion	Ratio	Lower	Upper
62	100		
64	31.2	19.6	45.8
49	35.2	24.2	56.6

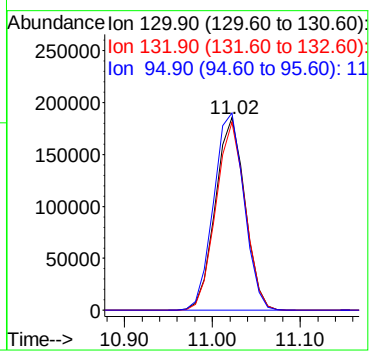


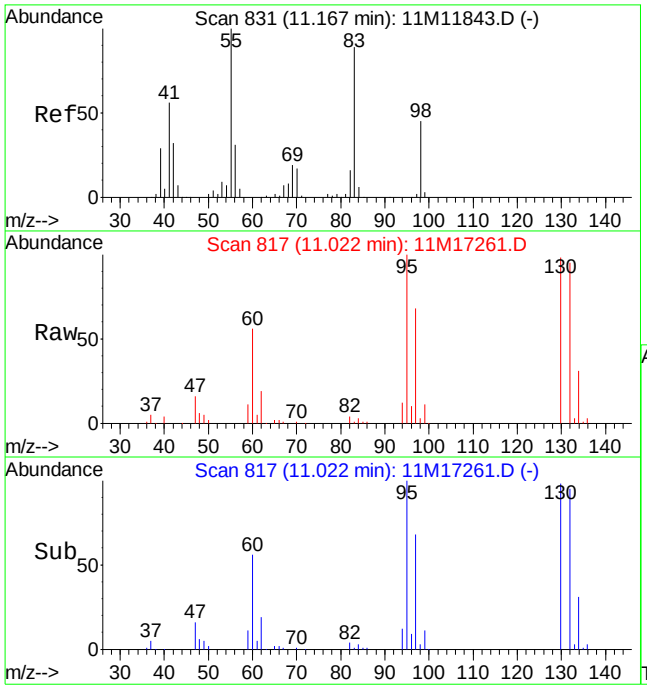


#46
Trichloroethene
Concen: 98.36 ug/L
RT: 11.02 min Scan# 817
Delta R.T. -0.00 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion:130 Resp: 435120

Ion	Ratio	Lower	Upper
130	100		
132	96.5	57.8	134.8
95	105.0	62.3	145.5

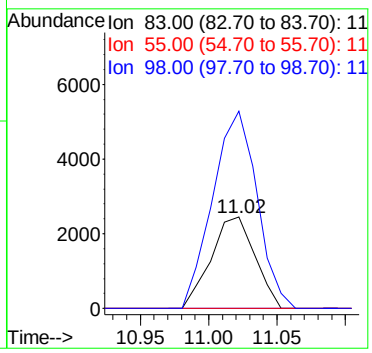


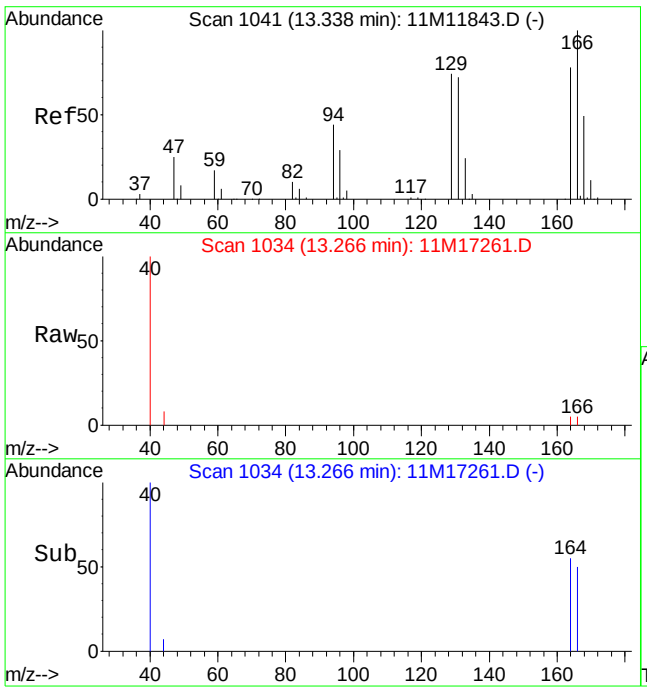


#47
Methylcyclohexane
Concen: 0.74 ug/L
RT: 11.02 min Scan# 817
Delta R.T. -0.07 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion: 83 Resp: 5473

Ion	Ratio	Lower	Upper
83	100		
55	0.0	58.6	136.6#
98	217.7	27.6	64.4#

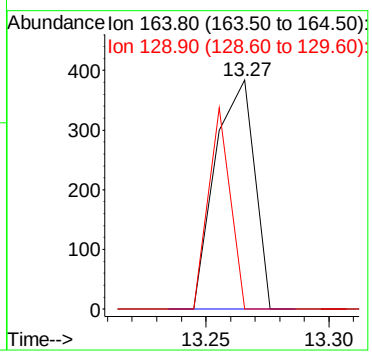


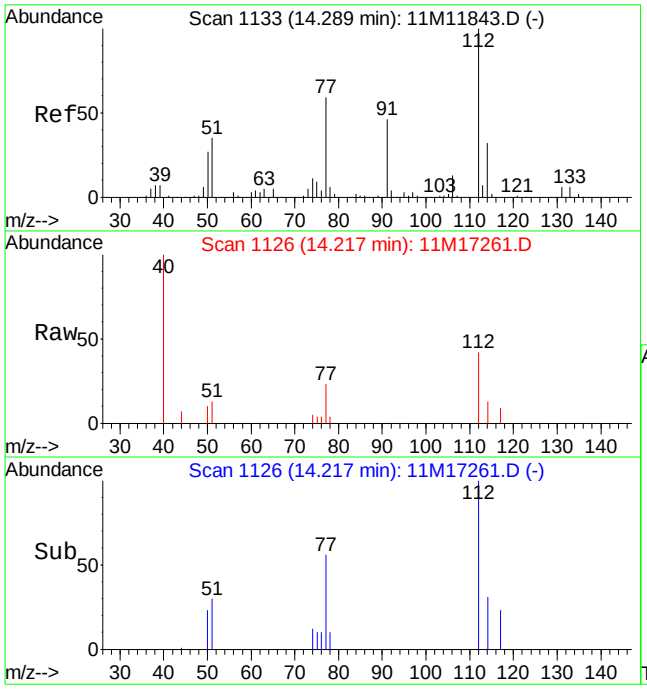


#64
Tetrachloroethene
Concen: 0.12 ug/L
RT: 13.27 min Scan# 1034
Delta R.T. 0.01 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion:164 Resp: 424

Ion	Ratio	Lower	Upper
164	100		
129	49.3	55.4	129.4#

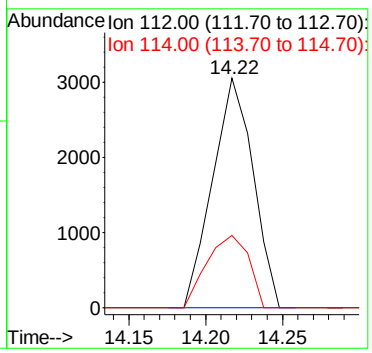


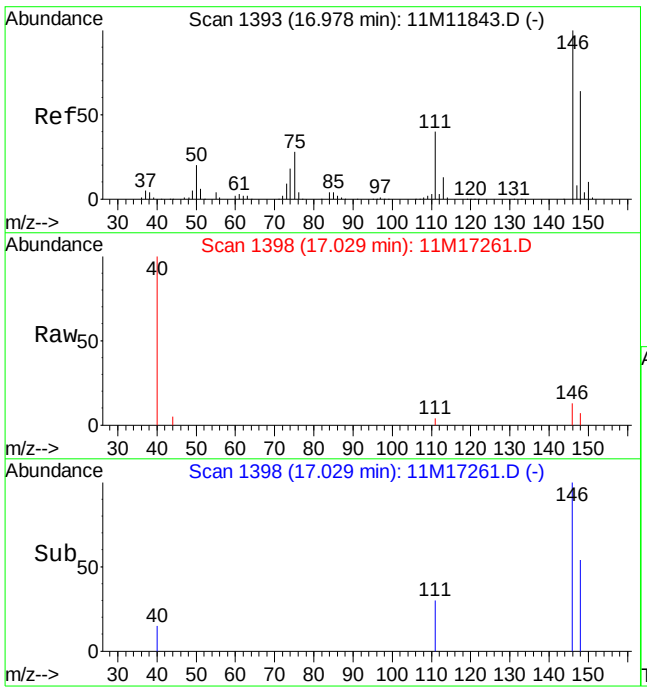


#68
Chlorobenzene
Concen: 0.49 ug/L
RT: 14.22 min Scan# 1126
Delta R.T. -0.00 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion:112 Resp: 5602

Ion	Ratio	Lower	Upper
112	100		
114	32.4	20.5	47.9

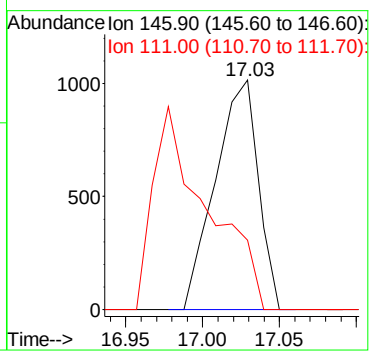


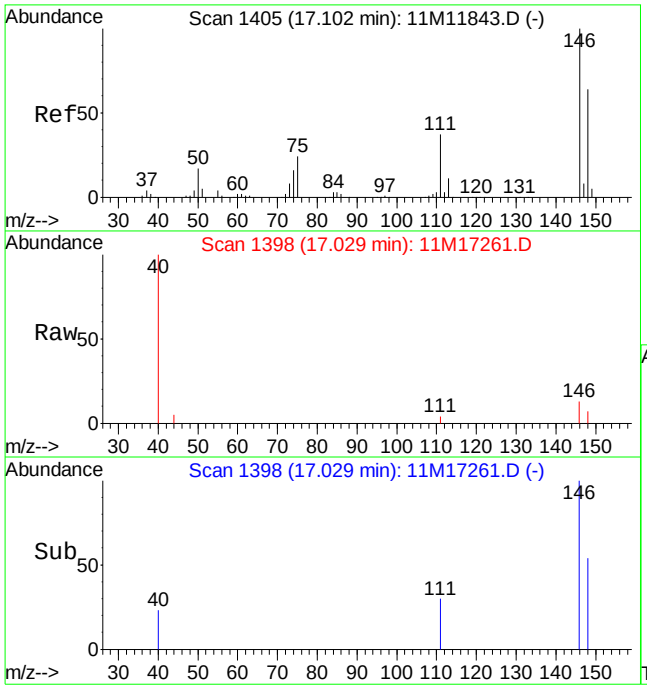


#91
1,3-Dichlorobenzene
Concen: 0.23 ug/L
RT: 17.03 min Scan# 1398
Delta R.T. 0.12 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion:146 Resp: 1968

Ion	Ratio	Lower	Upper
146	100		
111	111.9	25.3	58.9#

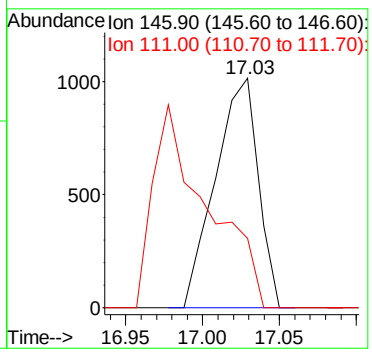




#92
1,4-Dichlorobenzene
Concen: 0.23 ug/L
RT: 17.03 min Scan# 1398
Delta R.T. 0.01 min
Lab File: 11M17261.D
Acq: 3 Apr 2017 23:19

Tgt Ion:146 Resp: 1968

Ion	Ratio	Lower	Upper
146	100		
111	111.9	24.5	57.3#



Data File : C:\MSDCHEM\1\DATA\040317\11M17257.D Vial: 11
Acq On : 3 Apr 2017 21:20 Operator: ADC
Sample : L17031689-02 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 04 11:54:50 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

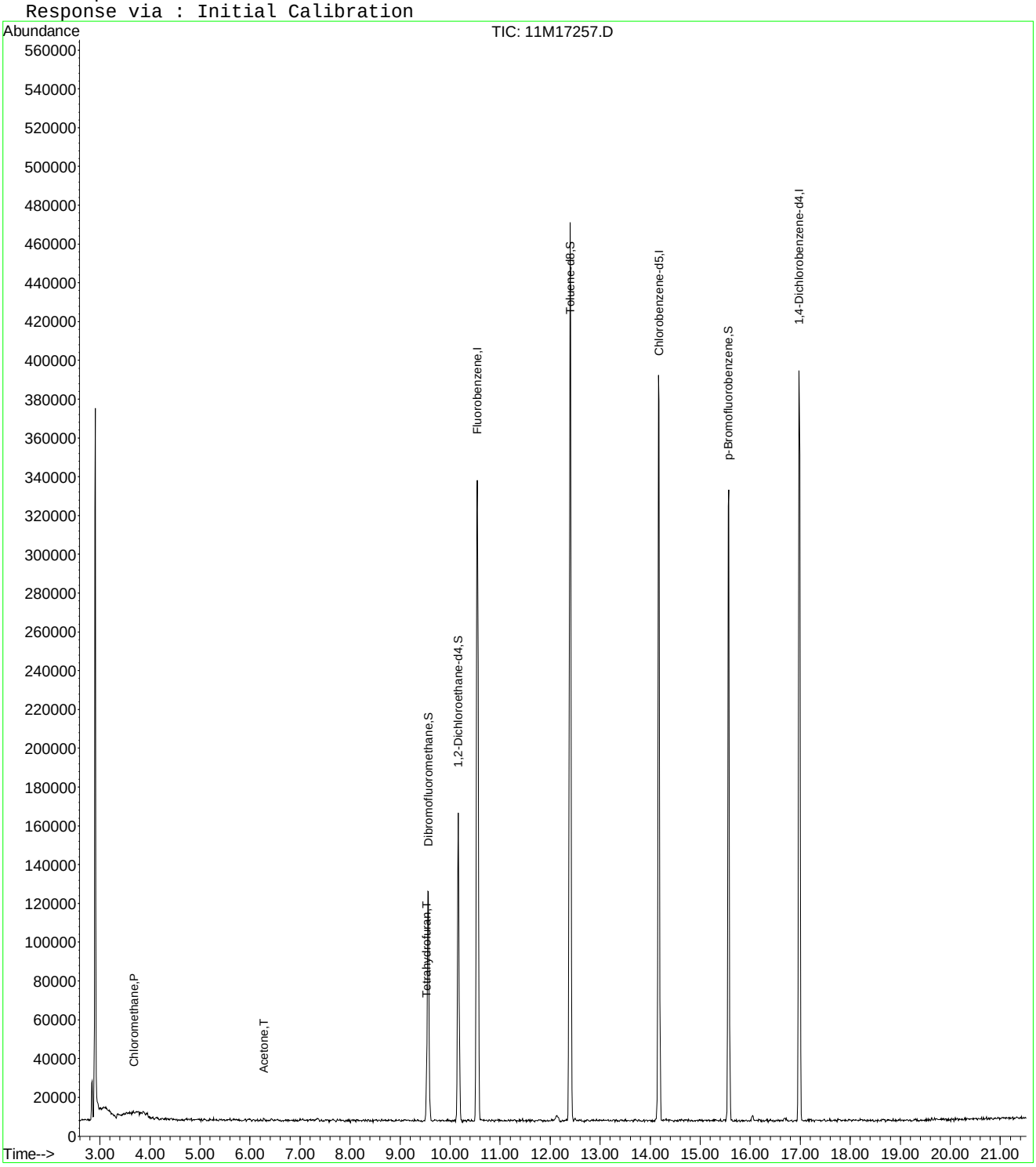
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.55	96	374634	25.00	ug/L	0.01
56) Chlorobenzene-d5	14.18	117	255500	25.00	ug/L	0.01
76) 1,4-Dichlorobenzene-d4	16.98	152	120895	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.56	111	99358	25.5166	ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%			
43) 1,2-Dichloroethane-d4	10.16	65	129543	26.0736	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.28%			
57) Toluene-d8	12.40	98	382310	26.7267	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.92%			
78) p-Bromofluorobenzene	15.56	95	140658	28.0697	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.28%			
Target Compounds						Qvalue
3) Chloromethane	3.68	50	2946	0.3916	ug/L #	74
13) Acetone	6.28	43	1172	0.7766	ug/L #	46
36) Tetrahydrofuran	9.53	42	2886	1.6934	ug/L #	68

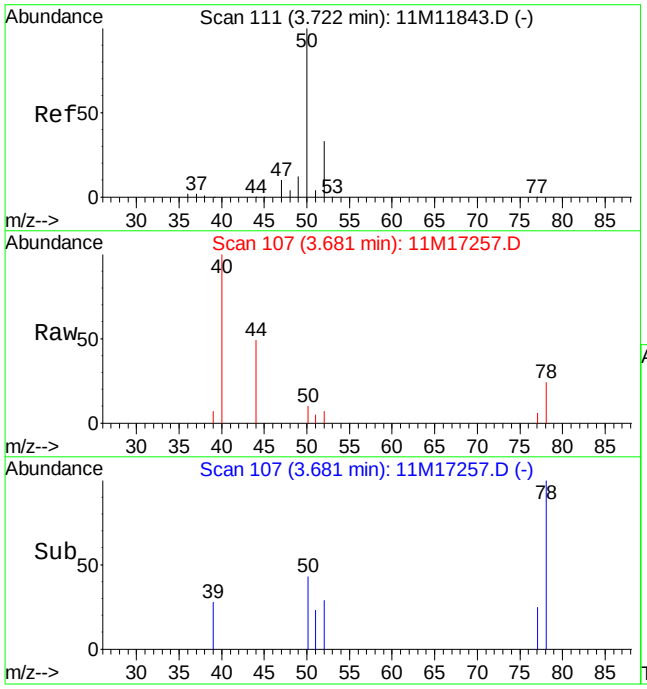
(#) = qualifier out of range (m) = manual integration
11M17257.D 8260WT.M Tue Apr 04 11:54:51 2017 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040317\11M17257.D Vial: 11
Acq On : 3 Apr 2017 21:20 Operator: ADC
Sample : L17031689-02 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 4 11:54 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration

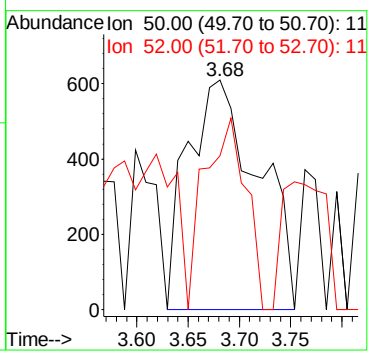


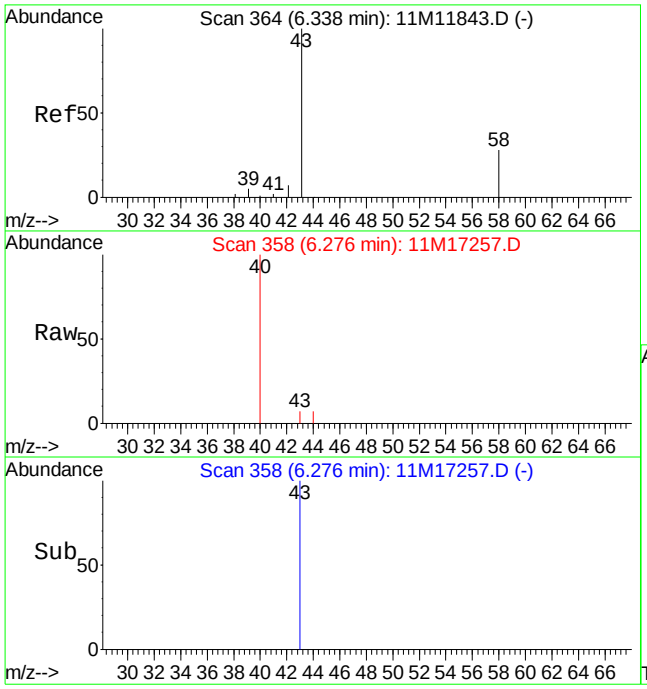


#3
Chloromethane
Concen: 0.39 ug/L
RT: 3.68 min Scan# 107
Delta R.T. 0.01 min
Lab File: 11M17257.D
Acq: 3 Apr 2017 21:20

Tgt Ion: 50 Resp: 2946

Ion	Ratio	Lower	Upper
50	100		
52	48.6	20.3	47.3#

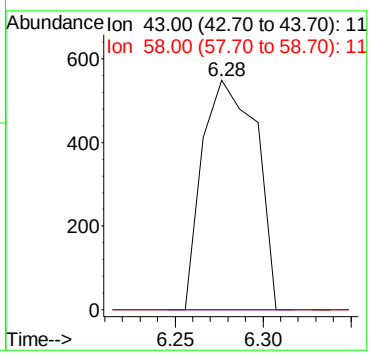


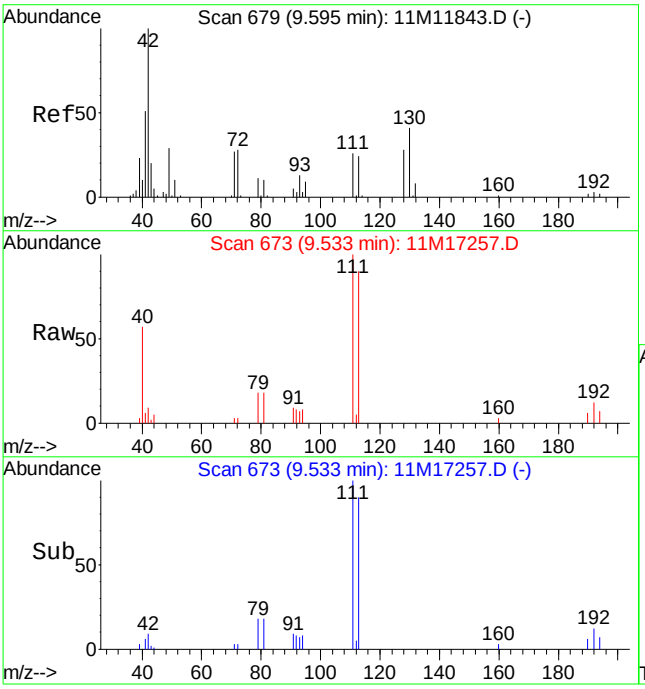


#13
Acetone
Concen: 0.78 ug/L
RT: 6.28 min Scan# 358
Delta R.T. 0.01 min
Lab File: 11M17257.D
Acq: 3 Apr 2017 21:20

Tgt Ion: 43 Resp: 1172

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.5	40.7#

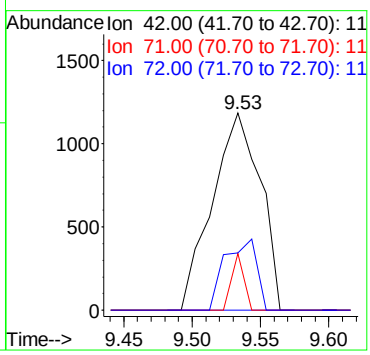




#36
Tetrahydrofuran
Concen: 1.69 ug/L
RT: 9.53 min Scan# 673
Delta R.T. 0.01 min
Lab File: 11M17257.D
Acq: 3 Apr 2017 21:20

Tgt Ion: 42 Resp: 2886

Ion	Ratio	Lower	Upper
42	100		
71	7.3	19.9	46.3#
72	23.7	21.0	49.0



2.1.1.4 Standards Data

Data File : C:\MSDCHEM\1\DATA\112916\11M15413.D Vial: 3
Acq On : 29 Nov 2016 17:04 Operator: JDS
Sample : WG593075-02 5ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:33 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

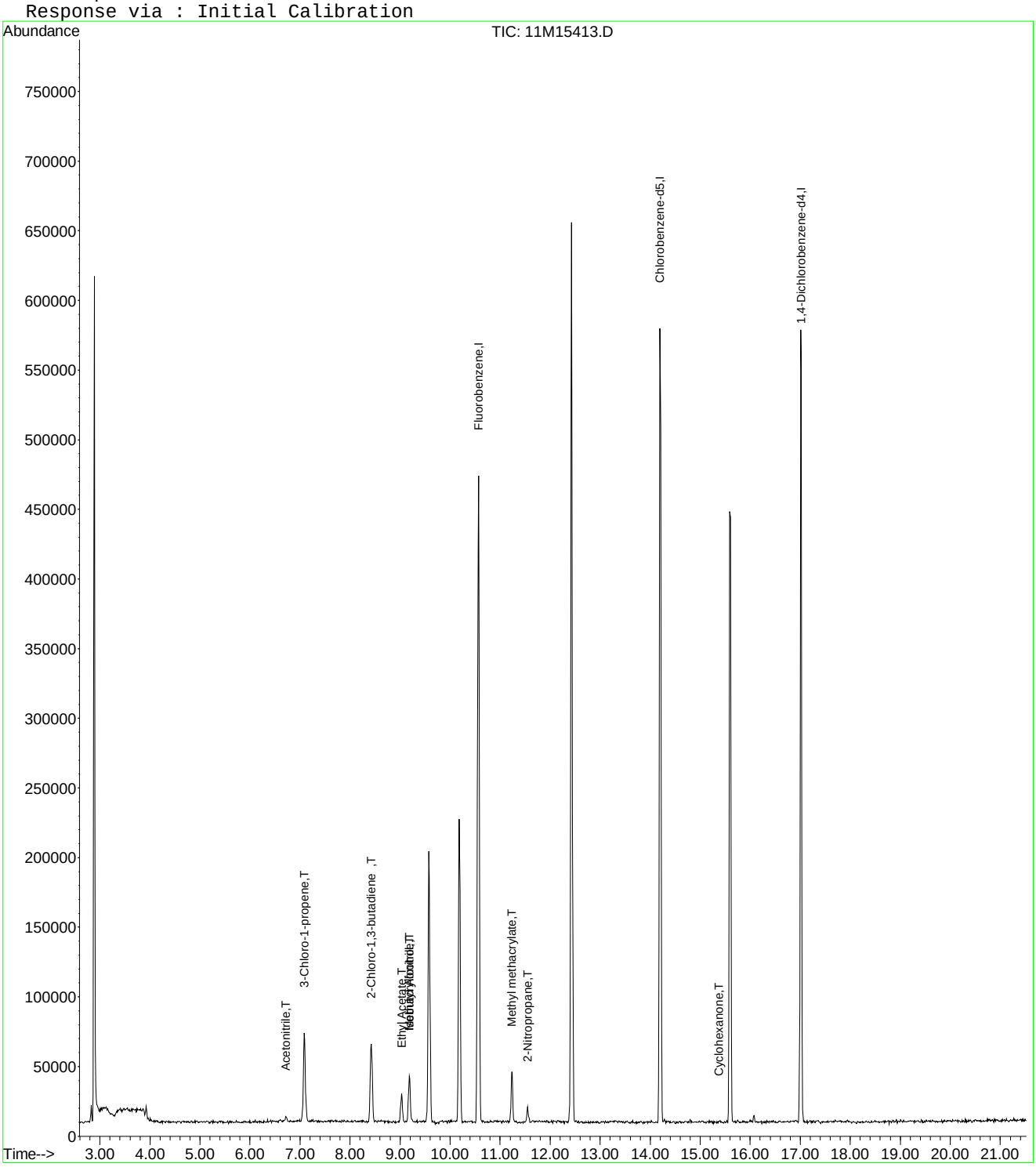
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.57	96	508264	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.20	117	375479	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	182783	25.00	ug/L	0.01
Target Compounds						Qvalue
2) Acetonitrile	6.71	41	5058	4.5315	ug/L	99
3) 3-Chloro-1-propene	7.08	41	75408	4.6204	ug/L	98
4) 2-Chloro-1,3-butadiene	8.43	53	57073	4.2715	ug/L	98
5) Methacrylonitrile	9.18	41	27821	4.4973	ug/L	99
6) Isobutyl Alcohol	9.18	43	1938	6.5106	ug/L	82
8) Cyclohexanone	15.38	55	667	26.9016	ug/L #	19
9) 2-Nitropropane	11.55	43	7814	3.2922	ug/L	86
10) Ethyl Acetate	9.03	43	34683	4.2287	ug/L	99
11) Methyl methacrylate	11.23	41	31845	4.0606	ug/L	99

(#) = qualifier out of range (m) = manual integration
11M15413.D A9FOOW.M Wed Nov 30 09:34:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15413.D Vial: 3
Acq On : 29 Nov 2016 17:04 Operator: JDS
Sample : WG593075-02 5ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15414.D Vial: 4
Acq On : 29 Nov 2016 17:33 Operator: JDS
Sample : WG593075-03 20ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:34 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

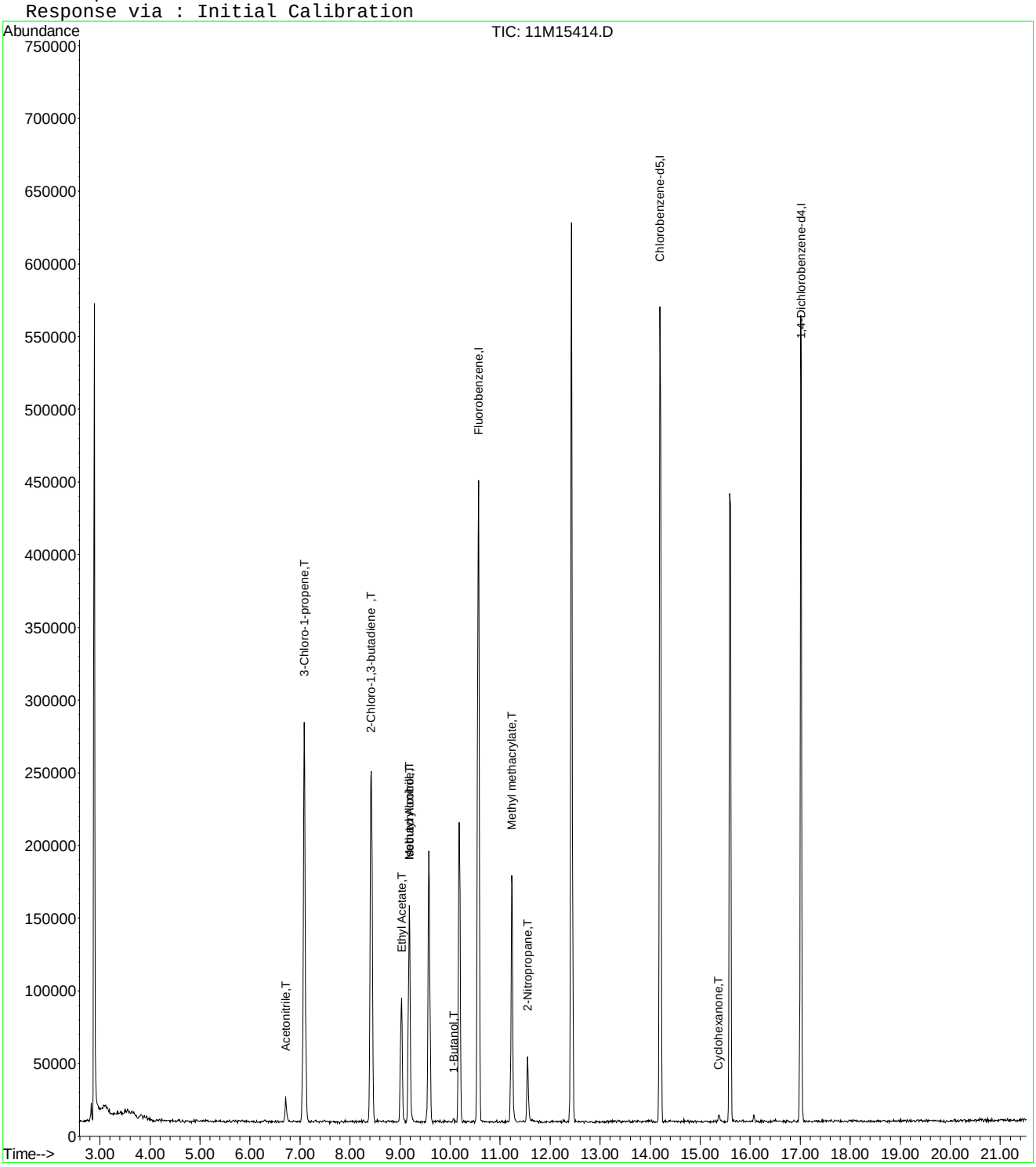
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.57	96	484954	25.00	ug/L		0.00
12) Chlorobenzene-d5	14.20	117	370089	25.00	ug/L		0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	180722	25.00	ug/L		0.01
Target Compounds							Qvalue
2) Acetonitrile	6.71	41	20833	19.5616	ug/L		97
3) 3-Chloro-1-propene	7.08	41	314465	20.1940	ug/L		99
4) 2-Chloro-1,3-butadiene	8.42	53	251294	19.7114	ug/L		99
5) Methacrylonitrile	9.18	41	115470	19.5632	ug/L		100
6) Isobutyl Alcohol	9.18	43	10262	36.1315	ug/L		98
7) 1-Butanol	10.07	56	966	8.6690	ug/L	#	56
8) Cyclohexanone	15.36	55	3155	36.3382	ug/L	#	84
9) 2-Nitropropane	11.55	43	37782	16.6833	ug/L		100
10) Ethyl Acetate	9.03	43	148946	19.0332	ug/L		100
11) Methyl methacrylate	11.23	41	137715	18.4041	ug/L		98

(#) = qualifier out of range (m) = manual integration
11M15414.D A9FOOW.M Wed Nov 30 09:34:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15414.D Vial: 4
Acq On : 29 Nov 2016 17:33 Operator: JDS
Sample : WG593075-03 20ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15415.D Vial: 5
Acq On : 29 Nov 2016 18:02 Operator: JDS
Sample : WG593075-04 50ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:35 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

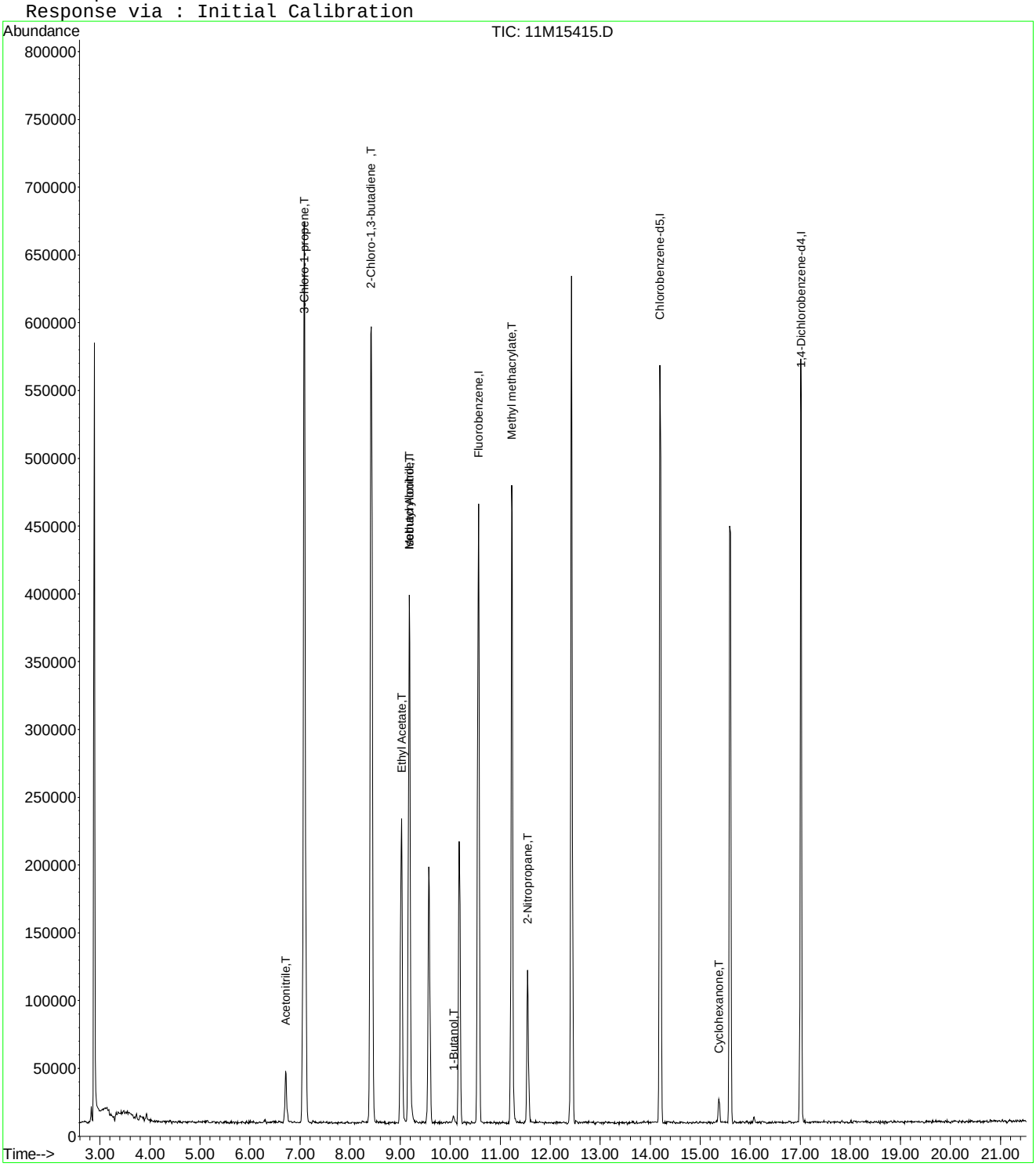
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.57	96	495571	25.00	ug/L		0.00
12) Chlorobenzene-d5	14.20	117	373248	25.00	ug/L		0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	179682	25.00	ug/L		0.01
Target Compounds							Qvalue
2) Acetonitrile	6.71	41	53691	49.3342	ug/L		100
3) 3-Chloro-1-propene	7.08	41	766200	48.1489	ug/L		98
4) 2-Chloro-1,3-butadiene	8.42	53	613583	47.0981	ug/L		100
5) Methacrylonitrile	9.18	41	299019	49.5751	ug/L		100
6) Isobutyl Alcohol	9.18	43	26759	92.1974	ug/L		97
7) 1-Butanol	10.07	56	4000	35.1273	ug/L	#	83
8) Cyclohexanone	15.38	55	9001	57.5193	ug/L	#	93
9) 2-Nitropropane	11.55	43	101680	43.9367	ug/L		99
10) Ethyl Acetate	9.03	43	392821	49.1216	ug/L		100
11) Methyl methacrylate	11.23	41	370524	48.4557	ug/L		99

(#) = qualifier out of range (m) = manual integration
11M15415.D A9FOOW.M Wed Nov 30 09:34:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15415.D Vial: 5
Acq On : 29 Nov 2016 18:02 Operator: JDS
Sample : WG593075-04 50ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



11M15415.D A9FOOW.M Wed Nov 30 09:34:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15416.D Vial: 6
Acq On : 29 Nov 2016 18:30 Operator: JDS
Sample : WG593075-05 100ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:36 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

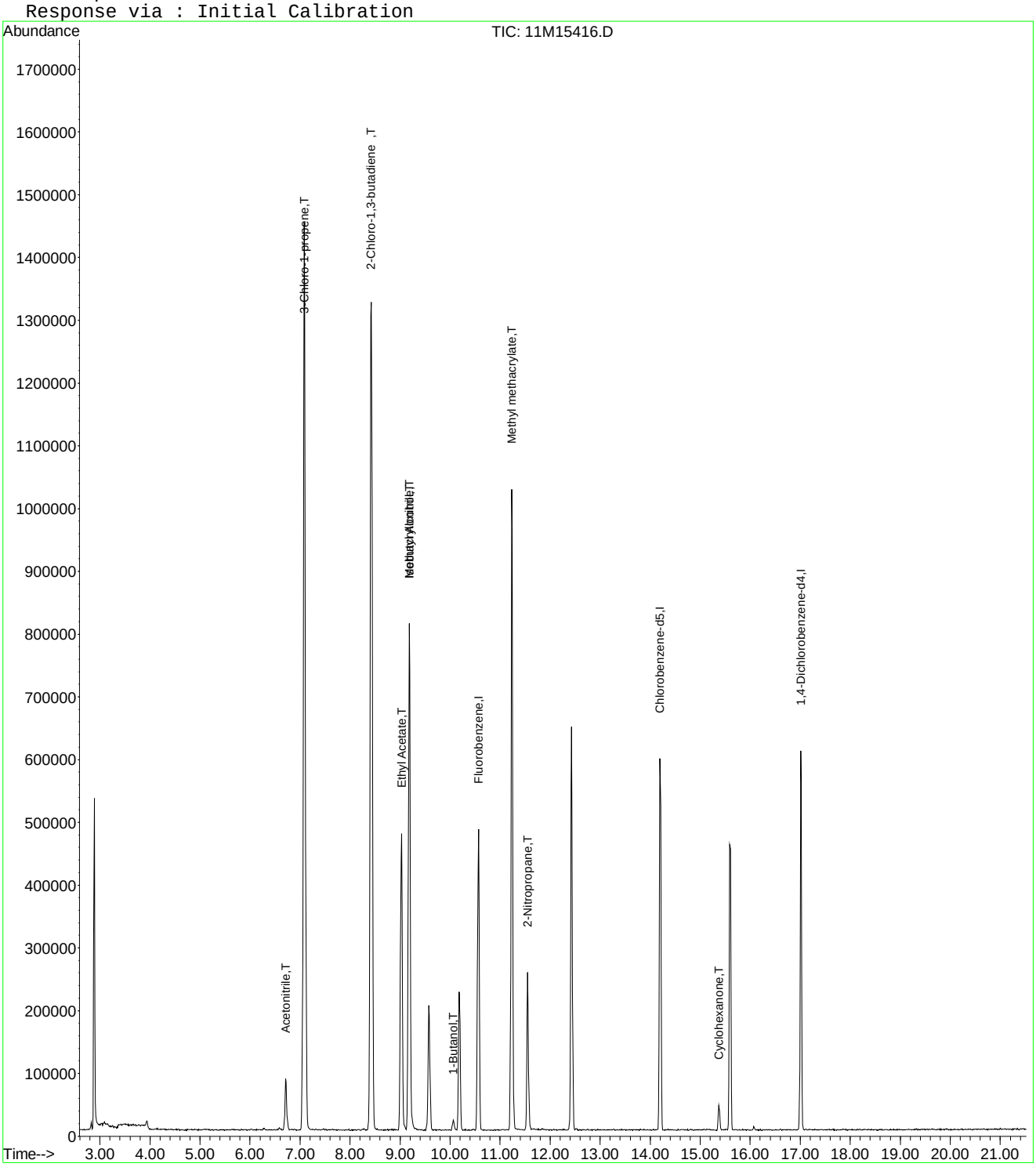
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.57	96	517102	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.20	117	388960	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	191793	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.71	41	111196	97.9186	ug/L	100
3) 3-Chloro-1-propene	7.08	41	1665534	100.3062	ug/L	100
4) 2-Chloro-1,3-butadiene	8.42	53	1369964	100.7788	ug/L	100
5) Methacrylonitrile	9.18	41	619159	98.3777	ug/L	100
6) Isobutyl Alcohol	9.18	43	57155	188.7264	ug/L	100
7) 1-Butanol	10.06	56	10146	85.3904	ug/L	100
8) Cyclohexanone	15.38	55	21531	100.1735	ug/L	100
9) 2-Nitropropane	11.55	43	215849	89.3864	ug/L	100
10) Ethyl Acetate	9.03	43	822119	98.5241	ug/L	100
11) Methyl methacrylate	11.23	41	794951	99.6320	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M15416.D A9FOOW.M Wed Nov 30 09:34:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15416.D Vial: 6
Acq On : 29 Nov 2016 18:30 Operator: JDS
Sample : WG593075-05 100ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\112916\11M15417.D Vial: 7
Acq On : 29 Nov 2016 19:00 Operator: JDS
Sample : WG593075-06 200ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:37 2016 Quant Results File: A9FOOW.RES

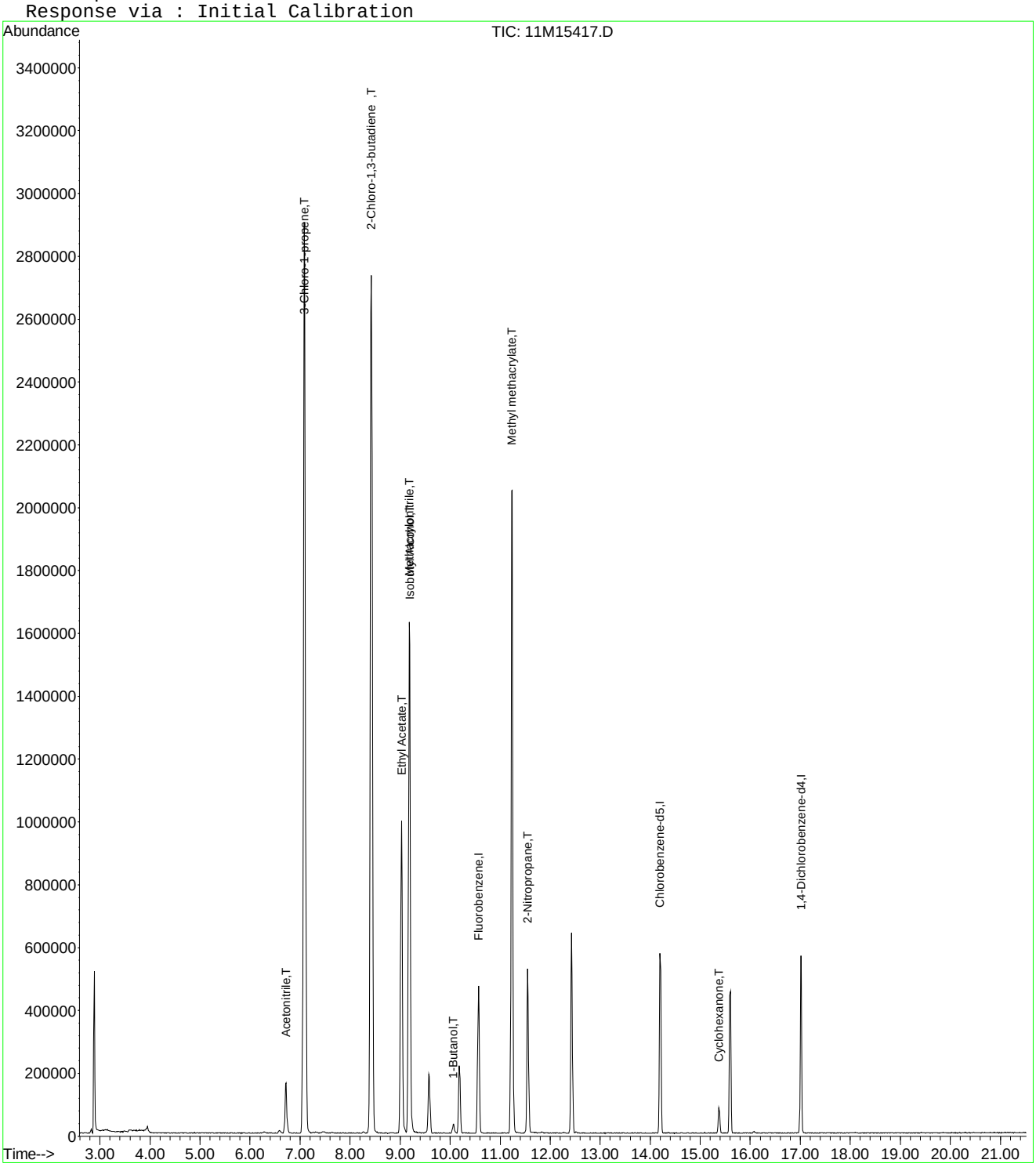
Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.57	96	501296	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.20	117	384160	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	189858	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.72	41	221594	201.2872	ug/L	98
3) 3-Chloro-1-propene	7.08	41	3362523	208.8918	ug/L	99
4) 2-Chloro-1,3-butadiene	8.43	53	2817559	213.8036	ug/L	99
5) Methacrylonitrile	9.18	41	1250204	204.9073	ug/L	100
6) Isobutyl Alcohol	9.19	43	113672	387.1809	ug/L	97
7) 1-Butanol	10.06	56	21030	182.5726	ug/L	90
8) Cyclohexanone	15.37	55	42513	178.6109	ug/L	97
9) 2-Nitropropane	11.55	43	478193	204.2710	ug/L	94
10) Ethyl Acetate	9.03	43	1687290	208.5833	ug/L	100
11) Methyl methacrylate	11.23	41	1640102	212.0368	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M15417.D A9FOOW.M Wed Nov 30 09:34:38 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\112916\11M15417.D Vial: 7
Acq On : 29 Nov 2016 19:00 Operator: JDS
Sample : WG593075-06 200ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15418.D Vial: 8
Acq On : 29 Nov 2016 19:29 Operator: JDS
Sample : WG593075-07 300ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:39 2016 Quant Results File: A9FOOW.RES

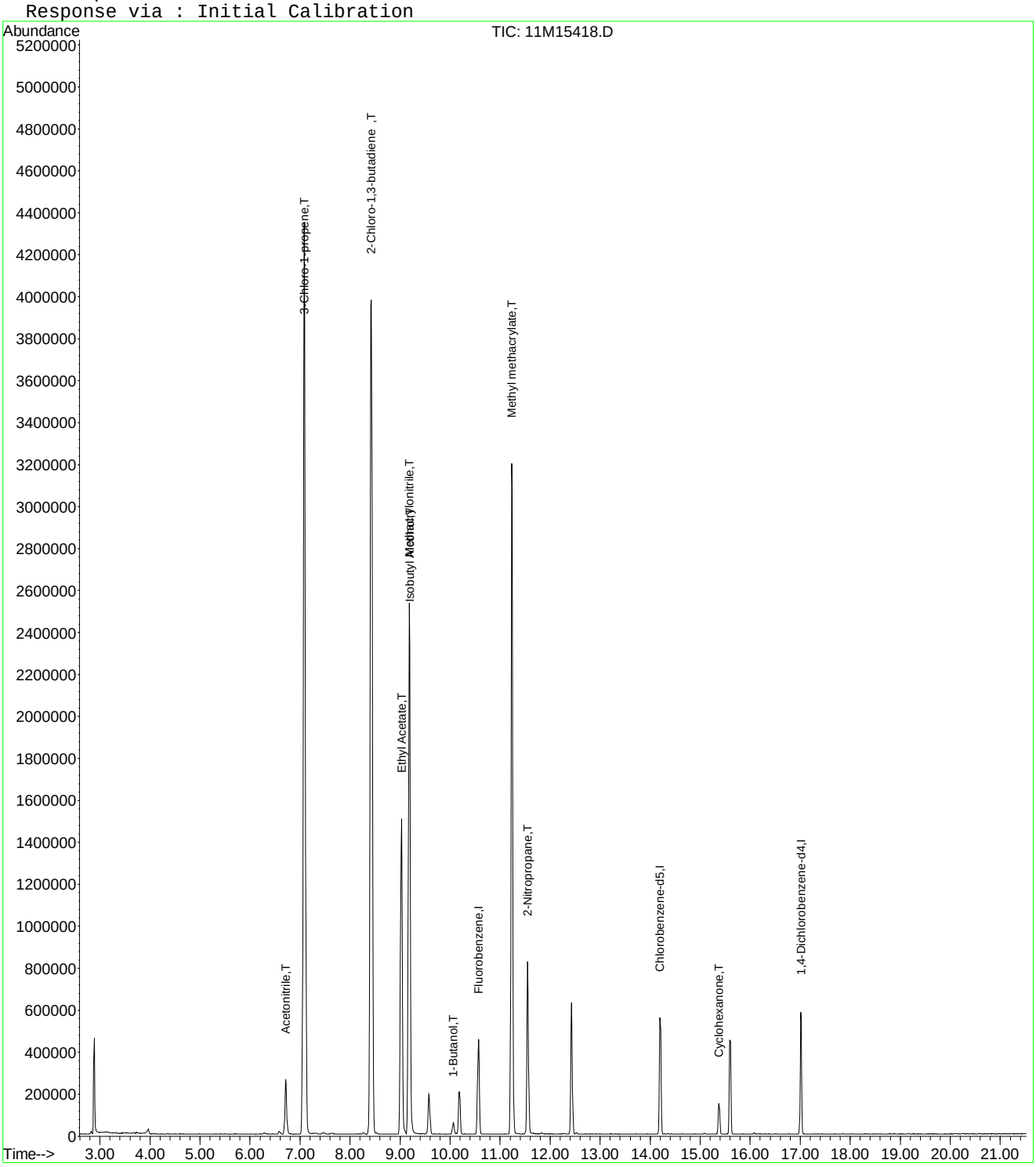
Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.57	96	493186	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.20	117	372251	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	188608	25.00	ug/L	0.01
Target Compounds						Qvalue
2) Acetonitrile	6.71	41	348913	322.1504	ug/L	100
3) 3-Chloro-1-propene	7.08	41	4977010	314.2738	ug/L	100
4) 2-Chloro-1,3-butadiene	8.43	53	4171645	321.7606	ug/L	100
5) Methacrylonitrile	9.18	41	1918968	319.6891	ug/L	100
6) Isobutyl Alcohol	9.19	43	190181	658.4322	ug/L	96
7) 1-Butanol	10.06	56	36803	324.7603	ug/L	89
8) Cyclohexanone	15.38	55	79093	315.9140	ug/L	96
9) 2-Nitropropane	11.55	43	740970	321.7271	ug/L	95
10) Ethyl Acetate	9.03	43	2595577	326.1424	ug/L	100
11) Methyl methacrylate	11.23	41	2517881	330.8713	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M15418.D A9FOOW.M Wed Nov 30 09:34:39 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\112916\11M15418.D Vial: 8
Acq On : 29 Nov 2016 19:29 Operator: JDS
Sample : WG593075-07 300ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15419.D Vial: 9
Acq On : 29 Nov 2016 19:58 Operator: JDS
Sample : WG593075-08 400ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:40 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

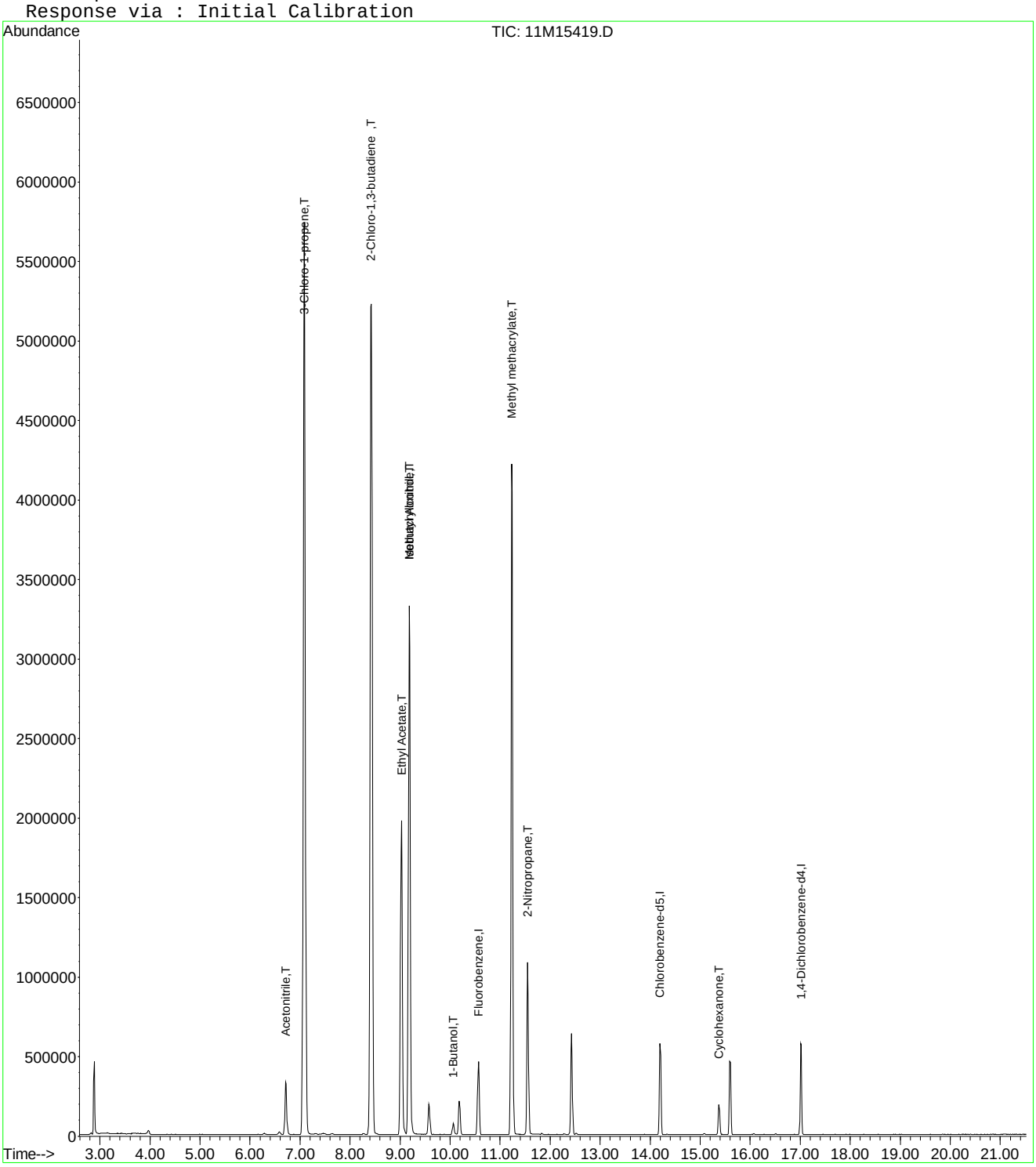
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.57	96	498573	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.20	117	381044	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	190663	25.00	ug/L	0.01
Target Compounds						Qvalue
2) Acetonitrile	6.71	41	452407	413.1929	ug/L	100
3) 3-Chloro-1-propene	7.08	41	6526548	407.6667	ug/L	99
4) 2-Chloro-1,3-butadiene	8.42	53	5466390	417.0692	ug/L	99
5) Methacrylonitrile	9.18	41	2516632	414.7264	ug/L	99
6) Isobutyl Alcohol	9.18	43	249778	855.4214	ug/L	94
7) 1-Butanol	10.06	56	47996	418.9544	ug/L	86
8) Cyclohexanone	15.38	55	102428	397.8081	ug/L	95
9) 2-Nitropropane	11.55	43	988069	424.3814	ug/L	95
10) Ethyl Acetate	9.03	43	3405037	423.2307	ug/L	100
11) Methyl methacrylate	11.23	41	3309181	430.1564	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M15419.D A9FOOW.M Wed Nov 30 09:34:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15419.D Vial: 9
Acq On : 29 Nov 2016 19:58 Operator: JDS
Sample : WG593075-08 400ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15420.D Vial: 10
Acq On : 29 Nov 2016 20:28 Operator: JDS
Sample : WG593075-09 500ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:41 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

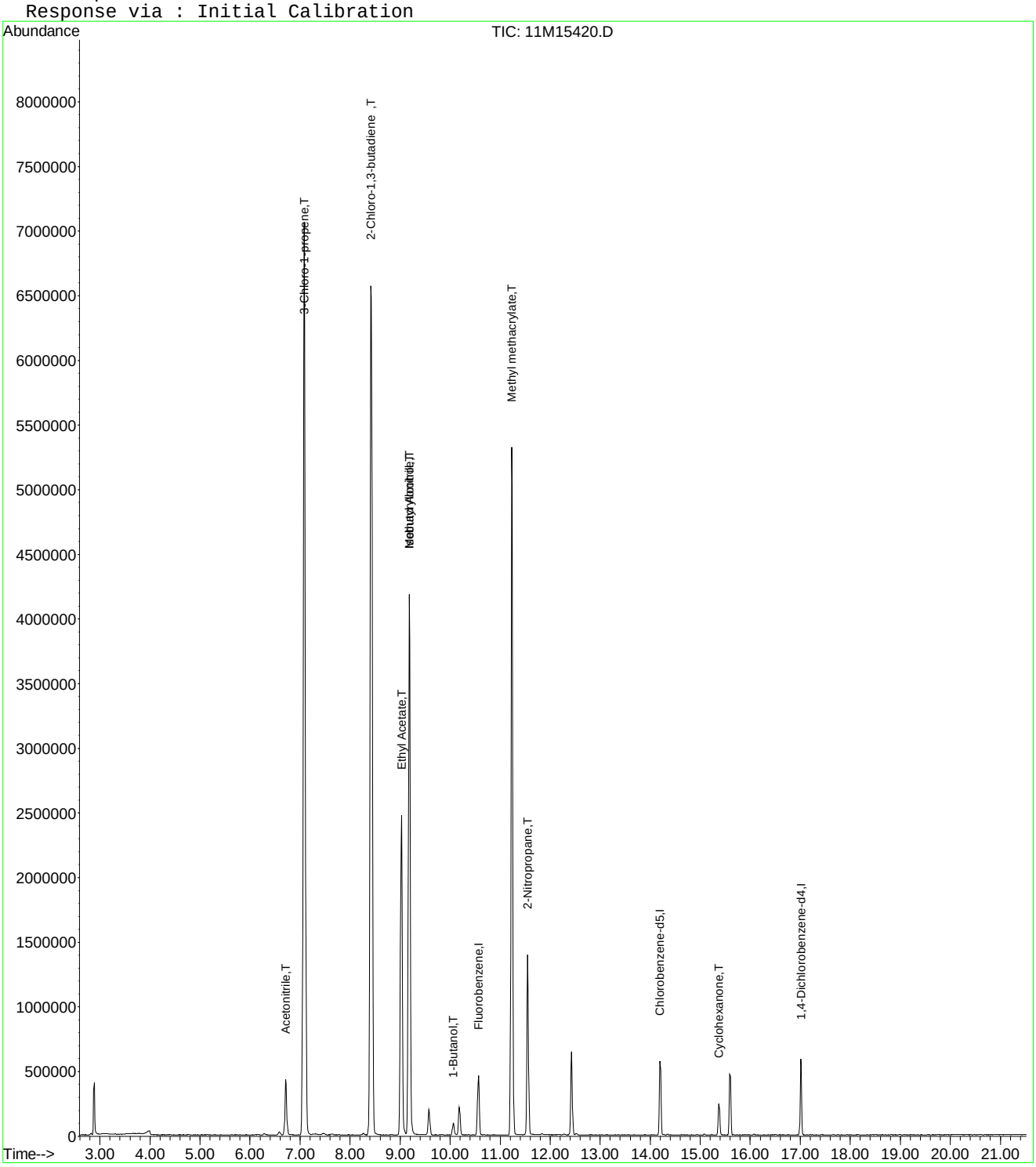
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.57	96	505022	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.20	117	379365	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	188903	25.00	ug/L	0.01
Target Compounds						Qvalue
2) Acetonitrile	6.71	41	574774	518.2498	ug/L	99
3) 3-Chloro-1-propene	7.08	41	8018921	494.4884	ug/L	98
4) 2-Chloro-1,3-butadiene	8.42	53	6811736	513.0785	ug/L	100
5) Methacrylonitrile	9.18	41	3135150	510.0571	ug/L	100
6) Isobutyl Alcohol	9.18	43	324248	1096.2805	ug/L	95
7) 1-Butanol	10.06	56	64016	551.6564	ug/L	89
8) Cyclohexanone	15.38	55	132149	499.9741	ug/L	95
9) 2-Nitropropane	11.55	43	1264877	536.3346	ug/L	95
10) Ethyl Acetate	9.03	43	4265326	523.3907	ug/L	100
11) Methyl methacrylate	11.23	41	4144690	531.8833	ug/L	100

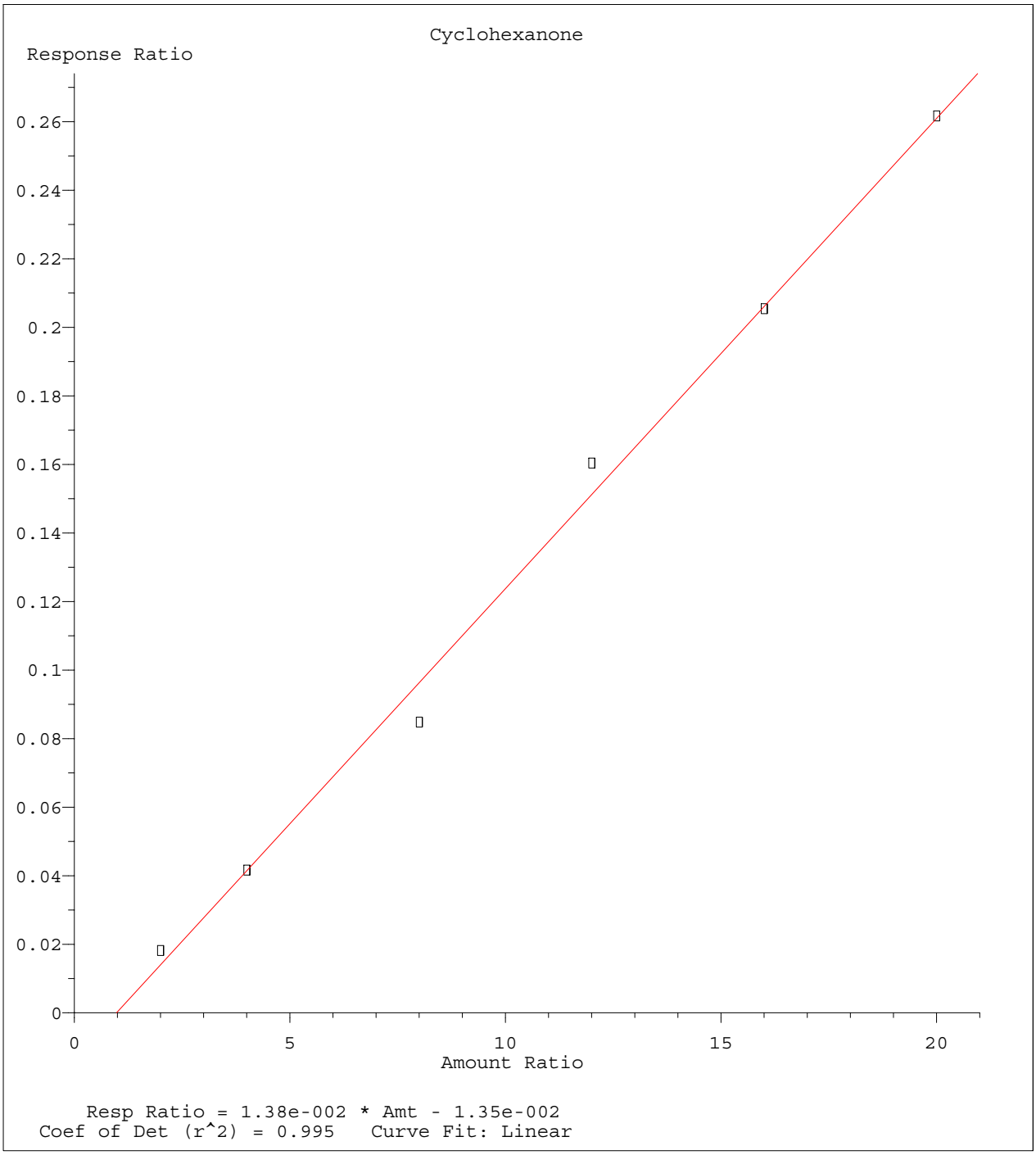
(#) = qualifier out of range (m) = manual integration
11M15420.D A9FOOW.M Wed Nov 30 09:34:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15420.D Vial: 10
Acq On : 29 Nov 2016 20:28 Operator: JDS
Sample : WG593075-09 500ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration





Method Name: C:\MSDCHEM\1\METHODS\A9FOOW.M
Calibration Table Last Updated: Wed Nov 30 09:30:53 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15422.D Vial: 12
Acq On : 29 Nov 2016 21:26 Operator: JDS
Sample : WG593075-10 100ug/L ALT SRC A9 Inst : hpms11
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:43 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

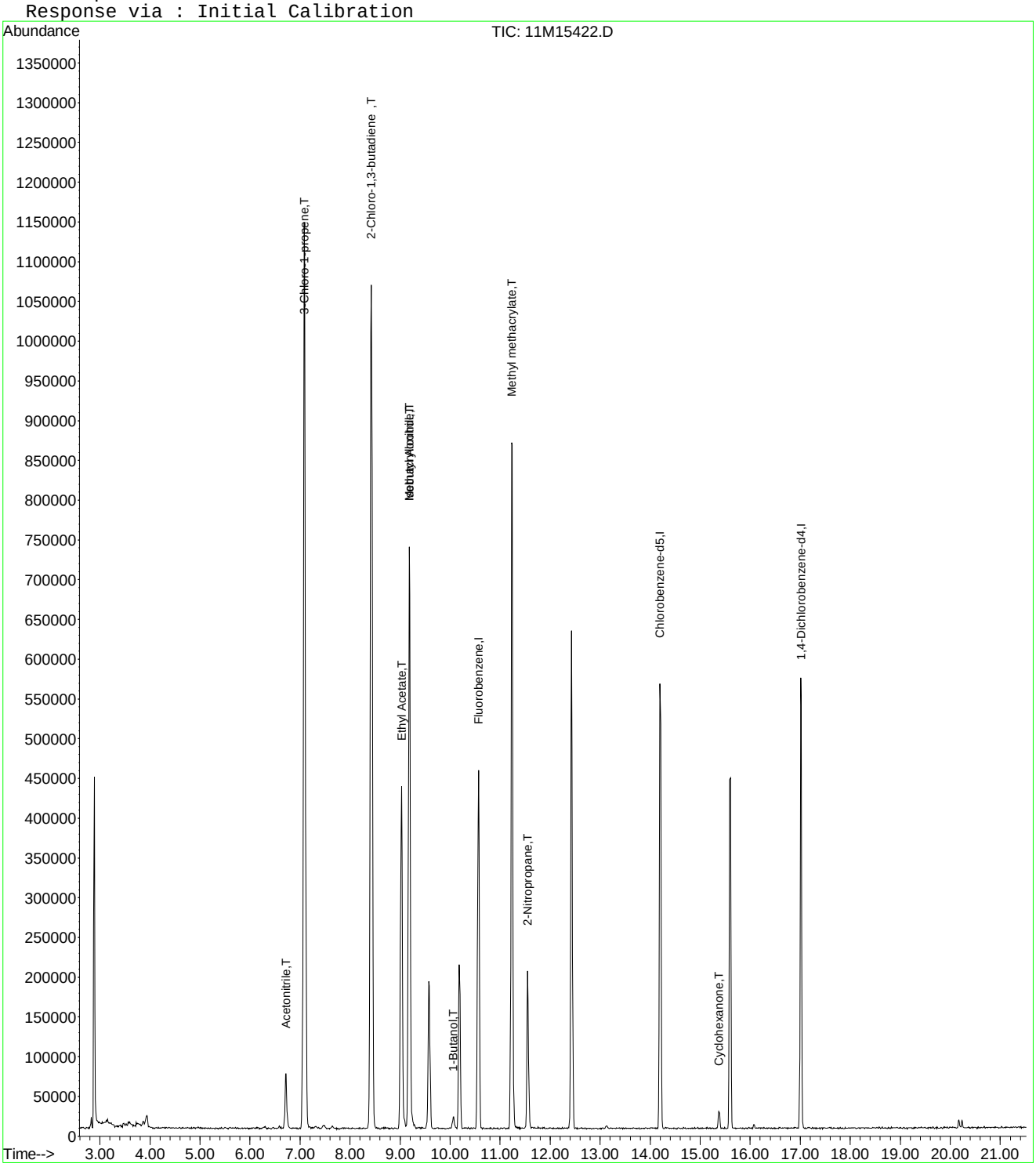
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.57	96	489102	25.00	ug/L		0.00
12) Chlorobenzene-d5	14.20	117	376399	25.00	ug/L		0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	181823	25.00	ug/L		0.01
Target Compounds							Qvalue
2) Acetonitrile	6.72	41	94821	88.2790	ug/L		100
3) 3-Chloro-1-propene	7.08	41	1314710	83.7107	ug/L		99
4) 2-Chloro-1,3-butadiene	8.43	53	1083476	84.2667	ug/L		100
5) Methacrylonitrile	9.18	41	554662	93.1751	ug/L		100
6) Isobutyl Alcohol	9.18	43	51332	179.2022	ug/L		98
7) 1-Butanol	10.06	56	9333	83.0448	ug/L	#	89
8) Cyclohexanone	15.38	55	13104	73.1984	ug/L		98
9) 2-Nitropropane	11.55	43	178328	78.0761	ug/L		95
10) Ethyl Acetate	9.03	43	742706	94.1026	ug/L		99
11) Methyl methacrylate	11.23	41	685111	90.7812	ug/L		99

(#) = qualifier out of range (m) = manual integration
11M15422.D A9FOOW.M Wed Nov 30 09:34:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15422.D Vial: 12
Acq On : 29 Nov 2016 21:26 Operator: JDS
Sample : WG593075-10 100ug/L ALT SRC A9 Inst : hpms11
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\112916\11M15422.D Vial: 12
Acq On : 29 Nov 2016 21:26 Operator: JDS
Sample : WG593075-10 100ug/L ALT SRC A9 Inst : hpms11
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	95	0.00
2	T	Acetonitrile	0.0549	0.0485	11.7	85	0.01
3	T	3-Chloro-1-propene	0.8028	0.6720	16.3	79	0.00
4	T	2-Chloro-1,3-butadiene	0.6572	0.5538	15.7	79	0.01
5	T	Methacrylonitrile	0.3043	0.2835	6.8	90	0.00
6	T	Isobutyl Alcohol	0.0146	0.0131	10.4	90	0.00
7	T	1-Butanol	0.0057	0.0048	16.9	92	0.00
8	T	Cyclohexanone	0.0116	0.0067	42.0	61	0.00
9	T	2-Nitropropane	0.1168	0.0911	21.9	83	0.00
10	T	Ethyl Acetate	0.4034	0.3796	5.9	90	0.00
11	T	Methyl methacrylate	0.3857	0.3502	9.2	86	0.00
12	I	Chlorobenzene-d5	1.0000	1.0000	0.0	97	0.00
13	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	95	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M15422.D A9FOOW.M Wed Nov 30 09:56:23 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\112916\11M15422.D Vial: 12
Acq On : 29 Nov 2016 21:26 Operator: JDS
Sample : WG593075-10 100ug/L ALT SRC A9 Inst : hpms11
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	88.2790	11.7	85	0.01
3	T	3-Chloro-1-propene	100.0000	83.7107	16.3	79	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	84.2667	15.7	79	0.01
5	T	Methacrylonitrile	100.0000	93.1751	6.8	90	0.00
6	T	Isobutyl Alcohol	200.0000	179.2022	10.4	90	0.00
7	T	1-Butanol	100.0000	83.0448	17.0	92	0.00
8	T	Cyclohexanone	100.0000	73.1984	26.8	61	0.00
9	T	2-Nitropropane	100.0000	78.0761	21.9	83	0.00
10	T	Ethyl Acetate	100.0000	94.1026	5.9	90	0.00
11	T	Methyl methacrylate	100.0000	90.7812	9.2	86	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	95	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M15422.D A9FOOW.M Wed Nov 30 09:56:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17016.D Vial: 5
Acq On : 24 Mar 2017 16:20 Operator: JDS
Sample : WG607620-03 .4 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:32 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.54	96	426057	25.00	ug/L	0.00
56) Chlorobenzene-d5	14.17	117	298873	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	148569	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#		
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#		
57) Toluene-d8	0.00	98	0	0.0000	ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#		
78) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.23	85	2431	0.6736	ug/L #	65
3) Chloromethane	3.67	50	5540	0.6475	ug/L #	67
4) Vinyl Chloride	3.91	62	3413	0.4841	ug/L	84
5) 1,3-Butadiene	3.96	54	2553	Below Cal	#	35
6) Bromomethane	4.80	94	1586	0.4311	ug/L	98
7) Chloroethane	4.94	64	1561	0.3486	ug/L #	69
8) Trichlorofluoromethane	5.43	101	2705	0.3532	ug/L	85
10) Isoprene	5.98	67	2898	0.3736	ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	1224	0.6449	ug/L	65
13) Acetone	6.27	43	742	0.4323	ug/L #	46
14) 1,1-Dichloroethene	6.49	61	3252	0.3674	ug/L	89
16) Dimethyl Sulfide	6.74	62	2285	0.3276	ug/L	70
17) Iodomethane	6.99	142	951	1.3818	ug/L #	32
18) Methyl acetate	7.02	43	1534	0.3187	ug/L #	65
19) Methylene Chloride	7.25	84	2346	0.4099	ug/L	97
20) Carbon Disulfide	7.29	76	5863	0.3967	ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	6115	0.4094	ug/L #	70
23) trans-1,2-Dichloroethene	7.68	96	1863	0.3751	ug/L	97
24) n-Hexane	7.77	57	3010	0.3573	ug/L #	71
26) Vinyl Acetate	8.24	43	3414	0.3107	ug/L #	77
27) 1,1-Dichloroethane	8.27	63	4369	0.3905	ug/L #	91
29) 2-Butanone	8.83	43	377	0.1370	ug/L #	55
31) 2,2-Dichloropropane	9.02	77	2819	0.3700	ug/L #	67
32) cis-1,2-Dichloroethene	9.09	96	2226	0.3794	ug/L	97
33) Chloroform	9.27	83	4875	0.4839	ug/L	91
35) Bromochloromethane	9.50	130	1043	0.3272	ug/L	88
36) Tetrahydrofuran	9.52	42	242	0.1249	ug/L #	41
38) 1,1,1-Trichloroethane	9.78	97	2862	0.3560	ug/L #	92
39) Cyclohexane	9.81	56	4531	0.4063	ug/L #	87
40) 1,1-Dichloropropene	9.97	75	2640	0.3804	ug/L #	67
41) Carbon Tetrachloride	10.11	117	2049	0.3132	ug/L #	85
44) 1,2-Dichloroethane	10.28	62	3053	0.3786	ug/L	85
45) Benzene	10.32	78	9343	0.4492	ug/L	93
46) Trichloroethene	11.02	130	1866	0.3677	ug/L	84
47) Methylcyclohexane	11.09	83	3371	0.3954	ug/L	91
48) 1,2-Dichloropropane	11.22	63	2331	0.3524	ug/L	92
50) Bromodichloromethane	11.50	83	2546	0.3630	ug/L #	82
51) Dibromomethane	11.59	93	1311	0.4086	ug/L #	64
52) 2-Chloroethyl Vinyl Ether	11.78	63	879	0.2464	ug/L #	53
54) cis-1,3-Dichloropropene	12.10	75	2730	0.3353	ug/L #	84

(#) = qualifier out of range (m) = manual integration
11M17016.D 8260WT.M Wed Mar 29 10:56:38 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17016.D Vial: 5
Acq On : 24 Mar 2017 16:20 Operator: JDS
Sample : WG607620-03 .4 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:32 2017 Quant Results File: 8260WT.RES

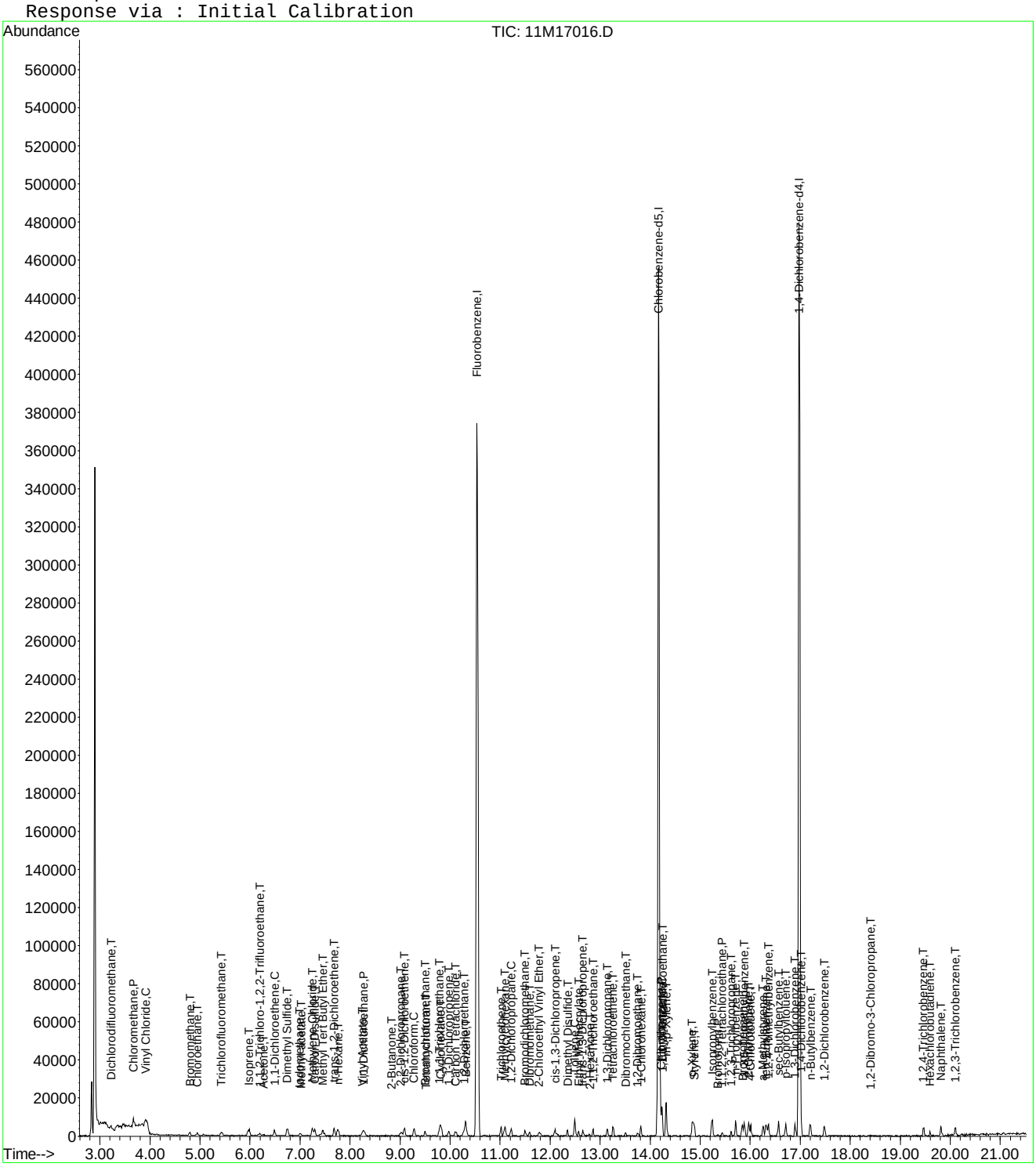
Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
55)	Dimethyl Disulfide	12.36	79	976	0.1913	ug/L		74
58)	Toluene	12.49	91	8957	0.4274	ug/L		89
59)	Ethyl Methacrylate	12.57	69	1674	0.2669	ug/L		93
60)	trans-1,3-Dichloropropene	12.65	75	2494	0.3443	ug/L	#	51
61)	1,1,2-Trichloroethane	12.86	97	1509	0.3303	ug/L		86
62)	2-Hexanone	12.80	43	1255	0.3152	ug/L	#	40
63)	1,3-Dichloropropane	13.14	76	3215	0.4013	ug/L		96
64)	Tetrachloroethene	13.26	164	1428	0.3570	ug/L		93
65)	Dibromochloromethane	13.51	129	1632	0.3334	ug/L		93
66)	1,2-Dibromoethane	13.74	107	1134	0.4114	ug/L		95
67)	1-Chlorohexane	13.82	91	1947	0.4624	ug/L		94
68)	Chlorobenzene	14.22	112	5229	0.3926	ug/L		92
69)	1,1,1,2-Tetrachloroethane	14.25	131	1375	0.2859	ug/L		84
70)	Ethylbenzene	14.24	106	2618	0.3474	ug/L		67
71)	m-,p-Xylene	14.32	106	7107	0.8322	ug/L		88
72)	o-Xylene	14.84	106	3386	0.3807	ug/L		90
73)	Styrene	14.88	104	4366	0.3258	ug/L		94
74)	Bromoform	15.35	173	761	0.7701	ug/L	#	28
75)	Isopropylbenzene	15.24	105	8573	0.4065	ug/L		94
77)	1,1,2,2-Tetrachloroethane	15.44	83	1539	0.2787	ug/L		99
79)	1,2,3-Trichloropropane	15.61	110	216	0.1380	ug/L		70
81)	n-Propylbenzene	15.71	91	9703	0.3778	ug/L		86
82)	Bromobenzene	15.85	156	1912	0.3261	ug/L		80
83)	1,3,5-Trimethylbenzene	15.88	105	6107	0.3568	ug/L		88
84)	2-Chlorotoluene	15.96	91	6473	0.3788	ug/L		99
85)	4-Chlorotoluene	16.01	91	4770	0.2982	ug/L		92
86)	a-Methylstyrene	16.25	118	2353	0.2399	ug/L		82
87)	tert-Butylbenzene	16.32	134	1618	0.4043	ug/L		73
88)	1,2,4-Trimethylbenzene	16.37	105	6203	0.3239	ug/L		89
89)	sec-Butylbenzene	16.56	105	8585	0.3775	ug/L	#	78
90)	p-Isopropyltoluene	16.71	119	6487	0.3430	ug/L		97
91)	1,3-Dichlorobenzene	16.90	146	4192	0.3927	ug/L		92
92)	1,4-Dichlorobenzene	17.02	146	4361	0.4085	ug/L		97
93)	n-Butylbenzene	17.21	91	5794	0.3381	ug/L	#	82
94)	1,2-Dichlorobenzene	17.48	146	3836	0.3616	ug/L		97
95)	1,2-Dibromo-3-Chloropropan	18.40	75	205	0.2004	ug/L	#	1
96)	1,2,4-Trichlorobenzene	19.46	180	2545	0.3543	ug/L	#	74
97)	Hexachlorobutadiene	19.59	225	1283	0.3732	ug/L	#	81
98)	Naphthalene	19.81	128	6514	0.4028	ug/L		97
99)	1,2,3-Trichlorobenzene	20.10	180	2265	0.3175	ug/L		95

(#) = qualifier out of range (m) = manual integration
11M17016.D 8260WT.M Wed Mar 29 10:56:38 2017 Page 2

Data File : C:\MSDCHEM\1\DATA\032417\11M17016.D Vial: 5
Acq On : 24 Mar 2017 16:20 Operator: JDS
Sample : WG607620-03 .4 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\032417\11M17016.D Vial: 5
Acq On : 24 Mar 2017 16:20 Operator: JDS
Sample : WG607620-03 .4 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.6736	0.0	0	0.01
3	P	Chloromethane	-1.0000	0.6475	0.0	0	0.00
4	C	Vinyl Chloride	0.4000	0.4841	-21.0#	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.4311	0.0	0	0.01
7	T	Chloroethane	-1.0000	0.3486	0.0	0	0.00
8	T	Trichlorofluoromethane	0.4000	0.3532	11.7	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.94#
10	T	Isoprene	0.4000	0.3736	6.6	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.17#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.6449	0.0	0	0.01
13	T	Acetone	-1.0000	0.4323	0.0	0	0.00
14	C	1,1-Dichloroethene	0.4000	0.3674	8.2	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3276	18.1	100	0.00
17	T	Iodomethane	-1.0000	1.3818	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.3187	0.0	0	0.02
19	T	Methylene Chloride	0.4000	0.4099	-2.5	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3967	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.42#
22	T	Methyl Tert Butyl Ether	0.4000	0.4094	-2.3	100	0.01
23	T	trans-1,2-Dichloroethene	0.4000	0.3751	6.2	100	0.00
24	T	n-Hexane	-1.0000	0.3573	0.0	0	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.09#
26	T	Vinyl Acetate	-1.0000	0.3107	0.0	0	0.00
27	P	1,1-Dichloroethane	0.4000	0.3905	2.4	100	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.63#
29	T	2-Butanone	-1.0000	0.1370	0.0	0	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.91#
31	T	2,2-Dichloropropane	0.4000	0.3700	7.5	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3794	5.2	100	0.01
33	C	Chloroform	0.4000	0.4839	-21.0#	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.42#
35	T	Bromochloromethane	0.4000	0.3272	18.2	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1249	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.55#
38	T	1,1,1-Trichloroethane	0.4000	0.3560	11.0	100	0.00
39	T	Cyclohexane	0.4000	0.4063	-1.6	100	0.00
40	T	1,1-Dichloropropene	0.4000	0.3804	4.9	100	0.00
41	T	Carbon Tetrachloride	0.4000	0.3132	21.7	100	0.00
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.06#
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.16#
44	T	1,2-Dichloroethane	0.4000	0.3786	5.4	100	0.01
45	T	Benzene	0.4000	0.4492	-12.3	100	0.01
46	T	Trichloroethene	0.4000	0.3677	8.1	100	0.00
47	T	Methylcyclohexane	0.4000	0.3954	1.1	100	0.00
48	C	1,2-Dichloropropane	0.4000	0.3524	11.9	100	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.49#
50	T	Bromodichloromethane	0.4000	0.3630	9.3	100	0.00
51	T	Dibromomethane	0.4000	0.4086	-2.1	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2464	0.0	0	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.80#
54	T	cis-1,3-Dichloropropene	0.4000	0.3353	16.2	100	0.00

(#) = Out of Range
11M17016.D 8260WT.M Wed Mar 29 10:56:36 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17016.D Vial: 5
Acq On : 24 Mar 2017 16:20 Operator: JDS
Sample : WG607620-03 .4 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.1913	0.0	0	0.01
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.40#
58	C	Toluene	0.4000	0.4274	-6.9	100	0.00
59	T	Ethyl Methacrylate	-1.0000	0.2669	0.0	0	0.00
60	T	trans-1,3-Dichloropropene	-1.0000	0.3443	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	0.4000	0.3303	17.4	100	0.01
62	T	2-Hexanone	-1.0000	0.3152	0.0	100	0.01
63	T	1,3-Dichloropropane	0.4000	0.4013	-0.3	100	0.00
64	T	Tetrachloroethene	0.4000	0.3570	10.7	100	0.00
65	T	Dibromochloromethane	0.4000	0.3334	16.7	100	0.00
66	T	1,2-Dibromoethane	0.4000	0.4114	-2.9	100	0.00
67	T	1-Chlorohexane	0.4000	0.4624	-15.6	100	0.01
68	P	Chlorobenzene	0.4000	0.3926	1.9	100	0.00
69	T	1,1,1,2-Tetrachloroethane	0.4000	0.2859	28.5#	100	0.00
70	C	Ethylbenzene	-1.0000	0.3474	0.0	0	0.00
71	T	m-,p-Xylene	0.8000	0.8322	-4.0	100	0.00
72	T	o-Xylene	0.4000	0.3807	4.8	100	-0.01
73	T	Styrene	0.4000	0.3258	18.6	100	0.00
74	P	Bromoform	-1.0000	0.7701	0.0	0	0.01
75	T	Isopropylbenzene	0.4000	0.4065	-1.6	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	0.4000	0.2787	30.3#	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-15.56#
79	T	1,2,3-Trichloropropane	-1.0000	0.1380	0.0	0	-0.01
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.65#
81	T	n-Propylbenzene	0.4000	0.3778	5.6	100	0.00
82	T	Bromobenzene	0.4000	0.3262	18.5	100	0.01
83	T	1,3,5-Trimethylbenzene	0.4000	0.3568	10.8	100	0.00
84	T	2-Chlorotoluene	0.4000	0.3788	5.3	100	0.00
85	T	4-Chlorotoluene	0.4000	0.2982	25.5#	100	0.00
86	T	a-Methylstyrene	-1.0000	0.2399	0.0	0	0.00
87	T	tert-Butylbenzene	0.4000	0.4043	-1.1	100	0.00
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3239	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3775	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.3430	0.0	0	0.00
91	T	1,3-Dichlorobenzene	0.4000	0.3927	1.8	100	-0.01
92	T	1,4-Dichlorobenzene	0.4000	0.4085	-2.1	100	0.00
93	T	n-Butylbenzene	0.4000	0.3381	15.5	100	0.01
94	T	1,2-Dichlorobenzene	0.4000	0.3616	9.6	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2004	0.0	0	0.00
96	T	1,2,4-Trichlorobenzene	0.4000	0.3543	11.4	100	-0.01
97	T	Hexachlorobutadiene	0.4000	0.3732	6.7	100	-0.01
98	T	Naphthalene	0.4000	0.4028	-0.7	100	0.00
99	T	1,2,3-Trichlorobenzene	0.4000	0.3175	20.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2
11M17016.D 8260WT.M Wed Mar 29 10:56:36 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17017.D Vial: 5
Acq On : 24 Mar 2017 16:49 Operator: JDS
Sample : WG607620-04 1 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:33 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.54	96	423779	25.00	ug/L	0.00
56) Chlorobenzene-d5	14.17	117	286639	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	133814	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#		
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#		
57) Toluene-d8	12.40	98	194	0.0121	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#		
78) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.22	85	5001	1.0372	ug/L	89
3) Chloromethane	3.66	50	10483	1.2318	ug/L #	75
4) Vinyl Chloride	3.90	62	6847	0.9764	ug/L	89
5) 1,3-Butadiene	3.95	54	5157	0.1968	ug/L #	74
6) Bromomethane	4.79	94	3752	1.0254	ug/L	96
7) Chloroethane	4.94	64	3967	0.8907	ug/L #	74
8) Trichlorofluoromethane	5.42	101	6806	0.8935	ug/L	98
9) Diethyl ether	5.94	59	28318	5.1029	ug/L	96
10) Isoprene	5.98	67	5898	0.7644	ug/L	98
11) Acrolein	6.18	56	1967	2.0779	ug/L	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1520	0.7102	ug/L #	4
13) Acetone	6.28	43	1801	1.0550	ug/L #	66
14) 1,1-Dichloroethene	6.48	61	8193	0.9305	ug/L	100
15) Tert-Butyl Alcohol	6.58	59	5776	9.8730	ug/L #	79
16) Dimethyl Sulfide	6.74	62	6696	0.9653	ug/L	89
17) Iodomethane	6.99	142	2126	1.5714	ug/L #	67
18) Methyl acetate	6.99	43	4453	0.9301	ug/L #	65
19) Methylene Chloride	7.25	84	5479	0.9624	ug/L	90
20) Carbon Disulfide	7.29	76	14245	0.9689	ug/L	99
21) Acrylonitrile	7.42	53	4927	2.1373	ug/L	88
22) Methyl Tert Butyl Ether	7.46	73	14248	0.9590	ug/L	93
23) trans-1,2-Dichloroethene	7.68	96	4606	0.9324	ug/L	99
24) n-Hexane	7.76	57	6467	0.7718	ug/L #	71
25) Diisopropyl ether	8.09	45	120423	5.6671	ug/L	94
26) Vinyl Acetate	8.24	43	8792	0.8044	ug/L #	81
27) 1,1-Dichloroethane	8.28	63	10541	0.9471	ug/L	92
28) Ethyl-Tert-Butyl ether	8.63	59	107466	5.5670	ug/L	94
29) 2-Butanone	8.81	43	2029	0.7412	ug/L #	55
30) Propionitrile	8.91	54	4057	4.6568	ug/L #	81
31) 2,2-Dichloropropane	9.02	77	6452	0.8513	ug/L	94
32) cis-1,2-Dichloroethene	9.08	96	5518	0.9454	ug/L	100
33) Chloroform	9.29	83	9663	0.9642	ug/L	91
35) Bromochloromethane	9.50	130	2910	0.9178	ug/L	95
36) Tetrahydrofuran	9.53	42	9953	5.1626	ug/L	93
38) 1,1,1-Trichloroethane	9.78	97	7548	0.9439	ug/L #	89
39) Cyclohexane	9.81	56	9964	0.8984	ug/L	93
40) 1,1-Dichloropropene	9.97	75	6031	0.8738	ug/L	80
41) Carbon Tetrachloride	10.11	117	5984	0.9196	ug/L	95
42) Tert-Amyl-Methyl ether	10.07	73	79893	5.3053	ug/L #	97
44) 1,2-Dichloroethane	10.28	62	7629	0.9511	ug/L	95

(#) = qualifier out of range (m) = manual integration
11M17017.D 8260WT.M Wed Mar 29 10:56:57 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17017.D Vial: 5
Acq On : 24 Mar 2017 16:49 Operator: JDS
Sample : WG607620-04 1 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:33 2017 Quant Results File: 8260WT.RES

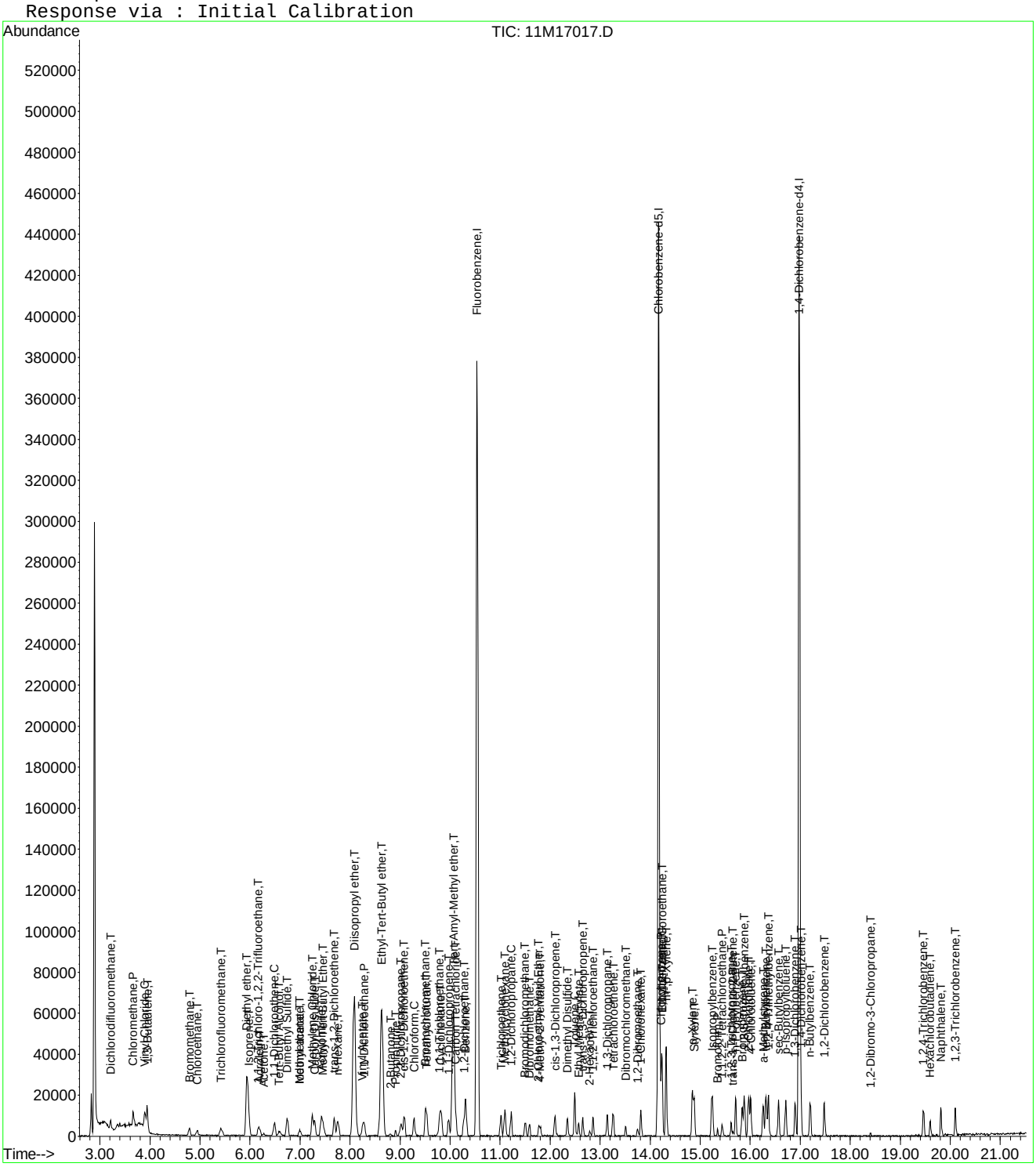
Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	Benzene	10.31	78	20253	0.9790	ug/L		96
46)	Trichloroethene	11.02	130	4698	0.9306	ug/L		100
47)	Methylcyclohexane	11.09	83	7626	0.8994	ug/L		98
48)	1,2-Dichloropropane	11.22	63	6449	0.9801	ug/L		78
50)	Bromodichloromethane	11.50	83	6223	0.8919	ug/L	#	92
51)	Dibromomethane	11.58	93	2782	0.8717	ug/L		90
52)	2-Chloroethyl Vinyl Ether	11.77	63	2563	0.7223	ug/L	#	69
53)	4-Methyl-2-Pentanone	11.80	58	1187	0.5111	ug/L	#	68
54)	cis-1,3-Dichloropropene	12.10	75	6939	0.8568	ug/L		100
55)	Dimethyl Disulfide	12.35	79	3034	0.5979	ug/L		96
58)	Toluene	12.49	91	20758	1.0329	ug/L		91
59)	Ethyl Methacrylate	12.57	69	4708	0.7826	ug/L		99
60)	trans-1,3-Dichloropropene	12.66	75	5379	0.7742	ug/L		93
61)	1,1,2-Trichloroethane	12.85	97	4189	0.9561	ug/L		91
62)	2-Hexanone	12.79	43	2774	0.7264	ug/L	#	59
63)	1,3-Dichloropropane	13.14	76	7172	0.9334	ug/L		99
64)	Tetrachloroethene	13.27	164	3346	0.8723	ug/L		96
65)	Dibromochloromethane	13.51	129	3876	0.8255	ug/L		99
66)	1,2-Dibromoethane	13.75	107	3017	0.8737	ug/L		85
67)	1-Chlorohexane	13.81	91	4649	0.8809	ug/L		85
68)	Chlorobenzene	14.22	112	12620	0.9879	ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.24	131	4083	0.8853	ug/L		98
70)	Ethylbenzene	14.24	106	6384	0.8832	ug/L		66
71)	m-,p-Xylene	14.32	106	15716	1.9189	ug/L		78
72)	o-Xylene	14.85	106	7631	0.8946	ug/L		80
73)	Styrene	14.88	104	10652	0.8287	ug/L		91
74)	Bromoform	15.34	173	2064	1.1449	ug/L		83
75)	Isopropylbenzene	15.24	105	20108	0.9941	ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.44	83	4943	0.9937	ug/L		96
79)	1,2,3-Trichloropropane	15.62	110	1045	0.7413	ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.65	53	629	1.0155	ug/L	#	1
81)	n-Propylbenzene	15.71	91	22520	0.9734	ug/L		87
82)	Bromobenzene	15.84	156	4939	0.9354	ug/L		89
83)	1,3,5-Trimethylbenzene	15.88	105	15375	0.9973	ug/L		95
84)	2-Chlorotoluene	15.96	91	16339	1.0616	ug/L		88
85)	4-Chlorotoluene	16.02	91	14877	1.0324	ug/L		100
86)	a-Methylstyrene	16.26	118	6250	0.7075	ug/L		92
87)	tert-Butylbenzene	16.32	134	3186	0.8839	ug/L		82
88)	1,2,4-Trimethylbenzene	16.37	105	17467	1.0126	ug/L		88
89)	sec-Butylbenzene	16.56	105	19371	0.9457	ug/L		91
90)	p-Isopropyltoluene	16.71	119	16088	0.9444	ug/L		90
91)	1,3-Dichlorobenzene	16.90	146	9721	1.0110	ug/L		92
92)	1,4-Dichlorobenzene	17.02	146	9542	0.9924	ug/L		76
93)	n-Butylbenzene	17.20	91	14164	0.9176	ug/L		91
94)	1,2-Dichlorobenzene	17.48	146	9923	1.0385	ug/L		92
95)	1,2-Dibromo-3-Chloropropan	18.40	75	745	0.8088	ug/L		90
96)	1,2,4-Trichlorobenzene	19.46	180	5895	0.9112	ug/L		93
97)	Hexachlorobutadiene	19.59	225	2580	0.8332	ug/L		96
98)	Naphthalene	19.81	128	13409	0.9207	ug/L	#	94
99)	1,2,3-Trichlorobenzene	20.10	180	5823	0.9062	ug/L		93

(#) = qualifier out of range (m) = manual integration
11M17017.D 8260WT.M Wed Mar 29 10:56:57 2017 Page 2

Data File : C:\MSDCHEM\1\DATA\032417\11M17017.D Vial: 5
Acq On : 24 Mar 2017 16:49 Operator: JDS
Sample : WG607620-04 1 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\032417\11M17017.D Vial: 5
Acq On : 24 Mar 2017 16:49 Operator: JDS
Sample : WG607620-04 1 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	1.0372	-3.7	100	0.00
3	P	Chloromethane	1.0000	1.2318	-23.2	100	0.00
4	C	Vinyl Chloride	1.0000	0.9765	2.4	100	0.00
5	T	1,3-Butadiene	-1.0000	0.1968	0.0	0	0.01
6	T	Bromomethane	1.0000	1.0254	-2.5	100	0.00
7	T	Chloroethane	1.0000	0.8907	10.9	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.8934	10.7	100	0.00
9	T	Diethyl ether	5.0000	5.1029	-2.1	100	0.00
10	T	Isoprene	1.0000	0.7644	23.6	100	0.00
11	T	Acrolein	2.5000	2.0779	16.9	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.7102	29.0#	52	-0.02
13	T	Acetone	-1.0000	1.0550	0.0	100	0.01
14	C	1,1-Dichloroethene	1.0000	0.9305	7.0	100	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.8730	1.3	100	-0.01
16	T	Dimethyl Sulfide	1.0000	0.9653	3.5	100	0.00
17	T	Iodomethane	-1.0000	1.5714	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.9301	0.0	0	-0.01
19	T	Methylene Chloride	1.0000	0.9624	3.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9689	3.1	100	0.00
21	T	Acrylonitrile	2.5000	2.1373	14.5	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9590	4.1	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9324	6.8	100	0.00
24	T	n-Hexane	-1.0000	0.7718	0.0	0	0.00
25	T	Diisopropyl ether	5.0000	5.6671	-13.3	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8044	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9471	5.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.5670	-11.3	100	0.00
29	T	2-Butanone	-1.0000	0.7412	0.0	0	0.00
30	T	Propionitrile	5.0000	4.6568	6.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.8513	14.9	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9454	5.5	100	0.00
33	C	Chloroform	1.0000	0.9642	3.6	100	0.01
34	T	1-Bromopropane	1.0000	0.0000	100.0#	0	-9.42#
35	T	Bromochloromethane	1.0000	0.9178	8.2	100	0.00
36	T	Tetrahydrofuran	5.0000	5.1626	-3.3	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.55#
38	T	1,1,1-Trichloroethane	1.0000	0.9439	5.6	100	0.00
39	T	Cyclohexane	1.0000	0.8984	10.2	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.8738	12.6	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9196	8.0	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	5.3053	-6.1	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.16#
44	T	1,2-Dichloroethane	1.0000	0.9511	4.9	100	0.01
45	T	Benzene	1.0000	0.9790	2.1	100	0.00
46	T	Trichloroethene	1.0000	0.9306	6.9	100	0.00
47	T	Methylcyclohexane	1.0000	0.8994	10.1	100	0.00
48	C	1,2-Dichloropropane	1.0000	0.9801	2.0	100	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.49#
50	T	Bromodichloromethane	1.0000	0.8920	10.8	100	0.00
51	T	Dibromomethane	1.0000	0.8717	12.8	100	0.00
52	T	2-Chloroethyl Vinyl Ether	1.0000	0.7223	27.8#	100	-0.01
53	T	4-Methyl-2-Pentanone	-1.0000	0.5111	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.8568	14.3	100	0.00

(#) = Out of Range
11M17017.D 8260WT.M Wed Mar 29 10:56:54 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17017.D Vial: 5
Acq On : 24 Mar 2017 16:49 Operator: JDS
Sample : WG607620-04 1 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

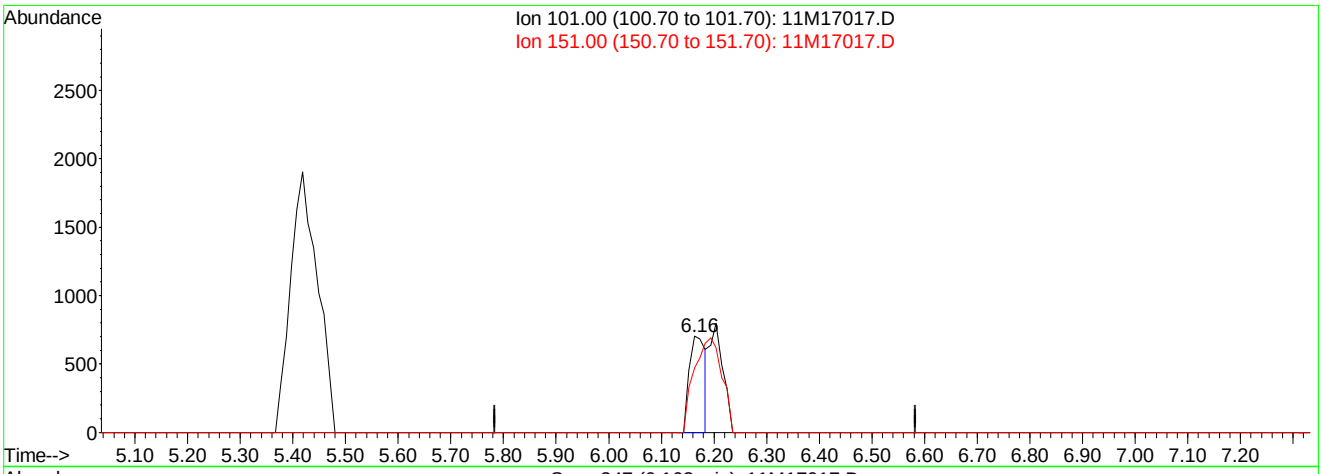
		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.5979	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0121	0.0	0	0.00
58	C	Toluene	1.0000	1.0329	-3.3	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.7826	21.7	100	0.00
60	T	trans-1,3-Dichloropropene	1.0000	0.7742	22.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.9561	4.4	100	0.00
62	T	2-Hexanone	-1.0000	0.7264	0.0	100	0.00
63	T	1,3-Dichloropropane	1.0000	0.9334	6.7	100	0.00
64	T	Tetrachloroethene	1.0000	0.8723	12.8	100	0.01
65	T	Dibromochloromethane	1.0000	0.8255	17.4	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8737	12.6	100	0.00
67	T	1-Chlorohexane	1.0000	0.8809	11.9	100	0.00
68	P	Chlorobenzene	1.0000	0.9879	1.2	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.8853	11.5	100	-0.01
70	C	Ethylbenzene	1.0000	0.8832	11.7	100	0.00
71	T	m-,p-Xylene	2.0000	1.9189	4.1	100	0.00
72	T	o-Xylene	1.0000	0.8945	10.5	100	0.00
73	T	Styrene	1.0000	0.8287	17.1	100	0.00
74	P	Bromoform	1.0000	1.1449	-14.5	100	0.00
75	T	Isopropylbenzene	1.0000	0.9941	0.6	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9937	0.6	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-15.56#
79	T	1,2,3-Trichloropropane	1.0000	0.7413	25.9#	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.0155	-1.6	100	0.00
81	T	n-Propylbenzene	1.0000	0.9734	2.7	100	0.00
82	T	Bromobenzene	1.0000	0.9354	6.5	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9973	0.3	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0616	-6.2	100	0.00
85	T	4-Chlorotoluene	1.0000	1.0324	-3.2	100	0.01
86	T	a-Methylstyrene	-1.0000	0.7075	0.0	0	0.01
87	T	tert-Butylbenzene	1.0000	0.8839	11.6	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	1.0126	-1.3	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9457	5.4	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9444	5.6	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0110	-1.1	100	-0.01
92	T	1,4-Dichlorobenzene	1.0000	0.9924	0.8	100	0.00
93	T	n-Butylbenzene	1.0000	0.9176	8.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	1.0385	-3.8	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	1.0000	0.8088	19.1	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9112	8.9	100	-0.01
97	T	Hexachlorobutadiene	1.0000	0.8332	16.7	100	-0.01
98	T	Naphthalene	1.0000	0.9207	7.9	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9062	9.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M17017.D 8260WT.M Wed Mar 29 10:56:54 2017 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\032417\11M17017.D Vial: 5
Acq On : 24 Mar 2017 16:49 Operator: JDS
Sample : WG607620-04 1 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Single Level Calibration



TIC: 11M17017.D

(12) 1,1,2-Trichloro-1,2,2-Trifluoroethane (T)

6.16min 0.71ug/L

response 1520

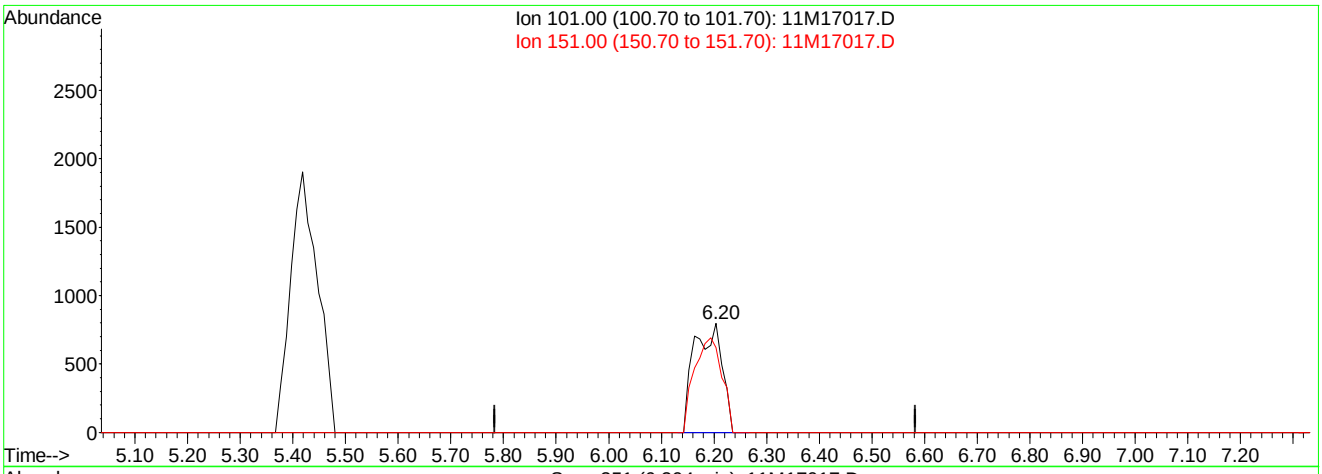
Ion	Exp%	Act%
101.00	100	100
151.00	79.90	164.41#
0.00	0.00	0.00
0.00	0.00	0.00

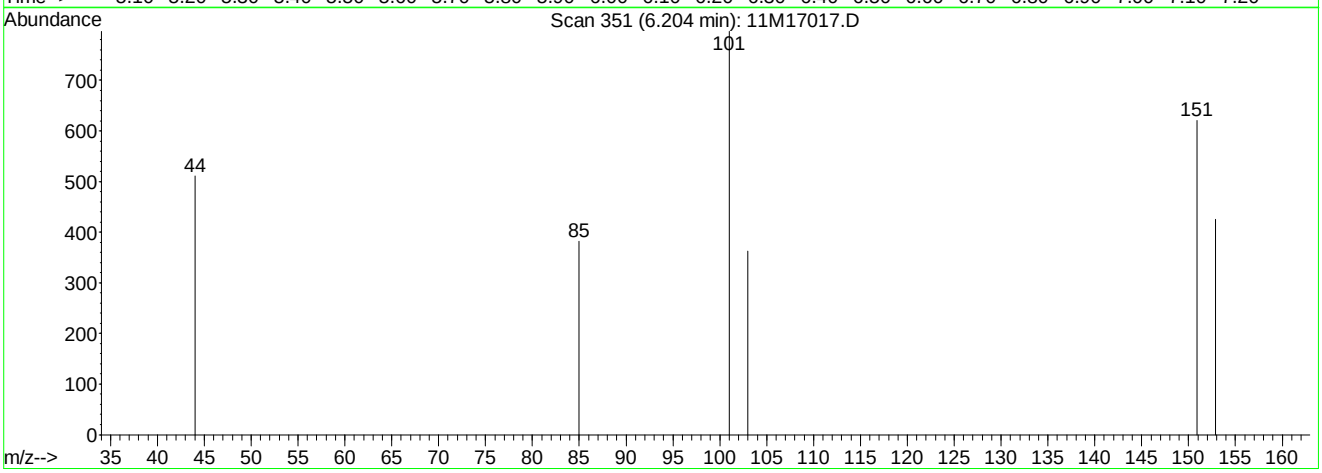
11M17017.D 8260WT.M Wed Mar 29 11:18:42 2017

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\032417\11M17017.D Vial: 5
Acq On : 24 Mar 2017 16:49 Operator: JDS
Sample : WG607620-04 1 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 11:18 2017 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Single Level Calibration





TIC: 11M17017.D

(12) 1,1,2-Trichloro-1,2,2-Trifluoroethane (T)

6.20min 1.01ug/L mint

response 2911

Ion	Exp%	Act%
101.00	100	100
151.00	79.90	85.85
0.00	0.00	0.00
0.00	0.00	0.00

11M17017.D 8260WT.M Wed Mar 29 6 2017

Analyst: 03/29/2017 18:10 Supervisor: 03/29/2017 18:11

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17018.D Vial: 6
Acq On : 24 Mar 2017 17:18 Operator: JDS
Sample : WG607620-05 2 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:33 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.54	96	415437	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.17	117	285295	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	137775	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.55	111	23220	5.3776 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 21.52%#		
43) 1,2-Dichloroethane-d4	10.15	65	29981	5.4417 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 21.76%#		
57) Toluene-d8	12.40	98	90254	5.6506 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 22.60%#		
78) p-Bromofluorobenzene	15.56	95	31062	5.4393 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 21.76%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.22	85	9419	1.6858 ug/L	95
3) Chloromethane	3.67	50	17768	2.1297 ug/L	92
4) Vinyl Chloride	3.90	62	12884	1.8743 ug/L	95
5) 1,3-Butadiene	3.94	54	10809	1.8918 ug/L	89
6) Bromomethane	4.79	94	8534	2.3791 ug/L	90
7) Chloroethane	4.94	64	8492	1.9449 ug/L	91
8) Trichlorofluoromethane	5.42	101	13399	1.7943 ug/L	96
9) Diethyl ether	5.94	59	143709	26.4164 ug/L	97
10) Isoprene	5.97	67	13528	1.7885 ug/L	92
11) Acrolein	6.17	56	11665	12.5700 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	7433	2.0188 ug/L	96
13) Acetone	6.27	43	3821	2.2832 ug/L #	78
14) 1,1-Dichloroethene	6.48	61	15827	1.8336 ug/L	92
15) Tert-Butyl Alcohol	6.59	59	27288	47.5806 ug/L	93
16) Dimethyl Sulfide	6.74	62	13720	2.0176 ug/L	100
17) Iodomethane	6.99	142	5200	2.0822 ug/L	97
18) Methyl acetate	7.00	43	8932	1.9031 ug/L #	87
19) Methylene Chloride	7.25	84	11172	2.0018 ug/L	92
20) Carbon Disulfide	7.29	76	28565	1.9820 ug/L	97
21) Acrylonitrile	7.41	53	26998	11.9466 ug/L	90
22) Methyl Tert Butyl Ether	7.46	73	29686	2.0382 ug/L	97
23) trans-1,2-Dichloroethene	7.68	96	9059	1.8706 ug/L	85
24) n-Hexane	7.75	57	12723	1.5489 ug/L #	93
25) Diisopropyl ether	8.08	45	592496	28.4426 ug/L	95
26) Vinyl Acetate	8.24	43	20933	1.9538 ug/L	95
27) 1,1-Dichloroethane	8.27	63	22217	2.0363 ug/L	99
28) Ethyl-Tert-Butyl ether	8.62	59	534667	28.2534 ug/L	94
29) 2-Butanone	8.81	43	5047	1.8808 ug/L	85
30) Propionitrile	8.91	54	20992	24.5793 ug/L	99
31) 2,2-Dichloropropane	9.02	77	14008	1.8854 ug/L	100
32) cis-1,2-Dichloroethene	9.08	96	11454	2.0019 ug/L	94
33) Chloroform	9.29	83	20060	2.0419 ug/L	98
35) Bromochloromethane	9.50	130	5787	1.8618 ug/L	82
36) Tetrahydrofuran	9.52	42	47774	25.2781 ug/L	97
38) 1,1,1-Trichloroethane	9.79	97	14716	1.8773 ug/L	97
39) Cyclohexane	9.82	56	19326	1.7775 ug/L	96
40) 1,1-Dichloropropene	9.97	75	12872	1.9023 ug/L	97
41) Carbon Tetrachloride	10.10	117	11341	1.7778 ug/L	93
42) Tert-Amyl-Methyl ether	10.06	73	407623	27.6120 ug/L	98
44) 1,2-Dichloroethane	10.28	62	17049	2.1681 ug/L	94

(#) = qualifier out of range (m) = manual integration
11M17018.D 8260WT.M Wed Mar 29 10:57:19 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17018.D Vial: 6
Acq On : 24 Mar 2017 17:18 Operator: JDS
Sample : WG607620-05 2 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:33 2017 Quant Results File: 8260WT.RES

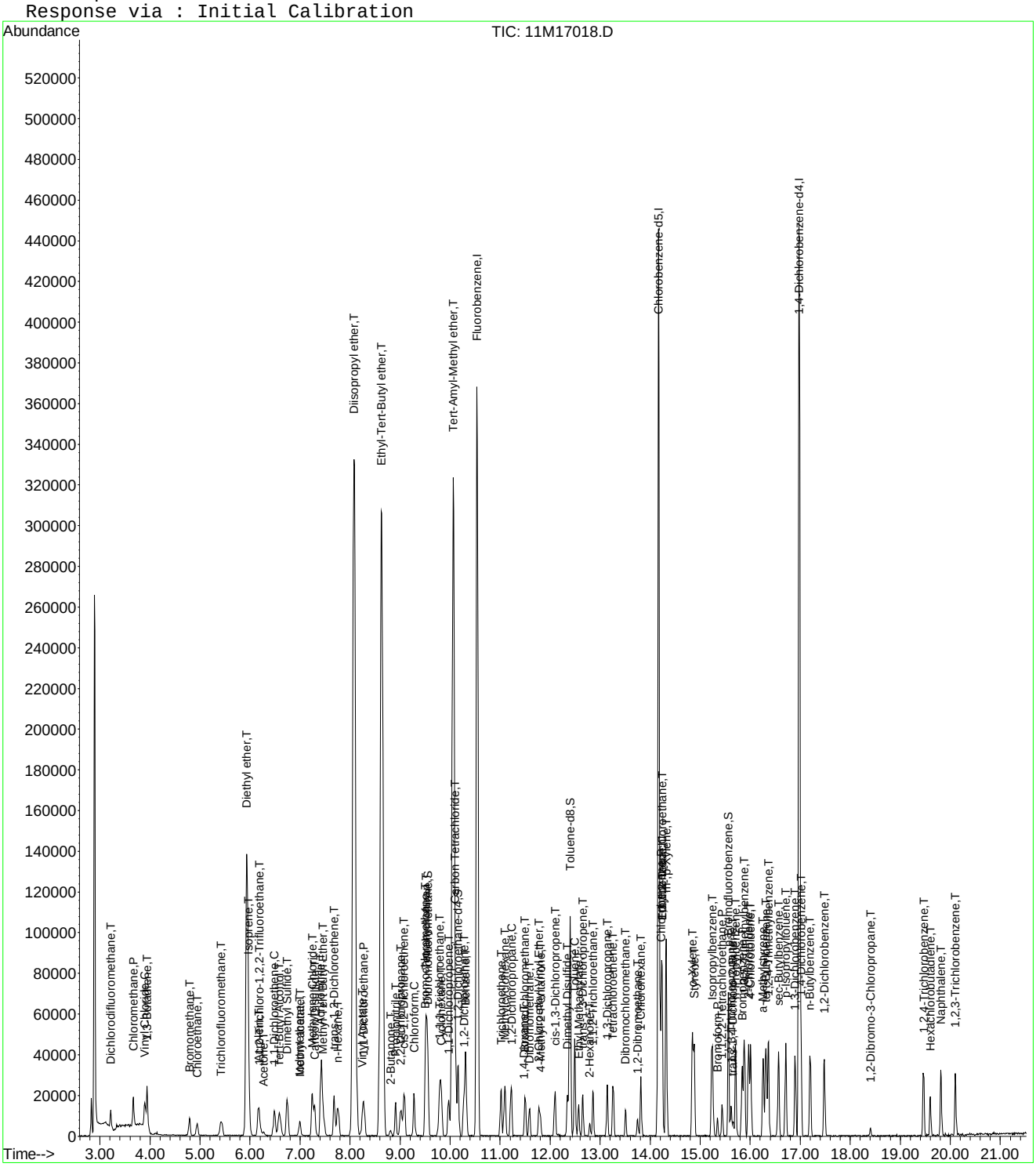
Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	Benzene	10.31	78	44751	2.2066	ug/L		94
46)	Trichloroethene	11.02	130	10048	2.0304	ug/L		95
47)	Methylcyclohexane	11.09	83	14812	1.7820	ug/L		96
48)	1,2-Dichloropropane	11.23	63	13404	2.0779	ug/L		99
49)	1,4-Dioxane	11.48	88	2930	59.0532	ug/L		77
50)	Bromodichloromethane	11.50	83	13844	2.0241	ug/L		95
51)	Dibromomethane	11.58	93	6365	2.0344	ug/L		96
52)	2-Chloroethyl Vinyl Ether	11.78	63	6691	1.9234	ug/L		90
53)	4-Methyl-2-Pentanone	11.81	58	3264	1.4336	ug/L	#	76
54)	cis-1,3-Dichloropropene	12.10	75	15885	2.0009	ug/L		96
55)	Dimethyl Disulfide	12.35	79	6592	1.3251	ug/L		65
58)	Toluene	12.49	91	44208	2.2100	ug/L		91
59)	Ethyl Methacrylate	12.57	69	10569	1.7651	ug/L		95
60)	trans-1,3-Dichloropropene	12.66	75	12789	1.8493	ug/L		99
61)	1,1,2-Trichloroethane	12.85	97	9120	2.0913	ug/L		96
62)	2-Hexanone	12.79	43	5915	1.5561	ug/L	#	66
63)	1,3-Dichloropropane	13.14	76	16196	2.1177	ug/L		98
64)	Tetrachloroethene	13.26	164	7481	1.9595	ug/L		98
65)	Dibromochloromethane	13.50	129	9174	1.9631	ug/L		99
66)	1,2-Dibromoethane	13.75	107	8128	2.1073	ug/L		98
67)	1-Chlorohexane	13.81	91	10646	1.7907	ug/L		98
68)	Chlorobenzene	14.22	112	28058	2.2066	ug/L		97
69)	1,1,1,2-Tetrachloroethane	14.24	131	9294	2.0246	ug/L		96
70)	Ethylbenzene	14.24	106	14185	1.9717	ug/L		78
71)	m-,p-Xylene	14.32	106	34240	4.2003	ug/L		74
72)	o-Xylene	14.85	106	17978	2.1174	ug/L		90
73)	Styrene	14.88	104	25595	2.0006	ug/L		98
74)	Bromoform	15.34	173	5151	2.0192	ug/L		99
75)	Isopropylbenzene	15.24	105	42262	2.0992	ug/L		90
77)	1,1,2,2-Tetrachloroethane	15.44	83	10761	2.1010	ug/L		93
79)	1,2,3-Trichloropropane	15.62	110	2913	2.0069	ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.65	53	2937	2.2182	ug/L		85
81)	n-Propylbenzene	15.71	91	49521	2.0790	ug/L		92
82)	Bromobenzene	15.84	156	11464	2.1087	ug/L		97
83)	1,3,5-Trimethylbenzene	15.88	105	35116	2.2122	ug/L		95
84)	2-Chlorotoluene	15.96	91	34077	2.1504	ug/L		91
85)	4-Chlorotoluene	16.01	91	32344	2.1801	ug/L		93
86)	a-Methylstyrene	16.25	118	15379	1.6907	ug/L		96
87)	tert-Butylbenzene	16.32	134	7057	1.9014	ug/L		80
88)	1,2,4-Trimethylbenzene	16.37	105	35987	2.0262	ug/L		93
89)	sec-Butylbenzene	16.56	105	42502	2.0153	ug/L		92
90)	p-Isopropyltoluene	16.71	119	34691	1.9778	ug/L		92
91)	1,3-Dichlorobenzene	16.90	146	20984	2.1195	ug/L		94
92)	1,4-Dichlorobenzene	17.02	146	21517	2.1735	ug/L		92
93)	n-Butylbenzene	17.20	91	30714	1.9326	ug/L		92
94)	1,2-Dichlorobenzene	17.48	146	21260	2.1610	ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.40	75	1657	1.7472	ug/L		90
96)	1,2,4-Trichlorobenzene	19.47	180	13431	2.0163	ug/L		96
97)	Hexachlorobutadiene	19.60	225	5569	1.7468	ug/L		99
98)	Naphthalene	19.81	128	32088	2.1399	ug/L		99
99)	1,2,3-Trichlorobenzene	20.10	180	13137	1.9858	ug/L		96

(#) = qualifier out of range (m) = manual integration
11M17018.D 8260WT.M Wed Mar 29 10:57:20 2017 Page 2

Data File : C:\MSDCHEM\1\DATA\032417\11M17018.D Vial: 6
Acq On : 24 Mar 2017 17:18 Operator: JDS
Sample : WG607620-05 2 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032417\11M17018.D Vial: 6
Acq On : 24 Mar 2017 17:18 Operator: JDS
Sample : WG607620-05 2 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6858	15.7	100	0.00
3	P	Chloromethane	2.0000	2.1297	-6.5	100	0.00
4	C	Vinyl Chloride	2.0000	1.8743	6.3	100	0.00
5	T	1,3-Butadiene	2.0000	1.8918	5.4	100	0.00
6	T	Bromomethane	2.0000	2.3791	-19.0	100	0.00
7	T	Chloroethane	2.0000	1.9449	2.8	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.7943	10.3	100	0.00
9	T	Diethyl ether	25.0000	26.4165	-5.7	100	0.00
10	T	Isoprene	2.0000	1.7885	10.6	100	0.00
11	T	Acrolein	12.5000	12.5700	-0.6	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0189	-0.9	100	0.00
13	T	Acetone	2.0000	2.2832	-14.2	100	0.00
14	C	1,1-Dichloroethene	2.0000	1.8336	8.3	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	47.5806	4.8	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0176	-0.9	100	0.00
17	T	Iodomethane	2.0000	2.0822	-4.1	100	0.00
18	T	Methyl acetate	2.0000	1.9031	4.8	100	0.00
19	T	Methylene Chloride	2.0000	2.0018	-0.1	100	0.00
20	T	Carbon Disulfide	2.0000	1.9820	0.9	100	0.00
21	T	Acrylonitrile	12.5000	11.9466	4.4	100	-0.01
22	T	Methyl Tert Butyl Ether	2.0000	2.0382	-1.9	100	0.01
23	T	trans-1,2-Dichloroethene	2.0000	1.8706	6.5	100	0.00
24	T	n-Hexane	2.0000	1.5489	22.6	100	0.00
25	T	Diisopropyl ether	25.0000	28.4426	-13.8	100	0.00
26	T	Vinyl Acetate	2.0000	1.9538	2.3	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0363	-1.8	100	-0.01
28	T	Ethyl-Tert-Butyl ether	25.0000	28.2534	-13.0	100	-0.01
29	T	2-Butanone	2.0000	1.8808	6.0	100	0.00
30	T	Propionitrile	25.0000	24.5793	1.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.8854	5.7	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0019	-0.1	100	0.00
33	C	Chloroform	2.0000	2.0419	-2.1	100	0.01
34	T	1-Bromopropane	2.0000	0.0000	100.0#	0	-9.42#
35	T	Bromochloromethane	2.0000	1.8618	6.9	100	0.00
36	T	Tetrahydrofuran	25.0000	25.2781	-1.1	100	0.00
37	S	Dibromofluoromethane	5.0000	5.3776	-7.6	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.8773	6.1	100	0.01
39	T	Cyclohexane	2.0000	1.7775	11.1	100	0.01
40	T	1,1-Dichloropropene	2.0000	1.9023	4.9	100	0.00
41	T	Carbon Tetrachloride	2.0000	1.7778	11.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	25.0000	27.6120	-10.4	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	5.4417	-8.8	100	-0.01
44	T	1,2-Dichloroethane	2.0000	2.1681	-8.4	100	0.01
45	T	Benzene	2.0000	2.2066	-10.3	100	0.00
46	T	Trichloroethene	2.0000	2.0304	-1.5	100	0.00
47	T	Methylcyclohexane	2.0000	1.7820	10.9	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0779	-3.9	100	0.01
49	T	1,4-Dioxane	-1.0000	59.0532	0.0	100	-0.01
50	T	Bromodichloromethane	2.0000	2.0241	-1.2	100	0.00
51	T	Dibromomethane	2.0000	2.0344	-1.7	100	0.00
52	T	2-Chloroethyl Vinyl Ether	2.0000	1.9234	3.8	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4336	0.0	0	0.01
54	T	cis-1,3-Dichloropropene	2.0000	2.0009	-0.0	100	0.00

(#) = Out of Range
11M17018.D 8260WT.M Wed Mar 29 10:57:17 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17018.D Vial: 6
Acq On : 24 Mar 2017 17:18 Operator: JDS
Sample : WG607620-05 2 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.3251	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	5.0000	5.6506	-13.0	100	0.00
58	C	Toluene	2.0000	2.2100	-10.5	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7652	11.7	100	0.00
60	T	trans-1,3-Dichloropropene	2.0000	1.8493	7.5	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.0913	-4.6	100	0.00
62	T	2-Hexanone	-1.0000	1.5561	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	2.1177	-5.9	100	0.00
64	T	Tetrachloroethene	2.0000	1.9595	2.0	100	0.00
65	T	Dibromochloromethane	2.0000	1.9631	1.8	100	-0.01
66	T	1,2-Dibromoethane	2.0000	2.1073	-5.4	100	0.00
67	T	1-Chlorohexane	2.0000	1.7907	10.5	100	0.00
68	P	Chlorobenzene	2.0000	2.2066	-10.3	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.0246	-1.2	100	-0.01
70	C	Ethylbenzene	2.0000	1.9717	1.4	100	0.00
71	T	m-,p-Xylene	4.0000	4.2003	-5.0	100	0.00
72	T	o-Xylene	2.0000	2.1174	-5.9	100	0.00
73	T	Styrene	2.0000	2.0006	-0.0	100	0.00
74	P	Bromoform	2.0000	2.0192	-1.0	100	0.00
75	T	Isopropylbenzene	2.0000	2.0992	-5.0	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	2.1010	-5.1	100	0.00
78	S	p-Bromofluorobenzene	5.0000	5.4393	-8.8	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.0069	-0.3	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	2.2182	-10.9	100	0.00
81	T	n-Propylbenzene	2.0000	2.0790	-4.0	100	0.00
82	T	Bromobenzene	2.0000	2.1087	-5.4	100	0.00
83	T	1,3,5-Trimethylbenzene	2.0000	2.2122	-10.6	100	0.00
84	T	2-Chlorotoluene	2.0000	2.1504	-7.5	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1801	-9.0	100	0.00
86	T	a-Methylstyrene	-1.0000	1.6907	0.0	0	0.00
87	T	tert-Butylbenzene	2.0000	1.9015	4.9	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0262	-1.3	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0153	-0.8	100	0.00
90	T	p-Isopropyltoluene	2.0000	1.9778	1.1	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.1195	-6.0	100	-0.01
92	T	1,4-Dichlorobenzene	2.0000	2.1735	-8.7	100	0.00
93	T	n-Butylbenzene	2.0000	1.9326	3.4	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1610	-8.0	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.7472	12.6	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	2.0163	-0.8	100	0.00
97	T	Hexachlorobutadiene	2.0000	1.7468	12.7	100	0.00
98	T	Naphthalene	2.0000	2.1399	-7.0	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	1.9858	0.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M17018.D 8260WT.M Wed Mar 29 10:57:17 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17019.D Vial: 7
Acq On : 24 Mar 2017 17:47 Operator: JDS
Sample : WG607620-06 5 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:34 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.54	96	437729	25.00	ug/L	0.00
56) Chlorobenzene-d5	14.17	117	308128	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	154409	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.55	111	41977	9.2264	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 36.92%#			
43) 1,2-Dichloroethane-d4	10.16	65	54837	9.4463	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 37.80%#			
57) Toluene-d8	12.40	98	168247	9.7530	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.00%#			
78) p-Bromofluorobenzene	15.56	95	58043	9.0690	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 36.28%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.22	85	29975	4.4183	ug/L	98
3) Chloromethane	3.67	50	40244	4.5780	ug/L	88
4) Vinyl Chloride	3.90	62	33802	4.6669	ug/L	97
5) 1,3-Butadiene	3.94	54	20197	4.3678	ug/L	92
6) Bromomethane	4.79	94	16876	4.4651	ug/L	97
7) Chloroethane	4.94	64	21338	4.6380	ug/L	99
8) Trichlorofluoromethane	5.43	101	39055	4.9635	ug/L	97
9) Diethyl ether	5.94	59	282424	49.2711	ug/L	97
10) Isoprene	5.98	67	38172	4.7897	ug/L	98
11) Acrolein	6.17	56	22816	23.3340	ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	21169	4.8061	ug/L	100
13) Acetone	6.28	43	8553	4.8505	ug/L	93
14) 1,1-Dichloroethene	6.49	61	46805	5.1464	ug/L	94
15) Tert-Butyl Alcohol	6.59	59	57550	95.2365	ug/L	96
16) Dimethyl Sulfide	6.74	62	34842	4.8627	ug/L	95
17) Iodomethane	7.00	142	20119	4.3600	ug/L	97
18) Methyl acetate	7.00	43	24191	4.8917	ug/L	95
19) Methylene Chloride	7.25	84	30063	5.1124	ug/L	96
20) Carbon Disulfide	7.29	76	75830	4.9935	ug/L	98
21) Acrylonitrile	7.42	53	57242	24.0397	ug/L	96
22) Methyl Tert Butyl Ether	7.46	73	76948	5.0141	ug/L	100
23) trans-1,2-Dichloroethene	7.68	96	24789	4.8580	ug/L	94
24) n-Hexane	7.75	57	38760	4.4783	ug/L	98
25) Diisopropyl ether	8.09	45	1158557	52.7838	ug/L	95
26) Vinyl Acetate	8.25	43	56100	4.9694	ug/L	99
27) 1,1-Dichloroethane	8.28	63	58541	5.0924	ug/L	98
28) Ethyl-Tert-Butyl ether	8.63	59	1038236	52.0695	ug/L	97
29) 2-Butanone	8.81	43	13499	4.7743	ug/L	97
30) Propionitrile	8.91	54	42805	47.5674	ug/L	97
31) 2,2-Dichloropropane	9.03	77	38649	4.9371	ug/L	98
32) cis-1,2-Dichloroethene	9.08	96	29619	4.9131	ug/L	95
33) Chloroform	9.27	83	50213	4.8509	ug/L	95
35) Bromochloromethane	9.50	130	16065	4.9053	ug/L	90
36) Tetrahydrofuran	9.52	42	96180	48.2989	ug/L	98
38) 1,1,1-Trichloroethane	9.78	97	41281	4.9980	ug/L	98
39) Cyclohexane	9.82	56	56402	4.9234	ug/L	98
40) 1,1-Dichloropropene	9.97	75	35544	4.9855	ug/L	95
41) Carbon Tetrachloride	10.11	117	33527	4.9881	ug/L	99
42) Tert-Amyl-Methyl ether	10.06	73	812014	52.2039	ug/L	98
44) 1,2-Dichloroethane	10.27	62	42215	5.0951	ug/L	99

(#) = qualifier out of range (m) = manual integration
11M17019.D 8260WT.M Wed Mar 29 10:58:14 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17019.D Vial: 7
Acq On : 24 Mar 2017 17:47 Operator: JDS
Sample : WG607620-06 5 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:34 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

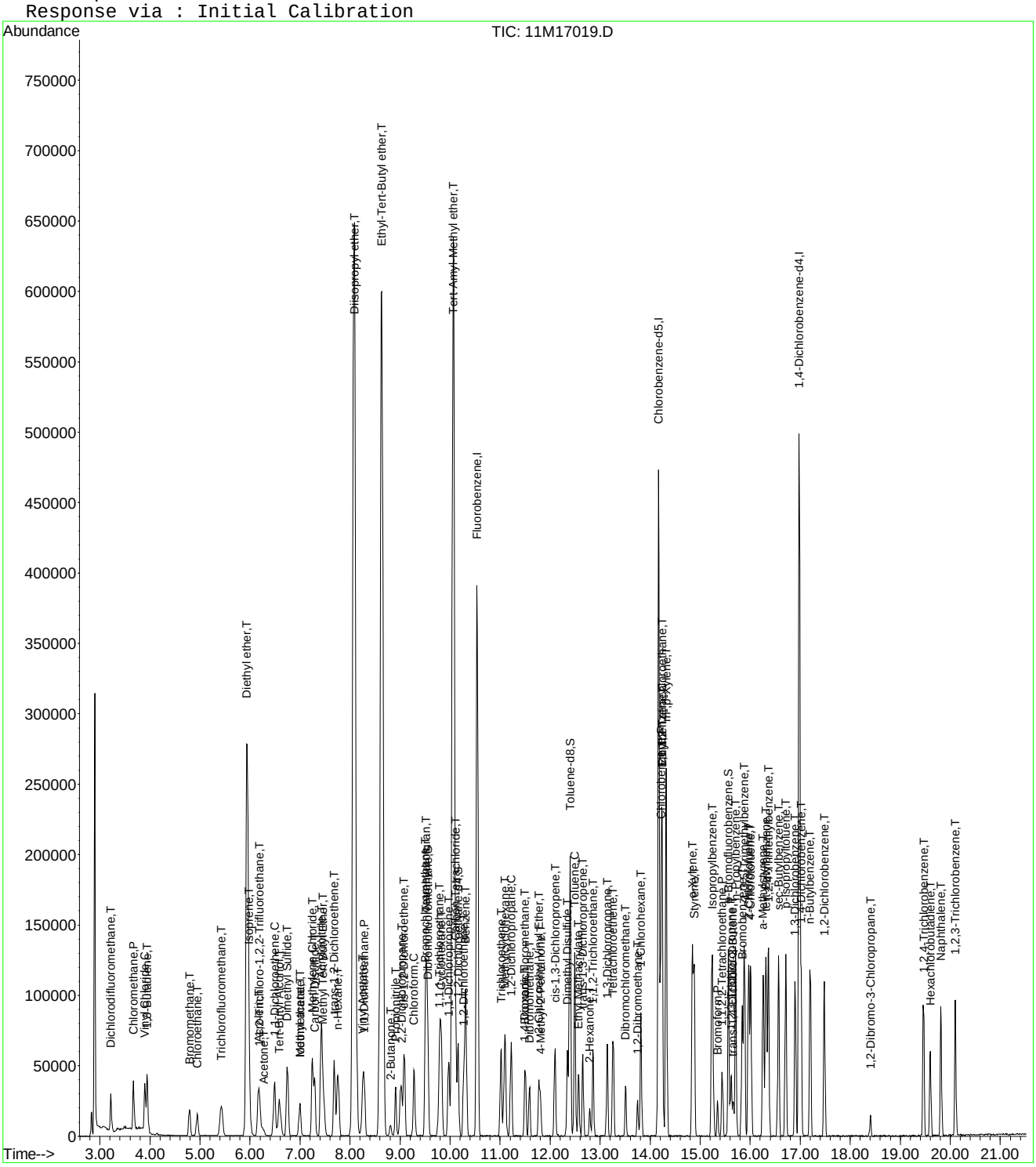
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	Benzene	10.31	78	112056	5.2438	ug/L		95
46)	Trichloroethene	11.02	130	25447	4.8802	ug/L		97
47)	Methylcyclohexane	11.09	83	42278	4.8273	ug/L		99
48)	1,2-Dichloropropane	11.22	63	34975	5.1458	ug/L		97
49)	1,4-Dioxane	11.49	88	4804	91.8922	ug/L		87
50)	Bromodichloromethane	11.50	83	35438	4.9175	ug/L		99
51)	Dibromomethane	11.58	93	15665	4.7520	ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.78	63	17066	4.6560	ug/L		97
53)	4-Methyl-2-Pentanone	11.81	58	10255	4.2747	ug/L		98
54)	cis-1,3-Dichloropropene	12.10	75	42374	5.0657	ug/L		100
55)	Dimethyl Disulfide	12.35	79	19794	3.7764	ug/L		78
58)	Toluene	12.49	91	114857	5.3164	ug/L		97
59)	Ethyl Methacrylate	12.56	69	30371	4.6964	ug/L		99
60)	trans-1,3-Dichloropropene	12.66	75	37209	4.9818	ug/L		95
61)	1,1,2-Trichloroethane	12.85	97	24373	5.1748	ug/L		99
62)	2-Hexanone	12.79	43	17680	4.3066	ug/L	#	99
63)	1,3-Dichloropropane	13.14	76	42807	5.1825	ug/L		96
64)	Tetrachloroethene	13.26	164	20984	5.0890	ug/L		96
65)	Dibromochloromethane	13.50	129	24226	4.7999	ug/L		99
66)	1,2-Dibromoethane	13.75	107	21051	4.8425	ug/L		100
67)	1-Chlorohexane	13.81	91	31702	4.6183	ug/L		95
68)	Chlorobenzene	14.22	112	72236	5.2601	ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.24	131	24813	5.0048	ug/L		98
70)	Ethylbenzene	14.24	106	39359	5.0656	ug/L		81
71)	m-,p-Xylene	14.32	106	92822	10.5430	ug/L		80
72)	o-Xylene	14.85	106	45403	4.9512	ug/L		86
73)	Styrene	14.88	104	71272	5.1581	ug/L		99
74)	Bromoform	15.34	173	14650	4.3943	ug/L		98
75)	Isopropylbenzene	15.24	105	114938	5.2859	ug/L		94
77)	1,1,2,2-Tetrachloroethane	15.44	83	30109	5.2454	ug/L		98
79)	1,2,3-Trichloropropane	15.62	110	8090	4.9731	ug/L		97
80)	trans-1,4-Dichloro-2-Buten	15.65	53	7873	4.3656	ug/L		77
81)	n-Propylbenzene	15.71	91	140786	5.2738	ug/L		91
82)	Bromobenzene	15.84	156	29573	4.8538	ug/L		91
83)	1,3,5-Trimethylbenzene	15.88	105	94395	5.3061	ug/L		96
84)	2-Chlorotoluene	15.96	91	89260	5.0259	ug/L		98
85)	4-Chlorotoluene	16.01	91	88364	5.3143	ug/L		82
86)	a-Methylstyrene	16.25	118	46594	4.5706	ug/L		94
87)	tert-Butylbenzene	16.32	134	20762	4.9915	ug/L		93
88)	1,2,4-Trimethylbenzene	16.37	105	99766	5.0120	ug/L		95
89)	sec-Butylbenzene	16.56	105	120685	5.1061	ug/L		93
90)	p-Isopropyltoluene	16.71	119	97594	4.9647	ug/L		93
91)	1,3-Dichlorobenzene	16.90	146	57182	5.1536	ug/L		95
92)	1,4-Dichlorobenzene	17.02	146	55812	5.0304	ug/L		98
93)	n-Butylbenzene	17.20	91	88341	4.9598	ug/L		94
94)	1,2-Dichlorobenzene	17.48	146	54970	4.9855	ug/L		100
95)	1,2-Dibromo-3-Chloropropan	18.40	75	4927	4.6354	ug/L		94
96)	1,2,4-Trichlorobenzene	19.47	180	36049	4.8287	ug/L		96
97)	Hexachlorobutadiene	19.60	225	17058	4.7740	ug/L		97
98)	Naphthalene	19.81	128	88468	5.2642	ug/L		98
99)	1,2,3-Trichlorobenzene	20.10	180	37071	4.9999	ug/L		95

(#) = qualifier out of range (m) = manual integration
11M17019.D 8260WT.M Wed Mar 29 10:58:14 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17019.D Vial: 7
Acq On : 24 Mar 2017 17:47 Operator: JDS
Sample : WG607620-06 5 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



11M17019.D 8260WT.M Wed Mar 29 10:58:15 2017 Page 3

Data File : C:\MSDCHEM\1\DATA\032417\11M17019.D Vial: 7
Acq On : 24 Mar 2017 17:47 Operator: JDS
Sample : WG607620-06 5 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.4183	11.6	100	0.00
3	P	Chloromethane	5.0000	4.5780	8.4	100	0.00
4	C	Vinyl Chloride	5.0000	4.6669	6.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.3678	12.6	100	0.00
6	T	Bromomethane	5.0000	4.4651	10.7	100	0.00
7	T	Chloroethane	5.0000	4.6380	7.2	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9635	0.7	100	0.01
9	T	Diethyl ether	50.0000	49.2711	1.5	100	0.00
10	T	Isoprene	5.0000	4.7897	4.2	100	0.00
11	T	Acrolein	25.0000	23.3340	6.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.8061	3.9	100	0.00
13	T	Acetone	5.0000	4.8505	3.0	100	0.01
14	C	1,1-Dichloroethene	5.0000	5.1464	-2.9	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	95.2365	4.8	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8627	2.7	100	0.00
17	T	Iodomethane	5.0000	4.3600	12.8	100	0.01
18	T	Methyl acetate	5.0000	4.8917	2.2	100	0.00
19	T	Methylene Chloride	5.0000	5.1124	-2.2	100	0.00
20	T	Carbon Disulfide	5.0000	4.9935	0.1	100	0.00
21	T	Acrylonitrile	25.0000	24.0397	3.8	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	5.0141	-0.3	100	0.01
23	T	trans-1,2-Dichloroethene	5.0000	4.8580	2.8	100	0.00
24	T	n-Hexane	5.0000	4.4783	10.4	100	0.00
25	T	Diisopropyl ether	50.0000	52.7838	-5.6	100	0.00
26	T	Vinyl Acetate	5.0000	4.9694	0.6	100	0.01
27	P	1,1-Dichloroethane	5.0000	5.0924	-1.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	52.0695	-4.1	100	0.00
29	T	2-Butanone	5.0000	4.7743	4.5	100	0.00
30	T	Propionitrile	50.0000	47.5674	4.9	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9371	1.3	100	0.01
32	T	cis-1,2-Dichloroethene	5.0000	4.9131	1.7	100	0.00
33	C	Chloroform	5.0000	4.8509	3.0	100	0.00
34	T	1-Bromopropane	5.0000	0.0000	100.0#	0	-9.42#
35	T	Bromochloromethane	5.0000	4.9053	1.9	100	0.00
36	T	Tetrahydrofuran	50.0000	48.2989	3.4	100	0.00
37	S	Dibromofluoromethane	10.0000	9.2264	7.7	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.9980	0.0	100	0.00
39	T	Cyclohexane	5.0000	4.9234	1.5	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.9855	0.3	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.9881	0.2	100	0.00
42	T	Tert-Amyl-Methyl ether	50.0000	52.2039	-4.4	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	9.4463	5.5	100	0.00
44	T	1,2-Dichloroethane	5.0000	5.0951	-1.9	100	0.00
45	T	Benzene	5.0000	5.2438	-4.9	100	0.00
46	T	Trichloroethene	5.0000	4.8803	2.4	100	0.00
47	T	Methylcyclohexane	5.0000	4.8273	3.5	100	0.00
48	C	1,2-Dichloropropane	5.0000	5.1458	-2.9	100	0.00
49	T	1,4-Dioxane	100.0000	91.8922	8.1	100	0.00
50	T	Bromodichloromethane	5.0000	4.9175	1.7	100	0.00
51	T	Dibromomethane	5.0000	4.7519	5.0	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.6560	6.9	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.2747	14.5	100	0.01
54	T	cis-1,3-Dichloropropene	5.0000	5.0657	-1.3	100	0.00

(#) = Out of Range
11M17019.D 8260WT.M Wed Mar 29 10:57:25 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17019.D Vial: 7
Acq On : 24 Mar 2017 17:47 Operator: JDS
Sample : WG607620-06 5 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	3.7764	24.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	10.0000	9.7530	2.5	100	0.00
58	C	Toluene	5.0000	5.3164	-6.3	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6964	6.1	100	-0.01
60	T	trans-1,3-Dichloropropene	5.0000	4.9818	0.4	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	5.1748	-3.5	100	0.00
62	T	2-Hexanone	5.0000	4.3066	13.9	100	0.00
63	T	1,3-Dichloropropane	5.0000	5.1825	-3.6	100	0.00
64	T	Tetrachloroethene	5.0000	5.0890	-1.8	100	0.00
65	T	Dibromochloromethane	5.0000	4.7999	4.0	100	-0.01
66	T	1,2-Dibromoethane	5.0000	4.8425	3.2	100	0.00
67	T	1-Chlorohexane	5.0000	4.6183	7.6	100	0.00
68	P	Chlorobenzene	5.0000	5.2601	-5.2	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	5.0048	-0.1	100	-0.01
70	C	Ethylbenzene	5.0000	5.0656	-1.3	100	0.00
71	T	m-,p-Xylene	10.0000	10.5430	-5.4	100	0.00
72	T	o-Xylene	5.0000	4.9512	1.0	100	0.00
73	T	Styrene	5.0000	5.1581	-3.2	100	0.00
74	P	Bromoform	5.0000	4.3943	12.1	100	0.00
75	T	Isopropylbenzene	5.0000	5.2859	-5.7	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	5.2454	-4.9	100	0.00
78	S	p-Bromofluorobenzene	10.0000	9.0690	9.3	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	4.9731	0.5	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3656	12.7	100	0.00
81	T	n-Propylbenzene	5.0000	5.2738	-5.5	100	0.00
82	T	Bromobenzene	5.0000	4.8538	2.9	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	5.3061	-6.1	100	0.00
84	T	2-Chlorotoluene	5.0000	5.0259	-0.5	100	0.00
85	T	4-Chlorotoluene	5.0000	5.3143	-6.3	100	0.00
86	T	a-Methylstyrene	5.0000	4.5706	8.6	100	0.00
87	T	tert-Butylbenzene	5.0000	4.9915	0.2	100	0.00
88	T	1,2,4-Trimethylbenzene	5.0000	5.0120	-0.2	100	0.00
89	T	sec-Butylbenzene	5.0000	5.1061	-2.1	100	0.00
90	T	p-Isopropyltoluene	5.0000	4.9646	0.7	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	5.1536	-3.1	100	-0.01
92	T	1,4-Dichlorobenzene	5.0000	5.0304	-0.6	100	0.00
93	T	n-Butylbenzene	5.0000	4.9598	0.8	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9855	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	4.6354	7.3	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8287	3.4	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.7740	4.5	100	0.00
98	T	Naphthalene	5.0000	5.2642	-5.3	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.9999	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M17019.D 8260WT.M Wed Mar 29 10:57:26 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17020.D Vial: 8
Acq On : 24 Mar 2017 18:16 Operator: JDS
Sample : WG607620-07 20 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:34 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.54	96	434056	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.17	117	300601	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	152374	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.55	111	113757	25.2151 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.88%		
43) 1,2-Dichloroethane-d4	10.16	65	146625	25.4717 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.88%		
57) Toluene-d8	12.40	98	443481	26.3515 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.40%		
78) p-Bromofluorobenzene	15.56	95	166815	26.4123 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.64%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.22	85	158213	22.0773 ug/L	98
3) Chloromethane	3.67	50	170959	19.6124 ug/L	100
4) Vinyl Chloride	3.90	62	164291	22.8748 ug/L	99
5) 1,3-Butadiene	3.94	54	89672	24.7167 ug/L	99
6) Bromomethane	4.80	94	64280	17.1515 ug/L	98
7) Chloroethane	4.94	64	93364	20.4653 ug/L	99
8) Trichlorofluoromethane	5.43	101	166192	21.3002 ug/L	100
9) Diethyl ether	5.94	59	461700	81.2287 ug/L	98
10) Isoprene	5.98	67	173966	22.0135 ug/L	99
11) Acrolein	6.17	56	39757	41.0037 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	91442	19.6540 ug/L	97
13) Acetone	6.27	43	32268	18.4545 ug/L	95
14) 1,1-Dichloroethene	6.49	61	187616	20.8036 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	89922	150.0664 ug/L	95
16) Dimethyl Sulfide	6.74	62	154190	21.7017 ug/L	98
17) Iodomethane	6.99	142	121854	20.3490 ug/L	98
18) Methyl acetate	7.00	43	100543	20.5030 ug/L	98
19) Methylene Chloride	7.25	84	116262	19.9382 ug/L	97
20) Carbon Disulfide	7.29	76	327728	21.7640 ug/L	99
21) Acrylonitrile	7.42	53	97641	41.3529 ug/L	100
22) Methyl Tert Butyl Ether	7.45	73	308949	20.3021 ug/L	99
23) trans-1,2-Dichloroethene	7.68	96	104017	20.5570 ug/L	98
24) n-Hexane	7.75	57	183379	21.3668 ug/L	98
25) Diisopropyl ether	8.09	45	1811932	83.2500 ug/L	97
26) Vinyl Acetate	8.25	43	236311	21.1099 ug/L	99
27) 1,1-Dichloroethane	8.28	63	236627	20.7580 ug/L	99
28) Ethyl-Tert-Butyl ether	8.63	59	1636358	82.7610 ug/L	98
29) 2-Butanone	8.81	43	54091	19.2927 ug/L	100
30) Propionitrile	8.91	54	70002	78.4486 ug/L	99
31) 2,2-Dichloropropane	9.02	77	168878	21.7554 ug/L	99
32) cis-1,2-Dichloroethene	9.09	96	122370	20.4699 ug/L	96
33) Chloroform	9.29	83	196266	19.1210 ug/L	99
35) Bromochloromethane	9.50	130	69097	21.2765 ug/L	96
36) Tetrahydrofuran	9.52	42	153982	77.9798 ug/L	100
38) 1,1,1-Trichloroethane	9.78	97	170743	20.8471 ug/L	99
39) Cyclohexane	9.81	56	245333	21.5965 ug/L	98
40) 1,1-Dichloropropene	9.97	75	147606	20.8787 ug/L	98
41) Carbon Tetrachloride	10.11	117	142594	21.3943 ug/L	98
42) Tert-Amyl-Methyl ether	10.06	73	1281231	83.0665 ug/L	97
44) 1,2-Dichloroethane	10.28	62	169651	20.6492 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M17020.D 8260WT.M Wed Mar 29 10:58:16 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17020.D Vial: 8
Acq On : 24 Mar 2017 18:16 Operator: JDS
Sample : WG607620-07 20 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:34 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

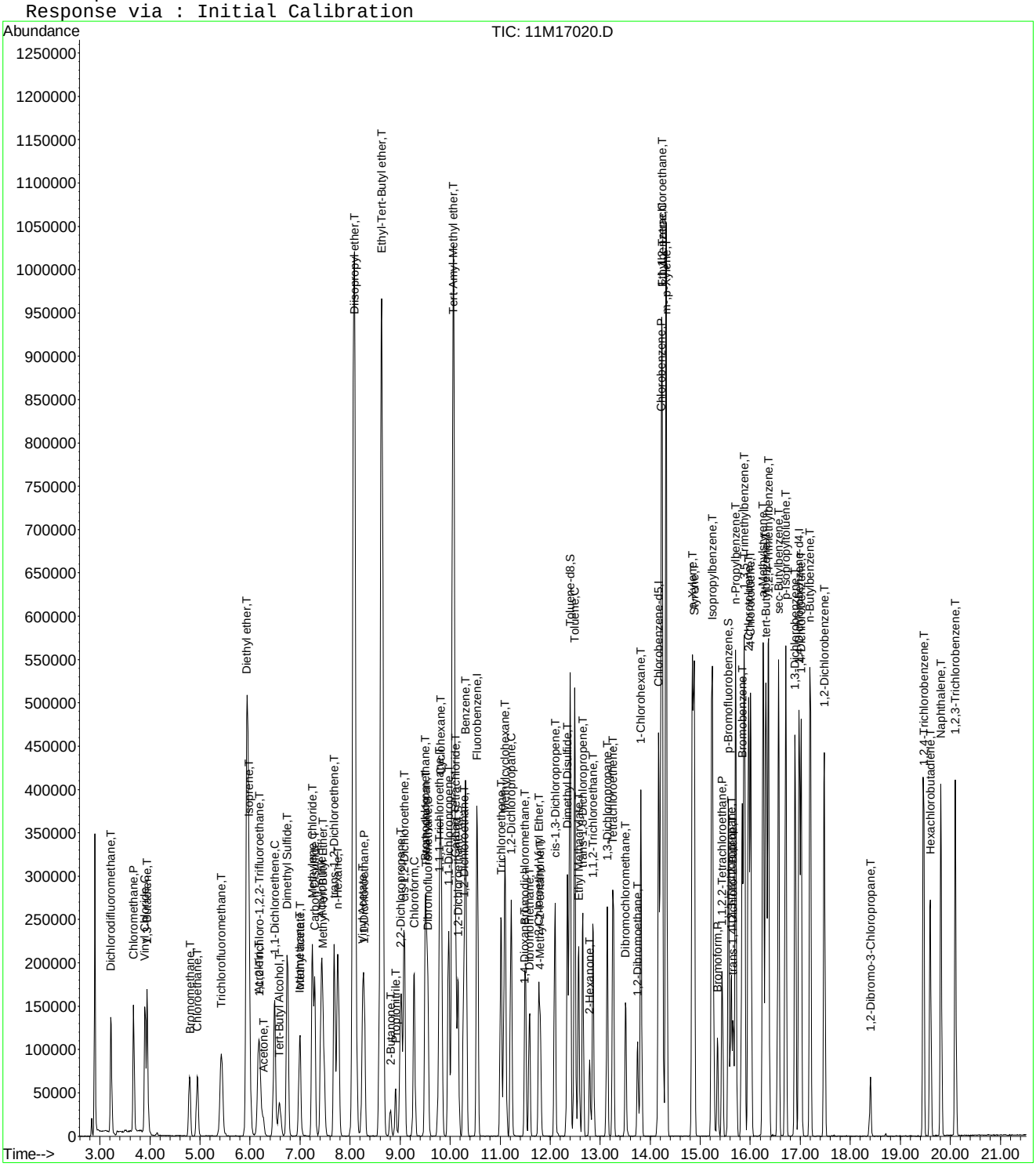
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	Benzene	10.31	78	443083	20.9102 ug/L	97
46)	Trichloroethene	11.02	130	104976	20.3028 ug/L	98
47)	Methylcyclohexane	11.09	83	186861	21.5161 ug/L	100
48)	1,2-Dichloropropane	11.22	63	136446	20.2449 ug/L	98
49)	1,4-Dioxane	11.49	88	7677	148.0903 ug/L	84
50)	Bromodichloromethane	11.50	83	148096	20.7242 ug/L	100
51)	Dibromomethane	11.58	93	65479	20.0310 ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.78	63	75822	20.8611 ug/L	100
53)	4-Methyl-2-Pentanone	11.80	58	44904	18.8760 ug/L	97
54)	cis-1,3-Dichloropropene	12.10	75	176169	21.2387 ug/L	99
55)	Dimethyl Disulfide	12.35	79	103190	19.8535 ug/L	93
58)	Toluene	12.49	91	458903	21.7731 ug/L	97
59)	Ethyl Methacrylate	12.57	69	142168	22.5348 ug/L	99
60)	trans-1,3-Dichloropropene	12.66	75	159907	21.9454 ug/L	98
61)	1,1,2-Trichloroethane	12.85	97	96387	20.9770 ug/L	100
62)	2-Hexanone	12.79	43	79523	19.8559 ug/L	96
63)	1,3-Dichloropropane	13.14	76	169444	21.0276 ug/L	96
64)	Tetrachloroethene	13.26	164	85327	21.2116 ug/L	99
65)	Dibromochloromethane	13.50	129	105748	21.4764 ug/L	98
66)	1,2-Dibromoethane	13.75	107	87997	20.2537 ug/L	100
67)	1-Chlorohexane	13.81	91	145300	21.0260 ug/L	96
68)	Chlorobenzene	14.22	112	285794	21.3320 ug/L	97
69)	1,1,1,2-Tetrachloroethane	14.24	131	106220	21.9609 ug/L	97
70)	Ethylbenzene	14.24	106	157575	20.7879 ug/L	83
71)	m-,p-Xylene	14.32	106	378142	44.0258 ug/L	85
72)	o-Xylene	14.85	106	190081	21.2475 ug/L	92
73)	Styrene	14.88	104	312952	23.2162 ug/L	97
74)	Bromoform	15.34	173	67177	18.5640 ug/L	99
75)	Isopropylbenzene	15.24	105	477811	22.5246 ug/L	96
77)	1,1,2,2-Tetrachloroethane	15.44	83	123941	21.8804 ug/L	100
79)	1,2,3-Trichloropropane	15.62	110	34831	21.6975 ug/L	89
80)	trans-1,4-Dichloro-2-Buten	15.65	53	39696	19.5304 ug/L	97
81)	n-Propylbenzene	15.71	91	586751	22.2731 ug/L	94
82)	Bromobenzene	15.84	156	126028	20.9610 ug/L	97
83)	1,3,5-Trimethylbenzene	15.88	105	402254	22.9133 ug/L	96
84)	2-Chlorotoluene	15.96	91	368240	21.0113 ug/L	96
85)	4-Chlorotoluene	16.01	91	358678	21.8594 ug/L	84
86)	a-Methylstyrene	16.25	118	219449	21.8142 ug/L	97
87)	tert-Butylbenzene	16.32	134	85646	20.8656 ug/L	90
88)	1,2,4-Trimethylbenzene	16.37	105	417201	21.2392 ug/L	96
89)	sec-Butylbenzene	16.56	105	511581	21.9338 ug/L	95
90)	p-Isopropyltoluene	16.71	119	422322	21.7706 ug/L	95
91)	1,3-Dichlorobenzene	16.89	146	232833	21.2645 ug/L	100
92)	1,4-Dichlorobenzene	17.02	146	229015	20.9170 ug/L	100
93)	n-Butylbenzene	17.19	91	399706	22.7409 ug/L	96
94)	1,2-Dichlorobenzene	17.48	146	227585	20.9164 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.40	75	21185	20.1974 ug/L	97
96)	1,2,4-Trichlorobenzene	19.47	180	159853	21.6981 ug/L	97
97)	Hexachlorobutadiene	19.60	225	75849	21.5113 ug/L	98
98)	Naphthalene	19.81	128	378808	22.8417 ug/L	98
99)	1,2,3-Trichlorobenzene	20.10	180	153855	21.0281 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M17020.D 8260WT.M Wed Mar 29 10:58:17 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17020.D Vial: 8
Acq On : 24 Mar 2017 18:16 Operator: JDS
Sample : WG607620-07 20 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



11M17020.D 8260WT.M Wed Mar 29 10:58:17 2017 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17021.D Vial: 9
Acq On : 24 Mar 2017 18:45 Operator: JDS
Sample : WG607620-08 50 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:35 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.54	96	432286	25.00	ug/L	0.00
56) Chlorobenzene-d5	14.17	117	305247	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	158955	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.55	111	233886	52.0548	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 208.20%#			
43) 1,2-Dichloroethane-d4	10.16	65	292470	51.0159	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.08%#			
57) Toluene-d8	12.40	98	857302	50.1653	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 200.68%#			
78) p-Bromofluorobenzene	15.56	95	340052	51.6122	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 206.44%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.22	85	412631	57.2755	ug/L	99
3) Chloromethane	3.67	50	401722	46.2741	ug/L	98
4) Vinyl Chloride	3.90	62	370534	51.8019	ug/L	100
5) 1,3-Butadiene	3.94	54	173958	51.2200	ug/L	98
6) Bromomethane	4.79	94	181343	48.5849	ug/L	99
7) Chloroethane	4.94	64	250312	55.0929	ug/L	99
8) Trichlorofluoromethane	5.42	101	444745	57.2348	ug/L	99
9) Diethyl ether	5.94	59	582879	102.9681	ug/L	98
10) Isoprene	5.98	67	455184	57.8345	ug/L	98
11) Acrolein	6.17	56	52533	54.4022	ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	243892	51.9941	ug/L	100
13) Acetone	6.27	43	88320	50.7182	ug/L	95
14) 1,1-Dichloroethene	6.48	61	504948	56.2199	ug/L	100
15) Tert-Butyl Alcohol	6.59	59	121821	204.1335	ug/L	96
16) Dimethyl Sulfide	6.74	62	389214	55.0047	ug/L	98
17) Iodomethane	6.99	142	333563	53.7809	ug/L	99
18) Methyl acetate	7.00	43	256594	52.5397	ug/L	100
19) Methylene Chloride	7.25	84	301873	51.9813	ug/L	97
20) Carbon Disulfide	7.29	76	827180	55.1569	ug/L	100
21) Acrylonitrile	7.42	53	130102	55.3263	ug/L	98
22) Methyl Tert Butyl Ether	7.44	73	809651	53.4229	ug/L	100
23) trans-1,2-Dichloroethene	7.68	96	277416	55.0505	ug/L	100
24) n-Hexane	7.75	57	481153	56.2922	ug/L	99
25) Diisopropyl ether	8.09	45	2242317	103.4461	ug/L	99
26) Vinyl Acetate	8.24	43	658042	59.0241	ug/L	100
27) 1,1-Dichloroethane	8.28	63	617056	54.3525	ug/L	100
28) Ethyl-Tert-Butyl ether	8.63	59	2040629	103.6301	ug/L	99
29) 2-Butanone	8.81	43	151233	54.1613	ug/L	98
30) Propionitrile	8.91	54	94260	106.0661	ug/L	96
31) 2,2-Dichloropropane	9.02	77	439136	56.8024	ug/L	99
32) cis-1,2-Dichloroethene	9.08	96	321796	54.0500	ug/L	99
33) Chloroform	9.27	83	507511	49.6462	ug/L	99
35) Bromochloromethane	9.50	130	180452	55.7926	ug/L	96
36) Tetrahydrofuran	9.52	42	202672	103.0577	ug/L	99
38) 1,1,1-Trichloroethane	9.78	97	456271	55.9371	ug/L	99
39) Cyclohexane	9.81	56	629011	55.5982	ug/L	99
40) 1,1-Dichloropropene	9.97	75	395301	56.1438	ug/L	100
41) Carbon Tetrachloride	10.11	117	386659	58.2504	ug/L	99
42) Tert-Amyl-Methyl ether	10.06	73	1611363	104.8979	ug/L	98
44) 1,2-Dichloroethane	10.27	62	436704	53.3714	ug/L	99

(#) = qualifier out of range (m) = manual integration
11M17021.D 8260WT.M Wed Mar 29 10:58:18 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17021.D Vial: 9
Acq On : 24 Mar 2017 18:45 Operator: JDS
Sample : WG607620-08 50 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:35 2017 Quant Results File: 8260WT.RES

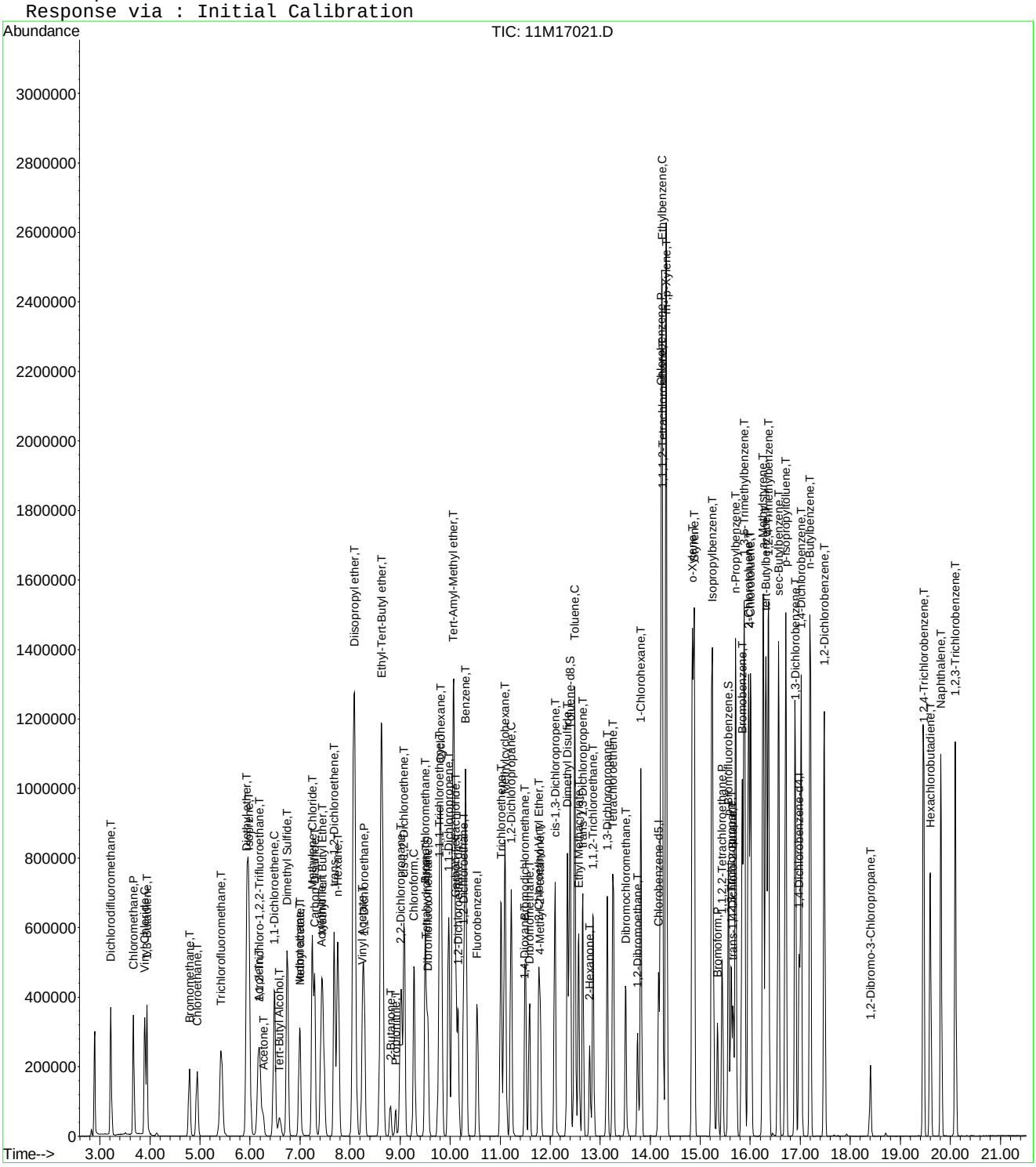
Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	Benzene	10.31	78	1108526	52.5284 ug/L	100
46)	Trichloroethene	11.02	130	284199	55.1902 ug/L	99
47)	Methylcyclohexane	11.09	83	481684	55.6907 ug/L	98
48)	1,2-Dichloropropane	11.22	63	361779	53.8980 ug/L	99
49)	1,4-Dioxane	11.49	88	10730	207.8305 ug/L	84
50)	Bromodichloromethane	11.50	83	395495	55.5711 ug/L	100
51)	Dibromomethane	11.58	93	174835	53.7037 ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.78	63	209245	57.8057 ug/L	99
53)	4-Methyl-2-Pentanone	11.80	58	126999	53.6044 ug/L	96
54)	cis-1,3-Dichloropropene	12.10	75	478987	57.9825 ug/L	99
55)	Dimethyl Disulfide	12.35	79	282890	54.6501 ug/L	98
58)	Toluene	12.49	91	1139902	53.2605 ug/L	99
59)	Ethyl Methacrylate	12.57	69	367357	57.3427 ug/L	99
60)	trans-1,3-Dichloropropene	12.66	75	433111	58.5349 ug/L	99
61)	1,1,2-Trichloroethane	12.85	97	254419	54.5273 ug/L	99
62)	2-Hexanone	12.79	43	224657	55.2402 ug/L	100
63)	1,3-Dichloropropane	13.14	76	436767	53.3769 ug/L	99
64)	Tetrachloroethene	13.26	164	226228	55.3825 ug/L	99
65)	Dibromochloromethane	13.51	129	290334	58.0665 ug/L	100
66)	1,2-Dibromoethane	13.75	107	237403	53.5599 ug/L	99
67)	1-Chlorohexane	13.81	91	389522	55.2113 ug/L	99
68)	Chlorobenzene	14.22	112	732051	53.8094 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.25	131	280642	57.1395 ug/L	99
70)	Ethylbenzene	14.24	106	421789	54.7972 ug/L	96
71)	m-,p-Xylene	14.32	106	961798	110.2745 ug/L	97
72)	o-Xylene	14.85	106	500572	55.1030 ug/L	98
73)	Styrene	14.88	104	822928	60.1193 ug/L	100
74)	Bromoform	15.34	173	192378	51.3251 ug/L	99
75)	Isopropylbenzene	15.24	105	1196583	55.5497 ug/L	98
77)	1,1,2,2-Tetrachloroethane	15.44	83	333364	56.4152 ug/L	99
79)	1,2,3-Trichloropropane	15.62	110	92583	55.2854 ug/L	98
80)	trans-1,4-Dichloro-2-Buten	15.65	53	110358	50.9239 ug/L	95
81)	n-Propylbenzene	15.71	91	1436148	52.2592 ug/L	99
82)	Bromobenzene	15.84	156	338952	54.0407 ug/L	100
83)	1,3,5-Trimethylbenzene	15.88	105	1030535	56.2712 ug/L	100
84)	2-Chlorotoluene	15.96	91	926841	50.6950 ug/L	99
85)	4-Chlorotoluene	16.01	91	917542	53.6039 ug/L	87
86)	a-Methylstyrene	16.25	118	583486	55.5999 ug/L	100
87)	tert-Butylbenzene	16.32	134	234643	54.7985 ug/L	97
88)	1,2,4-Trimethylbenzene	16.37	105	1065971	52.0206 ug/L	99
89)	sec-Butylbenzene	16.56	105	1288071	52.9389 ug/L	99
90)	p-Isopropyltoluene	16.71	119	1096141	54.1665 ug/L	100
91)	1,3-Dichlorobenzene	16.91	146	616008	53.9303 ug/L	100
92)	1,4-Dichlorobenzene	17.02	146	619762	54.2623 ug/L	99
93)	n-Butylbenzene	17.19	91	1063754	58.0156 ug/L	99
94)	1,2-Dichlorobenzene	17.48	146	605367	53.3332 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.40	75	63642	58.1632 ug/L	97
96)	1,2,4-Trichlorobenzene	19.47	180	438781	57.0933 ug/L	100
97)	Hexachlorobutadiene	19.60	225	210472	57.2199 ug/L	97
98)	Naphthalene	19.81	128	985099	56.9411 ug/L	99
99)	1,2,3-Trichlorobenzene	20.10	180	428233	56.1056 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M17021.D 8260WT.M Wed Mar 29 10:58:18 2017 Page 2

Data File : C:\MSDCHEM\1\DATA\032417\11M17021.D Vial: 9
Acq On : 24 Mar 2017 18:45 Operator: JDS
Sample : WG607620-08 50 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17022.D Vial: 10
Acq On : 24 Mar 2017 19:14 Operator: JDS
Sample : WG607620-09 100 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:35 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.54	96	446614	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.17	117	321851	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	172511	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.55	111	441985	95.2145 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 380.84%#		
43) 1,2-Dichloroethane-d4	10.16	65	549554	92.7840 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 371.12%#		
57) Toluene-d8	12.40	98	1508593	83.7218 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 334.88%#		
78) p-Bromofluorobenzene	15.56	95	655352	91.6514 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 366.60%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.21	85	790043	105.8600 ug/L	99
3) Chloromethane	3.66	50	790784	88.1676 ug/L	97
4) Vinyl Chloride	3.89	62	694413	93.9668 ug/L	98
5) 1,3-Butadiene	3.93	54	293463	89.1992 ug/L	98
6) Bromomethane	4.78	94	390148	101.1739 ug/L	99
7) Chloroethane	4.93	64	498947	106.2936 ug/L	100
8) Trichlorofluoromethane	5.42	101	873216	108.7701 ug/L	100
9) Diethyl ether	5.94	59	1118271	191.2099 ug/L	98
10) Isoprene	5.97	67	915216	112.5544 ug/L	99
11) Acrolein	6.16	56	106999	107.2513 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	489756	100.6984 ug/L	99
13) Acetone	6.27	43	179044	99.5183 ug/L	95
14) 1,1-Dichloroethene	6.48	61	984242	106.0680 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	254073	412.0875 ug/L	98
16) Dimethyl Sulfide	6.74	62	770465	105.3909 ug/L	98
17) Iodomethane	6.99	142	663046	102.3381 ug/L	98
18) Methyl acetate	7.00	43	513320	101.7344 ug/L	99
19) Methylene Chloride	7.24	84	602429	100.4079 ug/L	99
20) Carbon Disulfide	7.29	76	1551065	100.1079 ug/L	98
21) Acrylonitrile	7.41	53	259938	106.9933 ug/L	99
22) Methyl Tert Butyl Ether	7.44	73	1568110	100.1486 ug/L	97
23) trans-1,2-Dichloroethene	7.68	96	557107	107.0058 ug/L	96
24) n-Hexane	7.75	57	973154	110.2010 ug/L	100
25) Diisopropyl ether	8.08	45	3828224	170.9438 ug/L	95
26) Vinyl Acetate	8.24	43	1212098	105.2331 ug/L	99
27) 1,1-Dichloroethane	8.27	63	1186820	101.1856 ug/L	97
28) Ethyl-Tert-Butyl ether	8.62	59	3552817	174.6359 ug/L	94
29) 2-Butanone	8.80	43	297781	103.2234 ug/L	100
30) Propionitrile	8.91	54	189564	206.4638 ug/L	99
31) 2,2-Dichloropropane	9.02	77	859340	107.5899 ug/L	98
32) cis-1,2-Dichloroethene	9.08	96	640878	104.1908 ug/L	100
33) Chloroform	9.27	83	993645	94.0829 ug/L	99
35) Bromochloromethane	9.50	130	368285	110.2143 ug/L	99
36) Tetrahydrofuran	9.52	42	405638	199.6475 ug/L	98
38) 1,1,1-Trichloroethane	9.78	97	901487	106.9732 ug/L	98
39) Cyclohexane	9.81	56	1232389	105.4360 ug/L	100
40) 1,1-Dichloropropene	9.97	75	779293	107.1306 ug/L	99
41) Carbon Tetrachloride	10.11	117	764828	111.5252 ug/L	99
42) Tert-Amyl-Methyl ether	10.06	73	2848538	179.4875 ug/L	93
44) 1,2-Dichloroethane	10.27	62	844419	99.8891 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M17022.D 8260WT.M Wed Mar 29 10:58:19 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17022.D Vial: 10
Acq On : 24 Mar 2017 19:14 Operator: JDS
Sample : WG607620-09 100 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:35 2017 Quant Results File: 8260WT.RES

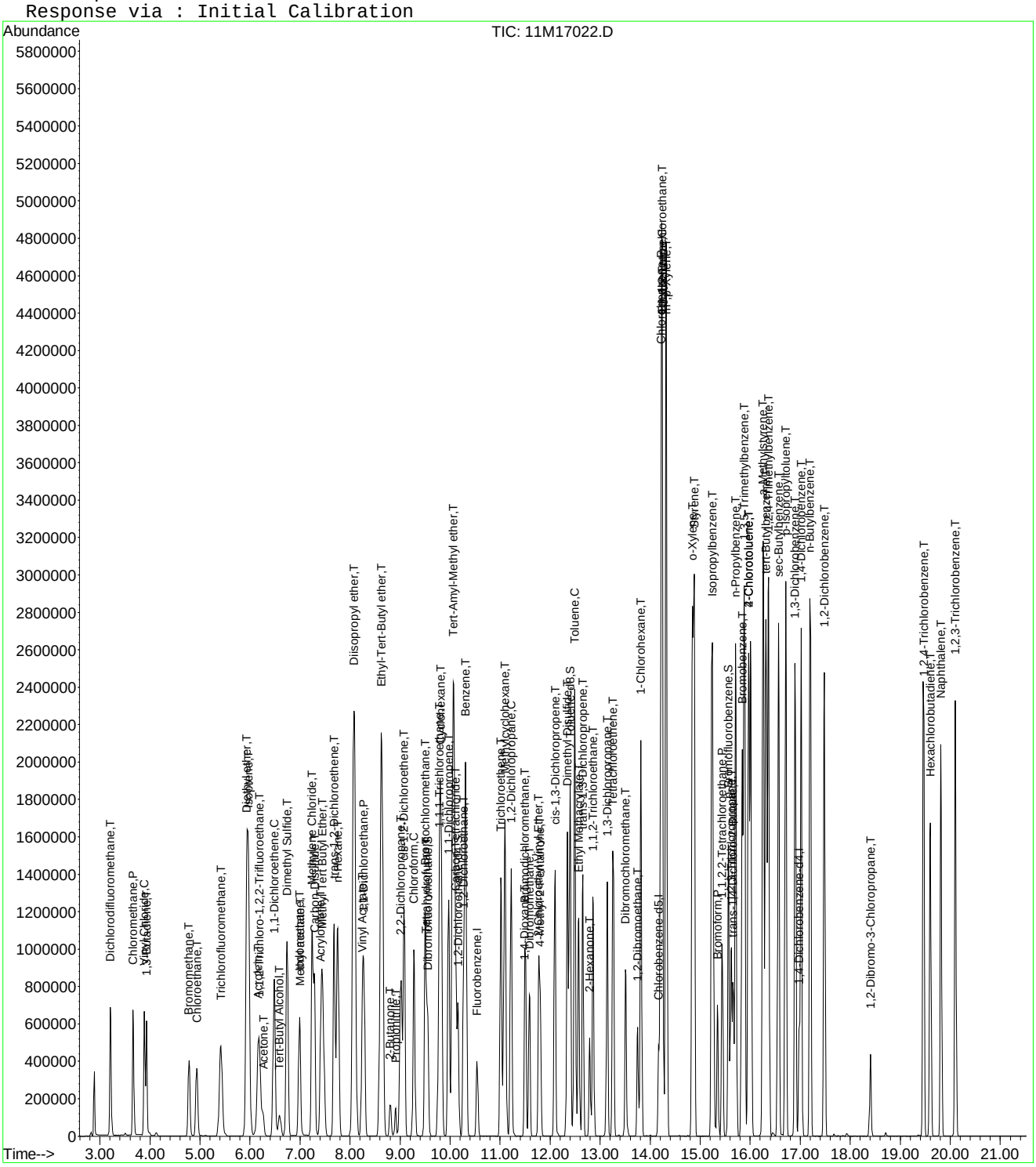
Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	Benzene	10.31	78	2002329	91.8381	ug/L		95
46)	Trichloroethene	11.01	130	557040	104.7043	ug/L		99
47)	Methylcyclohexane	11.09	83	956818	107.0751	ug/L		99
48)	1,2-Dichloropropane	11.22	63	713197	102.8437	ug/L		100
49)	1,4-Dioxane	11.49	88	21805	408.7940	ug/L		88
50)	Bromodichloromethane	11.50	83	784913	106.7502	ug/L		98
51)	Dibromomethane	11.58	93	353094	104.9796	ug/L		98
52)	2-Chloroethyl Vinyl Ether	11.77	63	411763	110.1037	ug/L		99
53)	4-Methyl-2-Pentanone	11.80	58	252972	103.3502	ug/L		98
54)	cis-1,3-Dichloropropene	12.10	75	938305	109.9400	ug/L		97
55)	Dimethyl Disulfide	12.35	79	583809	109.1649	ug/L		97
58)	Toluene	12.49	91	2012644	89.1870	ug/L		96
59)	Ethyl Methacrylate	12.57	69	744127	110.1625	ug/L		99
60)	trans-1,3-Dichloropropene	12.66	75	842172	107.9476	ug/L		98
61)	1,1,2-Trichloroethane	12.85	97	506797	103.0137	ug/L		100
62)	2-Hexanone	12.79	43	450770	105.1203	ug/L		99
63)	1,3-Dichloropropane	13.14	76	847008	98.1719	ug/L		100
64)	Tetrachloroethene	13.26	164	455365	105.7261	ug/L		99
65)	Dibromochloromethane	13.50	129	586202	111.1915	ug/L		99
66)	1,2-Dibromoethane	13.75	107	477347	102.0004	ug/L		100
67)	1-Chlorohexane	13.81	91	769707	103.3122	ug/L		97
68)	Chlorobenzene	14.22	112	1363926	95.0833	ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.24	131	570561	110.1748	ug/L		99
70)	Ethylbenzene	14.24	106	841946	103.7394	ug/L		86
71)	m-,p-Xylene	14.32	106	1745141	189.7660	ug/L		89
72)	o-Xylene	14.85	106	983881	102.7183	ug/L		92
73)	Styrene	14.88	104	1558658	107.9940	ug/L		95
74)	Bromoform	15.34	173	404665	101.8300	ug/L		98
75)	Isopropylbenzene	15.24	105	2125443	93.5805	ug/L		94
77)	1,1,2,2-Tetrachloroethane	15.44	83	672943	104.9332	ug/L		98
79)	1,2,3-Trichloropropane	15.62	110	192458	105.8944	ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.65	53	240346	101.5109	ug/L		89
81)	n-Propylbenzene	15.71	91	2472658	82.9059	ug/L		93
82)	Bromobenzene	15.84	156	684532	100.5619	ug/L		98
83)	1,3,5-Trimethylbenzene	15.88	105	1893518	95.2686	ug/L		95
84)	2-Chlorotoluene	15.96	91	1679689	84.6537	ug/L		81
85)	4-Chlorotoluene	15.96	91	1679689	90.4185	ug/L		86
86)	a-Methylstyrene	16.25	118	1172111	102.9128	ug/L		97
87)	tert-Butylbenzene	16.32	134	487788	104.9662	ug/L		91
88)	1,2,4-Trimethylbenzene	16.37	105	1933806	86.9562	ug/L		93
89)	sec-Butylbenzene	16.56	105	2297158	86.9928	ug/L		94
90)	p-Isopropyltoluene	16.71	119	1980869	90.1939	ug/L		93
91)	1,3-Dichlorobenzene	16.90	146	1216528	98.1355	ug/L		96
92)	1,4-Dichlorobenzene	17.02	146	1213168	97.8704	ug/L		96
93)	n-Butylbenzene	17.20	91	1953200	98.1539	ug/L		95
94)	1,2-Dichlorobenzene	17.48	146	1188773	96.5018	ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.40	75	134331	113.1196	ug/L		99
96)	1,2,4-Trichlorobenzene	19.47	180	888911	106.5744	ug/L		97
97)	Hexachlorobutadiene	19.60	225	451438	113.0859	ug/L		98
98)	Naphthalene	19.81	128	1770070	94.2745	ug/L	#	94
99)	1,2,3-Trichlorobenzene	20.10	180	855675	103.2980	ug/L		97

(#) = qualifier out of range (m) = manual integration
11M17022.D 8260WT.M Wed Mar 29 10:58:19 2017 Page 2

Data File : C:\MSDCHEM\1\DATA\032417\11M17022.D Vial: 10
Acq On : 24 Mar 2017 19:14 Operator: JDS
Sample : WG607620-09 100 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: 8260WT.RES

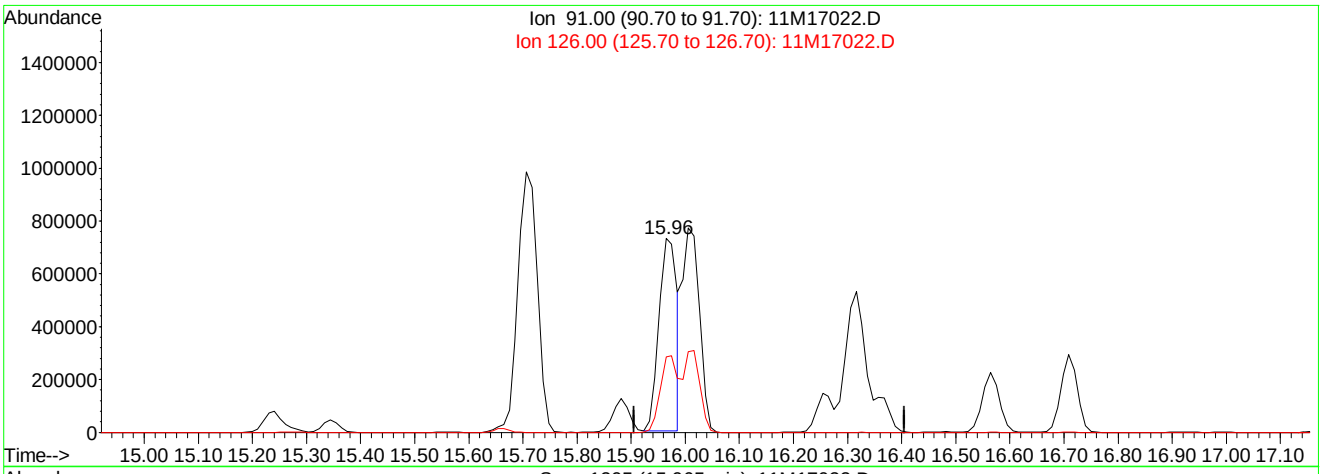
Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration

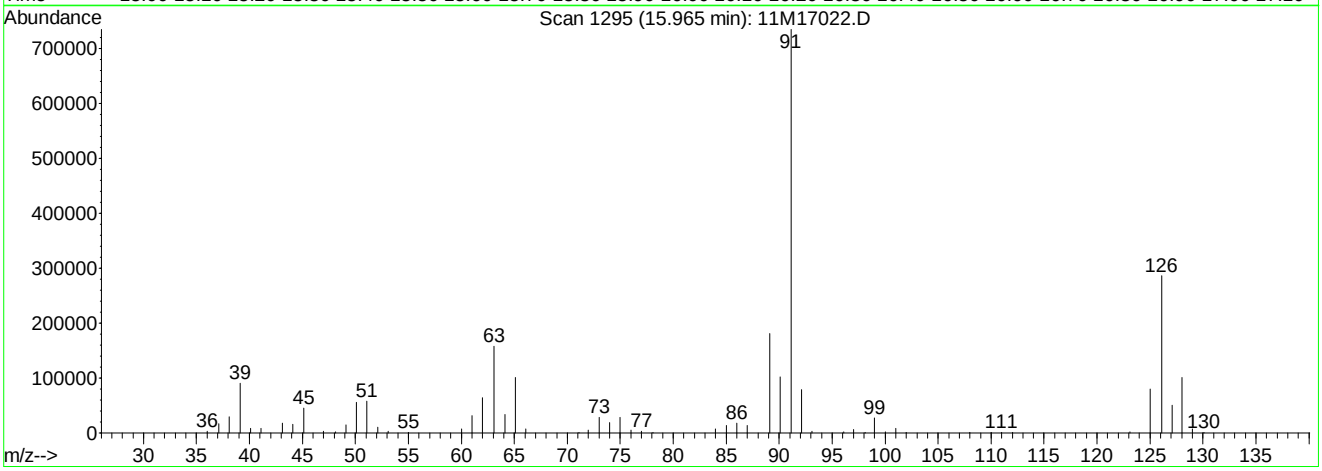


Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\032417\11M17022.D Vial: 10
Acq On : 24 Mar 2017 19:14 Operator: JDS
Sample : WG607620-09 100 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration





TIC: 11M17022.D

(85) 4-Chlorotoluene (T)

15.96min 90.42ug/L

response 1679689

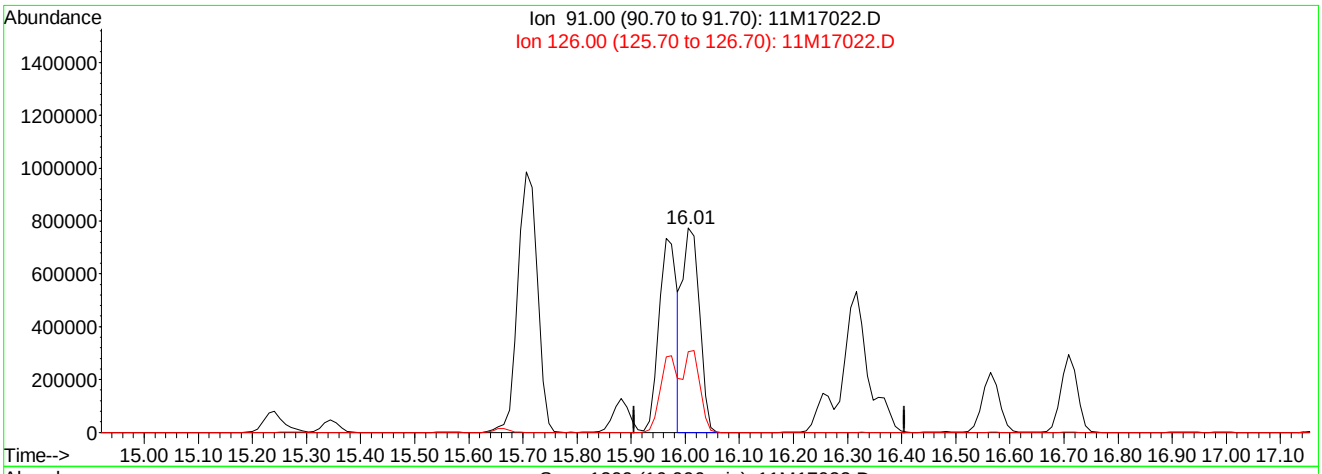
Ion	Exp%	Act%
91.00	100	100
126.00	36.10	44.57
0.00	0.00	0.00
0.00	0.00	0.00

11M17022.D 8260WT.M Wed Mar 29 11:19:41 2017

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\032417\11M17022.D Vial: 10
Acq On : 24 Mar 2017 19:14 Operator: JDS
Sample : WG607620-09 100 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 11:19 2017 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration



TIC: 11M17022.D

(85) 4-Chlorotoluene (T)

16.01min 90.43ug/L mint

response 1679819

Ion	Exp%	Act%
91.00	100	100
126.00	36.10	44.56
0.00	0.00	0.00
0.00	0.00	0.00

11M17022.D 8260WT.M Wed Mar 29 7 2017

Analyst: 03/29/2017 11:24 Supervisor: 03/29/2017 18:09

#3 - Improperly integrated isomers and/or coeluting compounds

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17023.D Vial: 11
Acq On : 24 Mar 2017 19:44 Operator: JDS
Sample : WG607620-10 200 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:36 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.54	96	459881	25.00	ug/L	0.00
56) Chlorobenzene-d5	14.17	117	334378	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	183142	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.55	111	3001	0.6278	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.52%#		
43) 1,2-Dichloroethane-d4	10.16	65	3727	0.6111	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.44%#		
57) Toluene-d8	12.40	98	11889	0.6351	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.56%#		
78) p-Bromofluorobenzene	15.56	95	5125	0.6751	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.72%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.22	85	1428586	185.6459	ug/L	95
3) Chloromethane	3.66	50	1411014	152.7810	ug/L	90
4) Vinyl Chloride	3.89	62	1252943	164.6550	ug/L	92
5) 1,3-Butadiene	3.93	54	576309	207.1513	ug/L	99
6) Bromomethane	4.78	94	834649	210.1985	ug/L	98
7) Chloroethane	4.93	64	987240	204.2501	ug/L	98
8) Trichlorofluoromethane	5.42	101	1713325	207.2595	ug/L	98
9) Diethyl ether	5.95	59	779	0.1294	ug/L #	1
10) Isoprene	5.97	67	1785857	213.2909	ug/L	98
11) Acrolein	6.17	56	547	0.5325	ug/L #	1
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	992538	197.8179	ug/L	100
13) Acetone	6.27	43	371876	200.7374	ug/L	96
14) 1,1-Dichloroethene	6.48	61	1872285	195.9482	ug/L	94
16) Dimethyl Sulfide	6.74	62	1498275	199.0347	ug/L	100
17) Iodomethane	6.99	142	1302303	194.0898	ug/L	94
18) Methyl acetate	7.00	43	1015043	195.3668	ug/L	98
19) Methylene Chloride	7.25	84	1172489	189.7832	ug/L	92
20) Carbon Disulfide	7.29	76	2708886	169.7915	ug/L	92
21) Acrylonitrile	7.46	53	36619	14.6379	ug/L #	34
22) Methyl Tert Butyl Ether	7.44	73	2936252	182.1162	ug/L	92
23) trans-1,2-Dichloroethene	7.68	96	1098025	204.8178	ug/L	90
24) n-Hexane	7.75	57	1879887	206.7391	ug/L	98
26) Vinyl Acetate	8.24	43	2204706	185.8884	ug/L	95
27) 1,1-Dichloroethane	8.27	63	2181861	180.6541	ug/L	92
29) 2-Butanone	8.80	43	594637	200.1797	ug/L	99
31) 2,2-Dichloropropane	9.02	77	1634862	198.7809	ug/L	95
32) cis-1,2-Dichloroethene	9.08	96	1236640	195.2469	ug/L	95
33) Chloroform	9.27	83	1837284	168.9440	ug/L	95
35) Bromochloromethane	9.50	130	736650	214.0927	ug/L	97
36) Tetrahydrofuran	9.52	42	1249	0.5970	ug/L #	41
38) 1,1,1-Trichloroethane	9.78	97	1730311	199.4007	ug/L	95
39) Cyclohexane	9.81	56	2325677	193.2312	ug/L	96
40) 1,1-Dichloropropene	9.97	75	1481237	197.7535	ug/L	94
41) Carbon Tetrachloride	10.11	117	1498374	212.1858	ug/L	98
44) 1,2-Dichloroethane	10.27	62	1567906	180.1220	ug/L	92
45) Benzene	10.31	78	3284600	146.3042	ug/L	84
46) Trichloroethene	11.01	130	1087902	198.5889	ug/L	99
47) Methylcyclohexane	11.09	83	1831445	199.0397	ug/L	98
48) 1,2-Dichloropropane	11.22	63	1360026	190.4593	ug/L	97
49) 1,4-Dioxane	11.50	88	2223	40.4739	ug/L #	16

(#) = qualifier out of range (m) = manual integration
11M17023.D 8260WT.M Wed Mar 29 10:58:20 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17023.D Vial: 11
Acq On : 24 Mar 2017 19:44 Operator: JDS
Sample : WG607620-10 200 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:36 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

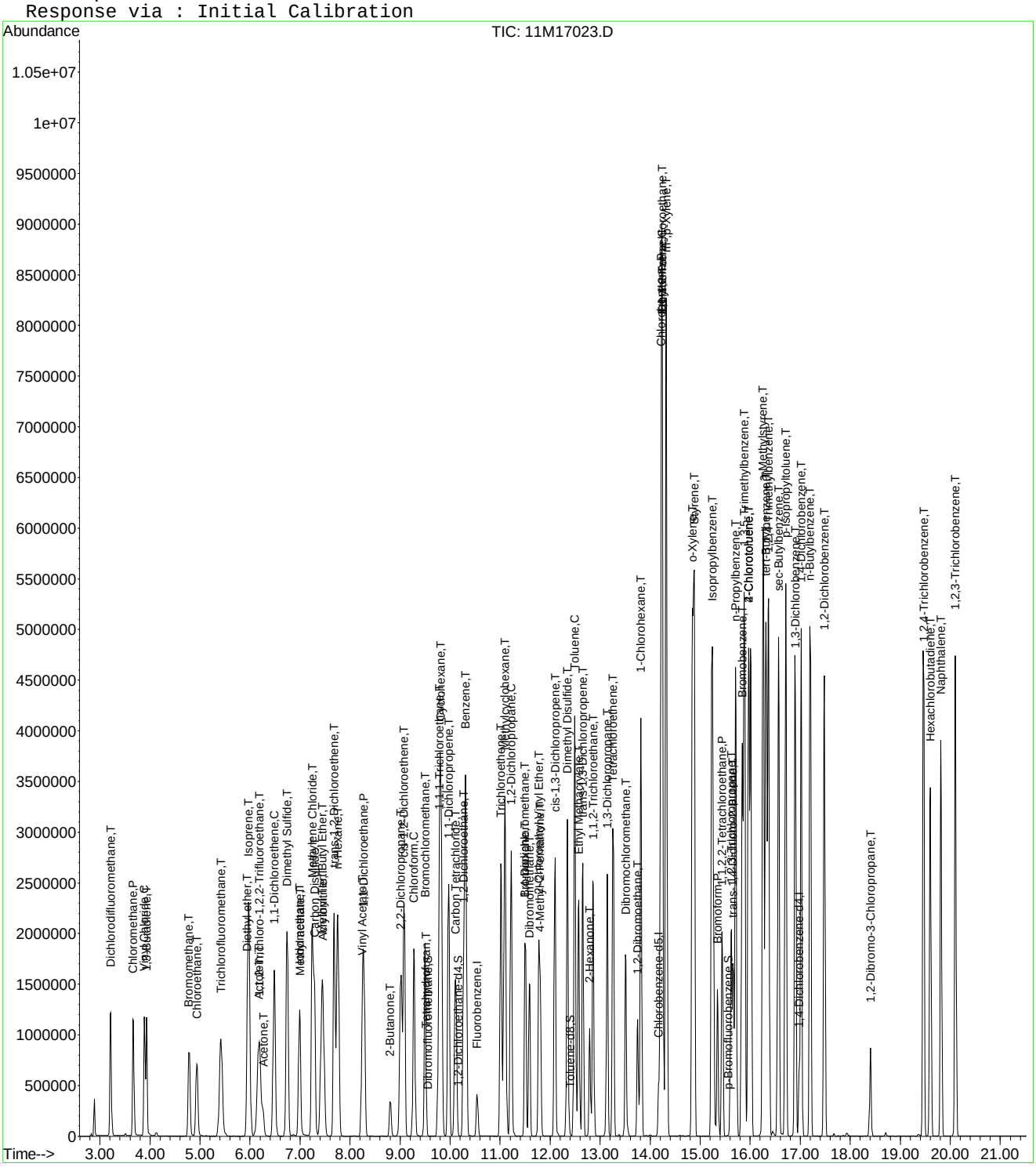
	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.50	83	1499012	197.9880 ug/L		96
51)	Dibromomethane	11.58	93	702248	202.7645 ug/L		98
52)	2-Chloroethyl Vinyl Ether	11.78	63	812094	210.8860 ug/L		97
53)	4-Methyl-2-Pentanone	11.80	58	524991	208.2944 ug/L		99
54)	cis-1,3-Dichloropropene	12.10	75	1705480	194.0642 ug/L		90
55)	Dimethyl Disulfide	12.35	79	1175600	213.4808 ug/L		82
58)	Toluene	12.49	91	3209852	136.9104 ug/L		88
59)	Ethyl Methacrylate	12.57	69	1432055	204.0627 ug/L		98
60)	trans-1,3-Dichloropropene	12.66	75	1551974	191.4758 ug/L		92
61)	1,1,2-Trichloroethane	12.86	97	989541	193.6029 ug/L		98
62)	2-Hexanone	12.79	43	889625	199.6898 ug/L		96
63)	1,3-Dichloropropane	13.14	76	1555040	173.4837 ug/L		96
64)	Tetrachloroethene	13.26	164	905717	202.4101 ug/L		99
65)	Dibromochloromethane	13.51	129	1152937	210.4976 ug/L		98
66)	1,2-Dibromoethane	13.75	107	945601	194.3512 ug/L		100
67)	1-Chlorohexane	13.81	91	1480350	191.0983 ug/L		96
68)	Chlorobenzene	14.22	112	2330241	156.3621 ug/L		85
69)	1,1,1,2-Tetrachloroethane	14.24	131	1123471	208.8137 ug/L		100
70)	Ethylbenzene	14.24	106	1593722	189.0119 ug/L		61
71)	m-,p-Xylene	14.32	106	2842089	297.4697 ug/L		75
72)	o-Xylene	14.85	106	1817436	182.6339 ug/L		77
73)	Styrene	14.88	104	2644514	176.3647 ug/L		84
74)	Bromoform	15.34	173	822678	198.7225 ug/L		96
75)	Isopropylbenzene	15.24	105	3350321	141.9840 ug/L		81
77)	1,1,2,2-Tetrachloroethane	15.44	83	1277857	187.6919 ug/L		94
79)	1,2,3-Trichloropropane	15.62	110	390192	202.2293 ug/L		97
80)	trans-1,4-Dichloro-2-Buten	15.65	53	500418	198.4355 ug/L		89
81)	n-Propylbenzene	15.71	91	3766203	118.9471 ug/L	#	78
82)	Bromobenzene	15.84	156	1306068	180.7317 ug/L		94
83)	1,3,5-Trimethylbenzene	15.88	105	3037128	143.9370 ug/L		85
84)	2-Chlorotoluene	15.96	91	2656283	126.1014 ug/L	#	66
85)	4-Chlorotoluene	15.96	91	2656283	134.6888 ug/L	#	70
86)	a-Methylstyrene	16.25	118	2065275	170.8077 ug/L		90
87)	tert-Butylbenzene	16.32	134	954629	193.5004 ug/L		75
88)	1,2,4-Trimethylbenzene	16.37	105	3051654	129.2563 ug/L		80
89)	sec-Butylbenzene	16.56	105	3518279	125.5023 ug/L	#	80
90)	p-Isopropyltoluene	16.71	119	3087281	132.4118 ug/L		80
91)	1,3-Dichlorobenzene	16.91	146	2089190	158.7489 ug/L		88
92)	1,4-Dichlorobenzene	17.02	146	2062612	156.7389 ug/L		88
93)	n-Butylbenzene	17.19	91	3031051	143.4772 ug/L	#	83
94)	1,2-Dichlorobenzene	17.48	146	2023296	154.7123 ug/L		89
95)	1,2-Dibromo-3-Chloropropan	18.40	75	273880	217.2455 ug/L		98
96)	1,2,4-Trichlorobenzene	19.47	180	1658851	187.3401 ug/L		91
97)	Hexachlorobutadiene	19.60	225	894083	210.9682 ug/L		95
98)	Naphthalene	19.81	128	2893215	145.1487 ug/L	#	82
99)	1,2,3-Trichlorobenzene	20.10	180	1642303	186.7520 ug/L		91

(#) = qualifier out of range (m) = manual integration
11M17023.D 8260WT.M Wed Mar 29 10:58:20 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17023.D Vial: 11
Acq On : 24 Mar 2017 19:44 Operator: JDS
Sample : WG607620-10 200 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\032417\11M17024.D Vial: 12
Acq On : 24 Mar 2017 20:13 Operator: JDS
Sample : WG607620-11 300 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:37 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.54	96	446049	25.00	ug/L	0.00
56) Chlorobenzene-d5	14.17	117	316742	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	166835	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#		
43) 1,2-Dichloroethane-d4	10.06	65	6582	1.1127	ug/L	-0.10
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.44%#		
57) Toluene-d8	12.35	98	5953	0.3357	ug/L	-0.05
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.36%#		
78) p-Bromofluorobenzene	15.56	95	504	0.0729	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.21	85	5077	1.0123	ug/L	87
3) Chloromethane	3.66	50	56776	6.3382	ug/L	95
4) Vinyl Chloride	3.89	62	3005	0.4071	ug/L	95
5) 1,3-Butadiene	3.93	54	539607	196.0782	ug/L	99
6) Bromomethane	4.78	94	102253	26.5500	ug/L	98
7) Chloroethane	4.93	64	1059	0.2259	ug/L #	43
8) Trichlorofluoromethane	5.41	101	3854	0.4807	ug/L	91
9) Diethyl ether	5.94	59	1640584	280.8740	ug/L	98
10) Isoprene	5.97	67	1752691	215.8211	ug/L	97
11) Acrolein	6.16	56	156070	156.6362	ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	2676	0.9309	ug/L	76
13) Acetone	6.26	43	513352	285.6987	ug/L	92
14) 1,1-Dichloroethene	6.47	61	4581	0.4943	ug/L	89
15) Tert-Butyl Alcohol	6.59	59	413768	671.9510	ug/L	99
16) Dimethyl Sulfide	6.73	62	1461707	200.1983	ug/L	100
17) Iodomethane	6.98	142	870102	134.0803	ug/L	98
18) Methyl acetate	6.99	43	1052906	208.9387	ug/L	97
19) Methylene Chloride	7.23	84	1715	0.2862	ug/L	65
20) Carbon Disulfide	7.28	76	2665665	172.2637	ug/L	93
21) Acrylonitrile	7.41	53	370326	152.6232	ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	2542	0.1626	ug/L #	47
23) trans-1,2-Dichloroethene	7.68	96	4092	0.7870	ug/L	78
24) n-Hexane	7.74	57	1778773	201.6853	ug/L	97
25) Diisopropyl ether	8.08	45	4988158	223.0211	ug/L	89
26) Vinyl Acetate	8.24	43	2800516	243.4459	ug/L	93
27) 1,1-Dichloroethane	8.28	63	2184	0.1864	ug/L #	75
28) Ethyl-Tert-Butyl ether	8.62	59	4700079	231.3213	ug/L	88
29) 2-Butanone	8.80	43	884878	307.1245	ug/L	97
30) Propionitrile	8.90	54	291749	318.1612	ug/L	98
31) 2,2-Dichloropropane	9.02	77	1171	0.1468	ug/L #	42
32) cis-1,2-Dichloroethene	9.07	96	2513	0.4091	ug/L	86
33) Chloroform	9.29	83	3158	0.2994	ug/L	91
35) Bromochloromethane	9.49	130	717	0.2148	ug/L #	3
36) Tetrahydrofuran	9.52	42	600730	296.0427	ug/L	100
38) 1,1,1-Trichloroethane	9.78	97	1362	0.1618	ug/L #	1
39) Cyclohexane	9.81	56	2258719	193.4876	ug/L	97
40) 1,1-Dichloropropene	9.97	75	5444	0.7493	ug/L	86
41) Carbon Tetrachloride	10.10	117	1839	0.2685	ug/L #	88
42) Tert-Amyl-Methyl ether	10.06	73	3830824	241.6875	ug/L	88
44) 1,2-Dichloroethane	10.28	62	1524	0.1805	ug/L #	68

(#) = qualifier out of range (m) = manual integration
11M17024.D 8260WT.M Wed Mar 29 10:58:21 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17024.D Vial: 12
Acq On : 24 Mar 2017 20:13 Operator: JDS
Sample : WG607620-11 300 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:37 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

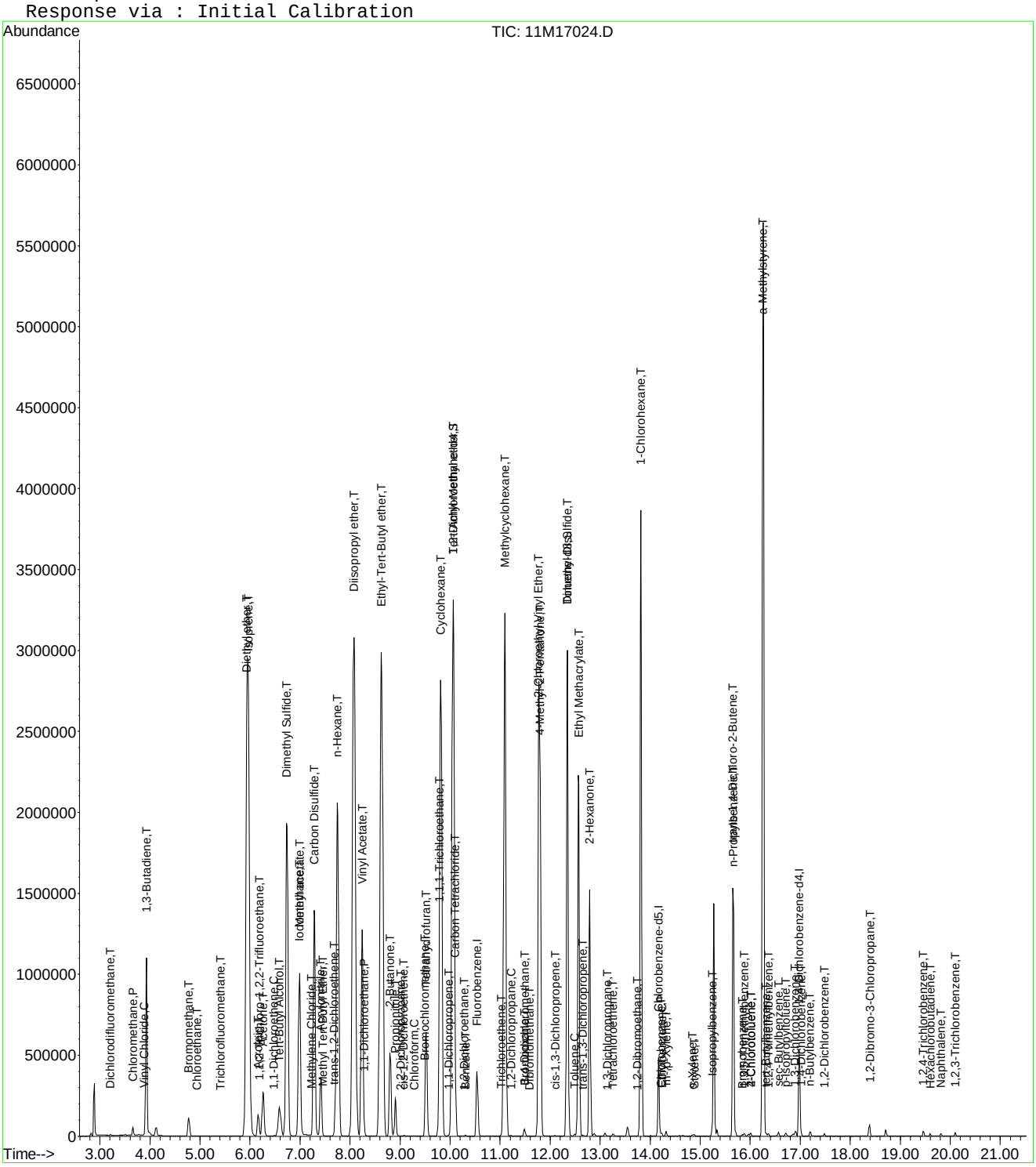
	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.31	78	7252	0.3330 ug/L		89
46)	Trichloroethene	11.02	130	3584	0.6745 ug/L		96
47)	Methylcyclohexane	11.09	83	1767800	198.0806 ug/L		97
48)	1,2-Dichloropropane	11.22	63	1187	0.1714 ug/L	#	38
49)	1,4-Dioxane	11.49	88	34980	656.6259 ug/L		85
50)	Bromodichloromethane	11.50	83	1085	0.1477 ug/L	#	89
51)	Dibromomethane	11.58	93	1000	0.2977 ug/L		91
52)	2-Chloroethyl Vinyl Ether	11.77	63	1154346	309.0582 ug/L		95
53)	4-Methyl-2-Pentanone	11.80	58	773140	316.2618 ug/L		99
54)	cis-1,3-Dichloropropene	12.10	75	2949	0.3460 ug/L	#	86
55)	Dimethyl Disulfide	12.35	79	1127616	211.1170 ug/L		84
58)	Toluene	12.49	91	9936	0.4474 ug/L		87
59)	Ethyl Methacrylate	12.57	69	1397482	210.2239 ug/L		99
60)	trans-1,3-Dichloropropene	12.66	75	3333	0.4341 ug/L		83
62)	2-Hexanone	12.79	43	1255163	297.4274 ug/L		95
63)	1,3-Dichloropropane	13.14	76	1568	0.1847 ug/L	#	1
64)	Tetrachloroethene	13.26	164	3099	0.7311 ug/L		79
66)	1,2-Dibromoethane	13.74	107	1335	0.4403 ug/L		90
67)	1-Chlorohexane	13.81	91	1385602	188.8286 ug/L		96
68)	Chlorobenzene	14.22	112	7002	0.4960 ug/L		88
70)	Ethylbenzene	14.24	106	4191	0.5247 ug/L		93
71)	m-,p-Xylene	14.32	106	10588	1.1699 ug/L		63
72)	o-Xylene	14.85	106	3551	0.3767 ug/L		100
73)	Styrene	14.88	104	6702	0.4718 ug/L		96
75)	Isopropylbenzene	15.24	105	18407	0.8235 ug/L		95
80)	trans-1,4-Dichloro-2-Buten	15.65	53	415621	180.9788 ug/L	#	9
81)	n-Propylbenzene	15.66	91	93097	3.2277 ug/L	#	63
82)	Bromobenzene	15.84	156	3165	0.4808 ug/L		81
83)	1,3,5-Trimethylbenzene	15.88	105	11925	0.6204 ug/L		93
84)	2-Chlorotoluene	16.02	91	25471	1.3274 ug/L		97
85)	4-Chlorotoluene	16.02	91	25995	1.4469 ug/L		95
86)	a-Methylstyrene	16.25	118	1922564	174.5465 ug/L		94
87)	tert-Butylbenzene	16.32	134	2633	0.5859 ug/L	#	1
88)	1,2,4-Trimethylbenzene	16.37	105	13865	0.6447 ug/L		89
89)	sec-Butylbenzene	16.56	105	23363	0.9149 ug/L		91
90)	p-Isopropyltoluene	16.71	119	16130	0.7594 ug/L		91
91)	1,3-Dichlorobenzene	16.90	146	10935	0.9121 ug/L		97
92)	1,4-Dichlorobenzene	17.02	146	12228	1.0200 ug/L		78
93)	n-Butylbenzene	17.20	91	21888	1.1374 ug/L		97
94)	1,2-Dichlorobenzene	17.48	146	7325	0.6149 ug/L		89
95)	1,2-Dibromo-3-Chloropropan	18.39	75	194	0.1689 ug/L	#	1
96)	1,2,4-Trichlorobenzene	19.46	180	11981	1.4853 ug/L		94
97)	Hexachlorobutadiene	19.60	225	4541	1.1762 ug/L		93
98)	Naphthalene	19.81	128	14493	0.7982 ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.10	180	8798	1.0982 ug/L		92

(#) = qualifier out of range (m) = manual integration
11M17024.D 8260WT.M Wed Mar 29 10:58:21 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17024.D Vial: 12
Acq On : 24 Mar 2017 20:13 Operator: JDS
Sample : WG607620-11 300 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17027.D Vial: 15
Acq On : 24 Mar 2017 21:41 Operator: JDS
Sample : WG607620-02 .3 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:38 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.54	96	423086	25.00	ug/L	0.00
56) Chlorobenzene-d5	14.17	117	291561	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	133556	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#		
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#		
57) Toluene-d8	12.42	98	191	0.0117	ug/L	0.02
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#		
78) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.23	85	2158	0.6375	ug/L #	65
3) Chloromethane	3.67	50	4581	0.5392	ug/L #	52
4) Vinyl Chloride	3.91	62	2373	0.3390	ug/L	81
5) 1,3-Butadiene	3.95	54	2442	Below Cal	#	70
6) Bromomethane	4.79	94	783	0.2143	ug/L	86
7) Chloroethane	4.95	64	1009	0.2269	ug/L #	43
8) Trichlorofluoromethane	5.42	101	2616	0.3440	ug/L	67
10) Isoprene	5.99	67	2677	0.3475	ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	288	0.4444	ug/L #	9
14) 1,1-Dichloroethene	6.50	61	3003	0.3416	ug/L	86
16) Dimethyl Sulfide	6.74	62	2038	0.2943	ug/L	78
17) Iodomethane	7.01	142	893	1.3735	ug/L #	32
18) Methyl acetate	7.00	43	1135	0.2375	ug/L #	65
19) Methylene Chloride	7.25	84	1805	0.3176	ug/L	96
20) Carbon Disulfide	7.29	76	11334	0.7722	ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	3806	0.2566	ug/L #	56
23) trans-1,2-Dichloroethene	7.68	96	1705	0.3457	ug/L	97
24) n-Hexane	7.75	57	3857	0.4611	ug/L #	71
26) Vinyl Acetate	8.25	43	2130	0.1952	ug/L #	77
27) 1,1-Dichloroethane	8.28	63	3244	0.2920	ug/L #	78
31) 2,2-Dichloropropane	9.03	77	1650	0.2181	ug/L #	42
32) cis-1,2-Dichloroethene	9.09	96	1334	0.2289	ug/L	81
33) Chloroform	9.29	83	3303	0.3301	ug/L	98
35) Bromochloromethane	9.51	130	769	0.2429	ug/L	78
36) Tetrahydrofuran	9.54	42	412	0.2141	ug/L #	41
38) 1,1,1-Trichloroethane	9.79	97	2125	0.2662	ug/L #	75
39) Cyclohexane	9.82	56	4234	0.3824	ug/L #	90
40) 1,1-Dichloropropene	9.98	75	2399	0.3481	ug/L	90
41) Carbon Tetrachloride	10.11	117	1765	0.2717	ug/L #	71
44) 1,2-Dichloroethane	10.28	62	2200	0.2747	ug/L #	54
45) Benzene	10.31	78	7513	0.3638	ug/L #	74
46) Trichloroethene	11.02	130	1732	0.3437	ug/L	91
47) Methylcyclohexane	11.10	83	3227	0.3812	ug/L	82
48) 1,2-Dichloropropane	11.22	63	1488	0.2265	ug/L #	38
50) Bromodichloromethane	11.50	83	1628	0.2337	ug/L #	81
51) Dibromomethane	11.58	93	496	0.1557	ug/L	99
54) cis-1,3-Dichloropropene	12.09	75	1601	0.1980	ug/L #	69
58) Toluene	12.49	91	7276	0.3559	ug/L	98
59) Ethyl Methacrylate	12.57	69	944	0.1543	ug/L	81
60) trans-1,3-Dichloropropene	12.66	75	2071	0.2930	ug/L #	51

(#) = qualifier out of range (m) = manual integration
11M17027.D 8260WT.M Wed Mar 29 10:56:14 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17027.D Vial: 15
Acq On : 24 Mar 2017 21:41 Operator: JDS
Sample : WG607620-02 .3 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53:38 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

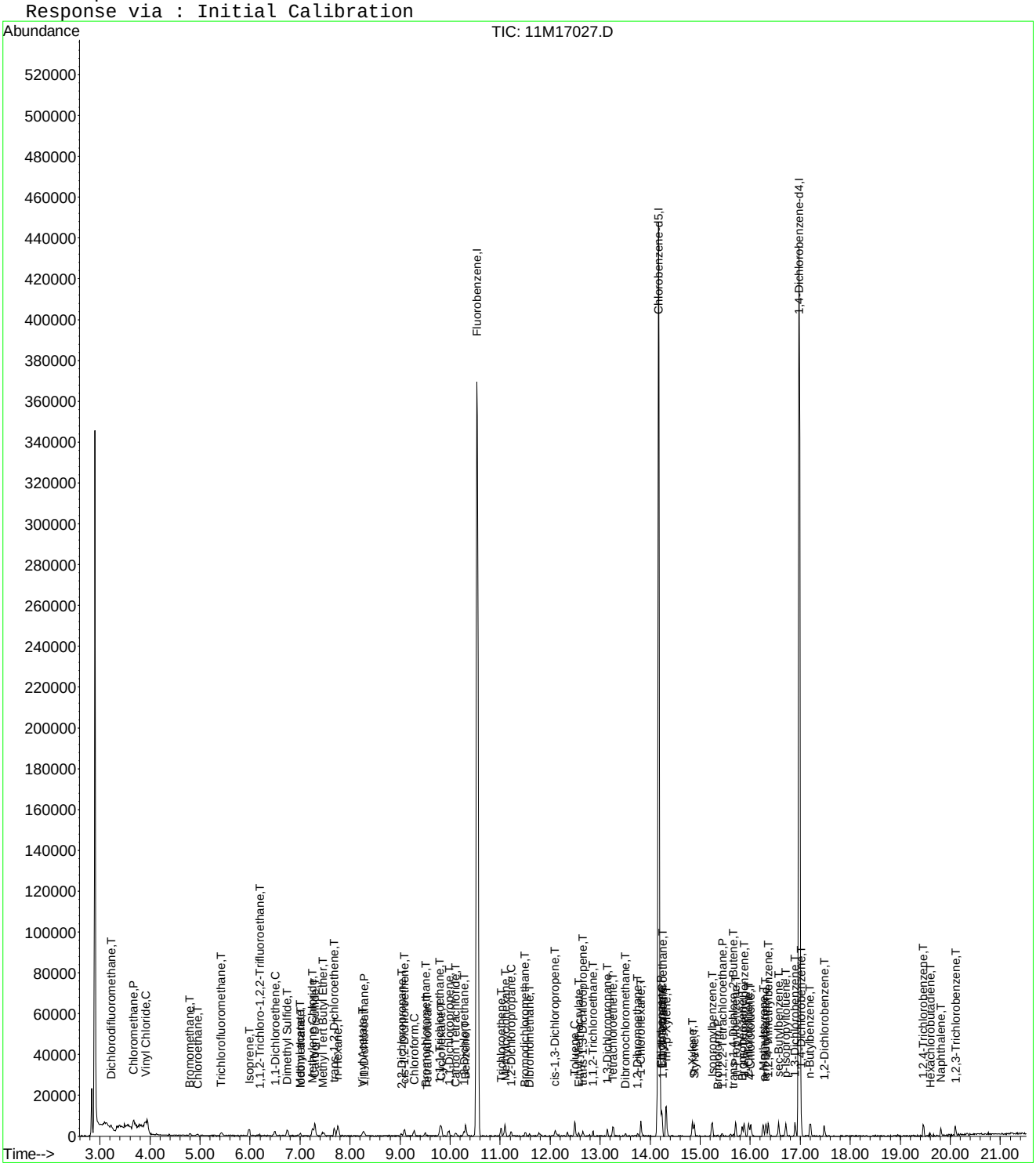
	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
61)	1,1,2-Trichloroethane	12.85	97	932	0.2091 ug/L		99
63)	1,3-Dichloropropane	13.14	76	1948	0.2492 ug/L		68
64)	Tetrachloroethene	13.26	164	1399	0.3586 ug/L		80
65)	Dibromochloromethane	13.50	129	943	0.1975 ug/L		78
66)	1,2-Dibromoethane	13.74	107	891	0.3607 ug/L		93
67)	1-Chlorohexane	13.81	91	2869	0.6058 ug/L		100
68)	Chlorobenzene	14.22	112	4603	0.3542 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.25	131	1171	0.2496 ug/L		97
70)	Ethylbenzene	14.24	106	2376	0.3232 ug/L		79
71)	m-,p-Xylene	14.32	106	5773	0.6930 ug/L		62
72)	o-Xylene	14.85	106	2378	0.2741 ug/L		72
73)	Styrene	14.88	104	3702	0.2831 ug/L		95
74)	Bromoform	15.35	173	398	0.6749 ug/L	#	28
75)	Isopropylbenzene	15.24	105	7276	0.3536 ug/L		83
77)	1,1,2,2-Tetrachloroethane	15.45	83	1148	0.2312 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.66	53	411	0.8980 ug/L	#	13
81)	n-Propylbenzene	15.71	91	9123	0.3951 ug/L		87
82)	Bromobenzene	15.84	156	1875	0.3558 ug/L		86
83)	1,3,5-Trimethylbenzene	15.88	105	5698	0.3703 ug/L		92
84)	2-Chlorotoluene	15.96	91	7068	0.4601 ug/L		86
85)	4-Chlorotoluene	16.01	91	4924	0.3424 ug/L		95
86)	a-Methylstyrene	16.26	118	2511	0.2848 ug/L		99
87)	tert-Butylbenzene	16.31	134	865	0.2404 ug/L	#	28
88)	1,2,4-Trimethylbenzene	16.36	105	5942	0.3451 ug/L		84
89)	sec-Butylbenzene	16.56	105	7831	0.3831 ug/L	#	81
90)	p-Isopropyltoluene	16.71	119	6161	0.3623 ug/L		95
91)	1,3-Dichlorobenzene	16.90	146	4147	0.4321 ug/L		93
92)	1,4-Dichlorobenzene	17.02	146	4221	0.4398 ug/L		87
93)	n-Butylbenzene	17.19	91	6580	0.4271 ug/L	#	87
94)	1,2-Dichlorobenzene	17.48	146	3230	0.3387 ug/L		98
96)	1,2,4-Trichlorobenzene	19.46	180	2726	0.4222 ug/L		78
97)	Hexachlorobutadiene	19.60	225	739	0.2391 ug/L	#	25
98)	Naphthalene	19.81	128	5059	0.3480 ug/L	#	77
99)	1,2,3-Trichlorobenzene	20.11	180	2245	0.3501 ug/L	#	72

(#) = qualifier out of range (m) = manual integration
11M17027.D 8260WT.M Wed Mar 29 10:56:14 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17027.D Vial: 15
Acq On : 24 Mar 2017 21:41 Operator: JDS
Sample : WG607620-02 .3 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 10:53 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\032417\11M17027.D Vial: 15
Acq On : 24 Mar 2017 21:41 Operator: JDS
Sample : WG607620-02 .3 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.6375	0.0	0	0.01
3	P	Chloromethane	-1.0000	0.5392	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3390	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.2143	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.2269	0.0	0	0.01
8	T	Trichlorofluoromethane	-1.0000	0.3440	0.0	0	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.94#
10	T	Isoprene	-1.0000	0.3475	0.0	0	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.17#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.4444	0.0	0	0.01
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.27#
14	C	1,1-Dichloroethene	-1.0000	0.3416	0.0	0	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.2943	0.0	0	0.00
17	T	Iodomethane	-1.0000	1.3735	0.0	0	0.02
18	T	Methyl acetate	-1.0000	0.2375	0.0	0	0.00
19	T	Methylene Chloride	-1.0000	0.3176	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.7722	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.42#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2566	0.0	0	0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.3457	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.4611	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.09#
26	T	Vinyl Acetate	-1.0000	0.1952	0.0	0	0.01
27	P	1,1-Dichloroethane	-1.0000	0.2920	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.63#
29	T	2-Butanone	-1.0000	0.0692	0.0	0	0.01
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.91#
31	T	2,2-Dichloropropane	-1.0000	0.2181	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2289	0.0	0	0.01
33	C	Chloroform	0.3000	0.3301	-10.0	100	0.01
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.42#
35	T	Bromochloromethane	-1.0000	0.2429	0.0	0	0.01
36	T	Tetrahydrofuran	-1.0000	0.2141	0.0	0	0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.55#
38	T	1,1,1-Trichloroethane	-1.0000	0.2662	0.0	0	0.01
39	T	Cyclohexane	-1.0000	0.3824	0.0	0	0.01
40	T	1,1-Dichloropropene	-1.0000	0.3481	0.0	0	0.01
41	T	Carbon Tetrachloride	-1.0000	0.2717	0.0	0	0.00
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0130	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.16#
44	T	1,2-Dichloroethane	-1.0000	0.2747	0.0	0	0.01
45	T	Benzene	-1.0000	0.3638	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.3437	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3812	0.0	0	0.01
48	C	1,2-Dichloropropane	-1.0000	0.2265	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.49#
50	T	Bromodichloromethane	-1.0000	0.2337	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.1557	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0556	0.0	0	-0.02
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.80#
54	T	cis-1,3-Dichloropropene	-1.0000	0.1980	0.0	0	-0.01

(#) = Out of Range

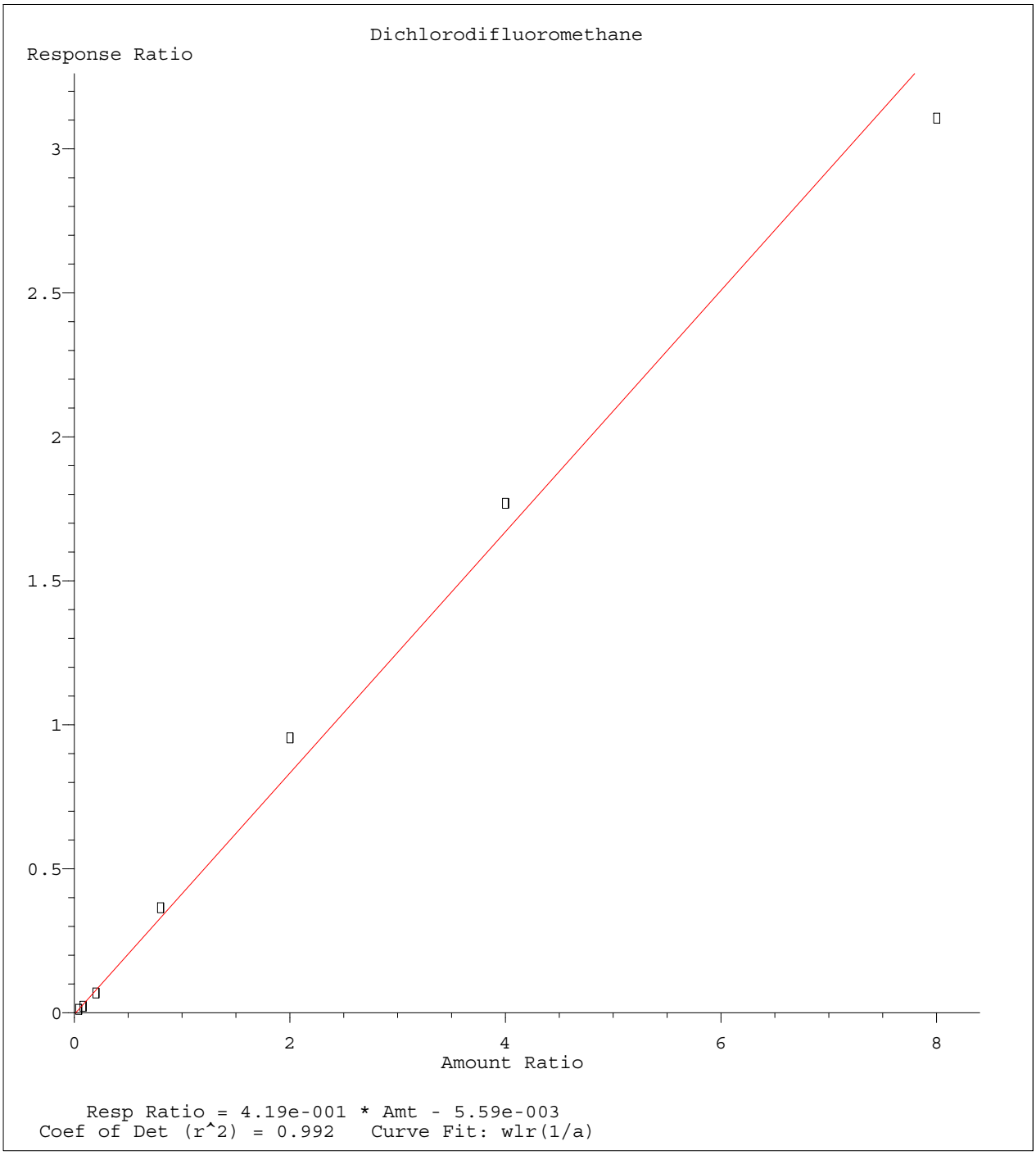
Data File : C:\MSDCHEM\1\DATA\032417\11M17027.D Vial: 15
Acq On : 24 Mar 2017 21:41 Operator: JDS
Sample : WG607620-02 .3 ug/L ICAL 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

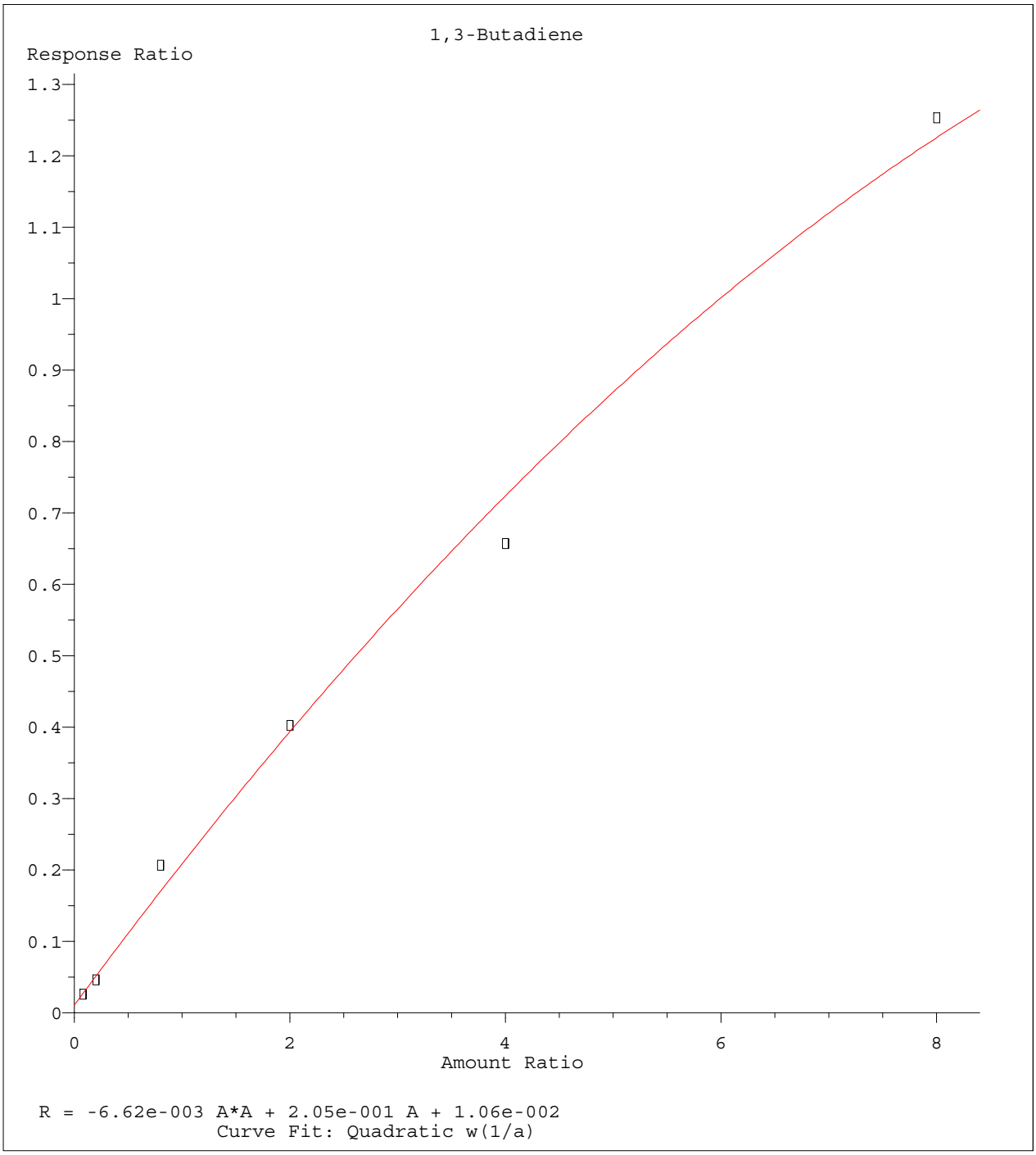
Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.1036	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0117	0.0	0	0.02
58	C	Toluene	-1.0000	0.3559	0.0	0	0.00
59	T	Ethyl Methacrylate	-1.0000	0.1543	0.0	0	0.00
60	T	trans-1,3-Dichloropropene	-1.0000	0.2930	0.0	0	0.00
61	T	1,1,2-Trichloroethane	-1.0000	0.2091	0.0	0	0.00
62	T	2-Hexanone	-1.0000	0.0780	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2492	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3586	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.1975	0.0	0	-0.01
66	T	1,2-Dibromoethane	-1.0000	0.3607	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.6058	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3542	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2496	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3232	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6930	0.0	0	0.00
72	T	o-Xylene	-1.0000	0.2741	0.0	0	0.00
73	T	Styrene	-1.0000	0.2831	0.0	0	0.00
74	P	Bromoform	-1.0000	0.6749	0.0	0	0.01
75	T	Isopropylbenzene	-1.0000	0.3536	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2312	0.0	0	0.01
78	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-15.56#
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.62#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8980	0.0	0	0.01
81	T	n-Propylbenzene	-1.0000	0.3951	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.3558	-18.6	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3703	0.0	0	0.00
84	T	2-Chlorotoluene	-1.0000	0.4601	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3424	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2848	0.0	0	0.01
87	T	tert-Butylbenzene	-1.0000	0.2404	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3451	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3831	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.3623	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.4321	0.0	0	-0.01
92	T	1,4-Dichlorobenzene	-1.0000	0.4398	0.0	0	0.00
93	T	n-Butylbenzene	-1.0000	0.4271	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.3387	-12.9	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.40#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.4222	0.0	0	-0.01
97	T	Hexachlorobutadiene	-1.0000	0.2391	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.3480	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.3501	-16.7	100	0.01

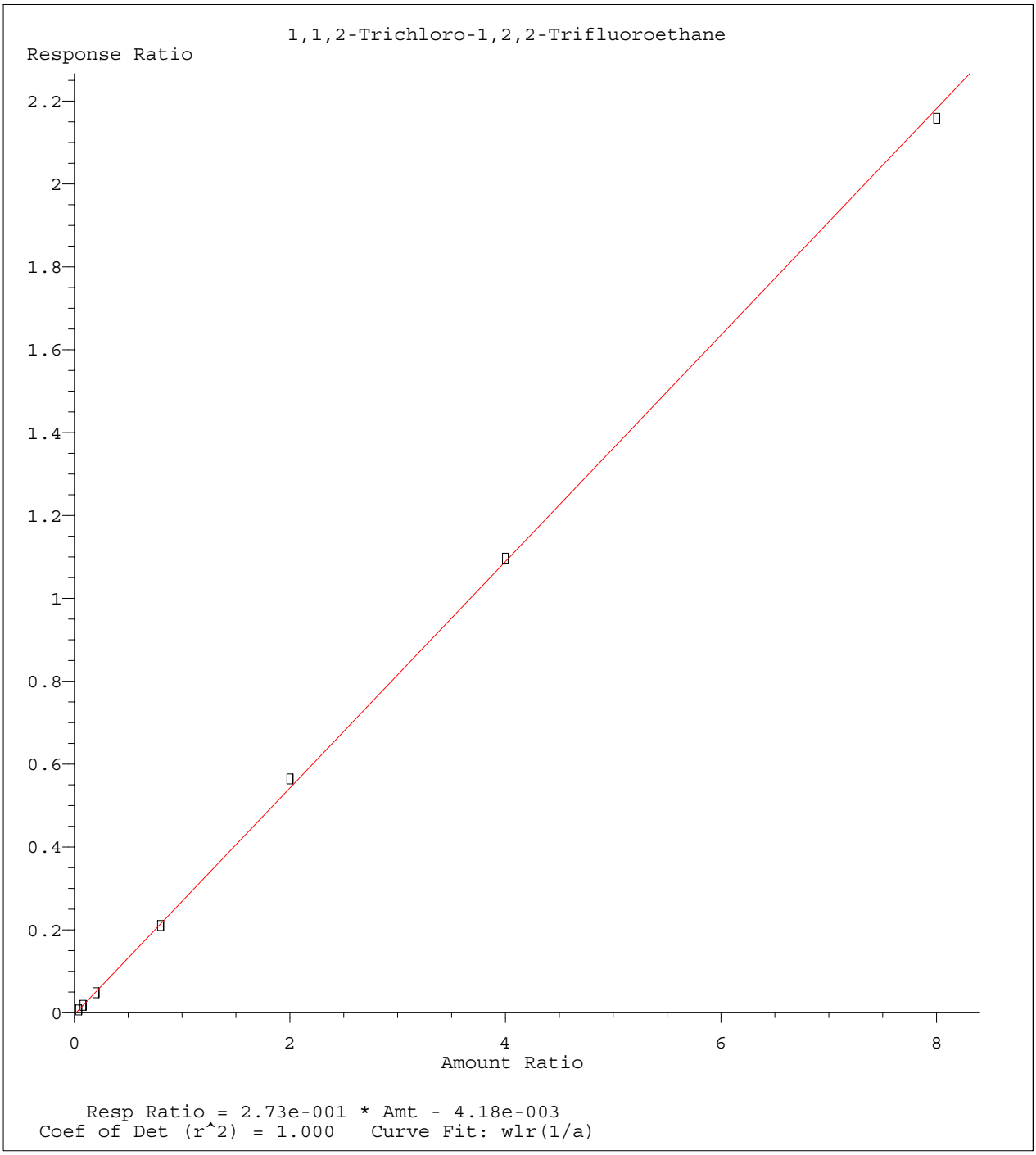
(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M17027.D 8260WT.M Wed Mar 29 10:56:12 2017 Page 2



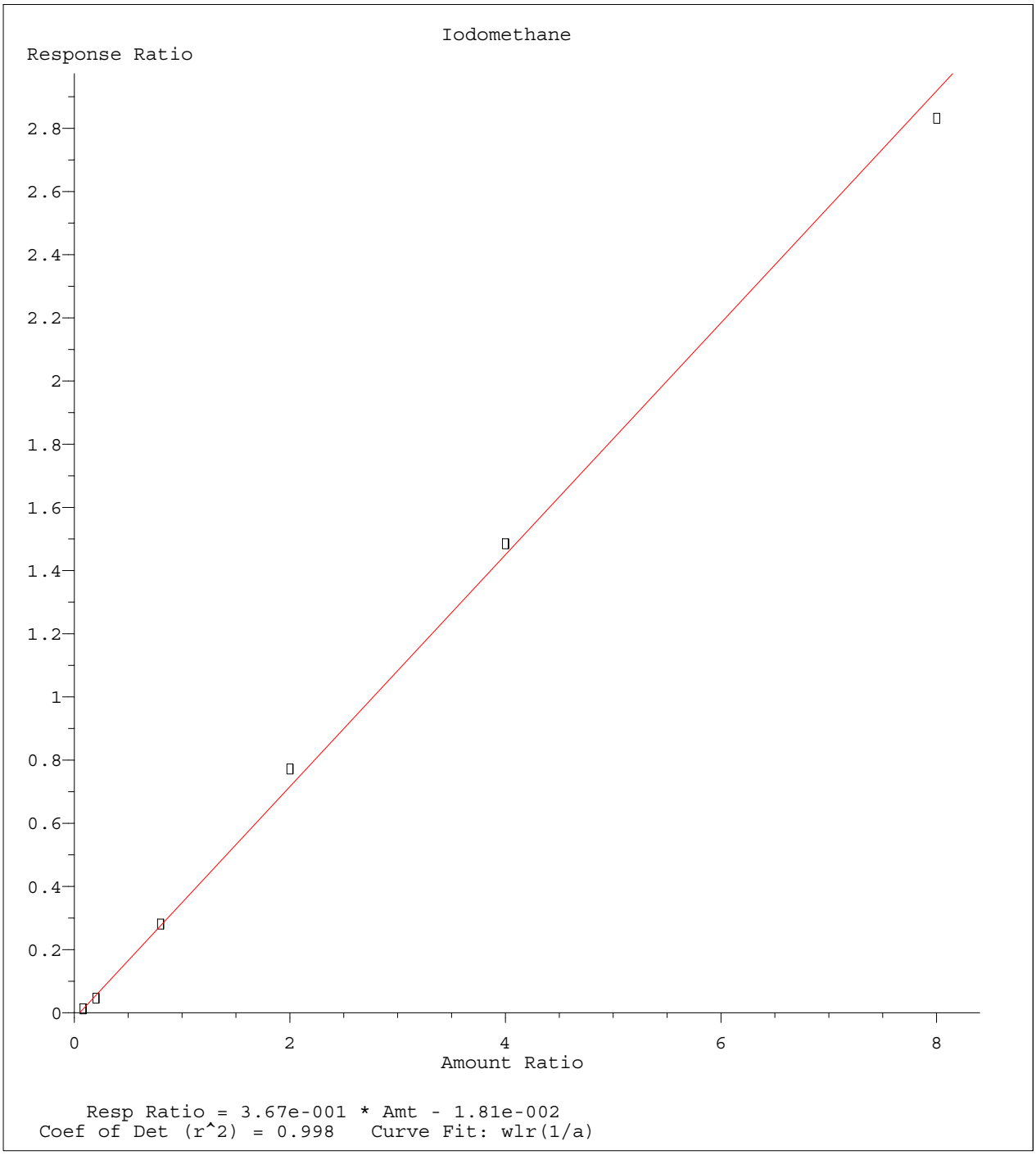
Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat Mar 25 12:46:14 2017



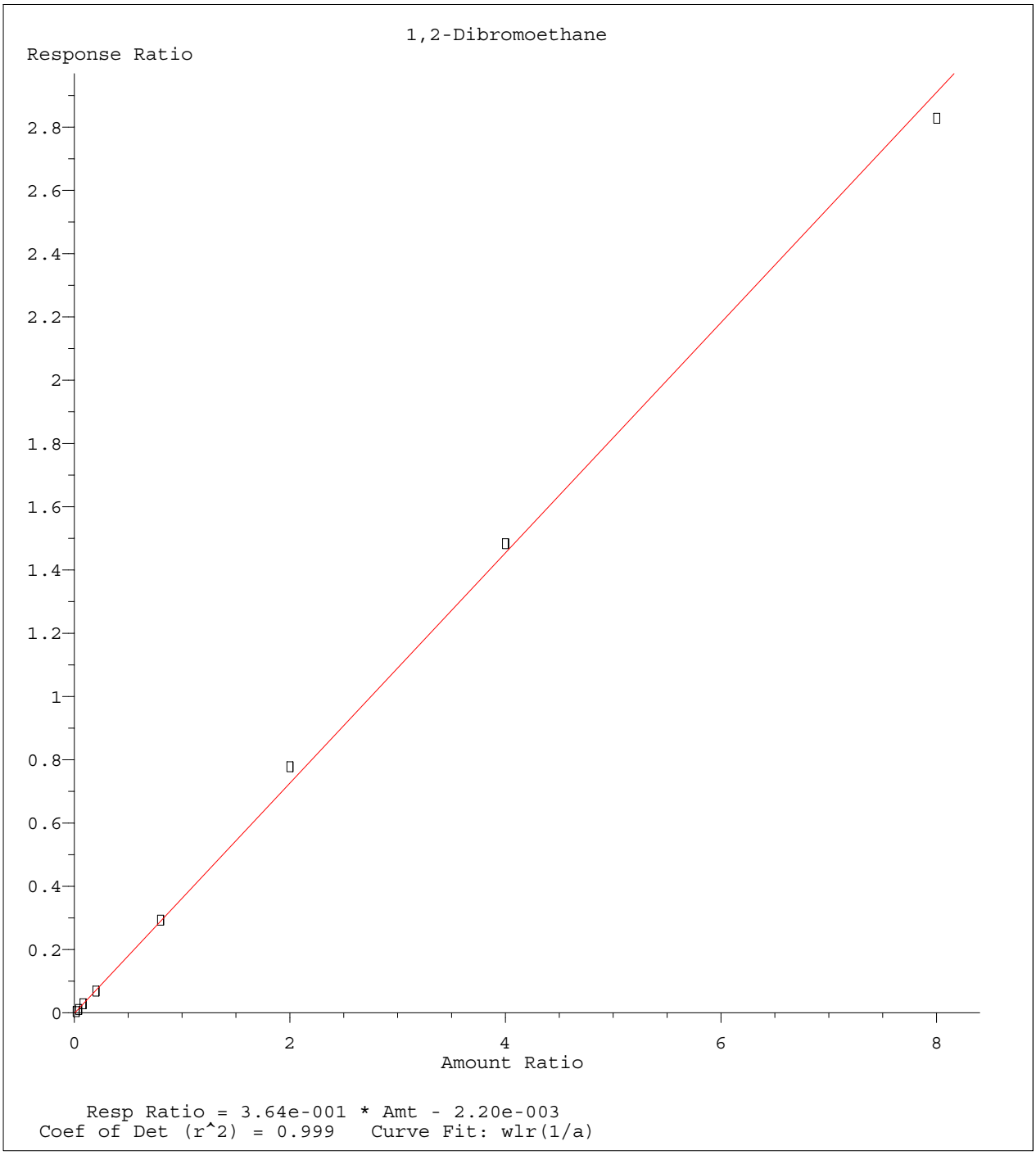
Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat Mar 25 12:46:14 2017



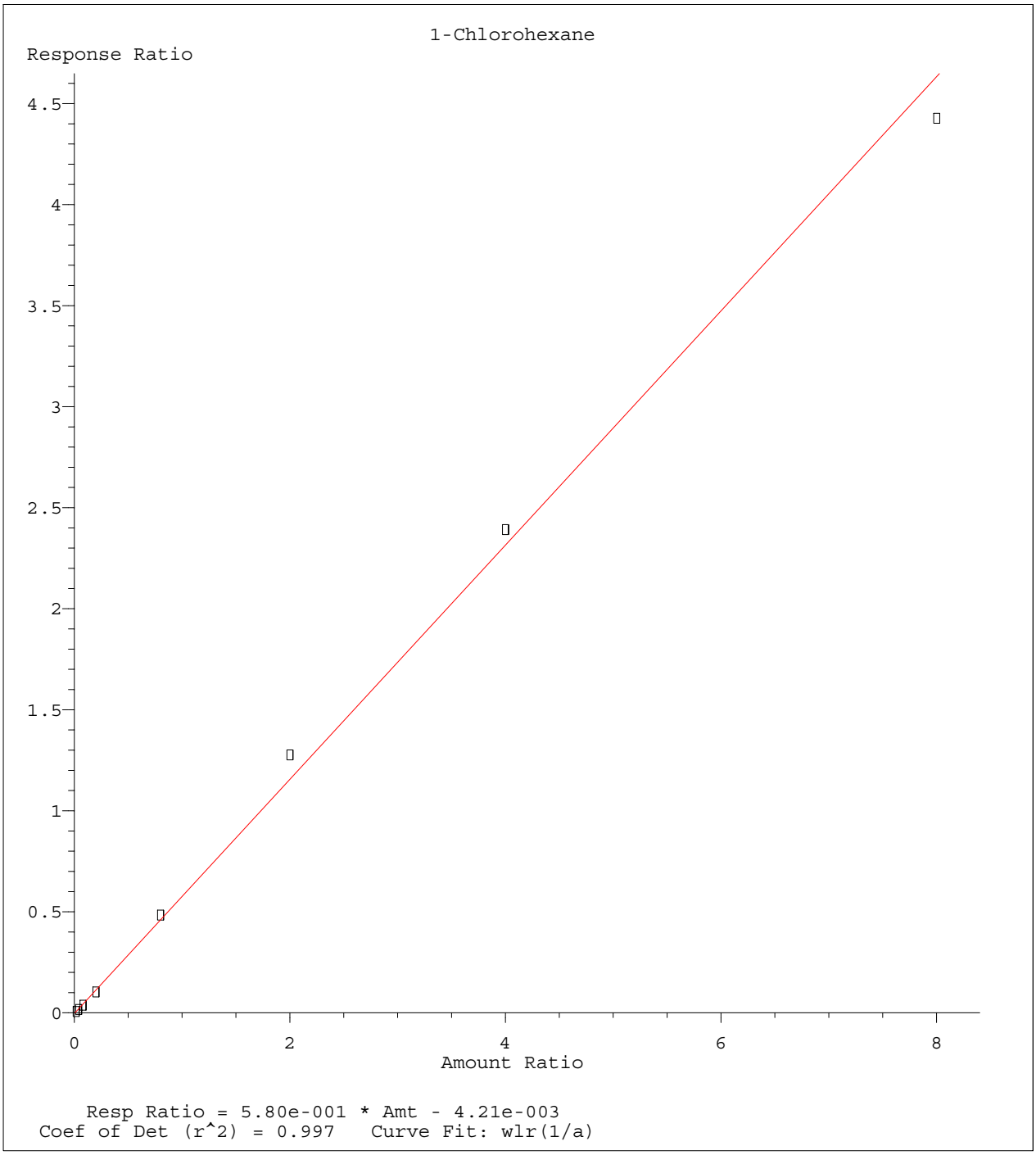
Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat Mar 25 12:46:14 2017



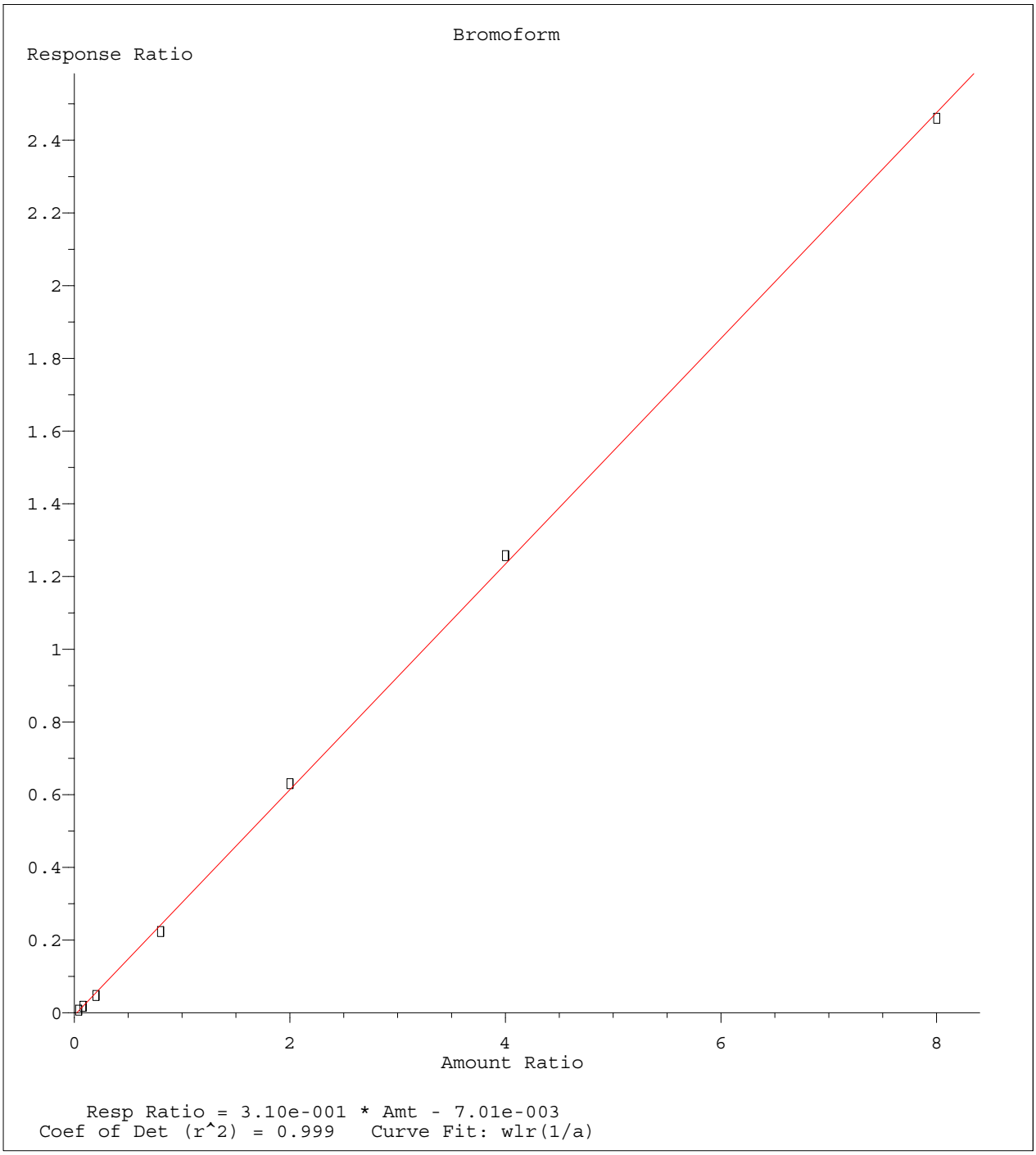
Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat Mar 25 12:46:14 2017



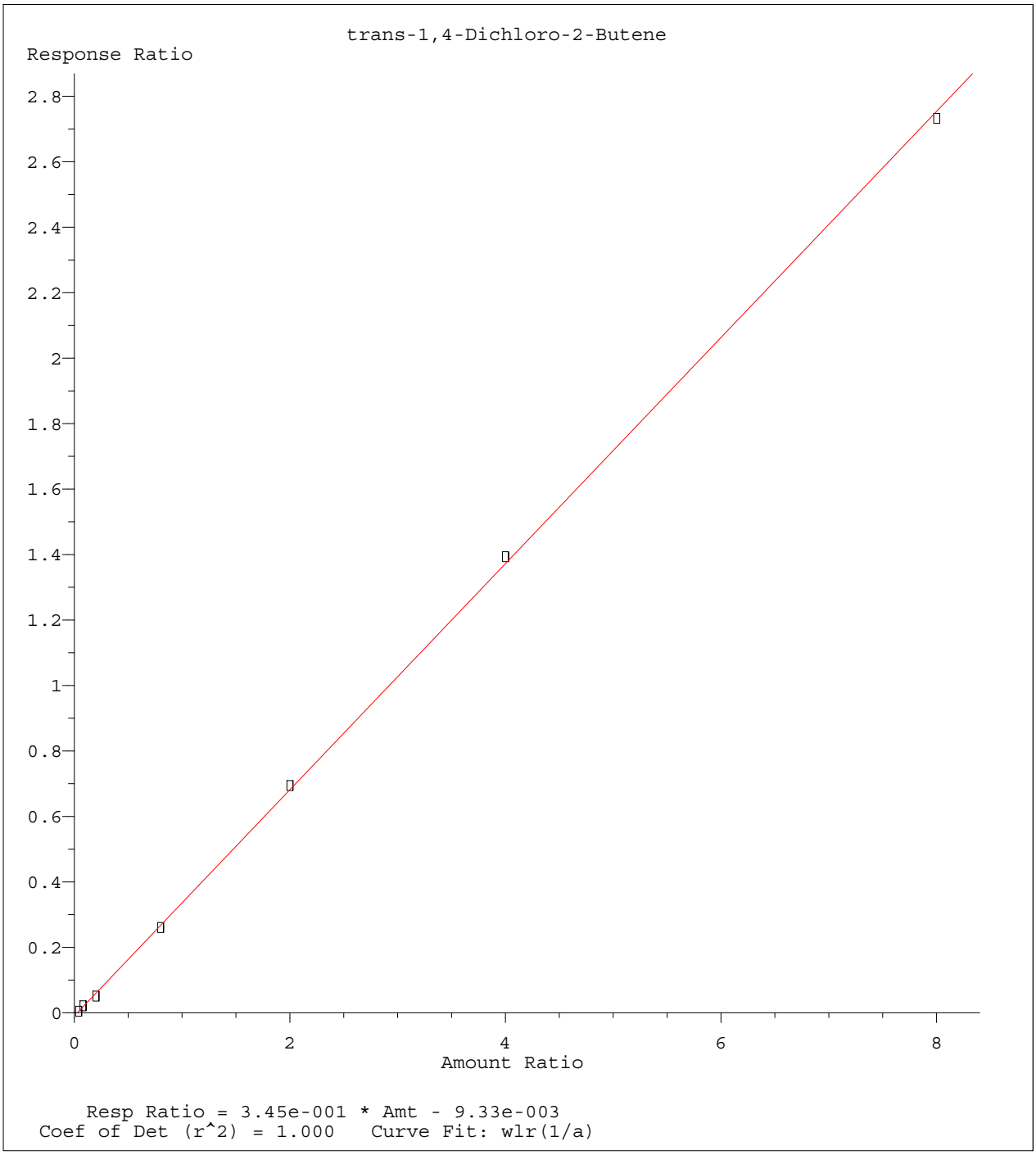
Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat Mar 25 12:46:14 2017



Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat Mar 25 12:46:14 2017



Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat Mar 25 12:46:14 2017



Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat Mar 25 12:46:14 2017

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17029.D Vial: 17
Acq On : 24 Mar 2017 22:40 Operator: JDS
Sample : WG607620-12 50 ug/L ICV/ ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 25 12:56:45 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.54	96	412689	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.17	117	298212	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	161191	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.55	111	114409	26.6726 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.68%		
43) 1,2-Dichloroethane-d4	10.15	65	146790	26.8206 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.28%		
57) Toluene-d8	12.40	98	444182	26.6046 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.40%		
78) p-Bromofluorobenzene	15.56	95	169760	25.4083 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.64%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.21	85	365410	53.1536 ug/L	100
3) Chloromethane	3.66	50	437185	52.7504 ug/L	98
4) Vinyl Chloride	3.89	62	298358	43.6922 ug/L	99
5) 1,3-Butadiene	3.93	54	166779	51.4612 ug/L	97
6) Bromomethane	4.78	94	147640	41.4336 ug/L	98
7) Chloroethane	4.93	64	230788	53.2078 ug/L	98
8) Trichlorofluoromethane	5.41	101	388403	52.3576 ug/L	99
9) Diethyl ether	5.94	59	497833	92.1205 ug/L	97
10) Isoprene	5.97	67	419301	55.8051 ug/L	99
11) Acrolein	6.16	56	58577	63.5418 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	230696	51.5198 ug/L	99
13) Acetone	6.27	43	78425	47.1745 ug/L	96
14) 1,1-Dichloroethene	6.47	61	456428	53.2309 ug/L	99
15) Tert-Butyl Alcohol	6.60	59	112783	197.9630 ug/L	98
16) Dimethyl Sulfide	6.74	62	360135	53.3120 ug/L	100
17) Iodomethane	6.99	142	272364	46.1769 ug/L	98
18) Methyl acetate	7.00	43	261320	56.0482 ug/L	99
19) Methylene Chloride	7.24	84	277925	50.1302 ug/L	98
20) Carbon Disulfide	7.28	76	620669	43.3519 ug/L	99
21) Acrylonitrile	7.41	53	117077	52.1516 ug/L	99
22) Methyl Tert Butyl Ether	7.44	73	716959	49.5532 ug/L	98
23) trans-1,2-Dichloroethene	7.67	96	257997	53.6281 ug/L	100
24) n-Hexane	7.74	57	406521	49.8192 ug/L	99
25) Diisopropyl ether	8.08	45	2045839	98.8637 ug/L	98
26) Vinyl Acetate	8.24	43	372623	35.0101 ug/L	99
27) 1,1-Dichloroethane	8.27	63	565911	52.2145 ug/L	100
28) Ethyl-Tert-Butyl ether	8.62	59	1768984	94.1009 ug/L	99
29) 2-Butanone	8.81	43	127016	47.6485 ug/L	99
30) Propionitrile	8.91	54	85604	100.9001 ug/L	98
31) 2,2-Dichloropropane	9.02	77	352105	47.7077 ug/L	100
32) cis-1,2-Dichloroethene	9.08	96	296148	52.1041 ug/L	99
33) Chloroform	9.27	83	476284	48.8040 ug/L	100
35) Bromochloromethane	9.50	130	169751	54.9763 ug/L	98
36) Tetrahydrofuran	9.52	42	180704	96.2504 ug/L	99
38) 1,1,1-Trichloroethane	9.78	97	433837	55.7124 ug/L	99
39) Cyclohexane	9.81	56	506702	46.9141 ug/L	100
40) 1,1-Dichloropropene	9.97	75	361993	53.8546 ug/L	100
41) Carbon Tetrachloride	10.10	117	360905	56.9523 ug/L	99
42) Tert-Amyl-Methyl ether	10.06	73	1466285	99.9862 ug/L	99
44) 1,2-Dichloroethane	10.27	62	393172	50.3329 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M17029.D 8260WT.M Wed Mar 29 10:59:35 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17029.D Vial: 17
Acq On : 24 Mar 2017 22:40 Operator: JDS
Sample : WG607620-12 50 ug/L ICV/ ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 25 12:56:45 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

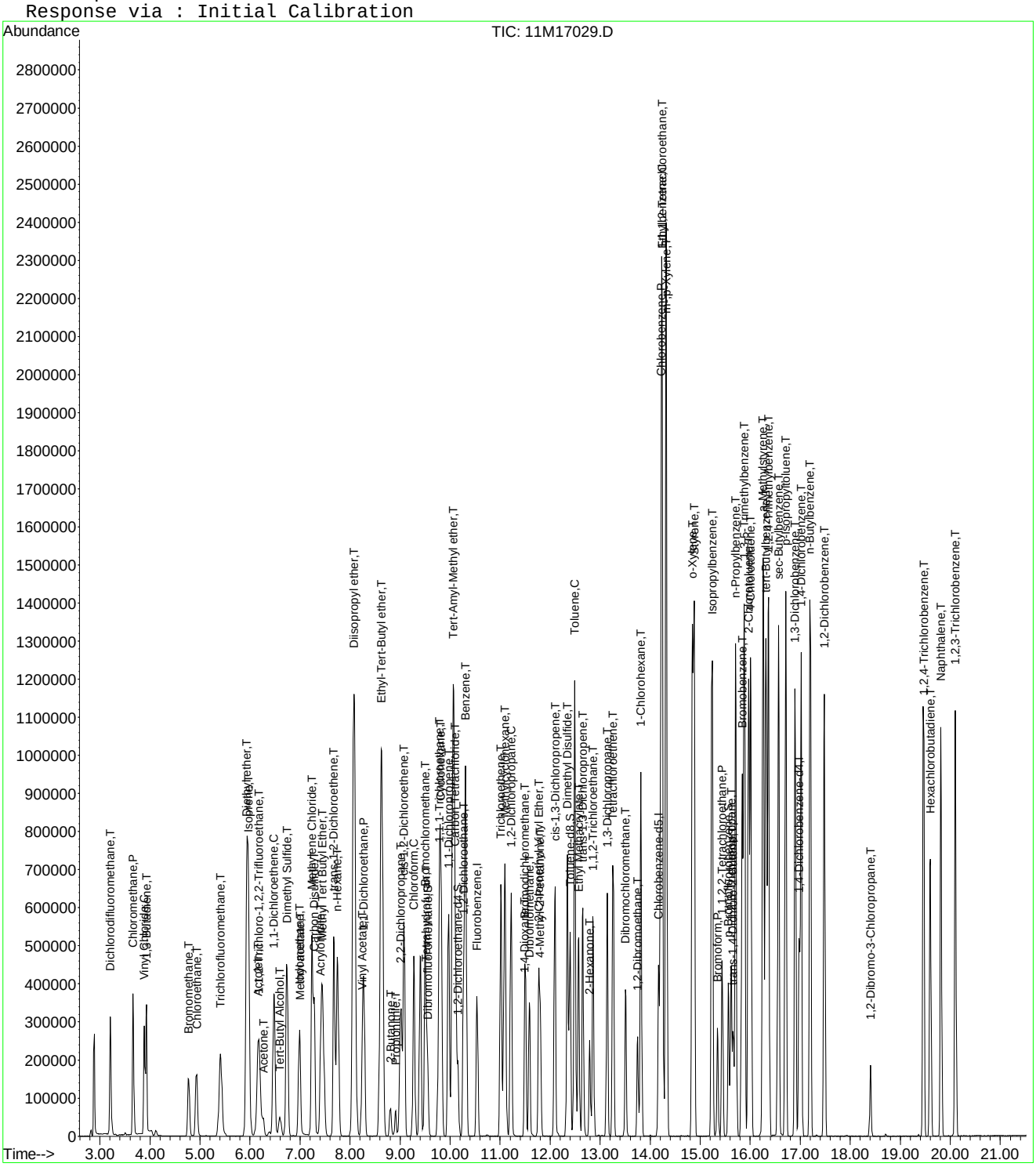
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	Benzene	10.31	78	1025579	50.9056 ug/L	100
46)	Trichloroethene	11.01	130	266479	54.2064 ug/L	99
47)	Methylcyclohexane	11.09	83	411796	49.8713 ug/L	100
48)	1,2-Dichloropropane	11.22	63	323295	50.4518 ug/L	99
49)	1,4-Dioxane	11.49	88	9147	185.5823 ug/L	93
50)	Bromodichloromethane	11.50	83	354199	52.1319 ug/L	99
51)	Dibromomethane	11.58	93	161148	51.8500 ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.78	63	192276	55.6402 ug/L	99
53)	4-Methyl-2-Pentanone	11.80	58	115829	51.2113 ug/L	97
54)	cis-1,3-Dichloropropene	12.10	75	437914	55.5278 ug/L	99
55)	Dimethyl Disulfide	12.35	79	254916	51.5845 ug/L	100
58)	Toluene	12.49	91	1049889	50.2120 ug/L	99
59)	Ethyl Methacrylate	12.57	69	345498	55.2029 ug/L	98
60)	trans-1,3-Dichloropropene	12.66	75	376059	52.0233 ug/L	99
61)	1,1,2-Trichloroethane	12.85	97	228634	50.1570 ug/L	99
62)	2-Hexanone	12.79	43	208028	52.3580 ug/L	100
63)	1,3-Dichloropropane	13.14	76	410731	51.3792 ug/L	97
64)	Tetrachloroethene	13.26	164	213950	53.6123 ug/L	100
65)	Dibromochloromethane	13.50	129	255339	52.2723 ug/L	99
66)	1,2-Dibromoethane	13.75	107	212823	49.1596 ug/L	100
67)	1-Chlorohexane	13.81	91	351658	51.0340 ug/L	98
68)	Chlorobenzene	14.22	112	673585	50.6799 ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.24	131	251331	52.3788 ug/L	99
70)	Ethylbenzene	14.24	106	395066	52.5362 ug/L	98
71)	m-,p-Xylene	14.32	106	887376	104.1419 ug/L	96
72)	o-Xylene	14.85	106	463385	52.2128 ug/L	97
73)	Styrene	14.88	104	766353	57.3069 ug/L	99
74)	Bromoform	15.34	173	168746	46.1400 ug/L	99
75)	Isopropylbenzene	15.24	105	1091057	51.8457 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.44	83	297161	49.5909 ug/L	100
79)	1,2,3-Trichloropropane	15.62	110	87396	51.4641 ug/L	88
80)	trans-1,4-Dichloro-2-Buten	15.65	53	82401	37.6739 ug/L	74
81)	n-Propylbenzene	15.71	91	1308339	46.9481 ug/L	98
82)	Bromobenzene	15.84	156	315260	49.5661 ug/L	99
83)	1,3,5-Trimethylbenzene	15.88	105	959875	51.6858 ug/L	99
84)	2-Chlorotoluene	15.96	91	843664	45.5053 ug/L	99
85)	4-Chlorotoluene	16.01	91	865943	49.8877 ug/L	99
86)	a-Methylstyrene	16.25	118	573334	53.8746 ug/L	99
87)	tert-Butylbenzene	16.32	134	220607	50.8058 ug/L	97
88)	1,2,4-Trimethylbenzene	16.37	105	1002381	48.2388 ug/L	99
89)	sec-Butylbenzene	16.56	105	1191116	48.2750 ug/L	99
90)	p-Isopropyltoluene	16.71	119	1035749	50.4722 ug/L	100
91)	1,3-Dichlorobenzene	16.90	146	578970	49.9846 ug/L	100
92)	1,4-Dichlorobenzene	17.02	146	592073	51.1189 ug/L	100
93)	n-Butylbenzene	17.19	91	1006999	54.1584 ug/L	99
94)	1,2-Dichlorobenzene	17.48	146	582216	50.5821 ug/L	99
95)	1,2-Dibromo-3-Chloropropan	18.40	75	58800	52.9926 ug/L	97
96)	1,2,4-Trichlorobenzene	19.47	180	433195	55.5845 ug/L	99
97)	Hexachlorobutadiene	19.60	225	200253	53.6865 ug/L	99
98)	Naphthalene	19.81	128	964278	54.9645 ug/L	98
99)	1,2,3-Trichlorobenzene	20.10	180	419315	54.1751 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M17029.D 8260WT.M Wed Mar 29 10:59:35 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032417\11M17029.D Vial: 17
Acq On : 24 Mar 2017 22:40 Operator: JDS
Sample : WG607620-12 50 ug/L ICV/ ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 25 12:56 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032417\11M17029.D Vial: 17
Acq On : 24 Mar 2017 22:40 Operator: JDS
Sample : WG607620-12 50 ug/L ICV/ ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Dichlorodifluoromethane	50.0000	53.1536	-6.3	89	0.00
3	P	Chloromethane	50.0000	52.7504	-5.5	109	0.00
4	C	Vinyl Chloride	50.0000	43.6922	12.6	81	-0.01
5	T	1,3-Butadiene	50.0000	51.4612	-2.9	96	0.00
6	T	Bromomethane	50.0000	41.4336	17.1	81	-0.01
7	T	Chloroethane	50.0000	53.2078	-6.4	92	-0.01
8	T	Trichlorofluoromethane	50.0000	52.3576	-4.7	87	-0.01
9	T	Diethyl ether	100.0000	92.1205	7.9	85	0.00
10	T	Isoprene	50.0000	55.8051	-11.6	92	0.00
11	T	Acrolein	50.0000	63.5418	-27.1#	112	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.5198	-3.0	95	-0.01
13	T	Acetone	50.0000	47.1745	5.7	89	0.00
14	C	1,1-Dichloroethene	50.0000	53.2309	-6.5	90	-0.01
15	T	Tert-Butyl Alcohol	200.0000	197.9630	1.0	93	0.01
16	T	Dimethyl Sulfide	50.0000	53.3120	-6.6	93	0.00
17	T	Iodomethane	50.0000	46.1769	7.6	82	0.00
18	T	Methyl acetate	50.0000	56.0482	-12.1	102	0.00
19	T	Methylene Chloride	50.0000	50.1302	-0.3	92	-0.01
20	T	Carbon Disulfide	50.0000	43.3519	13.3	75	0.00
21	T	Acrylonitrile	50.0000	52.1516	-4.3	90	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	49.5532	0.9	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.6281	-7.3	93	-0.01
24	T	n-Hexane	50.0000	49.8192	0.4	84	0.00
25	T	Diisopropyl ether	100.0000	98.8637	1.1	91	0.00
26	T	Vinyl Acetate	50.0000	35.0101	30.0#	57	0.00
27	P	1,1-Dichloroethane	50.0000	52.2145	-4.4	92	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	94.1009	5.9	87	-0.01
29	T	2-Butanone	50.0000	47.6485	4.7	84	0.00
30	T	Propionitrile	100.0000	100.9001	-0.9	91	0.00
31	T	2,2-Dichloropropane	50.0000	47.7077	4.6	80	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.1041	-4.2	92	0.00
33	C	Chloroform	50.0000	48.8040	2.4	94	0.00
34	T	1-Bromopropane	50.0000	0.0000	100.0#	0	0.00
35	T	Bromochloromethane	50.0000	54.9763	-10.0	94	0.00
36	T	Tetrahydrofuran	100.0000	96.2504	3.7	89	0.00
37	S	Dibromofluoromethane	50.0000	26.6726	46.7#	49	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.7124	-11.4	95	0.00
39	T	Cyclohexane	50.0000	46.9141	6.2	81	0.00
40	T	1,1-Dichloropropene	50.0000	53.8546	-7.7	92	0.00
41	T	Carbon Tetrachloride	50.0000	56.9524	-13.9	93	-0.01
42	T	Tert-Amyl-Methyl ether	100.0000	99.9862	0.0	91	0.00
43	S	1,2-Dichloroethane-d4	50.0000	26.8206	46.4#	50	-0.01
44	T	1,2-Dichloroethane	50.0000	50.3329	-0.7	90	0.00
45	T	Benzene	50.0000	50.9056	-1.8	93	0.00
46	T	Trichloroethene	50.0000	54.2064	-8.4	94	-0.01
47	T	Methylcyclohexane	50.0000	49.8713	0.3	85	0.00
48	C	1,2-Dichloropropane	50.0000	50.4518	-0.9	89	0.00
49	T	1,4-Dioxane	200.0000	185.5823	7.2	85	0.00
50	T	Bromodichloromethane	50.0000	52.1319	-4.3	90	0.00
51	T	Dibromomethane	50.0000	51.8500	-3.7	92	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	55.6403	-11.3	92	0.00
53	T	4-Methyl-2-Pentanone	50.0000	51.2113	-2.4	91	0.00
54	T	cis-1,3-Dichloropropene	50.0000	55.5278	-11.1	91	0.00

(#) = Out of Range
11M17029.D 8260WT.M Sat Mar 25 12:57:02 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032417\11M17029.D Vial: 17
Acq On : 24 Mar 2017 22:40 Operator: JDS
Sample : WG607620-12 50 ug/L ICV/ ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	51.5844	-3.2	90	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	98	0.00
57	S	Toluene-d8	50.0000	26.6046	46.8#	52	0.00
58	C	Toluene	50.0000	50.2120	-0.4	92	0.00
59	T	Ethyl Methacrylate	50.0000	55.2029	-10.4	94	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.0233	-4.0	87	0.00
61	T	1,1,2-Trichloroethane	50.0000	50.1570	-0.3	90	0.00
62	T	2-Hexanone	50.0000	52.3580	-4.7	93	0.00
63	T	1,3-Dichloropropane	50.0000	51.3792	-2.8	94	0.00
64	T	Tetrachloroethene	50.0000	53.6123	-7.2	95	0.00
65	T	Dibromochloromethane	50.0000	52.2723	-4.5	88	-0.01
66	T	1,2-Dibromoethane	50.0000	49.1596	1.7	90	0.00
67	T	1-Chlorohexane	50.0000	51.0340	-2.1	90	0.00
68	P	Chlorobenzene	50.0000	50.6799	-1.4	92	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	52.3788	-4.8	90	-0.01
70	C	Ethylbenzene	50.0000	52.5362	-5.1	94	0.00
71	T	m-,p-Xylene	100.0000	104.1419	-4.1	92	0.00
72	T	o-Xylene	50.0000	52.2128	-4.4	93	0.00
73	T	Styrene	50.0000	57.3069	-14.6	93	0.00
74	P	Bromoform	50.0000	46.1400	7.7	88	0.00
75	T	Isopropylbenzene	50.0000	51.8457	-3.7	91	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	49.5909	0.8	89	0.00
78	S	p-Bromofluorobenzene	50.0000	25.4083	49.2#	50	0.00
79	T	1,2,3-Trichloropropane	50.0000	51.4641	-2.9	94	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	37.6739	24.7	75	0.00
81	T	n-Propylbenzene	50.0000	46.9481	6.1	91	0.00
82	T	Bromobenzene	50.0000	49.5661	0.9	93	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	51.6858	-3.4	93	0.00
84	T	2-Chlorotoluene	50.0000	45.5054	9.0	91	0.00
85	T	4-Chlorotoluene	50.0000	49.8877	0.2	94	0.00
86	T	a-Methylstyrene	50.0000	53.8747	-7.7	98	0.00
87	T	tert-Butylbenzene	50.0000	50.8058	-1.6	94	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	48.2388	3.5	94	0.00
89	T	sec-Butylbenzene	50.0000	48.2750	3.4	92	0.00
90	T	p-Isopropyltoluene	50.0000	50.4722	-0.9	94	0.00
91	T	1,3-Dichlorobenzene	50.0000	49.9846	0.0	94	-0.01
92	T	1,4-Dichlorobenzene	50.0000	51.1189	-2.2	96	0.00
93	T	n-Butylbenzene	50.0000	54.1584	-8.3	95	0.00
94	T	1,2-Dichlorobenzene	50.0000	50.5821	-1.2	96	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	52.9926	-6.0	92	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.5845	-11.2	99	0.00
97	T	Hexachlorobutadiene	50.0000	53.6865	-7.4	95	0.00
98	T	Naphthalene	50.0000	54.9644	-9.9	98	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.1751	-8.4	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data File : C:\MSDchem\1\data\040317\11M17247.D Vial: 1
Acq On : 3 Apr 2017 16:20 Operator: ADC
Sample : WG608584-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 03 16:41:53 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.55	96	448921	25.00 ug/L	0.01
56) Chlorobenzene-d5	14.18	117	315769	25.00 ug/L	0.01
76) 1,4-Dichlorobenzene-d4	16.99	152	166556	25.00 ug/L	0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.55	111	122414	26.2355 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.96%		
43) 1,2-Dichloroethane-d4	10.16	65	151672	25.4760 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.92%		
57) Toluene-d8	12.40	98	459255	25.9780 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.92%		
78) p-Bromofluorobenzene	15.57	95	170943	24.7612 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.04%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.22	85	345014	46.1802 ug/L	97
3) Chloromethane	3.67	50	376866	41.8023 ug/L	99
4) Vinyl Chloride	3.90	62	313847	42.2510 ug/L	99
5) 1,3-Butadiene	3.94	54	191315	54.5785 ug/L	97
6) Bromomethane	4.79	94	172706	44.5563 ug/L	99
7) Chloroethane	4.94	64	232782	49.3361 ug/L	97
8) Trichlorofluoromethane	5.42	101	391153	48.4727 ug/L	99
9) Diethyl ether	5.94	59	546021	92.8827 ug/L	92
10) Isoprene	5.98	67	435402	53.2711 ug/L	95
11) Acrolein	6.17	56	40216	40.1037 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	221897	45.5995 ug/L	99
13) Acetone	6.27	43	84244	46.5848 ug/L	100
14) 1,1-Dichloroethene	6.49	61	456524	48.9450 ug/L	97
15) Tert-Butyl Alcohol	6.59	59	112814	182.0356 ug/L	93
16) Dimethyl Sulfide	6.74	62	366188	49.8330 ug/L	92
17) Iodomethane	6.99	142	295633	46.0794 ug/L	99
18) Methyl acetate	7.00	43	268724	52.9844 ug/L	96
19) Methylene Chloride	7.25	84	265739	44.0636 ug/L	84
20) Carbon Disulfide	7.29	76	783711	50.3219 ug/L	100
21) Acrylonitrile	7.42	53	120485	49.3381 ug/L	100
22) Methyl Tert Butyl Ether	7.44	73	693692	44.0755 ug/L	98
23) trans-1,2-Dichloroethene	7.68	96	242058	46.2541 ug/L	94
24) n-Hexane	7.75	57	512010	57.6826 ug/L	97
25) Diisopropyl ether	8.09	45	2266997	100.7092 ug/L	97
26) Vinyl Acetate	8.25	43	595213	51.4102 ug/L	98
27) 1,1-Dichloroethane	8.28	63	555895	47.1508 ug/L	100
28) Ethyl-Tert-Butyl ether	8.63	59	1904924	93.1538 ug/L	97
29) 2-Butanone	8.81	43	140125	48.3236 ug/L	95
30) Propionitrile	8.91	54	82980	89.9133 ug/L	99
31) 2,2-Dichloropropane	9.02	77	395296	49.2370 ug/L	99
32) cis-1,2-Dichloroethene	9.08	96	278375	45.0243 ug/L	92
33) Chloroform	9.29	83	443874	41.8121 ug/L	100
35) Bromochloromethane	9.50	130	152069	45.2748 ug/L	83
36) Tetrahydrofuran	9.52	42	193001	94.5034 ug/L	91
38) 1,1,1-Trichloroethane	9.79	97	391678	46.2389 ug/L	97
39) Cyclohexane	9.81	56	630877	53.6968 ug/L	94
40) 1,1-Dichloropropene	9.97	75	350562	47.9446 ug/L	98
41) Carbon Tetrachloride	10.11	117	337251	48.9243 ug/L	99
42) Tert-Amyl-Methyl ether	10.07	73	1438206	90.1562 ug/L	96
44) 1,2-Dichloroethane	10.28	62	377911	44.4746 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M17247.D 8260WT.M Mon Apr 03 16:41:54 2017 Page 1

Data File : C:\MSDchem\1\data\040317\11M17247.D Vial: 1
Acq On : 3 Apr 2017 16:20 Operator: ADC
Sample : WG608584-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 03 16:41:53 2017 Quant Results File: 8260WT.RES

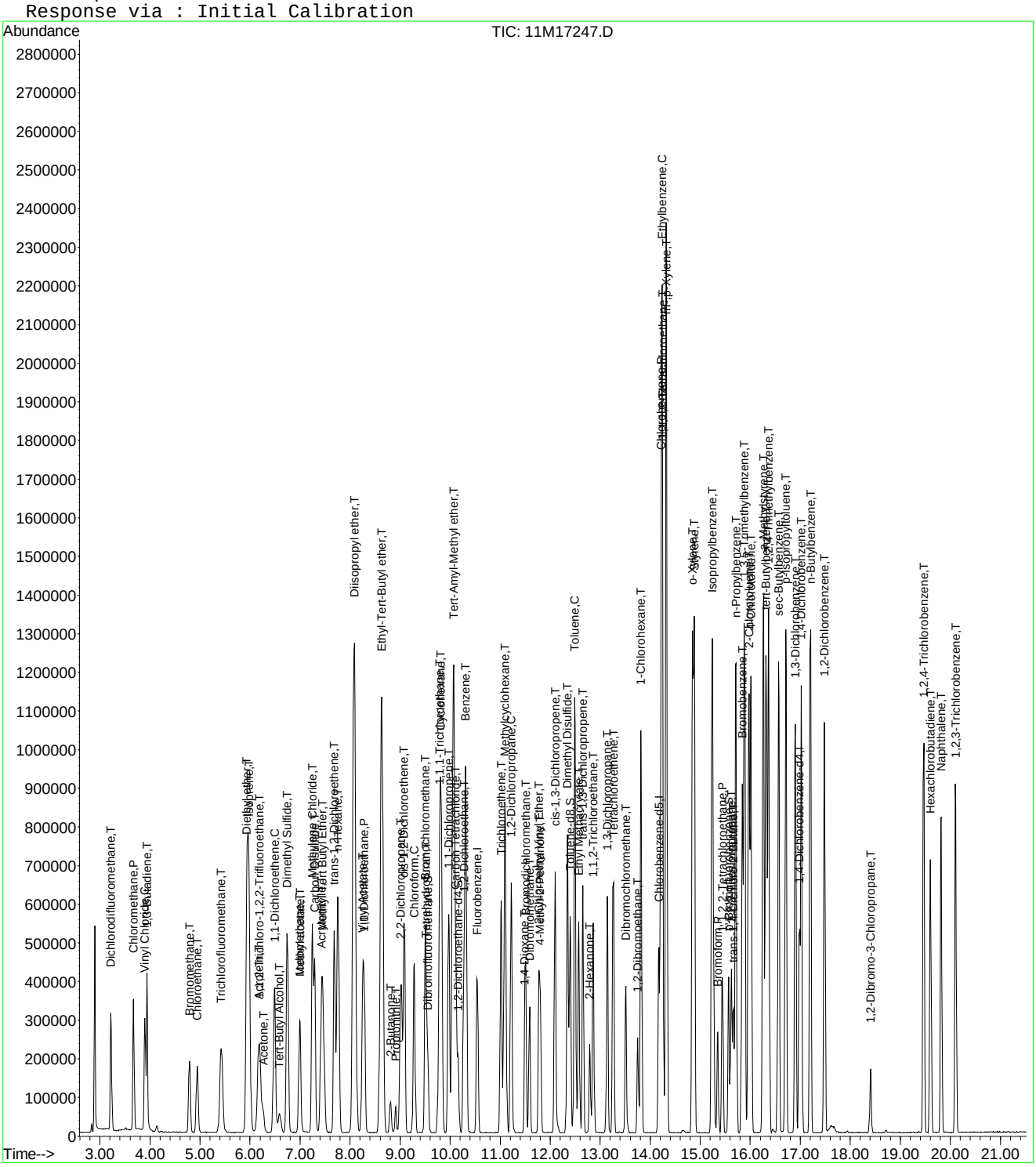
Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	Benzene	10.31	78	973996	44.4434	ug/L	100
46)	Trichloroethene	11.02	130	239390	44.7658	ug/L	99
47)	Methylcyclohexane	11.09	83	465123	51.7832	ug/L	94
48)	1,2-Dichloropropane	11.22	63	325204	46.6537	ug/L	96
49)	1,4-Dioxane	11.49	88	10677	199.1407	ug/L	67
50)	Bromodichloromethane	11.51	83	351432	47.5500	ug/L	99
51)	Dibromomethane	11.59	93	146868	43.4414	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.78	63	172320	45.8408	ug/L	97
53)	4-Methyl-2-Pentanone	11.80	58	112262	45.6283	ug/L	93
54)	cis-1,3-Dichloropropene	12.10	75	423939	49.4171	ug/L	100
55)	Dimethyl Disulfide	12.35	79	263010	48.9268	ug/L	98
58)	Toluene	12.49	91	991599	44.7874	ug/L	98
59)	Ethyl Methacrylate	12.57	69	326176	49.2180	ug/L	89
60)	trans-1,3-Dichloropropene	12.66	75	372216	48.6287	ug/L	98
61)	1,1,2-Trichloroethane	12.86	97	210387	43.5878	ug/L	99
62)	2-Hexanone	12.79	43	203500	48.3706	ug/L	96
63)	1,3-Dichloropropane	13.14	76	367693	43.4381	ug/L	90
64)	Tetrachloroethene	13.27	164	198854	47.0590	ug/L	99
65)	Dibromochloromethane	13.51	129	245862	47.5337	ug/L	100
66)	1,2-Dibromoethane	13.75	107	194328	42.4124	ug/L	99
67)	1-Chlorohexane	13.81	91	365440	50.0888	ug/L	92
68)	Chlorobenzene	14.22	112	624438	44.3699	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.25	131	239911	47.2189	ug/L	100
70)	Ethylbenzene	14.24	106	365475	45.8989	ug/L	95
71)	m-,p-Xylene	14.32	106	827790	91.7473	ug/L	94
72)	o-Xylene	14.85	106	432261	45.9978	ug/L	97
73)	Styrene	14.88	104	705186	49.8010	ug/L	100
74)	Bromoform	15.35	173	158589	41.0153	ug/L	100
75)	Isopropylbenzene	15.24	105	1033733	46.3905	ug/L	98
77)	1,1,2,2-Tetrachloroethane	15.45	83	272485	44.0082	ug/L	100
79)	1,2,3-Trichloropropane	15.62	110	72971	41.5857	ug/L	95
80)	trans-1,4-Dichloro-2-Buten	15.66	53	101071	44.5951	ug/L	85
81)	n-Propylbenzene	15.72	91	1274054	44.2452	ug/L	97
82)	Bromobenzene	15.84	156	285493	43.4402	ug/L	96
83)	1,3,5-Trimethylbenzene	15.88	105	892952	46.5334	ug/L	99
84)	2-Chlorotoluene	15.97	91	917351	47.8860	ug/L	99
85)	4-Chlorotoluene	16.02	91	682269	38.0400	ug/L	98
86)	a-Methylstyrene	16.26	118	525764	47.8132	ug/L	98
87)	tert-Butylbenzene	16.32	134	200742	44.7418	ug/L	95
88)	1,2,4-Trimethylbenzene	16.37	105	915287	42.6286	ug/L	99
89)	sec-Butylbenzene	16.56	105	1126093	44.1696	ug/L	98
90)	p-Isopropyltoluene	16.71	119	952521	44.9213	ug/L	99
91)	1,3-Dichlorobenzene	16.91	146	530739	44.3447	ug/L	99
92)	1,4-Dichlorobenzene	17.02	146	525926	43.9452	ug/L	99
93)	n-Butylbenzene	17.21	91	938171	48.8314	ug/L	98
94)	1,2-Dichlorobenzene	17.48	146	506736	42.6064	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.40	75	52519	45.8073	ug/L	94
96)	1,2,4-Trichlorobenzene	19.47	180	377095	46.8276	ug/L	98
97)	Hexachlorobutadiene	19.60	225	185313	48.0809	ug/L	99
98)	Naphthalene	19.82	128	766844	42.3026	ug/L	99
99)	1,2,3-Trichlorobenzene	20.11	180	350642	43.8433	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M17247.D 8260WT.M Mon Apr 03 16:41:55 2017 Page 2

Data File : C:\MSDchem\1\data\040317\11M17247.D Vial: 1
Acq On : 3 Apr 2017 16:20 Operator: ADC
Sample : WG608584-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 3 16:41 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 24 Mar 2017 18:45
CCV date: 3 Apr 2017 16:20
CCV Filename: 11M17247.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	432286	10.54	305247	14.17	158955	16.98
CCV	448921	10.55	315769	14.18	166556	16.99

Data File : C:\MSDCHEM\1\DATA\040317\11M17247.D Vial: 1
Acq On : 3 Apr 2017 16:20 Operator: ADC
Sample : WG608584-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	104	0.01
2	T	Dichlorodifluoromethane	0.3835	0.3843	-0.2	84	0.00
3	P	Chloromethane	0.5021	0.4198	16.4	94	0.00
4	C	Vinyl Chloride	0.4137	0.3496	15.5	85	0.00
5	T	1,3-Butadiene	0.2227	0.2131	4.3	110	0.00
6	T	Bromomethane	0.2159	0.1924	10.9	95	0.00
7	T	Chloroethane	0.2628	0.2593	1.3	93	0.00
8	T	Trichlorofluoromethane	0.4494	0.4357	3.1	88	0.00
9	T	Diethyl ether	0.3274	0.3041	7.1	94	0.00
10	T	Isoprene	0.4552	0.4849	-6.5	96	0.00
11	T	Acrolein	0.0558	0.0448	19.8	77	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2467	0.2471	-0.2	91	0.00
13	T	Acetone	0.1007	0.0938	6.8	95	0.00
14	C	1,1-Dichloroethene	0.5194	0.5085	2.1	90	0.01
15	T	Tert-Butyl Alcohol	0.0345	0.0314	9.0	93	0.00
16	T	Dimethyl Sulfide	0.4092	0.4078	0.3	94	0.00
17	T	Iodomethane	0.3080	0.3293	-6.9	89	0.00
18	T	Methyl acetate	0.2824	0.2993	-6.0	105	0.00
19	T	Methylene Chloride	0.3358	0.2960	11.9	88	0.00
20	T	Carbon Disulfide	0.8673	0.8729	-0.6	95	0.00
21	T	Acrylonitrile	0.1360	0.1342	1.3	93	0.00
22	T	Methyl Tert Butyl Ether	0.8765	0.7726	11.8	86	0.00
23	T	trans-1,2-Dichloroethene	0.2914	0.2696	7.5	87	0.00
24	T	n-Hexane	0.4943	0.5703	-15.4	106	0.00
25	T	Diisopropyl ether	1.2536	1.2625	-0.7	101	0.00
26	T	Vinyl Acetate	0.6448	0.6629	-2.8	90	0.01
27	P	1,1-Dichloroethane	0.6566	0.6191	5.7	90	0.00
28	T	Ethyl-Tert-Butyl ether	1.1388	1.0608	6.8	93	0.00
29	T	2-Butanone	0.1615	0.1561	3.4	93	0.00
30	T	Propionitrile	0.0514	0.0462	10.1	88	0.00
31	T	2,2-Dichloropropane	0.4471	0.4403	1.5	90	0.00
32	T	cis-1,2-Dichloroethene	0.3443	0.3100	10.0	87	0.00
33	C	Chloroform	0.5912	0.4944	16.4	87	0.01
34	T	1-Bromopropane	0.0000	0.0000	0.0	0#	-9.42#
35	T	Bromochloromethane	0.1870	0.1694	9.5	84	0.00
36	T	Tetrahydrofuran	0.1137	0.1075	5.5	95	0.00
37	S	Dibromofluoromethane	0.2598	0.1363	47.5#	52	0.00
38	T	1,1,1-Trichloroethane	0.4717	0.4362	7.5	86	0.01
39	T	Cyclohexane	0.6543	0.7027	-7.4	100	0.00
40	T	1,1-Dichloropropene	0.4072	0.3905	4.1	89	0.00
41	T	Carbon Tetrachloride	0.3839	0.3756	2.2	87	0.00
42	T	Tert-Amyl-Methyl ether	0.8884	0.8009	9.8	89	0.01
43	S	1,2-Dichloroethane-d4	0.3316	0.1689	49.0#	52	0.00
44	T	1,2-Dichloroethane	0.4732	0.4209	11.1	87	0.01
45	T	Benzene	1.2205	1.0848	11.1	88	0.00
46	T	Trichloroethene	0.2978	0.2666	10.5	84	0.00
47	T	Methylcyclohexane	0.5002	0.5181	-3.6	97	0.00
48	C	1,2-Dichloropropane	0.3882	0.3622	6.7	90	0.00
49	T	1,4-Dioxane	0.0030	0.0030	0.7	100	0.00
50	T	Bromodichloromethane	0.4116	0.3914	4.9	89	0.01
51	T	Dibromomethane	0.1883	0.1636	13.1	84	0.01
52	T	2-Chloroethyl Vinyl Ether	0.2093	0.1919	8.3	82	0.00
53	T	4-Methyl-2-Pentanone	0.1370	0.1250	8.7	88	0.00
54	T	cis-1,3-Dichloropropene	0.4777	0.4722	1.2	89	0.00

(#) = Out of Range
11M17247.D 8260WT.M Mon Apr 03 17:01:21 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\040317\11M17247.D Vial: 1
Acq On : 3 Apr 2017 16:20 Operator: ADC
Sample : WG608584-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2994	0.2929	2.1	93	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	103	0.01
57	S	Toluene-d8	1.3997	0.7272	48.0#	54	0.00
58	C	Toluene	1.7529	1.5701	10.4	87	0.00
59	T	Ethyl Methacrylate	0.5247	0.5165	1.6	89	0.00
60	T	trans-1,3-Dichloropropene	0.6060	0.5894	2.7	86	0.00
61	T	1,1,2-Trichloroethane	0.3821	0.3331	12.8	83	0.01
62	T	2-Hexanone	0.3331	0.3222	3.3	91	0.00
63	T	1,3-Dichloropropane	0.6702	0.5822	13.1	84	0.00
64	T	Tetrachloroethene	0.3346	0.3149	5.9	88	0.01
65	T	Dibromochloromethane	0.4095	0.3893	4.9	85	0.00
66	T	1,2-Dibromoethane	0.3346	0.3077	8.0	82	0.00
67	T	1-Chlorohexane	0.5234	0.5787	-10.6	94	0.00
68	P	Chlorobenzene	1.1142	0.9888	11.3	85	0.00
69	T	1,1,1,2-Tetrachloroethane	0.4023	0.3799	5.6	85	0.00
70	C	Ethylbenzene	0.6304	0.5787	8.2	87	0.00
71	T	m-,p-Xylene	0.7143	0.6554	8.3	86	0.00
72	T	o-Xylene	0.7440	0.6845	8.0	86	0.00
73	T	Styrene	1.1211	1.1166	0.4	86	0.00
74	P	Bromoform	0.2657	0.2511	5.5	82	0.01
75	T	Isopropylbenzene	1.7642	1.6368	7.2	86	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	105	0.01
77	P	1,1,2,2-Tetrachloroethane	0.9294	0.8180	12.0	82	0.01
78	S	p-Bromofluorobenzene	1.0362	0.5132	50.5#	50	0.01
79	T	1,2,3-Trichloropropane	0.2634	0.2191	16.8	79	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.2859	0.3034	-6.1	92	0.01
81	T	n-Propylbenzene	4.3222	3.8247	11.5	89	0.01
82	T	Bromobenzene	0.9865	0.8570	13.1	84	0.00
83	T	1,3,5-Trimethylbenzene	2.8803	2.6806	6.9	87	0.00
84	T	2-Chlorotoluene	2.8754	2.7539	4.2	99	0.01
85	T	4-Chlorotoluene	2.6921	2.0482	23.9	74	0.01
86	T	a-Methylstyrene	1.6505	1.5783	4.4	90	0.01
87	T	tert-Butylbenzene	0.6734	0.6026	10.5	86	0.00
88	T	1,2,4-Trimethylbenzene	3.2228	2.7477	14.7	86	0.00
89	T	sec-Butylbenzene	3.8268	3.3805	11.7	87	0.00
90	T	p-Isopropyltoluene	3.1827	2.8595	10.2	87	0.00
91	T	1,3-Dichlorobenzene	1.7965	1.5933	11.3	86	0.00
92	T	1,4-Dichlorobenzene	1.7964	1.5788	12.1	85	0.00
93	T	n-Butylbenzene	2.8838	2.8164	2.3	88	0.01
94	T	1,2-Dichlorobenzene	1.7852	1.5212	14.8	84	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.1721	0.1577	8.4	83	0.00
96	T	1,2,4-Trichlorobenzene	1.2087	1.1320	6.3	86	0.00
97	T	Hexachlorobutadiene	0.5785	0.5563	3.8	88	0.00
98	T	Naphthalene	2.7209	2.3021	15.4	78	0.01
99	T	1,2,3-Trichlorobenzene	1.2004	1.0526	12.3	82	0.01

Data File : C:\MSDCHEM\1\DATA\040317\11M17247.D Vial: 1
Acq On : 3 Apr 2017 16:20 Operator: ADC
Sample : WG608584-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	104	0.01
2	T	Dichlorodifluoromethane	50.0000	46.1803	7.6	84	0.00
3	P	Chloromethane	50.0000	41.8023	16.4	94	0.00
4	C	Vinyl Chloride	50.0000	42.2510	15.5	85	0.00
5	T	1,3-Butadiene	50.0000	54.5785	-9.2	110	0.00
6	T	Bromomethane	50.0000	44.5563	10.9	95	0.00
7	T	Chloroethane	50.0000	49.3361	1.3	93	0.00
8	T	Trichlorofluoromethane	50.0000	48.4727	3.1	88	0.00
9	T	Diethyl ether	100.0000	92.8828	7.1	94	0.00
10	T	Isoprene	50.0000	53.2711	-6.5	96	0.00
11	T	Acrolein	50.0000	40.1037	19.8	77	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	45.5995	8.8	91	0.00
13	T	Acetone	50.0000	46.5848	6.8	95	0.00
14	C	1,1-Dichloroethene	50.0000	48.9450	2.1	90	0.01
15	T	Tert-Butyl Alcohol	200.0000	182.0356	9.0	93	0.00
16	T	Dimethyl Sulfide	50.0000	49.8330	0.3	94	0.00
17	T	Iodomethane	50.0000	46.0794	7.8	89	0.00
18	T	Methyl acetate	50.0000	52.9845	-6.0	105	0.00
19	T	Methylene Chloride	50.0000	44.0636	11.9	88	0.00
20	T	Carbon Disulfide	50.0000	50.3219	-0.6	95	0.00
21	T	Acrylonitrile	50.0000	49.3381	1.3	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	44.0755	11.8	86	0.00
23	T	trans-1,2-Dichloroethene	50.0000	46.2541	7.5	87	0.00
24	T	n-Hexane	50.0000	57.6826	-15.4	106	0.00
25	T	Diisopropyl ether	100.0000	100.7092	-0.7	101	0.00
26	T	Vinyl Acetate	50.0000	51.4102	-2.8	90	0.01
27	P	1,1-Dichloroethane	50.0000	47.1508	5.7	90	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	93.1538	6.8	93	0.00
29	T	2-Butanone	50.0000	48.3236	3.4	93	0.00
30	T	Propionitrile	100.0000	89.9133	10.1	88	0.00
31	T	2,2-Dichloropropane	50.0000	49.2370	1.5	90	0.00
32	T	cis-1,2-Dichloroethene	50.0000	45.0243	10.0	87	0.00
33	C	Chloroform	50.0000	41.8121	16.4	87	0.01
34	T	1-Bromopropane	50.0000	0.0000	100.0#	0	-9.42#
35	T	Bromochloromethane	50.0000	45.2749	9.5	84	0.00
36	T	Tetrahydrofuran	100.0000	94.5034	5.5	95	0.00
37	S	Dibromofluoromethane	50.0000	26.2355	47.5#	52	0.00
38	T	1,1,1-Trichloroethane	50.0000	46.2389	7.5	86	0.01
39	T	Cyclohexane	50.0000	53.6968	-7.4	100	0.00
40	T	1,1-Dichloropropene	50.0000	47.9446	4.1	89	0.00
41	T	Carbon Tetrachloride	50.0000	48.9243	2.2	87	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	90.1562	9.8	89	0.01
43	S	1,2-Dichloroethane-d4	50.0000	25.4760	49.0#	52	0.00
44	T	1,2-Dichloroethane	50.0000	44.4746	11.1	87	0.01
45	T	Benzene	50.0000	44.4434	11.1	88	0.00
46	T	Trichloroethene	50.0000	44.7658	10.5	84	0.00
47	T	Methylcyclohexane	50.0000	51.7832	-3.6	97	0.00
48	C	1,2-Dichloropropane	50.0000	46.6537	6.7	90	0.00
49	T	1,4-Dioxane	200.0000	199.1407	0.4	100	0.00
50	T	Bromodichloromethane	50.0000	47.5500	4.9	89	0.01
51	T	Dibromomethane	50.0000	43.4414	13.1	84	0.01
52	T	2-Chloroethyl Vinyl Ether	50.0000	45.8409	8.3	82	0.00
53	T	4-Methyl-2-Pentanone	50.0000	45.6283	8.7	88	0.00
54	T	cis-1,3-Dichloropropene	50.0000	49.4171	1.2	89	0.00

(#) = Out of Range
11M17247.D 8260WT.M Mon Apr 03 17:01:24 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\040317\11M17247.D Vial: 1
Acq On : 3 Apr 2017 16:20 Operator: ADC
Sample : WG608584-02 50ug/L CCV 8260 Inst : hpms11
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

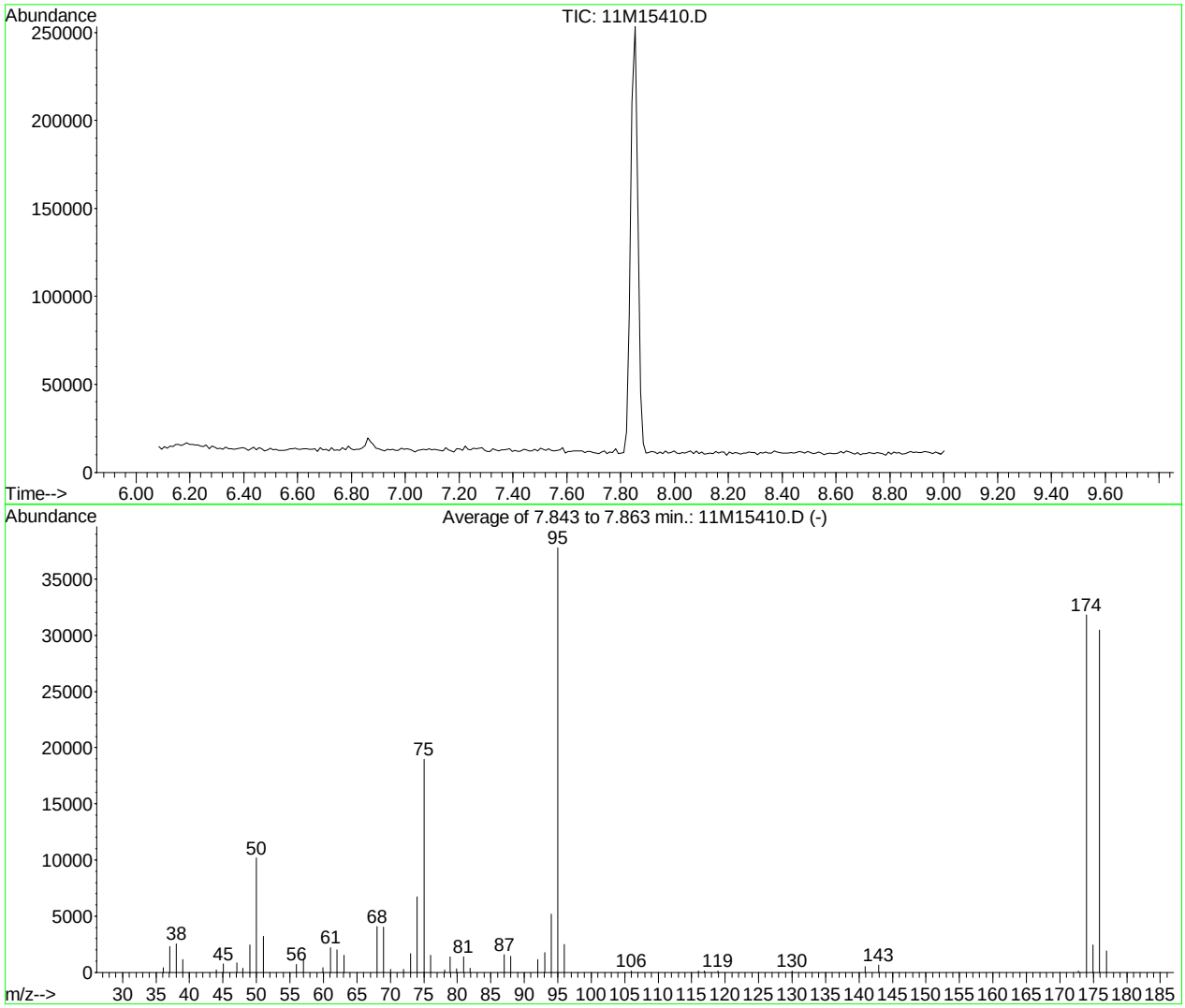
		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	48.9268	2.1	93	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	103	0.01
57	S	Toluene-d8	50.0000	25.9780	48.0#	54	0.00
58	C	Toluene	50.0000	44.7874	10.4	87	0.00
59	T	Ethyl Methacrylate	50.0000	49.2180	1.6	89	0.00
60	T	trans-1,3-Dichloropropene	50.0000	48.6287	2.7	86	0.00
61	T	1,1,2-Trichloroethane	50.0000	43.5878	12.8	83	0.01
62	T	2-Hexanone	50.0000	48.3706	3.3	91	0.00
63	T	1,3-Dichloropropane	50.0000	43.4381	13.1	84	0.00
64	T	Tetrachloroethene	50.0000	47.0590	5.9	88	0.01
65	T	Dibromochloromethane	50.0000	47.5337	4.9	85	0.00
66	T	1,2-Dibromoethane	50.0000	42.4124	15.2	82	0.00
67	T	1-Chlorohexane	50.0000	50.0888	-0.2	94	0.00
68	P	Chlorobenzene	50.0000	44.3699	11.3	85	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	47.2189	5.6	85	0.00
70	C	Ethylbenzene	50.0000	45.8989	8.2	87	0.00
71	T	m-,p-Xylene	100.0000	91.7473	8.3	86	0.00
72	T	o-Xylene	50.0000	45.9978	8.0	86	0.00
73	T	Styrene	50.0000	49.8010	0.4	86	0.00
74	P	Bromoform	50.0000	41.0153	18.0	82	0.01
75	T	Isopropylbenzene	50.0000	46.3905	7.2	86	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	105	0.01
77	P	1,1,2,2-Tetrachloroethane	50.0000	44.0082	12.0	82	0.01
78	S	p-Bromofluorobenzene	50.0000	24.7612	50.5#	50	0.01
79	T	1,2,3-Trichloropropane	50.0000	41.5857	16.8	79	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	44.5951	10.8	92	0.01
81	T	n-Propylbenzene	50.0000	44.2452	11.5	89	0.01
82	T	Bromobenzene	50.0000	43.4402	13.1	84	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	46.5334	6.9	87	0.00
84	T	2-Chlorotoluene	50.0000	47.8860	4.2	99	0.01
85	T	4-Chlorotoluene	50.0000	38.0400	23.9	74	0.01
86	T	a-Methylstyrene	50.0000	47.8132	4.4	90	0.01
87	T	tert-Butylbenzene	50.0000	44.7418	10.5	86	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	42.6286	14.7	86	0.00
89	T	sec-Butylbenzene	50.0000	44.1696	11.7	87	0.00
90	T	p-Isopropyltoluene	50.0000	44.9213	10.2	87	0.00
91	T	1,3-Dichlorobenzene	50.0000	44.3447	11.3	86	0.00
92	T	1,4-Dichlorobenzene	50.0000	43.9452	12.1	85	0.00
93	T	n-Butylbenzene	50.0000	48.8314	2.3	88	0.01
94	T	1,2-Dichlorobenzene	50.0000	42.6064	14.8	84	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	45.8073	8.4	83	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	46.8276	6.3	86	0.00
97	T	Hexachlorobutadiene	50.0000	48.0809	3.8	88	0.00
98	T	Naphthalene	50.0000	42.3026	15.4	78	0.01
99	T	1,2,3-Trichlorobenzene	50.0000	43.8434	12.3	82	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M17247.D 8260WT.M Mon Apr 03 17:01:24 2017 Page 2

2.1.1.5 Raw QC Data

CLPBFB

Data File : C:\MSDCHEM\1\DATA\112916\11M15410.D Vial: 1
Acq On : 29 Nov 2016 14:38 Operator: JDS
Sample : WG593075-01 BFB 50ng 8260 Inst : hpms11
Misc : 1,1 STD78474 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11



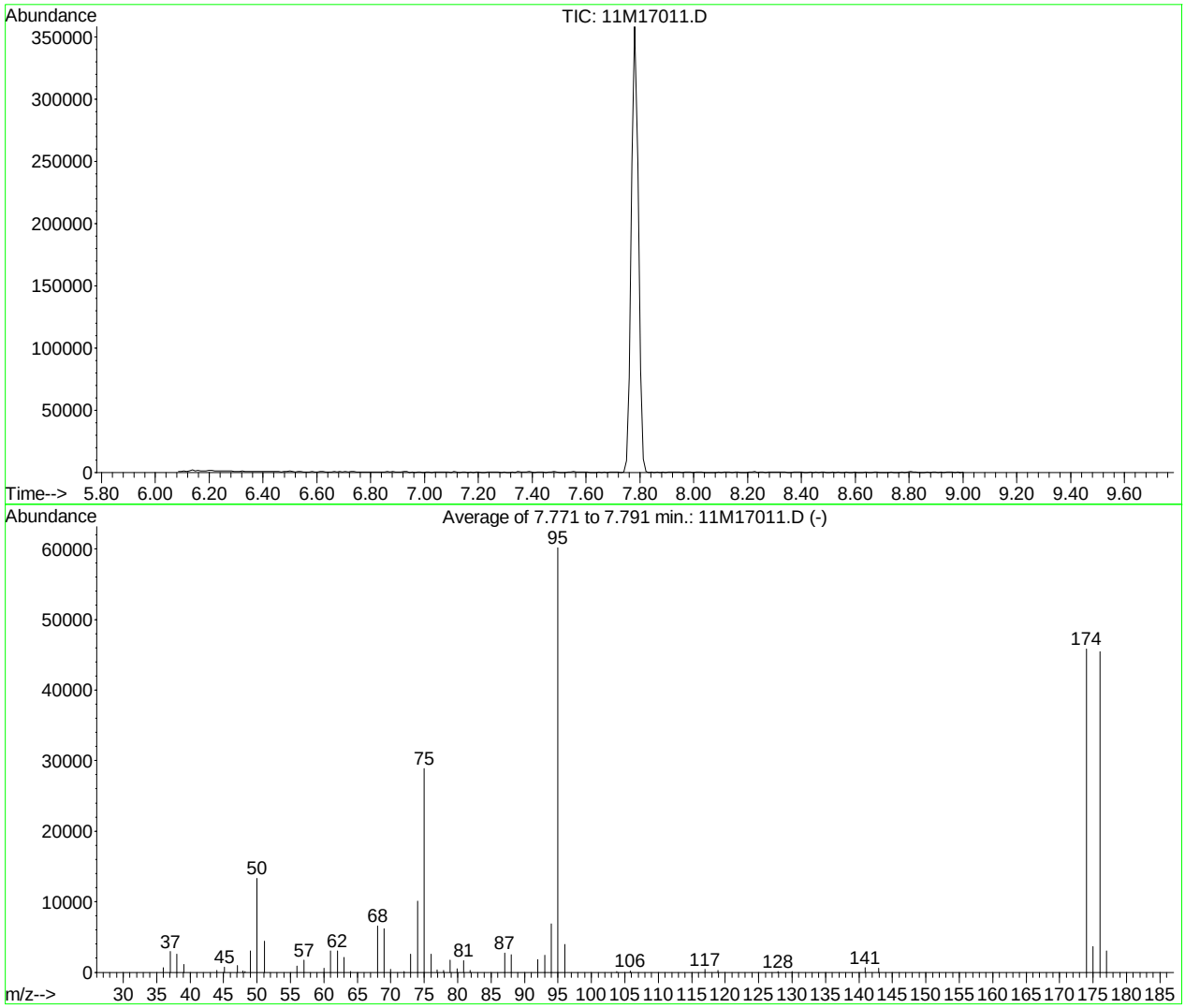
AutoFind: Scans 171, 172, 173; Background Corrected with Scan 165

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.9	10170	PASS
75	95	30	60	50.2	18975	PASS
95	95	100	100	100.0	37813	PASS
96	95	5	9	6.5	2474	PASS
173	174	0.00	2	0.4	114	PASS
174	95	50	100	84.1	31818	PASS
175	174	5	9	7.6	2425	PASS
176	174	95	101	95.8	30490	PASS
177	176	5	9	6.2	1892	PASS

11M15410.D A9FOOW.M Wed Nov 30 09:54:46 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\032417\11M17011.D          Vial: 1
Acq On    : 24 Mar 2017  13:48                       Operator: JDS
Sample    : WG607620-01 50ng BFB                     Inst    : hpms11
Misc      : 1,1 STD80989                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
```



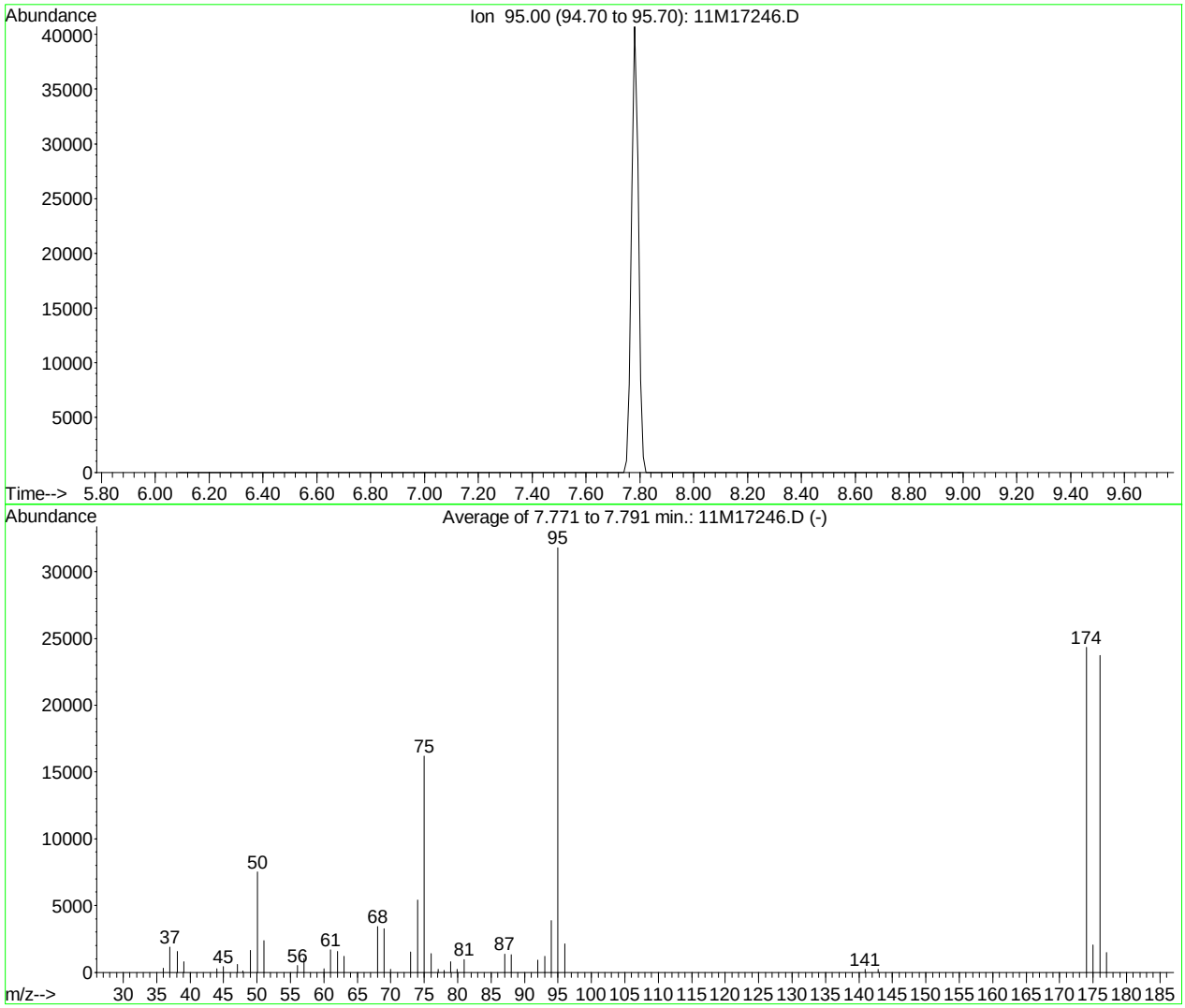
AutoFind: Scans 164, 165, 166; Background Corrected with Scan 159

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.1	13277	PASS
75	95	30	60	47.9	28850	PASS
95	95	100	100	100.0	60181	PASS
96	95	5	9	6.6	3955	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.1	45818	PASS
175	174	5	9	7.9	3624	PASS
176	174	95	101	99.2	45474	PASS
177	176	5	9	6.7	3056	PASS

11M17011.D 8260WT.M Wed Mar 29 10:53:52 2017

BFB

```
Data File : C:\MSDCHEM\1\DATA\040317\11M17246.D          Vial: 2
Acq On    :  3 Apr 2017  15:55                       Operator: ADC
Sample    : WG608584-01 50ng BFB                     Inst    : hpms11
Misc      : 1,1 STD80989                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
```



AutoFind: Scans 164, 165, 166; Background Corrected with Scan 159

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.7	7532	PASS
75	95	30	60	50.9	16180	PASS
95	95	100	100	100.0	31800	PASS
96	95	5	9	6.7	2115	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.5	24336	PASS
175	174	5	9	8.4	2054	PASS
176	174	95	101	97.4	23714	PASS
177	176	5	9	6.2	1475	PASS

11M17246.D 8260WT.M Mon Apr 03 17:00:31 2017

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040317\11M17249.D Vial: 3
Acq On : 3 Apr 2017 17:24 Operator: ADC
Sample : WG608588-01 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 04 11:54:34 2017 Quant Results File: 8260WT.RES

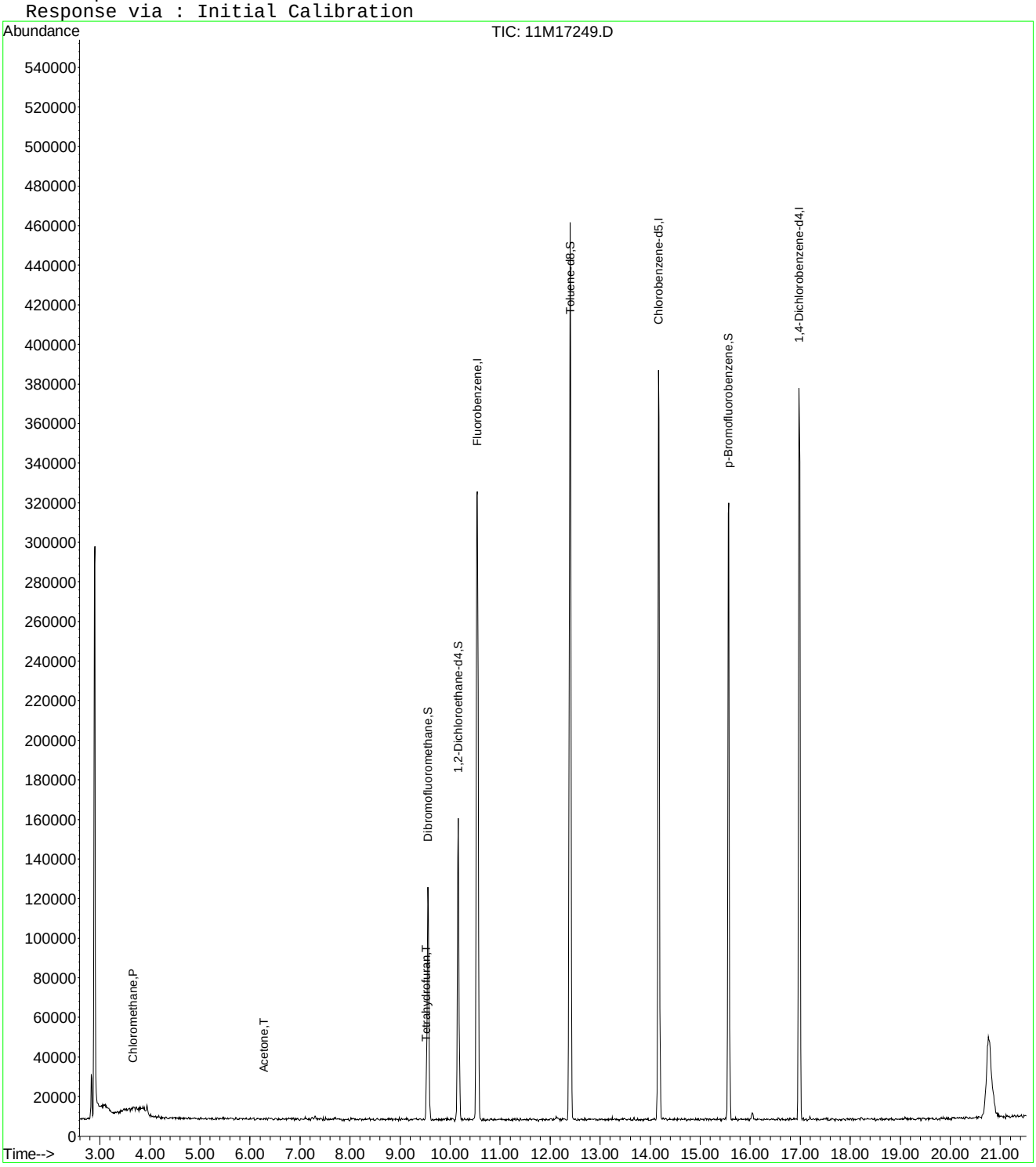
Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

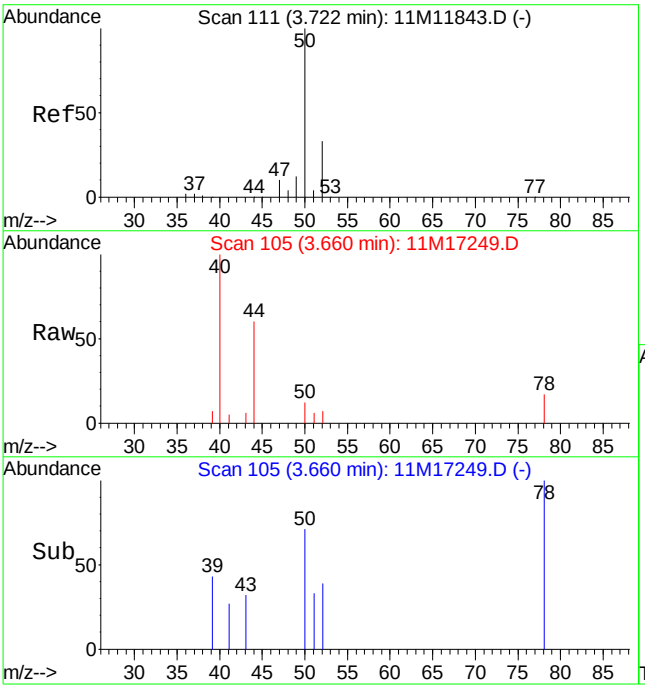
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.55	96	367965	25.00	ug/L	0.01
56) Chlorobenzene-d5	14.17	117	251654	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	16.98	152	116822	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.55	111	95552	24.9840	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.92%			
43) 1,2-Dichloroethane-d4	10.16	65	123435	25.2945	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.16%			
57) Toluene-d8	12.40	98	371757	26.3862	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.56%			
78) p-Bromofluorobenzene	15.56	95	134642	27.8059	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.24%			
Target Compounds						Qvalue
3) Chloromethane	3.66	50	1823	0.2467	ug/L #	41
13) Acetone	6.28	43	193	0.1302	ug/L #	46
36) Tetrahydrofuran	9.52	42	253	0.1511	ug/L #	41

(#) = qualifier out of range (m) = manual integration
11M17249.D 8260WT.M Tue Apr 04 11:54:35 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\040317\11M17249.D Vial: 3
Acq On : 3 Apr 2017 17:24 Operator: ADC
Sample : WG608588-01 BLANK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 4 11:54 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration

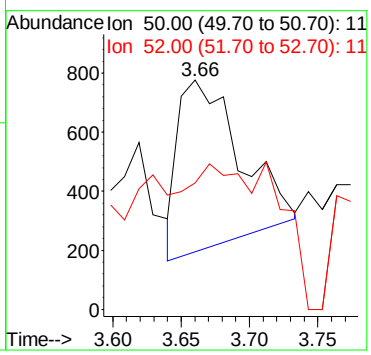


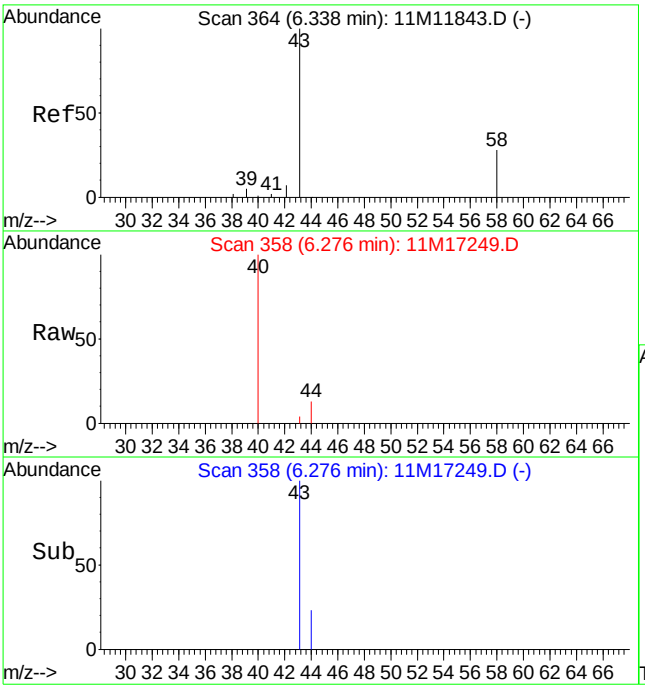


#3
Chloromethane
Concen: 0.25 ug/L
RT: 3.66 min Scan# 105
Delta R.T. -0.01 min
Lab File: 11M17249.D
Acq: 3 Apr 2017 17:24

Tgt Ion: 50 Resp: 1823

Ion	Ratio	Lower	Upper
50	100		
52	0.0	20.3	47.3#

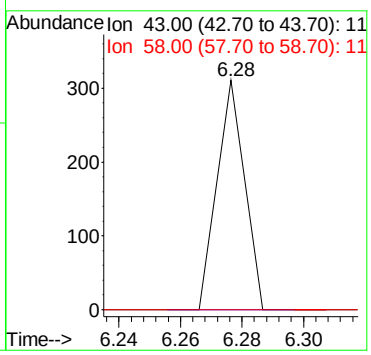


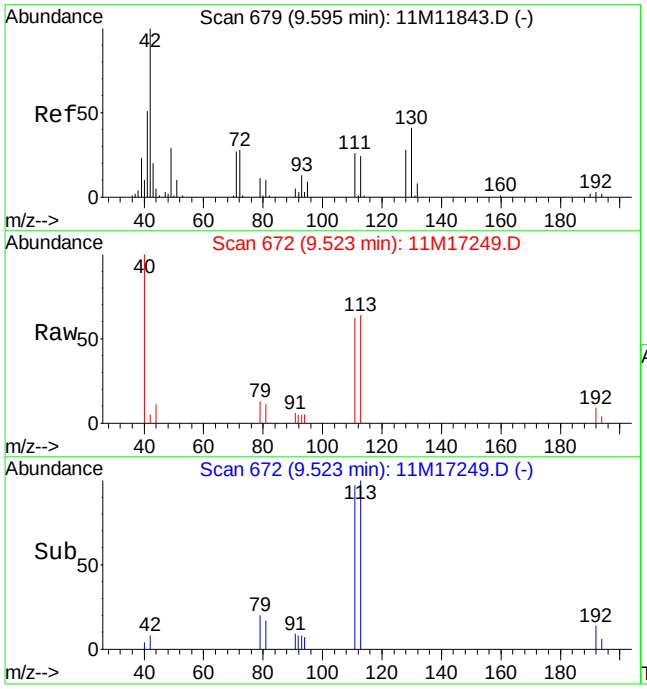


#13
Acetone
Concen: 0.13 ug/L
RT: 6.28 min Scan# 358
Delta R.T. 0.01 min
Lab File: 11M17249.D
Acq: 3 Apr 2017 17:24

Tgt Ion: 43 Resp: 193

Ion	Ratio	Lower	Upper
43	100		
58	0.0	17.5	40.7#

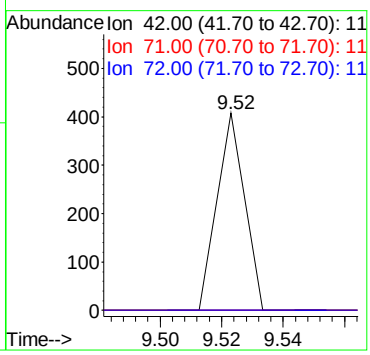




#36
Tetrahydrofuran
Concen: 0.15 ug/L
RT: 9.52 min Scan# 672
Delta R.T. 0.00 min
Lab File: 11M17249.D
Acq: 3 Apr 2017 17:24

Tgt Ion: 42 Resp: 253

Ion	Ratio	Lower	Upper
42	100		
71	0.0	19.9	46.3#
72	0.0	21.0	49.0#



Data File : C:\MSDchem\1\data\040317\11M17250.D Vial: 4
Acq On : 3 Apr 2017 17:54 Operator: ADC
Sample : WG608588-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD81253 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 03 18:16:04 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.55	96	368188	25.00	ug/L	0.01
56) Chlorobenzene-d5	14.18	117	256914	25.00	ug/L	0.01
76) 1,4-Dichlorobenzene-d4	16.98	152	129531	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.55	111	99699	26.0525	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.20%			
43) 1,2-Dichloroethane-d4	10.16	65	127686	26.1498	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.60%			
57) Toluene-d8	12.40	98	391693	27.2320	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 108.92%			
78) p-Bromofluorobenzene	15.56	95	146758	27.3344	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.32%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.23	85	146790	24.1165	ug/L	99
3) Chloromethane	3.68	50	158239	21.4007	ug/L	100
4) Vinyl Chloride	3.91	62	131453	21.5769	ug/L	98
5) 1,3-Butadiene	3.95	54	90486	29.8605	ug/L	98
6) Bromomethane	4.80	94	71295	22.4265	ug/L	98
7) Chloroethane	4.95	64	95594	24.7028	ug/L	98
8) Trichlorofluoromethane	5.43	101	154329	23.3184	ug/L	99
9) Diethyl ether	5.95	59	524556	108.7972	ug/L	93
10) Isoprene	5.99	67	171619	25.6016	ug/L	95
11) Acrolein	6.17	56	116492	141.6386	ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	91141	23.0269	ug/L	100
13) Acetone	6.28	43	26632	17.9560	ug/L	98
14) 1,1-Dichloroethene	6.49	61	183011	23.9234	ug/L	98
15) Tert-Butyl Alcohol	6.60	59	59357	116.7792	ug/L	95
16) Dimethyl Sulfide	6.75	62	145933	24.2140	ug/L	92
17) Iodomethane	7.00	142	112825	22.0992	ug/L	99
18) Methyl acetate	7.00	43	113811	27.3607	ug/L	96
19) Methylene Chloride	7.25	84	108667	21.9696	ug/L	85
20) Carbon Disulfide	7.30	76	257602	20.1674	ug/L	99
21) Acrylonitrile	7.42	53	44409	22.1728	ug/L	100
22) Methyl Tert Butyl Ether	7.46	73	280189	21.7061	ug/L	96
23) trans-1,2-Dichloroethene	7.69	96	99683	23.2248	ug/L	95
24) n-Hexane	7.75	57	184077	25.2852	ug/L	97
25) Diisopropyl ether	8.09	45	2211820	119.8032	ug/L	97
26) Vinyl Acetate	8.25	43	197698	20.8199	ug/L	98
27) 1,1-Dichloroethane	8.28	63	229325	23.7164	ug/L	99
28) Ethyl-Tert-Butyl ether	8.63	59	1777744	105.9968	ug/L	97
29) 2-Butanone	8.81	43	49090	20.6413	ug/L	92
30) Propionitrile	8.91	54	70900	93.6692	ug/L	98
31) 2,2-Dichloropropane	9.03	77	161332	24.5013	ug/L	98
32) cis-1,2-Dichloroethene	9.09	96	113168	22.3172	ug/L	89
33) Chloroform	9.29	83	188234	21.6192	ug/L	99
35) Bromochloromethane	9.50	130	63202	22.9429	ug/L	83
36) Tetrahydrofuran	9.52	42	185242	110.5930	ug/L	91
38) 1,1,1-Trichloroethane	9.79	97	168092	24.1950	ug/L	97
39) Cyclohexane	9.82	56	217313	22.5522	ug/L	93
40) 1,1-Dichloropropene	9.97	75	142786	23.8101	ug/L	98
41) Carbon Tetrachloride	10.11	117	138581	24.5118	ug/L	100
42) Tert-Amyl-Methyl ether	10.07	73	1433373	109.5555	ug/L	96
44) 1,2-Dichloroethane	10.28	62	155755	22.3493	ug/L	97

(#) = qualifier out of range (m) = manual integration
11M17250.D 8260WT.M Mon Apr 03 18:16:05 2017 Page 1

Data File : C:\MSDchem\1\data\040317\11M17250.D Vial: 4
Acq On : 3 Apr 2017 17:54 Operator: ADC
Sample : WG608588-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD81253 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 03 18:16:04 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

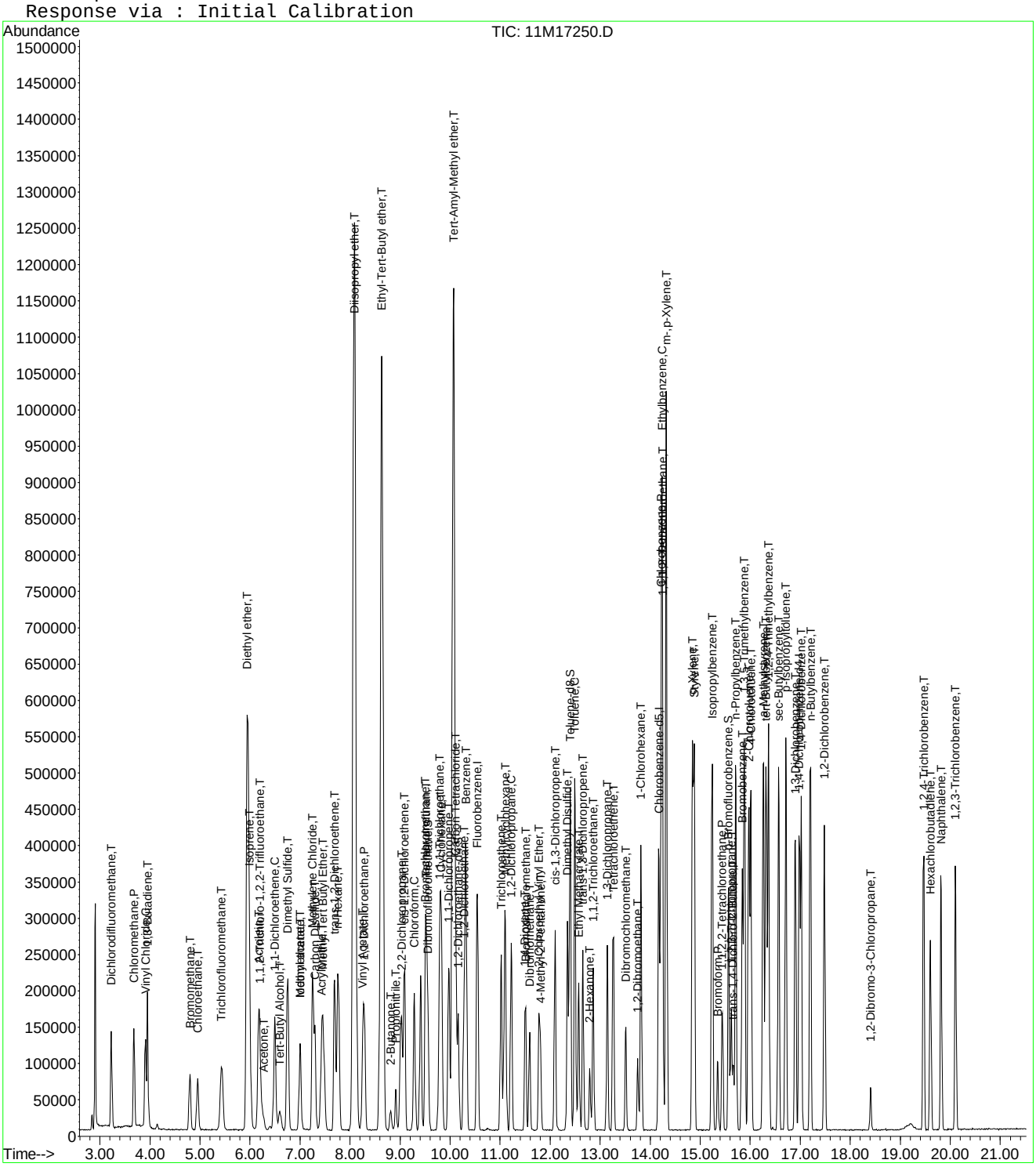
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) Benzene	10.32	78	423959	23.5871 ug/L	99
46) Trichloroethene	11.02	130	96112	21.9138 ug/L	98
47) Methylcyclohexane	11.10	83	164687	22.3553 ug/L	94
48) 1,2-Dichloropropane	11.22	63	131343	22.9741 ug/L	96
49) 1,4-Dioxane	11.50	88	3564	81.0492 ug/L	87
50) Bromodichloromethane	11.51	83	136383	22.4993 ug/L	99
51) Dibromomethane	11.59	93	61322	22.1153 ug/L	98
52) 2-Chloroethyl Vinyl Ether	11.78	63	68562	22.2383 ug/L	97
53) 4-Methyl-2-Pentanone	11.81	58	41262	20.4480 ug/L	93
54) cis-1,3-Dichloropropene	12.10	75	174660	24.8238 ug/L	98
55) Dimethyl Disulfide	12.35	79	98291	22.2940 ug/L	98
58) Toluene	12.49	91	430621	23.9054 ug/L	95
59) Ethyl Methacrylate	12.57	69	127289	23.6072 ug/L	93
60) trans-1,3-Dichloropropene	12.66	75	146072	23.4556 ug/L	97
61) 1,1,2-Trichloroethane	12.86	97	85803	21.8489 ug/L	98
62) 2-Hexanone	12.79	43	77387	22.6082 ug/L	91
63) 1,3-Dichloropropane	13.14	76	155756	22.6158 ug/L	91
64) Tetrachloroethene	13.27	164	81962	23.8398 ug/L	97
65) Dibromochloromethane	13.51	129	94359	22.4220 ug/L	100
66) 1,2-Dibromoethane	13.75	107	78051	21.0136 ug/L	99
67) 1-Chlorohexane	13.81	91	135436	22.9148 ug/L	90
68) Chlorobenzene	14.22	112	260831	22.7793 ug/L	97
69) 1,1,1,2-Tetrachloroethane	14.25	131	94454	22.8490 ug/L	99
70) Ethylbenzene	14.24	106	149320	23.0486 ug/L	83
71) m-,p-Xylene	14.32	106	352369	48.0013 ug/L	84
72) o-Xylene	14.85	106	176717	23.1127 ug/L	91
73) Styrene	14.88	104	289212	25.1034 ug/L	98
74) Bromoform	15.35	173	59528	19.2267 ug/L	96
75) Isopropylbenzene	15.24	105	440507	24.2972 ug/L	95
77) 1,1,2,2-Tetrachloroethane	15.44	83	110376	22.9220 ug/L	100
79) 1,2,3-Trichloropropane	15.62	110	28928	21.1982 ug/L	96
80) trans-1,4-Dichloro-2-Buten	15.65	53	28859	16.8004 ug/L	79
81) n-Propylbenzene	15.71	91	533797	23.8364 ug/L	94
82) Bromobenzene	15.84	156	115502	22.5981 ug/L	98
83) 1,3,5-Trimethylbenzene	15.88	105	371040	24.8625 ug/L	97
84) 2-Chlorotoluene	15.97	91	382582	25.6794 ug/L	95
85) 4-Chlorotoluene	16.02	91	282803	20.2747 ug/L	95
86) a-Methylstyrene	16.26	118	201206	23.5280 ug/L	96
87) tert-Butylbenzene	16.32	134	81135	23.2525 ug/L	81
88) 1,2,4-Trimethylbenzene	16.37	105	383338	22.9569 ug/L	95
89) sec-Butylbenzene	16.56	105	470675	23.7387 ug/L	95
90) p-Isopropyltoluene	16.71	119	396669	24.0543 ug/L	97
91) 1,3-Dichlorobenzene	16.91	146	208314	22.3803 ug/L	98
92) 1,4-Dichlorobenzene	17.02	146	207000	22.2405 ug/L	100
93) n-Butylbenzene	17.21	91	377284	25.2506 ug/L	96
94) 1,2-Dichlorobenzene	17.48	146	206129	22.2853 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.40	75	19036	21.3491 ug/L	93
96) 1,2,4-Trichlorobenzene	19.47	180	147290	23.5186 ug/L	98
97) Hexachlorobutadiene	19.60	225	71573	23.8783 ug/L	98
98) Naphthalene	19.82	128	330344	23.4322 ug/L	99
99) 1,2,3-Trichlorobenzene	20.10	180	143776	23.1160 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M17250.D 8260WT.M Mon Apr 03 18:16:05 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\040317\11M17250.D Vial: 4
Acq On : 3 Apr 2017 17:54 Operator: ADC
Sample : WG608588-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD81253 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 3 18:16 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



Data File : C:\MSDchem\1\data\040317\11M17251.D Vial: 5
Acq On : 3 Apr 2017 18:23 Operator: ADC
Sample : WG608588-03 20ug/L LCS2 8260 Inst : hpms11
Misc : 1,1 STD81253 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 03 18:45:21 2017 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.55	96	375878	25.00	ug/L	0.01
56) Chlorobenzene-d5	14.18	117	264199	25.00	ug/L	0.01
76) 1,4-Dichlorobenzene-d4	16.98	152	131472	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.55	111	98982	25.3360	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.36%			
43) 1,2-Dichloroethane-d4	10.16	65	125740	25.2244	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.88%			
57) Toluene-d8	12.40	98	382221	25.8407	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.36%			
78) p-Bromofluorobenzene	15.56	95	141643	25.9922	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.96%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.22	85	143919	23.1743	ug/L	99
3) Chloromethane	3.67	50	157767	20.9003	ug/L	99
4) Vinyl Chloride	3.90	62	129048	20.7488	ug/L	98
5) 1,3-Butadiene	3.94	54	87939	28.3026	ug/L	99
6) Bromomethane	4.79	94	72778	22.4246	ug/L	99
7) Chloroethane	4.94	64	96038	24.3098	ug/L	98
8) Trichlorofluoromethane	5.43	101	152961	22.6388	ug/L	98
9) Diethyl ether	5.95	59	530734	107.8265	ug/L	93
10) Isoprene	5.98	67	172072	25.1440	ug/L	96
11) Acrolein	6.17	56	119329	142.1197	ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	90705	22.4575	ug/L	99
13) Acetone	6.28	43	30371	20.0580	ug/L	98
14) 1,1-Dichloroethene	6.49	61	181715	23.2680	ug/L	97
15) Tert-Butyl Alcohol	6.60	59	68214	131.4589	ug/L	96
16) Dimethyl Sulfide	6.75	62	147826	24.0263	ug/L	92
17) Iodomethane	6.99	142	114121	21.9071	ug/L	98
18) Methyl acetate	7.00	43	117616	27.6969	ug/L	97
19) Methylene Chloride	7.25	84	108398	21.4669	ug/L	83
20) Carbon Disulfide	7.29	76	254957	19.5520	ug/L	98
21) Acrylonitrile	7.42	53	47135	23.0524	ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	289995	22.0062	ug/L	96
23) trans-1,2-Dichloroethene	7.68	96	100643	22.9688	ug/L	96
24) n-Hexane	7.75	57	183391	24.6756	ug/L	96
25) Diisopropyl ether	8.09	45	2214955	117.5185	ug/L	97
26) Vinyl Acetate	8.25	43	203739	21.0172	ug/L	98
27) 1,1-Dichloroethane	8.28	63	229340	23.2327	ug/L	99
28) Ethyl-Tert-Butyl ether	8.63	59	1793783	104.7649	ug/L	97
29) 2-Butanone	8.81	43	52220	21.5082	ug/L	94
30) Propionitrile	8.91	54	74466	96.3677	ug/L	96
31) 2,2-Dichloropropane	9.03	77	159315	23.7000	ug/L	99
32) cis-1,2-Dichloroethene	9.09	96	113901	22.0022	ug/L	91
33) Chloroform	9.29	83	188520	21.2091	ug/L	99
35) Bromochloromethane	9.50	130	64386	22.8945	ug/L	85
36) Tetrahydrofuran	9.52	42	193511	113.1661	ug/L	92
38) 1,1,1-Trichloroethane	9.78	97	166717	23.5061	ug/L	98
39) Cyclohexane	9.81	56	217364	22.0960	ug/L	94
40) 1,1-Dichloropropene	9.97	75	140884	23.0123	ug/L	98
41) Carbon Tetrachloride	10.11	117	135929	23.5509	ug/L	99
42) Tert-Amyl-Methyl ether	10.07	73	1466115	109.7654	ug/L	97
44) 1,2-Dichloroethane	10.28	62	158307	22.2508	ug/L	97

(#) = qualifier out of range (m) = manual integration
11M17251.D 8260WT.M Mon Apr 03 18:45:22 2017 Page 1

Data File : C:\MSDchem\1\data\040317\11M17251.D Vial: 5
Acq On : 3 Apr 2017 18:23 Operator: ADC
Sample : WG608588-03 20ug/L LCS2 8260 Inst : hpms11
Misc : 1,1 STD81253 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 03 18:45:21 2017 Quant Results File: 8260WT.RES

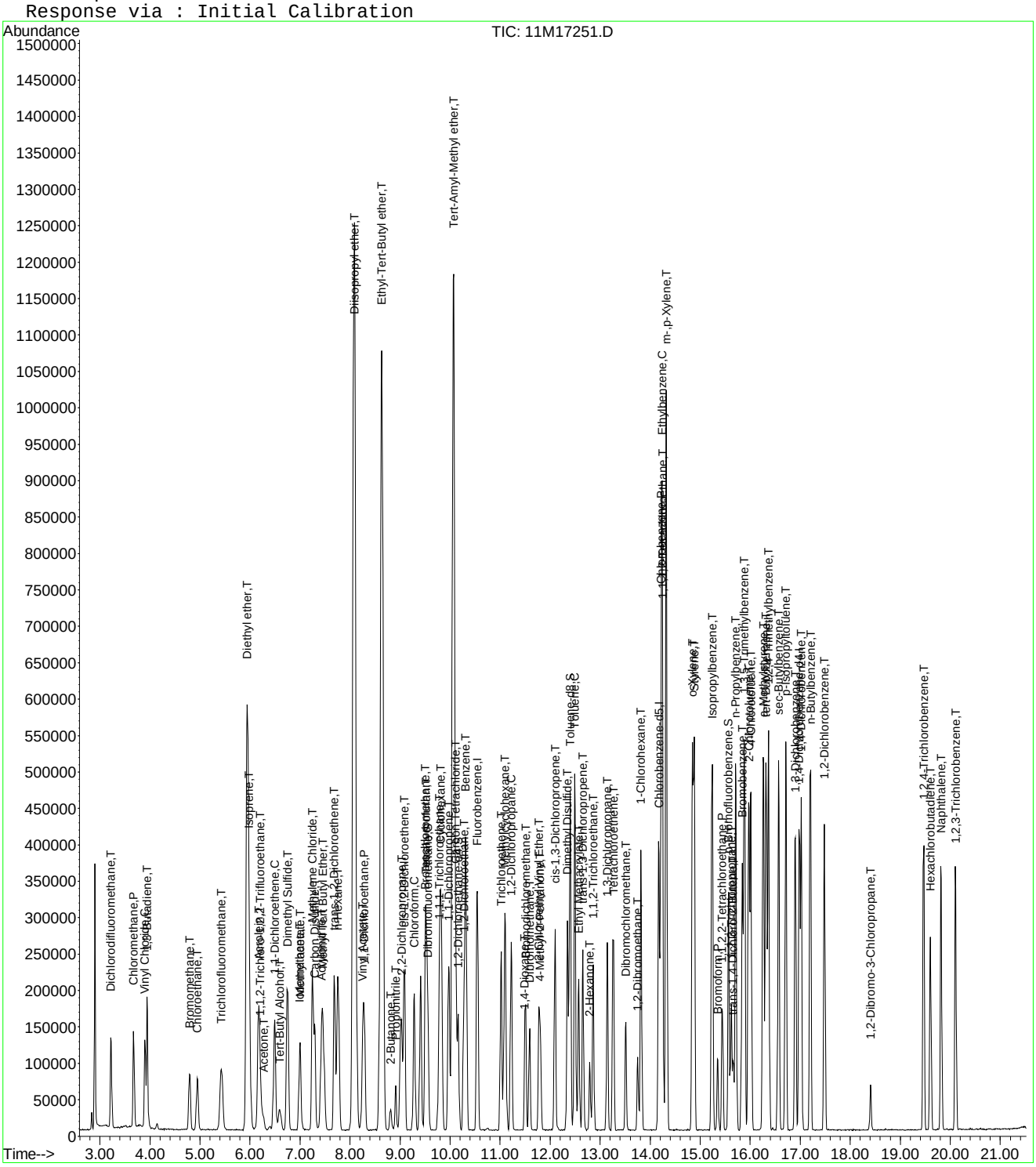
Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	Benzene	10.31	78	425495	23.1882 ug/L	98
46)	Trichloroethene	11.02	130	97328	21.7371 ug/L	99
47)	Methylcyclohexane	11.09	83	164672	21.8960 ug/L	93
48)	1,2-Dichloropropane	11.22	63	135284	23.1793 ug/L	94
49)	1,4-Dioxane	11.49	88	4367	97.2785 ug/L	86
50)	Bromodichloromethane	11.51	83	137763	22.2620 ug/L	99
51)	Dibromomethane	11.59	93	63383	22.3910 ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.78	63	70737	22.4743 ug/L	96
53)	4-Methyl-2-Pentanone	11.80	58	44030	21.3734 ug/L	95
54)	cis-1,3-Dichloropropene	12.10	75	175803	24.4751 ug/L	100
55)	Dimethyl Disulfide	12.35	79	97491	21.6602 ug/L	96
58)	Toluene	12.49	91	434510	23.4562 ug/L	96
59)	Ethyl Methacrylate	12.57	69	131030	23.6309 ug/L	94
60)	trans-1,3-Dichloropropene	12.66	75	146949	22.9458 ug/L	97
61)	1,1,2-Trichloroethane	12.86	97	87672	21.7093 ug/L	97
62)	2-Hexanone	12.79	43	80591	22.8951 ug/L	93
63)	1,3-Dichloropropane	13.14	76	163446	23.0780 ug/L	95
64)	Tetrachloroethene	13.27	164	81261	22.9841 ug/L	100
65)	Dibromochloromethane	13.51	129	97531	22.5367 ug/L	99
66)	1,2-Dibromoethane	13.75	107	81090	21.2282 ug/L	99
67)	1-Chlorohexane	13.81	91	136122	22.4000 ug/L	93
68)	Chlorobenzene	14.22	112	262387	22.2833 ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.25	131	96446	22.6876 ug/L	99
70)	Ethylbenzene	14.24	106	148656	22.3134 ug/L	83
71)	m-,p-Xylene	14.32	106	355317	47.0682 ug/L	85
72)	o-Xylene	14.85	106	175397	22.3075 ug/L	89
73)	Styrene	14.88	104	291685	24.6199 ug/L	97
74)	Bromoform	15.35	173	61547	19.3276 ug/L	99
75)	Isopropylbenzene	15.24	105	437790	23.4815 ug/L	95
77)	1,1,2,2-Tetrachloroethane	15.44	83	114388	23.4045 ug/L	98
79)	1,2,3-Trichloropropane	15.62	110	31103	22.4555 ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.65	53	29416	16.8689 ug/L	75
81)	n-Propylbenzene	15.71	91	535279	23.5497 ug/L	93
82)	Bromobenzene	15.84	156	115352	22.2356 ug/L	96
83)	1,3,5-Trimethylbenzene	15.88	105	375953	24.8198 ug/L	96
84)	2-Chlorotoluene	15.97	91	322134	21.3028 ug/L	94
85)	4-Chlorotoluene	16.02	91	277130	19.5747 ug/L	96
86)	a-Methylstyrene	16.26	118	201841	23.2538 ug/L	96
87)	tert-Butylbenzene	16.32	134	81300	22.9558 ug/L	81
88)	1,2,4-Trimethylbenzene	16.37	105	384942	22.7126 ug/L	95
89)	sec-Butylbenzene	16.56	105	469537	23.3317 ug/L	95
90)	p-Isopropyltoluene	16.71	119	396134	23.6672 ug/L	97
91)	1,3-Dichlorobenzene	16.91	146	210022	22.2307 ug/L	97
92)	1,4-Dichlorobenzene	17.02	146	213907	22.6433 ug/L	96
93)	n-Butylbenzene	17.21	91	375978	24.7917 ug/L	94
94)	1,2-Dichlorobenzene	17.48	146	208670	22.2270 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.40	75	20440	22.5853 ug/L	93
96)	1,2,4-Trichlorobenzene	19.47	180	148993	23.4393 ug/L	98
97)	Hexachlorobutadiene	19.60	225	70685	23.2338 ug/L	98
98)	Naphthalene	19.82	128	345127	24.1194 ug/L	99
99)	1,2,3-Trichlorobenzene	20.11	180	145216	23.0028 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M17251.D 8260WT.M Mon Apr 03 18:45:22 2017 Page 2

Data File : C:\MSDchem\1\data\040317\11M17251.D Vial: 5
Acq On : 3 Apr 2017 18:23 Operator: ADC
Sample : WG608588-03 20ug/L LCS2 8260 Inst : hpms11
Misc : 1,1 STD81253 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 3 18:45 2017 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 032417 HPMS11
Last Update : Sat Mar 25 12:46:14 2017
Response via : Initial Calibration



2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3520C	**Prep Date:**	04/03/2017 09:30
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	03/21/2017 13:29
Workgroup #:	WG608809	**Analyst:**	SCB	**Run Date:**	04/05/2017 12:27
Collect Date:	03/29/2017 15:00	**Dilution:**	5	**File ID:**	15M20980
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	22.5	J	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	486	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG608522
Analyst: JDH
Spike Analyst: JDH
Method: 3520C
Run Date: 04/03/2017 09:30
SOP: EXB01 Revison 20
Spike Witness: JLD
Surr Solution: STD80323

TIME ON: 14:30 OFF: 08:30 ON: _____ OFF: _____
Methylene Chloride Lot #: COA19595
Sodium Sulfate , Anhydrous , Granul Lot #: COA19381
1:1 H2SO4 Lot #: RGT39543

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L17031689-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Colored
2	L17031690-01	SAMP		827-DIOXANE	<2	900 mL	.05 mL			1 mL	Colored
3	L17040002-01	ML01		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD77209	1 mL	Transparent
4	L17040004-01	ML01		827-DIOXANE	<2	1000 mL	.05 mL	.01 mL	STD77209	1 mL	Transparent
5	WG608522-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	WG608522-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD77209	1 mL	Transparent
7	WG608522-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD77209	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.
pH 0-3 Lot#230515
TV1P5,6

L17040002-01	LOD
L17040004-01	LOQ

Analyst: Justin Hixson

Reviewer: Jessica DeLong

EXTRACT - Modified 01/23/2009
PDF ID: 5230379
Report generated: 04/04/2017 16:02

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 032117
Analyst1: SCB Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 28

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA
Workgroups: WG606959, WG606673
Internal STD: STD81022 Surrogate STD: NA Calibration STD
CCV STD: STD80097 LCS STD: MS/MSD STD:

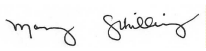
Comments: File 15M20885 does not exist

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M20882	BAKE OUT	1	1		03/21/17 08:57
2	15M20883	WG606959-01 5PPM LL DFTPP	1	1	STD80383	03/21/17 09:16
3	15M20884	WG606959-01 5PPM LL DFTPP	1	1	STD80383	03/21/17 09:33
4	15M20886	WG606959-01 5PPM LL DFTPP	1	1	STD80383	03/21/17 10:43
5	15M20887	WG606959-01 5PPM LL DFTPP	1	1	STD80383	03/21/17 11:00
6	15M20888	WG606959-01 5PPM LL DFTPP	1	1	STD80383	03/21/17 11:17
7	15M20889	WG606959-02 5PPM 1,4-DIOXSTD	1	1	STD80097	03/21/17 11:36
8	15M20890	WG606959-03 10PPM 1,4-DIOX STD	1	1	STD80097	03/21/17 11:59
9	15M20891	WG606959-04 7.5PPM 1,4-DIOX STD	1	1	STD80097	03/21/17 12:22
10	15M20892	WG606959-05 2.5PPM 1,4-DIOX STD	1	1	STD80097	03/21/17 12:44
11	15M20893	WG606959-06 1PPM 1,4-DIOX STD	1	1	STD80097	03/21/17 13:07
12	15M20894	WG606959-07 0.4PPM 1,4-DIOX STD	1	1	STD80097	03/21/17 13:29
13	15M20895	WG606959-08 5PPM 1,4-DIOX ALT SRC	1	1	STD80098	03/21/17 13:51
14	15M20896	WG606465-01 BLANK 3/16	1	1		03/21/17 14:14
15	15M20897	WG606465-02 LCS 3/16	1	1		03/21/17 14:37
16	15M20898	WG606465-03 LCS2 3/16	1	1		03/21/17 15:00
17	15M20899	L17030724-01	1	1		03/21/17 15:22
18	15M20900	L17030724-01 10X	1	10		03/21/17 15:45
19	15M20901	BAKE OUT	1	1		03/21/17 16:07
20	15M20902	BAKE OUT	1	1		03/21/17 16:30
21	15M20903	BAKE OUT	1	1		03/21/17 16:53
22	15M20904	CH2CL2 CHECK	1	1		03/21/17 17:15

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG606959-01 5PPM LL DFTPP has an ion failure, DNR			
3				
	WG606959-01 5PPM LL DFTPP has an ion failure, changed liner, DNR			
4				
	WG606959-01 5PPM LL DFTPP benzidine tailing is >2, DNR			
5				
	WG606959-01 5PPM LL DFTPP has two ion failures, tightened nuts, DNR			

Page: 1 Approved: 22-MAR-17



Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 032117

Analyst1: SCB Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 28

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG606959, WG606673

Internal STD: STD81022 Surrogate STD: NA

CCV STD: STD80097 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
	WG606465-02 LCS 3/16 has high %REC and high surrogate recovery			
16				
	WG606465-03 LCS2 3/16 has high %REC and high surrogate recovery			
17	X	10	Over Calibration Range	2
	L17030724-01 the surrogate recovery is high, needs re-extracted			
18				
	L17030724-01 10X the surrogate recovery is hgh			

Page: 2 Approved: 22-MAR-17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 040517
Analyst1: SCB Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 28

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:
Column 1 ID: RXI-5MS Column 2 ID: NA
Workgroups: WG608809
Internal STD: STD81022 Surrogate STD: NA Calibration STD
CCV STD: STD80097 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M20970	BAKE OUT	1	1		04/05/17 08:40
2	15M20971	WG608842-01 5PPM LL DFTPP	1	1	STD80383	04/05/17 09:00
3	15M20972	WG608842-02 5PPM 1,4-DIOX STD	1	1	STD80097	04/05/17 09:18
4	15M20973	WG608522-01 BLANK 4/3	1	1		04/05/17 09:47
5	15M20974	WG608522-02 LCS 4/3	1	1		04/05/17 10:10
6	15M20975	WG608522-03 LCS2 4/3	1	1		04/05/17 10:33
7	15M20976	L17040002-01 LOD	1	1		04/05/17 10:56
8	15M20977	L17040004-01 LOQ	1	1		04/05/17 11:18
9	15M20978	L17031689-01	1	1		04/05/17 11:41
10	15M20979	L17031690-01	1	1		04/05/17 12:04
11	15M20980	L17031689-01 5X	1	5		04/05/17 12:27
12	15M20981	L17031690-01 5X	1	5		04/05/17 12:49
13	15M20982	BAKE OUT	1	1		04/05/17 13:12
14	15M20983	BAKE OUT	1	1		04/05/17 13:35
15	15M20984	BAKE OUT	1	1		04/05/17 13:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9	X	5	Over Calibration Range	2
	L17031689-01 has a high surrogate recovery			
10	X	5	Over Calibration Range	2
	L17031690-01			
11				
	L17031689-01 5X has a high surrogate recovery due to SMI. OK to narrate per the client.			

Page: 1 Approved: 06-APR-17

Microbac Laboratories Inc.

Data Checklist

Date: 21-MAR-2017
Analyst: SCB
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 81082
Analytical Workgroups: WG606959, L17030724

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer:
22-MAR-2017
Sarah Bogolin

Secondary Reviewer:
22-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-22-2017 11:13:35

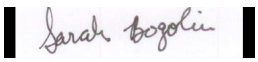
Microbac Laboratories Inc.

Data Checklist

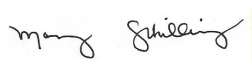
Date: 05-APR-2017
Analyst: SCB
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 81379
Analytical Workgroups: L17040002, L17040004, L17031689, L17031690

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer:
06-APR-2017



Secondary Reviewer:
06-APR-2017



CHECKLIST1 - Modified 03/05/2008
Generated: APR-06-2017 15:31:14

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D AAB#: WG608809

Login Number: L17031689

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP140-7428-GRAB	01	03/29/17					04/03/2017	4.8	7		04/05/17	2.1	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5232685
Report generated 04/07/2017 10:13

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L17031689
Instrument Id: HPMS15
Workgroup (AAB#): WG608809

Method: 827-DIOXANE
CAL ID: HPMS15 - 21-MAR-17
Matrix: Water

Sample Number	Dilution	Tag	1
L17031689-01	5.00	DL01	486
WG608522-01	1.00	01	68.4
WG608522-02	1.00	01	44.2
WG608522-03	1.00	01	65.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 5232732
Report generated: 04/07/2017 10:14

METHOD BLANK SUMMARY

Login Number:	L17031689	**Work Group:**	WG608809
Blank File ID:	15M20973	**Blank Sample ID:**	WG608522-01
Prep Date:	04/03/17 09:30	**Instrument ID:**	HPMS15
Analyzed Date:	04/05/17 09:47	**Method:**	8270D
Analyst:	SCB		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608522-02	15M20974	04/05/17 10:10	01
LCS2	WG608522-03	15M20975	04/05/17 10:33	01
LH18/24-SP140-7428-GRAB	L17031689-01	15M20980	04/05/17 12:27	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5232708
Report generated 04/07/2017 10:13

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L17031689 Prep Date: 04/03/17 09:30 Sample ID: WG608522-01
Instrument ID: HPMS15 Run Date: 04/05/17 09:47 Prep Method: 3520C
File ID: 15M20973 Analyst: SCB Method: 8270D
Workgroup (AAB#): WG608809 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	68.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5232709
07-APR-2017 10:13

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031689 Analyst: SCB Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG608809 Units: ug/L
QC Key: DOD4 Lot #: STD77209

Sample ID: WG608522-02 LCS File ID: 15M20974 Run Date: 04/05/2017 10:10
Sample ID: WG608522-03 LCS2 File ID: 15M20975 Run Date: 04/05/2017 10:33

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	2.02	40.4	5.00	2.92	58.4	36.4	30 - 104	30	#

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	44.2	65.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 5232710
Report generated: 04/07/2017 10:13

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L17031689
Instrument: HPMS15
Analyst: SCB
Workgroup: WG606959

Tune ID: WG606959-01
Run Date: 03/21/2017
Run Time: 11:17
File ID: 15M20888
Cal ID: HPMS15 - 21-MAR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	37.4	124900	PASS
68.0	69.0	0	2.00	1.56	2066	PASS
69.0	198	0	100	39.8	132696	PASS
70.0	69.0	0	2.00	0.730	969	PASS
127	198	40.0	60.0	55.0	183360	PASS
197	198	0	1.00	0.456	1521	PASS
198	198	100	100	100	333568	PASS
199	198	5.00	9.00	6.67	22252	PASS
275	198	10.0	30.0	26.9	89573	PASS
365	198	1.00	100	3.82	12731	PASS
441	443	0.0100	100	76.8	35691	PASS
442	198	40.0	100	72.5	241941	PASS
443	442	17.0	23.0	19.2	46461	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG606959-02	STD-CCV	01	03/21/2017 11:36	
WG606959-03	STD	01	03/21/2017 11:59	
WG606959-04	STD	01	03/21/2017 12:22	
WG606959-05	STD	01	03/21/2017 12:44	
WG606959-06	STD	01	03/21/2017 13:07	
WG606959-07	STD	01	03/21/2017 13:29	
WG606959-08	SSCV	01	03/21/2017 13:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5232723
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L17031689
Instrument: HPMS15
Analyst: SCB
Workgroup: WG608842

Tune ID: WG608842-01
Run Date: 04/05/2017
Run Time: 09:00
File ID: 15M20971
Cal ID: HPMS15 - 21-MAR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	37.5	135228	PASS
68.0	69.0	0	2.00	1.54	2197	PASS
69.0	198	0	100	39.6	142579	PASS
70.0	69.0	0	2.00	0.339	484	PASS
127	198	40.0	60.0	54.2	195218	PASS
197	198	0	1.00	0.935	3368	PASS
198	198	100	100	100	360220	PASS
199	198	5.00	9.00	7.02	25276	PASS
275	198	10.0	30.0	25.7	92736	PASS
365	198	1.00	100	3.63	13078	PASS
441	443	0.0100	100	79.4	38928	PASS
442	198	40.0	100	71.6	257835	PASS
443	442	17.0	23.0	19.0	49032	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG608842-02	CCV	01	04/05/2017 09:18	
WG608522-01	BLANK	01	04/05/2017 09:47	
WG608522-02	LCS	01	04/05/2017 10:10	
WG608522-03	LCS2	01	04/05/2017 10:33	
L17031689-01	LH18/24-SP140-7428-GRAB	DL01	04/05/2017 12:27	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5232723
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L17031689
Analytical Method: 8270D
ICAL Workgroup: WG606959

Instrument ID: HPMS15
Initial Calibration Date: 21-MAR-17 13:29
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3028	1.79		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 5232711
Report generated 04/07/2017 10:13

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L17031689
Analytical Method: 8270D
Instrument ID: HPMS15
Initial Calibration Date: 21-MAR-17 13:29
Column ID: F

Analyte	WG606959-02			WG606959-03			WG606959-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	212168.000	0.3040	10.0	413045.000	0.3069	7.50	289607.000	0.3055

INT_CAL - Modified 03/06/2008
PDF File ID: 5232711
Report generated 04/07/2017 10:13

Login Number: L17031689
Analytical Method: 8270D
Instrument ID: HPMS15
Initial Calibration Date: 21-MAR-17 13:29
Column ID: F

Analyte	WG606959-05			WG606959-06			WG606959-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	79286.0000	0.3015	1.00	32819.0000	0.3066	0.400	15800.0000	0.2925

INT_CAL - Modified 03/06/2008
PDF File ID: 5232711
Report generated 04/07/2017 10:13

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L17031689 Run Date: 03/21/2017 Sample ID: WG606959-08
Instrument ID: HPMS15 Run Time: 13:51 Method: 8270D
File ID: 15M20895 Analyst: SCB QC Key: DOD4
ICal Workgroup: WG606959 Cal ID: HPMS15 - 21-MAR-17

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	4630	ug/L	0.280	7.40	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 5232718
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031689 Run Date: 04/05/2017 Sample ID: WG608842-02
Instrument ID: HPMS15 Run Time: 09:18 Method: 8270D
File ID: 15M20972 Analyst: SCB QC Key: DOD4
Workgroup (AAB#): WG608809 Cal ID: HPMS15 - 21-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4890	ug/L	0.296	2.23	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 5232724
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031689
Instrument ID: HPMS15
Workgroup (AAB#): WG608809

ICAL CCV Number: WG606959-02
CAL ID: HPMS15-21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG606959-02	NA	NA	139587
Upper Limit	NA	NA	279174
Lower Limit	NA	NA	69794
L17031689-01	5.00	DL01	135077
WG608522-01	1.00	01	115831
WG608522-02	1.00	01	116681
WG608522-03	1.00	01	115106

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 5232731
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031689
Instrument ID: HPMS15
Workgroup (AAB#): WG608809

ICAL CCV Number: WG606959-02
CAL ID: HPMS15 - 21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG606959-02	NA	NA	7.05
Upper Limit	NA	NA	7.55
Lower Limit	NA	NA	6.55
L17031689-01	5.00	DL01	7.058
WG608522-01	1.00	01	7.054
WG608522-02	1.00	01	7.054
WG608522-03	1.00	01	7.054

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 5232733
Report generated: 04/07/2017 10:14

2.2.1.3 Sample Data

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20980.D
Acq On : 5 Apr 2017 12:27 pm
Operator : SCB
Sample : L17031689-01 5X
Misc : 1,5 DL
ALS Vial : 10 Sample Multiplier: 5

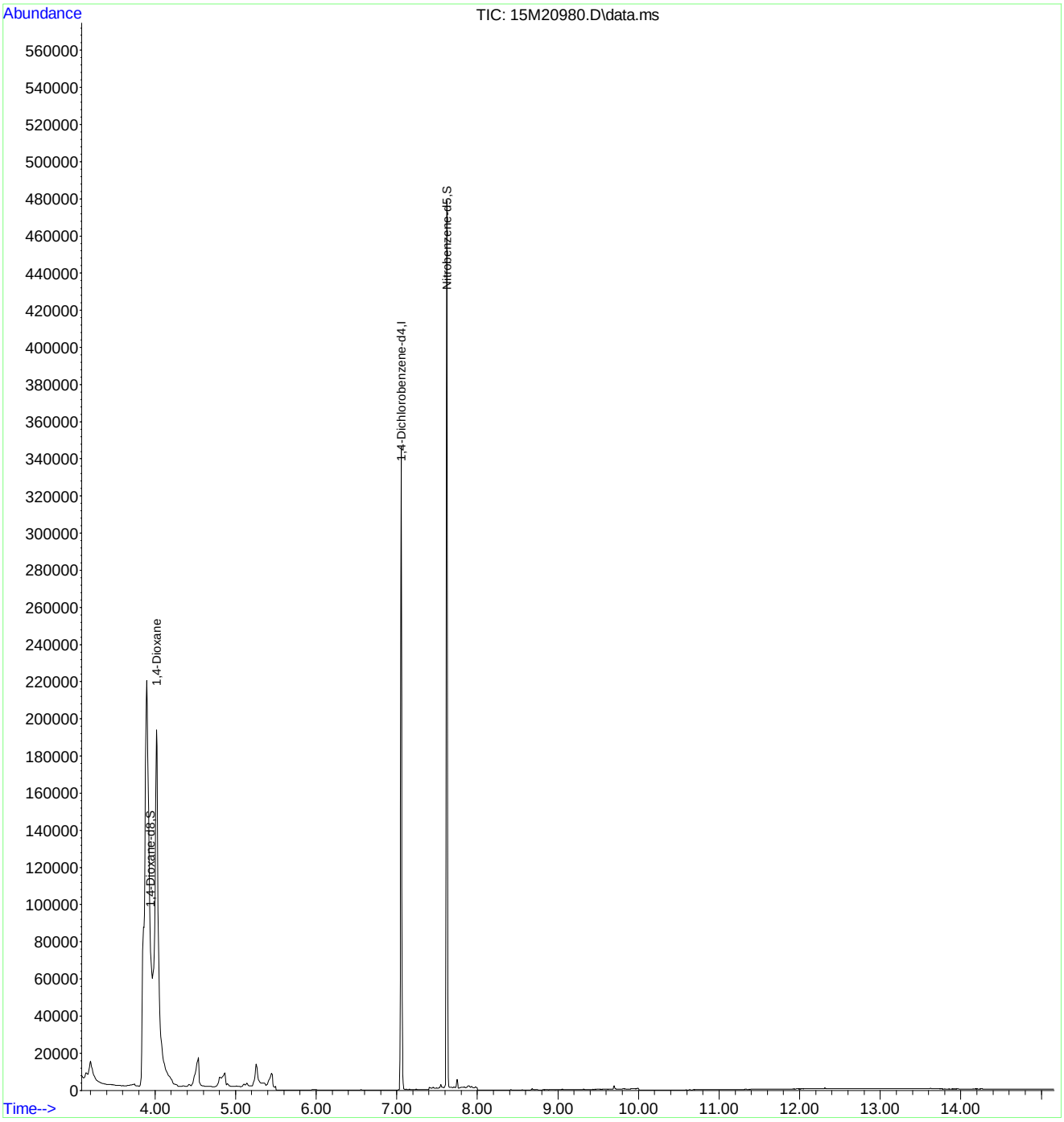
Quant Time: Apr 06 11:32:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

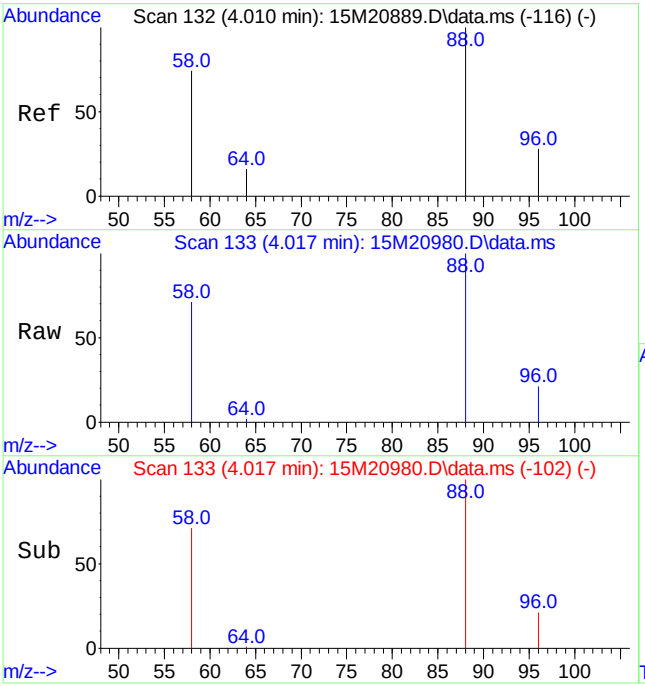
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.058	152	135077	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.947	96	256751m	24.3204	ug/L	-0.03
Spiked Amount 5.000			Recovery = 486.40%			
4) Nitrobenzene-d5	7.624	82	398721	13.8382	ug/L	0.08
Spiked Amount 5.000			Recovery = 276.80%			
5) 2-Fluorobiphenyl	9.055	172	144	0.0024	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.00%			
6) p-Terphenyl-d14	12.313	244	435	0.0070	ug/L	0.01
Spiked Amount 5.000			Recovery = 0.20%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.017	58	183826	4.4938	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20980.D
Acq On : 5 Apr 2017 12:27 pm
Operator : SCB
Sample : L17031689-01 5X
Misc : 1,5 DL
ALS Vial : 10 Sample Multiplier: 5

Quant Time: Apr 06 11:32:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

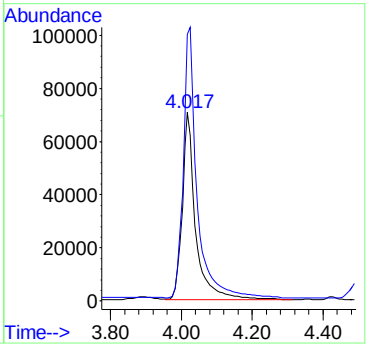




#2
1,4-Dioxane
Concen: 4.49 ug/L
RT: 4.017 min Scan# 133
Delta R.T. 0.007 min
Lab File: 15M20980.D
Acq: 5 Apr 2017 12:27 pm

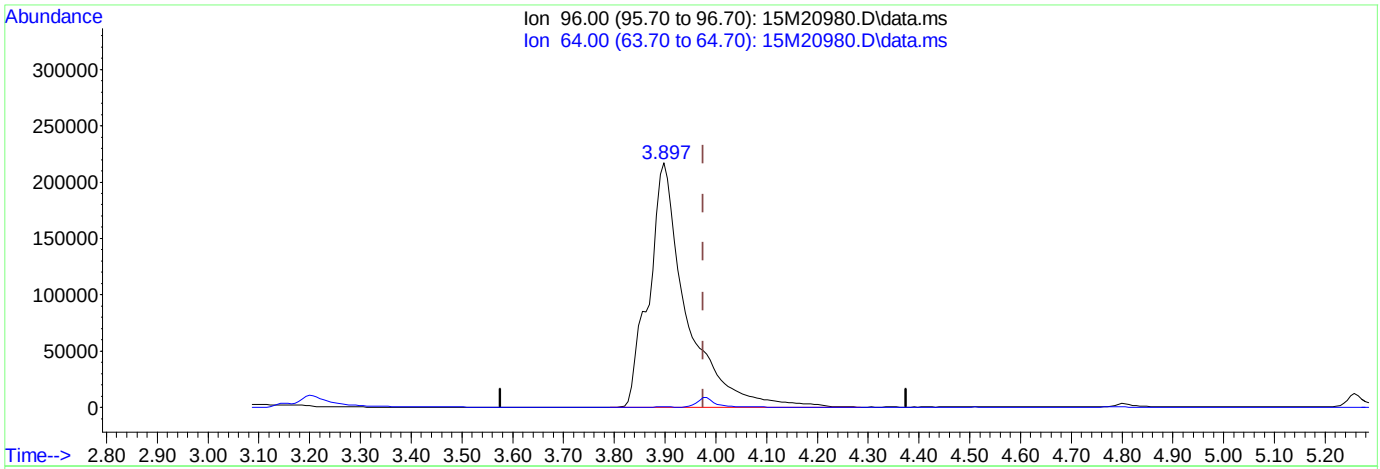
Tgt Ion: 58 Resp: 183826

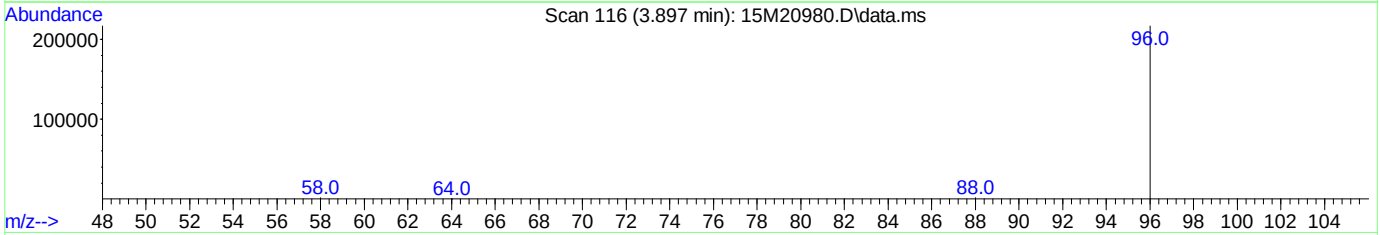
Ion	Ratio	Lower	Upper
58	100		
88	148.0	88.6	206.8

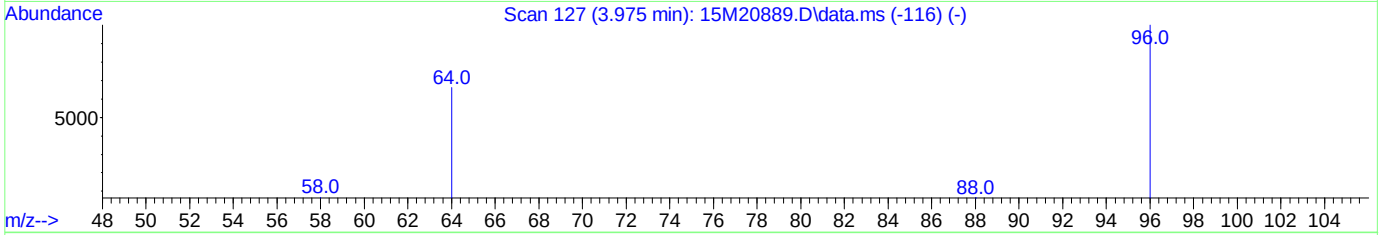


Data Path : C:\msdchem\1\data\040517\
Data File : 15M20980.D
Acq On : 5 Apr 2017 12:27 pm
Operator : SCB
Sample : L17031689-01 5X
Misc : 1,5 DL
ALS Vial : 10 Sample Multiplier: 5

Quant Time: Apr 06 08:33:47 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration







TIC: 15M20980.D\data.ms

(3) 1,4-Dioxane-d8 (S)

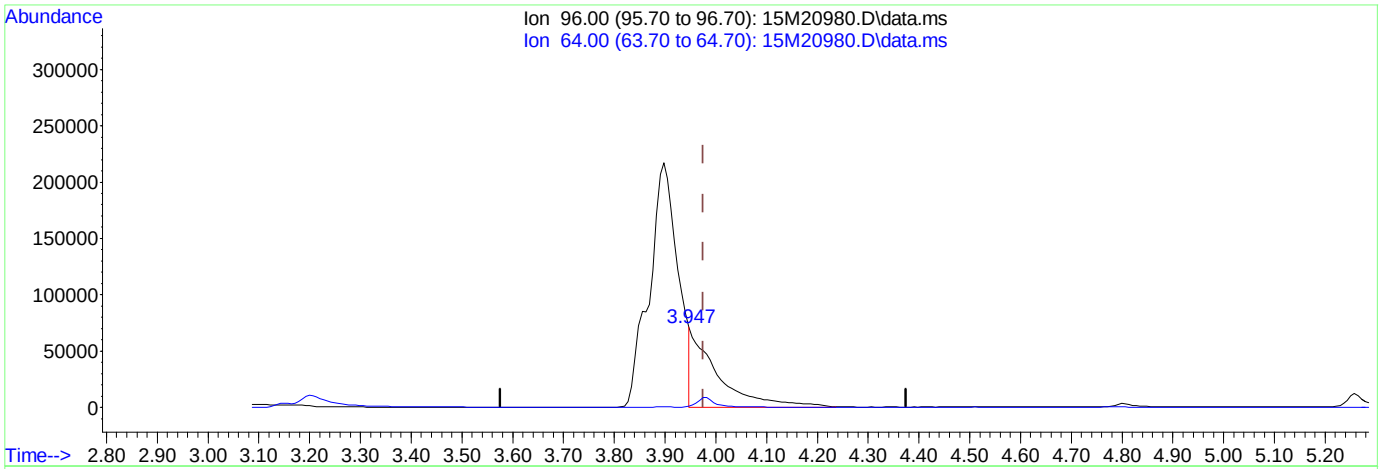
3.897min (-0.078) 105.33 ug/L

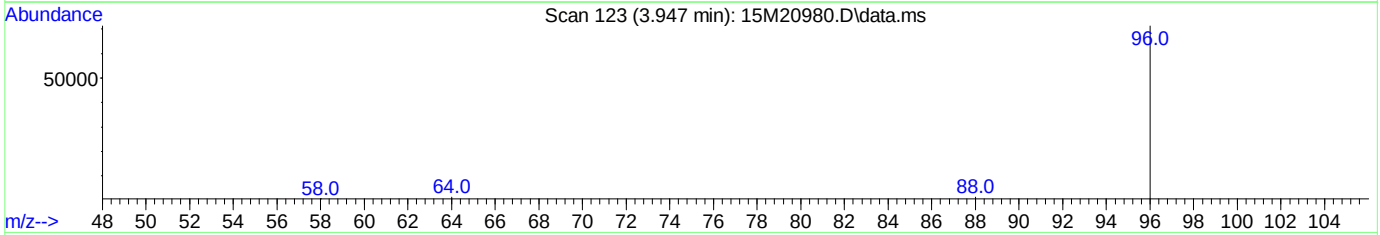
response 1111926

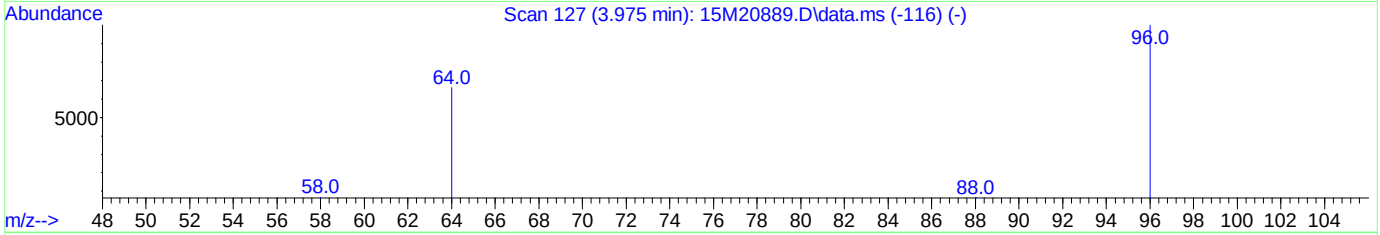
Ion	Exp%	Act%
96.00	100.00	100.00
64.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20980.D
Acq On : 5 Apr 2017 12:27 pm
Operator : SCB
Sample : L17031689-01 5X
Misc : 1,5 DL
ALS Vial : 10 Sample Multiplier: 5

Quant Time: Apr 06 08:33:47 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration







TIC: 15M20980.D\data.ms

(3) 1,4-Dioxane-d8 (S)

3.947min (-0.028) 24.32 ug/L mint

response 256751

Ion	Exp%	Act%
96.00	100.00	100.00
64.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Analyst: 04/06/2017 14:55 Supervisor: 04/06/2017 15:19

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

2.2.1.4 Standards Data

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20889.D
Acq On : 21 Mar 2017 11:36 am
Operator : SCB
Sample : WG606959-02 5PPM 1,4-DIOXSTD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

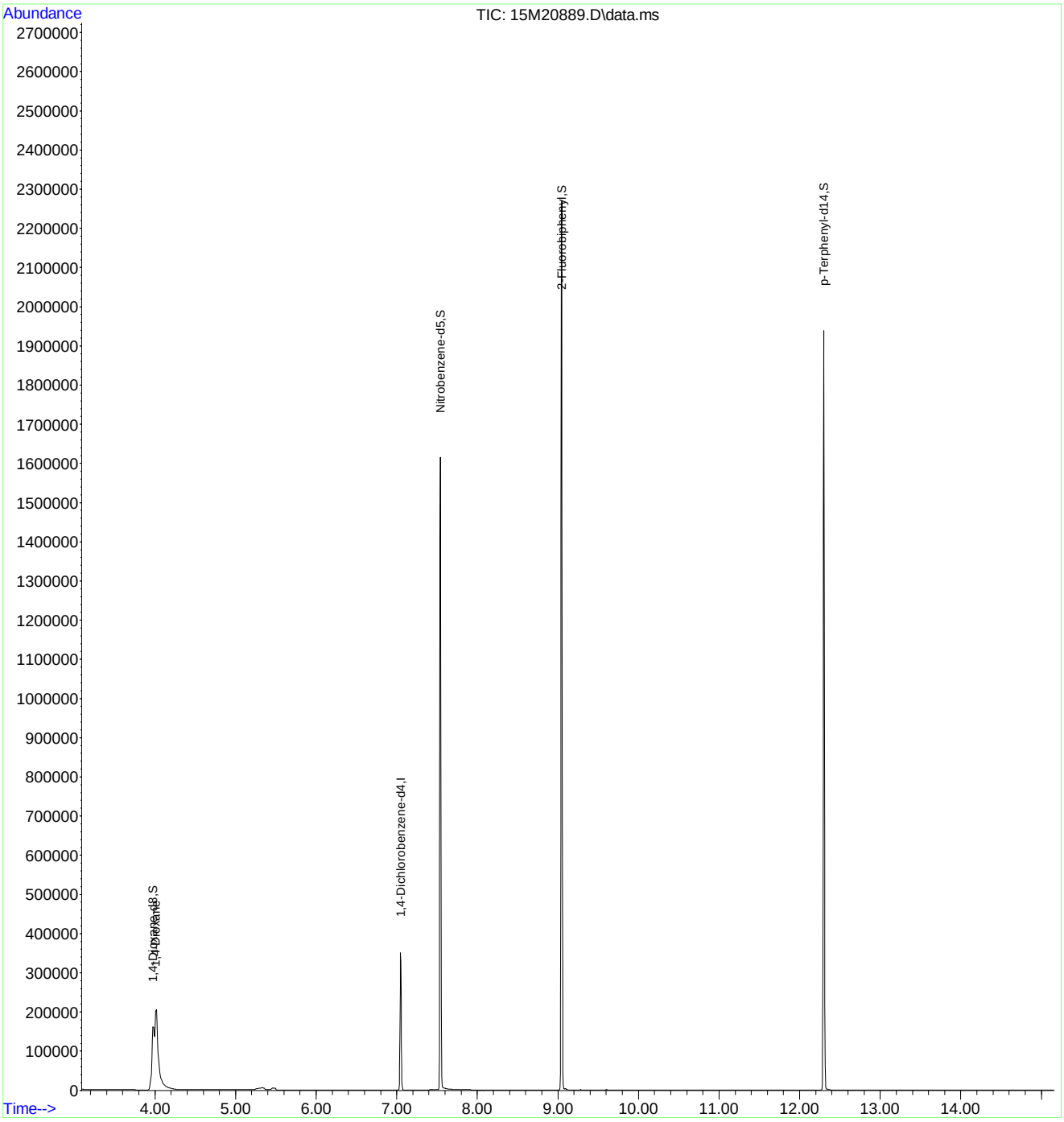
Quant Time: Mar 21 11:52:07 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032017
QLast Update : Tue Mar 21 08:23:00 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.051	152	139587	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.975	96	273434	4.9111	ug/L	0.06
Spiked Amount 5.000			Recovery = 98.20%			
4) Nitrobenzene-d5	7.544	82	772044	5.4825	ug/L	0.00
Spiked Amount 5.000			Recovery = 109.60%			
5) 2-Fluorobiphenyl	9.048	172	1542568	4.9879	ug/L	0.00
Spiked Amount 5.000			Recovery = 99.80%			
6) p-Terphenyl-d14	12.299	244	1602914	4.7952	ug/L	0.00
Spiked Amount 5.000			Recovery = 96.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.010	58	212168	4.9180	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20889.D
Acq On : 21 Mar 2017 11:36 am
Operator : SCB
Sample : WG606959-02 5PPM 1,4-DIOXSTD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 21 11:52:07 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032017
QLast Update : Tue Mar 21 08:23:00 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20890.D
Acq On : 21 Mar 2017 11:59 am
Operator : SCB
Sample : WG606959-03 10PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 3 Sample Multiplier: 1

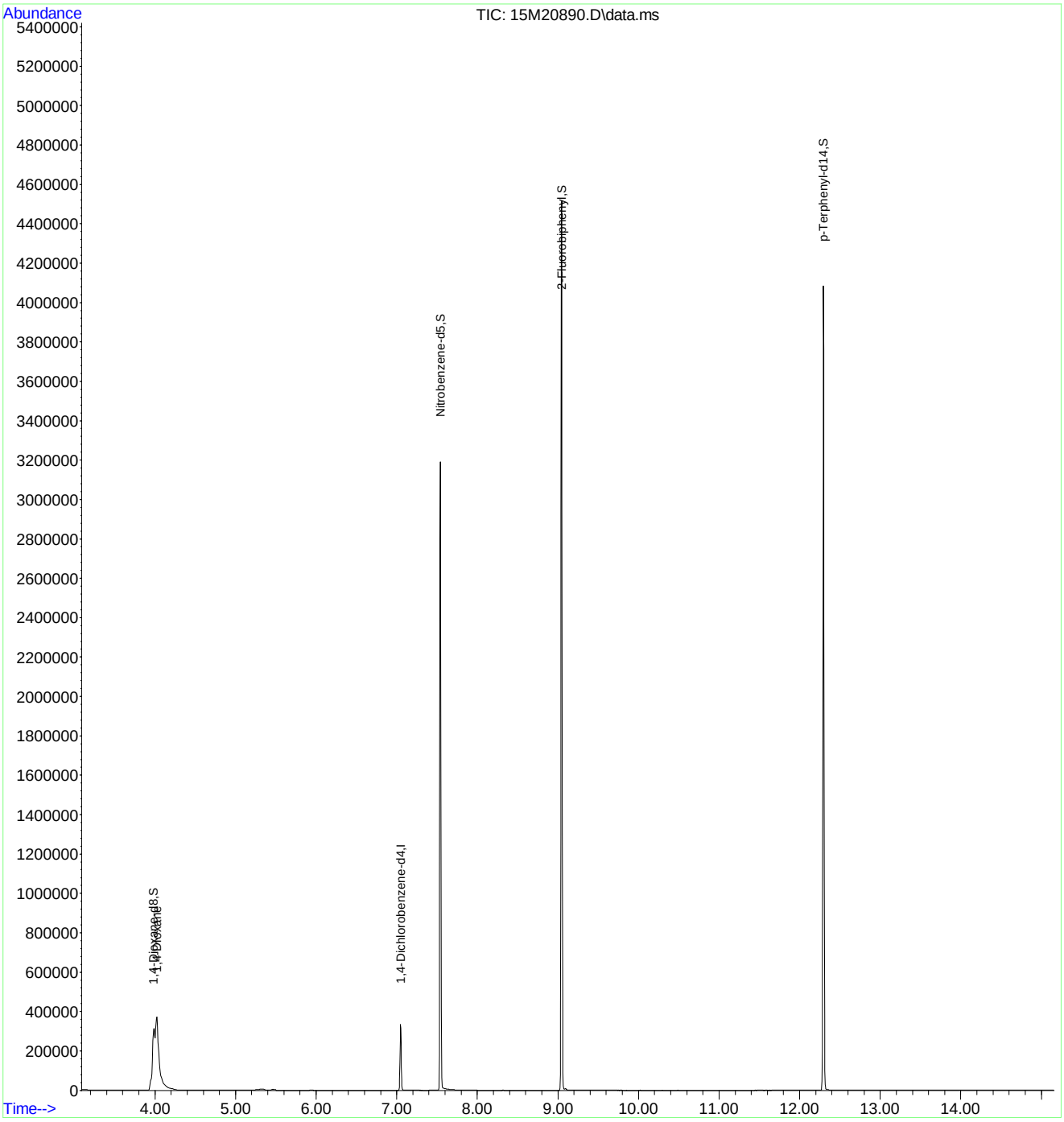
Quant Time: Mar 21 13:04:57 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 12:01:58 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.051	152	134604	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.982	96	531542	9.9382	ug/L	0.00
Spiked Amount 5.000			Recovery = 198.80%			
4) Nitrobenzene-d5	7.544	82	1518935	11.1141	ug/L	0.00
Spiked Amount 5.000			Recovery = 222.20%			
5) 2-Fluorobiphenyl	9.048	172	3039962	10.2007	ug/L	0.00
Spiked Amount 5.000			Recovery = 204.00%			
6) p-Terphenyl-d14	12.295	244	3286803	10.2842	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.024	58	413045	9.9666	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20890.D
Acq On : 21 Mar 2017 11:59 am
Operator : SCB
Sample : WG606959-03 10PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 21 13:04:57 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 12:01:58 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20891.D
Acq On : 21 Mar 2017 12:22 pm
Operator : SCB
Sample : WG606959-04 7.5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 4 Sample Multiplier: 1

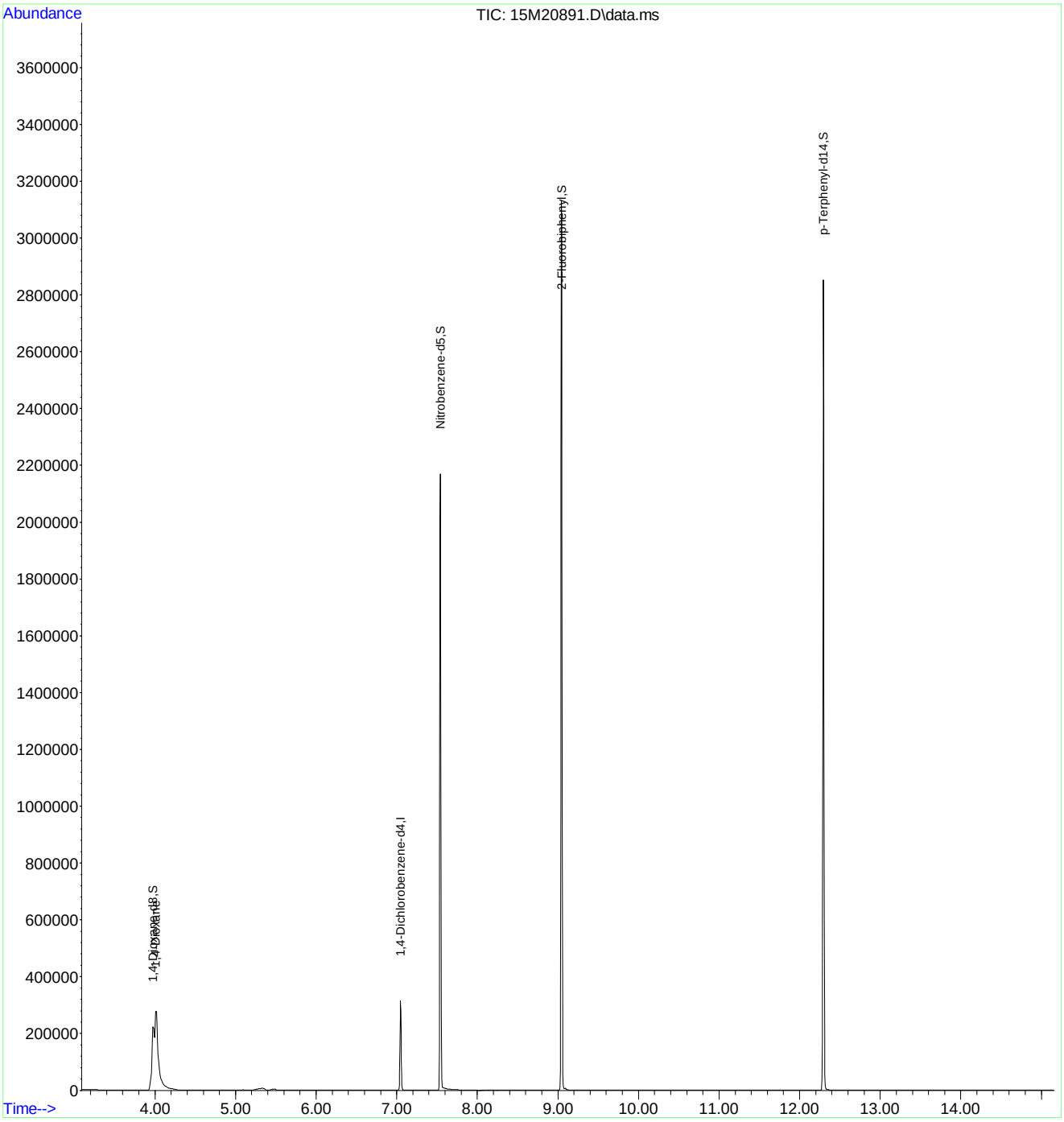
Quant Time: Mar 21 13:05:17 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:03 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.047	152	126394	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.975	96	370638	7.4104	ug/L	0.00
Spiked Amount 5.000			Recovery = 148.20%			
4) Nitrobenzene-d5	7.544	82	1062693	8.2685	ug/L	0.00
Spiked Amount 5.000			Recovery = 165.40%			
5) 2-Fluorobiphenyl	9.048	172	2137834	7.6518	ug/L	0.00
Spiked Amount 5.000			Recovery = 153.00%			
6) p-Terphenyl-d14	12.295	244	2249330	7.5428	ug/L	0.00
Spiked Amount 5.000			Recovery = 150.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.010	58	289607	7.4740	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20891.D
Acq On : 21 Mar 2017 12:22 pm
Operator : SCB
Sample : WG606959-04 7.5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 21 13:05:17 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:03 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20892.D
Acq On : 21 Mar 2017 12:44 pm
Operator : SCB
Sample : WG606959-05 2.5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 5 Sample Multiplier: 1

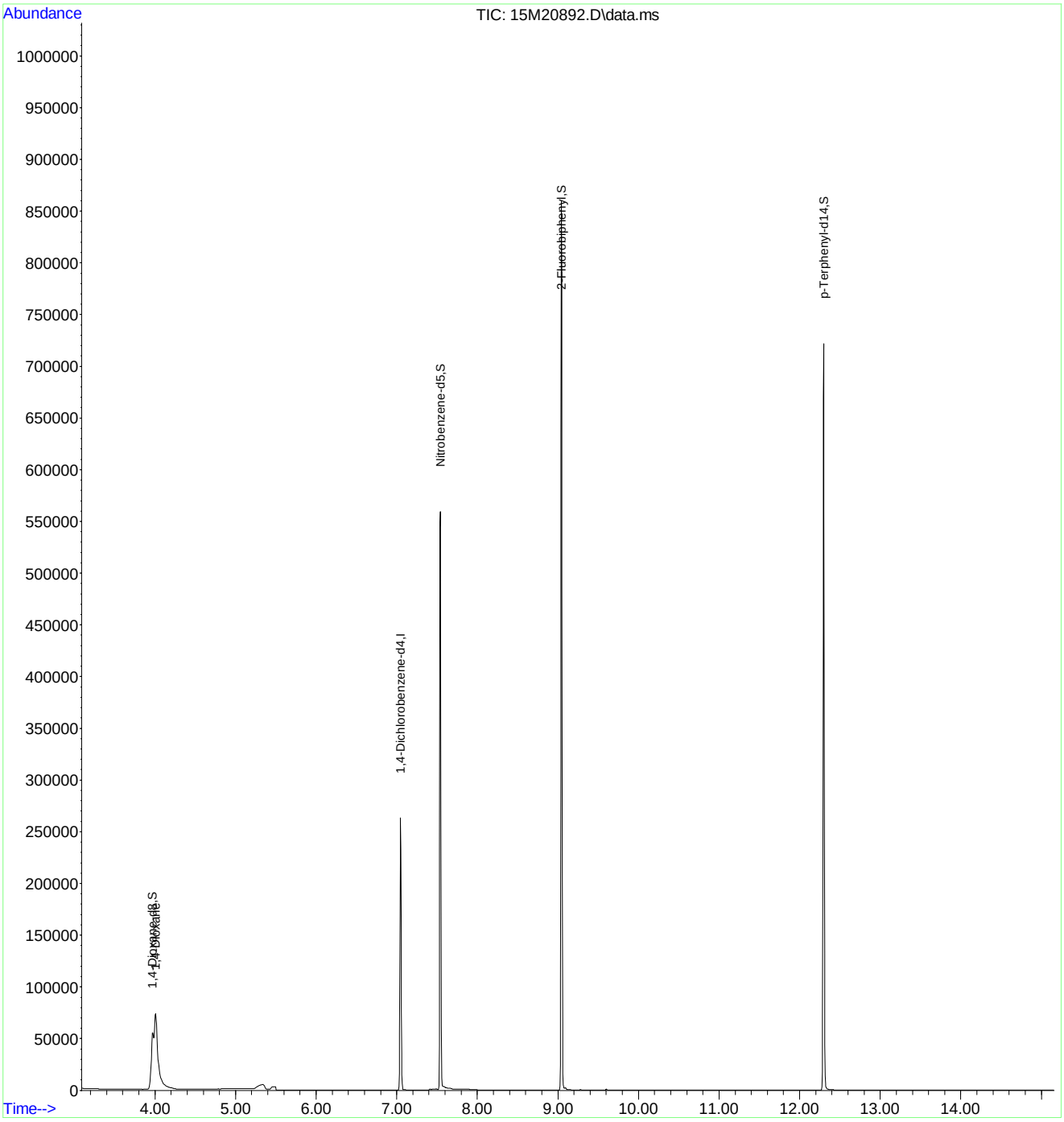
Quant Time: Mar 21 13:05:36 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:22 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.047	152	105174	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.968	96	101713	2.4531	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.00%			
4) Nitrobenzene-d5	7.544	82	282253	2.6276	ug/L	0.00
Spiked Amount 5.000			Recovery = 52.60%			
5) 2-Fluorobiphenyl	9.044	172	580576	2.4941	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.80%			
6) p-Terphenyl-d14	12.298	244	600130	2.4274	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.010	58	79286	2.4683	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20892.D
Acq On : 21 Mar 2017 12:44 pm
Operator : SCB
Sample : WG606959-05 2.5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 21 13:05:36 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:22 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20893.D
Acq On : 21 Mar 2017 1:07 pm
Operator : SCB
Sample : WG606959-06 1PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 6 Sample Multiplier: 1

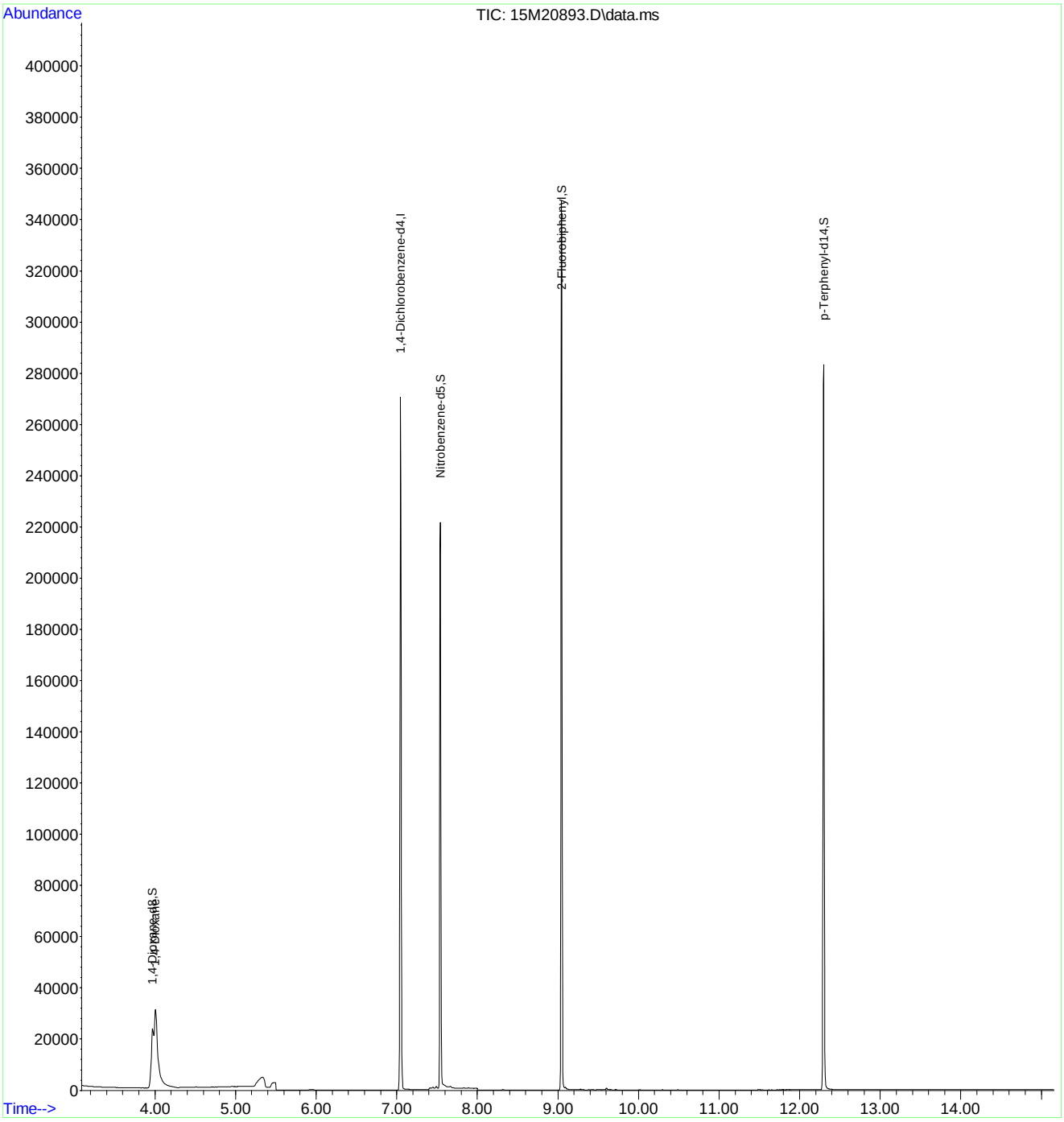
Quant Time: Mar 21 13:29:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:40 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.047	152	107027	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.968	96	41676	0.9900	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.80%			
4) Nitrobenzene-d5	7.544	82	110837	1.0035	ug/L	0.00
Spiked Amount 5.000			Recovery = 20.00%			
5) 2-Fluorobiphenyl	9.048	172	235176	0.9936	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.80%			
6) p-Terphenyl-d14	12.299	244	242621	0.9712	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.003	58	32819	1.0075	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20893.D
Acq On : 21 Mar 2017 1:07 pm
Operator : SCB
Sample : WG606959-06 1PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 21 13:29:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:40 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20894.D
Acq On : 21 Mar 2017 1:29 pm
Operator : SCB
Sample : WG606959-07 0.4PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 7 Sample Multiplier: 1

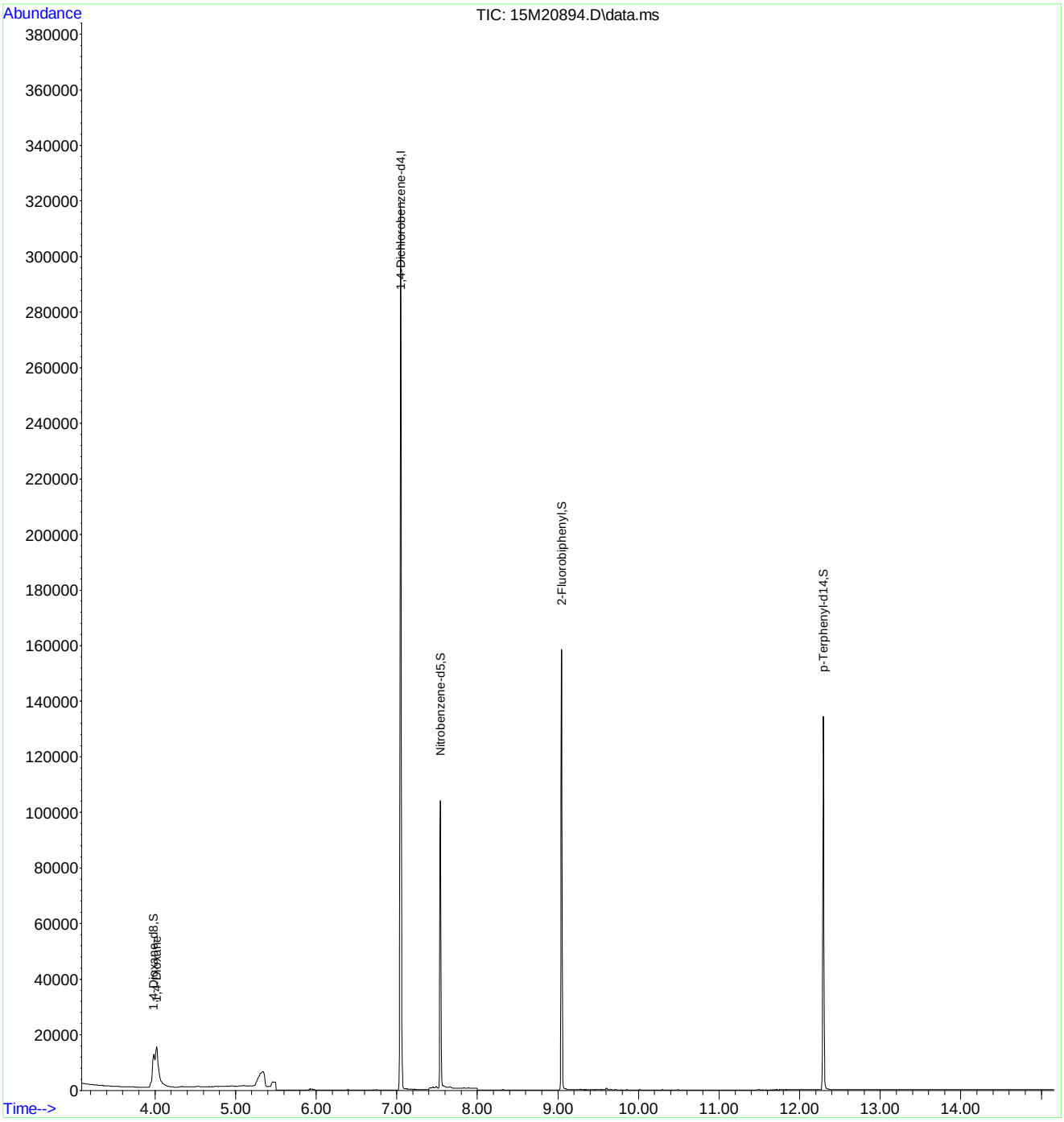
Quant Time: Mar 21 13:45:12 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:29:27 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.051	152	135041	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.982	96	19918	0.3774	ug/L	0.00
Spiked Amount 5.000			Recovery =	7.60%		
4) Nitrobenzene-d5	7.544	82	50480	0.3556	ug/L	0.00
Spiked Amount 5.000			Recovery =	7.20%		
5) 2-Fluorobiphenyl	9.048	172	109232	0.3664	ug/L	0.00
Spiked Amount 5.000			Recovery =	7.40%		
6) p-Terphenyl-d14	12.295	244	111976	0.3578	ug/L	0.00
Spiked Amount 5.000			Recovery =	7.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	4.017	58	15800	0.3852	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20894.D
Acq On : 21 Mar 2017 1:29 pm
Operator : SCB
Sample : WG606959-07 0.4PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 21 13:45:12 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:29:27 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20895.D
Acq On : 21 Mar 2017 1:51 pm
Operator : SCB
Sample : WG606959-08 5PPM 1,4-DIOX ALT SRC
Misc : 1,1 STD80098
ALS Vial : 8 Sample Multiplier: 1

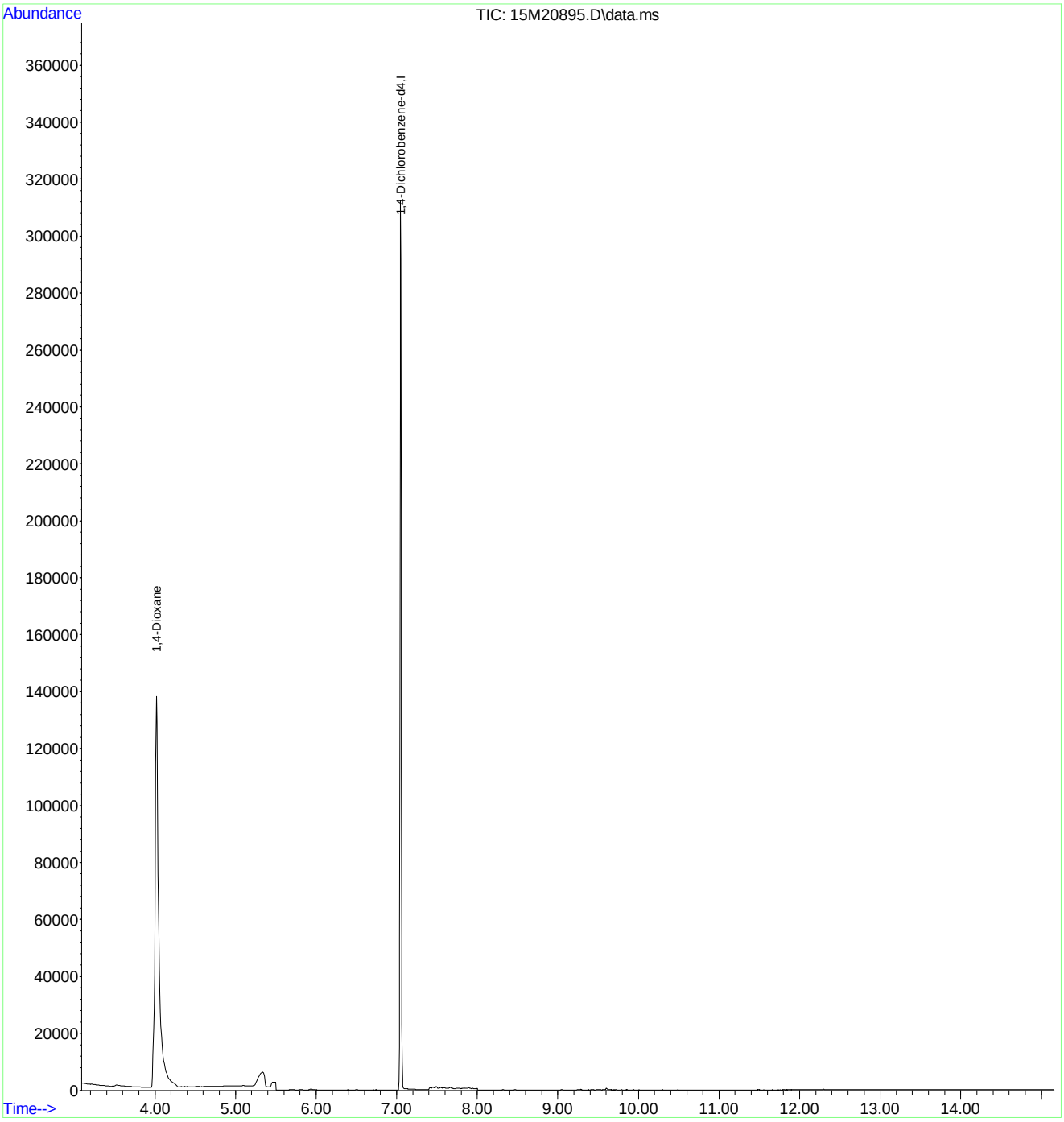
Quant Time: Mar 21 14:07:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.051	152	127276	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.989	96	40	0.0008	ug/L	0.01
Spiked Amount 5.000			Recovery =	0.00%		
4) Nitrobenzene-d5	7.447	82	447	0.0033	ug/L	-0.10
Spiked Amount 5.000			Recovery =	0.00%		
5) 2-Fluorobiphenyl	9.048	172	92	0.0003	ug/L	0.00
Spiked Amount 5.000			Recovery =	0.00%		
6) p-Terphenyl-d14	12.295	244	227	0.0008	ug/L	0.00
Spiked Amount 5.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	4.017	58	178401	4.6284	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20895.D
Acq On : 21 Mar 2017 1:51 pm
Operator : SCB
Sample : WG606959-08 5PPM 1,4-DIOX ALT SRC
Misc : 1,1 STD80098
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 21 14:07:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20895.D
Acq On : 21 Mar 2017 1:51 pm
Operator : SCB
Sample : WG606959-08 5PPM 1,4-DIOX ALT SRC
Misc : 1,1 STD80098
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 21 14:07:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	91	0.00
2		1,4-Dioxane	0.303	0.280	7.6	84	0.00
3	S	1,4-Dioxane-d8	0.391	0.000	100.0#	0#	0.01
4	S	Nitrobenzene-d5	1.067	0.001	99.9#	0#	-0.10
5	S	2-Fluorobiphenyl	2.192	0.000	100.0#	0#	0.00
6	S	p-Terphenyl-d14	2.289	0.000	100.0#	0#	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20895.D
Acq On : 21 Mar 2017 1:51 pm
Operator : SCB
Sample : WG606959-08 5PPM 1,4-DIOX ALT SRC
Misc : 1,1 STD80098
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 21 14:07:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	91	0.00
2		1,4-Dioxane	5.000	4.628	7.4	84	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	0.01
4	S	Nitrobenzene-d5	5.000	0.003	99.9#	0	-0.10
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20972.D
Acq On : 5 Apr 2017 9:18 am
Operator : SCB
Sample : WG608842-02 5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

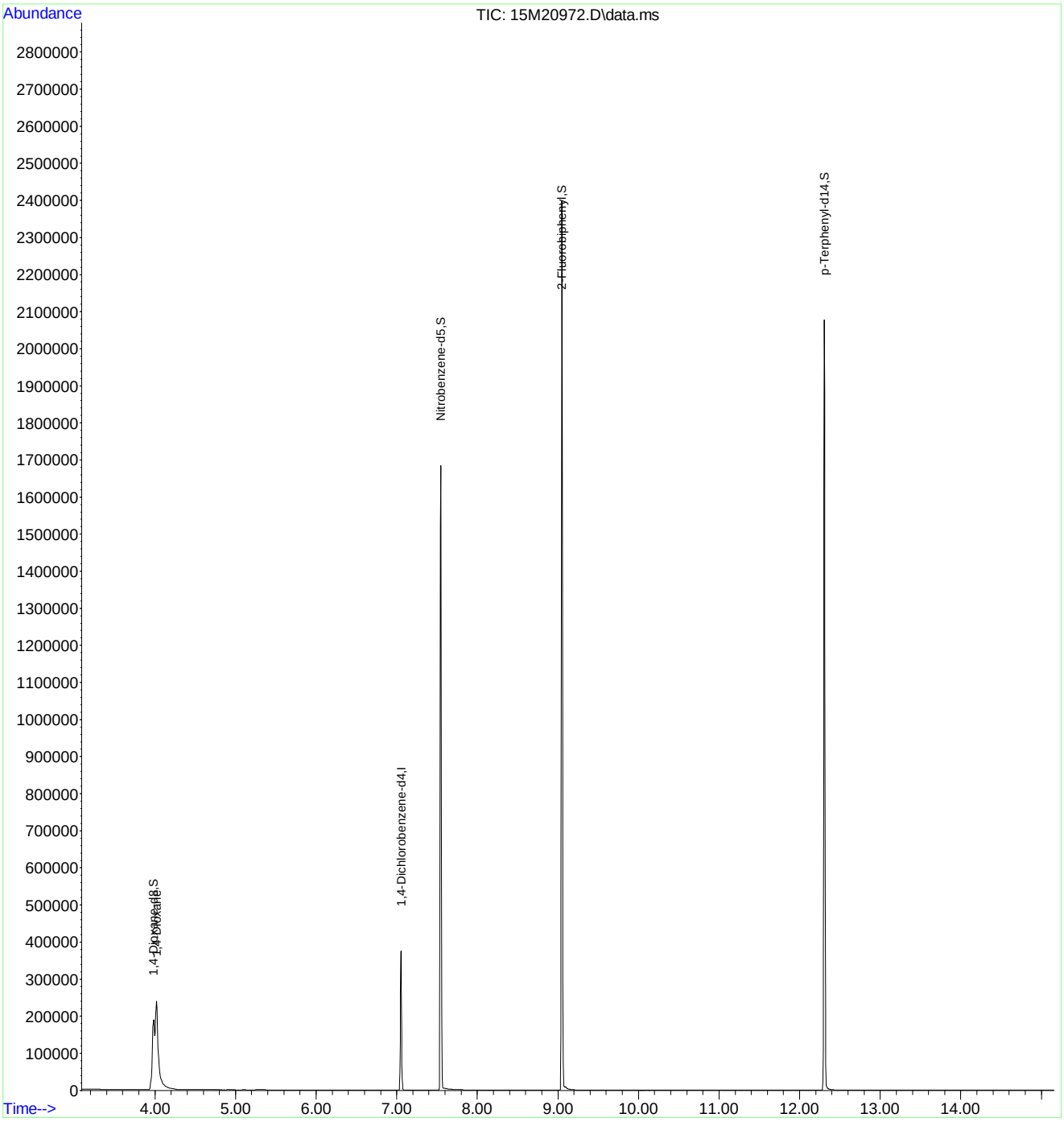
Quant Time: Apr 05 09:42:24 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.054	152	151426	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.982	96	290004	4.9009	ug/L	0.00
Spiked Amount 5.000			Recovery = 98.00%			
4) Nitrobenzene-d5	7.549	82	811944	5.0274	ug/L	0.00
Spiked Amount 5.000			Recovery = 100.60%			
5) 2-Fluorobiphenyl	9.051	172	1596137	4.8089	ug/L	0.00
Spiked Amount 5.000			Recovery = 96.20%			
6) p-Terphenyl-d14	12.306	244	1700869	4.9072	ug/L	0.00
Spiked Amount 5.000			Recovery = 98.20%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.017	58	224179	4.8885	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20972.D
Acq On : 5 Apr 2017 9:18 am
Operator : SCB
Sample : WG608842-02 5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:42:24 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\040517\
Data File : 15M20972.D
Acq On : 5 Apr 2017 9:18 am
Operator : SCB
Sample : WG608842-02 5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:42:24 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	0.00
2		1,4-Dioxane	0.303	0.296	2.3	106	0.00
3	S	1,4-Dioxane-d8	0.391	0.383	2.0	106	0.00
4	S	Nitrobenzene-d5	1.067	1.072	-0.5	105	0.00
5	S	2-Fluorobiphenyl	2.192	2.108	3.8	103	0.00
6	S	p-Terphenyl-d14	2.289	2.246	1.9	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20972.D
Acq On : 5 Apr 2017 9:18 am
Operator : SCB
Sample : WG608842-02 5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:42:24 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	0.00
2		1,4-Dioxane	5.000	4.889	2.2	106	0.00
3	S	1,4-Dioxane-d8	5.000	4.901	2.0	106	0.00
4	S	Nitrobenzene-d5	5.000	5.027	-0.5	105	0.00
5	S	2-Fluorobiphenyl	5.000	4.809	3.8	103	0.00
6	S	p-Terphenyl-d14	5.000	4.907	1.9	106	0.00

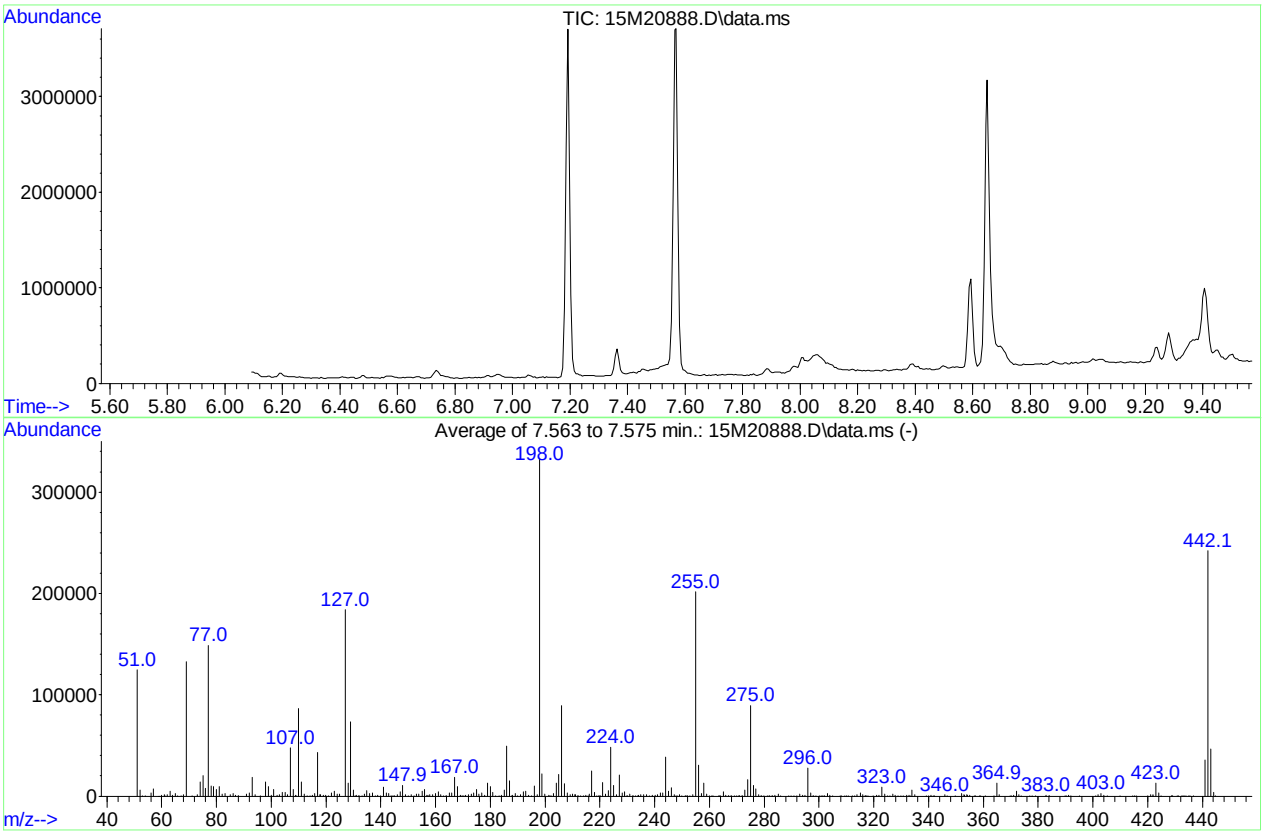
(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20888.D
Acq On : 21 Mar 2017 11:17 am
Operator : SCB
Sample : WG606959-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Tue Sep 13 14:03:54 2016

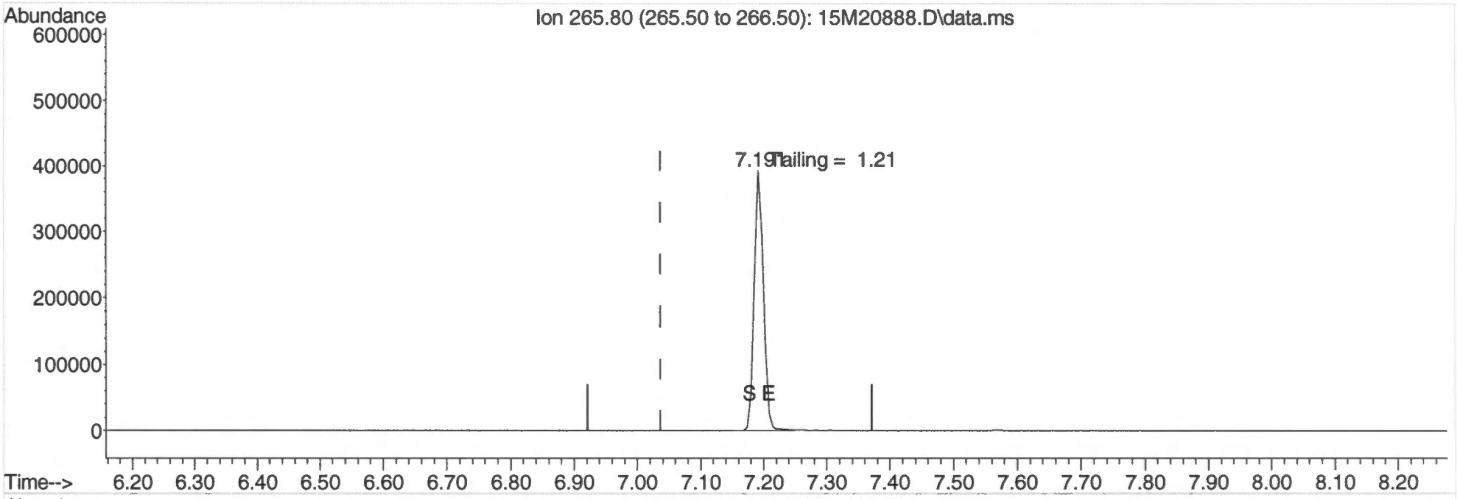


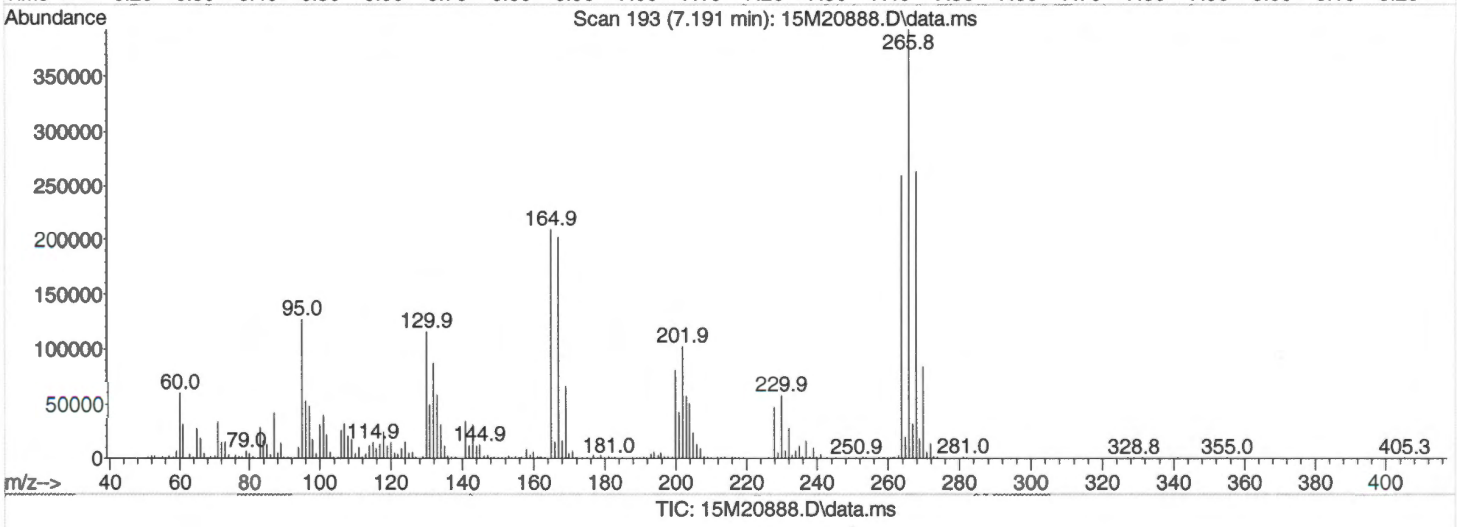
AutoFind: Scans 258, 259, 260; Background Corrected with Scan 252

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	37.4	124854	PASS
68	69	0.00	2	1.3	1708	PASS
69	198	0.00	100	39.8	132801	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	55.2	184234	PASS
197	198	0.00	1	0.4	1460	PASS
198	198	100	100	100.0	333568	PASS
199	198	5	9	6.7	22252	PASS
275	198	10	30	26.9	89573	PASS
365	198	1	100	3.8	12731	PASS
441	443	0.01	100	76.8	35691	PASS
442	198	40	100	72.5	241941	PASS
443	442	17	23	19.2	46461	PASS

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20888.D
Acq On : 21 Mar 2017 11:17 am
Operator : SCB
Sample : WG606959-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 21 11:34:37 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration





TIC: 15M20888.D\data.ms

(1) Pentachlorophenol

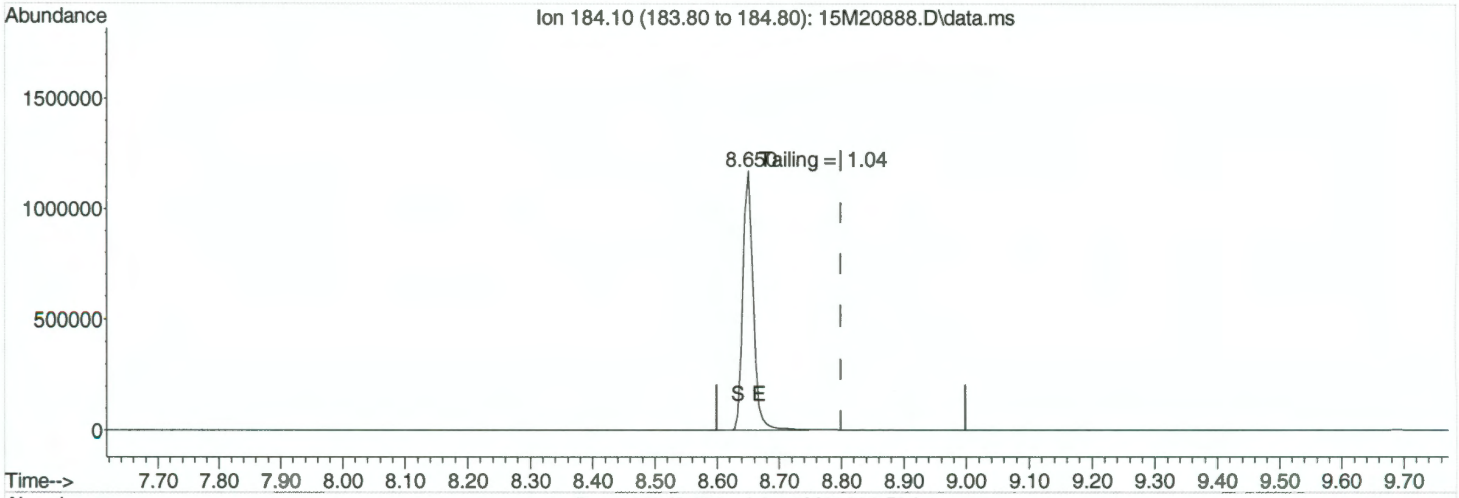
7.191min (+ 0.154) 0.00 ug/ml

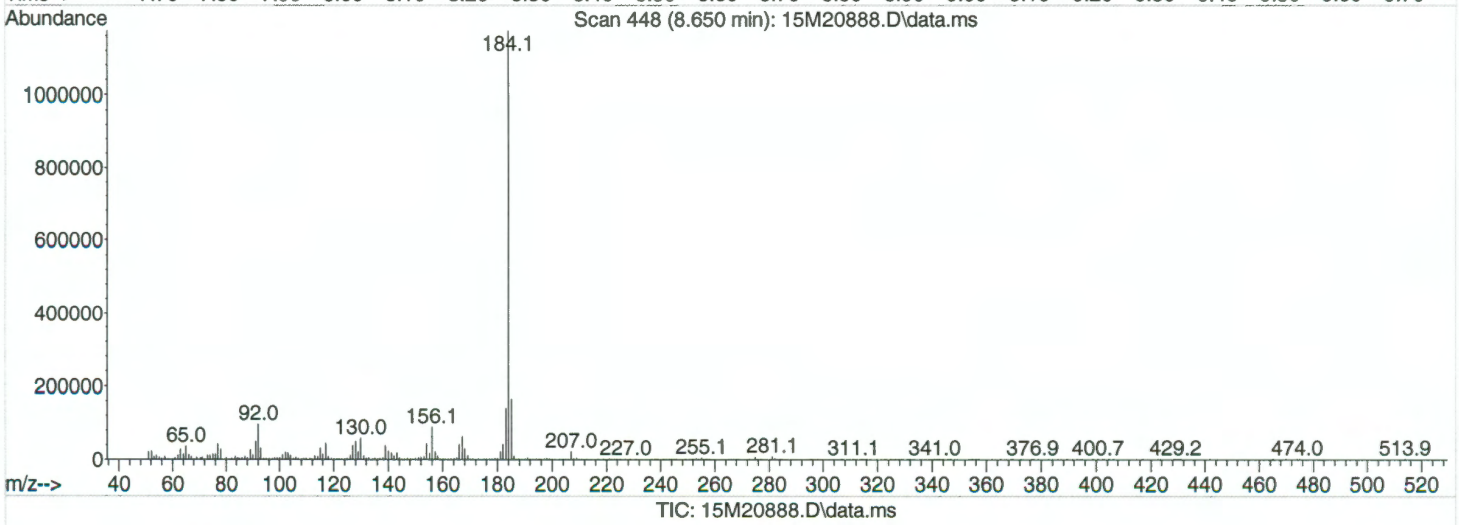
response 397953

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20888.D
Acq On : 21 Mar 2017 11:17 am
Operator : SCB
Sample : WG606959-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 21 11:34:37 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration





TIC: 15M20888.D\data.ms

(2) Benzidine

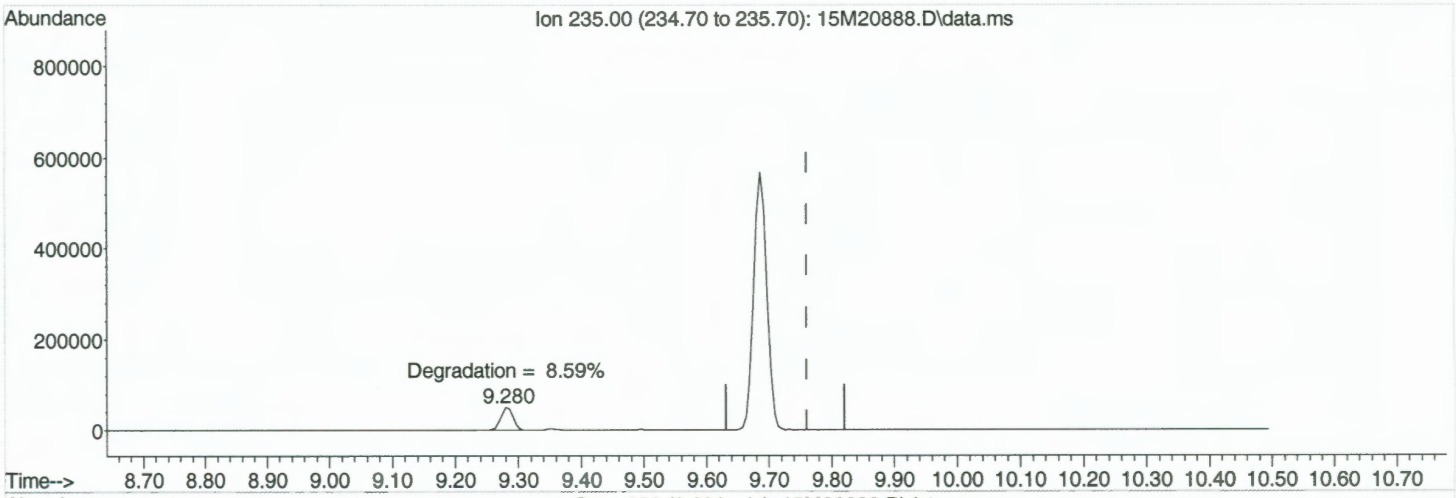
8.650min (-0.149) 0.00 ug/ml

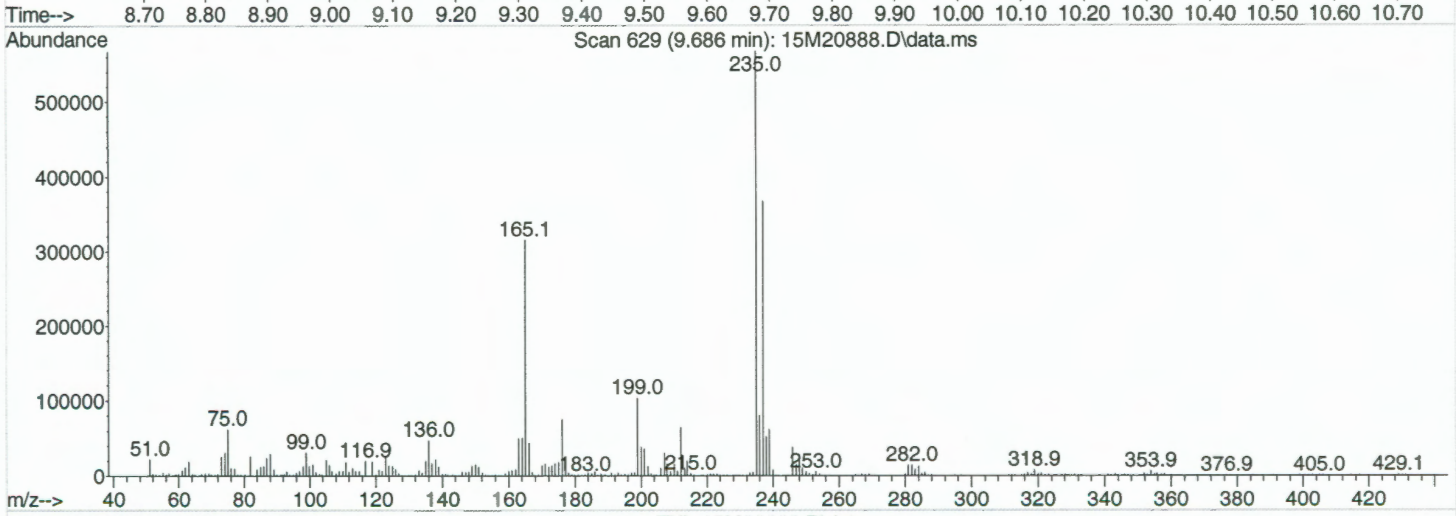
response 1362919

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20888.D
Acq On : 21 Mar 2017 11:17 am
Operator : SCB
Sample : WG606959-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 21 11:34:37 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration





TIC: 15M20888.D\data.ms

(3) DDT

9.686min (-0.074) 0.00 ug/ml

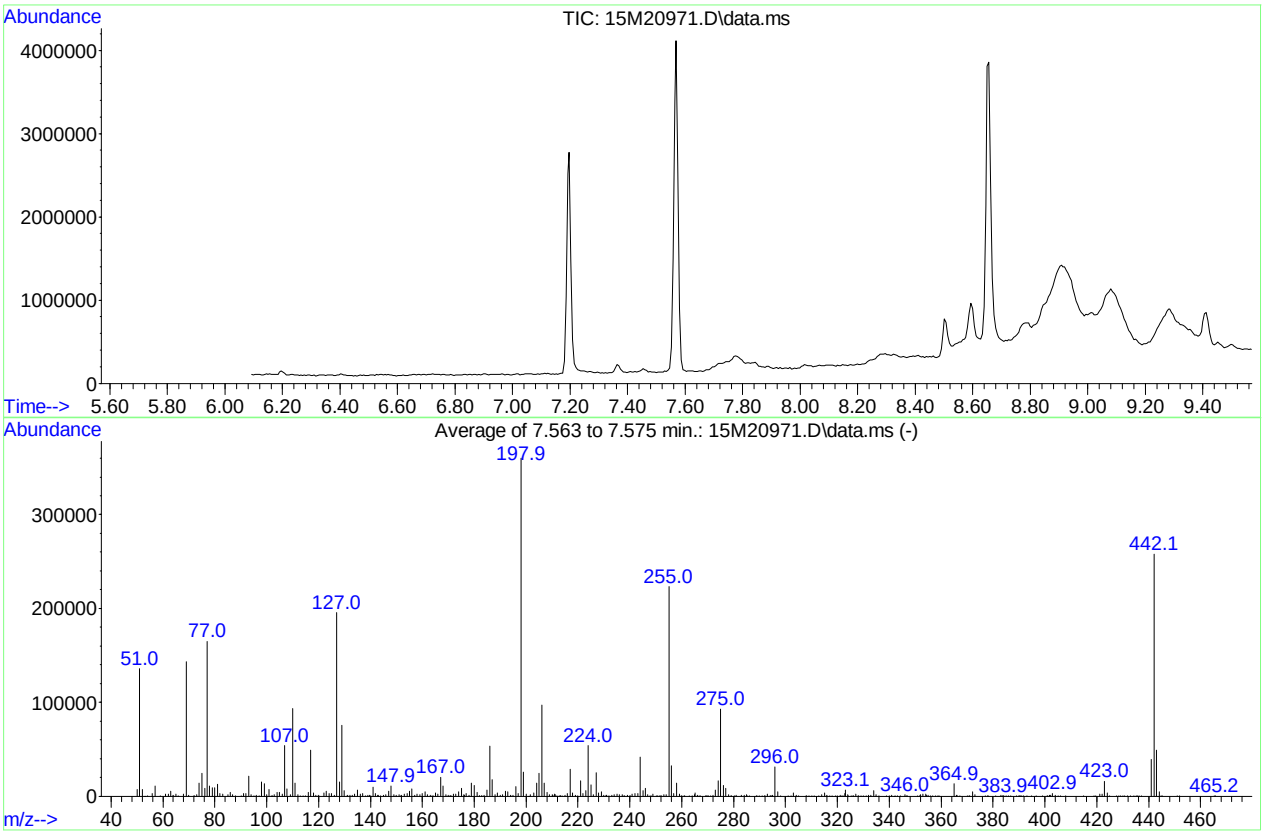
response 823625

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20971.D
Acq On : 5 Apr 2017 9:00 am
Operator : SCB
Sample : WG608842-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Tue Sep 13 14:03:54 2016

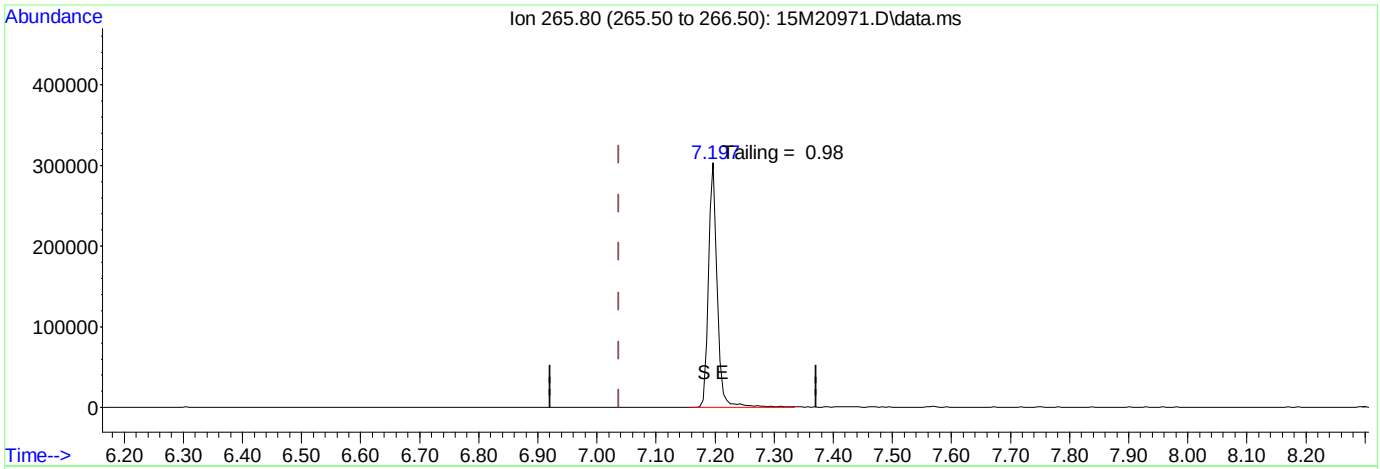


AutoFind: Scans 258, 259, 260; Background Corrected with Scan 250

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	37.6	135558	PASS
68	69	0.00	2	1.6	2275	PASS
69	198	0.00	100	39.7	143072	PASS
70	69	0.00	2	0.6	902	PASS
127	198	40	60	54.3	195437	PASS
197	198	0.00	1	0.9	3065	PASS
198	198	100	100	100.0	360204	PASS
199	198	5	9	7.1	25515	PASS
275	198	10	30	25.7	92736	PASS
365	198	1	100	3.6	13078	PASS
441	443	0.01	100	79.4	38928	PASS
442	198	40	100	71.6	257835	PASS
443	442	17	23	19.0	49032	PASS

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20971.D
Acq On : 5 Apr 2017 9:00 am
Operator : SCB
Sample : WG608842-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:13:26 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration



TIC: 15M20971.D\data.ms

(1) Pentachlorophenol

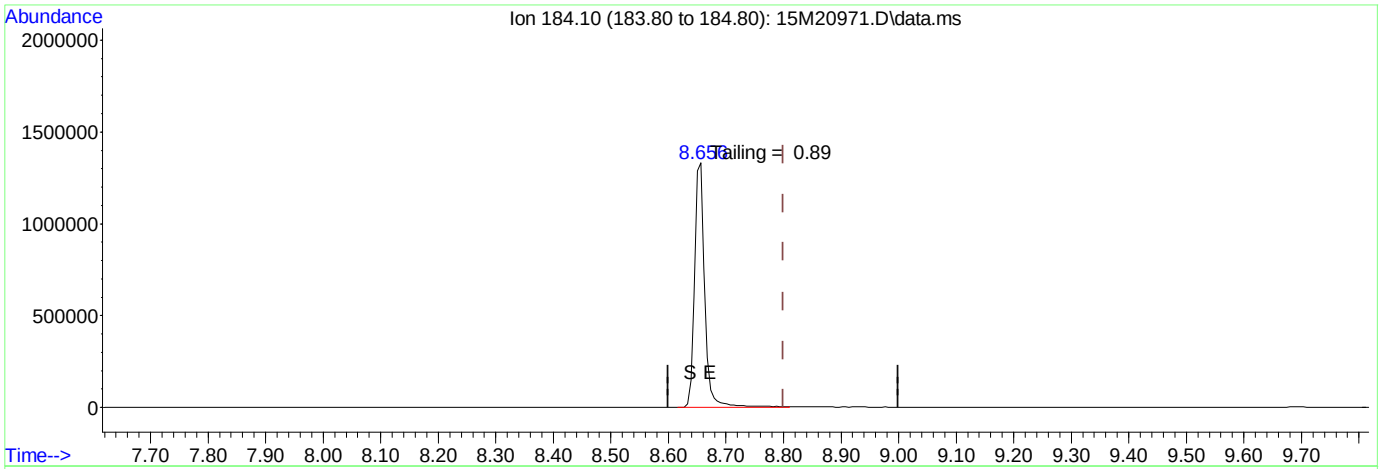
7.197min (+ 0.160) 0.00 ug/ml

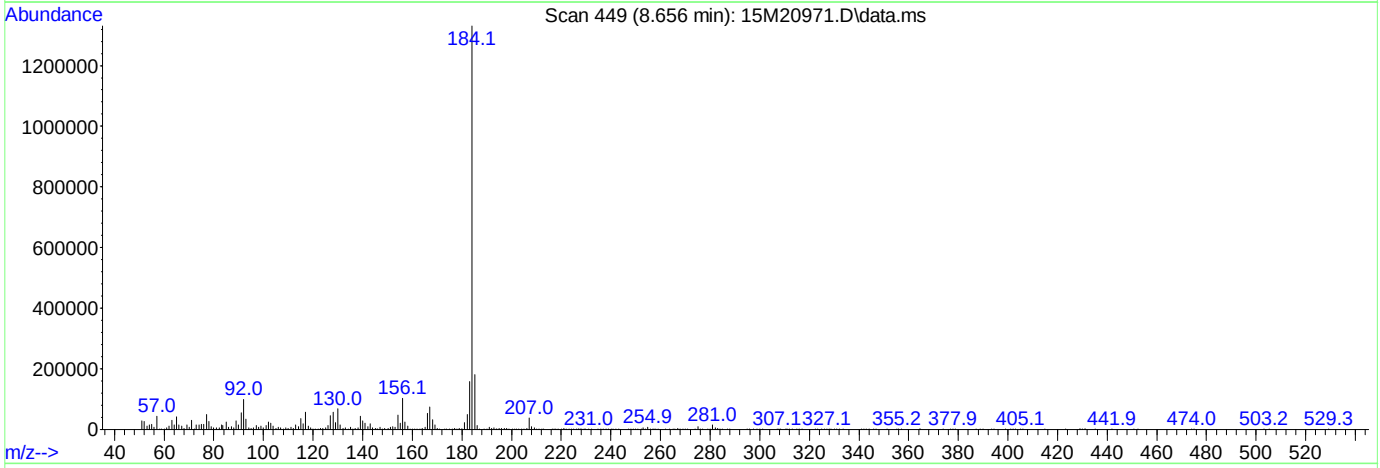
response 319123

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20971.D
Acq On : 5 Apr 2017 9:00 am
Operator : SCB
Sample : WG608842-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:13:26 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration





TIC: 15M20971.D\data.ms

(2) Benzidine

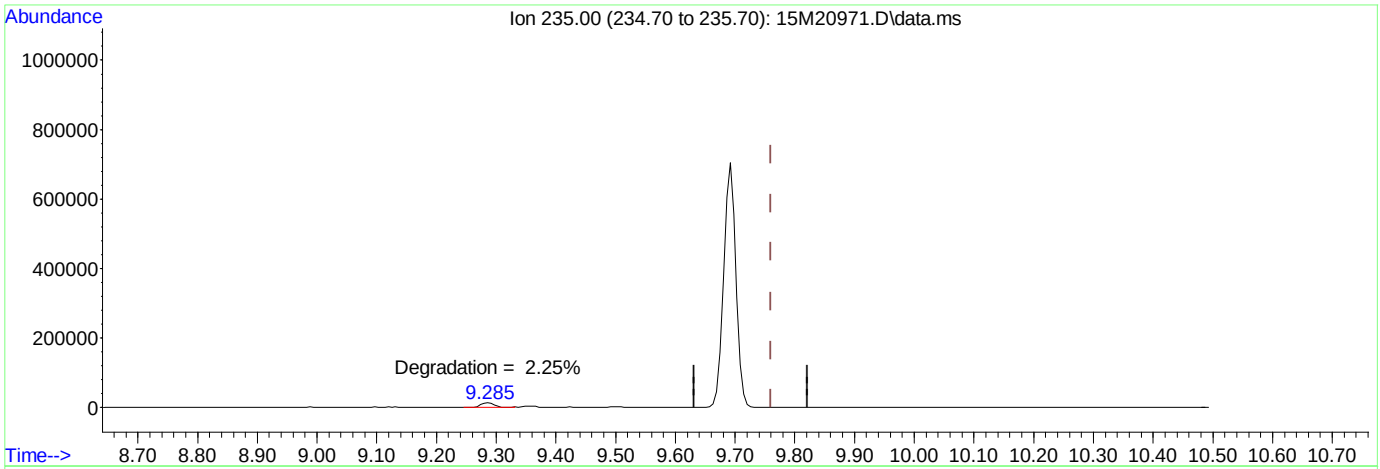
8.656min (-0.143) 0.00 ug/ml

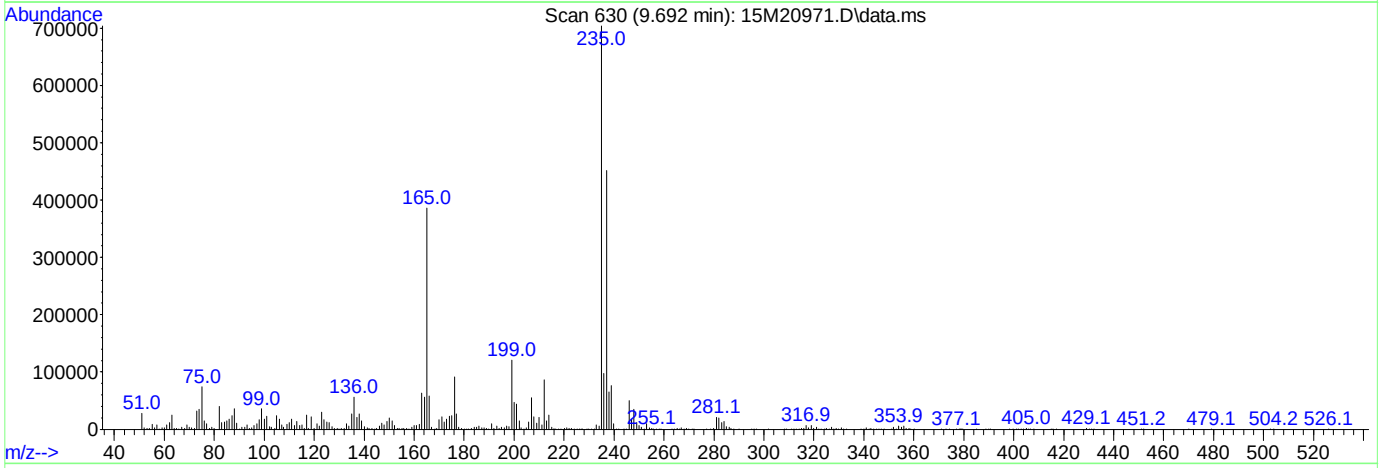
response 1646806

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20971.D
Acq On : 5 Apr 2017 9:00 am
Operator : SCB
Sample : WG608842-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:13:26 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration





TIC: 15M20971.D\data.ms

(3) DDT

9.692min (-0.068) 0.00 ug/ml

response 1009020

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20973.D
Acq On : 5 Apr 2017 9:47 am
Operator : SCB
Sample : WG608522-01 BLANK 4/3
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

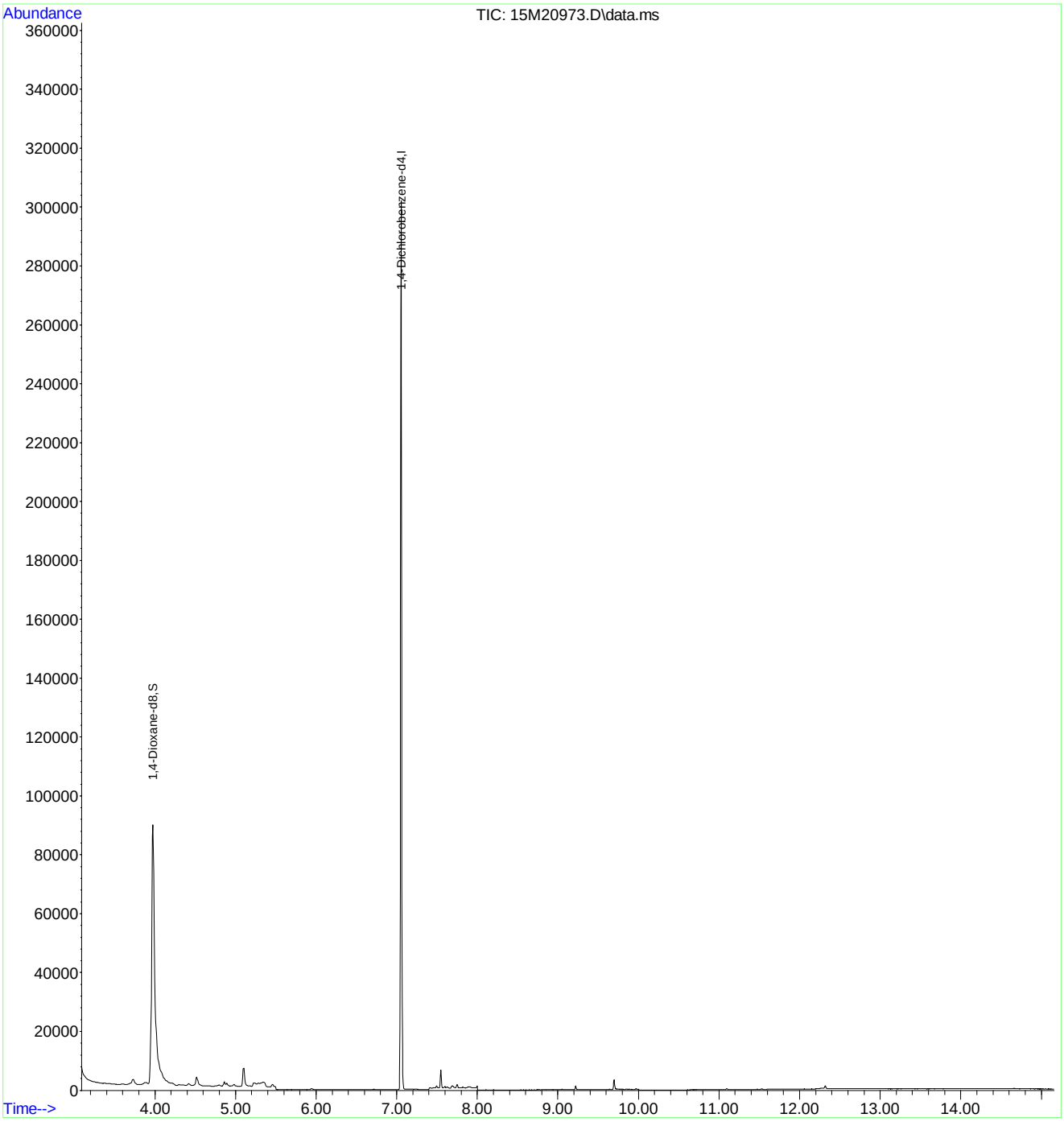
Quant Time: Apr 06 08:33:38 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.054	152	115831	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.975	96	154757	3.4190	ug/L	0.00
Spiked Amount 5.000			Recovery = 68.40%			
4) Nitrobenzene-d5	7.549	82	3340	0.0270	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.60%			
5) 2-Fluorobiphenyl	9.052	172	171	0.0007	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.00%			
6) p-Terphenyl-d14	12.317	244	861	0.0032	ug/L	0.02
Spiked Amount 5.000			Recovery = 0.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20973.D
Acq On : 5 Apr 2017 9:47 am
Operator : SCB
Sample : WG608522-01 BLANK 4/3
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 06 08:33:38 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\040517\
Data File : 15M20974.D
Acq On : 5 Apr 2017 10:10 am
Operator : SCB
Sample : WG608522-02 LCS 4/3
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

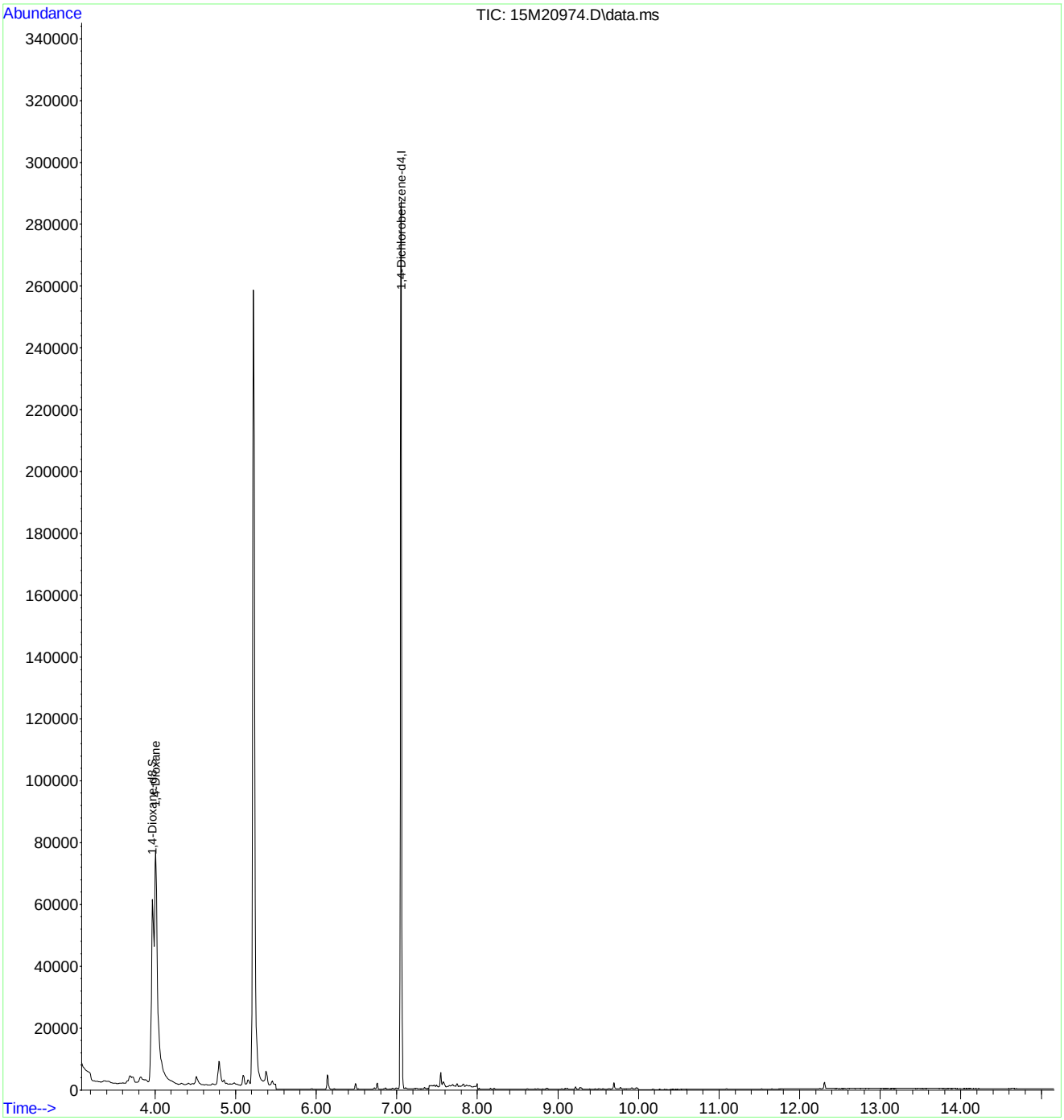
Quant Time: Apr 06 08:32:48 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.054	152	116681	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.968	96	100791	2.2105	ug/L	0.00
Spiked Amount 5.000			Recovery = 44.20%			
4) Nitrobenzene-d5	7.549	82	2947	0.0237	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.40%			
5) 2-Fluorobiphenyl	9.052	172	159	0.0006	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.00%			
6) p-Terphenyl-d14	12.310	244	1819	0.0068	ug/L	0.01
Spiked Amount 5.000			Recovery = 0.20%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.010	58	71412	2.0210	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20974.D
Acq On : 5 Apr 2017 10:10 am
Operator : SCB
Sample : WG608522-02 LCS 4/3
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 06 08:32:48 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\040517\
Data File : 15M20975.D
Acq On : 5 Apr 2017 10:33 am
Operator : SCB
Sample : WG608522-03 LCS2 4/3
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

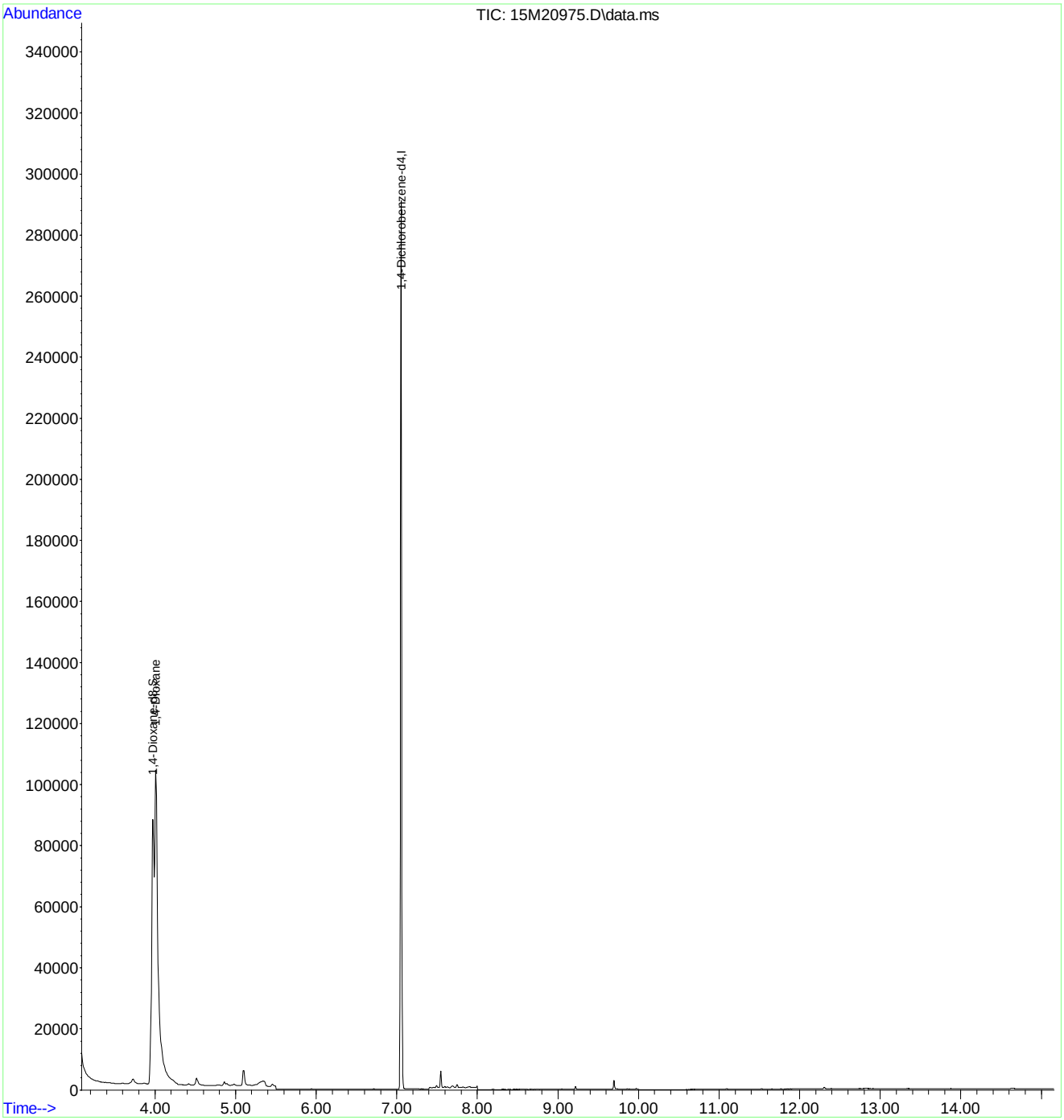
Quant Time: Apr 06 08:32:51 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.054	152	115106	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.975	96	148304	3.2970	ug/L	0.00
Spiked Amount 5.000			Recovery = 66.00%			
4) Nitrobenzene-d5	7.549	82	3035	0.0247	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.40%			
5) 2-Fluorobiphenyl	8.816	172	72	0.0003	ug/L	-0.23
Spiked Amount 5.000			Recovery = 0.00%			
6) p-Terphenyl-d14	12.306	244	432	0.0016	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.010	58	101749	2.9189	ug/L #	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20975.D
Acq On : 5 Apr 2017 10:33 am
Operator : SCB
Sample : WG608522-03 LCS2 4/3
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 06 08:32:51 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration



2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO4
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 12:02
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	04/04/2017 14:05
Workgroup #:	WG608728	**Analyst:**	KKB	**Run Date:**	04/04/2017 16:58
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	T4.040417.165852
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.463		0.200	0.200	0.100
Selenium, Total	7782-49-2	0.0200	U	0.0200	0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO4
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 12:02
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	04/05/2017 15:01
Workgroup #:	WG608728	**Analyst:**	KKB	**Run Date:**	04/05/2017 16:15
Collect Date:	03/29/2017 15:00	**Dilution:**	2	**File ID:**	T4.040517.161554
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	12.1		0.200	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG608524
Analyst: AC
Spike Analyst: AC
Run Date: 04/03/2017 12:02
Method: 3015A
Balance: BAL019
Instrument: MW-1
Instrument Start: 04/03/2017 11:59

SOP: ME407 Revison 19
Spike Solution: STD80805
Spike Witness: VC
HNO3 Lot #: COA19483
HCL Lot #: COA19441
ICP FILTERS LOT#R6EA4780 RGT38286
40 & 50 ML. DIGESTION TU COA19487

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG608524-02	BLANK	1	40 mL	50 mL	207.601 g	207.588 g		
2	WG608524-03	LCS	1	40 mL	50 mL	213.108 g	213.104 g	5 mL	
3	L17031664-01	SAMP	1	40 mL	50 mL	208.46 g	208.445 g		04/07/17
4	L17031664-02	SAMP	1	40 mL	50 mL	206.275 g	206.263 g		04/07/17
5	L17031664-03	SAMP	1	40 mL	50 mL	206.075 g	206.062 g		04/07/17
6	L17031664-04	SAMP	1	40 mL	50 mL	206.333 g	206.32 g		04/07/17
7	L17031664-05	SAMP	1	40 mL	50 mL	207.555 g	207.541 g		04/07/17
8	L17031664-06	SAMP	1	40 mL	50 mL	203.835 g	203.816 g		04/07/17
9	L17031666-01	SAMP	1	40 mL	50 mL	206.618 g	206.599 g		04/07/17
10	L17031676-01	SAMP	1	40 mL	50 mL	206.917 g	206.886 g		04/11/17
11	L17031676-02	SAMP	1	40 mL	50 mL	204.769 g	204.736 g		04/11/17
12	L17031676-03	SAMP	1	40 mL	50 mL	203.554 g	203.494 g		04/11/17
13	WG608524-01	REF	1	40 mL	50 mL	207.35 g	207.322 g		
14	L17031676-04	RS01	1	40 mL	50 mL	207.35 g	207.322 g		04/11/17
15	WG608524-04	MS	1	40 mL	50 mL	213.178 g	213.153 g	5 mL	
16	L17031676-05	MS01	1	40 mL	50 mL	213.178 g	213.153 g	5 mL	04/11/17
17	WG608524-05	MSD	1	40 mL	50 mL	210.417 g	210.392 g	5 mL	
18	L17031676-06	SD01	1	40 mL	50 mL	210.417 g	210.392 g	5 mL	04/11/17
19	L17031689-01	SAMP	1	40 mL	50 mL	207.385 g	207.35 g		04/11/17
20	L17031690-01	SAMP	1	40 mL	50 mL	204.623 g	204.599 g		04/11/17
21	L17031699-01	SAMP	12	1 mL	50 mL	207.826 g	207.795 g		04/07/17
22	L17040001-01	SAMP	1	40 mL	50 mL	205.034 g	204.996 g		04/07/17
23	L17040019-01	SAMP	1	40 mL	50 mL	205.174 g	205.149 g		04/07/17
24	L17040019-02	SAMP	1	40 mL	50 mL	203.833 g	203.821 g		04/07/17
25	L17040020-01	SAMP	1	40 mL	50 mL	206.652 g	206.624 g		04/10/17
26	L17040021-01	SAMP	1	40 mL	50 mL	205.577 g	205.538 g		04/10/17
27	L17040021-03	SAMP	1	40 mL	50 mL	206.099 g	206.063 g		04/10/17

L17031666-01	Filtered Digestate
L17031676-03	Filtered Digestate
L17031689-01	Filtered Digestate
L17031690-01	Filtered Digestate
L17031699-01	Filtered Digestate
L17040019-01	Filtered Digestate
L17040021-01	Filtered Digestate

MW_DIG - Modified 09/30/2009
PDF ID: 5227617
Report generated: 04/03/2017 16:02

Microbac Laboratories Inc.
Microwave Digestion Log

Analyst:

SOP:
Spike Solution:
Reviewer:
Spike Witness:

Method:
Balance:
Instrument:
Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 5227617
Report generated: 04/03/2017 16:02

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO4 Dataset: 040417T4.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80806
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT39282
CCV: ST81186 LLCCV: COA19158 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 608728,608563,608769,608730

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T4.040417.135126	WG608899-01	Calibration Point		1		04/04/17 13:51
2	T4.040417.135501	WG608899-02	Calibration Point		1		04/04/17 13:55
3	T4.040417.135835	WG608899-03	Calibration Point		1		04/04/17 13:58
4	T4.040417.140211	WG608899-04	Calibration Point		1		04/04/17 14:02
5	T4.040417.140541	WG608899-05	Calibration Point		1		04/04/17 14:05
6	T4.040417.140912	WG608899-06	Initial Calibration Verification		1		04/04/17 14:09
7	T4.040417.141246	WG608899-07	Initial Calib Blank		1		04/04/17 14:12
8	T4.040417.141620	WG608899-08	Low Level Initial Calibration V		1		04/04/17 14:16
9	T4.040417.141951	WG608899-09	LLICV		1		04/04/17 14:19
10	T4.040417.142321	WG608899-10	LLICV		1		04/04/17 14:23
11	T4.040417.142651	WG608899-11	Interference Check		1		04/04/17 14:26
12	T4.040417.143029	WG608899-12	Interference Check		1		04/04/17 14:30
13	T4.040417.143402	WG608899-13	CCV		1		04/04/17 14:34
14	T4.040417.143726	WG608899-14	CCB		1		04/04/17 14:37
15	T4.040417.154622	WG608899-15	CCV		1		04/04/17 15:46
16	T4.040417.154943	WG608899-16	CCB		1		04/04/17 15:49
17	T4.040417.155314	WG608524-02	Method/Prep Blank	40/50	1		04/04/17 15:53
18	T4.040417.155646	WG608524-03	Laboratory Control S	40/50	1		04/04/17 15:56
19	T4.040417.160010	L17031664-01	2212-155 W3	40/50	1		04/04/17 16:00
20	T4.040417.160339	L17031664-02	2212-155 W3	40/50	1		04/04/17 16:03
21	T4.040417.160707	L17031664-03	2212-156-A S1	40/50	1		04/04/17 16:07
22	T4.040417.161036	L17031664-04	2212-156-A S1	40/50	1		04/04/17 16:10
23	T4.040417.161405	L17031664-05	2212-156-A W1	40/50	1		04/04/17 16:14
24	T4.040417.161734	L17031664-06	2212-156-A W1	40/50	1		04/04/17 16:17
25	T4.040417.162102	WG608728-01	Post Digestion Spike		1	L17031664-06	04/04/17 16:21
26	T4.040417.162426	WG608728-02	Serial Dilution		5	L17031664-06	04/04/17 16:24
27	T4.040417.162755	WG608899-17	CCV		1		04/04/17 16:27
28	T4.040417.163115	WG608899-18	CCB		1		04/04/17 16:31
29	T4.040417.163445	L17031666-01	GAREY SPRING	40/50	1		04/04/17 16:34
30	T4.040417.163812	L17031676-01	MNA-GMW-706	40/50	1		04/04/17 16:38
31	T4.040417.164141	L17031676-02	MNA-GMW-707	40/50	1		04/04/17 16:41
32	T4.040417.164509	L17031676-03	MNA-GMW-906	40/50	1		04/04/17 16:45
33	T4.040417.164836	WG608524-01	Reference Sample		1	L17031676-04	04/04/17 16:48
34	T4.040417.165204	WG608524-04	Matrix Spike	40/50	1	L17031676-04	04/04/17 16:52

Page: 1 Approved: April 06, 2017

Kym H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO4 Dataset: 040417T4.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80806
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT39282
CCV: ST81186 LLCCV: COA19158 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 608728,608563,608769,608730

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T4.040417.165529	WG608524-05	Matrix Spike Duplica	40/50	1	L17031676-04	04/04/17 16:55
36	T4.040417.165852	L17031689-01	LH18/24-SP140-7428-GRAB	40/50	1		04/04/17 16:58
37	T4.040417.170218	L17031690-01	LH18/24-SP650-6428-GRAB	40/50	1		04/04/17 17:02
38	T4.040417.170555	L17031699-01	17C1634-01	1/50	1		04/04/17 17:05
39	T4.040417.170927	WG608899-19	CCV		1		04/04/17 17:09
40	T4.040417.171247	WG608899-20	CCB		1		04/04/17 17:12
41	T4.040417.171618	L17040001-01	GH55_GOLACINSKI_03-04	40/50	1		04/04/17 17:16
42	T4.040417.171945	L17040019-01	17C1636-01	40/50	1		04/04/17 17:19
43	T4.040417.172315	L17040019-02	17C1636-02	40/50	1		04/04/17 17:23
44	T4.040417.172644	L17040020-01	1805-105-A-W1	40/50	1		04/04/17 17:26
45	T4.040417.173011	L17040021-01	1001-138-S8	40/50	1		04/04/17 17:30
46	T4.040417.173338	L17040021-03	1001-138-S6	40/50	1		04/04/17 17:33
47	T4.040417.173706	WG608366-03	Method/Prep Blank	50/50	1		04/04/17 17:37
48	T4.040417.174037	WG608366-04	Laboratory Control S	50/50	1		04/04/17 17:40
49	T4.040417.174402	L17030513-01	S248-698	50/50	1		04/04/17 17:44
50	T4.040417.174734	WG608563-03	Serial Dilution		5	L17030513-01	04/04/17 17:47
51	T4.040417.175105	WG608899-21	CCV		1		04/04/17 17:51
52	T4.040417.175425	WG608899-22	CCB		1		04/04/17 17:54
53	T4.040417.175755	WG608703-02	Method/Prep Blank	40/50	1		04/04/17 17:57
54	T4.040417.180126	WG608703-03	Laboratory Control S	40/50	1		04/04/17 18:01
55	T4.040417.180451	WG608511-01	Fluid Blank 1		1		04/04/17 18:04
56	T4.040417.180823	WG608511-02	Fluid Blank 2		1		04/04/17 18:08
57	T4.040417.181153	L17031660-01	T9143	5/50	1		04/04/17 18:11
58	T4.040417.181524	WG608703-01	Reference Sample		1	L17040016-01	04/04/17 18:15
59	T4.040417.181853	WG608703-04	Matrix Spike	5/50	1	L17040016-01	04/04/17 18:18
60	T4.040417.182217	WG608703-05	Matrix Spike Duplica	5/50	1	L17040016-01	04/04/17 18:22
61	T4.040417.182542	L17040025-04	J7C1652-04	5/50	1		04/04/17 18:25
62	T4.040417.182910	L17040027-01	033017-BB	5/50	1		04/04/17 18:29
63	T4.040417.183239	WG608899-23	CCV		1		04/04/17 18:32
64	T4.040417.183559	WG608899-24	CCB		1		04/04/17 18:35
65	T4.040417.183930	L17040027-03	033017-CH	5/50	1		04/04/17 18:39
66	T4.040417.184301	L17040064-01	2402-102-B-W1	40/50	1		04/04/17 18:43
67	T4.040417.184630	L17040071-01	2212-113 W1	40/50	1		04/04/17 18:46
68	T4.040417.184956	L17040071-02	2212-113 S1	40/50	1		04/04/17 18:49

Page: 2 Approved: April 06, 2017

Kym H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO4 Dataset: 040417T4.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80806
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT39282
CCV: ST81186 LLCCV: COA19158 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 608728,608563,608769,608730

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T4.040417.185325	L17040071-03	2212-121-A W1	40/50	1		04/04/17 18:53
70	T4.040417.185654	L17040071-04	2211-103 S7	40/50	1		04/04/17 18:56
71	T4.040417.190023	L17040071-05	2211-103 S8	40/50	1		04/04/17 19:00
72	T4.040417.190355	L17040071-06	2211-103-B W1	40/50	1		04/04/17 19:03
73	T4.040417.190723	L17040071-07	2211-103-A S1	40/50	1		04/04/17 19:07
74	T4.040417.191051	L17040072-01	1801-143 S2	40/50	1		04/04/17 19:10
75	T4.040417.191419	WG608899-25	CCV		1		04/04/17 19:14
76	T4.040417.191741	WG608899-26	CCB		1		04/04/17 19:17
77	T4.040417.192112	L17040072-02	1801-143 S3/S2	40/50	1		04/04/17 19:21
78	T4.040417.192441	L17040072-03	1801-143 S4	40/50	1		04/04/17 19:24
79	T4.040417.192809	L17040072-04	1801-143 S1	40/50	1		04/04/17 19:28
80	T4.040417.193137	L17040072-05	1801-143 P1	40/50	1		04/04/17 19:31
81	T4.040417.193504	WG608769-01	Post Digestion Spike		1	L17040072-05	04/04/17 19:35
82	T4.040417.193828	WG608769-02	Serial Dilution		5	L17040072-05	04/04/17 19:38
83	T4.040417.194157	WG608899-27	CCV		1		04/04/17 19:41
84	T4.040417.194518	WG608899-28	CCB		1		04/04/17 19:45
85	T4.040417.194848	WG608899-29	Low Level Continuing Calibra		1		04/04/17 19:48
86	T4.040417.195215	WG608899-30	LLCCV		1		04/04/17 19:52
87	T4.040417.195543	WG608899-31	LLCCV		1		04/04/17 19:55
88	T4.040417.195914	WG608508-02	Method/Prep Blank	40/50	1		04/04/17 19:59
89	T4.040417.200249	WG608508-03	Laboratory Control S	40/50	1		04/04/17 20:02
90	T4.040417.200619	L17031657-01	2402-100-W2	40/50	1		04/04/17 20:06
91	T4.040417.200947	L17031657-02	2402-100-P1	40/50	1		04/04/17 20:09
92	T4.040417.201319	L17031657-03	2402-100-S14	40/50	1		04/04/17 20:13
93	T4.040417.201648	L17031657-04	2402-100-S1	40/50	1		04/04/17 20:16
94	T4.040417.202016	L17031657-05	2402-100-S2	40/50	1		04/04/17 20:20
95	T4.040417.202346	L17031658-01	2212-138B-W1	40/50	1		04/04/17 20:23
96	T4.040417.202713	WG608730-01	Post Digestion Spike		1	L17031658-01	04/04/17 20:27
97	T4.040417.203036	WG608730-02	Serial Dilution		5	L17031658-01	04/04/17 20:30
98	T4.040417.203403	WG608899-32	CCV		1		04/04/17 20:34
99	T4.040417.203723	WG608899-33	CCB		1		04/04/17 20:37
100	T4.040417.204053	L17031658-02	2212-138B-S1	40/50	1		04/04/17 20:40
101	T4.040417.204424	L17031662-01	59-5-2-1-6	40/50	1		04/04/17 20:44
102	T4.040417.204751	L17031662-02	59-5-2-1-6	40/50	1		04/04/17 20:47

Page: 3 Approved: April 06, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO4 Dataset: 040417T4.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80806
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT39282
CCV: ST81186 LLCCV: COA19158 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 608728,608563,608769,608730

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T4.040417.205119	L17031662-03	6-10-10 W1	40/50	1		04/04/17 20:51
104	T4.040417.205447	L17031662-04	6-8-15 W1	40/50	1		04/04/17 20:54
105	T4.040417.205815	L17031662-05	6-10-22 W1	40/50	1		04/04/17 20:58
106	T4.040417.210143	L17031662-06	59-11-10.10 W1	40/50	1		04/04/17 21:01
107	T4.040417.210511	L17031662-07	59-5-2-2-1 W1	40/50	1		04/04/17 21:05
108	T4.040417.210839	L17031662-08	59-2-2-4 W1	40/50	1		04/04/17 21:08
109	T4.040417.211207	L17031663-01	15-18-22 S1	40/50	1		04/04/17 21:12
110	T4.040417.211538	WG608899-34	CCV		1		04/04/17 21:15
111	T4.040417.211900	WG608899-35	CCB		1		04/04/17 21:19
112	T4.040417.212231	L17031665-01	59-11-11.05 W1	40/50	1		04/04/17 21:22
113	T4.040417.212558	L17031685-01	LF 6-7 SW11	40/50	1		04/04/17 21:25
114	T4.040417.212928	L17031685-02	LF 6-7 SW11	40/50	1		04/04/17 21:29
115	T4.040417.213257	L17031704-01	0317PRE-59 RAILROAD PA		1	WG608508-01	04/04/17 21:32
116	T4.040417.213624	WG608508-04	Matrix Spike	40/50	1	L17031704-01	04/04/17 21:36
117	T4.040417.213947	WG608508-05	Matrix Spike Duplica	40/50	1	L17031704-01	04/04/17 21:39
118	T4.040417.214310	WG608899-36	CCV		1		04/04/17 21:43
119	T4.040417.214630	WG608899-37	CCB		1		04/04/17 21:46

Page: 4 Approved: April 06, 2017

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO4 Dataset: 040517T4.1
Analyst1: KKB Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81302 ICV Std: STD81301 Post Spike: STD80806
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT39282
CCV: STD81303 LLCCV: COA19158 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 608704,608728,608705

Comments: Stds include Zr

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T4.040517.144707	WG609001-01	Calibration Point		1		04/05/17 14:47
2	T4.040517.145045	WG609001-02	Calibration Point		1		04/05/17 14:50
3	T4.040517.145420	WG609001-03	Calibration Point		1		04/05/17 14:54
4	T4.040517.145754	WG609001-04	Calibration Point		1		04/05/17 14:57
5	T4.040517.150118	WG609001-05	Calibration Point		1		04/05/17 15:01
6	T4.040517.150442	WG609001-06	Initial Calibration Verification		1		04/05/17 15:04
7	T4.040517.150820	WG609001-07	Initial Calib Blank		1		04/05/17 15:08
8	T4.040517.151155	WG609001-08	LLICV		1		04/05/17 15:11
9	T4.040517.151525	WG609001-09	Low Level Initial Calibration V		1		04/05/17 15:15
10	T4.040517.151856	WG609001-10	Interference Check		1		04/05/17 15:18
11	T4.040517.152234	WG609001-11	Interference Check		1		04/05/17 15:22
12	T4.040517.152608	WG609001-12	CCV		1		04/05/17 15:26
13	T4.040517.152931	WG609001-13	CCB		1		04/05/17 15:29
14	T4.040517.153308	L17040009-01	IDL1-ICP-PE2	40/50	1		04/05/17 15:33
15	T4.040517.153642	L17040009-02	IDL2-ICP-PE2	40/50	1		04/05/17 15:36
16	T4.040517.154016	L17040009-03	IDL3-ICP-PE2	40/50	1		04/05/17 15:40
17	T4.040517.154356	L17040009-04	IDL4-ICP-PE2	40/50	1		04/05/17 15:43
18	T4.040517.154730	L17040009-05	IDL5-ICP-PE2	40/50	1		04/05/17 15:47
19	T4.040517.155104	L17040009-06	IDL6-ICP-PE2	40/50	1		04/05/17 15:51
20	T4.040517.155438	L17040009-07	IDL7-ICP-PE2	40/50	1		04/05/17 15:54
21	T4.040517.155812	IDL8	IDL8		1		04/05/17 15:58
22	T4.040517.160146	IDL9	IDL9		1		04/05/17 16:01
23	T4.040517.160520	IDL10	IDL10		1		04/05/17 16:05
24	T4.040517.160855	WG609001-14	CCV		1		04/05/17 16:08
25	T4.040517.161218	WG609001-15	CCB		1		04/05/17 16:12
26	T4.040517.161554	L17031689-01	LH18/24-SP140-7428-GRAB	40/50	2		04/05/17 16:15
27	T4.040517.161926	WG609001-16	CCV		1		04/05/17 16:19
28	T4.040517.162251	WG609001-17	CCB		1		04/05/17 16:22
29	T4.040517.162628	WG609001-18	Low Level Continuing Calibra		1		04/05/17 16:26
30	T4.040517.162959	WG609001-19	LLCCV		1		04/05/17 16:29
31	T4.040517.171927	L17040010-01	PE2	40/50	1		04/05/17 17:19
32	T4.040517.172303	L17040010-02	PE2	40/50	1		04/05/17 17:23
33	T4.040517.172636	L17040010-03	PE2	40/50	1		04/05/17 17:26
34	T4.040517.173009	L17040010-04	PE2	40/50	1		04/05/17 17:30

Page: 1 Approved: April 06, 2017

Kym H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO4 Dataset: 040517T4.1
Analyst1: KKB Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

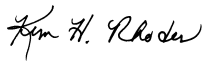
Calibration Std: STD81302 ICV Std: STD81301 Post Spike: STD80806
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT39282
CCV: STD81303 LLCCV: COA19158 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 608704,608728,608705

Comments: Stds include Zr

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T4.040517.173351	L17040010-05	PE2		1		04/05/17 17:33
36	T4.040517.173734	L17040010-06	PE2	40/50	1		04/05/17 17:37
37	T4.040517.174108	L17040010-07	PE2	40/50	1		04/05/17 17:41
38	T4.040517.174441	L17040010-08	PE2	40/50	1		04/05/17 17:44
39	T4.040517.174814	L17040010-09	PE2	40/50	1		04/05/17 17:48
40	T4.040517.175156	L17040010-10	PE2	40/50	1		04/05/17 17:51
41	T4.040517.175539	WG609001-20	CCV		1		04/05/17 17:55
42	T4.040517.175903	WG609001-21	CCB		1		04/05/17 17:59
43	T4.040517.180239	L17040010-11	PE2	40/50	1		04/05/17 18:02
44	T4.040517.180621	L17040010-12	PE2	40/50	1		04/05/17 18:06
45	T4.040517.180952	L17040010-13	PE2		1		04/05/17 18:09
46	T4.040517.181334	L17040010-14	PE2	40/50	1		04/05/17 18:13
47	T4.040517.181709	L17040010-15	PE2	40/50	1		04/05/17 18:17
48	T4.040517.182043	L17040010-16	PE2	40/50	1		04/05/17 18:20
49	T4.040517.182415	L17040010-17	PE2		1		04/05/17 18:24
50	T4.040517.182746	L17040010-18	PE2	40/50	1		04/05/17 18:27
51	T4.040517.183120	L17040010-19	PE2		1		04/05/17 18:31
52	T4.040517.183503	L17040010-20	PE2	40/50	1		04/05/17 18:35
53	T4.040517.183838	WG609001-22	CCV		1		04/05/17 18:38
54	T4.040517.184203	WG609001-23	CCB		1		04/05/17 18:42
55	T4.040517.184540	L17040010-21	PE2	40/50	1		04/05/17 18:45
56	T4.040517.184913	L17040010-22	PE2	40/50	1		04/05/17 18:49
57	T4.040517.185246	L17040010-23	PE2		1		04/05/17 18:52
58	T4.040517.185620	L17040010-24	PE2	40/50	1		04/05/17 18:56
59	T4.040517.185954	L17040010-25	PE2	40/50	1		04/05/17 18:59
60	T4.040517.190329	L17040010-26	PE2	40/50	1		04/05/17 19:03
61	T4.040517.190701	L17040010-27	PE2	40/50	1		04/05/17 19:07
62	T4.040517.191034	L17040010-28	PE2	40/50	1		04/05/17 19:10
63	T4.040517.191409	WG609001-24	CCV		1		04/05/17 19:14
64	T4.040517.191733	WG609001-25	CCB		1		04/05/17 19:17
65	T4.040517.192111	L17040010-29	PE2	40/50	1		04/05/17 19:21
66	T4.040517.192455	L17040010-29	PE2	40/50	1		04/05/17 19:24
67	T4.040517.192838	L17040010-29	PE2	40/50	1		04/05/17 19:28
68	T4.040517.193224	WG609001-26	CCV		1		04/05/17 19:32

Page: 2 Approved: April 06, 2017



Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO4 Dataset: 040517T4.1

Analyst1: KKB Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD81302 ICV Std: STD81301 Post Spike: STD80806

ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT39282

CCV: STD81303 LLCCV: COA19158 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 608704,608728,608705

Comments: Stds include Zr

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T4.040517.193548	WG609001-27	CCB		1		04/05/17 19:35

 Approved: April 06, 2017

Kym H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 04-APR-2017
Analyst: KKB
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO4
Curve Workgroup: 608899
Runlog ID: 81355
Analytical Workgroups: 608728,608563,608769,608730

Add'l Workgroups	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1704
Level 4	513,1676,1689,1690,1685
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KKB
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
05-APR-2017

Secondary Reviewer:
06-APR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: APR-06-2017 08:17:27

Microbac Laboratories Inc.

Data Checklist

Date: 05-APR-2017
Analyst: KKB
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO4
Curve Workgroup: 609001
Runlog ID: 81374
Analytical Workgroups: 608704,608728,608705

	STDS INCLUDE ZR
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	
Client Forms	X
Level X	
Level 3	
Level 4	1689
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KKB
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
06-APR-2017

Secondary Reviewer:
06-APR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: APR-06-2017 10:35:38

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C AAB#: WG608728

Login Number: L17031689

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP140-7428-GRAB	01	03/29/17					04/03/2017	4.9	180		04/05/17	7.1	180	
LH18/24-SP140-7428-GRAB	01	03/29/17					04/03/2017	4.9	180		04/04/17	6.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5231320
Report generated 04/06/2017 08:09

METHOD BLANK SUMMARY

Login Number:	L17031689	**Work Group:**	WG608728
Blank File ID:	T4.040417.155314	**Blank Sample ID:**	WG608524-02
Prep Date:	04/03/17 12:02	**Instrument ID:**	ICP-THERMO4
Analyzed Date:	04/04/17 15:53	**Method:**	6010C
Analyst:	KKB		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608524-03	T4.040417.155646	04/04/17 15:56	01
LH18/24-SP140-7428-GRAB	L17031689-01	T4.040417.165852	04/04/17 16:58	01
LH18/24-SP140-7428-GRAB	L17031689-01	T4.040517.161554	04/05/17 16:15	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5231321
Report generated 04/06/2017 08:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031689 Prep Date: 04/03/17 12:02 Sample ID: WG608524-02
Instrument ID: ICP-THERMO4 Run Date: 04/04/17 15:53 Prep Method: 3015A
File ID: T4.040417.155314 Analyst: KKB Method: 6010C
Workgroup (AAB#): WG608728 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-04-APR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.100	0.200	0.100	1	U
Iron, Total	0.0500	0.100	0.0500	1	U
Selenium, Total	0.0100	0.0200	0.0100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5231322
06-APR-2017 08:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031689 **Run Date:** 04/04/2017 **Sample ID:** WG608524-03
Instrument ID: ICP-THERMO4 **Run Time:** 15:56 **Prep Method:** 3015A
File ID: T4.040417.155646 **Analyst:** KKB **Method:** 6010C
Workgroup (AAB#): WG608728 **Matrix:** Water **Units:** mg/L
QC Key: DOD4 **Lot#:** STD80805 **Cal ID:** ICP-TH-04-APR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.55	105	80 - 120	
Iron, Total	2.50	2.59	104	80 - 120	
Selenium, Total	0.250	0.244	97.4	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5231323
Report generated: 04/06/2017 08:09

Loginnum:L17031689 Cal ID:ICP-THERMO4- Worknum:WG608728
Instrument ID:ICP-THERMO4 Contract #: Method:6010C
Parent ID:WG608524-01 File ID:T4.040417.164836 Dil:1 Matrix:WATER
Sample ID:WG608524-04 MS File ID:T4.040417.165204 Dil:1 Units:mg/L
Sample ID:WG608524-05 MSD File ID:T4.040417.165529 Dil:1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum, Total	0.647	6.25	8.02	118	6.25	7.29	106	9.54	80 - 120	20	
Iron, Total	0.618	2.50	4.07	138	2.50	3.60	119	12.3	80 - 120	20	*
Selenium, Total	ND	0.250	0.238	95.0	0.250	0.242	97.0	2.01	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 5231324
Report generated 04/06/2017 08:09

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031689 **Worknum:** WG608728
Instrument: ICP-THERMO4 **Method:** 6010C
Serial Dil: WG608728-02 **File ID:** T4.040417.162426 **Dil:** 5 **Units:** ug/L
Sample: L17031664-06 **File ID:** T4.040417.161734 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	ND	U	ND	U		
Iron	ND	U	97.1		1360.00	
Selenium	ND	U	3.75		270.00	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5231318
04/06/2017 08:09

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031689 **Worknum:** WG608728
Instrument ID: ICP-THERMO4 **Method:** 6010C
Post Spike ID: WG608728-01 **File ID:** T4.040417.162102 **Dil:** 1 **Units:** ug/L
Sample ID: L17031664-06 **File ID:** T4.040417.161734 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5100		0	U	5000	101.9	75 - 125	
IRON	2090		0	U	2000	104.4	75 - 125	
SELENIUM	197		0	U	200	98.4	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5231319
Report generated: 04/06/2017 08:09

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031689**	Workgroup (AAB#):	**WG608728**
Analytical Method:	**6010C**	Instrument ID:	**ICP-THERMO4**
ICAL Worknum:	**WG608899**	Initial Calibration Date:	**04-APR-2017 14:05**

	WG608899-01		WG608899-02		WG608899-03		WG608899-04		WG608899-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00127	.1	0.00243	.2	0.00350	10	0.131	20	0.253	.999862	
IRON	0	0.000170	.04	0.000900	.08	0.000920	4	0.0677	8	0.137	.999571	
SELENIUM	0	0	NA	NA	.008	0.0000600	.4	0.00645	.8	0.0129	.999516	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5231327
Report generated: 06-APR-2017 08:09

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031689**	Workgroup (AAB#):	**WG608728**
Analytical Method:	**6010C**	Instrument ID:	**ICP-THERMO4**
ICAL Worknum:	**WG609001**	Initial Calibration Date:	**05-APR-2017 15:01**

	WG609001-01		WG609001-02		WG609001-03		WG609001-04		WG609001-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00117	.1	0.00225	.2	0.00344	10	0.126	20	0.246	.999891	
IRON	0	-0.000280	.04	0.000680	.08	0.00134	4	0.0656	8	0.134	.998418	
SELENIUM	0	-0.0000700	NA	NA	.008	0.0000600	.4	0.00631	.8	0.0129	.999868	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5231327
Report generated: 06-APR-2017 08:09

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-07
Instrument ID: ICP-THERMO4 Run Time: 14:12 Method: 6010C
File ID: T4.040417.141246 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-THERI - 04-APR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.08	.16	.08	U
IRON	.04	.08	.04	U
SELENIUM	.008	.016	.008	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5231329
Report generated 04/06/2017 08:09

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031689 Run Date: 04/05/2017 Sample ID: WG609001-07
Instrument ID: ICP-THERMO4 Run Time: 15:08 Method: 6010C
File ID: T4.040517.150820 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-THERI - 05-APR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.08	.16	.08	U
IRON	.04	.08	.04	U
SELENIUM	.008	.016	.008	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5231329
Report generated 04/06/2017 08:09

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-14
Instrument ID: ICP-THERMO4 Run Time: 14:37 Method: 6010C
File ID: T4.040417.143726 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0800	0.160	0.0800	U
Iron	0.0400	0.0800	0.0400	U
Selenium	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-16
Instrument ID: ICP-THERMO4 Run Time: 15:49 Method: 6010C
File ID: T4.040417.154943 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0800	0.160	0.0800	U
Iron	0.0400	0.0800	0.0400	U
Selenium	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-18
Instrument ID: ICP-THERMO4 Run Time: 16:31 Method: 6010C
File ID: T4.040417.163115 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0800	0.160	0.0800	U
Iron	0.0400	0.0800	0.0400	U
Selenium	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-20
Instrument ID: ICP-THERMO4 Run Time: 17:12 Method: 6010C
File ID: T4.040417.171247 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0800	0.160	0.0800	U
Iron	0.0400	0.0800	0.0400	U
Selenium	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 Run Date: 04/05/2017 Sample ID: WG609001-13
Instrument ID: ICP-THERMO4 Run Time: 15:29 Method: 6010C
File ID: T4.040517.152931 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 05-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0800	0.160	0.0800	U
Iron	0.0400	0.0800	0.0400	U
Selenium	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 | Run Date: 04/05/2017 | Sample ID: WG609001-15
Instrument ID: ICP-THERMO4 | Run Time: 16:12 | Method: 6010C
File ID: T4.040517.161218 | Analyst: KKB | Units: mg/L
Workgroup (AAB#): WG608728 | Cal ID: ICP-TH - 05-APR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0800	0.160	0.0800	U
Iron	0.0400	0.0800	0.0400	U
Selenium	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L17031689 Run Date: 04/05/2017 Sample ID: WG609001-17
Instrument ID: ICP-THERMO4 Run Time: 16:22 Method: 6010C
File ID: T4.040517.162251 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 05-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0800	0.160	0.0800	U
Iron	0.0400	0.0800	0.0400	U
Selenium	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031689 Run Date: 04/05/2017 Sample ID: WG609001-06
Instrument ID: ICP-THERMO4 Run Time: 15:04 Method: 6010C
File ID: T4.040517.150442 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 05-APR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.3	103	90 - 110	
Iron		4	4.08	102	90 - 110	
Selenium		.4	0.418	105	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
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Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-06
Instrument ID: ICP-THERMO4 Run Time: 14:09 Method: 6010C
File ID: T4.040417.140912 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.99	99.9	90 - 110	
Iron		4	3.96	99.1	90 - 110	
Selenium		.4	0.391	97.8	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5231328
Report generated 04/06/2017 08:09

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-13
Instrument ID: ICP-THERMO4 Run Time: 14:34 Method: 6010C
File ID: T4.040417.143402 Analyst: KKB QC Key: DOD4
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Iron		4.00	3.95	mg/L	98.6	90 - 110		
Selenium		0.400	0.401	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-15

Instrument ID: ICP-THERMO4 Run Time: 15:46 Method: 6010C

File ID: T4.040417.154622 Analyst: KKB QC Key: DOD4

Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.05	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-17

Instrument ID: ICP-THERMO4 Run Time: 16:27 Method: 6010C

File ID: T4.040417.162755 Analyst: KKB QC Key: DOD4

Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.06	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-19
Instrument ID: ICP-THERMO4 Run Time: 17:09 Method: 6010C
File ID: T4.040417.170927 Analyst: KKB QC Key: DOD4
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.03	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031689 Run Date: 04/05/2017 Sample ID: WG609001-12
Instrument ID: ICP-THERMO4 Run Time: 15:26 Method: 6010C
File ID: T4.040517.152608 Analyst: KKB QC Key: DOD4
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 05-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Iron		4.00	3.93	mg/L	98.2	90 - 110		
Selenium		0.400	0.398	mg/L	99.5	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031689 Run Date: 04/05/2017 Sample ID: WG609001-14
Instrument ID: ICP-THERMO4 Run Time: 16:08 Method: 6010C
File ID: T4.040517.160855 Analyst: KKB QC Key: DOD4
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 05-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Iron		4.00	3.95	mg/L	98.8	90 - 110		
Selenium		0.400	0.404	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031689 Run Date: 04/05/2017 Sample ID: WG609001-16
Instrument ID: ICP-THERMO4 Run Time: 16:19 Method: 6010C
File ID: T4.040517.161926 Analyst: KKB QC Key: DOD4
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 05-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	3.96	mg/L	99.0	90 - 110		
Selenium		0.400	0.404	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-08
Instrument ID: ICP-THERMO4 Run Time: 14:16 Method: 6010C
File ID: T4.040417.141620 Analyst: KKB QC Key: DOD4
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.187	mg/L	117	70 - 130		
Iron		0.0800	0.0711	mg/L	88.9	70 - 130		
Selenium		0.0160	0.0173	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5231333
Report generated 04/06/2017 08:10

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608899-29
Instrument ID: ICP-THERMO4 Run Time: 19:48 Method: 6010C
File ID: T4.040417.194848 Analyst: KKB QC Key: DOD4
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.174	mg/L	109	70 - 130		
Iron		0.0800	0.0848	mg/L	106	70 - 130		
Selenium		0.0160	0.0140	mg/L	87.4	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5231333
Report generated 04/06/2017 08:10

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031689 Run Date: 04/05/2017 Sample ID: WG609001-09

Instrument ID: ICP-THERMO4 Run Time: 15:15 Method: 6010C

File ID: T4.040517.151525 Analyst: KKB QC Key: DOD4

Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 05-APR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0865	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010

PDF File ID: 5231333

Report generated 04/06/2017 08:10

Login Number: L17031689 Run Date: 04/05/2017 Sample ID: WG609001-18
Instrument ID: ICP-THERMO4 Run Time: 16:26 Method: 6010C
File ID: T4.040517.162628 Analyst: KKB QC Key: DOD4
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 05-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.104	mg/L	130	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5231333
Report generated 04/06/2017 08:10

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031689 **Workgroup (AAB#):** WG608728
Instrument ID: ICP-THERMO4 **Method:** 6010C
Sol. A : WG608899-11 **File ID:** T4.040417.142651 **Units:** mg/L
Sol. AB : WG608899-12 **File ID:** T4.040417.143029 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	240	96.0	250	234	93.6	
Iron	100	97.1	97.1	100	96.7	96.7	
Selenium	NS	-0.00218	NS	0.250	0.235	94.0	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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PDF File ID: 5231330
Report generated 04/06/2017 08:10

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031689 **Workgroup (AAB#):** WG608728
Instrument ID: ICP-THERMO4 **Method:** 6010C
Sol. A : WG609001-10 **File ID:** T4.040517.151856 **Units:** mg/L
Sol. AB : WG609001-11 **File ID:** T4.040517.152234 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	248	99.2	250	248	99.2	
Iron	100	99.4	99.4	100	97.8	97.8	
Selenium	NS	0.00315	NS	0.250	0.244	97.6	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5231330
Report generated 04/06/2017 08:10

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031689 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0145	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000378	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0	0.0000140	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.10	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000320	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5231326
Report generated: 04/06/2017 08:09

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031689 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0260
ARSENIC	189.00	0	0	0	0	-0.00730
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.10	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00350
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031689 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000490	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000648	0	0	0
CADMIUM	228.80	0	-0.00000500	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000400	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00139	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000220
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	0.0390	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.10	0	-0.000118	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000200	0	0	0
VANADIUM	292.40	0	0.0000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5231326
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031689 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	0.000910	0	-0.00190	0
ARSENIC	189.00	0	0.000139	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.000610	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0.0000300	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0.000600	0.000580	0	0	0
SILICON	212.40	0	-0.354	0	0	0
SILVER	328.10	0	-0.0000100	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00160	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5231326
Report generated: 04/06/2017 08:09

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031689 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0320
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.10	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5231326
Report generated: 04/06/2017 08:09

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031689 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0720	0
ANTIMONY	206.80	0	0.000500	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00170	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.10	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.00100	0	-0.0420	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5231326
Report generated: 04/06/2017 08:09

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031689 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.10	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.10	0
SILICON	212.40	0
SILVER	328.10	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5231326
Report generated: 04/06/2017 08:09

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L17031689 **Date:** 01/24/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	8.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	8.00	720.0
Lead	20.00	225.0
Lithium	8.00	36.0
Magnesium	8.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	8.00	360.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	4.5
Sodium	8.00	270.0
Strontium	8.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	8.00	45.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

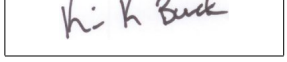
Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 5231325
Report generated: 04/06/2017 08:09

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000188	0.042372	0.000000	1.000000
Al 308.215 {109}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.001274	0.012623	0.000000	1.000000
As 189.042 {478}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000007	0.025441	0.000000	1.000000
B 249.678 {135}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000141	0.023279	0.000000	1.000000
Ba 455.403 { 74}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.024358	1.227028	0.000000	1.000000
Be 313.107 {108}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000336	1.013376	0.000000	1.000000
Ca 422.673 { 80}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000246	0.030179	0.000000	1.000000
Cd 228.802 {447}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000421	0.387108	0.000000	1.000000
Co 228.616 {447}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000314	0.309492	0.000000	1.000000
Cr 267.716 {126}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000197	0.061202	0.000000	1.000000
Cu 224.700 {450}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000747	0.094870	0.000000	1.000000
Fe 261.187 {129}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000171	0.016991	0.000000	1.000000
K 766.490 { 44}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.010754	0.030860	0.000000	1.000000
Li 670.784 { 50}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000575	0.682142	0.000000	1.000000
Mg 279.079 {121}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.001111	0.005247	0.000000	1.000000
Mn 257.610 {131}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000541	0.154990	0.000000	1.000000
Mo 202.030 {467}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000104	0.128665	0.000000	1.000000
Na 589.592 { 57}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.054793	0.103036	0.000000	1.000000
Ni 231.604 {446}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.001000	0.086073	0.000000	1.000000
P 214.914 {457}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000072	0.011291	0.000000	1.000000
Pb 220.353 {453}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000290	0.054131	0.000000	1.000000
Sb 206.833 {463}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000649	0.023335	0.000000	1.000000
Se 196.090 {472}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000003	0.016020	0.000000	1.000000
Si 212.412 {459}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000312	0.027375	0.000000	1.000000
Sn 189.989 {477}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.003551	0.076764	0.000000	1.000000
Sr 407.771 { 83}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.005209	2.087507	0.000000	1.000000
Ti 337.280 {100}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.001437	0.104319	0.000000	1.000000
Tl 190.856 {477}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000296	0.020208	0.000000	1.000000
V 292.402 {115}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000050	0.072657	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000403	0.512042	0.000000	1.000000
Zr 339.198 { 99}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.008717	0.006999	0.000000	1.000000

Approved: April 05, 2017



	Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
							Slope	Y-int	Slope factor	Offset
	Ag 328.068 {103}	0.999529	0.000003	0.001854	0.006179	OK.	1.000000	0.000000	1	0
	Al 308.215 {109}	0.999862	0.000013	0.005173	0.017244	OK.	1.000000	0.000000	1	0
	As 189.042 {478}	0.999969	0.000001	0.002221	0.007402	OK.	1.000000	0.000000	1	0
	B 249.678 {135}	0.999912	0.000002	0.002089	0.006963	OK.	1.000000	0.000000	1	0
	Ba 455.403 { 74}	0.999815	0.000150	0.001544	0.005147	OK.	1.000000	0.000000	1	0
	Be 313.107 {108}	0.999979	0.000002	0.000056	0.000188	OK.	1.000000	0.000000	1	0
	Ca 422.673 { 80}	0.999912	0.000025	0.047183	0.157277	OK.	1.000000	0.000000	1	0
	Cd 228.802 {447}	0.999997	0.000000	0.000237	0.000789	OK.	1.000000	0.000000	1	0
	Co 228.616 {447}	0.999981	0.000002	0.000346	0.001154	OK.	1.000000	0.000000	1	0
	Cr 267.716 {126}	0.999962	0.000002	0.000901	0.003005	OK.	1.000000	0.000000	1	0
	Cu 224.700 {450}	0.999936	0.000003	0.001254	0.004180	OK.	1.000000	0.000000	1	0
	Fe 261.187 {129}	0.999571	0.000013	0.027692	0.092305	OK.	1.000000	0.000000	1	0
	K 766.490 { 44}	0.999323	0.000360	0.133436	0.444788	OK.	1.000000	0.000000	1	0
	Li 670.784 { 50}	0.999812	0.000130	0.006020	0.020066	OK.	1.000000	0.000000	1	0
	Mg 279.079 {121}	0.998016	0.000032	0.093807	0.312691	OK.	1.000000	0.000000	1	0
	Mn 257.610 {131}	0.999978	0.000003	0.003722	0.012405	OK.	1.000000	0.000000	1	0
	Mo 202.030 {467}	1.000000	0.000000	0.000418	0.001393	OK.	1.000000	0.000000	1	0
	Na 589.592 { 57}	0.999983	0.000191	0.040575	0.135252	OK.	1.000000	0.000000	1	0
	Ni 231.604 {446}	0.999919	0.000003	0.001126	0.003752	OK.	1.000000	0.000000	1	0
	P 214.914 {457}	0.999991	0.000003	0.005857	0.019524	OK.	1.000000	0.000000	1	0
	Pb 220.353 {453}	0.999951	0.000002	0.002875	0.009585	OK.	1.000000	0.000000	1	0
	Sb 206.833 {463}	0.999939	0.000002	0.004049	0.013497	OK.	1.000000	0.000000	1	0
	Se 196.090 {472}	0.999516	0.000002	0.004839	0.016131	OK.	1.000000	0.000000	1	0
	Si 212.412 {459}	0.999994	0.000003	0.002231	0.007435	OK.	1.000000	0.000000	1	0
	Sn 189.989 {477}	0.999995	0.000002	0.000615	0.002049	OK.	1.000000	0.000000	1	0
	Sr 407.771 { 83}	0.999998	0.000024	0.000692	0.002305	OK.	1.000000	0.000000	1	0
	Ti 337.280 {100}	0.999481	0.000021	0.008551	0.028502	OK.	1.000000	0.000000	1	0
	Tl 190.856 {477}	0.999886	0.000001	0.002885	0.009618	OK.	1.000000	0.000000	1	0
	V 292.402 {115}	0.999991	0.000002	0.000799	0.002665	OK.	1.000000	0.000000	1	0
	Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Zn 206.200 {463}	1.000000	0.000003	0.000129	0.000429	OK.	1.000000	0.000000	1	0
	Zr 339.198 { 99}	0.601367	0.000059	0.272220	0.907399	OK.	1.000000	0.000000	1	0

Approved: April 05, 2017

Kirk Buck

Sample Name: S0 Acquired: 4/4/2017 13:51:26 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

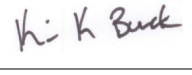
Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00019**	**.00127**	**.00001**	**-.00014**	**.02436**	**.00034**	**.00025**
Stddev	.00004	.00001	.00003	.00001	.00130	.00003	.00131
%RSD	20.056	.85610	395.67	8.9893	5.3310	8.6837	531.40
#1	-.00015	.00129	.00002	-.00013	.02360	.00035	.00077
#2	-.00022	.00126	.00002	-.00016	.02363	.00030	-.00124
#3	-.00020	.00127	-.00002	-.00014	.02586	.00036	.00121

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00042**	**.00031**	**.00020**	**-.00075**	**.00017**	**.01076**	**.00058**
Stddev	.00001	.00009	.00006	.00007	.00015	.00114	.00186
%RSD	3.5570	29.552	30.186	9.8963	88.734	10.568	322.50
#1	.00044	.00022	.00019	-.00077	.00010	.01207	.00134
#2	.00041	.00041	.00026	-.00066	.00034	.01003	.00194
#3	.00042	.00031	.00014	-.00080	.00007	.01019	-.00155

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00111**	**.00054**	**.00010**	**-.05479**	**-.00100**	**-.00007**	**-.00029**
Stddev	.00047	.00018	.00005	.00195	.00004	.00003	.00010
%RSD	42.701	32.644	44.557	3.5541	4.2152	37.508	34.705
#1	-.00069	.00034	.00010	-.05630	-.00102	-.00004	-.00019
#2	-.00101	.00063	.00015	-.05259	-.00095	-.00008	-.00029
#3	-.00163	.00065	.00006	-.05548	-.00103	-.00009	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00065**	**.00000**	**.00031**	**.00355**	**.00521**	**-.00144**	**-.00030**
Stddev	.00009	.00004	.00005	.00006	.00168	.00090	.00008
%RSD	13.267	1417.2	16.402	1.6120	32.328	62.961	27.499
#1	.00073	.00001	.00030	.00349	.00710	-.00077	-.00027
#2	.00056	-.00004	.00027	.00356	.00466	-.00247	-.00023
#3	.00065	.00004	.00037	.00360	.00387	-.00107	-.00039

Approved: April 05, 2017

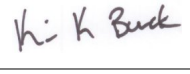


Sample Name: S0 Acquired: 4/4/2017 13:51:26 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00005**	**.00040**	**-.00872**
Stddev	.00006	.00004	.00454
%RSD	115.27	9.7447	52.063
#1	.00011	.00042	-.00928
#2	-.00000	.00043	-.00392
#3	.00004	.00036	-.01294

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22811.**	**150290.**	**4474.5**
Stddev	68.	289.	150.3
%RSD	.29991	.19244	3.3586
#1	22890.	150400.	4345.9
#2	22773.	149960.	4639.7
#3	22770.	150510.	4437.8

Approved: April 05, 2017



Sample Name: S1 Acquired: 4/4/2017 13:55:01 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

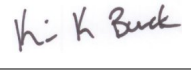
Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**.00243**	**.03057**	**.00076**	**.00207**	**.00058**	**.00083**
Stddev	.00005	.00007	.00272	.00004	.00118	.00005	.00004
%RSD	111.50	3.0582	8.9113	5.2340	57.216	9.2852	4.8162
#1	-.00001	.00236	.03367	.00081	.00171	.00052	.00087
#2	-.00003	.00251	.02856	.00074	.00339	.00059	.00083
#3	-.00010	.00242	.02947	.00074	.00110	.00062	.00079

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00040**	**-.00030**	**.00090**	**.01448**	**.00111**	**.00113**	**-.01738**
Stddev	.00005	.00005	.00043	.00484	.00063	.00002	.00166
%RSD	12.174	18.276	47.382	33.420	56.376	1.9014	9.5322
#1	.00034	-.00024	.00137	.01300	.00127	.00111	-.01845
#2	.00043	-.00029	.00080	.01055	.00164	.00115	-.01822
#3	.00043	-.00035	.00053	.01989	.00042	.00114	-.01547

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00070**	**.00087**	**-.00005**	**.00082**	**.00136**	**.00417**	**.02167**
Stddev	.00012	.00006	.00014	.00001	.00004	.00008	.00197
%RSD	16.784	6.4769	308.78	1.6352	2.6053	1.8808	9.1003
#1	-.00063	.00083	-.00021	.00082	.00140	.00409	.01971
#2	-.00083	.00093	.00004	.00081	.00132	.00425	.02164
#3	-.00063	.00083	.00004	.00084	.00136	.00416	.02365

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00099**	**.00064**	**.00456**	**-.01006**
Stddev	.00007	.00004	.00001	.00152
%RSD	6.9474	6.6306	.28240	15.124
#1	-.00095	.00068	.00455	-.00861
#2	-.00095	.00065	.00456	-.01164
#3	-.00107	.00060	.00457	-.00993

Approved: April 05, 2017



Sample Name: S1 Acquired: 4/4/2017 13:55:01 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22561.**	**152730.**	**4624.2**
Stddev	280.	1522.	50.5
%RSD	1.2421	.99628	1.0927
#1	22879.	153910.	4602.7
#2	22354.	153280.	4682.0
#3	22448.	151010.	4588.0

Approved: April 05, 2017

Sample Name: S2 Acquired: 4/4/2017 13:58:35 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

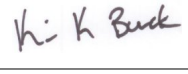
Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00350**	**.00018**	**.00001**	**.04306**	**.00110**	**.00489**
Stddev	.00006	.00003	.00006	.00002	.00129	.00006	.00083
%RSD	198.40	.93341	32.329	131.40	3.0015	5.5056	16.888
#1	-.00010	.00352	.00019	.00001	.04406	.00107	.00520
#2	.00000	.00352	.00012	.00003	.04352	.00117	.00551
#3	.00001	.00346	.00024	-.00000	.04160	.00107	.00395

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00077**	**.00126**	**.00068**	**.00007**	**.00092**	**.03660**	**.00863**
Stddev	.00013	.00004	.00002	.00002	.00046	.00145	.00276
%RSD	17.495	3.2141	2.9099	36.824	50.418	3.9543	31.958
#1	.00084	.00122	.00065	.00009	.00065	.03701	.00718
#2	.00085	.00130	.00069	.00007	.00065	.03499	.00689
#3	.00061	.00124	.00069	.00004	.00145	.03780	.01181

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00045**	**.00186**	**.00215**	**.03093**	**-.00021**	**.00169**	**.00011**
Stddev	.00089	.00113	.00003	.00318	.00005	.00004	.00006
%RSD	200.01	60.449	1.2369	10.289	21.861	2.4640	52.359
#1	.00125	.00193	.00218	.03117	-.00017	.00170	.00017
#2	-.00052	.00071	.00213	.02763	-.00026	.00172	.00005
#3	.00062	.00296	.00214	.03398	-.00021	.00164	.00012

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00107**	**.00006**	**.00239**	**.00478**	**.03907**	**.00070**	**-.00015**
Stddev	.00003	.00005	.00003	.00002	.00129	.00018	.00002
%RSD	2.3684	86.365	1.2727	.38194	3.2927	25.207	14.478
#1	.00109	.00005	.00240	.00478	.04034	.00053	-.00013
#2	.00104	.00002	.00236	.00476	.03912	.00069	-.00014
#3	.00107	.00012	.00242	.00479	.03777	.00088	-.00017

Approved: April 05, 2017



Sample Name: S2 Acquired: 4/4/2017 13:58:35 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00118**	**.00855**	**-.00812**
Stddev	.00003	.00004	.00098
%RSD	2.3856	.51423	12.034
#1	.00116	.00851	-.00836
#2	.00121	.00860	-.00704
#3	.00117	.00855	-.00895

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22814.**	**151550.**	**4694.4**
Stddev	55.	291.	57.0
%RSD	.23947	.19213	1.2135
#1	22808.	151220.	4691.2
#2	22871.	151670.	4752.9
#3	22762.	151760.	4639.1

Approved: April 05, 2017

Sample Name: S3 Acquired: 4/4/2017 14:02:11 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

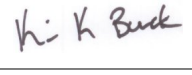
Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01678**	**.13093**	**.01005**	**.01141**	**1.2526**	**.05176**	**.30109**
Stddev	.00007	.00035	.00009	.00007	.0036	.00029	.00157
%RSD	.43191	.26445	.88365	.58723	.28933	.56471	.52148
#1	.01671	.13062	.01001	.01135	1.2558	.05146	.30277
#2	.01678	.13130	.00999	.01141	1.2487	.05204	.29966
#3	.01686	.13088	.01016	.01148	1.2533	.05179	.30082

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02160**	**.06251**	**.03082**	**.04690**	**.06771**	**1.5407**	**.68642**
Stddev	.00016	.00024	.00011	.00015	.00043	.0125	.00487
%RSD	.74864	.37767	.35810	.31662	.63650	.80892	.71011
#1	.02145	.06256	.03070	.04675	.06756	1.5331	.69010
#2	.02159	.06226	.03090	.04690	.06738	1.5340	.68089
#3	.02177	.06272	.03088	.04704	.06820	1.5551	.68827

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.05132**	**.07821**	**.12871**	**5.0845**	**.04227**	**.11263**	**.02722**
Stddev	.00149	.00006	.00067	.0211	.00025	.00062	.00021
%RSD	2.9112	.07541	.52280	.41541	.59609	.55045	.76221
#1	.05007	.07814	.12832	5.0855	.04198	.11217	.02698
#2	.05091	.07825	.12833	5.0629	.04237	.11238	.02732
#3	.05297	.07824	.12949	5.1051	.04246	.11333	.02736

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02821**	**.00645**	**.12793**	**.08052**	**2.0965**	**.10172**	**.00915**
Stddev	.00012	.00005	.00049	.00040	.0089	.00044	.00005
%RSD	.41667	.78628	.38405	.49079	.42504	.42824	.58123
#1	.02812	.00639	.12751	.08016	2.0931	.10218	.00915
#2	.02818	.00648	.12781	.08046	2.0899	.10166	.00910
#3	.02834	.00648	.12847	.08094	2.1067	.10131	.00921

Approved: April 05, 2017



Sample Name: S3 Acquired: 4/4/2017 14:02:11 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.07215**	**.51224**	**-.00234**
Stddev	.00022	.00280	.00095
%RSD	.30860	.54658	40.376
#1	.07191	.50978	-.00344
#2	.07219	.51164	-.00175
#3	.07235	.51529	-.00185

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22666.**	**149540.**	**4666.3**
Stddev	486.	416.	51.1
%RSD	2.1424	.27788	1.0944
#1	23104.	149170.	4637.3
#2	22750.	149470.	4725.3
#3	22144.	149990.	4636.4

Approved: April 05, 2017

Sample Name: S4 Acquired: 4/4/2017 14:05:41 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03364**	**.25331**	**.02029**	**.02311**	**2.4818**	**.10395**	**.60554**	**.04270**
Stddev	.00011	.00149	.00015	.00014	.0095	.00042	.00155	.00029
%RSD	.33861	.58909	.71531	.58703	.38355	.40579	.25612	.68734
#1	.03351	.25161	.02041	.02300	2.4737	.10347	.60468	.04297
#2	.03371	.25437	.02033	.02308	2.4793	.10415	.60733	.04274
#3	.03370	.25396	.02013	.02327	2.4923	.10424	.60460	.04239

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.12353**	**.06149**	**.09397**	**.13665**	**3.1172**	**1.3640**	**.10273**	**.15535**
Stddev	.00083	.00027	.00064	.00089	.0201	.0072	.00055	.00082
%RSD	.67174	.44103	.68337	.64840	.64624	.52597	.53127	.52939
#1	.12438	.06120	.09463	.13563	3.0939	1.3577	.10316	.15469
#2	.12349	.06155	.09394	.13728	3.1296	1.3718	.10291	.15627
#3	.12272	.06173	.09335	.13703	3.1280	1.3625	.10212	.15509

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.25746**	**10.262**	**.08478**	**.22686**	**.05410**	**.05565**	**.01287**	**.25418**
Stddev	.00192	.032	.00064	.00161	.00051	.00038	.00010	.00185
%RSD	.74460	.31038	.75990	.70827	.93573	.67893	.80996	.72928
#1	.25945	10.230	.08536	.22845	.05455	.05605	.01298	.25589
#2	.25731	10.293	.08489	.22690	.05420	.05560	.01285	.25443
#3	.25562	10.263	.08409	.22524	.05355	.05530	.01278	.25221

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.15643**	**4.1765**	**.20799**	**.01802**	**.14542**	**1.0238**	**.00682**
Stddev	.00126	.0103	.00040	.00020	.00054	.0076	.00070
%RSD	.80789	.24629	.19320	1.1273	.37429	.73981	10.206
#1	.15775	4.1663	.20831	.01818	.14480	1.0315	.00748
#2	.15631	4.1763	.20812	.01808	.14564	1.0235	.00609
#3	.15523	4.1868	.20754	.01779	.14582	1.0163	.00688

Approved: April 05, 2017
Kim K Buck

Sample Name: S4 Acquired: 4/4/2017 14:05:41 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22144.**	**146450.**	**4548.2**
Stddev	85.	745.	34.7
%RSD	.38375	.50852	.76218
#1	22237.	146980.	4586.9
#2	22070.	145600.	4537.8
#3	22127.	146780.	4519.9

Approved: April 05, 2017

Kristi K Buck

Sample Name: ICV Acquired: 4/4/2017 14:09:12 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38822**	**9.9911**	**.39060**	**.48549**	**.99865**	**.04862**	**10.071**
Stddev	.00205	.0611	.00226	.00265	.00514	.00013	.050
%RSD	.52810	.61134	.57852	.54644	.51438	.26636	.49779
#1	.38811	9.9210	.39310	.48662	1.0020	.04848	10.098
#2	.38623	10.032	.38870	.48738	1.0012	.04867	10.013
#3	.39033	10.020	.39001	.48246	.99273	.04872	10.102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04874**	**.19560**	**.49375**	**.49870**	**3.9631**	**49.077**	**1.0107**
Stddev	.00029	.00049	.00044	.00060	.0246	.196	.0063
%RSD	.59271	.25061	.08915	.11983	.62195	.39906	.62582
#1	.04858	.19516	.49348	.49808	3.9373	49.034	1.0045
#2	.04856	.19551	.49352	.49875	3.9865	48.906	1.0172
#3	.04907	.19613	.49426	.49927	3.9655	49.290	1.0105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9123**	**.50125**	F **.94735**	**49.005**	**.49535**	**9.6934**	**.50147**
Stddev	.0398	.00172	.00186	.065	.00129	.0063	.00101
%RSD	.40126	.34261	.19618	.13172	.25980	.06471	.20128
#1	9.8678	.50187	.94524	48.989	.49393	9.6958	.50226
#2	9.9246	.50258	.94811	49.077	.49642	9.6863	.50182
#3	9.9444	.49931	.94872	48.951	.49571	9.6981	.50033
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			1.0000				
Range			-5.0000%				

Approved: April 05, 2017

Sample Name: ICV Acquired: 4/4/2017 14:09:12 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2173**	**.39138**	**4.8819**	**1.0071**	**.99951**	**1.0016**	**.50048**
Stddev	.0016	.00327	.0018	.0013	.00281	.0021	.00211
%RSD	.13130	.83646	.03654	.13229	.28090	.20550	.42063
#1	1.2185	.39457	4.8798	1.0058	1.0025	1.0033	.50146
#2	1.2179	.38803	4.8825	1.0085	.99919	1.0021	.49807
#3	1.2155	.39154	4.8832	1.0069	.99688	.99930	.50193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97788**	**.99119**	**.97999**
Stddev	.00087	.00173	.26578
%RSD	.08849	.17478	27.120
#1	.97694	.98925	.81531
#2	.97808	.99173	1.2866
#3	.97864	.99259	.83806
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23003.**	**150840.**	**4639.3**
Stddev	39.	809.	31.4
%RSD	.16889	.53646	.67701
#1	23027.	151520.	4626.2
#2	22958.	151050.	4616.6
#3	23023.	149940.	4675.2

Approved: April 05, 2017

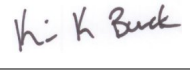
Sample Name: ICB Acquired: 4/4/2017 14:12:46 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**-.00039**	**.00044**	**.00430**	**-.00039**	**.00002**	**.02653**
Stddev	.00046	.00351	.00155	.00121	.00086	.00004	.06335
%RSD	38.874	889.47	354.78	28.225	218.35	247.68	238.79
#1	-.00093	-.00281	-.00133	.00290	-.00137	.00004	.06845
#2	-.00092	-.00200	.00106	.00510	-.00005	-.00003	.05749
#3	-.00173	.00363	.00158	.00490	.00024	.00004	-.04635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00010**	**-.00045**	**.00178**	**-.03367**	**.21242**	**-.00758**
Stddev	.00007	.00006	.00075	.00130	.01265	.11643	.00294
%RSD	49.476	56.420	167.04	72.958	37.563	54.812	38.791
#1	.00017	-.00007	-.00131	.00127	-.01998	.13057	-.00628
#2	.00007	-.00017	.00010	.00081	-.03613	.34571	-.00552
#3	.00021	-.00006	-.00015	.00326	-.04492	.16098	-.01095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.13746**	**-.00126**	**-.00000**	**.08663**	**.00090**	**-.00272**	**-.00026**
Stddev	.04024	.00544	.00022	.02260	.00035	.00529	.00159
%RSD	29.275	432.06	81680.	26.084	38.921	194.80	615.01
#1	.16209	.00410	.00016	.11137	.00115	.00329	-.00008
#2	.15926	-.00677	-.00025	.06709	.00105	-.00474	.00123
#3	.09102	-.00111	.00009	.08142	.00050	-.00669	-.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: ICB Acquired: 4/4/2017 14:12:46 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00484**	**-.00240**	**.00242**	**.00015**	**-.00032**	**-.00237**	**.00148**
Stddev	.00132	.00092	.00068	.00051	.00017	.00456	.00199
%RSD	27.361	38.258	28.079	330.25	52.444	192.22	133.79
#1	-.00610	-.00156	.00302	.00063	-.00013	-.00758	.00021
#2	-.00346	-.00338	.00254	.00020	-.00043	-.00051	.00047
#3	-.00496	-.00226	.00168	-.00038	-.00041	.00096	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00005**	**.00063**	F **-.09465**
Stddev	.00031	.00007	.16817
%RSD	605.42	11.113	177.68
#1	.00030	.00071	.09612
#2	-.00020	.00061	-.22144
#3	-.00026	.00058	-.15862
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23635.**	**155830.**	**4687.6**
Stddev	32.	410.	39.7
%RSD	.13632	.26312	.84655
#1	23669.	156290.	4643.6
#2	23631.	155500.	4720.8
#3	23604.	155690.	4698.3

Approved: April 05, 2017

Kristi K Buck

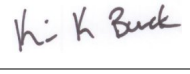
Sample Name: LLICV Acquired: 4/4/2017 14:16:20 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00730**	**.18654**	**.00737**	**.08003**	**.00804**	**.00165**	**.44086**	**.00078**
Stddev	.00118	.00136	.00156	.00038	.00120	.00003	.01447	.00005
%RSD	16.189	.72731	21.156	.47549	14.937	1.5358	3.2822	6.0065
#1	.00646	.18795	.00784	.08008	.00767	.00165	.42510	.00073
#2	.00679	.18524	.00863	.08038	.00938	.00163	.44393	.00081
#3	.00865	.18644	.00563	.07963	.00707	.00168	.45355	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00399**	**.00354**	**.00509**	**.07112**	**.68709**	**.08523**	**.52801**	**.00927**
Stddev	.00010	.00037	.00073	.04000	.08342	.00777	.07532	.00248
%RSD	2.4882	10.497	14.326	56.237	12.142	9.1211	14.266	26.793
#1	.00388	.00385	.00559	.02678	.60037	.08125	.56888	.01008
#2	.00404	.00364	.00543	.08210	.76678	.09418	.57406	.01125
#3	.00405	.00312	.00425	.10448	.69411	.08025	.44109	.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00773**	**.41413**	**.01661**	**.80994**	**.00634**	**.08295**	**.01727**	**.75367**
Stddev	.00020	.02603	.00132	.00721	.00102	.00258	.00376	.00148
%RSD	2.5414	6.2853	7.9753	.89042	16.039	3.1055	21.760	.19625
#1	.00777	.42657	.01725	.81293	.00666	.08042	.01936	.75196
#2	.00751	.38422	.01509	.81517	.00520	.08557	.01952	.75445
#3	.00790	.43160	.01750	.80171	.00716	.08288	.01293	.75459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LLICV Acquired: 4/4/2017 14:16:20 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41549**	**.04298**	**.02232**	**.16775**	**.00818**	**.01944**	**38.823**
Stddev	.00102	.00080	.00720	.00274	.00022	.00011	.253
%RSD	.24596	1.8605	32.246	1.6354	2.7180	.57018	.65079
#1	.41666	.04271	.03018	.17085	.00800	.01957	38.786
#2	.41504	.04388	.02075	.16673	.00843	.01935	39.093
#3	.41476	.04236	.01604	.16566	.00811	.01942	38.591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23005.**	**148830.**	**4473.2**
Stddev	188.	579.	35.1
%RSD	.81651	.38890	.78578
#1	23214.	149470.	4501.7
#2	22950.	148650.	4433.9
#3	22851.	148350.	4483.9

Approved: April 05, 2017

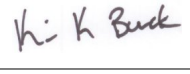
Sample Name: LLICV Acquired: 4/4/2017 14:19:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00720**	**.17252**	**.00922**	**.07934**	**.00733**	**.00165**	**.42581**	**.00092**
Stddev	.00020	.00291	.00161	.00139	.00155	.00003	.06779	.00010
%RSD	2.7195	1.6854	17.453	1.7489	21.203	1.8505	15.921	10.926
#1	.00737	.17164	.00736	.08092	.00829	.00164	.41699	.00099
#2	.00725	.17576	.01012	.07878	.00554	.00169	.49758	.00096
#3	.00699	.17015	.01017	.07832	.00817	.00163	.36286	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00398**	**.00361**	**.00616**	**.06067**	**.85732**	**.08383**	**.50782**	**.01269**
Stddev	.00027	.00045	.00070	.03449	.07243	.00617	.06900	.00427
%RSD	6.6944	12.476	11.390	56.843	8.4483	7.3615	13.587	33.685
#1	.00382	.00367	.00572	.06006	.77776	.08356	.43163	.01621
#2	.00429	.00313	.00697	.09546	.91943	.09012	.56607	.00793
#3	.00383	.00402	.00580	.02649	.87478	.07779	.52576	.01392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00774**	**.47292**	**.01710**	**.81237**	**.00812**	**.08011**	**.01710**	**.75969**
Stddev	.00003	.00985	.00042	.00385	.00304	.00293	.00247	.00370
%RSD	.35761	2.0821	2.4342	.47414	37.458	3.6616	14.452	.48747
#1	.00774	.47997	.01734	.81637	.00757	.08318	.01920	.76208
#2	.00771	.46167	.01734	.81206	.01140	.07734	.01438	.75543
#3	.00777	.47711	.01662	.80869	.00539	.07980	.01772	.76157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LLICV Acquired: 4/4/2017 14:19:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41733**	**.04326**	**.01904**	**.16999**	**.00843**	**.01789**	**39.844**
Stddev	.00101	.00012	.00382	.00163	.00051	.00008	.492
%RSD	.24202	.27965	20.080	.95967	6.0457	.43141	1.2345
#1	.41788	.04315	.02196	.17123	.00790	.01797	40.162
#2	.41794	.04325	.02046	.17060	.00846	.01790	39.278
#3	.41616	.04339	.01471	.16814	.00892	.01782	40.092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23549.**	**152680.**	**4560.3**
Stddev	40.	1414.	78.9
%RSD	.17026	.92583	1.7305
#1	23542.	154300.	4617.5
#2	23513.	151760.	4593.1
#3	23592.	151960.	4470.3

Approved: April 05, 2017

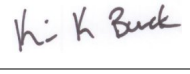
Sample Name: LLICV Acquired: 4/4/2017 14:23:21 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00749**	**.17752**	**.00923**	**.07790**	**.00749**	**.00159**	**.40066**	**.00083**
Stddev	.00106	.00608	.00232	.00035	.00067	.00003	.04342	.00016
%RSD	14.146	3.4231	25.174	.44527	8.9166	1.6867	10.836	18.946
#1	.00630	.17052	.01186	.07765	.00734	.00156	.44811	.00068
#2	.00787	.18147	.00837	.07775	.00822	.00158	.36291	.00081
#3	.00831	.18056	.00745	.07829	.00691	.00162	.39097	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00395**	**.00359**	**.00575**	**.08213**	**.89885**	**.06877**	**.56154**	**.01001**
Stddev	.00020	.00051	.00056	.01905	.08937	.00513	.07002	.00318
%RSD	5.0957	14.256	9.7797	23.192	9.9431	7.4636	12.469	31.748
#1	.00376	.00403	.00535	.09203	.94002	.07467	.56777	.00741
#2	.00393	.00371	.00639	.06017	.79631	.06534	.62823	.00908
#3	.00416	.00303	.00550	.09419	.96022	.06630	.48862	.01356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00812**	**.45850**	**.01819**	**.81118**	**.00392**	**.08337**	**.01677**	**.75467**
Stddev	.00042	.03690	.00064	.00329	.00197	.00273	.00181	.00263
%RSD	5.1392	8.0491	3.5250	.40559	50.369	3.2733	10.775	.34823
#1	.00856	.43229	.01799	.81484	.00547	.08487	.01474	.75744
#2	.00809	.50070	.01767	.80848	.00170	.08503	.01736	.75438
#3	.00772	.44251	.01891	.81021	.00459	.08022	.01821	.75221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LLICV Acquired: 4/4/2017 14:23:21 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41631**	**.04106**	**.02183**	**.16958**	**.00874**	**.01770**	**38.784**
Stddev	.00097	.00086	.00301	.00251	.00045	.00016	.494
%RSD	.23297	2.1001	13.793	1.4789	5.1377	.87976	1.2731
#1	.41697	.04040	.01929	.16857	.00918	.01788	39.350
#2	.41676	.04074	.02516	.17243	.00828	.01758	38.442
#3	.41520	.04203	.02105	.16773	.00877	.01764	38.561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23446.**	**154710.**	**4699.6**
Stddev	88.	393.	60.3
%RSD	.37516	.25399	1.2833
#1	23369.	154260.	4636.6
#2	23426.	155000.	4756.8
#3	23542.	154860.	4705.4

Approved: April 05, 2017

Kristi K Buck

Sample Name: ICSA Acquired: 4/4/2017 14:26:51 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**239.69**	**-.00309**	**.00925**	**-.00157**	**.00000**	**237.26**
Stddev	.00039	2.99	.00241	.00039	.00211	.00004	.70
%RSD	1241.5	1.2477	78.139	4.1890	134.32	3322.7	.29503
#1	-.00008	243.07	-.00576	.00932	-.00251	.00004	236.48
#2	-.00039	238.61	-.00108	.00883	.00085	-.00003	237.84
#3	.00038	237.39	-.00242	.00959	-.00305	.00000	237.47
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00086**	**-.00098**	**.00009**	**97.121**	**.18781**	**-.00300**
Stddev	.00013	.00012	.00073	.00095	.117	.07379	.00230
%RSD	240.76	14.217	74.146	1024.3	.12076	39.288	76.401
#1	.00002	-.00093	-.00095	.00033	96.987	.10634	-.00050
#2	-.00005	-.00093	-.00173	.00090	97.208	.25016	-.00500
#3	.00019	-.00072	-.00027	-.00095	97.166	.20693	-.00352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**240.49**	**.00131**	**-.00039**	**.11104**	**-.00166**	**.04282**	**-.00009**
Stddev	.81	.00461	.00045	.03951	.00060	.00512	.00351
%RSD	.33652	350.76	114.04	35.579	36.510	11.963	3858.6
#1	239.56	.00497	-.00079	.13293	-.00156	.04533	-.00413
#2	240.87	-.00386	.00009	.13476	-.00230	.03693	.00213
#3	241.04	.00284	-.00047	.06544	-.00111	.04620	.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017
Kim K Buck

Sample Name: ICSA Acquired: 4/4/2017 14:26:51 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00261**	**-.00218**	**.00948**	**-.00234**	**.00055**	**-.00529**	**.00193**
Stddev	.00633	.00537	.00175	.00042	.00029	.00229	.00397
%RSD	242.57	246.60	18.491	17.994	53.354	43.397	205.66
#1	.00468	.00389	.01005	-.00229	.00022	-.00277	.00584
#2	-.00586	-.00414	.01088	-.00278	.00065	-.00725	.00205
#3	-.00666	-.00629	.00751	-.00195	.00078	-.00584	-.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00167**	**-.00600**	F **-4.3123**
Stddev	.00084	.00018	.1793
%RSD	50.068	3.0472	4.1574
#1	-.00072	-.00619	-4.5019
#2	-.00228	-.00597	-4.1455
#3	-.00201	-.00583	-4.2895
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21731.**	**139730.**	**4572.0**
Stddev	24.	182.	9.7
%RSD	.10998	.13029	.21323
#1	21721.	139700.	4570.5
#2	21714.	139570.	4563.1
#3	21759.	139930.	4582.4

Approved: April 05, 2017

Kristi K Buck

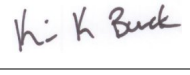
Sample Name: ICSAB Acquired: 4/4/2017 14:30:29 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51588**	**234.24**	**.23765**	**.50482**	**.25055**	**.25897**	**236.97**
Stddev	.00097	3.24	.00068	.00349	.00124	.00028	1.52
%RSD	.18714	1.3843	.28793	.69181	.49546	.10980	.64092
#1	.51495	232.04	.23821	.50085	.24984	.25901	238.64
#2	.51688	237.97	.23689	.50614	.24983	.25924	235.68
#3	.51583	232.72	.23786	.50745	.25198	.25867	236.59
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43227**	**.23487**	**.24726**	**.24222**	**96.665**	**5.2674**	**-.00573**
Stddev	.00036	.00041	.00146	.00116	.309	.0089	.00443
%RSD	.08248	.17452	.58867	.48006	.31988	.16915	77.284
#1	.43268	.23533	.24558	.24303	97.004	5.2755	-.00780
#2	.43203	.23454	.24803	.24089	96.593	5.2690	-.00065
#3	.43210	.23474	.24817	.24275	96.398	5.2578	-.00875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**239.36**	**.24260**	**-.00043**	**5.1658**	**.47351**	**-.04237**	**.48292**
Stddev	1.87	.00463	.00014	.0250	.00187	.00231	.00303
%RSD	.78240	1.9078	32.805	.48296	.39556	5.4412	.62686
#1	241.46	.24607	-.00041	5.1714	.47146	-.04340	.48593
#2	237.85	.24438	-.00058	5.1385	.47394	-.03973	.47988
#3	238.78	.23735	-.00030	5.1875	.47513	-.04399	.48294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: ICSAB Acquired: 4/4/2017 14:30:29 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48430**	**.23548**	**.00785**	**.48093**	**.00126**	**.00502**	**.45343**
Stddev	.00141	.00487	.00096	.00074	.00055	.00661	.00729
%RSD	.29018	2.0668	12.189	.15286	43.418	131.74	1.6070
#1	.48345	.24071	.00685	.48178	.00070	-.00253	.45346
#2	.48593	.23109	.00796	.48058	.00179	.00980	.44612
#3	.48353	.23465	.00875	.48044	.00128	.00779	.46070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.25126**	**.47363**	F **-4.5484**
Stddev	.00080	.00108	.4016
%RSD	.31885	.22807	8.8283
#1	.25067	.47461	-4.9968
#2	.25094	.47382	-4.2219
#3	.25218	.47247	-4.4266
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21565.**	**138780.**	**4498.9**
Stddev	84.	142.	50.5
%RSD	.38998	.10252	1.1223
#1	21473.	138890.	4464.4
#2	21584.	138830.	4556.9
#3	21638.	138620.	4475.5

Approved: April 05, 2017

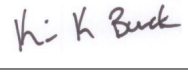
Sample Name: CCV Acquired: 4/4/2017 14:34:02 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40127**	**10.045**	**.39651**	**.49806**	**1.0092**	**.04991**	**9.9855**
Stddev	.00179	.030	.00238	.00143	.0042	.00008	.0098
%RSD	.44627	.30237	.59963	.28664	.41582	.15193	.09867
#1	.40279	10.055	.39383	.49949	1.0107	.04983	9.9860
#2	.39930	10.011	.39836	.49663	1.0045	.04998	9.9754
#3	.40171	10.069	.39734	.49805	1.0125	.04991	9.9951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05028**	**.20067**	**.49861**	**.50047**	**3.9458**	**50.368**	**1.0052**
Stddev	.00019	.00029	.00131	.00094	.0287	.081	.0039
%RSD	.37666	.14600	.26321	.18835	.72799	.15994	.38712
#1	.05046	.20034	.49719	.50101	3.9689	50.447	1.0067
#2	.05008	.20090	.49887	.50102	3.9136	50.286	1.0008
#3	.05031	.20078	.49978	.49938	3.9548	50.370	1.0081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.015**	**.49400**	**.99544**	**50.387**	**.50109**	**9.9053**	**.50039**
Stddev	.069	.00580	.00076	.013	.00055	.0248	.00139
%RSD	.69191	1.1735	.07621	.02613	.11011	.25031	.27786
#1	10.086	.49331	.99542	50.397	.50123	9.8774	.50118
#2	9.9476	.50012	.99622	50.392	.50155	9.9250	.49878
#3	10.011	.48859	.99470	50.372	.50048	9.9134	.50121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017



Sample Name: CCV Acquired: 4/4/2017 14:34:02 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2161	.40062	4.9999	1.0004	1.0020	.99848	.50857
Stddev	.0017	.00514	.0080	.0023	.0027	.01061	.00226
%RSD	.13936	1.2840	.16025	.23320	.26671	1.0631	.44381
#1	1.2142	.39850	4.9909	.99937	.99898	.98922	.50660
#2	1.2165	.40649	5.0022	.99874	1.0041	.99615	.51103
#3	1.2175	.39688	5.0064	1.0031	1.0029	1.0101	.50807
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.99490	1.0010	F 1.6836
Stddev	.00189	.0016	.3086
%RSD	.19030	.15704	18.331
#1	.99292	.99991	1.4382
#2	.99508	1.0003	1.5826
#3	.99670	1.0028	2.0301
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	23166.	149950.	4559.7
Stddev	54.	687.	52.9
%RSD	.23227	.45784	1.1599
#1	23167.	149350.	4535.7
#2	23219.	149800.	4523.0
#3	23111.	150700.	4620.3

Approved: April 05, 2017

Ki K Buck

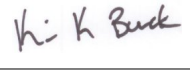
Sample Name: CCB Acquired: 4/4/2017 14:37:26 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00347**	**.00062**	**.00380**	**-.00255**	**-.00003**	**.03711**
Stddev	.00061	.00260	.00273	.00159	.00097	.00001	.07557
%RSD	145.38	74.910	442.41	41.859	38.061	27.103	203.64
#1	-.00020	.00227	.00148	.00556	-.00305	-.00002	.09880
#2	.00045	.00169	.00281	.00334	-.00317	-.00003	-.04718
#3	.00101	.00646	-.00244	.00249	-.00143	-.00004	.05971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00000**	**-.00028**	**.00116**	**-.02017**	**.18626**	**-.00055**
Stddev	.00027	.00008	.00064	.00076	.02806	.25607	.00478
%RSD	447.50	3528.1	226.15	65.690	139.16	137.48	863.17
#1	.00013	-.00004	-.00017	.00154	.01211	.19718	-.00582
#2	-.00037	-.00005	-.00097	.00028	-.03378	.43670	.00064
#3	.00006	.00010	.00029	.00166	-.03883	-.07510	.00352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.14536**	**.00071**	**-.00004**	**.28973**	**.00053**	**.00200**	**-.00164**
Stddev	.10088	.00156	.00024	.06138	.00066	.00745	.00242
%RSD	69.398	219.42	571.44	21.184	123.92	372.30	147.00
#1	.13455	.00172	-.00004	.28329	.00069	.00163	-.00024
#2	.05032	.00149	-.00029	.23182	.00110	.00963	-.00443
#3	.25120	-.00108	.00019	.35407	-.00019	-.00526	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: CCB Acquired: 4/4/2017 14:37:26 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**-.00400**	**.00167**	**.00051**	**-.00001**	**-.00462**	**.00001**
Stddev	.00338	.00105	.00156	.00043	.00064	.00275	.00170
%RSD	141.11	26.190	93.179	84.808	5091.6	59.370	31591.
#1	-.00004	-.00482	.00098	.00096	-.00063	-.00342	.00189
#2	-.00626	-.00437	.00058	.00046	.00065	-.00269	-.00045
#3	-.00088	-.00282	.00345	.00010	-.00005	-.00777	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00034**	**.00063**	F **.18830**
Stddev	.00032	.00008	.28568
%RSD	95.917	12.883	151.72
#1	.00067	.00059	.32122
#2	.00003	.00058	.38331
#3	.00031	.00072	-.13963
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24065.**	**159380.**	**4814.6**
Stddev	200.	1212.	16.6
%RSD	.82954	.76064	.34428
#1	23988.	160510.	4826.1
#2	24292.	159540.	4795.6
#3	23916.	158100.	4822.1

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 15:46:22 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40795**	**10.183**	**.40248**	**.50344**	**1.0187**	**.05079**	**10.128**
Stddev	.00130	.064	.00147	.00303	.0018	.00012	.018
%RSD	.31865	.62412	.36604	.60088	.17899	.23793	.18238
#1	.40662	10.127	.40295	.50208	1.0168	.05066	10.142
#2	.40922	10.171	.40367	.50133	1.0204	.05083	10.135
#3	.40800	10.252	.40083	.50690	1.0188	.05089	10.107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05043**	**.20223**	**.50667**	**.50382**	**4.0522**	**49.932**	**1.0279**
Stddev	.00017	.00139	.00216	.00348	.0222	.387	.0100
%RSD	.33595	.68644	.42579	.69141	.54803	.77590	.97557
#1	.05038	.20231	.50418	.50442	4.0491	49.503	1.0286
#2	.05062	.20357	.50796	.50697	4.0758	50.256	1.0375
#3	.05030	.20080	.50787	.50008	4.0317	50.038	1.0175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.096**	**.49989**	**1.0065**	**50.795**	**.50628**	**9.9245**	**.50427**
Stddev	.145	.00399	.0069	.281	.00368	.0578	.00625
%RSD	1.4387	.79733	.68074	.55328	.72600	.58193	1.2392
#1	10.053	.50387	1.0098	50.924	.50886	9.9441	.50781
#2	10.257	.49991	1.0110	50.988	.50791	9.9699	.50796
#3	9.9764	.49590	.99861	50.472	.50207	9.8595	.49706
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 15:46:22 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2359**	**.40611**	**5.0249**	**1.0116**	**1.0050**	**.99799**	**.51780**
Stddev	.0130	.00331	.0382	.0056	.0043	.00543	.00166
%RSD	1.0533	.81385	.76047	.55265	.43152	.54386	.32133
#1	1.2446	.40992	5.0447	1.0130	1.0031	.99914	.51972
#2	1.2422	.40396	5.0491	1.0163	1.0100	.99207	.51688
#3	1.2210	.40446	4.9809	1.0054	1.0020	1.0027	.51680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0084**	**1.0135**	F **1.1217**
Stddev	.0038	.0054	.1803
%RSD	.38061	.53713	16.072
#1	1.0049	1.0164	1.3204
#2	1.0079	1.0168	.96854
#3	1.0125	1.0072	1.0763
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23050.**	**148840.**	**4508.3**
Stddev	81.	183.	65.4
%RSD	.35137	.12302	1.4504
#1	22957.	148730.	4467.4
#2	23088.	148740.	4473.8
#3	23104.	149050.	4583.7

Approved: April 05, 2017

Sample Name: CCB Acquired: 4/4/2017 15:49:43 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00157**	**.00081**	**.00029**	**.00046**	**-.00073**	**.00000**	**.03493**
Stddev	.00126	.00323	.00111	.00186	.00202	.00006	.01581
%RSD	80.200	396.50	377.19	407.14	276.02	1283.0	45.252
#1	-.00243	.00445	.00024	-.00106	.00021	-.00001	.05192
#2	-.00012	-.00170	.00143	-.00010	-.00305	-.00005	.03221
#3	-.00217	-.00032	-.00079	.00253	.00064	.00007	.02066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00008**	**-.00037**	**.00032**	**.00709**	**-.18048**	**-.00518**
Stddev	.00011	.00030	.00047	.00027	.04722	.18535	.00272
%RSD	44.461	357.54	128.10	85.308	665.99	102.70	52.520
#1	-.00031	.00005	-.00059	.00013	-.04739	.02901	-.00594
#2	-.00012	-.00043	.00017	.00020	.03618	-.24727	-.00216
#3	-.00032	.00013	-.00070	.00063	.03248	-.32318	-.00745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11937**	**-.00388**	**-.00008**	**.19535**	**.00166**	**.00859**	**-.00112**
Stddev	.07315	.00205	.00046	.06926	.00086	.00234	.00182
%RSD	61.283	52.860	567.95	35.455	51.985	27.291	162.42
#1	.08955	-.00598	-.00061	.21987	.00074	.00866	.00055
#2	.06584	-.00377	.00019	.24901	.00245	.01090	-.00085
#3	.20273	-.00188	.00018	.11716	.00178	.00621	-.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: CCB Acquired: 4/4/2017 15:49:43 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00269**	**-.00163**	**.00197**	**-.00011**	**.00006**	**-.00010**	**.00101**
Stddev	.00183	.00199	.00242	.00010	.00058	.01281	.00041
%RSD	67.961	121.99	123.14	92.821	1047.4	12326.	40.300
#1	-.00472	-.00130	.00417	-.00009	.00057	.00214	.00089
#2	-.00117	-.00376	.00236	-.00002	-.00057	.01143	.00146
#3	-.00219	.00017	-.00063	-.00022	.00017	-.01389	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00024**	**.00075**	F **-.28390**
Stddev	.00054	.00003	.08299
%RSD	221.29	3.5637	29.231
#1	.00086	.00072	-.36815
#2	-.00002	.00075	-.28132
#3	-.00011	.00077	-.20223
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23383.**	**153480.**	**4559.7**
Stddev	16.	493.	21.2
%RSD	.06756	.32154	.46423
#1	23365.	152940.	4583.8
#2	23394.	153910.	4551.1
#3	23391.	153590.	4544.2

Approved: April 05, 2017

Kristi K Buck

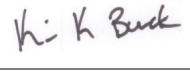
Sample Name: PBW FB Acquired: 4/4/2017 15:53:14 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00177**	**-.00241**	**.00034**	**-.00048**	**-.00143**	**-.00004**	**.04475**	**-.00009**
Stddev	.00231	.00248	.00094	.00103	.00174	.00005	.03866	.00005
%RSD	130.59	102.70	276.30	212.38	121.28	133.98	86.390	62.259
#1	.00056	-.00510	.00020	-.00091	-.00336	-.00009	.02950	-.00005
#2	-.00181	-.00021	.00134	-.00123	.00003	-.00003	.08871	-.00015
#3	-.00406	-.00194	-.00052	.00069	-.00097	.00001	.01605	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00006**	**.00155**	**-.00119**	**-.17415**	**.00021**	**.13522**	**.00279**
Stddev	.00031	.00038	.00054	.01100	.04644	.00112	.10325	.00346
%RSD	123.15	692.25	35.161	926.22	26.666	544.10	76.360	123.98
#1	-.00025	-.00039	.00142	.00294	-.18531	.00144	.03072	-.00062
#2	-.00056	.00036	.00108	.00716	-.21400	-.00075	.13777	.00630
#3	.00006	-.00013	.00214	-.01366	-.12315	-.00008	.23718	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**-.00014**	**.00152**	**-.00844**	**-.00073**	**-.00387**	**.00195**	**.00122**
Stddev	.00027	.04069	.00017	.00733	.00459	.00292	.00230	.00152
%RSD	153.74	29004.	11.015	86.811	633.46	75.362	118.34	124.59
#1	.00004	.04679	.00151	-.01409	.00390	-.00186	.00050	.00136
#2	.00049	-.02561	.00169	-.01108	-.00079	-.00254	.00460	-.00037
#3	.00000	-.02160	.00135	-.00016	-.00528	-.00722	.00074	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: PBW FB Acquired: 4/4/2017 15:53:14 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00014**	**-.00073**	**-.00238**	**-.00028**	**.00062**	**.19771**
Stddev	.00049	.00029	.00574	.00246	.00038	.00001	.42511
%RSD	89.802	203.94	788.50	103.67	139.13	2.1110	215.01
#1	-.00106	.00043	-.00159	.00042	.00009	.00062	.15483
#2	-.00049	-.00016	-.00599	-.00333	-.00024	.00062	-.20433
#3	-.00008	.00016	.00539	-.00422	-.00067	.00060	.64264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23268.**	**154070.**	**4594.7**
Stddev	98.	425.	26.7
%RSD	.42256	.27592	.58129
#1	23156.	154310.	4570.6
#2	23340.	154330.	4590.1
#3	23309.	153580.	4623.4

Approved: April 05, 2017

Sample Name: LCSW FB Acquired: 4/4/2017 15:56:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20349**	**5.2408**	**.19515**	**.95638**	**.52060**	**.02510**	**5.1458**	**.02526**
Stddev	.00183	.0190	.00101	.00189	.00353	.00003	.0536	.00022
%RSD	.90144	.36252	.51993	.19745	.67790	.11597	1.0421	.88226
#1	.20508	5.2573	.19610	.95632	.52452	.02513	5.1977	.02548
#2	.20148	5.2200	.19527	.95452	.51961	.02509	5.1491	.02503
#3	.20391	5.2452	.19408	.95830	.51767	.02508	5.0906	.02528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10236**	**.25781**	**.25417**	**2.0746**	**25.369**	**.52790**	**5.3482**	**.25712**
Stddev	.00045	.00038	.00053	.0264	.201	.00619	.0673	.00345
%RSD	.44351	.14576	.21037	1.2725	.79345	1.1727	1.2578	1.3409
#1	.10284	.25824	.25475	2.0677	25.400	.52148	5.3848	.25314
#2	.10193	.25760	.25370	2.1038	25.553	.52840	5.3893	.25910
#3	.10231	.25758	.25406	2.0524	25.154	.53383	5.2706	.25911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49916**	**26.082**	**.25788**	**4.8336**	**.25618**	**.61153**	**.19488**	**2.5426**
Stddev	.00125	.128	.00087	.0189	.00186	.00295	.00340	.0088
%RSD	.25072	.49225	.33562	.39062	.72447	.48309	1.7423	.34663
#1	.50037	26.230	.25864	4.8525	.25821	.61164	.19142	2.5523
#2	.49787	26.002	.25694	4.8148	.25458	.60852	.19820	2.5351
#3	.49924	26.015	.25805	4.8334	.25574	.61443	.19502	2.5406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: LCSW FB Acquired: 4/4/2017 15:56:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51305**	**.51922**	**.50764**	**.26033**	**.51100**	**.50766**	**.35783**
Stddev	.00107	.00260	.00107	.00075	.00217	.00127	.28156
%RSD	.20893	.50085	.21085	.28903	.42414	.24921	78.687
#1	.51415	.52117	.50803	.25952	.51327	.50850	.19460
#2	.51201	.52023	.50846	.26101	.50895	.50621	.68295
#3	.51298	.51627	.50643	.26045	.51077	.50828	.19594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23420.**	**149880.**	**4532.3**
Stddev	323.	803.	42.2
%RSD	1.3799	.53597	.93049
#1	23072.	149010.	4490.9
#2	23710.	150600.	4575.2
#3	23480.	150040.	4530.8

Approved: April 05, 2017

Sample Name: L1703166401 Acquired: 4/4/2017 16:00:10 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00102**	**.70604**	**.00653**	**.11387**	**.42987**	**.00002**	**25.688**	**.00021**
Stddev	.00064	.00053	.00086	.00104	.00161	.00001	.045	.00020
%RSD	62.822	.07470	13.162	.91557	.37557	70.615	.17465	94.269
#1	-.00151	.70665	.00678	.11449	.43157	.00003	25.645	.00044
#2	-.00127	.70570	.00723	.11267	.42968	.00001	25.735	.00010
#3	-.00029	.70578	.00557	.11447	.42836	.00001	25.685	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00087**	**.01171**	**.48263**	**.67080**	**.01574**	**4.0327**	**.14135**
Stddev	.00021	.00045	.00092	.01512	.14374	.00276	.0612	.00329
%RSD	150.16	51.573	7.8872	3.1325	21.429	17.508	1.5171	2.3277
#1	.00010	.00053	.01129	.49978	.77200	.01313	4.1019	.14499
#2	-.00027	.00070	.01107	.47123	.73413	.01547	3.9857	.13861
#3	-.00026	.00138	.01277	.47688	.50627	.01862	4.0106	.14044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00941**	**118.43**	**.00087**	**.01704**	**-.00155**	**-.00321**	**-.00091**	**4.2646**
Stddev	.00034	.32	.00057	.00130	.00074	.00248	.00389	.0084
%RSD	3.6071	.27270	64.879	7.6243	47.605	77.348	426.56	.19748
#1	.00925	118.13	.00043	.01849	-.00099	-.00216	.00348	4.2578
#2	.00980	118.77	.00069	.01668	-.00238	-.00142	-.00232	4.2619
#3	.00918	118.40	.00151	.01596	-.00126	-.00604	-.00390	4.2740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1703166401 Acquired: 4/4/2017 16:00:10 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.25986**	**.01562**	**-.00403**	**.00124**	**.00749**	**.71873**
Stddev	.00022	.00154	.00907	.00110	.00109	.00005	.19343
%RSD	19.058	.59440	58.046	27.174	87.416	.63275	26.913
#1	-.00121	.25823	.00624	-.00285	.00066	.00748	.73728
#2	-.00129	.26131	.02434	-.00424	.00058	.00754	.90223
#3	-.00088	.26004	.01628	-.00501	.00250	.00745	.51670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22913.**	**149490.**	**4640.5**
Stddev	23.	284.	40.3
%RSD	.09973	.18978	.86818
#1	22889.	149290.	4684.2
#2	22915.	149360.	4632.4
#3	22935.	149810.	4604.8

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703166402 Acquired: 4/4/2017 16:03:39 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00100**	**.00624**	**.00431**	**.10684**	**.36764**	**-.00002**	**24.168**
Stddev	.00252	.00467	.00283	.00075	.00266	.00004	.046
%RSD	250.41	74.773	65.578	.69863	.72379	191.92	.19149
#1	.00184	.00091	.00703	.10619	.36837	.00002	24.165
#2	-.00190	.00959	.00139	.10667	.36469	-.00006	24.124
#3	-.00295	.00821	.00450	.10766	.36985	-.00003	24.216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00038**	**-.00021**	**.00055**	**.01257**	**.61778**	**.01057**
Stddev	.00023	.00028	.00069	.00064	.01948	.08961	.00273
%RSD	1139.4	73.726	324.49	114.75	155.06	14.505	25.801
#1	-.00024	-.00045	-.00071	.00093	.01648	.71159	.01113
#2	-.00003	-.00061	.00058	.00092	.02980	.53307	.00761
#3	.00021	-.00007	-.00051	-.00018	-.00858	.60867	.01298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.7650**	**.12499**	**.00936**	**112.14**	**.00158**	**.00383**	**-.00045**
Stddev	.0682	.00187	.00024	.18	.00028	.00132	.00082
%RSD	1.8106	1.4925	2.5841	.16094	17.851	34.592	183.02
#1	3.8051	.12675	.00948	112.13	.00151	.00533	-.00033
#2	3.6863	.12303	.00953	111.97	.00133	.00283	.00031
#3	3.8037	.12520	.00908	112.33	.00189	.00333	-.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1703166402 Acquired: 4/4/2017 16:03:39 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**-.00089**	**3.1180**	**-.00140**	**.24194**	**-.00236**	**-.00098**
Stddev	.00277	.00030	.0044	.00017	.00049	.00252	.00239
%RSD	253.91	34.329	.13989	11.945	.20316	106.74	244.97
#1	.00057	-.00091	3.1216	-.00121	.24192	-.00159	-.00250
#2	.00044	-.00057	3.1132	-.00147	.24243	-.00032	-.00221
#3	-.00429	-.00118	3.1193	-.00152	.24145	-.00517	.00178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00018**	**.00406**	F **-.12553**
Stddev	.00095	.00010	.19869
%RSD	540.92	2.3506	158.28
#1	.00112	.00396	-.31858
#2	.00019	.00415	-.13637
#3	-.00078	.00406	.07836
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23055.**	**150370.**	**4592.2**
Stddev	40.	638.	75.3
%RSD	.17328	.42423	1.6406
#1	23035.	150630.	4508.7
#2	23029.	149640.	4612.8
#3	23101.	150840.	4655.1

Approved: April 05, 2017

Sample Name: L1703166403 Acquired: 4/4/2017 16:07:07 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00076**	**.14534**	**-.00101**	**.02289**	**.04771**	**.00002**	**36.876**	**.00010**
Stddev	.00086	.00259	.00010	.00137	.00077	.00002	.264	.00004
%RSD	112.51	1.7810	10.249	5.9862	1.6156	143.42	.71551	38.557
#1	-.00130	.14258	-.00113	.02265	.04715	.00000	37.013	.00012
#2	-.00122	.14771	-.00093	.02165	.04738	.00000	36.572	.00012
#3	.00023	.14573	-.00098	.02436	.04859	.00005	37.043	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.00115**	**.00197**	**.24679**	**.76193**	**.00643**	**4.8676**	**.00052**
Stddev	.00025	.00018	.00066	.03494	.05956	.00257	.1219	.00417
%RSD	69.586	15.420	33.226	14.158	7.8174	40.005	2.5037	797.48
#1	-.00063	.00131	.00202	.27015	.79074	.00413	5.0080	-.00427
#2	-.00017	.00117	.00260	.26359	.69344	.00596	4.7901	.00325
#3	-.00026	.00096	.00130	.20662	.80161	.00921	4.8045	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**11.302**	**.00167**	**.02057**	**-.00100**	**-.00215**	**.00084**	**3.3577**
Stddev	.00021	.072	.00057	.00330	.00115	.00460	.00456	.0113
%RSD	16.103	.64000	33.883	16.031	115.61	214.25	541.74	.33511
#1	.00143	11.233	.00178	.01896	.00033	.00209	-.00373	3.3586
#2	.00104	11.377	.00106	.01838	-.00171	-.00704	.00088	3.3460
#3	.00136	11.297	.00217	.02436	-.00161	-.00149	.00538	3.3685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

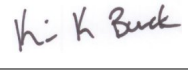
Approved: April 05, 2017

Sample Name: L1703166403 Acquired: 4/4/2017 16:07:07 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.13512**	**.00881**	**.00060**	**.00085**	**.00341**	**-.01442**
Stddev	.00090	.00082	.00218	.00388	.00047	.00009	.22824
%RSD	163.85	.60750	24.722	642.13	54.501	2.7497	1582.5
#1	-.00131	.13418	.00942	.00507	.00121	.00347	-.04993
#2	-.00080	.13550	.00639	-.00186	.00033	.00330	-.22282
#3	.00045	.13568	.01061	-.00140	.00103	.00345	.22948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23290.**	**155310.**	**4682.4**
Stddev	243.	695.	80.4
%RSD	1.0435	.44741	1.7165
#1	23441.	154530.	4667.0
#2	23010.	155880.	4769.3
#3	23419.	155510.	4610.8

Approved: April 05, 2017



Sample Name: L1703166404 Acquired: 4/4/2017 16:10:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00210**	**.00516**	**.00063**	**.02057**	**.05882**	**-.00005**	**36.737**
Stddev	.00031	.00600	.00134	.00054	.00136	.00006	.046
%RSD	14.665	116.30	213.90	2.6383	2.3205	105.65	.12458
#1	-.00195	.00528	.00127	.02104	.05766	-.00011	36.769
#2	-.00190	-.00090	.00152	.01998	.06033	-.00005	36.757
#3	-.00245	.01111	-.00091	.02071	.05848	.00000	36.684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00023**	**-.00011**	**.00248**	**.01213**	**.59554**	**.00391**
Stddev	.00004	.00020	.00060	.00057	.00395	.15988	.00971
%RSD	28.785	85.276	549.56	23.181	32.556	26.847	248.33
#1	.00020	-.00016	.00058	.00216	.00938	.48001	.00444
#2	.00015	-.00008	-.00038	.00213	.01036	.52859	-.00606
#3	.00011	-.00046	-.00053	.00314	.01666	.77801	.01335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.9385**	**.00730**	**.00074**	**11.171**	**.00055**	**.00272**	**-.00121**
Stddev	.1208	.00623	.00016	.018	.00131	.00191	.00228
%RSD	2.4457	85.324	22.326	.15937	238.52	70.232	187.90
#1	4.8707	.01410	.00056	11.187	-.00094	.00230	-.00164
#2	5.0779	.00185	.00088	11.174	.00154	.00105	.00125
#3	4.8668	.00597	.00078	11.152	.00104	.00480	-.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703166404 Acquired: 4/4/2017 16:10:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00306**	**.00170**	**3.1613**	**-.00154**	**.13582**	**-.00509**	**.00012**
Stddev	.00435	.00266	.0062	.00037	.00111	.00422	.00250
%RSD	142.40	156.79	.19750	23.879	.81772	82.935	2063.1
#1	.00151	.00426	3.1607	-.00146	.13492	-.00037	-.00239
#2	-.00716	.00189	3.1678	-.00122	.13547	-.00642	.00261
#3	-.00351	-.00105	3.1553	-.00194	.13706	-.00850	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00036**	**.00322**	F **-.11616**
Stddev	.00047	.00005	.26097
%RSD	130.72	1.4238	224.66
#1	.00090	.00327	.18224
#2	.00011	.00319	-.30172
#3	.00007	.00320	-.22901
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23179.**	**156830.**	**4671.4**
Stddev	194.	451.	19.0
%RSD	.83677	.28746	.40588
#1	23402.	156470.	4655.8
#2	23084.	156680.	4692.5
#3	23050.	157330.	4665.8

Approved: April 05, 2017

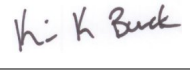
Sample Name: L1703166405 Acquired: 4/4/2017 16:14:05 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00154**	**.01131**	**.00036**	**.02007**	**.14518**	**.00000**	**49.913**
Stddev	.00014	.00049	.00097	.00183	.00144	.00002	.266
%RSD	9.3100	4.2906	267.76	9.1280	.99151	1968.8	.53293
#1	-.00170	.01078	.00131	.01897	.14352	-.00000	49.606
#2	-.00142	.01140	-.00063	.02218	.14597	.00002	50.079
#3	-.00149	.01174	.00040	.01904	.14606	-.00002	50.054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**-.00028**	**-.00034**	**.05028**	**.01022**	**.62446**	**.00845**
Stddev	.00005	.00027	.00100	.00048	.01432	.06503	.00341
%RSD	142.67	97.351	295.73	.95353	140.16	10.414	40.358
#1	.00000	-.00042	-.00101	.05030	.02250	.61792	.00724
#2	-.00002	-.00045	-.00081	.04979	.01367	.69251	.01229
#3	-.00009	.00003	.00081	.05074	-.00551	.56295	.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.364**	**.08947**	**.00033**	**9.0129**	**.00213**	**-.02645**	**.00414**
Stddev	.151	.00407	.00033	.0471	.00014	.00252	.00098
%RSD	1.4589	4.5493	100.47	.52198	6.4367	9.5429	23.695
#1	10.340	.08601	.00057	9.0172	.00227	-.02670	.00329
#2	10.525	.09396	.00046	9.0576	.00213	-.02884	.00393
#3	10.225	.08844	-.00005	8.9638	.00199	-.02381	.00522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: L1703166405 Acquired: 4/4/2017 16:14:05 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00556**	**-.00031**	**4.3757**	**-.00088**	**.43256**	**.00027**	**-.00158**
Stddev	.00192	.00324	.0044	.00033	.00159	.00271	.00075
%RSD	34.466	1031.9	.10108	37.984	.36787	986.91	47.479
#1	-.00415	-.00250	4.3764	-.00120	.43231	.00316	-.00095
#2	-.00774	.00340	4.3798	-.00053	.43427	-.00221	-.00138
#3	-.00479	-.00185	4.3710	-.00089	.43111	-.00013	-.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00059**	**.02453**	F **-.18224**
Stddev	.00027	.00018	.22460
%RSD	45.865	.73539	123.24
#1	.00090	.02440	-.37805
#2	.00042	.02445	-.23161
#3	.00044	.02474	.06294
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23561.**	**149070.**	**4624.0**
Stddev	23.	1294.	89.0
%RSD	.09705	.86777	1.9246
#1	23549.	150190.	4713.0
#2	23587.	149360.	4624.1
#3	23547.	147660.	4535.0

Approved: April 05, 2017

Sample Name: L1703166406 Acquired: 4/4/2017 16:17:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00096**	**-.00023**	**.02113**	**.13788**	**-.00000**	**49.260**
Stddev	.00027	.00333	.00079	.00189	.00046	.00004	.087
%RSD	1565.2	348.78	340.63	8.9489	.33332	4779.8	.17630
#1	.00002	-.00464	.00010	.01930	.13820	-.00003	49.341
#2	-.00030	.00185	-.00113	.02101	.13809	.00005	49.271
#3	.00023	-.00008	.00034	.02308	.13735	-.00001	49.168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**-.00044**	**.00081**	**.03688**	**-.00770**	**1.2759**	**.00554**
Stddev	.00021	.00026	.00004	.00066	.02168	.1988	.00305
%RSD	63.759	60.532	4.6777	1.7778	281.51	15.578	55.053
#1	.00024	-.00027	.00082	.03713	.01678	1.3719	.00903
#2	.00058	-.00030	.00076	.03613	-.02444	1.4085	.00423
#3	.00019	-.00074	.00083	.03737	-.01545	1.0474	.00337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.206**	**.08606**	**.00041**	**8.8875**	**.00214**	**-.00960**	**.00289**
Stddev	.032	.00351	.00041	.0473	.00052	.00390	.00024
%RSD	.31805	4.0801	97.881	.53183	24.293	40.587	8.3673
#1	10.188	.08761	.00088	8.9100	.00222	-.01009	.00273
#2	10.244	.08854	.00016	8.9193	.00262	-.00548	.00317
#3	10.187	.08204	.00021	8.8332	.00159	-.01323	.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703166406 Acquired: 4/4/2017 16:17:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00389**	**-.00221**	**4.2839**	**-.00097**	**.42233**	**-.00886**	**-.00143**
Stddev	.00312	.00402	.0234	.00040	.00202	.00454	.00476
%RSD	80.194	182.34	.54659	40.999	.47879	51.209	332.42
#1	-.00134	.00240	4.3077	-.00134	.42221	-.00719	.00289
#2	-.00737	-.00505	4.2831	-.00055	.42441	-.01399	-.00066
#3	-.00297	-.00397	4.2609	-.00102	.42037	-.00539	-.00653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00016**	**.01892**	F **-.06447**
Stddev	.00052	.00003	.35347
%RSD	326.17	.16366	548.27
#1	-.00019	.01891	-.25093
#2	.00076	.01895	-.28566
#3	-.00009	.01889	.34319
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23721.**	**156450.**	**4694.8**
Stddev	242.	1169.	9.7
%RSD	1.0210	.74721	.20710
#1	23490.	155340.	4684.6
#2	23700.	156350.	4695.8
#3	23973.	157670.	4704.0

Approved: April 05, 2017

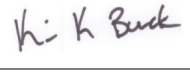
Sample Name: L1703166406PS Acquired: 4/4/2017 16:21:02 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608728-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20432**	**5.0966**	**.19599**	**.99604**	**.64538**	**.02550**	**49.298**	**.02541**
Stddev	.00148	.0085	.00118	.00225	.00132	.00007	.218	.00014
%RSD	.72417	.16739	.60411	.22616	.20407	.27806	.44310	.55995
#1	.20571	5.1061	.19502	.99705	.64636	.02553	49.048	.02530
#2	.20448	5.0940	.19731	.99346	.64388	.02542	49.397	.02557
#3	.20276	5.0897	.19564	.99761	.64589	.02555	49.449	.02535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10077**	**.25700**	**.28246**	**2.0871**	**26.743**	**.53194**	**14.153**	**.33541**
Stddev	.00019	.00107	.00168	.0223	.081	.00644	.016	.00084
%RSD	.18468	.41738	.59425	1.0679	.30386	1.2107	.11354	.24950
#1	.10055	.25817	.28053	2.0831	26.655	.53220	14.169	.33637
#2	.10088	.25605	.28325	2.0671	26.815	.52538	14.137	.33499
#3	.10087	.25680	.28360	2.1111	26.759	.53825	14.154	.33486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50062**	**33.930**	**.25493**	**4.9168**	**.25604**	**.61144**	**.19672**	**6.4130**
Stddev	.00108	.155	.00108	.0168	.00156	.00352	.00184	.0172
%RSD	.21491	.45602	.42199	.34144	.60949	.57512	.93506	.26813
#1	.49980	33.751	.25573	4.9063	.25430	.61206	.19596	6.4003
#2	.50183	34.029	.25534	4.9362	.25731	.61460	.19538	6.4326
#3	.50022	34.008	.25370	4.9080	.25652	.60765	.19882	6.4061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703166406PS Acquired: 4/4/2017 16:21:02 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608728-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51292**	**.89466**	**.51391**	**.25622**	**.51596**	**.52159**	**.42086**
Stddev	.00106	.00249	.00667	.00348	.00051	.00141	.30092
%RSD	.20583	.27799	1.2976	1.3598	.09903	.27123	71.502
#1	.51262	.89309	.51533	.25369	.51650	.52064	.70426
#2	.51410	.89753	.51975	.26019	.51548	.52322	.45326
#3	.51205	.89337	.50664	.25478	.51590	.52092	.10504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23434.**	**154190.**	**4709.3**
Stddev	153.	561.	17.0
%RSD	.65420	.36378	.36172
#1	23575.	153640.	4689.9
#2	23271.	154170.	4721.9
#3	23457.	154760.	4716.1

Approved: April 05, 2017

Kim K Buck

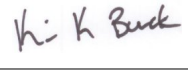
Sample Name: L1703166406SDL Acquired: 4/4/2017 16:24:26 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608728-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00208**	**-.00469**	**-.00140**	**.00748**	**.02424**	**-.00004**	**9.6712**	**.00001**
Stddev	.00046	.00176	.00146	.00160	.00084	.00002	.0188	.00007
%RSD	22.018	37.594	104.15	21.389	3.4733	60.884	.19441	568.34
#1	-.00261	-.00524	-.00021	.00929	.02460	-.00005	9.6499	-.00006
#2	-.00181	-.00611	-.00097	.00627	.02327	-.00006	9.6852	.00003
#3	-.00183	-.00272	-.00303	.00687	.02484	-.00001	9.6786	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**-.00069**	**.00803**	**.01942**	**.15307**	**-.00189**	**2.1009**	**.01881**
Stddev	.00034	.00052	.00085	.01128	.08295	.00454	.0566	.00378
%RSD	150.74	74.904	10.618	58.104	54.193	240.17	2.6949	20.083
#1	-.00055	-.00028	.00892	.01747	.07303	-.00542	2.0932	.01477
#2	.00013	-.00128	.00795	.00924	.23866	.00323	2.0485	.01942
#3	-.00026	-.00052	.00722	.03154	.14753	-.00347	2.1610	.02225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**1.7294**	**.00043**	**.00189**	**.00003**	**-.00533**	**.00075**	**.86012**
Stddev	.00017	.0182	.00059	.00419	.00107	.00362	.00313	.00370
%RSD	82.332	1.0555	138.07	222.07	3169.9	67.901	417.39	.43043
#1	.00025	1.7161	.00035	-.00217	.00051	-.00580	.00160	.85616
#2	.00002	1.7219	.00106	.00621	.00078	-.00870	-.00272	.86071
#3	.00034	1.7502	-.00012	.00162	-.00120	-.00150	.00336	.86349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703166406SDL Acquired: 4/4/2017 16:24:26 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608728-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.08268**	**.00221**	**.00242**	**.00066**	**.00443**	**-.01589**
Stddev	.00037	.00118	.01045	.00115	.00062	.00010	.37876
%RSD	3288.7	1.4217	472.74	47.630	93.709	2.2940	2384.0
#1	-.00027	.08132	.00090	.00138	.00019	.00439	-.00328
#2	.00041	.08327	.01326	.00222	.00043	.00436	.35641
#3	-.00017	.08344	-.00752	.00365	.00137	.00455	-.40079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24263.**	**159250.**	**4701.5**
Stddev	472.	213.	80.3
%RSD	1.9439	.13367	1.7082
#1	24742.	159030.	4688.2
#2	24247.	159270.	4628.6
#3	23799.	159450.	4787.6

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 16:27:55 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40817**	**10.175**	**.40007**	**.50622**	**1.0184**	**.05094**	**10.146**	**.05011**
Stddev	.00424	.032	.00114	.00297	.0037	.00024	.100	.00030
%RSD	1.0376	.31756	.28388	.58687	.36744	.46333	.98960	.58908
#1	.40595	10.168	.40136	.50478	1.0143	.05073	10.031	.05044
#2	.40551	10.147	.39961	.50423	1.0193	.05088	10.216	.04987
#3	.41305	10.210	.39923	.50963	1.0217	.05120	10.192	.05003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20156**	**.50733**	**.50197**	**4.0586**	**50.477**	**1.0387**	**10.087**	**.50186**
Stddev	.00093	.00160	.00372	.0717	.263	.0066	.134	.00912
%RSD	.46180	.31486	.74101	1.7677	.52084	.64013	1.3243	1.8165
#1	.20261	.50648	.50626	3.9932	50.286	1.0461	9.9335	.49169
#2	.20123	.50633	.50003	4.0472	50.777	1.0333	10.175	.50930
#3	.20084	.50917	.49962	4.1353	50.368	1.0367	10.153	.50458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0019**	**51.156**	**.50449**	**9.9214**	**.50528**	**1.2175**	**.40630**	**5.0070**
Stddev	.0059	.081	.00195	.0584	.00194	.0049	.00401	.0239
%RSD	.58559	.15849	.38588	.58858	.38446	.39986	.98687	.47705
#1	1.0086	51.081	.50649	9.9882	.50746	1.2231	.40847	5.0342
#2	.99921	51.147	.50260	9.8799	.50464	1.2145	.40168	4.9977
#3	.99783	51.242	.50439	9.8961	.50374	1.2148	.40876	4.9892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 16:27:55 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0069**	**1.0120**	**1.0093**	**.51294**	**1.0117**	**1.0068**	**.93078**
Stddev	.0072	.0036	.0067	.00298	.0027	.0057	.33950
%RSD	.71408	.35956	.66724	.58106	.26628	.56189	36.475
#1	1.0148	1.0080	1.0035	.51628	1.0098	1.0133	1.2254
#2	1.0054	1.0130	1.0167	.51201	1.0105	1.0043	.55951
#3	1.0006	1.0151	1.0078	.51054	1.0148	1.0029	1.0074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23098.**	**150340.**	**4735.5**
Stddev	117.	642.	53.0
%RSD	.50545	.42680	1.1186
#1	23233.	150770.	4789.6
#2	23028.	150650.	4733.4
#3	23032.	149600.	4683.7

Approved: April 05, 2017

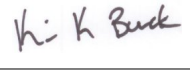
Sample Name: CCB Acquired: 4/4/2017 16:31:15 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00199**	**-.00788**	**.00060**	**.00379**	**-.00126**	**-.00004**	**.04887**
Stddev	.00061	.00210	.00124	.00200	.00142	.00004	.01195
%RSD	30.938	26.678	208.94	52.854	112.62	98.992	24.464
#1	-.00268	-.00551	-.00078	.00520	.00004	-.00004	.04605
#2	-.00151	-.00952	.00164	.00150	-.00105	-.00000	.03857
#3	-.00177	-.00860	.00093	.00466	-.00277	-.00008	.06198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.00018**	**-.00029**	**.00049**	**.02957**	**-.22626**	**-.00046**
Stddev	.00002	.00020	.00041	.00066	.01469	.05174	.00466
%RSD	14.297	113.38	142.11	134.52	49.686	22.866	1003.7
#1	-.00009	-.00029	-.00010	.00065	.03655	-.20088	-.00543
#2	-.00012	.00005	-.00000	-.00023	.01269	-.28578	.00382
#3	-.00011	-.00030	-.00076	.00107	.03948	-.19211	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17930**	**-.00118**	**-.00009**	**.26721**	**.00124**	**-.00405**	**-.00341**
Stddev	.04725	.00087	.00018	.07688	.00076	.00128	.00102
%RSD	26.354	73.795	194.28	28.773	61.320	31.661	30.012
#1	.23384	-.00120	-.00016	.34460	.00036	-.00351	-.00225
#2	.15330	-.00030	.00011	.26619	.00164	-.00552	-.00417
#3	.15075	-.00205	-.00023	.19085	.00172	-.00313	-.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: CCB Acquired: 4/4/2017 16:31:15 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00348**	**-.00051**	**.00047**	**.00027**	**.00062**	**-.00517**	**.00193**
Stddev	.00041	.00422	.00123	.00034	.00014	.00460	.00067
%RSD	11.813	820.17	264.86	125.67	22.177	89.038	34.581
#1	-.00345	-.00525	-.00084	.00031	.00050	-.00084	.00127
#2	-.00308	.00287	.00063	-.00009	.00058	-.01001	.00261
#3	-.00390	.00084	.00160	.00059	.00077	-.00466	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00016**	**.00066**	F **.13790**
Stddev	.00043	.00002	.36431
%RSD	262.65	2.6956	264.17
#1	.00037	.00067	-.24769
#2	-.00033	.00064	.18508
#3	.00046	.00067	.47632
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23904.**	**158520.**	**4783.5**
Stddev	148.	772.	9.2
%RSD	.61994	.48679	.19203
#1	23904.	158740.	4789.3
#2	23756.	159150.	4788.3
#3	24053.	157660.	4772.9

Approved: April 05, 2017

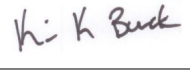
Sample Name: L1703166601 Acquired: 4/4/2017 16:34:45 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00134**	**1.4171**	**.00009**	**.01518**	**.11672**	**.00006**	**59.251**	**.00018**
Stddev	.00098	.0023	.00166	.00169	.00039	.00001	.449	.00022
%RSD	72.672	.16465	1836.6	11.137	.33632	23.340	.75794	123.40
#1	-.00022	1.4154	.00179	.01399	.11702	.00005	59.768	-.00007
#2	-.00201	1.4161	-.00153	.01443	.11627	.00008	59.019	.00026
#3	-.00179	1.4198	.00001	.01711	.11685	.00006	58.965	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00148**	**.00237**	**1.8106**	**1.0614**	**-.00188**	**9.4440**	**.14489**
Stddev	.00025	.00015	.00129	.0121	.0656	.00277	.1024	.00158
%RSD	45.771	10.148	54.554	.66915	6.1780	147.53	1.0847	1.0890
#1	.00034	.00134	.00195	1.7981	.98575	-.00447	9.5578	.14310
#2	.00083	.00146	.00382	1.8223	1.0962	.00104	9.3591	.14609
#3	.00047	.00164	.00134	1.8115	1.1022	-.00220	9.4151	.14547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**10.470**	**.00270**	**.05676**	**.00269**	**-.00352**	**-.00174**	**4.4673**
Stddev	.00038	.014	.00105	.00410	.00111	.00109	.00324	.0144
%RSD	60.403	.13830	38.934	7.2152	41.409	31.079	186.24	.32253
#1	.00021	10.477	.00388	.05348	.00359	-.00296	-.00125	4.4779
#2	.00096	10.453	.00235	.06135	.00303	-.00281	-.00520	4.4730
#3	.00073	10.479	.00187	.05546	.00144	-.00477	.00123	4.4509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

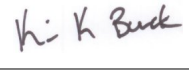


Sample Name: L1703166601 Acquired: 4/4/2017 16:34:45 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.27996**	**.00712**	**-.00153**	**.00237**	**.03715**	**.39412**
Stddev	.00060	.00115	.00785	.00046	.00051	.00042	.21170
%RSD	58.204	.41114	110.30	29.904	21.320	1.1317	53.714
#1	-.00085	.28125	.01438	-.00204	.00243	.03706	.28814
#2	-.00054	.27905	-.00121	-.00142	.00285	.03760	.25634
#3	-.00170	.27957	.00818	-.00114	.00184	.03678	.63788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23300.**	**152880.**	**4644.8**
Stddev	32.	745.	30.5
%RSD	.13713	.48752	.65680
#1	23272.	153730.	4615.1
#2	23335.	152510.	4643.0
#3	23294.	152380.	4676.1

Approved: April 05, 2017



Sample Name: L1703167601 Acquired: 4/4/2017 16:38:12 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**.93184**	**-.00031**	**.01405**	**.18829**	**.00001**	**34.942**	**.00020**
Stddev	.00213	.00691	.00065	.00024	.00150	.00005	.192	.00017
%RSD	214.85	.74106	209.47	1.7363	.79918	376.71	.54872	82.706
#1	.00035	.92494	-.00092	.01433	.18818	-.00003	34.779	.00039
#2	.00013	.93184	.00038	.01392	.18684	-.00000	34.894	.00007
#3	-.00344	.93875	-.00040	.01390	.18984	.00007	35.154	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00120**	**.00667**	**.60093**	**4.5367**	**.00809**	**2.3685**	**.00772**
Stddev	.00025	.00055	.00086	.04061	.1180	.00849	.1140	.00167
%RSD	158.11	45.616	12.863	6.7572	2.6019	104.93	4.8142	21.658
#1	-.00035	.00059	.00764	.58854	4.5193	.00491	2.2641	.00835
#2	.00012	.00166	.00603	.56796	4.4283	.00165	2.4902	.00582
#3	-.00025	.00134	.00634	.64629	4.6624	.01772	2.3513	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**3.1597**	**.00274**	**.07924**	**-.00130**	**-.00242**	**.00324**	**8.4580**
Stddev	.00029	.0335	.00054	.00306	.00132	.00083	.00149	.0248
%RSD	431.90	1.0604	19.686	3.8562	101.81	34.410	45.903	.29343
#1	-.00026	3.1886	.00334	.07968	-.00180	-.00188	.00191	8.4629
#2	.00030	3.1676	.00228	.07599	-.00229	-.00338	.00485	8.4800
#3	.00017	3.1230	.00261	.08206	.00020	-.00200	.00297	8.4311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703167601 Acquired: 4/4/2017 16:38:12 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	**.21399**	**.01410**	**-.00194**	**.00919**	**.25560**	**.57802**
Stddev	.00011	.00069	.00319	.00177	.00067	.00050	.25498
%RSD	10.351	.32290	22.643	91.227	7.2986	.19413	44.113
#1	-.00117	.21474	.01644	-.00346	.00994	.25595	.79521
#2	-.00109	.21386	.01046	-.00237	.00865	.25581	.29727
#3	-.00095	.21338	.01540	.00000	.00898	.25503	.64158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23235.**	**153500.**	**4644.1**
Stddev	95.	812.	78.3
%RSD	.40743	.52920	1.6868
#1	23330.	153950.	4613.0
#2	23235.	153990.	4733.2
#3	23141.	152560.	4586.1

Approved: April 05, 2017

Sample Name: L1703167602 Acquired: 4/4/2017 16:41:41 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.07544	.00181	.02621	.27554	.00001	86.737
Stddev	.00084	.00246	.00115	.00042	.00189	.00003	.396
%RSD	97.253	3.2647	63.456	1.5926	.68519	615.11	.45691
#1	-.00092	.07828	.00304	.02669	.27382	-.00003	86.315
#2	.00000	.07413	.00076	.02594	.27524	.00004	86.797
#3	-.00166	.07391	.00164	.02599	.27756	.00001	87.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00034	.00415	.00081	.02606	2.1403	.02886
Stddev	.00016	.00029	.00022	.00052	.01719	.0445	.00434
%RSD	43.331	84.867	5.3473	64.489	65.973	2.0778	15.041
#1	.00051	-.00059	.00422	.00117	.00968	2.1163	.03298
#2	.00020	-.00040	.00433	.00106	.04395	2.1916	.02433
#3	.00038	-.00003	.00390	.00021	.02454	2.1130	.02926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.820	.00260	.00099	22.378	.00039	.02918	.00016
Stddev	.196	.00317	.00010	.159	.00019	.00386	.00188
%RSD	1.2417	121.90	10.443	.70972	47.511	13.241	1184.5
#1	15.681	-.00018	.00099	22.226	.00046	.03356	-.00066
#2	16.045	.00605	.00109	22.365	.00018	.02770	.00231
#3	15.735	.00193	.00088	22.542	.00054	.02627	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017
Kim K Buck

Sample Name: L1703167602 Acquired: 4/4/2017 16:41:41 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00064**	**.00286**	**15.169**	**-.00117**	**1.2695**	**-.00170**	**-.00013**
Stddev	.00234	.00020	.014	.00022	.0111	.00564	.00105
%RSD	364.64	6.9820	.08915	18.489	.87183	331.65	816.45
#1	-.00278	.00299	15.168	-.00112	1.2625	.00341	-.00027
#2	-.00101	.00263	15.156	-.00141	1.2638	-.00076	-.00110
#3	.00186	.00297	15.183	-.00098	1.2823	-.00775	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01188**	**.01346**	F **-.05078**
Stddev	.00051	.00007	.13055
%RSD	4.3171	.49727	257.07
#1	.01246	.01343	.04107
#2	.01171	.01354	.00681
#3	.01147	.01341	-.20022
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23159.**	**150040.**	**4453.3**
Stddev	60.	4470.	34.9
%RSD	.25714	2.9793	.78379
#1	23212.	145070.	4463.7
#2	23095.	151330.	4414.4
#3	23171.	153720.	4481.9

Approved: April 05, 2017

Kristi K Buck

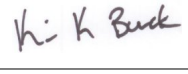
Sample Name: L1703167603 Acquired: 4/4/2017 16:45:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.71605**	**-.00003**	**.02542**	**.14012**	**.00005**	**37.971**	**.00036**
Stddev	.00146	.00542	.00212	.00033	.00047	.00002	.205	.00027
%RSD	321.24	.75717	6136.4	1.2810	.33744	37.792	.53947	74.759
#1	-.00078	.71982	-.00106	.02505	.13980	.00006	38.062	.00051
#2	.00008	.71850	-.00145	.02553	.14067	.00003	38.115	.00050
#3	.00206	.70984	.00240	.02567	.13990	.00007	37.736	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00137**	**.00759**	**.64301**	**3.9817**	**.01123**	**5.5666**	**.02982**
Stddev	.00023	.00121	.00014	.01207	.1973	.00101	.1264	.00307
%RSD	745.09	88.401	1.8125	1.8769	4.9560	8.9738	2.2701	10.304
#1	.00012	.00176	.00761	.64120	3.8582	.01225	5.5370	.03113
#2	-.00023	.00235	.00744	.65589	4.2093	.01120	5.7051	.02631
#3	.00021	.00001	.00771	.63196	3.8777	.01024	5.4576	.03201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00241**	**14.785**	**.00311**	**.04296**	**.00230**	**-.00029**	**-.00152**	**8.5349**
Stddev	.00030	.128	.00106	.00505	.00105	.00251	.00508	.0273
%RSD	12.458	.86477	34.158	11.749	45.591	871.05	333.73	.31958
#1	.00240	14.823	.00377	.04208	.00345	-.00120	-.00612	8.5052
#2	.00272	14.889	.00368	.04839	.00205	-.00221	-.00237	8.5404
#3	.00212	14.642	.00188	.03841	.00140	.00255	.00393	8.5589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703167603 Acquired: 4/4/2017 16:45:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.64366**	**.01239**	**-.00236**	**.00646**	**1.2721**	**.46757**
Stddev	.00050	.00277	.01179	.00299	.00080	.0043	.24313
%RSD	38.483	.43024	95.128	126.32	12.315	.34162	51.998
#1	-.00090	.64467	.02562	.00069	.00625	1.2671	.33370
#2	-.00186	.64579	.00855	-.00528	.00734	1.2741	.74822
#3	-.00114	.64053	.00301	-.00250	.00579	1.2751	.32080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23073.**	**153840.**	**4675.9**
Stddev	56.	161.	44.8
%RSD	.24206	.10450	.95824
#1	23029.	153880.	4659.5
#2	23053.	153990.	4641.6
#3	23136.	153670.	4726.6

Approved: April 05, 2017

Hi K Buck

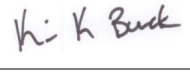
Sample Name: L1703167604 Acquired: 4/4/2017 16:48:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.51782**	**-.00026**	**.04499**	**.18407**	**.00006**	**79.637**	**.00042**
Stddev	.00170	.00769	.00154	.00103	.00147	.00002	.295	.00012
%RSD	255.90	1.4850	598.26	2.2939	.79885	34.130	.37061	29.043
#1	-.00166	.52422	-.00030	.04382	.18537	.00008	79.956	.00033
#2	-.00164	.50929	.00131	.04538	.18438	.00004	79.374	.00038
#3	.00130	.51994	-.00178	.04577	.18247	.00007	79.580	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00459**	**.00295**	**.49420**	**2.2493**	**.04790**	**20.666**	**.00870**
Stddev	.00024	.00047	.00035	.02801	.0139	.00313	.196	.00392
%RSD	178.15	10.165	11.775	5.6681	.61613	6.5297	.94902	45.028
#1	-.00032	.00485	.00311	.46274	2.2455	.04537	20.861	.00476
#2	.00014	.00405	.00319	.51643	2.2647	.04694	20.469	.01260
#3	-.00022	.00488	.00255	.50344	2.2378	.05140	20.668	.00874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**16.703**	**.00025**	**.03647**	**.00034**	**-.00259**	**-.00186**	**19.544**
Stddev	.00018	.069	.00082	.00247	.00210	.00173	.00159	.093
%RSD	12.032	.41461	333.26	6.7824	626.05	66.501	85.563	.47453
#1	.00151	16.644	-.00025	.03867	-.00141	-.00167	-.00306	19.584
#2	.00135	16.686	.00119	.03694	.00267	-.00458	-.00246	19.438
#3	.00172	16.780	-.00020	.03379	-.00025	-.00153	-.00005	19.610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703167604 Acquired: 4/4/2017 16:48:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00133**	**1.7887**	**.00163**	**-.00363**	**.01094**	**.17439**	**.38108**
Stddev	.00046	.0040	.00518	.00238	.00058	.00093	.26579
%RSD	34.919	.22219	318.22	65.496	5.2680	.53178	69.745
#1	-.00179	1.7926	-.00435	-.00361	.01161	.17511	.67922
#2	-.00086	1.7888	.00467	-.00601	.01062	.17334	.16894
#3	-.00133	1.7847	.00457	-.00126	.01060	.17471	.29509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22788.**	**149910.**	**4410.2**
Stddev	191.	1182.	15.6
%RSD	.83920	.78820	.35407
#1	22723.	150770.	4423.2
#2	22638.	150410.	4414.4
#3	23003.	148570.	4392.9

Approved: April 05, 2017

Sample Name: L1703167605MS Acquired: 4/4/2017 16:52:04 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20552**	**6.4157**	**.20044**	**1.0244**	**.70958**	**.02590**	**82.703**	**.02520**
Stddev	.00086	.0180	.00187	.0015	.00236	.00012	.439	.00014
%RSD	.41980	.28027	.93465	.15057	.33196	.44824	.53066	.55725
#1	.20545	6.3950	.19981	1.0261	.71176	.02580	82.310	.02506
#2	.20642	6.4251	.20255	1.0234	.70990	.02586	83.177	.02522
#3	.20470	6.4270	.19897	1.0235	.70708	.02603	82.622	.02534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10031**	**.26405**	**.25328**	**3.2569**	**28.262**	**.56663**	**24.855**	**.28107**
Stddev	.00032	.00135	.00197	.0327	.136	.00907	.168	.00153
%RSD	.31920	.51129	.77887	1.0042	.48012	1.5999	.67620	.54424
#1	.10054	.26249	.25216	3.2513	28.315	.56417	24.768	.28216
#2	.09994	.26480	.25213	3.2920	28.362	.57667	25.049	.28173
#3	.10044	.26485	.25556	3.2273	28.107	.55904	24.749	.27932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49949**	**41.704**	**.25213**	**4.9808**	**.25567**	**.60732**	**.19005**	**23.665**
Stddev	.00178	.157	.00099	.0152	.00080	.00505	.00315	.072
%RSD	.35665	.37693	.39358	.30452	.31461	.83211	1.6593	.30252
#1	.50044	41.602	.25267	4.9846	.25630	.60506	.18850	23.697
#2	.49743	41.885	.25098	4.9641	.25593	.60380	.18796	23.583
#3	.50059	41.625	.25273	4.9937	.25476	.61311	.19367	23.715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1703167605MS Acquired: 4/4/2017 16:52:04 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50974**	**2.2338**	**.52852**	**.25398**	**.52837**	**.56416**	**2.7014**
Stddev	.00248	.0077	.00715	.00235	.00205	.00150	.3303
%RSD	.48630	.34559	1.3529	.92640	.38819	.26666	12.227
#1	.50934	2.2351	.52864	.25532	.52808	.56420	2.3201
#2	.50749	2.2408	.53561	.25126	.52649	.56263	2.8894
#3	.51240	2.2255	.52131	.25535	.53056	.56564	2.8948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22871.**	**148490.**	**4487.5**
Stddev	186.	1440.	56.9
%RSD	.81133	.96953	1.2673
#1	22928.	146850.	4537.5
#2	23021.	149120.	4499.4
#3	22663.	149520.	4425.6

Approved: April 05, 2017

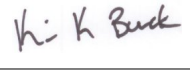
Sample Name: L1703167606MSD Acquired: 4/4/2017 16:55:29 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20567**	**5.8318**	**.19868**	**1.0308**	**.71305**	**.02590**	**84.076**	**.02520**
Stddev	.00163	.0096	.00222	.0042	.00209	.00004	.107	.00024
%RSD	.79410	.16423	1.1190	.40330	.29291	.16186	.12728	.94170
#1	.20414	5.8372	.20065	1.0354	.71255	.02595	84.097	.02511
#2	.20739	5.8374	.19912	1.0274	.71125	.02590	84.171	.02503
#3	.20548	5.8207	.19627	1.0295	.71534	.02586	83.960	.02547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10044**	**.26396**	**.25297**	**2.8802**	**28.659**	**.57639**	**25.028**	**.27022**
Stddev	.00050	.00077	.00054	.0262	.214	.00679	.185	.00246
%RSD	.49885	.29353	.21212	.91091	.74518	1.1772	.73754	.90978
#1	.10014	.26428	.25350	2.8522	28.444	.58301	24.815	.27260
#2	.10102	.26452	.25297	2.8843	28.871	.57670	25.129	.27036
#3	.10017	.26308	.25243	2.9042	28.661	.56945	25.140	.26769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50052**	**42.281**	**.25046**	**4.9781**	**.25275**	**.61088**	**.19390**	**22.474**
Stddev	.00169	.054	.00080	.0141	.00131	.00360	.00218	.063
%RSD	.33759	.12698	.31748	.28220	.51869	.58869	1.1268	.28026
#1	.50206	42.251	.25134	4.9874	.25171	.60943	.19309	22.496
#2	.50079	42.343	.24979	4.9850	.25422	.61498	.19224	22.524
#3	.49871	42.249	.25026	4.9620	.25232	.60824	.19638	22.403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703167606MSD Acquired: 4/4/2017 16:55:29 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50931	2.2751	.53252	.25346	.52683	.54569	1.5974
Stddev	.00245	.0032	.00737	.00301	.00145	.00157	.1527
%RSD	.48120	.14068	1.3834	1.1866	.27505	.28807	9.5594
#1	.51033	2.2720	.53291	.25073	.52573	.54614	1.6450
#2	.51109	2.2784	.53969	.25668	.52847	.54699	1.7206
#3	.50651	2.2749	.52497	.25297	.52630	.54394	1.4266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	22251.	148300.	4597.5
Stddev	95.	590.	49.3
%RSD	.42544	.39814	1.0722
#1	22344.	148520.	4555.3
#2	22155.	148740.	4651.7
#3	22255.	147630.	4585.4

Approved: April 05, 2017

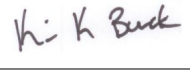
Sample Name: L1703168901 Acquired: 4/4/2017 16:58:52 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00093**	**.37000**	**.00126**	**.07413**	**.68039**	**.00048**	**66.012**
Stddev	.00145	.00189	.00077	.00218	.00305	.00003	.358
%RSD	156.38	.51178	61.148	2.9411	.44858	6.6912	.54174
#1	-.00218	.37146	.00089	.07665	.67694	.00049	65.847
#2	-.00126	.36786	.00215	.07290	.68275	.00050	66.422
#3	.00066	.37069	.00075	.07285	.68147	.00044	65.767
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00135**	**.02144**	**.03397**	**.01630**	**9.9437**	**1.4928**	**.02450**
Stddev	.00019	.00013	.00057	.00074	.0498	.0709	.00721
%RSD	14.384	.62402	1.6667	4.5324	.50092	4.7507	29.435
#1	.00146	.02146	.03459	.01654	9.8862	1.4116	.01969
#2	.00113	.02157	.03348	.01548	9.9738	1.5245	.03280
#3	.00148	.02130	.03386	.01690	9.9710	1.5424	.02103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**43.669**	**1.1917**	**.00487**	F **399.18**	**.03918**	**.32683**	**.00116**
Stddev	.278	.0106	.00061	1.99	.00024	.00362	.00036
%RSD	.63759	.88806	12.520	.49838	.60195	1.1089	31.056
#1	43.610	1.1844	.00496	397.44	.03904	.32871	.00147
#2	43.971	1.2039	.00423	401.35	.03945	.32914	.00124
#3	43.424	1.1870	.00544	398.76	.03903	.32266	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: April 05, 2017



Sample Name: L1703168901 Acquired: 4/4/2017 16:58:52 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00169**	**-.00079**	**17.856**	**-.00185**	**1.3134**	**-.00015**	**.00204**
Stddev	.00218	.00296	.042	.00021	.0077	.00653	.00201
%RSD	128.83	376.63	.23618	11.565	.58502	4482.1	98.393
#1	-.00356	.00037	17.870	-.00203	1.3056	.00333	.00180
#2	.00070	-.00415	17.809	-.00161	1.3210	.00391	.00416
#3	-.00220	.00142	17.889	-.00191	1.3135	-.00768	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00293**	**.52043**	F **-.60567**
Stddev	.00052	.00064	.12256
%RSD	17.635	.12251	20.236
#1	.00233	.52109	-.46624
#2	.00323	.51981	-.69637
#3	.00323	.52038	-.65442
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22246.**	**144250.**	**4577.1**
Stddev	188.	699.	16.5
%RSD	.84625	.48487	.35987
#1	22295.	144100.	4576.4
#2	22038.	143630.	4561.0
#3	22404.	145010.	4593.9

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703169001 Acquired: 4/4/2017 17:02:18 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00264**	**.04226**	**-.00060**	**.10295**	**.15795**	**-.00001**	**26.960**
Stddev	.00140	.00467	.00163	.00313	.00088	.00005	.100
%RSD	52.947	11.062	272.99	3.0367	.55397	679.27	.37223
#1	-.00405	.04468	-.00032	.10656	.15819	.00003	27.001
#2	-.00125	.03687	.00088	.10110	.15698	-.00006	27.033
#3	-.00263	.04522	-.00235	.10119	.15868	.00001	26.845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00342**	**.00631**	**.00158**	**.54543**	**4.2913**	**.02297**
Stddev	.00025	.00041	.00128	.00160	.01796	.1386	.00601
%RSD	103.29	11.929	20.286	101.34	3.2925	3.2289	26.173
#1	-.00004	.00319	.00527	.00041	.56493	4.1439	.01735
#2	.00033	.00318	.00592	.00092	.54178	4.3111	.02932
#3	.00044	.00389	.00774	.00341	.52958	4.4189	.02225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**23.125**	**.09451**	**.00236**	F **1522.0**	**.01217**	**3.5508**	**-.00135**
Stddev	.135	.00385	.00015	16.8	.00109	.0102	.00204
%RSD	.58327	4.0686	6.2201	1.1017	8.9411	.28654	151.94
#1	23.276	.09442	.00240	1541.0	.01092	3.5512	.00101
#2	23.082	.09071	.00249	1516.0	.01292	3.5404	-.00260
#3	23.017	.09840	.00220	1509.1	.01266	3.5608	-.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703169001 Acquired: 4/4/2017 17:02:18 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00325**	**.00004**	**7.8685**	**-.00258**	**1.4227**	**-.00216**	**-.00138**
Stddev	.00421	.00292	.0305	.00031	.0058	.00509	.00354
%RSD	129.61	7971.6	.38752	12.016	.40830	235.13	256.63
#1	-.00181	-.00246	7.8680	-.00224	1.4248	.00245	.00001
#2	-.00799	.00325	7.8383	-.00263	1.4272	-.00132	-.00540
#3	.00005	-.00068	7.8992	-.00285	1.4161	-.00762	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00085**	**.06230**	F **-.51776**
Stddev	.00051	.00042	.13316
%RSD	60.267	.67523	25.718
#1	.00070	.06251	-.36952
#2	.00142	.06182	-.62724
#3	.00043	.06257	-.55652
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21286.**	**134410.**	**4535.9**
Stddev	273.	1039.	18.9
%RSD	1.2835	.77288	.41579
#1	20988.	135280.	4520.0
#2	21523.	134680.	4556.8
#3	21348.	133260.	4531.0

Approved: April 05, 2017

Kristi K Buck

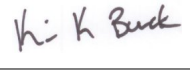
Sample Name: L1703169901 Acquired: 4/4/2017 17:05:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00116**	**.06719**	**-.00156**	**.00844**	**.07330**	**-.00008**	**1.1048**	**.00021**
Stddev	.00042	.00267	.00089	.00069	.00091	.00002	.0142	.00023
%RSD	36.168	3.9698	57.119	8.1202	1.2417	25.078	1.2887	110.00
#1	-.00069	.07006	-.00225	.00814	.07428	-.00011	1.1127	.00046
#2	-.00128	.06671	-.00187	.00922	.07313	-.00006	1.0884	.00013
#3	-.00150	.06480	-.00055	.00795	.07248	-.00009	1.1134	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00133**	**.08201**	**.54105**	**-.11466**	**.00986**	**.18509**	**.00746**
Stddev	.00011	.00040	.00054	.02058	.09873	.00291	.02893	.00182
%RSD	18.693	29.803	.65994	3.8033	86.107	29.492	15.632	24.351
#1	-.00066	.00150	.08164	.51900	-.00290	.00693	.20178	.00956
#2	-.00063	.00088	.08263	.54442	-.19004	.01274	.15168	.00633
#3	-.00046	.00162	.08177	.55974	-.15105	.00990	.20181	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00152**	**.97023**	**.00611**	**.40983**	**.01043**	**-.00395**	**.00061**	**.05751**
Stddev	.00036	.07377	.00045	.00719	.00110	.00436	.00161	.00064
%RSD	23.950	7.6034	7.3584	1.7550	10.514	110.24	264.95	1.1102
#1	.00133	1.0544	.00559	.41718	.01044	.00065	-.00039	.05724
#2	.00194	.93948	.00637	.40281	.01152	-.00449	.00247	.05706
#3	.00129	.91680	.00637	.40949	.00933	-.00802	-.00025	.05824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703169901 Acquired: 4/4/2017 17:05:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00376**	**.00202**	**.00550**	**-.00150**	**.00175**	**4.2047**	**.19653**
Stddev	.00025	.00060	.01380	.00184	.00033	.0026	.09341
%RSD	6.7523	29.691	251.14	122.14	19.095	.06272	47.530
#1	.00405	.00261	.01894	-.00059	.00137	4.2077	.17419
#2	.00357	.00204	-.00864	-.00030	.00195	4.2027	.11632
#3	.00367	.00141	.00619	-.00362	.00195	4.2037	.29908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**25100.**	**165230.**	**4920.9**
Stddev	47.	817.	9.5
%RSD	.18745	.49431	.19343
#1	25123.	166160.	4927.4
#2	25131.	164860.	4925.3
#3	25046.	164660.	4910.0

Approved: April 05, 2017

Kristi K Buck

Sample Name: CCV Acquired: 4/4/2017 17:09:27 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40459**	**10.067**	**.39779**	**.49938**	**1.0186**	**.05024**	**10.187**
Stddev	.00142	.022	.00407	.00214	.0021	.00010	.028
%RSD	.35034	.21450	1.0230	.42898	.20666	.18999	.27667
#1	.40622	10.090	.39501	.49796	1.0164	.05035	10.155
#2	.40372	10.047	.39590	.49834	1.0188	.05017	10.198
#3	.40382	10.063	.40246	.50185	1.0205	.05021	10.208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05047**	**.20179**	**.50043**	**.50170**	**4.0311**	**50.898**	**1.0414**
Stddev	.00025	.00125	.00293	.00219	.0176	.214	.0079
%RSD	.50099	.61719	.58630	.43743	.43666	.42040	.76182
#1	.05020	.20036	.50381	.49944	4.0134	50.751	1.0323
#2	.05051	.20263	.49848	.50184	4.0486	50.800	1.0455
#3	.05070	.20238	.49901	.50383	4.0311	51.143	1.0465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9270**	**.50282**	**1.0012**	**51.624**	**.50513**	**9.9261**	**.50389**
Stddev	.1050	.00461	.0037	.184	.00336	.0307	.00319
%RSD	1.0572	.91612	.36992	.35664	.66432	.30968	.63325
#1	9.8076	.50165	.99698	51.477	.50128	9.8934	.50234
#2	10.005	.49891	1.0031	51.565	.50665	9.9304	.50178
#3	9.9690	.50789	1.0037	51.830	.50746	9.9545	.50756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 17:09:27 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2168**	**.40567**	**5.0182**	**1.0058**	**1.0085**	**1.0143**	**.51543**
Stddev	.0058	.00133	.0233	.0044	.0015	.0069	.00148
%RSD	.47326	.32712	.46423	.44134	.14556	.68012	.28718
#1	1.2102	.40413	4.9934	1.0014	1.0069	1.0122	.51511
#2	1.2193	.40647	5.0216	1.0058	1.0089	1.0220	.51414
#3	1.2208	.40640	5.0396	1.0103	1.0098	1.0086	.51704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99902**	**1.0059**	F **.80018**
Stddev	.00223	.0050	.23924
%RSD	.22273	.49965	29.898
#1	1.0015	1.0003	.81522
#2	.99835	1.0074	.55378
#3	.99721	1.0101	1.0315
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23572.**	**154870.**	**4768.9**
Stddev	125.	468.	20.9
%RSD	.52902	.30208	.43898
#1	23689.	154490.	4762.7
#2	23586.	155390.	4751.7
#3	23441.	154740.	4792.2

Approved: April 05, 2017

Kristi K Buck

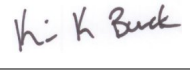
Sample Name: CCB Acquired: 4/4/2017 17:12:47 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**-.00107**	**.00009**	**.00334**	**-.00041**	**-.00004**	**-.00602**
Stddev	.00091	.00275	.00283	.00028	.00134	.00000	.02294
%RSD	74.886	257.69	3143.4	8.3313	326.01	8.3832	381.03
#1	-.00019	-.00066	.00333	.00346	.00101	-.00004	-.03192
#2	-.00193	.00146	-.00185	.00354	-.00164	-.00005	.01172
#3	-.00154	-.00400	-.00121	.00302	-.00060	-.00004	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00028**	**.00001**	**.00172**	**-.01563**	**-.26766**	**.00023**
Stddev	.00005	.00029	.00012	.00050	.02692	.02852	.00110
%RSD	41.437	105.39	830.64	29.082	172.22	10.656	488.33
#1	-.00015	-.00058	-.00001	.00163	-.04498	-.23913	.00012
#2	-.00017	.00001	-.00009	.00227	-.00983	-.26767	-.00082
#3	-.00007	-.00026	.00015	.00128	.00791	-.29618	.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11649**	**-.00059**	**.00019**	**.33548**	**.00170**	**.00212**	**-.00230**
Stddev	.09010	.00448	.00024	.07902	.00101	.00505	.00350
%RSD	77.344	762.36	126.00	23.555	59.053	238.70	152.03
#1	.02946	-.00066	.00040	.42572	.00199	-.00094	-.00262
#2	.20937	.00393	.00023	.27869	.00254	.00795	.00134
#3	.11065	-.00503	-.00007	.30202	.00059	-.00066	-.00563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: CCB Acquired: 4/4/2017 17:12:47 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00623**	**.00082**	**.00058**	**.00029**	**.00059**	**-.00953**	**-.00059**
Stddev	.00242	.00108	.00045	.00034	.00050	.00958	.00209
%RSD	38.901	131.44	77.691	117.81	85.394	100.55	354.96
#1	-.00834	.00116	.00106	.00007	.00026	-.00540	-.00277
#2	-.00358	-.00039	.00054	.00012	.00034	-.02048	-.00041
#3	-.00676	.00170	.00016	.00068	.00117	-.00270	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00078**	**.00071**	F **-.04661**
Stddev	.00026	.00009	.39330
%RSD	33.231	12.002	843.81
#1	.00050	.00062	-.08033
#2	.00081	.00074	.36246
#3	.00102	.00078	-.42196
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24023.**	**155960.**	**4547.2**
Stddev	134.	3152.	76.8
%RSD	.55902	2.0212	1.6891
#1	24171.	152410.	4563.2
#2	23987.	157070.	4463.6
#3	23910.	158410.	4614.7

Approved: April 05, 2017

Sample Name: L1704000101 Acquired: 4/4/2017 17:16:18 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.05629**	**.00099**	**.01771**	**.02304**	**.00002**	**47.810**
Stddev	.00145	.00191	.00476	.00127	.00119	.00001	.052
%RSD	212.47	3.3888	479.21	7.1746	5.1581	21.022	.10896
#1	-.00122	.05409	.00603	.01745	.02318	.00002	47.752
#2	.00096	.05749	.00038	.01909	.02178	.00002	47.853
#3	-.00179	.05729	-.00343	.01659	.02415	.00003	47.825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00043**	**.00047**	**.00858**	**.07507**	**.87923**	**.00280**
Stddev	.00008	.00012	.00093	.00091	.01165	.13440	.00527
%RSD	793.63	27.572	200.07	10.559	15.523	15.286	188.14
#1	.00002	-.00042	.00154	.00947	.08131	1.0344	.00888
#2	-.00007	-.00031	-.00006	.00863	.08229	.80402	-.00010
#3	.00009	-.00055	-.00009	.00766	.06163	.79928	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6397**	**-.00039**	**.00140**	**4.2593**	**.00186**	**.00050**	**.00195**
Stddev	.0437	.00469	.00030	.0554	.00039	.00136	.00151
%RSD	.45313	1200.1	21.237	1.3019	20.973	271.36	77.478
#1	9.6144	.00385	.00108	4.1959	.00141	.00097	.00071
#2	9.6901	-.00543	.00166	4.2828	.00214	.00157	.00363
#3	9.6146	.00041	.00145	4.2991	.00202	-.00103	.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1704000101 Acquired: 4/4/2017 17:16:18 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00436**	**.00206**	**3.2198**	**-.00085**	**.19597**	**-.00022**	**-.00268**
Stddev	.00347	.00379	.0126	.00049	.00070	.00364	.00298
%RSD	79.557	183.64	.39058	57.349	.35888	1656.8	111.22
#1	-.00040	.00592	3.2121	-.00054	.19598	-.00014	.00031
#2	-.00581	-.00165	3.2343	-.00141	.19666	.00338	-.00565
#3	-.00688	.00192	3.2129	-.00059	.19526	-.00390	-.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00014**	**.00527**	F **-.34696**
Stddev	.00074	.00009	.16067
%RSD	522.65	1.6510	46.307
#1	.00041	.00532	-.30640
#2	.00071	.00532	-.52402
#3	-.00069	.00516	-.21046
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23067.**	**152090.**	**4551.2**
Stddev	135.	367.	14.8
%RSD	.58627	.24110	.32521
#1	22975.	152410.	4541.1
#2	23223.	151690.	4544.2
#3	23004.	152170.	4568.2

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704001901 Acquired: 4/4/2017 17:19:45 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**1.1714**	**-.00227**	**.01051**	**.02718**	**.00014**	**8.4361**	**.00036**
Stddev	.00053	.0020	.00032	.00169	.00164	.00003	.0617	.00006
%RSD	1258.7	.17003	13.919	16.064	6.0192	20.493	.73129	17.273
#1	.00036	1.1735	-.00252	.00862	.02638	.00012	8.4771	.00041
#2	.00016	1.1695	-.00237	.01106	.02907	.00014	8.4660	.00029
#3	-.00065	1.1711	-.00191	.01186	.02611	.00017	8.3651	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00339**	**.00310**	**.02249**	**1.8773**	**2.7210**	**.02698**	**2.0730**	**.13629**
Stddev	.00032	.00082	.00084	.0622	.0944	.00487	.0890	.00360
%RSD	9.5055	26.348	3.7225	3.3109	3.4675	18.047	4.2913	2.6402
#1	.00373	.00404	.02297	1.8192	2.7475	.02212	2.1747	.13410
#2	.00309	.00272	.02153	1.9429	2.7993	.02697	2.0093	.13432
#3	.00335	.00254	.02298	1.8698	2.6162	.03185	2.0351	.14044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00060**	**5.8642**	**.00585**	**.06718**	**.00086**	**-.00175**	**.00148**	**6.2876**
Stddev	.00025	.0257	.00103	.00214	.00200	.00142	.00475	.0187
%RSD	41.948	.43757	17.660	3.1856	232.15	80.962	320.90	.29754
#1	.00069	5.8677	.00703	.06583	-.00015	-.00242	.00533	6.3063
#2	.00032	5.8880	.00511	.06607	-.00043	-.00012	-.00383	6.2875
#3	.00079	5.8370	.00541	.06965	.00317	-.00271	.00294	6.2689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704001901 Acquired: 4/4/2017 17:19:45 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03568**	**.02257**	**.02481**	**-.00114**	**.00354**	**.04681**	**.60452**
Stddev	.00044	.00055	.00635	.00337	.00061	.00009	.10187
%RSD	1.2250	2.4396	25.604	295.43	17.206	.19468	16.852
#1	.03605	.02202	.02344	.00081	.00323	.04674	.68967
#2	.03579	.02256	.03173	-.00504	.00424	.04691	.49166
#3	.03519	.02312	.01925	.00080	.00314	.04678	.63221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24477.**	**162190.**	**4675.7**
Stddev	59.	254.	51.4
%RSD	.23939	.15646	1.1000
#1	24410.	162400.	4681.4
#2	24506.	162260.	4724.0
#3	24516.	161910.	4621.6

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704001902 Acquired: 4/4/2017 17:23:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**.23450**	**-.00188**	**1.3252**	**.09493**	**.00025**	**20.977**	**.00028**
Stddev	.00160	.00839	.00035	.0034	.00057	.00005	.135	.00029
%RSD	139.32	3.5788	18.710	.25333	.59546	18.904	.64228	105.94
#1	.00070	.24403	-.00226	1.3282	.09496	.00022	20.951	.00032
#2	-.00204	.23126	-.00181	1.3259	.09435	.00024	21.123	-.00004
#3	-.00211	.22822	-.00156	1.3216	.09548	.00031	20.857	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06976**	**.00072**	**.00427**	**.18630**	**6.3834**	**.02483**	**3.1715**	**1.8255**
Stddev	.00045	.00016	.00113	.00350	.0998	.00632	.1194	.0236
%RSD	.65068	22.116	26.352	1.8790	1.5635	25.439	3.7633	1.2902
#1	.07009	.00056	.00474	.18696	6.3226	.02585	3.0521	1.8137
#2	.06996	.00073	.00509	.18252	6.4986	.01807	3.1715	1.8526
#3	.06925	.00088	.00299	.18942	6.3290	.03058	3.2908	1.8102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**27.817**	**.00991**	**-.00487**	**-.00033**	**-.00359**	**.00192**	**5.9508**
Stddev	.00009	.142	.00097	.00348	.00238	.00147	.00417	.0078
%RSD	47.912	.51027	9.7881	71.483	733.09	40.986	217.92	.13158
#1	-.00025	27.791	.00955	-.00303	-.00274	-.00509	.00438	5.9599
#2	-.00024	27.971	.00916	-.00888	-.00027	-.00214	.00427	5.9466
#3	-.00008	27.690	.01100	-.00270	.00203	-.00355	-.00290	5.9460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704001902 Acquired: 4/4/2017 17:23:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00812**	**.05015**	**.00097**	**.00153**	**.00054**	**.01431**	**.30251**
Stddev	.00035	.00104	.00401	.00180	.00062	.00017	.52636
%RSD	4.3664	2.0795	411.55	117.79	113.29	1.2165	174.00
#1	.00772	.05031	.00263	.00300	.00038	.01418	.02695
#2	.00840	.05111	.00389	.00207	.00123	.01425	-.02886
#3	.00823	.04904	-.00360	-.00048	.00003	.01451	.90945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23553.**	**151630.**	**4589.4**
Stddev	109.	2099.	74.5
%RSD	.46179	1.3841	1.6229
#1	23679.	150820.	4503.4
#2	23494.	150050.	4631.9
#3	23487.	154010.	4632.8

Approved: April 05, 2017

Sample Name: L1704002001 Acquired: 4/4/2017 17:26:44 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.14712**	**.00153**	**.01890**	**.19965**	**.00000**	**42.020**	**.00028**
Stddev	.00074	.00758	.00070	.00037	.00208	.00001	.121	.00023
%RSD	127.80	5.1535	45.799	1.9505	1.0429	284.48	.28901	82.746
#1	.00021	.15296	.00075	.01933	.20003	.00001	42.159	.00012
#2	-.00127	.14984	.00210	.01871	.20152	-.00001	41.960	.00018
#3	-.00069	.13855	.00174	.01867	.19741	.00001	41.940	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00085**	**.03179**	**1.1947**	**.71594**	**.00013**	**8.3957**	**.72568**
Stddev	.00008	.00075	.00173	.0223	.01854	.00363	.0300	.00198
%RSD	27.569	88.372	5.4510	1.8687	2.5895	2758.1	.35727	.27217
#1	-.00031	-.00001	.03315	1.1894	.73321	.00371	8.4036	.72622
#2	-.00035	.00122	.03239	1.1754	.71826	.00022	8.3625	.72733
#3	-.00020	.00135	.02984	1.2191	.69635	-.00354	8.4209	.72349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**6.6212**	**.00045**	**.01936**	**.00192**	**-.00351**	**-.00025**	**6.5000**
Stddev	.00016	.0327	.00084	.00109	.00077	.00350	.00193	.0144
%RSD	391.30	.49376	187.08	5.6355	40.159	99.580	764.67	.22111
#1	.00021	6.6589	-.00051	.01947	.00253	-.00612	.00164	6.4856
#2	.00002	6.6039	.00104	.02039	.00217	-.00487	-.00223	6.5001
#3	-.00010	6.6009	.00083	.01822	.00105	.00046	-.00017	6.5144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704002001 Acquired: 4/4/2017 17:26:44 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00075**	**.22886**	**.00120**	**-.00070**	**.00069**	**.00368**	**.05157**
Stddev	.00058	.00059	.00606	.00186	.00021	.00004	.28523
%RSD	77.693	.25627	503.14	266.65	29.838	1.1168	553.06
#1	-.00074	.22942	-.00561	.00126	.00051	.00370	.01827
#2	-.00018	.22890	.00325	-.00244	.00091	.00371	-.21554
#3	-.00134	.22825	.00598	-.00091	.00064	.00363	.35199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23181.**	**155690.**	**4521.3**
Stddev	133.	1507.	26.0
%RSD	.57444	.96766	.57484
#1	23288.	154480.	4491.3
#2	23222.	155220.	4535.4
#3	23032.	157380.	4537.2

Approved: April 05, 2017

Sample Name: L1704002101 Acquired: 4/4/2017 17:30:11 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.06102**	**.00100**	**.00852**	**.03948**	**-.00001**	**53.472**
Stddev	.00052	.00243	.00218	.00032	.00082	.00001	.200
%RSD	65.776	3.9883	218.53	3.7926	2.0862	129.45	.37384
#1	-.00135	.06312	.00322	.00833	.03853	.00001	53.577
#2	-.00067	.06158	-.00113	.00833	.03985	-.00002	53.598
#3	-.00034	.05835	.00090	.00889	.04005	-.00002	53.242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00019**	**.00039**	**.00200**	**.05966**	**.35983**	**.00422**
Stddev	.00014	.00016	.00031	.00067	.02050	.06777	.00425
%RSD	98.000	85.826	79.851	33.411	34.362	18.833	100.76
#1	.00028	-.00002	.00074	.00188	.08332	.28203	.00144
#2	.00000	-.00020	.00031	.00271	.04714	.40602	.00211
#3	.00014	-.00035	.00013	.00139	.04852	.39143	.00912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.8822**	**.00883**	**.00064**	**1.9269**	**.00035**	**.02514**	**.00012**
Stddev	.0998	.00056	.00028	.0119	.00042	.00213	.00176
%RSD	1.6969	6.3865	43.881	.61725	120.42	8.4636	1528.6
#1	5.8865	.00830	.00062	1.9326	.00026	.02378	.00077
#2	5.9798	.00942	.00094	1.9132	.00081	.02404	.00146
#3	5.7803	.00877	.00037	1.9349	-.00002	.02759	-.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Ki K Buck

Sample Name: L1704002101 Acquired: 4/4/2017 17:30:11 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00489**	**.00065**	**3.0319**	**-.00127**	**.11007**	**.00381**	**-.00072**
Stddev	.00143	.00248	.0058	.00039	.00013	.00417	.00080
%RSD	29.179	379.52	.19000	30.243	.11434	109.56	111.16
#1	-.00568	.00093	3.0267	-.00126	.10997	.00672	-.00079
#2	-.00324	-.00195	3.0310	-.00167	.11021	-.00097	.00011
#3	-.00574	.00298	3.0381	-.00090	.11003	.00567	-.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00061**	**.01522**	F **-.06927**
Stddev	.00034	.00004	.06473
%RSD	56.513	.28935	93.439
#1	.00085	.01518	-.12941
#2	.00076	.01521	-.07763
#3	.00021	.01527	-.00077
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23438.**	**155080.**	**4558.8**
Stddev	129.	459.	68.6
%RSD	.55164	.29605	1.5047
#1	23583.	155370.	4618.4
#2	23397.	154550.	4574.2
#3	23334.	155330.	4483.8

Approved: April 05, 2017

Kristi K Buck

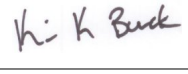
Sample Name: L1704002103 Acquired: 4/4/2017 17:33:38 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.49899**	**.00081**	**.01261**	**.03903**	**.00006**	**39.826**	**.00028**
Stddev	.00238	.00357	.00061	.00043	.00123	.00004	.058	.00014
%RSD	160.98	.71470	75.309	3.4029	3.1497	70.326	.14454	50.602
#1	.00119	.49935	.00150	.01268	.04000	.00001	39.810	.00018
#2	-.00222	.49526	.00063	.01300	.03765	.00008	39.778	.00045
#3	-.00341	.50236	.00031	.01215	.03945	.00008	39.890	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00041**	**.00281**	**.40311**	**.83357**	**-.00227**	**7.6391**	**.00991**
Stddev	.00010	.00038	.00108	.03827	.09021	.00477	.1366	.00472
%RSD	135.64	91.066	38.258	9.4930	10.822	210.13	1.7880	47.645
#1	-.00018	-.00001	.00183	.42353	.93771	-.00424	7.6042	.01009
#2	.00003	.00071	.00264	.42683	.78337	-.00573	7.7897	.00510
#3	-.00009	.00053	.00396	.35896	.77963	.00317	7.5233	.01453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	**2.6532**	**.00233**	**.02092**	**.00045**	**-.00330**	**-.00104**	**3.4976**
Stddev	.00017	.0173	.00136	.00236	.00218	.00360	.00145	.0186
%RSD	28.286	.65336	58.451	11.304	485.37	108.92	139.59	.53097
#1	.00068	2.6724	.00184	.02126	-.00189	-.00743	-.00270	3.4890
#2	.00073	2.6485	.00128	.01840	.00083	-.00167	-.00025	3.4849
#3	.00041	2.6387	.00386	.02310	.00241	-.00081	-.00015	3.5189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1704002103 Acquired: 4/4/2017 17:33:38 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.15489**	**.00704**	**-.00246**	**.00074**	**.00228**	**.10813**
Stddev	.00023	.00159	.00673	.00128	.00108	.00016	.07068
%RSD	33.747	1.0240	95.639	51.893	145.14	7.0637	65.368
#1	-.00064	.15602	.01154	-.00135	.00094	.00246	.04205
#2	-.00092	.15308	.01027	-.00217	.00170	.00220	.09969
#3	-.00047	.15558	-.00070	-.00385	-.00042	.00217	.18266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23292.**	**151790.**	**4531.4**
Stddev	92.	613.	44.9
%RSD	.39677	.40405	.99034
#1	23308.	151840.	4479.6
#2	23375.	151160.	4556.9
#3	23192.	152380.	4557.6

Approved: April 05, 2017

Kristi K Buck

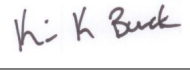
Sample Name: PBW R5 Acquired: 4/4/2017 17:37:06 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608366-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**-.00281**	**.00062**	**.00151**	**-.00145**	**-.00004**	**.00660**
Stddev	.00186	.00257	.00095	.00171	.00166	.00003	.04122
%RSD	510.16	91.567	153.42	113.73	114.22	72.449	624.90
#1	.00154	-.00552	.00172	.00259	-.00010	-.00003	.05286
#2	-.00046	-.00042	.00009	.00240	-.00095	-.00008	-.02619
#3	-.00218	-.00248	.00006	-.00047	-.00330	-.00003	-.00688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**-.00029**	**-.00025**	**.00100**	**.01303**	**-.16744**	**.00053**
Stddev	.00003	.00025	.00039	.00025	.02848	.21508	.00345
%RSD	18.836	87.194	160.45	25.432	218.57	128.45	652.93
#1	-.00012	-.00046	.00016	.00125	.04392	.07495	-.00122
#2	-.00018	.00000	-.00027	.00101	.00736	-.24179	.00451
#3	-.00016	-.00042	-.00063	.00074	-.01219	-.33549	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11074**	**-.00179**	**-.00007**	**.03046**	**.00113**	**.00378**	**.00110**
Stddev	.08635	.00093	.00039	.03286	.00016	.00148	.00285
%RSD	77.975	51.744	601.51	107.91	13.951	39.219	258.84
#1	.05706	-.00151	-.00018	-.00268	.00106	.00549	-.00205
#2	.21034	-.00104	.00037	.06305	.00101	.00299	.00187
#3	.06481	-.00282	-.00039	.03100	.00131	.00286	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: PBW R5 Acquired: 4/4/2017 17:37:06 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608366-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00296**	**-.00105**	**.00247**	**-.00083**	**.00001**	**.00611**	**.00242**
Stddev	.00300	.00261	.00222	.00035	.00033	.00554	.00125
%RSD	101.26	249.89	89.883	42.688	2395.9	90.595	51.835
#1	-.00394	-.00010	.00046	-.00064	.00025	.01250	.00314
#2	.00041	-.00400	.00486	-.00123	-.00037	.00312	.00315
#3	-.00535	.00096	.00210	-.00060	.00016	.00272	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00037**	**.00077**	F **-.09772**
Stddev	.00036	.00003	.16951
%RSD	97.019	3.4385	173.46
#1	-.00065	.00074	-.25193
#2	.00003	.00080	-.12502
#3	-.00048	.00077	.08378
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24671.**	**163660.**	**4730.4**
Stddev	129.	475.	153.2
%RSD	.52404	.29037	3.2396
#1	24769.	164200.	4553.4
#2	24525.	163380.	4818.5
#3	24719.	163380.	4819.2

Approved: April 05, 2017

Sample Name: LCSW R5 Acquired: 4/4/2017 17:40:37 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608366-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20402**	**5.2313**	**.19640**	**.98983**	**.49930**	**.02450**	**4.9459**	**.02494**
Stddev	.00217	.0040	.00210	.00148	.00102	.00005	.0378	.00030
%RSD	1.0654	.07625	1.0706	.14904	.20481	.19878	.76363	1.1870
#1	.20202	5.2268	.19876	.98822	.49831	.02455	4.9072	.02508
#2	.20370	5.2345	.19471	.99017	.49924	.02446	4.9827	.02514
#3	.20633	5.2326	.19574	.99111	.50035	.02447	4.9477	.02460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09918**	**.24644**	**.24928**	**1.9622**	**25.092**	**.50918**	**5.0533**	**.24727**
Stddev	.00057	.00057	.00203	.0084	.029	.00321	.1162	.00299
%RSD	.57481	.23045	.81261	.42741	.11572	.63013	2.2992	1.2087
#1	.09983	.24582	.25047	1.9569	25.063	.50738	4.9194	.24982
#2	.09880	.24659	.25043	1.9578	25.121	.50728	5.1137	.24398
#3	.09890	.24692	.24694	1.9718	25.093	.51289	5.1269	.24800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47705**	**25.470**	**.25014**	**4.8967**	**.25233**	**.61493**	**.20286**	**2.5154**
Stddev	.00206	.112	.00178	.0258	.00308	.00684	.00490	.0138
%RSD	.43173	.44080	.71161	.52671	1.2218	1.1129	2.4147	.55053
#1	.47931	25.343	.25219	4.9219	.25568	.61977	.20754	2.5303
#2	.47655	25.556	.24903	4.8977	.24961	.61792	.20326	2.5130
#3	.47529	25.512	.24920	4.8704	.25169	.60710	.19777	2.5030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: LCSW R5 Acquired: 4/4/2017 17:40:37 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608366-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49730**	**.49737**	**.49368**	**.25982**	**.49126**	**.49744**	**.99780**
Stddev	.00379	.00235	.00515	.00226	.00108	.00238	.35732
%RSD	.76165	.47318	1.0430	.86835	.21932	.47854	35.811
#1	.50115	.49469	.49214	.26172	.49170	.49987	1.3858
#2	.49716	.49913	.49942	.26042	.49003	.49733	.68226
#3	.49358	.49829	.48947	.25733	.49205	.49511	.92534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24265.**	**159190.**	**4809.6**
Stddev	280.	880.	21.0
%RSD	1.1556	.55283	.43765
#1	24190.	158380.	4830.2
#2	24031.	159050.	4810.5
#3	24576.	160130.	4788.1

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703051301 Acquired: 4/4/2017 17:44:02 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00292**	**.00693**	**.00327**	F **45.350**	**-.00177**	**-.00004**	**.01988**
Stddev	.00107	.00707	.00211	.365	.00071	.00007	.02865
%RSD	36.610	101.98	64.501	.80510	39.967	196.99	144.11
#1	-.00184	.01449	.00571	45.771	-.00145	.00004	-.00399
#2	-.00398	.00582	.00211	45.162	-.00129	-.00005	.05165
#3	-.00293	.00049	.00199	45.117	-.00259	-.00009	.01197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				45.000			
Low Limit				-.10000			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**-.00016**	**-.00029**	**.00140**	**.00604**	**32.529**	**-.00392**
Stddev	.00035	.00016	.00089	.00077	.02965	.310	.00180
%RSD	73.238	99.850	304.12	55.056	490.74	.95319	45.923
#1	-.00022	-.00009	-.00124	.00224	-.02534	32.827	-.00380
#2	-.00088	-.00005	.00053	.00072	.03359	32.551	-.00578
#3	-.00033	-.00035	-.00017	.00124	.00987	32.208	-.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.14321**	**-.00282**	**.00028**	**228.84**	**.00061**	**.00759**	**.00306**
Stddev	.08904	.00265	.00033	1.02	.00022	.00513	.00042
%RSD	62.172	93.930	119.25	.44767	35.636	67.555	13.670
#1	.20495	-.00272	-.00008	230.02	.00057	.01151	.00266
#2	.04115	-.00023	.00057	228.21	.00085	.00947	.00350
#3	.18354	-.00552	.00035	228.28	.00042	.00179	.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017
Kristi K Buck

Sample Name: L1703051301 Acquired: 4/4/2017 17:44:02 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00278**	**-.00724**	**.00338**	**-.00060**	**.00020**	**.00133**	**.00332**
Stddev	.00154	.00616	.00099	.00016	.00026	.00972	.00032
%RSD	55.260	85.148	29.169	26.063	130.42	728.52	9.5826
#1	-.00434	-.00104	.00229	-.00043	-.00009	-.00467	.00346
#2	-.00274	-.00730	.00365	-.00073	.00029	-.00387	.00355
#3	-.00127	-.01337	.00421	-.00064	.00041	.01254	.00296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00028**	**.00092**	**-.03784**
Stddev	.00034	.00003	.19987
%RSD	120.06	3.6660	528.21
#1	.00067	.00096	.17143
#2	.00008	.00091	-.22676
#3	.00009	.00090	-.05819
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23661.**	**151820.**	**4694.3**
Stddev	21.	4141.	47.8
%RSD	.08777	2.7273	1.0177
#1	23662.	147050.	4714.3
#2	23640.	154030.	4728.8
#3	23682.	154400.	4639.8

Approved: April 05, 2017

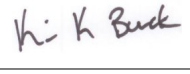
Sample Name: L1703051301 Acquired: 4/4/2017 17:47:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608563-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.00372**	**.00375**	**9.0681**	**-.00102**	**-.00001**	**-.01677**	**-.00037**
Stddev	.00126	.00513	.00092	.0333	.00112	.00006	.03101	.00011
%RSD	236.69	137.81	24.628	.36713	109.66	379.26	184.91	30.067
#1	-.00126	.00252	.00349	9.0582	-.00001	.00005	-.00843	-.00045
#2	.00092	-.00070	.00477	9.0408	-.00222	-.00006	.00922	-.00041
#3	-.00125	.00934	.00298	9.1052	-.00083	-.00003	-.05110	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**-.00085**	**.00039**	**-.00813**	**6.2755**	**-.00315**	**.18024**	**.00212**
Stddev	.00004	.00069	.00046	.00382	.1457	.00410	.07708	.00299
%RSD	13.101	81.586	117.48	47.022	2.3223	130.38	42.763	140.73
#1	-.00026	-.00145	.00078	-.01200	6.3514	-.00324	.14122	.00165
#2	-.00025	-.00009	.00051	-.00804	6.3676	.00100	.26902	.00532
#3	-.00032	-.00100	-.00012	-.00436	6.1075	-.00720	.13047	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**46.560**	**-.00014**	**.00604**	**-.00210**	**-.00631**	**-.00269**	**-.00194**
Stddev	.00014	.044	.00050	.00240	.00312	.00307	.00150	.00067
%RSD	147.14	.09449	355.39	39.703	148.38	48.743	55.949	34.732
#1	.00002	46.598	-.00071	.00477	-.00333	-.00625	-.00101	-.00211
#2	-.00005	46.569	.00006	.00881	.00144	-.00326	-.00392	-.00119
#3	-.00026	46.512	.00023	.00455	-.00443	-.00941	-.00314	-.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703051301 Acquired: 4/4/2017 17:47:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608563-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**.00034**	**.00495**	**.00475**	**.00043**	**.00056**	**.24550**
Stddev	.00041	.00022	.01488	.00198	.00059	.00005	.14907
%RSD	41.907	64.872	300.70	41.660	134.95	8.2656	60.719
#1	-.00051	.00055	.02135	.00265	.00111	.00061	.23633
#2	-.00117	.00037	.00119	.00502	.00013	.00055	.39895
#3	-.00126	.00011	-.00769	.00658	.00006	.00052	.10124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23190.**	**156810.**	**4848.7**
Stddev	157.	3791.	72.8
%RSD	.67756	2.4174	1.5018
#1	23116.	160160.	4767.5
#2	23371.	157590.	4870.2
#3	23084.	152690.	4908.3

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 17:51:05 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40920**	**10.179**	**.40296**	F **.61217**	**1.0182**	**.05064**	**10.228**
Stddev	.00259	.067	.00112	.02714	.0026	.00013	.049
%RSD	.63199	.65847	.27786	4.4333	.25960	.25249	.48046
#1	.40686	10.110	.40268	.59487	1.0161	.05051	10.183
#2	.40876	10.182	.40200	.59820	1.0173	.05076	10.280
#3	.41197	10.244	.40419	.64345	1.0212	.05067	10.221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				.50000			
Range				10.000%			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05073**	**.20339**	**.50388**	**.50527**	**3.9996**	**51.194**	**1.0437**
Stddev	.00037	.00133	.00050	.00141	.0256	.478	.0135
%RSD	.73234	.65163	.09925	.27818	.63999	.93279	1.2940
#1	.05106	.20491	.50393	.50689	4.0163	50.723	1.0285
#2	.05079	.20246	.50435	.50434	4.0123	51.180	1.0482
#3	.05033	.20281	.50335	.50458	3.9701	51.678	1.0544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.096**	**.50610**	**1.0101**	**51.658**	**.50701**	**10.027**	**.50839**
Stddev	.008	.00087	.0031	.272	.00182	.047	.00298
%RSD	.07955	.17223	.30288	.52600	.35815	.47042	.58651
#1	10.087	.50564	1.0137	51.386	.50842	10.078	.51121
#2	10.098	.50710	1.0084	51.657	.50496	9.9849	.50527
#3	10.103	.50556	1.0083	51.930	.50766	10.018	.50870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017

Kristi K Buck

Sample Name: CCV Acquired: 4/4/2017 17:51:05 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2324**	**.40569**	**5.0583**	**1.0151**	**1.0118**	**1.0124**	**.51582**
Stddev	.0046	.00125	.0212	.0036	.0013	.0026	.00273
%RSD	.37646	.30882	.41824	.35163	.13046	.25348	.52923
#1	1.2376	.40709	5.0810	1.0191	1.0104	1.0134	.51797
#2	1.2310	.40466	5.0391	1.0137	1.0120	1.0143	.51673
#3	1.2287	.40534	5.0548	1.0124	1.0130	1.0094	.51275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0069**	**1.0161**	F **.89234**
Stddev	.0028	.0035	.17300
%RSD	.27905	.34171	19.387
#1	1.0037	1.0201	.71439
#2	1.0080	1.0147	1.0599
#3	1.0090	1.0136	.90269
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22557.**	**150620.**	**4722.5**
Stddev	283.	2847.	59.3
%RSD	1.2535	1.8900	1.2565
#1	22249.	153340.	4781.6
#2	22617.	150840.	4722.8
#3	22805.	147660.	4662.9

Approved: April 05, 2017

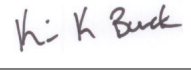
Sample Name: CCB Acquired: 4/4/2017 17:54:25 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00110**	**-.00630**	**-.00103**	**.05147**	**-.00067**	**.00000**	**-.01695**	**-.00013**
Stddev	.00211	.00204	.00036	.00303	.00200	.00003	.04172	.00013
%RSD	191.15	32.407	35.358	5.8775	299.79	1257.3	246.09	98.939
#1	.00076	-.00820	-.00065	.05418	.00149	.00002	.02330	-.00016
#2	-.00068	-.00414	-.00105	.05203	-.00103	.00003	-.01415	-.00024
#3	-.00339	-.00656	-.00138	.04821	-.00247	-.00004	-.06001	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**-.00026**	**.00067**	**.00546**	**.00929**	**.00223**	**.19100**	**-.00294**
Stddev	.00016	.00070	.00023	.01978	.07035	.00510	.07502	.00131
%RSD	162.96	274.01	34.499	362.00	757.58	229.03	39.277	44.652
#1	-.00025	.00055	.00060	-.01343	-.00594	-.00099	.12138	-.00243
#2	-.00011	-.00056	.00048	.00379	-.05220	.00811	.18118	-.00196
#3	.00007	-.00076	.00093	.02603	.08600	-.00044	.27045	-.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.31969**	**.00103**	**-.00395**	**-.00063**	**-.00235**	**-.00136**	**.00290**
Stddev	.00038	.01522	.00042	.00180	.00211	.00299	.00095	.00326
%RSD	391.45	4.7608	40.987	45.414	335.22	127.12	69.564	112.45
#1	-.00032	.33366	.00149	-.00490	-.00277	-.00480	-.00243	.00663
#2	.00034	.30347	.00066	-.00188	-.00055	.00098	-.00102	.00146
#3	-.00031	.32195	.00094	-.00508	.00144	-.00323	-.00064	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: CCB Acquired: 4/4/2017 17:54:25 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00026**	**-.00338**	**.00123**	**.00024**	**.00070**	**.00901**
Stddev	.00023	.00041	.00331	.00130	.00079	.00006	.23337
%RSD	60.774	159.92	97.894	105.78	334.77	8.5807	2589.6
#1	.00045	-.00003	-.00627	.00236	-.00067	.00076	.05186
#2	.00012	.00073	-.00410	.00151	.00078	.00070	.21798
#3	.00057	.00007	.00023	-.00019	.00060	.00064	-.24281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23008.**	**154670.**	**4619.1**
Stddev	127.	396.	44.2
%RSD	.55156	.25611	.95596
#1	22947.	155110.	4646.4
#2	22923.	154350.	4642.7
#3	23154.	154540.	4568.1

Approved: April 05, 2017

Kristi K Buck

Sample Name: PBW A4 Acquired: 4/4/2017 17:57:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.00239**	**-.00061**	**.03117**	**-.00082**	**-.00001**	**.00204**
Stddev	.00146	.00300	.00065	.00215	.00014	.00005	.00761
%RSD	99.025	125.25	107.50	6.9070	16.811	475.81	373.79
#1	-.00036	.00573	-.00131	.03348	-.00094	-.00003	.01014
#2	-.00314	.00151	-.00049	.02921	-.00084	.00005	.00091
#3	-.00094	-.00006	-.00002	.03083	-.00067	-.00005	-.00495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00041**	**.00003**	**.00119**	F **-.02401**	**.15359**	**-.00248**
Stddev	.00032	.00027	.00057	.00127	.01954	.11718	.00207
%RSD	166.27	67.133	1933.5	106.62	81.359	76.289	83.517
#1	-.00018	-.00056	-.00058	.00138	-.01316	.05346	-.00136
#2	.00037	-.00009	.00013	-.00016	-.01231	.28247	-.00121
#3	.00039	-.00058	.00054	.00237	-.04657	.12486	-.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.14339**	F **-.00327**	**.00037**	**.10595**	**.00140**	**-.01189**	**-.00163**
Stddev	.03937	.00189	.00012	.06308	.00023	.00228	.00309
%RSD	27.456	57.793	32.271	59.536	16.173	19.196	189.99
#1	.14922	-.00109	.00023	.07053	.00155	-.01237	-.00342
#2	.10143	-.00448	.00042	.17878	.00114	-.01389	.00194
#3	.17951	-.00424	.00045	.06855	.00150	-.00941	-.00340
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: April 05, 2017

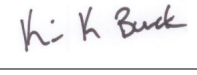
Sample Name: PBW A4 Acquired: 4/4/2017 17:57:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00628**	**.00146**	**.00257**	**-.00028**	**.00058**	**.00237**	**-.00215**
Stddev	.00081	.00175	.00178	.00026	.00024	.00377	.00009
%RSD	12.967	120.01	69.341	90.699	41.524	159.02	4.1912
#1	-.00722	.00165	.00460	.00001	.00048	-.00194	-.00221
#2	-.00593	.00311	.00182	-.00038	.00086	.00506	-.00204
#3	-.00571	-.00038	.00129	-.00048	.00041	.00400	-.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00080**	**.00085**	**.08286**
Stddev	.00070	.00011	.28194
%RSD	86.890	12.476	340.27
#1	.00022	.00081	-.10211
#2	.00062	.00097	-.05668
#3	.00158	.00076	.40736
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23432.**	**155780.**	**4566.7**
Stddev	50.	266.	18.8
%RSD	.21417	.17104	.41153
#1	23376.	155470.	4575.1
#2	23446.	155910.	4545.2
#3	23473.	155950.	4579.9

Approved: April 05, 2017



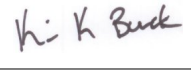
Sample Name: LCSW A4 Acquired: 4/4/2017 18:01:26 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20304**	**5.2074**	**.19479**	**.98284**	**.52287**	**.02479**	**5.1515**	**.02465**
Stddev	.00300	.0139	.00382	.00541	.00220	.00012	.0557	.00011
%RSD	1.4779	.26671	1.9621	.55053	.42117	.48283	1.0809	.44481
#1	.20604	5.2232	.19145	.98448	.52464	.02482	5.1796	.02472
#2	.20305	5.2018	.19396	.97679	.52041	.02466	5.0873	.02453
#3	.20004	5.1972	.19895	.98723	.52357	.02489	5.1875	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10164**	**.25415**	**.25371**	**2.0725**	**25.887**	**.52986**	**5.1877**	**.25984**
Stddev	.00022	.00035	.00094	.0350	.139	.00208	.1480	.00283
%RSD	.21450	.13696	.36881	1.6875	.53661	.39249	2.8523	1.0895
#1	.10160	.25419	.25473	2.0948	25.869	.53075	5.2553	.26004
#2	.10145	.25447	.25289	2.0906	25.758	.52749	5.2898	.25692
#3	.10188	.25378	.25352	2.0322	26.034	.53135	5.0180	.26257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49551**	**26.332**	**.25608**	**4.8145**	**.25572**	**.60380**	**.19171**	**2.5458**
Stddev	.00084	.132	.00014	.0156	.00224	.00157	.00063	.0055
%RSD	.17016	.49982	.05541	.32424	.87423	.26032	.32738	.21748
#1	.49489	26.445	.25603	4.7968	.25339	.60300	.19104	2.5409
#2	.49518	26.188	.25624	4.8204	.25785	.60279	.19183	2.5518
#3	.49647	26.365	.25597	4.8263	.25592	.60561	.19228	2.5448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LCSW A4 Acquired: 4/4/2017 18:01:26 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51036**	**.51831**	**.51406**	**.25948**	**.50727**	**.50436**	**.40146**
Stddev	.00035	.00068	.00581	.00327	.00188	.00025	.24693
%RSD	.06815	.13028	1.1307	1.2585	.37100	.05012	61.507
#1	.50998	.51764	.51484	.25646	.50867	.50434	.11877
#2	.51067	.51831	.51945	.25904	.50513	.50463	.57503
#3	.51043	.51899	.50790	.26294	.50801	.50412	.51057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23197.**	**148890.**	**4458.8**
Stddev	6.	3331.	42.7
%RSD	.02701	2.2374	.95845
#1	23198.	146260.	4446.6
#2	23203.	147770.	4506.3
#3	23191.	152630.	4423.5

Approved: April 05, 2017

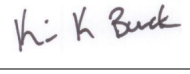
Sample Name: FBLK1 Acquired: 4/4/2017 18:04:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608511-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00185**	**.01175**	**.00070**	**.02194**	**-.00086**	**-.00002**	**.03675**	**-.00014**
Stddev	.00199	.00418	.00148	.00187	.00219	.00002	.03985	.00009
%RSD	107.69	35.555	212.25	8.5103	253.34	93.097	108.44	65.411
#1	-.00320	.01244	-.00077	.02394	-.00277	-.00001	.02405	-.00020
#2	-.00278	.01553	.00068	.02164	.00153	-.00004	.08140	-.00003
#3	.00044	.00726	.00219	.02025	-.00134	-.00001	.00480	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**-.00033**	**.00083**	**-.01696**	**.10438**	**-.00064**	**.11081**	**.00092**
Stddev	.00014	.00092	.00122	.03565	.12500	.00705	.07007	.00130
%RSD	43.192	279.86	146.48	210.21	119.76	1099.9	63.230	141.50
#1	-.00048	.00038	.00208	-.05698	.22161	-.00397	.17405	-.00027
#2	-.00027	-.00137	.00076	-.00529	-.02716	-.00541	.03549	.00230
#3	-.00021	.00000	-.00035	.01139	.11869	.00745	.12289	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**143.62**	**.00056**	**-.00277**	**-.00174**	**-.00456**	**.00211**	**.00051**
Stddev	.00029	.68	.00053	.00471	.00087	.00277	.00321	.00096
%RSD	269.67	.47034	95.643	170.35	50.124	60.665	151.87	189.76
#1	.00003	144.40	.00062	.00258	-.00257	-.00766	-.00123	-.00026
#2	-.00044	143.26	.00106	-.00631	-.00181	-.00368	.00517	.00020
#3	.00009	143.20	-.00000	-.00458	-.00083	-.00234	.00239	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: FBLK1 Acquired: 4/4/2017 18:04:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608511-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.00097**	**-.00002**	**-.00111**	**.00009**	**.00310**	**.01766**
Stddev	.00050	.00066	.00453	.00137	.00007	.00007	.14928
%RSD	33.748	68.560	26392.	123.32	79.712	2.1085	845.39
#1	-.00116	.00162	.00519	-.00241	.00017	.00304	-.15436
#2	-.00123	.00098	-.00217	-.00127	.00004	.00308	.11322
#3	-.00206	.00030	-.00307	.00033	.00006	.00317	.09412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22847.**	**149400.**	**4497.7**
Stddev	49.	2692.	61.7
%RSD	.21411	1.8021	1.3724
#1	22902.	146310.	4536.3
#2	22833.	150590.	4530.3
#3	22807.	151290.	4426.5

Approved: April 05, 2017

Sample Name: FBLK2 Acquired: 4/4/2017 18:08:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608511-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00154**	**.00654**	**-.00081**	**.01423**	**-.00040**	**-.00002**	**.02089**
Stddev	.00044	.00269	.00105	.00114	.00071	.00002	.01284
%RSD	28.679	41.155	130.24	8.0024	177.79	86.976	61.446
#1	-.00171	.00453	-.00194	.01442	-.00014	-.00003	.02000
#2	-.00104	.00549	.00014	.01526	.00014	-.00003	.00852
#3	-.00187	.00959	-.00062	.01301	-.00120	.00000	.03415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00042**	**.00033**	**.00101**	**-.00017**	**-.12082**	**.00176**
Stddev	.00026	.00021	.00095	.00058	.02045	.11990	.00398
%RSD	67463.	50.065	286.08	57.324	12049.	99.236	225.77
#1	-.00007	-.00054	.00129	.00088	.02317	-.24233	.00181
#2	.00029	-.00018	-.00062	.00051	-.00868	-.11753	.00571
#3	-.00021	-.00055	.00033	.00165	-.01499	-.00260	-.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18576**	**.00069**	**.00019**	**.16228**	**.00117**	**-.00972**	**-.00171**
Stddev	.02662	.00476	.00040	.02793	.00025	.00357	.00356
%RSD	14.331	690.04	213.10	17.211	21.307	36.783	207.78
#1	.18188	-.00236	-.00024	.13296	.00117	-.00804	-.00075
#2	.21411	-.00174	.00055	.16532	.00142	-.00730	.00126
#3	.16129	.00617	.00025	.18857	.00092	-.01382	-.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: FBLK2 Acquired: 4/4/2017 18:08:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608511-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00224**	**.00175**	**.00345**	**-.00021**	**-.00063**	**-.00307**	**-.00268**
Stddev	.00205	.00728	.00142	.00050	.00056	.01256	.00094
%RSD	91.678	416.36	41.139	234.05	88.334	409.57	35.210
#1	-.00175	.00726	.00507	.00006	-.00013	-.01129	-.00270
#2	-.00449	-.00650	.00280	-.00079	-.00052	-.00931	-.00172
#3	-.00048	.00449	.00247	.00009	-.00124	.01139	-.00361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00059**	**.00283**	F **-.06319**
Stddev	.00059	.00006	.34924
%RSD	100.63	2.0176	552.67
#1	.00022	.00289	-.36521
#2	.00027	.00282	-.14361
#3	.00128	.00278	.31924
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23353.**	**154770.**	**4599.8**
Stddev	102.	137.	62.7
%RSD	.43570	.08864	1.3634
#1	23318.	154930.	4563.2
#2	23273.	154660.	4672.2
#3	23468.	154730.	4564.0

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703166001 Acquired: 4/4/2017 18:11:53 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01129**	**.03847**	**-.00045**	**.02939**	**-.00231**	**-.00004**	**.27339**	**.00001**
Stddev	.00013	.00387	.00037	.00065	.00043	.00003	.07290	.00018
%RSD	1.1256	10.066	82.735	2.2028	18.458	67.945	26.663	1354.6
#1	.01141	.03578	-.00086	.02953	-.00194	-.00005	.32467	-.00010
#2	.01116	.04290	-.00034	.02997	-.00277	-.00001	.18995	.00022
#3	.01128	.03671	-.00014	.02869	-.00221	-.00006	.30556	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00045**	**.00108**	**-.00712**	**.01691**	**-.00224**	**.26975**	**.00075**
Stddev	.00001	.00060	.00035	.01962	.01902	.00923	.09484	.00097
%RSD	28.852	132.56	31.989	275.49	112.51	412.53	35.157	129.37
#1	-.00005	-.00108	.00121	.00349	.01240	.00600	.36718	-.00030
#2	-.00003	-.00040	.00134	.00491	.00054	-.00050	.17773	.00162
#3	-.00005	.00012	.00069	-.02977	.03777	-.01221	.26435	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**146.53**	**.00175**	**.37550**	**.00003**	**-.00151**	**-.00260**	**.03602**
Stddev	.00033	.16	.00069	.00629	.00039	.00410	.00252	.00453
%RSD	365.97	.10840	39.581	1.6752	1232.7	271.52	96.986	12.585
#1	-.00047	146.61	.00103	.37463	.00048	-.00167	-.00390	.03452
#2	.00010	146.63	.00242	.36969	-.00024	.00267	-.00419	.03242
#3	.00010	146.35	.00180	.38218	-.00015	-.00552	.00031	.04111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1703166001 Acquired: 4/4/2017 18:11:53 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**.00042**	**.00094**	**-.00147**	**-.00020**	**.00387**	**.09272**
Stddev	.00040	.00035	.00417	.00107	.00114	.00007	.07449
%RSD	37.310	84.843	444.68	72.889	561.89	1.8028	80.334
#1	-.00136	.00081	.00301	-.00076	-.00024	.00381	.08650
#2	-.00127	.00032	.00366	-.00095	.00096	.00387	.02154
#3	-.00062	.00013	-.00386	-.00271	-.00132	.00395	.17013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23156.**	**153500.**	**4725.8**
Stddev	57.	197.	25.0
%RSD	.24688	.12855	.52867
#1	23199.	153620.	4700.7
#2	23179.	153600.	4750.6
#3	23091.	153270.	4725.9

Approved: April 05, 2017

Sample Name: L1704001601 Acquired: 4/4/2017 18:15:24 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**7.7485**	**.00452**	**.02270**	**.51753**	**.00006**	F **659.42**
Stddev	.00094	.0167	.00093	.00150	.00430	.00002	1.74
%RSD	82.810	.21497	20.511	6.5974	.83055	42.599	.26330
#1	-.00205	7.7441	.00559	.02326	.52248	.00006	660.32
#2	-.00017	7.7670	.00406	.02101	.51537	.00008	657.42
#3	-.00118	7.7345	.00392	.02385	.51473	.00003	660.53
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00004**	**.00059**	**.01016**	F **-.02306**	**297.21**	**.00762**
Stddev	.00011	.00026	.00047	.00058	.05154	1.29	.00597
%RSD	17.034	661.42	79.389	5.7190	223.50	.43429	78.364
#1	.00063	.00028	.00006	.01083	-.07163	297.91	.00257
#2	.00057	-.00024	.00097	.00977	-.02855	295.72	.01421
#3	.00079	.00008	.00075	.00988	.03100	298.01	.00607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18433**	**.00196**	**.00968**	F **334.37**	**-.00080**	**.05321**	**.00001**
Stddev	.08043	.00057	.00059	.84	.00046	.00319	.00269
%RSD	43.632	28.946	6.1454	.24997	57.219	6.0002	49635.
#1	.14777	.00155	.00989	334.79	-.00029	.05057	.00257
#2	.27654	.00261	.00901	333.41	-.00118	.05231	.00025
#3	.12867	.00172	.01015	334.91	-.00094	.05676	-.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: April 05, 2017

Kristi K Burck

Sample Name: L1704001601 Acquired: 4/4/2017 18:15:24 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00401**	**.13470**	**-.00237**	**.60737**	F **-.05891**	**-.00533**
Stddev	.00241	.00122	.00106	.00022	.00477	.01011	.00190
%RSD	603.93	30.309	.78470	9.2538	.78556	17.170	35.691
#1	.00305	.00541	.13350	-.00211	.61258	-.06732	-.00333
#2	-.00165	.00341	.13549	-.00249	.60321	-.04768	-.00712
#3	-.00020	.00321	.13512	-.00250	.60633	-.06172	-.00555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00020**	**.00240**	F **-.51858**
Stddev	.00038	.00007	.19486
%RSD	190.25	3.0379	37.576
#1	-.00017	.00248	-.73861
#2	.00018	.00234	-.36781
#3	.00058	.00238	-.44932
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21157.**	**141450.**	**4615.4**
Stddev	179.	139.	60.6
%RSD	.84830	.09813	1.3123
#1	21080.	141360.	4557.3
#2	21029.	141380.	4678.1
#3	21362.	141610.	4610.8

Approved: April 05, 2017

Sample Name: L1704001601MS Acquired: 4/4/2017 18:18:53 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20412**	**12.135**	**.20732**	**.99527**	**1.0260**	**.02571**	F **662.58**
Stddev	.00157	.046	.00114	.00616	.0032	.00021	1.59
%RSD	.77157	.37839	.55090	.61893	.30692	.82133	.23927
#1	.20381	12.122	.20801	.99542	1.0231	.02561	661.42
#2	.20273	12.097	.20600	.98903	1.0256	.02557	664.39
#3	.20583	12.186	.20796	1.0013	1.0293	.02596	661.94
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02571**	**.09729**	**.24886**	**.25433**	**1.9406**	**322.02**	**.54130**
Stddev	.00017	.00047	.00136	.00266	.0237	.93	.00863
%RSD	.67627	.48037	.54647	1.0464	1.2228	.29024	1.5939
#1	.02560	.09761	.24886	.25712	1.9533	320.99	.54345
#2	.02591	.09676	.24750	.25406	1.9132	322.82	.54866
#3	.02562	.09751	.25022	.25182	1.9552	322.25	.53181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.8878**	**.24297**	**.50484**	F **357.99**	**.24352**	**5.1571**	**.24229**
Stddev	.1036	.00178	.00187	1.01	.00130	.0202	.00263
%RSD	2.1189	.73389	.37065	.28272	.53420	.39223	1.0849
#1	4.7693	.24411	.50687	357.28	.24498	5.1804	.24386
#2	4.9337	.24092	.50318	359.15	.24309	5.1467	.23926
#3	4.9605	.24390	.50448	357.53	.24248	5.1442	.24376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: April 05, 2017

Kim K Buck

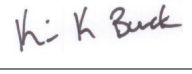
Sample Name: L1704001601MS Acquired: 4/4/2017 18:18:53 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60699**	**.20742**	**2.6913**	**.49058**	**1.0997**	**.45401**	**.23207**
Stddev	.00285	.00247	.0143	.00266	.0024	.00146	.00395
%RSD	.46891	1.1904	.53101	.54260	.22193	.32088	1.7016
#1	.60884	.20700	2.7067	.49345	1.0977	.45449	.23587
#2	.60371	.20519	2.6785	.48820	1.0989	.45516	.23236
#3	.60841	.21007	2.6886	.49010	1.1024	.45237	.22799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51168**	**.50385**	**-.01896**
Stddev	.00433	.00244	.06823
%RSD	.84702	.48405	359.93
#1	.51034	.50607	-.09682
#2	.50818	.50124	.03041
#3	.51653	.50423	.00953
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21092.**	**135310.**	**4264.5**
Stddev	166.	2318.	14.1
%RSD	.78659	1.7128	.33155
#1	20902.	133830.	4258.7
#2	21164.	134120.	4280.6
#3	21209.	137980.	4254.2

Approved: April 05, 2017



Sample Name: L1704001601MSD Acquired: 4/4/2017 18:22:17 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20779**	**12.275**	**.20179**	**1.0041**	**1.0351**	**.02602**	F **667.87**
Stddev	.00056	.056	.00328	.0052	.0019	.00013	3.79
%RSD	.26849	.45627	1.6265	.51526	.18858	.50111	.56777
#1	.20716	12.262	.20442	1.0035	1.0344	.02587	671.22
#2	.20822	12.337	.20284	1.0096	1.0335	.02610	668.64
#3	.20800	12.227	.19812	.99927	1.0372	.02609	663.76
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02555**	**.09755**	**.25259**	**.25493**	**1.9159**	**328.86**	**.54546**
Stddev	.00018	.00044	.00079	.00158	.0218	.14	.00937
%RSD	.69027	.44712	.31277	.61787	1.1369	.04394	1.7184
#1	.02545	.09772	.25180	.25604	1.9251	328.92	.55112
#2	.02575	.09787	.25338	.25562	1.9315	328.97	.55063
#3	.02545	.09705	.25260	.25312	1.8910	328.70	.53464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.7680**	**.23618**	**.50515**	F **364.14**	**.24336**	**5.1566**	**.23934**
Stddev	.0600	.00456	.00213	1.12	.00029	.0186	.00201
%RSD	1.2594	1.9313	.42129	.30823	.12063	.36110	.83805
#1	4.6994	.24143	.50607	364.86	.24342	5.1708	.24164
#2	4.7939	.23395	.50666	364.72	.24304	5.1634	.23843
#3	4.8109	.23317	.50272	362.84	.24362	5.1355	.23794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: April 05, 2017

Sample Name: L1704001601MSD Acquired: 4/4/2017 18:22:17 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60867**	**.20572**	**2.6877**	**.48906**	**1.1144**	**.45471**	**.23088**
Stddev	.00165	.00196	.0088	.00134	.0015	.00464	.00177
%RSD	.27097	.95068	.32832	.27368	.13738	1.0212	.76861
#1	.60701	.20794	2.6940	.49008	1.1126	.45187	.23291
#2	.60868	.20427	2.6915	.48955	1.1150	.46007	.23010
#3	.61031	.20494	2.6776	.48754	1.1155	.45220	.22962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51849**	**.50363**	**.23171**
Stddev	.00151	.00189	.46387
%RSD	.29190	.37513	200.19
#1	.51846	.50445	-.10637
#2	.52001	.50498	.76054
#3	.51698	.50147	.04096
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21334.**	**136730.**	**4374.8**
Stddev	124.	1317.	35.9
%RSD	.58288	.96283	.82100
#1	21239.	136800.	4335.8
#2	21288.	135380.	4382.2
#3	21474.	138020.	4406.5

Approved: April 05, 2017

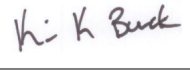
Sample Name: L1704002504 Acquired: 4/4/2017 18:25:42 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00156**	**.01148**	**.00021**	**.03140**	**.01555**	**-.00000**	**231.04**
Stddev	.00170	.00074	.00256	.00100	.00017	.00005	1.39
%RSD	108.84	6.4538	1224.6	3.1707	1.1001	2600.5	.60218
#1	-.00138	.01163	.00312	.03175	.01543	.00002	230.12
#2	-.00333	.01213	-.00167	.03218	.01575	-.00006	232.64
#3	.00004	.01067	-.00083	.03028	.01548	.00003	230.36
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00190**	**.00060**	**.00349**	**.00629**	**.85012**	**.00185**
Stddev	.00010	.00038	.00049	.00013	.03252	.15450	.00444
%RSD	64.268	19.970	81.074	3.7949	517.28	18.173	239.91
#1	.00016	.00181	.00087	.00341	-.02138	.95742	.00411
#2	.00025	.00157	.00090	.00364	.04211	.67304	-.00326
#3	.00005	.00231	.00004	.00342	-.00187	.91988	.00470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2922**	**.27480**	**.00042**	**1.5895**	**.00272**	**.00039**	**-.00284**
Stddev	.1023	.00539	.00024	.0344	.00079	.00565	.00107
%RSD	3.1086	1.9599	55.678	2.1649	28.946	1447.3	37.648
#1	3.2150	.27336	.00049	1.6292	.00302	-.00029	-.00310
#2	3.4083	.28075	.00016	1.5684	.00330	-.00489	-.00167
#3	3.2533	.27027	.00062	1.5708	.00182	.00635	-.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: L1704002504 Acquired: 4/4/2017 18:25:42 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00530**	**-.00207**	**.07939**	**-.00092**	**.24602**	**-.01351**	**-.00081**
Stddev	.00112	.00266	.00125	.00039	.00016	.00181	.00199
%RSD	21.064	128.82	1.5717	42.593	.06642	13.412	245.85
#1	-.00557	-.00495	.07893	-.00106	.24586	-.01454	-.00300
#2	-.00407	-.00155	.08080	-.00048	.24619	-.01142	-.00031
#3	-.00626	.00030	.07844	-.00123	.24600	-.01456	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00072**	**.01314**	F **-.19329**
Stddev	.00042	.00009	.18634
%RSD	58.255	.68723	96.401
#1	.00051	.01323	-.37653
#2	.00045	.01305	-.00401
#3	.00121	.01313	-.19934
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23076.**	**152470.**	**4497.1**
Stddev	41.	178.	4.9
%RSD	.17923	.11669	.10882
#1	23081.	152270.	4492.6
#2	23115.	152600.	4502.3
#3	23033.	152540.	4496.4

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704002701 Acquired: 4/4/2017 18:29:10 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00258**	**.22096**	**-.00085**	**.02835**	**.01828**	**-.00002**	**2.6926**
Stddev	.00132	.00198	.00176	.00222	.00028	.00003	.3315
%RSD	51.268	.89573	206.75	7.8437	1.5412	169.14	12.310
#1	-.00121	.22166	-.00098	.02987	.01860	.00000	2.5055
#2	-.00385	.21873	-.00255	.02939	.01817	-.00006	2.4970
#3	-.00270	.22249	.00097	.02580	.01807	-.00000	3.0753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00030**	**.00031**	**.01907**	**.34698**	**.72732**	**-.00194**
Stddev	.00007	.00020	.00031	.00051	.01069	.06235	.00616
%RSD	165.35	67.511	99.969	2.6951	3.0813	8.5724	316.87
#1	-.00001	.00050	-.00003	.01861	.34838	.73811	-.00904
#2	-.00013	.00009	.00038	.01899	.33566	.66028	.00200
#3	.00001	.00031	.00057	.01962	.35690	.78357	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43771**	**.01958**	**.00001**	**148.93**	**.01223**	**-.01307**	**.00099**
Stddev	.09091	.00463	.00036	.40	.00044	.00233	.00296
%RSD	20.770	23.663	2546.2	.26883	3.6246	17.825	299.09
#1	.44451	.01423	-.00033	149.12	.01172	-.01432	.00302
#2	.34359	.02216	-.00002	149.20	.01254	-.01452	-.00241
#3	.52502	.02234	.00039	148.47	.01243	-.01039	.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704002701 Acquired: 4/4/2017 18:29:10 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00114**	**.44462**	**-.00102**	**.00785**	**.00256**	**-.00302**
Stddev	.00315	.00371	.00088	.00049	.00092	.01224	.00303
%RSD	3868.5	326.85	.19744	47.984	11.756	478.26	100.35
#1	.00259	.00542	.44395	-.00089	.00699	.00423	-.00209
#2	.00072	-.00089	.44430	-.00156	.00774	-.01043	-.00641
#3	-.00356	-.00112	.44561	-.00061	.00882	.01388	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00034**	**.08622**	F **-.24152**
Stddev	.00029	.00045	.19035
%RSD	84.983	.51813	78.811
#1	.00062	.08589	-.36345
#2	.00036	.08672	-.02219
#3	.00004	.08603	-.33893
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22549.**	**148620.**	**4397.7**
Stddev	499.	1875.	4.1
%RSD	2.2148	1.2616	.09371
#1	22009.	149910.	4393.8
#2	22645.	149490.	4397.1
#3	22993.	146470.	4402.0

Approved: April 05, 2017

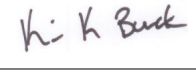
Sample Name: CCV Acquired: 4/4/2017 18:32:39 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40814**	**10.168**	**.40064**	**.50750**	**1.0287**	**.05085**	**10.326**
Stddev	.00034	.020	.00392	.00078	.0016	.00006	.062
%RSD	.08283	.19189	.97791	.15431	.15451	.11292	.60019
#1	.40782	10.157	.39621	.50766	1.0303	.05090	10.395
#2	.40849	10.156	.40365	.50665	1.0287	.05085	10.274
#3	.40811	10.190	.40206	.50820	1.0271	.05079	10.310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05071**	**.20299**	**.50595**	**.50513**	**3.9054**	**53.053**	**1.0637**
Stddev	.00027	.00104	.00082	.00280	.0386	.288	.0049
%RSD	.52328	.51108	.16293	.55472	.98810	.54308	.46406
#1	.05040	.20216	.50502	.50222	3.9313	53.031	1.0645
#2	.05087	.20415	.50627	.50781	3.8610	52.777	1.0583
#3	.05085	.20267	.50658	.50535	3.9238	53.352	1.0681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8927**	**.48346**	**1.0077**	**53.152**	**.50620**	**9.9551**	**.50843**
Stddev	.1555	.00157	.0036	.295	.00189	.0537	.00350
%RSD	1.5721	.32521	.35974	.55510	.37301	.53973	.68885
#1	9.9386	.48518	1.0040	53.104	.50424	9.9165	.50620
#2	9.7193	.48211	1.0113	52.884	.50801	10.016	.51246
#3	10.020	.48308	1.0077	53.468	.50636	9.9325	.50662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017



Sample Name: CCV Acquired: 4/4/2017 18:32:39 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2241**	**.40587**	**5.0238**	**1.0127**	**1.0173**	**1.0072**	**.51666**
Stddev	.0038	.00624	.0199	.0038	.0037	.0102	.00224
%RSD	.31095	1.5386	.39554	.37912	.36627	1.0096	.43355
#1	1.2198	.39986	5.0013	1.0088	1.0147	.99557	.51810
#2	1.2270	.41232	5.0389	1.0165	1.0157	1.0116	.51408
#3	1.2256	.40542	5.0312	1.0128	1.0216	1.0144	.51780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0078**	**1.0145**	F **.86551**
Stddev	.0006	.0041	.46765
%RSD	.05518	.40290	54.032
#1	1.0084	1.0106	.58776
#2	1.0073	1.0188	.60334
#3	1.0077	1.0141	1.4054
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22587.**	**149890.**	**4422.9**
Stddev	308.	1225.	37.7
%RSD	1.3648	.81708	.85146
#1	22896.	151130.	4392.6
#2	22280.	149860.	4465.1
#3	22585.	148680.	4411.1

Approved: April 05, 2017

Kristi K Buck

Sample Name: CCB Acquired: 4/4/2017 18:35:59 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00243**	**-.00172**	**-.00030**	**.00589**	**-.00061**	**-.00001**	**.00024**	**-.00023**
Stddev	.00044	.00164	.00196	.00133	.00064	.00004	.03898	.00004
%RSD	18.162	95.266	647.92	22.637	103.81	474.80	15920.	19.406
#1	-.00274	-.00307	-.00169	.00468	-.00036	-.00005	-.01235	-.00025
#2	-.00263	.00010	-.00116	.00732	-.00014	-.00002	.04397	-.00026
#3	-.00193	-.00219	.00194	.00568	-.00134	.00004	-.03088	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**-.00023**	**.00088**	**.00373**	**.21976**	**.00082**	**.18122**	**.00219**
Stddev	.00030	.00143	.00083	.02095	.08402	.00733	.01992	.00259
%RSD	134.20	624.62	94.176	561.79	38.232	898.25	10.993	118.31
#1	-.00022	.00132	.00159	-.01328	.20749	.00718	.16394	.00066
#2	-.00052	-.00150	.00109	.02713	.30924	.00247	.20302	.00072
#3	.00008	-.00051	-.00003	-.00267	.14255	-.00720	.17672	.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.17531**	**.00057**	**-.00009**	**-.00099**	**-.00334**	**-.00037**	**.00211**
Stddev	.00008	.02480	.00050	.00287	.00221	.00285	.00271	.00073
%RSD	29.755	14.144	87.904	3116.8	223.62	85.394	733.66	34.624
#1	.00033	.16327	.00095	-.00294	.00108	-.00232	-.00291	.00249
#2	.00028	.20383	.00000	-.00012	-.00332	-.00657	-.00067	.00258
#3	.00018	.15883	.00077	.00279	-.00073	-.00114	.00248	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: CCB Acquired: 4/4/2017 18:35:59 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00014**	**-.00449**	**.00054**	**.00029**	**.00009**	**.02403**
Stddev	.00034	.00045	.00589	.00180	.00089	.00013	.43951
%RSD	226.48	322.26	131.12	335.68	312.15	155.24	1829.3
#1	.00019	.00065	-.00247	.00033	.00110	.00023	.11689
#2	-.00048	-.00021	.00012	.00244	-.00066	-.00003	-.45450
#3	-.00015	-.00002	-.01112	-.00116	.00042	.00005	.40969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22601.**	**149110.**	**4401.6**
Stddev	24.	1068.	115.0
%RSD	.10617	.71632	2.6131
#1	22628.	150340.	4400.4
#2	22592.	148450.	4287.1
#3	22582.	148540.	4517.1

Approved: April 05, 2017

Sample Name: L1704002703 Acquired: 4/4/2017 18:39:30 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00141	.00847	.00225	.02579	.02176	.00002	F 313.61
Stddev	.00076	.00325	.00085	.00228	.00297	.00007	1.26
%RSD	53.553	38.321	37.663	8.8493	13.636	431.04	.40201
#1	-.00229	.00488	.00211	.02322	.02130	-.00004	312.49
#2	-.00096	.01120	.00317	.02659	.02492	.00000	314.98
#3	-.00099	.00933	.00149	.02756	.01904	.00009	313.37
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	-.00018	.00091	.00350	F -.02192	.51539	-.00178
Stddev	.00012	.00012	.00099	.00154	.01942	.05928	.00568
%RSD	14.103	65.942	109.27	43.972	88.605	11.501	318.50
#1	.00092	-.00016	.00199	.00344	-.04433	.53448	.00151
#2	.00069	-.00030	.00006	.00199	-.01005	.44892	.00148
#3	.00085	-.00007	.00067	.00506	-.01138	.56277	-.00834
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16883	.00100	.00057	92.558	.00082	-.00652	.00027
Stddev	.01257	.00419	.00043	.405	.00080	.00081	.00222
%RSD	7.4469	417.62	74.107	.43721	97.290	12.407	824.32
#1	.16713	-.00197	.00068	92.123	-.00007	-.00592	-.00050
#2	.15719	.00579	.00010	92.923	.00105	-.00620	.00277
#3	.18216	-.00082	.00093	92.628	.00147	-.00744	-.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017
Kim K Buck

Sample Name: L1704002703 Acquired: 4/4/2017 18:39:30 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00682**	**-.00070**	**.04308**	**.00459**	**.04816**	**-.02791**	**-.00184**
Stddev	.00300	.00088	.00127	.00044	.00062	.00635	.00075
%RSD	43.911	125.38	2.9538	9.5234	1.2903	22.744	40.692
#1	-.00966	-.00107	.04450	.00429	.04839	-.03523	-.00256
#2	-.00713	-.00134	.04268	.00510	.04746	-.02429	-.00189
#3	-.00369	.00030	.04205	.00440	.04864	-.02419	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00029**	**.00265**	F **-.30429**
Stddev	.00108	.00014	.24373
%RSD	368.60	5.3196	80.098
#1	.00095	.00249	-.53672
#2	-.00079	.00272	-.05064
#3	-.00104	.00275	-.32551
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22207.**	**142870.**	**4372.5**
Stddev	313.	556.	29.4
%RSD	1.4100	.38926	.67210
#1	22124.	143000.	4361.4
#2	22554.	142260.	4350.3
#3	21944.	143350.	4405.8

Approved: April 05, 2017

Sample Name: L1704006401 Acquired: 4/4/2017 18:43:01 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.03240**	**.00052**	**.08326**	**.12138**	**-.00003**	**3.4409**
Stddev	.00083	.00156	.00286	.00171	.00045	.00002	.0525
%RSD	105.48	4.8269	554.15	2.0536	.37332	47.639	1.5272
#1	-.00147	.03385	.00305	.08130	.12124	-.00003	3.4625
#2	-.00102	.03074	-.00258	.08443	.12101	-.00002	3.4793
#3	.00013	.03261	.00108	.08405	.12188	-.00005	3.3810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**-.00011**	**-.00054**	**.00053**	**-.00557**	**.66960**	**.00471**
Stddev	.00011	.00017	.00066	.00015	.02838	.07100	.00312
%RSD	185.55	159.89	123.35	28.276	509.24	10.604	66.341
#1	-.00019	.00001	-.00027	.00041	.02494	.72685	.00117
#2	.00004	-.00002	-.00005	.00070	-.03118	.59015	.00710
#3	-.00003	-.00031	-.00129	.00048	-.01048	.69179	.00586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0451**	**.00663**	**.00015**	**119.48**	**.00050**	**.01530**	**-.00009**
Stddev	.0906	.00468	.00007	.20	.00088	.00157	.00251
%RSD	8.6669	70.591	44.939	.16381	174.13	10.283	2902.3
#1	1.1477	.00124	.00023	119.68	.00125	.01349	.00273
#2	.97615	.00891	.00014	119.29	-.00046	.01640	-.00089
#3	1.0115	.00972	.00009	119.48	.00073	.01599	-.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704006401 Acquired: 4/4/2017 18:43:01 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.00065**	**3.8154**	**-.00101**	**.11392**	**-.00284**	**-.00214**
Stddev	.00101	.00443	.0040	.00039	.00023	.00434	.00442
%RSD	179.71	678.52	.10475	39.145	.20008	152.82	206.34
#1	.00005	.00299	3.8196	-.00146	.11372	.00103	.00269
#2	-.00001	.00342	3.8150	-.00078	.11386	-.00754	-.00315
#3	-.00172	-.00445	3.8117	-.00078	.11417	-.00202	-.00597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00068**	**.03050**	F **-.15209**
Stddev	.00111	.00005	.22369
%RSD	162.61	.16623	147.07
#1	.00122	.03052	-.28869
#2	.00142	.03053	-.27365
#3	-.00059	.03044	.10606
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23118.**	**150970.**	**4525.0**
Stddev	327.	2719.	4.9
%RSD	1.4138	1.8012	.10857
#1	23483.	149050.	4523.2
#2	22855.	149780.	4521.2
#3	23015.	154080.	4530.5

Approved: April 05, 2017

Kristi K Buck

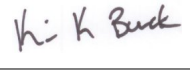
Sample Name: L1704007101 Acquired: 4/4/2017 18:46:30 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**.20134**	**-.00066**	**.06509**	**.04745**	**.00003**	**44.820**	**.00012**
Stddev	.00236	.00444	.00175	.00076	.00014	.00002	.457	.00017
%RSD	215.82	2.2033	267.43	1.1656	.30471	46.326	1.0199	143.90
#1	-.00204	.20642	.00081	.06427	.04747	.00005	44.886	.00031
#2	.00159	.19937	-.00260	.06577	.04759	.00002	45.241	.00007
#3	-.00284	.19823	-.00018	.06522	.04730	.00003	44.334	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00015**	**.00432**	**.12725**	**2.2045**	**-.00284**	**2.7430**	**.00539**
Stddev	.00021	.00104	.00057	.00913	.0566	.00502	.1618	.00265
%RSD	464.57	689.19	13.124	7.1777	2.5672	176.86	5.8968	49.216
#1	.00020	-.00028	.00491	.13276	2.1487	.00223	2.6635	.00428
#2	-.00013	-.00061	.00377	.11671	2.2031	-.00781	2.9291	.00842
#3	-.00020	.00133	.00429	.13229	2.2618	-.00294	2.6364	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**2.4809**	**.00195**	**.07142**	**.00025**	**-.00032**	**-.00254**	**2.2963**
Stddev	.00023	.0164	.00104	.00597	.00211	.00160	.00172	.0125
%RSD	288.93	.66266	53.151	8.3593	827.91	504.92	67.648	.54325
#1	.00015	2.4970	.00283	.07778	.00186	-.00035	-.00104	2.3107
#2	.00027	2.4641	.00081	.06594	-.00213	.00130	-.00216	2.2905
#3	-.00018	2.4814	.00222	.07054	.00103	-.00190	-.00442	2.2879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

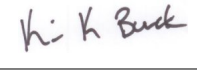


Sample Name: L1704007101 Acquired: 4/4/2017 18:46:30 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.13508**	**.00119**	**-.00237**	**.00066**	**.00740**	**.07469**
Stddev	.00072	.00045	.00612	.00287	.00053	.00017	.11722
%RSD	306.55	.32964	515.00	121.29	80.053	2.3029	156.93
#1	-.00043	.13542	.00286	-.00334	.00121	.00757	.16152
#2	.00013	.13524	-.00560	-.00463	.00059	.00723	-.05864
#3	.00101	.13457	.00630	.00086	.00017	.00739	.12119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23131.**	**152140.**	**4485.5**
Stddev	245.	457.	30.8
%RSD	1.0607	.30042	.68565
#1	23075.	152080.	4467.6
#2	22918.	152630.	4467.8
#3	23399.	151720.	4521.0

Approved: April 05, 2017



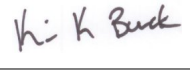
Sample Name: L1704007102 Acquired: 4/4/2017 18:49:56 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**.29494**	**.00021**	**.01208**	**.02801**	**-.00001**	**25.231**	**.00003**
Stddev	.00169	.00558	.00212	.00079	.00019	.00003	.071	.00013
%RSD	71.477	1.8920	992.44	6.5097	.67919	201.75	.27978	403.85
#1	-.00316	.30098	.00249	.01221	.02815	-.00000	25.166	-.00009
#2	-.00042	.29386	-.00172	.01123	.02810	.00001	25.220	.00003
#3	-.00350	.28998	-.00013	.01279	.02780	-.00005	25.306	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00025**	**.00176**	**.14926**	**1.0377**	**-.00888**	**3.2676**	**.00578**
Stddev	.00028	.00090	.00034	.01800	.0787	.00210	.0287	.00114
%RSD	191.25	360.22	19.569	12.059	7.5843	23.692	.87934	19.811
#1	.00010	-.00076	.00197	.15537	.95355	-.01053	3.2759	.00710
#2	-.00044	.00093	.00195	.16342	1.0502	-.00961	3.2912	.00521
#3	-.00009	.00058	.00136	.12901	1.1095	-.00651	3.2356	.00503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**2.1386**	**.00125**	**.01078**	**.00027**	**.00047**	**.00149**	**2.8568**
Stddev	.00014	.0769	.00070	.00088	.00224	.00401	.00371	.0130
%RSD	2477.9	3.5939	55.772	8.1837	820.15	862.11	249.90	.45455
#1	.00014	2.0540	.00152	.01178	.00126	.00386	-.00057	2.8432
#2	-.00015	2.1576	.00046	.01014	.00186	.00150	-.00075	2.8582
#3	-.00000	2.2041	.00177	.01041	-.00230	-.00396	.00577	2.8691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

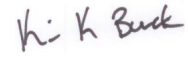


Sample Name: L1704007102 Acquired: 4/4/2017 18:49:56 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00085**	**.07354**	**.00922**	**-.00306**	**.00097**	**.00158**	**.44540**
Stddev	.00011	.00016	.00762	.00237	.00054	.00006	.01154
%RSD	12.434	.21279	82.600	77.581	55.816	3.5664	2.5900
#1	-.00075	.07343	.01341	-.00123	.00035	.00159	.45843
#2	-.00083	.07372	.01383	-.00574	.00130	.00164	.44129
#3	-.00096	.07346	.00043	-.00220	.00127	.00153	.43648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23070.**	**150950.**	**4377.9**
Stddev	95.	664.	18.8
%RSD	.41254	.43971	.42951
#1	22962.	151480.	4367.4
#2	23144.	150210.	4399.6
#3	23104.	151170.	4366.7

Approved: April 05, 2017



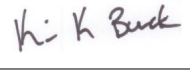
Sample Name: L1704007103 Acquired: 4/4/2017 18:53:25 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**.28922**	**-.00089**	**.02223**	**.03968**	**-.00001**	**33.448**	**.00015**
Stddev	.00173	.00344	.00137	.00246	.00103	.00004	.026	.00020
%RSD	109.59	1.1895	154.37	11.051	2.5889	309.43	.07678	137.54
#1	.00028	.28639	-.00064	.01943	.03850	-.00006	33.438	.00029
#2	-.00316	.28823	.00034	.02322	.04016	-.00000	33.430	.00023
#3	-.00187	.29305	-.00237	.02404	.04038	.00002	33.478	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.00065**	**.00157**	**.13986**	**1.0049**	**-.00315**	**4.7488**	**.00020**
Stddev	.00024	.00048	.00048	.02215	.1413	.00408	.1401	.00298
%RSD	51.123	72.717	30.322	15.838	14.057	129.50	2.9502	1476.8
#1	-.00064	.00119	.00117	.11963	1.1615	-.00610	4.5895	.00105
#2	-.00019	.00048	.00144	.16353	.96613	-.00486	4.8530	.00266
#3	-.00058	.00029	.00210	.13642	.88712	.00151	4.8038	-.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**7.0304**	**.00120**	**.02569**	**.00134**	**-.00229**	**-.00235**	**2.8335**
Stddev	.00028	.0769	.00028	.00397	.00190	.00431	.00244	.0069
%RSD	316.29	1.0938	23.021	15.459	141.71	187.77	103.90	.24177
#1	.00004	7.0551	.00118	.02143	-.00074	.00116	-.00422	2.8377
#2	.00040	7.0919	.00094	.02928	.00178	-.00712	.00041	2.8256
#3	-.00017	6.9442	.00149	.02637	.00298	-.00092	-.00323	2.8371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1704007103 Acquired: 4/4/2017 18:53:25 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.15022**	**.00500**	**-.00148**	**.00050**	**.00526**	**.02271**
Stddev	.00034	.00056	.00610	.00113	.00056	.00005	.35538
%RSD	38.336	.37509	122.07	76.195	112.42	.95736	1565.0
#1	-.00126	.15079	.01062	-.00174	.00084	.00520	-.38720
#2	-.00061	.15022	.00585	-.00246	.00080	.00530	.24425
#3	-.00078	.14966	-.00149	-.00025	-.00015	.00528	.21107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22986.**	**153880.**	**4514.9**
Stddev	467.	942.	43.9
%RSD	2.0305	.61247	.97288
#1	22549.	154770.	4487.0
#2	22933.	153970.	4565.6
#3	23477.	152890.	4492.2

Approved: April 05, 2017

Sample Name: L1704007104 Acquired: 4/4/2017 18:56:54 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.57914**	**-.00032**	**.00689**	**.04039**	**.00003**	**24.884**	**.00016**
Stddev	.00174	.00869	.00119	.00180	.00076	.00002	.024	.00025
%RSD	15588.	1.5011	373.05	26.045	1.8725	52.405	.09790	157.38
#1	-.00011	.58677	.00098	.00838	.03977	.00003	24.906	.00020
#2	.00178	.56968	-.00135	.00490	.04123	.00004	24.858	-.00011
#3	-.00170	.58098	-.00059	.00741	.04018	.00001	24.887	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.00081**	**.00258**	**.31359**	**.68858**	**-.00175**	**3.0286**	**.01224**
Stddev	.00022	.00067	.00187	.01222	.06841	.00857	.0440	.00114
%RSD	59.947	81.899	72.683	3.8973	9.9355	488.95	1.4513	9.2951
#1	-.00013	.00014	.00380	.30328	.64209	.00813	2.9784	.01317
#2	-.00040	.00147	.00351	.32709	.76713	-.00717	3.0471	.01097
#3	-.00057	.00084	.00042	.31040	.65651	-.00623	3.0602	.01259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**1.4471**	**.00157**	**-.00140**	**-.00050**	**-.00243**	**-.00072**	**3.6163**
Stddev	.00023	.0128	.00034	.00200	.00076	.00533	.00188	.0128
%RSD	137.26	.88733	21.712	142.49	153.98	219.02	260.90	.35425
#1	-.00006	1.4547	.00148	-.00263	-.00098	.00341	-.00181	3.6015
#2	.00016	1.4543	.00195	.00090	-.00089	-.00368	-.00180	3.6244
#3	.00040	1.4323	.00128	-.00248	.00038	-.00703	.00145	3.6229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704007104 Acquired: 4/4/2017 18:56:54 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.05371**	**.00866**	**.00083**	**.00123**	**.00214**	**.31254**
Stddev	.00069	.00038	.00411	.00188	.00041	.00009	.37363
%RSD	70.704	.71085	47.394	225.99	32.995	4.3244	119.55
#1	-.00146	.05409	.01040	.00275	.00163	.00219	.03904
#2	-.00019	.05332	.01162	-.00102	.00124	.00204	.73825
#3	-.00127	.05372	.00397	.00077	.00082	.00221	.16034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23868.**	**152920.**	**4493.1**
Stddev	191.	1413.	34.7
%RSD	.79888	.92407	.77214
#1	23661.	152960.	4505.1
#2	23907.	151490.	4520.1
#3	24036.	154310.	4453.9

Approved: April 05, 2017

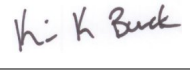
Sample Name: L1704007105 Acquired: 4/4/2017 19:00:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	**.27764**	**-.00135**	**.00862**	**.05091**	**-.00003**	**30.697**	**.00030**
Stddev	.00163	.00328	.00182	.00180	.00064	.00003	.176	.00019
%RSD	199.07	1.1797	134.53	20.942	1.2485	88.033	.57338	62.431
#1	-.00228	.27407	-.00283	.00788	.05150	-.00000	30.880	.00029
#2	.00094	.27832	.00068	.01067	.05101	-.00004	30.528	.00049
#3	-.00111	.28052	-.00191	.00729	.05024	-.00006	30.684	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00025**	**.00174**	**.12507**	**.73693**	**-.00126**	**4.1389**	**.00083**
Stddev	.00005	.00036	.00143	.03383	.15962	.00365	.0609	.00216
%RSD	34.965	140.09	82.008	27.052	21.661	290.42	1.4720	259.03
#1	-.00013	.00009	.00096	.14132	.55740	-.00165	4.1211	-.00060
#2	-.00022	.00066	.00088	.08618	.86284	-.00469	4.2068	.00332
#3	-.00012	.00001	.00339	.14771	.79054	.00257	4.0889	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**2.0399**	**.00061**	**.00258**	**.00024**	**.00056**	**-.00023**	**3.7274**
Stddev	.00030	.0471	.00054	.00673	.00157	.00193	.00277	.0023
%RSD	809.30	2.3069	88.430	261.31	659.69	341.42	1189.6	.06061
#1	.00016	1.9861	.00017	.00605	.00165	.00034	-.00182	3.7295
#2	.00011	2.0734	.00122	-.00518	-.00145	-.00124	.00296	3.7278
#3	-.00038	2.0602	.00045	.00686	.00052	.00259	-.00184	3.7250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1704007105 Acquired: 4/4/2017 19:00:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00081**	**.06063**	**.00134**	**-.00033**	**.00006**	**.00187**	**.11368**
Stddev	.00044	.00072	.00013	.00048	.00069	.00003	.14476
%RSD	54.264	1.1856	9.6911	145.60	1110.7	1.6744	127.34
#1	-.00031	.06002	.00138	.00012	-.00073	.00186	-.04280
#2	-.00114	.06045	.00145	-.00028	.00037	.00190	.14101
#3	-.00098	.06142	.00120	-.00083	.00055	.00184	.24282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23728.**	**157170.**	**4659.7**
Stddev	43.	2021.	47.0
%RSD	.18230	1.2856	1.0085
#1	23756.	158510.	4610.9
#2	23750.	158160.	4704.7
#3	23678.	154850.	4663.4

Approved: April 05, 2017

Sample Name: L1704007106 Acquired: 4/4/2017 19:03:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.13681**	**.00022**	**.00994**	**.06615**	**-.00001**	**43.989**
Stddev	.00095	.00589	.00193	.00077	.00154	.00004	.178
%RSD	319.02	4.3076	881.24	7.7294	2.3316	510.77	.40447
#1	-.00137	.13868	.00164	.01021	.06786	.00002	44.149
#2	.00006	.14154	.00099	.01053	.06574	-.00006	44.020
#3	.00042	.13021	-.00198	.00907	.06485	.00001	43.797
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00039**	**.00025**	**.00200**	**.25071**	**1.0133**	**.00183**
Stddev	.00016	.00021	.00073	.00116	.01184	.0127	.00106
%RSD	694.28	54.879	293.39	58.263	4.7234	1.2582	57.871
#1	.00005	-.00015	.00051	.00221	.26216	1.0044	.00174
#2	.00008	-.00055	-.00058	.00074	.23851	1.0077	.00292
#3	-.00020	-.00047	.00081	.00304	.25148	1.0279	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.7149**	**.00647**	**.00070**	**2.5820**	**.00126**	**.02484**	**-.00017**
Stddev	.1274	.00344	.00027	.0317	.00049	.00585	.00179
%RSD	1.6511	53.151	38.781	1.2283	39.104	23.549	1078.6
#1	7.8486	.00269	.00052	2.6090	.00119	.02984	.00172
#2	7.5950	.00731	.00057	2.5471	.00080	.02628	-.00036
#3	7.7011	.00941	.00101	2.5901	.00178	.01841	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017
Kim K Buck

Sample Name: L1704007106 Acquired: 4/4/2017 19:03:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**-.00340**	**3.3902**	**-.00029**	**.16311**	**.00117**	**-.00114**
Stddev	.00359	.00116	.0037	.00038	.00054	.00494	.00136
%RSD	824.85	34.044	.11015	132.40	.33225	421.66	120.04
#1	.00345	-.00395	3.3932	-.00073	.16313	-.00452	-.00268
#2	-.00112	-.00418	3.3860	-.00013	.16364	.00433	-.00064
#3	-.00362	-.00207	3.3914	-.00001	.16255	.00371	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00097**	**.00221**	F **-.06278**
Stddev	.00073	.00009	.32892
%RSD	74.980	4.1157	523.91
#1	.00151	.00211	-.13281
#2	.00126	.00229	.29551
#3	.00014	.00224	-.35105
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23283.**	**153760.**	**4464.5**
Stddev	69.	698.	49.1
%RSD	.29776	.45387	1.1003
#1	23318.	152960.	4418.1
#2	23328.	154050.	4459.6
#3	23203.	154260.	4516.0

Approved: April 05, 2017

Sample Name: L1704007107 Acquired: 4/4/2017 19:07:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00080**	**.85828**	**.00059**	**.01202**	**.04314**	**-.00002**	**38.603**	**.00010**
Stddev	.00263	.00575	.00186	.00113	.00102	.00005	.167	.00001
%RSD	330.18	.66949	312.00	9.4298	2.3645	286.65	.43138	9.5788
#1	.00046	.85200	.00047	.01311	.04235	-.00007	38.636	.00010
#2	.00097	.86327	.00251	.01208	.04278	.00002	38.422	.00009
#3	-.00382	.85959	-.00119	.01085	.04429	.00000	38.750	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00098**	**.00252**	**.70332**	**1.3114**	**-.00323**	**6.5211**	**.01700**
Stddev	.00027	.00082	.00048	.02171	.1825	.00904	.0834	.00769
%RSD	191.28	83.325	19.071	3.0871	13.915	280.04	1.2794	45.248
#1	-.00003	.00154	.00210	.68049	1.1187	-.00636	6.5283	.01423
#2	.00046	.00004	.00304	.72371	1.3337	-.01029	6.4343	.02569
#3	.00000	.00136	.00242	.70577	1.4816	.00696	6.6007	.01108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**3.2465**	**.00123**	**.01881**	**-.00172**	**.00081**	**.00296**	**4.4487**
Stddev	.00040	.0061	.00035	.00241	.00322	.00361	.00421	.0133
%RSD	207.60	.18829	28.702	12.836	186.50	444.33	142.49	.29830
#1	-.00024	3.2535	.00164	.02086	.00038	-.00183	.00225	4.4387
#2	.00026	3.2422	.00106	.01615	-.00543	.00493	-.00086	4.4436
#3	.00056	3.2438	.00100	.01942	-.00012	-.00066	.00748	4.4637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704007107 Acquired: 4/4/2017 19:07:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	**.13771**	**.01170**	**-.00315**	**.00149**	**.00399**	**.45477**
Stddev	.00062	.00119	.00595	.00220	.00034	.00010	.45405
%RSD	75.573	.86692	50.863	69.636	22.622	2.5576	99.841
#1	-.00154	.13906	.00798	-.00063	.00161	.00393	-.06939
#2	-.00041	.13678	.01857	-.00424	.00175	.00411	.70698
#3	-.00053	.13730	.00856	-.00460	.00111	.00393	.72673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22911.**	**152390.**	**4437.5**
Stddev	192.	1507.	17.4
%RSD	.83650	.98857	.39206
#1	22877.	153880.	4417.9
#2	22739.	150870.	4451.1
#3	23117.	152420.	4443.4

Approved: April 05, 2017

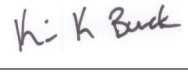
Sample Name: L1704007201 Acquired: 4/4/2017 19:10:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.29092**	**-.00158**	**.01280**	**.02709**	**-.00002**	**27.346**	**-.00006**
Stddev	.00026	.00444	.00075	.00058	.00145	.00006	.035	.00016
%RSD	45.399	1.5261	47.291	4.5234	5.3435	246.08	.12916	274.21
#1	-.00030	.28780	-.00157	.01214	.02805	-.00004	27.338	-.00024
#2	-.00058	.29600	-.00083	.01323	.02779	-.00007	27.316	.00007
#3	-.00081	.28896	-.00233	.01302	.02542	.00004	27.385	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.00021**	**.00099**	**.11793**	**.98939**	**-.00150**	**5.5434**	**.00080**
Stddev	.00029	.00027	.00090	.00040	.08674	.00604	.0892	.00291
%RSD	68.442	128.68	91.391	.34258	8.7667	401.47	1.6087	362.16
#1	-.00070	.00048	.00203	.11840	.94545	.00309	5.5771	.00179
#2	-.00012	-.00006	.00040	.11768	.93342	.00075	5.6108	-.00247
#3	-.00043	.00020	.00053	.11773	1.0893	-.00835	5.4423	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**20.172**	**.00086**	**.02337**	**-.00132**	**-.00454**	**-.00055**	**3.4908**
Stddev	.00022	.023	.00058	.00281	.00082	.00237	.00345	.0057
%RSD	85.509	.11159	66.834	12.032	61.800	52.158	626.54	.16470
#1	.00052	20.152	.00046	.02095	-.00068	-.00255	.00064	3.4940
#2	.00012	20.166	.00153	.02646	-.00224	-.00392	.00214	3.4841
#3	.00014	20.196	.00061	.02272	-.00104	-.00716	-.00443	3.4942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1704007201 Acquired: 4/4/2017 19:10:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.07041**	**.00264**	**-.00173**	**.00050**	**.00138**	**.06811**
Stddev	.00092	.00047	.00516	.00209	.00017	.00012	.01922
%RSD	126.91	.67451	195.28	121.17	34.824	8.6836	28.218
#1	-.00035	.07090	.00468	-.00414	.00041	.00150	.04885
#2	-.00177	.06996	-.00323	-.00037	.00038	.00126	.08729
#3	-.00005	.07035	.00647	-.00067	.00070	.00140	.06818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23664.**	**158300.**	**4528.7**
Stddev	447.	1664.	164.4
%RSD	1.8877	1.0513	3.6294
#1	23731.	159310.	4339.1
#2	23188.	159210.	4616.3
#3	24074.	156380.	4630.8

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 19:14:19 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41038**	**10.193**	**.40221**	**.50796**	**1.0245**	**.05101**	**10.172**
Stddev	.00134	.035	.00044	.00178	.0030	.00024	.040
%RSD	.32574	.34747	.10942	.35099	.29572	.47847	.39791
#1	.41038	10.222	.40236	.50789	1.0243	.05127	10.154
#2	.41172	10.203	.40171	.50977	1.0277	.05096	10.218
#3	.40904	10.154	.40255	.50621	1.0217	.05079	10.144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05029**	**.20143**	**.50905**	**.50035**	**3.9208**	**52.394**	**1.0237**
Stddev	.00018	.00089	.00176	.00315	.0399	.170	.0022
%RSD	.35054	.44302	.34548	.62946	1.0190	.32451	.21723
#1	.05049	.20219	.51104	.50293	3.9120	52.321	1.0235
#2	.05021	.20165	.50838	.50127	3.8860	52.588	1.0260
#3	.05016	.20045	.50771	.49684	3.9644	52.273	1.0216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8118**	**.48559**	**1.0007**	**52.204**	**.50403**	**9.8544**	**.50199**
Stddev	.1714	.00665	.0045	.198	.00304	.0563	.00297
%RSD	1.7469	1.3701	.44854	.37974	.60383	.57151	.59221
#1	9.8548	.48602	1.0057	52.053	.50694	9.9005	.50479
#2	9.9576	.49202	.99934	52.429	.50427	9.8711	.50231
#3	9.6230	.47873	.99706	52.132	.50087	9.7916	.49887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 19:14:19 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2325**	**.40890**	**4.9830**	**1.0121**	**1.0080**	**.99899**	**.51644**
Stddev	.0058	.00359	.0223	.0060	.0024	.00548	.00250
%RSD	.46822	.87909	.44785	.58893	.23944	.54867	.48396
#1	1.2348	.41054	5.0056	1.0181	1.0073	.99777	.51651
#2	1.2367	.41138	4.9826	1.0119	1.0107	1.0050	.51890
#3	1.2259	.40478	4.9610	1.0062	1.0060	.99423	.51390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0104**	**1.0152**	F **.88614**
Stddev	.0025	.0047	.26423
%RSD	.24323	.45968	29.818
#1	1.0131	1.0202	1.0110
#2	1.0098	1.0144	1.0648
#3	1.0083	1.0110	.58262
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23298.**	**153010.**	**4701.4**
Stddev	84.	809.	46.1
%RSD	.35995	.52851	.98143
#1	23384.	152180.	4749.0
#2	23217.	153070.	4698.6
#3	23294.	153790.	4656.8

Approved: April 05, 2017

Sample Name: CCB Acquired: 4/4/2017 19:17:41 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**-.00361**	**.00239**	**.00349**	**-.00045**	**.00000**	**.00919**	**-.00021**
Stddev	.00196	.00161	.00037	.00053	.00082	.00005	.00498	.00007
%RSD	97.346	44.774	15.525	15.118	182.89	1079.8	54.187	35.036
#1	-.00394	-.00183	.00209	.00327	.00050	-.00002	.00344	-.00013
#2	-.00209	-.00399	.00227	.00310	-.00085	-.00003	.01215	-.00023
#3	-.00001	-.00499	.00280	.00409	-.00100	.00006	.01197	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00006**	**.00123**	**.00009**	**.15503**	**-.01248**	**.13492**	**.00114**
Stddev	.00032	.00064	.00155	.04110	.18017	.00325	.06109	.00253
%RSD	434.39	1007.5	125.51	43259.	116.22	26.051	45.276	222.45
#1	-.00029	-.00074	-.00013	.03176	.00703	-.01498	.16223	-.00174
#2	.00029	.00003	.00091	.01487	.10240	-.01366	.17759	.00300
#3	.00022	.00052	.00292	-.04635	.35565	-.00880	.06494	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.13007**	**.00085**	**-.00246**	**.00002**	**.00068**	**-.00181**	**.00125**
Stddev	.00025	.04646	.00039	.00600	.00034	.00315	.00193	.00152
%RSD	462.64	35.719	46.092	244.14	1677.5	462.12	106.67	121.78
#1	-.00029	.11669	.00129	-.00273	-.00004	.00296	-.00386	.00293
#2	-.00008	.09176	.00053	.00367	-.00029	-.00291	-.00004	.00082
#3	.00021	.18175	.00072	-.00831	.00039	.00199	-.00152	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: CCB Acquired: 4/4/2017 19:17:41 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00043**	**-.00484**	**-.00001**	**.00055**	**.00004**	**-.02345**
Stddev	.00028	.00066	.00768	.00203	.00113	.00005	.39249
%RSD	993.24	153.40	158.78	19315.	204.34	109.94	1673.5
#1	-.00028	.00005	-.00221	.00231	.00156	.00010	.41288
#2	.00028	.00118	-.01349	-.00090	-.00067	.00001	-.34771
#3	.00009	.00005	.00119	-.00144	.00077	.00002	-.13554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23517.**	**152330.**	**4393.6**
Stddev	279.	1039.	50.3
%RSD	1.1874	.68218	1.1439
#1	23618.	153130.	4434.3
#2	23202.	152700.	4409.1
#3	23732.	151150.	4337.4

Approved: April 05, 2017

Sample Name: L1704007202 Acquired: 4/4/2017 19:21:12 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.17854**	**-.00030**	**.01432**	**.02548**	**-.00004**	**32.953**
Stddev	.00153	.00508	.00136	.00271	.00098	.00002	.255
%RSD	229.87	2.8438	457.48	18.918	3.8553	57.949	.77266
#1	-.00131	.17396	-.00040	.01579	.02573	-.00001	32.980
#2	.00108	.18400	-.00160	.01598	.02631	-.00005	33.192
#3	-.00177	.17767	.00111	.01119	.02440	-.00005	32.685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00011**	**-.00042**	**.00070**	**.09578**	**1.1577**	**-.00165**
Stddev	.00016	.00007	.00103	.00103	.01618	.0876	.00815
%RSD	313.20	61.648	244.21	147.21	16.897	7.5683	492.30
#1	.00013	-.00012	-.00112	.00135	.10902	1.1339	.00765
#2	-.00014	-.00017	-.00091	-.00049	.07774	1.2548	-.00751
#3	.00016	-.00004	.00076	.00122	.10059	1.0844	-.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.3776**	**.00314**	**.00028**	**28.411**	**.00088**	**.01059**	**-.00079**
Stddev	.1017	.00194	.00049	.208	.00058	.00214	.00284
%RSD	1.5940	61.758	178.99	.73358	65.691	20.222	357.64
#1	6.4439	.00266	.00074	28.512	.00067	.01089	-.00199
#2	6.4284	.00527	.00033	28.551	.00153	.01256	.00245
#3	6.2606	.00148	-.00024	28.172	.00043	.00831	-.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704007202 Acquired: 4/4/2017 19:21:12 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**-.00195**	**3.3732**	**-.00080**	**.08698**	**-.00180**	**-.00026**
Stddev	.00095	.00404	.0023	.00100	.00073	.00428	.00238
%RSD	65.525	207.92	.06735	125.26	.83660	237.96	902.87
#1	-.00083	-.00549	3.3758	.00032	.08771	-.00274	.00190
#2	-.00097	.00246	3.3718	-.00159	.08626	.00287	.00013
#3	-.00254	-.00280	3.3719	-.00112	.08698	-.00553	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00056**	**.00106**	F **-.31409**
Stddev	.00064	.00017	.21110
%RSD	114.01	16.221	67.209
#1	.00103	.00123	-.41909
#2	-.00017	.00106	-.07108
#3	.00081	.00089	-.45209
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23263.**	**150900.**	**4402.9**
Stddev	301.	769.	45.8
%RSD	1.2954	.50958	1.0412
#1	22915.	151690.	4352.5
#2	23444.	150840.	4414.1
#3	23430.	150160.	4442.1

Approved: April 05, 2017

Sample Name: L1704007203 Acquired: 4/4/2017 19:24:41 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.18561**	**-.00029**	**.01272**	**.03017**	**-.00005**	**27.429**
Stddev	.00227	.00638	.00130	.00131	.00085	.00006	.041
%RSD	869.34	3.4353	442.34	10.333	2.8270	124.08	.14933
#1	-.00222	.18582	-.00037	.01269	.03115	-.00004	27.429
#2	-.00223	.17914	.00104	.01143	.02976	-.00010	27.388
#3	-.00078	.19188	-.00156	.01406	.02960	.00001	27.470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**-.00028**	**-.00027**	**.00082**	**.11666**	**1.0900**	**-.00488**
Stddev	.00009	.00027	.00053	.00195	.01523	.1562	.00581
%RSD	230.95	97.791	198.05	236.34	13.059	14.332	119.11
#1	.00004	-.00033	-.00082	.00149	.11978	.93058	-.01105
#2	-.00005	-.00052	.00023	-.00137	.10011	1.0966	-.00405
#3	.00012	.00002	-.00021	.00235	.13010	1.2428	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.7671**	**.00756**	**.00013**	**15.246**	**.00026**	**.01130**	**-.00250**
Stddev	.0796	.00286	.00022	.049	.00030	.00474	.00114
%RSD	1.6691	37.877	164.36	.31934	115.98	41.948	45.501
#1	4.7024	.01075	-.00012	15.219	.00018	.01656	-.00125
#2	4.8560	.00669	.00022	15.216	.00060	.00998	-.00280
#3	4.7429	.00523	.00029	15.302	.00001	.00736	-.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704007203 Acquired: 4/4/2017 19:24:41 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**-.00067**	**3.1568**	**-.00023**	**.10205**	**.00389**	**-.00150**
Stddev	.00145	.00139	.0034	.00054	.00036	.01037	.00142
%RSD	121.43	205.73	.10862	239.72	.35339	266.80	94.670
#1	.00042	-.00017	3.1529	-.00007	.10218	.00706	-.00297
#2	-.00239	.00039	3.1592	-.00083	.10233	-.00770	-.00013
#3	-.00161	-.00224	3.1584	.00022	.10165	.01230	-.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00076**	**.00175**	F **-.11481**
Stddev	.00049	.00009	.34053
%RSD	64.584	4.8788	296.60
#1	.00048	.00176	-.47595
#2	.00132	.00184	.20046
#3	.00047	.00167	-.06895
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23707.**	**156430.**	**4581.9**
Stddev	155.	2078.	60.5
%RSD	.65429	1.3285	1.3195
#1	23722.	157070.	4515.0
#2	23854.	158110.	4598.3
#3	23545.	154110.	4632.5

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704007204 Acquired: 4/4/2017 19:28:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.24671**	**.00108**	**.01287**	**.07507**	**-.00002**	**49.719**	**.00007**
Stddev	.00041	.00370	.00208	.00229	.00182	.00004	.149	.00016
%RSD	49.477	1.5010	192.80	17.783	2.4205	153.15	.30024	223.21
#1	-.00080	.24382	.00021	.01096	.07682	-.00007	49.868	.00009
#2	-.00126	.25088	.00345	.01541	.07518	.00000	49.569	.00022
#3	-.00044	.24544	-.00042	.01224	.07320	-.00001	49.719	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00043**	**.00090**	**.19869**	**.76437**	**.00217**	**5.9730**	**.00640**
Stddev	.00015	.00027	.00125	.01808	.06311	.00229	.1732	.00283
%RSD	157.93	62.681	138.16	9.0974	8.2564	105.36	2.8999	44.239
#1	.00025	.00018	.00216	.20062	.81975	.00467	6.0441	.00595
#2	.00008	.00039	.00089	.21572	.77768	.00166	5.7755	.00942
#3	-.00005	.00071	-.00034	.17972	.69566	.00018	6.0993	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**24.225**	**.00139**	**.01881**	**-.00122**	**-.00501**	**.00150**	**3.3918**
Stddev	.00049	.096	.00113	.00541	.00350	.00369	.00156	.0050
%RSD	142.71	.39422	81.140	28.758	286.15	73.626	103.98	.14835
#1	.00079	24.334	.00103	.02355	-.00341	-.00877	.00184	3.3976
#2	.00042	24.156	.00265	.01292	.00282	-.00139	-.00020	3.3887
#3	-.00018	24.185	.00048	.01995	-.00308	-.00488	.00285	3.3892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704007204 Acquired: 4/4/2017 19:28:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.15534**	**.00461**	**-.00013**	**.00128**	**.00154**	**.15292**
Stddev	.00040	.00171	.00250	.00347	.00037	.00005	.64796
%RSD	91.400	1.1008	54.124	2711.6	28.983	3.5004	423.72
#1	-.00049	.15636	.00295	-.00306	.00099	.00153	.84322
#2	-.00081	.15337	.00340	-.00102	.00115	.00160	.05772
#3	-.00001	.15629	.00748	.00370	.00169	.00149	-.44217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23418.**	**154330.**	**4694.1**
Stddev	617.	1571.	48.4
%RSD	2.6345	1.0180	1.0317
#1	23899.	156100.	4645.2
#2	23634.	153110.	4742.1
#3	22723.	153790.	4694.9

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704007205 Acquired: 4/4/2017 19:31:37 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.18316**	**-.00049**	**.01512**	**.04700**	**-.00003**	**49.378**	**-.00002**
Stddev	.00158	.00063	.00122	.00155	.00173	.00001	.266	.00009
%RSD	388.83	.34573	249.20	10.269	3.6779	33.536	.53828	427.52
#1	-.00142	.18341	.00067	.01608	.04823	-.00004	49.359	.00006
#2	.00132	.18364	-.00038	.01332	.04502	-.00004	49.122	-.00001
#3	.00132	.18245	-.00175	.01594	.04774	-.00002	49.652	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00003**	**.00159**	**.33766**	**.93895**	**.00494**	**8.1976**	**.06334**
Stddev	.00019	.00027	.00105	.05073	.07761	.00245	.0994	.00269
%RSD	196.09	798.17	66.187	15.025	8.2655	49.552	1.2130	4.2397
#1	.00001	.00030	.00243	.35720	1.0008	.00284	8.2616	.06157
#2	-.00031	.00002	.00192	.37572	.96417	.00435	8.0831	.06643
#3	.00002	-.00023	.00041	.28006	.85187	.00763	8.2482	.06202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**22.052**	**.00061**	**.03754**	**-.00166**	**-.00019**	**-.00487**	**3.4359**
Stddev	.00015	.057	.00079	.00314	.00208	.00167	.00224	.0089
%RSD	34.213	.25652	129.06	8.3524	125.31	872.43	45.986	.25946
#1	.00032	22.074	.00150	.03727	-.00177	-.00109	-.00433	3.4438
#2	.00061	21.988	.00001	.04080	-.00368	-.00122	-.00295	3.4378
#3	.00040	22.094	.00032	.03454	.00047	.00174	-.00733	3.4262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704007205 Acquired: 4/4/2017 19:31:37 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00152**	**.19830**	**.00560**	**-.00101**	**.00098**	**.00157**	**-.01949**
Stddev	.00017	.00007	.00762	.00129	.00030	.00013	.30918
%RSD	11.372	.03317	136.19	128.50	30.849	7.9966	1586.3
#1	-.00149	.19828	-.00179	-.00089	.00100	.00159	-.13124
#2	-.00136	.19825	.01343	.00023	.00066	.00168	-.25725
#3	-.00171	.19837	.00515	-.00235	.00126	.00143	.33002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22972.**	**150820.**	**4523.4**
Stddev	98.	58.	19.0
%RSD	.42613	.03835	.42063
#1	23033.	150890.	4524.6
#2	23024.	150780.	4541.8
#3	22859.	150790.	4503.8

Approved: April 05, 2017

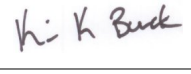
Sample Name: L1704007205PS Acquired: 4/4/2017 19:35:04 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608769-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20863**	**5.3196**	**.19907**	**1.0066**	**.56766**	**.02604**	**49.641**	**.02508**
Stddev	.00177	.0065	.00199	.0024	.00125	.00005	.252	.00019
%RSD	.84677	.12242	.99767	.23314	.21935	.18313	.50795	.76120
#1	.20869	5.3250	.19945	1.0048	.56683	.02608	49.356	.02491
#2	.21036	5.3216	.19693	1.0057	.56909	.02606	49.835	.02529
#3	.20683	5.3124	.20084	1.0092	.56706	.02599	49.732	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10118**	**.26071**	**.25271**	**2.3403**	**27.427**	**.54380**	**12.368**	**.30858**
Stddev	.00023	.00022	.00102	.0168	.148	.00867	.129	.00346
%RSD	.22993	.08282	.40250	.71781	.53985	1.5947	1.0392	1.1221
#1	.10109	.26096	.25155	2.3240	27.302	.54192	12.456	.30972
#2	.10145	.26060	.25344	2.3575	27.590	.53622	12.427	.31134
#3	.10101	.26057	.25314	2.3393	27.388	.55325	12.220	.30470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50071**	**46.543**	**.25434**	**4.9423**	**.25582**	**.61756**	**.19413**	**5.5791**
Stddev	.00108	.177	.00065	.0032	.00135	.00263	.00176	.0094
%RSD	.21578	.37990	.25383	.06452	.52687	.42619	.90915	.16899
#1	.50196	46.344	.25490	4.9436	.25708	.61461	.19210	5.5726
#2	.50011	46.602	.25363	4.9387	.25440	.61840	.19531	5.5747
#3	.50007	46.682	.25447	4.9446	.25597	.61967	.19498	5.5899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

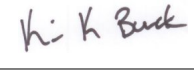


Sample Name: L1704007205PS Acquired: 4/4/2017 19:35:04 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608769-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51590**	**.69724**	**.51588**	**.25809**	**.52268**	**.51227**	**.46212**
Stddev	.00045	.00236	.00653	.00135	.00126	.00047	.33317
%RSD	.08693	.33898	1.2661	.52446	.24127	.09249	72.097
#1	.51632	.69580	.50919	.25653	.52362	.51179	.76803
#2	.51543	.69594	.52224	.25892	.52317	.51274	.10713
#3	.51596	.69996	.51622	.25883	.52124	.51227	.51120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23123.**	**151380.**	**4526.9**
Stddev	193.	712.	57.5
%RSD	.83471	.47030	1.2711
#1	23324.	151400.	4492.9
#2	23108.	152090.	4494.4
#3	22939.	150660.	4593.3

Approved: April 05, 2017



Sample Name: L1704007205SDL Acquired: 4/4/2017 19:38:28 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608769-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00256**	**.03471**	**.00206**	**.00615**	**.00795**	**.00002**	**10.023**
Stddev	.00248	.00613	.00157	.00112	.00136	.00002	.056
%RSD	96.713	17.670	76.374	18.251	17.125	86.887	.56172
#1	-.00135	.03007	.00067	.00744	.00931	.00001	10.086
#2	-.00541	.03240	.00174	.00561	.00795	.00001	10.005
#3	-.00092	.04167	.00376	.00539	.00659	.00004	9.9781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00018**	**-.00045**	**.00049**	**.05791**	**.28538**	**-.00418**
Stddev	.00021	.00011	.00024	.00082	.02552	.08196	.00842
%RSD	120.91	60.410	53.787	166.18	44.066	28.720	201.49
#1	.00002	-.00021	-.00025	.00139	.08626	.30315	.00156
#2	-.00015	-.00027	-.00071	-.00021	.05073	.19599	-.00025
#3	-.00039	-.00006	-.00038	.00029	.03675	.35699	-.01385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.8223**	**.01631**	**.00001**	**4.5172**	**.00043**	**.01263**	**-.00136**
Stddev	.0184	.00212	.00034	.0446	.00137	.00047	.00174
%RSD	1.0102	12.992	2352.7	.98828	319.24	3.7356	127.79
#1	1.8353	.01485	-.00029	4.5102	.00156	.01229	-.00331
#2	1.8304	.01874	-.00004	4.5650	.00082	.01242	.00002
#3	1.8012	.01534	.00038	4.4765	-.00109	.01317	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704007205SDL Acquired: 4/4/2017 19:38:28 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608769-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00591**	**-.00485**	**.68517**	**-.00064**	**.04012**	**.00253**	**.00212**
Stddev	.00111	.00163	.00153	.00076	.00070	.00228	.00100
%RSD	18.795	33.621	.22339	117.81	1.7459	90.017	47.133
#1	-.00692	-.00621	.68390	-.00132	.03941	.00516	.00181
#2	-.00610	-.00304	.68687	-.00079	.04016	.00118	.00131
#3	-.00472	-.00530	.68473	.00018	.04081	.00125	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00034**	**.00084**	F **-.22138**
Stddev	.00028	.00001	.11984
%RSD	81.458	1.5157	54.136
#1	.00002	.00085	-.26330
#2	.00054	.00083	-.08620
#3	.00045	.00084	-.31463
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23963.**	**153950.**	**4462.7**
Stddev	478.	49.	17.9
%RSD	1.9940	.03186	.40165
#1	23860.	153910.	4466.4
#2	23545.	154000.	4478.5
#3	24484.	153930.	4443.2

Approved: April 05, 2017

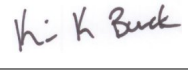
Sample Name: CCV Acquired: 4/4/2017 19:41:57 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41842**	**10.409**	**.40207**	**.52044**	**1.0382**	**.05190**	**10.307**
Stddev	.00331	.067	.00144	.00468	.0035	.00023	.064
%RSD	.79166	.64151	.35899	.89949	.33832	.44552	.62115
#1	.41513	10.333	.40350	.51515	1.0342	.05166	10.350
#2	.41837	10.439	.40208	.52216	1.0400	.05193	10.337
#3	.42175	10.456	.40062	.52402	1.0405	.05212	10.234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05043**	**.20238**	**.51555**	**.50446**	**3.9626**	**52.361**	**1.0470**
Stddev	.00015	.00084	.00363	.00188	.0257	.057	.0030
%RSD	.29442	.41543	.70366	.37185	.64993	.10907	.28594
#1	.05055	.20332	.51176	.50616	3.9922	52.400	1.0504
#2	.05027	.20211	.51590	.50245	3.9500	52.295	1.0449
#3	.05048	.20170	.51899	.50477	3.9456	52.388	1.0458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9937**	**.48941**	**1.0021**	**52.822**	**.50653**	**9.9961**	**.50652**
Stddev	.0833	.00594	.0026	.120	.00030	.0161	.00110
%RSD	.83315	1.2130	.26223	.22701	.05939	.16094	.21659
#1	9.9186	.49627	1.0050	52.948	.50637	10.014	.50589
#2	10.083	.48586	1.0013	52.811	.50688	9.9839	.50779
#3	9.9792	.48611	.99994	52.709	.50634	9.9901	.50589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017



Sample Name: CCV Acquired: 4/4/2017 19:41:57 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2429	.41214	5.0098	1.0203	1.0266	1.0074	.52095
Stddev	.0058	.00239	.0086	.0026	.0043	.0068	.00162
%RSD	.46618	.57922	.17157	.25005	.41410	.67784	.31093
#1	1.2488	.41326	5.0197	1.0233	1.0239	.99968	.52178
#2	1.2428	.41375	5.0042	1.0188	1.0245	1.0128	.52198
#3	1.2372	.40939	5.0056	1.0189	1.0315	1.0097	.51908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0251	1.0235	F .87560
Stddev	.0039	.0016	.09380
%RSD	.37700	.15433	10.712
#1	1.0208	1.0253	.94930
#2	1.0265	1.0224	.77002
#3	1.0281	1.0227	.90748
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	23579.	153600.	4727.0
Stddev	118.	1476.	77.0
%RSD	.50167	.96098	1.6299
#1	23708.	155170.	4661.9
#2	23476.	153380.	4707.0
#3	23552.	152240.	4812.0

Approved: April 05, 2017

Ki K Buck

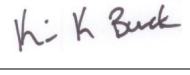
Sample Name: CCB Acquired: 4/4/2017 19:45:18 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00120**	**-.00637**	**.00075**	**.00408**	**-.00340**	**-.00003**	**.04369**
Stddev	.00181	.00457	.00165	.00112	.00214	.00003	.04593
%RSD	150.78	71.757	219.03	27.500	62.814	97.089	105.13
#1	-.00065	-.00659	.00016	.00295	-.00137	-.00006	-.00832
#2	.00027	-.00170	.00261	.00519	-.00321	-.00004	.06070
#3	-.00322	-.01083	-.00052	.00409	-.00563	.00000	.07869
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.00002**	**-.00037**	**.00001**	**-.02646**	**-.16741**	**.00123**
Stddev	.00010	.00020	.00118	.00091	.00867	.08396	.00410
%RSD	32.356	986.66	319.66	17645.	32.749	50.150	334.64
#1	-.00041	-.00017	-.00166	-.00104	-.02768	-.21168	-.00190
#2	-.00026	-.00000	.00066	.00055	-.01725	-.07059	.00587
#3	-.00023	.00023	-.00010	.00051	-.03446	-.21997	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11763**	**.00219**	**-.00028**	**.07761**	**.00046**	**-.00091**	**-.00234**
Stddev	.10131	.00479	.00036	.02719	.00053	.00181	.00110
%RSD	86.125	219.17	128.50	35.036	113.74	198.19	47.068
#1	.14810	.00406	-.00038	.05078	.00093	.00060	-.00143
#2	.20021	.00576	-.00059	.10515	.00057	-.00042	-.00203
#3	.00458	-.00326	.00012	.07692	-.00011	-.00292	-.00356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: CCB Acquired: 4/4/2017 19:45:18 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00283**	**-.00391**	**.00482**	**.00049**	**-.00024**	**.00214**	**-.00002**
Stddev	.00169	.00743	.00059	.00016	.00076	.01002	.00118
%RSD	59.879	190.13	12.153	33.270	316.15	468.28	5793.4
#1	-.00193	-.00697	.00442	.00060	-.00028	-.00908	-.00094
#2	-.00177	-.00931	.00455	.00031	-.00097	.01020	.00131
#3	-.00478	.00456	.00549	.00057	.00054	.00530	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00039**	**.00000**	F **-.12241**
Stddev	.00040	.00003	.06653
%RSD	104.09	5800.9	54.351
#1	.00051	-.00004	-.10161
#2	-.00006	.00001	-.19686
#3	.00072	.00003	-.06876
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23634.**	**157080.**	**4657.6**
Stddev	219.	1137.	49.8
%RSD	.92799	.72364	1.0702
#1	23500.	156130.	4674.0
#2	23887.	158340.	4697.2
#3	23515.	156790.	4601.6

Approved: April 05, 2017

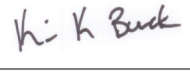
Sample Name: LLCCV Acquired: 4/4/2017 19:48:48 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00692**	**.17404**	**.00798**	**.08154**	**.00614**	**.00159**	**.50776**	**.00066**
Stddev	.00168	.00291	.00095	.00245	.00183	.00007	.05427	.00013
%RSD	24.288	1.6748	11.857	3.0024	29.752	4.5097	10.689	19.449
#1	.00647	.17218	.00823	.08432	.00803	.00166	.50889	.00063
#2	.00552	.17255	.00877	.07968	.00439	.00158	.56146	.00054
#3	.00879	.17740	.00693	.08063	.00599	.00152	.45293	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00438**	**.00417**	**.00526**	**.08480**	**.85365**	**.08017**	**.56355**	**.01093**
Stddev	.00039	.00030	.00066	.01798	.17651	.00169	.02041	.00294
%RSD	8.8541	7.1012	12.482	21.206	20.677	2.1033	3.6212	26.913
#1	.00477	.00428	.00462	.07075	.74418	.07865	.55990	.01148
#2	.00400	.00439	.00593	.07859	.75949	.07988	.58554	.00775
#3	.00436	.00383	.00524	.10507	1.0573	.08199	.54522	.01356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00795**	**.54906**	**.01801**	**.80666**	**.00646**	**.08733**	**.01399**	**.74899**
Stddev	.00029	.03211	.00024	.00545	.00299	.00277	.00380	.00409
%RSD	3.6747	5.8473	1.3268	.67536	46.254	3.1728	27.185	.54634
#1	.00777	.51260	.01780	.81030	.00820	.09053	.01004	.74822
#2	.00779	.57308	.01795	.80927	.00817	.08584	.01762	.74534
#3	.00829	.56152	.01827	.80039	.00301	.08563	.01431	.75341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

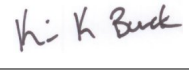


Sample Name: LLCCV Acquired: 4/4/2017 19:48:48 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42032**	**.04267**	**.02353**	**.17036**	**.00847**	**.01884**	**41.735**
Stddev	.00180	.00040	.00672	.00153	.00033	.00007	.748
%RSD	.42709	.93944	28.571	.89982	3.9047	.38303	1.7923
#1	.42022	.04300	.01606	.17212	.00863	.01889	41.793
#2	.41858	.04222	.02909	.16966	.00870	.01876	40.960
#3	.42216	.04277	.02543	.16931	.00809	.01888	42.453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24202.**	**158220.**	**4481.3**
Stddev	50.	1195.	70.1
%RSD	.20711	.75550	1.5651
#1	24157.	157370.	4510.3
#2	24193.	157710.	4532.3
#3	24256.	159590.	4401.3

Approved: April 05, 2017



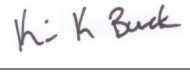
Sample Name: LLCCV Acquired: 4/4/2017 19:52:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00780**	**.17945**	**.00988**	**.08318**	**.00484**	**.00161**	**.44049**	**.00077**
Stddev	.00130	.00519	.00156	.00115	.00145	.00004	.05507	.00009
%RSD	16.651	2.8901	15.834	1.3845	29.854	2.3230	12.503	12.209
#1	.00746	.17492	.01070	.08269	.00542	.00164	.42389	.00069
#2	.00670	.18511	.00808	.08449	.00320	.00157	.50195	.00075
#3	.00923	.17833	.01086	.08234	.00591	.00163	.39563	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00405**	**.00357**	**.00455**	**.06565**	**.81618**	**.08838**	**.61761**	**.00949**
Stddev	.00039	.00047	.00033	.01001	.08585	.01030	.12861	.00042
%RSD	9.7108	13.282	7.3046	15.255	10.518	11.652	20.824	4.4348
#1	.00383	.00318	.00444	.07643	.81109	.07689	.60916	.00934
#2	.00451	.00344	.00429	.05664	.73299	.09145	.75024	.00997
#3	.00382	.00410	.00493	.06386	.90446	.09678	.49344	.00917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00784**	**.49102**	**.01720**	**.80973**	**.00944**	**.08507**	**.01522**	**.75113**
Stddev	.00032	.02065	.00061	.00547	.00094	.00248	.00311	.00113
%RSD	4.0688	4.2065	3.5254	.67568	9.9851	2.9169	20.457	.15052
#1	.00778	.50885	.01658	.81079	.00877	.08630	.01787	.75241
#2	.00818	.46838	.01779	.80381	.01052	.08221	.01179	.75026
#3	.00755	.49582	.01724	.81459	.00904	.08669	.01600	.75074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LLCCV Acquired: 4/4/2017 19:52:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42475**	**.04228**	**.02092**	**.17174**	**.00847**	**.01874**	**40.913**
Stddev	.00042	.00087	.00549	.00159	.00015	.00005	.729
%RSD	.09809	2.0498	26.235	.92377	1.8180	.28949	1.7810
#1	.42523	.04196	.02699	.17189	.00831	.01870	41.073
#2	.42447	.04161	.01631	.17008	.00848	.01880	40.117
#3	.42455	.04326	.01946	.17324	.00862	.01873	41.548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23373.**	**153190.**	**4558.9**
Stddev	169.	921.	84.9
%RSD	.72328	.60110	1.8614
#1	23556.	154240.	4577.0
#2	23338.	152500.	4633.3
#3	23224.	152840.	4466.5

Approved: April 05, 2017

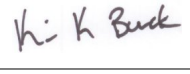
Sample Name: LLCCV Acquired: 4/4/2017 19:55:43 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00688**	**.18065**	**.01039**	**.08306**	**.00678**	**.00164**	**.47019**	**.00088**
Stddev	.00013	.00111	.00092	.00210	.00080	.00001	.02223	.00021
%RSD	1.8353	.61360	8.8208	2.5230	11.736	.63553	4.7277	23.834
#1	.00678	.18172	.00968	.08065	.00737	.00165	.49398	.00065
#2	.00683	.18074	.01007	.08404	.00710	.00163	.46666	.00094
#3	.00702	.17950	.01143	.08448	.00587	.00164	.44994	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00418**	**.00422**	**.00523**	**.06024**	**.81265**	**.08584**	**.57843**	**.01103**
Stddev	.00014	.00013	.00026	.02977	.14935	.00469	.06982	.00105
%RSD	3.4608	3.1336	4.8830	49.414	18.378	5.4688	12.071	9.5282
#1	.00434	.00435	.00513	.09037	.70115	.08536	.58968	.00986
#2	.00412	.00422	.00504	.05952	.75448	.09076	.50367	.01191
#3	.00407	.00408	.00552	.03084	.98233	.08141	.64194	.01131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00773**	**.50527**	**.01794**	**.81242**	**.00899**	**.08396**	**.01491**	**.75772**
Stddev	.00016	.04986	.00027	.00212	.00280	.00155	.00295	.00835
%RSD	2.1001	9.8679	1.4839	.26045	31.138	1.8517	19.784	1.1015
#1	.00791	.52634	.01802	.81401	.01096	.08470	.01313	.76292
#2	.00762	.44834	.01765	.81002	.01021	.08217	.01328	.74809
#3	.00765	.54115	.01816	.81322	.00578	.08500	.01832	.76214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LLCCV Acquired: 4/4/2017 19:55:43 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42359**	**.04259**	**.02357**	**.17465**	**.00812**	**.01952**	**41.839**
Stddev	.00325	.00016	.00059	.00042	.00014	.00015	.892
%RSD	.76764	.37169	2.5071	.24007	1.6764	.78710	2.1327
#1	.42664	.04262	.02412	.17447	.00821	.01970	42.473
#2	.42017	.04273	.02364	.17513	.00797	.01940	42.227
#3	.42396	.04242	.02294	.17435	.00819	.01947	40.819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23564.**	**151590.**	**4432.8**
Stddev	89.	1156.	39.5
%RSD	.37722	.76232	.89040
#1	23634.	152920.	4396.2
#2	23464.	150850.	4427.5
#3	23596.	150990.	4474.6

Approved: April 05, 2017

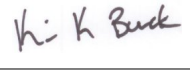
Sample Name: PBW 1C Acquired: 4/4/2017 19:59:14 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**-.00336**	**-.00087**	**.00136**	**-.00253**	**-.00006**	**.01160**
Stddev	.00125	.00195	.00304	.00076	.00105	.00004	.02349
%RSD	96.594	57.954	350.53	55.658	41.393	58.895	202.48
#1	-.00274	-.00113	.00109	.00062	-.00159	-.00009	.02094
#2	-.00047	-.00424	.00068	.00132	-.00235	-.00007	.02898
#3	-.00069	-.00472	-.00438	.00214	-.00366	-.00002	-.01512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00001**	**-.00119**	**.00091**	**.02359**	**.17275**	**-.00785**
Stddev	.00017	.00026	.00049	.00090	.04623	.14853	.00286
%RSD	186.47	1948.0	41.317	99.079	195.94	85.982	36.382
#1	-.00010	-.00029	-.00172	.00193	.07447	.14770	-.01000
#2	.00016	.00022	-.00075	.00057	.01214	.03833	-.00895
#3	.00020	.00003	-.00110	.00023	-.01584	.33221	-.00461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19833**	**.00137**	**-.00019**	**.09836**	**.00096**	**-.00921**	**-.00034**
Stddev	.02544	.00328	.00013	.00423	.00089	.00625	.00303
%RSD	12.826	239.96	67.863	4.3015	92.764	67.809	883.47
#1	.20872	.00191	-.00006	.09797	-.00005	-.00394	.00312
#2	.16934	-.00215	-.00020	.09434	.00162	-.00758	-.00162
#3	.21693	.00435	-.00032	.10278	.00131	-.01611	-.00253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: PBW 1C Acquired: 4/4/2017 19:59:14 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**-.00345**	**.00326**	**-.00010**	**-.00054**	**.00330**	**-.00215**
Stddev	.00559	.00362	.00146	.00032	.00073	.00861	.00235
%RSD	2593.1	104.87	44.659	326.83	136.97	261.30	109.04
#1	.00622	-.00227	.00389	-.00014	-.00136	-.00138	-.00024
#2	-.00073	-.00057	.00429	.00024	.00004	-.00196	-.00478
#3	-.00484	-.00751	.00159	-.00040	-.00028	.01323	-.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00020**	**.00086**	F **-.12824**
Stddev	.00020	.00007	.08763
%RSD	102.89	7.9390	68.338
#1	-.00042	.00093	-.22928
#2	-.00003	.00082	-.07293
#3	-.00014	.00081	-.08250
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24461.**	**161190.**	**4649.4**
Stddev	538.	1128.	105.3
%RSD	2.2004	.69969	2.2651
#1	23851.	161290.	4537.8
#2	24869.	160020.	4663.3
#3	24662.	162270.	4747.0

Approved: April 05, 2017

Sample Name: LCSW 1C Acquired: 4/4/2017 20:02:49 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20902**	**5.3069**	**.19717**	**.98663**	**.52360**	**.02567**	**5.2016**	**.02496**
Stddev	.00102	.0223	.00182	.00563	.00405	.00011	.0681	.00003
%RSD	.48875	.42071	.92264	.57017	.77355	.42106	1.3090	.13993
#1	.21020	5.2832	.19642	.98037	.51936	.02579	5.1258	.02493
#2	.20839	5.3276	.19924	.98825	.52400	.02558	5.2576	.02499
#3	.20846	5.3097	.19584	.99126	.52743	.02566	5.2213	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10288**	**.26102**	**.25649**	**2.0353**	**25.806**	**.53064**	**5.2776**	**.25598**
Stddev	.00055	.00106	.00078	.0205	.374	.00909	.1032	.00501
%RSD	.53058	.40502	.30512	1.0088	1.4502	1.7129	1.9547	1.9578
#1	.10225	.26091	.25561	2.0158	25.404	.52024	5.1772	.25113
#2	.10318	.26003	.25677	2.0335	25.869	.53707	5.3833	.26114
#3	.10321	.26213	.25710	2.0567	26.145	.53461	5.2721	.25568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49839**	**26.595**	**.26039**	**4.8599**	**.25947**	**.62338**	**.19644**	**2.5315**
Stddev	.00338	.275	.00208	.0178	.00186	.00488	.00124	.0110
%RSD	.67778	1.0322	.79890	.36605	.71533	.78354	.63153	.43375
#1	.49488	26.319	.25807	4.8441	.25737	.61941	.19680	2.5197
#2	.49867	26.597	.26103	4.8563	.26012	.62883	.19746	2.5335
#3	.50161	26.868	.26208	4.8792	.26091	.62190	.19506	2.5413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: LCSW 1C Acquired: 4/4/2017 20:02:49 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52080**	**.51474**	**.50922**	**.26378**	**.51752**	**.52068**	**1.2775**
Stddev	.00162	.00373	.01616	.00188	.00082	.00265	.1879
%RSD	.31066	.72553	3.1742	.71456	.15762	.50841	14.708
#1	.51893	.51093	.52235	.26161	.51742	.51779	1.0930
#2	.52179	.51490	.49117	.26489	.51675	.52126	1.2708
#3	.52168	.51839	.51414	.26485	.51838	.52299	1.4686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23792.**	**155580.**	**4779.6**
Stddev	227.	714.	77.9
%RSD	.95489	.45861	1.6295
#1	24049.	156400.	4869.3
#2	23713.	155070.	4729.4
#3	23616.	155280.	4740.2

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703165701 Acquired: 4/4/2017 20:06:19 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.12256**	**-.00013**	**.01956**	**.11351**	**-.00005**	**10.241**
Stddev	.00073	.00221	.00177	.00065	.00285	.00004	.069
%RSD	127.16	1.8017	1381.7	3.3031	2.5111	71.470	.67733
#1	-.00132	.12010	.00065	.02023	.11514	-.00010	10.283
#2	-.00051	.12435	-.00215	.01952	.11516	-.00003	10.279
#3	.00012	.12324	.00112	.01894	.11021	-.00003	10.161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00009**	**-.00029**	**.00170**	**.31048**	**2.0349**	**.00172**
Stddev	.00007	.00002	.00047	.00066	.02942	.1351	.00085
%RSD	627.03	26.001	163.97	39.093	9.4764	6.6415	49.365
#1	-.00006	.00007	-.00077	.00123	.34177	1.9609	.00124
#2	.00009	.00011	-.00025	.00246	.30632	1.9530	.00122
#3	.00000	.00007	.00016	.00141	.28337	2.1909	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1815**	**.03023**	**.00042**	**26.253**	**.00180**	**.02363**	**.00342**
Stddev	.0915	.00206	.00010	.157	.00051	.00131	.00104
%RSD	4.1940	6.8196	24.563	.59967	28.232	5.5336	30.385
#1	2.0889	.02958	.00049	26.394	.00133	.02508	.00461
#2	2.1837	.02858	.00048	26.283	.00172	.02253	.00279
#3	2.2719	.03254	.00030	26.083	.00233	.02328	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1703165701 Acquired: 4/4/2017 20:06:19 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**-.00120**	**1.8455**	**-.00055**	**.20175**	**.00342**	**-.00256**
Stddev	.00081	.00343	.0025	.00050	.00166	.01660	.00177
%RSD	54.646	286.71	.13759	91.172	.82251	485.86	69.051
#1	-.00130	.00190	1.8437	-.00070	.20340	.02111	-.00236
#2	-.00078	-.00061	1.8484	-.00097	.20178	-.01182	-.00090
#3	-.00238	-.00488	1.8444	.00001	.20008	.00096	-.00442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00083**	**.01724**	F **-.13257**
Stddev	.00060	.00001	.34498
%RSD	71.362	.07167	260.21
#1	.00016	.01724	-.27470
#2	.00105	.01723	-.38378
#3	.00129	.01726	.26076
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23729.**	**156070.**	**4535.2**
Stddev	172.	361.	99.1
%RSD	.72283	.23129	2.1855
#1	23886.	156120.	4471.5
#2	23756.	155680.	4484.7
#3	23546.	156390.	4649.4

Approved: April 05, 2017

Kristi K Buck

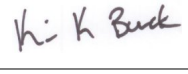
Sample Name: L1703165702 Acquired: 4/4/2017 20:09:47 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00052**	**.24876**	**.00121**	**.01112**	**.00736**	**-.00006**	**18.216**	**.00011**
Stddev	.00129	.00547	.00169	.00182	.00236	.00005	.083	.00027
%RSD	248.51	2.2007	139.68	16.409	32.099	87.372	.45453	233.15
#1	-.00096	.25498	-.00007	.01256	.00843	-.00010	18.179	.00033
#2	.00108	.24663	.00312	.00907	.00465	-.00000	18.157	-.00018
#3	.00143	.24467	.00058	.01172	.00900	-.00007	18.310	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00043**	**.00173**	**.31901**	**1.5331**	**-.00439**	**2.5313**	**.05404**
Stddev	.00019	.00091	.00135	.01975	.0769	.00486	.0364	.00185
%RSD	1637.0	211.78	77.959	6.1908	5.0150	110.66	1.4380	3.4280
#1	.00005	.00122	.00151	.31300	1.5678	-.00278	2.4893	.05197
#2	-.00019	.00063	.00051	.34106	1.5865	-.00054	2.5529	.05554
#3	.00018	-.00057	.00318	.30296	1.4450	-.00986	2.5518	.05460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**3.4888**	**.00186**	**.02140**	**-.00246**	**-.00153**	**-.00247**	**.55991**
Stddev	.00031	.0375	.00089	.00217	.00053	.00390	.00360	.00243
%RSD	199.38	1.0754	48.067	10.141	21.744	254.80	145.52	.43478
#1	-.00007	3.5217	.00279	.02121	-.00232	-.00135	-.00231	.55927
#2	.00003	3.4967	.00101	.01934	-.00201	-.00552	.00104	.55786
#3	.00052	3.4479	.00178	.02367	-.00305	.00228	-.00615	.56260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703165702 Acquired: 4/4/2017 20:09:47 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00142**	**.05685**	**.00555**	**-.00273**	**.00067**	**.00182**	**.25038**
Stddev	.00040	.00109	.01306	.00061	.00009	.00006	.11245
%RSD	28.037	1.9160	235.33	22.459	14.005	3.4375	44.912
#1	-.00149	.05809	.00279	-.00243	.00073	.00181	.25840
#2	-.00179	.05604	.01978	-.00344	.00072	.00177	.13414
#3	-.00100	.05643	-.00591	-.00233	.00056	.00189	.35861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23464.**	**157710.**	**4550.3**
Stddev	499.	1919.	30.2
%RSD	2.1254	1.2168	.66394
#1	23923.	155540.	4583.6
#2	23536.	159170.	4524.6
#3	22933.	158430.	4542.6

Approved: April 05, 2017

Sample Name: L1703165703 Acquired: 4/4/2017 20:13:19 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00127**	**.81250**	**-.00137**	**.01245**	**.04518**	**-.00002**	**41.217**
Stddev	.00046	.01136	.00212	.00276	.00061	.00002	.126
%RSD	36.065	1.3979	154.34	22.147	1.3524	117.10	.30506
#1	-.00083	.80312	.00058	.01477	.04455	-.00004	41.130
#2	-.00123	.80925	-.00107	.01317	.04520	-.00002	41.159
#3	-.00174	.82512	-.00362	.00940	.04577	.00000	41.361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00033**	**.00020**	**.00311**	**1.0895**	**1.1319**	**.00283**
Stddev	.00012	.00033	.00028	.00026	.0209	.0367	.00753
%RSD	61.352	99.558	140.00	8.2173	1.9150	3.2444	266.36
#1	.00010	.00061	-.00011	.00287	1.1131	1.1309	.01009
#2	.00032	-.00003	.00028	.00338	1.0819	1.0957	-.00494
#3	.00014	.00041	.00042	.00307	1.0734	1.1692	.00332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.2221**	**.05409**	**.00016**	**3.0905**	**.00176**	**.06071**	**.00140**
Stddev	.0498	.00153	.00006	.0314	.00076	.00729	.00318
%RSD	1.1789	2.8368	35.093	1.0165	43.221	12.012	226.50
#1	4.1985	.05325	.00013	3.0547	.00214	.06811	.00505
#2	4.1885	.05586	.00022	3.1035	.00088	.05353	-.00077
#3	4.2793	.05315	.00013	3.1134	.00224	.06050	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1703165703 Acquired: 4/4/2017 20:13:19 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00161**	**4.5926**	**-.00106**	**.11702**	**.00825**	**-.00214**
Stddev	.00412	.00027	.0200	.00039	.00062	.00808	.00115
%RSD	9964.5	17.017	.43542	36.502	.53025	97.973	53.599
#1	.00426	-.00160	4.5700	-.00135	.11647	.00000	-.00293
#2	-.00043	-.00189	4.5998	-.00062	.11689	.01615	-.00083
#3	-.00395	-.00134	4.6081	-.00120	.11769	.00859	-.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00179**	**.02283**	F **-.07472**
Stddev	.00039	.00016	.32918
%RSD	21.930	.71165	440.58
#1	.00221	.02272	-.03970
#2	.00173	.02276	.23556
#3	.00143	.02302	-.42001
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23825.**	**156130.**	**4546.4**
Stddev	48.	488.	35.2
%RSD	.20066	.31258	.77441
#1	23843.	155950.	4514.2
#2	23861.	156680.	4584.0
#3	23771.	155750.	4540.9

Approved: April 05, 2017

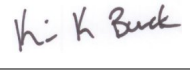
Sample Name: L1703165704 Acquired: 4/4/2017 20:16:48 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00183**	**.13053**	**.00002**	**.01402**	**.01992**	**-.00003**	**41.844**
Stddev	.00144	.00186	.00119	.00112	.00099	.00004	.084
%RSD	78.595	1.4254	6173.1	7.9919	4.9680	124.86	.20056
#1	-.00037	.13211	-.00001	.01531	.01935	.00001	41.772
#2	-.00325	.13100	.00123	.01332	.01935	-.00007	41.824
#3	-.00189	.12848	-.00116	.01343	.02106	-.00003	41.936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00005**	**.00013**	**.00183**	**.07600**	**.79831**	**.00234**
Stddev	.00003	.00037	.00041	.00057	.02734	.06647	.00243
%RSD	69.220	686.94	309.88	31.119	35.976	8.3267	103.53
#1	-.00005	-.00010	.00060	.00130	.09702	.72167	.00114
#2	-.00001	-.00022	-.00016	.00176	.04509	.84026	.00514
#3	-.00006	.00047	-.00004	.00244	.08589	.83300	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.1107**	**.00464**	**.00047**	**4.3925**	**.00154**	**.01200**	**-.00124**
Stddev	.0842	.00150	.00022	.0467	.00018	.00271	.00131
%RSD	1.3772	32.196	46.150	1.0626	11.826	22.595	106.06
#1	6.2032	.00578	.00043	4.3471	.00174	.01457	-.00203
#2	6.0387	.00520	.00028	4.3899	.00149	.00917	-.00195
#3	6.0903	.00295	.00071	4.4404	.00138	.01226	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: L1703165704 Acquired: 4/4/2017 20:16:48 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**-.00456**	**3.1006**	**-.00045**	**.12547**	**.00274**	**-.00031**
Stddev	.00253	.00560	.0095	.00029	.00076	.00955	.00219
%RSD	107.37	122.86	.30801	65.230	.60578	348.66	711.71
#1	.00054	-.00326	3.0954	-.00024	.12512	.01238	.00088
#2	-.00346	.00028	3.1116	-.00078	.12494	-.00672	.00103
#3	-.00416	-.01069	3.0948	-.00031	.12634	.00256	-.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00109**	**.00249**	F **-.08774**
Stddev	.00048	.00004	.21236
%RSD	44.552	1.4793	242.04
#1	.00119	.00249	-.19764
#2	.00056	.00246	-.22263
#3	.00151	.00253	.15705
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24290.**	**156230.**	**4614.5**
Stddev	74.	1878.	51.7
%RSD	.30284	1.2021	1.1208
#1	24308.	154140.	4567.3
#2	24210.	156770.	4669.8
#3	24354.	157770.	4606.4

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703165705 Acquired: 4/4/2017 20:20:16 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00192**	**.12671**	**-.00125**	**.01013**	**.02903**	**-.00012**	**36.467**	**.00023**
Stddev	.00062	.00064	.00088	.00125	.00074	.00002	.314	.00006
%RSD	32.286	.50453	70.126	12.353	2.5459	20.074	.86033	27.174
#1	-.00184	.12666	-.00203	.01132	.02961	-.00009	36.199	.00028
#2	-.00135	.12610	-.00030	.00882	.02819	-.00013	36.390	.00025
#3	-.00258	.12738	-.00141	.01024	.02928	-.00013	36.812	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00045**	**-.00005**	**.06515**	**.64613**	**.01024**	**4.3608**	**.00065**
Stddev	.00032	.00018	.00136	.01069	.09750	.00221	.1324	.00035
%RSD	279.94	39.475	2619.9	16.408	15.090	21.550	3.0365	53.544
#1	-.00046	-.00026	.00064	.05651	.73845	.01214	4.2486	.00034
#2	.00018	-.00050	-.00162	.06184	.54416	.00782	4.3270	.00102
#3	-.00007	-.00060	.00082	.07710	.65577	.01077	4.5069	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**3.8969**	**.00106**	**.01162**	**-.00080**	**-.00382**	**.00183**	**3.1283**
Stddev	.00045	.0187	.00071	.00239	.00174	.00094	.00235	.0056
%RSD	100.25	.47890	67.021	20.597	217.15	24.712	128.51	.17969
#1	.00097	3.8833	.00037	.00888	.00101	-.00474	.00269	3.1299
#2	.00025	3.9182	.00179	.01270	-.00246	-.00285	-.00083	3.1330
#3	.00014	3.8892	.00101	.01328	-.00096	-.00386	.00362	3.1221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1703165705 Acquired: 4/4/2017 20:20:16 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.09604**	**-.00396**	**-.00111**	**.00020**	**.00170**	**-.02685**
Stddev	.00059	.00089	.00659	.00239	.00044	.00008	.37093
%RSD	153.57	.92684	166.33	215.73	220.21	4.9585	1381.5
#1	-.00103	.09587	-.00740	-.00014	.00063	.00163	-.45165
#2	.00011	.09701	-.00813	-.00384	-.00025	.00167	.23297
#3	-.00023	.09526	.00364	.00064	.00021	.00179	.13813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24404.**	**158260.**	**4805.3**
Stddev	74.	2017.	125.4
%RSD	.30363	1.2748	2.6088
#1	24331.	159810.	4664.7
#2	24479.	159000.	4905.6
#3	24401.	155980.	4845.5

Approved: April 05, 2017

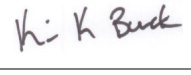
Sample Name: L1703165801 Acquired: 4/4/2017 20:23:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00157**	**.05178**	**-.00045**	**.05892**	**.21682**	**-.00004**	**32.007**	**.00023**
Stddev	.00086	.00194	.00165	.00060	.00299	.00003	.262	.00013
%RSD	54.788	3.7432	362.97	1.0252	1.3786	85.909	.81821	56.910
#1	-.00132	.05120	-.00149	.05962	.21362	-.00002	31.736	.00035
#2	-.00085	.05020	-.00132	.05858	.21955	-.00002	32.026	.00024
#3	-.00252	.05394	.00144	.05856	.21727	-.00008	32.259	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00023**	**.00202**	**.52428**	**1.2502**	**.00892**	**5.9364**	**.30615**
Stddev	.00015	.00041	.00081	.00697	.1880	.00208	.0362	.00307
%RSD	112.63	177.87	40.151	1.3287	15.040	23.372	.60967	1.0013
#1	.00004	-.00027	.00158	.52169	1.3874	.01072	5.9776	.30957
#2	-.00022	.00020	.00153	.51898	1.3274	.00939	5.9096	.30521
#3	-.00022	-.00062	.00296	.53217	1.0359	.00664	5.9220	.30366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00470**	**90.049**	**-.00001**	**.01801**	**-.00245**	**.00112**	**-.00093**	**3.6577**
Stddev	.00015	.465	.00088	.00318	.00320	.00275	.00427	.0294
%RSD	3.1616	.51587	6607.8	17.649	130.73	244.78	457.57	.80289
#1	.00483	89.521	-.00047	.01573	-.00436	-.00153	.00373	3.6784
#2	.00454	90.396	.00100	.01665	.00125	.00396	-.00187	3.6241
#3	.00471	90.230	-.00057	.02164	-.00423	.00094	-.00466	3.6705
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703165801 Acquired: 4/4/2017 20:23:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	**.55934**	**.00064**	**-.00133**	**.00085**	**.00123**	**.06000**
Stddev	.00016	.00378	.00356	.00204	.00021	.00017	.11996
%RSD	19.925	.67596	555.61	153.44	25.119	13.646	199.95
#1	-.00095	.55498	-.00097	.00055	.00076	.00136	-.07844
#2	-.00087	.56133	.00473	-.00351	.00110	.00104	.12519
#3	-.00063	.56171	-.00184	-.00103	.00070	.00130	.13325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23167.**	**151700.**	**4590.2**
Stddev	368.	712.	61.0
%RSD	1.5904	.46938	1.3298
#1	23349.	151480.	4572.3
#2	23408.	152490.	4540.2
#3	22743.	151120.	4658.2

Approved: April 05, 2017

Sample Name: L1703165801PS Acquired: 4/4/2017 20:27:13 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608730-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20848**	**5.1693**	**.20054**	**1.0608**	**.72057**	**.02627**	**34.309**	**.02491**
Stddev	.00160	.0164	.00084	.0048	.00215	.00009	.159	.00015
%RSD	.76978	.31797	.41866	.45218	.29778	.34265	.46329	.62193
#1	.20983	5.1820	.19963	1.0597	.71824	.02629	34.144	.02508
#2	.20671	5.1508	.20072	1.0567	.72247	.02618	34.461	.02477
#3	.20891	5.1752	.20128	1.0661	.72100	.02635	34.322	.02488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10135**	**.26290**	**.25325**	**2.5119**	**27.437**	**.52751**	**10.334**	**.53076**
Stddev	.00068	.00106	.00189	.0196	.034	.00453	.106	.00499
%RSD	.66740	.40261	.74475	.78138	.12535	.85930	1.0218	.94098
#1	.10072	.26251	.25223	2.5319	27.477	.52779	10.244	.52504
#2	.10127	.26210	.25210	2.5112	27.424	.52284	10.307	.53305
#3	.10207	.26410	.25543	2.4926	27.412	.53190	10.450	.53421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50525**	**108.15**	**.25499**	**4.9546**	**.25268**	**.62231**	**.19811**	**5.8492**
Stddev	.00219	.53	.00129	.0228	.00035	.00655	.00431	.0258
%RSD	.43353	.48935	.50472	.45974	.13723	1.0531	2.1758	.44123
#1	.50349	107.71	.25388	4.9414	.25268	.62077	.20233	5.8277
#2	.50456	108.74	.25468	4.9416	.25233	.61665	.19372	5.8422
#3	.50770	108.01	.25640	4.9809	.25303	.62949	.19827	5.8778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1703165801PS Acquired: 4/4/2017 20:27:13 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608730-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51599**	**1.0186**	**.52194**	**.25839**	**.52460**	**.51800**	**.52712**
Stddev	.00206	.0021	.01438	.00277	.00122	.00220	.29399
%RSD	.39903	.20543	2.7543	1.0737	.23249	.42515	55.772
#1	.51458	1.0167	.51317	.25519	.52475	.51629	.19968
#2	.51503	1.0183	.53853	.25994	.52331	.51723	.76839
#3	.51835	1.0209	.51412	.26004	.52574	.52049	.61330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23086.**	**150600.**	**4576.6**
Stddev	286.	625.	53.5
%RSD	1.2388	.41486	1.1697
#1	23296.	150630.	4515.4
#2	23202.	151210.	4599.3
#3	22760.	149970.	4615.0

Approved: April 05, 2017

Sample Name: L1703165801SDL Acquired: 4/4/2017 20:30:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608730-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00595**	**.00010**	**.01408**	**.03991**	**-.00002**	**6.2616**
Stddev	.00296	.00744	.00096	.00054	.00039	.00003	.0472
%RSD	1623.4	125.03	1006.9	3.8127	.96742	173.89	.75422
#1	.00221	-.00247	-.00076	.01428	.03973	.00002	6.2688
#2	-.00321	.00868	.00113	.01448	.03965	-.00004	6.2112
#3	.00155	.01165	-.00008	.01347	.04036	-.00003	6.3048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**-.00007**	**-.00086**	**.00088**	**.08521**	**.39614**	**-.00917**
Stddev	.00019	.00024	.00099	.00122	.03722	.09114	.00368
%RSD	120.95	325.65	115.54	138.28	43.678	23.008	40.098
#1	-.00001	-.00001	-.00040	-.00051	.11964	.48703	-.01151
#2	-.00009	-.00034	-.00018	.00139	.04572	.39664	-.00493
#3	-.00038	.00013	-.00200	.00176	.09026	.30474	-.01107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2964**	**.05763**	**.00053**	**18.060**	**.00064**	**.01176**	**.00023**
Stddev	.0272	.00134	.00028	.113	.00095	.00476	.00291
%RSD	2.0979	2.3199	52.185	.62719	147.37	40.460	1292.9
#1	1.3204	.05758	.00046	18.103	-.00033	.00632	-.00303
#2	1.3018	.05631	.00084	17.931	.00069	.01383	.00112
#3	1.2669	.05899	.00030	18.145	.00157	.01513	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703165801SDL Acquired: 4/4/2017 20:30:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608730-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**-.00419**	**.72304**	**-.00040**	**.10834**	**.00629**	**.00287**
Stddev	.00250	.00171	.00233	.00039	.00047	.00878	.00202
%RSD	129.19	40.831	.32224	97.662	.43309	139.53	70.439
#1	-.00198	-.00594	.72280	-.00043	.10847	.01143	.00516
#2	-.00441	-.00252	.72084	-.00077	.10782	-.00384	.00134
#3	.00059	-.00412	.72548	.00001	.10874	.01128	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00024**	**.00084**	F **-.20008**
Stddev	.00078	.00008	.24732
%RSD	321.72	10.044	123.61
#1	-.00008	.00094	.04161
#2	-.00109	.00078	-.18916
#3	.00044	.00081	-.45268
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23727.**	**155650.**	**4647.9**
Stddev	114.	1178.	105.3
%RSD	.47912	.75711	2.2648
#1	23848.	156920.	4642.4
#2	23623.	154590.	4755.8
#3	23709.	155430.	4545.5

Approved: April 05, 2017

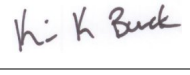
Sample Name: CCV Acquired: 4/4/2017 20:34:03 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42077**	**10.423**	**.40123**	**.52225**	**1.0424**	**.05244**	**10.515**
Stddev	.00158	.053	.00463	.00619	.0032	.00010	.104
%RSD	.37453	.51199	1.1530	1.1847	.30481	.18346	.98550
#1	.42252	10.383	.39822	.51515	1.0390	.05233	10.451
#2	.41945	10.403	.40656	.52508	1.0428	.05246	10.459
#3	.42035	10.484	.39892	.52651	1.0453	.05252	10.635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05059**	**.20247**	**.52023**	**.50364**	**4.0171**	**52.937**	**1.0615**
Stddev	.00033	.00069	.00045	.00195	.0368	.338	.0046
%RSD	.65132	.33835	.08562	.38682	.91688	.63846	.43584
#1	.05031	.20219	.52075	.50244	4.0316	52.561	1.0625
#2	.05095	.20325	.52001	.50589	3.9753	53.034	1.0565
#3	.05052	.20197	.51994	.50260	4.0445	53.216	1.0656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.217**	**.50770**	**1.0029**	**53.734**	**.50616**	**9.8754**	**.50258**
Stddev	.083	.00229	.0021	.250	.00007	.0236	.00201
%RSD	.81266	.45134	.21340	.46438	.01370	.23943	.39955
#1	10.136	.50558	1.0022	53.499	.50609	9.8523	.50236
#2	10.302	.51013	1.0054	53.707	.50623	9.8995	.50468
#3	10.215	.50739	1.0013	53.996	.50615	9.8745	.50068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017



Sample Name: CCV Acquired: 4/4/2017 20:34:03 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2369**	**.40911**	**4.9949**	**1.0163**	**1.0277**	**1.0333**	**.52253**
Stddev	.0045	.00685	.0141	.0019	.0031	.0089	.00096
%RSD	.36243	1.6751	.28142	.19121	.30211	.86574	.18350
#1	1.2372	.40433	4.9797	1.0145	1.0246	1.0435	.52207
#2	1.2413	.41696	5.0074	1.0184	1.0278	1.0265	.52189
#3	1.2323	.40604	4.9977	1.0159	1.0308	1.0301	.52363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0330**	**1.0235**	F **1.1241**
Stddev	.0030	.0029	.1238
%RSD	.28989	.28436	11.010
#1	1.0297	1.0227	.99692
#2	1.0336	1.0268	1.1312
#3	1.0356	1.0211	1.2441
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23343.**	**151830.**	**4550.3**
Stddev	468.	1322.	41.4
%RSD	2.0052	.87058	.91076
#1	23221.	150620.	4525.5
#2	22948.	153240.	4598.1
#3	23860.	151620.	4527.3

Approved: April 05, 2017

Sample Name: CCB Acquired: 4/4/2017 20:37:23 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**-.00353**	**.00054**	**.00168**	**-.00281**	**-.00004**	**.04647**	**-.00021**
Stddev	.00044	.00111	.00075	.00107	.00260	.00001	.00202	.00013
%RSD	87.371	31.454	138.58	63.655	92.792	20.229	4.3406	62.261
#1	-.00085	-.00225	-.00002	.00258	-.00184	-.00005	.04422	-.00033
#2	-.00001	-.00416	.00025	.00198	-.00576	-.00004	.04710	-.00022
#3	-.00066	-.00418	.00140	.00050	-.00082	-.00003	.04810	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00065**	**.00008**	**-.01043**	**.02529**	**.00135**	**.07684**	**.00106**
Stddev	.00012	.00069	.00050	.03797	.10329	.00464	.04696	.00166
%RSD	98.512	106.80	622.06	363.87	408.40	343.23	61.119	155.96
#1	-.00025	-.00140	.00051	.02545	.05930	-.00049	.12209	.00251
#2	-.00007	-.00004	-.00047	-.05019	-.09071	.00663	.08009	-.00075
#3	-.00003	-.00050	.00020	-.00656	.10729	-.00209	.02833	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.12276**	**.00084**	**.00303**	**.00042**	**-.00395**	**-.00287**	**.02877**
Stddev	.00040	.02162	.00039	.00601	.00056	.00398	.00332	.04689
%RSD	323.91	17.615	46.780	198.07	134.38	100.73	115.47	162.97
#1	.00056	.14610	.00050	.00893	-.00021	-.00636	-.00670	.00110
#2	.00002	.11876	.00076	-.00308	.00088	.00064	-.00078	.08292
#3	-.00021	.10341	.00127	.00325	.00058	-.00613	-.00114	.00231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: CCB Acquired: 4/4/2017 20:37:23 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**-.00026**	**.00350**	**-.00098**	**.00006**	**-.00008**	**.02876**
Stddev	.00034	.00019	.00884	.00206	.00015	.00009	.20968
%RSD	80.460	75.799	252.80	209.33	261.27	105.33	729.16
#1	.00034	-.00011	-.00488	.00069	-.00011	-.00000	.04290
#2	.00079	-.00018	.01273	-.00329	.00017	-.00018	-.18764
#3	.00013	-.00048	.00264	-.00035	.00011	-.00007	.23101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24627.**	**155890.**	**4664.9**
Stddev	220.	1157.	35.4
%RSD	.89232	.74224	.75783
#1	24429.	155090.	4656.6
#2	24863.	155360.	4703.6
#3	24588.	157210.	4634.4

Approved: April 05, 2017

Sample Name: L1703165802 Acquired: 4/4/2017 20:40:53 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**.42932**	**-.00104**	**.02287**	**.04240**	**.00001**	**33.557**	**.00001**
Stddev	.00041	.01349	.00216	.00101	.00305	.00001	.296	.00011
%RSD	37.959	3.1413	208.51	4.4260	7.1861	121.25	.88314	2055.8
#1	-.00063	.44216	.00121	.02404	.04098	.00000	33.853	-.00011
#2	-.00120	.43055	-.00310	.02223	.04590	.00003	33.260	.00001
#3	-.00143	.41527	-.00121	.02235	.04032	.00000	33.558	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00005**	**.00173**	**.38612**	**.69118**	**.00526**	**4.3551**	**.01580**
Stddev	.00029	.00066	.00054	.02210	.15108	.00229	.1406	.00328
%RSD	128.89	1240.7	31.425	5.7234	21.859	43.447	3.2283	20.725
#1	.00012	.00064	.00190	.40115	.64603	.00789	4.4906	.01308
#2	.00000	.00018	.00112	.39648	.85969	.00380	4.3648	.01489
#3	.00055	-.00066	.00217	.36075	.56782	.00409	4.2099	.01944
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**20.280**	**.00170**	**.02373**	**.00030**	**-.00318**	**-.00316**	**3.2171**
Stddev	.00030	.035	.00026	.00518	.00110	.00468	.00173	.0049
%RSD	70.503	.17501	15.345	21.831	367.17	146.92	54.628	.15345
#1	.00063	20.314	.00199	.02031	-.00061	-.00285	-.00248	3.2226
#2	.00008	20.244	.00149	.02969	.00153	.00132	-.00188	3.2158
#3	.00055	20.283	.00162	.02120	-.00001	-.00802	-.00513	3.2130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1703165802 Acquired: 4/4/2017 20:40:53 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00100**	**.19357**	**.01343**	**-.00162**	**.00055**	**.00220**	**.18837**
Stddev	.00065	.00075	.01083	.00221	.00048	.00011	.33720
%RSD	64.387	.38742	80.626	136.60	88.323	4.8193	179.01
#1	-.00100	.19413	.02408	-.00276	.00028	.00225	-.12624
#2	-.00166	.19386	.01377	-.00303	.00111	.00228	.14700
#3	-.00036	.19272	.00243	.00093	.00026	.00208	.54434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24378.**	**157570.**	**4791.4**
Stddev	103.	3581.	26.8
%RSD	.42294	2.2725	.55984
#1	24268.	155320.	4804.7
#2	24472.	155690.	4760.5
#3	24394.	161700.	4808.9

Approved: April 05, 2017

Sample Name: L1703166201 Acquired: 4/4/2017 20:44:24 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.08528**	**.00852**	**.03861**	**.21306**	**-.00004**	**77.177**
Stddev	.00030	.00343	.00253	.00097	.00172	.00006	.413
%RSD	2999.2	4.0190	29.721	2.5107	.80581	139.75	.53578
#1	.00033	.08383	.01144	.03969	.21114	-.00006	76.770
#2	-.00025	.08282	.00703	.03782	.21446	.00002	77.164
#3	-.00011	.08919	.00708	.03832	.21358	-.00010	77.597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00291**	**-.00020**	**.10403**	**17.821**	**1.6980**	**.01169**
Stddev	.00008	.00040	.00063	.00191	.151	.1533	.00669
%RSD	19.867	13.789	315.13	1.8341	.84819	9.0263	57.206
#1	.00036	.00325	-.00081	.10617	17.646	1.7692	.01920
#2	.00051	.00301	-.00024	.10249	17.907	1.8027	.00951
#3	.00038	.00247	.00045	.10344	17.909	1.5221	.00637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.762**	**.41177**	**.00050**	**13.051**	**.00200**	**.17771**	**.01547**
Stddev	.134	.00371	.00042	.075	.00115	.00427	.00221
%RSD	.75223	.90116	85.094	.57491	57.387	2.4042	14.311
#1	17.631	.40938	.00029	12.992	.00227	.18226	.01479
#2	17.757	.40990	.00022	13.136	.00074	.17378	.01794
#3	17.898	.41605	.00099	13.025	.00299	.17708	.01367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1703166201 Acquired: 4/4/2017 20:44:24 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**-.00378**	**7.2870**	**.00044**	**.62167**	**.00146**	**-.00014**
Stddev	.00327	.00379	.0305	.00035	.00218	.00744	.00192
%RSD	138.66	100.28	.41905	79.854	.35088	508.46	1336.6
#1	-.00422	-.00236	7.3204	.00028	.61938	.00674	.00020
#2	.00142	-.00808	7.2799	.00020	.62372	-.00705	-.00221
#3	-.00427	-.00091	7.2606	.00084	.62190	.00470	.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00017**	**.32568**	F **-1.0399**
Stddev	.00060	.00134	.4181
%RSD	344.52	.41265	40.202
#1	-.00058	.32695	-.59215
#2	-.00045	.32582	-1.4200
#3	.00051	.32427	-1.1076
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23176.**	**155680.**	**4637.4**
Stddev	300.	1421.	29.6
%RSD	1.2959	.91270	.63778
#1	23405.	156930.	4652.6
#2	22836.	155970.	4656.2
#3	23288.	154140.	4603.3

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703166202 Acquired: 4/4/2017 20:47:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00248**	**.00457**	**.00029**	**.02856**	**.12198**	**-.00007**	**62.608**	**.00021**
Stddev	.00222	.00453	.00136	.00082	.00231	.00001	.584	.00009
%RSD	89.412	99.110	463.64	2.8667	1.8954	8.4489	.93200	46.187
#1	-.00135	.00919	.00085	.02885	.12380	-.00008	62.843	.00021
#2	-.00105	.00013	-.00126	.02763	.12275	-.00007	63.038	.00011
#3	-.00503	.00439	.00129	.02919	.11938	-.00007	61.944	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00183**	**-.00036**	**.00170**	**.01630**	**1.3524**	**.00567**	**13.770**	**.24407**
Stddev	.00033	.00025	.00029	.01578	.1321	.00261	.131	.00475
%RSD	18.015	69.356	16.975	96.801	9.7693	46.073	.95363	1.9482
#1	.00145	-.00017	.00137	-.00046	1.2300	.00865	13.793	.24682
#2	.00203	-.00028	.00183	.01849	1.3347	.00456	13.888	.24681
#3	.00201	-.00065	.00191	.03088	1.4925	.00380	13.629	.23858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**11.328**	**.00236**	**.00583**	**-.00186**	**-.00093**	**-.00224**	**5.0802**
Stddev	.00047	.131	.00067	.00319	.00167	.00132	.00406	.0285
%RSD	98.463	1.1575	28.556	54.620	90.134	141.44	181.00	.56191
#1	.00100	11.356	.00287	.00445	-.00378	-.00186	-.00682	5.0937
#2	.00009	11.444	.00261	.00357	-.00103	.00058	-.00079	5.0995
#3	.00035	11.186	.00160	.00948	-.00076	-.00151	.00089	5.0474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

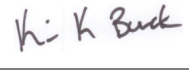
Approved: April 05, 2017

Sample Name: L1703166202 Acquired: 4/4/2017 20:47:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00101**	**.49743**	**-.00386**	**-.00164**	**.00026**	**.01454**	**-.03665**
Stddev	.00031	.00362	.01223	.00058	.00035	.00005	.26667
%RSD	30.583	.72863	317.27	35.596	136.56	.35419	727.62
#1	-.00096	.50043	.00209	-.00226	-.00014	.01453	.10399
#2	-.00135	.49846	-.01792	-.00109	.00038	.01459	-.34419
#3	-.00074	.49340	.00427	-.00158	.00054	.01449	.13025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23096.**	**154340.**	**4664.0**
Stddev	260.	1557.	19.9
%RSD	1.1263	1.0087	.42627
#1	23334.	155950.	4641.2
#2	23138.	154220.	4673.7
#3	22818.	152850.	4677.2

Approved: April 05, 2017



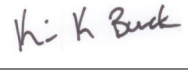
Sample Name: L1703166203 Acquired: 4/4/2017 20:51:19 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**.08009**	**.00088**	**.02096**	**.07526**	**.00001**	**57.386**	**.00009**
Stddev	.00058	.00696	.00059	.00108	.00233	.00007	.276	.00006
%RSD	44.293	8.6879	67.258	5.1453	3.1002	742.31	.48076	65.545
#1	-.00101	.07218	.00128	.02142	.07332	.00001	57.440	.00003
#2	-.00199	.08284	.00020	.02173	.07461	.00007	57.087	.00014
#3	-.00096	.08526	.00115	.01973	.07785	-.00006	57.631	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00040**	**.00339**	**.10725**	**1.3166**	**.00113**	**8.8665**	**.01491**
Stddev	.00019	.00020	.00018	.01970	.1032	.00318	.0629	.00473
%RSD	120.68	49.301	5.3946	18.366	7.8402	280.99	.70978	31.751
#1	-.00022	.00035	.00325	.12265	1.3727	-.00213	8.9208	.01086
#2	-.00031	.00062	.00360	.11405	1.3797	.00423	8.7975	.01376
#3	.00006	.00023	.00332	.08506	1.1975	.00129	8.8813	.02011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00052**	**32.970**	**.00111**	**.01290**	**.00113**	**-.00260**	**-.00211**	**3.6218**
Stddev	.00015	.100	.00055	.00142	.00363	.00498	.00102	.0085
%RSD	28.156	.30460	49.619	11.020	321.17	191.93	48.313	.23380
#1	.00046	33.002	.00086	.01354	-.00289	-.00148	-.00313	3.6264
#2	.00041	32.858	.00073	.01127	.00418	-.00804	-.00110	3.6121
#3	.00068	33.052	.00174	.01389	.00210	.00173	-.00209	3.6270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703166203 Acquired: 4/4/2017 20:51:19 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	**.19777**	**-.00726**	**-.00395**	**.00067**	**.01437**	**-.00679**
Stddev	.00038	.00109	.01117	.00117	.00012	.00010	.07166
%RSD	41.757	.55152	153.84	29.689	17.835	.71953	1056.1
#1	-.00048	.19667	-.01992	-.00267	.00073	.01428	.07076
#2	-.00122	.19779	.00124	-.00420	.00074	.01436	-.07056
#3	-.00101	.19885	-.00311	-.00497	.00053	.01448	-.02055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23128.**	**148270.**	**4406.4**
Stddev	278.	888.	9.0
%RSD	1.2009	.59916	.20529
#1	22810.	149000.	4409.9
#2	23324.	148520.	4413.3
#3	23251.	147280.	4396.2

Approved: April 05, 2017

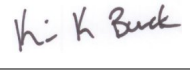
Sample Name: L1703166204 Acquired: 4/4/2017 20:54:47 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.01127**	**-.00078**	**.20656**	**.33399**	**-.00011**	**20.559**
Stddev	.00011	.00303	.00095	.00068	.00063	.00003	.038
%RSD	261.94	26.923	122.42	.33066	.18765	30.471	.18339
#1	.00007	.00791	.00008	.20617	.33443	-.00007	20.539
#2	.00013	.01382	-.00180	.20734	.33328	-.00014	20.535
#3	-.00008	.01209	-.00061	.20615	.33427	-.00010	20.602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**-.00007**	**-.00015**	**.00417**	**.16966**	**1.5782**	**.01027**
Stddev	.00037	.00012	.00103	.00124	.05111	.0645	.00718
%RSD	351.16	173.47	680.31	29.669	30.123	4.0898	69.945
#1	-.00013	.00002	.00058	.00531	.14541	1.6526	.00551
#2	-.00046	-.00020	.00030	.00433	.13519	1.5444	.01853
#3	.00027	-.00002	-.00133	.00286	.22838	1.5376	.00677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.5972**	**.03315**	**.00000**	**261.54**	**.00057**	**.04773**	**-.00062**
Stddev	.0717	.00259	.00042	.13	.00039	.00351	.00351
%RSD	1.5606	7.8121	10725.	.05043	67.842	7.3522	571.17
#1	4.5318	.03026	-.00041	261.55	.00030	.05060	.00343
#2	4.5858	.03394	.00043	261.41	.00039	.04382	-.00233
#3	4.6739	.03526	-.00001	261.67	.00101	.04876	-.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: L1703166204 Acquired: 4/4/2017 20:54:47 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00518**	**-.00234**	**3.2401**	**-.00150**	**.56106**	**-.00030**	**.00014**
Stddev	.00315	.00504	.0083	.00066	.00175	.01113	.00072
%RSD	60.724	215.71	.25601	44.003	.31227	3751.8	520.43
#1	-.00173	-.00690	3.2312	-.00193	.56014	.00487	-.00067
#2	-.00789	.00307	3.2476	-.00183	.55997	.00731	.00073
#3	-.00593	-.00317	3.2415	-.00074	.56308	-.01307	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00111**	**.00189**	F **-.11314**
Stddev	.00064	.00010	.07056
%RSD	57.749	5.0972	62.360
#1	.00140	.00199	-.05841
#2	.00038	.00190	-.08825
#3	.00156	.00179	-.19277
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23308.**	**147680.**	**4638.6**
Stddev	147.	1213.	89.9
%RSD	.63079	.82144	1.9378
#1	23261.	148500.	4554.7
#2	23191.	146280.	4733.5
#3	23473.	148240.	4627.6

Approved: April 05, 2017

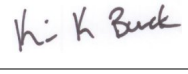
Sample Name: L1703166205 Acquired: 4/4/2017 20:58:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**.01148**	**-.00036**	**.04088**	**.02101**	**-.00015**	**2.2314**
Stddev	.00120	.00568	.00167	.00186	.00057	.00002	.0321
%RSD	76.004	49.521	463.23	4.5488	2.7218	16.095	1.4388
#1	-.00096	.01212	-.00226	.04123	.02062	-.00013	2.2333
#2	-.00082	.01682	.00035	.04253	.02075	-.00018	2.1984
#3	-.00297	.00550	.00084	.03886	.02167	-.00014	2.2625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**-.00000**	**.00011**	**.01652**	**-.01267**	**.58357**	**.00500**
Stddev	.00016	.00016	.00023	.00121	.00830	.02765	.00209
%RSD	117.82	4615.2	205.24	7.3060	65.472	4.7374	41.776
#1	.00029	-.00018	.00010	.01516	-.02095	.57093	.00687
#2	-.00002	.00010	.00035	.01745	-.01271	.56450	.00540
#3	.00014	.00007	-.00011	.01695	-.00436	.61527	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40173**	**.00344**	**.00272**	**185.43**	**.00173**	**-.00172**	**.00488**
Stddev	.09839	.00252	.00041	.40	.00038	.00550	.00114
%RSD	24.492	73.381	15.187	.21818	21.785	319.69	23.299
#1	.49156	.00116	.00313	185.37	.00212	.00316	.00389
#2	.29657	.00615	.00272	185.87	.00137	-.00769	.00612
#3	.41706	.00301	.00230	185.07	.00170	-.00063	.00462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: L1703166205 Acquired: 4/4/2017 20:58:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**-.00445**	**1.5690**	**-.00110**	**.03598**	**-.00299**	**-.00271**
Stddev	.00344	.00478	.0094	.00035	.00073	.01043	.00094
%RSD	473.83	107.43	.60114	31.331	2.0351	349.29	34.557
#1	-.00275	.00103	1.5588	-.00126	.03582	.00886	-.00339
#2	.00081	-.00663	1.5708	-.00071	.03678	-.01079	-.00164
#3	.00412	-.00776	1.5775	-.00134	.03535	-.00703	-.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00063**	**.02264**	F **-.15491**
Stddev	.00087	.00011	.24143
%RSD	137.66	.48549	155.85
#1	.00103	.02251	-.40222
#2	.00122	.02270	-.14267
#3	-.00036	.02271	.08016
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23692.**	**157150.**	**4800.1**
Stddev	89.	468.	15.5
%RSD	.37764	.29805	.32364
#1	23672.	156620.	4804.3
#2	23790.	157530.	4782.9
#3	23615.	157290.	4813.1

Approved: April 05, 2017

Sample Name: L1703166206 Acquired: 4/4/2017 21:01:43 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00102**	**-.00253**	**-.00176**	**.02240**	**.14731**	**-.00001**	**93.641**
Stddev	.00145	.00245	.00102	.00087	.00167	.00003	.796
%RSD	143.33	96.649	58.241	3.8836	1.1319	214.48	.84987
#1	-.00165	-.00029	-.00180	.02203	.14542	-.00004	92.722
#2	.00065	-.00215	-.00275	.02178	.14793	-.00002	94.112
#3	-.00204	-.00514	-.00071	.02339	.14858	.00002	94.089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00043**	**.00010**	**.01873**	**.00288**	**.87435**	**.00403**
Stddev	.00003	.00015	.00047	.00052	.02491	.09201	.00757
%RSD	30.091	34.850	449.54	2.7708	864.37	10.524	187.73
#1	.00008	-.00037	-.00017	.01860	-.02563	.89652	-.00410
#2	.00014	-.00060	.00065	.01930	.01389	.95324	.01088
#3	.00011	-.00032	-.00017	.01829	.02039	.77327	.00532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.295**	**.00045**	**.00020**	**26.299**	**-.00009**	**-.01410**	**-.00236**
Stddev	.170	.00030	.00026	.128	.00056	.00196	.00165
%RSD	1.2772	66.863	129.72	.48694	618.87	13.868	69.950
#1	13.145	.00072	-.00010	26.151	-.00066	-.01229	-.00108
#2	13.479	.00013	.00038	26.380	-.00006	-.01384	-.00422
#3	13.260	.00050	.00033	26.365	.00045	-.01617	-.00178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017
Kri K Buck

Sample Name: L1703166206 Acquired: 4/4/2017 21:01:43 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00303**	**-.00017**	**4.2507**	**-.00131**	**.44626**	**-.00398**	**-.00005**
Stddev	.00268	.00312	.0146	.00007	.00121	.00656	.00334
%RSD	88.394	1811.9	.34313	5.6808	.27093	165.05	7095.8
#1	-.00605	-.00352	4.2671	-.00136	.44491	-.00659	-.00389
#2	-.00095	.00266	4.2393	-.00135	.44724	-.00884	.00160
#3	-.00208	.00035	4.2455	-.00122	.44663	.00349	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00091**	**.04012**	F **-.31611**
Stddev	.00012	.00025	.22751
%RSD	13.480	.63439	71.973
#1	.00079	.04038	-.06151
#2	.00103	.04012	-.38732
#3	.00091	.03987	-.49950
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23467.**	**152140.**	**4721.7**
Stddev	165.	319.	36.2
%RSD	.70199	.20961	.76721
#1	23302.	152400.	4748.4
#2	23631.	151780.	4736.3
#3	23467.	152230.	4680.5

Approved: April 05, 2017

Sample Name: L1703166207 Acquired: 4/4/2017 21:05:11 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.16086**	**-.00201**	**.01249**	**.04602**	**-.00004**	**15.625**	**.00029**
Stddev	.00086	.00308	.00037	.00143	.00266	.00004	.074	.00009
%RSD	636.64	1.9136	18.545	11.487	5.7715	99.433	.47251	29.998
#1	.00060	.15732	-.00212	.01183	.04879	.00001	15.589	.00023
#2	-.00086	.16289	-.00160	.01413	.04576	-.00006	15.575	.00039
#3	.00066	.16238	-.00233	.01150	.04350	-.00007	15.710	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**-.00003**	**.00319**	**.15219**	**.59630**	**-.00398**	**4.8777**	**.01180**
Stddev	.00007	.00077	.00056	.02677	.08331	.00427	.1038	.00247
%RSD	37.232	2823.8	17.519	17.591	13.972	107.29	2.1273	20.963
#1	-.00023	-.00086	.00344	.14520	.50418	-.00381	4.7798	.00894
#2	-.00010	.00066	.00255	.18177	.61834	-.00834	4.8669	.01326
#3	-.00020	.00012	.00359	.12961	.66638	.00020	4.9864	.01320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**4.4566**	**.00246**	**.01946**	**-.00015**	**-.00069**	**.00206**	**3.0394**
Stddev	.00042	.0049	.00018	.00344	.00239	.00367	.00335	.0099
%RSD	275.19	.10895	7.4176	17.696	1633.3	528.76	162.89	.32448
#1	.00036	4.4554	.00257	.02280	-.00195	.00001	.00590	3.0507
#2	.00042	4.4620	.00225	.01965	-.00105	-.00467	-.00023	3.0327
#3	-.00033	4.4525	.00256	.01592	.00256	.00257	.00050	3.0348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703166207 Acquired: 4/4/2017 21:05:11 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00061**	**.06710**	**.00183**	**-.00457**	**.00057**	**.00878**	**.04675**
Stddev	.00022	.00014	.00836	.00143	.00053	.00006	.18496
%RSD	35.735	.21242	456.41	31.310	92.210	.71419	395.61
#1	-.00037	.06723	-.00373	-.00418	.00108	.00874	-.12241
#2	-.00067	.06695	-.00222	-.00337	.00003	.00876	.24425
#3	-.00079	.06713	.01145	-.00615	.00062	.00885	.01842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23244.**	**152020.**	**4613.5**
Stddev	223.	600.	61.3
%RSD	.95847	.39500	1.3291
#1	23003.	152700.	4669.4
#2	23443.	151550.	4623.1
#3	23286.	151810.	4547.9

Approved: April 05, 2017

Sample Name: L1703166208 Acquired: 4/4/2017 21:08:39 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00208	.00176	.00109	.02172	.06427	-.00003	80.040
Stddev	.00096	.00298	.00167	.00049	.00137	.00002	.352
%RSD	46.298	169.41	152.89	2.2443	2.1380	51.538	.43999
#1	-.00253	-.00165	.00289	.02178	.06554	-.00001	80.123
#2	-.00098	.00305	-.00042	.02217	.06281	-.00004	80.343
#3	-.00274	.00388	.00081	.02120	.06446	-.00004	79.654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	-.00012	.00010	.01173	.03711	1.3095	-.00299
Stddev	.00011	.00030	.00086	.00070	.02939	.0366	.00332
%RSD	48.036	256.34	895.83	6.0039	79.206	2.7934	111.34
#1	.00037	-.00040	.00104	.01112	.00317	1.3253	-.00252
#2	.00016	.00020	-.00066	.01158	.05374	1.2677	.00008
#3	.00018	-.00015	-.00009	.01250	.05441	1.3355	-.00652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.4754	.00585	.00113	11.071	.00190	.00247	.00149
Stddev	.0821	.00666	.00026	.021	.00063	.00572	.00229
%RSD	1.2681	113.79	23.162	.19188	33.016	231.41	153.37
#1	6.5627	-.00182	.00143	11.079	.00229	.00196	-.00014
#2	6.3997	.00927	.00095	11.086	.00224	-.00298	.00411
#3	6.4638	.01011	.00100	11.046	.00118	.00843	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017
Kim K Buck

Sample Name: L1703166208 Acquired: 4/4/2017 21:08:39 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00310**	**-.00206**	**3.8355**	**-.00130**	**.32864**	**-.01200**	**-.00298**
Stddev	.00018	.00416	.0073	.00059	.00177	.00948	.00287
%RSD	5.9628	201.75	.18927	45.538	.53954	79.012	96.350
#1	-.00326	.00146	3.8289	-.00191	.33033	-.01151	-.00156
#2	-.00314	-.00100	3.8433	-.00073	.32881	-.02171	-.00628
#3	-.00290	-.00665	3.8343	-.00126	.32679	-.00277	-.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00047**	**.01817**	F **-.31917**
Stddev	.00031	.00017	.11065
%RSD	66.011	.95613	34.669
#1	.00083	.01817	-.19174
#2	.00028	.01800	-.37476
#3	.00030	.01835	-.39100
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23364.**	**148710.**	**4428.3**
Stddev	69.	1381.	47.4
%RSD	.29639	.92888	1.0705
#1	23406.	149810.	4376.5
#2	23401.	149160.	4469.5
#3	23284.	147160.	4439.0

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703166301 Acquired: 4/4/2017 21:12:07 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00117**	**.15777**	**-.00109**	**.01208**	**.05137**	**-.00007**	**20.537**
Stddev	.00203	.00309	.00045	.00095	.00034	.00004	.140
%RSD	173.99	1.9566	41.103	7.8997	.66898	51.498	.68339
#1	-.00219	.15616	-.00153	.01204	.05149	-.00011	20.611
#2	.00117	.15582	-.00063	.01114	.05098	-.00006	20.376
#3	-.00248	.16133	-.00112	.01305	.05163	-.00004	20.625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**-.00017**	**-.00008**	**.00095**	**.18480**	**.48640**	**-.00207**
Stddev	.00010	.00014	.00014	.00069	.03080	.17065	.00617
%RSD	170.00	84.859	164.13	72.800	16.666	35.084	297.66
#1	.00003	-.00022	.00006	.00039	.14940	.61645	-.00430
#2	-.00016	-.00028	-.00009	.00172	.19951	.54957	.00490
#3	-.00004	-.00001	-.00022	.00073	.20549	.29317	-.00682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.7032**	**.01145**	**-.00026**	**1.8246**	**.00200**	**.00430**	**-.00081**
Stddev	.0239	.00226	.00066	.0376	.00133	.00486	.00112
%RSD	.64415	19.753	253.73	2.0597	66.705	113.00	138.38
#1	3.6981	.01296	-.00027	1.8533	.00160	.00269	.00047
#2	3.6823	.00885	-.00091	1.8385	.00091	.00045	-.00128
#3	3.7292	.01255	.00040	1.7821	.00349	.00977	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Ki K Buck

Sample Name: L1703166301 Acquired: 4/4/2017 21:12:07 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00155**	**.00337**	**3.2986**	**-.00061**	**.07582**	**-.00142**	**-.00247**
Stddev	.00216	.00357	.0080	.00035	.00055	.00769	.00308
%RSD	139.35	106.06	.24332	56.311	.72127	541.04	124.70
#1	-.00305	.00122	3.3075	-.00101	.07624	-.00380	-.00599
#2	.00092	.00749	3.2919	-.00043	.07520	.00718	-.00120
#3	-.00252	.00139	3.2964	-.00040	.07602	-.00764	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00035**	**.00167**	F **-.15609**
Stddev	.00056	.00009	.20949
%RSD	158.78	5.1683	134.21
#1	.00099	.00173	.05599
#2	-.00005	.00170	-.16136
#3	.00011	.00157	-.36290
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24178.**	**158070.**	**4695.7**
Stddev	553.	853.	49.7
%RSD	2.2889	.53957	1.0594
#1	23543.	158010.	4641.6
#2	24435.	158950.	4739.5
#3	24556.	157240.	4705.9

Approved: April 05, 2017

Kristi K Buck

Sample Name: CCV Acquired: 4/4/2017 21:15:38 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41892**	**10.348**	**.40019**	**.52018**	**1.0246**	**.05198**	**10.307**
Stddev	.00388	.021	.00112	.00187	.0029	.00029	.042
%RSD	.92522	.20410	.28013	.35868	.27950	.55253	.40892
#1	.42169	10.351	.40114	.52179	1.0271	.05216	10.355
#2	.42058	10.368	.40048	.52062	1.0252	.05212	10.288
#3	.41449	10.326	.39895	.51814	1.0214	.05165	10.278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05039**	**.20133**	**.51660**	**.50435**	**3.9532**	**51.832**	**1.0419**
Stddev	.00017	.00021	.00148	.00067	.0349	.026	.0037
%RSD	.33083	.10573	.28707	.13267	.88172	.04991	.35195
#1	.05058	.20157	.51764	.50445	3.9420	51.843	1.0439
#2	.05033	.20118	.51725	.50497	3.9923	51.851	1.0442
#3	.05026	.20124	.51490	.50364	3.9253	51.803	1.0377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.085**	**.49726**	**.99768**	**52.624**	**.50717**	**9.9198**	**.50373**
Stddev	.079	.00276	.00223	.205	.00080	.0084	.00063
%RSD	.78039	.55551	.22374	.38994	.15797	.08465	.12522
#1	10.005	.49993	.99793	52.729	.50806	9.9268	.50423
#2	10.163	.49442	.99978	52.756	.50691	9.9105	.50302
#3	10.087	.49743	.99534	52.388	.50652	9.9221	.50393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 21:15:38 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2474**	**.41538**	**4.9807**	**1.0192**	**1.0118**	**1.0120**	**.52076**
Stddev	.0027	.00518	.0048	.0009	.0029	.0146	.00191
%RSD	.21225	1.2466	.09645	.09097	.28422	1.4458	.36764
#1	1.2479	.40944	4.9859	1.0195	1.0151	1.0276	.51859
#2	1.2445	.41779	4.9764	1.0199	1.0103	.99862	.52221
#3	1.2497	.41892	4.9799	1.0181	1.0100	1.0098	.52149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0210**	**1.0295**	F **1.2236**
Stddev	.0046	.0014	.1743
%RSD	.45419	.13789	14.244
#1	1.0248	1.0298	1.2797
#2	1.0223	1.0307	1.3629
#3	1.0158	1.0279	1.0281
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24200.**	**156380.**	**4842.5**
Stddev	606.	945.	10.0
%RSD	2.5059	.60447	.20667
#1	23877.	157230.	4831.0
#2	23824.	156540.	4847.6
#3	24900.	155360.	4849.0

Approved: April 05, 2017

Sample Name: CCB Acquired: 4/4/2017 21:19:00 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00177**	**-.00581**	**-.00044**	**.00330**	**-.00291**	**-.00002**	**.01982**
Stddev	.00247	.00588	.00090	.00008	.00101	.00004	.03864
%RSD	139.98	101.22	204.04	2.5604	34.820	219.07	194.90
#1	-.00336	-.01088	.00059	.00321	-.00323	-.00004	.03881
#2	-.00302	-.00719	-.00084	.00338	-.00372	.00002	-.02463
#3	.00108	.00064	-.00106	.00330	-.00177	-.00003	.04530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00008**	**-.00136**	**-.00002**	**-.00042**	**-.00173**	**-.00076**
Stddev	.00005	.00025	.00088	.00056	.00552	.04144	.00091
%RSD	937.77	321.63	64.745	2322.4	1309.3	2394.0	119.56
#1	-.00001	.00000	-.00144	-.00027	-.00594	-.04675	.00012
#2	-.00004	-.00036	-.00044	-.00042	.00511	.03482	-.00072
#3	.00007	.00012	-.00219	.00061	-.00044	.00673	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11238**	**.00054**	**.00007**	**.11827**	**.00034**	**.00290**	F **-.00512**
Stddev	.09617	.00107	.00019	.03686	.00157	.00756	.00218
%RSD	85.580	199.10	285.63	31.163	465.17	260.71	42.627
#1	.13858	-.00070	-.00003	.08324	.00092	-.00038	-.00636
#2	.19274	.00112	-.00006	.11485	-.00144	-.00247	-.00260
#3	.00582	.00118	.00029	.15671	.00153	.01154	-.00641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: April 05, 2017

Kristi K Buck

Sample Name: CCB Acquired: 4/4/2017 21:19:00 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00310**	**-.00177**	**.00166**	**.00044**	**-.00016**	**.00271**	**.00265**
Stddev	.00511	.00334	.00032	.00035	.00042	.00578	.00037
%RSD	164.97	188.76	19.034	80.968	253.42	213.28	13.927
#1	-.00467	-.00468	.00182	.00032	-.00026	.00309	.00222
#2	-.00724	-.00250	.00129	.00083	.00029	.00828	.00287
#3	.00262	.00188	.00186	.00016	-.00052	-.00325	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00061**	**-.00002**	**.03751**
Stddev	.00002	.00010	.29203
%RSD	2.4693	588.45	778.56
#1	.00062	-.00014	.29057
#2	.00059	.00005	-.28202
#3	.00061	.00004	.10397
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24159.**	**157060.**	**4740.6**
Stddev	373.	1824.	38.9
%RSD	1.5423	1.1615	.82026
#1	24585.	159000.	4770.0
#2	23993.	155390.	4755.3
#3	23897.	156780.	4696.5

Approved: April 05, 2017

Sample Name: L1703166501 Acquired: 4/4/2017 21:22:31 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**1.3861**	**.00138**	**.20648**	**.04236**	**.00008**	**2.3125**	**.00023**
Stddev	.00107	.0066	.00045	.00209	.00158	.00002	.0701	.00016
%RSD	67.746	.47481	32.984	1.0110	3.7275	23.941	3.0329	71.607
#1	-.00258	1.3871	.00128	.20881	.04328	.00006	2.2544	.00029
#2	-.00045	1.3790	.00187	.20478	.04327	.00008	2.2926	.00035
#3	-.00171	1.3921	.00098	.20586	.04054	.00009	2.3904	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00118**	**.00300**	**.32427**	**3.1506**	**1.4404**	**.01073**	**1.2439**	**.03502**
Stddev	.00029	.00049	.00110	.0193	.1542	.00355	.1053	.00147
%RSD	24.394	16.300	.33819	.61209	10.703	33.080	8.4686	4.2052
#1	.00087	.00272	.32442	3.1287	1.5992	.00713	1.1239	.03349
#2	.00124	.00270	.32528	3.1648	1.4305	.01084	1.2867	.03643
#3	.00143	.00356	.32310	3.1584	1.2914	.01423	1.3211	.03515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**244.31**	**.00829**	**-.08621**	**.03106**	**-.00041**	**-.00314**	**4.1223**
Stddev	.00013	3.18	.00125	.00378	.00386	.00500	.00207	.0123
%RSD	20.915	1.3033	15.120	4.3804	12.423	1214.0	66.001	.29913
#1	.00057	240.63	.00704	-.09006	.02796	.00269	-.00496	4.1275
#2	.00077	246.03	.00954	-.08605	.03538	-.00619	-.00088	4.1311
#3	.00053	246.26	.00829	-.08251	.02984	.00226	-.00359	4.1082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703166501 Acquired: 4/4/2017 21:22:31 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00501**	**.10580**	**.01785**	**-.00221**	**.00282**	**.38469**	**.50302**
Stddev	.00049	.00128	.00819	.00197	.00051	.00162	.38340
%RSD	9.8407	1.2125	45.899	89.236	17.985	.42195	76.219
#1	.00536	.10442	.00847	-.00218	.00254	.38583	.14516
#2	.00445	.10695	.02364	-.00025	.00251	.38541	.90766
#3	.00523	.10604	.02142	-.00418	.00340	.38284	.45625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23220.**	**147140.**	**4590.0**
Stddev	112.	1213.	64.2
%RSD	.48127	.82430	1.3989
#1	23106.	147810.	4523.4
#2	23226.	145740.	4595.1
#3	23329.	147860.	4651.5

Approved: April 05, 2017

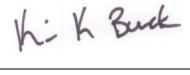
Sample Name: L1703168501 Acquired: 4/4/2017 21:25:58 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**4.8906**	**.00336**	**.01939**	**.04500**	**.00019**	**25.903**	**.00016**
Stddev	.00073	.0278	.00058	.00188	.00256	.00004	.190	.00012
%RSD	634.51	.56815	17.335	9.6695	5.6801	24.235	.73538	75.460
#1	-.00071	4.9133	.00370	.01875	.04748	.00014	25.684	.00023
#2	.00041	4.8989	.00268	.01792	.04237	.00020	26.027	.00023
#3	.00064	4.8596	.00368	.02150	.04515	.00022	25.998	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**.00514**	**.00563**	**4.3903**	**4.7588**	**.00613**	**10.570**	**.03427**
Stddev	.00033	.00051	.00072	.0814	.0503	.00383	.106	.00282
%RSD	40.326	9.8882	12.713	1.8548	1.0563	62.429	1.0075	8.2374
#1	.00086	.00571	.00644	4.3299	4.7297	.00382	10.450	.03101
#2	.00112	.00500	.00537	4.4829	4.8168	.00403	10.651	.03596
#3	.00047	.00472	.00509	4.3580	4.7298	.01055	10.610	.03584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00344**	**4.4880**	**.00662**	**.19382**	**.00308**	**-.00264**	**-.00262**	**10.769**
Stddev	.00022	.0520	.00062	.00222	.00054	.00229	.00127	.015
%RSD	6.3501	1.1593	9.3571	1.1475	17.600	86.755	48.299	.13769
#1	.00367	4.4661	.00726	.19570	.00302	-.00315	-.00198	10.767
#2	.00340	4.5473	.00660	.19438	.00257	-.00465	-.00181	10.785
#3	.00324	4.4504	.00602	.19137	.00364	-.00014	-.00408	10.755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703168501 Acquired: 4/4/2017 21:25:58 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00157**	**.08290**	**.06479**	**-.00184**	**.00843**	**.03356**	**1.1354**
Stddev	.00030	.00033	.00614	.00147	.00059	.00011	.2206
%RSD	18.971	.39763	9.4714	79.722	7.0264	.32996	19.430
#1	-.00141	.08291	.06998	-.00264	.00911	.03345	1.3601
#2	-.00139	.08257	.05802	-.00015	.00813	.03367	.91913
#3	-.00192	.08323	.06638	-.00275	.00804	.03354	1.1269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24046.**	**154560.**	**4507.1**
Stddev	89.	1934.	18.3
%RSD	.37173	1.2516	.40497
#1	24147.	152900.	4518.7
#2	24011.	154090.	4486.0
#3	23979.	156680.	4516.4

Approved: April 05, 2017

Sample Name: L1703168502 Acquired: 4/4/2017 21:29:28 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00076**	**3.2081**	**.00075**	**.01634**	**.03338**	**.00008**	**26.021**	**.00007**
Stddev	.00118	.0101	.00091	.00082	.00169	.00002	.228	.00021
%RSD	155.16	.31483	121.50	5.0485	5.0673	31.235	.87775	304.46
#1	-.00123	3.2175	.00156	.01724	.03389	.00010	25.874	-.00000
#2	-.00165	3.2094	-.00023	.01563	.03149	.00009	25.906	-.00010
#3	.00058	3.1974	.00090	.01615	.03475	.00005	26.284	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00060**	**.00357**	**.00747**	**3.7164**	**4.7280**	**-.00194**	**9.9917**	**.02787**
Stddev	.00024	.00054	.00025	.0359	.1058	.00155	.1233	.00547
%RSD	39.910	15.221	3.3123	.96578	2.2373	80.200	1.2338	19.628
#1	.00032	.00337	.00740	3.6972	4.7365	-.00047	9.9105	.03247
#2	.00072	.00315	.00727	3.6942	4.6183	-.00357	9.9311	.02182
#3	.00074	.00418	.00775	3.7578	4.8293	-.00177	10.134	.02931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00332**	**7.8714**	**.00710**	**.19033**	**.00310**	**.00112**	**.00366**	**7.9303**
Stddev	.00025	.0472	.00076	.00424	.00144	.00090	.00179	.0219
%RSD	7.6398	.59933	10.678	2.2297	46.320	80.124	48.867	.27548
#1	.00303	7.8400	.00623	.19201	.00476	.00025	.00397	7.9136
#2	.00348	7.8486	.00742	.18550	.00225	.00107	.00174	7.9223
#3	.00346	7.9257	.00764	.19346	.00230	.00205	.00528	7.9550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703168502 Acquired: 4/4/2017 21:29:28 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00118**	**.04484**	**.04222**	**-.00181**	**.00563**	**.03040**	**.76012**
Stddev	.00021	.00106	.00479	.00174	.00146	.00020	.36689
%RSD	17.860	2.3674	11.351	96.035	25.975	.66723	48.267
#1	-.00099	.04367	.04662	-.00039	.00396	.03029	.80613
#2	-.00114	.04512	.04292	-.00375	.00623	.03027	.37239
#3	-.00140	.04573	.03712	-.00129	.00669	.03063	1.1018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24017.**	**156060.**	**4610.5**
Stddev	71.	1068.	51.9
%RSD	.29718	.68434	1.1266
#1	23935.	154880.	4599.9
#2	24053.	156340.	4666.9
#3	24063.	156960.	4564.7

Approved: April 05, 2017

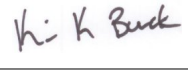
Sample Name: L1703170401 Acquired: 4/4/2017 21:32:57 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.00206**	**.00089**	**.04839**	**.17713**	**-.00003**	**76.946**
Stddev	.00175	.00333	.00067	.00079	.00065	.00006	.351
%RSD	368.05	161.55	75.497	1.6376	.36624	225.85	.45618
#1	.00153	.00164	.00076	.04814	.17667	.00001	76.544
#2	-.00128	-.00104	.00030	.04775	.17686	.00000	77.105
#3	-.00167	.00558	.00162	.04927	.17787	-.00010	77.190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00042**	**-.00008**	**.01310**	**.02301**	**4.5287**	**-.00444**
Stddev	.00011	.00013	.00045	.00104	.02757	.0384	.00627
%RSD	220.72	31.479	572.79	7.9412	119.83	.84901	141.20
#1	.00016	-.00041	-.00044	.01428	.00423	4.5172	-.01157
#2	-.00007	-.00029	-.00022	.01274	.01014	4.5715	.00022
#3	.00006	-.00055	.00042	.01229	.05466	4.4972	-.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.697**	**-.00029**	**.00033**	**14.945**	**.00018**	**-.01194**	**-.00128**
Stddev	.065	.00260	.00049	.052	.00041	.00379	.00111
%RSD	.47417	906.18	147.19	.34855	221.96	31.760	86.680
#1	13.623	-.00281	-.00022	14.933	.00050	-.01590	-.00238
#2	13.725	.00238	.00070	14.900	.00033	-.01157	-.00128
#3	13.743	-.00043	.00052	15.002	-.00028	-.00834	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: L1703170401 Acquired: 4/4/2017 21:32:57 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**-.00178**	**5.2195**	**-.00077**	**.11946**	**-.00840**	**-.00105**
Stddev	.00027	.00246	.0065	.00022	.00068	.00579	.00372
%RSD	23.681	138.05	.12349	28.495	.57011	68.896	352.40
#1	-.00085	-.00030	5.2231	-.00077	.11869	-.01380	-.00029
#2	-.00138	-.00462	5.2233	-.00055	.11997	-.00912	.00222
#3	-.00120	-.00042	5.2120	-.00098	.11971	-.00229	-.00509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00030**	**.10484**	F **-.13641**
Stddev	.00097	.00008	.17576
%RSD	323.65	.07625	128.85
#1	-.00005	.10483	.05465
#2	.00140	.10492	-.29124
#3	-.00045	.10476	-.17263
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23952.**	**155270.**	**4641.8**
Stddev	243.	671.	43.4
%RSD	1.0164	.43244	.93541
#1	23673.	156030.	4691.2
#2	24062.	155020.	4609.7
#3	24121.	154750.	4624.5

Approved: April 05, 2017

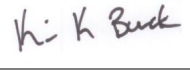
Sample Name: L1703170401MS Acquired: 4/4/2017 21:36:24 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21041**	**5.1114**	**.20038**	**1.0510**	**.70494**	**.02640**	**83.340**	**.02522**
Stddev	.00128	.0176	.00125	.0028	.00245	.00003	.439	.00026
%RSD	.61069	.34521	.62618	.27031	.34760	.10957	.52690	1.0235
#1	.21186	5.0976	.19916	1.0536	.70321	.02640	82.834	.02515
#2	.20996	5.1313	.20031	1.0514	.70775	.02642	83.620	.02500
#3	.20942	5.1054	.20167	1.0479	.70387	.02637	83.565	.02550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10036**	**.26218**	**.26429**	**2.0264**	**30.513**	**.53190**	**18.932**	**.25130**
Stddev	.00027	.00166	.00119	.0345	.210	.00620	.089	.00553
%RSD	.26645	.63404	.45164	1.7041	.68934	1.1649	.47011	2.1999
#1	.10033	.26074	.26396	2.0051	30.298	.53627	19.013	.24494
#2	.10012	.26400	.26330	2.0663	30.524	.53462	18.947	.25403
#3	.10065	.26181	.26561	2.0080	30.718	.52481	18.837	.25494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49900**	**41.551**	**.25406**	**4.9631**	**.25406**	**.62552**	**.19960**	**7.8790**
Stddev	.00095	.295	.00152	.0168	.00336	.00425	.00233	.0064
%RSD	.18949	.71041	.59633	.33824	1.3239	.67993	1.1664	.08067
#1	.49820	41.220	.25355	4.9510	.25776	.62215	.19804	7.8723
#2	.49876	41.646	.25287	4.9560	.25119	.62411	.20227	7.8796
#3	.50005	41.786	.25577	4.9823	.25324	.63030	.19848	7.8850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703170401MS Acquired: 4/4/2017 21:36:24 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51783**	**.63578**	**.51231**	**.25905**	**.52470**	**.62349**	**.37772**
Stddev	.00069	.00314	.01448	.00101	.00051	.00218	.06784
%RSD	.13272	.49436	2.8256	.38981	.09787	.34946	17.959
#1	.51726	.63306	.49560	.25908	.52436	.62165	.43274
#2	.51764	.63922	.52094	.25802	.52529	.62292	.39850
#3	.51860	.63505	.52040	.26004	.52444	.62590	.30193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24067.**	**155920.**	**4691.8**
Stddev	219.	737.	119.4
%RSD	.90984	.47293	2.5447
#1	23857.	156430.	4700.5
#2	24294.	156250.	4568.3
#3	24049.	155070.	4806.6

Approved: April 05, 2017

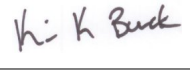
Sample Name: L1703170401MSD Acquired: 4/4/2017 21:39:47 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20944**	**5.0644**	**.19569**	**1.0480**	**.69813**	**.02619**	**81.676**	**.02495**
Stddev	.00120	.0005	.00082	.0028	.00113	.00007	.277	.00009
%RSD	.57455	.01061	.42065	.26993	.16142	.25855	.33934	.34979
#1	.21075	5.0640	.19538	1.0503	.69689	.02626	81.479	.02485
#2	.20917	5.0643	.19506	1.0489	.69839	.02620	81.556	.02502
#3	.20839	5.0650	.19662	1.0448	.69910	.02612	81.993	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09951**	**.26012**	**.26040**	**2.0048**	**30.663**	**.52122**	**18.650**	**.24801**
Stddev	.00023	.00067	.00157	.0226	.201	.00266	.014	.00302
%RSD	.22784	.25787	.60234	1.1269	.65400	.51080	.07539	1.2187
#1	.09925	.26049	.25946	2.0029	30.432	.52283	18.639	.25140
#2	.09962	.26052	.25952	2.0283	30.786	.51815	18.646	.24560
#3	.09966	.25934	.26221	1.9832	30.771	.52269	18.666	.24703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49273**	**41.241**	**.25084**	**4.8744**	**.24911**	**.61946**	**.19493**	**7.6740**
Stddev	.00111	.143	.00105	.0021	.00205	.00535	.00250	.0099
%RSD	.22472	.34609	.41818	.04269	.82182	.86434	1.2838	.12862
#1	.49235	41.289	.25101	4.8767	.24802	.62563	.19720	7.6819
#2	.49186	41.080	.25179	4.8727	.25147	.61601	.19224	7.6629
#3	.49397	41.353	.24971	4.8737	.24783	.61673	.19533	7.6771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703170401MSD Acquired: 4/4/2017 21:39:47 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51010**	**.62887**	**.50468**	**.25638**	**.51864**	**.61509**	**.72683**
Stddev	.00100	.00181	.00803	.00098	.00085	.00059	.16446
%RSD	.19633	.28839	1.5911	.38257	.16400	.09514	22.628
#1	.51124	.62787	.50418	.25744	.51869	.61569	.66558
#2	.50937	.62778	.49691	.25551	.51946	.61505	.91312
#3	.50970	.63097	.51295	.25619	.51776	.61452	.60177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23169.**	**151920.**	**4731.8**
Stddev	144.	715.	42.8
%RSD	.62168	.47061	.90398
#1	23239.	152740.	4728.6
#2	23004.	151420.	4776.1
#3	23265.	151600.	4690.8

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 21:43:10 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41458**	**10.249**	**.40192**	**.51860**	**1.0190**	**.05165**	**10.318**	**.05061**
Stddev	.00088	.055	.00285	.00120	.0015	.00039	.027	.00068
%RSD	.21160	.53839	.70797	.23069	.15154	.75143	.25954	1.3493
#1	.41489	10.215	.39915	.51941	1.0194	.05148	10.300	.04983
#2	.41359	10.219	.40484	.51915	1.0173	.05138	10.349	.05090
#3	.41526	10.313	.40176	.51722	1.0203	.05209	10.306	.05110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20233**	**.51174**	**.50323**	**3.9343**	**51.825**	**1.0428**	**10.081**	**.48541**
Stddev	.00156	.00411	.00472	.0293	.163	.0053	.073	.00469
%RSD	.77140	.80272	.93755	.74362	.31389	.50990	.72436	.96529
#1	.20053	.51140	.49810	3.9156	51.901	1.0482	10.020	.48147
#2	.20310	.50781	.50423	3.9680	51.936	1.0375	10.061	.48416
#3	.20336	.51601	.50738	3.9193	51.638	1.0426	10.162	.49059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0031**	**52.753**	**.50705**	**9.8202**	**.50085**	**1.2496**	**.41043**	**4.9614**
Stddev	.0082	.012	.00457	.0833	.00518	.0107	.00322	.0394
%RSD	.81795	.02247	.90106	.84790	1.0340	.85894	.78436	.79506
#1	.99360	52.742	.50201	9.7244	.49491	1.2375	.40671	4.9159
#2	1.0078	52.753	.50823	9.8757	.50439	1.2582	.41224	4.9825
#3	1.0078	52.765	.51091	9.8604	.50325	1.2529	.41234	4.9858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: April 05, 2017

Ki K Buck

Sample Name: CCV Acquired: 4/4/2017 21:43:10 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0177**	**1.0032**	**1.0097**	**.52488**	**1.0124**	**1.0278**	**.99979**
Stddev	.0071	.0039	.0087	.00281	.0057	.0078	.12573
%RSD	.70151	.38728	.86297	.53481	.56841	.76171	12.575
#1	1.0094	1.0001	1.0075	.52231	1.0118	1.0188	1.1113
#2	1.0219	1.0075	1.0023	.52788	1.0070	1.0323	.86353
#3	1.0217	1.0019	1.0193	.52445	1.0185	1.0324	1.0245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23167.**	**153300.**	**4704.4**
Stddev	296.	1432.	32.2
%RSD	1.2772	.93409	.68464
#1	23447.	154440.	4676.8
#2	23196.	153770.	4739.8
#3	22858.	151690.	4696.4

Approved: April 05, 2017
Kim K Buck

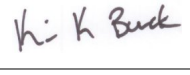
Sample Name: CCB Acquired: 4/4/2017 21:46:30 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00185**	**-.00400**	**.00111**	**.00492**	**-.00229**	**.00000**	**.01494**
Stddev	.00098	.00184	.00097	.00161	.00120	.00001	.02222
%RSD	53.256	46.161	87.651	32.794	52.466	2521.7	148.67
#1	-.00202	-.00202	.00221	.00306	-.00208	-.00001	.01944
#2	-.00079	-.00567	.00072	.00580	-.00359	.00002	.03456
#3	-.00273	-.00429	.00039	.00590	-.00121	-.00000	-.00918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00001**	**-.00017**	**.00025**	**.01264**	**.18698**	**-.01241**
Stddev	.00009	.00030	.00025	.00180	.01694	.11561	.00341
%RSD	39.989	3366.6	144.40	732.89	133.97	61.829	27.446
#1	-.00025	.00003	.00006	.00076	.00450	.26634	-.01496
#2	-.00012	.00030	-.00014	-.00175	.03212	.24025	-.00854
#3	-.00030	-.00030	-.00043	.00173	.00132	.05434	-.01372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06443**	**.00191**	**.00008**	**.14586**	**.00053**	**-.00498**	**-.00015**
Stddev	.05362	.00302	.00064	.02658	.00048	.00638	.00045
%RSD	83.229	157.59	802.02	18.224	90.098	128.25	301.83
#1	.00391	.00054	-.00021	.16212	.00062	-.00536	-.00047
#2	.10602	.00537	.00081	.11518	.00001	.00159	.00036
#3	.08335	-.00017	-.00036	.16027	.00096	-.01116	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: CCB Acquired: 4/4/2017 21:46:30 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00222**	**-.00039**	**.00089**	**-.00018**	**.00028**	**-.00121**	**.00035**
Stddev	.00074	.00071	.00083	.00067	.00005	.00927	.00153
%RSD	33.489	182.66	93.187	360.29	17.596	764.37	435.68
#1	-.00299	-.00028	-.00000	.00058	.00034	.00441	.00160
#2	-.00216	.00026	.00104	-.00060	.00027	-.01192	.00081
#3	-.00151	-.00115	.00164	-.00053	.00024	.00387	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

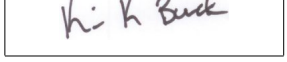
Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00033**	**-.00011**	F **-.07446**
Stddev	.00057	.00006	.20873
%RSD	171.04	57.913	280.33
#1	.00089	-.00007	.03902
#2	-.00025	-.00007	-.31535
#3	.00037	-.00018	.05295
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24329.**	**155000.**	**4509.8**
Stddev	78.	2269.	23.8
%RSD	.31944	1.4636	.52876
#1	24376.	156900.	4484.3
#2	24240.	155610.	4513.3
#3	24372.	152490.	4531.6

Approved: April 05, 2017

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.000266	0.042777	0.000000	1.000000
Al 308.215 {109}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.001170	0.012200	0.000000	1.000000
As 189.042 {478}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000016	0.024977	0.000000	1.000000
B 249.678 {135}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.000126	0.022863	0.000000	1.000000
Ba 455.403 { 74}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.020751	1.228729	0.000000	1.000000
Be 313.107 {108}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000272	1.010032	0.000000	1.000000
Ca 422.673 { 80}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.002435	0.029984	0.000000	1.000000
Cd 228.802 {447}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000379	0.333055	0.000000	1.000000
Co 228.616 {447}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000367	0.301461	0.000000	1.000000
Cr 267.716 {126}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000143	0.060122	0.000000	1.000000
Cu 224.700 {450}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.000673	0.092400	0.000000	1.000000
Fe 261.187 {129}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.000284	0.016745	0.000000	1.000000
K 766.490 { 44}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000253	0.030979	0.000000	1.000000
Li 670.784 { 50}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.004491	0.688636	0.000000	1.000000
Mg 279.079 {121}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000013	0.005048	0.000000	1.000000
Mn 257.610 {131}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000331	0.151675	0.000000	1.000000
Mo 202.030 {467}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000065	0.126181	0.000000	1.000000
Na 589.592 { 57}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.061786	0.103697	0.000000	1.000000
Ni 231.604 {446}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.000892	0.084359	0.000000	1.000000
P 214.914 {457}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.000086	0.010893	0.000000	1.000000
Pb 220.353 {453}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.000333	0.052661	0.000000	1.000000
Sb 206.833 {463}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000596	0.023311	0.000000	1.000000
Se 196.090 {472}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.000067	0.016054	0.000000	1.000000
Si 212.412 {459}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000297	0.026530	0.000000	1.000000
Sn 189.989 {477}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.003550	0.075703	0.000000	1.000000
Sr 407.771 { 83}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.005315	2.054440	0.000000	1.000000
Ti 337.280 {100}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.001458	0.102695	0.000000	1.000000
Tl 190.856 {477}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.000266	0.020188	0.000000	1.000000
V 292.402 {115}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000061	0.071018	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	0.000442	0.508803	0.000000	1.000000
Zr 339.198 { 99}	4/5/2017 15:04:38	4/5/2017 15:04:38	Linear	1/Conc	-0.008735	6.899293	0.000000	1.000000

Approved: April 06, 2017



	Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
							Slope	Y-int	Slope factor	Offset
	Ag 328.068 {103}	0.999641	0.000003	0.001746	0.005821	OK.	1.000000	0.000000	1	0
	Al 308.215 {109}	0.999891	0.000012	0.005057	0.016856	OK.	1.000000	0.000000	1	0
	As 189.042 {478}	0.999907	0.000001	0.002169	0.007229	OK.	1.000000	0.000000	1	0
	B 249.678 {135}	0.999921	0.000001	0.002010	0.006701	OK.	1.000000	0.000000	1	0
	Ba 455.403 { 74}	0.999952	0.000076	0.001506	0.005020	OK.	1.000000	0.000000	1	0
	Be 313.107 {108}	0.999969	0.000003	0.000054	0.000178	OK.	1.000000	0.000000	1	0
	Ca 422.673 { 80}	0.999405	0.000066	0.046479	0.154930	OK.	1.000000	0.000000	1	0
	Cd 228.802 {447}	0.999526	0.000004	0.000262	0.000872	OK.	1.000000	0.000000	1	0
	Co 228.616 {447}	0.999937	0.000004	0.000338	0.001128	OK.	1.000000	0.000000	1	0
	Cr 267.716 {126}	0.999962	0.000002	0.000866	0.002886	OK.	1.000000	0.000000	1	0
	Cu 224.700 {450}	0.999863	0.000005	0.001224	0.004081	OK.	1.000000	0.000000	1	0
	Fe 261.187 {129}	0.998418	0.000024	0.027422	0.091407	OK.	1.000000	0.000000	1	0
	K 766.490 { 44}	0.999916	0.000127	0.131170	0.437234	OK.	1.000000	0.000000	1	0
	Li 670.784 { 50}	0.999906	0.000093	0.005867	0.019558	OK.	1.000000	0.000000	1	0
	Mg 279.079 {121}	0.998460	0.000027	0.094524	0.315079	OK.	1.000000	0.000000	1	0
	Mn 257.610 {131}	0.999219	0.000019	0.003730	0.012432	OK.	1.000000	0.000000	1	0
	Mo 202.030 {467}	0.999921	0.000010	0.000407	0.001357	OK.	1.000000	0.000000	1	0
	Na 589.592 { 57}	0.999969	0.000261	0.039594	0.131980	OK.	1.000000	0.000000	1	0
	Ni 231.604 {446}	0.999918	0.000003	0.001094	0.003645	OK.	1.000000	0.000000	1	0
	P 214.914 {457}	0.999879	0.000011	0.005800	0.019332	OK.	1.000000	0.000000	1	0
	Pb 220.353 {453}	0.999580	0.000005	0.002816	0.009387	OK.	1.000000	0.000000	1	0
	Sb 206.833 {463}	0.999867	0.000003	0.003864	0.012881	OK.	1.000000	0.000000	1	0
	Se 196.090 {472}	0.999868	0.000001	0.004636	0.015452	OK.	1.000000	0.000000	1	0
	Si 212.412 {459}	0.999934	0.000009	0.002198	0.007326	OK.	1.000000	0.000000	1	0
	Sn 189.989 {477}	0.999949	0.000005	0.000597	0.001991	OK.	1.000000	0.000000	1	0
	Sr 407.771 { 83}	0.999976	0.000090	0.000684	0.002278	OK.	1.000000	0.000000	1	0
	Ti 337.280 {100}	0.999815	0.000013	0.008471	0.028236	OK.	1.000000	0.000000	1	0
	Tl 190.856 {477}	0.999958	0.000001	0.002767	0.009222	OK.	1.000000	0.000000	1	0
	V 292.402 {115}	0.999975	0.000003	0.000772	0.002574	OK.	1.000000	0.000000	1	0
	Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Zn 206.200 {463}	0.999911	0.000043	0.000124	0.000413	OK.	1.000000	0.000000	1	0
	Zr 339.198 { 99}	0.999625	0.001199	0.000271	0.000905	OK.	1.000000	0.000000	1	0

Approved: April 06, 2017

Kirk Buck

Sample Name: S0 Acquired: 4/5/2017 14:47:07 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00027**	**.00117**	**.00002**	**-.00013**	**.02075**	**.00027**	**.00244**
Stddev	.00008	.00001	.00003	.00001	.00038	.00004	.00019
%RSD	28.916	1.2089	191.83	10.596	1.8424	13.617	7.6264
#1	-.00027	.00116	-.00002	-.00012	.02119	.00028	.00262
#2	-.00019	.00116	.00004	-.00012	.02052	.00031	.00225
#3	-.00034	.00119	.00002	-.00014	.02054	.00023	.00245

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00038**	**.00037**	**.00014**	**-.00067**	**-.00028**	**.00025**	**.00449**
Stddev	.00006	.00004	.00004	.00005	.00030	.00161	.00237
%RSD	16.439	10.100	30.759	7.9110	104.71	643.14	52.838
#1	.00033	.00032	.00011	-.00068	-.00030	-.00156	.00674
#2	.00036	.00038	.00019	-.00062	.00002	.00077	.00201
#3	.00045	.00039	.00013	-.00072	-.00058	.00154	.00473

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**.00033**	**.00007**	**-.06179**	**-.00089**	**-.00009**	**-.00033**
Stddev	.00034	.00059	.00002	.00354	.00007	.00002	.00004
%RSD	2541.2	178.46	29.217	5.7244	7.5463	25.460	12.249
#1	.00022	-.00031	.00005	-.05950	-.00084	-.00007	-.00034
#2	-.00038	.00046	.00006	-.06001	-.00097	-.00011	-.00029
#3	.00021	.00085	.00009	-.06586	-.00087	-.00008	-.00037

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00060**	**-.00007**	**.00030**	**.00355**	**.00532**	**-.00146**	**-.00027**
Stddev	.00003	.00004	.00002	.00006	.00138	.00049	.00006
%RSD	5.2094	54.322	6.1964	1.8191	25.987	33.284	23.002
#1	.00062	-.00010	.00029	.00350	.00519	-.00095	-.00020
#2	.00056	-.00003	.00028	.00362	.00400	-.00151	-.00030
#3	.00060	-.00007	.00032	.00353	.00676	-.00192	-.00031

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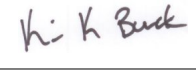

Sample Name: S0 Acquired: 4/5/2017 14:47:07 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00006**	**.00044**	**-.00872**
Stddev	.00003	.00006	.00140
%RSD	46.561	12.865	16.097
#1	.00007	.00046	-.01013
#2	.00009	.00038	-.00871
#3	.00003	.00048	-.00732

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23582.**	**157120.**	**4564.8**
Stddev	43.	1846.	123.5
%RSD	.18284	1.1748	2.7054
#1	23593.	158470.	4461.3
#2	23618.	155020.	4701.5
#3	23534.	157870.	4531.5

Approved: April 06, 2017

Sample Name: S1 Acquired: 4/5/2017 14:50:45 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00006**	**.00225**	**.03129**	**.00069**	**.00349**	**.00044**	**.00087**
Stddev	.00001	.00005	.00315	.00005	.00060	.00002	.00004
%RSD	22.236	2.3760	10.074	7.8802	17.233	4.8239	4.4068
#1	-.00006	.00220	.03332	.00064	.00282	.00044	.00091
#2	-.00005	.00230	.03289	.00074	.00398	.00042	.00086
#3	-.00008	.00223	.02766	.00070	.00366	.00046	.00084

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00041**	**-.00020**	**.00068**	**.01521**	**.00138**	**.00107**	**-.01635**
Stddev	.00002	.00011	.00033	.00096	.00031	.00003	.00328
%RSD	5.5612	54.827	48.849	6.3095	22.624	2.7087	20.036
#1	.00044	-.00032	.00099	.01460	.00168	.00105	-.01966
#2	.00041	-.00020	.00033	.01472	.00105	.00107	-.01311
#3	.00039	-.00010	.00071	.01632	.00141	.00111	-.01629

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00054**	**.00080**	**-.00000**	**.00085**	**.00139**	**.00420**	**.02103**
Stddev	.00005	.00003	.00003	.00006	.00006	.00003	.00089
%RSD	8.8094	3.5040	547.98	6.7231	4.2466	.62330	4.2409
#1	-.00058	.00077	-.00002	.00091	.00141	.00418	.02205
#2	-.00048	.00082	.00002	.00079	.00143	.00423	.02063
#3	-.00055	.00082	-.00002	.00084	.00132	.00420	.02040

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00070**	**.00065**	**.00476**	**.03494**
Stddev	.00050	.00003	.00011	.00311
%RSD	71.089	4.9785	2.3830	8.8948
#1	-.00117	.00063	.00489	.03697
#2	-.00018	.00069	.00473	.03648
#3	-.00076	.00063	.00467	.03136

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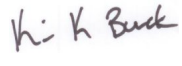


Sample Name: S1 Acquired: 4/5/2017 14:50:45 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23201.**	**155930.**	**4660.2**
Stddev	421.	772.	70.6
%RSD	1.8124	.49503	1.5156
#1	23053.	156680.	4630.3
#2	22875.	155140.	4740.8
#3	23676.	155970.	4609.3

Approved: April 06, 2017

Sample Name: S2 Acquired: 4/5/2017 14:54:20 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00004**	**.00344**	**.00017**	**.00004**	**.04155**	**.00113**	**.00641**
Stddev	.00005	.00010	.00004	.00001	.00301	.00002	.00163
%RSD	117.73	2.7907	24.028	21.500	7.2420	1.6066	25.372
#1	.00007	.00337	.00014	.00005	.03809	.00111	.00682
#2	-.00002	.00341	.00022	.00003	.04298	.00114	.00778
#3	.00007	.00355	.00015	.00004	.04357	.00114	.00461

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00072**	**.00126**	**.00066**	**.00009**	**.00134**	**.02387**	**.01494**
Stddev	.00007	.00003	.00003	.00011	.00008	.00528	.00549
%RSD	9.3816	2.1661	4.0075	120.56	5.8867	22.138	36.733
#1	.00071	.00127	.00069	.00001	.00142	.02705	.02128
#2	.00080	.00127	.00065	.00022	.00133	.01777	.01200
#3	.00066	.00123	.00065	.00005	.00126	.02680	.01156

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00022**	**.00158**	**.00214**	**.02342**	**-.00014**	**.00167**	**.00011**
Stddev	.00012	.00123	.00003	.00612	.00007	.00002	.00007
%RSD	57.414	77.867	1.4100	26.116	50.291	1.4389	61.865
#1	.00012	.00187	.00212	.03022	-.00021	.00170	.00016
#2	.00035	.00023	.00218	.02167	-.00016	.00166	.00013
#3	.00017	.00265	.00213	.01837	-.00007	.00165	.00003

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00109**	**.00006**	**.00231**	**.00479**	**.03846**	**.00047**	**-.00010**
Stddev	.00010	.00001	.00008	.00002	.00138	.00074	.00003
%RSD	9.2798	9.2219	3.5010	.32715	3.5977	156.76	30.543
#1	.00108	.00006	.00224	.00480	.03945	.00021	-.00009
#2	.00119	.00005	.00230	.00479	.03905	-.00010	-.00013
#3	.00099	.00006	.00240	.00477	.03688	.00131	-.00007

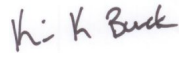
Approved: April 06, 2017

Sample Name: S2 Acquired: 4/5/2017 14:54:20 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00124**	**.00881**	**.09106**
Stddev	.00002	.00005	.00455
%RSD	1.5448	.52676	5.0008
#1	.00126	.00886	.09240
#2	.00122	.00879	.09479
#3	.00124	.00878	.08599

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23360.**	**153550.**	**4548.8**
Stddev	596.	2782.	37.5
%RSD	2.5507	1.8121	.82467
#1	22975.	155250.	4531.9
#2	23058.	155070.	4591.8
#3	24046.	150340.	4522.7

Approved: April 06, 2017



Sample Name: S3 Acquired: 4/5/2017 14:57:54 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01666**	**.12555**	**.00976**	**.01108**	**1.2349**	**.05122**	**.29707**	**.01827**
Stddev	.00023	.00119	.00003	.00009	.0057	.00031	.00182	.00008
%RSD	1.3582	.94482	.26555	.77606	.45936	.60476	.61260	.41220
#1	.01678	.12581	.00973	.01113	1.2290	.05143	.29499	.01821
#2	.01640	.12426	.00977	.01098	1.2404	.05087	.29787	.01835
#3	.01680	.12659	.00977	.01113	1.2354	.05138	.29836	.01825

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.05977**	**.03008**	**.04504**	**.06564**	**1.5344**	**.68044**	**.04986**	**.07472**
Stddev	.00008	.00017	.00012	.00030	.0066	.00648	.00054	.00062
%RSD	.13883	.54982	.27562	.46026	.42669	.95161	1.0769	.83381
#1	.05983	.03008	.04490	.06529	1.5292	.67300	.04931	.07401
#2	.05979	.02992	.04514	.06584	1.5418	.68352	.04990	.07519
#3	.05967	.03025	.04507	.06579	1.5322	.68480	.05038	.07495

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.12400**	**5.0777**	**.04068**	**.10672**	**.02592**	**.02758**	**.00631**	**.12176**
Stddev	.00020	.0295	.00006	.00029	.00004	.00009	.00002	.00021
%RSD	.15744	.58106	.14899	.27498	.16009	.33275	.32107	.17190
#1	.12399	5.0460	.04065	.10671	.02593	.02765	.00633	.12153
#2	.12420	5.0828	.04064	.10701	.02596	.02748	.00632	.12194
#3	.12381	5.1044	.04075	.10642	.02588	.02761	.00629	.12180

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.07812**	**2.0411**	**.09906**	**.00902**	**.07027**	**.49956**	**6.6602**
Stddev	.00021	.0058	.00102	.00007	.00048	.00079	.1267
%RSD	.26677	.28310	1.0275	.81146	.68228	.15734	1.9018
#1	.07807	2.0345	.09979	.00909	.07051	.49965	6.7930
#2	.07835	2.0442	.09948	.00895	.06972	.50029	6.6470
#3	.07794	2.0448	.09790	.00903	.07058	.49873	6.5407

Approved: April 06, 2017

Kristi K Buck

Sample Name: S3 Acquired: 4/5/2017 14:57:54 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	22957.	152050.	4631.6
Stddev	483.	1277.	47.2
%RSD	2.1059	.83960	1.0196
#1	22541.	152650.	4584.0
#2	22842.	152920.	4632.4
#3	23487.	150590.	4678.4

Approved: April 06, 2017

Kristi K Buck

Sample Name: S4 Acquired: 4/5/2017 15:01:18 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

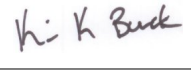
Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03388**	**.24562**	**.02007**	**.02284**	**2.4909**	**.10376**	**.60949**	**.03711**
Stddev	.00020	.00083	.00011	.00021	.0216	.00036	.00812	.00041
%RSD	.58352	.33897	.53243	.93557	.86789	.34766	1.3330	1.1100
#1	.03368	.24468	.02007	.02260	2.5039	.10336	.61202	.03691
#2	.03389	.24594	.02018	.02300	2.5029	.10386	.61605	.03758
#3	.03408	.24625	.01996	.02291	2.4660	.10406	.60040	.03684

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.12160**	**.06039**	**.09251**	**.13373**	**3.1116**	**1.3950**	**.10180**	**.15300**
Stddev	.00069	.00028	.00050	.00204	.0244	.0127	.00079	.00220
%RSD	.56392	.46800	.54522	1.5255	.78362	.90936	.77191	1.4380
#1	.12113	.06007	.09209	.13438	3.1172	1.4043	.10249	.15419
#2	.12238	.06049	.09307	.13536	3.1327	1.4002	.10197	.15435
#3	.12127	.06061	.09238	.13144	3.0849	1.3806	.10095	.15046

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.25458**	**10.347**	**.08399**	**.22074**	**.05288**	**.05594**	**.01285**	**.24846**
Stddev	.00177	.106	.00054	.00157	.00047	.00041	.00008	.00160
%RSD	.69404	1.0265	.64260	.70952	.88697	.73939	.59957	.64420
#1	.25343	10.410	.08371	.21939	.05245	.05556	.01276	.24711
#2	.25661	10.407	.08461	.22245	.05338	.05638	.01291	.25023
#3	.25369	10.224	.08364	.22037	.05281	.05589	.01288	.24804

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.15558**	**4.1335**	**.20559**	**.01817**	**.14234**	**1.0264**	**14.040**
Stddev	.00101	.0372	.00287	.00016	.00073	.0072	.163
%RSD	.65206	.90051	1.3946	.90205	.51258	.69945	1.1630
#1	.15482	4.1554	.20713	.01802	.14155	1.0209	14.160
#2	.15673	4.1546	.20736	.01834	.14247	1.0345	14.106
#3	.15519	4.0906	.20228	.01814	.14299	1.0236	13.854

Approved: April 06, 2017



Sample Name: S4 Acquired: 4/5/2017 15:01:18 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22134.**	**149510.**	**4490.0**
Stddev	378.	151.	72.4
%RSD	1.7069	.10106	1.6131
#1	22442.	149510.	4429.7
#2	21712.	149360.	4469.8
#3	22248.	149670.	4570.3

Approved: April 06, 2017

Sample Name: ICV Acquired: 4/5/2017 15:04:42 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41024**	**10.347**	**.41611**	**.50461**	**1.0147**	**.05135**	**10.274**
Stddev	.00319	.041	.00207	.00469	.0126	.00041	.194
%RSD	.77849	.39160	.49843	.92982	1.2423	.79101	1.8880
#1	.41235	10.358	.41376	.50885	1.0002	.05180	10.053
#2	.40656	10.302	.41693	.49957	1.0224	.05103	10.349
#3	.41180	10.381	.41765	.50540	1.0216	.05120	10.418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **.05257**	**.20860**	**.50868**	**.51936**	**4.0792**	**50.861**	**1.0145**
Stddev	.00034	.00040	.00294	.00301	.0451	.633	.0041
%RSD	.65261	.19217	.57802	.57948	1.1054	1.2437	.40764
#1	.05218	.20815	.51158	.51622	4.0394	50.149	1.0100
#2	.05268	.20870	.50570	.51965	4.0701	51.359	1.0155
#3	.05284	.20894	.50876	.52222	4.1282	51.074	1.0181
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.05000						
Range	5.0000%						

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.036**	**.50349**	**.98598**	**50.974**	**.51551**	**10.395**	**.52059**
Stddev	.125	.00490	.00410	.719	.00201	.043	.00339
%RSD	1.2501	.97377	.41558	1.4111	.38947	.41031	.65058
#1	9.9034	.49860	.98147	50.150	.51387	10.353	.51965
#2	10.051	.50346	.98700	51.479	.51491	10.395	.51777
#3	10.153	.50840	.98947	51.292	.51775	10.438	.52434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 06, 2017

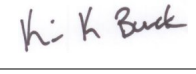
Sample Name: ICV Acquired: 4/5/2017 15:04:42 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.2793	.41800	5.1766	F 1.0517	1.0158	1.0166	.51614
Stddev	.0114	.00731	.0218	.0058	.0094	.0215	.00207
%RSD	.88762	1.7478	.42123	.54897	.92358	2.1112	.40064
#1	1.2675	.40995	5.1552	1.0458	1.0050	.99185	.51526
#2	1.2803	.41986	5.1757	1.0521	1.0210	1.0294	.51465
#3	1.2902	.42420	5.1988	1.0573	1.0215	1.0286	.51850
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value	1.2000			1.0000			
Range	5.0000%			5.0000%			

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0101	1.0299	.99806
Stddev	.0059	.0057	.00672
%RSD	.58001	.55100	.67311
#1	1.0166	1.0237	.99033
#2	1.0053	1.0313	1.0013
#3	1.0083	1.0348	1.0026
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	22799.	146820.	4544.5
Stddev	60.	1018.	74.2
%RSD	.26507	.69316	1.6334
#1	22842.	147610.	4629.1
#2	22825.	147180.	4514.3
#3	22730.	145680.	4490.1

Approved: April 06, 2017



Sample Name: ICB Acquired: 4/5/2017 15:08:20 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.00360**	**.00030**	**.00211**	**.00209**	**.00001**	**-.06895**	**-.00010**
Stddev	.00052	.00315	.00045	.00130	.00026	.00003	.03319	.00022
%RSD	54.668	87.378	146.66	61.412	12.382	479.25	48.129	211.64
#1	.00128	.00659	-.00004	.00356	.00226	.00003	-.06143	-.00018
#2	.00123	.00391	.00015	.00172	.00179	-.00002	-.10525	.00014
#3	.00035	.00031	.00081	.00106	.00222	.00001	-.04017	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00003**	**.00015**	**.01279**	**.32412**	**.00267**	**-.07072**	**.00325**
Stddev	.00017	.00029	.00027	.02871	.15841	.00182	.06186	.00219
%RSD	46.506	1124.3	176.90	224.55	48.873	68.340	87.470	67.527
#1	-.00022	.00020	.00043	-.01316	.50312	.00103	-.13432	.00566
#2	-.00056	-.00031	-.00011	.04363	.26725	.00234	-.06707	.00138
#3	-.00034	.00018	.00013	.00788	.20200	.00463	-.01077	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.04161**	**-.00031**	**.00081**	**.00109**	**.00061**	**.00330**	**.00184**
Stddev	.00030	.05388	.00024	.00301	.00187	.00397	.00023	.00136
%RSD	140.15	129.50	75.632	371.98	171.41	650.04	6.9798	73.688
#1	.00003	.08722	-.00006	.00090	.00194	.00327	.00328	.00208
#2	.00057	.05546	-.00035	.00377	-.00105	.00252	.00355	.00306
#3	.00006	-.01785	-.00053	-.00224	.00239	-.00396	.00309	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017

Sample Name: ICB Acquired: 4/5/2017 15:08:20 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00015**	**-.00737**	**-.00108**	**-.00045**	**.00039**	**.00050**
Stddev	.00049	.00036	.00513	.00177	.00015	.00004	.00030
%RSD	177.85	238.28	69.569	163.93	33.731	10.697	59.065
#1	-.00024	.00014	-.00687	-.00028	-.00038	.00044	.00016
#2	.00072	-.00005	-.00251	.00015	-.00062	.00036	.00063
#3	.00035	-.00055	-.01274	-.00311	-.00034	.00038	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23383.**	**152340.**	**4409.7**
Stddev	187.	1130.	35.2
%RSD	.79959	.74184	.79901
#1	23199.	153250.	4398.4
#2	23378.	151070.	4381.5
#3	23573.	152680.	4449.2

Approved: April 06, 2017

Sample Name: LLICV Acquired: 4/5/2017 15:11:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01089**	**.19419**	**.00776**	**.07962**	**.00963**	**.00168**	**.38907**	**.00114**
Stddev	.00231	.00579	.00365	.00161	.00185	.00005	.07481	.00009
%RSD	21.197	2.9832	47.018	2.0222	19.202	2.6862	19.228	7.7640
#1	.01309	.18760	.01136	.07837	.01133	.00165	.47349	.00105
#2	.00849	.19846	.00406	.08143	.00766	.00173	.33099	.00123
#3	.01110	.19652	.00787	.07904	.00992	.00167	.36273	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00404**	**.00477**	**.00487**	**.11591**	**.83506**	**.08086**	**.34181**	**.00775**
Stddev	.00012	.00053	.00081	.04530	.04966	.01004	.00309	.00299
%RSD	2.9164	11.099	16.677	39.081	5.9468	12.418	.90543	38.629
#1	.00395	.00416	.00489	.16541	.88894	.08950	.34441	.01120
#2	.00418	.00510	.00405	.10580	.82511	.08324	.34263	.00614
#3	.00400	.00505	.00568	.07652	.79113	.06984	.33839	.00590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00842**	**.46714**	**.01665**	**.84306**	**.01073**	**.08974**	**.01879**	**.78170**
Stddev	.00015	.05632	.00041	.00426	.00247	.00278	.00183	.00357
%RSD	1.7244	12.055	2.4577	.50497	23.066	3.1009	9.7202	.45644
#1	.00851	.52930	.01629	.83823	.00866	.09286	.01794	.78485
#2	.00848	.41953	.01657	.84625	.01347	.08751	.02089	.78243
#3	.00825	.45258	.01710	.84471	.01006	.08886	.01756	.77783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017

Sample Name: LLICV Acquired: 4/5/2017 15:11:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42997**	**.04317**	**.02306**	**.17139**	**.00832**	**.01879**	**.04121**
Stddev	.00115	.00043	.00150	.00210	.00027	.00014	.00104
%RSD	.26762	.98900	6.5145	1.2250	3.2704	.71848	2.5208
#1	.43128	.04295	.02146	.16909	.00840	.01883	.04084
#2	.42951	.04291	.02444	.17321	.00853	.01890	.04042
#3	.42913	.04367	.02328	.17187	.00801	.01864	.04239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23045.**	**153360.**	**4654.0**
Stddev	183.	2271.	53.0
%RSD	.79256	1.4808	1.1392
#1	22915.	153640.	4696.3
#2	23254.	150970.	4671.2
#3	22967.	155490.	4594.5

Approved: April 06, 2017
Ki K Buck

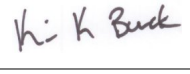
Sample Name: LLICV Acquired: 4/5/2017 15:15:25 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00979**	**.18960**	**.01003**	**.07998**	**.00949**	**.00169**	**.39851**	**.00102**
Stddev	.00048	.00126	.00060	.00111	.00105	.00003	.04511	.00011
%RSD	4.9301	.66341	5.9803	1.3877	11.041	1.9154	11.320	10.958
#1	.00935	.19101	.01035	.08012	.01064	.00173	.44327	.00090
#2	.00970	.18858	.00934	.08101	.00925	.00167	.39922	.00112
#3	.01031	.18921	.01040	.07880	.00858	.00167	.35305	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00395**	**.00508**	**.00544**	**.08653**	**.80350**	**.08705**	**.29664**	**.00712**
Stddev	.00018	.00034	.00149	.01786	.08776	.00433	.10367	.00415
%RSD	4.5915	6.6029	27.430	20.644	10.922	4.9799	34.949	58.283
#1	.00374	.00545	.00658	.07083	.75218	.08436	.32450	.00449
#2	.00403	.00499	.00600	.08280	.90484	.08473	.38355	.01190
#3	.00408	.00480	.00375	.10597	.75348	.09205	.18189	.00496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00814**	**.44997**	**.01838**	**.85334**	**.00824**	**.09156**	**.02323**	**.78941**
Stddev	.00010	.01928	.00094	.00379	.00177	.00186	.00772	.00247
%RSD	1.2621	4.2849	5.1229	.44367	21.546	2.0350	33.227	.31235
#1	.00803	.45318	.01750	.85641	.00882	.09225	.02681	.79069
#2	.00824	.42928	.01937	.84911	.00624	.09298	.02851	.78657
#3	.00814	.46744	.01827	.85450	.00964	.08945	.01437	.79098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017



Sample Name: LLICV Acquired: 4/5/2017 15:15:25 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43623**	**.04325**	**.02902**	**.17271**	**.00840**	**.01925**	**.04236**
Stddev	.00165	.00051	.01042	.00267	.00146	.00007	.00039
%RSD	.37934	1.1759	35.925	1.5458	17.334	.36085	.90975
#1	.43810	.04286	.03043	.17119	.01006	.01930	.04195
#2	.43496	.04382	.01796	.17115	.00783	.01927	.04240
#3	.43563	.04307	.03866	.17579	.00732	.01917	.04272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23030.**	**154640.**	**4529.9**
Stddev	143.	2688.	36.1
%RSD	.62284	1.7385	.79584
#1	22879.	151690.	4544.0
#2	23164.	156960.	4556.8
#3	23046.	155260.	4488.9

Approved: April 06, 2017

Sample Name: ICSA Acquired: 4/5/2017 15:18:56 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	248.47	-.00158	.01093	.00224	.00001	248.85
Stddev	.00308	.97	.00072	.00128	.00208	.00002	.15
%RSD	98.595	.39191	45.829	11.696	92.830	163.17	.06122
#1	.00357	249.37	-.00241	.01175	.00187	.00003	248.94
#2	.00596	247.44	-.00111	.01159	.00449	.00000	248.94
#3	-.00016	248.61	-.00121	.00946	.00037	-.00000	248.67
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	-.00142	-.00009	F -.00903	99.377	.04275	-.00221
Stddev	.00027	.00013	.00079	.00129	.153	.05066	.00660
%RSD	93.943	8.8183	837.72	14.255	.15405	118.52	298.53
#1	.00015	-.00132	.00068	-.00755	99.238	.04936	-.00134
#2	.00061	-.00156	-.00007	-.00985	99.353	-.01090	.00391
#3	.00011	-.00137	-.00089	-.00970	99.541	.08978	-.00920
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	256.33	.00186	-.00068	.02686	-.00302	.05650	.00377
Stddev	.21	.00217	.00068	.02852	.00058	.00422	.00302
%RSD	.08073	116.69	99.865	106.16	19.062	7.4730	80.100
#1	256.28	.00330	-.00138	.03861	-.00305	.05290	.00062
#2	256.56	.00291	-.00003	.04764	-.00243	.05545	.00404
#3	256.15	-.00063	-.00063	-.00565	-.00358	.06115	.00664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017
Kristi K Buck

Sample Name: ICSA Acquired: 4/5/2017 15:18:56 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00245**	**.00315**	**.00903**	**-.00180**	**.00138**	**.00061**	**-.00165**
Stddev	.00117	.00236	.00152	.00127	.00089	.00396	.00054
%RSD	47.748	74.933	16.853	70.606	64.740	645.23	32.589
#1	-.00300	.00432	.00754	-.00033	.00220	.00427	-.00226
#2	-.00324	.00469	.00896	-.00250	.00152	.00116	-.00145
#3	-.00111	.00043	.01058	-.00256	.00043	-.00359	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00321**	**-.00656**	**-.00212**
Stddev	.00039	.00003	.00032
%RSD	12.185	.50504	15.319
#1	-.00362	-.00656	-.00246
#2	-.00317	-.00653	-.00208
#3	-.00284	-.00660	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21589.**	**141550.**	**4341.4**
Stddev	47.	400.	48.7
%RSD	.21886	.28226	1.1219
#1	21611.	141760.	4314.2
#2	21535.	141090.	4312.4
#3	21622.	141800.	4397.6

Approved: April 06, 2017

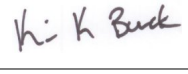
Sample Name: ICSAB Acquired: 4/5/2017 15:22:34 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52164**	**247.73**	**.25058**	**.52205**	**.25809**	**.26575**	**246.83**	**.51220**
Stddev	.00103	.76	.00519	.00193	.00182	.00084	1.56	.00190
%RSD	.19726	.30747	2.0711	.36972	.70362	.31481	.63157	.37074
#1	.52207	248.38	.24486	.52026	.25779	.26569	246.61	.51101
#2	.52047	247.93	.25191	.52180	.25645	.26495	245.40	.51439
#3	.52239	246.89	.25498	.52410	.26004	.26662	248.49	.51120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24407**	**.25751**	**.24633**	**97.752**	**5.2526**	**-.00436**	**251.93**	**.25113**
Stddev	.00092	.00100	.00089	.435	.1846	.00354	1.88	.00052
%RSD	.37582	.38640	.36201	.44535	3.5145	81.155	.74759	.20739
#1	.24345	.25750	.24568	97.769	5.0977	-.00639	251.93	.25114
#2	.24512	.25652	.24734	97.307	5.2033	-.00641	250.05	.25060
#3	.24364	.25851	.24596	98.178	5.4568	-.00027	253.82	.25165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**5.2966**	**.49056**	**-.04310**	**.50075**	**.49901**	**.24383**	**.00734**
Stddev	.00075	.0484	.00179	.00222	.00175	.00898	.00263	.00153
%RSD	1040.1	.91438	.36516	5.1602	.34901	1.7999	1.0773	20.853
#1	.00072	5.3518	.48893	-.04427	.49920	.48882	.24217	.00641
#2	-.00016	5.2769	.49027	-.04448	.50264	.50575	.24686	.00911
#3	-.00078	5.2611	.49248	-.04053	.50040	.50247	.24246	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017



Sample Name: ICSAB Acquired: 4/5/2017 15:22:34 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50011**	**.00141**	**-.00269**	**.46936**	**.25916**	**.48754**	**-.00192**
Stddev	.00195	.00054	.00676	.00205	.00061	.00209	.00019
%RSD	.39070	38.576	251.89	.43601	.23410	.42829	9.8019
#1	.49912	.00098	.00067	.46977	.25874	.48634	-.00214
#2	.50236	.00122	-.01047	.47117	.25889	.48995	-.00178
#3	.49885	.00202	.00175	.46714	.25986	.48633	-.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**20906.**	**138690.**	**4397.1**
Stddev	211.	536.	38.7
%RSD	1.0098	.38612	.88021
#1	21030.	138950.	4392.8
#2	20662.	139050.	4437.8
#3	21026.	138080.	4360.8

Approved: April 06, 2017

Sample Name: CCV Acquired: 4/5/2017 15:26:08 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40236	10.253	.39511	.49904	1.0032	.04967	10.029	.05027
Stddev	.00037	.050	.00212	.00473	.0034	.00018	.054	.00008
%RSD	.09238	.48539	.53563	.94718	.34405	.36542	.53513	.16393
#1	.40260	10.227	.39363	.49474	1.0072	.04957	10.082	.05019
#2	.40253	10.222	.39416	.49829	1.0012	.04957	9.9747	.05026
#3	.40193	10.310	.39753	.50410	1.0012	.04988	10.029	.05035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20035	.49983	.49991	3.9265	49.596	1.0004	9.7811	.48949
Stddev	.00040	.00078	.00147	.0343	.363	.0031	.0769	.00585
%RSD	.19989	.15562	.29438	.87371	.73162	.31153	.78625	1.1956
#1	.19993	.49962	.49849	3.9120	49.628	1.0039	9.8590	.49337
#2	.20039	.49918	.50143	3.9018	49.218	.99782	9.7790	.48276
#3	.20073	.50069	.49981	3.9657	49.942	.99952	9.7053	.49234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99890	50.046	.49977	9.9485	.50489	1.2015	.39797	5.0537
Stddev	.00137	.277	.00074	.0263	.00100	.0047	.00112	.0078
%RSD	.13704	.55298	.14792	.26475	.19783	.39393	.28212	.15373
#1	.99732	50.286	.49923	9.9367	.50397	1.1973	.39737	5.0454
#2	.99962	49.743	.49948	9.9302	.50475	1.2066	.39927	5.0548
#3	.99975	50.111	.50062	9.9787	.50596	1.2006	.39728	5.0608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: April 06, 2017

Ki K Buck

Sample Name: CCV Acquired: 4/5/2017 15:26:08 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0008	1.0004	.99157	.50714	.99995	.99308	.99233
Stddev	.0019	.0025	.00784	.00144	.00432	.00160	.00748
%RSD	.18762	.25226	.79073	.28342	.43162	.16078	.75335
#1	.99867	1.0014	1.0005	.50794	.99832	.99126	.99642
#2	1.0019	.99750	.98811	.50799	.99670	.99426	.99687
#3	1.0019	1.0022	.98605	.50548	1.0049	.99373	.98370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	22598.	153350.	4655.3
Stddev	209.	1588.	8.0
%RSD	.92522	1.0353	.17259
#1	22827.	154160.	4660.6
#2	22416.	154370.	4646.1
#3	22552.	151520.	4659.3

Approved: April 06, 2017

Sample Name: CCB Acquired: 4/5/2017 15:29:31 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00669**	**-.00153**	**.00156**	**-.00057**	**.00004**	**-.04756**	**-.00016**
Stddev	.00114	.00414	.00197	.00115	.00142	.00003	.03674	.00007
%RSD	240.37	61.920	129.11	73.557	250.16	64.501	77.245	45.971
#1	.00139	.00191	-.00380	.00237	-.00092	.00007	-.08564	-.00010
#2	-.00081	.00924	-.00030	.00208	.00100	.00001	-.04469	-.00013
#3	.00084	.00892	-.00048	.00025	-.00178	.00004	-.01234	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.00035**	**.00026**	**.02655**	**.08387**	**-.00588**	**-.09627**	**.00215**
Stddev	.00023	.00058	.00122	.02379	.18797	.01000	.04886	.00089
%RSD	63.439	162.99	471.80	89.609	224.11	170.10	50.750	41.173
#1	-.00063	.00042	-.00103	.04129	.30092	.00037	-.14353	.00265
#2	-.00024	-.00025	.00139	-.00090	-.02323	-.01741	-.04596	.00268
#3	-.00022	.00090	.00042	.03924	-.02606	-.00059	-.09932	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.01263**	**-.00068**	**.00623**	**.00058**	**.00132**	**.00070**	**.00010**
Stddev	.00020	.00818	.00055	.00778	.00064	.00230	.00549	.00049
%RSD	69.407	64.760	81.680	124.94	111.40	174.28	782.85	511.62
#1	.00009	.02121	-.00015	-.00090	.00086	.00265	.00570	-.00001
#2	.00029	.01176	-.00125	.00506	.00102	-.00134	-.00517	-.00033
#3	.00049	.00492	-.00063	.01453	-.00016	.00265	.00157	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017

Sample Name: CCB Acquired: 4/5/2017 15:29:31 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00360**	**-.00046**	**.00297**	**-.00144**	**-.00027**	**-.00022**	**.00030**
Stddev	.00032	.00046	.00913	.00178	.00051	.00005	.00023
%RSD	8.7968	98.618	307.42	124.22	184.11	22.477	76.734
#1	.00359	.00006	-.00675	.00037	-.00067	-.00028	.00052
#2	.00329	-.00072	.01136	-.00320	-.00044	-.00018	.00006
#3	.00393	-.00073	.00429	-.00148	.00029	-.00022	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23084.**	**153980.**	**4583.4**
Stddev	546.	2933.	67.9
%RSD	2.3666	1.9049	1.4811
#1	22855.	151920.	4638.9
#2	23708.	152690.	4603.7
#3	22690.	157340.	4507.7

Approved: April 06, 2017

Kristi K Burck

Sample Name: L1704000901 Acquired: 4/5/2017 15:33:08 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	.00745	.00120	.00157	.00044	-.00000	-.03881
Stddev	.00061	.00076	.00110	.00271	.00020	.00004	.03666
%RSD	54.746	10.227	91.876	172.00	46.101	1009.5	94.467
#1	.00180	.00657	.00241	-.00144	.00050	.00000	-.04688
#2	.00067	.00795	.00091	.00380	.00062	.00003	.00122
#3	.00085	.00782	.00027	.00236	.00022	-.00005	-.07076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00007	.00005	.00038	.02014	.01973	-.00748
Stddev	.00027	.00019	.00025	.00051	.02594	.08737	.00557
%RSD	173.95	289.44	471.02	133.86	128.82	442.75	74.464
#1	.00004	.00015	-.00018	.00096	.00955	-.07073	-.00128
#2	-.00004	-.00020	.00031	.00015	.04971	.10364	-.00911
#3	-.00047	-.00015	.00002	.00003	.00117	.02628	-.01205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.10884	.00400	.00018	.01933	-.00121	.00858	.00120
Stddev	.05406	.00226	.00029	.00584	.00114	.00606	.00262
%RSD	49.664	56.476	158.31	30.193	94.484	70.589	218.45
#1	-.16794	.00621	.00016	.02578	-.00006	.00320	.00152
#2	-.09669	.00170	-.00009	.01443	-.00235	.00741	.00365
#3	-.06190	.00408	.00048	.01778	-.00123	.01514	-.00157
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: April 06, 2017
Ki K Buck

Sample Name: L1704000901 Acquired: 4/5/2017 15:33:08 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.00030**	**-.00052**	**-.00034**	**.00020**	**-.00174**	**.00087**
Stddev	.00357	.00130	.00282	.00075	.00031	.00167	.00158
%RSD	3196.5	425.59	538.17	222.37	152.68	96.395	182.14
#1	-.00174	.00163	-.00369	-.00116	.00011	-.00316	.00269
#2	.00398	-.00096	.00038	.00032	-.00005	-.00216	.00002
#3	-.00258	.00025	.00173	-.00017	.00056	.00011	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00050**	**-.00021**	**-.00008**
Stddev	.00060	.00008	.00014
%RSD	119.61	35.384	168.55
#1	.00035	-.00027	.00005
#2	-.00001	-.00013	-.00023
#3	.00116	-.00023	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23270.**	**158900.**	**4733.0**
Stddev	53.	3618.	21.1
%RSD	.22817	2.2767	.44680
#1	23210.	162000.	4711.9
#2	23312.	159780.	4754.2
#3	23288.	154930.	4732.8

Approved: April 06, 2017

Sample Name: L1704000902 Acquired: 4/5/2017 15:36:42 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00189**	**.00591**	**.00127**	**-.00056**	**.00225**	**-.00001**	**-.05119**
Stddev	.00229	.00191	.00164	.00179	.00176	.00010	.03452
%RSD	121.42	32.259	129.22	321.67	78.418	813.55	67.441
#1	.00430	.00796	.00078	-.00232	.00326	.00009	-.06552
#2	-.00027	.00556	.00311	.00125	.00021	-.00002	-.07624
#3	.00164	.00420	-.00007	-.00059	.00326	-.00011	-.01181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00032**	**.00027**	**.00040**	**-.01721**	**-.16023**	**-.00160**
Stddev	.00011	.00005	.00042	.00059	.00364	.06197	.00750
%RSD	474.72	15.258	152.88	147.13	21.123	38.678	469.55
#1	.00008	-.00037	-.00005	.00054	-.02119	-.16391	.00706
#2	-.00014	-.00027	.00012	-.00025	-.01637	-.09649	-.00609
#3	-.00002	-.00032	.00075	.00091	-.01407	-.22028	-.00576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.12639**	**-.00117**	**-.00027**	**-.03860**	**.00011**	**.01226**	**.00219**
Stddev	.04107	.00213	.00035	.07008	.00103	.00353	.00235
%RSD	32.492	182.22	130.83	181.56	894.04	28.774	107.65
#1	-.11131	-.00363	-.00004	-.01137	-.00103	.00825	-.00028
#2	-.09500	.00012	-.00067	.01378	.00094	.01487	.00440
#3	-.17287	.00001	-.00009	-.11821	.00044	.01367	.00244
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: April 06, 2017

Kristi K Buck

Sample Name: L1704000902 Acquired: 4/5/2017 15:36:42 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00271**	**-.00091**	**-.00085**	**-.00057**	**.00005**	**-.00079**	**-.00077**
Stddev	.00268	.00454	.00033	.00041	.00061	.00658	.00114
%RSD	98.664	501.23	38.787	71.804	1266.6	835.70	147.61
#1	.00023	-.00581	-.00091	-.00085	.00068	.00117	-.00057
#2	-.00501	.00316	-.00050	-.00075	-.00052	.00459	-.00201
#3	-.00337	-.00008	-.00115	-.00010	-.00002	-.00812	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00060**	**-.00025**	**.00030**
Stddev	.00035	.00006	.00023
%RSD	58.427	23.512	77.083
#1	.00080	-.00028	.00006
#2	.00080	-.00018	.00032
#3	.00020	-.00029	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23499.**	**159800.**	**4470.0**
Stddev	327.	229.	100.5
%RSD	1.3919	.14310	2.2482
#1	23866.	159540.	4410.9
#2	23393.	159920.	4586.1
#3	23238.	159950.	4413.1

Approved: April 06, 2017

Sample Name: L1704000903 Acquired: 4/5/2017 15:40:16 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.00698**	**.00109**	**-.00003**	**.00064**	**.00004**	**-.08242**
Stddev	.00134	.00188	.00149	.00083	.00090	.00001	.09770
%RSD	98.379	26.915	137.26	2894.8	141.96	18.635	118.54
#1	.00067	.00506	.00281	-.00085	-.00015	.00003	.02247
#2	.00290	.00882	.00014	.00081	.00044	.00004	-.09889
#3	.00051	.00706	.00032	-.00005	.00162	.00005	-.17083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**-.00024**	**.00067**	**.00025**	**-.00599**	**-.04373**	**-.00296**
Stddev	.00008	.00022	.00089	.00094	.06119	.06443	.00479
%RSD	33.377	93.174	132.73	374.30	1020.8	147.33	161.98
#1	-.00030	-.00017	.00102	.00035	-.01387	-.02800	-.00812
#2	-.00024	-.00049	-.00034	-.00074	.05875	.01138	-.00208
#3	-.00015	-.00006	.00134	.00114	-.06286	-.11458	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.10352**	**.00064**	**.00001**	**-.07721**	**-.00049**	**.01023**	**.00226**
Stddev	.04883	.00170	.00036	.02723	.00110	.00398	.00222
%RSD	47.172	263.66	5083.8	35.264	226.48	38.921	98.219
#1	-.15023	-.00006	.00004	-.09810	-.00154	.00564	-.00030
#2	-.10750	.00258	.00035	-.04642	-.00058	.01233	.00346
#3	-.05282	-.00059	-.00037	-.08712	.00066	.01272	.00363
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: April 06, 2017

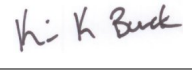
Sample Name: L1704000903 Acquired: 4/5/2017 15:40:16 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.00227**	**-.00186**	**-.00003**	**-.00001**	**-.01195**	**-.00181**
Stddev	.00629	.00562	.00087	.00041	.00032	.00863	.00178
%RSD	2061.7	247.48	46.631	1298.7	5180.7	72.199	97.881
#1	.00664	.00249	-.00089	.00043	-.00026	-.00218	-.00191
#2	-.00561	.00777	-.00214	-.00015	.00035	-.01517	.00001
#3	-.00195	-.00346	-.00256	-.00038	-.00012	-.01850	-.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00018**	**-.00023**	**.00004**
Stddev	.00063	.00011	.00008
%RSD	352.79	46.102	213.17
#1	-.00014	-.00027	.00011
#2	-.00023	-.00030	-.00004
#3	.00091	-.00011	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23538.**	**156500.**	**4582.7**
Stddev	204.	1897.	62.1
%RSD	.86488	1.2118	1.3544
#1	23399.	157570.	4554.4
#2	23772.	157630.	4653.9
#3	23443.	154320.	4539.9

Approved: April 06, 2017



Sample Name: L1704000904 Acquired: 4/5/2017 15:43:56 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.01284**	**.00069**	**-.00311**	**.00235**	**.00005**	**-.05257**
Stddev	.00124	.00678	.00043	.00308	.00104	.00003	.02116
%RSD	465.11	52.770	62.375	98.788	44.374	57.575	40.256
#1	-.00101	.01977	.00105	-.00142	.00172	.00005	-.06055
#2	.00147	.00622	.00021	-.00126	.00356	.00002	-.02858
#3	.00033	.01254	.00080	-.00666	.00178	.00007	-.06859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00037**	**.00046**	**.00062**	**.01104**	**-.02703**	**-.00421**
Stddev	.00015	.00010	.00034	.00168	.00987	.05040	.00356
%RSD	182.92	27.878	75.090	269.27	89.418	186.45	84.626
#1	-.00022	-.00025	.00036	-.00067	.01607	-.01964	-.00206
#2	.00007	-.00040	.00017	.00252	-.00033	.01926	-.00225
#3	-.00008	-.00045	.00084	.00002	.01739	-.08073	-.00832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.10082**	**.00179**	**-.00023**	**.00206**	**-.00077**	**.00963**	**-.00081**
Stddev	.12429	.00137	.00021	.06056	.00074	.00221	.00064
%RSD	123.29	76.196	91.872	2936.3	96.016	22.923	78.948
#1	-.21699	.00337	-.00017	.06803	-.00125	.00979	-.00155
#2	.03025	.00100	-.00006	-.01084	.00008	.01176	-.00050
#3	-.11572	.00101	-.00047	-.05100	-.00113	.00735	-.00038
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: April 06, 2017

Kristi K Buck

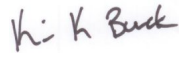
Sample Name: L1704000904 Acquired: 4/5/2017 15:43:56 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00425**	**-.00339**	**-.00235**	**.00025**	**.00033**	**-.00506**	**-.00014**
Stddev	.00188	.00075	.00017	.00033	.00070	.01024	.00258
%RSD	44.354	22.224	7.1572	132.04	215.52	202.23	1887.6
#1	-.00254	-.00322	-.00254	-.00004	.00113	-.01688	.00154
#2	-.00627	-.00421	-.00225	.00018	-.00003	.00046	-.00310
#3	-.00392	-.00273	-.00226	.00060	-.00013	.00123	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00016**	**-.00009**	**-.00012**
Stddev	.00049	.00006	.00020
%RSD	309.01	62.624	168.02
#1	-.00040	-.00004	-.00008
#2	.00051	-.00016	-.00033
#3	.00036	-.00008	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23086.**	**155470.**	**4500.9**
Stddev	233.	3266.	84.2
%RSD	1.0099	2.1003	1.8703
#1	23048.	152310.	4547.1
#2	23336.	158830.	4551.9
#3	22875.	155280.	4403.8

Approved: April 06, 2017



Sample Name: L1704000905 Acquired: 4/5/2017 15:47:30 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00761	-.00048	-.00080	.00208	.00006	F -.11737
Stddev	.00226	.00503	.00157	.00041	.00159	.00001	.03516
%RSD	890.85	66.041	327.61	50.710	76.312	12.172	29.958
#1	.00221	.01237	-.00112	-.00062	.00290	.00006	-.14792
#2	-.00222	.00810	.00131	-.00052	.00025	.00006	-.12526
#3	.00077	.00236	-.00162	-.00127	.00310	.00007	-.07893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00028	.00023	-.00103	.04086	.03999	-.00545
Stddev	.00026	.00008	.00031	.00056	.01246	.08536	.00259
%RSD	130.84	28.802	134.95	54.867	30.500	213.45	47.453
#1	-.00007	-.00025	-.00006	-.00044	.03016	.11329	-.00822
#2	-.00050	-.00037	.00019	-.00108	.05454	-.05373	-.00505
#3	-.00003	-.00022	.00056	-.00156	.03786	.06041	-.00309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.09627	.00337	.00000	-.03098	-.00021	.01167	-.00125
Stddev	.02250	.00262	.00020	.03426	.00050	.00083	.00154
%RSD	23.375	77.968	8914.8	110.60	237.83	7.1021	122.79
#1	-.08925	.00636	.00016	-.02391	-.00004	.01248	-.00101
#2	-.12145	.00145	-.00022	-.00081	-.00077	.01083	-.00291
#3	-.07812	.00229	.00007	-.06823	.00018	.01171	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017

Ki K Buck

Sample Name: L1704000905 Acquired: 4/5/2017 15:47:30 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00204**	**-.00060**	**.00006**	**.00013**	**-.00036**	**.00791**	**.00015**
Stddev	.00256	.00148	.00174	.00028	.00040	.00686	.00291
%RSD	125.51	245.82	2801.9	217.58	108.84	86.732	1982.2
#1	.00013	-.00200	.00109	.00041	-.00050	.00622	.00316
#2	-.00139	-.00077	-.00195	-.00015	.00008	.01547	-.00006
#3	-.00487	.00095	.00105	.00013	-.00067	.00205	-.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00006**	**-.00013**	**.00012**
Stddev	.00020	.00007	.00011
%RSD	352.13	57.135	88.690
#1	-.00016	-.00018	.00019
#2	.00023	-.00017	-.00000
#3	.00010	-.00004	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24032.**	**156620.**	**4555.3**
Stddev	172.	2371.	36.6
%RSD	.71612	1.5137	.80452
#1	24156.	156530.	4553.8
#2	23836.	154290.	4592.7
#3	24105.	159030.	4519.5

Approved: April 06, 2017

Kristi K Buck

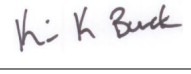
Sample Name: L1704000906 Acquired: 4/5/2017 15:51:04 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.00327**	**-.00010**	**-.00028**	**.00034**	**.00006**	**-.06289**	**.00002**
Stddev	.00071	.00762	.00187	.00172	.00063	.00004	.07008	.00016
%RSD	156.29	232.65	1830.2	608.56	181.90	73.944	111.43	765.60
#1	.00027	-.00548	.00175	.00170	.00107	.00009	-.06681	-.00006
#2	-.00049	.00689	-.00198	-.00142	.00002	.00008	.00907	.00020
#3	-.00116	.00841	-.00008	-.00112	-.00005	.00001	-.13093	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00058**	**-.00037**	**.02463**	**-.03186**	**-.00857**	**-.07787**	**.00434**
Stddev	.00004	.00044	.00135	.02329	.04985	.00550	.02750	.00181
%RSD	22.067	75.821	362.76	94.565	156.47	64.142	35.310	41.850
#1	-.00016	.00104	.00039	.03226	-.07967	-.00810	-.05277	.00334
#2	-.00018	.00016	-.00192	-.00152	-.03572	-.01429	-.10726	.00323
#3	-.00025	.00054	.00042	.04313	.01981	-.00332	-.07358	.00643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.06629**	**-.00036**	**.01365**	**-.00001**	**-.00453**	**.00171**	**-.00073**
Stddev	.00047	.00976	.00023	.00432	.00107	.00434	.00191	.00270
%RSD	1444.1	14.722	63.595	31.667	7351.2	95.717	111.66	368.21
#1	-.00003	-.05540	-.00021	.00902	.00077	-.00387	-.00008	.00123
#2	-.00040	-.07425	-.00062	.01757	-.00124	-.00057	.00372	-.00381
#3	.00053	-.06921	-.00024	.01435	.00042	-.00917	.00150	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017



Sample Name: L1704000906 Acquired: 4/5/2017 15:51:04 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**-.00052**	**.00288**	**.00212**	**.00024**	**-.00018**	**.00004**
Stddev	.00046	.00070	.00695	.00167	.00035	.00005	.00038
%RSD	168.91	134.63	241.67	78.620	147.57	25.729	857.94
#1	-.00020	.00027	-.00084	.00200	.00064	-.00017	-.00025
#2	.00015	-.00077	.01090	.00051	.00002	-.00014	-.00009
#3	-.00076	-.00106	-.00143	.00384	.00005	-.00023	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23564.**	**155440.**	**4657.8**
Stddev	238.	1459.	74.9
%RSD	1.0086	.93844	1.6071
#1	23560.	156710.	4611.9
#2	23804.	155770.	4744.1
#3	23329.	153850.	4617.2

Approved: April 06, 2017

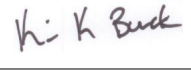
Sample Name: L1704000907 Acquired: 4/5/2017 15:54:38 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00405**	**.00149**	**-.00161**	**.00103**	**.00004**	**-.06064**	**-.00021**
Stddev	.00113	.00310	.00034	.00083	.00117	.00002	.05948	.00026
%RSD	266.69	76.694	22.937	51.823	113.80	63.324	98.086	124.32
#1	.00006	.00128	.00125	-.00180	.00011	.00001	-.00947	-.00010
#2	-.00048	.00740	.00134	-.00070	.00063	.00006	-.04654	-.00002
#3	.00169	.00345	.00188	-.00233	.00234	.00003	-.12589	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00095**	**.00089**	**.00097**	**-.06910**	**-.00655**	**-.09625**	**-.00084**
Stddev	.00006	.00035	.00052	.02179	.05996	.00237	.11134	.00277
%RSD	36.042	36.952	58.190	2249.6	86.781	36.115	115.67	329.88
#1	-.00023	.00086	.00112	.01914	-.13172	-.00532	-.21697	-.00349
#2	-.00012	.00066	.00124	-.02320	-.01221	-.00505	-.07418	-.00105
#3	-.00014	.00134	.00029	.00697	-.06336	-.00928	.00239	.00203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00287**	**-.00059**	**.00914**	**.00129**	**-.00137**	**.00198**	**-.00213**
Stddev	.00022	.04831	.00139	.00195	.00261	.00206	.00402	.00041
%RSD	162.32	1685.7	233.19	21.285	203.05	150.63	203.66	18.995
#1	-.00038	-.05109	.00078	.01128	.00009	-.00198	-.00190	-.00239
#2	-.00006	.04552	-.00200	.00866	.00429	.00093	.00613	-.00234
#3	.00003	-.00302	-.00057	.00748	-.00051	-.00306	.00169	-.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017

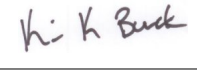


Sample Name: L1704000907 Acquired: 4/5/2017 15:54:38 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00037**	**.00176**	**-.00055**	**.00016**	**-.00022**	**.00016**
Stddev	.00071	.00053	.01475	.00204	.00064	.00011	.00009
%RSD	263.90	142.94	839.52	373.06	408.43	49.140	53.994
#1	.00024	-.00023	-.00967	.00106	-.00055	-.00010	.00025
#2	-.00108	.00076	-.00347	-.00285	.00033	-.00024	.00017
#3	.00003	.00057	.01841	.00014	.00069	-.00032	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23373.**	**156810.**	**4592.2**
Stddev	186.	645.	56.4
%RSD	.79672	.41102	1.2281
#1	23439.	157500.	4536.8
#2	23518.	156700.	4649.5
#3	23163.	156230.	4590.2

Approved: April 06, 2017



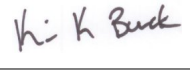
Sample Name: IDL8 Acquired: 4/5/2017 15:58:12 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**.00620**	**.00041**	**-.00083**	**.00164**	**.00004**	**-.06057**	**.00004**
Stddev	.00047	.00300	.00063	.00062	.00087	.00003	.03787	.00027
%RSD	165.48	48.350	153.36	74.811	52.844	72.784	62.522	683.04
#1	.00002	.00466	.00092	-.00045	.00206	.00008	-.09313	.00029
#2	.00082	.00429	.00061	-.00049	.00065	.00003	-.06958	-.00025
#3	.00000	.00966	-.00030	-.00154	.00222	.00002	-.01901	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00058**	**.00101**	**.02409**	**-.09425**	**-.00318**	**-.06501**	**.00052**
Stddev	.00031	.00069	.00084	.01013	.13084	.00471	.10442	.00848
%RSD	345.82	119.22	83.180	42.035	138.82	148.12	160.63	1621.1
#1	-.00042	-.00009	.00195	.02424	-.05012	-.00526	-.10540	-.00243
#2	.00020	.00128	.00034	.01389	.00882	-.00650	-.14319	-.00609
#3	-.00005	.00053	.00074	.03414	-.24145	.00221	.05358	.01009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00427**	**-.00096**	**.00797**	**.00126**	**.00190**	**.00233**	**-.00098**
Stddev	.00035	.03555	.00101	.00265	.00092	.00195	.00207	.00170
%RSD	307.24	832.01	105.61	33.227	73.464	102.78	88.871	172.33
#1	.00046	.02399	-.00108	.00897	.00143	-.00033	.00470	-.00189
#2	.00010	.00739	.00011	.00497	.00208	.00272	.00144	.00097
#3	-.00023	-.04419	-.00191	.00997	.00026	.00331	.00085	-.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017



Sample Name: IDL8 Acquired: 4/5/2017 15:58:12 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.00019**	**-.00424**	**-.00002**	**.00028**	**-.00024**	**-.00002**
Stddev	.00032	.00027	.00270	.00068	.00018	.00006	.00018
%RSD	119.71	138.28	63.683	3310.7	66.830	24.321	906.64
#1	-.00057	.00030	-.00678	-.00075	.00036	-.00031	-.00022
#2	.00006	.00039	-.00452	.00010	.00040	-.00021	.00014
#3	-.00029	-.00011	-.00141	.00059	.00006	-.00021	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22689.**	**154440.**	**4477.5**
Stddev	117.	1491.	98.3
%RSD	.51733	.96540	2.1946
#1	22636.	154960.	4499.8
#2	22823.	155600.	4562.7
#3	22607.	152760.	4370.0

Approved: April 06, 2017

Sample Name: IDL9 Acquired: 4/5/2017 16:01:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00689**	**.00090**	**-.00131**	**.00191**	**.00003**	**-.08087**
Stddev	.00074	.00769	.00139	.00120	.00167	.00003	.05519
%RSD	894.06	111.63	153.82	91.859	86.980	109.67	68.237
#1	.00093	-.00106	-.00054	-.00020	.00132	.00001	-.02202
#2	-.00042	.00744	.00102	-.00258	.00380	.00007	-.08915
#3	-.00027	.01430	.00222	-.00113	.00063	.00001	-.13146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**-.00032**	**.00078**	**.00020**	**.01552**	**.57857**	**-.01039**
Stddev	.00034	.00035	.00046	.00100	.03933	.09029	.01041
%RSD	512.75	108.60	59.278	489.30	253.51	15.605	100.17
#1	-.00002	-.00004	.00039	.00070	.03382	.47723	.00120
#2	-.00043	-.00022	.00129	.00086	-.02964	.65044	-.01345
#3	.00025	-.00071	.00066	-.00094	.04236	.60804	-.01893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.11835**	**.00037**	**-.00010**	**.07704**	**-.00009**	**.01499**	**-.00131**
Stddev	.08905	.00591	.00046	.02581	.00145	.00567	.00096
%RSD	75.243	1584.5	450.62	33.500	1700.8	37.803	73.267
#1	-.22004	-.00219	-.00021	.10459	-.00087	.02086	-.00022
#2	-.08068	.00713	.00040	.07313	.00159	.00955	-.00204
#3	-.05433	-.00382	-.00049	.05341	-.00098	.01456	-.00167
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: April 06, 2017

Sample Name: IDL9 Acquired: 4/5/2017 16:01:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00249**	**-.00117**	**-.00246**	**-.00055**	**.00033**	**-.00350**	**.00296**
Stddev	.00253	.00148	.00182	.00027	.00132	.00748	.00197
%RSD	101.28	126.83	74.138	49.266	393.65	213.45	66.592
#1	-.00077	.00046	-.00066	-.00083	.00181	-.00453	.00167
#2	-.00132	-.00243	-.00431	-.00029	-.00073	-.01041	.00198
#3	-.00539	-.00154	-.00241	-.00053	-.00008	.00443	.00523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00027**	**-.00016**	**-.00018**
Stddev	.00019	.00008	.00020
%RSD	71.098	47.301	109.40
#1	.00048	-.00020	-.00017
#2	.00010	-.00021	.00001
#3	.00024	-.00007	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23392.**	**156330.**	**4429.6**
Stddev	505.	2415.	19.7
%RSD	2.1581	1.5448	.44446
#1	23237.	158160.	4451.2
#2	23956.	157240.	4412.7
#3	22982.	153600.	4424.8

Approved: April 06, 2017

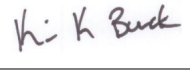
Sample Name: IDL10 Acquired: 4/5/2017 16:05:20 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00794**	**.00101**	**-.00112**	**.00244**	**.00002**	**-.06770**	**-.00012**
Stddev	.00116	.00401	.00207	.00053	.00049	.00002	.03926	.00003
%RSD	612.34	50.453	205.55	47.143	20.170	130.46	57.997	23.848
#1	.00133	.00532	.00133	-.00097	.00225	-.00001	-.02546	-.00011
#2	.00023	.01255	-.00120	-.00172	.00300	.00003	-.10309	-.00009
#3	-.00099	.00595	.00289	-.00069	.00207	.00003	-.07454	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.00057**	**.00005**	**.00016**	**.27982**	**-.00555**	**-.06585**	**.00407**
Stddev	.00026	.00083	.00158	.02183	.11704	.00288	.07696	.00358
%RSD	62.285	145.38	3301.2	13524.	41.827	51.942	116.88	87.990
#1	-.00028	.00070	.00174	.01150	.31523	-.00726	-.13126	.00276
#2	-.00071	-.00032	-.00020	-.02500	.14916	-.00222	-.08525	.00813
#3	-.00025	.00134	-.00140	.01399	.37506	-.00716	.01896	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.02085**	**-.00058**	**.00797**	**-.00054**	**-.00229**	**-.00265**	**-.00056**
Stddev	.00018	.04041	.00158	.00418	.00184	.00218	.00425	.00162
%RSD	247.76	193.84	273.04	52.489	338.63	95.199	160.63	289.19
#1	-.00027	.05246	-.00111	.01103	-.00259	.00017	-.00084	-.00181
#2	.00006	.03476	-.00183	.00320	.00098	-.00398	.00040	-.00114
#3	-.00000	-.02468	.00120	.00967	-.00002	-.00304	-.00750	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017



Sample Name: IDL10 Acquired: 4/5/2017 16:05:20 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00007**	**-.00383**	**-.00027**	**.00023**	**-.00023**	**.00021**
Stddev	.00053	.00069	.00519	.00328	.00074	.00004	.00009
%RSD	873.07	919.04	135.29	1237.6	321.88	19.325	44.127
#1	.00044	.00010	-.00602	-.00363	.00084	-.00021	.00012
#2	.00001	.00075	.00209	.00293	.00044	-.00028	.00031
#3	-.00063	-.00063	-.00757	-.00010	-.00059	-.00021	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23149.**	**151640.**	**4513.0**
Stddev	393.	314.	146.0
%RSD	1.6961	.20738	3.2341
#1	22936.	151400.	4666.4
#2	22910.	152000.	4496.9
#3	23602.	151530.	4375.8

Approved: April 06, 2017

Kristi K Buck

Sample Name: CCV Acquired: 4/5/2017 16:08:55 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40097**	**10.289**	**.40216**	**.49980**	**1.0097**	**.04969**	**10.019**	**.05030**
Stddev	.00087	.023	.00131	.00136	.0052	.00016	.092	.00010
%RSD	.21672	.21892	.32646	.27230	.51412	.32031	.92290	.19865
#1	.40093	10.283	.40338	.49845	1.0037	.04976	10.040	.05042
#2	.40012	10.271	.40077	.49977	1.0126	.04951	9.9177	.05025
#3	.40186	10.315	.40232	.50118	1.0129	.04980	10.099	.05024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20315**	**.50247**	**.50539**	**3.9501**	**49.377**	**1.0142**	**9.8720**	**.49437**
Stddev	.00098	.00165	.00288	.0518	.214	.0086	.0607	.00474
%RSD	.48013	.32783	.56896	1.3114	.43432	.85116	.61482	.95844
#1	.20423	.50251	.50870	3.8936	49.250	1.0136	9.8852	.49110
#2	.20232	.50081	.50396	3.9953	49.257	1.0059	9.8058	.49220
#3	.20290	.50410	.50351	3.9614	49.625	1.0231	9.9250	.49980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0108**	**50.237**	**.50664**	**10.092**	**.51259**	**1.2090**	**.40373**	**5.1278**
Stddev	.0032	.247	.00196	.039	.00512	.0015	.00153	.0181
%RSD	.31971	.49151	.38609	.39090	.99863	.12708	.37883	.35226
#1	1.0146	50.138	.50888	10.134	.51645	1.2078	.40524	5.1476
#2	1.0092	50.054	.50526	10.057	.50679	1.2084	.40218	5.1122
#3	1.0087	50.518	.50578	10.084	.51454	1.2107	.40378	5.1237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: April 06, 2017

Sample Name: CCV Acquired: 4/5/2017 16:08:55 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0140**	**1.0088**	**1.0054**	**.51425**	**1.0051**	**1.0029**	**1.0018**
Stddev	.0041	.0035	.0085	.00160	.0024	.0039	.0022
%RSD	.40086	.34547	.84951	.31184	.23921	.38708	.21461
#1	1.0187	1.0057	1.0151	.51507	1.0055	1.0073	1.0029
#2	1.0121	1.0083	.99925	.51240	1.0025	1.0004	1.0032
#3	1.0112	1.0126	1.0017	.51528	1.0073	1.0009	.99933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22341.**	**151100.**	**4558.2**
Stddev	88.	981.	14.5
%RSD	.39226	.64899	.31770
#1	22372.	150880.	4552.8
#2	22409.	152170.	4574.7
#3	22242.	150250.	4547.2

Approved: April 06, 2017

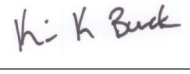
Sample Name: CCB Acquired: 4/5/2017 16:12:18 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00743**	**-.00014**	**.00081**	**.00089**	**.00007**	**-.06046**	**.00025**
Stddev	.00155	.00160	.00190	.00162	.00128	.00002	.05028	.00014
%RSD	601.01	21.494	1337.0	200.40	144.56	25.158	83.162	55.199
#1	.00036	.00612	-.00185	.00122	-.00059	.00009	-.11851	.00015
#2	.00175	.00921	.00190	-.00098	.00171	.00005	-.03270	.00040
#3	-.00134	.00696	-.00048	.00219	.00153	.00008	-.03018	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00023**	**.00043**	**.02667**	**.17457**	**.00022**	**-.03557**	**.00184**
Stddev	.00006	.00038	.00049	.01222	.19777	.00460	.07572	.00133
%RSD	25.774	166.46	113.94	45.819	113.29	2121.0	212.86	72.369
#1	-.00018	.00066	.00010	.03698	.16601	.00318	-.10757	.00045
#2	-.00021	.00006	.00100	.02985	.37648	-.00509	-.04255	.00310
#3	-.00029	-.00004	.00020	.01317	-.01878	.00256	.04339	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.02088**	**-.00053**	**.00038**	**.00002**	**-.00098**	**.00026**	**.00314**
Stddev	.00033	.04311	.00107	.00113	.00030	.00192	.00383	.00277
%RSD	112.88	206.44	200.87	296.67	1922.1	195.33	1471.4	88.436
#1	.00059	-.02491	.00070	.00136	-.00029	.00041	.00179	.00602
#2	.00037	.02688	-.00106	.00063	.00003	-.00317	.00309	.00291
#3	-.00007	.06067	-.00123	-.00085	.00031	-.00019	-.00409	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017



Sample Name: CCB Acquired: 4/5/2017 16:12:18 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00658**	**.00014**	**.00318**	**-.00117**	**.00018**	**-.00017**	**.00035**
Stddev	.00046	.00064	.00498	.00168	.00028	.00006	.00010
%RSD	7.0033	454.69	156.72	144.48	153.49	38.473	28.125
#1	.00642	.00019	-.00184	.00055	.00015	-.00014	.00028
#2	.00621	.00075	.00812	-.00281	.00048	-.00024	.00046
#3	.00710	-.00052	.00325	-.00124	-.00008	-.00012	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22949.**	**153830.**	**4294.8**
Stddev	227.	529.	56.4
%RSD	.98731	.34363	1.3130
#1	23150.	153600.	4247.3
#2	22995.	154430.	4280.0
#3	22703.	153450.	4357.2

Approved: April 06, 2017

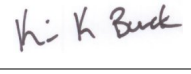
Sample Name: L1703168901 Acquired: 4/5/2017 16:15:54 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.20255**	**.00074**	**.03163**	**.33380**	**.00032**	**32.398**	**.00045**
Stddev	.00074	.00218	.00120	.00133	.00234	.00007	.256	.00013
%RSD	1080.5	1.0746	162.23	4.2081	.70072	23.382	.79108	29.327
#1	-.00010	.20416	.00190	.03316	.33305	.00035	32.221	.00030
#2	-.00079	.20342	.00082	.03098	.33193	.00037	32.281	.00056
#3	.00069	.20008	-.00050	.03074	.33643	.00023	32.692	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01022**	**.01796**	**.00712**	**4.8252**	**.96229**	**.00603**	**21.669**	**.57673**
Stddev	.00034	.00055	.00052	.0655	.09602	.00102	.227	.00429
%RSD	3.3498	3.0405	7.2995	1.3571	9.9782	16.919	1.0471	.74397
#1	.01002	.01857	.00685	4.8456	1.0064	.00503	21.487	.57713
#2	.01003	.01751	.00678	4.7519	1.0283	.00599	21.597	.57226
#3	.01062	.01780	.00771	4.8780	.85214	.00707	21.923	.58081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00207**	**195.51**	**.01835**	**.16515**	**.00092**	**-.00081**	**-.00007**	**8.9951**
Stddev	.00035	2.04	.00024	.00102	.00152	.00358	.00247	.0455
%RSD	16.692	1.0448	1.2874	.61655	166.00	441.19	3642.6	.50619
#1	.00173	193.80	.01826	.16631	.00180	-.00156	-.00246	8.9456
#2	.00206	194.96	.01862	.16442	.00180	-.00396	-.00022	9.0048
#3	.00242	197.78	.01818	.16471	-.00084	.00309	.00247	9.0351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017

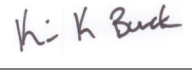


Sample Name: L1703168901 Acquired: 4/5/2017 16:15:54 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.64635**	**-.00157**	**.00185**	**.00116**	**.25551**	**-.00006**
Stddev	.00007	.00593	.00624	.00277	.00059	.00129	.00028
%RSD	11.942	.91694	396.84	149.44	51.118	.50403	487.26
#1	-.00051	.64118	-.00520	-.00087	.00109	.25419	-.00007
#2	-.00055	.64504	-.00515	.00466	.00179	.25556	-.00033
#3	-.00064	.65282	.00563	.00177	.00061	.25677	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22384.**	**147600.**	**4487.8**
Stddev	160.	421.	62.6
%RSD	.71351	.28494	1.3956
#1	22557.	147270.	4499.0
#2	22242.	147450.	4544.0
#3	22353.	148070.	4420.3

Approved: April 06, 2017



Sample Name: CCV Acquired: 4/5/2017 16:19:26 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40857	10.534	.40500	.50725	1.0126	.05032	10.028	.05065
Stddev	.00211	.052	.00675	.00374	.0061	.00028	.067	.00058
%RSD	.51758	.49633	1.6655	.73688	.60276	.55233	.66419	1.1368
#1	.40769	10.550	.39989	.50531	1.0071	.05033	9.9801	.05021
#2	.40704	10.476	.40246	.50489	1.0115	.05003	10.001	.05042
#3	.41098	10.577	.41264	.51156	1.0191	.05059	10.104	.05130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20358	.50930	.50880	3.9595	49.766	1.0127	9.8606	.49099
Stddev	.00323	.00398	.00743	.0322	.219	.0123	.1346	.00437
%RSD	1.5879	.78194	1.4599	.81287	.44020	1.2155	1.3645	.88973
#1	.20133	.50949	.50401	3.9255	49.622	.99912	9.8029	.49057
#2	.20212	.50523	.50503	3.9894	49.658	1.0157	9.7645	.48685
#3	.20728	.51319	.51736	3.9636	50.018	1.0232	10.014	.49555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0133	50.581	.50847	10.156	.51455	1.2075	.40445	5.1449
Stddev	.0157	.403	.00804	.146	.00756	.0179	.00495	.0733
%RSD	1.5457	.79588	1.5817	1.4408	1.4700	1.4791	1.2242	1.4244
#1	1.0002	50.221	.50283	10.052	.50966	1.1930	.40212	5.0841
#2	1.0091	50.506	.50490	10.093	.51071	1.2021	.40109	5.1243
#3	1.0307	51.016	.51768	10.324	.52326	1.2275	.41014	5.2263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: April 06, 2017

Ki K Buck

Sample Name: CCV Acquired: 4/5/2017 16:19:26 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0203**	**1.0135**	**.99541**	**.51325**	**1.0176**	**1.0043**	**.99581**
Stddev	.0158	.0056	.01112	.00971	.0065	.0156	.02495
%RSD	1.5457	.55481	1.1169	1.8928	.63572	1.5515	2.5051
#1	1.0069	1.0084	1.0007	.50644	1.0172	.99204	.97349
#2	1.0162	1.0125	1.0028	.50892	1.0114	.99892	.99120
#3	1.0377	1.0195	.98263	.52437	1.0243	1.0218	1.0227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22302.**	**145770.**	**4499.0**
Stddev	279.	689.	92.1
%RSD	1.2509	.47232	2.0473
#1	22482.	145070.	4585.9
#2	22444.	146440.	4508.7
#3	21981.	145810.	4402.5

Approved: April 06, 2017

Sample Name: CCB Acquired: 4/5/2017 16:22:51 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00139**	**.00856**	**-.00051**	**.00277**	**.00140**	**.00007**	**-.02464**	**.00005**
Stddev	.00046	.00507	.00115	.00216	.00228	.00006	.05553	.00021
%RSD	33.272	59.247	225.54	78.084	162.66	80.154	225.41	460.01
#1	.00183	.00802	.00005	.00500	.00265	.00014	.03733	.00027
#2	.00091	.01388	-.00184	.00263	-.00123	.00006	-.04132	-.00014
#3	.00145	.00378	.00026	.00068	.00279	.00002	-.06992	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00022**	**.00026**	**.03709**	**.11434**	**-.00020**	**-.01647**	**.00394**
Stddev	.00022	.00064	.00094	.01222	.18682	.00456	.09478	.00386
%RSD	57.639	291.59	365.73	32.937	163.38	2320.1	575.53	98.120
#1	-.00062	.00078	-.00013	.04415	.32820	-.00247	.07465	-.00037
#2	-.00018	-.00048	.00133	.04414	.03190	.00505	-.00952	.00510
#3	-.00036	.00037	-.00043	.02298	-.01707	-.00317	-.11453	.00708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	**.17811**	**-.00118**	**.00469**	**-.00051**	**.00255**	**.00179**	**.00277**
Stddev	.00008	.12458	.00119	.00556	.00153	.00186	.00255	.00065
%RSD	13.556	69.946	100.62	118.41	302.65	72.932	142.31	23.503
#1	.00052	.32192	-.00121	-.00160	-.00184	.00413	.00216	.00301
#2	.00068	.10921	-.00235	.00892	-.00083	.00050	.00414	.00327
#3	.00064	.10319	.00002	.00676	.00116	.00302	-.00092	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017

Sample Name: CCB Acquired: 4/5/2017 16:22:51 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00689**	**.00023**	**.01083**	**-.00282**	**.00092**	**-.00027**	**.00016**
Stddev	.00035	.00080	.00367	.00216	.00044	.00010	.00048
%RSD	5.0551	345.45	33.855	76.713	47.304	37.184	303.19
#1	.00699	.00100	.00726	-.00185	.00087	-.00035	-.00026
#2	.00718	.00028	.01065	-.00529	.00052	-.00016	.00068
#3	.00650	-.00059	.01458	-.00131	.00139	-.00031	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22623.**	**151100.**	**4595.2**
Stddev	41.	2976.	60.3
%RSD	.17963	1.9697	1.3131
#1	22609.	154330.	4609.6
#2	22591.	150500.	4647.1
#3	22669.	148470.	4529.0

Approved: April 06, 2017

Sample Name: LLCCV Acquired: 4/5/2017 16:26:28 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01031**	**.20672**	**.00991**	**.08021**	**.01051**	**.00168**	**.40921**	**.00095**
Stddev	.00108	.01066	.00105	.00233	.00154	.00004	.05550	.00007
%RSD	10.465	5.1560	10.623	2.9062	14.631	2.3376	13.562	7.6993
#1	.00967	.19919	.01094	.08175	.01228	.00163	.47299	.00095
#2	.01155	.20206	.00996	.08134	.00967	.00170	.38278	.00087
#3	.00969	.21892	.00884	.07752	.00957	.00170	.37187	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00361**	**.00490**	**.00462**	**.10391**	**.97836**	**.07988**	**.39075**	**.00879**
Stddev	.00049	.00078	.00133	.04313	.13311	.00905	.02702	.00459
%RSD	13.575	15.949	28.830	41.508	13.606	11.335	6.9153	52.300
#1	.00399	.00419	.00592	.09202	1.1184	.07505	.41847	.00741
#2	.00379	.00478	.00325	.06797	.85348	.09032	.36449	.00503
#3	.00306	.00574	.00470	.15174	.96318	.07426	.38930	.01391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00839**	**.47620**	**.01743**	**.85895**	**.00865**	**.08495**	**.01992**	**.79888**
Stddev	.00037	.03283	.00022	.00289	.00145	.00164	.00258	.00475
%RSD	4.4047	6.8951	1.2462	.33697	16.777	1.9293	12.963	.59508
#1	.00877	.44796	.01722	.85962	.00699	.08630	.02093	.80412
#2	.00838	.51223	.01740	.86146	.00933	.08312	.02185	.79484
#3	.00803	.46840	.01765	.85579	.00964	.08543	.01699	.79769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

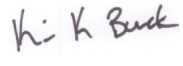
Approved: April 06, 2017

Sample Name: LLCCV Acquired: 4/5/2017 16:26:28 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43808**	**.04382**	**.03178**	**.17397**	**.00808**	**.02049**	**.04957**
Stddev	.00137	.00048	.01079	.00265	.00022	.00011	.00052
%RSD	.31231	1.0849	33.944	1.5257	2.7531	.55764	1.0561
#1	.43904	.04413	.04179	.17444	.00782	.02044	.04954
#2	.43651	.04406	.02036	.17111	.00822	.02062	.04906
#3	.43868	.04327	.03319	.17636	.00820	.02041	.05011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23030.**	**152980.**	**4475.3**
Stddev	125.	501.	32.6
%RSD	.54088	.32733	.72827
#1	23032.	152470.	4441.2
#2	23154.	153010.	4506.2
#3	22905.	153470.	4478.5

Approved: April 06, 2017



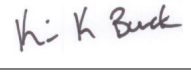
Sample Name: LLCCV Acquired: 4/5/2017 16:29:59 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01083**	**.21710**	**.00864**	**.08046**	**.01080**	**.00170**	**.39635**	**.00060**
Stddev	.00169	.00489	.00192	.00143	.00095	.00002	.03293	.00013
%RSD	15.582	2.2502	22.261	1.7723	8.7986	1.3361	8.3078	20.995
#1	.01225	.21166	.01004	.07882	.01164	.00168	.36646	.00047
#2	.00896	.22111	.00944	.08120	.01098	.00170	.39094	.00062
#3	.01129	.21853	.00645	.08137	.00977	.00172	.43165	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00406**	**.00472**	**.00548**	**.10368**	**.76095**	**.08499**	**.37074**	**.01211**
Stddev	.00020	.00069	.00149	.02040	.16739	.00669	.11727	.00201
%RSD	5.0425	14.661	27.217	19.671	21.998	7.8746	31.631	16.563
#1	.00430	.00528	.00602	.08285	.61078	.09271	.25001	.00983
#2	.00392	.00394	.00379	.10459	.73065	.08127	.37801	.01288
#3	.00397	.00493	.00663	.12361	.94143	.08098	.48420	.01361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00855**	**.43968**	**.01713**	**.84790**	**.00911**	**.08825**	**.02053**	**.79404**
Stddev	.00029	.04963	.00142	.00528	.00035	.00413	.00081	.00582
%RSD	3.3415	11.288	8.3133	.62232	3.8314	4.6845	3.9614	.73302
#1	.00871	.38470	.01549	.84826	.00939	.09145	.01998	.79864
#2	.00871	.45315	.01783	.85299	.00922	.08971	.02014	.79598
#3	.00822	.48119	.01807	.84246	.00872	.08358	.02146	.78750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017



Sample Name: LLCCV Acquired: 4/5/2017 16:29:59 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43469**	**.04357**	**.02323**	**.17202**	**.00844**	**.01954**	**.05092**
Stddev	.00360	.00053	.00948	.00176	.00034	.00021	.00017
%RSD	.82825	1.2112	40.789	1.0219	4.0691	1.0749	.33146
#1	.43768	.04408	.03323	.17252	.00860	.01970	.05073
#2	.43570	.04303	.01439	.17347	.00805	.01961	.05098
#3	.43069	.04359	.02208	.17006	.00868	.01930	.05106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23083.**	**151520.**	**4437.1**
Stddev	419.	1563.	22.5
%RSD	1.8153	1.0316	.50728
#1	22847.	152460.	4425.2
#2	22836.	149710.	4463.1
#3	23567.	152380.	4423.1

Approved: April 06, 2017

Sample Name: L1704001001 Acquired: 4/5/2017 17:19:27 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	F **921.53**	**.00220**	**-.00003**	**.00108**	**-.00001**	**-.08340**
Stddev	.00122	5.25	.00058	.00113	.00140	.00005	.04656
%RSD	301.60	.57015	26.470	3267.3	129.33	593.42	55.825
#1	.00143	917.08	.00253	.00016	.00252	-.00006	-.11793
#2	-.00095	927.33	.00254	-.00125	-.00027	.00003	-.03045
#3	.00074	920.17	.00153	.00099	.00100	.00001	-.10182
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00					
Low Limit		-.10000					

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**-.00044**	**.00045**	**.00465**	**.03434**	**.17441**	**-.00468**
Stddev	.00036	.00010	.00046	.00048	.01639	.06652	.00630
%RSD	121.45	22.713	101.31	10.243	47.729	38.140	134.58
#1	-.00060	-.00054	.00047	.00410	.02086	.19399	.00217
#2	.00010	-.00043	.00090	.00499	.02957	.22894	-.00598
#3	-.00039	-.00034	-.00002	.00484	.05258	.10030	-.01024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.13342**	**.00335**	**.00037**	**-.01267**	**-.00342**	**.22511**	**.03524**
Stddev	.11590	.00189	.00072	.06481	.00121	.00253	.00684
%RSD	86.865	56.325	192.51	511.55	35.493	1.1231	19.395
#1	-.07957	.00551	-.00035	-.08731	-.00210	.22708	.04216
#2	-.05425	.00198	.00108	.01994	-.00367	.22599	.02849
#3	-.26645	.00257	.00039	.02936	-.00450	.22226	.03508
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: April 06, 2017

Kristi K Buck

Sample Name: L1704001001 Acquired: 4/5/2017 17:19:27 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00143**	**-.00622**	**.02192**	**-.00288**	**-.00010**	**.00372**	**-.00508**
Stddev	.00119	.00464	.00181	.00118	.00092	.00446	.00455
%RSD	83.477	74.578	8.2417	40.883	958.28	119.83	89.513
#1	-.00247	-.00123	.02395	-.00215	.00091	.00815	-.00654
#2	-.00167	-.00703	.02048	-.00225	-.00090	-.00077	-.00872
#3	-.00013	-.01041	.02134	-.00423	-.00030	.00380	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00053**	F **-.02527**	**-.00006**
Stddev	.00056	.00028	.00023
%RSD	106.00	1.1196	347.31
#1	.00061	-.02513	-.00012
#2	-.00007	-.02560	-.00026
#3	.00105	-.02509	.00018
Check ?	Chk Pass	Chk Fail	Chk Pass
High Limit		45.000	
Low Limit		-.01000	

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22038.**	**139580.**	**4382.8**
Stddev	126.	295.	130.7
%RSD	.57385	.21104	2.9818
#1	22035.	139810.	4314.2
#2	21914.	139250.	4533.5
#3	22167.	139690.	4300.7

Approved: April 06, 2017

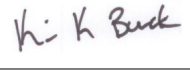
Sample Name: L1704001002 Acquired: 4/5/2017 17:23:03 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**.05018**	**.00179**	**-.00031**	**.00127**	**.00001**	**-.07839**
Stddev	.00189	.03653	.00231	.00231	.00036	.00002	.06533
%RSD	191.14	72.802	128.78	748.34	28.669	239.50	83.340
#1	.00065	.09191	.00101	-.00223	.00127	-.00001	-.01675
#2	-.00305	.03463	-.00002	-.00095	.00164	.00002	-.14688
#3	-.00057	.02400	.00439	.00225	.00091	.00002	-.07155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**-.00017**	**.00303**	**.00156**	**.00383**	**-.03139**	**-.00939**
Stddev	.00024	.00020	.00071	.00068	.01242	.12947	.00711
%RSD	122.62	121.01	23.575	43.360	324.27	412.44	75.648
#1	-.00035	-.00040	.00222	.00081	-.00188	-.12599	-.01672
#2	-.00031	-.00002	.00327	.00173	-.00471	.11616	-.00252
#3	.00008	-.00009	.00359	.00213	.01808	-.08434	-.00894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.08744**	**.00359**	**.00041**	**-.07404**	**.00077**	**.02094**	**.00124**
Stddev	.09199	.00544	.00030	.03229	.00111	.00285	.00231
%RSD	105.20	151.48	73.667	43.618	144.33	13.620	186.05
#1	-.18350	.00046	.00071	-.03787	-.00048	.02197	-.00076
#2	-.00015	.00044	.00040	-.09999	.00165	.01772	.00072
#3	-.07867	.00988	.00011	-.08426	.00115	.02314	.00378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017



Sample Name: L1704001002 Acquired: 4/5/2017 17:23:03 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **51.549**	**.00466**	**.00332**	**.00044**	**-.00015**	**.00380**	**-.00237**
Stddev	.384	.00172	.00194	.00055	.00028	.00404	.00342
%RSD	.74495	36.931	58.562	126.97	191.11	106.31	144.44
#1	51.963	.00338	.00415	-.00009	-.00021	.00003	-.00588
#2	51.204	.00662	.00110	.00101	-.00040	.00331	-.00219
#3	51.480	.00398	.00470	.00039	.00016	.00806	.00096
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	45.000						
Low Limit	-.02000						

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00043**	**.00089**	**.00019**
Stddev	.00041	.00009	.00024
%RSD	93.783	9.8225	126.46
#1	.00032	.00082	.00030
#2	.00010	.00087	-.00009
#3	.00089	.00099	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23224.**	**151980.**	**4514.1**
Stddev	634.	734.	124.0
%RSD	2.7314	.48300	2.7477
#1	22749.	151440.	4574.9
#2	23945.	151680.	4595.9
#3	22979.	152820.	4371.3

Approved: April 06, 2017

Sample Name: L1704001003 Acquired: 4/5/2017 17:26:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.02809**	F **47.613**	**-.00144**	**.00112**	**.00005**	**-.08068**
Stddev	.00088	.00337	.203	.00040	.00105	.00008	.03505
%RSD	391.16	11.998	.42684	27.412	93.572	148.09	43.445
#1	-.00011	.02707	47.421	-.00162	-.00006	-.00003	-.07813
#2	-.00116	.03186	47.826	-.00099	.00149	.00012	-.04697
#3	.00059	.02535	47.593	-.00172	.00194	.00007	-.11693
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			45.000				
Low Limit			-.01000				

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.09942**	**-.00035**	**.00021**	**.00004**	**.00694**	**.18315**	**-.00501**
Stddev	.00336	.00018	.00045	.00085	.02396	.08744	.00442
%RSD	3.3824	50.606	216.78	2116.4	345.19	47.745	88.204
#1	-.09650	-.00020	.00043	-.00076	.01705	.10055	-.00003
#2	-.10309	-.00055	-.00031	-.00005	-.02041	.27474	-.00847
#3	-.09866	-.00031	.00050	.00094	.02418	.17415	-.00653
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	4.5000						
Low Limit	-.00050						

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.11788**	**.00191**	**-.00014**	**.02749**	**-.00018**	**.00894**	**.00364**
Stddev	.03534	.00579	.00005	.01216	.00065	.00174	.00148
%RSD	29.980	303.66	36.800	44.223	357.47	19.421	40.756
#1	-.12636	.00790	-.00009	.01515	-.00053	.00694	.00417
#2	-.14822	.00145	-.00012	.03946	-.00058	.00979	.00478
#3	-.07907	-.00364	-.00019	.02786	.00057	.01009	.00196
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: April 06, 2017

Kristi K Buck

Sample Name: L1704001003 Acquired: 4/5/2017 17:26:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00451**	**.00510**	**.00216**	**.00011**	**-.00007**	**.00050**	**-.00110**
Stddev	.00236	.00366	.00179	.00004	.00078	.00440	.00012
%RSD	52.259	71.817	82.732	36.647	1073.3	871.66	11.398
#1	.00580	.00743	.00085	.00007	-.00088	.00382	-.00096
#2	.00595	.00088	.00420	.00014	.00068	-.00449	-.00120
#3	.00179	.00699	.00143	.00011	-.00002	.00218	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00020**	**.00168**	**.00024**
Stddev	.00106	.00002	.00028
%RSD	536.97	.93436	119.81
#1	-.00028	.00166	.00010
#2	-.00053	.00169	.00056
#3	.00141	.00168	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22931.**	**152150.**	**4586.8**
Stddev	332.	976.	112.9
%RSD	1.4478	.64155	2.4614
#1	22733.	153280.	4508.6
#2	22745.	151670.	4716.2
#3	23314.	151510.	4535.6

Approved: April 06, 2017

Sample Name: L1704001004 Acquired: 4/5/2017 17:30:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00127**	**.01197**	**.00304**	**-.00229**	F **50.069**	**.00007**	**-.09057**
Stddev	.00154	.00635	.00137	.00157	1.596	.00002	.02935
%RSD	121.70	53.043	44.981	68.579	3.1872	28.146	32.409
#1	.00042	.00928	.00278	-.00098	48.278	.00008	-.06133
#2	-.00260	.01923	.00182	-.00403	51.338	.00005	-.12004
#3	-.00162	.00741	.00451	-.00186	50.592	.00009	-.09034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					45.000		
Low Limit					-.00500		

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00331**	**.01133**	**.00008**	**-.00076**	**.01426**	**.31873**	**-.00739**
Stddev	.00017	.00033	.00070	.00124	.01494	.03753	.00452
%RSD	5.2525	2.9298	880.47	162.11	104.81	11.776	61.114
#1	.00351	.01096	-.00068	-.00093	-.00274	.35520	-.00758
#2	.00323	.01143	.00070	-.00191	.02017	.28022	-.01181
#3	.00319	.01160	.00022	.00055	.02534	.32076	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.04448**	**.00362**	**.00011**	**.00429**	**-.00161**	**.01023**	**.00043**
Stddev	.11433	.00497	.00037	.05535	.00053	.00497	.00110
%RSD	257.04	137.18	322.32	1290.5	33.076	48.584	254.63
#1	-.16133	-.00190	.00013	-.01142	-.00219	.00754	.00134
#2	.06714	.00774	-.00026	-.04150	-.00114	.01596	.00075
#3	-.03924	.00503	.00047	.06579	-.00150	.00718	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017

Ki K Buck

Sample Name: L1704001004 Acquired: 4/5/2017 17:30:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00324**	**-.00092**	**.00029**	**-.00008**	**.00142**	**-.00056**	**.00172**
Stddev	.00342	.00398	.00102	.00015	.00054	.00696	.00174
%RSD	105.49	433.67	354.26	202.62	37.835	1253.6	101.59
#1	.00200	-.00104	.00137	-.00013	.00144	.00005	.00089
#2	.00062	.00312	.00013	.00010	.00088	-.00780	.00372
#3	.00711	-.00483	-.00064	-.00019	.00196	.00608	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00039**	**.00041**	**.00024**
Stddev	.00030	.00010	.00040
%RSD	76.858	24.861	168.59
#1	.00005	.00052	.00053
#2	.00062	.00039	.00040
#3	.00050	.00032	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22624.**	**151640.**	**4495.2**
Stddev	299.	885.	123.8
%RSD	1.3228	.58373	2.7547
#1	22432.	150970.	4628.3
#2	22969.	151300.	4473.7
#3	22471.	152640.	4383.5

Approved: April 06, 2017

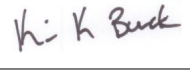
Sample Name: L1704001005 Acquired: 4/5/2017 17:33:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.01002**	**.00263**	**-.00015**	**.00398**	F **2.0631**	**-.06473**
Stddev	.00302	.00264	.00389	.00315	.00209	.0415	.05285
%RSD	380.82	26.391	148.21	2037.8	52.542	2.0098	81.647
#1	.00178	.01010	.00676	-.00304	.00156	2.0872	-.00370
#2	-.00413	.00734	.00209	.00320	.00520	2.0152	-.09528
#3	-.00003	.01263	-.00097	-.00062	.00517	2.0869	-.09520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						1.8000	
Low Limit						-.00050	

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00040**	**.00089**	**-.00078**	**-.01363**	**.09302**	**-.00077**
Stddev	.00021	.00024	.00015	.00015	.03283	.10192	.00495
%RSD	124.97	58.888	16.830	19.091	240.81	109.57	645.67
#1	-.00015	-.00035	.00073	-.00084	.01287	.09455	-.00060
#2	.00003	-.00066	.00102	-.00061	-.00341	.19416	.00410
#3	-.00038	-.00020	.00094	-.00088	-.05035	-.00966	-.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03973**	**.00026**	**-.00006**	**-.03244**	**-.00088**	**.00998**	**.00070**
Stddev	.01575	.00153	.00017	.03195	.00029	.00159	.00522
%RSD	39.639	584.84	289.88	98.502	33.705	15.881	742.95
#1	-.05779	.00106	.00014	-.05742	-.00115	.00927	.00635
#2	-.02888	-.00151	-.00017	.00357	-.00092	.00888	-.00395
#3	-.03251	.00123	-.00015	-.04346	-.00056	.01180	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017



Sample Name: L1704001005 Acquired: 4/5/2017 17:33:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00212**	**.00394**	**-.00233**	**.00088**	**.00016**	**.00170**	**.00212**
Stddev	.00457	.00346	.00226	.00055	.00033	.00371	.00198
%RSD	215.98	88.036	96.860	62.907	214.52	217.70	93.420
#1	.00737	.00729	-.00494	.00142	-.00023	.00399	.00422
#2	-.00000	.00037	-.00116	.00031	.00040	.00371	.00186
#3	-.00101	.00414	-.00090	.00091	.00029	-.00258	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00024**	**.00059**	**.00017**
Stddev	.00092	.00004	.00013
%RSD	380.97	6.7049	77.367
#1	-.00060	.00056	.00031
#2	.00010	.00063	.00005
#3	.00122	.00057	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22930.**	**152140.**	**4411.6**
Stddev	475.	3236.	106.3
%RSD	2.0733	2.1272	2.4088
#1	22687.	149010.	4399.8
#2	22625.	155470.	4523.2
#3	23477.	151940.	4311.7

Approved: April 06, 2017

Sample Name: L1704001006 Acquired: 4/5/2017 17:37:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**.01080**	**.00410**	F **49.503**	**.00086**	**.00012**	**-.02056**
Stddev	.00082	.00473	.00160	.149	.00195	.00001	.03339
%RSD	72.204	43.791	38.990	.30088	225.11	9.6373	162.41
#1	-.00209	.00722	.00470	49.363	.00284	.00011	-.05901
#2	-.00067	.01616	.00532	49.659	-.00105	.00011	-.00386
#3	-.00066	.00902	.00229	49.487	.00080	.00013	.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				45.000			
Low Limit				-.10000			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.00059**	**-.00031**	**.00027**	**.00017**	**.00889**	**.14439**	**-.00027**
Stddev	.00018	.00006	.00057	.00136	.01377	.14759	.00784
%RSD	30.193	18.048	206.65	796.33	154.86	102.22	2890.1
#1	-.00043	-.00028	-.00036	-.00019	-.00698	.15168	.00863
#2	-.00078	-.00037	.00072	-.00097	.01760	.28820	-.00328
#3	-.00054	-.00027	.00047	.00167	.01605	-.00671	-.00616
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	4.5000						
Low Limit	-.00050						

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.08438**	**-.00024**	**.00027**	**.02204**	**-.00181**	**.01135**	**-.00088**
Stddev	.03956	.00098	.00030	.00926	.00061	.00265	.00337
%RSD	46.884	405.12	110.06	41.999	33.572	23.327	384.98
#1	-.08649	-.00042	-.00007	.02854	-.00233	.01435	-.00220
#2	-.12283	-.00112	.00039	.02613	-.00114	.00935	.00296
#3	-.04380	.00082	.00049	.01144	-.00195	.01034	-.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017

Sample Name: L1704001006 Acquired: 4/5/2017 17:37:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00124**	**-.00284**	**-.00122**	**.00011**	**-.00010**	**-.00157**	**.00197**
Stddev	.00299	.00379	.00167	.00051	.00088	.00825	.00309
%RSD	241.33	133.23	136.54	480.40	926.17	526.01	156.73
#1	.00347	-.00720	-.00260	-.00018	.00065	-.01036	-.00159
#2	-.00216	-.00033	.00063	.00070	-.00107	.00600	.00387
#3	.00241	-.00100	-.00170	-.00020	.00013	-.00035	.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00031**	**-.00019**	**-.00010**
Stddev	.00063	.00014	.00010
%RSD	201.10	75.074	100.66
#1	.00039	-.00034	-.00020
#2	-.00052	-.00006	-.00001
#3	-.00082	-.00016	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23371.**	**155910.**	**4455.2**
Stddev	153.	1172.	81.7
%RSD	.65564	.75194	1.8335
#1	23236.	154960.	4368.8
#2	23339.	155540.	4531.1
#3	23537.	157220.	4465.6

Approved: April 06, 2017

Sample Name: L1704001007 Acquired: 4/5/2017 17:41:08 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.01130**	**.00176**	**.13353**	**.00381**	**.00022**	**-.03466**
Stddev	.00049	.00281	.00118	.00714	.00043	.00004	.02230
%RSD	295.05	24.863	67.064	5.3466	11.358	18.893	64.338
#1	-.00008	.01409	.00131	.14049	.00404	.00017	-.04438
#2	-.00070	.00847	.00310	.13388	.00331	.00025	-.00915
#3	.00028	.01134	.00087	.12622	.00407	.00025	-.05045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **5.6188**	**-.00076**	**-.00053**	**-.00099**	**.01367**	**.14256**	**-.00875**
Stddev	.0104	.00024	.00053	.00191	.02229	.19925	.00515
%RSD	.18590	31.738	99.745	192.51	163.05	139.76	58.802
#1	5.6281	-.00090	-.00054	.00066	.00181	.24482	-.00301
#2	5.6208	-.00048	-.00106	-.00309	.03939	-.08705	-.01031
#3	5.6075	-.00090	.00000	-.00055	-.00018	.26992	-.01294
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	4.5000						
Low Limit	-.00050						

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06795**	**.00304**	**.00012**	**-.07199**	**-.00093**	**.00800**	**-.00079**
Stddev	.08266	.00389	.00012	.02111	.00127	.00453	.00267
%RSD	121.65	127.78	94.912	29.318	136.16	56.646	338.99
#1	-.06618	-.00144	.00016	-.04909	-.00239	.00277	.00069
#2	-.15148	.00503	-.00001	-.09066	-.00006	.01082	-.00387
#3	.01381	.00553	.00021	-.07622	-.00035	.01041	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017

Sample Name: L1704001007 Acquired: 4/5/2017 17:41:08 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00332**	**-.00237**	**-.00088**	**.00055**	**.00005**	**.00129**	**-.00115**
Stddev	.00533	.00163	.00226	.00153	.00027	.00649	.00322
%RSD	160.47	68.799	256.00	275.20	558.21	504.24	280.29
#1	.00074	-.00154	.00102	.00212	.00014	.00643	-.00325
#2	.00946	-.00132	-.00029	.00047	.00026	-.00600	.00256
#3	-.00023	-.00425	-.00337	-.00093	-.00026	.00344	-.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00001**	**.00039**	**-.00012**
Stddev	.00087	.00011	.00008
%RSD	12650.	29.169	69.890
#1	-.00080	.00038	-.00012
#2	-.00010	.00050	-.00004
#3	.00092	.00027	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22398.**	**149440.**	**4334.5**
Stddev	296.	814.	67.0
%RSD	1.3223	.54479	1.5463
#1	22403.	149250.	4406.4
#2	22100.	148730.	4323.6
#3	22692.	150330.	4273.7

Approved: April 06, 2017

Sample Name: L1704001008 Acquired: 4/5/2017 17:44:41 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00071**	**.01393**	**.00159**	**.06322**	**.00233**	**.00015**	F **290.99**
Stddev	.00209	.00252	.00091	.00237	.00129	.00003	1.49
%RSD	296.34	18.052	57.310	3.7489	55.262	21.012	.51375
#1	-.00134	.01600	.00133	.06551	.00380	.00017	292.70
#2	-.00241	.01467	.00084	.06336	.00180	.00017	290.37
#3	.00163	.01113	.00261	.06078	.00139	.00012	289.91
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**-.00044**	**.00120**	**.00288**	**.01116**	**.14860**	**-.00256**
Stddev	.00040	.00028	.00028	.00088	.00350	.04916	.00386
%RSD	178.12	63.454	23.253	30.471	31.330	33.084	150.77
#1	.00023	-.00022	.00112	.00226	.00861	.19442	-.00662
#2	-.00018	-.00075	.00152	.00389	.01514	.15470	.00107
#3	.00063	-.00035	.00098	.00251	.00973	.09666	-.00214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06013**	**.00106**	**.00030**	**.02554**	**-.00190**	**.01910**	**-.00019**
Stddev	.06454	.00097	.00035	.01582	.00110	.00613	.00223
%RSD	107.34	91.416	117.02	61.925	57.794	32.070	1185.9
#1	-.12813	.00003	.00011	.00893	-.00245	.02472	-.00273
#2	-.05251	.00119	.00009	.04042	-.00260	.02002	.00072
#3	.00027	.00196	.00071	.02727	-.00063	.01257	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017

Sample Name: L1704001008 Acquired: 4/5/2017 17:44:41 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**-.00151**	**-.00017**	**-.00035**	**.01923**	**-.02620**	**.00008**
Stddev	.00108	.00498	.00141	.00030	.00065	.00957	.00043
%RSD	229.98	329.36	809.36	85.695	3.4061	36.542	565.70
#1	.00054	-.00461	.00141	-.00014	.01915	-.03678	-.00010
#2	-.00034	.00423	-.00131	-.00022	.01991	-.02370	.00057
#3	-.00160	-.00416	-.00062	-.00070	.01861	-.01813	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00008**	**.00087**	**-.00038**
Stddev	.00027	.00006	.00023
%RSD	324.37	6.6837	60.783
#1	.00036	.00094	-.00057
#2	-.00018	.00083	-.00012
#3	.00007	.00084	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21619.**	**145510.**	**4370.4**
Stddev	80.	645.	40.2
%RSD	.36874	.44314	.92018
#1	21573.	146260.	4352.0
#2	21573.	145170.	4416.6
#3	21711.	145110.	4342.8

Approved: April 06, 2017

Sample Name: L1704001009 Acquired: 4/5/2017 17:48:14 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.00562**	**.25090**	**.06093**	**.00281**	**-.00011**	**-.00693**
Stddev	.00161	.00568	.00137	.00098	.00116	.00001	.03637
%RSD	59814.	101.07	.54795	1.6096	41.407	6.4368	524.95
#1	.00184	.00158	.24938	.06130	.00286	-.00011	-.04277
#2	-.00113	.01211	.25206	.06167	.00162	-.00010	.02994
#3	-.00070	.00316	.25127	.05982	.00394	-.00011	-.00795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.00381**	**.00997**	F **39.588**	**.03986**	**.03499**	**.19811**	**-.00453**
Stddev	.00021	.00018	.055	.00061	.02555	.05893	.00578
%RSD	5.5129	1.8129	.13953	1.5421	73.022	29.746	127.64
#1	-.00358	.00978	39.644	.04029	.01620	.14584	-.00971
#2	-.00399	.01000	39.586	.03916	.02469	.26198	.00171
#3	-.00387	.01014	39.533	.04014	.06408	.18652	-.00560
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	4.5000		36.000				
Low Limit	-.00050		-.00300				

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03631**	**-.00228**	**.00296**	**.00613**	**-.00161**	**-.00243**	**.00488**
Stddev	.11564	.00528	.00013	.02189	.00083	.00481	.00097
%RSD	318.49	231.76	4.5208	357.13	51.773	197.93	19.886
#1	.09191	-.00811	.00296	.01478	-.00091	-.00584	.00590
#2	-.13270	-.00089	.00310	-.01876	-.00253	.00307	.00396
#3	-.06813	.00216	.00283	.02237	-.00139	-.00453	.00479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017
Ki K Buck

Sample Name: L1704001009 Acquired: 4/5/2017 17:48:14 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.41951**	**.00337**	**.01683**	**-.00138**	**.00032**	**-.00269**	**-.00606**
Stddev	.00531	.00579	.00152	.00061	.00015	.00788	.00075
%RSD	1.2654	171.90	9.0278	44.453	45.628	293.30	12.317
#1	-.42288	.00901	.01781	-.00208	.00049	.00122	-.00676
#2	-.42225	-.00255	.01760	-.00090	.00026	-.01176	-.00527
#3	-.41339	.00364	.01508	-.00117	.00022	.00248	-.00613
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	45.000						
Low Limit	-.02000						

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F **-.03825**	**.02636**	**-.01230**
Stddev	.00116	.00023	.00018
%RSD	3.0298	.88617	1.5011
#1	-.03941	.02660	-.01249
#2	-.03709	.02635	-.01212
#3	-.03825	.02613	-.01227
Check ?	Chk Fail	Chk Pass	Chk Pass
High Limit	27.000		
Low Limit	-.01000		

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21784.**	**155310.**	**4443.6**
Stddev	240.	1046.	19.1
%RSD	1.1034	.67339	.43055
#1	22055.	156510.	4461.2
#2	21596.	154580.	4423.2
#3	21701.	154840.	4446.5

Approved: April 06, 2017

Kim K Buck

Sample Name: L1704001010 Acquired: 4/5/2017 17:51:56 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.03753	.00203	-.00468	.00372	.00003	-.08365
Stddev	.00109	.00115	.00112	.00547	.00103	.00002	.02088
%RSD	118.15	3.0658	55.148	116.81	27.596	65.970	24.967
#1	.00061	.03868	.00209	-.00030	.00410	.00002	-.09162
#2	.00002	.03753	.00313	-.01081	.00450	.00001	-.09937
#3	.00213	.03638	.00089	-.00293	.00256	.00004	-.05995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	^ *****	F 51.509	.00498	-.00049	.03389	.15052	-.00321
Stddev	-----	1.120	.00726	.00050	.01667	.15090	.00699
%RSD	-----	2.1739	145.72	101.70	49.197	100.25	217.48
#1	^ -----	51.059	.00146	-.00025	.03744	.07113	-.00894
#2	^ -----	52.784	.01334	-.00107	.04850	.32455	-.00528
#3	^ -----	50.684	.00016	-.00016	.01573	.05589	.00457
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		45.000					
Low Limit		-.00500					

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.14159	.00287	.00028	-.02414	F -.02809	.00876	.00205
Stddev	.11878	.00155	.00033	.02464	.00111	.00289	.00099
%RSD	83.891	53.902	118.12	102.05	3.9542	32.992	48.209
#1	-.01514	.00154	.00028	-.02134	-.02931	.00900	.00158
#2	-.25082	.00456	-.00005	-.00103	-.02714	.01152	.00318
#3	-.15880	.00249	.00061	-.05006	-.02781	.00576	.00139
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit	900.00				90.000		
Low Limit	-.10000				-.02000		

Approved: April 06, 2017
Kim K Buck

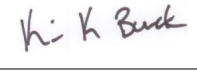
Sample Name: L1704001010 Acquired: 4/5/2017 17:51:56 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00433**	**-.01554**	**.00038**	**-.00056**	**-.00879**	**.14357**
Stddev	.00139	.00257	.00115	.00077	.00023	.00127	.00300
%RSD	206.12	59.199	7.4055	203.38	41.466	14.425	2.0863
#1	.00038	.00660	-.01676	.00068	-.00035	-.00801	.14657
#2	-.00055	.00485	-.01447	.00095	-.00081	-.01025	.14058
#3	.00219	.00155	-.01540	-.00050	-.00051	-.00810	.14356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00094**	**.00036**	**.00033**
Stddev	.00081	.00011	.00029
%RSD	86.241	28.988	88.224
#1	.00167	.00030	.00066
#2	.00007	.00031	.00021
#3	.00108	.00048	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22537.**	**154300.**	**4546.8**
Stddev	135.	238.	40.7
%RSD	.59946	.15431	.89433
#1	22576.	154510.	4539.1
#2	22386.	154040.	4590.7
#3	22647.	154360.	4510.5

Approved: April 06, 2017



Sample Name: CCV Acquired: 4/5/2017 17:55:39 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40302**	**10.529**	**.40426**	**.52302**	**1.0311**	**.04979**	**10.209**	**.04988**
Stddev	.00077	.018	.00317	.00486	.0116	.00011	.104	.00017
%RSD	.19206	.16845	.78403	.92990	1.1228	.22489	1.0141	.33977
#1	.40248	10.545	.40659	.51896	1.0442	.04983	10.325	.05004
#2	.40269	10.532	.40065	.52841	1.0270	.04987	10.127	.04970
#3	.40391	10.510	.40555	.52170	1.0222	.04966	10.175	.04990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20469**	**.50659**	**.51019**	**3.8966**	**50.240**	**1.0370**	**9.9081**	**.48790**
Stddev	.00156	.00442	.00326	.0759	.587	.0120	.1926	.00827
%RSD	.76289	.87182	.63985	1.9473	1.1683	1.1530	1.9442	1.6958
#1	.20631	.51159	.51289	3.9803	50.914	1.0492	10.130	.49733
#2	.20320	.50499	.50656	3.8774	49.968	1.0367	9.7919	.48449
#3	.20455	.50321	.51112	3.8322	49.839	1.0252	9.8019	.48188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0143**	**51.228**	**.50772**	**10.182**	**.51751**	**1.1959**	**.40437**	**5.1571**
Stddev	.0056	.643	.00272	.050	.00364	.0100	.00231	.0249
%RSD	.54746	1.2556	.53486	.48810	.70268	.83195	.57223	.48183
#1	1.0203	51.966	.51042	10.236	.51897	1.2058	.40704	5.1852
#2	1.0093	50.932	.50498	10.138	.52019	1.1859	.40312	5.1381
#3	1.0134	50.787	.50776	10.171	.51337	1.1960	.40296	5.1479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: April 06, 2017

Sample Name: CCV Acquired: 4/5/2017 17:55:39 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0218**	**1.0290**	**1.0034**	**.50914**	**1.0113**	**1.0077**	**1.0275**
Stddev	.0053	.0152	.0104	.00240	.0021	.0046	.0071
%RSD	.52161	1.4790	1.0313	.47129	.20880	.45994	.68713
#1	1.0277	1.0461	1.0114	.51174	1.0095	1.0127	1.0356
#2	1.0172	1.0243	1.0071	.50866	1.0137	1.0035	1.0225
#3	1.0206	1.0168	.99176	.50701	1.0108	1.0069	1.0244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21781.**	**144990.**	**4239.8**
Stddev	108.	2063.	109.2
%RSD	.49807	1.4230	2.5752
#1	21730.	142610.	4114.5
#2	21906.	146050.	4314.4
#3	21708.	146310.	4290.5

Approved: April 06, 2017

Sample Name: CCB Acquired: 4/5/2017 17:59:03 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.01023**	**.00226**	**.01563**	**.00387**	**.00009**	**-.05763**	**.00011**
Stddev	.00069	.00387	.00126	.00094	.00035	.00003	.03634	.00023
%RSD	166.10	37.840	55.951	6.0181	9.1410	37.842	63.053	202.96
#1	-.00008	.01387	.00193	.01515	.00352	.00012	-.09936	.00036
#2	.00012	.00616	.00365	.01671	.00388	.00010	-.04057	-.00010
#3	.00120	.01066	.00119	.01502	.00422	.00005	-.03296	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00057**	**.00039**	**.00111**	**.00460**	**-.01012**	**-.00732**	**-.02420**	**.00293**
Stddev	.00105	.00092	.00077	.05499	.25524	.00567	.03443	.00769
%RSD	184.64	233.68	69.474	1196.5	2521.5	77.521	142.28	262.54
#1	.00177	.00144	.00067	.01706	-.01752	-.00284	-.03121	.01107
#2	.00005	-.00001	.00199	.05229	.24874	-.01370	-.05458	-.00422
#3	-.00012	-.00025	.00065	-.05556	-.26159	-.00543	.01320	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**-.04211**	**-.00084**	**.00829**	**.00033**	**.00431**	**.00171**	**.00313**
Stddev	.00037	.02553	.00119	.00743	.00194	.00561	.00011	.00224
%RSD	112.78	60.628	142.67	89.632	588.39	130.18	6.2768	71.555
#1	-.00010	-.06882	-.00078	.01659	-.00007	.01076	.00183	.00565
#2	.00052	-.03953	-.00206	.00226	.00244	.00157	.00162	.00240
#3	.00055	-.01796	.00033	.00602	-.00138	.00060	.00167	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017

Sample Name: CCB Acquired: 4/5/2017 17:59:03 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00743**	**.00023**	**-.00310**	**-.00355**	**-.00002**	**-.00022**	**.00037**
Stddev	.00075	.00076	.01267	.00075	.00041	.00011	.00034
%RSD	10.088	325.82	409.10	21.057	2743.1	49.041	92.138
#1	.00758	-.00024	-.00833	-.00440	-.00027	-.00023	.00030
#2	.00808	-.00017	-.01232	-.00325	.00046	-.00032	.00008
#3	.00661	.00112	.01135	-.00299	-.00024	-.00010	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22236.**	**147430.**	**4260.0**
Stddev	74.	620.	63.8
%RSD	.33417	.42025	1.4988
#1	22151.	147680.	4194.8
#2	22265.	147900.	4322.4
#3	22291.	146730.	4262.7

Approved: April 06, 2017

Sample Name: L1704001011 Acquired: 4/5/2017 18:02:39 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00135**	**.00893**	**.00316**	**.01231**	**.00144**	**-.00003**	**-.06569**
Stddev	.00059	.00556	.00066	.00100	.00268	.00002	.02247
%RSD	43.387	62.317	20.826	8.1023	185.42	58.502	34.211
#1	-.00079	.00329	.00392	.01333	.00107	-.00003	-.06360
#2	-.00131	.00908	.00282	.01134	.00429	-.00004	-.08914
#3	-.00196	.01441	.00275	.01227	-.00103	-.00001	-.04434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.00089**	**.00000**	**.00027**	F **207.34**	**.03545**	**.03188**	**-.01118**
Stddev	.00017	.00010	.00112	2.15	.00314	.09207	.00467
%RSD	19.214	4657.9	411.25	1.0369	8.8503	288.81	41.743
#1	-.00103	.00000	.00036	208.26	.03892	.01429	-.00816
#2	-.00070	-.00010	-.00089	204.88	.03280	-.05013	-.01656
#3	-.00095	.00010	.00134	208.86	.03464	.13148	-.00883
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit	4.5000			180.00			
Low Limit	-.00050			-.00500			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00798**	**-.00241**	**-.00003**	**-.04784**	**-.00240**	^ *****	**.04715**
Stddev	.08787	.00320	.00043	.03698	.00039	-----	.00198
%RSD	1100.6	133.04	1585.9	77.300	16.321	-----	4.2091
#1	-.06762	.00116	.00046	-.01301	-.00218	^ -----	.04808
#2	-.04925	-.00503	-.00021	-.04386	-.00216	^ -----	.04850
#3	.09292	-.00336	-.00033	-.08664	-.00285	^ -----	.04487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017

Kristi K Buck

Sample Name: L1704001011 Acquired: 4/5/2017 18:02:39 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00373**	**.00503**	**.01183**	**.00155**	**.00007**	**.00098**	**-.00090**
Stddev	.00086	.00219	.00311	.00060	.00026	.00672	.00116
%RSD	23.040	43.487	26.332	38.722	351.53	685.94	128.43
#1	.00392	.00319	.01500	.00218	-.00020	.00219	.00025
#2	.00279	.00745	.01172	.00151	.00011	.00701	-.00088
#3	.00447	.00445	.00877	.00097	.00031	-.00626	-.00208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00548**	**.00654**	**.00042**
Stddev	.00038	.00006	.00023
%RSD	6.9013	.99156	54.008
#1	-.00558	.00647	.00059
#2	-.00580	.00660	.00016
#3	-.00506	.00654	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21959.**	**152440.**	**4505.2**
Stddev	405.	263.	21.9
%RSD	1.8462	.17257	.48592
#1	21832.	152490.	4529.2
#2	22413.	152670.	4486.3
#3	21633.	152150.	4500.0

Approved: April 06, 2017

Sample Name: L1704001012 Acquired: 4/5/2017 18:06:21 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01245	-.00635	F -.02703	.06365	.00099	.00005	F -.16914
Stddev	.00032	.00230	.00207	.00130	.00244	.00008	.05569
%RSD	2.6046	36.210	7.6594	2.0388	246.37	152.94	32.929
#1	.01215	-.00864	-.02726	.06403	.00306	-.00002	-.22467
#2	.01243	-.00404	-.02485	.06472	.00161	.00004	-.16946
#3	.01279	-.00637	-.02897	.06221	-.00170	.00013	-.11328
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000				270.00
Low Limit			-.01000				-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00455	F -.00541	F -.02143	.07432	F 753.58	-.02992	-.00426
Stddev	.00006	.00024	.00062	.01167	3.80	.13765	.00453
%RSD	1.3437	4.5196	2.8900	15.698	.50381	460.12	106.41
#1	-.00449	-.00554	-.02213	.06797	753.46	-.18576	-.00864
#2	-.00455	-.00556	-.02121	.06720	749.85	.07503	-.00454
#3	-.00461	-.00513	-.02095	.08778	757.44	.02099	.00041
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit	4.5000	45.000	36.000		720.00		
Low Limit	-.00050	-.00500	-.00300		-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.11391	.00646	-.00473	-.02253	-.01030	-.06813	.02131
Stddev	.02346	.00053	.00037	.05299	.00141	.01585	.00079
%RSD	20.596	8.1877	7.7707	235.23	13.674	23.268	3.7274
#1	-.13965	.00704	-.00497	.03723	-.00868	-.06734	.02222
#2	-.09372	.00602	-.00431	-.04100	-.01093	-.05268	.02095
#3	-.10837	.00632	-.00493	-.06381	-.01128	-.08436	.02076
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: April 06, 2017
Ki K Buck

Sample Name: L1704001012 Acquired: 4/5/2017 18:06:21 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02342**	**.00800**	**.00251**	**.00213**	**-.00078**	**.15106**	**.01062**
Stddev	.00295	.00392	.00072	.00043	.00022	.00730	.00174
%RSD	12.609	49.011	28.664	20.150	28.468	4.8335	16.396
#1	.02077	.01021	.00301	.00241	-.00054	.14272	.01264
#2	.02660	.01032	.00169	.00235	-.00081	.15412	.00960
#3	.02288	.00347	.00284	.00164	-.00098	.15632	.00964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F **-.01193**	**.00284**	^ *****
Stddev	.00093	.00003	-----
%RSD	7.8314	1.2092	-----
#1	-.01191	.00285	^ -----
#2	-.01101	.00287	^ -----
#3	-.01288	.00280	^ -----
Check ?	Chk Fail	Chk Pass	Chk Pass
High Limit	27.000		
Low Limit	-.01000		

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22057.**	**149690.**	**4418.5**
Stddev	144.	618.	41.1
%RSD	.65203	.41269	.92917
#1	21916.	149920.	4413.6
#2	22051.	150160.	4461.8
#3	22203.	148990.	4380.2

Approved: April 06, 2017

Kristi K Buck

Sample Name: L1704001013 Acquired: 4/5/2017 18:09:52 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00121**	**.01716**	**-.00154**	**.00415**	**.00353**	**.00007**	**-.04592**
Stddev	.00180	.00823	.00166	.00087	.00173	.00001	.00857
%RSD	149.41	47.948	107.60	20.883	49.085	18.886	18.658
#1	.00114	.02021	-.00346	.00507	.00260	.00006	-.04971
#2	-.00056	.02342	-.00057	.00404	.00246	.00007	-.03612
#3	.00304	.00784	-.00060	.00335	.00553	.00008	-.05195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00017**	**.00035**	F **-.40002**	**.03963**	**-.10918**	**-.00506**
Stddev	.00014	.00023	.00064	.01073	.01743	.20279	.00447
%RSD	872.26	132.62	185.93	2.6813	43.991	185.74	88.211
#1	.00001	.00002	-.00034	-.40599	.03634	.06221	-.00986
#2	-.00012	.00044	.00094	-.38763	.05848	-.33305	-.00430
#3	.00016	.00006	.00044	-.40643	.02408	-.05669	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				180.00			
Low Limit				-.00500			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06621**	**.00084**	**.00009**	**-.09463**	**.00012**	**.02240**	F **276.76**
Stddev	.09888	.00477	.00021	.05535	.00028	.00116	2.03
%RSD	149.34	564.32	239.74	58.491	232.09	5.1609	.73418
#1	-.17331	.00612	.00033	-.05659	-.00014	.02336	276.80
#2	-.04692	-.00316	-.00002	-.06917	.00041	.02112	274.71
#3	.02160	-.00042	-.00004	-.15813	.00010	.02273	278.77
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							225.00
Low Limit							-.00500

Approved: April 06, 2017

Kristi K Buck

Sample Name: L1704001013 Acquired: 4/5/2017 18:09:52 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**-.00234**	**.00329**	**-.00057**	**-.00002**	**-.00063**	**-.00668**
Stddev	.00351	.00448	.00138	.00055	.00021	.00075	.00300
%RSD	1226.1	191.64	41.959	95.981	881.73	118.77	44.946
#1	.00425	-.00446	.00182	-.00043	.00017	.00018	-.00680
#2	-.00242	.00281	.00350	-.00118	-.00024	-.00077	-.00362
#3	-.00097	-.00536	.00455	-.00011	-.00000	-.00130	-.00962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00026**	**.01140**	**-.00003**
Stddev	.00077	.00006	.00049
%RSD	291.23	.52400	1409.2
#1	-.00058	.01134	-.00020
#2	.00093	.01146	-.00042
#3	.00044	.01139	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22622.**	**151650.**	**4190.6**
Stddev	377.	4961.	82.6
%RSD	1.6686	3.2712	1.9702
#1	23054.	149020.	4182.0
#2	22356.	148540.	4277.2
#3	22457.	157370.	4112.7

Approved: April 06, 2017

Sample Name: L1704001014 Acquired: 4/5/2017 18:13:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.01647	.00097	.00225	.00401	.00001	-.06124
Stddev	.00129	.00256	.00202	.00162	.00111	.00003	.04348
%RSD	120.16	15.560	208.35	72.353	27.675	602.71	70.998
#1	-.00040	.01374	.00300	.00127	.00528	-.00003	-.01736
#2	.00161	.01685	-.00104	.00412	.00351	.00001	-.06206
#3	.00200	.01883	.00095	.00135	.00324	.00004	-.10431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	-.00034	.00027	-.00002	.03356	-.05559	F 39.727
Stddev	.00020	.00041	.00022	.00114	.00834	.05978	.171
%RSD	217.86	119.42	81.853	5561.0	24.857	107.55	.42918
#1	.00014	-.00046	.00017	-.00039	.03710	.00764	39.923
#2	-.00021	-.00068	.00012	.00126	.02403	-.11119	39.614
#3	-.00020	.00011	.00053	-.00093	.03955	-.06321	39.644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							36.000
Low Limit							-.10000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01777	.00040	-.00036	-.02948	-.00196	.00999	.00410
Stddev	.03036	.00439	.00041	.05753	.00181	.00582	.00804
%RSD	170.92	1100.8	112.92	195.14	92.540	58.284	196.13
#1	.05205	.00474	-.00025	-.09554	-.00137	.01438	.01319
#2	.00699	-.00403	-.00082	-.00249	-.00399	.01222	-.00209
#3	-.00575	.00049	-.00002	.00959	-.00051	.00338	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017

Kim K Buck

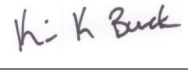
Sample Name: L1704001014 Acquired: 4/5/2017 18:13:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**.00216**	**.00072**	**-.00075**	**.00057**	**-.00135**	**.00301**
Stddev	.00234	.00295	.00184	.00054	.00053	.00828	.00194
%RSD	189.63	136.22	255.31	72.199	92.211	612.09	64.341
#1	-.00152	.00134	.00195	-.00061	.00009	-.00534	.00080
#2	.00124	.00544	-.00140	-.00135	.00114	-.00689	.00442
#3	-.00342	-.00029	.00161	-.00030	.00049	.00817	.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00010**	**.00089**	**-.00008**
Stddev	.00081	.00007	.00033
%RSD	805.51	7.3935	404.02
#1	.00077	.00084	-.00014
#2	-.00083	.00085	.00028
#3	-.00024	.00096	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22040.**	**147770.**	**4247.6**
Stddev	453.	933.	30.6
%RSD	2.0555	.63154	.71991
#1	22268.	148640.	4212.9
#2	21519.	146780.	4270.5
#3	22334.	147890.	4259.5

Approved: April 06, 2017



Sample Name: L1704001015 Acquired: 4/5/2017 18:17:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00136**	**.02546**	**.00199**	**.00320**	**.00396**	**.00013**	**-.09520**
Stddev	.00046	.00358	.00308	.00065	.00098	.00008	.01730
%RSD	33.902	14.047	154.94	20.218	24.880	59.966	18.172
#1	-.00162	.02137	.00124	.00358	.00457	.00005	-.09078
#2	-.00164	.02799	-.00065	.00356	.00282	.00014	-.11428
#3	-.00083	.02704	.00537	.00245	.00448	.00021	-.08054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00011**	**.00277**	**.00078**	**.03134**	**.17904**	**.00360**
Stddev	.00035	.00052	.00016	.00095	.01794	.20653	.00592
%RSD	62.909	469.91	5.8172	121.90	57.252	115.35	164.54
#1	.00078	-.00024	.00281	.00103	.02845	.30537	.00613
#2	.00074	.00070	.00291	-.00027	.01502	-.05929	.00782
#3	.00015	-.00014	.00259	.00157	.05055	.29106	-.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **959.85**	**.00770**	**.00001**	**.05953**	**-.00209**	**.00666**	**.00228**
Stddev	6.62	.00238	.00031	.07052	.00085	.00713	.00356
%RSD	.68919	30.862	4406.2	118.46	40.623	107.09	156.25
#1	952.63	.00775	-.00020	-.01919	-.00189	.00284	-.00117
#2	965.61	.00529	.00036	.11693	-.00302	.00225	.00207
#3	961.32	.01004	-.00013	.08085	-.00136	.01489	.00593
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: April 06, 2017

Kristi K Buck

Sample Name: L1704001015 Acquired: 4/5/2017 18:17:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**-.00079**	**.00005**	**-.00193**	**.00010**	**.00189**	**-.00077**
Stddev	.00202	.00167	.00056	.00037	.00067	.00833	.00214
%RSD	164.44	211.55	1159.3	19.171	693.45	440.95	277.47
#1	-.00107	-.00043	-.00046	-.00181	-.00064	.00037	-.00017
#2	.00206	-.00261	-.00005	-.00235	.00025	.01087	-.00315
#3	.00269	.00068	.00065	-.00164	.00067	-.00558	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00012**	**.00263**	**-.00005**
Stddev	.00084	.00011	.00008
%RSD	726.72	4.0727	161.05
#1	.00085	.00254	-.00011
#2	-.00056	.00275	-.00007
#3	-.00064	.00261	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**20955.**	**139920.**	**4137.0**
Stddev	283.	316.	8.6
%RSD	1.3510	.22574	.20705
#1	21013.	140210.	4146.7
#2	20648.	139590.	4130.5
#3	21205.	139980.	4133.8

Approved: April 06, 2017

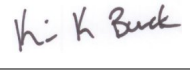
Sample Name: L1704001016 Acquired: 4/5/2017 18:20:43 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00726	.05525	-.00025	-.00558	.00428	.00013	-.08934
Stddev	.00034	.00613	.00171	.00084	.00032	.00004	.02801
%RSD	4.6744	11.099	695.14	14.999	7.4128	34.226	31.354
#1	.00723	.06207	.00040	-.00576	.00459	.00012	-.08351
#2	.00762	.05020	.00105	-.00631	.00396	.00009	-.11981
#3	.00694	.05347	-.00219	-.00467	.00430	.00018	-.06471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	-.00040	F -.00558	.00006	.02178	-.06861	-.00437
Stddev	.00015	.00020	.00042	.00051	.02260	.11876	.00464
%RSD	24.213	49.145	7.5402	782.96	103.78	173.09	106.08
#1	.00052	-.00058	-.00521	-.00029	-.00430	.04826	.00083
#2	.00054	-.00045	-.00548	-.00015	.03404	-.18918	-.00585
#3	.00079	-.00019	-.00604	.00064	.03559	-.06491	-.00809
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-.00300				

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.04965	F 38.239	-.00295	-.10135	.00042	-.01328	.00859
Stddev	.05851	.147	.00015	.04507	.00050	.00412	.00010
%RSD	117.86	.38493	5.2089	44.466	119.69	31.032	1.1312
#1	-.10902	38.075	-.00284	-.10372	.00048	-.01652	.00866
#2	.00797	38.361	-.00289	-.14518	.00088	-.00864	.00864
#3	-.04789	38.281	-.00313	-.05514	-.00011	-.01469	.00848
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: April 06, 2017



Sample Name: L1704001016 Acquired: 4/5/2017 18:20:43 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00229**	**.00379**	**-.00372**	**-.00085**	**-.00012**	**.00584**	**.04436**
Stddev	.00488	.00134	.00106	.00032	.00082	.00155	.00183
%RSD	213.30	35.423	28.460	38.170	666.90	26.564	4.1271
#1	.00444	.00518	-.00277	-.00118	-.00107	.00735	.04446
#2	-.00330	.00370	-.00486	-.00053	.00044	.00592	.04613
#3	.00572	.00250	-.00351	-.00084	.00026	.00425	.04248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00187**	**.00062**	**-.00014**
Stddev	.00049	.00004	.00034
%RSD	26.379	6.7331	251.66
#1	.00169	.00057	-.00017
#2	.00242	.00064	.00022
#3	.00149	.00064	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22959.**	**153430.**	**4296.3**
Stddev	174.	1066.	41.7
%RSD	.75876	.69471	.97151
#1	22773.	152720.	4343.4
#2	23118.	154650.	4264.0
#3	22986.	152910.	4281.4

Approved: April 06, 2017

Sample Name: L1704001017 Acquired: 4/5/2017 18:24:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **.00235**	k **.63354**	k **.06776**	k **-.01539**	**.00342**	k **.00007**
Stddev	.00039	.00580	.00122	.00052	.00234	.00002
%RSD	16.710	.91489	1.8030	3.3492	68.556	35.825
#1	k .00227	k .62765	k .06713	k -.01546	.00591	k .00006
#2	k .00201	k .63372	k .06698	k -.01587	.00127	k .00005
#3	k .00278	k .63924	k .06917	k -.01485	.00307	k .00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03565**	k **.00072**	kF **-.05000**	k **.00320**	k **.07169**	kF **-.02854**
Stddev	.04064	.00017	.00020	.00023	.00138	.04555
%RSD	114.01	23.318	.40531	7.2542	1.9201	159.61
#1	-.04326	k .00091	k -.04977	k .00293	k .07273	-.06162
#2	.00826	k .00069	k -.05009	k .00335	k .07221	-.04741
#3	-.07194	k .00057	k -.05015	k .00331	k .07013	k .02341
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000			720.00
Low Limit			-.00500			-.02000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.16185**	**-.01596**	kF **-.59565**	k **.00494**	kF **29.168**	**-.06997**
Stddev	.08249	.00416	.02470	.00361	.099	.03840
%RSD	50.966	26.083	4.1459	73.079	.33979	54.884
#1	-.24976	-.01417	k -.61991	k .00078	k 29.257	-.08087
#2	-.08614	-.01298	k -.57054	k .00681	k 29.185	-.10174
#3	-.14965	-.02071	k -.59649	k .00722	k 29.061	-.02730
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Pass
High Limit			900.00		27.000	
Low Limit			-.10000		-.01000	

Approved: April 06, 2017

Kristi K Buck

Sample Name: L1704001017 Acquired: 4/5/2017 18:24:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **.00016**	k **.22605**	kF **-.02895**	k **.03704**	k **.00420**	k **.84401**
Stddev	.00042	.00125	.00232	.00363	.00092	.00443
%RSD	266.40	.55484	8.0234	9.7938	21.867	.52482
#1	k .00043	k .22653	k -.03010	k .04097	k .00323	k .84754
#2	k -.00033	k .22699	k -.03046	k .03633	k .00432	k .84545
#3	k .00037	k .22462	k -.02627	k .03382	k .00506	k .83904
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			225.00			
Low Limit			-.00500			

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **.00046**	**.00011**	k **-.00392**	k **.00168**	^ *****	k **-.00495**
Stddev	.00043	.00113	.00883	.00131	-----	.00004
%RSD	94.321	1040.9	225.36	77.524	-----	.80377
#1	k .00093	-.00103	k -.01386	k .00263	^ -----	k -.00490
#2	.00037	.00123	k -.00093	k .00223	^ -----	k -.00498
#3	k .00008	.00013	k .00303	k .00019	^ -----	k -.00496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Zr3391
Units	ppm
Avg	**.04268**
Stddev	.00084
%RSD	1.9734
#1	.04345
#2	.04280
#3	.04178
Check ?	Chk Pass
High Limit	
Low Limit	

Approved: April 06, 2017
Ki K Buck

Sample Name: L1704001017 Acquired: 4/5/2017 18:24:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22774.**	**155730.**	**4153.6**
Stddev	227.	1179.	74.4
%RSD	.99637	.75691	1.7913
#1	22932.	157020.	4079.5
#2	22876.	155450.	4153.0
#3	22514.	154720.	4228.3

Approved: April 06, 2017

Sample Name: L1704001018 Acquired: 4/5/2017 18:27:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.01882**	**.00334**	**.00030**	**.00534**	**.00008**	F **-.13985**
Stddev	.00129	.00518	.00193	.00105	.00104	.00006	.04725
%RSD	17125.	27.506	57.735	352.02	19.398	71.277	33.785
#1	-.00148	.02231	.00117	-.00082	.00484	.00013	-.08544
#2	.00054	.02127	.00485	.00045	.00653	.00002	-.17055
#3	.00092	.01287	.00399	.00127	.00465	.00010	-.16355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00156**	**.00069**	**1.2577**	**-.00363**	**-.15267**	**-.00671**
Stddev	.00036	.00016	.00106	.0030	.03559	.01708	.00853
%RSD	97.926	10.062	153.31	.23675	980.10	11.188	127.15
#1	-.00072	.00138	.00158	1.2571	-.03170	-.15976	-.00067
#2	.00000	.00164	.00096	1.2609	.03640	-.13319	-.01647
#3	-.00038	.00166	-.00048	1.2551	-.01559	-.16507	-.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.18108**	**.00233**	**.00376**	**-.10625**	F **102.39**	**-.05325**	**.01281**
Stddev	.08764	.00475	.00022	.02444	.25	.00336	.00075
%RSD	48.397	203.71	5.8595	23.002	.24741	6.3109	5.8263
#1	-.08457	.00712	.00401	-.08819	102.27	-.05501	.01196
#2	-.25570	.00227	.00358	-.13406	102.69	-.05537	.01308
#3	-.20297	-.00239	.00371	-.09650	102.23	-.04938	.01338
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit	900.00				90.000		
Low Limit	-.10000				-.02000		

Approved: April 06, 2017

Kristi K Buck

Sample Name: L1704001018 Acquired: 4/5/2017 18:27:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02491**	**-.00480**	**.00119**	**-.00102**	**-.00027**	**-.00617**	**.00222**
Stddev	.00132	.00500	.00055	.00017	.00066	.00348	.00197
%RSD	5.2857	104.15	46.372	17.033	246.73	56.370	89.144
#1	.02643	.00057	.00059	-.00090	-.00070	-.00614	.00332
#2	.02418	-.00932	.00167	-.00122	.00050	-.00966	.00339
#3	.02412	-.00566	.00132	-.00094	-.00061	-.00271	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00130**	**.00041**	**-.00050**
Stddev	.00049	.00007	.00010
%RSD	37.803	16.309	20.599
#1	.00079	.00034	-.00039
#2	.00177	.00047	-.00060
#3	.00132	.00040	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22684.**	**155520.**	**4231.1**
Stddev	262.	1216.	102.7
%RSD	1.1541	.78179	2.4268
#1	22653.	156630.	4205.2
#2	22439.	155710.	4143.8
#3	22960.	154220.	4344.2

Approved: April 06, 2017

Sample Name: L1704001019 Acquired: 4/5/2017 18:31:20 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00152**	**.00853**	**.00581**	**.03035**	**.00295**	**.00009**	**-.06106**
Stddev	.00153	.00068	.00073	.00139	.00158	.00004	.05724
%RSD	101.00	7.9293	12.510	4.5964	53.577	39.977	93.746
#1	-.00279	.00799	.00658	.03179	.00208	.00008	-.12708
#2	.00018	.00929	.00514	.02901	.00478	.00013	-.03064
#3	-.00195	.00831	.00572	.03025	.00200	.00006	-.02545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**-.00062**	**.05848**	**.00170**	**.02233**	**-.07766**	**-.00826**
Stddev	.00017	.00004	.00011	.00107	.04520	.15222	.00581
%RSD	17.486	5.9416	.19072	63.302	202.45	196.01	70.344
#1	.00113	-.00058	.05845	.00197	-.02471	-.05879	-.00160
#2	.00080	-.00063	.05861	.00261	.02626	-.23844	-.01090
#3	.00092	-.00065	.05839	.00051	.06543	.06425	-.01228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.07503**	**.00603**	**.01156**	**-.10989**	**.00706**	F **1874.3**	**.00027**
Stddev	.09547	.00368	.00099	.06632	.00699	42.6	.00191
%RSD	127.25	61.039	8.5610	60.350	99.131	2.2707	702.39
#1	-.08346	.00702	.01103	-.16268	.00966	1835.4	-.00157
#2	.02438	.00912	.01270	-.13153	.01237	1919.8	.00224
#3	-.16601	.00196	.01095	-.03545	-.00087	1867.8	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						180.00	
Low Limit						-.10000	

Approved: April 06, 2017

Sample Name: L1704001019 Acquired: 4/5/2017 18:31:20 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00234**	**.00115**	**.00574**	**-.00016**	**-.00023**	**.00423**	**-.00129**
Stddev	.00444	.00156	.00199	.00064	.00058	.00344	.00347
%RSD	190.11	136.07	34.697	402.68	256.73	81.318	270.00
#1	-.00688	.00200	.00765	-.00081	-.00028	.00105	-.00530
#2	-.00213	-.00065	.00592	-.00014	.00038	.00789	.00085
#3	.00200	.00210	.00367	.00047	-.00077	.00376	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00022**	**.00100**	**.00077**
Stddev	.00031	.00004	.00019
%RSD	139.67	4.4690	25.131
#1	.00003	.00095	.00058
#2	.00058	.00102	.00075
#3	.00006	.00104	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22500.**	**155560.**	**4323.4**
Stddev	351.	3902.	45.2
%RSD	1.5604	2.5085	1.0451
#1	22874.	159200.	4271.4
#2	22450.	156050.	4352.4
#3	22177.	151440.	4346.5

Approved: April 06, 2017

Sample Name: L1704001020 Acquired: 4/5/2017 18:35:03 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.01862**	**-.00095**	**.00007**	**.00335**	**.00008**	**-.08351**
Stddev	.00066	.00408	.00252	.00230	.00036	.00002	.01102
%RSD	64.589	21.905	264.43	3161.0	10.872	29.433	13.193
#1	-.00124	.01395	.00120	.00221	.00317	.00006	-.07652
#2	-.00156	.02039	-.00034	.00037	.00310	.00011	-.09621
#3	-.00028	.02151	-.00372	-.00236	.00376	.00008	-.07779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**-.00002**	**.00006**	**.00161**	**.02685**	F **392.17**	**-.00969**
Stddev	.00018	.00061	.00043	.00035	.03203	2.18	.00221
%RSD	113.74	4054.5	737.78	21.898	119.32	.55527	22.841
#1	.00005	.00049	-.00044	.00174	.01379	390.55	-.00905
#2	-.00027	.00016	.00032	.00188	.00340	391.33	-.00786
#3	-.00026	-.00069	.00030	.00121	.06335	394.65	-.01215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						360.00	
Low Limit						-.50000	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.07575**	**.00360**	**.00321**	**-.03976**	**.01107**	**.37113**	**.00158**
Stddev	.00560	.00326	.00512	.03551	.02178	.56973	.00361
%RSD	7.3986	90.640	159.57	89.313	196.73	153.51	227.74
#1	-.07772	.00378	.00031	-.04159	-.00115	.05227	.00246
#2	-.06942	.00025	.00912	-.00337	.03622	1.0289	.00467
#3	-.08010	.00676	.00020	-.07431	-.00186	.03223	-.00238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017

Kristi K Burck

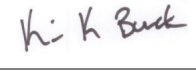
Sample Name: L1704001020 Acquired: 4/5/2017 18:35:03 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**-.00460**	**-.00005**	**-.00112**	**-.00011**	**-.00596**	**.00072**
Stddev	.00256	.00677	.00222	.00046	.00020	.00809	.00208
%RSD	374.27	147.15	4424.3	41.418	183.18	135.74	290.46
#1	-.00155	.00271	.00172	-.00133	-.00032	-.01115	.00072
#2	.00348	-.00585	.00067	-.00059	-.00009	-.01010	.00280
#3	.00012	-.01066	-.00254	-.00143	.00008	.00336	-.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00060**	**.00056**	**.00014**
Stddev	.00057	.00011	.00011
%RSD	95.685	19.681	78.734
#1	.00051	.00068	.00026
#2	.00007	.00046	.00013
#3	.00120	.00054	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21917.**	**145210.**	**4272.5**
Stddev	391.	1446.	56.4
%RSD	1.7840	.99588	1.3210
#1	21487.	146650.	4260.7
#2	22251.	145210.	4333.9
#3	22012.	143760.	4222.9

Approved: April 06, 2017



Sample Name: CCV Acquired: 4/5/2017 18:38:38 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40396**	**10.493**	**.40563**	**.50328**	**1.0487**	**.04959**	**10.278**	**.04962**
Stddev	.00041	.035	.00099	.00164	.0045	.00015	.108	.00019
%RSD	.10134	.33310	.24414	.32610	.42631	.29838	1.0550	.38932
#1	.40421	10.470	.40677	.50206	1.0506	.04963	10.262	.04984
#2	.40349	10.476	.40499	.50262	1.0435	.04942	10.178	.04953
#3	.40418	10.533	.40513	.50514	1.0518	.04971	10.393	.04948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20358**	**.50075**	**.51147**	**3.6827**	**52.349**	**1.0780**	**9.4546**	**.46288**
Stddev	.00111	.00007	.00175	.0284	.317	.0094	.1811	.00400
%RSD	.54581	.01378	.34254	.77090	.60498	.86729	1.9155	.86423
#1	.20486	.50071	.51345	3.7151	52.312	1.0804	9.2514	.45910
#2	.20282	.50082	.51083	3.6706	52.052	1.0677	9.5132	.46247
#3	.20306	.50070	.51013	3.6623	52.682	1.0860	9.5990	.46707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0142**	**52.521**	**.50993**	**10.241**	**.51609**	**1.1865**	**.40092**	**5.1577**
Stddev	.0021	.284	.00145	.024	.00300	.0029	.00431	.0161
%RSD	.20472	.53999	.28444	.23313	.58098	.24504	1.0760	.31173
#1	1.0164	52.565	.51152	10.262	.51953	1.1878	.40485	5.1740
#2	1.0122	52.219	.50960	10.247	.51405	1.1831	.40160	5.1573
#3	1.0141	52.781	.50868	10.215	.51469	1.1884	.39630	5.1419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: April 06, 2017

Ki K Buck

Sample Name: CCV Acquired: 4/5/2017 18:38:38 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0194**	**1.0330**	**.98783**	**.50705**	**1.0116**	**1.0022**	**1.0886**
Stddev	.0016	.0034	.00853	.00250	.0014	.0033	.0065
%RSD	.15721	.32591	.86395	.49258	.14106	.32897	.59387
#1	1.0212	1.0324	.98937	.50471	1.0117	1.0059	1.0827
#2	1.0185	1.0299	.97864	.50968	1.0101	.99958	1.0875
#3	1.0185	1.0365	.99550	.50675	1.0130	1.0012	1.0955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21930.**	**147580.**	**4072.5**
Stddev	182.	420.	16.9
%RSD	.83047	.28443	.41475
#1	21737.	147230.	4091.6
#2	22099.	147470.	4059.6
#3	21955.	148040.	4066.4

Approved: April 06, 2017

Kristi K Buck

Sample Name: CCB Acquired: 4/5/2017 18:42:03 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00086**	**.00176**	**.00263**	**.00127**	**.00375**	**.00006**	**-.06879**
Stddev	.00173	.00336	.00188	.00137	.00113	.00003	.08402
%RSD	201.34	191.38	71.646	107.59	30.211	48.761	122.14
#1	.00285	.00091	.00060	.00251	.00247	.00005	-.08277
#2	-.00015	-.00110	.00432	-.00019	.00462	.00003	.02135
#3	-.00013	.00546	.00296	.00150	.00414	.00009	-.14493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.00032**	**.00026**	**-.00001**	**.01608**	**.42896**	**-.00861**
Stddev	.00016	.00004	.00040	.00084	.02057	.01334	.00540
%RSD	140.33	13.311	156.91	11531.	127.89	3.1103	62.702
#1	-.00000	-.00030	-.00011	.00094	-.00351	.44094	-.01123
#2	-.00004	-.00028	.00020	-.00030	.03750	.41458	-.00240
#3	-.00029	-.00036	.00069	-.00066	.01426	.43135	-.01219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06330**	**-.00070**	**.00065**	**-.05343**	**.00062**	F **.03355**	**-.00151**
Stddev	.09113	.00455	.00016	.00396	.00043	.01865	.00290
%RSD	143.96	645.19	24.132	7.4047	69.743	55.581	191.83
#1	.16844	-.00455	.00083	-.05272	.00111	.05478	-.00435
#2	.01450	-.00188	.00060	-.04988	.00040	.01981	.00144
#3	.00697	.00431	.00053	-.05769	.00034	.02606	-.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: April 06, 2017

Sample Name: CCB Acquired: 4/5/2017 18:42:03 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00406**	**.00485**	**.00159**	**.00693**	**.00029**	**-.00258**	**-.00128**
Stddev	.00279	.00382	.00160	.00063	.00021	.00568	.00210
%RSD	68.737	78.731	100.65	9.0723	74.195	220.27	163.63
#1	.00090	.00225	.00341	.00628	.00053	-.00751	-.00301
#2	.00618	.00307	.00042	.00753	.00011	.00363	.00105
#3	.00509	.00923	.00093	.00698	.00023	-.00385	-.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00017**	**-.00018**	**.00065**
Stddev	.00040	.00006	.00017
%RSD	239.35	31.453	26.992
#1	.00044	-.00012	.00080
#2	-.00029	-.00024	.00045
#3	.00036	-.00018	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22676.**	**154640.**	**4292.3**
Stddev	294.	279.	37.1
%RSD	1.2952	.18053	.86407
#1	22761.	154960.	4282.6
#2	22918.	154520.	4333.3
#3	22349.	154450.	4261.0

Approved: April 06, 2017

Sample Name: L1704001021 Acquired: 4/5/2017 18:45:40 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00757**	**.00161**	**.00154**	**.00398**	**.00009**	F **-.10661**
Stddev	.00101	.00195	.00134	.00122	.00183	.00006	.03691
%RSD	314.68	25.737	83.194	79.196	45.975	73.072	34.619
#1	.00024	.00837	.00255	.00197	.00584	.00002	-.11069
#2	.00028	.00899	.00008	.00248	.00218	.00014	-.14132
#3	-.00149	.00535	.00221	.00016	.00392	.00010	-.06784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**-.00042**	**.00055**	**-.00026**	**.01591**	**-.08876**	**-.00718**
Stddev	.00009	.00032	.00073	.00176	.02321	.13098	.00239
%RSD	49.376	75.896	132.38	682.15	145.86	147.57	33.348
#1	-.00023	-.00066	.00045	.00123	.04132	-.22858	-.00901
#2	-.00025	-.00053	-.00012	.00019	-.00417	-.06881	-.00447
#3	-.00008	-.00006	.00133	-.00219	.01059	.03110	-.00806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.09854**	**.00355**	**.00012**	**-.11195**	**-.00103**	**.01151**	**-.00021**
Stddev	.09357	.00327	.00038	.02219	.00102	.00641	.00223
%RSD	94.951	92.333	330.57	19.824	98.889	55.737	1061.8
#1	-.20659	-.00020	-.00031	-.13374	-.00043	.01515	.00012
#2	-.04414	.00501	.00021	-.11272	-.00045	.01528	-.00259
#3	-.04490	.00583	.00044	-.08938	-.00221	.00410	.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017
Ki K Buck

Sample Name: L1704001021 Acquired: 4/5/2017 18:45:40 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	F **104.77**	**-.00251**	**.00044**	**.00042**	**.00082**	**-.00076**
Stddev	.00289	.42	.00202	.00019	.00054	.00808	.00132
%RSD	7930.1	.40278	80.647	42.908	127.40	981.16	174.38
#1	-.00307	104.30	-.00061	.00066	-.00005	.00669	-.00142
#2	.00268	105.11	-.00463	.00031	.00101	.00417	-.00161
#3	.00028	104.91	-.00229	.00036	.00031	-.00839	.00076
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.00070**	**.00003**
Stddev	.00038	.00017	.00013
%RSD	165.33	24.126	401.29
#1	.00063	.00088	.00008
#2	.00019	.00055	.00014
#3	-.00013	.00065	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22862.**	**153460.**	**4349.9**
Stddev	338.	529.	30.7
%RSD	1.4786	.34464	.70548
#1	23223.	154050.	4327.5
#2	22554.	153300.	4337.3
#3	22809.	153030.	4384.9

Approved: April 06, 2017

Sample Name: L1704001022 Acquired: 4/5/2017 18:49:13 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00799**	**.00063**	**.00039**	**.00459**	**.00006**	**-.09422**
Stddev	.00034	.00066	.00090	.00053	.00033	.00004	.03116
%RSD	90.165	8.3081	143.04	137.31	7.1482	72.808	33.074
#1	-.00021	.00738	.00101	-.00006	.00481	.00010	-.06206
#2	-.00076	.00788	-.00040	.00024	.00421	.00003	-.12427
#3	-.00015	.00869	.00127	.00097	.00474	.00004	-.09634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00095**	**.00017**	**-.00100**	**.03531**	**.01864**	**-.00428**
Stddev	.00022	.00036	.00053	.00219	.00191	.05098	.00561
%RSD	155.48	37.899	311.27	217.78	5.4238	273.44	131.17
#1	.00024	-.00115	.00009	.00018	.03547	-.02545	-.00815
#2	.00030	-.00116	-.00031	-.00353	.03713	.07446	-.00684
#3	-.00011	-.00053	.00074	.00034	.03331	.00692	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00246**	**.00027**	**.00036**	**-.11039**	**-.00467**	**.01881**	**.00158**
Stddev	.01908	.00144	.00018	.05644	.00068	.00746	.00106
%RSD	777.02	533.50	50.871	51.127	14.479	39.631	67.144
#1	.00304	.00147	.00021	-.17486	-.00390	.01021	.00230
#2	.02123	-.00133	.00031	-.06991	-.00493	.02322	.00209
#3	-.01691	.00067	.00057	-.08639	-.00518	.02302	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017

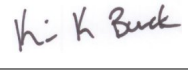
Sample Name: L1704001022 Acquired: 4/5/2017 18:49:13 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.01417**	F **36.964**	**.00058**	**.00013**	**.00019**	**.00007**
Stddev	.00125	.00762	.052	.00096	.00078	.00537	.00301
%RSD	157.26	53.803	.14057	165.37	597.81	2809.2	4437.1
#1	.00057	.00645	36.972	.00018	-.00076	-.00032	-.00294
#2	-.00107	.01435	37.011	.00168	.00045	.00580	.00307
#3	-.00188	.02169	36.908	-.00011	.00070	-.00491	.00008
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00010**	**.00033**	**.00449**
Stddev	.00008	.00017	.00090
%RSD	86.589	49.817	20.071
#1	-.00018	.00015	.00376
#2	-.00009	.00047	.00421
#3	-.00002	.00038	.00550
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22938.**	**155230.**	**4334.4**
Stddev	169.	397.	24.8
%RSD	.73702	.25567	.57159
#1	22775.	155380.	4323.7
#2	22926.	155530.	4362.7
#3	23112.	154780.	4316.7

Approved: April 06, 2017



Sample Name: L1704001023 Acquired: 4/5/2017 18:52:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.0331**	**.00685**	**.00218**	**-.00122**	**.00401**	**.00008**	**-.03979**
Stddev	.2667	.00218	.00073	.00056	.00100	.00002	.03252
%RSD	8.7938	31.820	33.614	46.086	24.836	24.033	81.730
#1	2.7254	.00492	.00219	-.00065	.00313	.00008	-.02731
#2	3.1758	.00642	.00291	-.00124	.00509	.00007	-.01535
#3	3.1981	.00922	.00144	-.00178	.00382	.00010	-.07669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00004**	**-.00038**	**-.00001**	**.04928**	**-.09871**	**-.00620**
Stddev	.00003	.00021	.00032	.00103	.01219	.09992	.00454
%RSD	15.674	521.86	83.887	8975.5	24.737	101.23	73.195
#1	-.00016	.00009	-.00074	.00117	.05992	-.21285	-.00904
#2	-.00020	.00022	-.00026	-.00070	.05192	-.02700	-.00858
#3	-.00015	-.00019	-.00014	-.00051	.03598	-.05627	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.10875**	**-.00022**	**-.00003**	**-.14317**	**-.00128**	**.01808**	**.00193**
Stddev	.06676	.00250	.00034	.03985	.00045	.00526	.00064
%RSD	61.386	1121.3	1017.2	27.837	35.498	29.061	33.098
#1	-.17571	.00006	-.00024	-.16412	-.00093	.01587	.00227
#2	-.04220	-.00286	-.00022	-.09721	-.00180	.02408	.00233
#3	-.10834	.00212	.00036	-.16818	-.00112	.01430	.00119
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: April 06, 2017
Kristi K Buck

Sample Name: L1704001023 Acquired: 4/5/2017 18:52:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.00296**	**.00340**	**.00032**	**-.00007**	**-.00663**	**-.00101**
Stddev	.00310	.00659	.00269	.00060	.00044	.00634	.00251
%RSD	680.39	222.99	79.149	184.92	633.08	95.629	249.94
#1	.00136	.00298	.00641	.00086	.00009	.00025	.00163
#2	-.00403	-.00365	.00257	.00043	-.00057	-.00792	-.00128
#3	.00131	.00954	.00122	-.00032	.00027	-.01224	-.00337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.00035**	**.00002**
Stddev	.00040	.00011	.00012
%RSD	174.45	31.483	765.02
#1	.00030	.00038	.00016
#2	.00059	.00023	-.00006
#3	-.00020	.00044	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22678.**	**153400.**	**4212.9**
Stddev	443.	488.	36.8
%RSD	1.9552	.31836	.87448
#1	22762.	152880.	4202.8
#2	22198.	153460.	4253.7
#3	23073.	153850.	4182.1

Approved: April 06, 2017

Sample Name: L1704001024 Acquired: 4/5/2017 18:56:20 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06142**	**.01626**	**.00091**	**.00026**	**.00448**	**.00005**	**-.07262**
Stddev	.01150	.00430	.00192	.00048	.00076	.00003	.05980
%RSD	18.730	26.465	211.77	184.18	16.974	64.373	82.345
#1	.04896	.01199	.00304	.00049	.00437	.00004	-.00595
#2	.06366	.02060	-.00069	-.00029	.00379	.00009	-.12152
#3	.07164	.01618	.00038	.00058	.00530	.00002	-.09038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**-.00017**	**.00053**	**-.00128**	**.03090**	**-.06604**	**-.00329**
Stddev	.00012	.00035	.00045	.00102	.05416	.25297	.00986
%RSD	51.420	204.54	84.699	79.519	175.27	383.04	299.42
#1	-.00018	-.00057	.00104	-.00073	.02653	-.32679	-.01301
#2	-.00036	.00009	.00027	-.00065	.08712	-.04971	-.00358
#3	-.00014	-.00003	.00027	-.00245	-.02094	.17837	.00671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.10939**	**.00126**	**-.00020**	F **306.66**	**-.00184**	**.01510**	**.00026**
Stddev	.06902	.00276	.00040	3.62	.00050	.00252	.00196
%RSD	63.094	219.46	199.51	1.1819	26.856	16.659	745.76
#1	-.18626	.00383	-.00065	306.43	-.00185	.01752	.00008
#2	-.05274	-.00167	-.00002	310.39	-.00135	.01529	.00231
#3	-.08917	.00162	.00008	303.15	-.00234	.01250	-.00160
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00			270.00			
Low Limit	-.10000			-.50000			

Approved: April 06, 2017
Ki K Buck

Sample Name: L1704001024 Acquired: 4/5/2017 18:56:20 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**-.00075**	**.00158**	**-.00194**	**-.00034**	**-.00594**	**-.00081**
Stddev	.00131	.00150	.00139	.00024	.00067	.00237	.00225
%RSD	134.53	199.48	87.550	12.176	195.30	39.947	278.13
#1	.00143	-.00125	.00003	-.00177	-.00085	-.00852	-.00284
#2	.00200	-.00195	.00202	-.00184	.00041	-.00386	.00161
#3	-.00050	.00093	.00270	-.00221	-.00058	-.00544	-.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00050**	**.00065**	**-.00007**
Stddev	.00051	.00006	.00032
%RSD	101.18	9.8835	457.65
#1	.00024	.00063	-.00039
#2	.00109	.00073	.00026
#3	.00018	.00061	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21950.**	**149250.**	**4255.1**
Stddev	49.	1178.	68.6
%RSD	.22122	.78917	1.6117
#1	21934.	150280.	4201.7
#2	22004.	149510.	4231.2
#3	21911.	147960.	4332.5

Approved: April 06, 2017

Sample Name: L1704001025 Acquired: 4/5/2017 18:59:54 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00477**	**.00394**	**-.00025**	**-.00062**	**.00413**	**.00006**	**-.06592**
Stddev	.00070	.00387	.00074	.00061	.00111	.00004	.05624
%RSD	14.688	98.452	291.63	97.130	26.931	56.369	85.314
#1	.00403	.00828	-.00081	-.00129	.00314	.00010	-.04533
#2	.00486	.00271	-.00053	-.00048	.00533	.00003	-.02288
#3	.00543	.00083	.00058	-.00010	.00391	.00006	-.12956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00042**	**-.00030**	**-.00035**	**.02329**	**-.11465**	**-.00607**
Stddev	.00016	.00016	.00035	.00055	.01127	.10594	.00863
%RSD	135.84	38.935	114.99	159.37	48.366	92.402	142.10
#1	-.00022	-.00044	-.00043	-.00051	.03229	-.12114	-.01594
#2	-.00020	-.00058	.00009	.00027	.01066	-.00561	-.00231
#3	.00007	-.00025	-.00057	-.00079	.02692	-.21718	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.15565**	**.00408**	**.00013**	**.10416**	**-.00034**	**.00927**	**.00003**
Stddev	.06328	.00247	.00020	.01147	.00030	.00374	.00203
%RSD	40.659	60.573	151.35	11.012	88.230	40.380	7967.1
#1	-.08607	.00133	.00034	.09254	-.00020	.01001	-.00168
#2	-.20979	.00480	-.00005	.11547	-.00068	.01258	-.00052
#3	-.17108	.00612	.00010	.10447	-.00013	.00521	.00227
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: April 06, 2017

Sample Name: L1704001025 Acquired: 4/5/2017 18:59:54 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**-.00296**	**-.00161**	**.00068**	F **10.623**	**.00867**	**.00257**
Stddev	.00380	.00582	.00152	.00041	.018	.00430	.00098
%RSD	1855.3	196.73	94.191	60.262	.16629	49.544	38.035
#1	-.00259	-.00655	.00014	.00114	10.616	.01322	.00295
#2	-.00220	-.00608	-.00240	.00052	10.610	.00469	.00146
#3	.00418	.00376	-.00257	.00037	10.643	.00809	.00330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00003**	**.00070**	**-.00009**
Stddev	.00061	.00013	.00002
%RSD	2224.5	18.168	22.267
#1	.00053	.00083	-.00011
#2	-.00068	.00068	-.00009
#3	.00007	.00058	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23132.**	**156680.**	**4355.9**
Stddev	220.	936.	69.8
%RSD	.94944	.59730	1.6031
#1	23049.	155840.	4361.1
#2	22965.	157690.	4423.0
#3	23380.	156500.	4283.7

Approved: April 06, 2017

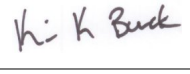
Sample Name: L1704001026 Acquired: 4/5/2017 19:03:29 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00406**	**.00512**	**.00176**	**-.00024**	**.00217**	**.00008**	F **-.10372**
Stddev	.00069	.00494	.00206	.00163	.00070	.00002	.02285
%RSD	16.871	96.467	116.81	678.34	32.346	23.087	22.028
#1	.00419	.00222	.00263	-.00183	.00294	.00007	-.09478
#2	.00468	.00232	-.00059	.00143	.00199	.00007	-.08669
#3	.00333	.01082	.00325	-.00032	.00157	.00010	-.12968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**-.00034**	**-.00010**	**.00048**	**.02541**	**.28156**	**-.00398**
Stddev	.00014	.00005	.00106	.00135	.03047	.08194	.00208
%RSD	37.056	14.290	1013.5	282.35	119.92	29.101	52.252
#1	-.00047	-.00031	-.00013	.00203	.00147	.18903	-.00295
#2	-.00021	-.00039	-.00115	-.00013	.01504	.31075	-.00261
#3	-.00043	-.00031	.00097	-.00046	.05971	.34491	-.00637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03955**	**.00316**	**.00037**	**.05810**	**.00589**	**.01029**	**-.00178**
Stddev	.20024	.00207	.00012	.00435	.00058	.00212	.00232
%RSD	506.32	65.487	31.263	7.4793	9.8497	20.612	130.40
#1	-.05587	.00080	.00046	.05618	.00644	.00893	-.00394
#2	.16836	.00466	.00024	.06307	.00528	.01274	.00068
#3	-.23113	.00401	.00041	.05504	.00595	.00921	-.00208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017



Sample Name: L1704001026 Acquired: 4/5/2017 19:03:29 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00293**	**.00145**	**-.00218**	**.00018**	**.00105**	**-.00288**	F **21.042**
Stddev	.00331	.00487	.00164	.00043	.00034	.00406	.009
%RSD	113.14	335.26	75.120	242.02	32.310	141.19	.04039
#1	-.00016	-.00104	-.00284	-.00001	.00074	-.00121	21.034
#2	-.00660	.00706	-.00338	.00067	.00099	.00009	21.042
#3	-.00203	-.00166	-.00031	-.00013	.00141	-.00751	21.051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							18.000
Low Limit							-.04000

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00006**	**.00040**	**.00017**
Stddev	.00019	.00005	.00014
%RSD	344.01	11.931	80.229
#1	-.00017	.00045	.00007
#2	.00016	.00036	.00011
#3	-.00015	.00038	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23569.**	**156890.**	**4377.6**
Stddev	50.	1624.	72.0
%RSD	.21050	1.0350	1.6447
#1	23600.	158340.	4343.5
#2	23512.	157210.	4460.4
#3	23595.	155130.	4329.0

Approved: April 06, 2017

Kristi K Buck

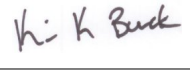
Sample Name: L1704001027 Acquired: 4/5/2017 19:07:01 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00137**	**.00491**	**.00150**	**.00177**	**.00347**	**.00006**	**-.05385**
Stddev	.00031	.00414	.00137	.00249	.00111	.00008	.03971
%RSD	22.640	84.341	91.520	140.69	31.923	134.72	73.748
#1	.00152	.00081	.00134	-.00037	.00361	.00013	-.08632
#2	.00101	.00482	.00021	.00451	.00450	.00009	-.06564
#3	.00157	.00909	.00294	.00117	.00230	-.00003	-.00957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00085**	**-.00027**	**-.00226**	**.05047**	**-.04253**	**-.00325**
Stddev	.00023	.00013	.00080	.00138	.04632	.07729	.00669
%RSD	555.60	15.549	301.14	61.177	91.779	181.73	205.94
#1	-.00026	-.00099	-.00064	-.00385	.00823	.03325	-.00791
#2	.00020	-.00074	-.00081	-.00139	.10001	-.03960	.00442
#3	-.00006	-.00080	.00065	-.00153	.04318	-.12125	-.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06217**	**.00177**	**-.00012**	**-.04321**	**.00016**	**.00279**	**.00044**
Stddev	.03975	.00334	.00060	.04671	.00090	.00432	.00036
%RSD	63.946	188.84	521.13	108.10	543.64	154.92	81.057
#1	-.10081	.00181	.00033	-.00367	.00091	.00775	.00037
#2	-.02139	.00508	-.00080	-.09475	.00041	-.00014	.00083
#3	-.06430	-.00159	.00012	-.03122	-.00083	.00075	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017



Sample Name: L1704001027 Acquired: 4/5/2017 19:07:01 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22969**	**.00207**	**.00697**	F **50.481**	**.00029**	**.00796**	**.00311**
Stddev	.00632	.00517	.00187	.190	.00054	.00239	.00174
%RSD	2.7527	250.33	26.799	.37716	184.35	29.959	55.896
#1	.22330	.00533	.00543	50.629	.00015	.01071	.00116
#2	.22983	-.00390	.00643	50.266	-.00016	.00680	.00366
#3	.23595	.00476	.00905	50.547	.00089	.00638	.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				45.000			
Low Limit				-.10000			

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00017**	**.00147**	**.00068**
Stddev	.00053	.00011	.00022
%RSD	318.87	7.8254	32.422
#1	-.00021	.00141	.00050
#2	-.00067	.00139	.00060
#3	.00038	.00160	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23096.**	**160810.**	**4476.5**
Stddev	554.	395.	51.5
%RSD	2.3975	.24542	1.1505
#1	23734.	161260.	4456.0
#2	22799.	160510.	4535.1
#3	22753.	160680.	4438.4

Approved: April 06, 2017

Kristi K Buck

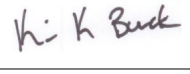
Sample Name: L1704001028 Acquired: 4/5/2017 19:10:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02928**	**.00668**	**.00373**	**.00129**	**.00402**	**.00124**	**-.09318**
Stddev	.00098	.00265	.00076	.00043	.00030	.00003	.00183
%RSD	3.3622	39.682	20.323	33.013	7.4963	2.1056	1.9613
#1	.02875	.00782	.00388	.00126	.00400	.00124	-.09481
#2	.02868	.00365	.00290	.00173	.00374	.00127	-.09120
#3	.03042	.00856	.00440	.00088	.00434	.00122	-.09352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.03455**	**.00022**	**.01008**	**.00537**	**.02594**	**-.00386**
Stddev	.00028	.00102	.00034	.00152	.01882	.09556	.00505
%RSD	338.81	2.9616	154.55	15.053	350.53	368.41	130.91
#1	.00039	.03403	.00035	.00893	.02603	.00544	-.00900
#2	-.00015	.03573	-.00017	.01180	.00087	.13008	.00110
#3	.00001	.03389	.00048	.00952	-.01079	-.05771	-.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.04290**	**.00243**	**.00077**	**-.05648**	**-.00023**	**-.03971**	**.00342**
Stddev	.09573	.00346	.00055	.02513	.00105	.02290	.00379
%RSD	223.16	142.85	71.388	44.491	452.59	57.670	110.96
#1	.01653	-.00152	.00050	-.03341	-.00016	-.05431	.00176
#2	.00811	.00380	.00141	-.05276	.00078	-.01332	.00775
#3	-.15333	.00499	.00041	-.08325	-.00131	-.05152	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017



Sample Name: L1704001028 Acquired: 4/5/2017 19:10:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01264**	**.00022**	**.02680**	**.09892**	**-.00016**	F **48.622**	**-.01207**
Stddev	.00335	.00625	.00277	.00895	.00075	.105	.00204
%RSD	26.519	2877.8	10.344	9.0479	456.39	.21511	16.938
#1	-.00922	-.00419	.02362	.09542	.00047	48.521	-.01442
#2	-.01278	.00737	.02869	.10909	-.00099	48.614	-.01111
#3	-.01591	-.00253	.02809	.09224	.00003	48.730	-.01068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.02302**	**-.00179**	**-.00027**
Stddev	.00071	.00003	.00013
%RSD	3.1017	1.9188	48.317
#1	.02315	-.00183	-.00037
#2	.02365	-.00176	-.00033
#3	.02224	-.00177	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22681.**	**153710.**	**4301.1**
Stddev	251.	1954.	53.1
%RSD	1.1049	1.2713	1.2346
#1	22948.	152100.	4265.5
#2	22450.	153150.	4362.2
#3	22644.	155880.	4275.8

Approved: April 06, 2017

Sample Name: CCV Acquired: 4/5/2017 19:14:09 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40354**	**10.361**	**.41055**	**.49951**	**1.0493**	**.04923**	**10.241**	**.05000**
Stddev	.00336	.022	.00329	.00140	.0020	.00015	.060	.00026
%RSD	.83350	.21673	.80091	.27936	.18990	.30948	.58401	.51916
#1	.40029	10.338	.40676	.49822	1.0515	.04911	10.256	.04971
#2	.40333	10.363	.41264	.49930	1.0490	.04917	10.175	.05008
#3	.40700	10.383	.41224	.50099	1.0476	.04940	10.291	.05020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20516**	**.49690**	**.51323**	**3.7056**	**50.302**	**1.0713**	**9.3670**	**.47063**
Stddev	.00146	.00143	.00208	.0197	.225	.0114	.1189	.00630
%RSD	.71259	.28823	.40536	.53174	.44808	1.0600	1.2698	1.3386
#1	.20387	.49581	.51156	3.6856	50.436	1.0766	9.4229	.46335
#2	.20486	.49638	.51258	3.7062	50.042	1.0583	9.2305	.47435
#3	.20675	.49852	.51556	3.7250	50.427	1.0790	9.4478	.47417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0229**	**52.228**	**.51104**	**10.342**	**.51874**	**1.2005**	**.40629**	**5.2286**
Stddev	.0050	.221	.00250	.059	.00297	.0017	.00501	.0222
%RSD	.49130	.42270	.48871	.57129	.57196	.13909	1.2328	.42446
#1	1.0194	52.297	.50968	10.299	.52133	1.1990	.40206	5.2093
#2	1.0207	51.981	.50952	10.317	.51550	1.2003	.40499	5.2237
#3	1.0287	52.406	.51392	10.409	.51938	1.2023	.41182	5.2529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: April 06, 2017

Kristi K Buck

Sample Name: CCV Acquired: 4/5/2017 19:14:09 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0394**	**1.0364**	**.99886**	**.50947**	**1.0075**	**1.0015**	**1.0420**
Stddev	.0046	.0042	.01364	.00421	.0036	.0049	.0144
%RSD	.44081	.40539	1.3655	.82595	.36034	.49087	1.3797
#1	1.0344	1.0388	1.0051	.50867	1.0058	.99719	1.0586
#2	1.0406	1.0316	.98322	.50573	1.0050	1.0006	1.0326
#3	1.0433	1.0390	1.0083	.51403	1.0116	1.0069	1.0349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21850.**	**148580.**	**4309.7**
Stddev	251.	453.	58.8
%RSD	1.1489	.30464	1.3646
#1	21752.	148950.	4242.1
#2	22135.	148700.	4349.0
#3	21663.	148080.	4338.1

Approved: April 06, 2017

Sample Name: CCB Acquired: 4/5/2017 19:17:33 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00141**	**.00324**	**-.00135**	**.00348**	**.00414**	**.00010**	**-.04144**	**-.00014**
Stddev	.00159	.00567	.00250	.00103	.00147	.00005	.02397	.00024
%RSD	113.01	174.64	185.55	29.706	35.412	45.784	57.849	172.74
#1	-.00009	-.00040	-.00171	.00263	.00452	.00008	-.06658	-.00029
#2	.00308	.00036	-.00365	.00463	.00537	.00015	-.03891	.00014
#3	.00124	.00977	.00131	.00319	.00252	.00007	-.01884	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**-.00032**	**-.00120**	**.03319**	**-.09114**	**-.00544**	**-.05889**	**.00291**
Stddev	.00044	.00052	.00040	.00077	.01957	.00290	.07502	.00482
%RSD	226.11	163.10	33.167	2.3054	21.472	53.372	127.40	165.71
#1	-.00059	-.00040	-.00130	.03398	-.09569	-.00284	-.02303	.00256
#2	.00028	.00024	-.00076	.03314	-.06969	-.00857	-.00852	.00789
#3	-.00027	-.00080	-.00153	.03245	-.10803	-.00490	-.14511	-.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.02308**	**-.00074**	**.00635**	**.00142**	**.00191**	**.00516**	**.00488**
Stddev	.00033	.02476	.00054	.00725	.00228	.00251	.00518	.00171
%RSD	216.72	107.27	72.475	114.20	160.49	131.33	100.34	35.027
#1	.00011	.00519	-.00133	-.00111	.00288	.00315	.00796	.00648
#2	-.00016	-.04089	-.00027	.01336	-.00121	.00357	-.00082	.00510
#3	.00051	-.03355	-.00063	.00679	.00258	-.00098	.00835	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017

Sample Name: CCB Acquired: 4/5/2017 19:17:33 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01552**	**.00071**	**.00128**	**-.00076**	**.00045**	**-.00026**	**.00018**
Stddev	.00064	.00039	.00508	.00120	.00068	.00010	.00024
%RSD	4.0909	55.212	396.91	156.58	150.91	37.495	136.22
#1	.01492	.00115	.00621	-.00001	.00049	-.00035	.00026
#2	.01547	.00055	-.00395	-.00014	.00110	-.00016	-.00009
#3	.01618	.00042	.00158	-.00214	-.00025	-.00028	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22770.**	**156740.**	**4348.5**
Stddev	367.	797.	16.1
%RSD	1.6098	.50833	.36926
#1	23030.	156800.	4351.7
#2	22929.	155910.	4362.7
#3	22351.	157500.	4331.1

Approved: April 06, 2017

Sample Name: L1704001029 Acquired: 4/5/2017 19:21:11 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01201**	F **-1.2195**	**-.00276**	**-.00125**	**.00345**	F **-.01999**	**-.04503**
Stddev	.00157	.0543	.00187	.00169	.00097	.00065	.05695
%RSD	13.087	4.4498	67.656	135.28	28.070	3.2285	126.48
#1	.01287	-1.2593	-.00143	-.00152	.00393	-.02039	-.01633
#2	.01019	-1.2416	-.00489	-.00280	.00409	-.02035	-.11061
#3	.01296	-1.1577	-.00195	.00056	.00234	-.01925	-.00813
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		900.00				1.8000	
Low Limit		-.10000				-.00050	

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**-.00038**	**-.00247**	**-.00179**	**.00473**	**-.11065**	**-.00841**
Stddev	.00011	.00043	.00049	.00124	.02226	.04800	.00370
%RSD	30.344	115.08	19.886	69.111	470.59	43.381	43.945
#1	.00026	-.00045	-.00191	-.00317	.02910	-.14825	-.00540
#2	.00049	.00009	-.00267	-.00141	-.00035	-.12712	-.00731
#3	.00037	-.00077	-.00283	-.00079	-.01455	-.05658	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01468**	F **-.00410**	**-.00610**	**-.07473**	**-.00047**	**-.07706**	**-.00099**
Stddev	.14931	.00171	.00023	.03804	.00049	.00730	.00182
%RSD	1017.0	41.694	3.8290	50.901	103.04	9.4735	184.06
#1	.18137	-.00213	-.00604	-.09142	-.00053	-.07078	-.00094
#2	-.03050	-.00523	-.00635	-.03120	-.00094	-.08507	-.00282
#3	-.10682	-.00495	-.00590	-.10157	.00004	-.07533	.00081
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: April 06, 2017
Kim K Buck

Sample Name: L1704001029 Acquired: 4/5/2017 19:21:11 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01579**	**-.00035**	**-.01009**	**.00240**	**.00039**	**.00752**	**.79086**
Stddev	.00568	.00227	.00115	.00033	.00018	.00226	.02999
%RSD	35.947	652.02	11.400	13.922	46.804	30.106	3.7922
#1	.02165	.00112	-.01140	.00229	.00034	.00609	.81256
#2	.01541	.00081	-.00927	.00214	.00059	.01013	.80339
#3	.01032	-.00297	-.00959	.00278	.00023	.00634	.75664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F **29.783**	**.00032**	**.00008**
Stddev	.747	.00002	.00012
%RSD	2.5075	5.0292	146.67
#1	30.298	.00030	-.00002
#2	30.124	.00033	.00021
#3	28.926	.00033	.00004
Check ?	Chk Fail	Chk Pass	Chk Pass
High Limit	27.000		
Low Limit	-.01000		

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23389.**	**153410.**	**4374.0**
Stddev	41.	1360.	32.8
%RSD	.17565	.88673	.75037
#1	23378.	152420.	4339.6
#2	23355.	152840.	4404.9
#3	23435.	154960.	4377.4

Approved: April 06, 2017

Kristi K Buck

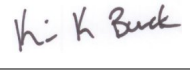
Sample Name: L1704001029 Acquired: 4/5/2017 19:24:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00198**	**.00641**	**-.00098**	**-.00186**	**.00354**	**.00003**	**-.08933**
Stddev	.00227	.00299	.00121	.00140	.00113	.00003	.02311
%RSD	114.84	46.603	123.58	74.897	31.983	88.386	25.865
#1	-.00054	.00809	.00016	-.00284	.00365	-.00000	-.06344
#2	.00259	.00819	-.00084	-.00026	.00235	.00005	-.10786
#3	.00388	.00296	-.00225	-.00249	.00461	.00006	-.09670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**-.00007**	**.00009**	**-.00025**	**.04666**	**-.05634**	**-.01501**
Stddev	.00010	.00021	.00045	.00149	.02400	.03749	.00029
%RSD	168.75	302.89	501.69	585.07	51.432	66.554	1.9163
#1	.00008	.00016	-.00033	.00065	.02052	-.09960	-.01491
#2	.00016	-.00011	.00002	.00056	.06770	-.03612	-.01533
#3	-.00005	-.00025	.00057	-.00197	.05175	-.03328	-.01478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05486**	**.00198**	**.00035**	**-.05897**	**-.00186**	**.00551**	**.00160**
Stddev	.04014	.00470	.00020	.02618	.00066	.00777	.00061
%RSD	73.173	237.81	57.855	44.396	35.607	141.08	38.313
#1	-.03935	.00736	.00056	-.08834	-.00221	.00629	.00135
#2	-.02479	-.00137	.00015	-.03807	-.00109	.01286	.00229
#3	-.10044	-.00005	.00034	-.05051	-.00227	-.00262	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017



Sample Name: L1704001029 Acquired: 4/5/2017 19:24:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00677**	**-.00003**	**-.00126**	**.00241**	**-.00061**	**-.00345**	**.00245**
Stddev	.00108	.00152	.00160	.00057	.00162	.01252	.00233
%RSD	15.968	4906.8	127.41	23.658	265.35	362.73	95.046
#1	-.00576	.00012	-.00013	.00230	.00036	-.00306	.00208
#2	-.00662	.00141	-.00309	.00191	.00029	-.01616	.00495
#3	-.00791	-.00162	-.00055	.00303	-.00249	.00887	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00083**	F **47.885**	**.00006**
Stddev	.00086	1.177	.00032
%RSD	102.84	2.4588	512.38
#1	.00176	48.088	.00022
#2	.00007	48.948	.00028
#3	.00067	46.619	-.00031
Check ?	Chk Pass	Chk Fail	Chk Pass
High Limit		45.000	
Low Limit		-.01000	

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22778.**	**158900.**	**4531.3**
Stddev	282.	1700.	85.9
%RSD	1.2379	1.0697	1.8947
#1	22576.	160050.	4583.2
#2	22658.	159710.	4578.5
#3	23100.	156950.	4432.2

Approved: April 06, 2017

Sample Name: L1704001029 Acquired: 4/5/2017 19:28:38 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36485**	**-.06068**	**.00466**	**.00205**	**.08009**	**.00613**	**-.08030**
Stddev	.00367	.00631	.00206	.00220	.00242	.00011	.01660
%RSD	1.0064	10.397	44.211	107.20	3.0260	1.7273	20.667
#1	.36209	-.06354	.00278	.00359	.08207	.00606	-.09946
#2	.36346	-.06505	.00433	-.00047	.07739	.00608	-.07043
#3	.36902	-.05345	.00686	.00302	.08082	.00625	-.07101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00022**	**.00011**	**.00241**	**.01264**	**-.05087**	**-.01688**
Stddev	.00021	.00022	.00046	.00146	.01340	.06888	.00492
%RSD	55.124	101.43	433.79	60.414	106.02	135.41	29.123
#1	.00060	.00031	.00035	.00265	.00016	-.06783	-.01887
#2	.00036	-.00003	.00039	.00374	.02681	.02491	-.01128
#3	.00018	.00038	-.00042	.00085	.01096	-.10968	-.02050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06752**	**.00254**	**-.00159**	**-.09559**	**-.00479**	**.08923**	**.00055**
Stddev	.03376	.00133	.00021	.02421	.00090	.00516	.00264
%RSD	49.998	52.506	13.069	25.332	18.802	5.7777	482.48
#1	-.10596	.00371	-.00143	-.08457	-.00575	.09512	-.00242
#2	-.04270	.00280	-.00182	-.07884	-.00467	.08553	.00264
#3	-.05389	.00109	-.00150	-.12335	-.00396	.08704	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 06, 2017

Sample Name: L1704001029 Acquired: 4/5/2017 19:28:38 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	F **-.01050**	**-.00934**	**.04444**	**-.00489**	**.00533**	**.00104**
Stddev	.00477	.00240	.00193	.00057	.00060	.01440	.00170
%RSD	1144.9	22.899	20.623	1.2871	12.223	270.18	163.44
#1	-.00509	-.01172	-.01134	.04379	-.00490	-.01129	-.00078
#2	.00287	-.00773	-.00920	.04466	-.00548	.01308	.00131
#3	.00347	-.01205	-.00749	.04487	-.00429	.01420	.00259
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00516**	**.00114**	F **49.597**
Stddev	.00036	.00052	.194
%RSD	6.9521	46.071	.39048
#1	.00530	.00174	49.817
#2	.00476	.00085	49.522
#3	.00543	.00082	49.452
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23765.**	**158410.**	**4513.6**
Stddev	105.	1186.	23.0
%RSD	.44156	.74866	.50977
#1	23853.	159520.	4507.8
#2	23794.	158550.	4538.9
#3	23649.	157160.	4494.0

Approved: April 06, 2017

Sample Name: CCV Acquired: 4/5/2017 19:32:24 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39986**	**10.253**	**.40481**	**.49700**	**1.0392**	**.04895**	**10.121**
Stddev	.00222	.039	.00298	.00377	.0083	.00014	.041
%RSD	.55413	.38267	.73659	.75936	.79749	.28350	.40561
#1	.39754	10.207	.40713	.49314	1.0394	.04881	10.160
#2	.40007	10.275	.40145	.49718	1.0308	.04895	10.078
#3	.40195	10.275	.40586	.50068	1.0474	.04909	10.126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04929**	**.20215**	**.49206**	**.50805**	**3.6916**	**50.409**	**1.0474**
Stddev	.00024	.00104	.00165	.00242	.0286	.387	.0068
%RSD	.49128	.51624	.33515	.47643	.77413	.76813	.65213
#1	.04954	.20334	.49022	.51076	3.6663	50.678	1.0434
#2	.04929	.20139	.49257	.50609	3.6858	49.966	1.0435
#3	.04905	.20172	.49339	.50731	3.7226	50.585	1.0553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.3724**	**.45708**	**1.0079**	**51.974**	**.50578**	**10.224**	**.51308**
Stddev	.0492	.00251	.0066	.363	.00430	.055	.00261
%RSD	.52486	.54950	.65509	.69816	.85027	.53425	.50820
#1	9.4291	.45509	1.0153	51.910	.51067	10.287	.51374
#2	9.3411	.45625	1.0025	51.648	.50406	10.189	.51020
#3	9.3471	.45990	1.0060	52.365	.50260	10.196	.51529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 06, 2017

Sample Name: CCV Acquired: 4/5/2017 19:32:24 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1814**	**.40634**	**5.1610**	**1.0136**	**1.0313**	**.98409**	**.50285**
Stddev	.0081	.00347	.0257	.0063	.0061	.01365	.00265
%RSD	.68556	.85380	.49869	.62104	.58713	1.3870	.52663
#1	1.1902	.40705	5.1889	1.0208	1.0310	.98498	.50586
#2	1.1797	.40941	5.1382	1.0092	1.0254	.97002	.50085
#3	1.1742	.40257	5.1559	1.0108	1.0375	.99727	.50185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0018**	**.98823**	F **1.1352**
Stddev	.0035	.00533	.0186
%RSD	.34597	.53925	1.6383
#1	.99862	.99387	1.1485
#2	1.0013	.98754	1.1140
#3	1.0055	.98328	1.1432
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22650.**	**152250.**	**4369.5**
Stddev	404.	775.	71.5
%RSD	1.7847	.50870	1.6364
#1	22186.	153040.	4324.6
#2	22924.	152210.	4451.9
#3	22840.	151500.	4331.9

Approved: April 06, 2017

Sample Name: CCB Acquired: 4/5/2017 19:35:48 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.00526**	**-.00116**	**.00146**	**.00446**	**.00005**	**-.04441**	**.00007**
Stddev	.00101	.00228	.00220	.00121	.00058	.00002	.02477	.00021
%RSD	180.12	43.246	190.09	83.147	12.945	46.584	55.780	291.22
#1	-.00053	.00765	-.00253	.00280	.00409	.00008	-.06772	-.00008
#2	.00044	.00502	.00138	.00113	.00512	.00004	-.04712	-.00001
#3	-.00158	.00312	-.00232	.00045	.00417	.00003	-.01840	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00011**	**-.00018**	**.00367**	**.08771**	**-.00624**	**-.07289**	**.00515**
Stddev	.00044	.00084	.00111	.01496	.13357	.00696	.01900	.00456
%RSD	562.26	735.38	599.22	407.34	152.28	111.42	26.071	88.564
#1	-.00010	-.00106	-.00099	-.00687	-.06651	-.00086	-.07716	.00685
#2	-.00051	.00055	.00108	-.00291	.16350	-.00378	-.05211	.00862
#3	.00037	.00016	-.00064	.02080	.16614	-.01410	-.08939	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**-.01725**	**-.00090**	**-.00058**	**-.00180**	**.00330**	**.00401**	**.00478**
Stddev	.00036	.01315	.00152	.00521	.00144	.00338	.00491	.00272
%RSD	87.936	76.235	169.06	901.62	80.279	102.35	122.37	56.802
#1	.00071	-.02671	-.00216	-.00212	-.00340	.00114	-.00145	.00430
#2	.00051	-.00223	-.00133	-.00484	-.00140	.00157	.00804	.00771
#3	.00001	-.02279	.00079	.00523	-.00059	.00720	.00544	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 06, 2017

Sample Name: CCB Acquired: 4/5/2017 19:35:48 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v309) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01026**	**.00016**	**.00478**	**-.00070**	**.00060**	**.00117**	**.00107**
Stddev	.00052	.00025	.00707	.00149	.00074	.00197	.00003
%RSD	5.0704	162.68	148.00	212.26	123.60	168.57	3.1569
#1	.01016	-.00013	.00926	.00101	.00139	.00001	.00108
#2	.00980	.00025	-.00337	-.00149	-.00007	.00345	.00109
#3	.01083	.00034	.00845	-.00162	.00046	.00005	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22323.**	**153530.**	**4291.5**
Stddev	408.	2124.	30.5
%RSD	1.8267	1.3833	.71139
#1	22699.	152570.	4305.5
#2	21890.	152060.	4312.5
#3	22380.	155960.	4256.5

Approved: April 06, 2017
Kim K Buck

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 15:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	04/04/2017 11:44
Workgroup #:	WG608658	**Analyst:**	JYH	**Run Date:**	04/04/2017 13:04
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	NI.040417.130410
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00487		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00165		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0436		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0277		0.00200	0.00100	0.000500
Lead, Total	7439-92-1	0.00161	J	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0500		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Vanadium, Total	7440-62-2	0.00191	J	0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 15:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	04/06/2017 10:24
Workgroup #:	WG608658	**Analyst:**	JYH	**Run Date:**	04/06/2017 12:47
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	NI.040617.124739
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Thallium, Total	7440-28-0	0.000141	J	0.000400	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 15:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	04/04/2017 11:44
Workgroup #:	WG608658	**Analyst:**	JYH	**Run Date:**	04/04/2017 13:41
Collect Date:	03/29/2017 15:00	**Dilution:**	10	**File ID:**	NI.040417.134151
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.921		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.57		0.0400	0.0200	0.0100
Zinc, Total	7440-66-6	0.726		0.500	0.250	0.125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG608583
Analyst: VC
Spike Analyst: VC
Run Date: 04/03/2017 15:35
Method: 3015A
Balance: BAL016
Instrument: MW-3
Instrument Start: 04/03/2017 15:31

SOP: ME407 Revison 19
Spike Solution: STD78216
Spike Witness: ERP
HNO3 Lot #: COA19483
40 & 50 ML. DIGESTION TU COA19487
MS Filters- fisher-Lot#R RGT38288

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG608583-02	BLANK	1	20 mL	50 mL	185.092 g	185.088 g		
2	WG608583-04	FLT_BLK	1	20 mL	50 mL	182.185 g	182.174 g		
3	WG608583-03	LCS	1	20 mL	50 mL	184.44 g	184.447 g	.25 mL	
4	L17031676-01	SAMP	1	20 mL	50 mL	182.83 g	182.812 g		04/11/17
5	L17031676-02	SAMP	1	20 mL	50 mL	185.37 g	185.362 g		04/11/17
6	L17031676-03	SAMP	1	20 mL	50 mL	184.966 g	184.937 g		04/11/17
7	WG608583-01	REF	1	20 mL	50 mL	184.823 g	184.794 g		
8	L17031676-04	RS01	1	20 mL	50 mL	184.823 g	184.794 g		04/11/17
9	WG608583-05	MS	1	20 mL	50 mL	182.79 g	182.779 g	.25 mL	
10	L17031676-05	MS01	1	20 mL	50 mL	182.79 g	182.779 g	.25 mL	04/11/17
11	WG608583-06	MSD	1	20 mL	50 mL	184.317 g	184.314 g	.25 mL	
12	L17031676-06	SD01	1	20 mL	50 mL	184.317 g	184.314 g	.25 mL	04/11/17
13	L17031685-01	SAMP	1	20 mL	50 mL	181.393 g	181.381 g		04/14/17
14	L17031689-01	SAMP	1	20 mL	50 mL	184.129 g	184.117 g		04/11/17
15	L17031690-01	SAMP	1	20 mL	50 mL	183.851 g	183.839 g		04/11/17
16	L17031695-01	SAMP	1	20 mL	50 mL	184.241 g	184.228 g		04/06/17
17	L17031695-02	SAMP	1	20 mL	50 mL	185.245 g	185.245 g		04/06/17
18	L17031695-03	SAMP	1	20 mL	50 mL	181.792 g	181.749 g		04/06/17
19	L17031695-04	SAMP	1	20 mL	50 mL	181.731 g	181.725 g		04/06/17

L17031685-01	filtered digestate
L17031690-01	filtered digestate

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 5228462
Report generated: 04/03/2017 16:01

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 040417B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

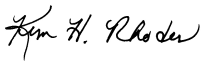
Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 608658,608658,608787

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.040417.113143	Blank	Blank		1		04/04/17 11:31
2	NI.040417.113449	WG608789-01	Calibration Point		1		04/04/17 11:34
3	NI.040417.113754	WG608789-02	Calibration Point		1		04/04/17 11:37
4	NI.040417.114100	WG608789-03	Calibration Point		1		04/04/17 11:41
5	NI.040417.114405	WG608789-04	Calibration Point		1		04/04/17 11:44
6	NI.040417.114712	WG608789-05	Initial Calibration Verification		1		04/04/17 11:47
7	NI.040417.115019	WG608789-06	Initial Calib Blank		1		04/04/17 11:50
8	NI.040417.115326	WG608789-07	Low Level Initial Calibration V		1		04/04/17 11:53
9	NI.040417.115639	WG608789-08	Interference Check		1		04/04/17 11:56
10	NI.040417.115945	WG608789-09	Interference Check		1		04/04/17 11:59
11	NI.040417.120734	WG608789-10	Interference Check		1		04/04/17 12:07
12	NI.040417.121041	WG608789-11	CCV		1		04/04/17 12:10
13	NI.040417.121347	WG608789-12	CCB		1		04/04/17 12:13
14	NI.040417.121749	WG608583-02	Method/Prep Blank	20/50	1		04/04/17 12:17
15	NI.040417.122054	WG608583-03	Laboratory Control S	20/50	1		04/04/17 12:20
16	NI.040417.122400	WG608583-04	Filter Blank		1		04/04/17 12:24
17	NI.040417.122705	WG608583-01	Reference Sample		1	L17031676-04	04/04/17 12:27
18	NI.040417.123011	WG608583-05	Matrix Spike	20/50	1	L17031676-04	04/04/17 12:30
19	NI.040417.123315	WG608583-06	Matrix Spike Duplica	20/50	1	L17031676-04	04/04/17 12:33
20	NI.040417.123620	L17031676-01	MNA-GMW-706	20/50	1		04/04/17 12:36
21	NI.040417.123926	WG608658-01	Post Digestion Spike		1	L17031676-01	04/04/17 12:39
22	NI.040417.124231	WG608658-02	Serial Dilution		5	L17031676-01	04/04/17 12:42
23	NI.040417.124535	WG608658-02	Serial Dilution		25	L17031676-01	04/04/17 12:45
24	NI.040417.124842	WG608789-13	CCV		1		04/04/17 12:48
25	NI.040417.125148	WG608789-14	CCB		1		04/04/17 12:51
26	NI.040417.125455	L17031676-02	MNA-GMW-707	20/50	1		04/04/17 12:54
27	NI.040417.125801	L17031676-03	MNA-GMW-906	20/50	1		04/04/17 12:58
28	NI.040417.130105	L17031685-01	LF 6-7 SW11	20/50	1		04/04/17 13:01
29	NI.040417.130410	L17031689-01	LH18/24-SP140-7428-GRAB	20/50	1		04/04/17 13:04
30	NI.040417.130715	L17031690-01	LH18/24-SP650-6428-GRAB	20/50	1		04/04/17 13:07
31	NI.040417.131021	L17031695-01	T7B0928-01	20/50	1		04/04/17 13:10
32	NI.040417.131326	L17031695-02	T7B0928-02	20/50	1		04/04/17 13:13
33	NI.040417.131631	L17031695-03	T7B0928-03	20/50	1		04/04/17 13:16
34	NI.040417.131937	L17031695-04	T7B0928-04	20/50	1		04/04/17 13:19

Page: 1 Approved: April 05, 2017



Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 040417B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 608658,608658,608787

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.040417.132244	WG608789-15	CCV		1		04/04/17 13:22
36	NI.040417.132549	WG608789-16	CCB		1		04/04/17 13:25
37	NI.040417.134151	L17031689-01	LH18/24-SP140-7428-GRAB	20/50	10		04/04/17 13:41
38	NI.040417.134459	WG608789-17	CCV		1		04/04/17 13:44
39	NI.040417.134804	WG608789-18	CCB		1		04/04/17 13:48
40	NI.040417.135110	WG608789-19	Low Level Continuing Calibra		1		04/04/17 13:51
41	NI.040417.135417	WG608632-02	Method/Prep Blank	.25/100	1		04/04/17 13:54
42	NI.040417.135724	WG608632-03	Laboratory Control S	.25/100	1		04/04/17 13:57
43	NI.040417.140030	WG608632-01	Reference Sample		1	L17040026-06	04/04/17 14:00
44	NI.040417.140336	WG608632-04	Matrix Spike	.25/100	1	L17040026-06	04/04/17 14:03
45	NI.040417.140641	WG608632-05	Matrix Spike Duplica	.254/100	1	L17040026-06	04/04/17 14:06
46	NI.040417.141028	L17040024-01	17C1666-01	.25/100	1		04/04/17 14:10
47	NI.040417.144105	L17040024-02	17C1666-02	.25/100	1		04/04/17 14:41
48	NI.040417.144410	WG608761-01	Post Digestion Spike		1	L17040024-02	04/04/17 14:44
49	NI.040417.144716	WG608761-02	Serial Dilution		5	L17040024-02	04/04/17 14:47
50	NI.040417.145021	WG608761-02	Serial Dilution		25	L17040024-02	04/04/17 14:50
51	NI.040417.145328	WG608789-20	CCV		1		04/04/17 14:53
52	NI.040417.145633	WG608789-21	CCB		1		04/04/17 14:56
53	NI.040417.145941	L17040024-03	17C1666-03	.251/100	1		04/04/17 14:59
54	NI.040417.150245	L17040024-04	17C1666-04	.254/100	1		04/04/17 15:02
55	NI.040417.150550	L17040024-05	17C1666-05	.254/100	1		04/04/17 15:05
56	NI.040417.150855	L17040024-06	17C1666-06	.256/100	1		04/04/17 15:08
57	NI.040417.151201	L17040024-07	17C1666-07	.25/100	1		04/04/17 15:12
58	NI.040417.151506	L17040024-08	17C1666-08	.257/100	1		04/04/17 15:15
59	NI.040417.151812	L17040024-09	17C1666-09	.254/100	1		04/04/17 15:18
60	NI.040417.152118	L17040024-10	17C1666-10	.255/100	1		04/04/17 15:21
61	NI.040417.152423	L17040026-01	17C1656-01	.251/100	1		04/04/17 15:24
62	NI.040417.152729	L17040026-02	17C1656-02	.252/100	1		04/04/17 15:27
63	NI.040417.153036	WG608789-22	CCV		1		04/04/17 15:30
64	NI.040417.153341	WG608789-23	CCB		1		04/04/17 15:33
65	NI.040417.153649	L17040026-03	17C1656-03	.256/100	1		04/04/17 15:36
66	NI.040417.153954	L17040026-04	17C1656-04	.251/100	1		04/04/17 15:39
67	NI.040417.154259	L17040026-05	17C1656-05	.25/100	1		04/04/17 15:42
68	NI.040417.154607	WG608789-24	CCV		1		04/04/17 15:46

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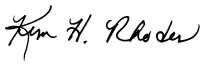

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 040417B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 608658,608658,608787

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.040417.154913	WG608789-25	CCB		1		04/04/17 15:49
70	NI.040417.161238	WG608619-02	Method/Prep Blank	.25/100	1		04/04/17 16:12
71	NI.040417.161543	WG608619-03	Laboratory Control S	.25/100	1		04/04/17 16:15
72	NI.040417.161849	L17040026-06	17C1656-06		1	WG608619-01	04/04/17 16:18
73	NI.040417.162154	WG608619-04	Matrix Spike	.255/100	1	L17040026-06	04/04/17 16:21
74	NI.040417.162500	WG608619-05	Matrix Spike Duplica	.256/100	1	L17040026-06	04/04/17 16:25
75	NI.040417.162805	L17040024-01	17C1666-01	.255/100	1		04/04/17 16:28
76	NI.040417.163110	L17040024-02	17C1666-02	.253/100	1		04/04/17 16:31
77	NI.040417.163415	WG608787-01	Post Digestion Spike		1	L17040024-02	04/04/17 16:34
78	NI.040417.163721	WG608787-02	Serial Dilution		5	L17040024-02	04/04/17 16:37
79	NI.040417.164026	WG608787-02	Serial Dilution		25	L17040024-02	04/04/17 16:40
80	NI.040417.164333	WG608789-26	CCV		1		04/04/17 16:43
81	NI.040417.164638	WG608789-27	CCB		1		04/04/17 16:46
82	NI.040417.164945	L17040024-03	17C1666-03	.25/100	1		04/04/17 16:49
83	NI.040417.165251	L17040024-05	17C1666-05	.253/100	1		04/04/17 16:52
84	NI.040417.165556	L17040024-06	17C1666-06	.251/100	1		04/04/17 16:55
85	NI.040417.165901	L17040024-10	17C1666-10	.25/100	1		04/04/17 16:59
86	NI.040417.170207	L17040026-05	17C1656-05	.255/100	1		04/04/17 17:02
87	NI.040417.170513	WG608789-28	CCV		1		04/04/17 17:05
88	NI.040417.170818	WG608789-29	CCB		1		04/04/17 17:08

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10			Rerun to verify. JYH	
86			Wrong sample label. JYH	

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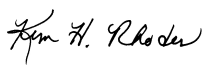

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 040617A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 609052,608761,608658

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.040617.101141	Blank	Blank		1		04/06/17 10:11
2	NI.040617.101447	WG609131-01	Calibration Point		1		04/06/17 10:14
3	NI.040617.101753	WG609131-02	Calibration Point		1		04/06/17 10:17
4	NI.040617.102058	WG609131-03	Calibration Point		1		04/06/17 10:20
5	NI.040617.102404	WG609131-04	Calibration Point		1		04/06/17 10:24
6	NI.040617.102711	WG609131-05	Initial Calibration Verification		1		04/06/17 10:27
7	NI.040617.103019	WG609131-06	Initial Calib Blank		1		04/06/17 10:30
8	NI.040617.103325	WG609131-07	Low Level Initial Calibration V		1		04/06/17 10:33
9	NI.040617.103631	WG609131-08	Interference Check		1		04/06/17 10:36
10	NI.040617.103936	WG609131-09	Interference Check		1		04/06/17 10:39
11	NI.040617.104243	WG609131-10	CCV		1		04/06/17 10:42
12	NI.040617.104548	WG609131-11	CCB		1		04/06/17 10:45
13	NI.040617.105007	WG608839-02	Method/Prep Blank	20/50	1		04/06/17 10:50
14	NI.040617.105312	WG608839-03	Laboratory Control S	20/50	1		04/06/17 10:53
15	NI.040617.105618	WG608839-01	Reference Sample		1	L17040123-13	04/06/17 10:56
16	NI.040617.105922	WG608839-04	Matrix Spike	20/50	1	L17040123-13	04/06/17 10:59
17	NI.040617.110228	WG608839-05	Matrix Spike Duplica	20/50	1	L17040123-13	04/06/17 11:02
18	NI.040617.110534	L17040019-01	17C1636-01	20/50	1		04/06/17 11:05
19	NI.040617.110839	L17040019-02	17C1636-02	20/50	1		04/06/17 11:08
20	NI.040617.111144	WG609052-01	Post Digestion Spike		1	L17040019-02	04/06/17 11:11
21	NI.040617.111449	WG609052-02	Serial Dilution		5	L17040019-02	04/06/17 11:14
22	NI.040617.111755	WG609052-02	Serial Dilution		25	L17040019-02	04/06/17 11:17
23	NI.040617.112102	WG609131-12	CCV		1		04/06/17 11:21
24	NI.040617.112408	WG609131-13	CCB		1		04/06/17 11:24
25	NI.040617.112715	L17031601-01	OBOD-J-SN	20/50	1		04/06/17 11:27
26	NI.040617.113019	L17031601-02	OBOD-K-SN	20/50	1		04/06/17 11:30
27	NI.040617.113325	L17031601-03	OBOD-18-SN	20/50	1		04/06/17 11:33
28	NI.040617.113630	L17031601-04	OBOD-30-SN	20/50	1		04/06/17 11:36
29	NI.040617.113935	L17031601-05	OBOD-29-SN	20/50	1		04/06/17 11:39
30	NI.040617.114240	L17031601-06	OBOD-15-SN	20/50	1		04/06/17 11:42
31	NI.040617.114545	L17040036-01	CEL-11-SN	20/50	1		04/06/17 11:45
32	NI.040617.114851	L17040036-02	CEL-13-SN	20/50	1		04/06/17 11:48
33	NI.040617.115156	L17040123-02	SW1A-331B-14	20/50	1		04/06/17 11:51
34	NI.040617.115501	L17040123-05	SW1B-331B-14	20/50	1		04/06/17 11:55

Page: 1 Approved: April 07, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 040617A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 609052,608761,608658

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.040617.115808	WG609131-14	CCV		1		04/06/17 11:58
36	NI.040617.120114	WG609131-15	CCB		1		04/06/17 12:01
37	NI.040617.120420	L17040123-08	SW2A-331B-14	20/50	1		04/06/17 12:04
38	NI.040617.120725	L17040123-20	SW4A-331B-14	20/50	1		04/06/17 12:07
39	NI.040617.121031	L17040123-23	SW5A-331B-14	20/50	1		04/06/17 12:10
40	NI.040617.121335	L17040024-03	17C1666-03	.251/100	5		04/06/17 12:13
41	NI.040617.121641	L17040024-05	17C1666-05	.254/100	5		04/06/17 12:16
42	NI.040617.121947	L17040024-06	17C1666-06	.256/100	5		04/06/17 12:19
43	NI.040617.122252	L17040024-10	17C1666-10	.255/100	5		04/06/17 12:22
44	NI.040617.122600	WG609131-16	CCV		1		04/06/17 12:26
45	NI.040617.122905	WG609131-17	CCB		1		04/06/17 12:29
46	NI.040617.123213	WG608583-02	Method/Prep Blank	20/50	1		04/06/17 12:32
47	NI.040617.123518	WG608583-03	Laboratory Control S	20/50	1		04/06/17 12:35
48	NI.040617.123824	WG608583-01	Reference Sample		1	L17031676-04	04/06/17 12:38
49	NI.040617.124129	WG608583-05	Matrix Spike	20/50	1	L17031676-04	04/06/17 12:41
50	NI.040617.124434	WG608583-06	Matrix Spike Duplica	20/50	1	L17031676-04	04/06/17 12:44
51	NI.040617.124739	L17031689-01	LH18/24-SP140-7428-GRAB	20/50	1		04/06/17 12:47
52	NI.040617.131257	L17031690-01	LH18/24-SP650-6428-GRAB	20/50	1		04/06/17 13:12
53	NI.040617.131602	WG608658-03	Post Digestion Spike		1	L17031690-01	04/06/17 13:16
54	NI.040617.131908	WG608658-04	Serial Dilution		5	L17031690-01	04/06/17 13:19
55	NI.040617.132213	WG608583-04	Filter Blank		1		04/06/17 13:22
56	NI.040617.132520	WG609131-18	CCV		1		04/06/17 13:25
57	NI.040617.132825	WG609131-19	CCB		1		04/06/17 13:28
58	NI.040617.133133	WG609131-20	Low Level Continuing Calibra		1		04/06/17 13:31

Page: 2 Approved: April 07, 2017

Microbac Laboratories Inc.

Data Checklist

Date: 04-APR-2017
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 608789
Runlog ID: 81343
Analytical Workgroups: 608658,608658,608787

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1676,1685,1689,1690,0024
Client Forms	X
Level X	
Level 3	
Level 4	1676,1685,1689,1690
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
05-APR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: APR-05-2017 08:54:30

Microbac Laboratories Inc.

Data Checklist

Date: 06-APR-2017
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 609131
Runlog ID: 81393
Analytical Workgroups: 609052,608761,608658

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1601,036
Client Forms	X
Level X	
Level 3	
Level 4	1601,036
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
07-APR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: APR-07-2017 08:18:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A AAB#: WG608658

Login Number: L17031689

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP140-7428-GRAB	01	03/29/17					04/03/2017	5	180		04/04/17	5.9	180	
LH18/24-SP140-7428-GRAB	01	03/29/17					04/03/2017	5	180		04/06/17	7.9	180	
LH18/24-SP140-7428-GRAB	01	03/29/17					04/03/2017	5	180		04/04/17	5.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5230201
Report generated 04/06/2017 13:57

METHOD BLANK SUMMARY

Login Number: L17031689
Work Group: WG608658
Blank File ID: NI.040417.121749
Blank Sample ID: WG608583-02
Prep Date: 04/03/17 15:35
Instrument ID: ICP-MS2
Analyzed Date: 04/04/17 12:17
Method: 6020A
Analyst: JYH

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608583-03	NI.040417.122054	04/04/17 12:20	01
FLT_BLK	WG608583-04	NI.040417.122400	04/04/17 12:24	01
LH18/24-SP140-7428-GRAB	L17031689-01	NI.040417.130410	04/04/17 13:04	01
LH18/24-SP140-7428-GRAB	L17031689-01	NI.040417.134151	04/04/17 13:41	DL01
LCS	WG608583-03	NI.040617.123518	04/06/17 12:35	02
LH18/24-SP140-7428-GRAB	L17031689-01	NI.040617.124739	04/06/17 12:47	02
FLT_BLK	WG608583-04	NI.040617.132213	04/06/17 13:22	02

Report Name: BLANK_SUMMARY
PDF File ID: 5230202
Report generated 04/06/2017 13:57

METHOD BLANK SUMMARY

Login Number: L17031689
Work Group: WG608658
Blank File ID: NI.040617.123213
Blank Sample ID: WG608583-02
Prep Date: 04/03/17 15:35
Instrument ID: ICP-MS2
Analyzed Date: 04/06/17 12:32
Method: 6020A
Analyst: JYH

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608583-03	NI.040417.122054	04/04/17 12:20	01
FLT_BLK	WG608583-04	NI.040417.122400	04/04/17 12:24	01
LH18/24-SP140-7428-GRAB	L17031689-01	NI.040417.130410	04/04/17 13:04	01
LH18/24-SP140-7428-GRAB	L17031689-01	NI.040417.134151	04/04/17 13:41	DL01
LCS	WG608583-03	NI.040617.123518	04/06/17 12:35	02
LH18/24-SP140-7428-GRAB	L17031689-01	NI.040617.124739	04/06/17 12:47	02
FLT_BLK	WG608583-04	NI.040617.132213	04/06/17 13:22	02

Report Name: BLANK_SUMMARY
PDF File ID: 5230202
Report generated 04/06/2017 13:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031689 Prep Date: 04/03/17 15:35 Sample ID: WG608583-02
Instrument ID: ICP-MS2 Run Date: 04/04/17 12:17 Prep Method: 3015A
File ID: NI.040417.121749 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG608658 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-04-APR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5230203
07-APR-2017 08:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031689 Prep Date: 04/03/17 15:35 Sample ID: WG608583-02
Instrument ID: ICP-MS2 Run Date: 04/06/17 12:32 Prep Method: 3015A
File ID: NI.040617.123213 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG608658 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-06-APR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Thallium, Total	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5230203
07-APR-2017 08:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608583-03
Instrument ID: ICP-MS2 Run Time: 12:20 Prep Method: 3015A
File ID: NI.040417.122054 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG608658 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD78216 Cal ID: ICP-MS-04-APR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.121	96.7	80 - 120	
Arsenic, Total	0.125	0.122	97.6	80 - 120	
Barium, Total	0.125	0.121	97.0	80 - 120	
Cadmium, Total	0.125	0.124	99.4	80 - 120	
Chromium, Total	0.125	0.125	100	80 - 120	
Cobalt, Total	0.125	0.124	99.0	80 - 120	
Lead, Total	0.125	0.123	98.6	80 - 120	
Manganese, Total	0.125	0.124	99.2	80 - 120	
Nickel, Total	0.125	0.126	101	80 - 120	
Silver, Total	0.125	0.123	98.4	80 - 120	
Vanadium, Total	0.125	0.123	98.2	80 - 120	
Zinc, Total	0.125	0.125	99.9	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5230216
Report generated: 04/07/2017 08:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031689 **Run Date:** 04/06/2017 **Sample ID:** WG608583-03
Instrument ID: ICP-MS2 **Run Time:** 12:35 **Prep Method:** 3015A
File ID: NI.040617.123518 **Analyst:** JYH **Method:** 6020A
Workgroup (AAB#): WG608658 **Matrix:** Water **Units:** mg/L
QC Key: DOD4 **Lot#:** STD78216 **Cal ID:** ICP-MS-06-APR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Thallium, Total	0.125	0.127	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5230216
Report generated: 04/07/2017 08:46

Microbac Laboratories Inc.

MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum:L17031689 Cal ID:ICP-MS2- Worknum:WG608658

Instrument ID:ICP-MS2 Contract #: Method:6020A

Parent ID:WG608583-01 File ID:NI.040417.122705 Dil:1 Matrix:WATER

Sample ID:WG608583-05 MS File ID:NI.040417.123011 Dil:1 Units:mg/L

Sample ID:WG608583-06 MSD File ID:NI.040417.123315 Dil:1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.122	97.2	0.125	0.126	101	3.63	80 - 120	20	
Arsenic	0.00288	0.125	0.126	98.8	0.125	0.130	102	2.69	80 - 120	20	
Cadmium	ND	0.125	0.124	99.0	0.125	0.127	102	2.76	80 - 120	20	
Chromium	0.00661	0.125	0.129	98.3	0.125	0.131	99.7	1.38	80 - 120	20	
Cobalt	ND	0.125	0.120	95.9	0.125	0.124	99.0	3.16	80 - 120	20	
Lead	ND	0.125	0.122	98.0	0.125	0.126	101	3.05	80 - 120	20	
Manganese	0.0142	0.125	0.149	108	0.125	0.141	102	5.71	80 - 120	20	
Nickel	0.00256	0.125	0.123	96.4	0.125	0.126	98.8	2.35	80 - 120	20	
Silver	ND	0.125	0.120	95.9	0.125	0.123	98.7	2.91	80 - 120	20	
Vanadium	0.0127	0.125	0.135	98.0	0.125	0.137	99.3	1.26	80 - 120	20	
Zinc	0.209	0.125	0.195	-11.5	0.125	0.178	-25.2	9.23	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011

PDF File ID:5230204

Report generated 04/07/2017 08:46

Loginnum:L17031689 Cal ID:ICP-MS2- Worknum:WG608658
Instrument ID:ICP-MS2 Contract #: Method:6020A
Parent ID:WG608583-01 File ID:NI.040617.123824 Dil:1 Matrix:WATER
Sample ID:WG608583-05 MS File ID:NI.040617.124129 Dil:1 Units:mg/L
Sample ID:WG608583-06 MSD File ID:NI.040617.124434 Dil:1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Thallium	ND	0.125	0.128	102	0.125	0.127	102	0.650	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 5230204
Report generated 04/07/2017 08:46

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031689 **Worknum:** WG608658
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG608658-02 **File ID:** NI.040417.124231 **Dil:** 5 **Units:** ug/L
Sample: L17031676-01 **File ID:** NI.040417.123620 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.17	F	1570.00	
Arsenic	0.551	F	ND	U		
Barium	89.8		91.4		1.75	
Cadmium	ND	U	ND	U		
Chromium	0.974	F	ND	U		
Cobalt	ND	U	ND	U		
Lead	0.229	F	ND	U		
Manganese	4.53	X	4.27	F	5.81	
Nickel	1.49	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	4.12	X	4.17	X	1.23	
Zinc	125	X	137	X	9.38	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5230199
04/06/2017 13:57

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031689 **Worknum:** WG608658
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG608658-04 **File ID:** NI.040617.131908 **Dil:** 5 **Units:** ug/L
Sample: L17031690-01 **File ID:** NI.040617.131257 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	0.461	F	1.82	F	295.00	
Arsenic	ND	U	ND	U		
Barium	75.2		73.5		2.25	
Cadmium	ND	U	ND	U		
Chromium	5.51	X	6.46	F	17.40	
Cobalt	1.90	X	1.79	F	5.69	
Lead	ND	U	ND	U		
Manganese	45.9		43.9		4.31	
Nickel	6.98	X	7.05	F	0.91	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	29.8	X	34.4	F	15.60	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5230199
04/06/2017 13:57

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031689 **Worknum:** WG608658
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG608658-01 **File ID:** NI.040417.123926 **Dil:** 1 **Units:** ug/L
Sample ID: L17031676-01 **File ID:** NI.040417.123620 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	49.9		0	U	50	99.8	75 - 125	
ARSENIC	50.2		0.551	F	50	99.4	75 - 125	
BARIUM	139		89.8		50	98.0	75 - 125	
CADMIUM	49.7		0	U	50	99.3	75 - 125	
CHROMIUM	49.8		0.974	F	50	97.7	75 - 125	
COBALT	49.2		0	U	50	98.5	75 - 125	
LEAD	49.6		0.229	F	50	98.8	75 - 125	
MANGANESE	53.4		4.53		50	97.7	75 - 125	
NICKEL	50.4		1.49	F	50	97.8	75 - 125	
SILVER	51.3		0	U	50	102.6	75 - 125	
THALLIUM	49.9		0	U	50	99.8	75 - 125	
VANADIUM	52.9		4.12		50	97.6	75 - 125	
ZINC	172		125		50	94.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5230200
Report generated: 04/06/2017 13:57

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031689 **Worknum:** WG608658
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG608658-03 **File ID:** NI.040617.131602 **Dil:** 1 **Units:** ug/L
Sample ID: L17031690-01 **File ID:** NI.040617.131257 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.7		0.461	F	50	100.5	75 - 125	
ARSENIC	52.7		0	U	50	105.3	75 - 125	
BARIUM	126		75.2		50	101.7	75 - 125	
CADMIUM	49.6		0	U	50	99.1	75 - 125	
CHROMIUM	59.8		5.51		50	108.6	75 - 125	
COBALT	53.6		1.90		50	103.4	75 - 125	
LEAD	51.4		0	U	50	102.8	75 - 125	
MANGANESE	98.0		45.9		50	104.1	75 - 125	
NICKEL	57.7		6.98		50	101.5	75 - 125	
SILVER	46.5		0	U	50	93.1	75 - 125	
THALLIUM	51.8		0	U	50	103.5	75 - 125	
VANADIUM	53.0		0	U	50	106.0	75 - 125	
ZINC	80.3		29.8		50	101.1	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5230200
Report generated: 04/06/2017 13:57

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031689**	Workgroup (AAB#):	**WG608658**
Analytical Method:	**6020A**	Instrument ID:	**ICP-MS2**
ICAL Worknum:	**WG608789**	Initial Calibration Date:	**04-APR-2017 11:44**

	WG608789-01		WG608789-02		WG608789-03		WG608789-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	33.3	.4	328	50	215000	100	425000	.999993	
ARSENIC	0	-34.9	.4	4.80	50	56100	100	112000	.999964	
BARIUM	0	52.3	.4	170	50	82500	100	162000	.999983	
CADMIUM	0	6.60	.4	114	50	82700	100	160000	.999926	
CHROMIUM	0	5520	.4	5860	50	308000	100	597000	.999804	
COBALT	0	339	.4	793	50	405000	100	791000	.999812	
LEAD	0	542	.4	848	50	289000	100	570000	.999978	
MANGANESE	0	2370	.4	3120	50	532000	100	1040000	.999851	
NICKEL	0	266	.4	365	50	86200	100	169000	.999863	
SILVER	0	114	.4	474	50	293000	100	564000	.999881	
THALLIUM	0	68.3	.4	587	50	348000	100	681000	.999947	
VANADIUM	0	1140	.4	1460	50	335000	100	650000	.999757	
ZINC	0	463	.4	482	50	54100	100	108000	.99997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5230207
Report generated: 06-APR-2017 13:57

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031689**	Workgroup (AAB#):	**WG608658**
Analytical Method:	**6020A**	Instrument ID:	**ICP-MS2**
ICAL Worknum:	**WG609131**	Initial Calibration Date:	**06-APR-2017 10:24**

	WG609131-01		WG609131-02		WG609131-03		WG609131-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	164	.4	285	50	157000	100	306000	.999999	
ARSENIC	0	-21.8	.4	18.9	50	41200	100	81600	.999988	
BARIUM	0	36.0	.4	109	50	57700	100	113000	1	
CADMIUM	0	2.30	.4	60.6	50	58200	100	112000	.999971	
CHROMIUM	0	4450	.4	4630	50	204000	100	389000	.999951	
COBALT	0	331	.4	613	50	280000	100	542000	.999981	
LEAD	0	351	.4	607	50	234000	100	459000	1	
MANGANESE	0	1730	.4	2120	50	345000	100	670000	.999991	
NICKEL	0	119	.4	195	50	59600	100	116000	.999996	
SILVER	0	78.3	.4	320	50	213000	100	408000	.999968	
THALLIUM	0	235	.4	499	50	268000	100	520000	.999991	
VANADIUM	0	858	.4	1060	50	213000	100	414000	.999992	
ZINC	0	246	.4	302	50	38900	100	76500	.999995	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5230207
Report generated: 06-APR-2017 13:57

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-06
Instrument ID: ICP-MS2 Run Time: 11:50 Method: 6020A
File ID: NI.040417.115019 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG608658 Cal ID: ICP-MS2 - 04-APR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5230209
Report generated 04/06/2017 13:57

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031689 Run Date: 04/06/2017 Sample ID: WG609131-06
Instrument ID: ICP-MS2 Run Time: 10:30 Method: 6020A
File ID: NI.040617.103019 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG608658 Cal ID: ICP-MS2 - 06-APR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.332	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5230209
Report generated 04/06/2017 13:57

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-12

Instrument ID: ICP-MS2 Run Time: 12:13 Method: 6020A

File ID: NI.040417.121347 Analyst: JYH Units: ug/L

Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 04-APR-17

Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5230212
Report generated 04/06/2017 13:57

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-14
Instrument ID: ICP-MS2 Run Time: 12:51 Method: 6020A
File ID: NI.040417.125148 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 04-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5230212
Report generated 04/06/2017 13:57

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-16

Instrument ID: ICP-MS2 Run Time: 13:25 Method: 6020A

File ID: NI.040417.132549 Analyst: JYH Units: ug/L

Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 04-APR-17

Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5230212
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-18
Instrument ID: ICP-MS2 Run Time: 13:48 Method: 6020A
File ID: NI.040417.134804 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 04-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5230212
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/06/2017 Sample ID: WG609131-11
Instrument ID: ICP-MS2 Run Time: 10:45 Method: 6020A
File ID: NI.040617.104548 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 06-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.231	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5230212
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/06/2017 Sample ID: WG609131-17
Instrument ID: ICP-MS2 Run Time: 12:29 Method: 6020A
File ID: NI.040617.122905 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 06-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5230212
Report generated 04/06/2017 13:57

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 | Run Date: 04/06/2017 | Sample ID: WG609131-19
Instrument ID: ICP-MS2 | Run Time: 13:28 | Method: 6020A
File ID: NI.040617.132825 | Analyst: JYH | Units: ug/L
Workgroup (AAB#): WG608658 | Cal ID: ICP-MS - 06-APR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5230212
Report generated 04/06/2017 13:57

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031689 Run Date: 04/06/2017 Sample ID: WG609131-05
Instrument ID: ICP-MS2 Run Time: 10:27 Method: 6020A
File ID: NI.040617.102711 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 06-APR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	51.1	102	90 - 110	
Arsenic		50	50.3	101	90 - 110	
Barium		50	50.6	101	90 - 110	
Cadmium		50	50.8	102	90 - 110	
Chromium		50	50.3	101	90 - 110	
Cobalt		50	50.5	101	90 - 110	
Lead		50	50.3	101	90 - 110	
Manganese		50	50.7	101	90 - 110	
Nickel		50	50.5	101	90 - 110	
Silver		50	50.4	101	90 - 110	
Thallium		50	50.5	101	90 - 110	
Vanadium		50	50.2	100	90 - 110	
Zinc		50	50.3	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5230208
Report generated 04/06/2017 13:57

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-05
Instrument ID: ICP-MS2 Run Time: 11:47 Method: 6020A
File ID: NI.040417.114712 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 04-APR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.9	99.8	90 - 110	
Arsenic		50	50.3	101	90 - 110	
Barium		50	49.7	99.5	90 - 110	
Cadmium		50	49.7	99.3	90 - 110	
Chromium		50	50.4	101	90 - 110	
Cobalt		50	50.2	100	90 - 110	
Lead		50	50.1	100	90 - 110	
Manganese		50	50.3	101	90 - 110	
Nickel		50	50.1	100	90 - 110	
Silver		50	50.0	100	90 - 110	
Thallium		50	50.3	101	90 - 110	
Vanadium		50	50.1	100	90 - 110	
Zinc		50	50.3	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5230208
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-11
Instrument ID: ICP-MS2 Run Time: 12:10 Method: 6020A
File ID: NI.040417.121041 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0496	mg/L	99.2	90 - 110		
Arsenic		0.0500	0.0492	mg/L	98.3	90 - 110		
Barium		0.0500	0.0496	mg/L	99.3	90 - 110		
Cadmium		0.0500	0.0498	mg/L	99.5	90 - 110		
Chromium		0.0500	0.0494	mg/L	98.8	90 - 110		
Cobalt		0.0500	0.0491	mg/L	98.2	90 - 110		
Lead		0.0500	0.0494	mg/L	98.8	90 - 110		
Manganese		0.0500	0.0493	mg/L	98.7	90 - 110		
Nickel		0.0500	0.0491	mg/L	98.2	90 - 110		
Silver		0.0500	0.0503	mg/L	101	90 - 110		
Thallium		0.0500	0.0499	mg/L	99.7	90 - 110		
Vanadium		0.0500	0.0488	mg/L	97.6	90 - 110		
Zinc		0.0500	0.0489	mg/L	97.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5230211
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-13
Instrument ID: ICP-MS2 Run Time: 12:48 Method: 6020A
File ID: NI.040417.124842 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0500	mg/L	100	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0499	mg/L	99.9	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0502	mg/L	100	90 - 110		
Cobalt		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0498	mg/L	99.6	90 - 110		
Manganese		0.0500	0.0503	mg/L	101	90 - 110		
Nickel		0.0500	0.0500	mg/L	100	90 - 110		
Silver		0.0500	0.0503	mg/L	101	90 - 110		
Thallium		0.0500	0.0501	mg/L	100	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.7	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5230211
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-15
Instrument ID: ICP-MS2 Run Time: 13:22 Method: 6020A
File ID: NI.040417.132244 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0497	mg/L	99.4	90 - 110		
Arsenic		0.0500	0.0490	mg/L	98.1	90 - 110		
Barium		0.0500	0.0501	mg/L	100	90 - 110		
Cadmium		0.0500	0.0501	mg/L	100	90 - 110		
Chromium		0.0500	0.0510	mg/L	102	90 - 110		
Cobalt		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0496	mg/L	99.3	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0500	mg/L	100	90 - 110		
Silver		0.0500	0.0495	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		
Vanadium		0.0500	0.0510	mg/L	102	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5230211
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-17
Instrument ID: ICP-MS2 Run Time: 13:44 Method: 6020A
File ID: NI.040417.134459 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0504	mg/L	101	90 - 110		
Arsenic		0.0500	0.0497	mg/L	99.4	90 - 110		
Barium		0.0500	0.0505	mg/L	101	90 - 110		
Cadmium		0.0500	0.0514	mg/L	103	90 - 110		
Chromium		0.0500	0.0522	mg/L	104	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Lead		0.0500	0.0503	mg/L	101	90 - 110		
Manganese		0.0500	0.0514	mg/L	103	90 - 110		
Nickel		0.0500	0.0509	mg/L	102	90 - 110		
Silver		0.0500	0.0502	mg/L	100	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0520	mg/L	104	90 - 110		
Zinc		0.0500	0.0505	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5230211
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/06/2017 Sample ID: WG609131-10
Instrument ID: ICP-MS2 Run Time: 10:42 Method: 6020A
File ID: NI.040617.104243 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 06-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0491	mg/L	98.2	90 - 110		
Barium		0.0500	0.0489	mg/L	97.8	90 - 110		
Cadmium		0.0500	0.0499	mg/L	99.7	90 - 110		
Chromium		0.0500	0.0495	mg/L	98.9	90 - 110		
Cobalt		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0500	mg/L	100	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.8	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.8	90 - 110		
Silver		0.0500	0.0496	mg/L	99.1	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0496	mg/L	99.2	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5230211
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/06/2017 Sample ID: WG609131-16
Instrument ID: ICP-MS2 Run Time: 12:26 Method: 6020A
File ID: NI.040617.122600 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 06-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.8	90 - 110		
Arsenic		0.0500	0.0493	mg/L	98.5	90 - 110		
Barium		0.0500	0.0489	mg/L	97.8	90 - 110		
Cadmium		0.0500	0.0500	mg/L	99.9	90 - 110		
Chromium		0.0500	0.0493	mg/L	98.6	90 - 110		
Cobalt		0.0500	0.0498	mg/L	99.5	90 - 110		
Lead		0.0500	0.0487	mg/L	97.3	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.9	90 - 110		
Nickel		0.0500	0.0497	mg/L	99.5	90 - 110		
Silver		0.0500	0.0496	mg/L	99.3	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.6	90 - 110		
Vanadium		0.0500	0.0497	mg/L	99.4	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5230211
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/06/2017 Sample ID: WG609131-18
Instrument ID: ICP-MS2 Run Time: 13:25 Method: 6020A
File ID: NI.040617.132520 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 06-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0490	mg/L	98.1	90 - 110		
Arsenic		0.0500	0.0491	mg/L	98.2	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0502	mg/L	100	90 - 110		
Chromium		0.0500	0.0510	mg/L	102	90 - 110		
Cobalt		0.0500	0.0501	mg/L	100	90 - 110		
Lead		0.0500	0.0487	mg/L	97.4	90 - 110		
Manganese		0.0500	0.0506	mg/L	101	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.8	90 - 110		
Silver		0.0500	0.0492	mg/L	98.4	90 - 110		
Thallium		0.0500	0.0495	mg/L	98.9	90 - 110		
Vanadium		0.0500	0.0512	mg/L	102	90 - 110		
Zinc		0.0500	0.0494	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5230211
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-07
Instrument ID: ICP-MS2 Run Time: 11:53 Method: 6020A
File ID: NI.040417.115326 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.406	ug/L	102	70 - 130		
Arsenic		0.400	0.425	ug/L	106	70 - 130		
Barium		0.750	0.701	ug/L	93.5	70 - 130		
Cadmium		0.240	0.207	ug/L	86.2	70 - 130		
Chromium		0.800	0.826	ug/L	103	70 - 130		
Cobalt		0.400	0.363	ug/L	90.7	70 - 130		
Lead		0.200	0.179	ug/L	89.6	70 - 130		
Manganese		0.500	0.403	ug/L	80.6	70 - 130		
Nickel		1.60	1.50	ug/L	94.1	70 - 130		
Silver		0.400	0.373	ug/L	93.3	70 - 130		
Thallium		0.0800	0.0567	ug/L	70.9	70 - 130		
Vanadium		0.400	0.352	ug/L	88.0	70 - 130		
Zinc		6.25	6.08	ug/L	97.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5230213
Report generated 04/06/2017 13:57

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031689 Run Date: 04/04/2017 Sample ID: WG608789-19
Instrument ID: ICP-MS2 Run Time: 13:51 Method: 6020A
File ID: NI.040417.135110 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.347	ug/L	86.8	70 - 130		
Arsenic		0.400	0.362	ug/L	90.5	70 - 130		
Barium		0.750	0.634	ug/L	84.5	70 - 130		
Cadmium		0.240	0.218	ug/L	91.0	70 - 130		
Chromium		0.800	0.897	ug/L	112	70 - 130		
Cobalt		0.400	0.351	ug/L	87.7	70 - 130		
Lead		0.200	0.171	ug/L	85.4	70 - 130		
Manganese		0.500	0.407	ug/L	81.4	70 - 130		
Nickel		1.60	1.44	ug/L	90.1	70 - 130		
Silver		0.400	0.357	ug/L	89.2	70 - 130		
Thallium		0.0800	0.0440	ug/L	55.0	70 - 130		*
Vanadium		0.400	0.377	ug/L	94.3	70 - 130		
Zinc		6.25	5.96	ug/L	95.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5230213
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/06/2017 Sample ID: WG609131-07
Instrument ID: ICP-MS2 Run Time: 10:33 Method: 6020A
File ID: NI.040617.103325 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 06-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.455	ug/L	114	70 - 130		
Arsenic		0.400	0.422	ug/L	106	70 - 130		
Barium		0.750	0.691	ug/L	92.1	70 - 130		
Cadmium		0.240	0.236	ug/L	98.5	70 - 130		
Chromium		0.800	0.777	ug/L	97.1	70 - 130		
Cobalt		0.400	0.364	ug/L	91.0	70 - 130		
Lead		0.200	0.198	ug/L	99.1	70 - 130		
Manganese		0.500	0.428	ug/L	85.6	70 - 130		
Nickel		1.60	1.50	ug/L	93.5	70 - 130		
Silver		0.400	0.377	ug/L	94.2	70 - 130		
Thallium		0.0800	0.0801	ug/L	100	70 - 130		
Vanadium		0.400	0.341	ug/L	85.3	70 - 130		
Zinc		6.25	6.28	ug/L	100	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5230213
Report generated 04/06/2017 13:57

Login Number: L17031689 Run Date: 04/06/2017 Sample ID: WG609131-20
Instrument ID: ICP-MS2 Run Time: 13:31 Method: 6020A
File ID: NI.040617.133133 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG608658 Cal ID: ICP-MS - 06-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.397	ug/L	99.3	70 - 130		
Arsenic		0.400	0.426	ug/L	106	70 - 130		
Barium		0.750	0.741	ug/L	98.7	70 - 130		
Cadmium		0.240	0.234	ug/L	97.5	70 - 130		
Chromium		0.800	0.880	ug/L	110	70 - 130		
Cobalt		0.400	0.385	ug/L	96.2	70 - 130		
Lead		0.200	0.188	ug/L	93.8	70 - 130		
Manganese		0.500	0.546	ug/L	109	70 - 130		
Nickel		1.60	1.57	ug/L	97.9	70 - 130		
Silver		0.400	0.405	ug/L	101	70 - 130		
Thallium		0.0800	0.0622	ug/L	77.8	70 - 130		
Vanadium		0.400	0.381	ug/L	95.2	70 - 130		
Zinc		6.25	6.52	ug/L	104	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5230213
Report generated 04/06/2017 13:57

Login number: L17031689 **Workgroup (AAB#):** WG608658
Instrument ID: ICP-MS2 **Method:** 6020A
Sol. A : WG608789-08 **File ID:** NI.040417.115639 **Units:** ug/L
Sol. AB : WG608789-10 **File ID:** NI.040417.120734 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0495	NS	100	97.1	97.1	
Arsenic	NS	0.0392	NS	100	95.9	95.9	
Barium	NS	-0.0139	NS	100	95.1	95.1	
Cadmium	NS	-0.115	NS	100	95.1	95.1	
Chromium	NS	0.230	NS	100	92.9	92.9	
Cobalt	NS	0.0471	NS	100	93.1	93.1	
Lead	NS	0.00990	NS	100	95.8	95.8	
Manganese	NS	0.208	NS	100	93.7	93.7	
Nickel	NS	0.205	NS	100	93.5	93.5	
Silver	NS	-0.00890	NS	100	95.3	95.3	
Thallium	NS	-0.0238	NS	100	95.4	95.4	
Vanadium	NS	0.000400	NS	100	92.8	92.8	
Zinc	NS	0.674	NS	100	97.7	97.7	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5230210
Report generated 04/06/2017 13:57

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031689 **Workgroup (AAB#):** WG608658
Instrument ID: ICP-MS2 **Method:** 6020A
Sol. A : WG609131-08 **File ID:** NI.040617.103631 **Units:** ug/L
Sol. AB : WG609131-09 **File ID:** NI.040617.103936 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0763	NS	100	101	101	
Arsenic	NS	0.0291	NS	100	101	101	
Barium	NS	-0.00150	NS	100	101	101	
Cadmium	NS	-0.103	NS	100	99.3	99.3	
Chromium	NS	0.0745	NS	100	99.0	99.0	
Cobalt	NS	0.0425	NS	100	99.2	99.2	
Lead	NS	0.0159	NS	100	100	100	
Manganese	NS	0.176	NS	100	99.3	99.3	
Nickel	NS	0.206	NS	100	98.2	98.2	
Silver	NS	-0.00270	NS	100	97.4	97.4	
Thallium	NS	-0.00490	NS	100	99.3	99.3	
Vanadium	NS	-0.0213	NS	100	98.5	98.5	
Zinc	NS	0.530	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5230210
Report generated 04/06/2017 13:57

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L17031689 **Analytical Method:** 6020
Analytical Workgroup: WG608658 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 04-APR-2017 11:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L17031676-01	SAMP	04-APR-2017 12:36	102.384	98.223	97.173
L17031689-01	SAMP	04-APR-2017 13:04	96.44	96.611	93.043
L17031689-01	SAMP	04-APR-2017 13:41	89.941	89.908	89.694
L17031690-01	SAMP	04-APR-2017 13:07	88.866	92.368	89.683
WG608583-02	BLANK	04-APR-2017 12:17	101.08	97.473	96.101
WG608583-03	LCS	04-APR-2017 12:20	103.103	98.105	98.337
WG608583-04	FLT_BLK	04-APR-2017 12:24	104.445	99.805	99.847
WG608658-01	PSPK	04-APR-2017 12:39	103.033	98.914	97.532
WG608658-02	SERIAL	04-APR-2017 12:42	97.647	92.016	91.503
WG608789-05	ICV	04-APR-2017 11:47	101.292	98.118	97.708
WG608789-06	ICB	04-APR-2017 11:50	102	98.238	98.971
WG608789-07	LLICV	04-APR-2017 11:53	100.971	97.73	97.472
WG608789-08	ICS	04-APR-2017 11:56	98.876	95.948	95.33
WG608789-10	ICS	04-APR-2017 12:07	103.052	98.677	96.897
WG608789-11	CCV	04-APR-2017 12:10	102.232	96.662	96.278
WG608789-12	CCB	04-APR-2017 12:13	104.729	98.874	99.215
WG608789-13	CCV	04-APR-2017 12:48	101.141	96.666	97.276
WG608789-14	CCB	04-APR-2017 12:51	101.752	97.466	98.153
WG608789-15	CCV	04-APR-2017 13:22	96.863	95.655	95.371
WG608789-16	CCB	04-APR-2017 13:25	98.28	95.981	96.164
WG608789-17	CCV	04-APR-2017 13:44	96.62	95.714	95.983
WG608789-18	CCB	04-APR-2017 13:48	96.839	93.322	94.624
WG608789-19	LLCCV	04-APR-2017 13:51	95.28	92.79	92.894

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 5230206
Report generated: 04/06/2017 13:57

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L17031689 **Analytical Method:** 6020
Analytical Workgroup: WG608658 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 06-APR-2017 10:14

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L17031689-01	SAMP	06-APR-2017 12:47	92.68	92.253	90.376
L17031690-01	SAMP	06-APR-2017 13:12	86.599	90.819	88.432
WG608583-02	BLANK	06-APR-2017 12:32	100.544	96.767	96.931
WG608583-03	LCS	06-APR-2017 12:35	100.226	96.475	96.724
WG608583-04	FLT_BLK	06-APR-2017 13:22	99.805	98.408	99.807
WG608658-03	PSPK	06-APR-2017 13:16	87.016	91.96	90.155
WG608658-04	SERIAL	06-APR-2017 13:19	90.662	94.152	92.223
WG609131-05	ICV	06-APR-2017 10:27	96.181	94.594	94.308
WG609131-06	ICB	06-APR-2017 10:30	97.889	95.255	95.46
WG609131-07	LLICV	06-APR-2017 10:33	97.442	94.943	95.043
WG609131-08	ICS	06-APR-2017 10:36	95.918	94.156	94.286
WG609131-09	ICS	06-APR-2017 10:39	96.98	94.54	92.876
WG609131-10	CCV	06-APR-2017 10:42	98.199	94.661	95.332
WG609131-11	CCB	06-APR-2017 10:45	98.557	94.308	94.543
WG609131-16	CCV	06-APR-2017 12:26	100.46	97.455	98.096
WG609131-17	CCB	06-APR-2017 12:29	99.923	96.045	95.407
WG609131-18	CCV	06-APR-2017 13:25	99.028	98.143	98.647
WG609131-19	CCB	06-APR-2017 13:28	98.355	96.723	96.35
WG609131-20	LLCCV	06-APR-2017 13:31	97.668	95.789	95.995

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 5230206
Report generated: 04/06/2017 13:57

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L17031689 **Date:** 01/24/2017
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 5230205
Report generated: 04/06/2017 13:57

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name default.tun
MassCal File Path C:\NexION Data\MassCal\default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, April 04, 2017 09:18:53

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1319	2026	0.709	
Mg	23.985	23.975	4499	2021	0.701	
Co	58.933	58.975	11694	2023	0.686	
In	114.904	114.875	22855	2029	0.688	
U	238.050	238.075	47456	2045	0.679	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	16.814
5.575	5.645
5.625	2.896
5.675	3.672
5.725	3.197
5.775	2.353
5.825	2.248
5.875	3.383
5.925	1.898
5.975	2.543
6.025	3.070
6.075	2.630
6.125	3.977
6.175	2.854
6.225	3.910
6.275	4.701
6.325	14.967
6.375	75.691
6.425	117.260
6.475	63.888
6.525	55.277
6.575	9.093
6.625	1.862
6.675	3.202
6.725	2.546
6.775	3.340
6.825	3.632

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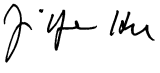
6.875	3.364
6.925	2.213
6.975	2.780
7.025	3.161
7.075	2.580
7.125	2.900
7.175	3.541
7.225	4.310
7.275	2.642
7.325	5.183
7.375	8.610
7.425	49.793
7.475	34.233
7.525	113.537
7.575	71.261
7.625	39.123
7.675	81.441
7.725	73.193
7.775	37.268
7.825	149.071
7.875	104.583
7.925	60.858
7.975	37.268
8.025	35.355
8.075	63.191
8.125	106.863
8.175	37.268
8.225	104.583
8.275	79.057
8.325	47.507
8.375	46.566
8.425	46.481
8.475	98.543
22.525	136.931
22.575	60.858
22.625	29.166
22.675	117.851
22.725	30.987
22.775	60.858
22.825	26.438
22.875	18.109
22.925	30.842
22.975	13.552
23.025	36.712
23.075	26.146
23.125	27.163
23.175	19.628

Approved: April 05, 2017



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23.275	22.822
23.325	19.764
23.375	59.087
23.425	38.528
23.475	33.301
23.525	8.179
23.575	4.517
23.625	2.665
23.675	3.554
23.725	3.118
23.775	3.122
23.825	4.109
23.875	3.447
23.925	3.748
23.975	4.569
24.025	4.558
24.075	4.479
24.125	4.230
24.175	4.513
24.225	3.051
24.275	2.507
24.325	12.205
24.375	25.074
24.425	49.872
24.475	11.103
24.525	6.561
24.575	5.288
24.625	1.808
24.675	2.360
24.725	2.362
24.775	1.191
24.825	2.554
24.875	2.066
24.925	1.780
24.975	2.171
25.025	3.231
25.075	2.922
25.125	2.502
25.175	2.467
25.225	1.936
25.275	2.923
25.325	34.233
25.375	27.163
25.425	46.904
25.475	21.561
57.525	10.547

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57.575	4.099
57.625	4.351
57.675	2.236
57.725	4.318
57.775	5.927
57.825	3.735
57.875	3.584
57.925	4.238
57.975	2.934
58.025	2.382
58.075	2.901
58.125	2.227
58.175	3.852
58.225	4.309
58.275	5.623
58.325	20.215
58.375	50.302
58.425	38.870
58.475	13.614
58.525	6.686
58.575	5.251
58.625	6.528
58.675	4.553
58.725	3.162
58.775	3.704
58.825	3.593
58.875	3.938
58.925	4.450
58.975	4.461
59.025	3.466
59.075	4.162
59.125	3.355
59.175	4.063
59.225	4.792
59.275	5.743
59.325	35.392
59.375	34.401
59.425	75.691
59.475	32.810
59.525	24.130
59.575	8.955
59.625	7.253
59.675	5.446
59.725	5.548
59.775	4.378
59.825	6.512
59.875	4.369

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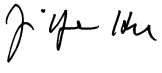

59.925	4.726
59.975	4.388
60.025	3.386
60.075	4.841
60.125	4.805
60.175	4.004
60.225	7.203
60.275	10.340
60.325	58.310
60.375	46.351
60.425	37.268
60.475	74.536
113.525	8.958
113.575	9.063
113.625	3.697
113.675	4.827
113.725	4.971
113.775	5.109
113.825	4.073
113.875	3.429
113.925	3.805
113.975	4.492
114.025	2.587
114.075	3.535
114.125	3.626
114.175	5.252
114.225	8.112
114.275	15.759
114.325	30.162
114.375	55.902
114.425	22.628
114.475	5.540
114.525	4.947
114.575	2.503
114.625	3.977
114.675	2.842
114.725	4.262
114.775	2.512
114.825	3.074
114.875	3.222
114.925	2.223
114.975	3.090
115.025	3.642
115.075	3.430
115.125	2.766
115.175	2.940
115.225	1.891

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115.275	2.909
115.325	11.165
115.375	38.030
115.425	28.284
115.475	38.861
115.525	18.871
115.575	11.561
115.625	8.067
115.675	6.552
115.725	5.189
115.775	6.481
115.825	4.366
115.875	3.110
115.925	7.413
115.975	8.565
116.025	3.454
116.075	1.653
116.125	5.645
116.175	5.813
116.225	12.741
116.275	14.949
116.325	35.315
116.375	67.748
116.425	15.215
116.475	50.047
236.525	
236.575	28.135
236.625	16.564
236.675	44.895
236.725	24.845
236.775	31.126
236.825	45.079
236.875	40.357
236.925	21.719
236.975	21.114
237.025	70.795
237.075	33.030
237.125	21.626
237.175	30.459
237.225	16.134
237.275	21.066
237.325	53.123
237.375	32.394
237.425	41.612
237.475	19.325
237.525	34.142
237.575	16.521

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237.625	6.904
237.675	3.787
237.725	5.374
237.775	5.365
237.825	4.178
237.875	4.860
237.925	3.668
237.975	3.436
238.025	3.909
238.075	3.106
238.125	3.650
238.175	3.658
238.225	3.032
238.275	3.371
238.325	3.292
238.375	3.104
238.425	4.887
238.475	3.773
238.525	6.783
238.575	10.033
238.625	21.979
238.675	23.595
238.725	39.700
238.775	23.563
238.825	26.694
238.875	41.650
238.925	51.888
238.975	23.903
239.025	13.352
239.075	16.524
239.125	13.546
239.175	16.318
239.225	24.022
239.275	26.086
239.325	38.079
239.375	13.546
239.425	14.400
239.475	25.693

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SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 4/4/2017 9:24:07 AM
End Time: 4/4/2017 9:26:44 AM

Daily Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9.0122): 13765.52
Obtained Intensity (Mg 23.985): 303698.40
Obtained Intensity (In 114.904): 84428.12
Obtained Intensity (U 238.05): 118802.73
Obtained Intensity (Bkgd 220): 0.20
Obtained Formula (CeO 155.9 / Ce 139.905): 0.014 (=3191.47 / 220648.95)
Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=1107.51 / 220648.95)

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 4/4/2017 9:24:07 AM


Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\FAST-Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 4000
                Intensity Criterion: Mg 23.985 > 20000
                Intensity Criterion: In 114.904 > 65000
                Intensity Criterion: U 238.05 > 45000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 13765.52
                Obtained Intensity (Mg 23.985): 303698.40
                Obtained Intensity (In 114.904): 84428.12
                Obtained Intensity (U 238.05): 118802.73
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.014 (=3191.47 / 220648.95)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=1107.51 / 220648.95)
[Passed]  Optimum value(s): N/A

End Time: 4/4/2017 9:26:44 AM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, April 04, 2017 11:31:43
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	302131.2	1.1				ug/L		Standard
	Be	9	11.7	65.5				ug/L		Standard
	Al	27	906.7	12.3				ug/L		Standard
	Sc	45	39227.4	3.7				ug/L		Standard
	Ti	47	33.7	22.3				ug/L		Standard
	V	51	1154.8	11.8				ug/L		Standard
	Cr	52	5602.0	1.8				ug/L		Standard
	Cr	53	1041.7	42.8				ug/L		Standard
	Mn	55	2370.2	0.8				ug/L		Standard
	Co	59	381.3	6.5				ug/L		Standard
	Ni	60	282.0	7.4				ug/L		Standard
	Cu	65	706.7	3.1				ug/L		Standard
	Zn	66	426.7	4.2				ug/L		Standard
>	Ge	72	842801.2	0.8				ug/L		Standard
	As	75	-10.9	375.6				ug/L		Standard
	Se	82	17.8	40.3				ug/L		Standard
	Se-1	77	127.3	27.1				ug/L		Standard
>	Ga	71	91.7	45.7				mg/L		Standard
	Rb	85	48.3	46.6				ug/L		Standard
	Y	89	587988.7	0.4				ug/L		Standard
>	Rh	103	8.3	91.7				ug/L		Standard
	Mo	98	35.0	29.9				ug/L		Standard
	Ag	107	120.7	19.8				ug/L		Standard
	Cd	111	4.3	74.7				mg/L		Standard
	Cd	114	26.8	29.3				ug/L		Standard
>	In	115	702234.8	1.1				ug/L		Standard
	Sn	118	180.0	8.4				ug/L		Standard
	Sb	123	43.4	44.9				ug/L		Standard
	Ba	135	50.3	12.9				ug/L		Standard
	Ce	140	20.0	25.0				ug/L		Standard
>	Tb	159	1036041.3	0.6				ug/L		Standard
	Ho	165	8.3	91.7				ug/L		Standard
	Tl	203	87.0	36.8				ug/L		Standard
	Tl	205	255.0	29.7				ug/L		Standard
	Pb	206	523.3	2.2				ug/L		Standard
	Pb	207	433.0	8.0				ug/L		Standard
	Pb	208	498.3	2.3				ug/L		Standard
	U	238	6.0	145.3				ug/L		Standard
>	Bi	209	631806.2	1.3				ug/L		Standard

Sample ID: Blank
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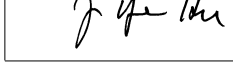

	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	26.7	10.8	mg/L	Standard
	K	39	16.7	17.3	mg/L	Standard
	Ca	43	46.7	22.3	mg/L	Standard
	Fe	54	23.1	82.3	mg/L	Standard
	Fe	57	253.3	6.9	mg/L	Standard
>	**Sc-1**	45	39227.4	3.7	mg/L	Standard
	Cl	35	0.7	173.2	ug/L	Standard
	Kr	83	2.7	78.1	ug/L	Standard
	Br	81	2163.5	5.6	ug/L	Standard
	P	31	56.7	43.5	ug/L	Standard
	S	34	26.7	75.8	ug/L	Standard
	Sr	88	125.0	12.0	ug/L	Standard
	C	12	43.3	58.1	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	10.0		mg/L	Standard
	Dy	164	9.0	100.4	mg/L	Standard
	Ho-1	165	8.3	91.7	mg/L	Standard
	Er	166	20.0	132.3	mg/L	Standard
	I	127	3535.4	12.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Tuesday, April 04, 2017 11:33:53
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, April 04, 2017 11:34:49
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	319291.1	3.0				ug/L	302131	Standard
	Be	9	15.0	0.0				ug/L	12	Standard
	Al	27	785.0	1.3				ug/L	907	Standard
	Sc	45	41660.5	1.3				ug/L	39227	Standard
	Ti	47	37.0	15.0				ug/L	34	Standard
	V	51	1137.8	5.0				ug/L	1155	Standard
	Cr	52	5523.3	2.7				ug/L	5602	Standard
	Cr	53	1056.7	30.6				ug/L	1042	Standard
	Mn	55	2366.5	1.7				ug/L	2370	Standard
	Co	59	339.3	4.4				ug/L	381	Standard
	Ni	60	265.7	3.9				ug/L	282	Standard
	Cu	65	726.4	3.2				ug/L	707	Standard
	Zn	66	463.3	5.8				ug/L	427	Standard
>	Ge	72	883705.2	2.5				ug/L	842801	Standard
	As	75	-34.9	42.7				ug/L	-11	Standard
	Se	82	18.5	3.5				ug/L	18	Standard
	Se-1	77	115.3	16.4				ug/L	127	Standard
>	Ga	71	105.0	25.2				mg/L	92	Standard
	Rb	85	28.3	10.2				ug/L	48	Standard
	Y	89	614767.9	2.2				ug/L	587989	Standard
>	Rh	103	13.3	21.7				ug/L	8	Standard
	Mo	98	22.2	10.0				ug/L	35	Standard
	Ag	107	113.7	4.8				ug/L	121	Standard
	Cd	111	6.6	48.5				mg/L	4	Standard
	Cd	114	32.7	61.1				ug/L	27	Standard
>	In	115	723397.9	1.9				ug/L	702235	Standard
	Sn	118	211.0	4.7				ug/L	180	Standard
	Sb	123	33.3	4.2				ug/L	43	Standard
	Ba	135	52.3	13.6				ug/L	50	Standard
	Ce	140	33.3	17.3				ug/L	20	Standard
>	Tb	159	1082336.5	2.2				ug/L	1036041	Standard
	Ho	165	10.0					ug/L	8	Standard
	Tl	203	68.3	18.6				ug/L	87	Standard
	Tl	205	158.3	30.0				ug/L	255	Standard
	Pb	206	551.7	2.2				ug/L	523	Standard
	Pb	207	467.0	2.8				ug/L	433	Standard
	Pb	208	542.0	5.3				ug/L	498	Standard
	U	238	3.0	57.7				ug/L	6	Standard
>	Bi	209	663628.7	2.1				ug/L	631806	Standard

Sample ID: Standard 1
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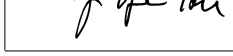

Na	23	0.0		mg/L	2	Standard
Mg	24	30.0	50.0	mg/L	27	Standard
K	39	15.0	66.7	mg/L	17	Standard
Ca	43	41.7	36.7	mg/L	47	Standard
Fe	54	21.2	59.2	mg/L	23	Standard
Fe	57	278.3	17.1	mg/L	253	Standard
Sc-1	45	41660.5	1.3	mg/L	39227	Standard
Cl	35	2.7	86.6	ug/L	1	Standard
Kr	83	3.3	17.3	ug/L	3	Standard
Br	81	2030.1	11.6	ug/L	2163	Standard
P	31	58.3	24.7	ug/L	57	Standard
S	34	26.7	108.3	ug/L	27	Standard
Sr	88	113.3	15.5	ug/L	125	Standard
C	12	16.7	124.9	mg/L	43	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	3.3	173.2	mg/L	10	Standard
Dy	164	13.0	46.5	mg/L	9	Standard
Ho-1	165	10.0		mg/L	8	Standard
Er	166	6.7	86.6	mg/L	20	Standard
I	127	3505.4	7.6	mg/L	3535	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Tuesday, April 04, 2017 11:36:59
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, April 04, 2017 11:37:54
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	302386.7	3.5				ug/L	302131	Standard
	Be	9	123.3	29.9				ug/L	12	Standard
	Al	27	9416.6	44.4				ug/L	907	Standard
	Sc	45	40726.3	0.7				ug/L	39227	Standard
	Ti	47	59.7	25.7				ug/L	34	Standard
	V	51	1457.6	18.2				ug/L	1155	Standard
	Cr	52	5860.5	1.1				ug/L	5602	Standard
	Cr	53	1060.0	53.6				ug/L	1042	Standard
	Mn	55	3122.3	14.8				ug/L	2370	Standard
	Co	59	793.0	5.0				ug/L	381	Standard
	Ni	60	364.7	6.9				ug/L	282	Standard
	Cu	65	713.4	7.9				ug/L	707	Standard
	Zn	66	481.7	5.7				ug/L	427	Standard
>	Ge	72	852172.4	2.3				ug/L	842801	Standard
	As	75	4.8	618.9				ug/L	-11	Standard
	Se	82	15.7	45.1				ug/L	18	Standard
	Se-1	77	118.7	31.6				ug/L	127	Standard
>	Ga	71	65.0	23.1				mg/L	92	Standard
	Rb	85	31.7	32.9				ug/L	48	Standard
	Y	89	592456.3	2.7				ug/L	587989	Standard
>	Rh	103	8.3	91.7				ug/L	8	Standard
	Mo	98	417.8	8.5				ug/L	35	Standard
	Ag	107	474.0	17.2				ug/L	121	Standard
	Cd	111	113.5	33.6				mg/L	4	Standard
	Cd	114	346.4	17.3				ug/L	27	Standard
>	In	115	711147.6	1.6				ug/L	702235	Standard
	Sn	118	258.0	18.1				ug/L	180	Standard
	Sb	123	328.2	22.7				ug/L	43	Standard
	Ba	135	169.7	26.4				ug/L	50	Standard
	Ce	140	43.3	58.1				ug/L	20	Standard
>	Tb	159	1047036.2	0.4				ug/L	1036041	Standard
	Ho	165	5.0	100.0				ug/L	8	Standard
	Tl	203	586.7	28.2				ug/L	87	Standard
	Tl	205	1275.1	31.6				ug/L	255	Standard
	Pb	206	909.0	19.3				ug/L	523	Standard
	Pb	207	740.7	11.3				ug/L	433	Standard
	Pb	208	848.3	5.3				ug/L	498	Standard
	U	238	294.3	33.4				ug/L	6	Standard
>	Bi	209	639550.6	1.1				ug/L	631806	Standard

Sample ID: Standard 2
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Na	23	1.7	173.2	mg/L	2	Standard
Mg	24	23.3	44.6	mg/L	27	Standard
K	39	10.0	86.6	mg/L	17	Standard
Ca	43	40.0	33.1	mg/L	47	Standard
Fe	54	34.9	49.3	mg/L	23	Standard
Fe	57	280.0	6.2	mg/L	253	Standard
Sc-1	45	40726.3	0.7	mg/L	39227	Standard
Cl	35	2.0	100.0	ug/L	1	Standard
Kr	83	2.3	137.8	ug/L	3	Standard
Br	81	2186.8	6.1	ug/L	2163	Standard
P	31	58.3	24.7	ug/L	57	Standard
S	34	26.7	39.0	ug/L	27	Standard
Sr	88	105.0	36.0	ug/L	125	Standard
C	12	30.0	88.2	mg/L	43	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	10	Standard
Dy	164	29.0	61.1	mg/L	9	Standard
Ho-1	165	5.0	100.0	mg/L	8	Standard
Er	166	20.0	86.6	mg/L	20	Standard
I	127	3485.4	11.1	mg/L	3535	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, April 04, 2017 11:41:00
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	293584.2	3.5				ug/L	302131	Standard
	Be	9	107949.9	1.9	50.0000	2.632	5.3	ug/L	12	Standard
	Al	27	6878577.1	2.5	50.0000	1.413	2.8	ug/L	907	Standard
	Sc	45	39608.4	1.1				ug/L	39227	Standard
	Ti	47	20957.2	1.6	100.0000	2.754	2.8	ug/L	34	Standard
	V	51	334637.8	1.9	50.0000	1.448	2.9	ug/L	1155	Standard
	Cr	52	308324.4	0.9	50.0000	1.258	2.5	ug/L	5602	Standard
	Cr	53	38564.0	2.7	50.0000	2.112	4.2	ug/L	1042	Standard
	Mn	55	531891.2	1.7	50.0000	1.557	3.1	ug/L	2370	Standard
	Co	59	404599.8	1.6	50.0000	1.726	3.5	ug/L	381	Standard
	Ni	60	86171.4	1.4	50.0000	1.387	2.8	ug/L	282	Standard
	Cu	65	90928.4	1.8	50.0000	1.381	2.8	ug/L	707	Standard
	Zn	66	54114.5	1.7	50.0000	1.371	2.7	ug/L	427	Standard
>	Ge	72	819546.5	2.1				ug/L	842801	Standard
	As	75	56054.4	2.1	50.0000	1.658	3.3	ug/L	-11	Standard
	Se	82	5162.2	2.3	50.0000	1.779	3.6	ug/L	18	Standard
	Se-1	77	3700.8	2.6	50.0000	2.349	4.7	ug/L	127	Standard
>	Ga	71	116.7	6.5				mg/L	92	Standard
	Rb	85	311.7	10.9				ug/L	48	Standard
	Y	89	579830.0	1.7				ug/L	587989	Standard
>	Rh	103	31.7	24.1				ug/L	8	Standard
	Mo	98	360437.2	1.8	100.0000	2.804	2.8	ug/L	35	Standard
	Ag	107	292650.3	0.6	50.0000	0.779	1.6	ug/L	121	Standard
	Cd	111	82650.7	0.9	50.0000	0.919	1.8	mg/L	4	Standard
	Cd	114	211914.8	0.9	50.0000	0.883	1.8	ug/L	27	Standard
>	In	115	686910.1	1.0				ug/L	702235	Standard
	Sn	118	46066.3	2.3	50.0000	1.649	3.3	ug/L	180	Standard
	Sb	123	215045.0	1.0	50.0000	0.964	1.9	ug/L	43	Standard
	Ba	135	82537.2	1.5	50.0000	1.220	2.4	ug/L	50	Standard
	Ce	140	260.0	13.3				ug/L	20	Standard
>	Tb	159	1033970.8	1.7				ug/L	1036041	Standard
	Ho	165	13.3	142.0				ug/L	8	Standard
	Tl	203	347507.6	1.6	50.0000	1.288	2.6	ug/L	87	Standard
	Tl	205	851695.6	1.2	50.0000	0.907	1.8	ug/L	255	Standard
	Pb	206	281359.5	1.6	50.0000	1.297	2.6	ug/L	523	Standard
	Pb	207	255057.6	1.7	50.0000	1.458	2.9	ug/L	433	Standard
	Pb	208	289181.1	0.9	50.0000	1.333	2.7	ug/L	498	Standard
	U	238	235845.2	1.2	50.0000	1.201	2.4	ug/L	6	Standard
>	Bi	209	636639.9	2.5				ug/L	631806	Standard

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	Na	23	18.3	83.3	**5.0000**	4.521	90.4	mg/L	2	Standard
	Mg	24	298.3	20.8	**5.0000**	1.189	23.8	mg/L	27	Standard
	K	39	485.0	12.7	**5.0000**	0.625	12.5	mg/L	17	Standard
	Ca	43	45.0	11.1	**5.0000**	3.884	77.7	mg/L	47	Standard
	Fe	54	724.6	9.7	**5.0000**	0.490	9.8	mg/L	23	Standard
	Fe	57	453.3	6.3	**5.0000**	0.665	13.3	mg/L	253	Standard
>	**Sc-1**	45	39608.4	1.1				mg/L	39227	Standard
	Cl	35	5.3	86.6				ug/L	1	Standard
	Kr	83	3.0	33.3				ug/L	3	Standard
	Br	81	2133.5	12.1				ug/L	2163	Standard
	P	31	48.3	15.8				ug/L	57	Standard
	S	34	28.3	27.0				ug/L	27	Standard
	Sr	88	146.7	11.0				ug/L	125	Standard
	C	12	23.3	99.0				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	16.3	92.9				mg/L	9	Standard
	Ho-1	165	13.3	142.0				mg/L	8	Standard
	Er	166	6.7	173.2				mg/L	20	Standard
	I	127	2935.3	9.9				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, April 04, 2017 11:44:05
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	297569.1	1.5				ug/L	302131	Standard
	Be	9	210186.4	1.5	97.9365	2.152	2.2	ug/L	12	Standard
	Al	27	13470178.7	2.2	98.2650	2.589	2.6	ug/L	907	Standard
	Sc	45	40031.2	3.4				ug/L	39227	Standard
	Ti	47	40773.1	1.6	195.7087	2.252	1.2	ug/L	34	Standard
	V	51	649784.9	1.2	97.7962	1.692	1.7	ug/L	1155	Standard
	Cr	52	597338.9	1.3	98.0223	1.675	1.7	ug/L	5602	Standard
	Cr	53	75548.0	2.9	98.7751	2.285	2.3	ug/L	1042	Standard
	Mn	55	1042014.5	0.6	98.2732	1.425	1.5	ug/L	2370	Standard
	Co	59	790822.7	0.9	98.0615	1.267	1.3	ug/L	381	Standard
	Ni	60	169184.4	1.0	98.3439	1.306	1.3	ug/L	282	Standard
	Cu	65	177970.0	1.7	98.2804	2.559	2.6	ug/L	707	Standard
	Zn	66	107888.5	1.8	99.2267	2.200	2.2	ug/L	427	Standard
>	Ge	72	832683.7	1.6				ug/L	842801	Standard
	As	75	112060.9	0.5	99.1510	1.590	1.6	ug/L	-11	Standard
	Se	82	10172.2	1.6	98.4917	0.928	0.9	ug/L	18	Standard
	Se-1	77	7232.1	1.7	98.7626	2.438	2.5	ug/L	127	Standard
>	Ga	71	165.0	13.2				mg/L	92	Standard
	Rb	85	625.0	14.7				ug/L	48	Standard
	Y	89	576386.1	1.0				ug/L	587989	Standard
>	Rh	103	36.7	31.5				ug/L	8	Standard
	Mo	98	689055.4	0.2	196.0189	1.951	1.0	ug/L	35	Standard
	Ag	107	564350.5	0.5	98.4594	1.245	1.3	ug/L	121	Standard
	Cd	111	160436.8	0.5	98.7832	1.590	1.6	mg/L	4	Standard
	Cd	114	412229.9	1.0	98.8964	1.886	1.9	ug/L	27	Standard
>	In	115	683238.9	1.1				ug/L	702235	Standard
	Sn	118	88782.0	0.6	98.5157	0.808	0.8	ug/L	180	Standard
	Sb	123	424582.4	1.2	99.6378	2.308	2.3	ug/L	43	Standard
	Ba	135	162220.8	0.3	99.4180	1.374	1.4	ug/L	50	Standard
	Ce	140	461.7	5.6				ug/L	20	Standard
>	Tb	159	1036209.8	0.9				ug/L	1036041	Standard
	Ho	165	45.0	11.1				ug/L	8	Standard
	Tl	203	680797.1	0.4	98.9760	1.262	1.3	ug/L	87	Standard
	Tl	205	1644300.0	0.9	98.2407	0.676	0.7	ug/L	255	Standard
	Pb	206	552890.7	0.8	99.1632	0.531	0.5	ug/L	523	Standard
	Pb	207	497419.9	1.2	98.7726	0.658	0.7	ug/L	433	Standard
	Pb	208	570299.3	1.0	99.3318	0.857	0.9	ug/L	498	Standard
	U	238	464238.4	1.7	99.1969	1.110	1.1	ug/L	6	Standard
>	Bi	209	636588.8	1.4				ug/L	631806	Standard

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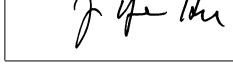

	Na	23	21.7	48.0	**7.5133**	4.084	54.4	mg/L	2	Standard
	Mg	24	533.3	2.4	**9.5540**	0.257	2.7	mg/L	27	Standard
	K	39	851.7	3.2	**9.3457**	0.518	5.5	mg/L	17	Standard
	Ca	43	51.7	31.1	**10.1858**	14.419	141.6	mg/L	47	Standard
	Fe	54	1476.9	3.9	**10.1636**	0.411	4.0	mg/L	23	Standard
	Fe	57	628.3	6.9	**9.8447**	1.808	18.4	mg/L	253	Standard
>	**Sc-1**	45	40031.2	3.4				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.0	86.6				ug/L	3	Standard
	Br	81	1993.5	7.9				ug/L	2163	Standard
	P	31	70.0	37.1				ug/L	57	Standard
	S	34	23.3	61.9				ug/L	27	Standard
	Sr	88	116.7	13.8				ug/L	125	Standard
	C	12	70.0	24.7				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	12.1	51.6				mg/L	9	Standard
	Ho-1	165	45.0	11.1				mg/L	8	Standard
	Er	166	26.7	114.6				mg/L	20	Standard
	I	127	3053.6	19.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	K	39	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, April 04, 2017 11:47:12
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	297205.5	1.7				ug/L	302131	Standard
	Be	9	109611.8	1.4	**51.1345**	1.147	2.2	ug/L	12	Standard
	Al	27	6824593.6	0.8	**49.8417**	1.029	2.1	ug/L	907	Standard
	Sc	45	39570.0	2.2				ug/L	39227	Standard
	Ti	47	20637.0	0.6	**99.7018**	2.894	2.9	ug/L	34	Standard
	V	51	330989.5	0.4	**50.1006**	1.470	2.9	ug/L	1155	Standard
	Cr	52	307656.2	0.3	**50.4192**	1.220	2.4	ug/L	5602	Standard
	Cr	53	38572.4	1.0	**50.1631**	1.662	3.3	ug/L	1042	Standard
	Mn	55	530654.8	0.4	**50.2915**	1.205	2.4	ug/L	2370	Standard
	Co	59	402251.7	0.3	**50.2188**	1.229	2.4	ug/L	381	Standard
	Ni	60	85752.6	0.4	**50.1311**	1.180	2.4	ug/L	282	Standard
	Cu	65	90530.3	1.1	**50.1821**	0.967	1.9	ug/L	707	Standard
	Zn	66	54474.4	1.0	**50.2740**	1.306	2.6	ug/L	427	Standard
>	Ge	72	826942.8	2.7				ug/L	842801	Standard
	As	75	56457.1	0.8	**50.3359**	1.264	2.5	ug/L	-11	Standard
	Se	82	5203.8	0.3	**50.7128**	1.519	3.0	ug/L	18	Standard
	Se-1	77	3740.8	0.3	**50.7016**	1.242	2.5	ug/L	127	Standard
>	Ga	71	110.0	16.4				mg/L	92	Standard
	Rb	85	768.4	5.1				ug/L	48	Standard
	Y	89	580949.8	0.3				ug/L	587989	Standard
>	Rh	103	36.7	7.9				ug/L	8	Standard
	Mo	98	345395.6	0.8	**97.8488**	2.230	2.3	ug/L	35	Standard
	Ag	107	287715.8	0.5	**49.9751**	0.998	2.0	ug/L	121	Standard
	Cd	111	80999.8	0.3	**49.6562**	0.900	1.8	mg/L	4	Standard
	Cd	114	208596.6	0.7	**49.8145**	0.403	0.8	ug/L	27	Standard
>	In	115	686139.1	1.5				ug/L	702235	Standard
	Sn	118	45397.6	0.9	**50.0557**	0.872	1.7	ug/L	180	Standard
	Sb	123	213548.0	0.3	**49.8904**	0.902	1.8	ug/L	43	Standard
	Ba	135	81534.8	0.7	**49.7346**	0.781	1.6	ug/L	50	Standard
	Ce	140	70.0	31.1				ug/L	20	Standard
>	Tb	159	1027734.0	0.9				ug/L	1036041	Standard
	Ho	165	26.7	21.7				ug/L	8	Standard
	Tl	203	347995.0	0.4	**50.3049**	0.550	1.1	ug/L	87	Standard
	Tl	205	846900.8	1.2	**50.3211**	0.935	1.9	ug/L	255	Standard
	Pb	206	281625.3	0.7	**50.1891**	0.673	1.3	ug/L	523	Standard
	Pb	207	255806.7	0.2	**50.4805**	0.432	0.9	ug/L	433	Standard
	Pb	208	289491.1	0.5	**50.1076**	0.587	1.2	ug/L	498	Standard
	U	238	237805.4	0.7	**50.5417**	0.698	1.4	ug/L	6	Standard
>	Bi	209	639968.3	0.7				ug/L	631806	Standard

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⌈	**Na**	23	6.7	43.3	**1.9013**	1.089	57.3	mg/L	2	Standard
|	**Mg**	24	276.7	8.9	**4.8113**	0.480	10.0	mg/L	27	Standard
|	**K**	39	488.3	15.1	**5.3653**	0.762	14.2	mg/L	17	Standard
|	**Ca**	43	46.7	12.4	**6.2751**	4.118	65.6	mg/L	47	Standard
|	**Fe**	54	785.9	4.4	**5.3624**	0.285	5.3	mg/L	23	Standard
|	**Fe**	57	495.0	9.9	**6.2485**	1.078	17.3	mg/L	253	Standard
⌊>	**Sc-1**	45	39570.0	2.2				mg/L	39227	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.0	57.7				ug/L	3	Standard
	Br	81	1990.1	6.1				ug/L	2163	Standard
	P	31	58.3	21.6				ug/L	57	Standard
	S	34	28.3	53.9				ug/L	27	Standard
	Sr	88	140.0	16.4				ug/L	125	Standard
	C	12	63.3	79.5				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	6.0	87.0				mg/L	9	Standard
	Ho-1	165	26.7	21.7				mg/L	8	Standard
	Er	166	13.3	114.6				mg/L	20	Standard
	I	127	5125.9	1.1				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	102.269		
⌊	Al	27	99.683		
⌈	Sc	45			
|	Ti	47	99.702		
|	V	51	100.201		
|	Cr	52	100.838		
|	Cr	53			
|	Mn	55	100.583		
|	Co	59	100.438		
|	Ni	60	100.262		
|	Cu	65	100.364		
|	Zn	66	100.548		
|>	Ge	72		98.118	
|	As	75	100.672		
|	Se	82	101.426		
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.849		
Ag	107	99.950		
Cd	111	99.312		
Cd	114			
In	115			97.708
Sn	118	100.111		
Sb	123	99.781		
Ba	135	99.469		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.610		
Tl	205			
Pb	206	100.378		
Pb	207	100.961		
Pb	208	100.215		
U	238	101.083		
Bi	209			101.292
Na	23	38.026		
Mg	24	96.226		
K	39	107.305		
Ca	43	125.501		
Fe	54	107.249		
Fe	57	124.971		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	
QC Std 1	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, April 04, 2017 11:50:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	299621.5	2.7				ug/L	302131	Standard
	Be	9	51.7	29.6	**0.0172**	0.007	43.6	ug/L	12	Standard
	Al	27	1966.8	52.1	**-0.0036**	0.008	211.7	ug/L	907	Standard
	Sc	45	39859.0	2.2				ug/L	39227	Standard
	Ti	47	41.0	23.5	**0.0186**	0.047	250.1	ug/L	34	Standard
	V	51	1000.7	3.8	**-0.0125**	0.003	27.0	ug/L	1155	Standard
	Cr	52	4582.7	2.5	**-0.1353**	0.018	13.5	ug/L	5602	Standard
	Cr	53	613.3	5.9	**-0.5154**	0.062	12.0	ug/L	1042	Standard
	Mn	55	2127.8	4.2	**-0.0368**	0.008	20.5	ug/L	2370	Standard
	Co	59	391.7	16.5	**0.0026**	0.007	289.1	ug/L	381	Standard
	Ni	60	252.7	9.1	**-0.0096**	0.011	114.2	ug/L	282	Standard
	Cu	65	770.7	11.6	**0.0930**	0.045	48.2	ug/L	707	Standard
	Zn	66	394.0	4.0	**-0.0188**	0.014	75.2	ug/L	427	Standard
>	Ge	72	827953.2	1.7				ug/L	842801	Standard
	As	75	5.4	326.8	**0.0505**	0.016	31.4	ug/L	-11	Standard
	Se	82	16.4	56.7	**0.0604**	0.090	149.4	ug/L	18	Standard
	Se-1	77	82.3	22.3	**-0.4149**	0.277	66.8	ug/L	127	Standard
>	Ga	71	66.7	26.3				mg/L	92	Standard
	Rb	85	25.0	20.0				ug/L	48	Standard
	Y	89	580406.8	0.9				ug/L	587989	Standard
>	Rh	103	6.7	86.6				ug/L	8	Standard
	Mo	98	242.4	16.0	**0.0534**	0.010	19.0	ug/L	35	Standard
	Ag	107	173.7	27.0	**0.0003**	0.008	2535.0	ug/L	121	Standard
	Cd	111	15.7	83.3	**-0.0077**	0.008	103.1	mg/L	4	Standard
	Cd	114	72.8	55.5	**-0.0127**	0.009	74.8	ug/L	27	Standard
>	In	115	695010.6	1.6				ug/L	702235	Standard
	Sn	118	269.0	10.3	**0.0686**	0.034	49.2	ug/L	180	Standard
	Sb	123	508.3	5.9	**0.0933**	0.008	8.9	ug/L	43	Standard
	Ba	135	72.7	21.4	**-0.0062**	0.010	153.7	ug/L	50	Standard
	Ce	140	28.3	20.4				ug/L	20	Standard
>	Tb	159	1030815.5	1.6				ug/L	1036041	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	182.0	17.8	**-0.0087**	0.005	57.7	ug/L	87	Standard
	Tl	205	431.7	9.4	**-0.0003**	0.003	868.3	ug/L	255	Standard
	Pb	206	1142.0	7.7	**0.0903**	0.018	20.2	ug/L	523	Standard
	Pb	207	931.4	5.0	**0.0864**	0.008	9.8	ug/L	433	Standard
	Pb	208	1089.7	7.2	**0.0905**	0.014	15.9	ug/L	498	Standard
	U	238	62.3	43.2	**0.0006**	0.006	1014.3	ug/L	6	Standard
>	Bi	209	644441.8	1.7				ug/L	631806	Standard

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	Na	23	1.7	173.2	**0.0318**	1.091	3427.5	mg/L	2	Standard
	Mg	24	10.0	50.0	**-0.2372**	0.094	39.8	mg/L	27	Standard
	K	39	10.0	86.6	**0.0071**	0.096	1355.4	mg/L	17	Standard
	Ca	43	41.7	48.5	**1.8586**	15.807	850.5	mg/L	47	Standard
	Fe	54	23.0	62.7	**-0.0730**	0.103	141.6	mg/L	23	Standard
	Fe	57	288.3	14.1	**0.4133**	1.219	295.0	mg/L	253	Standard
>	**Sc-1**	45	39859.0	2.2				mg/L	39227	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.3	45.8				ug/L	3	Standard
	Br	81	2046.8	5.1				ug/L	2163	Standard
	P	31	55.0	24.1				ug/L	57	Standard
	S	34	21.7	70.5				ug/L	27	Standard
	Sr	88	131.7	36.5				ug/L	125	Standard
	C	12	20.0	50.0				mg/L	43	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	6.0	93.6				mg/L	9	Standard
	Ho-1	165	11.7	65.5				mg/L	8	Standard
	Er	166	13.3	43.3				mg/L	20	Standard
	I	127	3382.0	12.3				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.238	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.971
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.000
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Mg	24	
QC Std 2	Ca	43	
QC Std 2	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, April 04, 2017 11:53:26
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	293099.6	1.0				ug/L	302131	Standard
	Be	9	403.3	10.5	**0.1841**	0.022	11.9	ug/L	12	Standard
	Al	27	960.0	33.9	**-0.0108**	0.002	22.5	ug/L	907	Standard
	Sc	45	39361.1	4.2				ug/L	39227	Standard
	Ti	47	29.0	21.5	**-0.0390**	0.028	71.5	ug/L	34	Standard
	V	51	3385.4	4.8	**0.3520**	0.032	9.0	ug/L	1155	Standard
	Cr	52	10297.8	2.0	**0.8260**	0.061	7.4	ug/L	5602	Standard
	Cr	53	1370.1	6.1	**0.5014**	0.095	18.9	ug/L	1042	Standard
	Mn	55	6718.8	3.5	**0.4032**	0.030	7.4	ug/L	2370	Standard
	Co	59	3260.7	4.5	**0.3628**	0.023	6.3	ug/L	381	Standard
	Ni	60	2823.3	5.7	**1.5049**	0.109	7.2	ug/L	282	Standard
	Cu	65	1956.8	1.9	**0.7602**	0.032	4.2	ug/L	707	Standard
	Zn	66	6929.9	1.1	**6.0843**	0.160	2.6	ug/L	427	Standard
>	Ge	72	823669.9	1.6				ug/L	842801	Standard
	As	75	423.5	1.3	**0.4245**	0.010	2.2	ug/L	-11	Standard
	Se	82	51.6	3.8	**0.4062**	0.019	4.7	ug/L	18	Standard
	Se-1	77	125.0	17.9	**0.1873**	0.323	172.6	ug/L	127	Standard
>	Ga	71	78.3	19.5				mg/L	92	Standard
	Rb	85	41.7	42.1				ug/L	48	Standard
	Y	89	573975.6	3.3				ug/L	587989	Standard
>	Rh	103	5.0	100.0				ug/L	8	Standard
	Mo	98	142.4	82.3	**0.0263**	0.034	128.3	ug/L	35	Standard
	Ag	107	2308.8	5.4	**0.3730**	0.028	7.5	ug/L	121	Standard
	Cd	111	364.5	5.8	**0.2069**	0.015	7.3	mg/L	4	Standard
	Cd	114	992.8	9.3	**0.2083**	0.026	12.7	ug/L	27	Standard
>	In	115	684480.6	2.0				ug/L	702235	Standard
	Sn	118	208.7	4.3	**0.0061**	0.014	236.0	ug/L	180	Standard
	Sb	123	1835.0	5.2	**0.4063**	0.031	7.5	ug/L	43	Standard
	Ba	135	1227.4	3.2	**0.7014**	0.031	4.4	ug/L	50	Standard
	Ce	140	21.7	35.3				ug/L	20	Standard
>	Tb	159	1017160.2	1.6				ug/L	1036041	Standard
	Ho	165	15.0	88.2				ug/L	8	Standard
	Tl	203	630.7	7.0	**0.0567**	0.008	14.4	ug/L	87	Standard
	Tl	205	1608.4	17.0	**0.0703**	0.018	25.5	ug/L	255	Standard
	Pb	206	1661.1	6.1	**0.1855**	0.024	12.9	ug/L	523	Standard
	Pb	207	1376.7	0.9	**0.1767**	0.007	3.7	ug/L	433	Standard
	Pb	208	1588.4	3.3	**0.1792**	0.013	7.2	ug/L	498	Standard
	U	238	1755.8	3.7	**0.3621**	0.020	5.5	ug/L	6	Standard
>	Bi	209	637938.8	2.4				ug/L	631806	Standard

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	Na	23	1.7	173.2	**0.0233**	1.076	4613.3	mg/L	2	Standard
	Mg	24	25.0	20.0	**0.0494**	0.084	170.6	mg/L	27	Standard
	K	39	25.0	20.0	**0.1788**	0.060	33.4	mg/L	17	Standard
	Ca	43	45.0	11.1	**5.2326**	4.696	89.7	mg/L	47	Standard
	Fe	54	17.9	33.6	**-0.1083**	0.039	35.6	mg/L	23	Standard
	Fe	57	273.3	20.2	**0.0580**	1.363	2348.8	mg/L	253	Standard
>	**Sc-1**	45	39361.1	4.2				mg/L	39227	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	1.3	114.6				ug/L	3	Standard
	Br	81	1953.5	3.1				ug/L	2163	Standard
	P	31	61.7	23.4				ug/L	57	Standard
	S	34	26.7	10.8				ug/L	27	Standard
	Sr	88	120.0	39.7				ug/L	125	Standard
	C	12	46.7	81.1				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	15.1	37.4				mg/L	9	Standard
	Ho-1	165	15.0	88.2				mg/L	8	Standard
	Er	166	33.3	17.3				mg/L	20	Standard
	I	127	3443.7	8.0				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	92.065		
	Al	27	-1.075		
	Sc	45			
	Ti	47			
	V	51	88.003		
	Cr	52	103.249		
	Cr	53			
	Mn	55	80.638		
	Co	59	90.712		
	Ni	60	94.054		
	Cu	65	95.024		
	Zn	66	97.349		
>	Ge	72		97.730	
	As	75	106.137		
	Se	82	101.543		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98		
|	Ag	107	93.251	
|	Cd	111	86.219	
|	Cd	114		
|>	In	115		97.472
|	Sn	118		
|	Sb	123	101.571	
⌊	Ba	135	93.517	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	70.894	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	89.625	
|	U	238	90.516	
⌊>	Bi	209		100.971
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, April 04, 2017 11:56:39
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	292593.8	1.9				ug/L	302131	Standard
	Be	9	25.0	52.9	**0.0051**	0.006	126.0	ug/L	12	Standard
	Al	27	6406657.0	2.0	**47.5153**	0.168	0.4	ug/L	907	Standard
	Sc	45	39342.7	0.8				ug/L	39227	Standard
	Ti	47	19365.4	1.6	**95.6235**	1.952	2.0	ug/L	34	Standard
	V	51	1060.3	3.1	**0.0004**	0.006	1394.6	ug/L	1155	Standard
	Cr	52	6615.8	1.7	**0.2296**	0.024	10.6	ug/L	5602	Standard
	Cr	53	786.7	5.4	**-0.2602**	0.053	20.4	ug/L	1042	Standard
	Mn	55	4588.0	2.1	**0.2075**	0.010	4.9	ug/L	2370	Standard
	Co	59	730.4	3.4	**0.0471**	0.004	7.6	ug/L	381	Standard
	Ni	60	605.0	3.0	**0.2053**	0.012	5.8	ug/L	282	Standard
	Cu	65	915.0	4.3	**0.1860**	0.023	12.3	ug/L	707	Standard
	Zn	66	1113.0	1.7	**0.6735**	0.023	3.4	ug/L	427	Standard
>	Ge	72	808654.8	0.5				ug/L	842801	Standard
	As	75	-7.3	283.5	**0.0392**	0.019	48.0	ug/L	-11	Standard
	Se	82	17.0	19.0	**0.0704**	0.033	46.8	ug/L	18	Standard
	Se-1	77	84.7	17.8	**-0.3568**	0.219	61.3	ug/L	127	Standard
>	Ga	71	66.7	31.2				mg/L	92	Standard
	Rb	85	723.4	7.5				ug/L	48	Standard
	Y	89	572751.2	1.5				ug/L	587989	Standard
>	Rh	103	10.0	100.0				ug/L	8	Standard
	Mo	98	324748.5	0.9	**94.2764**	1.302	1.4	ug/L	35	Standard
	Ag	107	115.3	1.0	**-0.0089**	0.000	1.5	ug/L	121	Standard
	Cd	111	-154.9	4.5	**-0.1146**	0.004	3.4	mg/L	4	Standard
	Cd	114	555.2	15.6	**0.1061**	0.021	19.6	ug/L	27	Standard
>	In	115	669441.7	0.5				ug/L	702235	Standard
	Sn	118	240.7	9.0	**0.0474**	0.025	53.0	ug/L	180	Standard
	Sb	123	307.1	7.8	**0.0495**	0.005	10.7	ug/L	43	Standard
	Ba	135	57.7	2.0	**-0.0139**	0.001	5.4	ug/L	50	Standard
	Ce	140	820.0	12.2				ug/L	20	Standard
>	Tb	159	1021703.8	1.1				ug/L	1036041	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	75.0	19.7	**-0.0238**	0.002	9.1	ug/L	87	Standard
	Tl	205	153.3	21.7	**-0.0165**	0.002	12.1	ug/L	255	Standard
	Pb	206	611.3	6.4	**-0.0006**	0.007	1159.9	ug/L	523	Standard
	Pb	207	527.7	0.4	**0.0104**	0.001	13.1	ug/L	433	Standard
	Pb	208	603.3	5.3	**0.0099**	0.005	49.8	ug/L	498	Standard
	U	238	8.7	37.1	**-0.0107**	0.001	6.4	ug/L	6	Standard
>	Bi	209	624701.8	0.9				ug/L	631806	Standard

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	Na	23	15.0	33.3	**5.0631**	1.929	38.1	mg/L	2	Standard
	Mg	24	606.7	1.7	**11.1200**	0.200	1.8	mg/L	27	Standard
	K	39	335.0	10.4	**3.6725**	0.373	10.2	mg/L	17	Standard
	Ca	43	66.7	35.4	**22.9038**	19.244	84.0	mg/L	47	Standard
	Fe	54	1769.7	7.2	**12.4432**	1.007	8.1	mg/L	23	Standard
	Fe	57	736.7	11.6	**13.1635**	2.361	17.9	mg/L	253	Standard
>	**Sc-1**	45	39342.7	0.8				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	3.7	56.8				ug/L	3	Standard
	Br	81	1966.8	3.8				ug/L	2163	Standard
	P	31	48.3	33.3				ug/L	57	Standard
	S	34	28.3	56.7				ug/L	27	Standard
	Sr	88	120.0	11.0				ug/L	125	Standard
	C	12	36.7	15.7				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	12.5	96.5				mg/L	9	Standard
	Ho-1	165	10.0	50.0				mg/L	8	Standard
	Er	166	16.7	69.3				mg/L	20	Standard
	I	127	2873.6	8.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	0.950		
	Sc	45			
	Ti	47	95.623		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.948	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85		
	Y	89		
>	Rh	103		
	Mo	98	94.276	
	Ag	107		
	Cd	111		
	Cd	114		
>	In	115		95.330
	Sn	118		
	Sb	123		
	Ba	135		
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203		
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208		
	U	238		
>	Bi	209		98.876
	Na	23	40.505	
	Mg	24	222.401	
	K	39	73.450	
	Ca	43	152.692	
	Fe	54	99.545	
	Fe	57	105.308	
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	K	39
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, April 04, 2017 11:59:45
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	304783.8	1.6				ug/L	302131	Standard
	Be	9	208518.4	0.8	**94.8569**	1.400	1.5	ug/L	12	Standard
	Al	27	6288394.2	1.4	**44.7871**	1.376	3.1	ug/L	907	Standard
	Sc	45	39981.0	2.0				ug/L	39227	Standard
	Ti	47	21310.0	1.0	**102.1326**	1.848	1.8	ug/L	34	Standard
	V	51	627124.3	0.4	**94.3019**	0.687	0.7	ug/L	1155	Standard
	Cr	52	578524.3	0.3	**94.8294**	0.718	0.8	ug/L	5602	Standard
	Cr	53	73049.0	1.5	**95.4097**	2.317	2.4	ug/L	1042	Standard
	Mn	55	1008327.3	1.0	**95.0106**	1.241	1.3	ug/L	2370	Standard
	Co	59	764144.5	1.1	**94.6743**	0.998	1.1	ug/L	381	Standard
	Ni	60	162438.8	1.1	**94.3390**	0.839	0.9	ug/L	282	Standard
	Cu	65	171180.4	1.5	**94.4339**	1.692	1.8	ug/L	707	Standard
	Zn	66	106872.6	1.0	**98.2107**	1.557	1.6	ug/L	427	Standard
>	Ge	72	833284.1	0.9				ug/L	842801	Standard
	As	75	109116.0	1.1	**96.4625**	0.921	1.0	ug/L	-11	Standard
	Se	82	9835.0	0.2	**95.1573**	0.997	1.0	ug/L	18	Standard
	Se-1	77	7167.0	1.1	**97.7716**	0.888	0.9	ug/L	127	Standard
>	Ga	71	151.7	5.0				mg/L	92	Standard
	Rb	85	731.7	8.9				ug/L	48	Standard
	Y	89	588716.2	0.4				ug/L	587989	Standard
>	Rh	103	31.7	45.6				ug/L	8	Standard
	Mo	98	334260.2	1.2	**94.4368**	1.075	1.1	ug/L	35	Standard
	Ag	107	451626.8	18.1	**78.2452**	14.049	18.0	ug/L	121	Standard
	Cd	111	155731.2	1.0	**95.2317**	0.947	1.0	mg/L	4	Standard
	Cd	114	388070.0	1.1	**92.4617**	0.854	0.9	ug/L	27	Standard
>	In	115	687849.9	0.5				ug/L	702235	Standard
	Sn	118	471.7	4.3	**0.2954**	0.025	8.5	ug/L	180	Standard
	Sb	123	417442.0	1.8	**97.2943**	2.149	2.2	ug/L	43	Standard
	Ba	135	157470.7	0.3	**95.8506**	0.765	0.8	ug/L	50	Standard
	Ce	140	85.0	27.0				ug/L	20	Standard
>	Tb	159	1050695.2	0.4				ug/L	1036041	Standard
	Ho	165	38.3	41.9				ug/L	8	Standard
	Tl	203	674434.3	1.8	**96.2329**	0.896	0.9	ug/L	87	Standard
	Tl	205	1646785.9	1.2	**96.5745**	0.136	0.1	ug/L	255	Standard
	Pb	206	555011.9	1.8	**97.7088**	1.594	1.6	ug/L	523	Standard
	Pb	207	497801.8	1.1	**97.0293**	0.939	1.0	ug/L	433	Standard
	Pb	208	562486.6	1.2	**96.1648**	1.010	1.1	ug/L	498	Standard
	U	238	468413.7	2.5	**98.2417**	1.809	1.8	ug/L	6	Standard
>	Bi	209	648510.2	1.1				ug/L	631806	Standard

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	Na	23	16.7	34.6	**5.5751**	2.121	38.0	mg/L	2	Standard
	Mg	24	665.0	8.7	**12.0283**	1.070	8.9	mg/L	27	Standard
	K	39	356.7	10.3	**3.8601**	0.476	12.3	mg/L	17	Standard
	Ca	43	76.7	39.8	**30.0987**	24.779	82.3	mg/L	47	Standard
	Fe	54	1714.9	6.0	**11.8519**	0.742	6.3	mg/L	23	Standard
	Fe	57	745.0	4.7	**13.0643**	0.804	6.2	mg/L	253	Standard
>	**Sc-1**	45	39981.0	2.0				mg/L	39227	Standard
	Cl	35	4.0	50.0				ug/L	1	Standard
	Kr	83	1.3	173.2				ug/L	3	Standard
	Br	81	2000.1	4.3				ug/L	2163	Standard
	P	31	41.7	30.2				ug/L	57	Standard
	S	34	28.3	27.0				ug/L	27	Standard
	Sr	88	130.0	6.7				ug/L	125	Standard
	C	12	70.0	28.6				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	30.0	88.2				mg/L	10	Standard
	Dy	164	29.0	36.1				mg/L	9	Standard
	Ho-1	165	38.3	41.9				mg/L	8	Standard
	Er	166	20.0	50.0				mg/L	20	Standard
	I	127	8426.4	70.1				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.857		
	Al	27	0.896		
	Sc	45			
	Ti	47	102.133		
	V	51	94.302		
	Cr	52	94.829		
	Cr	53			
	Mn	55	95.011		
	Co	59	94.674		
	Ni	60	94.339		
	Cu	65	94.434		
	Zn	66	98.211		
>	Ge	72		98.871	
	As	75	96.462		
	Se	82	95.157		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	94.437	
|	Ag	107	78.245	
|	Cd	111	95.232	
|	Cd	114		
|>	In	115		97.952
|	Sn	118		
|	Sb	123	97.294	
⌊	Ba	135	95.851	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	96.233	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	96.165	
|	U	238	98.242	
⌊>	Bi	209		102.644
⌈	Na	23	44.601	
|	Mg	24	240.567	
|	K	39	77.201	
|	Ca	43	200.658	
|	Fe	54	94.815	
|	Fe	57	104.514	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ag	107	
QC Std 5	Na	23	

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QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, April 04, 2017 12:07:34
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	301593.5	2.7				ug/L	302131	Standard
	Be	9	207959.1	0.5	**95.6424**	2.931	3.1	ug/L	12	Standard
	Al	27	6094602.8	1.4	**43.8698**	1.212	2.8	ug/L	907	Standard
	Sc	45	39085.4	2.7				ug/L	39227	Standard
	Ti	47	20010.2	0.5	**96.0766**	1.095	1.1	ug/L	34	Standard
	V	51	615908.7	0.4	**92.7975**	1.143	1.2	ug/L	1155	Standard
	Cr	52	565986.0	0.6	**92.9365**	0.418	0.4	ug/L	5602	Standard
	Cr	53	72122.9	1.2	**94.3675**	1.850	2.0	ug/L	1042	Standard
	Mn	55	992840.9	0.6	**93.7305**	0.802	0.9	ug/L	2370	Standard
	Co	59	749840.6	0.6	**93.0849**	0.731	0.8	ug/L	381	Standard
	Ni	60	160684.6	1.1	**93.5041**	1.203	1.3	ug/L	282	Standard
	Cu	65	170189.5	0.9	**94.0713**	1.339	1.4	ug/L	707	Standard
	Zn	66	106081.7	0.7	**97.6722**	1.281	1.3	ug/L	427	Standard
>	Ge	72	831651.9	0.8				ug/L	842801	Standard
	As	75	108302.9	0.5	**95.9345**	0.836	0.9	ug/L	-11	Standard
	Se	82	9817.9	0.7	**95.1813**	1.485	1.6	ug/L	18	Standard
	Se-1	77	7106.7	0.5	**97.1337**	1.247	1.3	ug/L	127	Standard
>	Ga	71	171.7	6.1				mg/L	92	Standard
	Rb	85	748.4	12.5				ug/L	48	Standard
	Y	89	588484.5	0.9				ug/L	587989	Standard
>	Rh	103	33.3	48.2				ug/L	8	Standard
	Mo	98	317898.5	0.8	**90.7967**	1.157	1.3	ug/L	35	Standard
	Ag	107	543772.2	0.5	**95.2568**	1.272	1.3	ug/L	121	Standard
	Cd	111	153818.9	0.8	**95.0895**	1.067	1.1	mg/L	4	Standard
	Cd	114	380965.5	1.2	**91.7669**	1.790	2.0	ug/L	27	Standard
>	In	115	680447.7	1.0				ug/L	702235	Standard
	Sn	118	441.0	6.3	**0.2669**	0.035	13.1	ug/L	180	Standard
	Sb	123	411958.1	3.4	**97.0757**	3.970	4.1	ug/L	43	Standard
	Ba	135	154546.3	1.5	**95.0984**	1.825	1.9	ug/L	50	Standard
	Ce	140	88.3	17.3				ug/L	20	Standard
>	Tb	159	1045762.4	0.3				ug/L	1036041	Standard
	Ho	165	30.0	57.7				ug/L	8	Standard
	Tl	203	671545.9	1.5	**95.4489**	1.661	1.7	ug/L	87	Standard
	Tl	205	1630734.7	1.5	**95.2587**	1.621	1.7	ug/L	255	Standard
	Pb	206	547891.3	1.9	**96.0784**	2.276	2.4	ug/L	523	Standard
	Pb	207	492760.9	2.1	**95.6677**	2.291	2.4	ug/L	433	Standard
	Pb	208	562372.3	1.7	**95.7669**	1.960	2.0	ug/L	498	Standard
	U	238	468842.0	2.3	**97.9527**	2.387	2.4	ug/L	6	Standard
>	Bi	209	651090.2	0.7				ug/L	631806	Standard

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⌈	**Na**	23	13.3	78.1	**4.4357**	3.925	88.5	mg/L	2	Standard
|	**Mg**	24	546.7	7.4	**10.0555**	0.885	8.8	mg/L	27	Standard
|	**K**	39	333.3	3.8	**3.6793**	0.040	1.1	mg/L	17	Standard
|	**Ca**	43	58.3	42.3	**16.1086**	19.525	121.2	mg/L	47	Standard
|	**Fe**	54	1644.5	5.3	**11.6364**	0.960	8.2	mg/L	23	Standard
|	**Fe**	57	693.3	9.1	**12.0602**	1.461	12.1	mg/L	253	Standard
⌊>	**Sc-1**	45	39085.4	2.7				mg/L	39227	Standard
	Cl	35	3.3	91.7				ug/L	1	Standard
	Kr	83	2.3	89.2				ug/L	3	Standard
	Br	81	2020.1	9.9				ug/L	2163	Standard
	P	31	50.0	52.0				ug/L	57	Standard
	S	34	35.0	37.8				ug/L	27	Standard
	Sr	88	131.7	9.6				ug/L	125	Standard
	C	12	83.3	56.7				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	10	Standard
	Dy	164	2.7	188.8				mg/L	9	Standard
	Ho-1	165	30.0	57.7				mg/L	8	Standard
	Er	166	13.3	114.6				mg/L	20	Standard
	I	127	12612.0	70.2				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	95.642		
⌊	Al	27	0.877		
⌈	Sc	45			
|	Ti	47	96.077		
|	V	51	92.798		
|	Cr	52	92.936		
|	Cr	53			
|	Mn	55	93.730		
|	Co	59	93.085		
|	Ni	60	93.504		
|	Cu	65	94.071		
|	Zn	66	97.672		
|>	Ge	72		98.677	
|	As	75	95.935		
|	Se	82	95.181		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	90.797	
|	Ag	107	95.257	
|	Cd	111	95.090	
|	Cd	114		
|>	In	115		96.897
|	Sn	118		
|	Sb	123	97.076	
⌊	Ba	135	95.098	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	95.449	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	95.767	
|	U	238	97.953	
⌊>	Bi	209		103.052
⌈	Na	23	35.486	
|	Mg	24	201.110	
|	K	39	73.585	
|	Ca	43	107.391	
|	Fe	54	93.092	
|	Fe	57	96.481	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	K	39
QC Std 5	Ca	43

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, April 04, 2017 12:10:41
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	291600.4	2.5				ug/L	302131	Standard
	Be	9	105037.8	0.8	**49.9479**	0.910	1.8	ug/L	12	Standard
	Al	27	6659452.7	2.2	**49.5769**	1.489	3.0	ug/L	907	Standard
	Sc	45	38674.3	2.2				ug/L	39227	Standard
	Ti	47	20113.3	1.8	**98.6048**	2.867	2.9	ug/L	34	Standard
	V	51	317780.2	1.1	**48.8039**	1.041	2.1	ug/L	1155	Standard
	Cr	52	297025.3	0.8	**49.3777**	0.924	1.9	ug/L	5602	Standard
	Cr	53	37137.1	1.2	**48.9757**	1.216	2.5	ug/L	1042	Standard
	Mn	55	513150.9	0.6	**49.3440**	0.635	1.3	ug/L	2370	Standard
	Co	59	387783.5	0.6	**49.1235**	0.609	1.2	ug/L	381	Standard
	Ni	60	82781.5	0.7	**49.1014**	0.298	0.6	ug/L	282	Standard
	Cu	65	87256.9	1.2	**49.0792**	0.990	2.0	ug/L	707	Standard
	Zn	66	52199.1	1.1	**48.8738**	0.885	1.8	ug/L	427	Standard
>	Ge	72	814672.7	1.2				ug/L	842801	Standard
	As	75	54345.3	0.7	**49.1647**	0.273	0.6	ug/L	-11	Standard
	Se	82	5046.7	0.8	**49.9011**	0.937	1.9	ug/L	18	Standard
	Se-1	77	3612.1	1.6	**49.6471**	1.068	2.2	ug/L	127	Standard
>	Ga	71	85.0	27.0				mg/L	92	Standard
	Rb	85	306.7	20.8				ug/L	48	Standard
	Y	89	581689.4	0.7				ug/L	587989	Standard
>	Rh	103	20.0	66.1				ug/L	8	Standard
	Mo	98	348987.0	0.3	**100.3201**	1.234	1.2	ug/L	35	Standard
	Ag	107	285273.4	1.0	**50.2830**	0.969	1.9	ug/L	121	Standard
	Cd	111	79988.1	0.8	**49.7607**	0.845	1.7	mg/L	4	Standard
	Cd	114	205545.1	1.4	**49.8179**	1.125	2.3	ug/L	27	Standard
>	In	115	676094.6	0.9				ug/L	702235	Standard
	Sn	118	45841.9	0.4	**51.2986**	0.667	1.3	ug/L	180	Standard
	Sb	123	209197.1	0.3	**49.5943**	0.557	1.1	ug/L	43	Standard
	Ba	135	80195.4	1.2	**49.6434**	1.030	2.1	ug/L	50	Standard
	Ce	140	213.3	19.9				ug/L	20	Standard
>	Tb	159	1033528.3	0.7				ug/L	1036041	Standard
	Ho	165	11.7	89.2				ug/L	8	Standard
	Tl	203	348159.2	0.8	**49.8656**	0.633	1.3	ug/L	87	Standard
	Tl	205	849174.4	1.1	**49.9904**	0.751	1.5	ug/L	255	Standard
	Pb	206	282038.9	0.6	**49.7999**	0.660	1.3	ug/L	523	Standard
	Pb	207	255637.9	0.5	**49.9829**	0.552	1.1	ug/L	433	Standard
	Pb	208	288020.2	0.7	**49.3927**	0.549	1.1	ug/L	498	Standard
	U	238	242626.5	0.1	**51.0912**	0.446	0.9	ug/L	6	Standard
>	Bi	209	645908.7	0.7				ug/L	631806	Standard

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⌈	**Na**	23	3.3	86.6	**0.6678**	1.097	164.2	mg/L	2	Standard
|	**Mg**	24	283.3	8.3	**5.0674**	0.566	11.2	mg/L	27	Standard
|	**K**	39	438.3	19.2	**4.9127**	0.851	17.3	mg/L	17	Standard
|	**Ca**	43	46.7	48.3	**6.9426**	17.890	257.7	mg/L	47	Standard
|	**Fe**	54	705.3	9.1	**4.8974**	0.351	7.2	mg/L	23	Standard
|	**Fe**	57	405.0	5.4	**4.0125**	0.852	21.2	mg/L	253	Standard
⌊>	**Sc-1**	45	38674.3	2.2				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	4.3	48.0				ug/L	3	Standard
	Br	81	2030.1	12.6				ug/L	2163	Standard
	P	31	43.3	26.6				ug/L	57	Standard
	S	34	35.0	37.8				ug/L	27	Standard
	Sr	88	136.7	33.2				ug/L	125	Standard
	C	12	36.7	56.8				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	12.9	48.2				mg/L	9	Standard
	Ho-1	165	11.7	89.2				mg/L	8	Standard
	Er	166	10.0	100.0				mg/L	20	Standard
	I	127	2828.6	14.6				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	99.896		
⌊	Al	27	99.154		
⌈	Sc	45			
|	Ti	47	98.605		
|	V	51	97.608		
|	Cr	52	98.755		
|	Cr	53			
|	Mn	55	98.688		
|	Co	59	98.247		
|	Ni	60	98.203		
|	Cu	65	98.158		
|	Zn	66	97.748		
|>	Ge	72		96.662	
|	As	75	98.329		
|	Se	82	99.802		
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.320		
Ag	107	100.566		
Cd	111	99.521		
Cd	114			
In	115			96.278
Sn	118	102.597		
Sb	123	99.189		
Ba	135	99.287		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.731		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.785		
U	238	102.182		
Bi	209			102.232
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 83 WG608583-02
Sample Date/Time: Tuesday, April 04, 2017 12:17:49
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	295803.5	3.5				ug/L	302131	Standard
	Be	9	26.7	39.0	**0.0058**	0.005	88.9	ug/L	12	Standard
	Al	27	1985.1	8.3	**-0.0033**	0.001	36.7	ug/L	907	Standard
	Sc	45	39431.2	0.8				ug/L	39227	Standard
	Ti	47	34.3	11.0	**-0.0123**	0.019	153.4	ug/L	34	Standard
	V	51	1070.7	2.9	**-0.0005**	0.006	1084.7	ug/L	1155	Standard
	Cr	52	5205.6	1.5	**-0.0247**	0.020	80.9	ug/L	5602	Standard
	Cr	53	675.0	10.8	**-0.4264**	0.104	24.3	ug/L	1042	Standard
	Mn	55	2253.5	1.3	**-0.0232**	0.003	14.5	ug/L	2370	Standard
	Co	59	270.3	8.9	**-0.0122**	0.003	24.5	ug/L	381	Standard
	Ni	60	253.3	9.4	**-0.0080**	0.013	162.6	ug/L	282	Standard
	Cu	65	636.7	4.4	**0.0216**	0.018	82.3	ug/L	707	Standard
	Zn	66	960.4	3.2	**0.5140**	0.027	5.2	ug/L	427	Standard
>	Ge	72	821500.6	0.8				ug/L	842801	Standard
	As	75	-75.4	33.0	**-0.0217**	0.022	102.3	ug/L	-11	Standard
	Se	82	13.4	50.3	**0.0319**	0.066	205.9	ug/L	18	Standard
	Se-1	77	89.3	16.3	**-0.3097**	0.213	68.8	ug/L	127	Standard
>	Ga	71	46.7	22.3				mg/L	92	Standard
	Rb	85	50.0	52.9				ug/L	48	Standard
	Y	89	575179.1	2.2				ug/L	587989	Standard
>	Rh	103	10.0	50.0				ug/L	8	Standard
	Mo	98	67.8	3.1	**0.0052**	0.001	13.7	ug/L	35	Standard
	Ag	107	114.3	7.1	**-0.0093**	0.001	15.1	ug/L	121	Standard
	Cd	111	3.6	42.6	**-0.0150**	0.001	6.3	mg/L	4	Standard
	Cd	114	38.5	34.7	**-0.0205**	0.003	15.3	ug/L	27	Standard
>	In	115	674855.5	1.0				ug/L	702235	Standard
	Sn	118	242.3	12.2	**0.0473**	0.036	75.1	ug/L	180	Standard
	Sb	123	177.7	39.2	**0.0183**	0.017	92.7	ug/L	43	Standard
	Ba	135	66.3	14.3	**-0.0089**	0.006	65.4	ug/L	50	Standard
	Ce	140	45.0	29.4				ug/L	20	Standard
>	Tb	159	1015864.7	0.5				ug/L	1036041	Standard
	Ho	165	5.0	0.0				ug/L	8	Standard
	Tl	203	73.3	21.7	**-0.0243**	0.002	9.6	ug/L	87	Standard
	Tl	205	166.7	36.3	**-0.0159**	0.004	22.7	ug/L	255	Standard
	Pb	206	540.0	0.5	**-0.0158**	0.000	2.7	ug/L	523	Standard
	Pb	207	462.0	6.6	**-0.0050**	0.006	125.2	ug/L	433	Standard
	Pb	208	521.0	2.4	**-0.0067**	0.002	31.4	ug/L	498	Standard
	U	238	10.3	24.4	**-0.0104**	0.001	5.2	ug/L	6	Standard
>	Bi	209	638629.6	0.3				ug/L	631806	Standard

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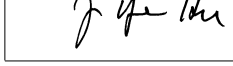

⌈	**Na**	23	1.7	173.2	**0.0297**	1.087	3665.3	mg/L	2	Standard
|	**Mg**	24	23.3	81.1	**0.0193**	0.363	1876.8	mg/L	27	Standard
|	**K**	39	6.7	86.6	**-0.0285**	0.065	229.2	mg/L	17	Standard
|	**Ca**	43	21.7	35.3	**-14.0062**	6.105	43.6	mg/L	47	Standard
|	**Fe**	54	28.1	10.3	**-0.0354**	0.020	55.6	mg/L	23	Standard
|	**Fe**	57	228.3	18.9	**-1.1932**	1.261	105.7	mg/L	253	Standard
⌊>	**Sc-1**	45	39431.2	0.8				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.3	43.3				ug/L	3	Standard
	Br	81	2073.5	7.0				ug/L	2163	Standard
	P	31	51.7	24.4				ug/L	57	Standard
	S	34	28.3	10.2				ug/L	27	Standard
	Sr	88	128.3	13.7				ug/L	125	Standard
	C	12	33.3	121.2				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	16.2	71.3				mg/L	9	Standard
	Ho-1	165	5.0	0.0				mg/L	8	Standard
	Er	166	10.0					mg/L	20	Standard
	I	127	3783.8	12.2				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		97.906	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.473	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.101
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.080
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703167605S WG608583-05
Sample Date/Time: Tuesday, April 04, 2017 12:30:11
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	314544.9	0.8				ug/L	302131	Standard
	Be	9	109559.8	2.0	**48.2867**	1.152	2.4	ug/L	12	Standard
	Al	27	13398387.1	0.7	**92.4564**	1.015	1.1	ug/L	907	Standard
	Sc	45	42479.5	0.4				ug/L	39227	Standard
	Ti	47	3624.4	4.6	**16.9271**	1.002	5.9	ug/L	34	Standard
	V	51	366181.8	0.8	**54.0452**	0.935	1.7	ug/L	1155	Standard
	Cr	52	324047.2	0.1	**51.7965**	0.693	1.3	ug/L	5602	Standard
	Cr	53	40865.0	1.8	**51.8500**	1.333	2.6	ug/L	1042	Standard
	Mn	55	646368.2	0.1	**59.7653**	0.803	1.3	ug/L	2370	Standard
	Co	59	394105.1	0.2	**47.9643**	0.659	1.4	ug/L	381	Standard
	Ni	60	86416.1	0.5	**49.2460**	0.374	0.8	ug/L	282	Standard
	Cu	65	91282.8	0.6	**49.3277**	0.642	1.3	ug/L	707	Standard
	Zn	66	86499.5	0.1	**78.0355**	0.913	1.2	ug/L	427	Standard
>	Ge	72	847964.7	1.2				ug/L	842801	Standard
	As	75	58165.0	0.4	**50.5575**	0.818	1.6	ug/L	-11	Standard
	Se	82	5231.9	0.6	**49.6984**	0.642	1.3	ug/L	18	Standard
	Se-1	77	3710.1	1.5	**48.9656**	0.202	0.4	ug/L	127	Standard
>	Ga	71	1183.4	8.8				mg/L	92	Standard
	Rb	85	29413.5	2.3				ug/L	48	Standard
	Y	89	609741.8	1.4				ug/L	587989	Standard
>	Rh	103	200.0	15.2				ug/L	8	Standard
	Mo	98	2729.1	4.0	**0.7438**	0.034	4.6	ug/L	35	Standard
	Ag	107	281471.4	0.1	**47.9302**	0.190	0.4	ug/L	121	Standard
	Cd	111	82354.4	0.4	**49.4979**	0.430	0.9	mg/L	4	Standard
	Cd	114	203232.9	0.5	**47.5854**	0.063	0.1	ug/L	27	Standard
>	In	115	699736.9	0.5				ug/L	702235	Standard
	Sn	118	481.3	4.1	**0.2970**	0.023	7.7	ug/L	180	Standard
	Sb	123	212260.3	0.5	**48.6172**	0.340	0.7	ug/L	43	Standard
	Ba	135	234717.8	0.7	**140.4675**	1.599	1.1	ug/L	50	Standard
	Ce	140	44057.3	0.3				ug/L	20	Standard
>	Tb	159	1079103.8	0.7				ug/L	1036041	Standard
	Ho	165	623.3	25.2				ug/L	8	Standard
	Tl	203	361419.2	0.6	**50.6854**	0.176	0.3	ug/L	87	Standard
	Tl	205	874999.9	1.0	**50.4354**	0.304	0.6	ug/L	255	Standard
	Pb	206	291133.9	1.6	**50.3332**	0.728	1.4	ug/L	523	Standard
	Pb	207	250926.6	2.0	**48.0338**	0.869	1.8	ug/L	433	Standard
	Pb	208	291767.9	1.2	**48.9911**	0.552	1.1	ug/L	498	Standard
	U	238	254620.8	1.8	**52.4973**	0.764	1.5	ug/L	6	Standard
>	Bi	209	659642.4	0.7				ug/L	631806	Standard

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⌈	**Na**	23	38.3	39.8	**12.7812**	5.339	41.8	mg/L	2	Standard
|	**Mg**	24	410.0	4.9	**6.8003**	0.327	4.8	mg/L	27	Standard
|	**K**	39	121.7	20.3	**1.1664**	0.253	21.7	mg/L	17	Standard
|	**Ca**	43	96.7	13.0	**41.6347**	9.376	22.5	mg/L	47	Standard
|	**Fe**	54	106.4	32.7	**0.4696**	0.228	48.6	mg/L	23	Standard
|	**Fe**	57	490.0	3.7	**5.1818**	0.485	9.4	mg/L	253	Standard
⌊>	**Sc-1**	45	42479.5	0.4				mg/L	39227	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	48644.7	2.3				ug/L	2163	Standard
	P	31	68.3	22.4				ug/L	57	Standard
	S	34	31.7	65.7				ug/L	27	Standard
	Sr	88	236.7	12.9				ug/L	125	Standard
	C	12	83.3	70.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	843.7	11.8				mg/L	9	Standard
	Ho-1	165	623.3	25.2				mg/L	8	Standard
	Er	166	620.0	21.0				mg/L	20	Standard
	I	127	136103.8	2.3				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.109	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		100.613	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.644
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.406
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703167606SD WG608583-06
Sample Date/Time: Tuesday, April 04, 2017 12:33:15
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	305759.5	0.9				ug/L	302131	Standard
	Be	9	109232.6	3.1	**49.5163**	1.112	2.2	ug/L	12	Standard
	Al	27	13460645.4	0.6	**95.5543**	0.670	0.7	ug/L	907	Standard
	Sc	45	41553.6	2.8				ug/L	39227	Standard
	Ti	47	2192.8	11.3	**10.4579**	1.159	11.1	ug/L	34	Standard
	V	51	360516.5	1.9	**54.7330**	1.386	2.5	ug/L	1155	Standard
	Cr	52	319343.3	1.4	**52.5167**	1.085	2.1	ug/L	5602	Standard
	Cr	53	40940.2	1.4	**53.4721**	1.298	2.4	ug/L	1042	Standard
	Mn	55	593692.0	1.2	**56.4492**	0.898	1.6	ug/L	2370	Standard
	Co	59	395451.9	0.5	**49.5048**	0.672	1.4	ug/L	381	Standard
	Ni	60	86006.5	1.7	**50.4155**	0.744	1.5	ug/L	282	Standard
	Cu	65	90465.3	2.0	**50.2895**	1.151	2.3	ug/L	707	Standard
	Zn	66	76721.1	1.5	**71.1532**	0.877	1.2	ug/L	427	Standard
>	Ge	72	824391.8	1.1				ug/L	842801	Standard
	As	75	58094.4	0.1	**51.9362**	0.598	1.2	ug/L	-11	Standard
	Se	82	5294.0	0.3	**51.7292**	0.474	0.9	ug/L	18	Standard
	Se-1	77	3684.1	1.9	**50.0525**	1.216	2.4	ug/L	127	Standard
>	Ga	71	618.3	7.9				mg/L	92	Standard
	Rb	85	21423.5	1.8				ug/L	48	Standard
	Y	89	590494.4	2.0				ug/L	587989	Standard
>	Rh	103	211.7	20.1				ug/L	8	Standard
	Mo	98	2636.8	0.9	**0.7456**	0.011	1.5	ug/L	35	Standard
	Ag	107	279283.2	0.6	**49.3441**	0.315	0.6	ug/L	121	Standard
	Cd	111	81594.1	0.5	**50.8839**	0.597	1.2	mg/L	4	Standard
	Cd	114	202118.7	1.9	**49.1004**	0.700	1.4	ug/L	27	Standard
>	In	115	674431.0	1.0				ug/L	702235	Standard
	Sn	118	407.0	5.7	**0.2327**	0.024	10.5	ug/L	180	Standard
	Sb	123	212141.9	1.5	**50.4165**	0.874	1.7	ug/L	43	Standard
	Ba	135	231017.7	1.3	**143.4403**	1.629	1.1	ug/L	50	Standard
	Ce	140	24170.9	1.0				ug/L	20	Standard
>	Tb	159	1047318.8	0.7				ug/L	1036041	Standard
	Ho	165	336.7	17.6				ug/L	8	Standard
	Tl	203	360211.8	1.1	**52.0634**	0.749	1.4	ug/L	87	Standard
	Tl	205	888146.9	1.6	**52.7586**	0.628	1.2	ug/L	255	Standard
	Pb	206	287415.3	1.1	**51.2151**	0.844	1.6	ug/L	523	Standard
	Pb	207	251314.1	0.4	**49.5837**	0.405	0.8	ug/L	433	Standard
	Pb	208	291859.3	0.8	**50.5107**	0.756	1.5	ug/L	498	Standard
	U	238	257182.9	1.3	**54.6530**	1.063	1.9	ug/L	6	Standard
>	Bi	209	640083.7	0.9				ug/L	631806	Standard

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⌈	**Na**	23	36.7	15.7	**12.4544**	1.787	14.4	mg/L	2	Standard
|	**Mg**	24	401.7	6.9	**6.8230**	0.662	9.7	mg/L	27	Standard
|	**K**	39	131.7	13.3	**1.3042**	0.204	15.7	mg/L	17	Standard
|	**Ca**	43	110.0	28.4	**53.9865**	26.360	48.8	mg/L	47	Standard
|	**Fe**	54	66.4	12.8	**0.2146**	0.059	27.6	mg/L	23	Standard
|	**Fe**	57	428.3	10.8	**3.8303**	1.347	35.2	mg/L	253	Standard
⌊>	**Sc-1**	45	41553.6	2.8				mg/L	39227	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	2.0	100.0				ug/L	3	Standard
	Br	81	57355.7	10.0				ug/L	2163	Standard
	P	31	50.0	17.3				ug/L	57	Standard
	S	34	33.3	45.8				ug/L	27	Standard
	Sr	88	216.7	7.4				ug/L	125	Standard
	C	12	56.7	71.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	10	Standard
	Dy	164	561.2	5.7				mg/L	9	Standard
	Ho-1	165	336.7	17.6				mg/L	8	Standard
	Er	166	323.3	7.1				mg/L	20	Standard
	I	127	153759.9	10.1				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		101.201	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.816	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.041
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.310
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703167601
Sample Date/Time: Tuesday, April 04, 2017 12:36:20
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	298462.7	3.0				ug/L	302131	Standard
	Be	9	81.7	21.5	**0.0311**	0.008	25.9	ug/L	12	Standard
	Al	27	1245105.8	0.3	**9.0446**	0.304	3.4	ug/L	907	Standard
	Sc	45	39277.5	2.9				ug/L	39227	Standard
	Ti	47	1628.4	2.0	**7.6890**	0.080	1.0	ug/L	34	Standard
	V	51	28239.2	1.2	**4.1177**	0.065	1.6	ug/L	1155	Standard
	Cr	52	11242.2	0.4	**0.9740**	0.012	1.3	ug/L	5602	Standard
	Cr	53	1328.4	11.3	**0.4366**	0.193	44.1	ug/L	1042	Standard
	Mn	55	50137.5	1.0	**4.5286**	0.096	2.1	ug/L	2370	Standard
	Co	59	1309.7	0.8	**0.1172**	0.001	0.9	ug/L	381	Standard
	Ni	60	2808.3	1.5	**1.4872**	0.035	2.4	ug/L	282	Standard
	Cu	65	4852.1	1.1	**2.3678**	0.014	0.6	ug/L	707	Standard
	Zn	66	135046.9	1.4	**125.0337**	2.937	2.3	ug/L	427	Standard
>	Ge	72	827828.2	1.0				ug/L	842801	Standard
	As	75	568.0	2.5	**0.5511**	0.013	2.4	ug/L	-11	Standard
	Se	82	125.9	4.3	**1.1282**	0.064	5.7	ug/L	18	Standard
	Se-1	77	97.7	2.1	**-0.2036**	0.042	20.8	ug/L	127	Standard
>	Ga	71	608.3	5.5				mg/L	92	Standard
	Rb	85	25890.4	0.9				ug/L	48	Standard
	Y	89	590191.7	2.1				ug/L	587989	Standard
>	Rh	103	33.3	43.3				ug/L	8	Standard
	Mo	98	444.1	8.6	**0.1122**	0.011	9.8	ug/L	35	Standard
	Ag	107	154.7	8.2	**-0.0025**	0.002	80.6	ug/L	121	Standard
	Cd	111	40.1	17.1	**0.0075**	0.004	54.8	mg/L	4	Standard
	Cd	114	136.7	20.4	**0.0030**	0.007	220.2	ug/L	27	Standard
>	In	115	682383.0	1.2				ug/L	702235	Standard
	Sn	118	371.7	2.9	**0.1881**	0.013	7.1	ug/L	180	Standard
	Sb	123	399.0	12.5	**0.0699**	0.013	18.4	ug/L	43	Standard
	Ba	135	146319.5	0.6	**89.7776**	0.940	1.0	ug/L	50	Standard
	Ce	140	11716.2	2.7				ug/L	20	Standard
>	Tb	159	1041248.0	1.2				ug/L	1036041	Standard
	Ho	165	318.3	16.8				ug/L	8	Standard
	Tl	203	235.0	9.8	**-0.0013**	0.003	272.2	ug/L	87	Standard
	Tl	205	595.0	13.0	**0.0092**	0.005	51.0	ug/L	255	Standard
	Pb	206	1894.1	0.6	**0.2222**	0.003	1.4	ug/L	523	Standard
	Pb	207	1602.8	3.2	**0.2170**	0.007	3.4	ug/L	433	Standard
	Pb	208	1901.7	2.7	**0.2290**	0.006	2.6	ug/L	498	Standard
	U	238	761.0	3.8	**0.1474**	0.005	3.3	ug/L	6	Standard
>	Bi	209	646867.1	0.8				ug/L	631806	Standard

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	Na	23	18.3	15.7	**6.3186**	1.064	16.8	mg/L	2	Standard
	Mg	24	95.0	24.1	**1.3863**	0.442	31.9	mg/L	27	Standard
	K	39	175.0	2.9	**1.8730**	0.016	0.8	mg/L	17	Standard
	Ca	43	73.3	19.7	**28.5739**	12.440	43.5	mg/L	47	Standard
	Fe	54	61.2	26.0	**0.2043**	0.120	58.5	mg/L	23	Standard
	Fe	57	303.3	9.7	**0.9387**	0.651	69.3	mg/L	253	Standard
>	**Sc-1**	45	39277.5	2.9				mg/L	39227	Standard
	Cl	35	2.0	0.0				ug/L	1	Standard
	Kr	83	1.3	86.6				ug/L	3	Standard
	Br	81	63014.4	5.4				ug/L	2163	Standard
	P	31	53.3	35.5				ug/L	57	Standard
	S	34	25.0	34.6				ug/L	27	Standard
	Sr	88	151.7	8.3				ug/L	125	Standard
	C	12	43.3	58.1				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	408.5	18.8				mg/L	9	Standard
	Ho-1	165	318.3	16.8				mg/L	8	Standard
	Er	166	310.0	19.4				mg/L	20	Standard
	I	127	87978.2	3.5				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.786	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.223	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.173
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.384
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1703167601PS WG608658-01
Sample Date/Time: Tuesday, April 04, 2017 12:39:26
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	298402.1	1.8				ug/L	302131	Standard
	Be	9	105925.7	1.5	**49.2254**	1.562	3.2	ug/L	12	Standard
	Al	27	1224109.5	0.5	**8.8900**	0.206	2.3	ug/L	907	Standard
	Sc	45	40761.4	2.2				ug/L	39227	Standard
	Ti	47	1630.4	8.7	**7.6431**	0.657	8.6	ug/L	34	Standard
	V	51	352392.8	0.5	**52.8945**	0.432	0.8	ug/L	1155	Standard
	Cr	52	306567.6	1.0	**49.8059**	0.550	1.1	ug/L	5602	Standard
	Cr	53	38819.7	1.1	**50.0491**	0.567	1.1	ug/L	1042	Standard
	Mn	55	567944.7	0.7	**53.3854**	0.346	0.6	ug/L	2370	Standard
	Co	59	397806.8	0.8	**49.2433**	0.471	1.0	ug/L	381	Standard
	Ni	60	86910.2	1.3	**50.3812**	0.823	1.6	ug/L	282	Standard
	Cu	65	94712.8	1.8	**52.0764**	1.052	2.0	ug/L	707	Standard
	Zn	66	187114.5	1.8	**172.1592**	3.537	2.1	ug/L	427	Standard
>	Ge	72	833647.6	0.7				ug/L	842801	Standard
	As	75	56832.5	0.8	**50.2431**	0.553	1.1	ug/L	-11	Standard
	Se	82	5246.5	1.4	**50.6935**	0.926	1.8	ug/L	18	Standard
	Se-1	77	3671.8	2.3	**49.3102**	1.522	3.1	ug/L	127	Standard
>	Ga	71	728.4	1.0				mg/L	92	Standard
	Rb	85	26322.8	1.6				ug/L	48	Standard
	Y	89	590123.4	1.0				ug/L	587989	Standard
>	Rh	103	33.3	48.2				ug/L	8	Standard
	Mo	98	488.8	9.7	**0.1244**	0.014	11.5	ug/L	35	Standard
	Ag	107	294966.2	2.0	**51.3204**	1.171	2.3	ug/L	121	Standard
	Cd	111	80864.0	1.6	**49.6558**	0.971	2.0	mg/L	4	Standard
	Cd	114	198831.8	1.4	**47.5641**	0.700	1.5	ug/L	27	Standard
>	In	115	684902.7	0.6				ug/L	702235	Standard
	Sn	118	358.3	3.1	**0.1718**	0.013	7.6	ug/L	180	Standard
	Sb	123	213167.9	0.9	**49.8850**	0.713	1.4	ug/L	43	Standard
	Ba	135	226948.6	1.4	**138.7623**	2.527	1.8	ug/L	50	Standard
	Ce	140	11711.2	1.1				ug/L	20	Standard
>	Tb	159	1041825.2	0.6				ug/L	1036041	Standard
	Ho	165	341.7	14.2				ug/L	8	Standard
	Tl	203	351288.8	1.3	**49.9211**	0.551	1.1	ug/L	87	Standard
	Tl	205	855509.0	2.1	**49.9664**	0.625	1.3	ug/L	255	Standard
	Pb	206	285143.2	1.5	**49.9553**	0.756	1.5	ug/L	523	Standard
	Pb	207	256917.3	1.6	**49.8412**	0.789	1.6	ug/L	433	Standard
	Pb	208	291760.8	1.4	**49.6441**	0.556	1.1	ug/L	498	Standard
	U	238	242823.4	1.7	**50.7335**	0.772	1.5	ug/L	6	Standard
>	Bi	209	650969.2	1.0				ug/L	631806	Standard

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⌈	**Na**	23	40.0	33.1	**13.9126**	4.648	33.4	mg/L	2	Standard
|	**Mg**	24	111.7	9.3	**1.6246**	0.160	9.8	mg/L	27	Standard
|	**K**	39	158.3	12.8	**1.6233**	0.254	15.7	mg/L	17	Standard
|	**Ca**	43	55.0	45.5	**12.0728**	20.544	170.2	mg/L	47	Standard
|	**Fe**	54	71.6	12.0	**0.2585**	0.054	21.1	mg/L	23	Standard
|	**Fe**	57	301.7	12.7	**0.5818**	0.929	159.7	mg/L	253	Standard
⌊>	**Sc-1**	45	40761.4	2.2				mg/L	39227	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	2.0	0.0				ug/L	3	Standard
	Br	81	60905.8	6.5				ug/L	2163	Standard
	P	31	56.7	18.4				ug/L	57	Standard
	S	34	20.0	43.3				ug/L	27	Standard
	Sr	88	135.0	41.2				ug/L	125	Standard
	C	12	86.7	74.2				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	388.5	9.6				mg/L	9	Standard
	Ho-1	165	341.7	14.2				mg/L	8	Standard
	Er	166	240.0	25.0				mg/L	20	Standard
	I	127	86436.1	3.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.766	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.914	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.532
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.033
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703167601SDL WG608658-02
Sample Date/Time: Tuesday, April 04, 2017 12:42:31
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	278248.9	1.9				ug/L	302131	Standard
	Be	9	53.3	35.5	**0.0197**	0.009	45.4	ug/L	12	Standard
	Al	27	236846.9	0.6	**1.8305**	0.043	2.4	ug/L	907	Standard
	Sc	45	37097.0	0.2				ug/L	39227	Standard
	Ti	47	319.7	6.7	**1.4692**	0.106	7.2	ug/L	34	Standard
	V	51	6165.3	0.5	**0.8337**	0.004	0.5	ug/L	1155	Standard
	Cr	52	5717.1	0.9	**0.1179**	0.006	4.9	ug/L	5602	Standard
	Cr	53	696.7	9.6	**-0.3425**	0.092	26.9	ug/L	1042	Standard
	Mn	55	10761.8	1.0	**0.8531**	0.007	0.9	ug/L	2370	Standard
	Co	59	460.7	6.4	**0.0151**	0.004	24.5	ug/L	381	Standard
	Ni	60	698.7	3.0	**0.2793**	0.014	4.9	ug/L	282	Standard
	Cu	65	1344.7	3.1	**0.4638**	0.022	4.7	ug/L	707	Standard
	Zn	66	27982.8	1.3	**27.3525**	0.407	1.5	ug/L	427	Standard
>	**Ge**	72	775514.9	0.4				ug/L	842801	Standard
	As	75	61.1	50.0	**0.1039**	0.029	28.2	ug/L	-11	Standard
	Se	82	35.9	18.2	**0.2738**	0.067	24.4	ug/L	18	Standard
	Se-1	77	78.7	5.1	**-0.3951**	0.056	14.2	ug/L	127	Standard
>	**Ga**	71	146.7	12.0				mg/L	92	Standard
	Rb	85	5025.8	2.9				ug/L	48	Standard
	Y	89	539105.2	0.6				ug/L	587989	Standard
>	**Rh**	103	15.0	33.3				ug/L	8	Standard
	Mo	98	113.6	11.2	**0.0200**	0.004	18.1	ug/L	35	Standard
	Ag	107	124.3	10.5	**-0.0064**	0.002	35.1	ug/L	121	Standard
	Cd	111	9.2	16.6	**-0.0112**	0.001	9.0	mg/L	4	Standard
	Cd	114	39.8	58.6	**-0.0197**	0.006	29.7	ug/L	27	Standard
>	**In**	115	642562.6	0.8				ug/L	702235	Standard
	Sn	118	193.7	14.1	**0.0033**	0.033	997.9	ug/L	180	Standard
	Sb	123	1033.1	14.2	**0.2339**	0.038	16.3	ug/L	43	Standard
	Ba	135	28103.0	1.4	**18.2701**	0.120	0.7	ug/L	50	Standard
	Ce	140	2203.5	3.5				ug/L	20	Standard
>	**Tb**	159	974663.8	1.9				ug/L	1036041	Standard
	Ho	165	68.3	22.4				ug/L	8	Standard
	Tl	203	140.0	14.2	**-0.0139**	0.003	24.0	ug/L	87	Standard
	Tl	205	316.7	6.0	**-0.0063**	0.002	24.2	ug/L	255	Standard
	Pb	206	815.4	5.8	**0.0386**	0.007	17.5	ug/L	523	Standard
	Pb	207	692.3	4.5	**0.0455**	0.005	9.9	ug/L	433	Standard
	Pb	208	840.3	3.8	**0.0539**	0.003	5.6	ug/L	498	Standard
	U	238	156.0	7.2	**0.0218**	0.003	14.0	ug/L	6	Standard
>	**Bi**	209	616938.0	1.9				ug/L	631806	Standard

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⌈	**Na**	23	8.3	124.9	**2.7377**	4.171	152.4	mg/L	2	Standard
|	**Mg**	24	23.3	12.4	**0.0459**	0.057	124.5	mg/L	27	Standard
|	**K**	39	50.0	10.0	**0.4942**	0.060	12.1	mg/L	17	Standard
|	**Ca**	43	41.7	13.9	**4.5124**	5.058	112.1	mg/L	47	Standard
|	**Fe**	54	26.4	22.4	**-0.0354**	0.045	127.2	mg/L	23	Standard
|	**Fe**	57	265.0	5.7	**0.3040**	0.466	153.2	mg/L	253	Standard
⌊>	**Sc-1**	45	37097.0	0.2				mg/L	39227	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	1.3	43.3				ug/L	3	Standard
	Br	81	13793.0	4.7				ug/L	2163	Standard
	P	31	48.3	6.0				ug/L	57	Standard
	S	34	31.7	9.1				ug/L	27	Standard
	Sr	88	138.3	10.4				ug/L	125	Standard
	C	12	36.7	83.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	10	Standard
	Dy	164	84.1	36.2				mg/L	9	Standard
	Ho-1	165	68.3	22.4				mg/L	8	Standard
	Er	166	53.3	28.6				mg/L	20	Standard
	I	127	19540.9	2.9				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		92.095	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		92.016	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.503
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.647
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703167601SDL WG608658-02
Sample Date/Time: Tuesday, April 04, 2017 12:45:35
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	276989.1	1.0				ug/L	302131	Standard
	Be	9	15.0	88.2	**0.0007**	0.007	910.9	ug/L	12	Standard
	Al	27	48034.4	1.0	**0.3586**	0.003	1.0	ug/L	907	Standard
	Sc	45	37202.3	1.4				ug/L	39227	Standard
	Ti	47	83.0	18.0	**0.2492**	0.077	31.1	ug/L	34	Standard
	V	51	2120.6	6.1	**0.1795**	0.021	11.8	ug/L	1155	Standard
	Cr	52	4768.4	0.2	**-0.0496**	0.003	5.3	ug/L	5602	Standard
	Cr	53	938.4	10.7	**0.0032**	0.141	4405.5	ug/L	1042	Standard
	Mn	55	3388.7	2.0	**0.1053**	0.007	6.5	ug/L	2370	Standard
	Co	59	305.3	5.1	**-0.0055**	0.002	38.9	ug/L	381	Standard
	Ni	60	290.3	5.6	**0.0243**	0.011	43.4	ug/L	282	Standard
	Cu	65	675.7	2.6	**0.0665**	0.011	17.1	ug/L	707	Standard
	Zn	66	6738.8	0.8	**6.3037**	0.061	1.0	ug/L	427	Standard
>	Ge	72	774503.3	0.2				ug/L	842801	Standard
	As	75	36.3	81.6	**0.0804**	0.028	35.1	ug/L	-11	Standard
	Se	82	21.1	3.9	**0.1205**	0.009	7.4	ug/L	18	Standard
	Se-1	77	107.0	21.2	**0.0289**	0.337	1166.5	ug/L	127	Standard
>	Ga	71	50.0	17.3				mg/L	92	Standard
	Rb	85	1015.0	10.7				ug/L	48	Standard
	Y	89	537973.8	1.5				ug/L	587989	Standard
>	Rh	103	15.0	57.7				ug/L	8	Standard
	Mo	98	37.9	14.4	**-0.0028**	0.002	58.9	ug/L	35	Standard
	Ag	107	119.3	16.0	**-0.0072**	0.004	50.2	ug/L	121	Standard
	Cd	111	4.6	76.2	**-0.0142**	0.002	16.4	mg/L	4	Standard
	Cd	114	42.4	18.6	**-0.0190**	0.002	10.8	ug/L	27	Standard
>	In	115	639265.1	0.3				ug/L	702235	Standard
	Sn	118	159.7	6.7	**-0.0360**	0.012	34.2	ug/L	180	Standard
	Sb	123	253.0	23.6	**0.0395**	0.015	37.7	ug/L	43	Standard
	Ba	135	5644.4	0.8	**3.6486**	0.024	0.7	ug/L	50	Standard
	Ce	140	488.3	6.7				ug/L	20	Standard
>	Tb	159	961827.0	1.2				ug/L	1036041	Standard
	Ho	165	21.7	58.1				ug/L	8	Standard
	Tl	203	207.7	12.9	**-0.0034**	0.004	118.8	ug/L	87	Standard
	Tl	205	480.0	14.8	**0.0041**	0.004	106.1	ug/L	255	Standard
	Pb	206	585.0	3.9	**-0.0028**	0.004	143.0	ug/L	523	Standard
	Pb	207	473.3	7.0	**0.0017**	0.007	400.2	ug/L	433	Standard
	Pb	208	571.7	10.5	**0.0067**	0.011	157.5	ug/L	498	Standard
	U	238	39.0	25.3	**-0.0039**	0.002	55.5	ug/L	6	Standard
>	Bi	209	610049.3	0.3				ug/L	631806	Standard

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⌈	**Na**	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	28.3	53.9	**0.1479**	0.315	212.7	mg/L	27	Standard
|	**K**	39	13.3	57.3	**0.0549**	0.091	165.7	mg/L	17	Standard
|	**Ca**	43	25.0	40.0	**-10.0127**	8.799	87.9	mg/L	47	Standard
|	**Fe**	54	16.4	46.4	**-0.1109**	0.059	53.5	mg/L	23	Standard
|	**Fe**	57	275.0	7.9	**0.5865**	0.759	129.4	mg/L	253	Standard
⌊>	**Sc-1**	45	37202.3	1.4				mg/L	39227	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.7	108.3				ug/L	3	Standard
	Br	81	4334.0	7.3				ug/L	2163	Standard
	P	31	45.0	22.2				ug/L	57	Standard
	S	34	21.7	35.3				ug/L	27	Standard
	Sr	88	136.7	20.1				ug/L	125	Standard
	C	12	50.0	20.0				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	29.0	70.6				mg/L	9	Standard
	Ho-1	165	21.7	58.1				mg/L	8	Standard
	Er	166	20.0	100.0				mg/L	20	Standard
	I	127	6351.3	5.1				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		91.678	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.896	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	91.033
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.556
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, April 04, 2017 12:48:42
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	291203.5	0.7				ug/L	302131	Standard
	Be	9	106347.0	1.4	**50.6232**	0.475	0.9	ug/L	12	Standard
	Al	27	6685993.2	1.4	**49.8238**	0.425	0.9	ug/L	907	Standard
	Sc	45	40096.3	1.6				ug/L	39227	Standard
	Ti	47	20563.3	1.0	**100.7893**	0.929	0.9	ug/L	34	Standard
	V	51	324494.8	1.3	**49.8297**	0.730	1.5	ug/L	1155	Standard
	Cr	52	302151.2	1.7	**50.2374**	0.919	1.8	ug/L	5602	Standard
	Cr	53	38539.0	1.5	**50.8617**	0.627	1.2	ug/L	1042	Standard
	Mn	55	523592.1	1.4	**50.3464**	0.682	1.4	ug/L	2370	Standard
	Co	59	395942.2	1.3	**50.1529**	0.720	1.4	ug/L	381	Standard
	Ni	60	84382.4	1.5	**50.0499**	0.727	1.5	ug/L	282	Standard
	Cu	65	88890.3	0.3	**49.9967**	0.345	0.7	ug/L	707	Standard
	Zn	66	53286.9	0.9	**49.8941**	0.602	1.2	ug/L	427	Standard
>	**Ge**	72	814701.8	0.4				ug/L	842801	Standard
	As	75	55056.6	0.7	**49.8042**	0.384	0.8	ug/L	-11	Standard
	Se	82	5077.1	1.1	**50.1940**	0.598	1.2	ug/L	18	Standard
	Se-1	77	3699.8	1.5	**50.8824**	0.680	1.3	ug/L	127	Standard
>	**Ga**	71	103.3	14.8				mg/L	92	Standard
	Rb	85	315.0	2.7				ug/L	48	Standard
	Y	89	574120.4	2.3				ug/L	587989	Standard
>	**Rh**	103	23.3	65.5				ug/L	8	Standard
	Mo	98	351849.7	0.6	**100.1039**	0.937	0.9	ug/L	35	Standard
	Ag	107	288138.4	2.1	**50.2575**	0.492	1.0	ug/L	121	Standard
	Cd	111	81696.6	1.7	**50.2951**	0.255	0.5	mg/L	4	Standard
	Cd	114	210835.2	1.6	**50.5675**	0.219	0.4	ug/L	27	Standard
>	**In**	115	683106.3	1.2				ug/L	702235	Standard
	Sn	118	46245.8	2.0	**51.2120**	0.482	0.9	ug/L	180	Standard
	Sb	123	213122.0	2.3	**50.0007**	0.802	1.6	ug/L	43	Standard
	Ba	135	81534.9	2.0	**49.9459**	0.452	0.9	ug/L	50	Standard
	Ce	140	280.0	13.9				ug/L	20	Standard
>	**Tb**	159	1038138.0	1.4				ug/L	1036041	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	346118.7	1.1	**50.1069**	0.409	0.8	ug/L	87	Standard
	Tl	205	840599.8	1.8	**50.0144**	0.325	0.7	ug/L	255	Standard
	Pb	206	279441.4	0.8	**49.8718**	0.194	0.4	ug/L	523	Standard
	Pb	207	255285.4	0.8	**50.4522**	0.285	0.6	ug/L	433	Standard
	Pb	208	287261.7	0.5	**49.7951**	0.347	0.7	ug/L	498	Standard
	U	238	238920.8	1.0	**50.8528**	0.403	0.8	ug/L	6	Standard
>	**Bi**	209	639017.1	1.1				ug/L	631806	Standard

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	Na	23	5.0	100.0	**1.2636**	1.856	146.9	mg/L	2	Standard
	Mg	24	273.3	12.2	**4.6751**	0.574	12.3	mg/L	27	Standard
	K	39	378.3	6.0	**4.0823**	0.236	5.8	mg/L	17	Standard
	Ca	43	43.3	48.0	**3.2964**	17.055	517.4	mg/L	47	Standard
	Fe	54	726.8	5.6	**4.8705**	0.257	5.3	mg/L	23	Standard
	Fe	57	488.3	3.0	**5.8999**	0.492	8.3	mg/L	253	Standard
>	**Sc-1**	45	40096.3	1.6				mg/L	39227	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	0.3	173.2				ug/L	3	Standard
	Br	81	2596.9	6.0				ug/L	2163	Standard
	P	31	58.3	26.2				ug/L	57	Standard
	S	34	36.7	31.5				ug/L	27	Standard
	Sr	88	136.7	7.6				ug/L	125	Standard
	C	12	43.3	35.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	26.2	110.2				mg/L	9	Standard
	Ho-1	165	10.0	50.0				mg/L	8	Standard
	Er	166	10.0	100.0				mg/L	20	Standard
	I	127	3130.3	12.9				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.246		
	Al	27	99.648		
	Sc	45			
	Ti	47	100.789		
	V	51	99.659		
	Cr	52	100.475		
	Cr	53			
	Mn	55	100.693		
	Co	59	100.306		
	Ni	60	100.100		
	Cu	65	99.993		
	Zn	66	99.788		
>	Ge	72		96.666	
	As	75	99.608		
	Se	82	100.388		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	100.104	
|	Ag	107	100.515	
|	Cd	111	100.590	
|	Cd	114		
|>	In	115		97.276
|	Sn	118	102.424	
|	Sb	123	100.001	
⌊	Ba	135	99.892	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	100.214	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	99.590	
|	U	238	101.706	
⌊>	Bi	209		101.141
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, April 04, 2017 12:51:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	295046.2	2.5				ug/L	302131	Standard
	Be	9	25.0	52.9	**0.0051**	0.006	126.6	ug/L	12	Standard
	Al	27	1336.7	32.5	**-0.0080**	0.003	41.0	ug/L	907	Standard
	Sc	45	40316.9	2.5				ug/L	39227	Standard
	Ti	47	28.7	19.2	**-0.0397**	0.028	71.7	ug/L	34	Standard
	V	51	1120.4	2.8	**0.0070**	0.001	18.4	ug/L	1155	Standard
	Cr	52	4936.1	2.3	**-0.0699**	0.015	21.8	ug/L	5602	Standard
	Cr	53	575.0	5.4	**-0.5602**	0.059	10.6	ug/L	1042	Standard
	Mn	55	2083.1	2.1	**-0.0395**	0.005	12.1	ug/L	2370	Standard
	Co	59	300.3	3.7	**-0.0084**	0.002	26.0	ug/L	381	Standard
	Ni	60	217.7	3.9	**-0.0290**	0.004	13.0	ug/L	282	Standard
	Cu	65	1100.4	6.3	**0.2816**	0.024	8.6	ug/L	707	Standard
	Zn	66	452.3	7.9	**0.0383**	0.024	61.5	ug/L	427	Standard
>	Ge	72	821446.1	2.3				ug/L	842801	Standard
	As	75	15.0	162.5	**0.0592**	0.022	36.9	ug/L	-11	Standard
	Se	82	16.5	26.6	**0.0633**	0.046	73.3	ug/L	18	Standard
	Se-1	77	79.3	11.0	**-0.4495**	0.142	31.5	ug/L	127	Standard
>	Ga	71	50.0	17.3				mg/L	92	Standard
	Rb	85	46.7	71.3				ug/L	48	Standard
	Y	89	582539.2	2.2				ug/L	587989	Standard
>	Rh	103	13.3	57.3				ug/L	8	Standard
	Mo	98	217.4	52.3	**0.0469**	0.032	67.8	ug/L	35	Standard
	Ag	107	217.3	58.2	**0.0081**	0.022	268.9	ug/L	121	Standard
	Cd	111	23.7	141.8	**-0.0028**	0.020	742.8	mg/L	4	Standard
	Cd	114	97.1	85.9	**-0.0068**	0.020	292.4	ug/L	27	Standard
>	In	115	689266.4	2.2				ug/L	702235	Standard
	Sn	118	233.0	11.6	**0.0315**	0.034	107.3	ug/L	180	Standard
	Sb	123	322.6	26.5	**0.0512**	0.021	40.3	ug/L	43	Standard
	Ba	135	59.3	49.3	**-0.0140**	0.018	126.1	ug/L	50	Standard
	Ce	140	53.3	44.3				ug/L	20	Standard
>	Tb	159	1030472.7	2.2				ug/L	1036041	Standard
	Ho	165	18.3	15.7				ug/L	8	Standard
	Tl	203	118.3	70.0	**-0.0178**	0.012	68.6	ug/L	87	Standard
	Tl	205	321.7	66.6	**-0.0066**	0.013	195.3	ug/L	255	Standard
	Pb	206	1063.7	5.5	**0.0768**	0.012	15.5	ug/L	523	Standard
	Pb	207	834.7	5.1	**0.0678**	0.009	13.7	ug/L	433	Standard
	Pb	208	1015.0	2.5	**0.0780**	0.001	1.4	ug/L	498	Standard
	U	238	46.3	77.5	**-0.0027**	0.008	283.9	ug/L	6	Standard
>	Bi	209	642877.5	2.6				ug/L	631806	Standard

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	Na	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
	Mg	24	20.0	43.3	**-0.0559**	0.150	267.7	mg/L	27	Standard
	K	39	10.0	86.6	**0.0067**	0.096	1447.0	mg/L	17	Standard
	Ca	43	35.0	37.8	**-3.7731**	10.296	272.9	mg/L	47	Standard
	Fe	54	38.0	39.8	**0.0278**	0.098	352.9	mg/L	23	Standard
	Fe	57	238.3	5.3	**-1.0577**	0.481	45.5	mg/L	253	Standard
>	**Sc-1**	45	40316.9	2.5				mg/L	39227	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	2083.5	14.3				ug/L	2163	Standard
	P	31	65.0	42.8				ug/L	57	Standard
	S	34	23.3	44.6				ug/L	27	Standard
	Sr	88	123.3	24.4				ug/L	125	Standard
	C	12	16.7	124.9				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	15.7	73.5				mg/L	9	Standard
	Ho-1	165	18.3	15.7				mg/L	8	Standard
	Er	166	20.0	0.0				mg/L	20	Standard
	I	127	3405.4	10.7				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.466	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.153
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.752
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703167602
Sample Date/Time: Tuesday, April 04, 2017 12:54:55
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	299682.3	2.2				ug/L	302131	Standard
	Be	9	43.3	17.6	**0.0133**	0.004	29.6	ug/L	12	Standard
	Al	27	10305631.3	1.6	**74.6471**	1.182	1.6	ug/L	907	Standard
	Sc	45	40860.0	0.7				ug/L	39227	Standard
	Ti	47	399.3	9.3	**1.7942**	0.192	10.7	ug/L	34	Standard
	V	51	38035.5	0.5	**5.7340**	0.131	2.3	ug/L	1155	Standard
	Cr	52	18786.6	1.0	**2.3016**	0.073	3.2	ug/L	5602	Standard
	Cr	53	2798.6	2.1	**2.4824**	0.148	6.0	ug/L	1042	Standard
	Mn	55	9784.5	1.4	**0.7123**	0.017	2.4	ug/L	2370	Standard
	Co	59	846.4	3.0	**0.0618**	0.005	8.3	ug/L	381	Standard
	Ni	60	1545.7	2.5	**0.7682**	0.025	3.3	ug/L	282	Standard
	Cu	65	1379.1	0.6	**0.4499**	0.014	3.0	ug/L	707	Standard
	Zn	66	8020.5	0.8	**7.2327**	0.197	2.7	ug/L	427	Standard
>	Ge	72	809626.1	1.8				ug/L	842801	Standard
	As	75	1157.0	4.0	**1.0980**	0.040	3.6	ug/L	-11	Standard
	Se	82	98.4	1.8	**0.8816**	0.035	4.0	ug/L	18	Standard
	Se-1	77	186.3	7.1	**1.0905**	0.157	14.4	ug/L	127	Standard
>	Ga	71	106.7	9.8				mg/L	92	Standard
	Rb	85	6291.3	3.5				ug/L	48	Standard
	Y	89	568660.6	1.9				ug/L	587989	Standard
>	Rh	103	151.7	15.6				ug/L	8	Standard
	Mo	98	1666.4	3.8	**0.4718**	0.011	2.4	ug/L	35	Standard
	Ag	107	123.7	12.7	**-0.0074**	0.003	33.9	ug/L	121	Standard
	Cd	111	14.8	20.5	**-0.0078**	0.002	25.2	mg/L	4	Standard
	Cd	114	73.6	15.4	**-0.0117**	0.003	26.2	ug/L	27	Standard
>	In	115	666171.5	1.5				ug/L	702235	Standard
	Sn	118	299.7	4.5	**0.1162**	0.020	17.0	ug/L	180	Standard
	Sb	123	284.8	11.9	**0.0446**	0.009	20.6	ug/L	43	Standard
	Ba	135	207138.0	0.9	**130.2252**	2.735	2.1	ug/L	50	Standard
	Ce	140	2463.5	7.1				ug/L	20	Standard
>	Tb	159	1029018.4	0.8				ug/L	1036041	Standard
	Ho	165	50.0	36.1				ug/L	8	Standard
	Tl	203	397.7	2.6	**0.0233**	0.001	6.2	ug/L	87	Standard
	Tl	205	911.7	5.1	**0.0290**	0.003	10.0	ug/L	255	Standard
	Pb	206	745.4	5.3	**0.0222**	0.007	30.7	ug/L	523	Standard
	Pb	207	635.0	4.6	**0.0305**	0.006	18.3	ug/L	433	Standard
	Pb	208	749.0	4.8	**0.0342**	0.007	19.3	ug/L	498	Standard
	U	238	10167.7	2.0	**2.1744**	0.046	2.1	ug/L	6	Standard
>	Bi	209	632478.4	0.2				ug/L	631806	Standard

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⌈	**Na**	23	53.3	42.3	**18.7767**	8.254	44.0	mg/L	2	Standard
|	**Mg**	24	540.0	6.7	**9.4723**	0.716	7.6	mg/L	27	Standard
|	**K**	39	81.7	24.7	**0.7838**	0.224	28.5	mg/L	17	Standard
|	**Ca**	43	125.0	4.0	**66.9166**	4.429	6.6	mg/L	47	Standard
|	**Fe**	54	22.8	14.4	**-0.0785**	0.022	28.2	mg/L	23	Standard
|	**Fe**	57	418.3	2.8	**3.7403**	0.271	7.2	mg/L	253	Standard
⌊>	**Sc-1**	45	40860.0	0.7				mg/L	39227	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	2.3	89.2				ug/L	3	Standard
	Br	81	30150.0	1.5				ug/L	2163	Standard
	P	31	45.0	48.4				ug/L	57	Standard
	S	34	38.3	32.8				ug/L	27	Standard
	Sr	88	201.7	5.7				ug/L	125	Standard
	C	12	66.7	48.2				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0					mg/L	10	Standard
	Dy	164	83.6	19.1				mg/L	9	Standard
	Ho-1	165	50.0	36.1				mg/L	8	Standard
	Er	166	63.3	24.1				mg/L	20	Standard
	I	127	77698.8	2.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.189	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.064	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.865
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.106
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703167603
Sample Date/Time: Tuesday, April 04, 2017 12:58:01
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	301644.9	1.0				ug/L	302131	Standard
	Be	9	151.7	22.4	**0.0630**	0.016	25.8	ug/L	12	Standard
	Al	27	3800794.7	1.6	**27.3398**	0.681	2.5	ug/L	907	Standard
	Sc	45	39917.5	1.6				ug/L	39227	Standard
	Ti	47	2340.8	4.0	**11.2435**	0.396	3.5	ug/L	34	Standard
	V	51	24576.5	0.5	**3.5993**	0.020	0.5	ug/L	1155	Standard
	Cr	52	13286.5	2.1	**1.3365**	0.050	3.7	ug/L	5602	Standard
	Cr	53	1876.8	4.3	**1.1928**	0.098	8.3	ug/L	1042	Standard
	Mn	55	143531.3	0.8	**13.5437**	0.029	0.2	ug/L	2370	Standard
	Co	59	2339.8	2.4	**0.2486**	0.006	2.6	ug/L	381	Standard
	Ni	60	2827.9	1.4	**1.5150**	0.017	1.1	ug/L	282	Standard
	Cu	65	6536.4	1.3	**3.3426**	0.036	1.1	ug/L	707	Standard
	Zn	66	689607.0	1.6	**646.3077**	7.091	1.1	ug/L	427	Standard
>	Ge	72	819670.9	0.6				ug/L	842801	Standard
	As	75	754.8	11.2	**0.7241**	0.078	10.8	ug/L	-11	Standard
	Se	82	124.0	5.0	**1.1216**	0.066	5.9	ug/L	18	Standard
	Se-1	77	111.0	4.5	**-0.0023**	0.074	3180.8	ug/L	127	Standard
>	Ga	71	823.4	7.6				mg/L	92	Standard
	Rb	85	36360.3	1.9				ug/L	48	Standard
	Y	89	581016.6	1.2				ug/L	587989	Standard
>	Rh	103	113.3	22.2				ug/L	8	Standard
	Mo	98	4418.3	3.0	**1.2705**	0.040	3.1	ug/L	35	Standard
	Ag	107	163.0	18.9	**-0.0004**	0.005	1173.7	ug/L	121	Standard
	Cd	111	49.6	21.0	**0.0140**	0.006	45.8	mg/L	4	Standard
	Cd	114	204.5	23.1	**0.0203**	0.011	56.2	ug/L	27	Standard
>	In	115	668428.5	0.9				ug/L	702235	Standard
	Sn	118	516.7	10.9	**0.3613**	0.059	16.4	ug/L	180	Standard
	Sb	123	900.9	7.1	**0.1921**	0.014	7.5	ug/L	43	Standard
	Ba	135	116150.2	1.5	**72.7415**	1.087	1.5	ug/L	50	Standard
	Ce	140	22181.2	2.8				ug/L	20	Standard
>	Tb	159	1026519.3	0.3				ug/L	1036041	Standard
	Ho	165	348.3	16.6				ug/L	8	Standard
	Tl	203	299.7	16.8	**0.0087**	0.007	84.2	ug/L	87	Standard
	Tl	205	713.4	16.6	**0.0168**	0.007	41.9	ug/L	255	Standard
	Pb	206	1872.4	6.1	**0.2240**	0.021	9.5	ug/L	523	Standard
	Pb	207	1534.7	1.2	**0.2087**	0.004	2.0	ug/L	433	Standard
	Pb	208	1844.0	1.2	**0.2244**	0.004	1.9	ug/L	498	Standard
	U	238	2886.3	1.1	**0.6045**	0.008	1.2	ug/L	6	Standard
>	Bi	209	636244.1	0.4				ug/L	631806	Standard

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	Na	23	33.3	34.6	**11.7573**	4.211	35.8	mg/L	2	Standard
	Mg	24	403.3	3.8	**7.1416**	0.331	4.6	mg/L	27	Standard
	K	39	176.7	1.6	**1.8598**	0.001	0.0	mg/L	17	Standard
	Ca	43	68.3	25.7	**23.6269**	14.905	63.1	mg/L	47	Standard
	Fe	54	129.6	17.0	**0.6800**	0.163	23.9	mg/L	23	Standard
	Fe	57	338.3	17.0	**1.7997**	1.724	95.8	mg/L	253	Standard
>	**Sc-1**	45	39917.5	1.6				mg/L	39227	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	3.3	45.8				ug/L	3	Standard
	Br	81	63480.4	10.6				ug/L	2163	Standard
	P	31	61.7	23.4				ug/L	57	Standard
	S	34	33.3	17.3				ug/L	27	Standard
	Sr	88	160.0	15.6				ug/L	125	Standard
	C	12	33.3	17.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	384.8	22.5				mg/L	9	Standard
	Ho-1	165	348.3	16.6				mg/L	8	Standard
	Er	166	316.7	26.5				mg/L	20	Standard
	I	127	260431.7	5.4				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		99.839	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.256	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	95.186
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.702
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1703168501
Sample Date/Time: Tuesday, April 04, 2017 13:01:05
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	292305.1	2.1				ug/L	302131	Standard
	Be	9	301.7	26.9	**0.1368**	0.041	29.9	ug/L	12	Standard
	Al	27	7060394.7	2.0	**52.4465**	2.083	4.0	ug/L	907	Standard
	Sc	45	40701.3	1.7				ug/L	39227	Standard
	Ti	47	7994.4	2.3	**39.1930**	2.082	5.3	ug/L	34	Standard
	V	51	35420.1	2.1	**5.3088**	0.272	5.1	ug/L	1155	Standard
	Cr	52	27990.8	2.4	**3.8515**	0.211	5.5	ug/L	5602	Standard
	Cr	53	3665.4	3.5	**3.6435**	0.228	6.3	ug/L	1042	Standard
	Mn	55	171101.5	1.5	**16.3387**	0.741	4.5	ug/L	2370	Standard
	Co	59	5511.7	1.3	**0.6545**	0.030	4.6	ug/L	381	Standard
	Ni	60	5577.7	0.9	**3.1700**	0.116	3.7	ug/L	282	Standard
	Cu	65	6365.7	1.8	**3.2791**	0.178	5.4	ug/L	707	Standard
	Zn	66	24574.2	1.4	**22.8662**	0.973	4.3	ug/L	427	Standard
>	Ge	72	813143.0	3.2				ug/L	842801	Standard
	As	75	1000.0	4.4	**0.9523**	0.058	6.1	ug/L	-11	Standard
	Se	82	38.4	15.2	**0.2814**	0.057	20.3	ug/L	18	Standard
	Se-1	77	109.0	2.8	**-0.0165**	0.087	525.7	ug/L	127	Standard
>	Ga	71	3720.5	3.3				mg/L	92	Standard
	Rb	85	71530.2	2.6				ug/L	48	Standard
	Y	89	589133.4	1.5				ug/L	587989	Standard
>	Rh	103	11.7	49.5				ug/L	8	Standard
	Mo	98	6503.2	1.1	**1.8499**	0.056	3.0	ug/L	35	Standard
	Ag	107	159.7	8.1	**-0.0014**	0.003	200.9	ug/L	121	Standard
	Cd	111	27.9	18.2	**0.0001**	0.003	2353.7	mg/L	4	Standard
	Cd	114	120.0	33.2	**-0.0008**	0.010	1234.3	ug/L	27	Standard
>	In	115	678319.9	2.3				ug/L	702235	Standard
	Sn	118	374.0	5.6	**0.1936**	0.032	16.5	ug/L	180	Standard
	Sb	123	1801.0	4.5	**0.4021**	0.028	7.1	ug/L	43	Standard
	Ba	135	35527.6	0.4	**21.8978**	0.531	2.4	ug/L	50	Standard
	Ce	140	43708.0	0.8				ug/L	20	Standard
>	Tb	159	1040414.4	2.0				ug/L	1036041	Standard
	Ho	165	853.4	10.5				ug/L	8	Standard
	Tl	203	518.3	3.1	**0.0395**	0.003	7.6	ug/L	87	Standard
	Tl	205	1251.7	12.4	**0.0480**	0.010	20.7	ug/L	255	Standard
	Pb	206	9765.1	2.1	**1.6174**	0.050	3.1	ug/L	523	Standard
	Pb	207	7824.0	2.3	**1.4378**	0.050	3.4	ug/L	433	Standard
	Pb	208	9525.2	1.3	**1.5410**	0.037	2.4	ug/L	498	Standard
	U	238	1553.4	4.0	**0.3150**	0.016	5.2	ug/L	6	Standard
>	Bi	209	645355.1	1.1				ug/L	631806	Standard

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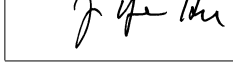

⌈	**Na**	23	18.3	56.8	**6.0404**	3.674	60.8	mg/L	2	Standard
|	**Mg**	24	93.3	34.9	**1.2949**	0.604	46.7	mg/L	27	Standard
|	**K**	39	223.3	9.0	**2.3300**	0.202	8.7	mg/L	17	Standard
|	**Ca**	43	58.3	27.6	**14.5121**	12.721	87.7	mg/L	47	Standard
|	**Fe**	54	355.8	3.5	**2.2289**	0.128	5.8	mg/L	23	Standard
|	**Fe**	57	393.3	25.1	**3.0759**	2.518	81.9	mg/L	253	Standard
⌊>	**Sc-1**	45	40701.3	1.7				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	3.0	57.7				ug/L	3	Standard
	Br	81	6998.3	2.5				ug/L	2163	Standard
	P	31	56.7	39.8				ug/L	57	Standard
	S	34	38.3	27.2				ug/L	27	Standard
	Sr	88	135.0	20.6				ug/L	125	Standard
	C	12	90.0	22.2				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	10	Standard
	Dy	164	1436.0	10.6				mg/L	9	Standard
	Ho-1	165	853.4	10.5				mg/L	8	Standard
	Er	166	850.0	4.2				mg/L	20	Standard
	I	127	18381.2	7.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		96.748	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.481	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.594
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	102.144
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703168901
Sample Date/Time: Tuesday, April 04, 2017 13:04:10
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	316740.3	1.5				ug/L	302131	Standard
	Be	9	576.7	7.0	**0.2458**	0.021	8.6	ug/L	12	Standard
	Al	27	30773615.9	1.6	**210.9632**	6.560	3.1	ug/L	907	Standard
	Sc	45	42676.7	0.8				ug/L	39227	Standard
	Ti	47	883.7	3.1	**4.1615**	0.104	2.5	ug/L	34	Standard
	V	51	6029.1	9.3	**0.7657**	0.093	12.2	ug/L	1155	Standard
	Cr	52	108191.6	1.1	**17.4236**	0.328	1.9	ug/L	5602	Standard
	Cr	53	33178.0	1.7	**43.6266**	0.574	1.3	ug/L	1042	Standard
	Mn	55	7215557.4	0.7	**697.3313**	10.669	1.5	ug/L	2370	Standard
	Co	59	87802.7	0.8	**11.0928**	0.177	1.6	ug/L	381	Standard
	Ni	60	33838.1	1.5	**19.9901**	0.456	2.3	ug/L	282	Standard
	Cu	65	14033.8	2.2	**7.6158**	0.222	2.9	ug/L	707	Standard
	Zn	66	263070.0	1.1	**247.9813**	3.597	1.5	ug/L	427	Standard
>	Ge	72	814240.1	0.9				ug/L	842801	Standard
	As	75	2102.2	1.8	**1.9469**	0.035	1.8	ug/L	-11	Standard
	Se	82	286.9	7.9	**2.7429**	0.202	7.4	ug/L	18	Standard
	Se-1	77	2170.2	5.2	**29.2265**	1.861	6.4	ug/L	127	Standard
>	Ga	71	393.3	16.9				mg/L	92	Standard
	Rb	85	13899.7	1.9				ug/L	48	Standard
	Y	89	590207.5	0.3				ug/L	587989	Standard
>	Rh	103	171.7	13.1				ug/L	8	Standard
	Mo	98	7710.6	0.7	**2.2796**	0.028	1.2	ug/L	35	Standard
	Ag	107	285.0	2.6	**0.0225**	0.001	5.2	ug/L	121	Standard
	Cd	111	1049.1	5.8	**0.6581**	0.034	5.2	mg/L	4	Standard
	Cd	114	2707.4	4.9	**0.6494**	0.028	4.3	ug/L	27	Standard
>	In	115	653379.6	1.2				ug/L	702235	Standard
	Sn	118	353.7	4.4	**0.1856**	0.021	11.3	ug/L	180	Standard
	Sb	123	812.0	5.8	**0.1752**	0.010	5.5	ug/L	43	Standard
	Ba	135	551543.8	1.3	**353.5703**	4.379	1.2	ug/L	50	Standard
	Ce	140	47156.6	2.7				ug/L	20	Standard
>	Tb	159	1036886.6	0.7				ug/L	1036041	Standard
	Ho	165	1013.4	4.3				ug/L	8	Standard
	Tl	203	434.3	13.8	**0.0310**	0.008	27.0	ug/L	87	Standard
	Tl	205	1186.7	9.8	**0.0482**	0.006	13.1	ug/L	255	Standard
	Pb	206	4107.9	1.9	**0.6583**	0.022	3.4	ug/L	523	Standard
	Pb	207	3431.1	2.5	**0.6162**	0.027	4.3	ug/L	433	Standard
	Pb	208	4075.9	1.0	**0.6453**	0.017	2.6	ug/L	498	Standard
	U	238	3312.7	0.8	**0.7270**	0.004	0.5	ug/L	6	Standard
>	Bi	209	609314.8	1.3				ug/L	631806	Standard

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	Na	23	38.3	32.8	**12.7089**	4.360	34.3	mg/L	2	Standard
	Mg	24	11816.3	3.3	**206.8617**	6.533	3.2	mg/L	27	Standard
	K	39	66.7	17.3	**0.5887**	0.114	19.4	mg/L	17	Standard
	Ca	43	116.7	6.5	**56.4337**	6.206	11.0	mg/L	47	Standard
	Fe	54	729.9	7.1	**4.5817**	0.306	6.7	mg/L	23	Standard
	Fe	57	613.3	2.9	**8.3307**	0.347	4.2	mg/L	253	Standard
>	**Sc-1**	45	42676.7	0.8				mg/L	39227	Standard
	Cl	35	2.7	173.2				ug/L	1	Standard
	Kr	83	2.7	78.1				ug/L	3	Standard
	Br	81	190598.5	2.4				ug/L	2163	Standard
	P	31	76.7	15.1				ug/L	57	Standard
	S	34	45.0	50.9				ug/L	27	Standard
	Sr	88	218.3	20.5				ug/L	125	Standard
	C	12	113.3	53.9				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	10	Standard
	Dy	164	1233.9	12.2				mg/L	9	Standard
	Ho-1	165	1013.4	4.3				mg/L	8	Standard
	Er	166	963.4	8.8				mg/L	20	Standard
	I	127	435581.2	6.5				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.835	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.611	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.043
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.440
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1703169001
Sample Date/Time: Tuesday, April 04, 2017 13:07:15
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	315122.0	3.1				ug/L	302131	Standard
	Be	9	78.3	14.7	**0.0276**	0.004	15.0	ug/L	12	Standard
	Al	27	15106003.6	1.7	**104.1370**	4.550	4.4	ug/L	907	Standard
	Sc	45	43530.8	2.2				ug/L	39227	Standard
	Ti	47	914.7	4.6	**4.5224**	0.256	5.7	ug/L	34	Standard
	V	51	-1159.8	57.4	**-0.3521**	0.109	31.0	ug/L	1155	Standard
	Cr	52	33379.1	4.2	**5.0157**	0.314	6.3	ug/L	5602	Standard
	Cr	53	46916.0	5.4	**65.1980**	4.307	6.6	ug/L	1042	Standard
	Mn	55	441030.3	2.0	**44.3634**	1.363	3.1	ug/L	2370	Standard
	Co	59	14422.9	0.4	**1.8677**	0.033	1.8	ug/L	381	Standard
	Ni	60	11291.9	2.2	**6.8756**	0.226	3.3	ug/L	282	Standard
	Cu	65	4018.2	5.6	**2.0463**	0.158	7.7	ug/L	707	Standard
	Zn	66	29820.7	2.2	**29.0690**	0.998	3.4	ug/L	427	Standard
>	Ge	72	778481.3	1.3				ug/L	842801	Standard
	As	75	-592.5	50.5	**-0.5168**	0.288	55.7	ug/L	-11	Standard
	Se	82	-274.6	18.5	**-2.9502**	0.554	18.8	ug/L	18	Standard
	Se-1	77	4941.1	8.5	**71.8002**	7.079	9.9	ug/L	127	Standard
>	Ga	71	158.3	23.3				mg/L	92	Standard
	Rb	85	36472.2	2.4				ug/L	48	Standard
	Y	89	548097.8	1.8				ug/L	587989	Standard
>	Rh	103	371.7	21.6				ug/L	8	Standard
	Mo	98	4360.3	0.4	**1.3315**	0.020	1.5	ug/L	35	Standard
	Ag	107	195.7	11.6	**0.0075**	0.004	50.1	ug/L	121	Standard
	Cd	111	159.4	10.1	**0.0893**	0.012	13.2	mg/L	4	Standard
	Cd	114	473.5	5.4	**0.0935**	0.008	8.8	ug/L	27	Standard
>	In	115	629784.7	1.5				ug/L	702235	Standard
	Sn	118	303.0	6.4	**0.1397**	0.021	14.9	ug/L	180	Standard
	Sb	123	1767.9	4.9	**0.4264**	0.029	6.7	ug/L	43	Standard
	Ba	135	112663.7	1.4	**74.9084**	2.168	2.9	ug/L	50	Standard
	Ce	140	1783.4	7.4				ug/L	20	Standard
>	Tb	159	1002832.7	1.6				ug/L	1036041	Standard
	Ho	165	55.0	63.6				ug/L	8	Standard
	Tl	203	279.3	8.1	**0.0111**	0.003	30.2	ug/L	87	Standard
	Tl	205	665.0	8.7	**0.0193**	0.004	22.1	ug/L	255	Standard
	Pb	206	854.7	1.4	**0.0616**	0.004	6.6	ug/L	523	Standard
	Pb	207	704.0	6.5	**0.0621**	0.009	14.0	ug/L	433	Standard
	Pb	208	820.7	4.1	**0.0650**	0.007	11.2	ug/L	498	Standard
	U	238	1245.4	3.1	**0.2893**	0.014	4.8	ug/L	6	Standard
>	Bi	209	561459.9	1.6				ug/L	631806	Standard

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⌈	**Na**	23	31.7	39.7	**10.1568**	4.209	41.4	mg/L	2	Standard
|	**Mg**	24	50134.6	3.7	**862.3192**	44.074	5.1	mg/L	27	Standard
|	**K**	39	133.3	32.3	**1.2621**	0.472	37.4	mg/L	17	Standard
|	**Ca**	43	53.3	32.9	**7.6141**	12.162	159.7	mg/L	47	Standard
|	**Fe**	54	79.0	11.2	**0.2754**	0.057	20.7	mg/L	23	Standard
|	**Fe**	57	373.3	5.4	**1.8911**	0.340	18.0	mg/L	253	Standard
⌊>	**Sc-1**	45	43530.8	2.2				mg/L	39227	Standard
	Cl	35	5.3	57.3				ug/L	1	Standard
	Kr	83	5.7	20.4				ug/L	3	Standard
	Br	81	126707.8	2.3				ug/L	2163	Standard
	P	31	66.7	43.9				ug/L	57	Standard
	S	34	50.0	43.6				ug/L	27	Standard
	Sr	88	213.3	10.8				ug/L	125	Standard
	C	12	480.0	44.8				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	87.3	49.2				mg/L	9	Standard
	Ho-1	165	55.0	63.6				mg/L	8	Standard
	Er	166	56.7	40.8				mg/L	20	Standard
	I	127	413463.4	7.0				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.300	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		92.368	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.683
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.866
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
As 75 Lower	As	75	
Se 82 Lower	Se	82	

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Method 6020 - Summary Report

Sample ID: L1703169501
Sample Date/Time: Tuesday, April 04, 2017 13:10:21
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	298886.2	1.3				ug/L	302131	Standard
	Be	9	73.3	23.9	**0.0272**	0.008	29.7	ug/L	12	Standard
	Al	27	18882253.5	0.6	**137.1366**	1.026	0.7	ug/L	907	Standard
	Sc	45	44712.5	0.5				ug/L	39227	Standard
	Ti	47	139.7	10.3	**0.4947**	0.074	14.9	ug/L	34	Standard
	V	51	1652.1	23.5	**0.0856**	0.056	65.7	ug/L	1155	Standard
	Cr	52	10499.0	4.1	**0.8470**	0.055	6.5	ug/L	5602	Standard
	Cr	53	6644.8	18.1	**7.5001**	1.519	20.3	ug/L	1042	Standard
	Mn	55	9282758.1	0.8	**881.0059**	10.971	1.2	ug/L	2370	Standard
	Co	59	9295.5	1.9	**1.1117**	0.013	1.2	ug/L	381	Standard
	Ni	60	4195.9	2.5	**2.2956**	0.058	2.5	ug/L	282	Standard
	Cu	65	1935.1	2.0	**0.7407**	0.026	3.6	ug/L	707	Standard
	Zn	66	9638.4	1.3	**8.5520**	0.196	2.3	ug/L	427	Standard
>	Ge	72	829162.9	1.0				ug/L	842801	Standard
	As	75	2557.7	5.7	**2.3172**	0.134	5.8	ug/L	-11	Standard
	Se	82	57.5	18.0	**0.4601**	0.104	22.7	ug/L	18	Standard
	Se-1	77	579.3	22.6	**6.4925**	1.741	26.8	ug/L	127	Standard
>	Ga	71	131.7	8.8				mg/L	92	Standard
	Rb	85	17510.1	0.4				ug/L	48	Standard
	Y	89	586953.4	0.8				ug/L	587989	Standard
>	Rh	103	55.0	32.8				ug/L	8	Standard
	Mo	98	1144.5	3.1	**0.3098**	0.011	3.5	ug/L	35	Standard
	Ag	107	135.7	7.7	**-0.0059**	0.002	31.4	ug/L	121	Standard
	Cd	111	17.5	24.7	**-0.0065**	0.003	40.9	mg/L	4	Standard
	Cd	114	72.6	34.0	**-0.0125**	0.006	47.2	ug/L	27	Standard
>	In	115	686354.0	0.3				ug/L	702235	Standard
	Sn	118	336.3	2.8	**0.1466**	0.009	6.4	ug/L	180	Standard
	Sb	123	184.0	24.8	**0.0190**	0.011	56.7	ug/L	43	Standard
	Ba	135	395687.3	1.1	**241.4491**	3.192	1.3	ug/L	50	Standard
	Ce	140	2798.6	4.1				ug/L	20	Standard
>	Tb	159	1048195.1	0.8				ug/L	1036041	Standard
	Ho	165	388.3	8.8				ug/L	8	Standard
	Tl	203	290.0	6.7	**0.0082**	0.003	33.5	ug/L	87	Standard
	Tl	205	758.4	9.2	**0.0205**	0.004	19.9	ug/L	255	Standard
	Pb	206	932.0	1.3	**0.0588**	0.003	4.3	ug/L	523	Standard
	Pb	207	739.4	3.2	**0.0539**	0.005	8.7	ug/L	433	Standard
	Pb	208	896.0	3.3	**0.0626**	0.005	7.5	ug/L	498	Standard
	U	238	1252.4	1.0	**0.2612**	0.004	1.5	ug/L	6	Standard
>	Bi	209	622160.6	0.5				ug/L	631806	Standard

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⌈	**Na**	23	25.0	52.9	**7.7030**	4.431	57.5	mg/L	2	Standard
|	**Mg**	24	2693.6	7.1	**44.6659**	2.957	6.6	mg/L	27	Standard
|	**K**	39	160.0	9.4	**1.4836**	0.146	9.8	mg/L	17	Standard
|	**Ca**	43	86.7	3.3	**30.7842**	2.356	7.7	mg/L	47	Standard
|	**Fe**	54	484.7	11.2	**2.8173**	0.326	11.6	mg/L	23	Standard
|	**Fe**	57	476.7	4.2	**4.2095**	0.473	11.2	mg/L	253	Standard
⌊>	**Sc-1**	45	44712.5	0.5				mg/L	39227	Standard
	Cl	35	2.0	0.0				ug/L	1	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	19355.7	2.7				ug/L	2163	Standard
	P	31	65.0	42.8				ug/L	57	Standard
	S	34	36.7	20.8				ug/L	27	Standard
	Sr	88	126.7	23.8				ug/L	125	Standard
	C	12	96.7	51.0				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	10	Standard
	Dy	164	453.2	10.1				mg/L	9	Standard
	Ho-1	165	388.3	8.8				mg/L	8	Standard
	Er	166	350.0	7.6				mg/L	20	Standard
	I	127	143475.0	3.5				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.926	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.382	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.739
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.473
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703169502
Sample Date/Time: Tuesday, April 04, 2017 13:13:26
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	298022.3	2.9				ug/L	302131	Standard
	Be	9	50.0	26.5	**0.0164**	0.005	33.4	ug/L	12	Standard
	Al	27	17542911.8	1.0	**127.8333**	3.552	2.8	ug/L	907	Standard
	Sc	45	42930.7	0.5				ug/L	39227	Standard
	Ti	47	137.0	6.5	**0.4831**	0.050	10.4	ug/L	34	Standard
	V	51	1200.9	15.3	**0.0178**	0.026	144.3	ug/L	1155	Standard
	Cr	52	7835.7	3.1	**0.4068**	0.026	6.4	ug/L	5602	Standard
	Cr	53	2987.0	10.1	**2.6463**	0.354	13.4	ug/L	1042	Standard
	Mn	55	14255126.4	0.4	**1355.7058**	20.994	1.5	ug/L	2370	Standard
	Co	59	11816.6	1.2	**1.4286**	0.011	0.8	ug/L	381	Standard
	Ni	60	5680.4	2.9	**3.1708**	0.134	4.2	ug/L	282	Standard
	Cu	65	1992.8	2.9	**0.7750**	0.040	5.1	ug/L	707	Standard
	Zn	66	6088.6	3.5	**5.2710**	0.204	3.9	ug/L	427	Standard
>	Ge	72	827588.1	1.2				ug/L	842801	Standard
	As	75	457.6	13.5	**0.4534**	0.059	13.1	ug/L	-11	Standard
	Se	82	31.8	7.7	**0.2104**	0.021	10.1	ug/L	18	Standard
	Se-1	77	302.7	14.9	**2.6566**	0.621	23.4	ug/L	127	Standard
>	Ga	71	138.3	18.5				mg/L	92	Standard
	Rb	85	10170.1	2.9				ug/L	48	Standard
	Y	89	582805.8	1.6				ug/L	587989	Standard
>	Rh	103	33.3	37.7				ug/L	8	Standard
	Mo	98	623.1	2.1	**0.1611**	0.003	2.0	ug/L	35	Standard
	Ag	107	151.3	31.9	**-0.0034**	0.008	237.4	ug/L	121	Standard
	Cd	111	17.2	86.0	**-0.0068**	0.009	131.1	mg/L	4	Standard
	Cd	114	87.5	11.6	**-0.0090**	0.003	28.2	ug/L	27	Standard
>	In	115	690623.3	0.8				ug/L	702235	Standard
	Sn	118	340.0	3.8	**0.1484**	0.017	11.3	ug/L	180	Standard
	Sb	123	180.2	18.6	**0.0178**	0.008	42.4	ug/L	43	Standard
	Ba	135	422806.0	0.9	**256.4225**	4.194	1.6	ug/L	50	Standard
	Ce	140	528.3	11.4				ug/L	20	Standard
>	Tb	159	1060388.5	0.4				ug/L	1036041	Standard
	Ho	165	16.7	75.5				ug/L	8	Standard
	Tl	203	364.3	20.0	**0.0193**	0.011	55.7	ug/L	87	Standard
	Tl	205	976.7	29.1	**0.0339**	0.017	51.0	ug/L	255	Standard
	Pb	206	692.7	13.5	**0.0149**	0.017	115.4	ug/L	523	Standard
	Pb	207	622.7	15.3	**0.0302**	0.019	63.4	ug/L	433	Standard
	Pb	208	696.3	13.3	**0.0271**	0.017	61.6	ug/L	498	Standard
	U	238	206.3	33.1	**0.0325**	0.015	45.7	ug/L	6	Standard
>	Bi	209	621873.2	0.5				ug/L	631806	Standard

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⌈	**Na**	23	50.0	26.5	**16.6634**	4.567	27.4	mg/L	2	Standard
|	**Mg**	24	1713.4	6.3	**29.4502**	1.742	5.9	mg/L	27	Standard
|	**K**	39	130.0	10.2	**1.2397**	0.138	11.1	mg/L	17	Standard
|	**Ca**	43	101.7	15.0	**44.6403**	11.588	26.0	mg/L	47	Standard
|	**Fe**	54	484.5	4.7	**2.9437**	0.143	4.9	mg/L	23	Standard
|	**Fe**	57	475.0	5.3	**4.6597**	0.677	14.5	mg/L	253	Standard
⌊>	**Sc-1**	45	42930.7	0.5				mg/L	39227	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	4.0	86.6				ug/L	3	Standard
	Br	81	10700.4	4.2				ug/L	2163	Standard
	P	31	65.0	7.7				ug/L	57	Standard
	S	34	55.0	39.6				ug/L	27	Standard
	Sr	88	193.3	19.6				ug/L	125	Standard
	C	12	43.3	66.6				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	15.4	96.6				mg/L	9	Standard
	Ho-1	165	16.7	75.5				mg/L	8	Standard
	Er	166	26.7	43.3				mg/L	20	Standard
	I	127	98452.9	5.9				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.640	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.195	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.347
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.428
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703169503
Sample Date/Time: Tuesday, April 04, 2017 13:16:31
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	298915.0	1.2				ug/L	302131	Standard
	Be	9	70.0	25.8	**0.0257**	0.009	33.9	ug/L	12	Standard
	Al	27	16612545.4	1.6	**120.6393**	2.147	1.8	ug/L	907	Standard
	Sc	45	42858.9	2.8				ug/L	39227	Standard
	Ti	47	110.7	7.5	**0.3589**	0.041	11.5	ug/L	34	Standard
	V	51	973.2	20.8	**-0.0157**	0.030	189.8	ug/L	1155	Standard
	Cr	52	8780.2	1.5	**0.5738**	0.031	5.3	ug/L	5602	Standard
	Cr	53	4954.1	7.8	**5.3160**	0.557	10.5	ug/L	1042	Standard
	Mn	55	12385914.4	1.2	**1185.3447**	21.094	1.8	ug/L	2370	Standard
	Co	59	12761.0	1.0	**1.5566**	0.015	1.0	ug/L	381	Standard
	Ni	60	8783.2	0.3	**5.0200**	0.017	0.3	ug/L	282	Standard
	Cu	65	1986.5	4.7	**0.7785**	0.059	7.5	ug/L	707	Standard
	Zn	66	7094.7	2.4	**6.2478**	0.196	3.1	ug/L	427	Standard
>	Ge	72	822355.4	0.6				ug/L	842801	Standard
	As	75	453.7	1.5	**0.4521**	0.007	1.6	ug/L	-11	Standard
	Se	82	42.2	14.4	**0.3141**	0.059	18.7	ug/L	18	Standard
	Se-1	77	489.7	5.2	**5.3119**	0.392	7.4	ug/L	127	Standard
>	Ga	71	163.3	8.8				mg/L	92	Standard
	Rb	85	12318.3	3.7				ug/L	48	Standard
	Y	89	583752.5	2.1				ug/L	587989	Standard
>	Rh	103	38.3	41.9				ug/L	8	Standard
	Mo	98	3143.6	3.6	**0.8803**	0.030	3.4	ug/L	35	Standard
	Ag	107	198.7	64.2	**0.0051**	0.022	430.6	ug/L	121	Standard
	Cd	111	29.6	115.0	**0.0009**	0.021	2199.1	mg/L	4	Standard
	Cd	114	125.5	49.2	**0.0003**	0.015	5175.5	ug/L	27	Standard
>	In	115	682969.4	1.4				ug/L	702235	Standard
	Sn	118	353.0	7.7	**0.1669**	0.028	16.7	ug/L	180	Standard
	Sb	123	647.8	16.1	**0.1281**	0.024	19.1	ug/L	43	Standard
	Ba	135	111585.4	0.9	**68.4014**	1.312	1.9	ug/L	50	Standard
	Ce	140	635.0	7.6				ug/L	20	Standard
>	Tb	159	1038948.7	1.0				ug/L	1036041	Standard
	Ho	165	181.7	13.6				ug/L	8	Standard
	Tl	203	317.7	20.1	**0.0122**	0.009	77.3	ug/L	87	Standard
	Tl	205	781.7	23.8	**0.0218**	0.011	50.9	ug/L	255	Standard
	Pb	206	785.7	5.3	**0.0315**	0.007	23.0	ug/L	523	Standard
	Pb	207	659.7	7.0	**0.0373**	0.008	22.7	ug/L	433	Standard
	Pb	208	754.7	8.2	**0.0371**	0.011	30.2	ug/L	498	Standard
	U	238	1824.1	4.4	**0.3854**	0.019	5.0	ug/L	6	Standard
>	Bi	209	623572.7	0.9				ug/L	631806	Standard

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⌈	**Na**	23	45.0	22.2	**14.9097**	3.055	20.5	mg/L	2	Standard
|	**Mg**	24	3687.1	2.5	**64.0364**	3.145	4.9	mg/L	27	Standard
|	**K**	39	133.3	9.4	**1.2747**	0.093	7.3	mg/L	17	Standard
|	**Ca**	43	98.3	38.8	**42.3007**	28.431	67.2	mg/L	47	Standard
|	**Fe**	54	259.4	5.9	**1.4703**	0.101	6.9	mg/L	23	Standard
|	**Fe**	57	443.3	10.2	**3.8587**	1.109	28.7	mg/L	253	Standard
⌊>	**Sc-1**	45	42858.9	2.8				mg/L	39227	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	2.3	65.5				ug/L	3	Standard
	Br	81	15404.5	6.0				ug/L	2163	Standard
	P	31	85.0	15.6				ug/L	57	Standard
	S	34	43.3	29.0				ug/L	27	Standard
	Sr	88	156.7	4.9				ug/L	125	Standard
	C	12	60.0	66.7				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	140.7	19.6				mg/L	9	Standard
	Ho-1	165	181.7	13.6				mg/L	8	Standard
	Er	166	263.3	15.8				mg/L	20	Standard
	I	127	33882.9	1.7				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.936	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.574	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.257
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.697
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703169504
Sample Date/Time: Tuesday, April 04, 2017 13:19:37
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	299679.0	2.4				ug/L	302131	Standard
	Be	9	46.7	22.3	**0.0148**	0.005	31.6	ug/L	12	Standard
	Al	27	19737599.8	0.6	**143.0094**	3.167	2.2	ug/L	907	Standard
	Sc	45	42987.6	0.4				ug/L	39227	Standard
	Ti	47	136.0	4.1	**0.4826**	0.031	6.4	ug/L	34	Standard
	V	51	1109.4	9.3	**0.0054**	0.017	324.1	ug/L	1155	Standard
	Cr	52	7963.4	1.9	**0.4375**	0.025	5.8	ug/L	5602	Standard
	Cr	53	2690.2	15.5	**2.2738**	0.508	22.3	ug/L	1042	Standard
	Mn	55	17971658.9	0.4	**1721.0647**	23.129	1.3	ug/L	2370	Standard
	Co	59	6811.2	1.7	**0.8100**	0.027	3.3	ug/L	381	Standard
	Ni	60	5364.6	1.0	**3.0071**	0.059	2.0	ug/L	282	Standard
	Cu	65	1453.1	1.1	**0.4797**	0.018	3.7	ug/L	707	Standard
	Zn	66	4227.3	0.2	**3.5696**	0.067	1.9	ug/L	427	Standard
>	Ge	72	821901.2	1.5				ug/L	842801	Standard
	As	75	1281.4	5.5	**1.1935**	0.053	4.4	ug/L	-11	Standard
	Se	82	28.8	18.6	**0.1827**	0.048	26.5	ug/L	18	Standard
	Se-1	77	333.7	4.9	**3.1238**	0.260	8.3	ug/L	127	Standard
>	Ga	71	195.0	12.8				mg/L	92	Standard
	Rb	85	13609.4	2.2				ug/L	48	Standard
	Y	89	569190.3	2.0				ug/L	587989	Standard
>	Rh	103	26.7	54.1				ug/L	8	Standard
	Mo	98	2099.3	3.5	**0.5842**	0.027	4.6	ug/L	35	Standard
	Ag	107	112.3	8.6	**-0.0099**	0.002	15.6	ug/L	121	Standard
	Cd	111	5.3	33.9	**-0.0139**	0.001	7.8	mg/L	4	Standard
	Cd	114	58.5	17.4	**-0.0158**	0.003	15.9	ug/L	27	Standard
>	In	115	681855.4	1.0				ug/L	702235	Standard
	Sn	118	304.7	7.5	**0.1137**	0.023	20.5	ug/L	180	Standard
	Sb	123	234.1	11.8	**0.0310**	0.006	19.7	ug/L	43	Standard
	Ba	135	376591.7	0.5	**231.3154**	1.513	0.7	ug/L	50	Standard
	Ce	140	170.0	21.2				ug/L	20	Standard
>	Tb	159	1032646.3	0.7				ug/L	1036041	Standard
	Ho	165	108.3	17.5				ug/L	8	Standard
	Tl	203	294.7	7.0	**0.0096**	0.003	30.2	ug/L	87	Standard
	Tl	205	656.7	12.4	**0.0149**	0.005	33.7	ug/L	255	Standard
	Pb	206	618.7	6.8	**0.0029**	0.009	292.4	ug/L	523	Standard
	Pb	207	513.7	3.3	**0.0095**	0.003	33.2	ug/L	433	Standard
	Pb	208	593.0	1.1	**0.0101**	0.001	14.0	ug/L	498	Standard
	U	238	621.7	3.0	**0.1253**	0.004	3.3	ug/L	6	Standard
>	Bi	209	613142.2	0.8				ug/L	631806	Standard

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⌈	**Na**	23	41.7	18.3	**13.7664**	2.611	19.0	mg/L	2	Standard
|	**Mg**	24	2425.2	4.3	**41.8081**	1.694	4.1	mg/L	27	Standard
|	**K**	39	171.7	10.2	**1.6680**	0.181	10.9	mg/L	17	Standard
|	**Ca**	43	110.0	13.6	**50.7744**	11.191	22.0	mg/L	47	Standard
|	**Fe**	54	416.2	12.3	**2.4921**	0.339	13.6	mg/L	23	Standard
|	**Fe**	57	476.7	9.5	**4.6878**	1.208	25.8	mg/L	253	Standard
⌊>	**Sc-1**	45	42987.6	0.4				mg/L	39227	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	2.7	57.3				ug/L	3	Standard
	Br	81	13102.3	1.6				ug/L	2163	Standard
	P	31	60.0	38.2				ug/L	57	Standard
	S	34	36.7	43.8				ug/L	27	Standard
	Sr	88	128.3	37.0				ug/L	125	Standard
	C	12	53.3	75.8				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	54.1	62.2				mg/L	9	Standard
	Ho-1	165	108.3	17.5				mg/L	8	Standard
	Er	166	193.3	16.6				mg/L	20	Standard
	I	127	170874.4	6.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.188	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.520	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.098
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.046
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, April 04, 2017 13:22:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	285626.0	1.8				ug/L	302131	Standard
	Be	9	103738.9	0.3	**50.3566**	0.801	1.6	ug/L	12	Standard
	Al	27	6688217.6	0.5	**50.8246**	0.797	1.6	ug/L	907	Standard
	Sc	45	40718.0	1.9				ug/L	39227	Standard
	Ti	47	20816.6	0.9	**103.1160**	0.667	0.6	ug/L	34	Standard
	V	51	328446.5	0.2	**50.9761**	0.503	1.0	ug/L	1155	Standard
	Cr	52	303718.2	0.1	**51.0493**	0.594	1.2	ug/L	5602	Standard
	Cr	53	38532.3	0.3	**51.4087**	0.462	0.9	ug/L	1042	Standard
	Mn	55	519551.2	1.0	**50.4900**	0.667	1.3	ug/L	2370	Standard
	Co	59	391805.9	1.0	**50.1535**	0.286	0.6	ug/L	381	Standard
	Ni	60	83412.7	1.8	**50.0023**	1.102	2.2	ug/L	282	Standard
	Cu	65	87619.7	1.4	**49.8028**	0.722	1.5	ug/L	707	Standard
	Zn	66	52099.1	0.5	**49.2958**	0.619	1.3	ug/L	427	Standard
>	Ge	72	806179.6	1.1				ug/L	842801	Standard
	As	75	53634.7	0.6	**49.0332**	0.379	0.8	ug/L	-11	Standard
	Se	82	4867.9	0.4	**48.6333**	0.381	0.8	ug/L	18	Standard
	Se-1	77	3533.1	2.0	**49.0548**	1.243	2.5	ug/L	127	Standard
>	Ga	71	111.7	11.3				mg/L	92	Standard
	Rb	85	318.3	4.0				ug/L	48	Standard
	Y	89	558905.4	0.8				ug/L	587989	Standard
>	Rh	103	35.0	37.8				ug/L	8	Standard
	Mo	98	341362.0	0.8	**99.0622**	1.417	1.4	ug/L	35	Standard
	Ag	107	278003.4	0.9	**49.4662**	0.777	1.6	ug/L	121	Standard
	Cd	111	79839.1	0.3	**50.1394**	0.577	1.2	mg/L	4	Standard
	Cd	114	206147.8	0.5	**50.4354**	0.418	0.8	ug/L	27	Standard
>	In	115	669725.3	1.1				ug/L	702235	Standard
	Sn	118	45667.4	2.4	**51.5995**	1.804	3.5	ug/L	180	Standard
	Sb	123	207701.9	0.2	**49.7086**	0.533	1.1	ug/L	43	Standard
	Ba	135	80105.2	1.0	**50.0608**	1.014	2.0	ug/L	50	Standard
	Ce	140	221.7	7.9				ug/L	20	Standard
>	Tb	159	1009931.3	1.2				ug/L	1036041	Standard
	Ho	165	20.0	66.1				ug/L	8	Standard
	Tl	203	331798.5	0.9	**50.1581**	0.495	1.0	ug/L	87	Standard
	Tl	205	806021.4	0.9	**50.0808**	0.361	0.7	ug/L	255	Standard
	Pb	206	268668.9	0.7	**50.0698**	0.403	0.8	ug/L	523	Standard
	Pb	207	243018.5	1.0	**50.1518**	0.661	1.3	ug/L	433	Standard
	Pb	208	274291.4	0.7	**49.6479**	0.412	0.8	ug/L	498	Standard
	U	238	225093.9	1.2	**50.0309**	0.912	1.8	ug/L	6	Standard
>	Bi	209	611989.3	1.5				ug/L	631806	Standard

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	Na	23	5.0	0.0	**1.2223**	0.036	2.9	mg/L	2	Standard
	Mg	24	331.7	10.3	**5.6735**	0.610	10.7	mg/L	27	Standard
	K	39	510.0	7.8	**5.4535**	0.419	7.7	mg/L	17	Standard
	Ca	43	56.7	36.7	**13.3853**	17.503	130.8	mg/L	47	Standard
	Fe	54	784.4	1.5	**5.1927**	0.085	1.6	mg/L	23	Standard
	Fe	57	506.7	2.5	**6.1905**	0.235	3.8	mg/L	253	Standard
>	**Sc-1**	45	40718.0	1.9				mg/L	39227	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.3	75.5				ug/L	3	Standard
	Br	81	2110.1	4.3				ug/L	2163	Standard
	P	31	66.7	8.7				ug/L	57	Standard
	S	34	50.0	20.0				ug/L	27	Standard
	Sr	88	123.3	24.4				ug/L	125	Standard
	C	12	23.3	49.5				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	173.2				mg/L	10	Standard
	Dy	164	43.0	13.1				mg/L	9	Standard
	Ho-1	165	20.0	66.1				mg/L	8	Standard
	Er	166	6.7	86.6				mg/L	20	Standard
	I	127	6071.3	38.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.713		
	Al	27	101.649		
	Sc	45			
	Ti	47	103.116		
	V	51	101.952		
	Cr	52	102.099		
	Cr	53			
	Mn	55	100.980		
	Co	59	100.307		
	Ni	60	100.005		
	Cu	65	99.606		
	Zn	66	98.592		
>	Ge	72		95.655	
	As	75	98.066		
	Se	82	97.267		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.062		
Ag	107	98.932		
Cd	111	100.279		
Cd	114			
In	115			95.371
Sn	118	103.199		
Sb	123	99.417		
Ba	135	100.122		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.316		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.296		
U	238	100.062		
Bi	209			96.863
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, April 04, 2017 13:25:49
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	289391.2	1.5				ug/L	302131	Standard
	Be	9	38.3	54.3	**0.0116**	0.010	86.0	ug/L	12	Standard
	Al	27	1313.4	25.9	**-0.0080**	0.003	34.1	ug/L	907	Standard
	Sc	45	41254.5	3.4				ug/L	39227	Standard
	Ti	47	34.3	14.4	**-0.0096**	0.026	269.4	ug/L	34	Standard
	V	51	926.7	7.9	**-0.0205**	0.010	46.4	ug/L	1155	Standard
	Cr	52	4677.1	0.4	**-0.1012**	0.007	7.4	ug/L	5602	Standard
	Cr	53	566.7	7.3	**-0.5607**	0.051	9.1	ug/L	1042	Standard
	Mn	55	2761.9	8.4	**0.0298**	0.025	83.7	ug/L	2370	Standard
	Co	59	293.0	8.0	**-0.0088**	0.003	37.1	ug/L	381	Standard
	Ni	60	212.0	4.3	**-0.0304**	0.004	14.8	ug/L	282	Standard
	Cu	65	1369.4	2.0	**0.4450**	0.019	4.3	ug/L	707	Standard
	Zn	66	434.3	2.4	**0.0282**	0.014	49.7	ug/L	427	Standard
>	**Ge**	72	808925.1	1.2				ug/L	842801	Standard
	As	75	-13.9	299.9	**0.0331**	0.038	115.4	ug/L	-11	Standard
	Se	82	14.4	42.2	**0.0444**	0.060	136.1	ug/L	18	Standard
	Se-1	77	88.3	18.1	**-0.3070**	0.211	68.8	ug/L	127	Standard
>	**Ga**	71	95.0	13.9				mg/L	92	Standard
	Rb	85	31.7	39.7				ug/L	48	Standard
	Y	89	560605.4	1.2				ug/L	587989	Standard
>	**Rh**	103	13.3	78.1				ug/L	8	Standard
	Mo	98	148.2	22.1	**0.0284**	0.010	34.7	ug/L	35	Standard
	Ag	107	144.7	7.6	**-0.0039**	0.002	51.0	ug/L	121	Standard
	Cd	111	6.8	28.8	**-0.0130**	0.001	9.8	mg/L	4	Standard
	Cd	114	40.9	47.0	**-0.0199**	0.005	24.0	ug/L	27	Standard
>	**In**	115	675295.9	1.2				ug/L	702235	Standard
	Sn	118	214.3	9.0	**0.0153**	0.020	131.9	ug/L	180	Standard
	Sb	123	151.2	11.2	**0.0119**	0.004	30.1	ug/L	43	Standard
	Ba	135	52.0	5.8	**-0.0178**	0.002	8.4	ug/L	50	Standard
	Ce	140	21.7	53.3				ug/L	20	Standard
>	**Tb**	159	1008848.8	1.1				ug/L	1036041	Standard
	Ho	165	6.7	43.3				ug/L	8	Standard
	Tl	203	78.3	16.7	**-0.0232**	0.002	8.4	ug/L	87	Standard
	Tl	205	235.0	14.9	**-0.0114**	0.002	19.7	ug/L	255	Standard
	Pb	206	983.0	2.5	**0.0685**	0.004	5.4	ug/L	523	Standard
	Pb	207	808.0	1.1	**0.0681**	0.001	2.2	ug/L	433	Standard
	Pb	208	954.0	3.4	**0.0733**	0.005	6.3	ug/L	498	Standard
	U	238	27.0	22.5	**-0.0067**	0.001	20.1	ug/L	6	Standard
>	**Bi**	209	620936.6	0.8				ug/L	631806	Standard

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	Na	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
	Mg	24	33.3	34.6	**0.1757**	0.193	109.8	mg/L	27	Standard
	K	39	20.0	50.0	**0.1138**	0.116	101.5	mg/L	17	Standard
	Ca	43	30.0	33.3	**-8.2602**	7.593	91.9	mg/L	47	Standard
	Fe	54	27.6	20.1	**-0.0472**	0.036	76.7	mg/L	23	Standard
	Fe	57	321.7	8.6	**1.0414**	0.875	84.1	mg/L	253	Standard
>	**Sc-1**	45	41254.5	3.4				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	4.7	44.6				ug/L	3	Standard
	Br	81	1823.4	13.2				ug/L	2163	Standard
	P	31	58.3	21.6				ug/L	57	Standard
	S	34	38.3	41.9				ug/L	27	Standard
	Sr	88	130.0	25.2				ug/L	125	Standard
	C	12	13.3	43.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	12.7	93.2				mg/L	9	Standard
	Ho-1	165	6.7	43.3				mg/L	8	Standard
	Er	166	13.3	86.6				mg/L	20	Standard
	I	127	4235.6	5.9				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.981	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.164
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.280
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, April 04, 2017 13:28:00
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Method 6020 - Summary Report

Sample ID: L1703168901
Sample Date/Time: Tuesday, April 04, 2017 13:41:51
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	263039.6	2.6				ug/L	302131	Standard
	Be	9	78.3	26.6	**0.0347**	0.012	34.0	ug/L	12	Standard
	Al	27	3035785.3	0.3	**25.0483**	0.698	2.8	ug/L	907	Standard
	Sc	45	38458.8	3.2				ug/L	39227	Standard
	Ti	47	113.7	2.2	**0.4209**	0.024	5.6	ug/L	34	Standard
	V	51	1724.5	3.8	**0.1214**	0.007	5.6	ug/L	1155	Standard
	Cr	52	15063.2	0.5	**1.8432**	0.058	3.1	ug/L	5602	Standard
	Cr	53	3760.5	4.7	**4.1438**	0.274	6.6	ug/L	1042	Standard
	Mn	55	607847.5	0.8	**62.9234**	1.613	2.6	ug/L	2370	Standard
	Co	59	9011.7	2.1	**1.1829**	0.053	4.5	ug/L	381	Standard
	Ni	60	3601.8	0.6	**2.1473**	0.038	1.8	ug/L	282	Standard
	Cu	65	1894.5	2.6	**0.8177**	0.040	4.9	ug/L	707	Standard
	Zn	66	28992.7	1.9	**29.0397**	1.019	3.5	ug/L	427	Standard
>	Ge	72	757746.4	2.2				ug/L	842801	Standard
	As	75	173.5	30.7	**0.2139**	0.049	23.1	ug/L	-11	Standard
	Se	82	45.2	13.9	**0.3823**	0.068	17.7	ug/L	18	Standard
	Se-1	77	298.3	7.0	**2.9823**	0.334	11.2	ug/L	127	Standard
>	Ga	71	81.7	41.7				mg/L	92	Standard
	Rb	85	1355.1	0.4				ug/L	48	Standard
	Y	89	513480.4	2.9				ug/L	587989	Standard
>	Rh	103	28.3	36.7				ug/L	8	Standard
	Mo	98	772.0	4.3	**0.2241**	0.014	6.4	ug/L	35	Standard
	Ag	107	125.7	8.0	**-0.0057**	0.002	41.8	ug/L	121	Standard
	Cd	111	113.7	11.2	**0.0588**	0.009	16.0	mg/L	4	Standard
	Cd	114	306.9	5.9	**0.0500**	0.003	6.2	ug/L	27	Standard
>	In	115	629862.5	2.2				ug/L	702235	Standard
	Sn	118	178.3	20.8	**-0.0109**	0.042	389.7	ug/L	180	Standard
	Sb	123	203.8	27.9	**0.0277**	0.014	49.2	ug/L	43	Standard
	Ba	135	55437.6	0.5	**36.8335**	1.001	2.7	ug/L	50	Standard
	Ce	140	4770.8	5.8				ug/L	20	Standard
>	Tb	159	933909.6	1.6				ug/L	1036041	Standard
	Ho	165	110.0	12.0				ug/L	8	Standard
	Tl	203	239.7	4.1	**0.0041**	0.002	42.2	ug/L	87	Standard
	Tl	205	635.0	6.1	**0.0167**	0.003	17.9	ug/L	255	Standard
	Pb	206	902.0	2.5	**0.0690**	0.004	5.5	ug/L	523	Standard
	Pb	207	728.0	4.6	**0.0656**	0.005	8.1	ug/L	433	Standard
	Pb	208	866.7	1.6	**0.0721**	0.004	5.1	ug/L	498	Standard
	U	238	291.3	1.5	**0.0571**	0.001	1.0	ug/L	6	Standard
>	Bi	209	568254.6	1.4				ug/L	631806	Standard

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	Na	23	8.3	34.6	**2.5995**	1.061	40.8	mg/L	2	Standard
	Mg	24	1223.4	5.4	**23.4298**	1.958	8.4	mg/L	27	Standard
	K	39	28.3	36.7	**0.2234**	0.122	54.8	mg/L	17	Standard
	Ca	43	41.7	27.7	**3.3081**	10.086	304.9	mg/L	47	Standard
	Fe	54	107.9	5.7	**0.5560**	0.065	11.7	mg/L	23	Standard
	Fe	57	320.0	8.7	**1.6340**	1.086	66.5	mg/L	253	Standard
>	**Sc-1**	45	38458.8	3.2				mg/L	39227	Standard
	Cl	35	3.3	69.3				ug/L	1	Standard
	Kr	83	2.7	43.3				ug/L	3	Standard
	Br	81	19909.8	3.7				ug/L	2163	Standard
	P	31	66.7	35.4				ug/L	57	Standard
	S	34	40.0	25.0				ug/L	27	Standard
	Sr	88	155.0	5.6				ug/L	125	Standard
	C	12	20.0	50.0				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	135.4	18.8				mg/L	9	Standard
	Ho-1	165	110.0	12.0				mg/L	8	Standard
	Er	166	96.7	26.0				mg/L	20	Standard
	I	127	52980.0	20.1				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		87.061	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		89.908	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	89.694
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	89.941
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703168901
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, April 04, 2017 13:44:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	288179.9	1.0				ug/L	302131	Standard
	Be	9	105702.6	2.6	**50.8519**	1.600	3.1	ug/L	12	Standard
	Al	27	6824491.9	1.0	**51.3967**	0.937	1.8	ug/L	907	Standard
	Sc	45	40791.6	5.4				ug/L	39227	Standard
	Ti	47	21118.4	0.8	**104.5677**	2.227	2.1	ug/L	34	Standard
	V	51	335080.9	0.6	**51.9816**	0.901	1.7	ug/L	1155	Standard
	Cr	52	310410.9	0.8	**52.1652**	0.934	1.8	ug/L	5602	Standard
	Cr	53	38798.0	2.0	**51.7539**	1.809	3.5	ug/L	1042	Standard
	Mn	55	528808.3	1.0	**51.3708**	1.231	2.4	ug/L	2370	Standard
	Co	59	400234.9	0.9	**51.2125**	1.191	2.3	ug/L	381	Standard
	Ni	60	84919.0	0.5	**50.8798**	0.848	1.7	ug/L	282	Standard
	Cu	65	89497.2	0.2	**50.8500**	0.657	1.3	ug/L	707	Standard
	Zn	66	53341.7	1.4	**50.4522**	1.021	2.0	ug/L	427	Standard
>	Ge	72	806674.9	1.4				ug/L	842801	Standard
	As	75	54393.8	0.6	**49.7029**	0.965	1.9	ug/L	-11	Standard
	Se	82	4961.0	1.1	**49.5342**	0.229	0.5	ug/L	18	Standard
	Se-1	77	3585.8	2.4	**49.7878**	1.831	3.7	ug/L	127	Standard
>	Ga	71	88.3	26.1				mg/L	92	Standard
	Rb	85	316.7	7.5				ug/L	48	Standard
	Y	89	556097.0	2.5				ug/L	587989	Standard
>	Rh	103	28.3	71.3				ug/L	8	Standard
	Mo	98	348348.0	1.4	**100.4674**	2.909	2.9	ug/L	35	Standard
	Ag	107	283841.2	1.8	**50.1935**	1.541	3.1	ug/L	121	Standard
	Cd	111	82311.0	0.7	**51.3712**	1.194	2.3	mg/L	4	Standard
	Cd	114	210578.8	1.8	**51.2021**	1.473	2.9	ug/L	27	Standard
>	In	115	674027.1	1.7				ug/L	702235	Standard
	Sn	118	45850.6	0.8	**51.4685**	0.628	1.2	ug/L	180	Standard
	Sb	123	211729.3	0.8	**50.3592**	1.240	2.5	ug/L	43	Standard
	Ba	135	81352.2	1.5	**50.5188**	1.180	2.3	ug/L	50	Standard
	Ce	140	233.3	17.8				ug/L	20	Standard
>	Tb	159	1002494.3	0.9				ug/L	1036041	Standard
	Ho	165	10.0	86.6				ug/L	8	Standard
	Tl	203	334070.3	1.6	**50.6376**	1.418	2.8	ug/L	87	Standard
	Tl	205	811527.4	1.5	**50.5576**	1.282	2.5	ug/L	255	Standard
	Pb	206	271296.9	1.9	**50.6975**	1.548	3.1	ug/L	523	Standard
	Pb	207	246268.7	1.8	**50.9605**	1.516	3.0	ug/L	433	Standard
	Pb	208	276908.8	1.5	**50.2575**	1.385	2.8	ug/L	498	Standard
	U	238	228092.7	1.7	**50.8307**	1.429	2.8	ug/L	6	Standard
>	Bi	209	610448.8	1.4				ug/L	631806	Standard

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⌈	**Na**	23	5.0	100.0	**1.2718**	1.860	146.3	mg/L	2	Standard
|	**Mg**	24	366.7	15.1	**6.2832**	0.669	10.6	mg/L	27	Standard
|	**K**	39	566.7	3.3	**6.0676**	0.285	4.7	mg/L	17	Standard
|	**Ca**	43	43.3	17.6	**2.6033**	6.421	246.6	mg/L	47	Standard
|	**Fe**	54	725.9	9.5	**4.7820**	0.478	10.0	mg/L	23	Standard
|	**Fe**	57	453.3	5.2	**4.7540**	1.218	25.6	mg/L	253	Standard
⌊>	**Sc-1**	45	40791.6	5.4				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.3	99.0				ug/L	3	Standard
	Br	81	2236.8	7.4				ug/L	2163	Standard
	P	31	31.7	59.8				ug/L	57	Standard
	S	34	36.7	43.8				ug/L	27	Standard
	Sr	88	136.7	18.4				ug/L	125	Standard
	C	12	13.3	86.6				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	18.2	53.5				mg/L	9	Standard
	Ho-1	165	10.0	86.6				mg/L	8	Standard
	Er	166	36.7	15.7				mg/L	20	Standard
	I	127	3385.4	11.2				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	101.704		
⌊	Al	27	102.793		
⌈	Sc	45			
|	Ti	47	104.568		
|	V	51	103.963		
|	Cr	52	104.330		
|	Cr	53			
|	Mn	55	102.742		
|	Co	59	102.425		
|	Ni	60	101.760		
|	Cu	65	101.700		
|	Zn	66	100.904		
|>	Ge	72		95.714	
|	As	75	99.406		
|	Se	82	99.068		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	100.467	
|	Ag	107	100.387	
|	Cd	111	102.742	
|	Cd	114		
|>	In	115		95.983
|	Sn	118	102.937	
|	Sb	123	100.718	
⌊	Ba	135	101.038	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	101.275	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	100.515	
|	U	238	101.661	
⌊>	Bi	209		96.620
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, April 04, 2017 13:48:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	283222.5	3.0				ug/L	302131	Standard
	Be	9	35.0	14.3	**0.0104**	0.003	27.0	ug/L	12	Standard
	Al	27	855.0	12.7	**-0.0113**	0.001	7.4	ug/L	907	Standard
	Sc	45	40348.7	1.8				ug/L	39227	Standard
	Ti	47	30.7	7.5	**-0.0235**	0.012	50.8	ug/L	34	Standard
	V	51	1062.4	9.6	**0.0053**	0.016	293.0	ug/L	1155	Standard
	Cr	52	4889.5	1.3	**-0.0414**	0.008	18.5	ug/L	5602	Standard
	Cr	53	425.0	11.8	**-0.7374**	0.069	9.3	ug/L	1042	Standard
	Mn	55	2151.8	0.5	**-0.0238**	0.002	8.1	ug/L	2370	Standard
	Co	59	279.3	5.1	**-0.0095**	0.002	19.7	ug/L	381	Standard
	Ni	60	216.3	2.6	**-0.0241**	0.003	12.5	ug/L	282	Standard
	Cu	65	1472.4	4.2	**0.5275**	0.033	6.3	ug/L	707	Standard
	Zn	66	424.7	5.5	**0.0304**	0.021	69.7	ug/L	427	Standard
>	Ge	72	786515.4	0.4				ug/L	842801	Standard
	As	75	-18.9	142.5	**0.0282**	0.025	89.1	ug/L	-11	Standard
	Se	82	15.7	14.5	**0.0619**	0.023	37.4	ug/L	18	Standard
	Se-1	77	87.0	6.9	**-0.2892**	0.084	28.9	ug/L	127	Standard
>	Ga	71	61.7	16.9				mg/L	92	Standard
	Rb	85	45.0	33.3				ug/L	48	Standard
	Y	89	552249.6	0.8				ug/L	587989	Standard
>	Rh	103	5.0	100.0				ug/L	8	Standard
	Mo	98	141.3	30.6	**0.0270**	0.012	46.2	ug/L	35	Standard
	Ag	107	123.3	12.3	**-0.0074**	0.003	37.4	ug/L	121	Standard
	Cd	111	4.2	27.7	**-0.0146**	0.001	5.0	mg/L	4	Standard
	Cd	114	47.5	6.5	**-0.0181**	0.001	3.9	ug/L	27	Standard
>	In	115	664479.2	0.5				ug/L	702235	Standard
	Sn	118	219.0	7.5	**0.0247**	0.020	79.8	ug/L	180	Standard
	Sb	123	174.0	16.1	**0.0180**	0.007	38.4	ug/L	43	Standard
	Ba	135	48.7	8.3	**-0.0194**	0.002	12.5	ug/L	50	Standard
	Ce	140	30.0	16.7				ug/L	20	Standard
>	Tb	159	982650.9	1.9				ug/L	1036041	Standard
	Ho	165	5.0	0.0				ug/L	8	Standard
	Tl	203	63.7	26.6	**-0.0253**	0.003	10.1	ug/L	87	Standard
	Tl	205	136.7	45.2	**-0.0173**	0.004	22.2	ug/L	255	Standard
	Pb	206	1027.0	0.8	**0.0794**	0.002	3.1	ug/L	523	Standard
	Pb	207	845.7	6.1	**0.0784**	0.011	13.6	ug/L	433	Standard
	Pb	208	972.3	6.0	**0.0791**	0.010	12.4	ug/L	498	Standard
	U	238	16.7	36.7	**-0.0089**	0.001	15.2	ug/L	6	Standard
>	Bi	209	611832.5	0.5				ug/L	631806	Standard

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	Na	23	1.7	173.2	**0.0031**	1.041	33749.6	mg/L	2	Standard
	Mg	24	28.3	44.4	**0.0992**	0.230	231.8	mg/L	27	Standard
	K	39	13.3	57.3	**0.0421**	0.083	197.2	mg/L	17	Standard
	Ca	43	40.0	33.1	**0.3678**	11.143	3029.3	mg/L	47	Standard
	Fe	54	29.6	1.4	**-0.0289**	0.005	16.8	mg/L	23	Standard
	Fe	57	215.0	4.7	**-1.7129**	0.239	13.9	mg/L	253	Standard
>	**Sc-1**	45	40348.7	1.8				mg/L	39227	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	3.0	66.7				ug/L	3	Standard
	Br	81	1903.5	5.0				ug/L	2163	Standard
	P	31	46.7	44.6				ug/L	57	Standard
	S	34	33.3	85.3				ug/L	27	Standard
	Sr	88	130.0	25.2				ug/L	125	Standard
	C	12	20.0	0.0				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	16.0	75.7				mg/L	9	Standard
	Ho-1	165	5.0	0.0				mg/L	8	Standard
	Er	166	13.3	173.2				mg/L	20	Standard
	I	127	3247.0	4.5				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.322	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	94.624
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	96.839
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, April 04, 2017 13:51:10
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	280340.5	3.8				ug/L	302131	Standard
	Be	9	401.7	7.5	**0.1917**	0.009	4.4	ug/L	12	Standard
	Al	27	748.4	29.7	**-0.0121**	0.001	12.2	ug/L	907	Standard
	Sc	45	39319.3	1.4				ug/L	39227	Standard
	Ti	47	36.0	12.7	**0.0047**	0.025	518.2	ug/L	34	Standard
	V	51	3371.8	2.3	**0.3770**	0.010	2.5	ug/L	1155	Standard
	Cr	52	10180.8	1.8	**0.8965**	0.031	3.4	ug/L	5602	Standard
	Cr	53	1043.4	2.5	**0.1388**	0.046	32.8	ug/L	1042	Standard
	Mn	55	6421.7	2.9	**0.4071**	0.014	3.5	ug/L	2370	Standard
	Co	59	3007.3	6.0	**0.3509**	0.022	6.2	ug/L	381	Standard
	Ni	60	2579.2	2.8	**1.4412**	0.037	2.5	ug/L	282	Standard
	Cu	65	1841.4	0.5	**0.7503**	0.010	1.4	ug/L	707	Standard
	Zn	66	6454.0	1.3	**5.9593**	0.074	1.2	ug/L	427	Standard
>	Ge	72	782038.5	0.7				ug/L	842801	Standard
	As	75	336.0	4.0	**0.3621**	0.012	3.3	ug/L	-11	Standard
	Se	82	45.5	9.0	**0.3697**	0.043	11.6	ug/L	18	Standard
	Se-1	77	115.3	11.3	**0.1375**	0.201	146.1	ug/L	127	Standard
>	Ga	71	51.7	27.9				mg/L	92	Standard
	Rb	85	21.7	53.3				ug/L	48	Standard
	Y	89	543074.1	2.1				ug/L	587989	Standard
>	Rh	103	10.0	50.0				ug/L	8	Standard
	Mo	98	52.2	17.3	**0.0012**	0.003	212.4	ug/L	35	Standard
	Ag	107	2114.8	4.5	**0.3569**	0.014	3.9	ug/L	121	Standard
	Cd	111	365.3	6.5	**0.2183**	0.014	6.2	mg/L	4	Standard
	Cd	114	805.0	8.7	**0.1724**	0.016	9.4	ug/L	27	Standard
>	In	115	652333.4	0.9				ug/L	702235	Standard
	Sn	118	187.3	8.4	**-0.0075**	0.020	264.0	ug/L	180	Standard
	Sb	123	1509.9	1.5	**0.3472**	0.007	2.1	ug/L	43	Standard
	Ba	135	1064.7	0.7	**0.6337**	0.006	0.9	ug/L	50	Standard
	Ce	140	15.0	66.7				ug/L	20	Standard
>	Tb	159	975680.5	1.2				ug/L	1036041	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	513.3	7.0	**0.0440**	0.006	13.1	ug/L	87	Standard
	Tl	205	1176.7	3.0	**0.0485**	0.001	2.7	ug/L	255	Standard
	Pb	206	1469.1	2.1	**0.1665**	0.006	3.3	ug/L	523	Standard
	Pb	207	1243.1	1.2	**0.1648**	0.006	3.7	ug/L	433	Standard
	Pb	208	1453.4	3.2	**0.1707**	0.009	5.4	ug/L	498	Standard
	U	238	1587.1	5.1	**0.3459**	0.014	4.0	ug/L	6	Standard
>	Bi	209	601985.2	1.4				ug/L	631806	Standard

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	Na	23	1.7	173.2	**0.0379**	1.102	2910.2	mg/L	2	Standard
	Mg	24	31.7	9.1	**0.1777**	0.047	26.5	mg/L	27	Standard
	K	39	16.7	45.8	**0.0837**	0.084	99.9	mg/L	17	Standard
	Ca	43	35.0	14.3	**-2.9751**	4.327	145.4	mg/L	47	Standard
	Fe	54	29.5	44.3	**-0.0239**	0.095	396.2	mg/L	23	Standard
	Fe	57	291.7	13.9	**0.5989**	1.026	171.3	mg/L	253	Standard
>	**Sc-1**	45	39319.3	1.4				mg/L	39227	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	2.7	86.6				ug/L	3	Standard
	Br	81	1710.1	10.8				ug/L	2163	Standard
	P	31	60.0	38.2				ug/L	57	Standard
	S	34	25.0	60.0				ug/L	27	Standard
	Sr	88	135.0	13.4				ug/L	125	Standard
	C	12	13.3	43.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	2.9	217.0				mg/L	9	Standard
	Ho-1	165	10.0	50.0				mg/L	8	Standard
	Er	166	10.0	100.0				mg/L	20	Standard
	I	127	2973.6	5.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	95.848		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	94.241		
	Cr	52	112.058		
	Cr	53			
	Mn	55	81.428		
	Co	59	87.722		
	Ni	60	90.076		
	Cu	65	93.783		
	Zn	66	95.349		
>	Ge	72		92.790	
	As	75	90.533		
	Se	82	92.429		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98		
|	Ag	107	89.237	
|	Cd	111	90.956	
|	Cd	114		
|>	In	115		92.894
|	Sn	118		
|	Sb	123	86.790	
⌊	Ba	135	84.493	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	55.047	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	85.368	
|	U	238	86.484	
⌊>	Bi	209		95.280
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Tl	203	

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBS MS WG608632-02
Sample Date/Time: Tuesday, April 04, 2017 13:54:17
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	290368.2	1.8				ug/L	302131	Standard
	Be	9	33.3	22.9	**0.0091**	0.004	39.2	ug/L	12	Standard
	Al	27	6493.1	1.3	**0.0307**	0.001	4.1	ug/L	907	Standard
	Sc	45	40674.5	2.5				ug/L	39227	Standard
	Ti	47	42.0	7.1	**0.0301**	0.013	42.7	ug/L	34	Standard
	V	51	1193.8	1.5	**0.0229**	0.003	15.1	ug/L	1155	Standard
	Cr	52	6851.2	0.9	**0.2807**	0.017	6.2	ug/L	5602	Standard
	Cr	53	783.4	2.9	**-0.2548**	0.014	5.7	ug/L	1042	Standard
	Mn	55	2462.9	3.4	**0.0028**	0.003	92.2	ug/L	2370	Standard
	Co	59	296.0	0.3	**-0.0081**	0.001	12.0	ug/L	381	Standard
	Ni	60	326.7	3.2	**0.0403**	0.007	16.6	ug/L	282	Standard
	Cu	65	947.4	3.2	**0.2094**	0.009	4.3	ug/L	707	Standard
	Zn	66	1865.1	2.4	**1.4048**	0.028	2.0	ug/L	427	Standard
>	Ge	72	801262.8	2.4				ug/L	842801	Standard
	As	75	-35.9	12.2	**0.0129**	0.004	29.3	ug/L	-11	Standard
	Se	82	16.1	30.2	**0.0632**	0.053	83.3	ug/L	18	Standard
	Se-1	77	88.0	11.8	**-0.2975**	0.154	51.8	ug/L	127	Standard
>	Ga	71	41.7	18.3				mg/L	92	Standard
	Rb	85	58.3	32.5				ug/L	48	Standard
	Y	89	555520.2	1.4				ug/L	587989	Standard
>	Rh	103	16.7	62.4				ug/L	8	Standard
	Mo	98	89.7	13.7	**0.0115**	0.003	29.7	ug/L	35	Standard
	Ag	107	115.7	11.5	**-0.0090**	0.002	24.9	ug/L	121	Standard
	Cd	111	5.6	52.1	**-0.0137**	0.002	13.4	mg/L	4	Standard
	Cd	114	49.6	15.4	**-0.0178**	0.002	10.3	ug/L	27	Standard
>	In	115	673922.0	0.8				ug/L	702235	Standard
	Sn	118	264.7	0.2	**0.0727**	0.003	4.1	ug/L	180	Standard
	Sb	123	101.5	13.5	**0.0002**	0.003	2214.5	ug/L	43	Standard
	Ba	135	79.0	14.3	**-0.0009**	0.007	734.7	ug/L	50	Standard
	Ce	140	58.3	13.1				ug/L	20	Standard
>	Tb	159	999076.3	0.3				ug/L	1036041	Standard
	Ho	165	8.3	69.3				ug/L	8	Standard
	Tl	203	40.0	7.5	**-0.0289**	0.000	1.2	ug/L	87	Standard
	Tl	205	121.7	39.9	**-0.0183**	0.003	15.5	ug/L	255	Standard
	Pb	206	526.7	0.7	**-0.0144**	0.002	16.4	ug/L	523	Standard
	Pb	207	460.3	4.8	**-0.0017**	0.003	199.7	ug/L	433	Standard
	Pb	208	521.3	4.1	**-0.0030**	0.003	106.2	ug/L	498	Standard
	U	238	9.0	40.1	**-0.0106**	0.001	7.7	ug/L	6	Standard
>	Bi	209	614243.4	2.0				ug/L	631806	Standard

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	Na	23	1.7	173.2	**0.0147**	1.061	7232.3	mg/L	2	Standard
	Mg	24	31.7	24.1	**0.1582**	0.143	90.1	mg/L	27	Standard
	K	39	11.7	49.5	**0.0232**	0.062	269.3	mg/L	17	Standard
	Ca	43	31.7	39.7	**-6.7495**	9.296	137.7	mg/L	47	Standard
	Fe	54	19.3	24.8	**-0.1013**	0.035	35.0	mg/L	23	Standard
	Fe	57	286.7	17.9	**0.1905**	1.351	708.9	mg/L	253	Standard
>	**Sc-1**	45	40674.5	2.5				mg/L	39227	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	1.7	69.3				ug/L	3	Standard
	Br	81	2020.1	3.9				ug/L	2163	Standard
	P	31	70.0	12.4				ug/L	57	Standard
	S	34	28.3	44.4				ug/L	27	Standard
	Sr	88	118.3	17.1				ug/L	125	Standard
	C	12	20.0	86.6				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	5.9	187.3				mg/L	9	Standard
	Ho-1	165	8.3	69.3				mg/L	8	Standard
	Er	166	16.7	69.3				mg/L	20	Standard
	I	127	16637.5	2.6				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		96.107	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.071	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.968
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	97.220
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS MS WG608632-02
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Method 6020 - Summary Report

Sample ID: LCSS MS WG608632-03
Sample Date/Time: Tuesday, April 04, 2017 13:57:24
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	293729.4	2.6				ug/L	302131	Standard
	Be	9	52196.4	1.4	**24.6423**	0.792	3.2	ug/L	12	Standard
	Al	27	8737.7	31.2	**0.0467**	0.020	42.6	ug/L	907	Standard
	Sc	45	41409.9	1.4				ug/L	39227	Standard
	Ti	47	41.7	11.3	**0.0236**	0.023	97.1	ug/L	34	Standard
	V	51	167669.3	0.6	**25.4829**	0.146	0.6	ug/L	1155	Standard
	Cr	52	158493.0	0.6	**25.7324**	0.117	0.5	ug/L	5602	Standard
	Cr	53	19802.9	1.8	**25.2969**	0.592	2.3	ug/L	1042	Standard
	Mn	55	263742.8	0.8	**25.0599**	0.234	0.9	ug/L	2370	Standard
	Co	59	198820.0	0.3	**24.9807**	0.209	0.8	ug/L	381	Standard
	Ni	60	42908.3	1.6	**25.1920**	0.532	2.1	ug/L	282	Standard
	Cu	65	45819.2	0.9	**25.4236**	0.373	1.5	ug/L	707	Standard
	Zn	66	27144.3	0.7	**25.0443**	0.307	1.2	ug/L	427	Standard
>	Ge	72	820576.3	0.6				ug/L	842801	Standard
	As	75	27242.4	0.8	**24.4913**	0.326	1.3	ug/L	-11	Standard
	Se	82	2459.2	1.6	**24.0871**	0.455	1.9	ug/L	18	Standard
	Se-1	77	1870.4	3.4	**24.7587**	0.833	3.4	ug/L	127	Standard
>	Ga	71	43.3	17.6				mg/L	92	Standard
	Rb	85	53.3	27.1				ug/L	48	Standard
	Y	89	566537.8	0.7				ug/L	587989	Standard
>	Rh	103	25.0	60.0				ug/L	8	Standard
	Mo	98	114.8	107.9	**0.0185**	0.036	191.7	ug/L	35	Standard
	Ag	107	138559.0	0.9	**24.2431**	0.429	1.8	ug/L	121	Standard
	Cd	111	40387.9	0.8	**24.9465**	0.263	1.1	mg/L	4	Standard
	Cd	114	99608.2	1.6	**23.9649**	0.617	2.6	ug/L	27	Standard
>	In	115	680669.8	1.0				ug/L	702235	Standard
	Sn	118	306.0	16.0	**0.1158**	0.054	47.1	ug/L	180	Standard
	Sb	123	104223.5	0.7	**24.5308**	0.389	1.6	ug/L	43	Standard
	Ba	135	40495.7	1.2	**24.8742**	0.486	2.0	ug/L	50	Standard
	Ce	140	71.7	26.4				ug/L	20	Standard
>	Tb	159	1013725.0	1.4				ug/L	1036041	Standard
	Ho	165	21.7	70.5				ug/L	8	Standard
	Tl	203	174677.5	0.4	**25.8355**	0.275	1.1	ug/L	87	Standard
	Tl	205	425311.9	0.7	**25.8603**	0.355	1.4	ug/L	255	Standard
	Pb	206	140858.1	0.9	**25.6471**	0.481	1.9	ug/L	523	Standard
	Pb	207	121979.1	1.1	**24.5966**	0.448	1.8	ug/L	433	Standard
	Pb	208	140192.5	0.7	**24.7949**	0.301	1.2	ug/L	498	Standard
	U	238	111707.6	0.9	**24.3015**	0.425	1.8	ug/L	6	Standard
>	Bi	209	625084.0	1.0				ug/L	631806	Standard

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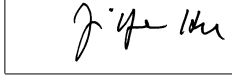

⌈	**Na**	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	28.3	27.0	**0.0886**	0.144	163.1	mg/L	27	Standard
|	**K**	39	13.3	21.7	**0.0388**	0.029	75.3	mg/L	17	Standard
|	**Ca**	43	41.7	36.7	**0.8108**	12.211	1506.1	mg/L	47	Standard
|	**Fe**	54	21.4	37.4	**-0.0898**	0.056	62.6	mg/L	23	Standard
|	**Fe**	57	301.7	15.0	**0.4512**	1.115	247.0	mg/L	253	Standard
⌊>	**Sc-1**	45	41409.9	1.4				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.0	86.6				ug/L	3	Standard
	Br	81	2783.6	4.5				ug/L	2163	Standard
	P	31	61.7	20.4				ug/L	57	Standard
	S	34	40.0	25.0				ug/L	27	Standard
	Sr	88	143.3	26.2				ug/L	125	Standard
	C	12	3.3	173.2				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	33.2	46.2				mg/L	9	Standard
	Ho-1	165	21.7	70.5				mg/L	8	Standard
	Er	166	3.3	173.2				mg/L	20	Standard
	I	127	16667.5	2.2				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		97.219	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.363	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: LCSS MS WG608632-03
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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	96.929
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	98.936
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS MS WG608632-03
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Method 6020 - Summary Report

Sample ID: L1704002606 WG608632-01
Sample Date/Time: Tuesday, April 04, 2017 14:00:30
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	304680.3	2.0				ug/L	302131	Standard
	Be	9	3193.7	4.7	**1.4469**	0.077	5.3	ug/L	12	Standard
	Al	27	1348520.2	1.9	**9.5910**	0.117	1.2	ug/L	907	Standard
	Sc	45	46322.4	3.5				ug/L	39227	Standard
	Ti	47	10727.5	1.5	**52.2618**	0.420	0.8	ug/L	34	Standard
	V	51	400094.7	0.8	**61.2072**	0.365	0.6	ug/L	1155	Standard
	Cr	52	222902.0	0.4	**36.6606**	0.182	0.5	ug/L	5602	Standard
	Cr	53	27429.8	0.9	**35.6577**	0.612	1.7	ug/L	1042	Standard
	Mn	55	41956879.9	0.2	**4035.8282**	41.067	1.0	ug/L	2370	Standard
	Co	59	109665.8	0.3	**13.7973**	0.150	1.1	ug/L	381	Standard
	Ni	60	22831.5	0.8	**13.3690**	0.216	1.6	ug/L	282	Standard
	Cu	65	31834.7	0.7	**17.6123**	0.286	1.6	ug/L	707	Standard
	Zn	66	66999.8	0.7	**62.5596**	0.934	1.5	ug/L	427	Standard
>	Ge	72	818282.7	0.9				ug/L	842801	Standard
	As	75	14726.7	0.6	**13.2974**	0.107	0.8	ug/L	-11	Standard
	Se	82	136.9	12.8	**1.2499**	0.164	13.1	ug/L	18	Standard
	Se-1	77	193.0	4.2	**1.1583**	0.138	11.9	ug/L	127	Standard
>	Ga	71	37468.0	3.7				mg/L	92	Standard
	Rb	85	252832.0	0.1				ug/L	48	Standard
	Y	89	937245.6	1.1				ug/L	587989	Standard
>	Rh	103	26.7	43.3				ug/L	8	Standard
	Mo	98	3835.1	1.8	**1.0853**	0.019	1.7	ug/L	35	Standard
	Ag	107	865.4	4.1	**0.1227**	0.006	4.6	ug/L	121	Standard
	Cd	111	294.1	2.7	**0.1653**	0.007	4.5	mg/L	4	Standard
	Cd	114	654.1	5.2	**0.1285**	0.011	8.5	ug/L	27	Standard
>	In	115	677937.8	1.6				ug/L	702235	Standard
	Sn	118	220.0	12.5	**0.0212**	0.035	165.1	ug/L	180	Standard
	Sb	123	155.1	12.2	**0.0127**	0.005	39.5	ug/L	43	Standard
	Ba	135	356391.5	2.0	**220.1976**	5.383	2.4	ug/L	50	Standard
	Ce	140	3913899.8	1.2				ug/L	20	Standard
>	Tb	159	1068923.8	0.7				ug/L	1036041	Standard
	Ho	165	25423.0	1.7				ug/L	8	Standard
	Tl	203	3228.0	3.2	**0.4412**	0.012	2.7	ug/L	87	Standard
	Tl	205	7908.7	10.1	**0.4534**	0.045	10.0	ug/L	255	Standard
	Pb	206	254223.9	1.3	**46.1917**	0.498	1.1	ug/L	523	Standard
	Pb	207	203624.9	1.2	**40.9593**	0.362	0.9	ug/L	433	Standard
	Pb	208	242602.3	1.6	**42.8069**	0.561	1.3	ug/L	498	Standard
	U	238	7531.9	0.8	**1.6202**	0.017	1.0	ug/L	6	Standard
>	Bi	209	627535.5	0.7				ug/L	631806	Standard

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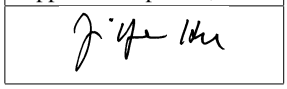

⌈	**Na**	23	8.3	91.7	**2.0149**	2.374	117.8	mg/L	2	Standard
|	**Mg**	24	45.0	29.4	**0.3068**	0.238	77.5	mg/L	27	Standard
|	**K**	39	86.7	8.8	**0.7253**	0.045	6.2	mg/L	17	Standard
|	**Ca**	43	55.0	36.4	**6.9277**	15.256	220.2	mg/L	47	Standard
|	**Fe**	54	5339.7	0.6	**32.2640**	0.932	2.9	mg/L	23	Standard
|	**Fe**	57	1703.4	2.1	**33.2274**	0.592	1.8	mg/L	253	Standard
⌊>	**Sc-1**	45	46322.4	3.5				mg/L	39227	Standard
	Cl	35	3.3	34.6				ug/L	1	Standard
	Kr	83	4.7	49.5				ug/L	3	Standard
	Br	81	4380.6	4.0				ug/L	2163	Standard
	P	31	70.0	18.9				ug/L	57	Standard
	S	34	31.7	59.8				ug/L	27	Standard
	Sr	88	128.3	11.9				ug/L	125	Standard
	C	12	56.7	53.9				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	176.7	25.5				mg/L	10	Standard
	Dy	164	39436.4	1.4				mg/L	9	Standard
	Ho-1	165	25423.0	1.7				mg/L	8	Standard
	Er	166	23264.5	0.6				mg/L	20	Standard
	I	127	65128.1	2.6				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		100.844	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.091	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.540
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.324
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1704002606 WG608632-01
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Method 6020 - Summary Report

Sample ID: L1704002606S WG608632-04
Sample Date/Time: Tuesday, April 04, 2017 14:03:36
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	310297.9	2.2				ug/L	302131	Standard
	Be	9	55046.5	0.9	**24.5956**	0.587	2.4	ug/L	12	Standard
	Al	27	1372666.9	1.2	**9.5891**	0.276	2.9	ug/L	907	Standard
	Sc	45	47720.0	1.5				ug/L	39227	Standard
	Ti	47	10487.3	1.7	**50.5395**	1.407	2.8	ug/L	34	Standard
	V	51	522202.7	1.5	**79.0816**	2.320	2.9	ug/L	1155	Standard
	Cr	52	323177.0	1.3	**52.9705**	1.294	2.4	ug/L	5602	Standard
	Cr	53	40124.7	1.4	**52.1988**	1.698	3.3	ug/L	1042	Standard
	Mn	55	35081488.8	1.6	**3338.2062**	96.460	2.9	ug/L	2370	Standard
	Co	59	294657.9	1.3	**36.7438**	0.563	1.5	ug/L	381	Standard
	Ni	60	63808.8	0.8	**37.2348**	0.687	1.8	ug/L	282	Standard
	Cu	65	74347.3	0.3	**41.1272**	0.864	2.1	ug/L	707	Standard
	Zn	66	94626.9	1.3	**87.5386**	0.855	1.0	ug/L	427	Standard
>	Ge	72	827393.2	2.1				ug/L	842801	Standard
	As	75	37534.5	1.9	**33.4575**	0.958	2.9	ug/L	-11	Standard
	Se	82	2321.3	1.8	**22.5479**	0.582	2.6	ug/L	18	Standard
	Se-1	77	1755.1	2.7	**22.9313**	0.273	1.2	ug/L	127	Standard
>	Ga	71	38886.5	2.9				mg/L	92	Standard
	Rb	85	270931.4	1.8				ug/L	48	Standard
	Y	89	930758.9	0.7				ug/L	587989	Standard
>	Rh	103	45.0	33.3				ug/L	8	Standard
	Mo	98	3801.3	0.5	**1.0654**	0.011	1.0	ug/L	35	Standard
	Ag	107	134772.2	1.8	**23.4515**	0.472	2.0	ug/L	121	Standard
	Cd	111	40269.2	1.4	**24.7388**	0.339	1.4	mg/L	4	Standard
	Cd	114	99765.5	2.7	**23.8700**	0.632	2.6	ug/L	27	Standard
>	In	115	684338.2	0.6				ug/L	702235	Standard
	Sn	118	201.0	6.5	**-0.0026**	0.014	529.5	ug/L	180	Standard
	Sb	123	1560.4	0.8	**0.3416**	0.005	1.5	ug/L	43	Standard
	Ba	135	397577.7	1.0	**243.3249**	3.459	1.4	ug/L	50	Standard
	Ce	140	3910893.7	1.4				ug/L	20	Standard
>	Tb	159	1090501.1	0.6				ug/L	1036041	Standard
	Ho	165	24524.8	0.6				ug/L	8	Standard
	Tl	203	176196.4	1.5	**25.4669**	0.496	1.9	ug/L	87	Standard
	Tl	205	430905.0	0.7	**25.6033**	0.285	1.1	ug/L	255	Standard
	Pb	206	399206.2	0.8	**71.2269**	0.872	1.2	ug/L	523	Standard
	Pb	207	331069.2	1.1	**65.3956**	0.894	1.4	ug/L	433	Standard
	Pb	208	389937.5	0.5	**67.5609**	0.379	0.6	ug/L	498	Standard
	U	238	121255.0	0.9	**25.7766**	0.150	0.6	ug/L	6	Standard
>	Bi	209	639623.7	0.4				ug/L	631806	Standard

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	Na	23	5.0	100.0	**0.9407**	1.537	163.3	mg/L	2	Standard
	Mg	24	28.3	20.4	**0.0192**	0.086	449.4	mg/L	27	Standard
	K	39	85.0	10.2	**0.6871**	0.088	12.8	mg/L	17	Standard
	Ca	43	46.7	16.4	**-0.2018**	4.876	2416.2	mg/L	47	Standard
	Fe	54	4591.9	6.8	**26.8674**	1.602	6.0	mg/L	23	Standard
	Fe	57	1573.4	5.7	**28.9766**	1.558	5.4	mg/L	253	Standard
>	**Sc-1**	45	47720.0	1.5				mg/L	39227	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	3.7	41.7				ug/L	3	Standard
	Br	81	5267.6	7.9				ug/L	2163	Standard
	P	31	60.0	8.3				ug/L	57	Standard
	S	34	31.7	65.7				ug/L	27	Standard
	Sr	88	116.7	21.1				ug/L	125	Standard
	C	12	80.0	25.0				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	203.3	7.5				mg/L	10	Standard
	Dy	164	38137.1	1.7				mg/L	9	Standard
	Ho-1	165	24524.8	0.6				mg/L	8	Standard
	Er	166	22970.7	1.7				mg/L	20	Standard
	I	127	69546.0	2.2				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.703	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.172	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.451
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.237
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1704002606S WG608632-04
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Method 6020 - Summary Report

Sample ID: L1704002606SD WG608632-05
Sample Date/Time: Tuesday, April 04, 2017 14:06:41
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	300822.4	1.5				ug/L	302131	Standard
	Be	9	56098.7	1.8	**25.8474**	0.251	1.0	ug/L	12	Standard
	Al	27	1381764.5	1.9	**9.9550**	0.231	2.3	ug/L	907	Standard
	Sc	45	46752.1	2.7				ug/L	39227	Standard
	Ti	47	10956.3	1.7	**53.5430**	2.078	3.9	ug/L	34	Standard
	V	51	627966.4	0.8	**96.4183**	1.787	1.9	ug/L	1155	Standard
	Cr	52	367024.3	1.4	**61.1094**	1.291	2.1	ug/L	5602	Standard
	Cr	53	46038.2	2.0	**60.9153**	1.668	2.7	ug/L	1042	Standard
	Mn	55	43342586.3	1.3	**4180.5465**	115.711	2.8	ug/L	2370	Standard
	Co	59	312462.6	1.2	**39.5030**	0.953	2.4	ug/L	381	Standard
	Ni	60	64327.6	1.2	**38.0509**	0.673	1.8	ug/L	282	Standard
	Cu	65	75322.1	1.6	**42.2483**	1.380	3.3	ug/L	707	Standard
	Zn	66	98784.4	2.0	**92.6772**	3.136	3.4	ug/L	427	Standard
>	Ge	72	816324.9	2.4				ug/L	842801	Standard
	As	75	41836.1	0.8	**37.7955**	0.985	2.6	ug/L	-11	Standard
	Se	82	2342.2	1.2	**23.0696**	0.861	3.7	ug/L	18	Standard
	Se-1	77	1793.4	1.5	**23.8169**	0.700	2.9	ug/L	127	Standard
>	Ga	71	41157.5	2.6				mg/L	92	Standard
	Rb	85	271134.8	1.4				ug/L	48	Standard
	Y	89	964976.6	1.2				ug/L	587989	Standard
>	Rh	103	26.7	10.8				ug/L	8	Standard
	Mo	98	4491.8	1.6	**1.2927**	0.025	2.0	ug/L	35	Standard
	Ag	107	134332.3	1.4	**23.9476**	0.402	1.7	ug/L	121	Standard
	Cd	111	39931.1	0.2	**25.1317**	0.093	0.4	mg/L	4	Standard
	Cd	114	98752.1	1.8	**24.2080**	0.549	2.3	ug/L	27	Standard
>	In	115	667991.2	0.5				ug/L	702235	Standard
	Sn	118	202.3	5.5	**0.0044**	0.012	277.5	ug/L	180	Standard
	Sb	123	1798.2	4.0	**0.4077**	0.019	4.7	ug/L	43	Standard
	Ba	135	430124.8	1.0	**269.6780**	2.096	0.8	ug/L	50	Standard
	Ce	140	4033609.6	0.9				ug/L	20	Standard
>	Tb	159	1067569.1	1.0				ug/L	1036041	Standard
	Ho	165	27414.8	2.0				ug/L	8	Standard
	Tl	203	175150.6	1.1	**25.9415**	0.339	1.3	ug/L	87	Standard
	Tl	205	425375.5	0.9	**25.8996**	0.294	1.1	ug/L	255	Standard
	Pb	206	410804.7	0.5	**75.1136**	0.669	0.9	ug/L	523	Standard
	Pb	207	341168.5	0.8	**69.0594**	0.334	0.5	ug/L	433	Standard
	Pb	208	399411.5	1.1	**70.9185**	0.845	1.2	ug/L	498	Standard
	U	238	121758.6	0.6	**26.5245**	0.195	0.7	ug/L	6	Standard
>	Bi	209	624203.1	0.8				ug/L	631806	Standard

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⌈	**Na**	23	6.7	86.6	**1.4952**	1.814	121.3	mg/L	2	Standard
|	**Mg**	24	41.7	25.0	**0.2413**	0.162	67.1	mg/L	27	Standard
|	**K**	39	55.0	15.7	**0.4170**	0.068	16.2	mg/L	17	Standard
|	**Ca**	43	28.3	27.0	**-12.2291**	4.836	39.5	mg/L	47	Standard
|	**Fe**	54	6589.3	2.7	**39.5016**	1.791	4.5	mg/L	23	Standard
|	**Fe**	57	2048.5	1.3	**41.0697**	1.882	4.6	mg/L	253	Standard
⌊>	**Sc-1**	45	46752.1	2.7				mg/L	39227	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	1.0	100.0				ug/L	3	Standard
	Br	81	5120.9	2.8				ug/L	2163	Standard
	P	31	50.0	17.3				ug/L	57	Standard
	S	34	25.0	52.9				ug/L	27	Standard
	Sr	88	138.3	20.6				ug/L	125	Standard
	C	12	110.0	27.3				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	186.7	24.7				mg/L	10	Standard
	Dy	164	43974.6	0.6				mg/L	9	Standard
	Ho-1	165	27414.8	2.0				mg/L	8	Standard
	Er	166	25037.3	2.7				mg/L	20	Standard
	I	127	76861.2	2.3				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.567	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.859	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		95.124
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		98.797
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1704002402
Sample Date/Time: Tuesday, April 04, 2017 14:41:05
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	340229.3	0.5				ug/L	302131	Standard
	Be	9	9352.9	1.7	**3.8044**	0.062	1.6	ug/L	12	Standard
	Al	27	2843837.0	1.0	**18.1281**	0.237	1.3	ug/L	907	Standard
	Sc	45	74139.3	0.8				ug/L	39227	Standard
	Ti	47	35365.9	1.5	**169.5173**	5.398	3.2	ug/L	34	Standard
	V	51	964747.5	1.1	**145.0808**	4.192	2.9	ug/L	1155	Standard
	Cr	52	484313.5	1.5	**79.2004**	2.641	3.3	ug/L	5602	Standard
	Cr	53	61367.4	0.2	**79.8771**	1.534	1.9	ug/L	1042	Standard
	Mn	55	3789719.8	1.0	**357.5235**	8.596	2.4	ug/L	2370	Standard
	Co	59	89096.5	0.7	**10.9909**	0.234	2.1	ug/L	381	Standard
	Ni	60	77625.3	0.2	**44.9717**	0.876	1.9	ug/L	282	Standard
	Cu	65	102328.7	0.6	**56.2804**	1.314	2.3	ug/L	707	Standard
	Zn	66	102189.8	0.5	**93.8292**	2.147	2.3	ug/L	427	Standard
>	Ge	72	833990.6	1.8				ug/L	842801	Standard
	As	75	17219.6	1.0	**15.2506**	0.237	1.6	ug/L	-11	Standard
	Se	82	97.1	6.5	**0.8409**	0.072	8.5	ug/L	18	Standard
	Se-1	77	241.3	8.2	**1.7740**	0.234	13.2	ug/L	127	Standard
>	Ga	71	119773.4	2.4				mg/L	92	Standard
	Rb	85	439474.0	2.0				ug/L	48	Standard
	Y	89	1552553.4	1.4				ug/L	587989	Standard
>	Rh	103	18.3	15.7				ug/L	8	Standard
	Mo	98	1491.8	2.2	**0.4111**	0.007	1.6	ug/L	35	Standard
	Ag	107	932.4	6.5	**0.1336**	0.010	7.4	ug/L	121	Standard
	Cd	111	211.4	8.1	**0.1133**	0.010	8.7	mg/L	4	Standard
	Cd	114	549.2	10.0	**0.1022**	0.012	12.2	ug/L	27	Standard
>	In	115	681497.4	0.7				ug/L	702235	Standard
	Sn	118	277.3	0.8	**0.0835**	0.004	4.7	ug/L	180	Standard
	Sb	123	153.7	25.0	**0.0121**	0.009	73.4	ug/L	43	Standard
	Ba	135	88520.2	0.7	**54.3636**	0.724	1.3	ug/L	50	Standard
	Ce	140	563726.4	1.2				ug/L	20	Standard
>	Tb	159	1119713.7	1.0				ug/L	1036041	Standard
	Ho	165	73506.2	0.8				ug/L	8	Standard
	Tl	203	4348.6	2.7	**0.6092**	0.025	4.2	ug/L	87	Standard
	Tl	205	10753.8	2.6	**0.6287**	0.023	3.7	ug/L	255	Standard
	Pb	206	135304.1	0.7	**24.6261**	0.304	1.2	ug/L	523	Standard
	Pb	207	106064.9	0.2	**21.3713**	0.286	1.3	ug/L	433	Standard
	Pb	208	128354.2	0.1	**22.6901**	0.328	1.4	ug/L	498	Standard
	U	238	8477.7	1.3	**1.8326**	0.053	2.9	ug/L	6	Standard
>	Bi	209	625210.8	1.5				ug/L	631806	Standard

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⌈	**Na**	23	1.7	173.2	**-0.2639**	0.579	219.3	mg/L	2	Standard
|	**Mg**	24	38.3	32.8	**-0.0372**	0.129	346.9	mg/L	27	Standard
|	**K**	39	156.7	17.6	**0.8337**	0.165	19.8	mg/L	17	Standard
|	**Ca**	43	40.0	25.0	**-14.2838**	4.437	31.1	mg/L	47	Standard
|	**Fe**	54	14423.9	3.8	**54.5714**	1.654	3.0	mg/L	23	Standard
|	**Fe**	57	4172.2	5.0	**54.8808**	3.265	5.9	mg/L	253	Standard
⌊>	**Sc-1**	45	74139.3	0.8				mg/L	39227	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	4.0	25.0				ug/L	3	Standard
	Br	81	4003.9	2.7				ug/L	2163	Standard
	P	31	58.3	21.6				ug/L	57	Standard
	S	34	38.3	45.8				ug/L	27	Standard
	Sr	88	113.3	28.7				ug/L	125	Standard
	C	12	16.7	69.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	390.0	14.3				mg/L	10	Standard
	Dy	164	111468.0	2.4				mg/L	9	Standard
	Ho-1	165	73506.2	0.8				mg/L	8	Standard
	Er	166	69559.4	3.0				mg/L	20	Standard
	I	127	18009.0	1.3				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		112.610	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.955	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		97.047
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		98.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1704002402PS WG608761-01
Sample Date/Time: Tuesday, April 04, 2017 14:44:10
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	341952.8	2.9				ug/L	302131	Standard
	Be	9	115245.0	1.4	**46.7328**	0.867	1.9	ug/L	12	Standard
	Al	27	2823474.0	0.9	**17.9151**	0.456	2.5	ug/L	907	Standard
	Sc	45	72119.7	3.0				ug/L	39227	Standard
	Ti	47	34457.5	1.0	**167.2300**	2.949	1.8	ug/L	34	Standard
	V	51	1273639.4	0.2	**193.9856**	2.189	1.1	ug/L	1155	Standard
	Cr	52	776109.9	0.6	**129.0586**	1.410	1.1	ug/L	5602	Standard
	Cr	53	97642.0	1.9	**129.5309**	3.875	3.0	ug/L	1042	Standard
	Mn	55	4362876.3	0.8	**416.8206**	5.717	1.4	ug/L	2370	Standard
	Co	59	478999.4	0.9	**60.0404**	0.840	1.4	ug/L	381	Standard
	Ni	60	159953.9	1.0	**94.0112**	1.559	1.7	ug/L	282	Standard
	Cu	65	190276.4	1.0	**106.2672**	1.739	1.6	ug/L	707	Standard
	Zn	66	154442.5	1.0	**143.8078**	3.051	2.1	ug/L	427	Standard
>	Ge	72	823476.7	1.3				ug/L	842801	Standard
	As	75	72926.8	0.7	**65.2615**	1.191	1.8	ug/L	-11	Standard
	Se	82	5153.1	0.1	**50.4085**	0.683	1.4	ug/L	18	Standard
	Se-1	77	3785.5	3.8	**51.5207**	1.690	3.3	ug/L	127	Standard
>	Ga	71	117975.9	1.1				mg/L	92	Standard
	Rb	85	441352.7	0.7				ug/L	48	Standard
	Y	89	1555116.7	1.4				ug/L	587989	Standard
>	Rh	103	31.7	18.2				ug/L	8	Standard
	Mo	98	1458.0	2.1	**0.4013**	0.010	2.4	ug/L	35	Standard
	Ag	107	287252.4	0.3	**50.2012**	0.720	1.4	ug/L	121	Standard
	Cd	111	80426.4	1.2	**49.6109**	1.102	2.2	mg/L	4	Standard
	Cd	114	201169.2	1.3	**48.3439**	1.142	2.4	ug/L	27	Standard
>	In	115	681889.5	1.2				ug/L	702235	Standard
	Sn	118	289.7	2.9	**0.0970**	0.010	10.5	ug/L	180	Standard
	Sb	123	210537.7	0.8	**49.4864**	0.311	0.6	ug/L	43	Standard
	Ba	135	167097.7	0.9	**102.6120**	1.741	1.7	ug/L	50	Standard
	Ce	140	563999.7	1.2				ug/L	20	Standard
>	Tb	159	1127332.7	1.1				ug/L	1036041	Standard
	Ho	165	73695.5	2.1				ug/L	8	Standard
	Tl	203	344312.3	0.5	**50.2267**	0.258	0.5	ug/L	87	Standard
	Tl	205	842458.9	0.9	**50.5124**	0.453	0.9	ug/L	255	Standard
	Pb	206	410173.0	0.8	**73.8169**	0.583	0.8	ug/L	523	Standard
	Pb	207	353503.6	1.0	**70.4353**	0.749	1.1	ug/L	433	Standard
	Pb	208	410695.2	0.7	**71.7772**	0.480	0.7	ug/L	498	Standard
	U	238	240850.0	1.1	**51.6555**	0.592	1.1	ug/L	6	Standard
>	Bi	209	634150.1	0.0				ug/L	631806	Standard

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⌈	**Na**	23	5.0	100.0	**0.4345**	1.053	242.3	mg/L	2	Standard
|	**Mg**	24	43.3	29.0	**0.0274**	0.140	511.4	mg/L	27	Standard
|	**K**	39	141.7	44.1	**0.7667**	0.387	50.5	mg/L	17	Standard
|	**Ca**	43	35.0	57.1	**-16.0778**	9.002	56.0	mg/L	47	Standard
|	**Fe**	54	14103.7	4.6	**54.8546**	1.479	2.7	mg/L	23	Standard
|	**Fe**	57	4252.3	3.1	**57.8660**	1.337	2.3	mg/L	253	Standard
⌊>	**Sc-1**	45	72119.7	3.0				mg/L	39227	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	1.3	114.6				ug/L	3	Standard
	Br	81	4110.6	3.7				ug/L	2163	Standard
	P	31	71.7	33.0				ug/L	57	Standard
	S	34	36.7	70.0				ug/L	27	Standard
	Sr	88	146.7	24.7				ug/L	125	Standard
	C	12	30.0	33.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	346.7	13.3				mg/L	10	Standard
	Dy	164	109570.6	1.4				mg/L	9	Standard
	Ho-1	165	73695.5	2.1				mg/L	8	Standard
	Er	166	70396.6	2.7				mg/L	20	Standard
	I	127	16847.7	3.5				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		113.180	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.707	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1704002402PS WG608761-01
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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.103
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.371
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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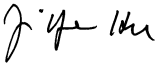

Method 6020 - Summary Report

Sample ID: L1704002402SDL WG608761-02
Sample Date/Time: Tuesday, April 04, 2017 14:47:16
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	288818.8	1.5				ug/L	302131	Standard
	Be	9	1851.8	4.6	**0.8820**	0.033	3.8	ug/L	12	Standard
	Al	27	469170.4	1.0	**3.5094**	0.088	2.5	ug/L	907	Standard
	Sc	45	45222.4	1.0				ug/L	39227	Standard
	Ti	47	6705.8	1.5	**33.5557**	0.499	1.5	ug/L	34	Standard
	V	51	187500.0	0.3	**29.4329**	0.254	0.9	ug/L	1155	Standard
	Cr	52	96868.0	0.3	**15.8987**	0.226	1.4	ug/L	5602	Standard
	Cr	53	12136.5	3.3	**15.5120**	0.723	4.7	ug/L	1042	Standard
	Mn	55	618157.3	1.0	**60.9486**	0.425	0.7	ug/L	2370	Standard
	Co	59	17465.4	1.0	**2.2224**	0.002	0.1	ug/L	381	Standard
	Ni	60	15364.1	1.7	**9.2080**	0.066	0.7	ug/L	282	Standard
	Cu	65	21036.9	0.8	**11.8680**	0.050	0.4	ug/L	707	Standard
	Zn	66	21975.3	1.2	**20.8597**	0.357	1.7	ug/L	427	Standard
>	**Ge**	72	795198.3	1.0				ug/L	842801	Standard
	As	75	3474.4	1.6	**3.2628**	0.019	0.6	ug/L	-11	Standard
	Se	82	33.8	13.5	**0.2436**	0.043	17.7	ug/L	18	Standard
	Se-1	77	106.0	12.3	**-0.0259**	0.202	778.2	ug/L	127	Standard
>	**Ga**	71	23171.0	1.1				mg/L	92	Standard
	Rb	85	85829.1	1.3				ug/L	48	Standard
	Y	89	737654.9	0.4				ug/L	587989	Standard
>	**Rh**	103	6.7	43.3				ug/L	8	Standard
	Mo	98	304.9	5.4	**0.0761**	0.006	7.8	ug/L	35	Standard
	Ag	107	281.7	3.3	**0.0217**	0.001	4.4	ug/L	121	Standard
	Cd	111	41.6	4.2	**0.0095**	0.001	15.5	mg/L	4	Standard
	Cd	114	101.6	2.7	**-0.0044**	0.000	10.3	ug/L	27	Standard
>	**In**	115	655586.4	1.6				ug/L	702235	Standard
	Sn	118	188.7	2.1	**-0.0071**	0.002	22.8	ug/L	180	Standard
	Sb	123	1178.6	32.2	**0.2637**	0.089	33.7	ug/L	43	Standard
	Ba	135	17729.4	1.4	**11.2820**	0.342	3.0	ug/L	50	Standard
	Ce	140	111656.7	1.9				ug/L	20	Standard
>	**Tb**	159	1010420.9	1.3				ug/L	1036041	Standard
	Ho	165	14368.5	3.6				ug/L	8	Standard
	Tl	203	902.7	2.4	**0.1014**	0.004	4.1	ug/L	87	Standard
	Tl	205	2268.5	0.1	**0.1149**	0.001	0.7	ug/L	255	Standard
	Pb	206	27064.2	1.1	**4.9329**	0.036	0.7	ug/L	523	Standard
	Pb	207	21088.0	1.0	**4.2557**	0.068	1.6	ug/L	433	Standard
	Pb	208	25534.6	1.7	**4.5251**	0.095	2.1	ug/L	498	Standard
	U	238	1662.1	2.7	**0.3562**	0.010	2.9	ug/L	6	Standard
>	**Bi**	209	613110.5	0.7				ug/L	631806	Standard

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⌈	**Na**	23	3.3	86.6	**0.4893**	0.942	192.5	mg/L	2	Standard
|	**Mg**	24	30.0	33.3	**0.0714**	0.164	230.4	mg/L	27	Standard
|	**K**	39	48.3	41.8	**0.3716**	0.202	54.2	mg/L	17	Standard
|	**Ca**	43	36.7	15.7	**-5.5792**	3.926	70.4	mg/L	47	Standard
|	**Fe**	54	2637.1	8.0	**16.2035**	1.462	9.0	mg/L	23	Standard
|	**Fe**	57	930.0	7.1	**15.2237**	1.839	12.1	mg/L	253	Standard
⌊>	**Sc-1**	45	45222.4	1.0				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	2160.2	7.2				ug/L	2163	Standard
	P	31	48.3	23.9				ug/L	57	Standard
	S	34	38.3	32.8				ug/L	27	Standard
	Sr	88	131.7	24.7				ug/L	125	Standard
	C	12	26.7	78.1				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	80.0	12.5				mg/L	10	Standard
	Dy	164	21146.0	0.6				mg/L	9	Standard
	Ho-1	165	14368.5	3.6				mg/L	8	Standard
	Er	166	13562.7	3.1				mg/L	20	Standard
	I	127	13017.3	0.3				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		95.594	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.352	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.357
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.041
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704002402SDL WG608761-02
Sample Date/Time: Tuesday, April 04, 2017 14:50:21
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	275071.6	1.7				ug/L	302131	Standard
	Be	9	388.3	10.0	**0.1888**	0.016	8.7	ug/L	12	Standard
	Al	27	95079.3	3.3	**0.7324**	0.013	1.8	ug/L	907	Standard
	Sc	45	39992.7	0.2				ug/L	39227	Standard
	Ti	47	1366.7	4.3	**6.8133**	0.270	4.0	ug/L	34	Standard
	V	51	38440.3	0.8	**6.0078**	0.062	1.0	ug/L	1155	Standard
	Cr	52	22736.0	0.6	**3.1116**	0.043	1.4	ug/L	5602	Standard
	Cr	53	2580.2	4.6	**2.3088**	0.178	7.7	ug/L	1042	Standard
	Mn	55	126074.1	1.7	**12.4553**	0.265	2.1	ug/L	2370	Standard
	Co	59	3751.8	3.0	**0.4495**	0.017	3.8	ug/L	381	Standard
	Ni	60	3258.7	1.0	**1.8632**	0.018	1.0	ug/L	282	Standard
	Cu	65	4609.7	1.8	**2.3843**	0.060	2.5	ug/L	707	Standard
	Zn	66	5267.6	0.9	**4.7951**	0.068	1.4	ug/L	427	Standard
>	Ge	72	781755.4	0.5				ug/L	842801	Standard
	As	75	667.2	2.4	**0.6742**	0.015	2.2	ug/L	-11	Standard
	Se	82	16.4	51.3	**0.0702**	0.087	124.3	ug/L	18	Standard
	Se-1	77	90.3	12.6	**-0.2314**	0.175	75.5	ug/L	127	Standard
>	Ga	71	4664.1	3.1				mg/L	92	Standard
	Rb	85	17678.7	3.8				ug/L	48	Standard
	Y	89	579651.7	0.7				ug/L	587989	Standard
>	Rh	103	3.3	86.6				ug/L	8	Standard
	Mo	98	80.8	14.3	**0.0099**	0.004	35.6	ug/L	35	Standard
	Ag	107	148.0	22.1	**-0.0023**	0.006	251.0	ug/L	121	Standard
	Cd	111	16.6	76.4	**-0.0065**	0.008	125.7	mg/L	4	Standard
	Cd	114	62.4	83.4	**-0.0141**	0.013	92.5	ug/L	27	Standard
>	In	115	649328.7	1.3				ug/L	702235	Standard
	Sn	118	158.3	10.4	**-0.0406**	0.017	42.7	ug/L	180	Standard
	Sb	123	286.6	39.8	**0.0467**	0.028	59.6	ug/L	43	Standard
	Ba	135	3571.4	1.1	**2.2540**	0.010	0.5	ug/L	50	Standard
	Ce	140	22626.9	2.2				ug/L	20	Standard
>	Tb	159	975238.5	1.2				ug/L	1036041	Standard
	Ho	165	2735.2	8.1				ug/L	8	Standard
	Tl	203	227.3	15.1	**0.0001**	0.006	8211.5	ug/L	87	Standard
	Tl	205	481.7	22.3	**0.0047**	0.007	151.4	ug/L	255	Standard
	Pb	206	5743.1	1.2	**0.9782**	0.025	2.6	ug/L	523	Standard
	Pb	207	4535.7	1.8	**0.8569**	0.019	2.2	ug/L	433	Standard
	Pb	208	5331.4	1.0	**0.8858**	0.018	2.0	ug/L	498	Standard
	U	238	352.3	11.0	**0.0671**	0.009	13.9	ug/L	6	Standard
>	Bi	209	601984.1	1.1				ug/L	631806	Standard

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⌈	**Na**	23	1.7	173.2	**0.0201**	1.071	5318.3	mg/L	2	Standard
|	**Mg**	24	26.7	57.3	**0.0742**	0.286	385.2	mg/L	27	Standard
|	**K**	39	23.3	24.7	**0.1550**	0.063	41.0	mg/L	17	Standard
|	**Ca**	43	56.7	48.6	**13.9498**	22.098	158.4	mg/L	47	Standard
|	**Fe**	54	559.5	10.1	**3.7056**	0.393	10.6	mg/L	23	Standard
|	**Fe**	57	426.7	2.9	**4.2186**	0.329	7.8	mg/L	253	Standard
⌊>	**Sc-1**	45	39992.7	0.2				mg/L	39227	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	3.3	34.6				ug/L	3	Standard
	Br	81	1746.8	5.8				ug/L	2163	Standard
	P	31	58.3	49.5				ug/L	57	Standard
	S	34	33.3	67.6				ug/L	27	Standard
	Sr	88	131.7	20.9				ug/L	125	Standard
	C	12	13.3	114.6				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	23.3	65.5				mg/L	10	Standard
	Dy	164	4271.0	2.8				mg/L	9	Standard
	Ho-1	165	2735.2	8.1				mg/L	8	Standard
	Er	166	2496.9	12.4				mg/L	20	Standard
	I	127	13459.3	1.7				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		91.044	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		92.757	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	92.466
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	95.280
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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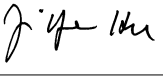

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, April 04, 2017 14:53:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	289460.2	2.7				ug/L	302131	Standard
	Be	9	103035.9	2.2	**49.3733**	1.974	4.0	ug/L	12	Standard
	Al	27	6633331.7	3.3	**49.7573**	2.206	4.4	ug/L	907	Standard
	Sc	45	40972.0	3.4				ug/L	39227	Standard
	Ti	47	20882.4	4.0	**100.3663**	4.250	4.2	ug/L	34	Standard
	V	51	329621.6	2.6	**49.6315**	1.372	2.8	ug/L	1155	Standard
	Cr	52	304521.9	2.4	**49.6369**	1.351	2.7	ug/L	5602	Standard
	Cr	53	37922.4	3.2	**49.0263**	1.544	3.1	ug/L	1042	Standard
	Mn	55	523294.4	1.9	**49.3357**	1.116	2.3	ug/L	2370	Standard
	Co	59	394930.4	3.1	**49.0494**	1.575	3.2	ug/L	381	Standard
	Ni	60	84581.2	2.9	**49.1886**	1.432	2.9	ug/L	282	Standard
	Cu	65	88656.4	2.2	**48.8874**	1.193	2.4	ug/L	707	Standard
	Zn	66	53457.8	2.2	**49.0736**	1.190	2.4	ug/L	427	Standard
>	Ge	72	830920.4	1.3				ug/L	842801	Standard
	As	75	54751.4	2.8	**48.5660**	1.434	3.0	ug/L	-11	Standard
	Se	82	5004.3	2.8	**48.5114**	1.599	3.3	ug/L	18	Standard
	Se-1	77	3617.1	2.2	**48.7086**	0.787	1.6	ug/L	127	Standard
>	Ga	71	76.7	16.4				mg/L	92	Standard
	Rb	85	501.7	24.5				ug/L	48	Standard
	Y	89	578474.7	1.7				ug/L	587989	Standard
>	Rh	103	11.7	65.5				ug/L	8	Standard
	Mo	98	347530.6	3.0	**97.8427**	3.946	4.0	ug/L	35	Standard
	Ag	107	284030.1	2.7	**49.0285**	1.804	3.7	ug/L	121	Standard
	Cd	111	81594.0	2.5	**49.7114**	1.763	3.5	mg/L	4	Standard
	Cd	114	207400.1	2.3	**49.2267**	1.653	3.4	ug/L	27	Standard
>	In	115	690456.8	1.1				ug/L	702235	Standard
	Sn	118	45923.9	2.9	**50.3274**	2.002	4.0	ug/L	180	Standard
	Sb	123	209917.8	1.9	**48.7367**	1.458	3.0	ug/L	43	Standard
	Ba	135	80062.1	2.4	**48.5345**	1.664	3.4	ug/L	50	Standard
	Ce	140	455.0	77.1				ug/L	20	Standard
>	Tb	159	1023203.5	2.5				ug/L	1036041	Standard
	Ho	165	21.7	96.1				ug/L	8	Standard
	Tl	203	333022.2	1.4	**49.1109**	1.927	3.9	ug/L	87	Standard
	Tl	205	804774.4	1.5	**48.7805**	1.924	3.9	ug/L	255	Standard
	Pb	206	270626.8	1.3	**49.1978**	1.860	3.8	ug/L	523	Standard
	Pb	207	244681.5	2.3	**49.2636**	2.336	4.7	ug/L	433	Standard
	Pb	208	277432.1	2.6	**48.9964**	2.493	5.1	ug/L	498	Standard
	U	238	229460.5	3.0	**49.7623**	2.675	5.4	ug/L	6	Standard
>	Bi	209	627697.2	2.5				ug/L	631806	Standard

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	Na	23	6.7	114.6	**1.7600**	2.690	152.8	mg/L	2	Standard
	Mg	24	295.0	8.5	**4.9798**	0.641	12.9	mg/L	27	Standard
	K	39	425.0	17.3	**4.5199**	0.970	21.5	mg/L	17	Standard
	Ca	43	41.7	18.3	**1.2479**	7.219	578.5	mg/L	47	Standard
	Fe	54	696.6	2.6	**4.5600**	0.257	5.6	mg/L	23	Standard
	Fe	57	503.3	5.5	**6.0180**	0.693	11.5	mg/L	253	Standard
>	**Sc-1**	45	40972.0	3.4				mg/L	39227	Standard
	Cl	35	2.7	114.6				ug/L	1	Standard
	Kr	83	2.7	43.3				ug/L	3	Standard
	Br	81	2023.5	9.4				ug/L	2163	Standard
	P	31	48.3	43.1				ug/L	57	Standard
	S	34	50.0	34.6				ug/L	27	Standard
	Sr	88	118.3	28.8				ug/L	125	Standard
	C	12	40.0	25.0				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	10	Standard
	Dy	164	32.7	68.5				mg/L	9	Standard
	Ho-1	165	21.7	96.1				mg/L	8	Standard
	Er	166	13.3	114.6				mg/L	20	Standard
	I	127	2471.9	5.7				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	98.747		
	Al	27	99.515		
	Sc	45			
	Ti	47	100.366		
	V	51	99.263		
	Cr	52	99.274		
	Cr	53			
	Mn	55	98.671		
	Co	59	98.099		
	Ni	60	98.377		
	Cu	65	97.775		
	Zn	66	98.147		
>	Ge	72		98.590	
	As	75	97.132		
	Se	82	97.023		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	97.843		
Ag	107	98.057		
Cd	111	99.423		
Cd	114			
In	115			98.323
Sn	118	100.655		
Sb	123	97.473		
Ba	135	97.069		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.222		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.993		
U	238	99.525		
Bi	209			99.350
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, April 04, 2017 14:56:33
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	280157.5	2.6				ug/L	302131	Standard
	Be	9	20.0	43.3	**0.0031**	0.004	136.1	ug/L	12	Standard
	Al	27	835.0	14.4	**-0.0114**	0.001	8.1	ug/L	907	Standard
	Sc	45	40509.1	3.5				ug/L	39227	Standard
	Ti	47	34.3	14.4	**-0.0089**	0.019	217.8	ug/L	34	Standard
	V	51	1075.6	3.6	**0.0040**	0.005	130.5	ug/L	1155	Standard
	Cr	52	4926.1	0.6	**-0.0523**	0.022	42.4	ug/L	5602	Standard
	Cr	53	413.3	2.5	**-0.7652**	0.024	3.1	ug/L	1042	Standard
	Mn	55	2167.5	2.9	**-0.0267**	0.002	6.2	ug/L	2370	Standard
	Co	59	267.7	7.5	**-0.0117**	0.004	30.1	ug/L	381	Standard
	Ni	60	183.3	12.3	**-0.0469**	0.010	21.7	ug/L	282	Standard
	Cu	65	2234.5	3.2	**0.9479**	0.037	3.9	ug/L	707	Standard
	Zn	66	436.0	5.8	**0.0325**	0.012	37.8	ug/L	427	Standard
>	**Ge**	72	803051.9	2.9				ug/L	842801	Standard
	As	75	-2.4	2389.6	**0.0442**	0.052	118.3	ug/L	-11	Standard
	Se	82	16.8	24.3	**0.0695**	0.044	62.8	ug/L	18	Standard
	Se-1	77	69.7	5.4	**-0.5650**	0.027	4.7	ug/L	127	Standard
>	**Ga**	71	35.0	24.7				mg/L	92	Standard
	Rb	85	105.0	29.7				ug/L	48	Standard
	Y	89	569859.2	1.0				ug/L	587989	Standard
>	**Rh**	103	11.7	49.5				ug/L	8	Standard
	Mo	98	136.2	8.9	**0.0248**	0.003	13.4	ug/L	35	Standard
	Ag	107	145.0	8.1	**-0.0040**	0.002	40.7	ug/L	121	Standard
	Cd	111	2.8	60.9	**-0.0155**	0.001	6.8	mg/L	4	Standard
	Cd	114	48.9	43.4	**-0.0179**	0.005	29.9	ug/L	27	Standard
>	**In**	115	677184.0	2.6				ug/L	702235	Standard
	Sn	118	229.0	17.8	**0.0319**	0.052	161.6	ug/L	180	Standard
	Sb	123	392.1	20.3	**0.0691**	0.021	30.4	ug/L	43	Standard
	Ba	135	50.7	1.1	**-0.0187**	0.001	6.0	ug/L	50	Standard
	Ce	140	40.0	66.1				ug/L	20	Standard
>	**Tb**	159	1012433.5	1.5				ug/L	1036041	Standard
	Ho	165	18.3	15.7				ug/L	8	Standard
	Tl	203	46.7	50.3	**-0.0281**	0.004	12.6	ug/L	87	Standard
	Tl	205	125.0	55.4	**-0.0183**	0.004	23.4	ug/L	255	Standard
	Pb	206	1102.0	3.7	**0.0865**	0.004	5.0	ug/L	523	Standard
	Pb	207	880.4	3.6	**0.0794**	0.004	4.9	ug/L	433	Standard
	Pb	208	1024.7	1.9	**0.0825**	0.006	7.1	ug/L	498	Standard
	U	238	17.3	31.8	**-0.0089**	0.001	13.3	ug/L	6	Standard
>	**Bi**	209	632987.6	1.5				ug/L	631806	Standard

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	Na	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
	Mg	24	43.3	29.0	**0.3810**	0.252	66.1	mg/L	27	Standard
	K	39	11.7	65.5	**0.0252**	0.086	340.2	mg/L	17	Standard
	Ca	43	43.3	24.0	**2.6418**	7.087	268.2	mg/L	47	Standard
	Fe	54	22.8	13.8	**-0.0775**	0.021	27.0	mg/L	23	Standard
	Fe	57	263.3	19.4	**-0.4106**	1.399	340.7	mg/L	253	Standard
>	**Sc-1**	45	40509.1	3.5				mg/L	39227	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	3.3	17.3				ug/L	3	Standard
	Br	81	2083.5	8.4				ug/L	2163	Standard
	P	31	46.7	16.4				ug/L	57	Standard
	S	34	45.0	0.0				ug/L	27	Standard
	Sr	88	110.0	7.9				ug/L	125	Standard
	C	12	26.7	43.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	12.4	122.2				mg/L	9	Standard
	Ho-1	165	18.3	15.7				mg/L	8	Standard
	Er	166	20.0	50.0				mg/L	20	Standard
	I	127	3107.0	4.7				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.284	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.433
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.187
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Cu	65	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1704002403
Sample Date/Time: Tuesday, April 04, 2017 14:59:41
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	335516.7	1.9				ug/L	302131	Standard
	Be	9	7178.4	1.1	**2.9602**	0.069	2.3	ug/L	12	Standard
	Al	27	1945783.6	1.3	**12.5768**	0.396	3.1	ug/L	907	Standard
	Sc	45	72598.5	1.5				ug/L	39227	Standard
	Ti	47	20922.8	1.5	**100.7918**	0.813	0.8	ug/L	34	Standard
	V	51	813754.2	0.6	**123.0670**	1.592	1.3	ug/L	1155	Standard
	Cr	52	284411.3	0.9	**46.4119**	0.535	1.2	ug/L	5602	Standard
	Cr	53	35586.7	1.3	**46.0439**	0.964	2.1	ug/L	1042	Standard
	Mn	55	29489318.4	0.5	**2800.0998**	19.099	0.7	ug/L	2370	Standard
	Co	59	1458166.1	1.1	**181.6655**	2.625	1.4	ug/L	381	Standard
	Ni	60	76666.1	0.4	**44.6797**	0.431	1.0	ug/L	282	Standard
	Cu	65	92305.3	0.5	**51.0354**	0.224	0.4	ug/L	707	Standard
	Zn	66	122512.3	1.0	**113.2311**	1.119	1.0	ug/L	427	Standard
>	**Ge**	72	828894.3	0.8				ug/L	842801	Standard
	As	75	15683.4	1.5	**13.9777**	0.226	1.6	ug/L	-11	Standard
	Se	82	90.2	5.6	**0.7785**	0.047	6.0	ug/L	18	Standard
	Se-1	77	250.7	4.1	**1.9268**	0.160	8.3	ug/L	127	Standard
>	**Ga**	71	86223.1	2.9				mg/L	92	Standard
	Rb	85	236386.5	0.9				ug/L	48	Standard
	Y	89	1392243.0	0.5				ug/L	587989	Standard
>	**Rh**	103	31.7	24.1				ug/L	8	Standard
	Mo	98	1967.7	3.3	**0.5413**	0.017	3.1	ug/L	35	Standard
	Ag	107	1083.0	1.9	**0.1581**	0.003	1.6	ug/L	121	Standard
	Cd	111	319.8	5.9	**0.1783**	0.012	6.6	mg/L	4	Standard
	Cd	114	720.5	8.4	**0.1418**	0.015	10.8	ug/L	27	Standard
>	**In**	115	688281.7	0.6				ug/L	702235	Standard
	Sn	118	293.7	4.3	**0.0985**	0.016	16.0	ug/L	180	Standard
	Sb	123	266.1	27.6	**0.0381**	0.017	45.8	ug/L	43	Standard
	Ba	135	78296.5	1.1	**47.6035**	0.635	1.3	ug/L	50	Standard
	Ce	140	39673183.1	0.8				ug/L	20	Standard
>	**Tb**	159	1139510.3	0.8				ug/L	1036041	Standard
	Ho	165	68025.8	2.3				ug/L	8	Standard
	Tl	203	9096.4	0.7	**1.2947**	0.025	2.0	ug/L	87	Standard
	Tl	205	22515.1	2.6	**1.3263**	0.018	1.4	ug/L	255	Standard
	Pb	206	579810.3	2.1	**104.5100**	1.202	1.2	ug/L	523	Standard
	Pb	207	450031.8	1.8	**89.7972**	0.852	0.9	ug/L	433	Standard
	Pb	208	546596.9	1.8	**95.6716**	1.138	1.2	ug/L	498	Standard
	U	238	12431.4	2.6	**2.6571**	0.038	1.4	ug/L	6	Standard
>	**Bi**	209	633409.1	1.3				ug/L	631806	Standard

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⌈	**Na**	23	1.7	173.2	**-0.2593**	0.587	226.3	mg/L	2	Standard
|	**Mg**	24	21.7	13.3	**-0.2011**	0.033	16.5	mg/L	27	Standard
|	**K**	39	133.3	22.0	**0.7113**	0.180	25.3	mg/L	17	Standard
|	**Ca**	43	25.0	72.1	**-20.6300**	7.940	38.5	mg/L	47	Standard
|	**Fe**	54	13921.2	1.8	**53.7938**	0.744	1.4	mg/L	23	Standard
|	**Fe**	57	4078.9	6.5	**54.7506**	3.393	6.2	mg/L	253	Standard
⌊>	**Sc-1**	45	72598.5	1.5				mg/L	39227	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	2516.9	4.1				ug/L	2163	Standard
	P	31	55.0	32.8				ug/L	57	Standard
	S	34	40.0	12.5				ug/L	27	Standard
	Sr	88	128.3	2.2				ug/L	125	Standard
	C	12	26.7	57.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	950.0	4.6				mg/L	10	Standard
	Dy	164	106330.0	1.3				mg/L	9	Standard
	Ho-1	165	68025.8	2.3				mg/L	8	Standard
	Er	166	64584.0	0.6				mg/L	20	Standard
	I	127	20704.1	1.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		111.050	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.350	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.013
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.254
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Zn 66 Upper, S, EEE	Zn	66
Pb 206 Upper, S, EEE	Pb	206

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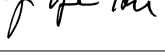

Method 6020 - Summary Report

Sample ID: L1704002404
Sample Date/Time: Tuesday, April 04, 2017 15:02:45
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	393126.6	0.8				ug/L	302131	Standard
	Be	9	12531.9	3.7	**4.4136**	0.197	4.5	ug/L	12	Standard
	Al	27	14282981.3	1.9	**78.8599**	1.868	2.4	ug/L	907	Standard
	Sc	45	75722.1	1.4				ug/L	39227	Standard
	Ti	47	59298.9	2.6	**282.3001**	9.157	3.2	ug/L	34	Standard
	V	51	615217.9	2.1	**91.7895**	2.487	2.7	ug/L	1155	Standard
	Cr	52	385839.9	2.0	**62.4489**	1.570	2.5	ug/L	5602	Standard
	Cr	53	48074.5	2.0	**61.8275**	1.247	2.0	ug/L	1042	Standard
	Mn	55	9925338.1	1.6	**930.0084**	18.596	2.0	ug/L	2370	Standard
	Co	59	446493.2	2.0	**54.8712**	1.449	2.6	ug/L	381	Standard
	Ni	60	77626.4	2.3	**44.6531**	1.394	3.1	ug/L	282	Standard
	Cu	65	165916.9	1.4	**90.8056**	2.017	2.2	ug/L	707	Standard
	Zn	66	118302.8	1.7	**107.9060**	2.690	2.5	ug/L	427	Standard
>	Ge	72	839871.2	0.8				ug/L	842801	Standard
	As	75	25391.0	2.2	**22.3085**	0.646	2.9	ug/L	-11	Standard
	Se	82	303.8	2.0	**2.8200**	0.079	2.8	ug/L	18	Standard
	Se-1	77	993.0	2.6	**12.0884**	0.289	2.4	ug/L	127	Standard
>	Ga	71	85344.8	2.3				mg/L	92	Standard
	Rb	85	828128.6	4.5				ug/L	48	Standard
	Y	89	4870561.1	2.7				ug/L	587989	Standard
>	Rh	103	51.7	36.6				ug/L	8	Standard
	Mo	98	1606.4	1.3	**0.4359**	0.004	0.9	ug/L	35	Standard
	Ag	107	1312.4	3.2	**0.1962**	0.007	3.7	ug/L	121	Standard
	Cd	111	565.3	8.5	**0.3257**	0.029	8.8	mg/L	4	Standard
	Cd	114	1394.5	5.6	**0.2999**	0.019	6.2	ug/L	27	Standard
>	In	115	693407.5	0.5				ug/L	702235	Standard
	Sn	118	392.7	3.4	**0.2045**	0.015	7.2	ug/L	180	Standard
	Sb	123	178.6	29.8	**0.0173**	0.012	70.3	ug/L	43	Standard
	Ba	135	98386.4	1.3	**59.3880**	0.910	1.5	ug/L	50	Standard
	Ce	140	8316124.8	1.9				ug/L	20	Standard
>	Tb	159	1412957.9	0.2				ug/L	1036041	Standard
	Ho	165	297365.1	1.5				ug/L	8	Standard
	Tl	203	5760.8	2.3	**0.7895**	0.025	3.1	ug/L	87	Standard
	Tl	205	14233.3	0.5	**0.8112**	0.012	1.4	ug/L	255	Standard
	Pb	206	293118.0	2.1	**51.6834**	1.591	3.1	ug/L	523	Standard
	Pb	207	223009.7	1.4	**43.5239**	0.954	2.2	ug/L	433	Standard
	Pb	208	269340.5	2.0	**46.1148**	1.346	2.9	ug/L	498	Standard
	U	238	13053.3	1.8	**2.7326**	0.072	2.6	ug/L	6	Standard
>	Bi	209	646951.4	0.9				ug/L	631806	Standard

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⌈	**Na**	23	15.0	33.3	**2.3380**	0.971	41.5	mg/L	2	Standard
|	**Mg**	24	31.7	32.9	**-0.1115**	0.103	92.8	mg/L	27	Standard
|	**K**	39	570.0	5.3	**3.2381**	0.227	7.0	mg/L	17	Standard
|	**Ca**	43	31.7	48.2	**-18.2681**	6.361	34.8	mg/L	47	Standard
|	**Fe**	54	10528.1	4.2	**38.9346**	1.405	3.6	mg/L	23	Standard
|	**Fe**	57	3287.0	8.4	**40.6231**	4.644	11.4	mg/L	253	Standard
⌊>	**Sc-1**	45	75722.1	1.4				mg/L	39227	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	2.0	100.0				ug/L	3	Standard
	Br	81	2416.9	3.4				ug/L	2163	Standard
	P	31	53.3	28.6				ug/L	57	Standard
	S	34	33.3	37.7				ug/L	27	Standard
	Sr	88	131.7	36.1				ug/L	125	Standard
	C	12	36.7	31.5				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	510.0	2.0				mg/L	10	Standard
	Dy	164	490171.1	3.0				mg/L	9	Standard
	Ho-1	165	297365.1	1.5				mg/L	8	Standard
	Er	166	272153.5	2.5				mg/L	20	Standard
	I	127	15346.1	3.7				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		130.118	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		99.652	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.743
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	102.397
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1704002405
Sample Date/Time: Tuesday, April 04, 2017 15:05:50
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	335022.1	1.3				ug/L	302131	Standard
	Be	9	23888.8	1.5	**9.8791**	0.103	1.0	ug/L	12	Standard
	Al	27	3382032.0	0.9	**21.9009**	0.464	2.1	ug/L	907	Standard
	Sc	45	76139.2	1.9				ug/L	39227	Standard
	Ti	47	14476.3	7.5	**70.2106**	4.028	5.7	ug/L	34	Standard
	V	51	776844.0	0.6	**118.4517**	1.754	1.5	ug/L	1155	Standard
	Cr	52	769172.7	0.9	**128.1151**	2.328	1.8	ug/L	5602	Standard
	Cr	53	97405.5	1.8	**129.3923**	0.584	0.5	ug/L	1042	Standard
	Mn	55	3251481.5	0.9	**311.1026**	5.807	1.9	ug/L	2370	Standard
	Co	59	102238.1	1.0	**12.7996**	0.169	1.3	ug/L	381	Standard
	Ni	60	159679.4	1.4	**93.9939**	0.700	0.7	ug/L	282	Standard
	Cu	65	90293.6	0.6	**50.3340**	0.720	1.4	ug/L	707	Standard
	Zn	66	181926.4	0.7	**169.7350**	2.549	1.5	ug/L	427	Standard
>	Ge	72	822165.4	1.7				ug/L	842801	Standard
	As	75	13740.2	1.0	**12.3526**	0.177	1.4	ug/L	-11	Standard
	Se	82	257.1	4.0	**2.4253**	0.139	5.7	ug/L	18	Standard
	Se-1	77	632.3	3.5	**7.3181**	0.341	4.7	ug/L	127	Standard
>	Ga	71	108179.9	1.6				mg/L	92	Standard
	Rb	85	313765.6	0.5				ug/L	48	Standard
	Y	89	5216839.2	1.0				ug/L	587989	Standard
>	Rh	103	25.0	40.0				ug/L	8	Standard
	Mo	98	1413.8	2.2	**0.3956**	0.016	4.1	ug/L	35	Standard
	Ag	107	1125.4	0.5	**0.1706**	0.004	2.5	ug/L	121	Standard
	Cd	111	741.2	5.1	**0.4477**	0.022	5.0	mg/L	4	Standard
	Cd	114	1872.9	4.2	**0.4283**	0.027	6.4	ug/L	27	Standard
>	In	115	670724.9	1.9				ug/L	702235	Standard
	Sn	118	269.7	7.8	**0.0795**	0.019	23.9	ug/L	180	Standard
	Sb	123	152.2	26.5	**0.0125**	0.010	81.6	ug/L	43	Standard
	Ba	135	91937.8	1.0	**57.3813**	1.180	2.1	ug/L	50	Standard
	Ce	140	5009207.9	1.1				ug/L	20	Standard
>	Tb	159	1303002.0	0.4				ug/L	1036041	Standard
	Ho	165	279659.0	0.4				ug/L	8	Standard
	Tl	203	3679.8	1.1	**0.5000**	0.006	1.2	ug/L	87	Standard
	Tl	205	9181.1	3.1	**0.5227**	0.017	3.2	ug/L	255	Standard
	Pb	206	237509.8	0.5	**42.5210**	0.230	0.5	ug/L	523	Standard
	Pb	207	185218.9	0.9	**36.7075**	0.305	0.8	ug/L	433	Standard
	Pb	208	221750.7	0.4	**38.5518**	0.143	0.4	ug/L	498	Standard
	U	238	3432.1	2.4	**0.7206**	0.017	2.4	ug/L	6	Standard
>	Bi	209	636755.4	0.0				ug/L	631806	Standard

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	Na	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
	Mg	24	35.0	28.6	**-0.0795**	0.105	132.0	mg/L	27	Standard
	K	39	166.7	11.4	**0.8683**	0.120	13.8	mg/L	17	Standard
	Ca	43	33.3	45.8	**-17.6310**	6.309	35.8	mg/L	47	Standard
	Fe	54	15722.3	1.0	**57.9513**	0.554	1.0	mg/L	23	Standard
	Fe	57	4619.0	3.8	**59.7683**	2.862	4.8	mg/L	253	Standard
>	**Sc-1**	45	76139.2	1.9				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	2586.9	6.8				ug/L	2163	Standard
	P	31	65.0	26.6				ug/L	57	Standard
	S	34	23.3	53.9				ug/L	27	Standard
	Sr	88	103.3	11.2				ug/L	125	Standard
	C	12	53.3	10.8				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	236.7	17.1				mg/L	10	Standard
	Dy	164	410804.9	0.8				mg/L	9	Standard
	Ho-1	165	279659.0	0.4				mg/L	8	Standard
	Er	166	260456.4	1.2				mg/L	20	Standard
	I	127	13889.7	1.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.886	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.552	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115	95.513	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209	100.783	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66

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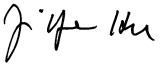

Method 6020 - Summary Report

Sample ID: L1704002406
Sample Date/Time: Tuesday, April 04, 2017 15:08:55
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	312761.2	2.4				ug/L	302131	Standard
	Be	9	90352.0	1.4	**40.0541**	0.788	2.0	ug/L	12	Standard
	Al	27	2618852.9	1.0	**18.1679**	0.550	3.0	ug/L	907	Standard
	Sc	45	97979.2	2.0				ug/L	39227	Standard
	Ti	47	10818.9	1.6	**52.0859**	1.023	2.0	ug/L	34	Standard
	V	51	1040202.7	0.9	**157.5052**	1.771	1.1	ug/L	1155	Standard
	Cr	52	627215.5	0.9	**103.5355**	1.248	1.2	ug/L	5602	Standard
	Cr	53	79444.4	1.4	**104.5251**	1.485	1.4	ug/L	1042	Standard
	Mn	55	7827318.5	1.0	**743.7717**	9.374	1.3	ug/L	2370	Standard
	Co	59	285820.1	0.6	**35.6050**	0.290	0.8	ug/L	381	Standard
	Ni	60	69156.2	1.4	**40.3256**	0.633	1.6	ug/L	282	Standard
	Cu	65	101514.6	0.8	**56.2153**	0.539	1.0	ug/L	707	Standard
	Zn	66	103887.7	1.6	**96.0537**	1.766	1.8	ug/L	427	Standard
>	**Ge**	72	828091.8	0.3				ug/L	842801	Standard
	As	75	24863.1	2.1	**22.1536**	0.518	2.3	ug/L	-11	Standard
	Se	82	804.8	4.3	**7.7442**	0.361	4.7	ug/L	18	Standard
	Se-1	77	2150.8	0.8	**28.4319**	0.330	1.2	ug/L	127	Standard
>	**Ga**	71	134455.7	1.0				mg/L	92	Standard
	Rb	85	385294.4	1.1				ug/L	48	Standard
	Y	89	12279036.2	0.9				ug/L	587989	Standard
>	**Rh**	103	31.7	18.2				ug/L	8	Standard
	Mo	98	2155.7	1.4	**0.6095**	0.014	2.3	ug/L	35	Standard
	Ag	107	2641.2	5.6	**0.4395**	0.030	6.8	ug/L	121	Standard
	Cd	111	1674.3	3.8	**1.0317**	0.049	4.7	mg/L	4	Standard
	Cd	114	4165.9	3.4	**0.9872**	0.043	4.4	ug/L	27	Standard
>	**In**	115	671702.3	0.8				ug/L	702235	Standard
	Sn	118	236.7	8.2	**0.0419**	0.021	50.6	ug/L	180	Standard
	Sb	123	165.6	48.9	**0.0156**	0.020	125.8	ug/L	43	Standard
	Ba	135	124754.6	1.7	**77.7576**	1.732	2.2	ug/L	50	Standard
	Ce	140	8570909.0	1.4				ug/L	20	Standard
>	**Tb**	159	1883986.8	1.2				ug/L	1036041	Standard
	Ho	165	909620.5	1.0				ug/L	8	Standard
	Tl	203	8299.3	2.3	**1.1734**	0.033	2.8	ug/L	87	Standard
	Tl	205	19737.8	1.5	**1.1551**	0.024	2.1	ug/L	255	Standard
	Pb	206	558423.9	0.9	**100.2679**	1.245	1.2	ug/L	523	Standard
	Pb	207	431978.5	0.5	**85.8606**	0.692	0.8	ug/L	433	Standard
	Pb	208	524766.0	0.7	**91.4924**	0.768	0.8	ug/L	498	Standard
	U	238	6430.4	1.9	**1.3632**	0.034	2.5	ug/L	6	Standard
>	**Bi**	209	635877.6	0.6				ug/L	631806	Standard

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	Na	23	5.0	100.0	**0.1553**	0.760	489.7	mg/L	2	Standard
	Mg	24	30.0	28.9	**-0.1958**	0.066	33.5	mg/L	27	Standard
	K	39	76.7	30.8	**0.2434**	0.108	44.4	mg/L	17	Standard
	Ca	43	28.3	10.2	**-22.3695**	0.933	4.2	mg/L	47	Standard
	Fe	54	16515.5	2.2	**47.2693**	1.396	3.0	mg/L	23	Standard
	Fe	57	4639.0	1.0	**44.9684**	0.788	1.8	mg/L	253	Standard
>	**Sc-1**	45	97979.2	2.0				mg/L	39227	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	6151.3	6.1				ug/L	2163	Standard
	P	31	46.7	50.6				ug/L	57	Standard
	S	34	43.3	6.7				ug/L	27	Standard
	Sr	88	135.0	18.5				ug/L	125	Standard
	C	12	16.7	34.6				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	1486.7	3.0				mg/L	10	Standard
	Dy	164	1331284.6	1.2				mg/L	9	Standard
	Ho-1	165	909620.5	1.0				mg/L	8	Standard
	Er	166	872246.3	2.4				mg/L	20	Standard
	I	127	28870.8	1.4				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.518	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.255	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.652
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.644
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Pb 206 Upper, S, EEE	Pb	206

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Method 6020 - Summary Report

Sample ID: L1704002407
Sample Date/Time: Tuesday, April 04, 2017 15:12:01
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	350054.3	0.5				ug/L	302131	Standard
	Be	9	8865.9	1.7	**3.5044**	0.042	1.2	ug/L	12	Standard
	Al	27	3084786.1	0.2	**19.1129**	0.122	0.6	ug/L	907	Standard
	Sc	45	62324.6	0.6				ug/L	39227	Standard
	Ti	47	23885.6	10.6	**117.9084**	12.163	10.3	ug/L	34	Standard
	V	51	646612.0	0.9	**100.1631**	0.936	0.9	ug/L	1155	Standard
	Cr	52	354288.0	1.2	**59.4858**	0.699	1.2	ug/L	5602	Standard
	Cr	53	44652.4	2.1	**59.5701**	1.134	1.9	ug/L	1042	Standard
	Mn	55	7203213.2	0.9	**700.6423**	8.221	1.2	ug/L	2370	Standard
	Co	59	238555.4	0.9	**30.4135**	0.353	1.2	ug/L	381	Standard
	Ni	60	189906.0	0.0	**113.6393**	0.388	0.3	ug/L	282	Standard
	Cu	65	92168.2	0.2	**52.2226**	0.116	0.2	ug/L	707	Standard
	Zn	66	128776.9	0.5	**121.9814**	0.237	0.2	ug/L	427	Standard
>	Ge	72	808958.3	0.3				ug/L	842801	Standard
	As	75	11650.4	0.4	**10.6497**	0.035	0.3	ug/L	-11	Standard
	Se	82	125.0	8.0	**1.1474**	0.103	9.0	ug/L	18	Standard
	Se-1	77	203.3	13.9	**1.3362**	0.401	30.0	ug/L	127	Standard
>	Ga	71	80543.5	1.2				mg/L	92	Standard
	Rb	85	239535.9	2.3				ug/L	48	Standard
	Y	89	920030.4	0.5				ug/L	587989	Standard
>	Rh	103	30.0	28.9				ug/L	8	Standard
	Mo	98	1770.9	1.0	**0.5095**	0.011	2.2	ug/L	35	Standard
	Ag	107	775.7	1.3	**0.1112**	0.001	0.8	ug/L	121	Standard
	Cd	111	284.7	4.1	**0.1651**	0.009	5.3	mg/L	4	Standard
	Cd	114	695.0	4.4	**0.1436**	0.009	6.3	ug/L	27	Standard
>	In	115	657261.4	1.2				ug/L	702235	Standard
	Sn	118	249.0	6.6	**0.0622**	0.021	34.1	ug/L	180	Standard
	Sb	123	138.1	19.3	**0.0097**	0.006	66.9	ug/L	43	Standard
	Ba	135	78883.2	1.6	**50.2291**	0.960	1.9	ug/L	50	Standard
	Ce	140	1567644.2	0.9				ug/L	20	Standard
>	Tb	159	1059747.9	2.5				ug/L	1036041	Standard
	Ho	165	27336.3	0.9				ug/L	8	Standard
	Tl	203	5081.5	1.0	**0.7247**	0.005	0.7	ug/L	87	Standard
	Tl	205	12255.0	2.4	**0.7270**	0.016	2.3	ug/L	255	Standard
	Pb	206	326598.7	0.9	**60.1687**	0.541	0.9	ug/L	523	Standard
	Pb	207	252191.5	0.5	**51.4326**	0.553	1.1	ug/L	433	Standard
	Pb	208	304061.2	1.1	**54.3953**	0.645	1.2	ug/L	498	Standard
	U	238	17938.9	0.7	**3.9284**	0.053	1.3	ug/L	6	Standard
>	Bi	209	619314.0	1.6				ug/L	631806	Standard

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⌈	**Na**	23	1.7	173.2	**-0.2037**	0.683	335.5	mg/L	2	Standard
|	**Mg**	24	36.7	15.7	**0.0158**	0.071	449.8	mg/L	27	Standard
|	**K**	39	138.3	27.1	**0.8802**	0.264	30.0	mg/L	17	Standard
|	**Ca**	43	30.0	28.9	**-16.1594**	4.577	28.3	mg/L	47	Standard
|	**Fe**	54	14872.5	2.4	**66.9942**	1.211	1.8	mg/L	23	Standard
|	**Fe**	57	4340.6	0.5	**69.7293**	0.829	1.2	mg/L	253	Standard
⌊>	**Sc-1**	45	62324.6	0.6				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.7	78.1				ug/L	3	Standard
	Br	81	4927.5	2.3				ug/L	2163	Standard
	P	31	55.0					ug/L	57	Standard
	S	34	31.7	24.1				ug/L	27	Standard
	Sr	88	126.7	14.9				ug/L	125	Standard
	C	12	50.0	34.6				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	403.3	13.7				mg/L	10	Standard
	Dy	164	40306.0	3.1				mg/L	9	Standard
	Ho-1	165	27336.3	0.9				mg/L	8	Standard
	Er	166	27161.0	2.0				mg/L	20	Standard
	I	127	88947.0	1.4				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		115.862	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.984	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		93.596
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		98.023
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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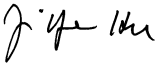

Method 6020 - Summary Report

Sample ID: L1704002408
Sample Date/Time: Tuesday, April 04, 2017 15:15:06
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	287160.8	0.9				ug/L	302131	Standard
	Be	9	18491.3	1.3	**8.9210**	0.124	1.4	ug/L	12	Standard
	Al	27	583039.2	1.4	**4.3896**	0.022	0.5	ug/L	907	Standard
	Sc	45	58270.2	1.8				ug/L	39227	Standard
	Ti	47	7556.9	9.3	**37.3254**	3.372	9.0	ug/L	34	Standard
	V	51	453914.4	0.8	**70.5355**	1.012	1.4	ug/L	1155	Standard
	Cr	52	116497.9	1.1	**19.0341**	0.363	1.9	ug/L	5602	Standard
	Cr	53	14475.3	4.7	**18.4912**	1.093	5.9	ug/L	1042	Standard
	Mn	55	567017.2	0.6	**55.1439**	0.781	1.4	ug/L	2370	Standard
	Co	59	76268.8	1.0	**9.7294**	0.147	1.5	ug/L	381	Standard
	Ni	60	91257.7	0.3	**54.7363**	0.582	1.1	ug/L	282	Standard
	Cu	65	69641.7	0.7	**39.5304**	0.610	1.5	ug/L	707	Standard
	Zn	66	83900.0	0.6	**79.6463**	1.079	1.4	ug/L	427	Standard
>	Ge	72	805907.7	0.8				ug/L	842801	Standard
	As	75	4811.6	2.6	**4.4414**	0.079	1.8	ug/L	-11	Standard
	Se	82	81.5	20.2	**0.7166**	0.162	22.6	ug/L	18	Standard
	Se-1	77	253.7	5.2	**2.0688**	0.184	8.9	ug/L	127	Standard
>	Ga	71	89361.1	1.4				mg/L	92	Standard
	Rb	85	28022.6	0.8				ug/L	48	Standard
	Y	89	1466225.8	1.8				ug/L	587989	Standard
>	Rh	103	18.3	56.8				ug/L	8	Standard
	Mo	98	653.8	1.7	**0.1769**	0.005	2.6	ug/L	35	Standard
	Ag	107	720.4	2.0	**0.0997**	0.002	2.1	ug/L	121	Standard
	Cd	111	941.2	4.1	**0.5788**	0.033	5.6	mg/L	4	Standard
	Cd	114	2233.6	6.8	**0.5211**	0.038	7.3	ug/L	27	Standard
>	In	115	664740.9	1.5				ug/L	702235	Standard
	Sn	118	244.7	5.8	**0.0540**	0.019	35.7	ug/L	180	Standard
	Sb	123	104.1	28.1	**0.0011**	0.007	634.8	ug/L	43	Standard
	Ba	135	22362.5	1.7	**14.0434**	0.273	1.9	ug/L	50	Standard
	Ce	140	3667399.1	1.5				ug/L	20	Standard
>	Tb	159	1093456.9	1.1				ug/L	1036041	Standard
	Ho	165	68116.1	1.5				ug/L	8	Standard
	Tl	203	3505.4	0.1	**0.4858**	0.002	0.4	ug/L	87	Standard
	Tl	205	8700.8	1.9	**0.5053**	0.007	1.4	ug/L	255	Standard
	Pb	206	125795.4	1.3	**22.9586**	0.217	0.9	ug/L	523	Standard
	Pb	207	96028.7	0.8	**19.3996**	0.096	0.5	ug/L	433	Standard
	Pb	208	115717.7	0.9	**20.5098**	0.166	0.8	ug/L	498	Standard
	U	238	16375.8	0.3	**3.5621**	0.012	0.3	ug/L	6	Standard
>	Bi	209	623207.4	0.5				ug/L	631806	Standard

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⌈	**Na**	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	30.0	16.7	**-0.0400**	0.058	145.1	mg/L	27	Standard
|	**K**	39	43.3	29.0	**0.2261**	0.096	42.6	mg/L	17	Standard
|	**Ca**	43	48.3	33.3	**-4.9913**	8.796	176.2	mg/L	47	Standard
|	**Fe**	54	9085.9	2.5	**43.6991**	0.911	2.1	mg/L	23	Standard
|	**Fe**	57	2595.2	4.2	**41.8460**	2.162	5.2	mg/L	253	Standard
⌊>	**Sc-1**	45	58270.2	1.8				mg/L	39227	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	3.0	33.3				ug/L	3	Standard
	Br	81	2353.5	17.5				ug/L	2163	Standard
	P	31	80.0	12.5				ug/L	57	Standard
	S	34	36.7	31.5				ug/L	27	Standard
	Sr	88	136.7	13.9				ug/L	125	Standard
	C	12	23.3	49.5				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	186.7	35.7				mg/L	10	Standard
	Dy	164	103034.4	0.3				mg/L	9	Standard
	Ho-1	165	68116.1	1.5				mg/L	8	Standard
	Er	166	65963.3	0.7				mg/L	20	Standard
	I	127	50950.6	2.4				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		95.045	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.623	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.661
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.639
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704002409
Sample Date/Time: Tuesday, April 04, 2017 15:18:12
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	367959.7	0.9				ug/L	302131	Standard
	Be	9	4557.4	5.2	**1.7106**	0.097	5.7	ug/L	12	Standard
	Al	27	5335478.6	1.9	**31.4627**	0.721	2.3	ug/L	907	Standard
	Sc	45	62557.3	2.7				ug/L	39227	Standard
	Ti	47	24443.7	0.3	**121.6910**	2.486	2.0	ug/L	34	Standard
	V	51	671549.1	2.0	**104.8632**	0.315	0.3	ug/L	1155	Standard
	Cr	52	221648.3	1.4	**37.1831**	0.239	0.6	ug/L	5602	Standard
	Cr	53	27423.1	0.8	**36.3754**	0.413	1.1	ug/L	1042	Standard
	Mn	55	1438882.8	0.9	**140.8966**	1.191	0.8	ug/L	2370	Standard
	Co	59	100917.7	0.9	**12.9437**	0.142	1.1	ug/L	381	Standard
	Ni	60	58260.1	1.2	**35.0353**	0.250	0.7	ug/L	282	Standard
	Cu	65	96817.4	0.6	**55.3230**	0.659	1.2	ug/L	707	Standard
	Zn	66	79594.9	0.7	**75.8646**	1.044	1.4	ug/L	427	Standard
>	Ge	72	802538.4	1.8				ug/L	842801	Standard
	As	75	10947.2	1.5	**10.0904**	0.152	1.5	ug/L	-11	Standard
	Se	82	57.4	30.8	**0.4766**	0.171	35.9	ug/L	18	Standard
	Se-1	77	191.3	9.4	**1.1861**	0.241	20.4	ug/L	127	Standard
>	Ga	71	99373.2	1.7				mg/L	92	Standard
	Rb	85	259609.0	1.7				ug/L	48	Standard
	Y	89	1114100.9	0.8				ug/L	587989	Standard
>	Rh	103	30.0	44.1				ug/L	8	Standard
	Mo	98	757.5	5.4	**0.2095**	0.013	6.2	ug/L	35	Standard
	Ag	107	764.0	9.9	**0.1090**	0.014	12.9	ug/L	121	Standard
	Cd	111	200.0	11.5	**0.1108**	0.016	14.1	mg/L	4	Standard
	Cd	114	458.8	8.5	**0.0845**	0.010	12.1	ug/L	27	Standard
>	In	115	658055.0	1.1				ug/L	702235	Standard
	Sn	118	293.3	11.7	**0.1132**	0.043	38.2	ug/L	180	Standard
	Sb	123	142.0	36.4	**0.0106**	0.013	119.5	ug/L	43	Standard
	Ba	135	46530.0	0.8	**29.5700**	0.103	0.3	ug/L	50	Standard
	Ce	140	1854200.5	1.5				ug/L	20	Standard
>	Tb	159	1065528.6	1.4				ug/L	1036041	Standard
	Ho	165	43512.4	2.4				ug/L	8	Standard
	Tl	203	2995.6	5.6	**0.4150**	0.025	6.1	ug/L	87	Standard
	Tl	205	7361.8	2.6	**0.4286**	0.010	2.3	ug/L	255	Standard
	Pb	206	112933.3	0.7	**20.8312**	0.164	0.8	ug/L	523	Standard
	Pb	207	86185.4	0.8	**17.5964**	0.116	0.7	ug/L	433	Standard
	Pb	208	104687.2	1.1	**18.7530**	0.143	0.8	ug/L	498	Standard
	U	238	11283.5	3.1	**2.4778**	0.069	2.8	ug/L	6	Standard
>	Bi	209	616369.2	1.4				ug/L	631806	Standard

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⌈	**Na**	23	3.3	86.6	**0.1852**	0.679	366.6	mg/L	2	Standard
|	**Mg**	24	33.3	37.7	**-0.0233**	0.159	684.4	mg/L	27	Standard
|	**K**	39	291.7	11.4	**1.9698**	0.287	14.6	mg/L	17	Standard
|	**Ca**	43	31.7	24.1	**-15.3121**	4.282	28.0	mg/L	47	Standard
|	**Fe**	54	10227.4	3.2	**45.8336**	1.230	2.7	mg/L	23	Standard
|	**Fe**	57	3040.3	1.6	**46.3633**	0.832	1.8	mg/L	253	Standard
⌊>	**Sc-1**	45	62557.3	2.7				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.7	69.3				ug/L	3	Standard
	Br	81	2413.5	9.2				ug/L	2163	Standard
	P	31	61.7	32.8				ug/L	57	Standard
	S	34	21.7	35.3				ug/L	27	Standard
	Sr	88	120.0	11.0				ug/L	125	Standard
	C	12	40.0	25.0				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	126.7	40.5				mg/L	10	Standard
	Dy	164	65312.5	0.9				mg/L	9	Standard
	Ho-1	165	43512.4	2.4				mg/L	8	Standard
	Er	166	40704.6	2.1				mg/L	20	Standard
	I	127	39167.2	1.1				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		121.788	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.223	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		93.709
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		97.557
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1704002410
Sample Date/Time: Tuesday, April 04, 2017 15:21:18
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	325813.2	1.8				ug/L	302131	Standard
	Be	9	5004.2	3.9	**2.1236**	0.111	5.2	ug/L	12	Standard
	Al	27	1190268.3	0.7	**7.9151**	0.192	2.4	ug/L	907	Standard
	Sc	45	72114.5	0.7				ug/L	39227	Standard
	Ti	47	17831.5	2.3	**89.8736**	1.091	1.2	ug/L	34	Standard
	V	51	850043.5	0.7	**134.5499**	1.047	0.8	ug/L	1155	Standard
	Cr	52	438901.8	1.2	**75.5089**	1.005	1.3	ug/L	5602	Standard
	Cr	53	55347.6	1.0	**75.7839**	1.554	2.1	ug/L	1042	Standard
	Mn	55	5469600.8	0.6	**543.3562**	6.523	1.2	ug/L	2370	Standard
	Co	59	202673.2	0.4	**26.3856**	0.211	0.8	ug/L	381	Standard
	Ni	60	76688.9	1.2	**46.7837**	0.935	2.0	ug/L	282	Standard
	Cu	65	106249.9	0.7	**61.5509**	0.704	1.1	ug/L	707	Standard
	Zn	66	124495.1	1.2	**120.4527**	2.224	1.8	ug/L	427	Standard
>	Ge	72	792043.1	1.2				ug/L	842801	Standard
	As	75	17996.8	1.0	**16.7775**	0.264	1.6	ug/L	-11	Standard
	Se	82	43.7	19.4	**0.3468**	0.092	26.5	ug/L	18	Standard
	Se-1	77	158.7	4.5	**0.7469**	0.089	11.9	ug/L	127	Standard
>	Ga	71	130096.2	1.2				mg/L	92	Standard
	Rb	85	378373.2	1.0				ug/L	48	Standard
	Y	89	1020467.0	1.0				ug/L	587989	Standard
>	Rh	103	26.7	21.7				ug/L	8	Standard
	Mo	98	1412.8	0.6	**0.4119**	0.010	2.3	ug/L	35	Standard
	Ag	107	966.4	3.8	**0.1493**	0.006	3.8	ug/L	121	Standard
	Cd	111	202.2	8.7	**0.1149**	0.013	11.2	mg/L	4	Standard
	Cd	114	437.1	17.5	**0.0815**	0.020	25.1	ug/L	27	Standard
>	In	115	644468.2	1.7				ug/L	702235	Standard
	Sn	118	233.7	1.3	**0.0498**	0.004	8.0	ug/L	180	Standard
	Sb	123	96.7	27.8	**0.0001**	0.007	8859.8	ug/L	43	Standard
	Ba	135	56337.2	0.7	**36.5753**	0.656	1.8	ug/L	50	Standard
	Ce	140	12141327.8	0.7				ug/L	20	Standard
>	Tb	159	1067664.5	0.7				ug/L	1036041	Standard
	Ho	165	37107.1	0.9				ug/L	8	Standard
	Tl	203	5326.3	1.3	**0.7664**	0.012	1.5	ug/L	87	Standard
	Tl	205	12775.4	2.3	**0.7640**	0.017	2.3	ug/L	255	Standard
	Pb	206	247423.5	0.3	**45.8467**	0.218	0.5	ug/L	523	Standard
	Pb	207	192773.9	0.3	**39.5423**	0.186	0.5	ug/L	433	Standard
	Pb	208	230543.2	0.2	**41.4830**	0.153	0.4	ug/L	498	Standard
	U	238	14599.4	1.1	**3.2151**	0.035	1.1	ug/L	6	Standard
>	Bi	209	615337.1	0.2				ug/L	631806	Standard

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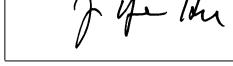

⌈	**Na**	23	3.3	173.2	**0.0924**	1.196	1294.5	mg/L	2	Standard
|	**Mg**	24	20.0	25.0	**-0.2172**	0.052	24.0	mg/L	27	Standard
|	**K**	39	78.3	16.1	**0.3778**	0.074	19.6	mg/L	17	Standard
|	**Ca**	43	28.3	36.7	**-19.0373**	4.612	24.2	mg/L	47	Standard
|	**Fe**	54	15841.3	2.4	**61.6536**	1.228	2.0	mg/L	23	Standard
|	**Fe**	57	4505.7	1.1	**61.7671**	0.663	1.1	mg/L	253	Standard
⌊>	**Sc-1**	45	72114.5	0.7				mg/L	39227	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	5.0	60.0				ug/L	3	Standard
	Br	81	2690.2	3.9				ug/L	2163	Standard
	P	31	56.7	28.4				ug/L	57	Standard
	S	34	28.3	20.4				ug/L	27	Standard
	Sr	88	153.3	3.8				ug/L	125	Standard
	C	12	30.0	33.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	350.0	13.1				mg/L	10	Standard
	Dy	164	55609.3	2.3				mg/L	9	Standard
	Ho-1	165	37107.1	0.9				mg/L	8	Standard
	Er	166	36724.5	0.9				mg/L	20	Standard
	I	127	22147.8	1.6				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.838	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		93.977	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.774
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.393
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1704002601
Sample Date/Time: Tuesday, April 04, 2017 15:24:23
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	298250.5	1.2				ug/L	302131	Standard
	Be	9	2401.9	5.4	**1.1093**	0.048	4.4	ug/L	12	Standard
	Al	27	1144722.9	0.5	**8.3147**	0.073	0.9	ug/L	907	Standard
	Sc	45	55125.1	2.4				ug/L	39227	Standard
	Ti	47	6356.7	5.8	**31.8824**	1.657	5.2	ug/L	34	Standard
	V	51	673588.8	0.3	**106.4642**	0.528	0.5	ug/L	1155	Standard
	Cr	52	342466.8	0.2	**58.6533**	0.436	0.7	ug/L	5602	Standard
	Cr	53	42705.1	0.2	**58.0964**	0.487	0.8	ug/L	1042	Standard
	Mn	55	1088549.2	1.6	**107.8124**	0.929	0.9	ug/L	2370	Standard
	Co	59	70731.1	2.2	**9.1670**	0.151	1.7	ug/L	381	Standard
	Ni	60	41631.1	1.0	**25.2930**	0.111	0.4	ug/L	282	Standard
	Cu	65	51750.9	1.6	**29.7703**	0.295	1.0	ug/L	707	Standard
	Zn	66	41760.5	0.7	**40.0996**	0.047	0.1	ug/L	427	Standard
>	Ge	72	792924.8	0.8				ug/L	842801	Standard
	As	75	14822.9	1.3	**13.8099**	0.126	0.9	ug/L	-11	Standard
	Se	82	80.9	4.7	**0.7233**	0.034	4.7	ug/L	18	Standard
	Se-1	77	153.0	6.9	**0.6627**	0.167	25.2	ug/L	127	Standard
>	Ga	71	71535.2	1.2				mg/L	92	Standard
	Rb	85	442967.0	0.3				ug/L	48	Standard
	Y	89	671537.5	0.2				ug/L	587989	Standard
>	Rh	103	21.7	58.1				ug/L	8	Standard
	Mo	98	1695.2	0.5	**0.4943**	0.005	1.1	ug/L	35	Standard
	Ag	107	925.7	7.7	**0.1408**	0.012	8.4	ug/L	121	Standard
	Cd	111	92.1	16.3	**0.0427**	0.010	23.5	mg/L	4	Standard
	Cd	114	163.3	4.7	**0.0115**	0.002	19.9	ug/L	27	Standard
>	In	115	647885.3	0.8				ug/L	702235	Standard
	Sn	118	189.0	2.4	**-0.0041**	0.004	98.9	ug/L	180	Standard
	Sb	123	75.4	30.7	**-0.0053**	0.006	110.1	ug/L	43	Standard
	Ba	135	75805.8	0.9	**48.9630**	0.255	0.5	ug/L	50	Standard
	Ce	140	3988751.9	1.3				ug/L	20	Standard
>	Tb	159	1028399.4	2.1				ug/L	1036041	Standard
	Ho	165	12310.0	3.5				ug/L	8	Standard
	Tl	203	4258.6	2.2	**0.6045**	0.008	1.3	ug/L	87	Standard
	Tl	205	10158.4	2.9	**0.6010**	0.010	1.7	ug/L	255	Standard
	Pb	206	171416.4	1.5	**31.6687**	0.055	0.2	ug/L	523	Standard
	Pb	207	132504.6	1.1	**27.0999**	0.171	0.6	ug/L	433	Standard
	Pb	208	157588.5	0.8	**28.2750**	0.354	1.3	ug/L	498	Standard
	U	238	11085.1	1.4	**2.4336**	0.018	0.7	ug/L	6	Standard
>	Bi	209	616499.6	1.7				ug/L	631806	Standard

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⌈	**Na**	23	1.7	173.2	**-0.1593**	0.760	477.1	mg/L	2	Standard
|	**Mg**	24	45.0	22.2	**0.1887**	0.151	80.0	mg/L	27	Standard
|	**K**	39	116.7	24.4	**0.8389**	0.249	29.7	mg/L	17	Standard
|	**Ca**	43	40.0	12.5	**-8.3414**	2.375	28.5	mg/L	47	Standard
|	**Fe**	54	10384.6	1.4	**52.8603**	1.377	2.6	mg/L	23	Standard
|	**Fe**	57	3045.3	4.4	**53.7957**	4.193	7.8	mg/L	253	Standard
⌊>	**Sc-1**	45	55125.1	2.4				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.7	69.3				ug/L	3	Standard
	Br	81	3707.1	7.2				ug/L	2163	Standard
	P	31	60.0	25.0				ug/L	57	Standard
	S	34	48.3	15.8				ug/L	27	Standard
	Sr	88	135.0	7.4				ug/L	125	Standard
	C	12	26.7	21.7				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	753.4	3.8				mg/L	10	Standard
	Dy	164	18396.6	2.9				mg/L	9	Standard
	Ho-1	165	12310.0	3.5				mg/L	8	Standard
	Er	166	11801.3	3.5				mg/L	20	Standard
	I	127	31010.1	3.7				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.716	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.082	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	92.261
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.577
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1704002602
Sample Date/Time: Tuesday, April 04, 2017 15:27:29
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	295929.3	3.5				ug/L	302131	Standard
	Be	9	5125.9	3.7	**2.3946**	0.025	1.1	ug/L	12	Standard
	Al	27	861403.1	1.5	**6.3042**	0.132	2.1	ug/L	907	Standard
	Sc	45	63713.7	2.0				ug/L	39227	Standard
	Ti	47	6317.7	3.2	**30.8934**	0.487	1.6	ug/L	34	Standard
	V	51	915656.4	1.7	**141.1680**	0.224	0.2	ug/L	1155	Standard
	Cr	52	422142.7	1.9	**70.6764**	0.662	0.9	ug/L	5602	Standard
	Cr	53	53427.4	2.0	**71.1785**	2.022	2.8	ug/L	1042	Standard
	Mn	55	1042049.0	2.0	**100.6206**	0.241	0.2	ug/L	2370	Standard
	Co	59	66719.9	1.2	**8.4290**	0.084	1.0	ug/L	381	Standard
	Ni	60	43086.5	2.2	**25.5253**	0.128	0.5	ug/L	282	Standard
	Cu	65	133499.3	1.5	**75.3972**	0.329	0.4	ug/L	707	Standard
	Zn	66	72007.0	0.7	**67.6911**	0.855	1.3	ug/L	427	Standard
>	Ge	72	813201.7	1.8				ug/L	842801	Standard
	As	75	23418.3	0.4	**21.2531**	0.307	1.4	ug/L	-11	Standard
	Se	82	103.1	4.9	**0.9235**	0.033	3.5	ug/L	18	Standard
	Se-1	77	176.7	2.9	**0.9426**	0.058	6.2	ug/L	127	Standard
>	Ga	71	78164.4	0.7				mg/L	92	Standard
	Rb	85	320910.4	2.1				ug/L	48	Standard
	Y	89	870402.9	1.1				ug/L	587989	Standard
>	Rh	103	13.3	43.3				ug/L	8	Standard
	Mo	98	2634.0	0.7	**0.7607**	0.012	1.6	ug/L	35	Standard
	Ag	107	973.0	2.8	**0.1461**	0.004	2.9	ug/L	121	Standard
	Cd	111	108.9	4.3	**0.0521**	0.002	4.8	mg/L	4	Standard
	Cd	114	244.3	4.1	**0.0308**	0.003	8.3	ug/L	27	Standard
>	In	115	660699.5	1.6				ug/L	702235	Standard
	Sn	118	212.7	3.8	**0.0189**	0.013	67.9	ug/L	180	Standard
	Sb	123	85.9	25.0	**-0.0031**	0.005	175.7	ug/L	43	Standard
	Ba	135	64311.9	0.7	**40.7309**	0.625	1.5	ug/L	50	Standard
	Ce	140	899582.3	0.4				ug/L	20	Standard
>	Tb	159	1073300.8	1.1				ug/L	1036041	Standard
	Ho	165	25044.0	1.6				ug/L	8	Standard
	Tl	203	3256.3	1.1	**0.4489**	0.007	1.5	ug/L	87	Standard
	Tl	205	8115.5	2.3	**0.4697**	0.014	2.9	ug/L	255	Standard
	Pb	206	161356.3	0.8	**29.4861**	0.179	0.6	ug/L	523	Standard
	Pb	207	124897.3	0.6	**25.2655**	0.184	0.7	ug/L	433	Standard
	Pb	208	149824.6	1.2	**26.5873**	0.173	0.7	ug/L	498	Standard
	U	238	17448.7	1.0	**3.7970**	0.047	1.2	ug/L	6	Standard
>	Bi	209	623102.6	0.6				ug/L	631806	Standard

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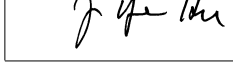

	Na	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
	Mg	24	36.7	55.1	**0.0029**	0.226	7734.9	mg/L	27	Standard
	K	39	90.0	40.1	**0.5224**	0.251	48.1	mg/L	17	Standard
	Ca	43	26.7	28.6	**-18.1853**	3.974	21.9	mg/L	47	Standard
	Fe	54	14898.6	1.5	**65.6547**	0.698	1.1	mg/L	23	Standard
	Fe	57	4142.2	2.0	**64.5954**	1.755	2.7	mg/L	253	Standard
>	**Sc-1**	45	63713.7	2.0				mg/L	39227	Standard
	Cl	35	2.7	86.6				ug/L	1	Standard
	Kr	83	2.3	24.7				ug/L	3	Standard
	Br	81	5204.2	6.3				ug/L	2163	Standard
	P	31	68.3	11.2				ug/L	57	Standard
	S	34	30.0	16.7				ug/L	27	Standard
	Sr	88	118.3	6.5				ug/L	125	Standard
	C	12	43.3	48.0				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	300.0	14.5				mg/L	10	Standard
	Dy	164	36717.3	1.8				mg/L	9	Standard
	Ho-1	165	25044.0	1.6				mg/L	8	Standard
	Er	166	23728.6	2.9				mg/L	20	Standard
	I	127	42004.8	1.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.947	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.488	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.085
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.622
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, April 04, 2017 15:30:36
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	276221.9	3.3				ug/L	302131	Standard
	Be	9	103373.2	1.8	**51.8976**	1.000	1.9	ug/L	12	Standard
	Al	27	6605901.4	1.3	**51.9221**	1.052	2.0	ug/L	907	Standard
	Sc	45	38132.9	2.7				ug/L	39227	Standard
	Ti	47	20568.0	0.6	**104.2919**	2.322	2.2	ug/L	34	Standard
	V	51	325498.7	0.4	**51.7057**	0.632	1.2	ug/L	1155	Standard
	Cr	52	298927.7	0.3	**51.4307**	0.859	1.7	ug/L	5602	Standard
	Cr	53	37594.9	0.7	**51.3331**	0.719	1.4	ug/L	1042	Standard
	Mn	55	515689.1	0.4	**51.2941**	0.613	1.2	ug/L	2370	Standard
	Co	59	389293.4	0.4	**51.0048**	0.704	1.4	ug/L	381	Standard
	Ni	60	82998.0	0.4	**50.9235**	0.751	1.5	ug/L	282	Standard
	Cu	65	87266.3	0.7	**50.7747**	0.827	1.6	ug/L	707	Standard
	Zn	66	52694.1	0.0	**51.0432**	0.834	1.6	ug/L	427	Standard
>	Ge	72	787752.3	1.6				ug/L	842801	Standard
	As	75	54212.4	0.9	**50.7210**	0.402	0.8	ug/L	-11	Standard
	Se	82	5037.1	0.4	**51.5150**	0.982	1.9	ug/L	18	Standard
	Se-1	77	3566.1	2.2	**50.7292**	1.573	3.1	ug/L	127	Standard
>	Ga	71	120.0	23.2				mg/L	92	Standard
	Rb	85	755.0	8.3				ug/L	48	Standard
	Y	89	552922.0	1.0				ug/L	587989	Standard
>	Rh	103	20.0	75.0				ug/L	8	Standard
	Mo	98	348824.8	0.5	**104.3612**	1.383	1.3	ug/L	35	Standard
	Ag	107	287549.0	0.4	**52.7486**	0.587	1.1	ug/L	121	Standard
	Cd	111	81118.7	0.5	**52.5208**	0.741	1.4	mg/L	4	Standard
	Cd	114	205925.0	0.3	**51.9418**	0.558	1.1	ug/L	27	Standard
>	In	115	649620.3	1.0				ug/L	702235	Standard
	Sn	118	45970.6	1.6	**53.5475**	0.932	1.7	ug/L	180	Standard
	Sb	123	210884.3	0.5	**52.0331**	0.620	1.2	ug/L	43	Standard
	Ba	135	79942.7	0.3	**51.5016**	0.358	0.7	ug/L	50	Standard
	Ce	140	2602.3	156.8				ug/L	20	Standard
>	Tb	159	984780.9	1.3				ug/L	1036041	Standard
	Ho	165	68.3	135.4				ug/L	8	Standard
	Tl	203	342142.0	0.7	**52.0120**	0.538	1.0	ug/L	87	Standard
	Tl	205	831672.0	1.5	**51.9664**	0.979	1.9	ug/L	255	Standard
	Pb	206	279841.3	0.5	**52.4486**	0.457	0.9	ug/L	523	Standard
	Pb	207	252230.9	0.6	**52.3465**	0.379	0.7	ug/L	433	Standard
	Pb	208	286392.2	0.7	**52.1310**	0.147	0.3	ug/L	498	Standard
	U	238	242794.6	0.6	**54.2639**	0.381	0.7	ug/L	6	Standard
>	Bi	209	608554.4	0.4				ug/L	631806	Standard

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	Na	23	5.0	100.0	**1.3811**	2.003	145.0	mg/L	2	Standard
	Mg	24	298.3	20.1	**5.4501**	1.312	24.1	mg/L	27	Standard
	K	39	463.3	9.2	**5.2930**	0.558	10.5	mg/L	17	Standard
	Ca	43	46.7	24.7	**7.6348**	8.848	115.9	mg/L	47	Standard
	Fe	54	764.9	17.2	**5.4145**	0.943	17.4	mg/L	23	Standard
	Fe	57	425.0	10.8	**4.7736**	1.636	34.3	mg/L	253	Standard
>	**Sc-1**	45	38132.9	2.7				mg/L	39227	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	2.7	78.1				ug/L	3	Standard
	Br	81	2043.5	3.3				ug/L	2163	Standard
	P	31	68.3	34.6				ug/L	57	Standard
	S	34	23.3	68.9				ug/L	27	Standard
	Sr	88	128.3	11.9				ug/L	125	Standard
	C	12	40.0	43.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	10	Standard
	Dy	164	77.1	152.9				mg/L	9	Standard
	Ho-1	165	68.3	135.4				mg/L	8	Standard
	Er	166	60.0	130.2				mg/L	20	Standard
	I	127	2448.5	12.4				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.795		
	Al	27	103.844		
	Sc	45			
	Ti	47	104.292		
	V	51	103.411		
	Cr	52	102.861		
	Cr	53			
	Mn	55	102.588		
	Co	59	102.010		
	Ni	60	101.847		
	Cu	65	101.549		
	Zn	66	102.086		
>	Ge	72		93.468	
	As	75	101.442		
	Se	82	103.030		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	104.361	
|	Ag	107	105.497	
|	Cd	111	105.042	
|	Cd	114		
|>	In	115		92.508
|	Sn	118	107.095	
|	Sb	123	104.066	
⌊	Ba	135	103.003	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	104.024	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	104.262	
|	U	238	108.528	
⌊>	Bi	209		96.320
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, April 04, 2017 15:33:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	272617.0	2.9				ug/L	302131	Standard
	Be	9	28.3	27.0	**0.0077**	0.004	55.4	ug/L	12	Standard
	Al	27	865.0	12.3	**-0.0110**	0.001	7.1	ug/L	907	Standard
	Sc	45	37705.2	2.7				ug/L	39227	Standard
	Ti	47	26.3	25.3	**-0.0428**	0.036	84.7	ug/L	34	Standard
	V	51	917.8	4.4	**-0.0150**	0.007	43.9	ug/L	1155	Standard
	Cr	52	4373.3	1.8	**-0.1177**	0.004	3.3	ug/L	5602	Standard
	Cr	53	298.3	4.2	**-0.9074**	0.010	1.1	ug/L	1042	Standard
	Mn	55	2116.8	4.1	**-0.0234**	0.005	20.1	ug/L	2370	Standard
	Co	59	308.0	2.3	**-0.0050**	0.001	18.8	ug/L	381	Standard
	Ni	60	188.7	12.1	**-0.0388**	0.017	43.3	ug/L	282	Standard
	Cu	65	2437.5	2.3	**1.1200**	0.010	0.9	ug/L	707	Standard
	Zn	66	427.0	5.0	**0.0402**	0.013	33.3	ug/L	427	Standard
>	Ge	72	772263.2	2.0				ug/L	842801	Standard
	As	75	-26.0	74.5	**0.0211**	0.018	86.7	ug/L	-11	Standard
	Se	82	10.5	35.9	**0.0102**	0.039	380.8	ug/L	18	Standard
	Se-1	77	81.7	19.8	**-0.3437**	0.251	73.2	ug/L	127	Standard
>	Ga	71	96.7	15.8				mg/L	92	Standard
	Rb	85	255.0	7.1				ug/L	48	Standard
	Y	89	544472.8	2.1				ug/L	587989	Standard
>	Rh	103	11.7	24.7				ug/L	8	Standard
	Mo	98	133.5	19.6	**0.0258**	0.007	27.7	ug/L	35	Standard
	Ag	107	124.7	7.6	**-0.0064**	0.002	33.4	ug/L	121	Standard
	Cd	111	6.5	38.2	**-0.0130**	0.002	11.9	mg/L	4	Standard
	Cd	114	46.1	37.4	**-0.0181**	0.004	24.2	ug/L	27	Standard
>	In	115	645350.4	2.0				ug/L	702235	Standard
	Sn	118	208.3	6.0	**0.0197**	0.017	87.2	ug/L	180	Standard
	Sb	123	292.8	15.1	**0.0489**	0.013	25.6	ug/L	43	Standard
	Ba	135	40.0	7.5	**-0.0240**	0.002	9.8	ug/L	50	Standard
	Ce	140	81.7	63.7				ug/L	20	Standard
>	Tb	159	981673.7	1.9				ug/L	1036041	Standard
	Ho	165	5.0	100.0				ug/L	8	Standard
	Tl	203	45.0	8.0	**-0.0281**	0.001	2.3	ug/L	87	Standard
	Tl	205	116.7	34.6	**-0.0186**	0.003	14.1	ug/L	255	Standard
	Pb	206	1087.0	5.8	**0.0895**	0.012	13.3	ug/L	523	Standard
	Pb	207	884.4	7.7	**0.0853**	0.012	14.2	ug/L	433	Standard
	Pb	208	1003.7	3.9	**0.0839**	0.009	11.0	ug/L	498	Standard
	U	238	15.7	35.2	**-0.0092**	0.001	13.0	ug/L	6	Standard
>	Bi	209	615346.2	1.5				ug/L	631806	Standard

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⌈	**Na**	23	3.3	86.6	**0.7091**	1.133	159.8	mg/L	2	Standard
|	**Mg**	24	30.0	28.9	**0.1717**	0.176	102.5	mg/L	27	Standard
|	**K**	39	11.7	49.5	**0.0347**	0.071	203.2	mg/L	17	Standard
|	**Ca**	43	36.7	55.1	**-0.0206**	18.011	87574.0	mg/L	47	Standard
|	**Fe**	54	24.8	39.7	**-0.0516**	0.069	132.8	mg/L	23	Standard
|	**Fe**	57	281.7	8.8	**0.6814**	0.928	136.2	mg/L	253	Standard
⌊>	**Sc-1**	45	37705.2	2.7				mg/L	39227	Standard
	Cl	35	3.3	34.6				ug/L	1	Standard
	Kr	83	2.0	100.0				ug/L	3	Standard
	Br	81	2030.1	5.1				ug/L	2163	Standard
	P	31	71.7	35.8				ug/L	57	Standard
	S	34	26.7	39.0				ug/L	27	Standard
	Sr	88	113.3	16.7				ug/L	125	Standard
	C	12	23.3	49.5				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	10	Standard
	Dy	164	6.2	100.1				mg/L	9	Standard
	Ho-1	165	5.0	100.0				mg/L	8	Standard
	Er	166	10.0	100.0				mg/L	20	Standard
	I	127	2720.2	8.2				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.631	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		91.900
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		97.395
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1704002603
Sample Date/Time: Tuesday, April 04, 2017 15:36:49
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	284363.7	0.2				ug/L	302131	Standard
	Be	9	2026.8	5.1	**0.9814**	0.051	5.2	ug/L	12	Standard
	Al	27	1422019.0	1.4	**10.8379**	0.147	1.4	ug/L	907	Standard
	Sc	45	51203.1	2.7				ug/L	39227	Standard
	Ti	47	5599.0	2.0	**27.9415**	0.259	0.9	ug/L	34	Standard
	V	51	755176.9	1.2	**118.8512**	0.514	0.4	ug/L	1155	Standard
	Cr	52	399717.5	1.6	**68.2976**	0.261	0.4	ug/L	5602	Standard
	Cr	53	50328.5	1.0	**68.4082**	1.665	2.4	ug/L	1042	Standard
	Mn	55	3374627.8	2.8	**333.2165**	4.135	1.2	ug/L	2370	Standard
	Co	59	90053.3	3.0	**11.6306**	0.158	1.4	ug/L	381	Standard
	Ni	60	41504.8	2.8	**25.1002**	0.291	1.2	ug/L	282	Standard
	Cu	65	52109.8	2.9	**29.8423**	0.505	1.7	ug/L	707	Standard
	Zn	66	42434.0	2.1	**40.5686**	0.418	1.0	ug/L	427	Standard
>	Ge	72	796462.3	1.6				ug/L	842801	Standard
	As	75	24060.6	2.6	**22.2866**	0.251	1.1	ug/L	-11	Standard
	Se	82	95.2	6.4	**0.8644**	0.048	5.6	ug/L	18	Standard
	Se-1	77	165.7	6.0	**0.8349**	0.114	13.7	ug/L	127	Standard
>	Ga	71	77105.8	3.0				mg/L	92	Standard
	Rb	85	429856.9	1.8				ug/L	48	Standard
	Y	89	631304.3	2.6				ug/L	587989	Standard
>	Rh	103	26.7	21.7				ug/L	8	Standard
	Mo	98	2037.2	6.1	**0.6013**	0.032	5.3	ug/L	35	Standard
	Ag	107	989.4	5.8	**0.1539**	0.010	6.2	ug/L	121	Standard
	Cd	111	99.0	7.2	**0.0476**	0.005	9.9	mg/L	4	Standard
	Cd	114	226.6	16.4	**0.0280**	0.010	35.6	ug/L	27	Standard
>	In	115	642985.8	1.0				ug/L	702235	Standard
	Sn	118	188.3	7.8	**-0.0033**	0.015	463.1	ug/L	180	Standard
	Sb	123	164.7	28.7	**0.0170**	0.012	67.9	ug/L	43	Standard
	Ba	135	59906.2	1.5	**38.9778**	0.420	1.1	ug/L	50	Standard
	Ce	140	1330956.1	0.9				ug/L	20	Standard
>	Tb	159	1007940.2	1.3				ug/L	1036041	Standard
	Ho	165	10103.4	1.6				ug/L	8	Standard
	Tl	203	3757.1	1.6	**0.5382**	0.002	0.4	ug/L	87	Standard
	Tl	205	9221.1	4.2	**0.5521**	0.015	2.7	ug/L	255	Standard
	Pb	206	178498.2	2.0	**33.5072**	0.227	0.7	ug/L	523	Standard
	Pb	207	140459.1	1.1	**29.1911**	0.149	0.5	ug/L	433	Standard
	Pb	208	168586.9	2.8	**30.7306**	0.361	1.2	ug/L	498	Standard
	U	238	9526.0	3.2	**2.1226**	0.036	1.7	ug/L	6	Standard
>	Bi	209	606837.8	1.6				ug/L	631806	Standard

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⌈	**Na**	23	11.7	99.0	**2.7206**	3.201	117.7	mg/L	2	Standard
|	**Mg**	24	88.3	19.9	**0.8715**	0.286	32.9	mg/L	27	Standard
|	**K**	39	108.3	21.8	**0.8364**	0.216	25.8	mg/L	17	Standard
|	**Ca**	43	36.7	43.8	**-8.7787**	9.358	106.6	mg/L	47	Standard
|	**Fe**	54	11709.8	4.9	**64.2476**	4.064	6.3	mg/L	23	Standard
|	**Fe**	57	3408.7	1.1	**66.3623**	2.727	4.1	mg/L	253	Standard
⌊>	**Sc-1**	45	51203.1	2.7				mg/L	39227	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	1.3	43.3				ug/L	3	Standard
	Br	81	4000.5	2.0				ug/L	2163	Standard
	P	31	58.3	60.8				ug/L	57	Standard
	S	34	30.0	16.7				ug/L	27	Standard
	Sr	88	128.3	19.2				ug/L	125	Standard
	C	12	73.3	7.9				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	1083.4	16.3				mg/L	10	Standard
	Dy	164	15492.1	4.0				mg/L	9	Standard
	Ho-1	165	10103.4	1.6				mg/L	8	Standard
	Er	166	9943.3	1.6				mg/L	20	Standard
	I	127	45240.8	3.0				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		94.119	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.502	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	91.563
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	96.048
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1704002604
Sample Date/Time: Tuesday, April 04, 2017 15:39:54
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	293782.9	1.6				ug/L	302131	Standard
	Be	9	1173.4	4.9	**0.5471**	0.030	5.4	ug/L	12	Standard
	Al	27	1933372.0	1.9	**14.2687**	0.182	1.3	ug/L	907	Standard
	Sc	45	51402.1	1.8				ug/L	39227	Standard
	Ti	47	5769.1	5.4	**28.7242**	1.554	5.4	ug/L	34	Standard
	V	51	629136.5	1.4	**98.7375**	1.310	1.3	ug/L	1155	Standard
	Cr	52	310606.2	0.8	**52.7381**	0.330	0.6	ug/L	5602	Standard
	Cr	53	39090.4	0.4	**52.6883**	0.125	0.2	ug/L	1042	Standard
	Mn	55	1214160.9	0.5	**119.4547**	0.695	0.6	ug/L	2370	Standard
	Co	59	54916.7	0.3	**7.0580**	0.014	0.2	ug/L	381	Standard
	Ni	60	32597.0	0.8	**19.6331**	0.189	1.0	ug/L	282	Standard
	Cu	65	39916.2	0.4	**22.7259**	0.044	0.2	ug/L	707	Standard
	Zn	66	41597.4	0.9	**39.6628**	0.305	0.8	ug/L	427	Standard
>	Ge	72	798434.0	0.2				ug/L	842801	Standard
	As	75	10301.6	1.7	**9.5456**	0.159	1.7	ug/L	-11	Standard
	Se	82	64.4	11.5	**0.5514**	0.076	13.7	ug/L	18	Standard
	Se-1	77	132.0	1.5	**0.3429**	0.032	9.3	ug/L	127	Standard
>	Ga	71	67058.1	0.5				mg/L	92	Standard
	Rb	85	429413.4	0.4				ug/L	48	Standard
	Y	89	623354.9	0.8				ug/L	587989	Standard
>	Rh	103	28.3	27.0				ug/L	8	Standard
	Mo	98	1430.3	3.3	**0.4122**	0.014	3.5	ug/L	35	Standard
	Ag	107	972.7	2.0	**0.1484**	0.004	3.0	ug/L	121	Standard
	Cd	111	240.2	3.9	**0.1378**	0.006	4.0	mg/L	4	Standard
	Cd	114	562.7	5.9	**0.1117**	0.009	8.2	ug/L	27	Standard
>	In	115	651867.1	1.3				ug/L	702235	Standard
	Sn	118	210.7	3.6	**0.0199**	0.011	55.7	ug/L	180	Standard
	Sb	123	111.1	32.2	**0.0034**	0.009	271.1	ug/L	43	Standard
	Ba	135	101900.5	0.7	**65.4356**	0.418	0.6	ug/L	50	Standard
	Ce	140	1960590.9	1.0				ug/L	20	Standard
>	Tb	159	1016135.8	0.7				ug/L	1036041	Standard
	Ho	165	6226.3	3.5				ug/L	8	Standard
	Tl	203	3115.0	1.1	**0.4344**	0.006	1.4	ug/L	87	Standard
	Tl	205	7590.2	1.8	**0.4441**	0.007	1.7	ug/L	255	Standard
	Pb	206	163779.1	0.3	**30.3530**	0.018	0.1	ug/L	523	Standard
	Pb	207	126872.3	0.8	**26.0285**	0.183	0.7	ug/L	433	Standard
	Pb	208	152462.8	0.8	**27.4399**	0.226	0.8	ug/L	498	Standard
	U	238	14219.3	1.4	**3.1356**	0.046	1.5	ug/L	6	Standard
>	Bi	209	614457.8	0.2				ug/L	631806	Standard

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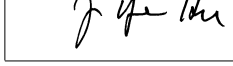

⌈	**Na**	23	3.3	86.6	**0.3594**	0.830	230.8	mg/L	2	Standard
|	**Mg**	24	86.7	33.3	**0.8396**	0.431	51.3	mg/L	27	Standard
|	**K**	39	126.7	18.7	**0.9893**	0.203	20.5	mg/L	17	Standard
|	**Ca**	43	36.7	34.3	**-8.6975**	7.967	91.6	mg/L	47	Standard
|	**Fe**	54	8817.3	3.8	**48.1231**	2.573	5.3	mg/L	23	Standard
|	**Fe**	57	2716.9	3.5	**51.1064**	2.837	5.6	mg/L	253	Standard
⌊>	**Sc-1**	45	51402.1	1.8				mg/L	39227	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.0	33.3				ug/L	3	Standard
	Br	81	3883.8	3.5				ug/L	2163	Standard
	P	31	50.0	45.8				ug/L	57	Standard
	S	34	20.0	0.0				ug/L	27	Standard
	Sr	88	131.7	19.1				ug/L	125	Standard
	C	12	36.7	103.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	596.7	5.1				mg/L	10	Standard
	Dy	164	9228.9	4.8				mg/L	9	Standard
	Ho-1	165	6226.3	3.5				mg/L	8	Standard
	Er	166	5931.2	4.3				mg/L	20	Standard
	I	127	34272.1	0.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		97.237	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.736	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	92.828
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.254
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1704002605
Sample Date/Time: Tuesday, April 04, 2017 15:42:59
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	283126.3	1.8				ug/L	302131	Standard
	Be	9	3007.0	2.5	**1.4662**	0.057	3.9	ug/L	12	Standard
	Al	27	760334.6	0.7	**5.8130**	0.093	1.6	ug/L	907	Standard
	Sc	45	62117.1	2.7				ug/L	39227	Standard
	Ti	47	8204.2	4.3	**41.6103**	1.475	3.5	ug/L	34	Standard
	V	51	500399.3	0.3	**79.8286**	0.390	0.5	ug/L	1155	Standard
	Cr	52	189193.9	0.9	**32.3233**	0.099	0.3	ug/L	5602	Standard
	Cr	53	23583.3	1.8	**31.8066**	0.414	1.3	ug/L	1042	Standard
	Mn	55	947894.9	1.0	**94.7809**	0.333	0.4	ug/L	2370	Standard
	Co	59	59038.8	1.7	**7.7198**	0.079	1.0	ug/L	381	Standard
	Ni	60	59801.8	1.0	**36.7613**	0.075	0.2	ug/L	282	Standard
	Cu	65	89114.6	1.0	**52.0185**	0.106	0.2	ug/L	707	Standard
	Zn	66	93328.3	2.0	**90.9759**	1.069	1.2	ug/L	427	Standard
>	Ge	72	785194.5	0.8				ug/L	842801	Standard
	As	75	25994.9	1.7	**24.4207**	0.230	0.9	ug/L	-11	Standard
	Se	82	40.1	19.7	**0.3127**	0.085	27.0	ug/L	18	Standard
	Se-1	77	140.0	16.3	**0.4911**	0.319	65.0	ug/L	127	Standard
>	Ga	71	53609.7	2.4				mg/L	92	Standard
	Rb	85	149384.5	0.6				ug/L	48	Standard
	Y	89	740639.2	2.3				ug/L	587989	Standard
>	Rh	103	21.7	48.0				ug/L	8	Standard
	Mo	98	3136.3	1.4	**0.9363**	0.014	1.5	ug/L	35	Standard
	Ag	107	978.4	4.4	**0.1524**	0.008	5.4	ug/L	121	Standard
	Cd	111	162.3	4.4	**0.0893**	0.005	5.5	mg/L	4	Standard
	Cd	114	383.0	12.4	**0.0681**	0.012	17.7	ug/L	27	Standard
>	In	115	641291.1	0.2				ug/L	702235	Standard
	Sn	118	199.7	9.8	**0.0108**	0.023	214.1	ug/L	180	Standard
	Sb	123	91.8	20.3	**-0.0011**	0.005	438.5	ug/L	43	Standard
	Ba	135	17733.7	1.6	**11.5336**	0.176	1.5	ug/L	50	Standard
	Ce	140	6735831.6	1.1				ug/L	20	Standard
>	Tb	159	1010629.2	0.2				ug/L	1036041	Standard
	Ho	165	16215.3	1.6				ug/L	8	Standard
	Tl	203	3973.9	1.0	**0.5720**	0.007	1.2	ug/L	87	Standard
	Tl	205	9609.7	3.2	**0.5773**	0.019	3.3	ug/L	255	Standard
	Pb	206	333056.6	0.7	**62.6966**	0.367	0.6	ug/L	523	Standard
	Pb	207	251910.8	1.3	**52.4920**	0.627	1.2	ug/L	433	Standard
	Pb	208	302572.3	0.6	**55.3067**	0.339	0.6	ug/L	498	Standard
	U	238	18149.5	0.6	**4.0612**	0.025	0.6	ug/L	6	Standard
>	Bi	209	606086.9	0.2				ug/L	631806	Standard

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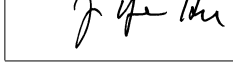

Na	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
Mg	24	28.3	10.2	**-0.0837**	0.028	33.6	mg/L	27	Standard
K	39	73.3	14.2	**0.4192**	0.063	15.1	mg/L	17	Standard
Ca	43	28.3	20.4	**-16.9374**	3.368	19.9	mg/L	47	Standard
Fe	54	7664.9	1.3	**34.5416**	0.683	2.0	mg/L	23	Standard
Fe	57	2413.5	9.7	**35.4719**	2.999	8.5	mg/L	253	Standard
Sc-1	45	62117.1	2.7				mg/L	39227	Standard
Cl	35	2.7	43.3				ug/L	1	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	3213.7	4.6				ug/L	2163	Standard
P	31	68.3	4.2				ug/L	57	Standard
S	34	25.0	40.0				ug/L	27	Standard
Sr	88	118.3	10.6				ug/L	125	Standard
C	12	26.7	21.7				mg/L	43	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	360.0	14.4				mg/L	10	Standard
Dy	164	24460.8	2.9				mg/L	9	Standard
Ho-1	165	16215.3	1.6				mg/L	8	Standard
Er	166	15661.4	0.4				mg/L	20	Standard
I	127	19681.1	3.0				mg/L	3535	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.710	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.165	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	91.321
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	95.929
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, April 04, 2017 15:46:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	267270.1	0.9				ug/L	302131	Standard
	Be	9	99138.4	2.7	**51.4203**	1.388	2.7	ug/L	12	Standard
	Al	27	6502802.8	2.3	**52.7965**	0.791	1.5	ug/L	907	Standard
	Sc	45	37559.8	2.5				ug/L	39227	Standard
	Ti	47	19938.4	0.5	**102.8319**	0.287	0.3	ug/L	34	Standard
	V	51	312839.6	0.3	**50.5506**	0.423	0.8	ug/L	1155	Standard
	Cr	52	290382.2	0.3	**50.8124**	0.563	1.1	ug/L	5602	Standard
	Cr	53	36587.5	1.0	**50.8054**	0.138	0.3	ug/L	1042	Standard
	Mn	55	501597.9	1.1	**50.7548**	0.883	1.7	ug/L	2370	Standard
	Co	59	379175.6	0.4	**50.5381**	0.601	1.2	ug/L	381	Standard
	Ni	60	80576.0	0.7	**50.2881**	0.317	0.6	ug/L	282	Standard
	Cu	65	85256.5	0.4	**50.4588**	0.247	0.5	ug/L	707	Standard
	Zn	66	51321.4	0.4	**50.5668**	0.310	0.6	ug/L	427	Standard
>	Ge	72	774291.2	0.8				ug/L	842801	Standard
	As	75	53200.9	0.4	**50.6370**	0.229	0.5	ug/L	-11	Standard
	Se	82	4935.6	1.1	**51.3431**	0.423	0.8	ug/L	18	Standard
	Se-1	77	3547.4	1.2	**51.3474**	0.474	0.9	ug/L	127	Standard
>	Ga	71	91.7	36.3				mg/L	92	Standard
	Rb	85	561.7	6.4				ug/L	48	Standard
	Y	89	544498.5	1.1				ug/L	587989	Standard
>	Rh	103	23.3	12.4				ug/L	8	Standard
	Mo	98	341675.7	0.8	**103.4807**	0.914	0.9	ug/L	35	Standard
	Ag	107	279035.3	0.5	**51.8171**	0.263	0.5	ug/L	121	Standard
	Cd	111	79271.7	1.0	**51.9560**	0.504	1.0	mg/L	4	Standard
	Cd	114	204259.6	2.1	**52.1553**	0.971	1.9	ug/L	27	Standard
>	In	115	641671.4	0.3				ug/L	702235	Standard
	Sn	118	44776.4	1.0	**52.7964**	0.463	0.9	ug/L	180	Standard
	Sb	123	206562.2	1.1	**51.5933**	0.409	0.8	ug/L	43	Standard
	Ba	135	78635.2	1.1	**51.2839**	0.500	1.0	ug/L	50	Standard
	Ce	140	408.3	30.6				ug/L	20	Standard
>	Tb	159	973567.6	1.2				ug/L	1036041	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	337363.1	2.0	**51.3238**	0.919	1.8	ug/L	87	Standard
	Tl	205	820592.4	2.8	**51.3104**	1.291	2.5	ug/L	255	Standard
	Pb	206	273752.9	1.5	**51.3443**	0.625	1.2	ug/L	523	Standard
	Pb	207	248273.9	1.5	**51.5637**	0.642	1.2	ug/L	433	Standard
	Pb	208	277889.5	1.3	**50.6208**	0.559	1.1	ug/L	498	Standard
	U	238	237283.3	0.8	**53.0736**	0.324	0.6	ug/L	6	Standard
>	Bi	209	608064.2	0.2				ug/L	631806	Standard

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⌈	**Na**	23	10.0	100.0	**3.3933**	4.059	119.6	mg/L	2	Standard
|	**Mg**	24	278.3	15.0	**5.1394**	0.979	19.0	mg/L	27	Standard
|	**K**	39	478.3	7.9	**5.5415**	0.314	5.7	mg/L	17	Standard
|	**Ca**	43	50.0	50.0	**11.3493**	21.539	189.8	mg/L	47	Standard
|	**Fe**	54	757.4	0.0	**5.4484**	0.142	2.6	mg/L	23	Standard
|	**Fe**	57	468.3	7.5	**6.2078**	0.706	11.4	mg/L	253	Standard
⌊>	**Sc-1**	45	37559.8	2.5				mg/L	39227	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	2.7	78.1				ug/L	3	Standard
	Br	81	1933.5	3.4				ug/L	2163	Standard
	P	31	58.3	32.5				ug/L	57	Standard
	S	34	26.7	54.1				ug/L	27	Standard
	Sr	88	113.3	11.1				ug/L	125	Standard
	C	12	36.7	15.7				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	12.4	43.3				mg/L	9	Standard
	Ho-1	165	8.3	91.7				mg/L	8	Standard
	Er	166	20.0	50.0				mg/L	20	Standard
	I	127	2303.5	10.6				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	102.841		
⌊	Al	27	105.593		
⌈	Sc	45			
|	Ti	47	102.832		
|	V	51	101.101		
|	Cr	52	101.625		
|	Cr	53			
|	Mn	55	101.510		
|	Co	59	101.076		
|	Ni	60	100.576		
|	Cu	65	100.918		
|	Zn	66	101.134		
|>	Ge	72		91.871	
|	As	75	101.274		
|	Se	82	102.686		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	103.481	
|	Ag	107	103.634	
|	Cd	111	103.912	
|	Cd	114		
|>	In	115		91.376
|	Sn	118	105.593	
|	Sb	123	103.187	
⌊	Ba	135	102.568	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	102.648	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	101.242	
|	U	238	106.147	
⌊>	Bi	209		96.242
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, April 04, 2017 15:49:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	267840.6	2.0				ug/L	302131	Standard
	Be	9	43.3	46.6	**0.0156**	0.010	64.9	ug/L	12	Standard
	Al	27	1080.0	28.7	**-0.0091**	0.003	27.5	ug/L	907	Standard
	Sc	45	37018.5	2.7				ug/L	39227	Standard
	Ti	47	28.0	10.7	**-0.0313**	0.017	55.3	ug/L	34	Standard
	V	51	1076.3	2.8	**0.0145**	0.007	50.2	ug/L	1155	Standard
	Cr	52	4558.0	1.2	**-0.0677**	0.018	26.7	ug/L	5602	Standard
	Cr	53	341.7	8.8	**-0.8354**	0.040	4.7	ug/L	1042	Standard
	Mn	55	2146.2	5.7	**-0.0158**	0.014	87.6	ug/L	2370	Standard
	Co	59	294.7	1.9	**-0.0060**	0.001	21.7	ug/L	381	Standard
	Ni	60	185.0	3.0	**-0.0388**	0.005	11.9	ug/L	282	Standard
	Cu	65	2686.2	1.6	**1.3019**	0.011	0.8	ug/L	707	Standard
	Zn	66	417.0	6.5	**0.0389**	0.022	57.2	ug/L	427	Standard
>	Ge	72	756540.9	1.3				ug/L	842801	Standard
	As	75	-26.5	82.2	**0.0201**	0.021	105.1	ug/L	-11	Standard
	Se	82	8.2	29.2	**-0.0117**	0.027	226.3	ug/L	18	Standard
	Se-1	77	82.0	17.1	**-0.3164**	0.199	62.9	ug/L	127	Standard
>	Ga	71	81.7	36.9				mg/L	92	Standard
	Rb	85	270.0	22.5				ug/L	48	Standard
	Y	89	538969.5	1.2				ug/L	587989	Standard
>	Rh	103	5.0	0.0				ug/L	8	Standard
	Mo	98	157.8	27.6	**0.0341**	0.013	37.7	ug/L	35	Standard
	Ag	107	144.3	17.5	**-0.0023**	0.005	211.0	ug/L	121	Standard
	Cd	111	9.1	44.3	**-0.0111**	0.003	24.8	mg/L	4	Standard
	Cd	114	32.6	9.1	**-0.0214**	0.001	3.4	ug/L	27	Standard
>	In	115	632954.3	1.2				ug/L	702235	Standard
	Sn	118	214.0	7.1	**0.0313**	0.021	67.5	ug/L	180	Standard
	Sb	123	291.6	27.1	**0.0500**	0.021	41.5	ug/L	43	Standard
	Ba	135	45.7	19.1	**-0.0198**	0.006	29.5	ug/L	50	Standard
	Ce	140	190.0	92.2				ug/L	20	Standard
>	Tb	159	958937.4	1.8				ug/L	1036041	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	53.7	78.3	**-0.0267**	0.006	24.2	ug/L	87	Standard
	Tl	205	113.3	71.3	**-0.0187**	0.005	27.3	ug/L	255	Standard
	Pb	206	1102.0	3.1	**0.0949**	0.007	7.6	ug/L	523	Standard
	Pb	207	890.0	2.3	**0.0889**	0.003	3.6	ug/L	433	Standard
	Pb	208	1023.3	2.8	**0.0897**	0.005	5.5	ug/L	498	Standard
	U	238	26.7	52.5	**-0.0066**	0.003	47.7	ug/L	6	Standard
>	Bi	209	607461.2	0.5				ug/L	631806	Standard

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	Na	23	1.7	173.2	**0.0749**	1.166	1555.6	mg/L	2	Standard
	Mg	24	23.3	65.5	**0.0496**	0.319	643.5	mg/L	27	Standard
	K	39	16.7	45.8	**0.0975**	0.097	99.0	mg/L	17	Standard
	Ca	43	31.7	24.1	**-4.0562**	7.103	175.1	mg/L	47	Standard
	Fe	54	23.0	54.2	**-0.0589**	0.099	167.7	mg/L	23	Standard
	Fe	57	270.0	3.2	**0.4697**	0.071	15.1	mg/L	253	Standard
>	**Sc-1**	45	37018.5	2.7				mg/L	39227	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	2033.5	8.8				ug/L	2163	Standard
	P	31	55.0	24.1				ug/L	57	Standard
	S	34	38.3	30.1				ug/L	27	Standard
	Sr	88	106.7	22.2				ug/L	125	Standard
	C	12	33.3	45.8				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	10	Standard
	Dy	164	12.4	132.4				mg/L	9	Standard
	Ho-1	165	10.0	50.0				mg/L	8	Standard
	Er	166	20.0	132.3				mg/L	20	Standard
	I	127	2816.9	7.6				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		89.765	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	90.134
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.147
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Cu	65	

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Method 6020 - Summary Report

Sample ID: PBS 12 WG608619-02
Sample Date/Time: Tuesday, April 04, 2017 16:12:38
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	455850.5	1.8				ug/L	302131	Standard
	Be	9	48.3	15.8	**0.0079**	0.002	27.4	ug/L	12	Standard
	Al	27	36926.7	4.2	**0.1579**	0.004	2.7	ug/L	907	Standard
	Sc	45	49885.3	0.9				ug/L	39227	Standard
	Ti	47	739.4	6.6	**3.1948**	0.234	7.3	ug/L	34	Standard
	V	51	976.0	242.6	**-0.0235**	0.340	1449.6	ug/L	1155	Standard
	Cr	52	36637.9	0.3	**4.8639**	0.026	0.5	ug/L	5602	Standard
	Cr	53	87658.0	2.8	**108.9913**	2.639	2.4	ug/L	1042	Standard
	Mn	55	6389.7	1.5	**0.3346**	0.006	1.8	ug/L	2370	Standard
	Co	59	421.0	3.7	**0.0034**	0.002	59.5	ug/L	381	Standard
	Ni	60	468.0	7.0	**0.1014**	0.019	19.1	ug/L	282	Standard
	Cu	65	1380.7	2.9	**0.3906**	0.024	6.2	ug/L	707	Standard
	Zn	66	6097.6	7.4	**4.9610**	0.371	7.5	ug/L	427	Standard
>	Ge	72	876649.6	0.5				ug/L	842801	Standard
	As	75	-384.6	138.1	**-0.2765**	0.446	161.1	ug/L	-11	Standard
	Se	82	6.0	100.7	**-0.0443**	0.056	125.7	ug/L	18	Standard
	Se-1	77	18513.3	2.5	**242.3260**	5.286	2.2	ug/L	127	Standard
>	Ga	71	516.7	3.9				mg/L	92	Standard
	Rb	85	675.0	5.1				ug/L	48	Standard
	Y	89	621429.7	0.6				ug/L	587989	Standard
>	Rh	103	13.3	43.3				ug/L	8	Standard
	Mo	98	104.8	4.2	**0.0151**	0.001	7.7	ug/L	35	Standard
	Ag	107	154.0	15.3	**-0.0029**	0.004	142.2	ug/L	121	Standard
	Cd	111	26.9	30.5	**-0.0009**	0.005	545.7	mg/L	4	Standard
	Cd	114	101.7	20.6	**-0.0058**	0.005	84.6	ug/L	27	Standard
>	In	115	691952.0	0.6				ug/L	702235	Standard
	Sn	118	371.3	2.1	**0.1820**	0.011	5.9	ug/L	180	Standard
	Sb	123	197.7	30.8	**0.0218**	0.014	64.3	ug/L	43	Standard
	Ba	135	411.7	7.9	**0.1991**	0.018	9.2	ug/L	50	Standard
	Ce	140	813.4	6.2				ug/L	20	Standard
>	Tb	159	1169048.7	1.6				ug/L	1036041	Standard
	Ho	165	35.0	62.3				ug/L	8	Standard
	Tl	203	244.7	31.1	**-0.0007**	0.011	1733.5	ug/L	87	Standard
	Tl	205	561.7	17.7	**0.0065**	0.006	98.4	ug/L	255	Standard
	Pb	206	883.0	4.1	**0.0396**	0.004	10.6	ug/L	523	Standard
	Pb	207	747.7	1.8	**0.0460**	0.001	1.6	ug/L	433	Standard
	Pb	208	977.0	3.1	**0.0662**	0.007	10.5	ug/L	498	Standard
	U	238	12.3	28.5	**-0.0101**	0.001	7.6	ug/L	6	Standard
>	Bi	209	663801.4	1.9				ug/L	631806	Standard

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⌈	**Na**	23	1.7	173.2	**-0.1025**	0.859	837.7	mg/L	2	Standard
|	**Mg**	24	68.3	40.3	**0.6027**	0.423	70.1	mg/L	27	Standard
|	**K**	39	15.0	33.3	**0.0294**	0.044	148.0	mg/L	17	Standard
|	**Ca**	43	48.3	57.0	**-0.3778**	18.102	4791.3	mg/L	47	Standard
|	**Fe**	54	47.5	6.3	**0.0323**	0.015	46.5	mg/L	23	Standard
|	**Fe**	57	283.3	5.4	**-1.3208**	0.380	28.7	mg/L	253	Standard
⌊>	**Sc-1**	45	49885.3	0.9				mg/L	39227	Standard
	Cl	35	5.3	78.1				ug/L	1	Standard
	Kr	83	6.0	16.7				ug/L	3	Standard
	Br	81	2763.6	8.7				ug/L	2163	Standard
	P	31	103.3	19.6				ug/L	57	Standard
	S	34	41.7	38.6				ug/L	27	Standard
	Sr	88	173.3	19.6				ug/L	125	Standard
	C	12	130.0	20.4				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	114.6				mg/L	10	Standard
	Dy	164	29.4	92.3				mg/L	9	Standard
	Ho-1	165	35.0	62.3				mg/L	8	Standard
	Er	166	13.3	114.6				mg/L	20	Standard
	I	127	13881.4	7.2				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		150.878	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		104.016	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.536
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	105.064
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

Sample ID: PBS 12 WG608619-02
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Method 6020 - Summary Report

Sample ID: LCSS 12 WG608619-03
Sample Date/Time: Tuesday, April 04, 2017 16:15:43
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	477433.3	3.6				ug/L	302131	Standard
	Be	9	82783.9	1.1	**24.0533**	0.916	3.8	ug/L	12	Standard
	Al	27	13300.8	4.5	**0.0427**	0.004	10.5	ug/L	907	Standard
	Sc	45	50756.6	2.5				ug/L	39227	Standard
	Ti	47	154.3	15.2	**0.5054**	0.102	20.3	ug/L	34	Standard
	V	51	206740.7	2.3	**28.6302**	0.796	2.8	ug/L	1155	Standard
	Cr	52	233253.7	0.1	**34.7854**	0.115	0.3	ug/L	5602	Standard
	Cr	53	130925.0	1.3	**158.9658**	2.829	1.8	ug/L	1042	Standard
	Mn	55	331589.0	1.6	**28.7215**	0.593	2.1	ug/L	2370	Standard
	Co	59	243142.5	1.9	**27.8209**	0.667	2.4	ug/L	381	Standard
	Ni	60	52515.9	1.4	**28.0895**	0.495	1.8	ug/L	282	Standard
	Cu	65	53002.6	2.1	**26.7949**	0.690	2.6	ug/L	707	Standard
	Zn	66	32670.2	2.1	**27.4819**	0.720	2.6	ug/L	427	Standard
>	Ge	72	901265.7	0.5				ug/L	842801	Standard
	As	75	30321.8	1.3	**24.8186**	0.445	1.8	ug/L	-11	Standard
	Se	82	2810.4	0.9	**25.0668**	0.324	1.3	ug/L	18	Standard
	Se-1	77	23713.2	0.7	**302.3111**	0.824	0.3	ug/L	127	Standard
>	Ga	71	595.0	4.7				mg/L	92	Standard
	Rb	85	346.7	11.6				ug/L	48	Standard
	Y	89	635439.7	0.5				ug/L	587989	Standard
>	Rh	103	31.7	24.1				ug/L	8	Standard
	Mo	98	106.4	5.0	**0.0153**	0.001	7.7	ug/L	35	Standard
	Ag	107	150072.3	0.8	**25.6377**	0.038	0.1	ug/L	121	Standard
	Cd	111	42946.3	1.7	**25.8996**	0.200	0.8	mg/L	4	Standard
	Cd	114	108135.2	0.4	**25.4027**	0.320	1.3	ug/L	27	Standard
>	In	115	697105.2	1.0				ug/L	702235	Standard
	Sn	118	348.7	3.6	**0.1542**	0.010	6.6	ug/L	180	Standard
	Sb	123	106309.4	2.2	**24.4279**	0.352	1.4	ug/L	43	Standard
	Ba	135	43179.4	1.2	**25.8965**	0.138	0.5	ug/L	50	Standard
	Ce	140	665.0	5.3				ug/L	20	Standard
>	Tb	159	1183151.5	0.5				ug/L	1036041	Standard
	Ho	165	36.7	15.7				ug/L	8	Standard
	Tl	203	204589.3	1.9	**27.5824**	0.353	1.3	ug/L	87	Standard
	Tl	205	489374.2	0.4	**27.1238**	0.237	0.9	ug/L	255	Standard
	Pb	206	161470.0	1.6	**26.8005**	0.271	1.0	ug/L	523	Standard
	Pb	207	137576.3	1.9	**25.2869**	0.322	1.3	ug/L	433	Standard
	Pb	208	177638.7	0.4	**28.6525**	0.110	0.4	ug/L	498	Standard
	U	238	144853.2	1.3	**28.7236**	0.202	0.7	ug/L	6	Standard
>	Bi	209	685732.6	0.6				ug/L	631806	Standard

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⌈	**Na**	23	1.7	173.2	**-0.1149**	0.837	728.9	mg/L	2	Standard
|	**Mg**	24	63.3	37.3	**0.5048**	0.327	64.8	mg/L	27	Standard
|	**K**	39	16.7	62.4	**0.0404**	0.088	218.6	mg/L	17	Standard
|	**Ca**	43	41.7	59.2	**-4.9794**	16.509	331.5	mg/L	47	Standard
|	**Fe**	54	34.0	16.6	**-0.0469**	0.033	70.2	mg/L	23	Standard
|	**Fe**	57	345.0	12.9	**-0.0943**	0.796	843.9	mg/L	253	Standard
⌊>	**Sc-1**	45	50756.6	2.5				mg/L	39227	Standard
	Cl	35	2.0	173.2				ug/L	1	Standard
	Kr	83	6.0					ug/L	3	Standard
	Br	81	2680.2	3.9				ug/L	2163	Standard
	P	31	70.0	7.1				ug/L	57	Standard
	S	34	35.0	24.7				ug/L	27	Standard
	Sr	88	163.3	4.7				ug/L	125	Standard
	C	12	86.7	33.3				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	10	Standard
	Dy	164	28.7	5.1				mg/L	9	Standard
	Ho-1	165	36.7	15.7				mg/L	8	Standard
	Er	166	26.7	114.6				mg/L	20	Standard
	I	127	13065.6	0.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		158.022	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		106.937	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.270
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	108.535
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

Sample ID: LCSS 12 WG608619-03
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Method 6020 - Summary Report

Sample ID: L1704002606 WG608619-01
Sample Date/Time: Tuesday, April 04, 2017 16:18:49
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	494010.9	1.7				ug/L	302131	Standard
	Be	9	4839.1	2.4	**1.3512**	0.018	1.4	ug/L	12	Standard
	Al	27	3090950.9	1.3	**13.5667**	0.221	1.6	ug/L	907	Standard
	Sc	45	58499.4	1.8				ug/L	39227	Standard
	Ti	47	32430.3	1.1	**145.9915**	1.370	0.9	ug/L	34	Standard
	V	51	563898.7	1.4	**79.5860**	1.322	1.7	ug/L	1155	Standard
	Cr	52	442752.5	0.9	**67.8851**	0.851	1.3	ug/L	5602	Standard
	Cr	53	197166.8	5.1	**243.8284**	13.559	5.6	ug/L	1042	Standard
	Mn	55	48823028.0	0.7	**4329.7448**	42.911	1.0	ug/L	2370	Standard
	Co	59	121713.3	1.1	**14.1193**	0.227	1.6	ug/L	381	Standard
	Ni	60	32516.5	1.1	**17.6031**	0.269	1.5	ug/L	282	Standard
	Cu	65	39212.3	0.5	**20.0456**	0.179	0.9	ug/L	707	Standard
	Zn	66	88820.9	0.3	**76.5445**	0.497	0.6	ug/L	427	Standard
>	**Ge**	72	887529.8	0.5				ug/L	842801	Standard
	As	75	18027.0	0.8	**15.0017**	0.196	1.3	ug/L	-11	Standard
	Se	82	111.3	4.3	**0.9127**	0.048	5.3	ug/L	18	Standard
	Se-1	77	28216.3	5.9	**365.6699**	22.898	6.3	ug/L	127	Standard
>	**Ga**	71	51313.4	1.2				mg/L	92	Standard
	Rb	85	386853.5	1.1				ug/L	48	Standard
	Y	89	1046186.4	2.1				ug/L	587989	Standard
>	**Rh**	103	25.0	87.2				ug/L	8	Standard
	Mo	98	9745.4	2.1	**2.7685**	0.073	2.6	ug/L	35	Standard
	Ag	107	908.4	1.7	**0.1296**	0.004	2.8	ug/L	121	Standard
	Cd	111	251.1	1.6	**0.1380**	0.002	1.7	mg/L	4	Standard
	Cd	114	920.1	8.2	**0.1918**	0.018	9.3	ug/L	27	Standard
>	**In**	115	680717.9	0.7				ug/L	702235	Standard
	Sn	118	2481.2	0.8	**2.5440**	0.040	1.6	ug/L	180	Standard
	Sb	123	2950.4	1.3	**0.6710**	0.008	1.2	ug/L	43	Standard
	Ba	135	395909.9	1.0	**243.5778**	0.746	0.3	ug/L	50	Standard
	Ce	140	4455032.3	1.0				ug/L	20	Standard
>	**Tb**	159	1226181.1	1.6				ug/L	1036041	Standard
	Ho	165	31621.3	1.3				ug/L	8	Standard
	Tl	203	4331.6	1.0	**0.5578**	0.008	1.3	ug/L	87	Standard
	Tl	205	10533.7	1.5	**0.5665**	0.006	1.0	ug/L	255	Standard
	Pb	206	270902.8	1.7	**45.6562**	0.667	1.5	ug/L	523	Standard
	Pb	207	213253.1	1.5	**39.7861**	0.398	1.0	ug/L	433	Standard
	Pb	208	297519.9	0.5	**48.7099**	0.142	0.3	ug/L	498	Standard
	U	238	10022.3	0.9	**2.0028**	0.024	1.2	ug/L	6	Standard
>	**Bi**	209	676521.3	0.5				ug/L	631806	Standard

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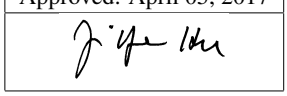

	Na	23	5.0	100.0	**0.6803**	1.275	187.5	mg/L	2	Standard
	Mg	24	70.0	25.8	**0.4711**	0.233	49.4	mg/L	27	Standard
	K	39	176.7	11.4	**1.2369**	0.163	13.2	mg/L	17	Standard
	Ca	43	33.3	31.2	**-13.3903**	5.359	40.0	mg/L	47	Standard
	Fe	54	6145.9	1.1	**29.3678**	0.234	0.8	mg/L	23	Standard
	Fe	57	1938.5	4.5	**29.2015**	2.296	7.9	mg/L	253	Standard
>	**Sc-1**	45	58499.4	1.8				mg/L	39227	Standard
	Cl	35	4.0	50.0				ug/L	1	Standard
	Kr	83	3.7	68.6				ug/L	3	Standard
	Br	81	4690.7	2.6				ug/L	2163	Standard
	P	31	71.7	17.6				ug/L	57	Standard
	S	34	31.7	36.5				ug/L	27	Standard
	Sr	88	166.7	22.5				ug/L	125	Standard
	C	12	180.0	55.6				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	210.0	8.2				mg/L	10	Standard
	Dy	164	48999.3	1.6				mg/L	9	Standard
	Ho-1	165	31621.3	1.3				mg/L	8	Standard
	Er	166	28690.5	2.8				mg/L	20	Standard
	I	127	143648.9	10.0				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		163.509	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.307	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.936
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.077
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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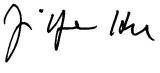

Method 6020 - Summary Report

Sample ID: L1704002606S WG608619-04
Sample Date/Time: Tuesday, April 04, 2017 16:21:54
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	476391.9	0.6				ug/L	302131	Standard
	Be	9	84159.8	1.2	**24.4849**	0.159	0.7	ug/L	12	Standard
	Al	27	2904214.1	1.1	**13.2166**	0.160	1.2	ug/L	907	Standard
	Sc	45	57308.2	1.2				ug/L	39227	Standard
	Ti	47	32147.4	0.4	**148.4753**	0.820	0.6	ug/L	34	Standard
	V	51	714364.9	1.6	**103.4825**	1.550	1.5	ug/L	1155	Standard
	Cr	52	518111.6	1.1	**81.6770**	0.798	1.0	ug/L	5602	Standard
	Cr	53	217788.0	2.4	**276.4496**	6.395	2.3	ug/L	1042	Standard
	Mn	55	50823278.1	1.1	**4623.9194**	46.695	1.0	ug/L	2370	Standard
	Co	59	342404.1	1.2	**40.8355**	0.480	1.2	ug/L	381	Standard
	Ni	60	77469.9	1.6	**43.2521**	0.701	1.6	ug/L	282	Standard
	Cu	65	85841.2	1.5	**45.4381**	0.666	1.5	ug/L	707	Standard
	Zn	66	109559.4	0.9	**96.9658**	0.840	0.9	ug/L	427	Standard
>	Ge	72	865090.1	0.1				ug/L	842801	Standard
	As	75	44631.9	1.3	**38.0325**	0.470	1.2	ug/L	-11	Standard
	Se	82	2579.7	0.3	**23.9661**	0.068	0.3	ug/L	18	Standard
	Se-1	77	32317.8	1.1	**429.8950**	4.576	1.1	ug/L	127	Standard
>	Ga	71	46148.5	1.2				mg/L	92	Standard
	Rb	85	354369.6	0.6				ug/L	48	Standard
	Y	89	1041943.2	0.7				ug/L	587989	Standard
>	Rh	103	33.3	22.9				ug/L	8	Standard
	Mo	98	12087.2	0.5	**3.5127**	0.038	1.1	ug/L	35	Standard
	Ag	107	134287.8	0.4	**24.0067**	0.207	0.9	ug/L	121	Standard
	Cd	111	39474.8	0.6	**24.9137**	0.020	0.1	mg/L	4	Standard
	Cd	114	99450.6	2.7	**24.4443**	0.546	2.2	ug/L	27	Standard
>	In	115	666124.2	0.5				ug/L	702235	Standard
	Sn	118	1309.1	1.8	**1.2675**	0.029	2.3	ug/L	180	Standard
	Sb	123	95891.3	0.2	**23.0591**	0.083	0.4	ug/L	43	Standard
	Ba	135	410280.7	0.2	**257.9591**	0.930	0.4	ug/L	50	Standard
	Ce	140	4373466.6	0.4				ug/L	20	Standard
>	Tb	159	1205980.0	0.4				ug/L	1036041	Standard
	Ho	165	33640.7	2.4				ug/L	8	Standard
	Tl	203	191250.2	1.0	**26.6988**	0.207	0.8	ug/L	87	Standard
	Tl	205	462315.9	0.7	**26.5314**	0.039	0.1	ug/L	255	Standard
	Pb	206	403617.8	1.2	**69.5508**	0.930	1.3	ug/L	523	Standard
	Pb	207	325922.7	1.0	**62.1739**	0.526	0.8	ug/L	433	Standard
	Pb	208	454202.4	1.0	**76.0178**	0.078	0.1	ug/L	498	Standard
	U	238	151263.1	1.3	**31.0593**	0.161	0.5	ug/L	6	Standard
>	Bi	209	662251.5	0.9				ug/L	631806	Standard

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	Na	23	10.0	50.0	**1.9861**	1.278	64.4	mg/L	2	Standard
	Mg	24	65.0	20.4	**0.4256**	0.183	43.0	mg/L	27	Standard
	K	39	148.3	8.5	**1.0449**	0.102	9.8	mg/L	17	Standard
	Ca	43	35.0	75.6	**-12.0580**	14.783	122.6	mg/L	47	Standard
	Fe	54	6135.5	4.9	**29.9366**	1.649	5.5	mg/L	23	Standard
	Fe	57	1845.1	6.0	**28.1486**	2.540	9.0	mg/L	253	Standard
>	**Sc-1**	45	57308.2	1.2				mg/L	39227	Standard
	Cl	35	2.0	173.2				ug/L	1	Standard
	Kr	83	4.7	32.7				ug/L	3	Standard
	Br	81	4310.6	6.1				ug/L	2163	Standard
	P	31	91.7	26.9				ug/L	57	Standard
	S	34	26.7	10.8				ug/L	27	Standard
	Sr	88	211.7	5.9				ug/L	125	Standard
	C	12	160.0	34.8				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	170.0	27.0				mg/L	10	Standard
	Dy	164	50952.3	2.1				mg/L	9	Standard
	Ho-1	165	33640.7	2.4				mg/L	8	Standard
	Er	166	29742.5	2.6				mg/L	20	Standard
	I	127	141918.9	7.3				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		157.677	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.645	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		94.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		104.819
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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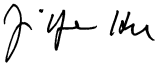

Method 6020 - Summary Report

Sample ID: L1704002606SD WG608619-05
Sample Date/Time: Tuesday, April 04, 2017 16:25:00
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	481885.4	1.1				ug/L	302131	Standard
	Be	9	87304.1	0.6	**25.1131**	0.342	1.4	ug/L	12	Standard
	Al	27	4253775.4	3.1	**19.1487**	0.724	3.8	ug/L	907	Standard
	Sc	45	59612.0	0.1				ug/L	39227	Standard
	Ti	47	52546.0	1.4	**235.3148**	1.605	0.7	ug/L	34	Standard
	V	51	835253.5	0.4	**117.3044**	1.879	1.6	ug/L	1155	Standard
	Cr	52	511896.1	1.2	**78.1769**	0.910	1.2	ug/L	5602	Standard
	Cr	53	217561.2	1.9	**267.6017**	2.185	0.8	ug/L	1042	Standard
	Mn	55	54342022.7	1.8	**4791.5222**	16.091	0.3	ug/L	2370	Standard
	Co	59	366036.4	1.6	**42.3093**	0.153	0.4	ug/L	381	Standard
	Ni	60	89677.7	2.4	**48.5411**	0.692	1.4	ug/L	282	Standard
	Cu	65	94301.7	2.5	**48.3930**	0.310	0.6	ug/L	707	Standard
	Zn	66	140243.2	1.9	**120.3861**	1.207	1.0	ug/L	427	Standard
>	Ge	72	892664.7	2.0				ug/L	842801	Standard
	As	75	48842.0	3.2	**40.3255**	0.490	1.2	ug/L	-11	Standard
	Se	82	2780.8	2.2	**25.0402**	0.107	0.4	ug/L	18	Standard
	Se-1	77	31824.1	1.8	**410.2014**	3.707	0.9	ug/L	127	Standard
>	Ga	71	61087.9	1.5				mg/L	92	Standard
	Rb	85	487448.2	1.6				ug/L	48	Standard
	Y	89	1066066.0	1.1				ug/L	587989	Standard
>	Rh	103	50.0	20.0				ug/L	8	Standard
	Mo	98	10444.1	0.9	**2.9974**	0.006	0.2	ug/L	35	Standard
	Ag	107	137433.6	1.4	**24.2809**	0.264	1.1	ug/L	121	Standard
	Cd	111	40595.9	0.9	**25.3237**	0.434	1.7	mg/L	4	Standard
	Cd	114	103000.0	1.1	**25.0222**	0.021	0.1	ug/L	27	Standard
>	In	115	674030.6	1.1				ug/L	702235	Standard
	Sn	118	2088.8	2.0	**2.1294**	0.066	3.1	ug/L	180	Standard
	Sb	123	96772.5	1.1	**22.9984**	0.223	1.0	ug/L	43	Standard
	Ba	135	481164.2	1.3	**298.9809**	2.114	0.7	ug/L	50	Standard
	Ce	140	4709031.5	1.4				ug/L	20	Standard
>	Tb	159	1215281.6	0.6				ug/L	1036041	Standard
	Ho	165	34497.6	1.7				ug/L	8	Standard
	Tl	203	199781.6	1.2	**27.4121**	0.285	1.0	ug/L	87	Standard
	Tl	205	481551.6	1.1	**27.1626**	0.365	1.3	ug/L	255	Standard
	Pb	206	451048.1	2.1	**76.3915**	0.751	1.0	ug/L	523	Standard
	Pb	207	365244.0	2.9	**68.4752**	1.054	1.5	ug/L	433	Standard
	Pb	208	507529.2	1.2	**83.4947**	0.694	0.8	ug/L	498	Standard
	U	238	157519.8	2.2	**31.7866**	0.300	0.9	ug/L	6	Standard
>	Bi	209	673865.1	1.7				ug/L	631806	Standard

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	Na	23	18.3	41.7	**3.9605**	1.899	48.0	mg/L	2	Standard
	Mg	24	75.0	24.0	**0.5170**	0.226	43.7	mg/L	27	Standard
	K	39	240.0	9.5	**1.6825**	0.172	10.2	mg/L	17	Standard
	Ca	43	35.0	28.6	**-12.7693**	5.396	42.3	mg/L	47	Standard
	Fe	54	6794.5	6.0	**31.8789**	1.947	6.1	mg/L	23	Standard
	Fe	57	1966.8	3.0	**29.0150**	1.067	3.7	mg/L	253	Standard
>	**Sc-1**	45	59612.0	0.1				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	5.0	20.0				ug/L	3	Standard
	Br	81	4570.7	11.5				ug/L	2163	Standard
	P	31	73.3	14.2				ug/L	57	Standard
	S	34	40.0	33.1				ug/L	27	Standard
	Sr	88	166.7	10.5				ug/L	125	Standard
	C	12	226.7	33.1				mg/L	43	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	206.7	14.8				mg/L	10	Standard
	Dy	164	53054.0	2.5				mg/L	9	Standard
	Ho-1	165	34497.6	1.7				mg/L	8	Standard
	Er	166	31399.2	2.1				mg/L	20	Standard
	I	127	149874.8	9.0				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		159.495	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.916	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115	95.984	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209	106.657	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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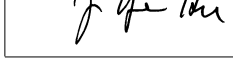

Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

Sample ID: L1704002606SD WG608619-05
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Method 6020 - Summary Report

Sample ID: L1704002401
Sample Date/Time: Tuesday, April 04, 2017 16:28:05
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	522708.9	1.9				ug/L	302131	Standard
	Be	9	2046.8	4.9	**0.5365**	0.036	6.7	ug/L	12	Standard
	Al	27	3444392.0	2.1	**14.2937**	0.549	3.8	ug/L	907	Standard
	Sc	45	60825.2	2.9				ug/L	39227	Standard
	Ti	47	36285.1	2.4	**158.4038**	4.946	3.1	ug/L	34	Standard
	V	51	937175.1	0.9	**128.3404**	1.900	1.5	ug/L	1155	Standard
	Cr	52	498904.5	0.8	**74.2484**	1.106	1.5	ug/L	5602	Standard
	Cr	53	184791.7	0.4	**221.4144**	2.256	1.0	ug/L	1042	Standard
	Mn	55	11259662.5	1.4	**968.0093**	22.511	2.3	ug/L	2370	Standard
	Co	59	180534.0	1.4	**20.3260**	0.458	2.3	ug/L	381	Standard
	Ni	60	32981.9	1.7	**17.3097**	0.448	2.6	ug/L	282	Standard
	Cu	65	55014.4	1.9	**27.3892**	0.672	2.5	ug/L	707	Standard
	Zn	66	94154.0	1.3	**78.6858**	1.760	2.2	ug/L	427	Standard
>	**Ge**	72	915447.6	0.9				ug/L	842801	Standard
	As	75	23173.4	0.6	**18.6859**	0.286	1.5	ug/L	-11	Standard
	Se	82	137.2	13.9	**1.1091**	0.159	14.3	ug/L	18	Standard
	Se-1	77	24626.3	1.8	**309.1150**	3.519	1.1	ug/L	127	Standard
>	**Ga**	71	95659.4	2.1				mg/L	92	Standard
	Rb	85	597988.1	1.9				ug/L	48	Standard
	Y	89	725820.2	0.5				ug/L	587989	Standard
>	**Rh**	103	23.3	86.6				ug/L	8	Standard
	Mo	98	11700.4	2.1	**3.2418**	0.082	2.5	ug/L	35	Standard
	Ag	107	909.7	4.5	**0.1258**	0.006	4.7	ug/L	121	Standard
	Cd	111	142.6	10.1	**0.0687**	0.009	13.1	mg/L	4	Standard
	Cd	114	518.8	10.3	**0.0918**	0.011	12.1	ug/L	27	Standard
>	**In**	115	698531.6	1.6				ug/L	702235	Standard
	Sn	118	2281.2	2.5	**2.2566**	0.100	4.4	ug/L	180	Standard
	Sb	123	4178.6	1.6	**0.9355**	0.030	3.2	ug/L	43	Standard
	Ba	135	105357.7	1.3	**63.1434**	1.450	2.3	ug/L	50	Standard
	Ce	140	744026.7	1.7				ug/L	20	Standard
>	**Tb**	159	1212371.7	1.8				ug/L	1036041	Standard
	Ho	165	7248.4	2.9				ug/L	8	Standard
	Tl	203	5673.4	1.0	**0.7256**	0.015	2.1	ug/L	87	Standard
	Tl	205	13626.1	0.4	**0.7248**	0.011	1.5	ug/L	255	Standard
	Pb	206	251564.4	1.3	**41.5227**	0.907	2.2	ug/L	523	Standard
	Pb	207	199125.3	2.0	**36.3856**	0.974	2.7	ug/L	433	Standard
	Pb	208	266974.2	0.7	**42.8065**	0.893	2.1	ug/L	498	Standard
	U	238	13562.4	1.4	**2.6589**	0.055	2.1	ug/L	6	Standard
>	**Bi**	209	690744.0	1.7				ug/L	631806	Standard

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	Na	23	3.3	173.2	**0.2157**	1.410	653.4	mg/L	2	Standard
	Mg	24	81.7	15.4	**0.5798**	0.149	25.7	mg/L	27	Standard
	K	39	208.3	27.7	**1.4235**	0.465	32.6	mg/L	17	Standard
	Ca	43	23.3	12.4	**-19.2930**	1.832	9.5	mg/L	47	Standard
	Fe	54	11493.2	0.7	**53.0359**	1.768	3.3	mg/L	23	Standard
	Fe	57	2960.3	1.8	**46.4523**	1.628	3.5	mg/L	253	Standard
>	**Sc-1**	45	60825.2	2.9				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	3.0	66.7				ug/L	3	Standard
	Br	81	4223.9	5.9				ug/L	2163	Standard
	P	31	93.3	18.8				ug/L	57	Standard
	S	34	53.3	10.8				ug/L	27	Standard
	Sr	88	175.0	15.9				ug/L	125	Standard
	C	12	113.3	28.4				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	930.0	6.5				mg/L	10	Standard
	Dy	164	10901.8	5.7				mg/L	9	Standard
	Ho-1	165	7248.4	2.9				mg/L	8	Standard
	Er	166	7008.3	6.0				mg/L	20	Standard
	I	127	300209.9	9.7				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		173.007	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.620	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.473
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	109.328
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Se-1 77 Upper, S, EEE	Se-1	77

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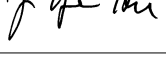

Method 6020 - Summary Report

Sample ID: L1704002402
Sample Date/Time: Tuesday, April 04, 2017 16:31:10
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	724249.4	1.9				ug/L	302131	Standard
	Be	9	17471.7	1.2	**3.3390**	0.100	3.0	ug/L	12	Standard
	Al	27	8199017.6	1.8	**24.5593**	0.297	1.2	ug/L	907	Standard
	Sc	45	96857.0	1.2				ug/L	39227	Standard
	Ti	47	77401.6	1.6	**345.2722**	6.861	2.0	ug/L	34	Standard
	V	51	1530002.3	1.3	**214.0831**	2.692	1.3	ug/L	1155	Standard
	Cr	52	782931.0	1.5	**119.5299**	1.361	1.1	ug/L	5602	Standard
	Cr	53	202979.2	1.7	**248.5162**	1.446	0.6	ug/L	1042	Standard
	Mn	55	8526151.6	1.3	**748.4613**	8.211	1.1	ug/L	2370	Standard
	Co	59	263944.2	0.7	**30.3689**	0.156	0.5	ug/L	381	Standard
	Ni	60	136355.5	0.9	**73.5824**	0.175	0.2	ug/L	282	Standard
	Cu	65	139362.7	0.8	**71.3866**	0.412	0.6	ug/L	707	Standard
	Zn	66	159449.3	0.8	**136.3548**	0.710	0.5	ug/L	427	Standard
>	Ge	72	896380.5	1.2				ug/L	842801	Standard
	As	75	27499.4	1.5	**22.6335**	0.070	0.3	ug/L	-11	Standard
	Se	82	69.3	5.0	**0.5240**	0.027	5.2	ug/L	18	Standard
	Se-1	77	21633.1	1.5	**277.1766**	3.673	1.3	ug/L	127	Standard
>	Ga	71	183283.9	2.3				mg/L	92	Standard
	Rb	85	879756.7	0.9				ug/L	48	Standard
	Y	89	1813129.0	1.8				ug/L	587989	Standard
>	Rh	103	21.7	35.3				ug/L	8	Standard
	Mo	98	9566.4	0.3	**2.7431**	0.031	1.1	ug/L	35	Standard
	Ag	107	1079.7	1.7	**0.1614**	0.003	2.1	ug/L	121	Standard
	Cd	111	261.7	3.5	**0.1460**	0.005	3.4	mg/L	4	Standard
	Cd	114	1008.2	3.9	**0.2152**	0.009	4.0	ug/L	27	Standard
>	In	115	674357.8	1.2				ug/L	702235	Standard
	Sn	118	3610.4	1.1	**3.8424**	0.005	0.1	ug/L	180	Standard
	Sb	123	2438.4	2.0	**0.5559**	0.015	2.7	ug/L	43	Standard
	Ba	135	134543.4	0.9	**83.5304**	1.002	1.2	ug/L	50	Standard
	Ce	140	4153252.6	1.9				ug/L	20	Standard
>	Tb	159	1275884.6	1.6				ug/L	1036041	Standard
	Ho	165	95924.4	1.1				ug/L	8	Standard
	Tl	203	7939.7	1.2	**1.0617**	0.008	0.7	ug/L	87	Standard
	Tl	205	18950.2	0.9	**1.0498**	0.008	0.8	ug/L	255	Standard
	Pb	206	231241.6	0.2	**39.3229**	0.236	0.6	ug/L	523	Standard
	Pb	207	179565.5	0.4	**33.8017**	0.067	0.2	ug/L	433	Standard
	Pb	208	239480.5	1.5	**39.5561**	0.494	1.2	ug/L	498	Standard
	U	238	12607.2	1.3	**2.5463**	0.027	1.1	ug/L	6	Standard
>	Bi	209	670239.0	0.4				ug/L	631806	Standard

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⌈	**Na**	23	3.3	173.2	**-0.0948**	0.872	919.3	mg/L	2	Standard
|	**Mg**	24	66.7	58.3	**0.0885**	0.293	331.2	mg/L	27	Standard
|	**K**	39	471.7	16.5	**2.0558**	0.349	17.0	mg/L	17	Standard
|	**Ca**	43	31.7	77.9	**-21.2120**	8.033	37.9	mg/L	47	Standard
|	**Fe**	54	21292.2	2.0	**61.7182**	1.951	3.2	mg/L	23	Standard
|	**Fe**	57	5429.3	2.2	**54.6463**	2.038	3.7	mg/L	253	Standard
⌊>	**Sc-1**	45	96857.0	1.2				mg/L	39227	Standard
	Cl	35	5.3	78.1				ug/L	1	Standard
	Kr	83	5.3	78.1				ug/L	3	Standard
	Br	81	2990.3	10.1				ug/L	2163	Standard
	P	31	86.7	8.8				ug/L	57	Standard
	S	34	28.3	62.0				ug/L	27	Standard
	Sr	88	176.7	7.1				ug/L	125	Standard
	C	12	106.7	42.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	533.3	20.7				mg/L	10	Standard
	Dy	164	143947.3	1.0				mg/L	9	Standard
	Ho-1	165	95924.4	1.1				mg/L	8	Standard
	Er	166	90774.5	1.6				mg/L	20	Standard
	I	127	57642.6	14.5				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		239.714	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		106.357	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.030
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.083
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77

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Method 6020 - Summary Report

Sample ID: L1704002402PS WG608787-01
Sample Date/Time: Tuesday, April 04, 2017 16:34:15
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	689948.3	1.6				ug/L	302131	Standard
	Be	9	170275.2	2.4	**34.2212**	1.305	3.8	ug/L	12	Standard
	Al	27	8020606.5	1.0	**25.2243**	0.596	2.4	ug/L	907	Standard
	Sc	45	94166.8	1.5				ug/L	39227	Standard
	Ti	47	74808.2	0.7	**338.6343**	7.089	2.1	ug/L	34	Standard
	V	51	2286383.3	1.1	**324.7656**	8.301	2.6	ug/L	1155	Standard
	Cr	52	1107372.4	0.7	**171.9662**	3.625	2.1	ug/L	5602	Standard
	Cr	53	239484.8	1.6	**297.8804**	9.222	3.1	ug/L	1042	Standard
	Mn	55	8942497.2	0.5	**796.6699**	15.899	2.0	ug/L	2370	Standard
	Co	59	696660.8	1.1	**81.4233**	1.872	2.3	ug/L	381	Standard
	Ni	60	225904.4	1.0	**123.8225**	2.639	2.1	ug/L	282	Standard
	Cu	65	231797.9	1.4	**120.7320**	3.144	2.6	ug/L	707	Standard
	Zn	66	218080.3	0.8	**189.4068**	3.763	2.0	ug/L	427	Standard
>	Ge	72	883427.4	1.5				ug/L	842801	Standard
	As	75	86187.3	1.2	**71.8960**	1.805	2.5	ug/L	-11	Standard
	Se	82	5492.2	0.9	**50.0847**	1.178	2.4	ug/L	18	Standard
	Se-1	77	24553.9	1.2	**319.5284**	8.783	2.7	ug/L	127	Standard
>	Ga	71	179626.9	0.5				mg/L	92	Standard
	Rb	85	873689.4	1.1				ug/L	48	Standard
	Y	89	1814006.6	1.2				ug/L	587989	Standard
>	Rh	103	45.0	19.2				ug/L	8	Standard
	Mo	98	9397.7	0.8	**2.7445**	0.037	1.4	ug/L	35	Standard
	Ag	107	283302.1	0.5	**50.9840**	0.279	0.5	ug/L	121	Standard
	Cd	111	79006.7	0.9	**50.1843**	0.688	1.4	mg/L	4	Standard
	Cd	114	200940.7	0.5	**49.7258**	0.689	1.4	ug/L	27	Standard
>	In	115	662140.0	0.9				ug/L	702235	Standard
	Sn	118	3637.4	1.3	**3.9487**	0.078	2.0	ug/L	180	Standard
	Sb	123	203343.9	0.6	**49.2203**	0.231	0.5	ug/L	43	Standard
	Ba	135	210692.8	0.2	**133.2503**	1.384	1.0	ug/L	50	Standard
	Ce	140	4106541.1	0.5				ug/L	20	Standard
>	Tb	159	1250992.7	0.5				ug/L	1036041	Standard
	Ho	165	95399.4	1.7				ug/L	8	Standard
	Tl	203	381998.6	0.6	**53.9927**	0.696	1.3	ug/L	87	Standard
	Tl	205	919554.7	1.2	**53.4224**	1.037	1.9	ug/L	255	Standard
	Pb	206	521950.2	0.5	**91.0365**	1.226	1.3	ug/L	523	Standard
	Pb	207	435764.9	0.1	**84.1405**	0.694	0.8	ug/L	433	Standard
	Pb	208	568340.6	1.0	**96.2661**	0.903	0.9	ug/L	498	Standard
	U	238	295320.2	1.2	**61.3668**	0.802	1.3	ug/L	6	Standard
>	Bi	209	654564.7	0.9				ug/L	631806	Standard

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	Na	23	3.3	173.2	**-0.0723**	0.911	1260.4	mg/L	2	Standard
	Mg	24	66.7	41.3	**0.1045**	0.218	208.6	mg/L	27	Standard
	K	39	490.0	4.7	**2.2054**	0.121	5.5	mg/L	17	Standard
	Ca	43	35.0	51.5	**-19.7656**	6.025	30.5	mg/L	47	Standard
	Fe	54	20672.2	3.3	**61.6195**	1.986	3.2	mg/L	23	Standard
	Fe	57	5344.3	3.4	**55.4310**	2.889	5.2	mg/L	253	Standard
>	**Sc-1**	45	94166.8	1.5				mg/L	39227	Standard
	Cl	35	2.7	86.6				ug/L	1	Standard
	Kr	83	6.0					ug/L	3	Standard
	Br	81	2987.0	11.3				ug/L	2163	Standard
	P	31	73.3	15.7				ug/L	57	Standard
	S	34	28.3	44.4				ug/L	27	Standard
	Sr	88	156.7	24.0				ug/L	125	Standard
	C	12	100.0	17.3				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	556.7	16.3				mg/L	10	Standard
	Dy	164	141555.7	0.6				mg/L	9	Standard
	Ho-1	165	95399.4	1.7				mg/L	8	Standard
	Er	166	89969.7	0.8				mg/L	20	Standard
	I	127	48016.1	5.5				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		228.361	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.820	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.290
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.602
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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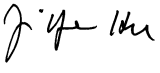

Method 6020 - Summary Report

Sample ID: L1704002402SDL WG608787-02
Sample Date/Time: Tuesday, April 04, 2017 16:37:21
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	397755.1	0.7				ug/L	302131	Standard
	Be	9	2810.3	3.0	**0.9726**	0.023	2.4	ug/L	12	Standard
	Al	27	1181297.5	0.8	**6.4296**	0.067	1.0	ug/L	907	Standard
	Sc	45	50510.7	1.2				ug/L	39227	Standard
	Ti	47	13073.0	0.7	**60.0701**	0.799	1.3	ug/L	34	Standard
	V	51	270621.0	1.3	**38.9695**	0.686	1.8	ug/L	1155	Standard
	Cr	52	145020.4	0.4	**22.1368**	0.115	0.5	ug/L	5602	Standard
	Cr	53	42145.2	1.1	**52.2407**	0.557	1.1	ug/L	1042	Standard
	Mn	55	1295757.5	1.3	**117.2630**	1.992	1.7	ug/L	2370	Standard
	Co	59	48649.0	1.2	**5.7429**	0.087	1.5	ug/L	381	Standard
	Ni	60	25634.3	1.4	**14.1584**	0.232	1.6	ug/L	282	Standard
	Cu	65	27634.5	0.3	**14.3502**	0.072	0.5	ug/L	707	Standard
	Zn	66	32453.4	0.3	**28.3556**	0.257	0.9	ug/L	427	Standard
>	Ge	72	868032.0	0.6				ug/L	842801	Standard
	As	75	5445.4	3.2	**4.6649**	0.148	3.2	ug/L	-11	Standard
	Se	82	22.2	35.1	**0.1072**	0.074	68.6	ug/L	18	Standard
	Se-1	77	5045.5	2.5	**65.5624**	1.363	2.1	ug/L	127	Standard
>	Ga	71	34252.0	0.5				mg/L	92	Standard
	Rb	85	173312.3	0.5				ug/L	48	Standard
	Y	89	827816.9	1.3				ug/L	587989	Standard
>	Rh	103	18.3	56.8				ug/L	8	Standard
	Mo	98	1890.0	2.4	**0.5310**	0.018	3.3	ug/L	35	Standard
	Ag	107	310.0	5.0	**0.0253**	0.002	8.6	ug/L	121	Standard
	Cd	111	63.6	29.2	**0.0224**	0.011	49.5	mg/L	4	Standard
	Cd	114	271.0	17.0	**0.0360**	0.011	29.7	ug/L	27	Standard
>	In	115	673834.1	1.1				ug/L	702235	Standard
	Sn	118	831.7	3.4	**0.7119**	0.022	3.2	ug/L	180	Standard
	Sb	123	1400.9	20.4	**0.3096**	0.070	22.5	ug/L	43	Standard
	Ba	135	27232.1	0.4	**16.8799**	0.121	0.7	ug/L	50	Standard
	Ce	140	690471.0	0.6				ug/L	20	Standard
>	Tb	159	1111784.9	1.2				ug/L	1036041	Standard
	Ho	165	17641.9	1.2				ug/L	8	Standard
	Tl	203	1651.8	1.9	**0.1948**	0.005	2.7	ug/L	87	Standard
	Tl	205	4103.9	2.6	**0.2087**	0.005	2.3	ug/L	255	Standard
	Pb	206	45128.4	1.0	**7.6360**	0.118	1.5	ug/L	523	Standard
	Pb	207	35372.9	1.0	**6.6268**	0.115	1.7	ug/L	433	Standard
	Pb	208	43267.1	1.0	**7.1156**	0.077	1.1	ug/L	498	Standard
	U	238	2235.2	2.1	**0.4441**	0.007	1.6	ug/L	6	Standard
>	Bi	209	665742.5	0.8				ug/L	631806	Standard

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Na	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	34.4	**0.2687**	0.248	92.2	mg/L	27	Standard
K	39	90.0	9.6	**0.6870**	0.080	11.6	mg/L	17	Standard
Ca	43	43.3	65.6	**-4.0911**	17.910	437.8	mg/L	47	Standard
Fe	54	3230.5	3.7	**17.7807**	0.456	2.6	mg/L	23	Standard
Fe	57	1170.0	3.0	**18.0997**	0.785	4.3	mg/L	253	Standard
Sc-1	45	50510.7	1.2				mg/L	39227	Standard
Cl	35	0.7	173.2				ug/L	1	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2103.5	9.0				ug/L	2163	Standard
P	31	78.3	24.2				ug/L	57	Standard
S	34	28.3	20.4				ug/L	27	Standard
Sr	88	165.0	16.9				ug/L	125	Standard
C	12	36.7	68.6				mg/L	43	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	20.4				mg/L	10	Standard
Dy	164	26973.7	4.5				mg/L	9	Standard
Ho-1	165	17641.9	1.2				mg/L	8	Standard
Er	166	16529.0	1.0				mg/L	20	Standard
I	127	23428.1	0.5				mg/L	3535	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		131.650	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.994	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.956
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	105.371
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1704002402SDL WG608787-02
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Method 6020 - Summary Report

Sample ID: L1704002402SDL WG608787-02
Sample Date/Time: Tuesday, April 04, 2017 16:40:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	299556.2	1.8				ug/L	302131	Standard
	Be	9	480.0	3.1	**0.2153**	0.003	1.5	ug/L	12	Standard
	Al	27	211039.8	1.5	**1.5119**	0.038	2.5	ug/L	907	Standard
	Sc	45	39818.9	1.7				ug/L	39227	Standard
	Ti	47	2290.8	0.8	**11.3060**	0.174	1.5	ug/L	34	Standard
	V	51	47954.0	0.9	**7.3799**	0.152	2.1	ug/L	1155	Standard
	Cr	52	28600.0	0.6	**4.0439**	0.088	2.2	ug/L	5602	Standard
	Cr	53	10040.0	2.2	**12.5495**	0.245	2.0	ug/L	1042	Standard
	Mn	55	236307.2	2.9	**23.0775**	0.960	4.2	ug/L	2370	Standard
	Co	59	8898.3	0.6	**1.1057**	0.016	1.4	ug/L	381	Standard
	Ni	60	4754.1	1.3	**2.7310**	0.059	2.2	ug/L	282	Standard
	Cu	65	5370.0	1.4	**2.7684**	0.028	1.0	ug/L	707	Standard
	Zn	66	6852.2	1.1	**6.2163**	0.031	0.5	ug/L	427	Standard
>	Ge	72	797964.6	1.2				ug/L	842801	Standard
	As	75	969.6	16.6	**0.9408**	0.151	16.1	ug/L	-11	Standard
	Se	82	12.0	48.4	**0.0223**	0.060	271.2	ug/L	18	Standard
	Se-1	77	1284.4	5.9	**17.0286**	1.200	7.0	ug/L	127	Standard
>	Ga	71	6444.7	1.6				mg/L	92	Standard
	Rb	85	31178.7	0.9				ug/L	48	Standard
	Y	89	589893.9	0.0				ug/L	587989	Standard
>	Rh	103	15.0	57.7				ug/L	8	Standard
	Mo	98	358.5	4.7	**0.0941**	0.004	4.2	ug/L	35	Standard
	Ag	107	167.7	27.0	**0.0016**	0.008	515.7	ug/L	121	Standard
	Cd	111	17.2	62.6	**-0.0060**	0.007	115.9	mg/L	4	Standard
	Cd	114	84.5	44.7	**-0.0083**	0.009	113.4	ug/L	27	Standard
>	In	115	642559.3	1.1				ug/L	702235	Standard
	Sn	118	268.7	7.7	**0.0918**	0.021	23.4	ug/L	180	Standard
	Sb	123	334.8	33.1	**0.0594**	0.027	45.5	ug/L	43	Standard
	Ba	135	5246.9	3.6	**3.3708**	0.128	3.8	ug/L	50	Standard
	Ce	140	130447.5	1.4				ug/L	20	Standard
>	Tb	159	1005870.7	0.8				ug/L	1036041	Standard
	Ho	165	2952.0	3.7				ug/L	8	Standard
	Tl	203	455.7	16.1	**0.0330**	0.011	32.9	ug/L	87	Standard
	Tl	205	1113.4	22.2	**0.0424**	0.015	35.7	ug/L	255	Standard
	Pb	206	8735.9	2.9	**1.4946**	0.037	2.5	ug/L	523	Standard
	Pb	207	7014.3	2.2	**1.3322**	0.041	3.1	ug/L	433	Standard
	Pb	208	8308.2	1.8	**1.3872**	0.041	3.0	ug/L	498	Standard
	U	238	415.3	15.0	**0.0783**	0.014	17.5	ug/L	6	Standard
>	Bi	209	621282.2	1.2				ug/L	631806	Standard

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⌈	**Na**	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	26.7	78.1	**0.0783**	0.398	508.4	mg/L	27	Standard
|	**K**	39	18.3	83.3	**0.1011**	0.173	171.0	mg/L	17	Standard
|	**Ca**	43	30.0	60.1	**-7.4623**	14.584	195.4	mg/L	47	Standard
|	**Fe**	54	639.5	6.7	**4.2932**	0.372	8.7	mg/L	23	Standard
|	**Fe**	57	391.7	11.8	**3.2823**	1.098	33.4	mg/L	253	Standard
⌊>	**Sc-1**	45	39818.9	1.7				mg/L	39227	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	2.3	24.7				ug/L	3	Standard
	Br	81	2010.1	0.5				ug/L	2163	Standard
	P	31	60.0	8.3				ug/L	57	Standard
	S	34	33.3	43.3				ug/L	27	Standard
	Sr	88	128.3	11.2				ug/L	125	Standard
	C	12	26.7	57.3				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	40.0	66.1				mg/L	10	Standard
	Dy	164	4669.4	3.9				mg/L	9	Standard
	Ho-1	165	2952.0	3.7				mg/L	8	Standard
	Er	166	3020.3	4.1				mg/L	20	Standard
	I	127	16739.2	1.6				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.148	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		94.680	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	91.502
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.334
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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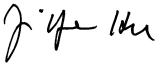

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, April 04, 2017 16:43:33
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	282682.9	1.3				ug/L	302131	Standard
	Be	9	103752.5	2.3	**50.8736**	0.622	1.2	ug/L	12	Standard
	Al	27	6695475.6	2.0	**51.3982**	0.643	1.3	ug/L	907	Standard
	Sc	45	39566.6	2.4				ug/L	39227	Standard
	Ti	47	20497.9	1.1	**100.6236**	0.677	0.7	ug/L	34	Standard
	V	51	322917.2	1.8	**49.6598**	0.369	0.7	ug/L	1155	Standard
	Cr	52	298314.0	1.7	**49.6622**	0.277	0.6	ug/L	5602	Standard
	Cr	53	40094.7	4.4	**53.0444**	1.949	3.7	ug/L	1042	Standard
	Mn	55	518558.2	2.0	**49.9345**	0.585	1.2	ug/L	2370	Standard
	Co	59	391767.8	1.7	**49.6967**	0.280	0.6	ug/L	381	Standard
	Ni	60	83447.6	2.1	**49.5689**	0.799	1.6	ug/L	282	Standard
	Cu	65	88453.5	2.1	**49.8225**	0.625	1.3	ug/L	707	Standard
	Zn	66	53083.8	1.8	**49.7749**	0.309	0.6	ug/L	427	Standard
>	Ge	72	813462.4	1.2				ug/L	842801	Standard
	As	75	55214.4	0.9	**50.0236**	0.185	0.4	ug/L	-11	Standard
	Se	82	5082.4	1.1	**50.3268**	0.699	1.4	ug/L	18	Standard
	Se-1	77	3948.5	2.3	**54.4894**	0.607	1.1	ug/L	127	Standard
>	Ga	71	155.0	12.9				mg/L	92	Standard
	Rb	85	563.3	17.2				ug/L	48	Standard
	Y	89	572806.7	0.2				ug/L	587989	Standard
>	Rh	103	26.7	28.6				ug/L	8	Standard
	Mo	98	353735.9	1.3	**102.7429**	0.602	0.6	ug/L	35	Standard
	Ag	107	289414.7	1.4	**51.5413**	0.309	0.6	ug/L	121	Standard
	Cd	111	81669.3	1.3	**51.3338**	0.212	0.4	mg/L	4	Standard
	Cd	114	211022.0	1.3	**51.6746**	0.097	0.2	ug/L	27	Standard
>	In	115	669085.3	1.1				ug/L	702235	Standard
	Sn	118	45767.7	0.4	**51.7554**	0.745	1.4	ug/L	180	Standard
	Sb	123	212260.3	1.1	**50.8452**	0.257	0.5	ug/L	43	Standard
	Ba	135	79532.5	1.2	**49.7426**	0.137	0.3	ug/L	50	Standard
	Ce	140	251.7	20.1				ug/L	20	Standard
>	Tb	159	1035240.6	0.4				ug/L	1036041	Standard
	Ho	165	10.0	100.0				ug/L	8	Standard
	Tl	203	343925.0	0.6	**50.5089**	0.436	0.9	ug/L	87	Standard
	Tl	205	841867.9	1.5	**50.8186**	0.914	1.8	ug/L	255	Standard
	Pb	206	280000.9	0.2	**50.6953**	0.331	0.7	ug/L	523	Standard
	Pb	207	254154.3	0.5	**50.9555**	0.482	0.9	ug/L	433	Standard
	Pb	208	282560.2	0.5	**49.6867**	0.439	0.9	ug/L	498	Standard
	U	238	237911.3	0.1	**51.3693**	0.294	0.6	ug/L	6	Standard
>	Bi	209	629912.3	0.5				ug/L	631806	Standard

Sample ID: QC Std 6
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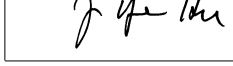

	Na	23	5.0	100.0	**1.3060**	1.924	147.3	mg/L	2	Standard
	Mg	24	271.7	6.5	**4.7230**	0.460	9.7	mg/L	27	Standard
	K	39	496.7	1.2	**5.4686**	0.191	3.5	mg/L	17	Standard
	Ca	43	40.0	12.5	**0.9459**	4.665	493.2	mg/L	47	Standard
	Fe	54	722.5	9.4	**4.9159**	0.581	11.8	mg/L	23	Standard
	Fe	57	473.3	5.0	**5.6727**	0.993	17.5	mg/L	253	Standard
>	**Sc-1**	45	39566.6	2.4				mg/L	39227	Standard
	Cl	35	2.7	86.6				ug/L	1	Standard
	Kr	83	1.3	43.3				ug/L	3	Standard
	Br	81	2093.5	5.8				ug/L	2163	Standard
	P	31	56.7	33.4				ug/L	57	Standard
	S	34	26.7	21.7				ug/L	27	Standard
	Sr	88	103.3	18.3				ug/L	125	Standard
	C	12	30.0	33.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	25.5	88.2				mg/L	9	Standard
	Ho-1	165	10.0	100.0				mg/L	8	Standard
	Er	166	23.3	49.5				mg/L	20	Standard
	I	127	3218.7	9.2				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.747		
	Al	27	102.796		
	Sc	45			
	Ti	47	100.624		
	V	51	99.320		
	Cr	52	99.324		
	Cr	53			
	Mn	55	99.869		
	Co	59	99.393		
	Ni	60	99.138		
	Cu	65	99.645		
	Zn	66	99.550		
>	Ge	72		96.519	
	As	75	100.047		
	Se	82	100.654		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.743		
Ag	107	103.083		
Cd	111	102.668		
Cd	114			
In	115			95.279
Sn	118	103.511		
Sb	123	101.690		
Ba	135	99.485		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.018		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.373		
U	238	102.739		
Bi	209			99.700
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, April 04, 2017 16:46:38
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	276782.2	1.5				ug/L	302131	Standard
	Be	9	45.0	11.1	**0.0158**	0.003	16.2	ug/L	12	Standard
	Al	27	1033.4	26.9	**-0.0098**	0.002	22.0	ug/L	907	Standard
	Sc	45	37777.1	3.3				ug/L	39227	Standard
	Ti	47	24.3	2.4	**-0.0556**	0.004	7.7	ug/L	34	Standard
	V	51	763.5	18.3	**-0.0423**	0.022	52.1	ug/L	1155	Standard
	Cr	52	4582.0	1.3	**-0.0943**	0.012	13.2	ug/L	5602	Standard
	Cr	53	2351.8	2.0	**1.9698**	0.080	4.1	ug/L	1042	Standard
	Mn	55	2612.9	12.8	**0.0223**	0.029	130.4	ug/L	2370	Standard
	Co	59	283.0	7.7	**-0.0090**	0.002	26.7	ug/L	381	Standard
	Ni	60	179.0	10.8	**-0.0471**	0.010	21.5	ug/L	282	Standard
	Cu	65	2331.8	2.0	**1.0331**	0.018	1.8	ug/L	707	Standard
	Zn	66	421.0	6.7	**0.0271**	0.023	86.0	ug/L	427	Standard
>	**Ge**	72	785699.6	1.6				ug/L	842801	Standard
	As	75	23.5	163.5	**0.0676**	0.036	52.7	ug/L	-11	Standard
	Se	82	11.6	66.2	**0.0202**	0.080	396.3	ug/L	18	Standard
	Se-1	77	285.7	12.2	**2.6282**	0.443	16.9	ug/L	127	Standard
>	**Ga**	71	125.0	14.4				mg/L	92	Standard
	Rb	85	176.7	22.7				ug/L	48	Standard
	Y	89	558525.0	0.7				ug/L	587989	Standard
>	**Rh**	103	5.0	100.0				ug/L	8	Standard
	Mo	98	131.4	31.7	**0.0249**	0.012	50.1	ug/L	35	Standard
	Ag	107	131.7	9.1	**-0.0054**	0.003	47.3	ug/L	121	Standard
	Cd	111	2.5	60.1	**-0.0156**	0.001	6.1	mg/L	4	Standard
	Cd	114	37.8	18.9	**-0.0203**	0.002	9.3	ug/L	27	Standard
>	**In**	115	651935.9	1.8				ug/L	702235	Standard
	Sn	118	206.3	11.2	**0.0148**	0.027	183.7	ug/L	180	Standard
	Sb	123	481.6	33.1	**0.0948**	0.041	43.5	ug/L	43	Standard
	Ba	135	42.3	25.3	**-0.0229**	0.007	28.4	ug/L	50	Standard
	Ce	140	58.3	106.5				ug/L	20	Standard
>	**Tb**	159	1004299.9	1.6				ug/L	1036041	Standard
	Ho	165	5.0	100.0				ug/L	8	Standard
	Tl	203	260.7	7.9	**0.0039**	0.003	81.6	ug/L	87	Standard
	Tl	205	655.0	4.0	**0.0142**	0.001	10.0	ug/L	255	Standard
	Pb	206	963.0	2.9	**0.0645**	0.006	8.8	ug/L	523	Standard
	Pb	207	793.7	2.6	**0.0649**	0.003	5.1	ug/L	433	Standard
	Pb	208	885.3	2.6	**0.0607**	0.003	4.5	ug/L	498	Standard
	U	238	20.3	40.1	**-0.0082**	0.002	22.3	ug/L	6	Standard
>	**Bi**	209	622270.4	1.3				ug/L	631806	Standard

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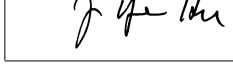

⌈	**Na**	23	3.3	86.6	**0.7136**	1.138	159.5	mg/L	2	Standard
|	**Mg**	24	16.7	69.3	**-0.0897**	0.243	271.2	mg/L	27	Standard
|	**K**	39	8.3	124.9	**-0.0055**	0.121	2193.5	mg/L	17	Standard
|	**Ca**	43	23.3	81.1	**-11.4613**	17.038	148.7	mg/L	47	Standard
|	**Fe**	54	21.5	58.8	**-0.0762**	0.090	118.4	mg/L	23	Standard
|	**Fe**	57	285.0	6.3	**0.7431**	0.263	35.4	mg/L	253	Standard
⌊>	**Sc-1**	45	37777.1	3.3				mg/L	39227	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	4.0	50.0				ug/L	3	Standard
	Br	81	2023.5	6.1				ug/L	2163	Standard
	P	31	58.3	21.6				ug/L	57	Standard
	S	34	23.3	53.9				ug/L	27	Standard
	Sr	88	130.0	3.8				ug/L	125	Standard
	C	12	40.0	66.1				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	2.9	187.9				mg/L	9	Standard
	Ho-1	165	5.0	100.0				mg/L	8	Standard
	Er	166	10.0	100.0				mg/L	20	Standard
	I	127	3550.4	3.2				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		93.225	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	92.837
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	98.491
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1704002403
Sample Date/Time: Tuesday, April 04, 2017 16:49:45
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	493727.5	1.0				ug/L	302131	Standard
	Be	9	10273.5	7.1	**2.8774**	0.188	6.5	ug/L	12	Standard
	Al	27	3352453.6	0.3	**14.7233**	0.127	0.9	ug/L	907	Standard
	Sc	45	83142.5	1.5				ug/L	39227	Standard
	Ti	47	39226.8	3.5	**178.7819**	4.016	2.2	ug/L	34	Standard
	V	51	1125208.5	1.0	**160.9452**	1.875	1.2	ug/L	1155	Standard
	Cr	52	369066.1	1.4	**57.1478**	0.738	1.3	ug/L	5602	Standard
	Cr	53	130800.9	3.1	**163.3566**	7.092	4.3	ug/L	1042	Standard
	Mn	55	68017426.0	1.1	**6106.7509**	40.842	0.7	ug/L	2370	Standard
	Co	59	3995631.2	1.2	**470.7274**	3.894	0.8	ug/L	381	Standard
	Ni	60	90628.6	1.2	**49.9575**	0.636	1.3	ug/L	282	Standard
	Cu	65	104116.6	1.6	**54.4497**	0.508	0.9	ug/L	707	Standard
	Zn	66	129699.5	1.3	**113.3460**	1.603	1.4	ug/L	427	Standard
>	Ge	72	876691.2	1.5				ug/L	842801	Standard
	As	75	23242.2	3.9	**19.5616**	0.494	2.5	ug/L	-11	Standard
	Se	82	60.9	16.5	**0.4616**	0.096	20.8	ug/L	18	Standard
	Se-1	77	18407.2	5.2	**241.0614**	15.457	6.4	ug/L	127	Standard
>	Ga	71	107590.7	0.5				mg/L	92	Standard
	Rb	85	285353.8	0.9				ug/L	48	Standard
	Y	89	1464019.9	1.0				ug/L	587989	Standard
>	Rh	103	23.3	12.4				ug/L	8	Standard
	Mo	98	11563.6	1.2	**3.3852**	0.036	1.1	ug/L	35	Standard
	Ag	107	1144.7	1.6	**0.1770**	0.004	2.3	ug/L	121	Standard
	Cd	111	333.4	7.0	**0.1950**	0.015	7.9	mg/L	4	Standard
	Cd	114	1105.9	7.1	**0.2444**	0.018	7.5	ug/L	27	Standard
>	In	115	661136.0	0.4				ug/L	702235	Standard
	Sn	118	2265.5	1.0	**2.3780**	0.029	1.2	ug/L	180	Standard
	Sb	123	2852.6	3.1	**0.6678**	0.021	3.1	ug/L	43	Standard
	Ba	135	85336.6	0.5	**54.0201**	0.461	0.9	ug/L	50	Standard
	Ce	140	62868947.8	1.2				ug/L	20	Standard
>	Tb	159	1233140.6	0.2				ug/L	1036041	Standard
	Ho	165	76107.3	0.7				ug/L	8	Standard
	Tl	203	12506.2	1.3	**1.7049**	0.039	2.3	ug/L	87	Standard
	Tl	205	30290.3	2.6	**1.7054**	0.020	1.2	ug/L	255	Standard
	Pb	206	750070.7	2.4	**128.6973**	1.847	1.4	ug/L	523	Standard
	Pb	207	577532.1	2.0	**109.6976**	1.140	1.0	ug/L	433	Standard
	Pb	208	784042.9	0.4	**130.6684**	2.385	1.8	ug/L	498	Standard
	U	238	15027.1	0.3	**3.0596**	0.055	1.8	ug/L	6	Standard
>	Bi	209	665533.4	1.5				ug/L	631806	Standard

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	Na	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
	Mg	24	60.0	36.3	**0.1145**	0.191	166.8	mg/L	27	Standard
	K	39	163.3	14.5	**0.7670**	0.116	15.2	mg/L	17	Standard
	Ca	43	41.7	48.5	**-15.5660**	7.716	49.6	mg/L	47	Standard
	Fe	54	18105.8	2.3	**61.1231**	1.251	2.0	mg/L	23	Standard
	Fe	57	4724.1	4.1	**55.4636**	1.731	3.1	mg/L	253	Standard
>	**Sc-1**	45	83142.5	1.5				mg/L	39227	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	4.7	44.6				ug/L	3	Standard
	Br	81	2596.9	4.0				ug/L	2163	Standard
	P	31	81.7	31.4				ug/L	57	Standard
	S	34	35.0	37.8				ug/L	27	Standard
	Sr	88	150.0	11.5				ug/L	125	Standard
	C	12	80.0	69.6				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	960.0	5.8				mg/L	10	Standard
	Dy	164	117843.6	2.9				mg/L	9	Standard
	Ho-1	165	76107.3	0.7				mg/L	8	Standard
	Er	166	73079.3	3.3				mg/L	20	Standard
	I	127	54692.3	8.6				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		163.415	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.021	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.147
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.338
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Co 59 Upper, S, EEE	Co	59
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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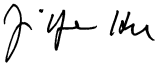

Method 6020 - Summary Report

Sample ID: L1704002405
Sample Date/Time: Tuesday, April 04, 2017 16:52:51
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	480934.5	3.0				ug/L	302131	Standard
	Be	9	31764.9	2.2	**9.1556**	0.349	3.8	ug/L	12	Standard
	Al	27	7628930.8	3.8	**34.4282**	1.328	3.9	ug/L	907	Standard
	Sc	45	83370.4	0.1				ug/L	39227	Standard
	Ti	47	41942.7	2.8	**190.4093**	5.534	2.9	ug/L	34	Standard
	V	51	1013780.7	2.8	**144.3784**	4.222	2.9	ug/L	1155	Standard
	Cr	52	768429.1	2.5	**119.4511**	3.109	2.6	ug/L	5602	Standard
	Cr	53	170576.6	1.5	**212.4624**	3.146	1.5	ug/L	1042	Standard
	Mn	55	5837232.3	3.1	**521.6691**	16.729	3.2	ug/L	2370	Standard
	Co	59	166468.3	2.9	**19.4853**	0.580	3.0	ug/L	381	Standard
	Ni	60	162861.1	1.9	**89.5194**	1.837	2.1	ug/L	282	Standard
	Cu	65	114614.5	3.4	**59.7234**	2.133	3.6	ug/L	707	Standard
	Zn	66	187270.1	2.6	**163.1354**	4.548	2.8	ug/L	427	Standard
>	**Ge**	72	880359.4	0.2				ug/L	842801	Standard
	As	75	19418.4	2.4	**16.2869**	0.413	2.5	ug/L	-11	Standard
	Se	82	186.6	10.9	**1.6107**	0.186	11.5	ug/L	18	Standard
	Se-1	77	16582.1	2.1	**215.9749**	4.481	2.1	ug/L	127	Standard
>	**Ga**	71	112647.3	2.2				mg/L	92	Standard
	Rb	85	446871.1	3.0				ug/L	48	Standard
	Y	89	4621403.8	3.0				ug/L	587989	Standard
>	**Rh**	103	25.0	72.1				ug/L	8	Standard
	Mo	98	5781.9	2.4	**1.6838**	0.055	3.3	ug/L	35	Standard
	Ag	107	1091.0	4.7	**0.1671**	0.011	6.4	ug/L	121	Standard
	Cd	111	849.6	1.6	**0.5228**	0.004	0.8	mg/L	4	Standard
	Cd	114	2396.2	1.8	**0.5638**	0.016	2.8	ug/L	27	Standard
>	**In**	115	661889.8	0.9				ug/L	702235	Standard
	Sn	118	2759.6	3.0	**2.9429**	0.121	4.1	ug/L	180	Standard
	Sb	123	2366.7	6.2	**0.5496**	0.040	7.2	ug/L	43	Standard
	Ba	135	90159.3	3.0	**57.0220**	2.185	3.8	ug/L	50	Standard
	Ce	140	4733030.3	2.7				ug/L	20	Standard
>	**Tb**	159	1373107.5	0.4				ug/L	1036041	Standard
	Ho	165	249760.2	1.2				ug/L	8	Standard
	Tl	203	4728.7	3.0	**0.6110**	0.022	3.7	ug/L	87	Standard
	Tl	205	11147.4	6.1	**0.6000**	0.041	6.8	ug/L	255	Standard
	Pb	206	222113.8	3.0	**37.3510**	1.363	3.6	ug/L	523	Standard
	Pb	207	169650.9	2.5	**31.5784**	0.959	3.0	ug/L	433	Standard
	Pb	208	222204.2	1.8	**36.2914**	0.863	2.4	ug/L	498	Standard
	U	238	3911.5	2.3	**0.7726**	0.023	2.9	ug/L	6	Standard
>	**Bi**	209	677756.4	0.6				ug/L	631806	Standard

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⌈	**Na**	23	5.0	100.0	**0.2899**	0.888	306.3	mg/L	2	Standard
|	**Mg**	24	50.0	10.0	**0.0241**	0.045	185.5	mg/L	27	Standard
|	**K**	39	341.7	15.6	**1.7147**	0.287	16.8	mg/L	17	Standard
|	**Ca**	43	35.0	42.9	**-18.1602**	5.790	31.9	mg/L	47	Standard
|	**Fe**	54	18522.8	3.7	**62.3608**	2.235	3.6	mg/L	23	Standard
|	**Fe**	57	4902.5	4.1	**57.6814**	2.617	4.5	mg/L	253	Standard
⌊>	**Sc-1**	45	83370.4	0.1				mg/L	39227	Standard
	Cl	35	4.0	50.0				ug/L	1	Standard
	Kr	83	4.0	43.3				ug/L	3	Standard
	Br	81	3770.5	3.9				ug/L	2163	Standard
	P	31	80.0	16.5				ug/L	57	Standard
	S	34	26.7	39.0				ug/L	27	Standard
	Sr	88	211.7	10.9				ug/L	125	Standard
	C	12	60.0	66.7				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	173.3	31.8				mg/L	10	Standard
	Dy	164	363864.1	2.8				mg/L	9	Standard
	Ho-1	165	249760.2	1.2				mg/L	8	Standard
	Er	166	234532.3	3.0				mg/L	20	Standard
	I	127	21697.2	1.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		159.181	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		104.456	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.255
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.273
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77

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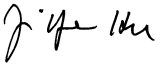

Method 6020 - Summary Report

Sample ID: L1704002406
Sample Date/Time: Tuesday, April 04, 2017 16:55:56
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	433236.8	0.7				ug/L	302131	Standard
	Be	9	126590.1	1.8	**40.5051**	0.826	2.0	ug/L	12	Standard
	Al	27	3822416.1	2.2	**19.1371**	0.507	2.6	ug/L	907	Standard
	Sc	45	114020.8	0.5				ug/L	39227	Standard
	Ti	47	23860.1	1.8	**110.0803**	1.842	1.7	ug/L	34	Standard
	V	51	1525566.5	1.3	**221.0414**	3.456	1.6	ug/L	1155	Standard
	Cr	52	750610.7	1.6	**118.6556**	1.971	1.7	ug/L	5602	Standard
	Cr	53	166378.8	2.3	**210.7506**	5.278	2.5	ug/L	1042	Standard
	Mn	55	8854415.5	1.8	**804.8804**	16.144	2.0	ug/L	2370	Standard
	Co	59	315101.9	1.4	**37.5520**	0.581	1.5	ug/L	381	Standard
	Ni	60	87734.3	1.5	**48.9727**	0.801	1.6	ug/L	282	Standard
	Cu	65	120122.0	1.6	**63.6764**	0.973	1.5	ug/L	707	Standard
	Zn	66	127374.8	0.7	**112.7240**	1.047	0.9	ug/L	427	Standard
>	Ge	72	865657.4	0.4				ug/L	842801	Standard
	As	75	41809.6	1.7	**35.6067**	0.505	1.4	ug/L	-11	Standard
	Se	82	699.1	3.5	**6.4184**	0.221	3.4	ug/L	18	Standard
	Se-1	77	17158.0	1.1	**227.3629**	3.435	1.5	ug/L	127	Standard
>	Ga	71	158136.3	2.5				mg/L	92	Standard
	Rb	85	496210.5	1.4				ug/L	48	Standard
	Y	89	12829242.7	2.0				ug/L	587989	Standard
>	Rh	103	48.3	26.0				ug/L	8	Standard
	Mo	98	14442.3	1.0	**4.2982**	0.035	0.8	ug/L	35	Standard
	Ag	107	2728.2	1.8	**0.4703**	0.014	2.9	ug/L	121	Standard
	Cd	111	1482.1	2.9	**0.9406**	0.017	1.8	mg/L	4	Standard
	Cd	114	4073.7	6.1	**0.9967**	0.073	7.3	ug/L	27	Standard
>	In	115	650927.4	1.2				ug/L	702235	Standard
	Sn	118	3920.5	4.8	**4.3500**	0.188	4.3	ug/L	180	Standard
	Sb	123	4072.1	1.6	**0.9791**	0.007	0.7	ug/L	43	Standard
	Ba	135	133177.9	1.8	**85.6522**	0.951	1.1	ug/L	50	Standard
	Ce	140	8279032.8	1.3				ug/L	20	Standard
>	Tb	159	2482215.4	0.9				ug/L	1036041	Standard
	Ho	165	987576.8	2.3				ug/L	8	Standard
	Tl	203	9669.1	1.8	**1.3301**	0.011	0.8	ug/L	87	Standard
	Tl	205	23795.3	0.4	**1.3548**	0.009	0.7	ug/L	255	Standard
	Pb	206	578922.6	2.6	**100.7919**	1.765	1.8	ug/L	523	Standard
	Pb	207	441525.9	2.4	**85.0931**	1.316	1.5	ug/L	433	Standard
	Pb	208	576561.3	0.4	**97.4913**	0.814	0.8	ug/L	498	Standard
	U	238	7825.4	1.9	**1.6109**	0.022	1.3	ug/L	6	Standard
>	Bi	209	655716.9	1.0				ug/L	631806	Standard

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	Na	23	5.0	100.0	**0.0532**	0.651	1222.8	mg/L	2	Standard
	Mg	24	48.3	36.3	**-0.1077**	0.114	106.0	mg/L	27	Standard
	K	39	163.3	27.8	**0.5316**	0.176	33.1	mg/L	17	Standard
	Ca	43	28.3	66.8	**-23.6680**	5.384	22.8	mg/L	47	Standard
	Fe	54	20133.2	1.6	**49.5169**	0.971	2.0	mg/L	23	Standard
	Fe	57	5237.6	1.3	**43.3902**	0.561	1.3	mg/L	253	Standard
>	**Sc-1**	45	114020.8	0.5				mg/L	39227	Standard
	Cl	35	4.0	50.0				ug/L	1	Standard
	Kr	83	3.7	15.7				ug/L	3	Standard
	Br	81	4273.9	5.6				ug/L	2163	Standard
	P	31	68.3	27.7				ug/L	57	Standard
	S	34	45.0	19.2				ug/L	27	Standard
	Sr	88	158.3	32.9				ug/L	125	Standard
	C	12	90.0	69.4				mg/L	43	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	1746.8	14.5				mg/L	10	Standard
	Dy	164	1435835.7	1.0				mg/L	9	Standard
	Ho-1	165	987576.8	2.3				mg/L	8	Standard
	Er	166	939686.4	1.4				mg/L	20	Standard
	I	127	88892.9	8.6				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		143.394	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.712	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	92.694
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	103.785
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Pb 206 Upper, S, EEE	Pb	206

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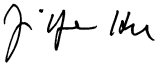

Method 6020 - Summary Report

Sample ID: L1704002410
Sample Date/Time: Tuesday, April 04, 2017 16:59:01
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	546013.5	3.9				ug/L	302131	Standard
	Be	9	8635.8	1.8	**2.1871**	0.046	2.1	ug/L	12	Standard
	Al	27	4361132.2	3.7	**17.3224**	0.114	0.7	ug/L	907	Standard
	Sc	45	88088.7	2.2				ug/L	39227	Standard
	Ti	47	47543.8	1.9	**218.2006**	5.385	2.5	ug/L	34	Standard
	V	51	1222801.4	0.4	**176.0535**	1.432	0.8	ug/L	1155	Standard
	Cr	52	639752.2	0.3	**100.3768**	0.969	1.0	ug/L	5602	Standard
	Cr	53	160191.0	2.2	**201.6240**	5.616	2.8	ug/L	1042	Standard
	Mn	55	8094452.5	0.6	**731.2787**	8.865	1.2	ug/L	2370	Standard
	Co	59	323829.6	1.2	**38.3584**	0.680	1.8	ug/L	381	Standard
	Ni	60	111788.9	0.2	**62.0597**	0.531	0.9	ug/L	282	Standard
	Cu	65	129920.6	0.4	**68.4744**	0.359	0.5	ug/L	707	Standard
	Zn	66	169126.0	0.6	**148.8823**	1.786	1.2	ug/L	427	Standard
>	Ge	72	870999.6	0.6				ug/L	842801	Standard
	As	75	24649.4	1.1	**20.8839**	0.305	1.5	ug/L	-11	Standard
	Se	82	26.0	17.6	**0.1416**	0.041	29.1	ug/L	18	Standard
	Se-1	77	16305.1	2.3	**214.6651**	6.177	2.9	ug/L	127	Standard
>	Ga	71	163994.6	1.9				mg/L	92	Standard
	Rb	85	637924.1	0.3				ug/L	48	Standard
	Y	89	1120459.9	2.3				ug/L	587989	Standard
>	Rh	103	35.0	28.6				ug/L	8	Standard
	Mo	98	8725.6	0.9	**2.5560**	0.031	1.2	ug/L	35	Standard
	Ag	107	1094.4	6.9	**0.1683**	0.015	9.1	ug/L	121	Standard
	Cd	111	390.1	9.5	**0.2316**	0.026	11.0	mg/L	4	Standard
	Cd	114	1307.1	5.7	**0.2950**	0.021	7.0	ug/L	27	Standard
>	In	115	659861.5	0.9				ug/L	702235	Standard
	Sn	118	3527.7	0.9	**3.8369**	0.074	1.9	ug/L	180	Standard
	Sb	123	2627.5	3.8	**0.6147**	0.030	4.8	ug/L	43	Standard
	Ba	135	80349.5	0.2	**50.9598**	0.398	0.8	ug/L	50	Standard
	Ce	140	5494276.5	1.5				ug/L	20	Standard
>	Tb	159	1190406.5	0.6				ug/L	1036041	Standard
	Ho	165	44246.2	0.8				ug/L	8	Standard
	Tl	203	7480.2	3.0	**1.0092**	0.035	3.4	ug/L	87	Standard
	Tl	205	18242.6	2.2	**1.0207**	0.028	2.7	ug/L	255	Standard
	Pb	206	309370.2	0.5	**53.2083**	0.756	1.4	ug/L	523	Standard
	Pb	207	236778.6	1.1	**45.0801**	0.878	1.9	ug/L	433	Standard
	Pb	208	309094.2	0.5	**51.6284**	0.623	1.2	ug/L	498	Standard
	U	238	17892.6	0.2	**3.6577**	0.027	0.7	ug/L	6	Standard
>	Bi	209	663224.1	0.9				ug/L	631806	Standard

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	Na	23	5.0	100.0	**0.2349**	0.822	349.7	mg/L	2	Standard
	Mg	24	55.0	31.5	**0.0422**	0.146	345.2	mg/L	27	Standard
	K	39	306.7	3.4	**1.4406**	0.030	2.0	mg/L	17	Standard
	Ca	43	38.3	15.1	**-17.6526**	2.210	12.5	mg/L	47	Standard
	Fe	54	19859.0	2.4	**63.3132**	2.487	3.9	mg/L	23	Standard
	Fe	57	5242.6	4.3	**58.4540**	1.415	2.4	mg/L	253	Standard
>	**Sc-1**	45	88088.7	2.2				mg/L	39227	Standard
	Cl	35	4.0	50.0				ug/L	1	Standard
	Kr	83	4.3	48.0				ug/L	3	Standard
	Br	81	4590.7	2.3				ug/L	2163	Standard
	P	31	73.3	25.8				ug/L	57	Standard
	S	34	15.0	57.7				ug/L	27	Standard
	Sr	88	175.0	12.5				ug/L	125	Standard
	C	12	116.7	47.2				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	423.3	14.4				mg/L	10	Standard
	Dy	164	65809.3	0.8				mg/L	9	Standard
	Ho-1	165	44246.2	0.8				mg/L	8	Standard
	Er	166	42773.6	2.3				mg/L	20	Standard
	I	127	77568.8	7.8				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		180.721	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.346	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.966
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.973
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77

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Method 6020 - Summary Report

Sample ID: L1704002405
Sample Date/Time: Tuesday, April 04, 2017 17:02:07
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	416566.6	2.8				ug/L	302131	Standard
	Be	9	3572.1	2.3	**1.1829**	0.051	4.3	ug/L	12	Standard
	Al	27	366831.7	1.7	**1.8944**	0.040	2.1	ug/L	907	Standard
	Sc	45	77233.1	2.1				ug/L	39227	Standard
	Ti	47	23531.9	2.9	**105.9385**	3.367	3.2	ug/L	34	Standard
	V	51	796583.0	2.2	**112.5436**	2.660	2.4	ug/L	1155	Standard
	Cr	52	276907.0	1.1	**42.1385**	0.480	1.1	ug/L	5602	Standard
	Cr	53	113419.7	1.8	**139.7446**	2.992	2.1	ug/L	1042	Standard
	Mn	55	1580791.0	1.1	**140.0210**	1.919	1.4	ug/L	2370	Standard
	Co	59	74601.9	1.1	**8.6400**	0.122	1.4	ug/L	381	Standard
	Ni	60	64423.7	1.1	**35.0459**	0.486	1.4	ug/L	282	Standard
	Cu	65	96116.6	1.1	**49.6447**	0.588	1.2	ug/L	707	Standard
	Zn	66	99999.3	0.7	**86.2658**	0.879	1.0	ug/L	427	Standard
>	**Ge**	72	887127.0	0.3				ug/L	842801	Standard
	As	75	37061.5	1.8	**30.8052**	0.459	1.5	ug/L	-11	Standard
	Se	82	10.3	42.1	**-0.0056**	0.039	695.6	ug/L	18	Standard
	Se-1	77	15981.1	1.6	**206.4884**	2.848	1.4	ug/L	127	Standard
>	**Ga**	71	73201.4	0.8				mg/L	92	Standard
	Rb	85	144929.9	1.4				ug/L	48	Standard
	Y	89	815847.7	0.4				ug/L	587989	Standard
>	**Rh**	103	46.7	22.3				ug/L	8	Standard
	Mo	98	18889.1	1.7	**5.4682**	0.101	1.9	ug/L	35	Standard
	Ag	107	916.4	5.1	**0.1337**	0.009	6.8	ug/L	121	Standard
	Cd	111	166.6	2.3	**0.0875**	0.002	2.4	mg/L	4	Standard
	Cd	114	543.3	7.5	**0.1032**	0.010	10.1	ug/L	27	Standard
>	**In**	115	669665.8	0.5				ug/L	702235	Standard
	Sn	118	1492.4	2.1	**1.4676**	0.036	2.4	ug/L	180	Standard
	Sb	123	3337.4	0.4	**0.7751**	0.004	0.6	ug/L	43	Standard
	Ba	135	19446.8	1.4	**12.1148**	0.200	1.6	ug/L	50	Standard
	Ce	140	6951035.4	0.5				ug/L	20	Standard
>	**Tb**	159	1172929.7	1.7				ug/L	1036041	Standard
	Ho	165	19349.0	1.9				ug/L	8	Standard
	Tl	203	4917.5	0.1	**0.6339**	0.008	1.2	ug/L	87	Standard
	Tl	205	11978.1	3.1	**0.6438**	0.027	4.2	ug/L	255	Standard
	Pb	206	406689.2	1.1	**68.1727**	0.206	0.3	ug/L	523	Standard
	Pb	207	305149.0	1.5	**56.6203**	0.509	0.9	ug/L	433	Standard
	Pb	208	397057.2	0.8	**64.6388**	0.725	1.1	ug/L	498	Standard
	U	238	25491.8	2.0	**5.0820**	0.109	2.2	ug/L	6	Standard
>	**Bi**	209	680740.1	1.2				ug/L	631806	Standard

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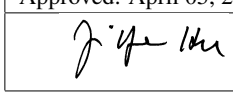

⌈	**Na**	23	1.7	173.2	**-0.2858**	0.541	189.4	mg/L	2	Standard
|	**Mg**	24	65.0	7.7	**0.2054**	0.051	24.9	mg/L	27	Standard
|	**K**	39	61.7	12.4	**0.2506**	0.046	18.4	mg/L	17	Standard
|	**Ca**	43	23.3	32.7	**-21.9082**	3.349	15.3	mg/L	47	Standard
|	**Fe**	54	11795.7	1.4	**42.8153**	1.431	3.3	mg/L	23	Standard
|	**Fe**	57	3187.0	2.0	**38.2156**	1.296	3.4	mg/L	253	Standard
⌊>	**Sc-1**	45	77233.1	2.1				mg/L	39227	Standard
	Cl	35	4.7	24.7				ug/L	1	Standard
	Kr	83	4.7	32.7				ug/L	3	Standard
	Br	81	2600.2	8.0				ug/L	2163	Standard
	P	31	75.0	35.3				ug/L	57	Standard
	S	34	21.7	58.1				ug/L	27	Standard
	Sr	88	161.7	18.9				ug/L	125	Standard
	C	12	133.3	55.3				mg/L	43	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	523.3	15.4				mg/L	10	Standard
	Dy	164	28676.0	4.6				mg/L	9	Standard
	Ho-1	165	19349.0	1.9				mg/L	8	Standard
	Er	166	18221.0	2.8				mg/L	20	Standard
	I	127	53238.5	5.0				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		137.876	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		105.259	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.362
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.745
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Se-1 77 Upper, S, EEE	Se-1	77

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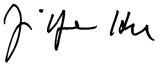

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, April 04, 2017 17:05:13
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	284254.6	5.2				ug/L	302131	Standard
	Be	9	108957.1	1.8	**53.2068**	2.192	4.1	ug/L	12	Standard
	Al	27	6978078.5	1.6	**53.3813**	3.217	6.0	ug/L	907	Standard
	Sc	45	38201.5	2.9				ug/L	39227	Standard
	Ti	47	20985.9	1.6	**104.5174**	3.860	3.7	ug/L	34	Standard
	V	51	331550.3	0.8	**51.7456**	2.171	4.2	ug/L	1155	Standard
	Cr	52	309360.3	1.3	**52.2951**	1.825	3.5	ug/L	5602	Standard
	Cr	53	43520.9	5.5	**58.4766**	0.677	1.2	ug/L	1042	Standard
	Mn	55	534079.2	2.1	**52.1713**	1.261	2.4	ug/L	2370	Standard
	Co	59	403621.0	2.2	**51.9296**	1.255	2.4	ug/L	381	Standard
	Ni	60	85980.0	1.7	**51.8105**	1.411	2.7	ug/L	282	Standard
	Cu	65	90813.1	2.1	**51.8969**	1.451	2.8	ug/L	707	Standard
	Zn	66	54261.0	2.3	**51.6146**	1.192	2.3	ug/L	427	Standard
>	Ge	72	802637.3	4.4				ug/L	842801	Standard
	As	75	56219.1	2.2	**51.6515**	1.181	2.3	ug/L	-11	Standard
	Se	82	5222.0	2.2	**52.4400**	1.165	2.2	ug/L	18	Standard
	Se-1	77	4360.3	8.0	**61.1095**	2.338	3.8	ug/L	127	Standard
>	Ga	71	195.0	19.4				mg/L	92	Standard
	Rb	85	551.7	6.8				ug/L	48	Standard
	Y	89	562583.5	4.7				ug/L	587989	Standard
>	Rh	103	25.0	34.6				ug/L	8	Standard
	Mo	98	364952.2	0.4	**107.1259**	3.541	3.3	ug/L	35	Standard
	Ag	107	298250.6	0.5	**53.6791**	1.722	3.2	ug/L	121	Standard
	Cd	111	84521.9	0.3	**53.6961**	1.970	3.7	mg/L	4	Standard
	Cd	114	216112.0	0.9	**53.4784**	1.537	2.9	ug/L	27	Standard
>	In	115	662590.3	3.6				ug/L	702235	Standard
	Sn	118	47646.5	1.7	**54.4456**	1.465	2.7	ug/L	180	Standard
	Sb	123	220398.7	0.1	**53.3592**	1.909	3.6	ug/L	43	Standard
	Ba	135	83102.6	0.8	**52.5246**	1.513	2.9	ug/L	50	Standard
	Ce	140	1298.4	108.1				ug/L	20	Standard
>	Tb	159	1015057.6	3.4				ug/L	1036041	Standard
	Ho	165	25.0	80.0				ug/L	8	Standard
	Tl	203	359560.4	0.3	**53.0878**	1.433	2.7	ug/L	87	Standard
	Tl	205	870835.2	0.4	**52.8480**	1.506	2.9	ug/L	255	Standard
	Pb	206	292442.2	1.2	**53.2469**	2.090	3.9	ug/L	523	Standard
	Pb	207	263930.3	0.6	**53.1966**	1.226	2.3	ug/L	433	Standard
	Pb	208	293293.7	0.7	**51.8596**	1.800	3.5	ug/L	498	Standard
	U	238	249203.4	0.6	**54.0989**	1.714	3.2	ug/L	6	Standard
>	Bi	209	626872.5	2.7				ug/L	631806	Standard

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⌈	**Na**	23	11.7	89.2	**3.9185**	4.074	104.0	mg/L	2	Standard
|	**Mg**	24	298.3	25.2	**5.4228**	1.491	27.5	mg/L	27	Standard
|	**K**	39	396.7	10.7	**4.5048**	0.508	11.3	mg/L	17	Standard
|	**Ca**	43	46.7	40.6	**7.9918**	16.798	210.2	mg/L	47	Standard
|	**Fe**	54	673.5	11.8	**4.7307**	0.569	12.0	mg/L	23	Standard
|	**Fe**	57	490.0	10.8	**6.6228**	1.592	24.0	mg/L	253	Standard
⌊>	**Sc-1**	45	38201.5	2.9				mg/L	39227	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	3.0	33.3				ug/L	3	Standard
	Br	81	2240.2	5.9				ug/L	2163	Standard
	P	31	48.3	33.3				ug/L	57	Standard
	S	34	26.7	60.3				ug/L	27	Standard
	Sr	88	153.3	24.7				ug/L	125	Standard
	C	12	16.7	91.7				mg/L	43	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	51.1	92.8				mg/L	9	Standard
	Ho-1	165	25.0	80.0				mg/L	8	Standard
	Er	166	46.7	96.6				mg/L	20	Standard
	I	127	4225.6	24.0				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	106.414		
⌊	Al	27	106.763		
⌈	Sc	45			
|	Ti	47	104.517		
|	V	51	103.491		
|	Cr	52	104.590		
|	Cr	53			
|	Mn	55	104.343		
|	Co	59	103.859		
|	Ni	60	103.621		
|	Cu	65	103.794		
|	Zn	66	103.229		
|>	Ge	72		95.234	
|	As	75	103.303		
|	Se	82	104.880		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	107.126	
|	Ag	107	107.358	
|	Cd	111	107.392	
|	Cd	114		
|>	In	115		94.355
|	Sn	118	108.891	
|	Sb	123	106.718	
⌊	Ba	135	105.049	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	106.176	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	103.719	
|	U	238	108.198	
⌊>	Bi	209		99.219
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, April 04, 2017 17:08:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	283379.2	3.5				ug/L	302131	Standard
	Be	9	33.3	22.9	**0.0095**	0.003	36.3	ug/L	12	Standard
	Al	27	1193.4	47.9	**-0.0087**	0.004	51.4	ug/L	907	Standard
	Sc	45	38512.3	3.6				ug/L	39227	Standard
	Ti	47	31.3	9.8	**-0.0243**	0.016	66.1	ug/L	34	Standard
	V	51	457.2	36.8	**-0.0931**	0.026	28.1	ug/L	1155	Standard
	Cr	52	4367.6	2.1	**-0.1529**	0.016	10.2	ug/L	5602	Standard
	Cr	53	3127.0	5.0	**2.9371**	0.178	6.1	ug/L	1042	Standard
	Mn	55	2689.6	9.1	**0.0228**	0.021	92.9	ug/L	2370	Standard
	Co	59	331.7	16.9	**-0.0038**	0.007	184.2	ug/L	381	Standard
	Ni	60	188.3	10.7	**-0.0443**	0.013	29.5	ug/L	282	Standard
	Cu	65	2473.9	3.3	**1.0769**	0.047	4.4	ug/L	707	Standard
	Zn	66	436.0	3.4	**0.0305**	0.020	66.5	ug/L	427	Standard
>	Ge	72	807777.3	1.4				ug/L	842801	Standard
	As	75	-72.9	96.9	**-0.0210**	0.066	311.6	ug/L	-11	Standard
	Se	82	9.6	45.2	**-0.0031**	0.044	1383.8	ug/L	18	Standard
	Se-1	77	377.7	1.9	**3.8341**	0.127	3.3	ug/L	127	Standard
>	Ga	71	156.7	10.3				mg/L	92	Standard
	Rb	85	173.3	23.1				ug/L	48	Standard
	Y	89	569059.7	1.7				ug/L	587989	Standard
>	Rh	103	10.0	50.0				ug/L	8	Standard
	Mo	98	158.0	7.9	**0.0320**	0.003	8.0	ug/L	35	Standard
	Ag	107	149.7	1.7	**-0.0026**	0.001	42.2	ug/L	121	Standard
	Cd	111	11.8	53.0	**-0.0097**	0.004	42.3	mg/L	4	Standard
	Cd	114	37.4	72.1	**-0.0205**	0.007	33.6	ug/L	27	Standard
>	In	115	662889.0	2.6				ug/L	702235	Standard
	Sn	118	220.0	9.6	**0.0269**	0.030	113.1	ug/L	180	Standard
	Sb	123	344.5	28.2	**0.0597**	0.026	42.8	ug/L	43	Standard
	Ba	135	51.0	11.8	**-0.0177**	0.005	25.9	ug/L	50	Standard
	Ce	140	325.0	81.3				ug/L	20	Standard
>	Tb	159	1025954.1	2.0				ug/L	1036041	Standard
	Ho	165	10.0					ug/L	8	Standard
	Tl	203	359.0	2.9	**0.0170**	0.001	7.5	ug/L	87	Standard
	Tl	205	761.7	7.8	**0.0194**	0.003	13.0	ug/L	255	Standard
	Pb	206	982.0	7.1	**0.0628**	0.010	16.2	ug/L	523	Standard
	Pb	207	837.7	1.0	**0.0692**	0.005	7.9	ug/L	433	Standard
	Pb	208	941.0	4.8	**0.0661**	0.011	16.8	ug/L	498	Standard
	U	238	29.0	55.5	**-0.0064**	0.003	54.4	ug/L	6	Standard
>	Bi	209	640103.2	2.4				ug/L	631806	Standard

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⌈	**Na**	23	0.0		**-0.5982**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	23.3	12.4	**0.0285**	0.052	181.1	mg/L	27	Standard
|	**K**	39	15.0	57.7	**0.0704**	0.104	148.2	mg/L	17	Standard
|	**Ca**	43	35.0	14.3	**-2.2870**	5.092	222.7	mg/L	47	Standard
|	**Fe**	54	36.1	16.4	**0.0284**	0.040	142.1	mg/L	23	Standard
|	**Fe**	57	273.3	8.6	**0.2704**	0.902	333.5	mg/L	253	Standard
⌊>	**Sc-1**	45	38512.3	3.6				mg/L	39227	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.0	86.6				ug/L	3	Standard
	Br	81	2036.8	9.5				ug/L	2163	Standard
	P	31	45.0	29.4				ug/L	57	Standard
	S	34	21.7	35.3				ug/L	27	Standard
	Sr	88	116.7	36.4				ug/L	125	Standard
	C	12	56.7	40.8				mg/L	43	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	36.3	57.7				mg/L	9	Standard
	Ho-1	165	10.0					mg/L	8	Standard
	Er	166	6.7	173.2				mg/L	20	Standard
	I	127	3305.4	5.5				mg/L	3535	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.844	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: QC Std 7
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.397
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.313
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Cu	65	

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexION Data\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, April 06, 2017 09:45:43

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1315	2026	0.693	
Mg	23.985	23.975	4509	2021	0.693	
Co	58.933	58.925	11686	2023	0.692	
In	114.904	114.925	22861	2029	0.691	
U	238.050	238.075	47454	2044	0.702	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	28.944
5.575	9.367
5.625	6.648
5.675	6.192
5.725	2.272
5.775	2.384
5.825	2.524
5.875	1.824
5.925	2.708
5.975	1.397
6.025	2.162
6.075	1.838
6.125	1.674
6.175	2.124
6.225	3.924
6.275	2.487
6.325	1.842
6.375	24.495
6.425	105.409
6.475	95.831
6.525	57.735
6.575	27.082
6.625	17.254
6.675	3.986
6.725	3.466
6.775	1.099
6.825	2.992

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6.875	2.373
6.925	1.451
6.975	1.669
7.025	2.096
7.075	2.572
7.125	1.681
7.175	0.659
7.225	1.760
7.275	2.906
7.325	1.044
7.375	4.360
7.425	14.816
7.475	149.071
7.525	71.261
7.575	37.268
7.625	82.402
7.675	55.902
7.725	72.436
7.775	70.711
7.825	104.583
7.875	35.355
7.925	55.902
7.975	93.541
8.025	61.237
8.075	122.475
8.125	108.327
8.175	35.355
8.225	83.853
8.275	34.233
8.325	55.902
8.375	58.685
8.425	52.705
8.475	29.881
22.525	223.607
22.575	42.127
22.625	33.641
22.675	42.426
22.725	51.875
22.775	37.268
22.825	24.164
22.875	41.650
22.925	11.620
22.975	7.402
23.025	34.233
23.075	14.172
23.125	26.517
23.175	25.353

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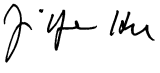

23.225	34.233
23.275	26.307
23.325	40.074
23.375	55.513
23.425	22.427
23.475	12.278
23.525	4.624
23.575	3.995
23.625	2.332
23.675	2.825
23.725	1.490
23.775	2.245
23.825	2.026
23.875	2.440
23.925	2.290
23.975	2.077
24.025	2.231
24.075	1.909
24.125	2.258
24.175	2.438
24.225	2.510
24.275	7.146
24.325	34.993
24.375	46.206
24.425	19.275
24.475	9.487
24.525	7.528
24.575	4.336
24.625	2.851
24.675	1.536
24.725	2.409
24.775	2.219
24.825	2.041
24.875	1.705
24.925	2.109
24.975	2.533
25.025	3.968
25.075	2.918
25.125	1.871
25.175	1.975
25.225	2.890
25.275	31.623
25.325	34.967
25.375	30.842
25.425	30.769
25.475	6.349
57.525	15.606

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57.575	8.707
57.625	3.767
57.675	2.829
57.725	3.435
57.775	3.173
57.825	2.861
57.875	1.809
57.925	1.269
57.975	3.034
58.025	2.533
58.075	3.703
58.125	1.881
58.175	2.397
58.225	2.444
58.275	7.093
58.325	28.037
58.375	45.913
58.425	12.500
58.475	11.214
58.525	3.597
58.575	5.048
58.625	2.334
58.675	2.997
58.725	3.252
58.775	1.928
58.825	2.419
58.875	2.133
58.925	2.139
58.975	1.953
59.025	2.592
59.075	3.882
59.125	1.917
59.175	4.277
59.225	2.857
59.275	12.541
59.325	38.030
59.375	67.711
59.425	50.000
59.475	26.394
59.525	5.712
59.575	7.395
59.625	3.264
59.675	2.344
59.725	0.934
59.775	4.089
59.825	1.513
59.875	5.485

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59.925	1.886
59.975	3.524
60.025	2.284
60.075	5.973
60.125	4.758
60.175	4.087
60.225	3.736
60.275	12.304
60.325	51.349
60.375	47.140
60.425	43.853
60.475	69.722
113.525	6.763
113.575	7.388
113.625	3.378
113.675	1.472
113.725	4.325
113.775	1.746
113.825	3.519
113.875	3.232
113.925	2.623
113.975	2.665
114.025	2.059
114.075	3.510
114.125	1.336
114.175	4.221
114.225	4.537
114.275	14.110
114.325	21.429
114.375	26.352
114.425	10.388
114.475	10.992
114.525	7.367
114.575	5.293
114.625	3.688
114.675	3.705
114.725	3.877
114.775	1.339
114.825	1.616
114.875	1.892
114.925	0.915
114.975	1.921
115.025	3.145
115.075	2.984
115.125	2.763
115.175	2.321
115.225	2.600

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115.275	8.202
115.325	9.260
115.375	33.641
115.425	10.648
115.475	38.932
115.525	34.167
115.575	19.913
115.625	9.923
115.675	8.953
115.725	1.803
115.775	1.139
115.825	6.524
115.875	3.038
115.925	4.298
115.975	5.445
116.025	5.119
116.075	2.346
116.125	5.710
116.175	6.596
116.225	7.884
116.275	12.499
116.325	29.186
116.375	39.123
116.425	50.461
116.475	75.357
236.525	
236.575	22.222
236.625	21.601
236.675	29.533
236.725	13.176
236.775	50.634
236.825	46.018
236.875	13.469
236.925	23.077
236.975	35.277
237.025	28.144
237.075	15.475
237.125	15.746
237.175	37.268
237.225	31.126
237.275	22.720
237.325	21.114
237.375	59.835
237.425	31.599
237.475	21.254
237.525	9.448
237.575	18.256

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237.625	7.377
237.675	2.566
237.725	5.144
237.775	1.613
237.825	0.893
237.875	1.403
237.925	1.285
237.975	1.152
238.025	1.310
238.075	0.875
238.125	0.354
238.175	0.601
238.225	0.397
238.275	1.568
238.325	1.154
238.375	2.030
238.425	2.410
238.475	3.425
238.525	6.927
238.575	13.682
238.625	23.344
238.675	20.888
238.725	22.569
238.775	23.362
238.825	17.275
238.875	40.161
238.925	40.737
238.975	29.220
239.025	25.901
239.075	39.336
239.125	25.693
239.175	41.097
239.225	21.812
239.275	25.635
239.325	20.233
239.375	27.216
239.425	25.489
239.475	31.181

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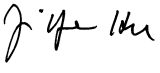

SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\SmartTune Fullmicrobac.swz

Start Time: 4/6/2017 9:50:50 AM
End Time: 4/6/2017 9:53:21 AM

Daily Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9.0122): 9596.91
Obtained Intensity (Mg 23.985): 228617.80
Obtained Intensity (In 114.904): 55389.33
Obtained Intensity (U 238.05): 92230.07
Obtained Intensity (Bkgd 220): 0.07
Obtained Formula (CeO 155.9 / Ce 139.905): 0.016 (=2387.85 / 149661.69)
Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=590.61 / 149661.69)

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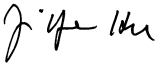

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 4/6/2017 9:50:50 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 9596.91
                Obtained Intensity (Mg 23.985): 228617.80
                Obtained Intensity (In 114.904): 55389.33
                Obtained Intensity (U 238.05): 92230.07
                Obtained Intensity (Bkgd 220): 0.07
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.016 (=2387.85 / 149661.69)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=590.61 / 149661.69)
[Passed]  Optimum value(s): N/A

End Time: 4/6/2017 9:53:21 AM
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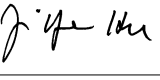

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, April 06, 2017 10:11:41
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	187000.7	2.5				ug/L		Standard
	Be	9	16.7	75.5				ug/L		Standard
	Al	27	1055.0	7.9				ug/L		Standard
	Sc	45	23084.2	1.0				ug/L		Standard
	Ti	47	23.7	4.9				ug/L		Standard
	V	51	975.4	5.6				ug/L		Standard
	Cr	52	4541.7	2.8				ug/L		Standard
	Cr	53	656.7	11.0				ug/L		Standard
	Mn	55	1886.5	4.7				ug/L		Standard
	Co	59	343.3	7.4				ug/L		Standard
	Ni	60	119.7	5.6				ug/L		Standard
	Cu	65	405.0	5.0				ug/L		Standard
	Zn	66	262.7	5.2				ug/L		Standard
>	Ge	72	524310.1	2.0				ug/L		Standard
	As	75	4.2	506.2				ug/L		Standard
	Se	82	16.1	29.8				ug/L		Standard
	Se-1	77	96.7	8.4				ug/L		Standard
>	Ga	71	23.3	12.4				mg/L		Standard
	Rb	85	35.0	14.3				ug/L		Standard
	Y	89	364599.8	2.5				ug/L		Standard
>	Rh	103	10.0	50.0				ug/L		Standard
	Mo	98	45.2	10.5				ug/L		Standard
	Ag	107	85.7	5.9				ug/L		Standard
	Cd	111	3.9	25.3				mg/L		Standard
	Cd	114	24.6	50.7				ug/L		Standard
>	In	115	418957.7	1.9				ug/L		Standard
	Sn	118	139.3	3.0				ug/L		Standard
	Sb	123	278.0	43.5				ug/L		Standard
	Ba	135	47.7	11.6				ug/L		Standard
	Ce	140	30.0	60.1				ug/L		Standard
>	Tb	159	683587.6	0.7				ug/L		Standard
	Ho	165	5.0	100.0				ug/L		Standard
	Tl	203	251.3	1.0				ug/L		Standard
	Tl	205	568.3	3.3				ug/L		Standard
	Pb	206	333.7	4.2				ug/L		Standard
	Pb	207	300.0	3.8				ug/L		Standard
	Pb	208	368.0	5.7				ug/L		Standard
	U	238	3.7	87.7				ug/L		Standard
>	Bi	209	431903.8	1.1				ug/L		Standard

Sample ID: Blank
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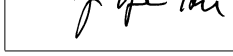

	Na	23	0.0		mg/L	Standard
	Mg	24	25.0	40.0	mg/L	Standard
	K	39	16.7	17.3	mg/L	Standard
	Ca	43	58.3	17.8	mg/L	Standard
	Fe	54	22.8	32.9	mg/L	Standard
	Fe	57	255.0	10.2	mg/L	Standard
>	**Sc-1**	45	23084.2	1.0	mg/L	Standard
	Cl	35	1.3	86.6	ug/L	Standard
	Kr	83	3.0	88.2	ug/L	Standard
	Br	81	1806.8	3.1	ug/L	Standard
	P	31	31.7	32.9	ug/L	Standard
	S	34	8.3	69.3	ug/L	Standard
	Sr	88	143.3	16.5	ug/L	Standard
	C	12	33.3	45.8	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	16.3	126.9	mg/L	Standard
	Ho-1	165	5.0	100.0	mg/L	Standard
	Er	166	6.7	86.6	mg/L	Standard
	I	127	2930.3	5.4	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, April 06, 2017 10:14:47
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	187651.7	1.4				ug/L	187001	Standard
	Be	9	13.3	57.3	**-0.0156**	0.005	31.0	ug/L	17	Standard
	Al	27	978.4	5.0	**0.0039**	0.001	18.0	ug/L	1055	Standard
	Sc	45	22894.0	0.1				ug/L	23084	Standard
	Ti	47	27.3	9.2	**0.0587**	0.018	30.0	ug/L	24	Standard
	V	51	857.7	8.1	**0.0038**	0.017	450.1	ug/L	975	Standard
	Cr	52	4450.7	1.4	**0.0095**	0.007	72.9	ug/L	4542	Standard
	Cr	53	580.0	3.4	**-0.0238**	0.032	134.1	ug/L	657	Standard
	Mn	55	1727.1	4.0	**-0.0052**	0.006	118.3	ug/L	1886	Standard
	Co	59	331.3	6.2	**0.0004**	0.004	1116.0	ug/L	343	Standard
	Ni	60	118.7	16.2	**-0.0131**	0.017	129.5	ug/L	120	Standard
	Cu	65	397.7	2.5	**0.0145**	0.009	65.2	ug/L	405	Standard
	Zn	66	245.7	9.4	**-0.0200**	0.028	139.7	ug/L	263	Standard
>	Ge	72	521216.5	1.6				ug/L	524310	Standard
	As	75	-21.8	21.9	**0.0018**	0.005	299.9	ug/L	4	Standard
	Se	82	12.2	40.6	**0.0139**	0.063	454.4	ug/L	16	Standard
	Se-1	77	92.3	8.1	**0.0332**	0.117	351.0	ug/L	97	Standard
>	Ga	71	30.0	44.1				mg/L	23	Standard
	Rb	85	18.3	31.5				ug/L	35	Standard
	Y	89	361624.0	2.0				ug/L	364600	Standard
>	Rh	103	13.3	57.3				ug/L	10	Standard
	Mo	98	30.5	12.3	**-0.0068**	0.001	18.5	ug/L	45	Standard
	Ag	107	78.3	6.0	**-0.0059**	0.001	10.6	ug/L	86	Standard
	Cd	111	2.3	50.3	**0.0007**	0.001	151.5	mg/L	4	Standard
	Cd	114	24.4	53.2	**-0.0080**	0.004	51.7	ug/L	25	Standard
>	In	115	416823.0	2.8				ug/L	418958	Standard
	Sn	118	145.3	14.3	**0.0212**	0.038	177.3	ug/L	139	Standard
	Sb	123	163.8	35.5	**0.0129**	0.020	152.2	ug/L	278	Standard
	Ba	135	36.0	0.0	**-0.0118**	0.001	7.5	ug/L	48	Standard
	Ce	140	13.3	21.7				ug/L	30	Standard
>	Tb	159	682687.6	1.2				ug/L	683588	Standard
	Ho	165	5.0	0.0				ug/L	5	Standard
	Tl	203	235.3	1.6	**0.0018**	0.000	24.7	ug/L	251	Standard
	Tl	205	551.7	11.7	**-0.0037**	0.005	130.0	ug/L	568	Standard
	Pb	206	327.7	6.4	**-0.0071**	0.005	64.1	ug/L	334	Standard
	Pb	207	291.3	6.8	**-0.0029**	0.005	159.6	ug/L	300	Standard
	Pb	208	350.7	4.2	**-0.0031**	0.003	106.9	ug/L	368	Standard
	U	238	3.0	33.3	**-0.0001**	0.000	361.2	ug/L	4	Standard
>	Bi	209	431881.6	0.7				ug/L	431904	Standard

Sample ID: Standard 1
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	Na	23	8.3	91.7	**6.6092**	10.083	152.6	mg/L	0	Standard
	Mg	24	40.0	21.7	**0.5717**	0.226	39.6	mg/L	25	Standard
	K	39	8.3	34.6	**-0.2186**	0.039	17.9	mg/L	17	Standard
	Ca	43	70.0	31.1	**5.6653**	3.894	68.7	mg/L	58	Standard
	Fe	54	14.8	35.8	**-0.0094**	0.048	511.9	mg/L	23	Standard
	Fe	57	258.3	10.7	**0.8241**	0.759	92.2	mg/L	255	Standard
>	**Sc-1**	45	22894.0	0.1				mg/L	23084	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	1.7	69.3				ug/L	3	Standard
	Br	81	1880.1	3.5				ug/L	1807	Standard
	P	31	25.0	72.1				ug/L	32	Standard
	S	34	5.0	100.0				ug/L	8	Standard
	Sr	88	130.0	36.7				ug/L	143	Standard
	C	12	16.7	69.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	13.2	114.0				mg/L	16	Standard
	Ho-1	165	5.0	0.0				mg/L	5	Standard
	Er	166	3.3	173.2				mg/L	7	Standard
	I	127	3022.0	5.9				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, April 06, 2017 10:17:53
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	186440.8	3.0				ug/L	187001	Standard
	Be	9	115.0	11.5	**0.0500**	0.011	21.7	ug/L	17	Standard
	Al	27	4922.5	3.1	**0.0500**	0.001	2.7	ug/L	1055	Standard
	Sc	45	22984.1	1.4				ug/L	23084	Standard
	Ti	47	32.3	9.9	**0.1000**	0.022	22.3	ug/L	24	Standard
	V	51	1059.1	3.6	**0.0500**	0.013	25.9	ug/L	975	Standard
	Cr	52	4629.0	2.7	**0.0500**	0.022	43.0	ug/L	4542	Standard
	Cr	53	620.0	4.3	**0.0500**	0.060	120.6	ug/L	657	Standard
	Mn	55	2116.8	0.9	**0.0500**	0.005	9.7	ug/L	1886	Standard
	Co	59	613.3	1.9	**0.0500**	0.002	4.0	ug/L	343	Standard
	Ni	60	195.3	5.6	**0.0500**	0.009	17.1	ug/L	120	Standard
	Cu	65	444.3	3.3	**0.0500**	0.009	18.0	ug/L	405	Standard
	Zn	66	301.7	3.4	**0.0500**	0.014	28.3	ug/L	263	Standard
>	Ge	72	522950.7	1.7				ug/L	524310	Standard
	As	75	18.9	50.2	**0.0500**	0.011	21.8	ug/L	4	Standard
	Se	82	15.0	14.2	**0.0500**	0.029	58.2	ug/L	16	Standard
	Se-1	77	93.3	14.9	**0.0500**	0.283	566.0	ug/L	97	Standard
>	Ga	71	31.7	50.8				mg/L	23	Standard
	Rb	85	35.0	65.5				ug/L	35	Standard
	Y	89	362001.8	2.5				ug/L	364600	Standard
>	Rh	103	8.3	69.3				ug/L	10	Standard
	Mo	98	309.5	3.9	**0.1000**	0.005	5.3	ug/L	45	Standard
	Ag	107	319.7	5.1	**0.0500**	0.004	8.6	ug/L	86	Standard
	Cd	111	60.6	14.1	**0.0500**	0.007	15.0	mg/L	4	Standard
	Cd	114	200.5	4.3	**0.0500**	0.003	6.2	ug/L	25	Standard
>	In	115	419360.8	0.7				ug/L	418958	Standard
	Sn	118	166.0	2.1	**0.0500**	0.006	12.4	ug/L	139	Standard
	Sb	123	284.8	14.1	**0.0500**	0.013	25.9	ug/L	278	Standard
	Ba	135	109.3	14.0	**0.0500**	0.012	24.6	ug/L	48	Standard
	Ce	140	11.7	65.5				ug/L	30	Standard
>	Tb	159	690339.1	1.0				ug/L	683588	Standard
	Ho	165	6.7	86.6				ug/L	5	Standard
	Tl	203	499.0	3.4	**0.0500**	0.004	8.1	ug/L	251	Standard
	Tl	205	1256.7	3.4	**0.0500**	0.004	8.5	ug/L	568	Standard
	Pb	206	573.3	2.5	**0.0500**	0.004	8.2	ug/L	334	Standard
	Pb	207	497.0	5.6	**0.0500**	0.008	16.4	ug/L	300	Standard
	Pb	208	606.7	6.9	**0.0500**	0.008	15.4	ug/L	368	Standard
	U	238	199.3	7.9	**0.0500**	0.004	7.3	ug/L	4	Standard
>	Bi	209	434036.8	1.1				ug/L	431904	Standard

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⌈	**Na**	23	3.3	86.6	**0.0050**	3.803	76058.6	mg/L	0	Standard
|	**Mg**	24	18.3	15.7	**0.0050**	0.077	1547.2	mg/L	25	Standard
|	**K**	39	25.0	20.0	**0.0050**	0.063	1261.8	mg/L	17	Standard
|	**Ca**	43	38.3	27.2	**0.0050**	1.959	39175.4	mg/L	58	Standard
|	**Fe**	54	16.5	45.6	**0.0050**	0.066	1322.6	mg/L	23	Standard
|	**Fe**	57	230.0	31.4	**0.0050**	1.945	38912.0	mg/L	255	Standard
⌊>	**Sc-1**	45	22984.1	1.4				mg/L	23084	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	1896.8	5.6				ug/L	1807	Standard
	P	31	43.3	13.3				ug/L	32	Standard
	S	34	3.3	86.6				ug/L	8	Standard
	Sr	88	106.7	23.6				ug/L	143	Standard
	C	12	30.0	0.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	9.2	106.6				mg/L	16	Standard
	Ho-1	165	6.7	86.6				mg/L	5	Standard
	Er	166	16.7	124.9				mg/L	7	Standard
	I	127	2960.3	5.4				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72			
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, April 06, 2017 10:20:58
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	181460.5	2.1				ug/L	187001	Standard
	Be	9	76646.7	0.6	**50.6362**	1.006	2.0	ug/L	17	Standard
	Al	27	4190436.7	0.4	**50.2686**	0.901	1.8	ug/L	1055	Standard
	Sc	45	22720.4	0.5				ug/L	23084	Standard
	Ti	47	11760.9	0.8	**100.7629**	0.890	0.9	ug/L	24	Standard
	V	51	213163.2	0.7	**50.1993**	0.321	0.6	ug/L	975	Standard
	Cr	52	204305.6	0.4	**50.4954**	0.593	1.2	ug/L	4542	Standard
	Cr	53	26155.9	3.2	**50.1469**	1.143	2.3	ug/L	657	Standard
	Mn	55	345305.4	1.0	**50.2136**	0.192	0.4	ug/L	1886	Standard
	Co	59	279961.8	1.3	**50.3070**	0.159	0.3	ug/L	343	Standard
	Ni	60	59564.2	1.1	**50.1348**	0.348	0.7	ug/L	120	Standard
	Cu	65	63242.7	0.7	**50.1964**	0.307	0.6	ug/L	405	Standard
	Zn	66	38918.9	1.4	**49.8459**	0.044	0.1	ug/L	263	Standard
>	Ge	72	513816.3	1.3				ug/L	524310	Standard
	As	75	41186.4	0.6	**49.7537**	0.371	0.7	ug/L	4	Standard
	Se	82	3775.0	1.6	**49.6327**	1.050	2.1	ug/L	16	Standard
	Se-1	77	2678.2	3.7	**49.6627**	1.225	2.5	ug/L	97	Standard
>	Ga	71	41.7	18.3				mg/L	23	Standard
	Rb	85	253.3	6.9				ug/L	35	Standard
	Y	89	356417.5	1.7				ug/L	364600	Standard
>	Rh	103	25.0	52.9				ug/L	10	Standard
	Mo	98	257229.2	0.1	**100.7615**	0.153	0.2	ug/L	45	Standard
	Ag	107	212532.6	0.6	**50.4001**	0.227	0.4	ug/L	86	Standard
	Cd	111	58177.6	0.6	**50.3796**	0.345	0.7	mg/L	4	Standard
	Cd	114	151735.2	1.4	**51.1251**	0.758	1.5	ug/L	25	Standard
>	In	115	409726.6	0.2				ug/L	418958	Standard
	Sn	118	33544.4	1.3	**50.8825**	0.613	1.2	ug/L	139	Standard
	Sb	123	156672.6	0.8	**49.9484**	0.375	0.8	ug/L	278	Standard
	Ba	135	57697.0	0.9	**49.9676**	0.453	0.9	ug/L	48	Standard
	Ce	140	201.7	29.4				ug/L	30	Standard
>	Tb	159	677900.8	1.0				ug/L	683588	Standard
	Ho	165	6.7	114.6				ug/L	5	Standard
	Tl	203	267871.9	0.3	**50.2162**	0.115	0.2	ug/L	251	Standard
	Tl	205	641501.2	1.0	**50.0096**	0.341	0.7	ug/L	568	Standard
	Pb	206	209328.4	0.2	**49.9733**	0.230	0.5	ug/L	334	Standard
	Pb	207	189634.3	0.4	**50.0488**	0.341	0.7	ug/L	300	Standard
	Pb	208	234392.7	0.3	**50.0082**	0.314	0.6	ug/L	368	Standard
	U	238	191538.4	0.8	**49.9360**	0.567	1.1	ug/L	4	Standard
>	Bi	209	424751.4	0.4				ug/L	431904	Standard

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	Na	23	6.7	114.6	**4.4386**	10.100	227.5	mg/L	0	Standard
	Mg	24	215.0	12.3	**5.1760**	0.669	12.9	mg/L	25	Standard
	K	39	395.0	7.0	**5.0538**	0.367	7.3	mg/L	17	Standard
	Ca	43	71.7	24.5	**6.0518**	3.118	51.5	mg/L	58	Standard
	Fe	54	592.2	10.6	**5.2758**	0.602	11.4	mg/L	23	Standard
	Fe	57	435.0	12.1	**5.8286**	1.485	25.5	mg/L	255	Standard
>	**Sc-1**	45	22720.4	0.5				mg/L	23084	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.7	78.7				ug/L	3	Standard
	Br	81	1570.1	8.6				ug/L	1807	Standard
	P	31	48.3	15.8				ug/L	32	Standard
	S	34	11.7	65.5				ug/L	8	Standard
	Sr	88	121.7	13.2				ug/L	143	Standard
	C	12	33.3	45.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.5	5.0				mg/L	16	Standard
	Ho-1	165	6.7	114.6				mg/L	5	Standard
	Er	166	10.0	100.0				mg/L	7	Standard
	I	127	2628.6	10.9				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, April 06, 2017 10:24:04
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	180949.2	1.3				ug/L	187001	Standard
	Be	9	149012.5	0.7	**98.7283**	1.310	1.3	ug/L	17	Standard
	Al	27	8267860.2	0.9	**99.4631**	2.205	2.2	ug/L	1055	Standard
	Sc	45	22653.6	2.3				ug/L	23084	Standard
	Ti	47	22698.0	0.4	**198.4749**	3.068	1.5	ug/L	24	Standard
	V	51	413937.7	0.3	**99.6017**	1.758	1.8	ug/L	975	Standard
	Cr	52	388766.2	0.7	**99.0096**	1.268	1.3	ug/L	4542	Standard
	Cr	53	50430.5	1.5	**99.7063**	0.498	0.5	ug/L	657	Standard
	Mn	55	669854.8	1.4	**99.5730**	0.822	0.8	ug/L	1886	Standard
	Co	59	542108.7	1.5	**99.3863**	0.673	0.7	ug/L	343	Standard
	Ni	60	116081.1	1.8	**99.7306**	0.581	0.6	ug/L	120	Standard
	Cu	65	122720.1	1.5	**99.6073**	0.652	0.7	ug/L	405	Standard
	Zn	66	76543.5	0.7	**100.3080**	1.374	1.4	ug/L	263	Standard
>	Ge	72	503935.3	2.0				ug/L	524310	Standard
	As	75	81603.1	1.0	**100.4924**	1.460	1.5	ug/L	4	Standard
	Se	82	7503.7	1.5	**100.7343**	0.426	0.4	ug/L	16	Standard
	Se-1	77	5232.9	0.8	**100.6742**	1.442	1.4	ug/L	97	Standard
>	Ga	71	83.3	17.3				mg/L	23	Standard
	Rb	85	471.7	9.8				ug/L	35	Standard
	Y	89	351083.2	1.4				ug/L	364600	Standard
>	Rh	103	30.0	44.1				ug/L	10	Standard
	Mo	98	494078.1	0.7	**198.4778**	1.366	0.7	ug/L	45	Standard
	Ag	107	407859.2	0.9	**99.2001**	0.127	0.1	ug/L	86	Standard
	Cd	111	111763.7	1.0	**99.2412**	0.168	0.2	mg/L	4	Standard
	Cd	114	282904.0	1.8	**97.7509**	1.048	1.1	ug/L	25	Standard
>	In	115	399582.0	1.0				ug/L	418958	Standard
	Sn	118	63042.9	1.6	**98.2359**	0.773	0.8	ug/L	139	Standard
	Sb	123	306094.2	0.8	**100.1031**	0.324	0.3	ug/L	278	Standard
	Ba	135	112634.5	1.1	**100.0647**	0.478	0.5	ug/L	48	Standard
	Ce	140	323.3	9.1				ug/L	30	Standard
>	Tb	159	667511.0	0.9				ug/L	683588	Standard
	Ho	165	25.0	60.0				ug/L	5	Standard
	Tl	203	520197.9	1.0	**99.5678**	0.997	1.0	ug/L	251	Standard
	Tl	205	1256094.0	1.5	**99.9807**	0.695	0.7	ug/L	568	Standard
	Pb	206	410308.7	0.8	**100.0534**	0.317	0.3	ug/L	334	Standard
	Pb	207	370604.6	0.8	**99.9024**	0.669	0.7	ug/L	300	Standard
	Pb	208	458805.8	0.1	**99.9835**	1.122	1.1	ug/L	368	Standard
	U	238	376300.2	0.3	**100.1280**	1.039	1.0	ug/L	4	Standard
>	Bi	209	416191.7	1.0				ug/L	431904	Standard

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⌈	**Na**	23	11.7	89.2	**11.1222**	13.953	125.5	mg/L	0	Standard
|	**Mg**	24	385.0	22.1	**9.6482**	2.027	21.0	mg/L	25	Standard
|	**K**	39	748.4	9.5	**9.8924**	0.759	7.7	mg/L	17	Standard
|	**Ca**	43	81.7	3.5	**7.8975**	0.185	2.3	mg/L	58	Standard
|	**Fe**	54	1044.5	4.1	**9.4486**	0.605	6.4	mg/L	23	Standard
|	**Fe**	57	523.3	2.8	**8.3436**	0.074	0.9	mg/L	255	Standard
⌊>	**Sc-1**	45	22653.6	2.3				mg/L	23084	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	1.0	100.0				ug/L	3	Standard
	Br	81	1750.1	15.0				ug/L	1807	Standard
	P	31	41.7	13.9				ug/L	32	Standard
	S	34	5.0	0.0				ug/L	8	Standard
	Sr	88	115.0	26.4				ug/L	143	Standard
	C	12	46.7	32.7				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	18.9	93.2				mg/L	16	Standard
	Ho-1	165	25.0	60.0				mg/L	5	Standard
	Er	166	23.3	49.5				mg/L	7	Standard
	I	127	3412.1	4.2				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72			
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998
Corr. Coef.	Fe	57	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, April 06, 2017 10:27:11
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	180167.1	3.0				ug/L	187001	Standard
	Be	9	75010.2	0.7	**49.9342**	1.875	3.8	ug/L	17	Standard
	Al	27	4150359.0	0.9	**50.1587**	1.362	2.7	ug/L	1055	Standard
	Sc	45	22672.0	1.1				ug/L	23084	Standard
	Ti	47	11435.0	0.5	**101.5080**	1.366	1.3	ug/L	24	Standard
	V	51	205927.3	0.4	**50.2467**	0.731	1.5	ug/L	975	Standard
	Cr	52	196426.7	0.4	**50.2946**	0.708	1.4	ug/L	4542	Standard
	Cr	53	25262.7	1.8	**50.1906**	0.988	2.0	ug/L	657	Standard
	Mn	55	336745.4	0.6	**50.7407**	0.699	1.4	ug/L	1886	Standard
	Co	59	271182.6	0.2	**50.4930**	0.812	1.6	ug/L	343	Standard
	Ni	60	57904.4	1.4	**50.4941**	0.340	0.7	ug/L	120	Standard
	Cu	65	61836.6	0.6	**50.8568**	0.757	1.5	ug/L	405	Standard
	Zn	66	37937.1	0.7	**50.3487**	0.712	1.4	ug/L	263	Standard
>	Ge	72	495963.6	1.8				ug/L	524310	Standard
	As	75	40192.1	0.9	**50.3022**	0.489	1.0	ug/L	4	Standard
	Se	82	3738.7	2.5	**50.9188**	0.486	1.0	ug/L	16	Standard
	Se-1	77	2677.6	1.7	**51.5177**	1.098	2.1	ug/L	97	Standard
>	Ga	71	48.3	15.8				mg/L	23	Standard
	Rb	85	298.3	15.6				ug/L	35	Standard
	Y	89	344227.9	3.6				ug/L	364600	Standard
>	Rh	103	18.3	56.8				ug/L	10	Standard
	Mo	98	249182.4	0.9	**101.2998**	3.111	3.1	ug/L	45	Standard
	Ag	107	204865.4	0.3	**50.4298**	1.975	3.9	ug/L	86	Standard
	Cd	111	56525.7	0.8	**50.8118**	2.075	4.1	mg/L	4	Standard
	Cd	114	146423.8	0.9	**51.2178**	2.285	4.5	ug/L	25	Standard
>	In	115	395112.7	3.9				ug/L	418958	Standard
	Sn	118	32509.5	1.2	**51.1775**	1.571	3.1	ug/L	139	Standard
	Sb	123	154326.9	0.8	**51.0793**	2.280	4.5	ug/L	278	Standard
	Ba	135	56334.9	0.5	**50.6385**	1.771	3.5	ug/L	48	Standard
	Ce	140	131.7	13.3				ug/L	30	Standard
>	Tb	159	649649.2	3.2				ug/L	683588	Standard
	Ho	165	11.7	65.5				ug/L	5	Standard
	Tl	203	263254.7	0.7	**50.4749**	0.920	1.8	ug/L	251	Standard
	Tl	205	636840.6	0.9	**50.7842**	1.354	2.7	ug/L	568	Standard
	Pb	206	208280.1	0.3	**50.8624**	1.289	2.5	ug/L	334	Standard
	Pb	207	188735.9	0.2	**50.9505**	1.140	2.2	ug/L	300	Standard
	Pb	208	230656.2	0.4	**50.3360**	1.179	2.3	ug/L	368	Standard
	U	238	191856.5	1.0	**51.1653**	1.520	3.0	ug/L	4	Standard
>	Bi	209	415409.4	2.4				ug/L	431904	Standard

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⌈	**Na**	23	1.7	173.2	**-2.1510**	3.870	179.9	mg/L	0	Standard
|	**Mg**	24	200.0	10.0	**4.7953**	0.530	11.1	mg/L	25	Standard
|	**K**	39	378.3	20.7	**4.8371**	1.066	22.0	mg/L	17	Standard
|	**Ca**	43	53.3	21.7	**2.7989**	2.172	77.6	mg/L	58	Standard
|	**Fe**	54	515.3	2.3	**4.5808**	0.097	2.1	mg/L	23	Standard
|	**Fe**	57	336.7	7.0	**3.0988**	0.759	24.5	mg/L	255	Standard
⌊>	**Sc-1**	45	22672.0	1.1				mg/L	23084	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	3.3	34.6				ug/L	3	Standard
	Br	81	1586.8	10.4				ug/L	1807	Standard
	P	31	26.7	28.6				ug/L	32	Standard
	S	34	16.7	96.4				ug/L	8	Standard
	Sr	88	138.3	35.1				ug/L	143	Standard
	C	12	20.0	50.0				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	12.9	48.2				mg/L	16	Standard
	Ho-1	165	11.7	65.5				mg/L	5	Standard
	Er	166	10.0	100.0				mg/L	7	Standard
	I	127	2680.2	5.2				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	99.868		
⌊	Al	27	100.317		
⌈	Sc	45			
|	Ti	47	101.508		
|	V	51	100.493		
|	Cr	52	100.589		
|	Cr	53			
|	Mn	55	101.481		
|	Co	59	100.986		
|	Ni	60	100.988		
|	Cu	65	101.714		
|	Zn	66	100.697		
|>	Ge	72		94.594	
|	As	75	100.604		
|	Se	82	101.838		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	101.300	
|	Ag	107	100.860	
|	Cd	111	101.624	
|	Cd	114		
|>	In	115		94.308
|	Sn	118	102.355	
|	Sb	123	102.159	
⌊	Ba	135	101.277	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	100.950	
|	Tl	205		
|	Pb	206	101.725	
|	Pb	207	101.901	
|	Pb	208	100.672	
|	U	238	102.331	
⌊>	Bi	209		96.181
⌈	Na	23	-43.020	
|	Mg	24	95.906	
|	K	39	96.742	
|	Ca	43	55.979	
|	Fe	54	91.615	
|	Fe	57	61.976	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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QC Std 1	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, April 06, 2017 10:30:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	179954.7	3.2				ug/L	187001	Standard
	Be	9	28.3	50.9	**-0.0053**	0.010	184.4	ug/L	17	Standard
	Al	27	1301.7	2.3	**0.0083**	0.000	2.3	ug/L	1055	Standard
	Sc	45	22505.0	3.6				ug/L	23084	Standard
	Ti	47	24.3	35.0	**0.0421**	0.073	173.7	ug/L	24	Standard
	V	51	634.2	5.6	**-0.0419**	0.009	21.9	ug/L	975	Standard
	Cr	52	3290.0	0.2	**-0.2437**	0.008	3.4	ug/L	4542	Standard
	Cr	53	453.3	11.2	**-0.2303**	0.104	45.1	ug/L	657	Standard
	Mn	55	1890.8	1.2	**0.0303**	0.003	10.7	ug/L	1886	Standard
	Co	59	287.3	7.0	**-0.0053**	0.003	60.9	ug/L	343	Standard
	Ni	60	108.0	4.8	**-0.0181**	0.006	30.6	ug/L	120	Standard
	Cu	65	432.7	3.1	**0.0568**	0.009	15.7	ug/L	405	Standard
	Zn	66	409.7	5.1	**0.2110**	0.022	10.3	ug/L	263	Standard
>	Ge	72	499432.5	1.1				ug/L	524310	Standard
	As	75	-14.5	288.7	**0.0093**	0.053	565.8	ug/L	4	Standard
	Se	82	16.1	48.4	**0.0738**	0.105	142.5	ug/L	16	Standard
	Se-1	77	98.0	6.7	**0.2220**	0.121	54.3	ug/L	97	Standard
>	Ga	71	16.7	69.3				mg/L	23	Standard
	Rb	85	38.3	15.1				ug/L	35	Standard
	Y	89	348102.2	2.9				ug/L	364600	Standard
>	Rh	103	15.0	88.2				ug/L	10	Standard
	Mo	98	150.7	25.4	**0.0418**	0.014	33.5	ug/L	45	Standard
	Ag	107	91.7	7.9	**-0.0019**	0.001	70.7	ug/L	86	Standard
	Cd	111	4.8	89.7	**0.0029**	0.004	127.0	mg/L	4	Standard
	Cd	114	45.5	49.1	**-0.0004**	0.007	1684.7	ug/L	25	Standard
>	In	115	399938.3	1.9				ug/L	418958	Standard
	Sn	118	168.0	12.4	**0.0656**	0.037	56.6	ug/L	139	Standard
	Sb	123	1130.2	38.5	**0.3319**	0.148	44.6	ug/L	278	Standard
	Ba	135	50.3	11.6	**0.0021**	0.004	204.2	ug/L	48	Standard
	Ce	140	13.3	78.1				ug/L	30	Standard
>	Tb	159	657719.4	1.5				ug/L	683588	Standard
	Ho	165	5.0	100.0				ug/L	5	Standard
	Tl	203	217.3	12.6	**-0.0006**	0.006	904.5	ug/L	251	Standard
	Tl	205	510.0	9.0	**-0.0060**	0.004	66.1	ug/L	568	Standard
	Pb	206	406.3	8.0	**0.0134**	0.006	48.1	ug/L	334	Standard
	Pb	207	364.0	5.3	**0.0181**	0.005	28.7	ug/L	300	Standard
	Pb	208	428.0	9.1	**0.0150**	0.007	49.9	ug/L	368	Standard
	U	238	22.0	12.0	**0.0049**	0.001	15.8	ug/L	4	Standard
>	Bi	209	422785.9	1.4				ug/L	431904	Standard

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⌈	**Na**	23	0.0		**-4.3853**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	31.7	65.7	**0.3565**	0.514	144.2	mg/L	25	Standard
|	**K**	39	3.3	173.2	**-0.2844**	0.081	28.6	mg/L	17	Standard
|	**Ca**	43	48.3	26.0	**2.0048**	2.548	127.1	mg/L	58	Standard
|	**Fe**	54	31.4	24.5	**0.1480**	0.079	53.6	mg/L	23	Standard
|	**Fe**	57	231.7	11.1	**0.2050**	0.834	406.9	mg/L	255	Standard
⌊>	**Sc-1**	45	22505.0	3.6				mg/L	23084	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	4.3	66.6				ug/L	3	Standard
	Br	81	1630.1	7.5				ug/L	1807	Standard
	P	31	38.3	64.3				ug/L	32	Standard
	S	34	10.0					ug/L	8	Standard
	Sr	88	113.3	28.7				ug/L	143	Standard
	C	12	30.0	88.2				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.2	186.7				mg/L	16	Standard
	Ho-1	165	5.0	100.0				mg/L	5	Standard
	Er	166	16.7	34.6				mg/L	7	Standard
	I	127	2756.9	4.7				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.255	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.460
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.889
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Mg	24	

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QC Std 2	K	39
QC Std 2	Ca	43
QC Std 2	Fe	54
QC Std 2	Fe	57

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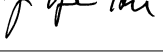

Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, April 06, 2017 10:33:25
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	180238.2	3.5				ug/L	187001	Standard
	Be	9	346.7	12.1	**0.2069**	0.032	15.3	ug/L	17	Standard
	Al	27	1285.1	39.5	**0.0079**	0.006	69.6	ug/L	1055	Standard
	Sc	45	23192.8	4.9				ug/L	23084	Standard
	Ti	47	24.0	15.0	**0.0408**	0.036	89.0	ug/L	24	Standard
	V	51	2199.7	4.9	**0.3412**	0.038	11.1	ug/L	975	Standard
	Cr	52	7193.0	1.8	**0.7767**	0.025	3.2	ug/L	4542	Standard
	Cr	53	911.7	1.6	**0.7010**	0.034	4.9	ug/L	657	Standard
	Mn	55	4522.0	4.2	**0.4280**	0.012	2.9	ug/L	1886	Standard
	Co	59	2275.5	5.0	**0.3639**	0.010	2.7	ug/L	343	Standard
	Ni	60	1847.4	2.6	**1.4967**	0.003	0.2	ug/L	120	Standard
	Cu	65	1307.7	6.9	**0.7784**	0.047	6.0	ug/L	405	Standard
	Zn	66	4965.8	2.2	**6.2776**	0.113	1.8	ug/L	263	Standard
>	Ge	72	497793.5	2.8				ug/L	524310	Standard
	As	75	317.0	13.4	**0.4222**	0.046	10.8	ug/L	4	Standard
	Se	82	46.9	10.0	**0.4935**	0.052	10.5	ug/L	16	Standard
	Se-1	77	110.0	11.6	**0.4718**	0.311	65.8	ug/L	97	Standard
>	Ga	71	11.7	49.5				mg/L	23	Standard
	Rb	85	20.0	0.0				ug/L	35	Standard
	Y	89	351566.9	2.4				ug/L	364600	Standard
>	Rh	103	6.7	173.2				ug/L	10	Standard
	Mo	98	57.1	6.6	**0.0045**	0.002	33.9	ug/L	45	Standard
	Ag	107	1641.1	1.4	**0.3766**	0.003	0.9	ug/L	86	Standard
	Cd	111	266.9	7.3	**0.2364**	0.012	5.0	mg/L	4	Standard
	Cd	114	701.3	7.8	**0.2270**	0.016	6.8	ug/L	25	Standard
>	In	115	398188.2	2.2				ug/L	418958	Standard
	Sn	118	139.7	3.6	**0.0218**	0.005	22.9	ug/L	139	Standard
	Sb	123	1501.8	5.3	**0.4546**	0.034	7.5	ug/L	278	Standard
	Ba	135	822.4	2.1	**0.6910**	0.016	2.3	ug/L	48	Standard
	Ce	140	18.3	31.5				ug/L	30	Standard
>	Tb	159	656054.4	2.8				ug/L	683588	Standard
	Ho	165	5.0	100.0				ug/L	5	Standard
	Tl	203	643.7	16.8	**0.0801**	0.019	23.1	ug/L	251	Standard
	Tl	205	1510.1	6.7	**0.0729**	0.006	8.0	ug/L	568	Standard
	Pb	206	1170.7	7.6	**0.1982**	0.016	8.2	ug/L	334	Standard
	Pb	207	967.4	2.8	**0.1794**	0.003	1.5	ug/L	300	Standard
	Pb	208	1275.0	3.9	**0.1981**	0.006	2.9	ug/L	368	Standard
	U	238	1467.7	5.7	**0.3852**	0.016	4.1	ug/L	4	Standard
>	Bi	209	420856.4	1.8				ug/L	431904	Standard

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	Na	23	5.0	100.0	**2.1856**	6.422	293.8	mg/L	0	Standard
	Mg	24	21.7	48.0	**0.0874**	0.266	304.4	mg/L	25	Standard
	K	39	8.3	34.6	**-0.2211**	0.034	15.5	mg/L	17	Standard
	Ca	43	81.7	30.2	**7.4917**	3.836	51.2	mg/L	58	Standard
	Fe	54	21.3	59.5	**0.0513**	0.125	242.8	mg/L	23	Standard
	Fe	57	256.7	9.2	**0.6784**	0.385	56.8	mg/L	255	Standard
>	**Sc-1**	45	23192.8	4.9				mg/L	23084	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	2.7	78.1				ug/L	3	Standard
	Br	81	1676.8	5.1				ug/L	1807	Standard
	P	31	25.0	0.0				ug/L	32	Standard
	S	34	10.0	86.6				ug/L	8	Standard
	Sr	88	131.7	5.8				ug/L	143	Standard
	C	12	33.3	45.8				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	8.6	9.7				mg/L	16	Standard
	Ho-1	165	5.0	100.0				mg/L	5	Standard
	Er	166	30.0	57.7				mg/L	7	Standard
	I	127	2916.9	5.1				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.439		
	Al	27	0.792		
	Sc	45			
	Ti	47			
	V	51	85.305		
	Cr	52	97.091		
	Cr	53			
	Mn	55	85.599		
	Co	59	90.987		
	Ni	60	93.545		
	Cu	65	97.295		
	Zn	66	100.441		
>	Ge	72		94.943	
	As	75	105.546		
	Se	82	123.374		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98		
|	Ag	107	94.142	
|	Cd	111	98.490	
|	Cd	114		
|>	In	115		95.043
|	Sn	118		
|	Sb	123	113.648	
⌊	Ba	135	92.138	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	100.071	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	99.038	
|	U	238	96.299	
⌊>	Bi	209		97.442
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, April 06, 2017 10:36:31
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	178350.4	1.6				ug/L	187001	Standard
	Be	9	23.3	32.7	**-0.0085**	0.005	61.6	ug/L	17	Standard
	Al	27	3840707.2	0.4	**46.8743**	0.923	2.0	ug/L	1055	Standard
	Sc	45	22470.0	1.9				ug/L	23084	Standard
	Ti	47	10582.4	0.8	**94.3612**	1.024	1.1	ug/L	24	Standard
	V	51	710.1	6.5	**-0.0213**	0.013	62.5	ug/L	975	Standard
	Cr	52	4462.3	0.8	**0.0745**	0.013	17.2	ug/L	4542	Standard
	Cr	53	611.7	6.3	**0.1046**	0.100	96.0	ug/L	657	Standard
	Mn	55	2829.3	1.9	**0.1764**	0.007	4.0	ug/L	1886	Standard
	Co	59	539.0	4.0	**0.0425**	0.005	12.1	ug/L	343	Standard
	Ni	60	362.0	8.8	**0.2062**	0.032	15.3	ug/L	120	Standard
	Cu	65	545.0	4.0	**0.1542**	0.011	7.3	ug/L	405	Standard
	Zn	66	642.3	4.4	**0.5299**	0.039	7.3	ug/L	263	Standard
>	Ge	72	493670.3	1.9				ug/L	524310	Standard
	As	75	1.2	1252.8	**0.0291**	0.019	66.5	ug/L	4	Standard
	Se	82	12.8	10.1	**0.0316**	0.018	56.2	ug/L	16	Standard
	Se-1	77	81.0	20.5	**-0.0945**	0.334	353.2	ug/L	97	Standard
>	Ga	71	36.7	63.0				mg/L	23	Standard
	Rb	85	526.7	7.1				ug/L	35	Standard
	Y	89	344803.1	1.5				ug/L	364600	Standard
>	Rh	103	11.7	49.5				ug/L	10	Standard
	Mo	98	225509.2	0.2	**91.6344**	1.138	1.2	ug/L	45	Standard
	Ag	107	87.0	11.1	**-0.0027**	0.002	81.9	ug/L	86	Standard
	Cd	111	-113.2	12.0	**-0.1031**	0.013	13.0	mg/L	4	Standard
	Cd	114	367.8	13.8	**0.1126**	0.018	16.3	ug/L	25	Standard
>	In	115	395017.3	1.4				ug/L	418958	Standard
	Sn	118	145.0	1.4	**0.0320**	0.001	2.7	ug/L	139	Standard
	Sb	123	346.8	36.5	**0.0763**	0.043	56.9	ug/L	278	Standard
	Ba	135	45.7	10.8	**-0.0015**	0.004	287.1	ug/L	48	Standard
	Ce	140	590.0	6.6				ug/L	30	Standard
>	Tb	159	664562.0	0.8				ug/L	683588	Standard
	Ho	165	11.7	65.5				ug/L	5	Standard
	Tl	203	191.3	11.5	**-0.0049**	0.004	82.6	ug/L	251	Standard
	Tl	205	428.3	12.8	**-0.0117**	0.004	36.8	ug/L	568	Standard
	Pb	206	414.3	1.9	**0.0174**	0.002	8.9	ug/L	334	Standard
	Pb	207	341.7	5.5	**0.0140**	0.005	32.3	ug/L	300	Standard
	Pb	208	423.0	1.2	**0.0159**	0.001	8.6	ug/L	368	Standard
	U	238	7.3	43.8	**0.0011**	0.001	75.6	ug/L	4	Standard
>	Bi	209	414274.4	0.7				ug/L	431904	Standard

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⌈	**Na**	23	11.7	24.7	**11.3280**	4.138	36.5	mg/L	0	Standard
|	**Mg**	24	486.7	22.1	**12.4588**	2.865	23.0	mg/L	25	Standard
|	**K**	39	328.3	9.2	**4.2014**	0.499	11.9	mg/L	17	Standard
|	**Ca**	43	76.7	26.4	**7.0943**	3.605	50.8	mg/L	58	Standard
|	**Fe**	54	1196.1	6.5	**10.9139**	0.511	4.7	mg/L	23	Standard
|	**Fe**	57	601.7	12.3	**10.6629**	1.817	17.0	mg/L	255	Standard
⌊>	**Sc-1**	45	22470.0	1.9				mg/L	23084	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	1.0	100.0				ug/L	3	Standard
	Br	81	1590.1	6.7				ug/L	1807	Standard
	P	31	41.7	13.9				ug/L	32	Standard
	S	34	8.3	34.6				ug/L	8	Standard
	Sr	88	111.7	2.6				ug/L	143	Standard
	C	12	23.3	24.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	13.2	44.9				mg/L	16	Standard
	Ho-1	165	11.7	65.5				mg/L	5	Standard
	Er	166	3.3	173.2				mg/L	7	Standard
	I	127	2283.5	9.2				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27	0.937		
⌈	Sc	45			
|	Ti	47	94.361		
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.156	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	91.634	
|	Ag	107		
|	Cd	111		
|	Cd	114		
|>	In	115		94.286
|	Sn	118		
|	Sb	123		
⌊	Ba	135		
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203		
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208		
|	U	238		
⌊>	Bi	209		95.918
⌈	Na	23	90.624	
|	Mg	24	249.175	
|	K	39	84.028	
|	Ca	43	47.295	
|	Fe	54	87.311	
|	Fe	57	85.303	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mg	24	
QC Std 4	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, April 06, 2017 10:39:36
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	181612.8	3.4				ug/L	187001	Standard
	Be	9	150726.1	1.3	**99.5372**	2.127	2.1	ug/L	17	Standard
	Al	27	3754476.0	0.6	**45.0171**	1.239	2.8	ug/L	1055	Standard
	Sc	45	22611.9	2.6				ug/L	23084	Standard
	Ti	47	11402.6	1.3	**101.2642**	1.518	1.5	ug/L	24	Standard
	V	51	402842.6	0.8	**98.5237**	1.116	1.1	ug/L	975	Standard
	Cr	52	382342.1	0.4	**98.9783**	0.240	0.2	ug/L	4542	Standard
	Cr	53	50183.0	0.8	**100.8799**	1.274	1.3	ug/L	657	Standard
	Mn	55	657261.5	1.1	**99.3176**	0.872	0.9	ug/L	1886	Standard
	Co	59	532209.2	0.4	**99.1890**	0.206	0.2	ug/L	343	Standard
	Ni	60	112387.0	0.7	**98.1607**	0.841	0.9	ug/L	120	Standard
	Cu	65	120375.6	0.4	**99.3246**	0.454	0.5	ug/L	405	Standard
	Zn	66	77175.1	0.5	**102.8124**	0.944	0.9	ug/L	263	Standard
>	Ge	72	495682.7	0.4				ug/L	524310	Standard
	As	75	80615.5	0.7	**100.9121**	0.530	0.5	ug/L	4	Standard
	Se	82	7396.6	1.6	**100.9419**	1.176	1.2	ug/L	16	Standard
	Se-1	77	5301.3	2.1	**103.7256**	2.492	2.4	ug/L	97	Standard
>	Ga	71	81.7	18.7				mg/L	23	Standard
	Rb	85	525.0	9.9				ug/L	35	Standard
	Y	89	343638.9	1.6				ug/L	364600	Standard
>	Rh	103	26.7	39.0				ug/L	10	Standard
	Mo	98	225440.8	1.2	**92.9920**	1.304	1.4	ug/L	45	Standard
	Ag	107	390035.1	2.1	**97.4119**	1.272	1.3	ug/L	86	Standard
	Cd	111	108922.7	0.9	**99.3281**	1.311	1.3	mg/L	4	Standard
	Cd	114	271540.3	1.1	**96.3527**	0.200	0.2	ug/L	25	Standard
>	In	115	389110.2	1.0				ug/L	418958	Standard
	Sn	118	184.0	8.7	**0.0982**	0.028	28.7	ug/L	139	Standard
	Sb	123	300922.0	0.9	**101.0608**	0.614	0.6	ug/L	278	Standard
	Ba	135	110440.4	0.2	**100.7630**	1.067	1.1	ug/L	48	Standard
	Ce	140	51.7	36.6				ug/L	30	Standard
>	Tb	159	659198.0	1.4				ug/L	683588	Standard
	Ho	165	13.3	78.1				ug/L	5	Standard
	Tl	203	521879.9	1.0	**99.2510**	1.170	1.2	ug/L	251	Standard
	Tl	205	1262847.0	1.2	**99.8811**	1.416	1.4	ug/L	568	Standard
	Pb	206	412260.8	0.5	**99.8870**	0.550	0.6	ug/L	334	Standard
	Pb	207	371590.6	0.8	**99.5268**	0.845	0.8	ug/L	300	Standard
	Pb	208	462307.8	1.2	**100.0985**	1.419	1.4	ug/L	368	Standard
	U	238	385576.2	1.5	**101.9373**	1.747	1.7	ug/L	4	Standard
>	Bi	209	418861.4	0.2				ug/L	431904	Standard

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Na	23	10.0		**8.9699**	0.339	3.8	mg/L	0	Standard
Mg	24	435.0	10.5	**10.9998**	0.933	8.5	mg/L	25	Standard
K	39	330.0	13.6	**4.2004**	0.711	16.9	mg/L	17	Standard
Ca	43	68.3	21.1	**5.5477**	2.807	50.6	mg/L	58	Standard
Fe	54	1147.4	3.0	**10.4102**	0.490	4.7	mg/L	23	Standard
Fe	57	545.0	6.4	**8.9874**	1.056	11.8	mg/L	255	Standard
Sc-1	45	22611.9	2.6				mg/L	23084	Standard
Cl	35	2.7	43.3				ug/L	1	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	1683.4	0.7				ug/L	1807	Standard
P	31	31.7	50.8				ug/L	32	Standard
S	34	10.0	86.6				ug/L	8	Standard
Sr	88	133.3	7.8				ug/L	143	Standard
C	12	53.3	10.8				mg/L	33	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	8.9	8.2				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	5	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	15302.7	1.8				mg/L	2930	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.537		
Al	27	0.900		
Sc	45			
Ti	47	101.264		
V	51	98.524		
Cr	52	98.978		
Cr	53			
Mn	55	99.318		
Co	59	99.189		
Ni	60	98.161		
Cu	65	99.325		
Zn	66	102.812		
Ge	72		94.540	
As	75	100.912		
Se	82	100.942		
Se-1	77			
Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	92.992	
|	Ag	107	97.412	
|	Cd	111	99.328	
|	Cd	114		
|>	In	115		92.876
|	Sn	118		
|	Sb	123	101.061	
⌊	Ba	135	100.763	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	99.251	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	100.098	
|	U	238	101.937	
⌊>	Bi	209		96.980
⌈	Na	23	71.759	
|	Mg	24	219.996	
|	K	39	84.008	
|	Ca	43	36.985	
|	Fe	54	83.281	
|	Fe	57	71.899	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43
QC Std 5	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, April 06, 2017 10:42:43
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	179249.6	2.9				ug/L	187001	Standard
	Be	9	73968.5	2.2	**49.4710**	1.216	2.5	ug/L	17	Standard
	Al	27	4105870.6	0.3	**49.8781**	1.511	3.0	ug/L	1055	Standard
	Sc	45	22381.5	4.6				ug/L	23084	Standard
	Ti	47	11410.3	0.3	**101.2339**	2.303	2.3	ug/L	24	Standard
	V	51	203362.8	1.6	**49.5790**	0.305	0.6	ug/L	975	Standard
	Cr	52	193432.7	1.3	**49.4741**	0.487	1.0	ug/L	4542	Standard
	Cr	53	24868.7	1.7	**49.3577**	0.964	2.0	ug/L	657	Standard
	Mn	55	331346.2	0.1	**49.8954**	1.084	2.2	ug/L	1886	Standard
	Co	59	266588.9	0.6	**49.6039**	0.808	1.6	ug/L	343	Standard
	Ni	60	57232.9	0.4	**49.8821**	0.915	1.8	ug/L	120	Standard
	Cu	65	60669.9	0.2	**49.8651**	1.194	2.4	ug/L	405	Standard
	Zn	66	37606.6	0.9	**49.8735**	0.691	1.4	ug/L	263	Standard
>	Ge	72	496316.4	2.2				ug/L	524310	Standard
	As	75	39239.8	1.6	**49.0756**	0.377	0.8	ug/L	4	Standard
	Se	82	3712.8	2.2	**50.5346**	0.364	0.7	ug/L	16	Standard
	Se-1	77	2657.6	2.7	**51.0704**	0.302	0.6	ug/L	97	Standard
>	Ga	71	45.0	55.6				mg/L	23	Standard
	Rb	85	258.3	14.5				ug/L	35	Standard
	Y	89	350863.3	1.6				ug/L	364600	Standard
>	Rh	103	25.0	40.0				ug/L	10	Standard
	Mo	98	248140.3	1.0	**99.7338**	1.889	1.9	ug/L	45	Standard
	Ag	107	203747.5	0.4	**49.5746**	0.715	1.4	ug/L	86	Standard
	Cd	111	56112.5	0.5	**49.8588**	0.973	2.0	mg/L	4	Standard
	Cd	114	145460.8	0.3	**50.2899**	1.015	2.0	ug/L	25	Standard
>	In	115	399399.1	1.8				ug/L	418958	Standard
	Sn	118	32271.3	0.5	**50.2261**	0.959	1.9	ug/L	139	Standard
	Sb	123	154461.3	0.5	**50.5256**	0.717	1.4	ug/L	278	Standard
	Ba	135	55031.8	1.1	**48.8998**	0.932	1.9	ug/L	48	Standard
	Ce	140	163.3	11.6				ug/L	30	Standard
>	Tb	159	661889.0	1.7				ug/L	683588	Standard
	Ho	165	3.3	86.6				ug/L	5	Standard
	Tl	203	266244.6	0.4	**50.0015**	1.221	2.4	ug/L	251	Standard
	Tl	205	642319.1	0.3	**50.1623**	1.038	2.1	ug/L	568	Standard
	Pb	206	209966.2	0.6	**50.2128**	0.995	2.0	ug/L	334	Standard
	Pb	207	189545.0	1.1	**50.1074**	0.735	1.5	ug/L	300	Standard
	Pb	208	234023.0	0.3	**50.0177**	1.108	2.2	ug/L	368	Standard
	U	238	198814.6	0.5	**51.9268**	1.344	2.6	ug/L	4	Standard
>	Bi	209	424126.6	2.1				ug/L	431904	Standard

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⌈	**Na**	23	6.7	86.6	**4.8427**	7.994	165.1	mg/L	0	Standard
|	**Mg**	24	176.7	9.1	**4.2524**	0.542	12.7	mg/L	25	Standard
|	**K**	39	313.3	3.3	**4.0152**	0.329	8.2	mg/L	17	Standard
|	**Ca**	43	75.0	11.5	**6.8923**	1.823	26.5	mg/L	58	Standard
|	**Fe**	54	545.9	9.1	**4.9197**	0.228	4.6	mg/L	23	Standard
|	**Fe**	57	393.3	11.0	**4.8132**	0.856	17.8	mg/L	255	Standard
⌊>	**Sc-1**	45	22381.5	4.6				mg/L	23084	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	3.3	45.8				ug/L	3	Standard
	Br	81	1616.8	2.9				ug/L	1807	Standard
	P	31	41.7	6.9				ug/L	32	Standard
	S	34	11.7	24.7				ug/L	8	Standard
	Sr	88	118.3	8.8				ug/L	143	Standard
	C	12	30.0	57.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	9.5	105.0				mg/L	16	Standard
	Ho-1	165	3.3	86.6				mg/L	5	Standard
	Er	166	10.0					mg/L	7	Standard
	I	127	2431.9	8.7				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	98.942		
⌊	Al	27	99.756		
⌈	Sc	45			
|	Ti	47	101.234		
|	V	51	99.158		
|	Cr	52	98.948		
|	Cr	53			
|	Mn	55	99.791		
|	Co	59	99.208		
|	Ni	60	99.764		
|	Cu	65	99.730		
|	Zn	66	99.747		
|>	Ge	72		94.661	
|	As	75	98.151		
|	Se	82	101.069		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	99.734	
|	Ag	107	99.149	
|	Cd	111	99.718	
|	Cd	114		
|>	In	115		95.332
|	Sn	118	100.452	
|	Sb	123	101.051	
⌊	Ba	135	97.800	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	100.003	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	100.035	
|	U	238	103.854	
⌊>	Bi	209		98.199
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, April 06, 2017 10:45:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	177363.0	3.8				ug/L	187001	Standard
	Be	9	41.7	36.7	**0.0040**	0.010	253.6	ug/L	17	Standard
	Al	27	1228.4	2.5	**0.0076**	0.000	5.6	ug/L	1055	Standard
	Sc	45	22142.8	3.4				ug/L	23084	Standard
	Ti	47	23.0	21.7	**0.0324**	0.043	131.5	ug/L	24	Standard
	V	51	744.9	4.8	**-0.0132**	0.002	17.8	ug/L	975	Standard
	Cr	52	3488.7	3.6	**-0.1830**	0.014	7.7	ug/L	4542	Standard
	Cr	53	463.3	5.1	**-0.1993**	0.076	38.2	ug/L	657	Standard
	Mn	55	1754.1	1.9	**0.0125**	0.005	39.2	ug/L	1886	Standard
	Co	59	259.3	4.2	**-0.0099**	0.003	32.4	ug/L	343	Standard
	Ni	60	111.7	15.2	**-0.0141**	0.014	99.9	ug/L	120	Standard
	Cu	65	400.0	5.3	**0.0334**	0.016	46.9	ug/L	405	Standard
	Zn	66	405.0	6.1	**0.2101**	0.015	7.0	ug/L	263	Standard
>	Ge	72	494463.8	3.5				ug/L	524310	Standard
	As	75	-7.7	601.8	**0.0193**	0.057	297.4	ug/L	4	Standard
	Se	82	11.8	64.9	**0.0187**	0.111	594.3	ug/L	16	Standard
	Se-1	77	68.3	3.7	**-0.3498**	0.003	0.8	ug/L	97	Standard
>	Ga	71	16.7	45.8				mg/L	23	Standard
	Rb	85	31.7	18.2				ug/L	35	Standard
	Y	89	350310.6	2.9				ug/L	364600	Standard
>	Rh	103	11.7	24.7				ug/L	10	Standard
	Mo	98	151.5	16.6	**0.0428**	0.009	21.2	ug/L	45	Standard
	Ag	107	99.0	16.0	**0.0002**	0.004	2173.1	ug/L	86	Standard
	Cd	111	5.5	64.6	**0.0037**	0.003	90.0	mg/L	4	Standard
	Cd	114	32.6	38.0	**-0.0046**	0.005	101.8	ug/L	25	Standard
>	In	115	396096.6	2.9				ug/L	418958	Standard
	Sn	118	150.7	10.0	**0.0407**	0.028	68.1	ug/L	139	Standard
	Sb	123	809.9	46.8	**0.2309**	0.134	57.8	ug/L	278	Standard
	Ba	135	45.3	25.8	**-0.0019**	0.010	528.8	ug/L	48	Standard
	Ce	140	18.3	83.3				ug/L	30	Standard
>	Tb	159	658289.6	2.7				ug/L	683588	Standard
	Ho	165	8.3	91.7				ug/L	5	Standard
	Tl	203	216.3	1.5	**-0.0011**	0.000	12.0	ug/L	251	Standard
	Tl	205	488.3	12.5	**-0.0079**	0.005	64.7	ug/L	568	Standard
	Pb	206	394.0	4.2	**0.0099**	0.005	53.6	ug/L	334	Standard
	Pb	207	363.3	4.2	**0.0172**	0.003	15.6	ug/L	300	Standard
	Pb	208	452.3	4.8	**0.0197**	0.006	30.7	ug/L	368	Standard
	U	238	23.0	45.8	**0.0052**	0.003	54.7	ug/L	4	Standard
>	Bi	209	425669.8	1.5				ug/L	431904	Standard

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⌈	**Na**	23	0.0		**-4.3853**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	23.3	32.7	**0.1537**	0.187	121.8	mg/L	25	Standard
|	**K**	39	15.0	33.3	**-0.1208**	0.074	61.6	mg/L	17	Standard
|	**Ca**	43	48.3	11.9	**2.0751**	0.778	37.5	mg/L	58	Standard
|	**Fe**	54	14.7	67.2	**-0.0069**	0.088	1274.8	mg/L	23	Standard
|	**Fe**	57	213.3	16.6	**-0.2327**	0.946	406.4	mg/L	255	Standard
⌊>	**Sc-1**	45	22142.8	3.4				mg/L	23084	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	1693.4	10.5				ug/L	1807	Standard
	P	31	36.7	55.1				ug/L	32	Standard
	S	34	5.0	0.0				ug/L	8	Standard
	Sr	88	125.0	16.0				ug/L	143	Standard
	C	12	33.3	45.8				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	-0.2	173.2				mg/L	16	Standard
	Ho-1	165	8.3	91.7				mg/L	5	Standard
	Er	166	3.3	173.2				mg/L	7	Standard
	I	127	2478.5	5.2				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.308	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		94.543
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		98.557
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBW A6 WG608839-02
Sample Date/Time: Thursday, April 06, 2017 10:50:07
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	178629.1	3.0				ug/L	187001	Standard
	Be	9	18.3	41.7	**-0.0119**	0.005	42.0	ug/L	17	Standard
	Al	27	1298.4	4.8	**0.0083**	0.001	9.6	ug/L	1055	Standard
	Sc	45	22107.8	1.0				ug/L	23084	Standard
	Ti	47	20.7	29.6	**0.0104**	0.052	493.8	ug/L	24	Standard
	V	51	759.4	6.5	**-0.0105**	0.012	113.3	ug/L	975	Standard
	Cr	52	3840.5	3.4	**-0.0960**	0.019	19.6	ug/L	4542	Standard
	Cr	53	470.0	2.1	**-0.1921**	0.015	7.9	ug/L	657	Standard
	Mn	55	1398.1	1.9	**-0.0428**	0.001	3.1	ug/L	1886	Standard
	Co	59	262.0	1.0	**-0.0097**	0.000	4.5	ug/L	343	Standard
	Ni	60	119.3	11.2	**-0.0077**	0.013	167.8	ug/L	120	Standard
	Cu	65	398.0	7.6	**0.0298**	0.021	70.5	ug/L	405	Standard
	Zn	66	874.4	5.2	**0.8332**	0.053	6.4	ug/L	263	Standard
>	Ge	72	496961.5	1.6				ug/L	524310	Standard
	As	75	-17.7	266.4	**0.0062**	0.059	959.2	ug/L	4	Standard
	Se	82	12.0	33.0	**0.0191**	0.057	296.8	ug/L	16	Standard
	Se-1	77	93.7	14.2	**0.1443**	0.242	167.9	ug/L	97	Standard
>	Ga	71	16.7	17.3				mg/L	23	Standard
	Rb	85	25.0	40.0				ug/L	35	Standard
	Y	89	344531.1	2.3				ug/L	364600	Standard
>	Rh	103	3.3	86.6				ug/L	10	Standard
	Mo	98	58.5	22.3	**0.0053**	0.005	103.5	ug/L	45	Standard
	Ag	107	77.7	20.7	**-0.0051**	0.004	70.7	ug/L	86	Standard
	Cd	111	4.6	45.4	**0.0028**	0.002	69.2	mg/L	4	Standard
	Cd	114	28.1	19.6	**-0.0062**	0.002	33.7	ug/L	25	Standard
>	In	115	395480.0	2.2				ug/L	418958	Standard
	Sn	118	133.7	8.0	**0.0141**	0.020	141.8	ug/L	139	Standard
	Sb	123	374.3	38.8	**0.0856**	0.051	59.5	ug/L	278	Standard
	Ba	135	45.3	17.1	**-0.0019**	0.006	316.9	ug/L	48	Standard
	Ce	140	21.7	13.3				ug/L	30	Standard
>	Tb	159	660533.7	1.1				ug/L	683588	Standard
	Ho	165	5.0	0.0				ug/L	5	Standard
	Tl	203	162.0	3.3	**-0.0112**	0.001	6.5	ug/L	251	Standard
	Tl	205	353.3	3.3	**-0.0184**	0.001	5.9	ug/L	568	Standard
	Pb	206	325.7	4.3	**-0.0063**	0.002	32.3	ug/L	334	Standard
	Pb	207	285.7	3.0	**-0.0030**	0.001	45.4	ug/L	300	Standard
	Pb	208	369.3	3.3	**0.0022**	0.003	154.3	ug/L	368	Standard
	U	238	5.0	52.9	**0.0005**	0.001	147.6	ug/L	4	Standard
>	Bi	209	424325.9	1.8				ug/L	431904	Standard

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⌈	**Na**	23	0.0		**-4.3853**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	31.7	36.5	**0.3853**	0.320	83.0	mg/L	25	Standard
|	**K**	39	8.3	91.7	**-0.2153**	0.106	49.3	mg/L	17	Standard
|	**Ca**	43	41.7	36.7	**0.8635**	2.777	321.6	mg/L	58	Standard
|	**Fe**	54	18.0	30.6	**0.0256**	0.053	207.5	mg/L	23	Standard
|	**Fe**	57	220.0	8.2	**-0.0263**	0.462	1758.8	mg/L	255	Standard
⌊>	**Sc-1**	45	22107.8	1.0				mg/L	23084	Standard
	Cl	35	4.0	50.0				ug/L	1	Standard
	Kr	83	3.0	88.2				ug/L	3	Standard
	Br	81	1906.8	13.4				ug/L	1807	Standard
	P	31	51.7	24.4				ug/L	32	Standard
	S	34	8.3	34.6				ug/L	8	Standard
	Sr	88	145.0	11.9				ug/L	143	Standard
	C	12	33.3	45.8				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	9.2	6.0				mg/L	16	Standard
	Ho-1	165	5.0	0.0				mg/L	5	Standard
	Er	166	16.7	69.3				mg/L	7	Standard
	I	127	3037.0	4.0				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		95.523	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.784	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.396
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.245
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW A6 WG608839-03
Sample Date/Time: Thursday, April 06, 2017 10:53:12
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	184722.8	1.8				ug/L	187001	Standard
	Be	9	75259.8	0.3	**48.8366**	0.727	1.5	ug/L	17	Standard
	Al	27	6539.9	42.1	**0.0693**	0.031	44.9	ug/L	1055	Standard
	Sc	45	22398.2	1.9				ug/L	23084	Standard
	Ti	47	32.7	12.7	**0.1154**	0.035	30.4	ug/L	24	Standard
	V	51	205178.5	0.3	**49.6146**	0.571	1.2	ug/L	975	Standard
	Cr	52	198283.4	0.8	**50.3160**	0.500	1.0	ug/L	4542	Standard
	Cr	53	25680.1	0.8	**50.5809**	1.147	2.3	ug/L	657	Standard
	Mn	55	338064.8	1.0	**50.4809**	0.359	0.7	ug/L	1886	Standard
	Co	59	274652.7	0.7	**50.6804**	0.506	1.0	ug/L	343	Standard
	Ni	60	59662.2	1.1	**51.5664**	0.224	0.4	ug/L	120	Standard
	Cu	65	62938.1	0.8	**51.3011**	0.383	0.7	ug/L	405	Standard
	Zn	66	38359.8	1.0	**50.4530**	0.221	0.4	ug/L	263	Standard
>	**Ge**	72	500403.5	1.5				ug/L	524310	Standard
	As	75	40088.7	1.1	**49.7242**	0.223	0.4	ug/L	4	Standard
	Se	82	3776.3	2.0	**50.9792**	0.663	1.3	ug/L	16	Standard
	Se-1	77	2621.2	0.5	**49.9326**	0.542	1.1	ug/L	97	Standard
>	**Ga**	71	40.0	25.0				mg/L	23	Standard
	Rb	85	46.7	55.0				ug/L	35	Standard
	Y	89	352205.3	1.2				ug/L	364600	Standard
>	**Rh**	103	16.7	45.8				ug/L	10	Standard
	Mo	98	101.1	86.4	**0.0218**	0.034	157.7	ug/L	45	Standard
	Ag	107	204780.7	1.2	**49.6601**	0.579	1.2	ug/L	86	Standard
	Cd	111	57595.8	0.6	**51.0056**	0.620	1.2	mg/L	4	Standard
	Cd	114	144550.8	1.8	**49.8023**	0.599	1.2	ug/L	25	Standard
>	**In**	115	400694.8	1.5				ug/L	418958	Standard
	Sn	118	210.7	6.0	**0.1309**	0.015	11.3	ug/L	139	Standard
	Sb	123	150073.7	1.4	**48.9229**	0.201	0.4	ug/L	278	Standard
	Ba	135	56296.1	0.5	**49.8606**	0.776	1.6	ug/L	48	Standard
	Ce	140	73.3	27.6				ug/L	30	Standard
>	**Tb**	159	665884.7	2.0				ug/L	683588	Standard
	Ho	165	15.0	0.0				ug/L	5	Standard
	Tl	203	279528.8	1.0	**51.7800**	0.095	0.2	ug/L	251	Standard
	Tl	205	671740.1	0.8	**51.7480**	0.282	0.5	ug/L	568	Standard
	Pb	206	219375.8	1.0	**51.7531**	0.378	0.7	ug/L	334	Standard
	Pb	207	189660.7	0.3	**49.4616**	0.353	0.7	ug/L	300	Standard
	Pb	208	238847.2	0.4	**50.3576**	0.707	1.4	ug/L	368	Standard
	U	238	195316.5	0.5	**50.3189**	0.681	1.4	ug/L	4	Standard
>	**Bi**	209	429858.4	1.0				ug/L	431904	Standard

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⌈	**Na**	23	0.0		**-4.3853**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	36.7	20.8	**0.5083**	0.222	43.6	mg/L	25	Standard
|	**K**	39	18.3	87.7	**-0.0806**	0.220	272.3	mg/L	17	Standard
|	**Ca**	43	60.0	52.0	**4.1174**	5.650	137.2	mg/L	58	Standard
|	**Fe**	54	14.9	78.9	**-0.0061**	0.108	1765.3	mg/L	23	Standard
|	**Fe**	57	228.3	12.6	**0.1225**	0.708	578.0	mg/L	255	Standard
⌊>	**Sc-1**	45	22398.2	1.9				mg/L	23084	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	0.3	173.2				ug/L	3	Standard
	Br	81	1743.4	5.3				ug/L	1807	Standard
	P	31	40.0	25.0				ug/L	32	Standard
	S	34	3.3	173.2				ug/L	8	Standard
	Sr	88	120.0	23.2				ug/L	143	Standard
	C	12	16.7	69.3				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	6.3	99.7				mg/L	16	Standard
	Ho-1	165	15.0	0.0				mg/L	5	Standard
	Er	166	6.7	173.2				mg/L	7	Standard
	I	127	7591.9	2.2				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.782	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.440	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.641
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.526
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704012313 WG608839-01
Sample Date/Time: Thursday, April 06, 2017 10:56:18
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	184658.6	1.3				ug/L	187001	Standard
	Be	9	50.0	26.5	**0.0084**	0.009	107.0	ug/L	17	Standard
	Al	27	334677.6	0.1	**3.9378**	0.049	1.2	ug/L	1055	Standard
	Sc	45	23346.3	4.2				ug/L	23084	Standard
	Ti	47	159.3	14.5	**1.2038**	0.214	17.8	ug/L	24	Standard
	V	51	1309.4	9.7	**0.1153**	0.033	28.9	ug/L	975	Standard
	Cr	52	5771.1	0.8	**0.3669**	0.013	3.6	ug/L	4542	Standard
	Cr	53	816.7	6.9	**0.4645**	0.090	19.5	ug/L	657	Standard
	Mn	55	29548.5	1.0	**4.0889**	0.098	2.4	ug/L	1886	Standard
	Co	59	585.0	4.1	**0.0474**	0.004	8.6	ug/L	343	Standard
	Ni	60	608.3	6.8	**0.4038**	0.026	6.4	ug/L	120	Standard
	Cu	65	839.4	2.7	**0.3752**	0.015	4.0	ug/L	405	Standard
	Zn	66	1326.7	4.0	**1.3874**	0.050	3.6	ug/L	263	Standard
>	Ge	72	511044.5	1.7				ug/L	524310	Standard
	As	75	65.5	7.1	**0.1072**	0.005	4.4	ug/L	4	Standard
	Se	82	20.5	14.4	**0.1279**	0.043	33.3	ug/L	16	Standard
	Se-1	77	80.7	10.5	**-0.1560**	0.165	105.6	ug/L	97	Standard
>	Ga	71	76.7	10.0				mg/L	23	Standard
	Rb	85	1825.1	6.3				ug/L	35	Standard
	Y	89	361402.8	0.6				ug/L	364600	Standard
>	Rh	103	10.0	50.0				ug/L	10	Standard
	Mo	98	67.6	17.2	**0.0083**	0.005	57.0	ug/L	45	Standard
	Ag	107	135.3	3.4	**0.0084**	0.001	11.1	ug/L	86	Standard
	Cd	111	15.9	50.2	**0.0126**	0.007	55.4	mg/L	4	Standard
	Cd	114	87.8	38.4	**0.0139**	0.011	81.8	ug/L	25	Standard
>	In	115	404840.3	0.8				ug/L	418958	Standard
	Sn	118	206.0	7.2	**0.1206**	0.025	20.8	ug/L	139	Standard
	Sb	123	1900.0	39.6	**0.5759**	0.248	43.1	ug/L	278	Standard
	Ba	135	4560.0	1.8	**3.9575**	0.049	1.2	ug/L	48	Standard
	Ce	140	2336.8	2.0				ug/L	30	Standard
>	Tb	159	676336.1	0.7				ug/L	683588	Standard
	Ho	165	65.0	50.4				ug/L	5	Standard
	Tl	203	299.3	15.3	**0.0129**	0.009	71.0	ug/L	251	Standard
	Tl	205	790.0	7.9	**0.0139**	0.006	41.2	ug/L	568	Standard
	Pb	206	595.3	2.0	**0.0539**	0.004	8.2	ug/L	334	Standard
	Pb	207	523.0	2.4	**0.0555**	0.002	4.4	ug/L	300	Standard
	Pb	208	620.7	8.0	**0.0518**	0.010	19.0	ug/L	368	Standard
	U	238	101.0	14.8	**0.0247**	0.004	17.0	ug/L	4	Standard
>	Bi	209	437949.6	1.6				ug/L	431904	Standard

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	Na	23	3.3	173.2	**0.0342**	7.655	22414.2	mg/L	0	Standard
	Mg	24	60.0	36.3	**1.0735**	0.600	55.9	mg/L	25	Standard
	K	39	15.0	66.7	**-0.1322**	0.136	103.0	mg/L	17	Standard
	Ca	43	45.0	50.9	**1.1598**	4.243	365.8	mg/L	58	Standard
	Fe	54	33.1	17.3	**0.1522**	0.059	38.6	mg/L	23	Standard
	Fe	57	256.7	18.9	**0.6551**	1.435	219.1	mg/L	255	Standard
>	**Sc-1**	45	23346.3	4.2				mg/L	23084	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	2.3	65.5				ug/L	3	Standard
	Br	81	3873.8	2.3				ug/L	1807	Standard
	P	31	28.3	36.7				ug/L	32	Standard
	S	34	6.7	43.3				ug/L	8	Standard
	Sr	88	118.3	28.1				ug/L	143	Standard
	C	12	43.3	13.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	113.3	22.1				mg/L	16	Standard
	Ho-1	165	65.0	50.4				mg/L	5	Standard
	Er	166	70.0	49.5				mg/L	7	Standard
	I	127	11027.3	2.3				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.748	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.470	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.630
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.400
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704012314S WG608839-04
Sample Date/Time: Thursday, April 06, 2017 10:59:22
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	184886.7	2.7				ug/L	187001	Standard
	Be	9	77960.1	0.4	**50.5639**	1.565	3.1	ug/L	17	Standard
	Al	27	362087.1	0.3	**4.2574**	0.124	2.9	ug/L	1055	Standard
	Sc	45	23746.9	2.4				ug/L	23084	Standard
	Ti	47	154.3	6.7	**1.1465**	0.093	8.1	ug/L	24	Standard
	V	51	213260.7	0.3	**50.0002**	0.447	0.9	ug/L	975	Standard
	Cr	52	205118.8	0.1	**50.4707**	0.479	0.9	ug/L	4542	Standard
	Cr	53	26214.3	0.5	**50.0442**	0.553	1.1	ug/L	657	Standard
	Mn	55	377501.6	0.3	**54.6773**	0.426	0.8	ug/L	1886	Standard
	Co	59	282915.3	0.5	**50.6176**	0.619	1.2	ug/L	343	Standard
	Ni	60	61077.5	0.6	**51.1872**	0.751	1.5	ug/L	120	Standard
	Cu	65	65349.6	0.2	**51.6494**	0.524	1.0	ug/L	405	Standard
	Zn	66	40173.5	0.7	**51.2390**	0.647	1.3	ug/L	263	Standard
>	Ge	72	516086.3	0.9				ug/L	524310	Standard
	As	75	42600.0	0.3	**51.2330**	0.425	0.8	ug/L	4	Standard
	Se	82	3917.8	1.0	**51.2885**	0.944	1.8	ug/L	16	Standard
	Se-1	77	2761.9	3.2	**51.0491**	1.814	3.6	ug/L	97	Standard
>	Ga	71	80.0	21.7				mg/L	23	Standard
	Rb	85	1828.4	6.5				ug/L	35	Standard
	Y	89	362016.0	1.4				ug/L	364600	Standard
>	Rh	103	15.0	33.3				ug/L	10	Standard
	Mo	98	88.7	13.7	**0.0161**	0.005	32.2	ug/L	45	Standard
	Ag	107	208492.7	0.7	**49.1122**	0.539	1.1	ug/L	86	Standard
	Cd	111	59451.0	0.9	**51.1452**	1.171	2.3	mg/L	4	Standard
	Cd	114	148181.6	0.9	**49.6007**	1.146	2.3	ug/L	25	Standard
>	In	115	412515.1	1.5				ug/L	418958	Standard
	Sn	118	233.3	8.3	**0.1563**	0.034	21.9	ug/L	139	Standard
	Sb	123	154701.6	0.3	**48.9943**	0.860	1.8	ug/L	278	Standard
	Ba	135	61562.2	1.0	**52.9696**	1.284	2.4	ug/L	48	Standard
	Ce	140	2346.8	3.9				ug/L	30	Standard
>	Tb	159	687424.5	1.1				ug/L	683588	Standard
	Ho	165	56.7	10.2				ug/L	5	Standard
	Tl	203	283312.4	1.6	**51.4446**	1.231	2.4	ug/L	251	Standard
	Tl	205	681555.7	1.5	**51.4636**	1.001	1.9	ug/L	568	Standard
	Pb	206	223250.5	2.0	**51.6279**	1.473	2.9	ug/L	334	Standard
	Pb	207	193866.6	1.7	**49.5590**	1.258	2.5	ug/L	300	Standard
	Pb	208	244958.3	1.1	**50.6213**	0.983	1.9	ug/L	368	Standard
	U	238	198864.3	0.9	**50.2158**	0.877	1.7	ug/L	4	Standard
>	Bi	209	438572.5	0.9				ug/L	431904	Standard

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⌈	**Na**	23	0.0		**-4.3853**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	56.7	25.5	**0.9487**	0.339	35.7	mg/L	25	Standard
|	**K**	39	20.0	25.0	**-0.0699**	0.068	97.0	mg/L	17	Standard
|	**Ca**	43	60.0	25.0	**3.4782**	2.437	70.1	mg/L	58	Standard
|	**Fe**	54	36.1	15.8	**0.1731**	0.057	33.2	mg/L	23	Standard
|	**Fe**	57	231.7	11.1	**-0.1424**	0.739	519.1	mg/L	255	Standard
⌊>	**Sc-1**	45	23746.9	2.4				mg/L	23084	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.7	78.1				ug/L	3	Standard
	Br	81	6871.6	8.7				ug/L	1807	Standard
	P	31	33.3	17.3				ug/L	32	Standard
	S	34	10.0	50.0				ug/L	8	Standard
	Sr	88	138.3	29.0				ug/L	143	Standard
	C	12	20.0	100.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	57.4	63.2				mg/L	16	Standard
	Ho-1	165	56.7	10.2				mg/L	5	Standard
	Er	166	53.3	10.8				mg/L	7	Standard
	I	127	11707.9	6.1				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.870	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.431	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.462
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.544
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1704012314S WG608839-04
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Method 6020 - Summary Report

Sample ID: L1704012315SD WG608839-05
Sample Date/Time: Thursday, April 06, 2017 11:02:28
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	183678.4	1.1				ug/L	187001	Standard
	Be	9	78047.2	1.8	**50.9337**	1.325	2.6	ug/L	17	Standard
	Al	27	353737.5	1.8	**4.1842**	0.048	1.1	ug/L	1055	Standard
	Sc	45	24014.0	1.6				ug/L	23084	Standard
	Ti	47	151.3	10.9	**1.1284**	0.148	13.1	ug/L	24	Standard
	V	51	215163.2	0.5	**50.7332**	0.525	1.0	ug/L	975	Standard
	Cr	52	205271.2	0.7	**50.8000**	0.658	1.3	ug/L	4542	Standard
	Cr	53	26297.8	0.6	**50.4944**	0.210	0.4	ug/L	657	Standard
	Mn	55	375429.5	0.6	**54.6842**	0.644	1.2	ug/L	1886	Standard
	Co	59	282530.9	0.7	**50.8334**	0.639	1.3	ug/L	343	Standard
	Ni	60	61190.0	0.5	**51.5692**	0.516	1.0	ug/L	120	Standard
	Cu	65	65767.4	0.4	**52.2755**	0.507	1.0	ug/L	405	Standard
	Zn	66	40883.4	1.0	**52.4451**	0.706	1.3	ug/L	263	Standard
>	Ge	72	513189.8	0.6				ug/L	524310	Standard
	As	75	42576.1	0.8	**51.4907**	0.180	0.3	ug/L	4	Standard
	Se	82	3939.3	0.2	**51.8582**	0.205	0.4	ug/L	16	Standard
	Se-1	77	2748.6	1.9	**51.0906**	1.207	2.4	ug/L	97	Standard
>	Ga	71	80.0	16.5				mg/L	23	Standard
	Rb	85	1793.4	7.8				ug/L	35	Standard
	Y	89	368117.2	1.5				ug/L	364600	Standard
>	Rh	103	15.0	33.3				ug/L	10	Standard
	Mo	98	79.3	7.9	**0.0126**	0.003	22.0	ug/L	45	Standard
	Ag	107	209213.2	0.7	**49.5771**	0.872	1.8	ug/L	86	Standard
	Cd	111	59290.7	0.3	**51.3038**	0.569	1.1	mg/L	4	Standard
	Cd	114	147928.4	1.0	**49.8065**	1.004	2.0	ug/L	25	Standard
>	In	115	410071.8	1.0				ug/L	418958	Standard
	Sn	118	197.3	6.8	**0.1032**	0.020	19.2	ug/L	139	Standard
	Sb	123	154629.7	0.8	**49.2578**	0.554	1.1	ug/L	278	Standard
	Ba	135	61887.5	1.0	**53.5552**	0.331	0.6	ug/L	48	Standard
	Ce	140	2178.5	5.5				ug/L	30	Standard
>	Tb	159	684314.0	1.4				ug/L	683588	Standard
	Ho	165	68.3	8.4				ug/L	5	Standard
	Tl	203	284538.9	0.2	**51.6827**	0.207	0.4	ug/L	251	Standard
	Tl	205	681567.5	0.4	**51.4829**	0.367	0.7	ug/L	568	Standard
	Pb	206	224486.5	0.9	**51.9282**	0.543	1.0	ug/L	334	Standard
	Pb	207	195060.0	1.1	**49.8776**	0.442	0.9	ug/L	300	Standard
	Pb	208	245604.5	1.1	**50.7714**	0.640	1.3	ug/L	368	Standard
	U	238	199825.8	1.0	**50.4748**	0.544	1.1	ug/L	4	Standard
>	Bi	209	438391.8	0.5				ug/L	431904	Standard

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	Na	23	0.0		**-4.3853**	0.000	0.0	mg/L	0	Standard
	Mg	24	53.3	37.9	**0.8577**	0.519	60.6	mg/L	25	Standard
	K	39	25.0	52.9	**-0.0092**	0.169	1829.7	mg/L	17	Standard
	Ca	43	48.3	15.8	**1.3920**	1.253	90.0	mg/L	58	Standard
	Fe	54	30.7	34.2	**0.1216**	0.087	71.5	mg/L	23	Standard
	Fe	57	246.7	11.2	**0.1772**	0.671	378.6	mg/L	255	Standard
>	**Sc-1**	45	24014.0	1.6				mg/L	23084	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	1.0	0.0				ug/L	3	Standard
	Br	81	2480.2	7.3				ug/L	1807	Standard
	P	31	41.7	38.6				ug/L	32	Standard
	S	34	15.0	88.2				ug/L	8	Standard
	Sr	88	123.3	18.7				ug/L	143	Standard
	C	12	33.3	124.9				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	64.1	44.7				mg/L	16	Standard
	Ho-1	165	68.3	8.4				mg/L	5	Standard
	Er	166	53.3	57.3				mg/L	7	Standard
	I	127	13099.0	4.0				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.223	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.879	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	97.879
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.502
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704001901
Sample Date/Time: Thursday, April 06, 2017 11:05:34
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	191970.2	0.8				ug/L	187001	Standard
	Be	9	201.7	36.1	**0.1016**	0.045	44.1	ug/L	17	Standard
	Al	27	716763.8	0.3	**8.1198**	0.093	1.1	ug/L	1055	Standard
	Sc	45	24466.4	3.0				ug/L	23084	Standard
	Ti	47	1030.4	5.1	**8.4059**	0.355	4.2	ug/L	24	Standard
	V	51	6339.3	3.4	**1.2583**	0.056	4.4	ug/L	975	Standard
	Cr	52	10645.4	0.2	**1.5101**	0.022	1.5	ug/L	4542	Standard
	Cr	53	1426.7	2.8	**1.5699**	0.063	4.0	ug/L	657	Standard
	Mn	55	473662.2	0.9	**66.9223**	0.575	0.9	ug/L	1886	Standard
	Co	59	11590.4	0.9	**1.9649**	0.009	0.5	ug/L	343	Standard
	Ni	60	2417.2	1.9	**1.8666**	0.018	0.9	ug/L	120	Standard
	Cu	65	14313.8	0.7	**10.7910**	0.042	0.4	ug/L	405	Standard
	Zn	66	19354.7	1.4	**23.8833**	0.345	1.4	ug/L	263	Standard
>	Ge	72	529505.8	1.0				ug/L	524310	Standard
	As	75	450.0	10.9	**0.5552**	0.062	11.2	ug/L	4	Standard
	Se	82	124.5	5.2	**1.4487**	0.089	6.2	ug/L	16	Standard
	Se-1	77	93.3	10.0	**0.0255**	0.171	669.5	ug/L	97	Standard
>	Ga	71	648.3	7.7				mg/L	23	Standard
	Rb	85	22606.9	2.7				ug/L	35	Standard
	Y	89	385918.9	1.7				ug/L	364600	Standard
>	Rh	103	21.7	26.6				ug/L	10	Standard
	Mo	98	511.0	9.1	**0.1755**	0.022	12.3	ug/L	45	Standard
	Ag	107	165.0	45.5	**0.0140**	0.018	129.5	ug/L	86	Standard
	Cd	111	134.3	14.8	**0.1115**	0.019	17.1	mg/L	4	Standard
	Cd	114	1746.1	2.5	**0.5538**	0.025	4.4	ug/L	25	Standard
>	In	115	423398.0	2.0				ug/L	418958	Standard
	Sn	118	11086.4	2.1	**16.1402**	0.187	1.2	ug/L	139	Standard
	Sb	123	2687.7	31.6	**0.7946**	0.281	35.3	ug/L	278	Standard
	Ba	135	16148.3	1.2	**13.5037**	0.101	0.7	ug/L	48	Standard
	Ce	140	45519.9	0.7				ug/L	30	Standard
>	Tb	159	705013.4	1.9				ug/L	683588	Standard
	Ho	165	811.7	9.0				ug/L	5	Standard
	Tl	203	458.0	19.1	**0.0396**	0.016	39.6	ug/L	251	Standard
	Tl	205	1106.7	14.8	**0.0356**	0.012	34.2	ug/L	568	Standard
	Pb	206	4938.1	1.3	**1.0314**	0.016	1.5	ug/L	334	Standard
	Pb	207	4109.2	1.9	**0.9475**	0.018	1.9	ug/L	300	Standard
	Pb	208	5271.0	1.6	**0.9872**	0.017	1.7	ug/L	368	Standard
	U	238	303.0	11.0	**0.0738**	0.008	11.4	ug/L	4	Standard
>	Bi	209	449608.0	0.2				ug/L	431904	Standard

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⌈	**Na**	23	6.7	114.6	**3.9995**	9.784	244.6	mg/L	0	Standard
|	**Mg**	24	103.3	7.4	**2.0512**	0.194	9.5	mg/L	25	Standard
|	**K**	39	150.0	12.0	**1.5651**	0.186	11.9	mg/L	17	Standard
|	**Ca**	43	56.7	27.0	**2.5986**	2.364	91.0	mg/L	58	Standard
|	**Fe**	54	103.0	5.4	**0.7310**	0.034	4.6	mg/L	23	Standard
|	**Fe**	57	273.3	11.0	**0.7518**	0.723	96.1	mg/L	255	Standard
⌊>	**Sc-1**	45	24466.4	3.0				mg/L	23084	Standard
	Cl	35	4.0	86.6				ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	61742.3	3.4				ug/L	1807	Standard
	P	31	63.3	4.6				ug/L	32	Standard
	S	34	13.3	43.3				ug/L	8	Standard
	Sr	88	135.0	33.3				ug/L	143	Standard
	C	12	63.3	39.7				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	180.0	19.2				mg/L	3	Standard
	Dy	164	1256.2	7.8				mg/L	16	Standard
	Ho-1	165	811.7	9.0				mg/L	5	Standard
	Er	166	706.7	2.9				mg/L	7	Standard
	I	127	367037.2	7.6				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.657	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.991	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.060
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.099
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704001902
Sample Date/Time: Thursday, April 06, 2017 11:08:39
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	188104.2	2.4				ug/L	187001	Standard
	Be	9	308.3	13.0	**0.1722**	0.023	13.2	ug/L	17	Standard
	Al	27	1227715.3	1.7	**14.2002**	0.106	0.7	ug/L	1055	Standard
	Sc	45	23326.3	1.7				ug/L	23084	Standard
	Ti	47	430.3	4.3	**3.5134**	0.137	3.9	ug/L	24	Standard
	V	51	1769.4	7.5	**0.2214**	0.032	14.4	ug/L	975	Standard
	Cr	52	7074.0	2.8	**0.6843**	0.037	5.4	ug/L	4542	Standard
	Cr	53	1818.4	1.7	**2.4146**	0.052	2.2	ug/L	657	Standard
	Mn	55	7206162.3	0.9	**1050.9817**	5.296	0.5	ug/L	1886	Standard
	Co	59	204101.9	0.8	**36.5923**	0.231	0.6	ug/L	343	Standard
	Ni	60	6370.0	0.9	**5.2515**	0.016	0.3	ug/L	120	Standard
	Cu	65	2390.2	3.2	**1.6060**	0.047	2.9	ug/L	405	Standard
	Zn	66	7005.3	2.5	**8.6825**	0.174	2.0	ug/L	263	Standard
>	Ge	72	514764.7	0.7				ug/L	524310	Standard
	As	75	124.2	13.7	**0.1773**	0.020	11.3	ug/L	4	Standard
	Se	82	65.1	0.5	**0.7126**	0.004	0.5	ug/L	16	Standard
	Se-1	77	163.3	2.2	**1.4161**	0.080	5.6	ug/L	97	Standard
>	Ga	71	166.7	17.1				mg/L	23	Standard
	Rb	85	64781.6	1.9				ug/L	35	Standard
	Y	89	372782.6	1.6				ug/L	364600	Standard
>	Rh	103	20.0	43.3				ug/L	10	Standard
	Mo	98	121.0	20.6	**0.0290**	0.010	33.9	ug/L	45	Standard
	Ag	107	87.7	8.4	**-0.0033**	0.002	55.7	ug/L	86	Standard
	Cd	111	162.5	1.3	**0.1396**	0.003	1.9	mg/L	4	Standard
	Cd	114	676.0	3.2	**0.2120**	0.006	2.7	ug/L	25	Standard
>	In	115	409275.2	0.7				ug/L	418958	Standard
	Sn	118	3318.7	1.2	**4.8622**	0.055	1.1	ug/L	139	Standard
	Sb	123	654.8	31.0	**0.1704**	0.066	38.5	ug/L	278	Standard
	Ba	135	56446.0	1.8	**48.9367**	0.757	1.5	ug/L	48	Standard
	Ce	140	15429.5	3.1				ug/L	30	Standard
>	Tb	159	683744.9	1.0				ug/L	683588	Standard
	Ho	165	518.3	6.2				ug/L	5	Standard
	Tl	203	1296.1	2.3	**0.1967**	0.008	3.9	ug/L	251	Standard
	Tl	205	3178.7	8.3	**0.1970**	0.020	10.0	ug/L	568	Standard
	Pb	206	1443.4	0.2	**0.2540**	0.004	1.6	ug/L	334	Standard
	Pb	207	1163.0	5.7	**0.2226**	0.016	7.0	ug/L	300	Standard
	Pb	208	1527.7	1.5	**0.2430**	0.003	1.2	ug/L	368	Standard
	U	238	123.0	2.9	**0.0306**	0.001	4.2	ug/L	4	Standard
>	Bi	209	433493.7	1.2				ug/L	431904	Standard

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⌈	**Na**	23	8.3	124.9	**6.3946**	13.374	209.2	mg/L	0	Standard
|	**Mg**	24	485.0	6.4	**11.9486**	0.924	7.7	mg/L	25	Standard
|	**K**	39	225.0	15.6	**2.6585**	0.475	17.9	mg/L	17	Standard
|	**Ca**	43	51.7	5.6	**2.2195**	0.411	18.5	mg/L	58	Standard
|	**Fe**	54	26.1	9.7	**0.0890**	0.020	22.6	mg/L	23	Standard
|	**Fe**	57	265.0	8.2	**0.8758**	0.624	71.3	mg/L	255	Standard
⌊>	**Sc-1**	45	23326.3	1.7				mg/L	23084	Standard
	Cl	35	2.0	173.2				ug/L	1	Standard
	Kr	83	2.3	24.7				ug/L	3	Standard
	Br	81	16098.6	3.5				ug/L	1807	Standard
	P	31	46.7	32.7				ug/L	32	Standard
	S	34	8.3	91.7				ug/L	8	Standard
	Sr	88	118.3	6.5				ug/L	143	Standard
	C	12	80.0	33.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	336.7	12.0				mg/L	3	Standard
	Dy	164	735.4	10.6				mg/L	16	Standard
	Ho-1	165	518.3	6.2				mg/L	5	Standard
	Er	166	513.3	9.2				mg/L	7	Standard
	I	127	2680596.7	5.9				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		100.590	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.179	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	97.689
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.368
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1704001902PS WG609052-01
Sample Date/Time: Thursday, April 06, 2017 11:11:44
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	186434.0	3.0				ug/L	187001	Standard
	Be	9	77253.1	1.5	**49.6771**	0.828	1.7	ug/L	17	Standard
	Al	27	1226518.4	1.6	**14.3205**	0.490	3.4	ug/L	1055	Standard
	Sc	45	23391.4	1.0				ug/L	23084	Standard
	Ti	47	397.0	33.0	**3.2300**	1.145	35.4	ug/L	24	Standard
	V	51	214502.4	0.5	**50.4371**	1.391	2.8	ug/L	975	Standard
	Cr	52	206822.1	0.7	**51.0438**	1.239	2.4	ug/L	4542	Standard
	Cr	53	26817.0	0.8	**51.3621**	0.917	1.8	ug/L	657	Standard
	Mn	55	7522813.5	1.3	**1097.3669**	21.903	2.0	ug/L	1886	Standard
	Co	59	480369.7	1.2	**86.2169**	1.697	2.0	ug/L	343	Standard
	Ni	60	65770.1	1.9	**55.2709**	1.022	1.8	ug/L	120	Standard
	Cu	65	66866.9	1.4	**52.9968**	0.979	1.8	ug/L	405	Standard
	Zn	66	46794.5	1.5	**59.8940**	0.814	1.4	ug/L	263	Standard
>	Ge	72	514830.0	2.6				ug/L	524310	Standard
	As	75	42644.6	1.8	**51.4256**	1.253	2.4	ug/L	4	Standard
	Se	82	4011.5	1.9	**52.6679**	1.808	3.4	ug/L	16	Standard
	Se-1	77	2914.9	2.9	**54.1159**	1.529	2.8	ug/L	97	Standard
>	Ga	71	246.7	15.5				mg/L	23	Standard
	Rb	85	63512.9	1.7				ug/L	35	Standard
	Y	89	373542.2	2.6				ug/L	364600	Standard
>	Rh	103	40.0	54.5				ug/L	10	Standard
	Mo	98	136.9	28.4	**0.0354**	0.014	38.3	ug/L	45	Standard
	Ag	107	218339.0	0.8	**52.3401**	1.314	2.5	ug/L	86	Standard
	Cd	111	58437.6	1.4	**51.1460**	0.880	1.7	mg/L	4	Standard
	Cd	114	144951.3	1.8	**49.3579**	0.763	1.5	ug/L	25	Standard
>	In	115	405530.6	3.1				ug/L	418958	Standard
	Sn	118	3219.3	1.1	**4.7595**	0.178	3.7	ug/L	139	Standard
	Sb	123	159198.2	0.8	**51.3059**	1.313	2.6	ug/L	278	Standard
	Ba	135	114485.2	0.7	**100.2749**	2.927	2.9	ug/L	48	Standard
	Ce	140	15446.2	2.4				ug/L	30	Standard
>	Tb	159	688792.2	0.7				ug/L	683588	Standard
	Ho	165	560.0	10.9				ug/L	5	Standard
	Tl	203	280644.6	0.5	**51.4388**	0.509	1.0	ug/L	251	Standard
	Tl	205	669136.4	1.4	**50.9997**	0.452	0.9	ug/L	568	Standard
	Pb	206	220119.2	1.0	**51.3773**	0.226	0.4	ug/L	334	Standard
	Pb	207	197695.9	1.4	**51.0100**	0.196	0.4	ug/L	300	Standard
	Pb	208	246142.1	1.0	**51.3436**	0.387	0.8	ug/L	368	Standard
	U	238	205667.9	0.9	**52.4235**	0.708	1.4	ug/L	4	Standard
>	Bi	209	434474.1	1.4				ug/L	431904	Standard

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⌈	**Na**	23	10.0		**8.5201**	0.131	1.5	mg/L	0	Standard
|	**Mg**	24	576.7	11.3	**14.2452**	1.626	11.4	mg/L	25	Standard
|	**K**	39	281.7	11.4	**3.4006**	0.444	13.1	mg/L	17	Standard
|	**Ca**	43	48.3	15.8	**1.6226**	1.407	86.7	mg/L	58	Standard
|	**Fe**	54	38.8	51.4	**0.2007**	0.175	87.3	mg/L	23	Standard
|	**Fe**	57	286.7	8.2	**1.4391**	0.573	39.9	mg/L	255	Standard
⌊>	**Sc-1**	45	23391.4	1.0				mg/L	23084	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.0	100.0				ug/L	3	Standard
	Br	81	15381.1	4.2				ug/L	1807	Standard
	P	31	28.3	36.7				ug/L	32	Standard
	S	34	5.0	0.0				ug/L	8	Standard
	Sr	88	96.7	25.5				ug/L	143	Standard
	C	12	53.3	39.0				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	346.7	7.3				mg/L	3	Standard
	Dy	164	798.1	10.2				mg/L	16	Standard
	Ho-1	165	560.0	10.9				mg/L	5	Standard
	Er	166	526.7	15.3				mg/L	7	Standard
	I	127	2688998.5	4.8				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.697	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.192	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.795
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.595
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1704001902SDL WG609052-02
Sample Date/Time: Thursday, April 06, 2017 11:14:49
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	175647.4	1.4				ug/L	187001	Standard
	Be	9	86.7	31.8	**0.0350**	0.019	53.5	ug/L	17	Standard
	Al	27	241575.7	0.9	**2.9862**	0.021	0.7	ug/L	1055	Standard
	Sc	45	21987.6	1.9				ug/L	23084	Standard
	Ti	47	108.3	55.7	**0.7989**	0.543	68.0	ug/L	24	Standard
	V	51	914.0	11.9	**0.0293**	0.024	81.8	ug/L	975	Standard
	Cr	52	4048.9	2.2	**-0.0306**	0.036	116.2	ug/L	4542	Standard
	Cr	53	690.0	7.0	**0.2673**	0.082	30.8	ug/L	657	Standard
	Mn	55	1209791.9	0.6	**184.3888**	1.581	0.9	ug/L	1886	Standard
	Co	59	39267.8	0.4	**7.3192**	0.103	1.4	ug/L	343	Standard
	Ni	60	1359.1	2.5	**1.0855**	0.038	3.5	ug/L	120	Standard
	Cu	65	728.4	6.5	**0.3084**	0.032	10.2	ug/L	405	Standard
	Zn	66	1896.5	2.2	**2.2218**	0.090	4.0	ug/L	263	Standard
>	Ge	72	492057.6	1.4				ug/L	524310	Standard
	As	75	18.6	282.9	**0.0510**	0.066	130.5	ug/L	4	Standard
	Se	82	26.1	24.2	**0.2147**	0.089	41.3	ug/L	16	Standard
	Se-1	77	93.7	7.3	**0.1639**	0.122	74.4	ug/L	97	Standard
>	Ga	71	73.3	19.7				mg/L	23	Standard
	Rb	85	12214.9	2.3				ug/L	35	Standard
	Y	89	345087.4	0.9				ug/L	364600	Standard
>	Rh	103	16.7	34.6				ug/L	10	Standard
	Mo	98	27.6	13.2	**-0.0073**	0.001	19.8	ug/L	45	Standard
	Ag	107	119.0	7.6	**0.0052**	0.002	40.6	ug/L	86	Standard
	Cd	111	32.6	3.5	**0.0280**	0.001	3.3	mg/L	4	Standard
	Cd	114	190.5	14.2	**0.0505**	0.009	18.2	ug/L	25	Standard
>	In	115	395103.3	0.4				ug/L	418958	Standard
	Sn	118	728.7	4.2	**0.9536**	0.044	4.6	ug/L	139	Standard
	Sb	123	1044.8	35.2	**0.3071**	0.123	40.0	ug/L	278	Standard
	Ba	135	11027.7	0.6	**9.8698**	0.061	0.6	ug/L	48	Standard
	Ce	140	3048.6	4.8				ug/L	30	Standard
>	Tb	159	657235.8	0.7				ug/L	683588	Standard
	Ho	165	116.7	6.5				ug/L	5	Standard
	Tl	203	433.7	3.7	**0.0396**	0.002	6.0	ug/L	251	Standard
	Tl	205	1056.7	1.0	**0.0363**	0.001	4.0	ug/L	568	Standard
	Pb	206	573.7	5.9	**0.0528**	0.009	16.3	ug/L	334	Standard
	Pb	207	504.0	1.0	**0.0544**	0.003	4.7	ug/L	300	Standard
	Pb	208	625.0	4.1	**0.0565**	0.006	10.9	ug/L	368	Standard
	U	238	64.0	5.4	**0.0158**	0.001	5.7	ug/L	4	Standard
>	Bi	209	425409.4	0.9				ug/L	431904	Standard

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⌈	**Na**	23	3.3	86.6	**0.1466**	3.925	2677.7	mg/L	0	Standard
|	**Mg**	24	155.0	8.5	**3.7337**	0.285	7.6	mg/L	25	Standard
|	**K**	39	51.7	20.1	**0.3973**	0.152	38.4	mg/L	17	Standard
|	**Ca**	43	56.7	18.4	**3.7203**	2.051	55.1	mg/L	58	Standard
|	**Fe**	54	19.7	50.4	**0.0441**	0.098	221.0	mg/L	23	Standard
|	**Fe**	57	278.3	19.2	**1.7201**	1.691	98.3	mg/L	255	Standard
⌊>	**Sc-1**	45	21987.6	1.9				mg/L	23084	Standard
	Cl	35	3.3	34.6				ug/L	1	Standard
	Kr	83	2.0	0.0				ug/L	3	Standard
	Br	81	4437.3	6.9				ug/L	1807	Standard
	P	31	53.3	44.3				ug/L	32	Standard
	S	34	5.0	100.0				ug/L	8	Standard
	Sr	88	126.7	26.3				ug/L	143	Standard
	C	12	30.0	66.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	56.7	20.4				mg/L	3	Standard
	Dy	164	160.1	13.3				mg/L	16	Standard
	Ho-1	165	116.7	6.5				mg/L	5	Standard
	Er	166	136.7	21.1				mg/L	7	Standard
	I	127	496845.2	3.7				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		93.929	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		93.849	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		94.306
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		98.496
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1704001902SDL WG609052-02
Sample Date/Time: Thursday, April 06, 2017 11:17:55
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	170797.5	1.9				ug/L	187001	Standard
	Be	9	40.0	25.0	**0.0039**	0.007	174.7	ug/L	17	Standard
	Al	27	49291.7	1.2	**0.6209**	0.019	3.0	ug/L	1055	Standard
	Sc	45	21829.0	1.3				ug/L	23084	Standard
	Ti	47	34.3	11.8	**0.1373**	0.038	27.9	ug/L	24	Standard
	V	51	777.8	16.0	**-0.0027**	0.033	1240.1	ug/L	975	Standard
	Cr	52	3690.4	0.9	**-0.1191**	0.026	21.7	ug/L	4542	Standard
	Cr	53	495.0	8.1	**-0.1246**	0.091	73.4	ug/L	657	Standard
	Mn	55	247433.0	0.3	**37.7468**	0.664	1.8	ug/L	1886	Standard
	Co	59	8052.8	1.3	**1.4641**	0.041	2.8	ug/L	343	Standard
	Ni	60	346.3	6.8	**0.1949**	0.015	7.7	ug/L	120	Standard
	Cu	65	390.3	2.6	**0.0290**	0.012	41.3	ug/L	405	Standard
	Zn	66	916.4	5.5	**0.9089**	0.061	6.7	ug/L	263	Standard
>	**Ge**	72	489061.4	1.9				ug/L	524310	Standard
	As	75	-21.7	50.3	**-0.0000**	0.0	1185300.4	ug/L	4	Standard
	Se	82	9.9	35.5	**-0.0072**	0.050	700.3	ug/L	16	Standard
	Se-1	77	77.0	8.5	**-0.1584**	0.154	96.9	ug/L	97	Standard
>	**Ga**	71	40.0	12.5				mg/L	23	Standard
	Rb	85	2323.5	3.2				ug/L	35	Standard
	Y	89	339355.1	0.8				ug/L	364600	Standard
>	**Rh**	103	11.7	49.5				ug/L	10	Standard
	Mo	98	16.1	17.8	**-0.0119**	0.001	9.7	ug/L	45	Standard
	Ag	107	79.7	11.9	**-0.0043**	0.002	51.9	ug/L	86	Standard
	Cd	111	11.3	48.7	**0.0090**	0.005	56.3	mg/L	4	Standard
	Cd	114	40.8	104.4	**-0.0016**	0.015	924.2	ug/L	25	Standard
>	**In**	115	391121.7	0.7				ug/L	418958	Standard
	Sn	118	220.3	11.6	**0.1545**	0.041	26.7	ug/L	139	Standard
	Sb	123	235.5	36.4	**0.0400**	0.029	72.6	ug/L	278	Standard
	Ba	135	2155.5	1.0	**1.9148**	0.033	1.7	ug/L	48	Standard
	Ce	140	568.3	14.9				ug/L	30	Standard
>	**Tb**	159	643319.9	1.3				ug/L	683588	Standard
	Ho	165	13.3	108.3				ug/L	5	Standard
	Tl	203	200.0	10.0	**-0.0037**	0.004	107.4	ug/L	251	Standard
	Tl	205	521.7	6.9	**-0.0048**	0.003	63.3	ug/L	568	Standard
	Pb	206	395.3	2.7	**0.0114**	0.003	26.3	ug/L	334	Standard
	Pb	207	298.3	9.7	**0.0012**	0.008	685.3	ug/L	300	Standard
	Pb	208	407.3	3.9	**0.0112**	0.004	33.1	ug/L	368	Standard
	U	238	8.0	54.5	**0.0013**	0.001	90.7	ug/L	4	Standard
>	**Bi**	209	420027.8	0.5				ug/L	431904	Standard

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⌈	**Na**	23	1.7	173.2	**-2.0787**	3.995	192.2	mg/L	0	Standard
|	**Mg**	24	43.3	35.3	**0.7151**	0.422	59.0	mg/L	25	Standard
|	**K**	39	18.3	41.7	**-0.0706**	0.110	155.8	mg/L	17	Standard
|	**Ca**	43	48.3	26.0	**2.2265**	2.412	108.3	mg/L	58	Standard
|	**Fe**	54	11.4	50.9	**-0.0347**	0.055	159.5	mg/L	23	Standard
|	**Fe**	57	245.0	7.4	**0.7837**	0.460	58.7	mg/L	255	Standard
⌊>	**Sc-1**	45	21829.0	1.3				mg/L	23084	Standard
	Cl	35	2.0	0.0				ug/L	1	Standard
	Kr	83	4.0	43.3				ug/L	3	Standard
	Br	81	2250.2	9.6				ug/L	1807	Standard
	P	31	38.3	41.9				ug/L	32	Standard
	S	34	8.3	34.6				ug/L	8	Standard
	Sr	88	130.0	6.7				ug/L	143	Standard
	C	12	50.0	0.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	16.7	69.3				mg/L	3	Standard
	Dy	164	31.7	64.7				mg/L	16	Standard
	Ho-1	165	13.3	108.3				mg/L	5	Standard
	Er	166	33.3	45.8				mg/L	7	Standard
	I	127	115965.5	1.4				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		91.335	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		93.277	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	93.356
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	97.250
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, April 06, 2017 11:21:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	183960.5	2.6				ug/L	187001	Standard
	Be	9	75011.9	1.0	**48.8884**	1.231	2.5	ug/L	17	Standard
	Al	27	4227260.3	1.6	**50.0169**	0.498	1.0	ug/L	1055	Standard
	Sc	45	23414.7	0.6				ug/L	23084	Standard
	Ti	47	11787.3	1.8	**101.4646**	0.296	0.3	ug/L	24	Standard
	V	51	209015.2	0.5	**49.4611**	0.845	1.7	ug/L	975	Standard
	Cr	52	197512.8	1.2	**49.0198**	0.782	1.6	ug/L	4542	Standard
	Cr	53	25309.5	1.7	**48.7315**	0.452	0.9	ug/L	657	Standard
	Mn	55	338442.8	1.6	**49.4475**	0.442	0.9	ug/L	1886	Standard
	Co	59	275046.2	1.2	**49.6629**	0.482	1.0	ug/L	343	Standard
	Ni	60	58520.1	1.6	**49.4893**	0.328	0.7	ug/L	120	Standard
	Cu	65	62811.0	1.8	**50.0882**	0.233	0.5	ug/L	405	Standard
	Zn	66	38308.7	2.2	**49.2969**	0.884	1.8	ug/L	263	Standard
>	Ge	72	511400.7	2.1				ug/L	524310	Standard
	As	75	40911.5	1.6	**49.6563**	0.464	0.9	ug/L	4	Standard
	Se	82	3891.4	0.9	**51.4129**	0.626	1.2	ug/L	16	Standard
	Se-1	77	2737.2	2.6	**51.0682**	1.691	3.3	ug/L	97	Standard
>	Ga	71	48.3	29.9				mg/L	23	Standard
	Rb	85	255.0	7.8				ug/L	35	Standard
	Y	89	356335.7	3.1				ug/L	364600	Standard
>	Rh	103	15.0	33.3				ug/L	10	Standard
	Mo	98	254952.8	0.2	**100.4473**	2.007	2.0	ug/L	45	Standard
	Ag	107	209639.1	1.2	**49.9952**	0.615	1.2	ug/L	86	Standard
	Cd	111	57940.0	1.4	**50.4565**	0.623	1.2	mg/L	4	Standard
	Cd	114	150192.1	1.2	**50.8902**	0.520	1.0	ug/L	25	Standard
>	In	115	407489.1	2.2				ug/L	418958	Standard
	Sn	118	32957.1	1.1	**50.2728**	0.605	1.2	ug/L	139	Standard
	Sb	123	155022.4	0.6	**49.7060**	0.864	1.7	ug/L	278	Standard
	Ba	135	56416.2	0.5	**49.1385**	0.875	1.8	ug/L	48	Standard
	Ce	140	148.3	28.7				ug/L	30	Standard
>	Tb	159	674049.5	0.9				ug/L	683588	Standard
	Ho	165	5.0	100.0				ug/L	5	Standard
	Tl	203	268782.1	0.5	**49.2972**	0.481	1.0	ug/L	251	Standard
	Tl	205	650931.9	1.4	**49.6459**	0.526	1.1	ug/L	568	Standard
	Pb	206	211812.3	0.2	**49.4714**	0.246	0.5	ug/L	334	Standard
	Pb	207	193731.4	0.4	**50.0248**	0.535	1.1	ug/L	300	Standard
	Pb	208	235893.6	0.6	**49.2393**	0.539	1.1	ug/L	368	Standard
	U	238	200936.1	1.2	**51.2533**	0.803	1.6	ug/L	4	Standard
>	Bi	209	434149.7	0.7				ug/L	431904	Standard

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	Na	23	1.7	173.2	**-2.2503**	3.698	164.3	mg/L	0	Standard
	Mg	24	208.3	10.0	**4.8399**	0.520	10.8	mg/L	25	Standard
	K	39	320.0	15.9	**3.9051**	0.696	17.8	mg/L	17	Standard
	Ca	43	40.0	45.1	**0.1570**	3.156	2010.9	mg/L	58	Standard
	Fe	54	530.7	24.4	**4.5702**	1.165	25.5	mg/L	23	Standard
	Fe	57	370.0	10.7	**3.6969**	1.042	28.2	mg/L	255	Standard
>	**Sc-1**	45	23414.7	0.6				mg/L	23084	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.3	24.7				ug/L	3	Standard
	Br	81	1936.8	9.5				ug/L	1807	Standard
	P	31	36.7	34.3				ug/L	32	Standard
	S	34	5.0	0.0				ug/L	8	Standard
	Sr	88	108.3	9.6				ug/L	143	Standard
	C	12	30.0	33.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	19.2	137.3				mg/L	16	Standard
	Ho-1	165	5.0	100.0				mg/L	5	Standard
	Er	166	16.7	34.6				mg/L	7	Standard
	I	127	11352.7	19.0				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	97.777		
	Al	27	100.034		
	Sc	45			
	Ti	47	101.465		
	V	51	98.922		
	Cr	52	98.040		
	Cr	53			
	Mn	55	98.895		
	Co	59	99.326		
	Ni	60	98.979		
	Cu	65	100.176		
	Zn	66	98.594		
>	Ge	72		97.538	
	As	75	99.313		
	Se	82	102.826		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.447		
Ag	107	99.990		
Cd	111	100.913		
Cd	114			
In	115		97.263	
Sn	118	100.546		
Sb	123	99.412		
Ba	135	98.277		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.594		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.479		
U	238	102.507		
Bi	209		100.520	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, April 06, 2017 11:24:08
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	180027.8	4.2				ug/L	187001	Standard
	Be	9	43.3	59.2	**0.0043**	0.016	373.2	ug/L	17	Standard
	Al	27	1096.7	13.6	**0.0058**	0.002	27.0	ug/L	1055	Standard
	Sc	45	22735.4	4.9				ug/L	23084	Standard
	Ti	47	20.3	33.5	**0.0077**	0.062	810.6	ug/L	24	Standard
	V	51	807.6	8.0	**0.0000**	0.010	36388.2	ug/L	975	Standard
	Cr	52	3775.5	0.7	**-0.1176**	0.021	17.9	ug/L	4542	Standard
	Cr	53	451.7	7.4	**-0.2329**	0.086	36.7	ug/L	657	Standard
	Mn	55	1877.1	3.1	**0.0282**	0.006	22.4	ug/L	1886	Standard
	Co	59	255.3	4.5	**-0.0112**	0.002	15.4	ug/L	343	Standard
	Ni	60	105.3	19.3	**-0.0205**	0.017	85.1	ug/L	120	Standard
	Cu	65	383.0	1.7	**0.0160**	0.005	32.8	ug/L	405	Standard
	Zn	66	393.7	8.0	**0.1893**	0.027	14.5	ug/L	263	Standard
>	Ge	72	499606.7	2.7				ug/L	524310	Standard
	As	75	-10.3	125.1	**0.0148**	0.016	109.2	ug/L	4	Standard
	Se	82	9.9	31.4	**-0.0113**	0.041	359.7	ug/L	16	Standard
	Se-1	77	77.3	12.8	**-0.1819**	0.233	128.2	ug/L	97	Standard
>	Ga	71	23.3	75.3				mg/L	23	Standard
	Rb	85	26.7	39.0				ug/L	35	Standard
	Y	89	349831.5	3.0				ug/L	364600	Standard
>	Rh	103	13.3	21.7				ug/L	10	Standard
	Mo	98	142.2	17.6	**0.0385**	0.008	21.8	ug/L	45	Standard
	Ag	107	96.3	16.8	**-0.0007**	0.003	425.6	ug/L	86	Standard
	Cd	111	5.8	33.8	**0.0038**	0.002	41.5	mg/L	4	Standard
	Cd	114	37.3	7.9	**-0.0031**	0.001	42.8	ug/L	25	Standard
>	In	115	399155.4	3.4				ug/L	418958	Standard
	Sn	118	162.3	1.6	**0.0569**	0.005	8.7	ug/L	139	Standard
	Sb	123	467.7	32.0	**0.1154**	0.053	46.2	ug/L	278	Standard
	Ba	135	42.3	8.9	**-0.0049**	0.003	62.2	ug/L	48	Standard
	Ce	140	16.7	34.6				ug/L	30	Standard
>	Tb	159	658881.2	3.0				ug/L	683588	Standard
	Ho	165	3.3	173.2				ug/L	5	Standard
	Tl	203	117.0	13.8	**-0.0197**	0.003	16.0	ug/L	251	Standard
	Tl	205	305.0	14.8	**-0.0222**	0.004	17.9	ug/L	568	Standard
	Pb	206	415.3	9.9	**0.0148**	0.007	45.7	ug/L	334	Standard
	Pb	207	338.7	9.9	**0.0106**	0.006	57.5	ug/L	300	Standard
	Pb	208	461.0	5.8	**0.0214**	0.003	13.0	ug/L	368	Standard
	U	238	27.0	59.6	**0.0061**	0.004	64.4	ug/L	4	Standard
>	Bi	209	425649.9	3.0				ug/L	431904	Standard

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	Na	23	1.7	173.2	**-2.1121**	3.937	186.4	mg/L	0	Standard
	Mg	24	20.0	25.0	**0.0581**	0.152	261.4	mg/L	25	Standard
	K	39	11.7	24.7	**-0.1734**	0.031	17.8	mg/L	17	Standard
	Ca	43	60.0	33.3	**4.0706**	4.005	98.4	mg/L	58	Standard
	Fe	54	19.6	68.0	**0.0336**	0.118	349.7	mg/L	23	Standard
	Fe	57	228.3	11.0	**0.0466**	0.805	1730.3	mg/L	255	Standard
>	**Sc-1**	45	22735.4	4.9				mg/L	23084	Standard
	Cl	35	4.0	86.6				ug/L	1	Standard
	Kr	83	1.7	34.6				ug/L	3	Standard
	Br	81	1880.1	9.6				ug/L	1807	Standard
	P	31	45.0	22.2				ug/L	32	Standard
	S	34	11.7	24.7				ug/L	8	Standard
	Sr	88	115.0	4.3				ug/L	143	Standard
	C	12	36.7	15.7				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	6.3	93.2				mg/L	16	Standard
	Ho-1	165	3.3	173.2				mg/L	5	Standard
	Er	166	6.7	86.6				mg/L	7	Standard
	I	127	7973.8	5.5				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.288	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.273
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	98.552
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1703160101
Sample Date/Time: Thursday, April 06, 2017 11:27:15
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	223642.1	1.9				ug/L	187001	Standard
	Be	9	35.0	14.3	**-0.0054**	0.002	43.7	ug/L	17	Standard
	Al	27	61634886.5	0.1	**599.9844**	10.807	1.8	ug/L	1055	Standard
	Sc	45	21660.5	1.7				ug/L	23084	Standard
	Ti	47	101.3	17.4	**0.7943**	0.172	21.6	ug/L	24	Standard
	V	51	-632.1	57.0	**-0.3625**	0.095	26.3	ug/L	975	Standard
	Cr	52	7417.2	7.3	**0.9832**	0.161	16.4	ug/L	4542	Standard
	Cr	53	8295.7	30.9	**16.9514**	5.658	33.4	ug/L	657	Standard
	Mn	55	38983.1	0.7	**6.0769**	0.060	1.0	ug/L	1886	Standard
	Co	59	1511.1	2.7	**0.2436**	0.008	3.2	ug/L	343	Standard
	Ni	60	9950.9	0.8	**9.2157**	0.113	1.2	ug/L	120	Standard
	Cu	65	3195.0	4.3	**2.5363**	0.135	5.3	ug/L	405	Standard
	Zn	66	5289.9	5.8	**7.2479**	0.476	6.6	ug/L	263	Standard
>	Ge	72	462409.9	0.5				ug/L	524310	Standard
	As	75	1716.6	6.5	**2.3309**	0.160	6.9	ug/L	4	Standard
	Se	82	759.2	7.1	**10.9809**	0.839	7.6	ug/L	16	Standard
	Se-1	77	1417.1	20.2	**28.5188**	6.228	21.8	ug/L	97	Standard
>	Ga	71	70.0	18.9				mg/L	23	Standard
	Rb	85	3993.9	4.7				ug/L	35	Standard
	Y	89	336179.0	1.3				ug/L	364600	Standard
>	Rh	103	533.3	13.7				ug/L	10	Standard
	Mo	98	130.3	8.6	**0.0392**	0.005	12.0	ug/L	45	Standard
	Ag	107	106.3	16.0	**0.0044**	0.005	106.0	ug/L	86	Standard
	Cd	111	57.5	4.0	**0.0549**	0.002	3.6	mg/L	4	Standard
	Cd	114	196.3	36.5	**0.0585**	0.026	45.3	ug/L	25	Standard
>	In	115	362755.3	1.3				ug/L	418958	Standard
	Sn	118	263.0	27.0	**0.2544**	0.116	45.4	ug/L	139	Standard
	Sb	123	329.5	29.2	**0.0801**	0.036	44.6	ug/L	278	Standard
	Ba	135	5338.9	4.0	**5.1866**	0.271	5.2	ug/L	48	Standard
	Ce	140	421.7	7.7				ug/L	30	Standard
>	Tb	159	640315.5	1.5				ug/L	683588	Standard
	Ho	165	26.7	28.6				ug/L	5	Standard
	Tl	203	623.7	21.2	**0.0880**	0.029	32.7	ug/L	251	Standard
	Tl	205	1413.4	27.2	**0.0762**	0.034	45.2	ug/L	568	Standard
	Pb	206	461.3	0.9	**0.0378**	0.001	2.0	ug/L	334	Standard
	Pb	207	408.0	5.3	**0.0407**	0.006	15.4	ug/L	300	Standard
	Pb	208	532.3	3.3	**0.0490**	0.005	10.7	ug/L	368	Standard
	U	238	2255.2	4.2	**0.6493**	0.021	3.2	ug/L	4	Standard
>	Bi	209	384006.3	1.0				ug/L	431904	Standard

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⌈	**Na**	23	70.0	18.9	**92.9760**	16.940	18.2	mg/L	0	Standard
|	**Mg**	24	15372.8	1.0	**423.2707**	3.069	0.7	mg/L	25	Standard
|	**K**	39	200.0	15.2	**2.5324**	0.463	18.3	mg/L	17	Standard
|	**Ca**	43	160.0	16.5	**23.3270**	4.760	20.4	mg/L	58	Standard
|	**Fe**	54	34.7	38.4	**0.1905**	0.130	68.2	mg/L	23	Standard
|	**Fe**	57	551.7	13.5	**9.8686**	2.361	23.9	mg/L	255	Standard
⌊>	**Sc-1**	45	21660.5	1.7				mg/L	23084	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	0.3	173.2				ug/L	3	Standard
	Br	81	424304.7	2.4				ug/L	1807	Standard
	P	31	23.3	12.4				ug/L	32	Standard
	S	34	8.3	34.6				ug/L	8	Standard
	Sr	88	561.7	6.3				ug/L	143	Standard
	C	12	40.0	25.0				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	34.6	88.0				mg/L	16	Standard
	Ho-1	165	26.7	28.6				mg/L	5	Standard
	Er	166	43.3	35.3				mg/L	7	Standard
	I	127	107519.8	7.2				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		119.594	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		88.194	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	86.585
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	88.910
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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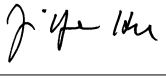

Method 6020 - Summary Report

Sample ID: L1703160102
Sample Date/Time: Thursday, April 06, 2017 11:30:19
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	255217.0	1.9				ug/L	187001	Standard
	Be	9	61.7	23.4	**0.0048**	0.007	140.4	ug/L	17	Standard
	Al	27	68821348.6	1.9	**587.0686**	15.633	2.7	ug/L	1055	Standard
	Sc	45	22091.1	2.0				ug/L	23084	Standard
	Ti	47	69.0	13.3	**0.4728**	0.079	16.7	ug/L	24	Standard
	V	51	-476.6	89.6	**-0.3191**	0.111	34.8	ug/L	975	Standard
	Cr	52	7722.0	1.1	**1.0277**	0.026	2.5	ug/L	4542	Standard
	Cr	53	10316.8	3.1	**20.9246**	0.947	4.5	ug/L	657	Standard
	Mn	55	6279.0	5.2	**0.7463**	0.040	5.4	ug/L	1886	Standard
	Co	59	1408.4	4.5	**0.2178**	0.010	4.6	ug/L	343	Standard
	Ni	60	9629.7	1.5	**8.7452**	0.084	1.0	ug/L	120	Standard
	Cu	65	2970.0	3.4	**2.2868**	0.076	3.3	ug/L	405	Standard
	Zn	66	6796.2	0.3	**9.2230**	0.132	1.4	ug/L	263	Standard
>	Ge	72	471234.9	1.2				ug/L	524310	Standard
	As	75	1200.5	8.8	**1.6073**	0.126	7.9	ug/L	4	Standard
	Se	82	563.4	1.2	**7.9549**	0.117	1.5	ug/L	16	Standard
	Se-1	77	1503.7	6.9	**29.7666**	2.541	8.5	ug/L	97	Standard
>	Ga	71	31.7	9.1				mg/L	23	Standard
	Rb	85	7463.5	1.5				ug/L	35	Standard
	Y	89	342189.5	1.0				ug/L	364600	Standard
>	Rh	103	880.0	5.2				ug/L	10	Standard
	Mo	98	210.1	11.3	**0.0738**	0.011	14.7	ug/L	45	Standard
	Ag	107	88.0	9.7	**-0.0007**	0.002	283.0	ug/L	86	Standard
	Cd	111	129.7	5.8	**0.1245**	0.008	6.4	mg/L	4	Standard
	Cd	114	286.5	11.6	**0.0921**	0.012	13.0	ug/L	25	Standard
>	In	115	365826.2	0.7				ug/L	418958	Standard
	Sn	118	192.3	2.1	**0.1311**	0.008	6.2	ug/L	139	Standard
	Sb	123	228.8	27.8	**0.0430**	0.023	54.1	ug/L	278	Standard
	Ba	135	4176.6	2.3	**4.0122**	0.099	2.5	ug/L	48	Standard
	Ce	140	268.3	13.5				ug/L	30	Standard
>	Tb	159	660028.6	0.9				ug/L	683588	Standard
	Ho	165	65.0	33.5				ug/L	5	Standard
	Tl	203	396.0	10.1	**0.0386**	0.008	19.6	ug/L	251	Standard
	Tl	205	1071.7	5.9	**0.0444**	0.005	10.5	ug/L	568	Standard
	Pb	206	516.7	2.9	**0.0494**	0.005	9.7	ug/L	334	Standard
	Pb	207	424.0	3.7	**0.0426**	0.005	11.0	ug/L	300	Standard
	Pb	208	585.3	6.5	**0.0584**	0.009	15.8	ug/L	368	Standard
	U	238	3464.1	2.2	**0.9755**	0.020	2.0	ug/L	4	Standard
>	Bi	209	392881.1	0.8				ug/L	431904	Standard

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⌈	**Na**	23	103.3	24.8	**137.0119**	36.378	26.6	mg/L	0	Standard
|	**Mg**	24	12538.5	2.8	**338.4435**	10.359	3.1	mg/L	25	Standard
|	**K**	39	218.3	17.5	**2.7269**	0.496	18.2	mg/L	17	Standard
|	**Ca**	43	136.7	27.5	**18.5059**	7.316	39.5	mg/L	58	Standard
|	**Fe**	54	29.3	17.8	**0.1330**	0.053	39.7	mg/L	23	Standard
|	**Fe**	57	566.7	2.8	**9.9771**	0.778	7.8	mg/L	255	Standard
⌊>	**Sc-1**	45	22091.1	2.0				mg/L	23084	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	1.7	34.6				ug/L	3	Standard
	Br	81	303693.4	0.3				ug/L	1807	Standard
	P	31	40.0	37.5				ug/L	32	Standard
	S	34	13.3	57.3				ug/L	8	Standard
	Sr	88	711.7	8.3				ug/L	143	Standard
	C	12	46.7	53.9				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	56.2	35.6				mg/L	16	Standard
	Ho-1	165	65.0	33.5				mg/L	5	Standard
	Er	166	80.0	21.7				mg/L	7	Standard
	I	127	27807.2	2.1				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		136.479	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		89.877	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	87.318
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.965
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1703160103
Sample Date/Time: Thursday, April 06, 2017 11:33:25
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	227350.1	2.0				ug/L	187001	Standard
	Be	9	238.3	23.1	**0.1019**	0.031	30.4	ug/L	17	Standard
	Al	27	11332995.1	0.8	**108.5327**	3.053	2.8	ug/L	1055	Standard
	Sc	45	22593.5	3.5				ug/L	23084	Standard
	Ti	47	978.4	6.4	**8.7325**	0.700	8.0	ug/L	24	Standard
	V	51	3791.2	11.9	**0.7533**	0.106	14.1	ug/L	975	Standard
	Cr	52	10866.6	3.4	**1.8097**	0.095	5.3	ug/L	4542	Standard
	Cr	53	14947.4	2.5	**29.9295**	1.006	3.4	ug/L	657	Standard
	Mn	55	1248712.5	0.3	**193.1860**	3.096	1.6	ug/L	1886	Standard
	Co	59	5596.0	5.4	**1.0091**	0.071	7.0	ug/L	343	Standard
	Ni	60	8136.5	0.9	**7.1626**	0.078	1.1	ug/L	120	Standard
	Cu	65	3096.3	0.7	**2.3216**	0.030	1.3	ug/L	405	Standard
	Zn	66	14006.8	1.5	**18.8065**	0.030	0.2	ug/L	263	Standard
>	Ge	72	484837.4	1.6				ug/L	524310	Standard
	As	75	1792.6	10.6	**2.3239**	0.273	11.8	ug/L	4	Standard
	Se	82	749.8	0.7	**10.3335**	0.208	2.0	ug/L	16	Standard
	Se-1	77	1613.4	3.4	**31.1004**	1.262	4.1	ug/L	97	Standard
>	Ga	71	711.7	6.5				mg/L	23	Standard
	Rb	85	26165.9	3.0				ug/L	35	Standard
	Y	89	359616.4	1.3				ug/L	364600	Standard
>	Rh	103	195.0	8.9				ug/L	10	Standard
	Mo	98	375.0	16.7	**0.1404**	0.028	19.6	ug/L	45	Standard
	Ag	107	167.7	35.3	**0.0189**	0.016	82.0	ug/L	86	Standard
	Cd	111	352.9	7.7	**0.3290**	0.026	8.0	mg/L	4	Standard
	Cd	114	900.6	12.5	**0.3124**	0.045	14.5	ug/L	25	Standard
>	In	115	379107.5	1.5				ug/L	418958	Standard
	Sn	118	228.3	4.6	**0.1790**	0.023	12.7	ug/L	139	Standard
	Sb	123	390.3	20.5	**0.0959**	0.029	30.2	ug/L	278	Standard
	Ba	135	77950.7	0.8	**72.9930**	1.412	1.9	ug/L	48	Standard
	Ce	140	63345.5	1.3				ug/L	30	Standard
>	Tb	159	668645.5	1.4				ug/L	683588	Standard
	Ho	165	933.4	7.8				ug/L	5	Standard
	Tl	203	754.4	5.6	**0.1052**	0.008	7.7	ug/L	251	Standard
	Tl	205	1741.8	0.6	**0.0951**	0.003	2.9	ug/L	568	Standard
	Pb	206	6250.3	1.9	**1.4672**	0.039	2.7	ug/L	334	Standard
	Pb	207	4983.5	0.7	**1.2886**	0.018	1.4	ug/L	300	Standard
	Pb	208	6728.6	1.0	**1.4154**	0.022	1.6	ug/L	368	Standard
	U	238	1734.1	1.1	**0.4684**	0.007	1.5	ug/L	4	Standard
>	Bi	209	409282.6	1.4				ug/L	431904	Standard

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	Na	23	31.7	18.2	**37.8321**	6.904	18.2	mg/L	0	Standard
	Mg	24	8615.8	3.8	**227.5700**	16.301	7.2	mg/L	25	Standard
	K	39	125.0	14.4	**1.3789**	0.200	14.5	mg/L	17	Standard
	Ca	43	103.3	2.8	**11.8686**	0.721	6.1	mg/L	58	Standard
	Fe	54	74.2	7.0	**0.5404**	0.066	12.3	mg/L	23	Standard
	Fe	57	341.7	10.3	**3.2600**	0.809	24.8	mg/L	255	Standard
>	**Sc-1**	45	22593.5	3.5				mg/L	23084	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	3.7	31.5				ug/L	3	Standard
	Br	81	417122.2	2.2				ug/L	1807	Standard
	P	31	33.3	34.6				ug/L	32	Standard
	S	34	8.3	34.6				ug/L	8	Standard
	Sr	88	283.3	16.4				ug/L	143	Standard
	C	12	73.3	43.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	1412.4	4.9				mg/L	16	Standard
	Ho-1	165	933.4	7.8				mg/L	5	Standard
	Er	166	856.7	12.9				mg/L	7	Standard
	I	127	635006.4	6.9				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		121.577	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.471	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.488
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.762
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703160104
Sample Date/Time: Thursday, April 06, 2017 11:36:30
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	185264.6	2.6				ug/L	187001	Standard
	Be	9	190.0	22.8	**0.0986**	0.027	27.4	ug/L	17	Standard
	Al	27	161105.9	3.2	**1.8870**	0.103	5.5	ug/L	1055	Standard
	Sc	45	24162.6	1.3				ug/L	23084	Standard
	Ti	47	1297.4	5.0	**11.0444**	0.743	6.7	ug/L	24	Standard
	V	51	11960.1	2.0	**2.6507**	0.072	2.7	ug/L	975	Standard
	Cr	52	10605.7	2.9	**1.5972**	0.041	2.6	ug/L	4542	Standard
	Cr	53	2105.1	11.9	**3.0071**	0.431	14.3	ug/L	657	Standard
	Mn	55	372658.9	0.4	**54.5834**	0.878	1.6	ug/L	1886	Standard
	Co	59	5693.4	2.1	**0.9726**	0.008	0.8	ug/L	343	Standard
	Ni	60	1617.1	0.4	**1.2617**	0.032	2.5	ug/L	120	Standard
	Cu	65	2724.9	3.3	**1.8911**	0.031	1.7	ug/L	405	Standard
	Zn	66	26394.3	0.8	**33.9299**	0.444	1.3	ug/L	263	Standard
>	Ge	72	510419.0	1.9				ug/L	524310	Standard
	As	75	774.7	4.4	**0.9689**	0.024	2.5	ug/L	4	Standard
	Se	82	42.8	14.4	**0.4218**	0.070	16.7	ug/L	16	Standard
	Se-1	77	134.0	13.7	**0.8726**	0.308	35.3	ug/L	97	Standard
>	Ga	71	1068.4	3.5				mg/L	23	Standard
	Rb	85	16986.2	1.7				ug/L	35	Standard
	Y	89	371283.2	1.7				ug/L	364600	Standard
>	Rh	103	20.0	86.6				ug/L	10	Standard
	Mo	98	179.9	12.1	**0.0523**	0.007	13.7	ug/L	45	Standard
	Ag	107	165.0	12.2	**0.0153**	0.005	32.7	ug/L	86	Standard
	Cd	111	83.1	14.1	**0.0712**	0.011	16.0	mg/L	4	Standard
	Cd	114	229.1	6.5	**0.0616**	0.004	6.1	ug/L	25	Standard
>	In	115	407140.5	1.9				ug/L	418958	Standard
	Sn	118	221.7	0.7	**0.1428**	0.006	4.0	ug/L	139	Standard
	Sb	123	294.4	17.5	**0.0559**	0.018	32.5	ug/L	278	Standard
	Ba	135	19297.6	0.3	**16.7948**	0.360	2.1	ug/L	48	Standard
	Ce	140	62038.4	0.9				ug/L	30	Standard
>	Tb	159	695786.5	0.9				ug/L	683588	Standard
	Ho	165	930.0	7.9				ug/L	5	Standard
	Tl	203	576.3	12.9	**0.0602**	0.012	20.1	ug/L	251	Standard
	Tl	205	1320.1	13.0	**0.0510**	0.012	23.2	ug/L	568	Standard
	Pb	206	7633.6	0.6	**1.6362**	0.017	1.0	ug/L	334	Standard
	Pb	207	5971.2	1.4	**1.4090**	0.028	2.0	ug/L	300	Standard
	Pb	208	7995.5	1.5	**1.5333**	0.022	1.4	ug/L	368	Standard
	U	238	898.4	2.3	**0.2199**	0.005	2.1	ug/L	4	Standard
>	Bi	209	450708.8	1.1				ug/L	431904	Standard

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⌈	**Na**	23	1.7	173.2	**-2.3094**	3.596	155.7	mg/L	0	Standard
|	**Mg**	24	121.7	20.7	**2.5309**	0.597	23.6	mg/L	25	Standard
|	**K**	39	20.0	90.1	**-0.0733**	0.236	321.7	mg/L	17	Standard
|	**Ca**	43	43.3	43.7	**0.5283**	3.317	627.8	mg/L	58	Standard
|	**Fe**	54	223.0	18.3	**1.7715**	0.326	18.4	mg/L	23	Standard
|	**Fe**	57	273.3	16.6	**0.8527**	1.289	151.2	mg/L	255	Standard
⌊>	**Sc-1**	45	24162.6	1.3				mg/L	23084	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	2.0	0.0				ug/L	3	Standard
	Br	81	11591.1	8.9				ug/L	1807	Standard
	P	31	33.3	22.9				ug/L	32	Standard
	S	34	5.0	100.0				ug/L	8	Standard
	Sr	88	123.3	22.3				ug/L	143	Standard
	C	12	43.3	74.2				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	16.7	124.9				mg/L	3	Standard
	Dy	164	1474.3	9.3				mg/L	16	Standard
	Ho-1	165	930.0	7.9				mg/L	5	Standard
	Er	166	816.7	6.7				mg/L	7	Standard
	I	127	36120.0	10.0				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.072	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.351	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	97.179
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.354
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703160105
Sample Date/Time: Thursday, April 06, 2017 11:39:35
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	191357.9	2.4				ug/L	187001	Standard
	Be	9	616.7	7.9	**0.3624**	0.031	8.7	ug/L	17	Standard
	Al	27	554463.1	0.6	**6.3012**	0.128	2.0	ug/L	1055	Standard
	Sc	45	27085.9	3.0				ug/L	23084	Standard
	Ti	47	3634.8	1.7	**30.8598**	0.970	3.1	ug/L	24	Standard
	V	51	30284.8	1.2	**6.9260**	0.181	2.6	ug/L	975	Standard
	Cr	52	22670.6	0.7	**4.5954**	0.052	1.1	ug/L	4542	Standard
	Cr	53	4242.3	1.5	**7.1298**	0.074	1.0	ug/L	657	Standard
	Mn	55	53754.5	0.9	**7.5608**	0.162	2.1	ug/L	1886	Standard
	Co	59	9266.2	0.1	**1.5997**	0.026	1.6	ug/L	343	Standard
	Ni	60	3269.4	1.0	**2.6311**	0.014	0.6	ug/L	120	Standard
	Cu	65	9922.2	1.0	**7.5806**	0.073	1.0	ug/L	405	Standard
	Zn	66	83653.6	0.4	**106.9546**	2.012	1.9	ug/L	263	Standard
>	Ge	72	516632.6	1.5				ug/L	524310	Standard
	As	75	1008.1	1.6	**1.2381**	0.014	1.1	ug/L	4	Standard
	Se	82	72.7	14.5	**0.8088**	0.142	17.5	ug/L	16	Standard
	Se-1	77	173.3	7.8	**1.5964**	0.274	17.1	ug/L	97	Standard
>	Ga	71	4585.7	2.9				mg/L	23	Standard
	Rb	85	59105.1	0.5				ug/L	35	Standard
	Y	89	447893.5	2.7				ug/L	364600	Standard
>	Rh	103	26.7	10.8				ug/L	10	Standard
	Mo	98	465.4	4.9	**0.1640**	0.007	4.4	ug/L	45	Standard
	Ag	107	269.7	3.2	**0.0399**	0.002	4.5	ug/L	86	Standard
	Cd	111	53.7	8.4	**0.0453**	0.004	9.3	mg/L	4	Standard
	Cd	114	169.4	16.4	**0.0411**	0.009	22.4	ug/L	25	Standard
>	In	115	409356.2	1.6				ug/L	418958	Standard
	Sn	118	208.7	6.0	**0.1209**	0.014	11.6	ug/L	139	Standard
	Sb	123	255.0	19.1	**0.0428**	0.017	39.2	ug/L	278	Standard
	Ba	135	85320.2	0.8	**73.9910**	1.417	1.9	ug/L	48	Standard
	Ce	140	621070.4	0.6				ug/L	30	Standard
>	Tb	159	714390.0	2.1				ug/L	683588	Standard
	Ho	165	5984.5	0.9				ug/L	5	Standard
	Tl	203	898.4	1.6	**0.1168**	0.004	3.6	ug/L	251	Standard
	Tl	205	2115.1	9.6	**0.1089**	0.012	11.2	ug/L	568	Standard
	Pb	206	15949.4	1.6	**3.5007**	0.112	3.2	ug/L	334	Standard
	Pb	207	12873.8	2.4	**3.1202**	0.124	4.0	ug/L	300	Standard
	Pb	208	16874.3	0.9	**3.3117**	0.065	2.0	ug/L	368	Standard
	U	238	4953.8	0.7	**1.2128**	0.016	1.3	ug/L	4	Standard
>	Bi	209	452052.1	1.7				ug/L	431904	Standard

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⌈	**Na**	23	3.3	86.6	**-0.6053**	3.274	540.9	mg/L	0	Standard
|	**Mg**	24	625.0	11.2	**13.3402**	1.905	14.3	mg/L	25	Standard
|	**K**	39	55.0	15.7	**0.3000**	0.116	38.7	mg/L	17	Standard
|	**Ca**	43	58.3	21.6	**1.9483**	1.703	87.4	mg/L	58	Standard
|	**Fe**	54	356.0	5.9	**2.5903**	0.195	7.5	mg/L	23	Standard
|	**Fe**	57	286.7	1.0	**0.3836**	0.243	63.5	mg/L	255	Standard
⌊>	**Sc-1**	45	27085.9	3.0				mg/L	23084	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	1.7	124.9				ug/L	3	Standard
	Br	81	27732.1	4.6				ug/L	1807	Standard
	P	31	41.7	27.7				ug/L	32	Standard
	S	34	0.0					ug/L	8	Standard
	Sr	88	126.7	9.9				ug/L	143	Standard
	C	12	43.3	58.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	16.7	69.3				mg/L	3	Standard
	Dy	164	9971.5	0.5				mg/L	16	Standard
	Ho-1	165	5984.5	0.9				mg/L	5	Standard
	Er	166	5677.7	2.1				mg/L	7	Standard
	I	127	355519.1	6.1				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.330	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		98.536	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	97.708
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.665
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1703160106
Sample Date/Time: Thursday, April 06, 2017 11:42:40
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	229858.1	2.9				ug/L	187001	Standard
	Be	9	251.7	14.1	**0.1069**	0.015	14.1	ug/L	17	Standard
	Al	27	57105206.9	1.6	**540.9708**	14.251	2.6	ug/L	1055	Standard
	Sc	45	23002.5	3.3				ug/L	23084	Standard
	Ti	47	2426.5	2.2	**22.8494**	0.286	1.3	ug/L	24	Standard
	V	51	7695.4	6.1	**1.8155**	0.129	7.1	ug/L	975	Standard
	Cr	52	14521.3	2.4	**2.9552**	0.037	1.2	ug/L	4542	Standard
	Cr	53	20387.1	8.5	**43.0268**	2.983	6.9	ug/L	657	Standard
	Mn	55	15888252.7	0.5	**2567.3266**	35.287	1.4	ug/L	1886	Standard
	Co	59	8131.5	1.5	**1.5589**	0.009	0.6	ug/L	343	Standard
	Ni	60	9682.8	3.4	**8.9171**	0.198	2.2	ug/L	120	Standard
	Cu	65	13599.8	1.4	**11.7066**	0.144	1.2	ug/L	405	Standard
	Zn	66	29633.0	1.5	**41.9079**	0.096	0.2	ug/L	263	Standard
>	Ge	72	464754.9	1.7				ug/L	524310	Standard
	As	75	9667.2	1.3	**12.9318**	0.152	1.2	ug/L	4	Standard
	Se	82	1808.1	2.9	**26.2085**	0.381	1.5	ug/L	16	Standard
	Se-1	77	2508.2	4.4	**51.4782**	1.632	3.2	ug/L	97	Standard
>	Ga	71	1235.1	3.9				mg/L	23	Standard
	Rb	85	15633.1	4.0				ug/L	35	Standard
	Y	89	365887.8	3.1				ug/L	364600	Standard
>	Rh	103	773.4	2.3				ug/L	10	Standard
	Mo	98	1881.4	2.0	**0.8219**	0.001	0.1	ug/L	45	Standard
	Ag	107	246.0	4.3	**0.0424**	0.003	7.3	ug/L	86	Standard
	Cd	111	353.2	1.4	**0.3475**	0.008	2.2	mg/L	4	Standard
	Cd	114	933.0	7.0	**0.3422**	0.017	5.1	ug/L	25	Standard
>	In	115	359363.4	2.0				ug/L	418958	Standard
	Sn	118	448.0	2.3	**0.5811**	0.026	4.5	ug/L	139	Standard
	Sb	123	474.4	6.2	**0.1337**	0.009	7.1	ug/L	278	Standard
	Ba	135	76780.4	0.1	**75.8570**	1.597	2.1	ug/L	48	Standard
	Ce	140	63064.3	0.9				ug/L	30	Standard
>	Tb	159	651948.4	1.1				ug/L	683588	Standard
	Ho	165	2115.1	4.2				ug/L	5	Standard
	Tl	203	530.7	14.3	**0.0679**	0.014	21.0	ug/L	251	Standard
	Tl	205	1335.1	8.9	**0.0687**	0.009	12.9	ug/L	568	Standard
	Pb	206	17823.8	1.3	**4.6104**	0.013	0.3	ug/L	334	Standard
	Pb	207	13819.6	0.9	**3.9457**	0.086	2.2	ug/L	300	Standard
	Pb	208	18828.9	1.1	**4.3555**	0.101	2.3	ug/L	368	Standard
	U	238	3222.7	1.6	**0.9248**	0.026	2.8	ug/L	4	Standard
>	Bi	209	385629.3	1.3				ug/L	431904	Standard

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	Na	23	95.0	10.5	**120.1688**	10.519	8.8	mg/L	0	Standard
	Mg	24	15846.6	1.1	**411.2158**	18.021	4.4	mg/L	25	Standard
	K	39	73.3	32.2	**0.6573**	0.325	49.5	mg/L	17	Standard
	Ca	43	230.0	14.3	**34.0661**	6.250	18.3	mg/L	58	Standard
	Fe	54	1177.7	6.8	**10.5177**	1.004	9.6	mg/L	23	Standard
	Fe	57	991.7	4.3	**21.1240**	2.078	9.8	mg/L	255	Standard
>	**Sc-1**	45	23002.5	3.3				mg/L	23084	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.7	43.3				ug/L	3	Standard
	Br	81	1125145.1	1.7				ug/L	1807	Standard
	P	31	36.7	15.7				ug/L	32	Standard
	S	34	6.7	43.3				ug/L	8	Standard
	Sr	88	640.0	3.9				ug/L	143	Standard
	C	12	100.0	36.1				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	53.3	57.3				mg/L	3	Standard
	Dy	164	3087.8	3.3				mg/L	16	Standard
	Ho-1	165	2115.1	4.2				mg/L	5	Standard
	Er	166	2070.1	2.5				mg/L	7	Standard
	I	127	418395.8	7.8				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.918	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		88.641	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	85.776
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.286
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1704003601
Sample Date/Time: Thursday, April 06, 2017 11:45:45
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	219473.9	2.7				ug/L	187001	Standard
	Be	9	1223.4	1.7	**0.6447**	0.028	4.3	ug/L	17	Standard
	Al	27	28959430.6	1.0	**287.3247**	8.055	2.8	ug/L	1055	Standard
	Sc	45	23116.0	1.8				ug/L	23084	Standard
	Ti	47	1513.1	10.6	**13.8472**	1.623	11.7	ug/L	24	Standard
	V	51	230.8	89.5	**-0.1376**	0.053	38.2	ug/L	975	Standard
	Cr	52	26535.6	0.7	**6.1323**	0.187	3.1	ug/L	4542	Standard
	Cr	53	23448.1	1.2	**48.4854**	1.576	3.3	ug/L	657	Standard
	Mn	55	15835631.4	0.7	**2496.9009**	38.892	1.6	ug/L	1886	Standard
	Co	59	302953.8	0.4	**58.7531**	1.301	2.2	ug/L	343	Standard
	Ni	60	39311.9	0.6	**35.6721**	0.824	2.3	ug/L	120	Standard
	Cu	65	2961.3	1.4	**2.2532**	0.090	4.0	ug/L	405	Standard
	Zn	66	14396.8	1.1	**19.6954**	0.340	1.7	ug/L	263	Standard
>	Ge	72	476314.7	2.2				ug/L	524310	Standard
	As	75	5967.3	4.5	**7.8064**	0.514	6.6	ug/L	4	Standard
	Se	82	1670.9	3.3	**23.6395**	1.284	5.4	ug/L	16	Standard
	Se-1	77	2071.1	4.6	**41.1962**	2.874	7.0	ug/L	97	Standard
>	Ga	71	735.0	10.0				mg/L	23	Standard
	Rb	85	13317.5	3.3				ug/L	35	Standard
	Y	89	364749.0	1.7				ug/L	364600	Standard
>	Rh	103	245.0	18.4				ug/L	10	Standard
	Mo	98	225.4	7.1	**0.0788**	0.008	10.4	ug/L	45	Standard
	Ag	107	808.7	3.2	**0.1870**	0.003	1.4	ug/L	86	Standard
	Cd	111	105.7	11.8	**0.0996**	0.013	13.3	mg/L	4	Standard
	Cd	114	340.1	1.8	**0.1102**	0.004	3.6	ug/L	25	Standard
>	In	115	372254.1	1.9				ug/L	418958	Standard
	Sn	118	492.0	2.1	**0.6279**	0.025	4.0	ug/L	139	Standard
	Sb	123	307.5	9.7	**0.0691**	0.011	15.2	ug/L	278	Standard
	Ba	135	15042.5	0.6	**14.3122**	0.312	2.2	ug/L	48	Standard
	Ce	140	81485.2	0.7				ug/L	30	Standard
>	Tb	159	661255.6	1.0				ug/L	683588	Standard
	Ho	165	1448.4	5.2				ug/L	5	Standard
	Tl	203	290.7	8.0	**0.0155**	0.005	29.7	ug/L	251	Standard
	Tl	205	670.0	12.0	**0.0087**	0.006	70.0	ug/L	568	Standard
	Pb	206	1374.1	3.7	**0.2599**	0.010	3.8	ug/L	334	Standard
	Pb	207	1079.4	2.3	**0.2202**	0.005	2.0	ug/L	300	Standard
	Pb	208	1435.0	1.9	**0.2443**	0.003	1.4	ug/L	368	Standard
	U	238	720.7	1.2	**0.1960**	0.004	2.0	ug/L	4	Standard
>	Bi	209	405568.2	0.8				ug/L	431904	Standard

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⌈	**Na**	23	30.0	44.1	**34.9745**	17.703	50.6	mg/L	0	Standard
|	**Mg**	24	9332.9	3.2	**240.6511**	10.215	4.2	mg/L	25	Standard
|	**K**	39	60.0	22.0	**0.4736**	0.182	38.5	mg/L	17	Standard
|	**Ca**	43	93.3	16.4	**9.6864**	2.838	29.3	mg/L	58	Standard
|	**Fe**	54	462.7	1.3	**4.0173**	0.033	0.8	mg/L	23	Standard
|	**Fe**	57	455.0	5.5	**6.1751**	0.803	13.0	mg/L	255	Standard
⌊>	**Sc-1**	45	23116.0	1.8				mg/L	23084	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	999864.2	6.1				ug/L	1807	Standard
	P	31	30.0	50.0				ug/L	32	Standard
	S	34	6.7	114.6				ug/L	8	Standard
	Sr	88	265.0	18.0				ug/L	143	Standard
	C	12	100.0	20.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	26.7	57.3				mg/L	3	Standard
	Dy	164	2027.1	8.1				mg/L	16	Standard
	Ho-1	165	1448.4	5.2				mg/L	5	Standard
	Er	166	1316.7	7.1				mg/L	7	Standard
	I	127	19267579.3	9.3				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		117.365	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		90.846	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.852
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.902
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1704003602
Sample Date/Time: Thursday, April 06, 2017 11:48:51
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	202485.0	3.2				ug/L	187001	Standard
	Be	9	238.3	16.8	**0.1166**	0.019	16.5	ug/L	17	Standard
	Al	27	17805024.6	0.6	**191.5014**	5.402	2.8	ug/L	1055	Standard
	Sc	45	23543.3	3.8				ug/L	23084	Standard
	Ti	47	506.3	8.0	**4.4459**	0.366	8.2	ug/L	24	Standard
	V	51	-1623.5	25.4	**-0.6030**	0.096	15.9	ug/L	975	Standard
	Cr	52	10179.1	1.0	**1.6339**	0.065	4.0	ug/L	4542	Standard
	Cr	53	18973.5	0.4	**38.4094**	0.570	1.5	ug/L	657	Standard
	Mn	55	1227915.8	0.2	**190.5130**	3.498	1.8	ug/L	1886	Standard
	Co	59	3329.4	0.8	**0.5782**	0.008	1.4	ug/L	343	Standard
	Ni	60	25145.8	0.6	**22.4362**	0.426	1.9	ug/L	120	Standard
	Cu	65	1484.1	1.5	**0.9608**	0.017	1.7	ug/L	405	Standard
	Zn	66	3797.1	2.1	**4.8720**	0.149	3.1	ug/L	263	Standard
>	Ge	72	483467.3	1.8				ug/L	524310	Standard
	As	75	1624.5	4.6	**2.1129**	0.116	5.5	ug/L	4	Standard
	Se	82	600.0	6.1	**8.2677**	0.599	7.2	ug/L	16	Standard
	Se-1	77	1577.1	5.1	**30.4683**	2.120	7.0	ug/L	97	Standard
>	Ga	71	191.7	8.4				mg/L	23	Standard
	Rb	85	9272.8	4.9				ug/L	35	Standard
	Y	89	352527.3	3.6				ug/L	364600	Standard
>	Rh	103	116.7	19.8				ug/L	10	Standard
	Mo	98	80.5	4.4	**0.0157**	0.002	12.9	ug/L	45	Standard
	Ag	107	88.7	4.0	**-0.0013**	0.000	36.9	ug/L	86	Standard
	Cd	111	66.9	21.7	**0.0617**	0.015	23.8	mg/L	4	Standard
	Cd	114	208.4	17.1	**0.0603**	0.014	23.9	ug/L	25	Standard
>	In	115	377868.3	2.3				ug/L	418958	Standard
	Sn	118	184.0	6.4	**0.1067**	0.014	13.3	ug/L	139	Standard
	Sb	123	88.9	26.1	**-0.0080**	0.009	108.7	ug/L	278	Standard
	Ba	135	13879.7	1.6	**13.0042**	0.165	1.3	ug/L	48	Standard
	Ce	140	26227.7	3.2				ug/L	30	Standard
>	Tb	159	665776.3	1.9				ug/L	683588	Standard
	Ho	165	528.3	6.0				ug/L	5	Standard
	Tl	203	340.7	4.7	**0.0241**	0.003	10.5	ug/L	251	Standard
	Tl	205	846.7	5.9	**0.0220**	0.005	21.8	ug/L	568	Standard
	Pb	206	1077.7	2.9	**0.1809**	0.004	2.2	ug/L	334	Standard
	Pb	207	880.0	0.2	**0.1607**	0.003	2.1	ug/L	300	Standard
	Pb	208	1132.4	4.0	**0.1721**	0.009	5.4	ug/L	368	Standard
	U	238	171.0	1.8	**0.0450**	0.000	0.6	ug/L	4	Standard
>	Bi	209	412903.9	1.4				ug/L	431904	Standard

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⌈	**Na**	23	20.0	75.0	**21.1858**	19.481	92.0	mg/L	0	Standard
|	**Mg**	24	6311.3	0.8	**159.7244**	6.254	3.9	mg/L	25	Standard
|	**K**	39	46.7	6.2	**0.2838**	0.056	19.8	mg/L	17	Standard
|	**Ca**	43	78.3	3.7	**6.7741**	0.598	8.8	mg/L	58	Standard
|	**Fe**	54	52.8	14.5	**0.3213**	0.053	16.6	mg/L	23	Standard
|	**Fe**	57	280.0	14.6	**1.2427**	1.356	109.1	mg/L	255	Standard
⌊>	**Sc-1**	45	23543.3	3.8				mg/L	23084	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	2.7	57.3				ug/L	3	Standard
	Br	81	353335.9	0.7				ug/L	1807	Standard
	P	31	46.7	32.7				ug/L	32	Standard
	S	34	1.7	173.2				ug/L	8	Standard
	Sr	88	208.3	13.2				ug/L	143	Standard
	C	12	90.0	55.6				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	700.4	11.3				mg/L	16	Standard
	Ho-1	165	528.3	6.0				mg/L	5	Standard
	Er	166	480.0	5.5				mg/L	7	Standard
	I	127	476295.5	41.7				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		108.280	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		92.210	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.192
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.601
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1704012302
Sample Date/Time: Thursday, April 06, 2017 11:51:56
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	196691.1	3.4				ug/L	187001	Standard
	Be	9	53.3	23.6	**0.0083**	0.007	86.5	ug/L	17	Standard
	Al	27	270130.4	1.4	**2.9833**	0.073	2.5	ug/L	1055	Standard
	Sc	45	23039.2	2.5				ug/L	23084	Standard
	Ti	47	198.3	14.3	**1.5462**	0.212	13.7	ug/L	24	Standard
	V	51	1458.7	4.0	**0.1528**	0.020	13.4	ug/L	975	Standard
	Cr	52	6632.8	4.8	**0.5947**	0.052	8.8	ug/L	4542	Standard
	Cr	53	1660.1	4.2	**2.1464**	0.078	3.7	ug/L	657	Standard
	Mn	55	23447.1	2.2	**3.2112**	0.026	0.8	ug/L	1886	Standard
	Co	59	550.0	0.9	**0.0416**	0.001	2.6	ug/L	343	Standard
	Ni	60	519.3	3.5	**0.3311**	0.012	3.7	ug/L	120	Standard
	Cu	65	834.4	6.0	**0.3751**	0.039	10.3	ug/L	405	Standard
	Zn	66	1680.1	2.7	**1.8589**	0.076	4.1	ug/L	263	Standard
>	**Ge**	72	508104.5	2.0				ug/L	524310	Standard
	As	75	28.1	137.0	**0.0626**	0.048	76.2	ug/L	4	Standard
	Se	82	28.4	10.8	**0.2345**	0.042	18.1	ug/L	16	Standard
	Se-1	77	127.7	11.4	**0.7656**	0.290	37.9	ug/L	97	Standard
>	**Ga**	71	131.7	35.3				mg/L	23	Standard
	Rb	85	2265.2	2.3				ug/L	35	Standard
	Y	89	359873.7	3.5				ug/L	364600	Standard
>	**Rh**	103	21.7	70.5				ug/L	10	Standard
	Mo	98	45.9	11.1	**-0.0002**	0.002	942.2	ug/L	45	Standard
	Ag	107	88.7	19.0	**-0.0027**	0.003	129.1	ug/L	86	Standard
	Cd	111	9.6	21.6	**0.0072**	0.002	22.3	mg/L	4	Standard
	Cd	114	43.4	15.1	**-0.0011**	0.002	224.3	ug/L	25	Standard
>	**In**	115	401257.2	2.6				ug/L	418958	Standard
	Sn	118	185.0	18.5	**0.0900**	0.046	51.6	ug/L	139	Standard
	Sb	123	79.7	3.8	**-0.0128**	0.002	12.4	ug/L	278	Standard
	Ba	135	4148.6	2.3	**3.6298**	0.066	1.8	ug/L	48	Standard
	Ce	140	4170.6	4.3				ug/L	30	Standard
>	**Tb**	159	689291.0	1.6				ug/L	683588	Standard
	Ho	165	65.0	27.7				ug/L	5	Standard
	Tl	203	236.0	24.3	**0.0003**	0.009	3207.9	ug/L	251	Standard
	Tl	205	625.0	33.3	**0.0002**	0.015	9498.3	ug/L	568	Standard
	Pb	206	751.4	10.8	**0.0863**	0.016	18.5	ug/L	334	Standard
	Pb	207	623.3	3.5	**0.0779**	0.004	5.5	ug/L	300	Standard
	Pb	208	815.3	3.8	**0.0886**	0.005	5.6	ug/L	368	Standard
	U	238	44.3	1.3	**0.0101**	0.000	0.8	ug/L	4	Standard
>	**Bi**	209	447186.7	1.9				ug/L	431904	Standard

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	Na	23	5.0	100.0	**2.0894**	6.376	305.2	mg/L	0	Standard
	Mg	24	50.0	10.0	**0.8266**	0.159	19.3	mg/L	25	Standard
	K	39	18.3	78.7	**-0.0838**	0.197	234.9	mg/L	17	Standard
	Ca	43	46.7	32.7	**1.4342**	2.676	186.6	mg/L	58	Standard
	Fe	54	36.2	20.9	**0.1841**	0.075	40.9	mg/L	23	Standard
	Fe	57	221.7	5.2	**-0.2294**	0.391	170.5	mg/L	255	Standard
>	**Sc-1**	45	23039.2	2.5				mg/L	23084	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	2.0	100.0				ug/L	3	Standard
	Br	81	7928.8	13.7				ug/L	1807	Standard
	P	31	46.7	22.3				ug/L	32	Standard
	S	34	8.3	124.9				ug/L	8	Standard
	Sr	88	110.0	20.8				ug/L	143	Standard
	C	12	43.3	35.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	97.3	19.2				mg/L	16	Standard
	Ho-1	165	65.0	27.7				mg/L	5	Standard
	Er	166	56.7	50.9				mg/L	7	Standard
	I	127	51472.0	15.6				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.182	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.909	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.775
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	103.538
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704012305
Sample Date/Time: Thursday, April 06, 2017 11:55:01
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	192258.1	3.6				ug/L	187001	Standard
	Be	9	258.3	4.9	**0.1369**	0.003	2.4	ug/L	17	Standard
	Al	27	268231.9	0.6	**3.0316**	0.102	3.4	ug/L	1055	Standard
	Sc	45	23126.0	3.0				ug/L	23084	Standard
	Ti	47	138.7	9.9	**1.0349**	0.131	12.7	ug/L	24	Standard
	V	51	1956.1	3.2	**0.2729**	0.022	8.2	ug/L	975	Standard
	Cr	52	6560.4	3.6	**0.5808**	0.037	6.4	ug/L	4542	Standard
	Cr	53	1268.4	3.1	**1.3780**	0.112	8.2	ug/L	657	Standard
	Mn	55	19971.9	8.3	**2.7094**	0.311	11.5	ug/L	1886	Standard
	Co	59	1180.7	2.8	**0.1571**	0.011	6.9	ug/L	343	Standard
	Ni	60	675.7	2.2	**0.4660**	0.011	2.4	ug/L	120	Standard
	Cu	65	955.0	7.3	**0.4738**	0.039	8.2	ug/L	405	Standard
	Zn	66	1873.8	1.5	**2.1174**	0.043	2.0	ug/L	263	Standard
>	Ge	72	506843.0	2.3				ug/L	524310	Standard
	As	75	106.6	29.4	**0.1585**	0.040	25.0	ug/L	4	Standard
	Se	82	18.7	12.8	**0.1058**	0.038	35.9	ug/L	16	Standard
	Se-1	77	128.0	11.8	**0.7762**	0.273	35.1	ug/L	97	Standard
>	Ga	71	96.7	15.8				mg/L	23	Standard
	Rb	85	2080.1	3.8				ug/L	35	Standard
	Y	89	360423.5	2.7				ug/L	364600	Standard
>	Rh	103	21.7	26.6				ug/L	10	Standard
	Mo	98	41.3	5.2	**-0.0021**	0.001	52.3	ug/L	45	Standard
	Ag	107	86.7	2.9	**-0.0033**	0.001	24.8	ug/L	86	Standard
	Cd	111	158.3	8.6	**0.1374**	0.009	6.3	mg/L	4	Standard
	Cd	114	411.8	6.2	**0.1246**	0.011	8.5	ug/L	25	Standard
>	In	115	404528.1	2.3				ug/L	418958	Standard
	Sn	118	182.7	6.2	**0.0849**	0.021	24.8	ug/L	139	Standard
	Sb	123	118.8	3.6	**-0.0004**	0.002	344.2	ug/L	278	Standard
	Ba	135	4186.9	1.0	**3.6339**	0.047	1.3	ug/L	48	Standard
	Ce	140	3540.4	3.9				ug/L	30	Standard
>	Tb	159	680229.6	1.5				ug/L	683588	Standard
	Ho	165	55.0	9.1				ug/L	5	Standard
	Tl	203	774.4	2.0	**0.0981**	0.002	1.6	ug/L	251	Standard
	Tl	205	1793.4	6.3	**0.0887**	0.011	11.8	ug/L	568	Standard
	Pb	206	1120.0	6.9	**0.1733**	0.014	8.0	ug/L	334	Standard
	Pb	207	921.4	3.1	**0.1556**	0.007	4.6	ug/L	300	Standard
	Pb	208	1233.0	3.3	**0.1767**	0.011	6.2	ug/L	368	Standard
	U	238	484.0	2.5	**0.1205**	0.003	2.9	ug/L	4	Standard
>	Bi	209	441641.7	1.5				ug/L	431904	Standard

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	Na	23	5.0	100.0	**2.1142**	6.595	311.9	mg/L	0	Standard
	Mg	24	60.0	8.3	**1.0808**	0.173	16.0	mg/L	25	Standard
	K	39	11.7	107.9	**-0.1777**	0.163	91.5	mg/L	17	Standard
	Ca	43	38.3	19.9	**-0.0666**	1.239	1859.9	mg/L	58	Standard
	Fe	54	43.0	23.6	**0.2429**	0.093	38.4	mg/L	23	Standard
	Fe	57	215.0	20.3	**-0.4546**	1.083	238.2	mg/L	255	Standard
>	**Sc-1**	45	23126.0	3.0				mg/L	23084	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	1.7	34.6				ug/L	3	Standard
	Br	81	4577.4	5.6				ug/L	1807	Standard
	P	31	28.3	10.2				ug/L	32	Standard
	S	34	8.3	124.9				ug/L	8	Standard
	Sr	88	123.3	29.9				ug/L	143	Standard
	C	12	70.0	62.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	79.2	26.4				mg/L	16	Standard
	Ho-1	165	55.0	9.1				mg/L	5	Standard
	Er	166	86.7	53.3				mg/L	7	Standard
	I	127	34257.1	4.7				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.811	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.669	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.556
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.255
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, April 06, 2017 11:58:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	186725.9	2.9				ug/L	187001	Standard
	Be	9	76929.8	0.8	**49.3969**	1.081	2.2	ug/L	17	Standard
	Al	27	4169819.5	0.7	**48.6201**	1.148	2.4	ug/L	1055	Standard
	Sc	45	23247.8	1.2				ug/L	23084	Standard
	Ti	47	11723.2	0.7	**102.1678**	0.808	0.8	ug/L	24	Standard
	V	51	204204.3	0.6	**48.9137**	0.728	1.5	ug/L	975	Standard
	Cr	52	195522.5	0.8	**49.1239**	0.417	0.8	ug/L	4542	Standard
	Cr	53	25147.5	0.4	**49.0299**	0.842	1.7	ug/L	657	Standard
	Mn	55	336274.1	0.7	**49.7454**	1.000	2.0	ug/L	1886	Standard
	Co	59	270620.2	1.0	**49.4674**	0.721	1.5	ug/L	343	Standard
	Ni	60	58039.6	1.4	**49.6898**	0.596	1.2	ug/L	120	Standard
	Cu	65	61273.3	0.8	**49.4654**	0.498	1.0	ug/L	405	Standard
	Zn	66	38100.5	0.5	**49.6415**	0.803	1.6	ug/L	263	Standard
>	Ge	72	505144.0	1.4				ug/L	524310	Standard
	As	75	40148.4	1.1	**49.3311**	0.261	0.5	ug/L	4	Standard
	Se	82	3834.0	1.6	**51.2732**	0.276	0.5	ug/L	16	Standard
	Se-1	77	2683.2	3.2	**50.6759**	2.397	4.7	ug/L	97	Standard
>	Ga	71	56.7	33.4				mg/L	23	Standard
	Rb	85	261.7	10.5				ug/L	35	Standard
	Y	89	356378.2	1.7				ug/L	364600	Standard
>	Rh	103	10.0	100.0				ug/L	10	Standard
	Mo	98	250687.1	0.9	**100.0781**	2.396	2.4	ug/L	45	Standard
	Ag	107	205880.1	1.2	**49.7481**	0.498	1.0	ug/L	86	Standard
	Cd	111	56789.7	0.4	**50.1150**	0.855	1.7	mg/L	4	Standard
	Cd	114	146570.3	1.2	**50.3209**	0.584	1.2	ug/L	25	Standard
>	In	115	402157.9	2.1				ug/L	418958	Standard
	Sn	118	32191.8	2.6	**49.7511**	1.216	2.4	ug/L	139	Standard
	Sb	123	150831.8	0.8	**49.0005**	0.736	1.5	ug/L	278	Standard
	Ba	135	55341.9	0.7	**48.8426**	1.030	2.1	ug/L	48	Standard
	Ce	140	186.7	19.4				ug/L	30	Standard
>	Tb	159	682689.8	0.5				ug/L	683588	Standard
	Ho	165	5.0	100.0				ug/L	5	Standard
	Tl	203	270321.9	0.9	**49.1892**	0.468	1.0	ug/L	251	Standard
	Tl	205	648434.7	1.4	**49.0711**	0.946	1.9	ug/L	568	Standard
	Pb	206	213606.2	0.3	**49.4999**	0.494	1.0	ug/L	334	Standard
	Pb	207	194039.9	0.4	**49.7107**	0.540	1.1	ug/L	300	Standard
	Pb	208	238531.7	0.3	**49.3994**	0.502	1.0	ug/L	368	Standard
	U	238	207229.2	0.2	**52.4420**	0.282	0.5	ug/L	4	Standard
>	Bi	209	437587.2	0.8				ug/L	431904	Standard

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	Na	23	5.0	100.0	**2.1539**	6.583	305.7	mg/L	0	Standard
	Mg	24	208.3	10.8	**4.8828**	0.634	13.0	mg/L	25	Standard
	K	39	340.0	9.6	**4.2023**	0.481	11.4	mg/L	17	Standard
	Ca	43	53.3	14.3	**2.5475**	1.354	53.2	mg/L	58	Standard
	Fe	54	548.6	9.2	**4.7592**	0.421	8.8	mg/L	23	Standard
	Fe	57	395.0	9.9	**4.4613**	1.134	25.4	mg/L	255	Standard
>	**Sc-1**	45	23247.8	1.2				mg/L	23084	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.0	100.0				ug/L	3	Standard
	Br	81	3157.0	7.4				ug/L	1807	Standard
	P	31	30.0	57.7				ug/L	32	Standard
	S	34	13.3	43.3				ug/L	8	Standard
	Sr	88	116.7	25.1				ug/L	143	Standard
	C	12	20.0	100.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	12.7	46.9				mg/L	16	Standard
	Ho-1	165	5.0	100.0				mg/L	5	Standard
	Er	166	13.3	114.6				mg/L	7	Standard
	I	127	19437.5	5.9				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	98.794		
	Al	27	97.240		
	Sc	45			
	Ti	47	102.168		
	V	51	97.827		
	Cr	52	98.248		
	Cr	53			
	Mn	55	99.491		
	Co	59	98.935		
	Ni	60	99.380		
	Cu	65	98.931		
	Zn	66	99.283		
>	Ge	72		96.345	
	As	75	98.662		
	Se	82	102.546		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	100.078	
|	Ag	107	99.496	
|	Cd	111	100.230	
|	Cd	114		
|>	In	115		95.990
|	Sn	118	99.502	
|	Sb	123	98.001	
⌊	Ba	135	97.685	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	98.378	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	98.799	
|	U	238	104.884	
⌊>	Bi	209		101.316
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, April 06, 2017 12:01:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	186749.0	1.7				ug/L	187001	Standard
	Be	9	45.0	40.1	**0.0047**	0.011	242.7	ug/L	17	Standard
	Al	27	1166.7	19.6	**0.0061**	0.002	39.8	ug/L	1055	Standard
	Sc	45	22760.4	2.1				ug/L	23084	Standard
	Ti	47	24.3	15.6	**0.0446**	0.039	87.2	ug/L	24	Standard
	V	51	709.0	7.8	**-0.0225**	0.013	59.5	ug/L	975	Standard
	Cr	52	3818.1	1.7	**-0.0994**	0.013	13.5	ug/L	4542	Standard
	Cr	53	695.0	3.1	**0.2683**	0.080	29.6	ug/L	657	Standard
	Mn	55	1915.1	4.0	**0.0359**	0.007	18.8	ug/L	1886	Standard
	Co	59	225.7	4.3	**-0.0163**	0.002	15.2	ug/L	343	Standard
	Ni	60	148.0	5.5	**0.0174**	0.004	21.2	ug/L	120	Standard
	Cu	65	417.7	3.0	**0.0473**	0.019	40.7	ug/L	405	Standard
	Zn	66	450.3	8.0	**0.2701**	0.061	22.4	ug/L	263	Standard
>	Ge	72	495974.7	2.7				ug/L	524310	Standard
	As	75	-9.1	399.4	**0.0161**	0.045	282.6	ug/L	4	Standard
	Se	82	13.6	39.1	**0.0413**	0.076	184.5	ug/L	16	Standard
	Se-1	77	97.7	12.0	**0.2264**	0.188	82.9	ug/L	97	Standard
>	Ga	71	26.7	47.2				mg/L	23	Standard
	Rb	85	28.3	27.0				ug/L	35	Standard
	Y	89	350697.0	2.4				ug/L	364600	Standard
>	Rh	103	20.0	43.3				ug/L	10	Standard
	Mo	98	111.4	14.9	**0.0261**	0.006	21.5	ug/L	45	Standard
	Ag	107	97.7	2.4	**-0.0004**	0.001	157.0	ug/L	86	Standard
	Cd	111	5.9	61.9	**0.0039**	0.003	83.4	mg/L	4	Standard
	Cd	114	29.0	55.9	**-0.0061**	0.005	89.8	ug/L	25	Standard
>	In	115	399829.0	2.3				ug/L	418958	Standard
	Sn	118	163.0	2.8	**0.0575**	0.013	21.8	ug/L	139	Standard
	Sb	123	255.4	39.4	**0.0449**	0.034	75.7	ug/L	278	Standard
	Ba	135	35.7	15.9	**-0.0109**	0.004	39.4	ug/L	48	Standard
	Ce	140	21.7	81.0				ug/L	30	Standard
>	Tb	159	671329.3	0.9				ug/L	683588	Standard
	Ho	165	1.7	173.2				ug/L	5	Standard
	Tl	203	97.3	7.4	**-0.0238**	0.001	5.1	ug/L	251	Standard
	Tl	205	246.7	18.4	**-0.0271**	0.004	13.7	ug/L	568	Standard
	Pb	206	396.7	4.9	**0.0087**	0.005	51.9	ug/L	334	Standard
	Pb	207	352.7	2.7	**0.0127**	0.002	12.9	ug/L	300	Standard
	Pb	208	446.3	6.5	**0.0166**	0.005	31.8	ug/L	368	Standard
	U	238	29.0	42.0	**0.0066**	0.003	48.4	ug/L	4	Standard
>	Bi	209	433670.0	1.5				ug/L	431904	Standard

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	Na	23	0.0		**-4.3853**	0.000	0.0	mg/L	0	Standard
	Mg	24	31.7	39.7	**0.3579**	0.328	91.6	mg/L	25	Standard
	K	39	13.3	21.7	**-0.1494**	0.042	28.3	mg/L	17	Standard
	Ca	43	63.3	43.5	**4.5429**	4.959	109.2	mg/L	58	Standard
	Fe	54	21.3	34.6	**0.0523**	0.072	136.8	mg/L	23	Standard
	Fe	57	181.7	17.9	**-1.2694**	0.975	76.8	mg/L	255	Standard
>	**Sc-1**	45	22760.4	2.1				mg/L	23084	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	1.3	114.6				ug/L	3	Standard
	Br	81	2470.2	12.0				ug/L	1807	Standard
	P	31	25.0	40.0				ug/L	32	Standard
	S	34	11.7	24.7				ug/L	8	Standard
	Sr	88	128.3	31.5				ug/L	143	Standard
	C	12	30.0	115.5				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	16.2	74.0				mg/L	16	Standard
	Ho-1	165	1.7	173.2				mg/L	5	Standard
	Er	166	10.0	173.2				mg/L	7	Standard
	I	127	14899.0	8.8				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.596	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.434
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.409
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704012308
Sample Date/Time: Thursday, April 06, 2017 12:04:20
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	192145.1	3.7				ug/L	187001	Standard
	Be	9	65.0	7.7	**0.0165**	0.004	23.5	ug/L	17	Standard
	Al	27	275819.1	2.7	**3.1215**	0.193	6.2	ug/L	1055	Standard
	Sc	45	23343.0	3.6				ug/L	23084	Standard
	Ti	47	121.3	4.1	**0.8845**	0.019	2.1	ug/L	24	Standard
	V	51	1349.4	3.7	**0.1278**	0.011	8.5	ug/L	975	Standard
	Cr	52	5897.1	1.9	**0.4141**	0.052	12.5	ug/L	4542	Standard
	Cr	53	1008.4	6.0	**0.8653**	0.164	19.0	ug/L	657	Standard
	Mn	55	24584.5	12.7	**3.3979**	0.504	14.8	ug/L	1886	Standard
	Co	59	587.3	19.3	**0.0491**	0.022	45.0	ug/L	343	Standard
	Ni	60	486.7	5.0	**0.3052**	0.027	8.8	ug/L	120	Standard
	Cu	65	838.4	7.2	**0.3806**	0.036	9.3	ug/L	405	Standard
	Zn	66	1650.8	1.3	**1.8299**	0.076	4.2	ug/L	263	Standard
>	Ge	72	506063.3	2.3				ug/L	524310	Standard
	As	75	-8.4	899.5	**0.0184**	0.092	502.9	ug/L	4	Standard
	Se	82	18.4	56.2	**0.1019**	0.141	138.7	ug/L	16	Standard
	Se-1	77	99.7	17.3	**0.2270**	0.312	137.4	ug/L	97	Standard
>	Ga	71	73.3	7.9				mg/L	23	Standard
	Rb	85	1755.1	2.5				ug/L	35	Standard
	Y	89	358063.0	2.3				ug/L	364600	Standard
>	Rh	103	18.3	56.8				ug/L	10	Standard
	Mo	98	61.0	28.2	**0.0058**	0.007	126.6	ug/L	45	Standard
	Ag	107	99.0	19.7	**-0.0004**	0.004	1216.2	ug/L	86	Standard
	Cd	111	26.3	15.9	**0.0217**	0.003	14.7	mg/L	4	Standard
	Cd	114	76.1	40.5	**0.0099**	0.011	106.2	ug/L	25	Standard
>	In	115	404399.7	2.3				ug/L	418958	Standard
	Sn	118	208.7	5.1	**0.1252**	0.023	18.2	ug/L	139	Standard
	Sb	123	129.9	30.6	**0.0033**	0.014	415.1	ug/L	278	Standard
	Ba	135	3974.9	0.7	**3.4491**	0.064	1.9	ug/L	48	Standard
	Ce	140	2720.2	1.0				ug/L	30	Standard
>	Tb	159	682342.1	2.5				ug/L	683588	Standard
	Ho	165	38.3	7.5				ug/L	5	Standard
	Tl	203	169.3	6.4	**-0.0110**	0.002	22.3	ug/L	251	Standard
	Tl	205	461.7	13.6	**-0.0112**	0.005	46.9	ug/L	568	Standard
	Pb	206	608.3	8.3	**0.0562**	0.012	21.3	ug/L	334	Standard
	Pb	207	532.7	2.9	**0.0573**	0.002	2.8	ug/L	300	Standard
	Pb	208	656.7	6.6	**0.0585**	0.007	11.3	ug/L	368	Standard
	U	238	68.7	25.7	**0.0165**	0.005	27.9	ug/L	4	Standard
>	Bi	209	440057.2	1.7				ug/L	431904	Standard

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⌈	**Na**	23	1.7	173.2	**-2.2025**	3.781	171.7	mg/L	0	Standard
|	**Mg**	24	50.0	30.0	**0.7996**	0.339	42.3	mg/L	25	Standard
|	**K**	39	20.0	100.0	**-0.0718**	0.255	355.2	mg/L	17	Standard
|	**Ca**	43	51.7	20.1	**2.2018**	1.726	78.4	mg/L	58	Standard
|	**Fe**	54	21.4	57.4	**0.0484**	0.114	236.2	mg/L	23	Standard
|	**Fe**	57	230.0	14.3	**-0.0881**	0.860	975.7	mg/L	255	Standard
⌊>	**Sc-1**	45	23343.0	3.6				mg/L	23084	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	3.0	33.3				ug/L	3	Standard
	Br	81	3393.7	4.1				ug/L	1807	Standard
	P	31	35.0	28.6				ug/L	32	Standard
	S	34	13.3	57.3				ug/L	8	Standard
	Sr	88	143.3	13.2				ug/L	143	Standard
	C	12	30.0	66.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	67.9	14.4				mg/L	16	Standard
	Ho-1	165	38.3	7.5				mg/L	5	Standard
	Er	166	43.3	13.3				mg/L	7	Standard
	I	127	18054.1	1.2				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.751	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.520	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.525
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.888
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704012320
Sample Date/Time: Thursday, April 06, 2017 12:07:25
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	187610.0	3.0				ug/L	187001	Standard
	Be	9	53.3	42.3	**0.0099**	0.015	147.1	ug/L	17	Standard
	Al	27	8676.1	39.4	**0.0925**	0.036	39.1	ug/L	1055	Standard
	Sc	45	22586.8	3.2				ug/L	23084	Standard
	Ti	47	25.0	8.0	**0.0465**	0.013	26.9	ug/L	24	Standard
	V	51	911.2	9.9	**0.0245**	0.029	119.3	ug/L	975	Standard
	Cr	52	5622.0	3.6	**0.3510**	0.003	0.7	ug/L	4542	Standard
	Cr	53	1021.7	9.4	**0.8983**	0.125	13.9	ug/L	657	Standard
	Mn	55	9053.8	130.3	**1.0557**	1.676	158.7	ug/L	1886	Standard
	Co	59	456.7	59.9	**0.0243**	0.046	189.9	ug/L	343	Standard
	Ni	60	279.3	38.0	**0.1267**	0.081	63.9	ug/L	120	Standard
	Cu	65	935.4	12.9	**0.4623**	0.070	15.1	ug/L	405	Standard
	Zn	66	1253.7	14.3	**1.3139**	0.171	13.0	ug/L	263	Standard
>	Ge	72	503245.4	3.8				ug/L	524310	Standard
	As	75	33.1	166.2	**0.0669**	0.065	97.1	ug/L	4	Standard
	Se	82	17.2	38.3	**0.0855**	0.079	92.0	ug/L	16	Standard
	Se-1	77	86.7	10.3	**-0.0170**	0.112	660.8	ug/L	97	Standard
>	Ga	71	38.3	7.5				mg/L	23	Standard
	Rb	85	83.3	19.3				ug/L	35	Standard
	Y	89	351270.2	6.2				ug/L	364600	Standard
>	Rh	103	20.0	50.0				ug/L	10	Standard
	Mo	98	70.2	99.3	**0.0091**	0.026	292.1	ug/L	45	Standard
	Ag	107	128.0	51.7	**0.0066**	0.015	222.9	ug/L	86	Standard
	Cd	111	27.2	60.8	**0.0225**	0.014	60.6	mg/L	4	Standard
	Cd	114	84.3	75.6	**0.0125**	0.021	165.2	ug/L	25	Standard
>	In	115	400527.1	3.5				ug/L	418958	Standard
	Sn	118	211.7	1.2	**0.1329**	0.008	6.0	ug/L	139	Standard
	Sb	123	109.4	27.7	**-0.0032**	0.009	280.6	ug/L	278	Standard
	Ba	135	664.3	7.3	**0.5461**	0.026	4.8	ug/L	48	Standard
	Ce	140	61.7	49.5				ug/L	30	Standard
>	Tb	159	674896.5	3.5				ug/L	683588	Standard
	Ho	165	8.3	91.7				ug/L	5	Standard
	Tl	203	140.0	42.7	**-0.0163**	0.010	61.8	ug/L	251	Standard
	Tl	205	316.7	43.4	**-0.0221**	0.010	43.7	ug/L	568	Standard
	Pb	206	506.0	14.4	**0.0334**	0.014	41.0	ug/L	334	Standard
	Pb	207	411.3	9.6	**0.0271**	0.007	25.5	ug/L	300	Standard
	Pb	208	520.0	7.0	**0.0313**	0.004	14.2	ug/L	368	Standard
	U	238	59.3	39.2	**0.0141**	0.005	38.6	ug/L	4	Standard
>	Bi	209	436336.5	3.1				ug/L	431904	Standard

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	Na	23	1.7	173.2	**-2.2231**	3.745	168.5	mg/L	0	Standard
	Mg	24	61.7	12.4	**1.1605**	0.216	18.6	mg/L	25	Standard
	K	39	3.3	173.2	**-0.2858**	0.079	27.6	mg/L	17	Standard
	Ca	43	33.3	8.7	**-0.7846**	0.682	86.9	mg/L	58	Standard
	Fe	54	16.3	78.6	**0.0052**	0.113	2159.4	mg/L	23	Standard
	Fe	57	230.0	18.8	**0.1073**	1.040	969.5	mg/L	255	Standard
>	**Sc-1**	45	22586.8	3.2				mg/L	23084	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	3.3	62.4				ug/L	3	Standard
	Br	81	2583.6	2.7				ug/L	1807	Standard
	P	31	41.7	60.4				ug/L	32	Standard
	S	34	11.7	65.5				ug/L	8	Standard
	Sr	88	93.3	13.5				ug/L	143	Standard
	C	12	26.7	43.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.4	173.2				mg/L	16	Standard
	Ho-1	165	8.3	91.7				mg/L	5	Standard
	Er	166	13.3	173.2				mg/L	7	Standard
	I	127	12697.0	3.9				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.326	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.982	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.601
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.026
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704012323
Sample Date/Time: Thursday, April 06, 2017 12:10:31
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	185875.3	5.3				ug/L	187001	Standard
	Be	9	61.7	23.4	**0.0160**	0.011	68.9	ug/L	17	Standard
	Al	27	6438.0	6.4	**0.0679**	0.003	3.9	ug/L	1055	Standard
	Sc	45	23074.2	3.1				ug/L	23084	Standard
	Ti	47	34.3	21.9	**0.1336**	0.070	52.2	ug/L	24	Standard
	V	51	1023.3	12.2	**0.0541**	0.024	44.8	ug/L	975	Standard
	Cr	52	5598.7	2.3	**0.3667**	0.020	5.4	ug/L	4542	Standard
	Cr	53	890.0	6.3	**0.6652**	0.140	21.1	ug/L	657	Standard
	Mn	55	2273.2	0.9	**0.0904**	0.008	9.0	ug/L	1886	Standard
	Co	59	360.3	4.2	**0.0088**	0.004	45.7	ug/L	343	Standard
	Ni	60	292.7	4.5	**0.1439**	0.005	3.3	ug/L	120	Standard
	Cu	65	875.4	5.6	**0.4253**	0.022	5.2	ug/L	405	Standard
	Zn	66	1028.7	4.2	**1.0423**	0.052	5.0	ug/L	263	Standard
>	Ge	72	495849.5	2.6				ug/L	524310	Standard
	As	75	9.9	168.3	**0.0401**	0.021	52.0	ug/L	4	Standard
	Se	82	22.1	33.1	**0.1557**	0.095	61.0	ug/L	16	Standard
	Se-1	77	90.7	9.4	**0.0943**	0.216	229.6	ug/L	97	Standard
>	Ga	71	31.7	24.1				mg/L	23	Standard
	Rb	85	58.3	34.6				ug/L	35	Standard
	Y	89	349674.6	3.0				ug/L	364600	Standard
>	Rh	103	6.7	43.3				ug/L	10	Standard
	Mo	98	26.6	18.9	**-0.0076**	0.002	26.6	ug/L	45	Standard
	Ag	107	156.0	12.8	**0.0147**	0.006	41.2	ug/L	86	Standard
	Cd	111	30.6	21.2	**0.0263**	0.005	19.3	mg/L	4	Standard
	Cd	114	86.1	8.5	**0.0143**	0.003	21.9	ug/L	25	Standard
>	In	115	391875.0	3.1				ug/L	418958	Standard
	Sn	118	208.3	6.6	**0.1352**	0.030	21.9	ug/L	139	Standard
	Sb	123	82.8	18.0	**-0.0111**	0.006	52.1	ug/L	278	Standard
	Ba	135	438.3	6.9	**0.3545**	0.019	5.3	ug/L	48	Standard
	Ce	140	115.0	23.0				ug/L	30	Standard
>	Tb	159	670510.1	2.7				ug/L	683588	Standard
	Ho	165	5.0	173.2				ug/L	5	Standard
	Tl	203	143.3	7.0	**-0.0152**	0.002	10.3	ug/L	251	Standard
	Tl	205	348.3	4.1	**-0.0192**	0.002	9.4	ug/L	568	Standard
	Pb	206	426.0	7.0	**0.0161**	0.004	25.7	ug/L	334	Standard
	Pb	207	349.0	6.5	**0.0122**	0.003	28.2	ug/L	300	Standard
	Pb	208	444.7	3.0	**0.0169**	0.005	28.7	ug/L	368	Standard
	U	238	63.0	13.6	**0.0153**	0.002	11.4	ug/L	4	Standard
>	Bi	209	431094.1	3.1				ug/L	431904	Standard

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⌈	**Na**	23	1.7	173.2	**-2.1460**	3.879	180.7	mg/L	0	Standard
|	**Mg**	24	56.7	45.3	**0.9845**	0.617	62.7	mg/L	25	Standard
|	**K**	39	13.3	21.7	**-0.1529**	0.035	23.2	mg/L	17	Standard
|	**Ca**	43	63.3	19.9	**4.4023**	2.359	53.6	mg/L	58	Standard
|	**Fe**	54	29.4	32.1	**0.1212**	0.084	69.4	mg/L	23	Standard
|	**Fe**	57	203.3	19.9	**-0.7273**	1.234	169.6	mg/L	255	Standard
⌊>	**Sc-1**	45	23074.2	3.1				mg/L	23084	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	1.7	34.6				ug/L	3	Standard
	Br	81	4617.4	5.5				ug/L	1807	Standard
	P	31	36.7	28.4				ug/L	32	Standard
	S	34	11.7	49.5				ug/L	8	Standard
	Sr	88	113.3	13.5				ug/L	143	Standard
	C	12	50.0	40.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	-0.2	173.2				mg/L	16	Standard
	Ho-1	165	5.0	173.2				mg/L	5	Standard
	Er	166	3.3	173.2				mg/L	7	Standard
	I	127	10828.9	2.5				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.398	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.572	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.536
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.813
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704002403
Sample Date/Time: Thursday, April 06, 2017 12:13:35
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	186914.2	0.3				ug/L	187001	Standard
	Be	9	993.4	7.1	**0.6130**	0.044	7.1	ug/L	17	Standard
	Al	27	236391.6	3.8	**2.7451**	0.099	3.6	ug/L	1055	Standard
	Sc	45	26072.4	2.0				ug/L	23084	Standard
	Ti	47	1981.8	4.7	**17.5699**	0.938	5.3	ug/L	24	Standard
	V	51	93885.7	1.3	**22.9523**	0.198	0.9	ug/L	975	Standard
	Cr	52	35729.4	0.8	**8.3117**	0.115	1.4	ug/L	4542	Standard
	Cr	53	4659.1	3.2	**8.3871**	0.384	4.6	ug/L	657	Standard
	Mn	55	3343263.9	0.8	**509.3769**	5.532	1.1	ug/L	1886	Standard
	Co	59	184999.0	1.4	**34.6537**	0.465	1.3	ug/L	343	Standard
	Ni	60	9776.8	0.5	**8.4898**	0.023	0.3	ug/L	120	Standard
	Cu	65	12784.4	1.7	**10.3474**	0.203	2.0	ug/L	405	Standard
	Zn	66	17494.8	0.3	**23.1937**	0.119	0.5	ug/L	263	Standard
>	Ge	72	492648.0	0.8				ug/L	524310	Standard
	As	75	2122.2	3.8	**2.6995**	0.085	3.1	ug/L	4	Standard
	Se	82	27.2	17.4	**0.2294**	0.068	29.6	ug/L	16	Standard
	Se-1	77	102.7	1.1	**0.3423**	0.011	3.2	ug/L	97	Standard
>	Ga	71	10463.6	2.2				mg/L	23	Standard
	Rb	85	29508.7	2.2				ug/L	35	Standard
	Y	89	443983.1	0.9				ug/L	364600	Standard
>	Rh	103	8.3	34.6				ug/L	10	Standard
	Mo	98	283.0	17.5	**0.0981**	0.021	21.3	ug/L	45	Standard
	Ag	107	211.0	2.2	**0.0285**	0.001	4.6	ug/L	86	Standard
	Cd	111	42.0	19.1	**0.0369**	0.007	20.1	mg/L	4	Standard
	Cd	114	125.3	19.0	**0.0284**	0.009	30.2	ug/L	25	Standard
>	In	115	389743.6	0.7				ug/L	418958	Standard
	Sn	118	114.7	15.4	**-0.0133**	0.029	219.0	ug/L	139	Standard
	Sb	123	64.5	32.9	**-0.0172**	0.007	42.1	ug/L	278	Standard
	Ba	135	10017.6	1.1	**9.0860**	0.120	1.3	ug/L	48	Standard
	Ce	140	4947098.4	0.5				ug/L	30	Standard
>	Tb	159	670160.5	0.6				ug/L	683588	Standard
	Ho	165	8999.3	3.2				ug/L	5	Standard
	Tl	203	1331.1	1.3	**0.2071**	0.004	1.7	ug/L	251	Standard
	Tl	205	3247.0	6.5	**0.2064**	0.017	8.1	ug/L	568	Standard
	Pb	206	81494.6	0.6	**19.3260**	0.183	0.9	ug/L	334	Standard
	Pb	207	63276.2	0.6	**16.5806**	0.146	0.9	ug/L	300	Standard
	Pb	208	83371.2	0.2	**17.6664**	0.064	0.4	ug/L	368	Standard
	U	238	1924.5	4.4	**0.4988**	0.020	4.1	ug/L	4	Standard
>	Bi	209	426463.6	0.5				ug/L	431904	Standard

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⌈	**Na**	23	0.0		**-4.3853**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	25.0	69.3	**0.1019**	0.399	391.7	mg/L	25	Standard
|	**K**	39	25.0	52.9	**-0.0342**	0.159	463.6	mg/L	17	Standard
|	**Ca**	43	51.7	22.3	**1.2746**	1.843	144.6	mg/L	58	Standard
|	**Fe**	54	1854.5	6.1	**14.6325**	0.599	4.1	mg/L	23	Standard
|	**Fe**	57	816.7	12.0	**13.6130**	2.784	20.5	mg/L	255	Standard
⌊>	**Sc-1**	45	26072.4	2.0				mg/L	23084	Standard
	Cl	35	4.7	24.7				ug/L	1	Standard
	Kr	83	4.3	48.0				ug/L	3	Standard
	Br	81	2130.1	2.6				ug/L	1807	Standard
	P	31	31.7	36.5				ug/L	32	Standard
	S	34	6.7	114.6				ug/L	8	Standard
	Sr	88	126.7	12.7				ug/L	143	Standard
	C	12	33.3	45.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	90.0	29.4				mg/L	3	Standard
	Dy	164	14285.2	1.7				mg/L	16	Standard
	Ho-1	165	8999.3	3.2				mg/L	5	Standard
	Er	166	8599.1	3.7				mg/L	7	Standard
	I	127	13207.4	0.5				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.954	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		93.961	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.027
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.740
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1704002405
Sample Date/Time: Thursday, April 06, 2017 12:16:41
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	190343.3	1.6				ug/L	187001	Standard
	Be	9	3267.0	4.3	**2.0351**	0.120	5.9	ug/L	17	Standard
	Al	27	344166.8	0.8	**3.9285**	0.049	1.2	ug/L	1055	Standard
	Sc	45	26954.0	2.5				ug/L	23084	Standard
	Ti	47	1518.7	3.2	**13.1632**	0.536	4.1	ug/L	24	Standard
	V	51	91917.9	0.1	**22.0334**	0.173	0.8	ug/L	975	Standard
	Cr	52	95942.8	0.8	**23.6849**	0.229	1.0	ug/L	4542	Standard
	Cr	53	12718.7	1.0	**24.3741**	0.437	1.8	ug/L	657	Standard
	Mn	55	334383.6	1.3	**49.7380**	0.470	0.9	ug/L	1886	Standard
	Co	59	13359.9	1.5	**2.4005**	0.053	2.2	ug/L	343	Standard
	Ni	60	20966.2	1.0	**17.9804**	0.176	1.0	ug/L	120	Standard
	Cu	65	12418.1	1.4	**9.8445**	0.206	2.1	ug/L	405	Standard
	Zn	66	26076.4	0.5	**34.0625**	0.440	1.3	ug/L	263	Standard
>	Ge	72	502284.2	0.8				ug/L	524310	Standard
	As	75	1840.7	3.1	**2.3006**	0.052	2.3	ug/L	4	Standard
	Se	82	42.1	9.0	**0.4229**	0.053	12.6	ug/L	16	Standard
	Se-1	77	148.0	5.1	**1.1920**	0.124	10.4	ug/L	97	Standard
>	Ga	71	13752.9	2.6				mg/L	23	Standard
	Rb	85	40759.8	2.2				ug/L	35	Standard
	Y	89	851547.0	1.1				ug/L	364600	Standard
>	Rh	103	18.3	31.5				ug/L	10	Standard
	Mo	98	193.8	12.7	**0.0600**	0.011	17.9	ug/L	45	Standard
	Ag	107	228.0	10.0	**0.0318**	0.006	18.9	ug/L	86	Standard
	Cd	111	97.1	14.7	**0.0856**	0.014	15.9	mg/L	4	Standard
	Cd	114	263.5	20.8	**0.0758**	0.020	26.5	ug/L	25	Standard
>	In	115	396875.4	1.0				ug/L	418958	Standard
	Sn	118	116.7	9.4	**-0.0135**	0.018	134.8	ug/L	139	Standard
	Sb	123	62.7	62.6	**-0.0181**	0.013	72.9	ug/L	278	Standard
	Ba	135	11975.7	1.1	**10.6738**	0.036	0.3	ug/L	48	Standard
	Ce	140	545421.8	0.3				ug/L	30	Standard
>	Tb	159	704018.9	1.5				ug/L	683588	Standard
	Ho	165	38477.1	0.9				ug/L	5	Standard
	Tl	203	610.7	7.5	**0.0724**	0.008	11.1	ug/L	251	Standard
	Tl	205	1448.4	7.9	**0.0666**	0.009	13.0	ug/L	568	Standard
	Pb	206	33616.6	1.5	**7.9224**	0.126	1.6	ug/L	334	Standard
	Pb	207	25865.1	1.1	**6.7308**	0.040	0.6	ug/L	300	Standard
	Pb	208	34176.6	0.5	**7.1967**	0.054	0.8	ug/L	368	Standard
	U	238	523.3	5.8	**0.1350**	0.007	5.4	ug/L	4	Standard
>	Bi	209	426465.0	0.6				ug/L	431904	Standard

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	Na	23	0.0		**-4.3853**	0.000	0.0	mg/L	0	Standard
	Mg	24	18.3	41.7	**-0.0673**	0.164	244.2	mg/L	25	Standard
	K	39	26.7	21.7	**-0.0239**	0.072	302.0	mg/L	17	Standard
	Ca	43	46.7	24.7	**0.2251**	1.586	704.9	mg/L	58	Standard
	Fe	54	2213.4	3.9	**16.9355**	0.937	5.5	mg/L	23	Standard
	Fe	57	783.4	2.1	**12.1512**	0.823	6.8	mg/L	255	Standard
>	**Sc-1**	45	26954.0	2.5				mg/L	23084	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	1.0	100.0				ug/L	3	Standard
	Br	81	1990.1	5.3				ug/L	1807	Standard
	P	31	35.0	28.6				ug/L	32	Standard
	S	34	16.7	34.6				ug/L	8	Standard
	Sr	88	150.0	15.3				ug/L	143	Standard
	C	12	23.3	24.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	86.6				mg/L	3	Standard
	Dy	164	57719.4	1.1				mg/L	16	Standard
	Ho-1	165	38477.1	0.9				mg/L	5	Standard
	Er	166	36751.2	3.4				mg/L	7	Standard
	I	127	11839.6	2.6				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.787	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.799	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.729
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.741
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1704002406
Sample Date/Time: Thursday, April 06, 2017 12:19:47
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	188541.0	1.3				ug/L	187001	Standard
	Be	9	12621.9	1.6	**8.0049**	0.233	2.9	ug/L	17	Standard
	Al	27	277413.3	0.7	**3.1956**	0.062	1.9	ug/L	1055	Standard
	Sc	45	29936.2	2.2				ug/L	23084	Standard
	Ti	47	1121.4	4.5	**9.5547**	0.323	3.4	ug/L	24	Standard
	V	51	126433.0	0.4	**30.0253**	0.330	1.1	ug/L	975	Standard
	Cr	52	79391.5	0.7	**19.1707**	0.145	0.8	ug/L	4542	Standard
	Cr	53	10365.2	1.2	**19.4080**	0.109	0.6	ug/L	657	Standard
	Mn	55	808846.0	0.5	**119.2716**	1.268	1.1	ug/L	1886	Standard
	Co	59	37909.7	0.7	**6.8375**	0.099	1.5	ug/L	343	Standard
	Ni	60	9409.6	1.2	**7.9131**	0.030	0.4	ug/L	120	Standard
	Cu	65	14079.9	0.7	**11.0672**	0.081	0.7	ug/L	405	Standard
	Zn	66	15297.7	0.8	**19.6112**	0.337	1.7	ug/L	263	Standard
>	Ge	72	508220.7	1.4				ug/L	524310	Standard
	As	75	3568.3	1.2	**4.3840**	0.111	2.5	ug/L	4	Standard
	Se	82	97.3	5.6	**1.1529**	0.092	8.0	ug/L	16	Standard
	Se-1	77	281.7	3.4	**3.7539**	0.260	6.9	ug/L	97	Standard
>	Ga	71	16951.1	0.6				mg/L	23	Standard
	Rb	85	51290.0	0.7				ug/L	35	Standard
	Y	89	1648371.8	1.1				ug/L	364600	Standard
>	Rh	103	16.7	45.8				ug/L	10	Standard
	Mo	98	313.2	10.7	**0.1080**	0.013	11.8	ug/L	45	Standard
	Ag	107	431.7	2.6	**0.0815**	0.002	2.6	ug/L	86	Standard
	Cd	111	222.6	2.7	**0.1976**	0.007	3.4	mg/L	4	Standard
	Cd	114	595.7	8.1	**0.1910**	0.016	8.1	ug/L	25	Standard
>	In	115	397187.5	0.7				ug/L	418958	Standard
	Sn	118	99.3	14.3	**-0.0409**	0.023	56.6	ug/L	139	Standard
	Sb	123	50.3	37.0	**-0.0223**	0.006	27.1	ug/L	278	Standard
	Ba	135	16434.6	1.8	**14.6516**	0.185	1.3	ug/L	48	Standard
	Ce	140	951219.7	0.8				ug/L	30	Standard
>	Tb	159	787250.3	0.9				ug/L	683588	Standard
	Ho	165	124386.9	1.1				ug/L	5	Standard
	Tl	203	1279.7	0.8	**0.1975**	0.004	1.8	ug/L	251	Standard
	Tl	205	3075.3	4.1	**0.1930**	0.011	5.5	ug/L	568	Standard
	Pb	206	79497.4	1.1	**18.8488**	0.240	1.3	ug/L	334	Standard
	Pb	207	61754.6	0.6	**16.1787**	0.123	0.8	ug/L	300	Standard
	Pb	208	80867.7	1.1	**17.1316**	0.051	0.3	ug/L	368	Standard
	U	238	990.4	2.2	**0.2563**	0.006	2.5	ug/L	4	Standard
>	Bi	209	426505.6	1.0				ug/L	431904	Standard

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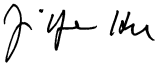

	Na	23	8.3	69.3	**4.0414**	5.889	145.7	mg/L	0	Standard
	Mg	24	13.3	57.3	**-0.2068**	0.148	71.8	mg/L	25	Standard
	K	39	23.3	12.4	**-0.0894**	0.035	38.8	mg/L	17	Standard
	Ca	43	50.0	26.5	**-0.0236**	1.692	7178.1	mg/L	58	Standard
	Fe	54	2177.1	1.9	**14.9779**	0.486	3.2	mg/L	23	Standard
	Fe	57	795.0	10.6	**10.5752**	2.145	20.3	mg/L	255	Standard
>	**Sc-1**	45	29936.2	2.2				mg/L	23084	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	0.7	173.2				ug/L	3	Standard
	Br	81	2493.5	7.9				ug/L	1807	Standard
	P	31	26.7	47.2				ug/L	32	Standard
	S	34	15.0	57.7				ug/L	8	Standard
	Sr	88	136.7	16.9				ug/L	143	Standard
	C	12	36.7	83.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	233.3	6.5				mg/L	3	Standard
	Dy	164	188955.8	1.4				mg/L	16	Standard
	Ho-1	165	124386.9	1.1				mg/L	5	Standard
	Er	166	121673.3	1.0				mg/L	7	Standard
	I	127	12988.9	3.1				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.824	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.931	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.804
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.750
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1704002410
Sample Date/Time: Thursday, April 06, 2017 12:22:52
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	191475.9	1.8				ug/L	187001	Standard
	Be	9	673.3	2.4	**0.3976**	0.012	3.1	ug/L	17	Standard
	Al	27	147513.0	1.1	**1.6696**	0.024	1.4	ug/L	1055	Standard
	Sc	45	27249.5	1.2				ug/L	23084	Standard
	Ti	47	1806.8	1.4	**15.5246**	0.268	1.7	ug/L	24	Standard
	V	51	105087.3	0.9	**24.9542**	0.349	1.4	ug/L	975	Standard
	Cr	52	57915.2	1.2	**13.7066**	0.244	1.8	ug/L	4542	Standard
	Cr	53	7276.7	2.1	**13.3056**	0.481	3.6	ug/L	657	Standard
	Mn	55	576743.5	0.7	**85.0768**	0.686	0.8	ug/L	1886	Standard
	Co	59	26964.3	1.3	**4.8522**	0.056	1.2	ug/L	343	Standard
	Ni	60	10551.7	2.0	**8.8980**	0.122	1.4	ug/L	120	Standard
	Cu	65	14879.6	0.5	**11.7280**	0.115	1.0	ug/L	405	Standard
	Zn	66	18678.5	0.9	**24.0477**	0.311	1.3	ug/L	263	Standard
>	Ge	72	507591.5	1.4				ug/L	524310	Standard
	As	75	2517.7	1.2	**3.1050**	0.064	2.1	ug/L	4	Standard
	Se	82	18.8	31.3	**0.1068**	0.081	75.5	ug/L	16	Standard
	Se-1	77	92.0	6.8	**0.0738**	0.095	129.0	ug/L	97	Standard
>	Ga	71	17373.3	2.0				mg/L	23	Standard
	Rb	85	50562.6	2.0				ug/L	35	Standard
	Y	89	415354.7	0.8				ug/L	364600	Standard
>	Rh	103	16.7	62.4				ug/L	10	Standard
	Mo	98	198.8	10.2	**0.0606**	0.009	14.8	ug/L	45	Standard
	Ag	107	166.7	2.3	**0.0160**	0.001	6.4	ug/L	86	Standard
	Cd	111	27.7	13.0	**0.0231**	0.003	13.5	mg/L	4	Standard
	Cd	114	70.2	14.6	**0.0080**	0.004	47.9	ug/L	25	Standard
>	In	115	403696.0	1.4				ug/L	418958	Standard
	Sn	118	118.7	5.9	**-0.0135**	0.013	99.0	ug/L	139	Standard
	Sb	123	50.6	10.5	**-0.0224**	0.002	8.5	ug/L	278	Standard
	Ba	135	7533.5	0.4	**6.5854**	0.061	0.9	ug/L	48	Standard
	Ce	140	1355513.6	1.0				ug/L	30	Standard
>	Tb	159	674531.2	1.9				ug/L	683588	Standard
	Ho	165	5177.6	2.6				ug/L	5	Standard
	Tl	203	844.4	2.7	**0.1149**	0.002	1.7	ug/L	251	Standard
	Tl	205	2035.1	2.8	**0.1109**	0.003	2.7	ug/L	568	Standard
	Pb	206	35500.9	0.5	**8.3077**	0.167	2.0	ug/L	334	Standard
	Pb	207	27537.7	0.9	**7.1161**	0.074	1.0	ug/L	300	Standard
	Pb	208	35568.1	0.4	**7.4354**	0.094	1.3	ug/L	368	Standard
	U	238	2206.5	1.8	**0.5678**	0.013	2.2	ug/L	4	Standard
>	Bi	209	429776.8	1.6				ug/L	431904	Standard

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⌈	**Na**	23	3.3	86.6	**-0.7143**	3.179	445.1	mg/L	0	Standard
|	**Mg**	24	30.0	28.9	**0.1846**	0.182	98.7	mg/L	25	Standard
|	**K**	39	43.3	56.9	**0.1632**	0.284	174.1	mg/L	17	Standard
|	**Ca**	43	38.3	41.9	**-1.0816**	2.398	221.7	mg/L	58	Standard
|	**Fe**	54	2126.2	6.0	**16.0700**	0.847	5.3	mg/L	23	Standard
|	**Fe**	57	750.0	6.8	**11.1567**	1.128	10.1	mg/L	255	Standard
⌊>	**Sc-1**	45	27249.5	1.2				mg/L	23084	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	4.0	43.3				ug/L	3	Standard
	Br	81	2093.5	3.5				ug/L	1807	Standard
	P	31	36.7	41.7				ug/L	32	Standard
	S	34	13.3	21.7				ug/L	8	Standard
	Sr	88	171.7	37.1				ug/L	143	Standard
	C	12	10.0	100.0				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	46.7	32.7				mg/L	3	Standard
	Dy	164	7959.9	6.9				mg/L	16	Standard
	Ho-1	165	5177.6	2.6				mg/L	5	Standard
	Er	166	5127.5	2.4				mg/L	7	Standard
	I	127	12183.2	1.0				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.393	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.811	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.357
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.508
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Report Date/Time: Thursday, April 06, 2017 15:42:35
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, April 06, 2017 12:26:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	185828.2	2.9				ug/L	187001	Standard
	Be	9	76965.0	1.5	**49.6717**	1.877	3.8	ug/L	17	Standard
	Al	27	4229955.1	0.8	**49.5678**	1.595	3.2	ug/L	1055	Standard
	Sc	45	23162.7	0.8				ug/L	23084	Standard
	Ti	47	11957.7	1.9	**103.0215**	1.498	1.5	ug/L	24	Standard
	V	51	209861.1	1.2	**49.6953**	0.342	0.7	ug/L	975	Standard
	Cr	52	198528.7	1.3	**49.3133**	0.191	0.4	ug/L	4542	Standard
	Cr	53	25381.2	1.1	**48.9141**	0.249	0.5	ug/L	657	Standard
	Mn	55	341484.6	1.6	**49.9324**	0.059	0.1	ug/L	1886	Standard
	Co	59	275442.5	1.6	**49.7705**	0.243	0.5	ug/L	343	Standard
	Ni	60	58778.8	1.3	**49.7488**	0.168	0.3	ug/L	120	Standard
	Cu	65	62642.2	0.9	**49.9970**	0.340	0.7	ug/L	405	Standard
	Zn	66	38775.6	1.3	**49.9423**	0.295	0.6	ug/L	263	Standard
>	Ge	72	510964.6	1.6				ug/L	524310	Standard
	As	75	40561.3	1.0	**49.2720**	0.281	0.6	ug/L	4	Standard
	Se	82	3847.5	1.2	**50.8686**	0.380	0.7	ug/L	16	Standard
	Se-1	77	2740.6	3.5	**51.1561**	1.240	2.4	ug/L	97	Standard
>	Ga	71	50.0	52.0				mg/L	23	Standard
	Rb	85	368.3	17.0				ug/L	35	Standard
	Y	89	359251.3	1.3				ug/L	364600	Standard
>	Rh	103	18.3	68.6				ug/L	10	Standard
	Mo	98	254072.8	1.0	**99.2307**	1.242	1.3	ug/L	45	Standard
	Ag	107	209908.7	1.9	**49.6252**	0.419	0.8	ug/L	86	Standard
	Cd	111	57879.5	1.7	**49.9673**	0.162	0.3	mg/L	4	Standard
	Cd	114	148620.3	0.7	**49.9273**	0.548	1.1	ug/L	25	Standard
>	In	115	410980.3	1.5				ug/L	418958	Standard
	Sn	118	32943.4	1.4	**49.8202**	0.841	1.7	ug/L	139	Standard
	Sb	123	155423.5	1.1	**49.4012**	0.316	0.6	ug/L	278	Standard
	Ba	135	56652.4	0.7	**48.9165**	0.431	0.9	ug/L	48	Standard
	Ce	140	825.0	121.4				ug/L	30	Standard
>	Tb	159	675350.9	1.7				ug/L	683588	Standard
	Ho	165	20.0	109.0				ug/L	5	Standard
	Tl	203	268701.4	0.4	**49.3095**	0.127	0.3	ug/L	251	Standard
	Tl	205	651671.0	0.4	**49.7325**	0.176	0.4	ug/L	568	Standard
	Pb	206	212138.5	0.8	**49.5758**	0.342	0.7	ug/L	334	Standard
	Pb	207	193596.1	1.3	**50.0166**	0.577	1.2	ug/L	300	Standard
	Pb	208	232950.4	0.8	**48.6503**	0.318	0.7	ug/L	368	Standard
	U	238	202176.3	0.3	**51.5977**	0.199	0.4	ug/L	4	Standard
>	Bi	209	433892.7	0.2				ug/L	431904	Standard

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	Na	23	6.7	86.6	**4.3248**	7.544	174.4	mg/L	0	Standard
	Mg	24	203.3	11.1	**4.7698**	0.582	12.2	mg/L	25	Standard
	K	39	331.7	5.3	**4.1045**	0.233	5.7	mg/L	17	Standard
	Ca	43	56.7	22.2	**3.1790**	2.302	72.4	mg/L	58	Standard
	Fe	54	495.7	5.5	**4.3059**	0.278	6.5	mg/L	23	Standard
	Fe	57	375.0	10.4	**3.9527**	1.163	29.4	mg/L	255	Standard
>	**Sc-1**	45	23162.7	0.8				mg/L	23084	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	1970.1	4.0				ug/L	1807	Standard
	P	31	38.3	39.8				ug/L	32	Standard
	S	34	10.0					ug/L	8	Standard
	Sr	88	105.0	25.2				ug/L	143	Standard
	C	12	20.0	100.0				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	25.4	147.0				mg/L	16	Standard
	Ho-1	165	20.0	109.0				mg/L	5	Standard
	Er	166	26.7	43.3				mg/L	7	Standard
	I	127	5005.8	3.8				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.343		
	Al	27	99.136		
	Sc	45			
	Ti	47	103.021		
	V	51	99.391		
	Cr	52	98.627		
	Cr	53			
	Mn	55	99.865		
	Co	59	99.541		
	Ni	60	99.498		
	Cu	65	99.994		
	Zn	66	99.885		
>	Ge	72		97.455	
	As	75	98.544		
	Se	82	101.737		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	99.231	
|	Ag	107	99.250	
|	Cd	111	99.935	
|	Cd	114		
|>	In	115		98.096
|	Sn	118	99.640	
|	Sb	123	98.802	
⌊	Ba	135	97.833	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	98.619	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	97.301	
|	U	238	103.195	
⌊>	Bi	209		100.460
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, April 06, 2017 12:29:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	182454.0	2.3				ug/L	187001	Standard
	Be	9	55.0	48.1	**0.0118**	0.017	140.8	ug/L	17	Standard
	Al	27	1003.4	7.5	**0.0045**	0.001	15.7	ug/L	1055	Standard
	Sc	45	23146.0	4.3				ug/L	23084	Standard
	Ti	47	21.3	16.5	**0.0144**	0.030	211.9	ug/L	24	Standard
	V	51	540.9	9.2	**-0.0655**	0.014	22.0	ug/L	975	Standard
	Cr	52	3086.0	1.9	**-0.3033**	0.005	1.5	ug/L	4542	Standard
	Cr	53	438.3	15.5	**-0.2695**	0.119	44.0	ug/L	657	Standard
	Mn	55	1788.4	2.7	**0.0127**	0.002	17.1	ug/L	1886	Standard
	Co	59	240.0	4.8	**-0.0144**	0.001	10.2	ug/L	343	Standard
	Ni	60	129.7	5.5	**-0.0002**	0.008	3922.5	ug/L	120	Standard
	Cu	65	385.0	10.9	**0.0148**	0.029	194.8	ug/L	405	Standard
	Zn	66	401.7	8.1	**0.1958**	0.033	17.0	ug/L	263	Standard
>	Ge	72	503573.5	1.9				ug/L	524310	Standard
	As	75	-11.8	7.2	**0.0131**	0.001	7.4	ug/L	4	Standard
	Se	82	11.4	73.7	**0.0092**	0.114	1244.8	ug/L	16	Standard
	Se-1	77	83.3	5.9	**-0.0815**	0.068	83.6	ug/L	97	Standard
>	Ga	71	26.7	28.6				mg/L	23	Standard
	Rb	85	48.3	26.0				ug/L	35	Standard
	Y	89	356070.4	2.6				ug/L	364600	Standard
>	Rh	103	11.7	65.5				ug/L	10	Standard
	Mo	98	115.1	36.7	**0.0275**	0.016	56.8	ug/L	45	Standard
	Ag	107	93.3	5.9	**-0.0014**	0.001	80.7	ug/L	86	Standard
	Cd	111	5.9	73.6	**0.0038**	0.004	95.0	mg/L	4	Standard
	Cd	114	29.1	41.9	**-0.0060**	0.004	73.6	ug/L	25	Standard
>	In	115	399716.5	2.9				ug/L	418958	Standard
	Sn	118	159.7	9.9	**0.0527**	0.031	58.2	ug/L	139	Standard
	Sb	123	272.8	23.5	**0.0508**	0.024	46.6	ug/L	278	Standard
	Ba	135	43.3	25.4	**-0.0042**	0.009	211.1	ug/L	48	Standard
	Ce	140	20.0	66.1				ug/L	30	Standard
>	Tb	159	664865.9	2.7				ug/L	683588	Standard
	Ho	165	1.7	173.2				ug/L	5	Standard
	Tl	203	61.3	19.1	**-0.0303**	0.002	7.6	ug/L	251	Standard
	Tl	205	148.3	24.8	**-0.0346**	0.003	7.2	ug/L	568	Standard
	Pb	206	413.3	5.9	**0.0131**	0.006	47.6	ug/L	334	Standard
	Pb	207	342.3	2.9	**0.0106**	0.005	50.1	ug/L	300	Standard
	Pb	208	426.0	4.9	**0.0127**	0.002	16.3	ug/L	368	Standard
	U	238	19.7	49.9	**0.0042**	0.002	56.7	ug/L	4	Standard
>	Bi	209	431571.3	3.0				ug/L	431904	Standard

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	Na	23	1.7	173.2	**-2.1007**	3.957	188.4	mg/L	0	Standard
	Mg	24	28.3	53.9	**0.2531**	0.378	149.5	mg/L	25	Standard
	K	39	15.0	57.7	**-0.1293**	0.118	91.6	mg/L	17	Standard
	Ca	43	51.7	20.1	**2.2550**	1.529	67.8	mg/L	58	Standard
	Fe	54	21.3	53.2	**0.0464**	0.095	204.4	mg/L	23	Standard
	Fe	57	233.3	15.2	**0.0773**	1.085	1404.8	mg/L	255	Standard
>	**Sc-1**	45	23146.0	4.3				mg/L	23084	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	4.0	66.1				ug/L	3	Standard
	Br	81	2050.1	5.4				ug/L	1807	Standard
	P	31	40.0	54.5				ug/L	32	Standard
	S	34	5.0	100.0				ug/L	8	Standard
	Sr	88	170.0	12.8				ug/L	143	Standard
	C	12	26.7	57.3				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	6.2	93.6				mg/L	16	Standard
	Ho-1	165	1.7	173.2				mg/L	5	Standard
	Er	166	10.0	100.0				mg/L	7	Standard
	I	127	5115.9	1.4				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.045	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	95.407
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.923
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 83 WG608583-02
Sample Date/Time: Thursday, April 06, 2017 12:32:13
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	186220.0	3.6				ug/L	187001	Standard
	Be	9	13.3	21.7	**-0.0156**	0.002	12.5	ug/L	17	Standard
	Al	27	5586.0	3.8	**0.0578**	0.002	3.6	ug/L	1055	Standard
	Sc	45	23159.4	2.9				ug/L	23084	Standard
	Ti	47	25.0	24.3	**0.0444**	0.049	109.9	ug/L	24	Standard
	V	51	565.8	8.6	**-0.0606**	0.014	22.3	ug/L	975	Standard
	Cr	52	4325.0	1.9	**0.0077**	0.016	213.4	ug/L	4542	Standard
	Cr	53	616.7	5.2	**0.0807**	0.084	104.2	ug/L	657	Standard
	Mn	55	2900.9	2.0	**0.1754**	0.002	1.0	ug/L	1886	Standard
	Co	59	274.7	2.1	**-0.0084**	0.000	4.0	ug/L	343	Standard
	Ni	60	203.3	8.0	**0.0617**	0.011	17.1	ug/L	120	Standard
	Cu	65	682.3	1.1	**0.2534**	0.017	6.7	ug/L	405	Standard
	Zn	66	986.7	1.6	**0.9566**	0.042	4.3	ug/L	263	Standard
>	Ge	72	507360.5	2.1				ug/L	524310	Standard
	As	75	-11.3	89.0	**0.0141**	0.012	86.2	ug/L	4	Standard
	Se	82	14.2	30.8	**0.0462**	0.062	133.3	ug/L	16	Standard
	Se-1	77	77.7	0.7	**-0.2025**	0.041	20.4	ug/L	97	Standard
>	Ga	71	26.7	39.0				mg/L	23	Standard
	Rb	85	85.0	27.0				ug/L	35	Standard
	Y	89	357012.1	2.4				ug/L	364600	Standard
>	Rh	103	8.3	91.7				ug/L	10	Standard
	Mo	98	44.7	6.0	**-0.0008**	0.001	103.8	ug/L	45	Standard
	Ag	107	88.0	17.8	**-0.0031**	0.003	110.4	ug/L	86	Standard
	Cd	111	4.9	60.7	**0.0030**	0.003	84.5	mg/L	4	Standard
	Cd	114	44.2	30.4	**-0.0009**	0.005	509.3	ug/L	25	Standard
>	In	115	406100.9	2.3				ug/L	418958	Standard
	Sn	118	215.7	10.3	**0.1341**	0.029	21.8	ug/L	139	Standard
	Sb	123	95.5	29.6	**-0.0080**	0.010	122.6	ug/L	278	Standard
	Ba	135	98.7	2.1	**0.0438**	0.003	7.7	ug/L	48	Standard
	Ce	140	83.3	45.0				ug/L	30	Standard
>	Tb	159	672963.0	1.0				ug/L	683588	Standard
	Ho	165	10.0	86.6				ug/L	5	Standard
	Tl	203	45.7	17.8	**-0.0333**	0.001	4.2	ug/L	251	Standard
	Tl	205	85.0	48.1	**-0.0395**	0.003	7.7	ug/L	568	Standard
	Pb	206	377.0	9.4	**0.0039**	0.007	185.4	ug/L	334	Standard
	Pb	207	341.7	4.3	**0.0097**	0.003	27.5	ug/L	300	Standard
	Pb	208	433.0	2.8	**0.0137**	0.004	27.3	ug/L	368	Standard
	U	238	5.3	39.0	**0.0005**	0.001	102.4	ug/L	4	Standard
>	Bi	209	434255.5	1.3				ug/L	431904	Standard

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	Na	23	1.7	173.2	**-2.1395**	3.890	181.8	mg/L	0	Standard
	Mg	24	31.7	32.9	**0.3400**	0.248	73.0	mg/L	25	Standard
	K	39	16.7	45.8	**-0.1100**	0.097	87.8	mg/L	17	Standard
	Ca	43	35.0	49.5	**-0.5907**	3.286	556.2	mg/L	58	Standard
	Fe	54	22.8	78.5	**0.0638**	0.166	260.7	mg/L	23	Standard
	Fe	57	200.0	8.7	**-0.8666**	0.327	37.7	mg/L	255	Standard
>	**Sc-1**	45	23159.4	2.9				mg/L	23084	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	2133.5	3.1				ug/L	1807	Standard
	P	31	38.3	15.1				ug/L	32	Standard
	S	34	6.7	43.3				ug/L	8	Standard
	Sr	88	130.0	30.0				ug/L	143	Standard
	C	12	16.7	34.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	12.9	89.8				mg/L	16	Standard
	Ho-1	165	10.0	86.6				mg/L	5	Standard
	Er	166	10.0					mg/L	7	Standard
	I	127	8670.8	4.4				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		99.583	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.767	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.931
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.544
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 83 WG608583-02
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Method 6020 - Summary Report

Sample ID: LCSW 83 WG608583-03
Sample Date/Time: Thursday, April 06, 2017 12:35:18
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	185723.1	0.9				ug/L	187001	Standard
	Be	9	76355.3	2.4	**49.2697**	0.893	1.8	ug/L	17	Standard
	Al	27	4964.1	1.3	**0.0507**	0.001	1.5	ug/L	1055	Standard
	Sc	45	23264.5	3.2				ug/L	23084	Standard
	Ti	47	33.0	12.1	**0.1149**	0.029	25.1	ug/L	24	Standard
	V	51	207287.2	2.4	**49.5851**	0.227	0.5	ug/L	975	Standard
	Cr	52	200029.4	2.8	**50.2083**	0.076	0.2	ug/L	4542	Standard
	Cr	53	25256.0	2.5	**49.1741**	0.337	0.7	ug/L	657	Standard
	Mn	55	339245.8	2.5	**50.1123**	0.141	0.3	ug/L	1886	Standard
	Co	59	275027.8	2.6	**50.2026**	0.125	0.2	ug/L	343	Standard
	Ni	60	59550.5	2.4	**50.9207**	0.565	1.1	ug/L	120	Standard
	Cu	65	63099.8	2.3	**50.8805**	0.304	0.6	ug/L	405	Standard
	Zn	66	38578.4	2.2	**50.1983**	0.334	0.7	ug/L	263	Standard
>	**Ge**	72	505826.7	2.8				ug/L	524310	Standard
	As	75	39707.1	2.1	**48.7286**	0.386	0.8	ug/L	4	Standard
	Se	82	3803.2	0.8	**50.8103**	1.028	2.0	ug/L	16	Standard
	Se-1	77	2652.6	4.0	**49.9751**	0.855	1.7	ug/L	97	Standard
>	**Ga**	71	11.7	24.7				mg/L	23	Standard
	Rb	85	41.7	30.2				ug/L	35	Standard
	Y	89	353978.4	2.1				ug/L	364600	Standard
>	**Rh**	103	21.7	35.3				ug/L	10	Standard
	Mo	98	43.2	11.6	**-0.0014**	0.002	176.6	ug/L	45	Standard
	Ag	107	207420.1	2.8	**49.7404**	0.330	0.7	ug/L	86	Standard
	Cd	111	57599.0	3.2	**50.4344**	0.248	0.5	mg/L	4	Standard
	Cd	114	144302.1	2.8	**49.1659**	0.334	0.7	ug/L	25	Standard
>	**In**	115	405233.8	3.4				ug/L	418958	Standard
	Sn	118	206.0	5.5	**0.1208**	0.027	22.6	ug/L	139	Standard
	Sb	123	148808.3	3.0	**47.9704**	0.215	0.4	ug/L	278	Standard
	Ba	135	55578.8	2.1	**48.6803**	0.664	1.4	ug/L	48	Standard
	Ce	140	65.0	61.5				ug/L	30	Standard
>	**Tb**	159	671950.9	2.1				ug/L	683588	Standard
	Ho	165	23.3	12.4				ug/L	5	Standard
	Tl	203	276167.1	1.4	**50.8176**	0.878	1.7	ug/L	251	Standard
	Tl	205	666513.5	0.9	**51.0087**	1.131	2.2	ug/L	568	Standard
	Pb	206	217741.2	1.0	**51.0290**	1.072	2.1	ug/L	334	Standard
	Pb	207	188828.8	1.3	**48.9163**	0.893	1.8	ug/L	300	Standard
	Pb	208	234305.7	1.3	**49.0670**	0.883	1.8	ug/L	368	Standard
	U	238	195230.3	1.5	**49.9592**	0.918	1.8	ug/L	4	Standard
>	**Bi**	209	432880.8	3.1				ug/L	431904	Standard

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	Na	23	3.3	86.6	**0.0184**	3.814	20751.2	mg/L	0	Standard
	Mg	24	35.0	37.8	**0.4280**	0.347	81.1	mg/L	25	Standard
	K	39	15.0	57.7	**-0.1332**	0.113	84.6	mg/L	17	Standard
	Ca	43	36.7	47.9	**-0.3408**	3.191	936.4	mg/L	58	Standard
	Fe	54	23.1	36.5	**0.0636**	0.080	125.2	mg/L	23	Standard
	Fe	57	251.7	10.9	**0.5264**	0.707	134.3	mg/L	255	Standard
>	**Sc-1**	45	23264.5	3.2				mg/L	23084	Standard
	Cl	35	4.0	50.0				ug/L	1	Standard
	Kr	83	2.0	0.0				ug/L	3	Standard
	Br	81	2260.2	3.5				ug/L	1807	Standard
	P	31	48.3	15.8				ug/L	32	Standard
	S	34	6.7	43.3				ug/L	8	Standard
	Sr	88	135.0	25.9				ug/L	143	Standard
	C	12	46.7	32.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	16.2	73.9				mg/L	16	Standard
	Ho-1	165	23.3	12.4				mg/L	5	Standard
	Er	166	10.0	100.0				mg/L	7	Standard
	I	127	8999.3	5.0				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		99.317	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.475	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.724
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.226
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703167604 WG608583-01
Sample Date/Time: Thursday, April 06, 2017 12:38:24
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	189449.4	3.1				ug/L	187001	Standard
	Be	9	81.7	39.4	**0.0279**	0.022	77.2	ug/L	17	Standard
	Al	27	8316454.2	2.8	**95.5518**	1.385	1.4	ug/L	1055	Standard
	Sc	45	24359.6	2.8				ug/L	23084	Standard
	Ti	47	999.4	5.7	**8.6354**	0.530	6.1	ug/L	24	Standard
	V	51	21576.5	2.9	**5.0405**	0.039	0.8	ug/L	975	Standard
	Cr	52	13600.4	0.7	**2.4284**	0.058	2.4	ug/L	4542	Standard
	Cr	53	2105.1	8.0	**3.1007**	0.436	14.1	ug/L	657	Standard
	Mn	55	40122.7	2.5	**5.7667**	0.082	1.4	ug/L	1886	Standard
	Co	59	1085.4	5.1	**0.1421**	0.011	7.5	ug/L	343	Standard
	Ni	60	1352.7	0.5	**1.0600**	0.022	2.1	ug/L	120	Standard
	Cu	65	1767.8	3.0	**1.1505**	0.021	1.8	ug/L	405	Standard
	Zn	66	64837.8	1.7	**85.5052**	0.566	0.7	ug/L	263	Standard
>	Ge	72	500448.2	2.4				ug/L	524310	Standard
	As	75	885.2	6.6	**1.1250**	0.071	6.3	ug/L	4	Standard
	Se	82	58.5	17.1	**0.6478**	0.146	22.6	ug/L	16	Standard
	Se-1	77	114.3	11.9	**0.5451**	0.318	58.3	ug/L	97	Standard
>	Ga	71	328.3	4.7				mg/L	23	Standard
	Rb	85	13117.3	3.2				ug/L	35	Standard
	Y	89	349457.7	1.1				ug/L	364600	Standard
>	Rh	103	161.7	6.4				ug/L	10	Standard
	Mo	98	1725.7	2.0	**0.6821**	0.003	0.4	ug/L	45	Standard
	Ag	107	118.7	12.0	**0.0051**	0.004	74.7	ug/L	86	Standard
	Cd	111	19.1	28.9	**0.0159**	0.005	31.4	mg/L	4	Standard
	Cd	114	78.1	11.3	**0.0112**	0.003	24.0	ug/L	25	Standard
>	In	115	395395.5	1.7				ug/L	418958	Standard
	Sn	118	256.7	5.3	**0.2081**	0.023	11.2	ug/L	139	Standard
	Sb	123	2015.1	32.4	**0.6300**	0.229	36.3	ug/L	278	Standard
	Ba	135	97702.4	1.6	**87.7136**	0.234	0.3	ug/L	48	Standard
	Ce	140	13037.3	2.1				ug/L	30	Standard
>	Tb	159	669156.3	1.6				ug/L	683588	Standard
	Ho	165	210.0	16.5				ug/L	5	Standard
	Tl	203	341.0	11.7	**0.0223**	0.008	35.4	ug/L	251	Standard
	Tl	205	821.7	15.6	**0.0181**	0.010	56.7	ug/L	568	Standard
	Pb	206	997.7	2.3	**0.1541**	0.005	3.2	ug/L	334	Standard
	Pb	207	853.7	5.7	**0.1468**	0.013	9.1	ug/L	300	Standard
	Pb	208	1115.7	1.1	**0.1613**	0.004	2.7	ug/L	368	Standard
	U	238	14407.2	0.2	**3.7505**	0.020	0.5	ug/L	4	Standard
>	Bi	209	425293.1	0.7				ug/L	431904	Standard

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⌈	**Na**	23	33.3	60.6	**36.8877**	24.553	66.6	mg/L	0	Standard
|	**Mg**	24	283.3	10.2	**6.4629**	0.523	8.1	mg/L	25	Standard
|	**K**	39	106.7	24.1	**1.0214**	0.300	29.4	mg/L	17	Standard
|	**Ca**	43	93.3	3.1	**8.8244**	0.052	0.6	mg/L	58	Standard
|	**Fe**	54	46.1	34.8	**0.2496**	0.132	52.9	mg/L	23	Standard
|	**Fe**	57	381.7	10.7	**3.6312**	1.248	34.4	mg/L	255	Standard
⌊>	**Sc-1**	45	24359.6	2.8				mg/L	23084	Standard
	Cl	35	2.0	100.0				ug/L	1	Standard
	Kr	83	1.3	43.3				ug/L	3	Standard
	Br	81	18004.0	0.6				ug/L	1807	Standard
	P	31	51.7	20.1				ug/L	32	Standard
	S	34	8.3	69.3				ug/L	8	Standard
	Sr	88	230.0	13.2				ug/L	143	Standard
	C	12	73.3	41.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	284.9	12.1				mg/L	16	Standard
	Ho-1	165	210.0	16.5				mg/L	5	Standard
	Er	166	176.7	32.2				mg/L	7	Standard
	I	127	75062.2	2.8				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		101.309	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.449	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.376
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.469
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703167605S WG608583-05
Sample Date/Time: Thursday, April 06, 2017 12:41:29
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	188303.3	2.4				ug/L	187001	Standard
	Be	9	75983.4	2.1	**48.3616**	0.129	0.3	ug/L	17	Standard
	Al	27	8148415.2	1.8	**94.1965**	1.655	1.8	ug/L	1055	Standard
	Sc	45	24306.2	2.9				ug/L	23084	Standard
	Ti	47	1904.1	5.8	**16.8445**	0.811	4.8	ug/L	24	Standard
	V	51	225277.2	1.9	**55.2812**	0.797	1.4	ug/L	975	Standard
	Cr	52	204281.7	1.4	**52.6356**	0.276	0.5	ug/L	4542	Standard
	Cr	53	26586.6	2.5	**53.1858**	1.892	3.6	ug/L	657	Standard
	Mn	55	407890.6	0.6	**61.8506**	0.743	1.2	ug/L	1886	Standard
	Co	59	262742.6	0.8	**49.1834**	0.492	1.0	ug/L	343	Standard
	Ni	60	57861.6	1.1	**50.7357**	0.651	1.3	ug/L	120	Standard
	Cu	65	61261.3	1.2	**50.6528**	0.361	0.7	ug/L	405	Standard
	Zn	66	60666.2	0.7	**81.1548**	1.099	1.4	ug/L	263	Standard
>	Ge	72	493272.2	1.8				ug/L	524310	Standard
	As	75	41440.5	0.9	**52.1482**	0.705	1.4	ug/L	4	Standard
	Se	82	3879.1	0.6	**53.1458**	1.257	2.4	ug/L	16	Standard
	Se-1	77	2676.2	1.5	**51.7861**	1.319	2.5	ug/L	97	Standard
>	Ga	71	743.4	4.9				mg/L	23	Standard
	Rb	85	20251.9	0.7				ug/L	35	Standard
	Y	89	350154.1	1.9				ug/L	364600	Standard
>	Rh	103	195.0	6.8				ug/L	10	Standard
	Mo	98	1890.2	3.3	**0.7527**	0.021	2.8	ug/L	45	Standard
	Ag	107	197464.8	0.7	**48.7747**	0.779	1.6	ug/L	86	Standard
	Cd	111	56520.5	0.6	**50.9783**	0.508	1.0	mg/L	4	Standard
	Cd	114	141368.9	0.8	**49.6113**	0.601	1.2	ug/L	25	Standard
>	In	115	393407.6	1.3				ug/L	418958	Standard
	Sn	118	283.3	4.4	**0.2524**	0.020	8.0	ug/L	139	Standard
	Sb	123	150666.8	0.2	**50.0322**	0.711	1.4	ug/L	278	Standard
	Ba	135	157169.7	0.6	**141.8552**	2.148	1.5	ug/L	48	Standard
	Ce	140	29213.2	3.4				ug/L	30	Standard
>	Tb	159	662170.1	0.2				ug/L	683588	Standard
	Ho	165	418.3	10.8				ug/L	5	Standard
	Tl	203	275722.2	0.4	**51.1333**	0.448	0.9	ug/L	251	Standard
	Tl	205	661018.1	0.2	**50.9794**	0.479	0.9	ug/L	568	Standard
	Pb	206	216735.2	0.9	**51.1898**	0.857	1.7	ug/L	334	Standard
	Pb	207	188114.2	0.2	**49.1125**	0.465	0.9	ug/L	300	Standard
	Pb	208	234557.4	0.6	**49.5060**	0.683	1.4	ug/L	368	Standard
	U	238	216288.9	0.5	**55.7812**	0.443	0.8	ug/L	4	Standard
>	Bi	209	429381.4	0.8				ug/L	431904	Standard

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⌈	**Na**	23	38.3	19.9	**43.2478**	9.737	22.5	mg/L	0	Standard
|	**Mg**	24	285.0	6.3	**6.5242**	0.238	3.6	mg/L	25	Standard
|	**K**	39	90.0	34.7	**0.8100**	0.374	46.1	mg/L	17	Standard
|	**Ca**	43	85.0	48.1	**7.4646**	6.984	93.6	mg/L	58	Standard
|	**Fe**	54	80.0	33.2	**0.5451**	0.244	44.8	mg/L	23	Standard
|	**Fe**	57	416.7	4.2	**4.5577**	0.531	11.7	mg/L	255	Standard
⌊>	**Sc-1**	45	24306.2	2.9				mg/L	23084	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	3.3	34.6				ug/L	3	Standard
	Br	81	29775.9	4.5				ug/L	1807	Standard
	P	31	21.7	35.3				ug/L	32	Standard
	S	34	8.3	91.7				ug/L	8	Standard
	Sr	88	190.0	7.0				ug/L	143	Standard
	C	12	50.0	0.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	114.6				mg/L	3	Standard
	Dy	164	556.7	11.2				mg/L	16	Standard
	Ho-1	165	418.3	10.8				mg/L	5	Standard
	Er	166	416.7	12.3				mg/L	7	Standard
	I	127	117052.9	5.3				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		100.697	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.080	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		93.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		99.416
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703167606SD WG608583-06
Sample Date/Time: Thursday, April 06, 2017 12:44:34
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	184515.5	2.4				ug/L	187001	Standard
	Be	9	75732.2	1.7	**49.1953**	0.376	0.8	ug/L	17	Standard
	Al	27	8009573.3	1.8	**94.5044**	2.511	2.7	ug/L	1055	Standard
	Sc	45	23740.3	3.2				ug/L	23084	Standard
	Ti	47	1020.7	3.7	**9.0337**	0.296	3.3	ug/L	24	Standard
	V	51	219105.5	2.0	**54.2433**	0.447	0.8	ug/L	975	Standard
	Cr	52	197426.9	1.9	**51.2958**	0.105	0.2	ug/L	4542	Standard
	Cr	53	25456.4	2.8	**51.3222**	0.643	1.3	ug/L	657	Standard
	Mn	55	365212.4	2.1	**55.8419**	0.277	0.5	ug/L	1886	Standard
	Co	59	256701.2	2.0	**48.4789**	0.624	1.3	ug/L	343	Standard
	Ni	60	55983.3	1.6	**49.5241**	0.552	1.1	ug/L	120	Standard
	Cu	65	59784.8	2.3	**49.8660**	0.544	1.1	ug/L	405	Standard
	Zn	66	52097.1	2.6	**70.2559**	0.520	0.7	ug/L	263	Standard
>	Ge	72	488895.5	2.0				ug/L	524310	Standard
	As	75	40500.1	2.8	**51.4093**	0.485	0.9	ug/L	4	Standard
	Se	82	3747.1	3.1	**51.7769**	1.127	2.2	ug/L	16	Standard
	Se-1	77	2577.9	2.8	**50.2646**	0.488	1.0	ug/L	97	Standard
>	Ga	71	428.3	7.8				mg/L	23	Standard
	Rb	85	14688.8	2.7				ug/L	35	Standard
	Y	89	343970.5	2.5				ug/L	364600	Standard
>	Rh	103	158.3	17.4				ug/L	10	Standard
	Mo	98	1774.5	2.3	**0.7182**	0.021	3.0	ug/L	45	Standard
	Ag	107	193073.1	1.0	**48.5079**	0.216	0.4	ug/L	86	Standard
	Cd	111	54999.7	1.2	**50.4601**	0.382	0.8	mg/L	4	Standard
	Cd	114	138341.6	1.2	**49.3881**	0.917	1.9	ug/L	25	Standard
>	In	115	386734.9	1.2				ug/L	418958	Standard
	Sn	118	269.3	5.7	**0.2376**	0.026	11.1	ug/L	139	Standard
	Sb	123	147597.7	1.1	**49.8534**	0.223	0.4	ug/L	278	Standard
	Ba	135	152349.5	1.2	**139.8690**	1.866	1.3	ug/L	48	Standard
	Ce	140	15779.9	0.8				ug/L	30	Standard
>	Tb	159	658798.4	0.8				ug/L	683588	Standard
	Ho	165	236.7	26.6				ug/L	5	Standard
	Tl	203	270434.8	0.6	**50.8020**	0.072	0.1	ug/L	251	Standard
	Tl	205	648339.4	1.5	**50.6470**	0.495	1.0	ug/L	568	Standard
	Pb	206	210762.2	0.9	**50.4194**	0.230	0.5	ug/L	334	Standard
	Pb	207	183840.3	0.4	**48.6178**	0.237	0.5	ug/L	300	Standard
	Pb	208	232384.7	0.4	**49.6817**	0.143	0.3	ug/L	368	Standard
	U	238	212305.1	0.8	**55.4629**	0.203	0.4	ug/L	4	Standard
>	Bi	209	423874.8	0.6				ug/L	431904	Standard

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⌈	**Na**	23	30.0	16.7	**33.6661**	5.276	15.7	mg/L	0	Standard
|	**Mg**	24	300.0	4.4	**7.0849**	0.564	8.0	mg/L	25	Standard
|	**K**	39	108.3	50.8	**1.0694**	0.672	62.8	mg/L	17	Standard
|	**Ca**	43	103.3	26.6	**11.0129**	5.081	46.1	mg/L	58	Standard
|	**Fe**	54	56.8	23.9	**0.3561**	0.129	36.3	mg/L	23	Standard
|	**Fe**	57	315.0	6.3	**2.0926**	0.595	28.4	mg/L	255	Standard
⌊>	**Sc-1**	45	23740.3	3.2				mg/L	23084	Standard
	Cl	35	2.7	114.6				ug/L	1	Standard
	Kr	83	1.7	69.3				ug/L	3	Standard
	Br	81	24369.6	1.4				ug/L	1807	Standard
	P	31	26.7	10.8				ug/L	32	Standard
	S	34	11.7	24.7				ug/L	8	Standard
	Sr	88	211.7	9.5				ug/L	143	Standard
	C	12	53.3	10.8				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	391.8	21.9				mg/L	16	Standard
	Ho-1	165	236.7	26.6				mg/L	5	Standard
	Er	166	240.0	8.3				mg/L	7	Standard
	I	127	144674.8	3.9				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.671	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		93.245	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	92.309
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.141
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703168901
Sample Date/Time: Thursday, April 06, 2017 12:47:39
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	192424.4	1.6				ug/L	187001	Standard
	Be	9	386.7	6.0	**0.2170**	0.018	8.3	ug/L	17	Standard
	Al	27	18875376.9	1.0	**213.5126**	1.432	0.7	ug/L	1055	Standard
	Sc	45	23980.6	1.7				ug/L	23084	Standard
	Ti	47	484.3	7.9	**4.2438**	0.360	8.5	ug/L	24	Standard
	V	51	-1765.4	27.9	**-0.6391**	0.121	19.0	ug/L	975	Standard
	Cr	52	69624.9	0.9	**17.5778**	0.186	1.1	ug/L	4542	Standard
	Cr	53	33097.8	3.5	**67.8195**	2.697	4.0	ug/L	657	Standard
	Mn	55	4398818.7	0.5	**682.6746**	1.177	0.2	ug/L	1886	Standard
	Co	59	59204.8	0.6	**11.2562**	0.099	0.9	ug/L	343	Standard
	Ni	60	22889.9	2.0	**20.3992**	0.377	1.9	ug/L	120	Standard
	Cu	65	9644.1	0.9	**7.8808**	0.062	0.8	ug/L	405	Standard
	Zn	66	182936.1	0.5	**250.2263**	2.337	0.9	ug/L	263	Standard
>	Ge	72	483690.1	0.6				ug/L	524310	Standard
	As	75	1440.6	7.9	**1.8747**	0.134	7.2	ug/L	4	Standard
	Se	82	260.4	7.1	**3.5010**	0.239	6.8	ug/L	16	Standard
	Se-1	77	2403.2	2.2	**47.2688**	1.076	2.3	ug/L	97	Standard
>	Ga	71	228.3	10.3				mg/L	23	Standard
	Rb	85	9898.2	1.3				ug/L	35	Standard
	Y	89	357987.6	2.1				ug/L	364600	Standard
>	Rh	103	130.0	17.6				ug/L	10	Standard
	Mo	98	5307.0	0.3	**2.2316**	0.027	1.2	ug/L	45	Standard
	Ag	107	218.0	5.9	**0.0319**	0.003	10.7	ug/L	86	Standard
	Cd	111	750.2	2.7	**0.7016**	0.015	2.1	mg/L	4	Standard
	Cd	114	1845.4	4.5	**0.6569**	0.024	3.6	ug/L	25	Standard
>	In	115	378636.1	1.0				ug/L	418958	Standard
	Sn	118	236.7	5.4	**0.1929**	0.018	9.4	ug/L	139	Standard
	Sb	123	654.8	9.1	**0.1873**	0.022	11.9	ug/L	278	Standard
	Ba	135	373173.8	0.7	**350.0075**	5.523	1.6	ug/L	48	Standard
	Ce	140	32055.5	0.4				ug/L	30	Standard
>	Tb	159	657104.2	1.1				ug/L	683588	Standard
	Ho	165	738.4	7.6				ug/L	5	Standard
	Tl	203	491.7	11.2	**0.0562**	0.011	19.0	ug/L	251	Standard
	Tl	205	1190.0	18.6	**0.0525**	0.018	34.4	ug/L	568	Standard
	Pb	206	2971.0	1.6	**0.6697**	0.014	2.0	ug/L	334	Standard
	Pb	207	2460.5	1.1	**0.6116**	0.008	1.4	ug/L	300	Standard
	Pb	208	3125.1	1.2	**0.6318**	0.010	1.6	ug/L	368	Standard
	U	238	2812.3	2.0	**0.7772**	0.017	2.2	ug/L	4	Standard
>	Bi	209	400286.7	0.3				ug/L	431904	Standard

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⌈	**Na**	23	40.0	21.7	**46.0857**	11.777	25.6	mg/L	0	Standard
|	**Mg**	24	7663.6	4.5	**190.3754**	9.759	5.1	mg/L	25	Standard
|	**K**	39	96.7	28.5	**0.9154**	0.347	37.9	mg/L	17	Standard
|	**Ca**	43	100.0	13.2	**10.1908**	2.047	20.1	mg/L	58	Standard
|	**Fe**	54	540.5	2.7	**4.5402**	0.064	1.4	mg/L	23	Standard
|	**Fe**	57	516.7	11.6	**7.3647**	1.693	23.0	mg/L	255	Standard
⌊>	**Sc-1**	45	23980.6	1.7				mg/L	23084	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	2.3	24.7				ug/L	3	Standard
	Br	81	148060.2	2.3				ug/L	1807	Standard
	P	31	50.0	10.0				ug/L	32	Standard
	S	34	10.0	50.0				ug/L	8	Standard
	Sr	88	208.3	10.8				ug/L	143	Standard
	C	12	80.0	50.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	1027.5	3.6				mg/L	16	Standard
	Ho-1	165	738.4	7.6				mg/L	5	Standard
	Er	166	610.0	7.5				mg/L	7	Standard
	I	127	363274.8	7.3				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.900	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		92.253	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	90.376
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	92.680
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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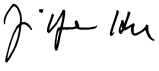

Method 6020 - Summary Report

Sample ID: L1703169001
Sample Date/Time: Thursday, April 06, 2017 13:12:57
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	203224.1	1.8				ug/L	187001	Standard
	Be	9	48.3	26.0	**0.0043**	0.007	164.3	ug/L	17	Standard
	Al	27	9884631.4	1.6	**105.8778**	2.250	2.1	ug/L	1055	Standard
	Sc	45	24122.5	2.6				ug/L	23084	Standard
	Ti	47	532.0	3.7	**4.7534**	0.148	3.1	ug/L	24	Standard
	V	51	-12331.3	10.4	**-3.3434**	0.348	10.4	ug/L	975	Standard
	Cr	52	24229.7	4.9	**5.5050**	0.366	6.6	ug/L	4542	Standard
	Cr	53	63622.5	9.6	**133.5610**	13.876	10.4	ug/L	657	Standard
	Mn	55	292820.7	1.2	**45.9288**	0.863	1.9	ug/L	1886	Standard
	Co	59	10076.4	1.8	**1.8979**	0.050	2.6	ug/L	343	Standard
	Ni	60	7791.7	2.3	**6.9813**	0.212	3.0	ug/L	120	Standard
	Cu	65	2667.9	4.2	**2.0003**	0.109	5.5	ug/L	405	Standard
	Zn	66	21645.8	2.1	**29.7861**	0.851	2.9	ug/L	263	Standard
>	Ge	72	476172.2	0.7				ug/L	524310	Standard
	As	75	-102.9	129.0	**-0.1066**	0.173	161.9	ug/L	4	Standard
	Se	82	81.2	8.1	**1.0103**	0.093	9.2	ug/L	16	Standard
	Se-1	77	5805.5	8.8	**118.5320**	11.435	9.6	ug/L	97	Standard
>	Ga	71	153.3	16.7				mg/L	23	Standard
	Rb	85	25616.6	1.3				ug/L	35	Standard
	Y	89	337199.7	1.3				ug/L	364600	Standard
>	Rh	103	311.7	14.5				ug/L	10	Standard
	Mo	98	3128.4	1.7	**1.3372**	0.032	2.4	ug/L	45	Standard
	Ag	107	158.0	6.7	**0.0173**	0.002	14.2	ug/L	86	Standard
	Cd	111	115.3	13.1	**0.1092**	0.015	13.8	mg/L	4	Standard
	Cd	114	337.5	6.5	**0.1098**	0.009	8.0	ug/L	25	Standard
>	In	115	370491.3	0.9				ug/L	418958	Standard
	Sn	118	217.0	8.3	**0.1685**	0.032	19.0	ug/L	139	Standard
	Sb	123	1416.2	9.7	**0.4612**	0.053	11.5	ug/L	278	Standard
	Ba	135	78472.7	1.3	**75.1881**	1.611	2.1	ug/L	48	Standard
	Ce	140	1183.4	9.6				ug/L	30	Standard
>	Tb	159	636661.0	0.4				ug/L	683588	Standard
	Ho	165	40.0	43.3				ug/L	5	Standard
	Tl	203	352.7	16.8	**0.0335**	0.012	36.8	ug/L	251	Standard
	Tl	205	843.4	22.8	**0.0287**	0.017	58.3	ug/L	568	Standard
	Pb	206	585.0	0.5	**0.0747**	0.001	1.1	ug/L	334	Standard
	Pb	207	494.7	1.4	**0.0699**	0.001	2.1	ug/L	300	Standard
	Pb	208	664.7	2.3	**0.0845**	0.004	4.8	ug/L	368	Standard
	U	238	1061.0	4.6	**0.3133**	0.014	4.3	ug/L	4	Standard
>	Bi	209	374023.2	0.4				ug/L	431904	Standard

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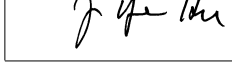

⌈	**Na**	23	8.3	91.7	**6.0024**	9.400	156.6	mg/L	0	Standard
|	**Mg**	24	35899.2	4.7	**888.2688**	43.948	4.9	mg/L	25	Standard
|	**K**	39	110.0	25.3	**1.0837**	0.366	33.8	mg/L	17	Standard
|	**Ca**	43	73.3	30.7	**5.5720**	3.662	65.7	mg/L	58	Standard
|	**Fe**	54	55.8	33.9	**0.3350**	0.155	46.3	mg/L	23	Standard
|	**Fe**	57	383.3	14.7	**3.7514**	1.417	37.8	mg/L	255	Standard
⌊>	**Sc-1**	45	24122.5	2.6				mg/L	23084	Standard
	Cl	35	1.3	173.2				ug/L	1	Standard
	Kr	83	4.0	75.0				ug/L	3	Standard
	Br	81	99566.1	0.7				ug/L	1807	Standard
	P	31	63.3	25.4				ug/L	32	Standard
	S	34	21.7	26.6				ug/L	8	Standard
	Sr	88	193.3	14.2				ug/L	143	Standard
	C	12	350.0	7.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	58.6	46.4				mg/L	16	Standard
	Ho-1	165	40.0	43.3				mg/L	5	Standard
	Er	166	30.0	66.7				mg/L	7	Standard
	I	127	343249.3	9.3				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		108.676	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		90.819	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.432
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	86.599
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	
Cr 53 Upper, S, EEE	Cr	53	

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Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1703169001PS WG608658-03
Sample Date/Time: Thursday, April 06, 2017 13:16:02
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	207013.9	3.2				ug/L	187001	Standard
	Be	9	84449.7	1.1	**48.9120**	1.020	2.1	ug/L	17	Standard
	Al	27	9928916.4	1.1	**104.4331**	2.177	2.1	ug/L	1055	Standard
	Sc	45	25701.8	0.2				ug/L	23084	Standard
	Ti	47	562.3	2.6	**4.9736**	0.231	4.6	ug/L	24	Standard
	V	51	211084.5	1.0	**53.0018**	1.458	2.8	ug/L	975	Standard
	Cr	52	226215.3	0.6	**59.7977**	1.662	2.8	ug/L	4542	Standard
	Cr	53	92094.0	0.7	**191.4153**	5.543	2.9	ug/L	657	Standard
	Mn	55	630273.9	0.9	**97.9515**	2.946	3.0	ug/L	1886	Standard
	Co	59	279690.9	0.2	**53.5810**	1.296	2.4	ug/L	343	Standard
	Ni	60	64323.3	0.6	**57.7329**	1.557	2.7	ug/L	120	Standard
	Cu	65	61242.9	1.0	**51.8270**	1.391	2.7	ug/L	405	Standard
	Zn	66	58681.1	1.3	**80.3098**	1.360	1.7	ug/L	263	Standard
>	Ge	72	482155.9	2.2				ug/L	524310	Standard
	As	75	40895.9	0.8	**52.6542**	0.888	1.7	ug/L	4	Standard
	Se	82	3687.6	1.3	**51.6780**	0.784	1.5	ug/L	16	Standard
	Se-1	77	8987.3	3.6	**182.1897**	10.431	5.7	ug/L	97	Standard
>	Ga	71	165.0	6.1				mg/L	23	Standard
	Rb	85	25140.8	1.3				ug/L	35	Standard
	Y	89	333840.4	2.0				ug/L	364600	Standard
>	Rh	103	368.3	27.2				ug/L	10	Standard
	Mo	98	3123.7	1.8	**1.3094**	0.037	2.8	ug/L	45	Standard
	Ag	107	180846.2	0.4	**46.5275**	0.829	1.8	ug/L	86	Standard
	Cd	111	52750.0	0.1	**49.5585**	0.763	1.5	mg/L	4	Standard
	Cd	114	133246.0	1.0	**48.7112**	1.188	2.4	ug/L	25	Standard
>	In	115	377709.7	1.4				ug/L	418958	Standard
	Sn	118	213.3	7.0	**0.1552**	0.020	13.0	ug/L	139	Standard
	Sb	123	146550.2	1.0	**50.6844**	0.267	0.5	ug/L	278	Standard
	Ba	135	134056.8	0.6	**126.0161**	1.460	1.2	ug/L	48	Standard
	Ce	140	1236.7	8.4				ug/L	30	Standard
>	Tb	159	651576.0	1.6				ug/L	683588	Standard
	Ho	165	35.0	51.5				ug/L	5	Standard
	Tl	203	244256.6	1.1	**51.7548**	0.416	0.8	ug/L	251	Standard
	Tl	205	589969.3	1.1	**51.9867**	0.562	1.1	ug/L	568	Standard
	Pb	206	191935.7	0.1	**51.7982**	0.878	1.7	ug/L	334	Standard
	Pb	207	172965.7	1.1	**51.5970**	0.279	0.5	ug/L	300	Standard
	Pb	208	213216.3	1.5	**51.4149**	0.311	0.6	ug/L	368	Standard
	U	238	189946.0	1.3	**55.9685**	0.239	0.4	ug/L	4	Standard
>	Bi	209	375825.4	1.6				ug/L	431904	Standard

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⌈	**Na**	23	13.3	57.3	**11.2715**	8.975	79.6	mg/L	0	Standard
|	**Mg**	24	38627.5	2.2	**896.7676**	18.754	2.1	mg/L	25	Standard
|	**K**	39	130.0	13.9	**1.2356**	0.218	17.7	mg/L	17	Standard
|	**Ca**	43	61.7	16.9	**2.9731**	1.638	55.1	mg/L	58	Standard
|	**Fe**	54	52.4	28.8	**0.2805**	0.123	43.7	mg/L	23	Standard
|	**Fe**	57	368.3	18.5	**2.7644**	1.694	61.3	mg/L	255	Standard
⌊>	**Sc-1**	45	25701.8	0.2				mg/L	23084	Standard
	Cl	35	4.0	50.0				ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	99069.6	1.6				ug/L	1807	Standard
	P	31	68.3	18.4				ug/L	32	Standard
	S	34	20.0	50.0				ug/L	8	Standard
	Sr	88	240.0	10.8				ug/L	143	Standard
	C	12	370.0	15.0				mg/L	33	Standard
	N	14	10.0	100.0				mg/L	0	Standard
	Hg	202	13.3	114.6				mg/L	3	Standard
	Dy	164	44.4	14.2				mg/L	16	Standard
	Ho-1	165	35.0	51.5				mg/L	5	Standard
	Er	166	46.7	24.7				mg/L	7	Standard
	I	127	359822.7	6.6				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		110.702	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.960	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	90.155
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	87.016
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

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Ba 135 Upper, S, EEE	Ba	135	

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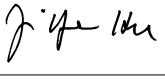

Method 6020 - Summary Report

Sample ID: L1703169001SDL WG608658-04
Sample Date/Time: Thursday, April 06, 2017 13:19:08
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	191656.5	1.8				ug/L	187001	Standard
	Be	9	51.7	68.0	**0.0079**	0.022	272.7	ug/L	17	Standard
	Al	27	1707913.7	0.5	**19.3930**	0.363	1.9	ug/L	1055	Standard
	Sc	45	23913.9	0.4				ug/L	23084	Standard
	Ti	47	130.7	6.7	**0.9944**	0.068	6.8	ug/L	24	Standard
	V	51	-3728.5	2.2	**-1.1137**	0.025	2.2	ug/L	975	Standard
	Cr	52	9096.4	1.4	**1.2923**	0.013	1.0	ug/L	4542	Standard
	Cr	53	22056.0	1.9	**43.8858**	1.176	2.7	ug/L	657	Standard
	Mn	55	59451.4	1.4	**8.7895**	0.057	0.6	ug/L	1886	Standard
	Co	59	2224.2	1.5	**0.3580**	0.004	1.0	ug/L	343	Standard
	Ni	60	1732.1	3.0	**1.4090**	0.050	3.6	ug/L	120	Standard
	Cu	65	872.7	3.6	**0.4266**	0.021	5.0	ug/L	405	Standard
	Zn	66	5378.3	0.8	**6.8854**	0.020	0.3	ug/L	263	Standard
>	Ge	72	493646.5	0.9				ug/L	524310	Standard
	As	75	-38.1	319.4	**-0.0209**	0.153	731.9	ug/L	4	Standard
	Se	82	41.9	5.8	**0.4306**	0.029	6.7	ug/L	16	Standard
	Se-1	77	1647.4	2.1	**31.1855**	0.452	1.4	ug/L	97	Standard
>	Ga	71	61.7	57.5				mg/L	23	Standard
	Rb	85	5237.6	2.4				ug/L	35	Standard
	Y	89	335372.9	0.9				ug/L	364600	Standard
>	Rh	103	116.7	16.2				ug/L	10	Standard
	Mo	98	633.1	3.8	**0.2445**	0.007	2.8	ug/L	45	Standard
	Ag	107	104.3	6.2	**0.0021**	0.002	71.0	ug/L	86	Standard
	Cd	111	31.5	9.1	**0.0276**	0.002	8.5	mg/L	4	Standard
	Cd	114	90.1	21.2	**0.0161**	0.007	40.3	ug/L	25	Standard
>	In	115	386376.9	1.2				ug/L	418958	Standard
	Sn	118	119.0	6.3	**-0.0048**	0.014	283.8	ug/L	139	Standard
	Sb	123	1189.3	28.0	**0.3644**	0.118	32.3	ug/L	278	Standard
	Ba	135	16035.5	0.9	**14.6987**	0.292	2.0	ug/L	48	Standard
	Ce	140	285.0	9.8				ug/L	30	Standard
>	Tb	159	644142.5	0.4				ug/L	683588	Standard
	Ho	165	3.3	86.6				ug/L	5	Standard
	Tl	203	214.7	4.0	**0.0020**	0.001	72.6	ug/L	251	Standard
	Tl	205	470.0	11.1	**-0.0062**	0.004	70.7	ug/L	568	Standard
	Pb	206	421.7	3.7	**0.0252**	0.005	20.1	ug/L	334	Standard
	Pb	207	358.3	4.3	**0.0242**	0.005	20.7	ug/L	300	Standard
	Pb	208	455.0	7.0	**0.0286**	0.007	23.2	ug/L	368	Standard
	U	238	246.7	12.0	**0.0690**	0.009	12.9	ug/L	4	Standard
>	Bi	209	391571.6	1.0				ug/L	431904	Standard

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⌈	**Na**	23	3.3	86.6	**-0.1843**	3.638	1973.8	mg/L	0	Standard
|	**Mg**	24	6301.3	1.6	**156.8411**	2.344	1.5	mg/L	25	Standard
|	**K**	39	46.7	52.9	**0.2722**	0.316	116.1	mg/L	17	Standard
|	**Ca**	43	58.3	21.6	**3.1444**	2.189	69.6	mg/L	58	Standard
|	**Fe**	54	22.7	46.7	**0.0536**	0.092	172.2	mg/L	23	Standard
|	**Fe**	57	270.0	20.6	**0.8246**	1.448	175.7	mg/L	255	Standard
⌊>	**Sc-1**	45	23913.9	0.4				mg/L	23084	Standard
	Cl	35	0.7	173.2				ug/L	1	Standard
	Kr	83	4.0	43.3				ug/L	3	Standard
	Br	81	21365.1	1.5				ug/L	1807	Standard
	P	31	83.3	9.2				ug/L	32	Standard
	S	34	16.7	45.8				ug/L	8	Standard
	Sr	88	153.3	15.1				ug/L	143	Standard
	C	12	96.7	23.9				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	9.0	5.3				mg/L	16	Standard
	Ho-1	165	3.3	86.6				mg/L	5	Standard
	Er	166	20.0	50.0				mg/L	7	Standard
	I	127	89503.8	3.3				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.490	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.152	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.223
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.662
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	

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Method 6020 - Summary Report

Sample ID: F BLANK WG608583-04
Sample Date/Time: Thursday, April 06, 2017 13:22:13
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	200105.2	3.0				ug/L	187001	Standard
	Be	9	33.3	8.7	**-0.0042**	0.001	34.0	ug/L	17	Standard
	Al	27	8959.3	11.6	**0.0900**	0.012	13.1	ug/L	1055	Standard
	Sc	45	24640.1	6.9				ug/L	23084	Standard
	Ti	47	38.3	8.4	**0.1558**	0.036	22.9	ug/L	24	Standard
	V	51	1010.8	5.4	**0.0419**	0.012	29.5	ug/L	975	Standard
	Cr	52	7041.3	4.8	**0.6715**	0.030	4.5	ug/L	4542	Standard
	Cr	53	1948.5	24.1	**2.6441**	0.796	30.1	ug/L	657	Standard
	Mn	55	6088.6	6.7	**0.6315**	0.033	5.2	ug/L	1886	Standard
	Co	59	277.0	9.2	**-0.0087**	0.005	61.3	ug/L	343	Standard
	Ni	60	485.7	6.1	**0.2959**	0.013	4.5	ug/L	120	Standard
	Cu	65	1036.0	3.6	**0.5251**	0.005	0.9	ug/L	405	Standard
	Zn	66	2064.5	2.6	**2.3187**	0.016	0.7	ug/L	263	Standard
>	Ge	72	515963.8	3.1				ug/L	524310	Standard
	As	75	-32.6	149.1	**-0.0122**	0.060	493.6	ug/L	4	Standard
	Se	82	17.2	34.2	**0.0809**	0.076	93.5	ug/L	16	Standard
	Se-1	77	170.7	11.5	**1.5432**	0.273	17.7	ug/L	97	Standard
>	Ga	71	25.0	20.0				mg/L	23	Standard
	Rb	85	63.3	4.6				ug/L	35	Standard
	Y	89	354734.5	4.3				ug/L	364600	Standard
>	Rh	103	33.3	37.7				ug/L	10	Standard
	Mo	98	27.3	17.5	**-0.0080**	0.002	26.7	ug/L	45	Standard
	Ag	107	106.0	14.5	**0.0005**	0.004	680.5	ug/L	86	Standard
	Cd	111	5.0	60.5	**0.0029**	0.003	87.3	mg/L	4	Standard
	Cd	114	55.5	37.7	**0.0022**	0.007	303.3	ug/L	25	Standard
>	In	115	418148.4	2.7				ug/L	418958	Standard
	Sn	118	230.7	5.6	**0.1477**	0.029	19.6	ug/L	139	Standard
	Sb	123	801.3	41.1	**0.2137**	0.111	51.9	ug/L	278	Standard
	Ba	135	122.3	13.1	**0.0612**	0.012	18.9	ug/L	48	Standard
	Ce	140	90.0	14.7				ug/L	30	Standard
>	Tb	159	681512.2	3.3				ug/L	683588	Standard
	Ho	165	8.3	69.3				ug/L	5	Standard
	Tl	203	256.7	29.3	**0.0056**	0.012	224.0	ug/L	251	Standard
	Tl	205	515.0	40.0	**-0.0067**	0.015	218.7	ug/L	568	Standard
	Pb	206	574.7	8.0	**0.0511**	0.007	13.0	ug/L	334	Standard
	Pb	207	510.3	5.9	**0.0542**	0.004	6.8	ug/L	300	Standard
	Pb	208	657.3	8.5	**0.0614**	0.008	12.7	ug/L	368	Standard
	U	238	15.7	41.0	**0.0032**	0.002	51.4	ug/L	4	Standard
>	Bi	209	431060.4	3.2				ug/L	431904	Standard

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	Na	23	3.3	86.6	**-0.1679**	3.665	2182.1	mg/L	0	Standard
	Mg	24	45.0	50.9	**0.6485**	0.647	99.8	mg/L	25	Standard
	K	39	21.7	26.6	**-0.0573**	0.080	139.0	mg/L	17	Standard
	Ca	43	48.3	47.8	**1.3857**	4.536	327.3	mg/L	58	Standard
	Fe	54	31.1	8.8	**0.1197**	0.024	19.8	mg/L	23	Standard
	Fe	57	280.0	7.8	**0.9156**	0.961	105.0	mg/L	255	Standard
>	**Sc-1**	45	24640.1	6.9				mg/L	23084	Standard
	Cl	35	2.7	43.3				ug/L	1	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	3367.0	8.0				ug/L	1807	Standard
	P	31	31.7	107.5				ug/L	32	Standard
	S	34	13.3	78.1				ug/L	8	Standard
	Sr	88	120.0	12.5				ug/L	143	Standard
	C	12	40.0	43.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	30.0	33.3				mg/L	16	Standard
	Ho-1	165	8.3	69.3				mg/L	5	Standard
	Er	166	0.0					mg/L	7	Standard
	I	127	11070.7	12.0				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.008	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.408	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.807
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	99.805
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, April 06, 2017 13:25:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	191608.2	3.4				ug/L	187001	Standard
	Be	9	79305.4	2.5	**49.6166**	0.785	1.6	ug/L	17	Standard
	Al	27	4416170.7	2.2	**50.1743**	0.889	1.8	ug/L	1055	Standard
	Sc	45	24186.0	3.1				ug/L	23084	Standard
	Ti	47	12226.6	2.0	**104.5980**	0.607	0.6	ug/L	24	Standard
	V	51	217634.6	0.9	**51.1843**	0.508	1.0	ug/L	975	Standard
	Cr	52	206587.6	0.9	**50.9969**	0.575	1.1	ug/L	4542	Standard
	Cr	53	26725.2	1.4	**51.1958**	0.254	0.5	ug/L	657	Standard
	Mn	55	348746.1	0.9	**50.6481**	0.703	1.4	ug/L	1886	Standard
	Co	59	279005.5	0.6	**50.0694**	0.659	1.3	ug/L	343	Standard
	Ni	60	59378.8	1.3	**49.9067**	0.288	0.6	ug/L	120	Standard
	Cu	65	63347.5	0.8	**50.2106**	0.604	1.2	ug/L	405	Standard
	Zn	66	38661.6	0.8	**49.4484**	0.592	1.2	ug/L	263	Standard
>	Ge	72	514571.3	1.9				ug/L	524310	Standard
	As	75	40705.9	0.6	**49.1061**	0.625	1.3	ug/L	4	Standard
	Se	82	3808.8	0.9	**50.0142**	1.222	2.4	ug/L	16	Standard
	Se-1	77	2738.6	1.9	**50.7542**	0.203	0.4	ug/L	97	Standard
>	Ga	71	33.3	62.5				mg/L	23	Standard
	Rb	85	250.0	10.6				ug/L	35	Standard
	Y	89	354376.4	0.7				ug/L	364600	Standard
>	Rh	103	46.7	37.6				ug/L	10	Standard
	Mo	98	252049.3	0.7	**97.9023**	1.624	1.7	ug/L	45	Standard
	Ag	107	209323.0	0.6	**49.2213**	0.774	1.6	ug/L	86	Standard
	Cd	111	58438.6	0.9	**50.1770**	0.568	1.1	mg/L	4	Standard
	Cd	114	152448.5	1.1	**50.9292**	0.493	1.0	ug/L	25	Standard
>	In	115	413287.6	2.0				ug/L	418958	Standard
	Sn	118	33058.4	1.8	**49.7143**	0.728	1.5	ug/L	139	Standard
	Sb	123	155097.6	1.4	**49.0269**	0.740	1.5	ug/L	278	Standard
	Ba	135	57004.7	1.0	**48.9536**	0.992	2.0	ug/L	48	Standard
	Ce	140	168.3	10.4				ug/L	30	Standard
>	Tb	159	677887.5	1.2				ug/L	683588	Standard
	Ho	165	10.0	50.0				ug/L	5	Standard
	Tl	203	265660.0	1.2	**49.4633**	0.725	1.5	ug/L	251	Standard
	Tl	205	638981.2	1.7	**49.4760**	0.954	1.9	ug/L	568	Standard
	Pb	206	210405.7	1.2	**49.8907**	0.862	1.7	ug/L	334	Standard
	Pb	207	189338.8	1.1	**49.6296**	0.540	1.1	ug/L	300	Standard
	Pb	208	229826.8	0.5	**48.7015**	0.759	1.6	ug/L	368	Standard
	U	238	197326.0	0.9	**51.0977**	0.900	1.8	ug/L	4	Standard
>	Bi	209	427705.3	1.8				ug/L	431904	Standard

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	Na	23	1.7	173.2	**-2.2705**	3.663	161.3	mg/L	0	Standard
	Mg	24	226.7	8.4	**5.1217**	0.400	7.8	mg/L	25	Standard
	K	39	396.7	14.6	**4.7433**	0.667	14.1	mg/L	17	Standard
	Ca	43	68.3	27.7	**4.7501**	3.403	71.6	mg/L	58	Standard
	Fe	54	501.2	8.9	**4.1665**	0.412	9.9	mg/L	23	Standard
	Fe	57	418.3	18.1	**4.6205**	1.672	36.2	mg/L	255	Standard
>	**Sc-1**	45	24186.0	3.1				mg/L	23084	Standard
	Cl	35	0.0					ug/L	1	Standard
	Kr	83	3.7	56.8				ug/L	3	Standard
	Br	81	1920.1	6.6				ug/L	1807	Standard
	P	31	50.0	26.5				ug/L	32	Standard
	S	34	28.3	36.7				ug/L	8	Standard
	Sr	88	143.3	25.7				ug/L	143	Standard
	C	12	26.7	57.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	9.0	113.3				mg/L	16	Standard
	Ho-1	165	10.0	50.0				mg/L	5	Standard
	Er	166	20.0	50.0				mg/L	7	Standard
	I	127	3802.1	8.6				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.233		
	Al	27	100.349		
	Sc	45			
	Ti	47	104.598		
	V	51	102.369		
	Cr	52	101.994		
	Cr	53			
	Mn	55	101.296		
	Co	59	100.139		
	Ni	60	99.813		
	Cu	65	100.421		
	Zn	66	98.897		
>	Ge	72		98.143	
	As	75	98.212		
	Se	82	100.028		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.902		
Ag	107	98.443		
Cd	111	100.354		
Cd	114			
In	115			98.647
Sn	118	99.429		
Sb	123	98.054		
Ba	135	97.907		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.927		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.403		
U	238	102.195		
Bi	209			99.028
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, April 06, 2017 13:28:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	191235.4	3.8				ug/L	187001	Standard
	Be	9	23.3	61.9	**-0.0093**	0.010	104.2	ug/L	17	Standard
	Al	27	1616.8	38.5	**0.0111**	0.008	70.3	ug/L	1055	Standard
	Sc	45	23558.3	4.4				ug/L	23084	Standard
	Ti	47	31.3	38.3	**0.1012**	0.108	106.4	ug/L	24	Standard
	V	51	683.3	7.0	**-0.0323**	0.015	45.9	ug/L	975	Standard
	Cr	52	3726.1	0.9	**-0.1449**	0.020	13.7	ug/L	4542	Standard
	Cr	53	673.3	8.2	**0.1929**	0.107	55.6	ug/L	657	Standard
	Mn	55	2055.5	0.8	**0.0504**	0.004	8.7	ug/L	1886	Standard
	Co	59	266.0	1.6	**-0.0099**	0.002	18.0	ug/L	343	Standard
	Ni	60	175.0	5.5	**0.0377**	0.008	20.4	ug/L	120	Standard
	Cu	65	445.3	3.1	**0.0617**	0.006	10.0	ug/L	405	Standard
	Zn	66	441.0	4.5	**0.2437**	0.014	5.8	ug/L	263	Standard
>	Ge	72	507128.1	2.2				ug/L	524310	Standard
	As	75	9.4	303.7	**0.0391**	0.035	89.6	ug/L	4	Standard
	Se	82	12.9	26.6	**0.0275**	0.044	159.4	ug/L	16	Standard
	Se-1	77	101.0	5.5	**0.2527**	0.135	53.6	ug/L	97	Standard
>	Ga	71	26.7	39.0				mg/L	23	Standard
	Rb	85	36.7	61.5				ug/L	35	Standard
	Y	89	349795.0	2.5				ug/L	364600	Standard
>	Rh	103	35.0	14.3				ug/L	10	Standard
	Mo	98	142.7	23.2	**0.0385**	0.014	37.2	ug/L	45	Standard
	Ag	107	115.7	30.2	**0.0040**	0.010	243.0	ug/L	86	Standard
	Cd	111	12.1	68.8	**0.0096**	0.008	82.6	mg/L	4	Standard
	Cd	114	38.8	26.2	**-0.0027**	0.004	149.9	ug/L	25	Standard
>	In	115	403663.9	4.0				ug/L	418958	Standard
	Sn	118	167.7	5.9	**0.0628**	0.026	40.9	ug/L	139	Standard
	Sb	123	364.7	38.9	**0.0806**	0.052	63.9	ug/L	278	Standard
	Ba	135	52.7	22.0	**0.0037**	0.009	248.7	ug/L	48	Standard
	Ce	140	20.0	50.0				ug/L	30	Standard
>	Tb	159	665352.4	2.5				ug/L	683588	Standard
	Ho	165	8.3	91.7				ug/L	5	Standard
	Tl	203	140.7	15.4	**-0.0152**	0.005	29.6	ug/L	251	Standard
	Tl	205	355.0	25.9	**-0.0182**	0.008	43.7	ug/L	568	Standard
	Pb	206	444.0	2.1	**0.0221**	0.005	21.1	ug/L	334	Standard
	Pb	207	342.0	3.6	**0.0119**	0.006	46.8	ug/L	300	Standard
	Pb	208	435.0	6.4	**0.0162**	0.007	41.6	ug/L	368	Standard
	U	238	38.3	62.8	**0.0093**	0.007	71.5	ug/L	4	Standard
>	Bi	209	424799.7	2.8				ug/L	431904	Standard

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	Na	23	1.7	173.2	**-2.1693**	3.838	176.9	mg/L	0	Standard
	Mg	24	31.7	32.9	**0.3321**	0.272	81.9	mg/L	25	Standard
	K	39	8.3	91.7	**-0.2232**	0.097	43.5	mg/L	17	Standard
	Ca	43	56.7	5.1	**3.0152**	0.721	23.9	mg/L	58	Standard
	Fe	54	19.6	1.2	**0.0294**	0.007	24.9	mg/L	23	Standard
	Fe	57	275.0	15.5	**1.0880**	1.285	118.1	mg/L	255	Standard
>	**Sc-1**	45	23558.3	4.4				mg/L	23084	Standard
	Cl	35	1.3	86.6				ug/L	1	Standard
	Kr	83	3.7	41.7				ug/L	3	Standard
	Br	81	1953.5	7.5				ug/L	1807	Standard
	P	31	51.7	11.2				ug/L	32	Standard
	S	34	20.0	25.0				ug/L	8	Standard
	Sr	88	121.7	14.4				ug/L	143	Standard
	C	12	33.3	34.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	6.2	180.0				mg/L	16	Standard
	Ho-1	165	8.3	91.7				mg/L	5	Standard
	Er	166	10.0	100.0				mg/L	7	Standard
	I	127	3880.5	8.5				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.723	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.350
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.355
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, April 06, 2017 13:31:33
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	187394.3	5.8				ug/L	187001	Standard
	Be	9	350.0	0.0	**0.2003**	0.013	6.4	ug/L	17	Standard
	Al	27	3992.8	130.6	**0.0369**	0.056	153.0	ug/L	1055	Standard
	Sc	45	23773.7	4.0				ug/L	23084	Standard
	Ti	47	34.0	12.8	**0.1255**	0.028	22.2	ug/L	24	Standard
	V	51	2386.3	6.3	**0.3807**	0.012	3.2	ug/L	975	Standard
	Cr	52	7654.3	2.6	**0.8802**	0.047	5.3	ug/L	4542	Standard
	Cr	53	1206.7	4.4	**1.2780**	0.116	9.1	ug/L	657	Standard
	Mn	55	5386.7	29.6	**0.5459**	0.201	36.7	ug/L	1886	Standard
	Co	59	2413.5	13.7	**0.3847**	0.042	10.9	ug/L	343	Standard
	Ni	60	1944.1	4.4	**1.5663**	0.041	2.6	ug/L	120	Standard
	Cu	65	1390.4	9.2	**0.8356**	0.055	6.6	ug/L	405	Standard
	Zn	66	5194.6	2.9	**6.5229**	0.113	1.7	ug/L	263	Standard
>	Ge	72	502232.8	4.5				ug/L	524310	Standard
	As	75	322.5	9.5	**0.4255**	0.025	6.0	ug/L	4	Standard
	Se	82	47.5	14.5	**0.4964**	0.089	17.9	ug/L	16	Standard
	Se-1	77	119.3	9.9	**0.6273**	0.145	23.1	ug/L	97	Standard
>	Ga	71	13.3	78.1				mg/L	23	Standard
	Rb	85	68.3	65.6				ug/L	35	Standard
	Y	89	346311.2	5.0				ug/L	364600	Standard
>	Rh	103	23.3	32.7				ug/L	10	Standard
	Mo	98	123.4	125.0	**0.0292**	0.058	199.8	ug/L	45	Standard
	Ag	107	1781.1	12.9	**0.4053**	0.036	8.9	ug/L	86	Standard
	Cd	111	267.8	21.3	**0.2340**	0.040	17.1	mg/L	4	Standard
	Cd	114	779.7	25.1	**0.2501**	0.055	21.8	ug/L	25	Standard
>	In	115	402177.1	4.5				ug/L	418958	Standard
	Sn	118	135.0	11.5	**0.0127**	0.026	203.1	ug/L	139	Standard
	Sb	123	1342.9	9.4	**0.3973**	0.027	6.9	ug/L	278	Standard
	Ba	135	888.4	10.0	**0.7406**	0.043	5.8	ug/L	48	Standard
	Ce	140	175.0	155.9				ug/L	30	Standard
>	Tb	159	659376.8	3.8				ug/L	683588	Standard
	Ho	165	10.0	86.6				ug/L	5	Standard
	Tl	203	552.7	28.5	**0.0622**	0.026	41.2	ug/L	251	Standard
	Tl	205	1308.4	38.0	**0.0561**	0.035	62.5	ug/L	568	Standard
	Pb	206	1217.4	13.9	**0.2082**	0.029	14.0	ug/L	334	Standard
	Pb	207	1016.7	11.3	**0.1916**	0.021	10.9	ug/L	300	Standard
	Pb	208	1230.7	10.1	**0.1876**	0.017	8.8	ug/L	368	Standard
	U	238	1510.1	8.0	**0.3952**	0.017	4.3	ug/L	4	Standard
>	Bi	209	421833.6	4.0				ug/L	431904	Standard

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	Na	23	1.7	173.2	**-2.2269**	3.739	167.9	mg/L	0	Standard
	Mg	24	31.7	50.8	**0.3143**	0.365	116.2	mg/L	25	Standard
	K	39	16.7	34.6	**-0.1120**	0.082	73.3	mg/L	17	Standard
	Ca	43	56.7	22.2	**2.9322**	2.319	79.1	mg/L	58	Standard
	Fe	54	24.7	52.4	**0.0758**	0.120	157.8	mg/L	23	Standard
	Fe	57	231.7	3.3	**-0.1480**	0.334	225.6	mg/L	255	Standard
>	**Sc-1**	45	23773.7	4.0				mg/L	23084	Standard
	Cl	35	2.7	114.6				ug/L	1	Standard
	Kr	83	2.3	65.5				ug/L	3	Standard
	Br	81	1933.5	9.4				ug/L	1807	Standard
	P	31	35.0	14.3				ug/L	32	Standard
	S	34	18.3	31.5				ug/L	8	Standard
	Sr	88	131.7	20.9				ug/L	143	Standard
	C	12	33.3	34.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	12.4	40.1				mg/L	16	Standard
	Ho-1	165	10.0	86.6				mg/L	5	Standard
	Er	166	20.0	100.0				mg/L	7	Standard
	I	127	3648.8	7.1				mg/L	2930	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.140		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	95.178		
	Cr	52	110.020		
	Cr	53			
	Mn	55	109.175		
	Co	59	96.175		
	Ni	60	97.892		
	Cu	65	104.450		
	Zn	66	104.367		
>	Ge	72		95.789	
	As	75	106.380		
	Se	82	124.100		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, April 06, 2017 15:43:16
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⌊	Rb	85			
⌈	Y	89			
⌊>	Rh	103			
⌈	Mo	98			
|	Ag	107	101.333		
|	Cd	111	97.497		
|	Cd	114			
|>	In	115		95.995	
|	Sn	118			
|	Sb	123	99.318		
⌊	Ba	135	98.752		
⌈	Ce	140			
⌊>	Tb	159			
⌈	Ho	165			
|	Tl	203	77.699		
|	Tl	205			
|	Pb	206			
|	Pb	207			
|	Pb	208	93.784		
|	U	238	98.802		
⌊>	Bi	209		97.668	
⌈	Na	23			
|	Mg	24			
|	K	39			
|	Ca	43			
|	Fe	54			
|	Fe	57			
⌊>	Sc-1	45			
	Cl	35			
	Kr	83			
	Br	81			
	P	31			
	S	34			
	Sr	88			
	C	12			
	N	14			
	Hg	202			
	Dy	164			
	Ho-1	165			
	Er	166			
	I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Thursday, April 06, 2017 15:43:16
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Approved: April 06, 2017

2.4 General Chemistry Data

2.4.1 Method 9056

2.4.1.1 Summary Data

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	9056	**Prep Date:**	04/03/2017 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	12/01/2016 17:22
Workgroup #:	WG608568	**Analyst:**	LJH	**Run Date:**	04/03/2017 18:44
Collect Date:	03/29/2017 15:00	**Dilution:**	10	**File ID:**	I3_040317-11
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	61.8		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	9056	**Prep Date:**	04/03/2017 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	12/01/2016 17:22
Workgroup #:	WG608568	**Analyst:**	LJH	**Run Date:**	04/03/2017 19:05
Collect Date:	03/29/2017 15:00	**Dilution:**	100	**File ID:**	I3_040317-12
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1110		40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.4.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)} \right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 120116 IC3 ICAL.SEQ_OL

Analyst1: CAS Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160109254

Eluent ID#: RGT385836

Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Analytical WGs: 593355 (LOD/LOQ Waters) 593356 (LOD/LOQ Soils)

Internal STD: NA Surrogate STD: NA Calibration STD STD77046 01-DEC-2016

CCV STD: STD77046 LCS STD: STD79166 MS/MSD STD: NA

Comments: System Backpressure: 2166 psi

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_120116-01	ELUENT	1	1		12/01/16 15:00
2	I3_120116-02	DI WATER	1	1		12/01/16 15:20
3	I3_120116-03	WG593545-01 STD	1	1	STD77046	12/01/16 15:40
4	I3_120116-04	WG593545-02 STD	1	1	STD77046	12/01/16 16:01
5	I3_120116-05	WG593545-03 STD	1	1	STD77046	12/01/16 16:21
6	I3_120116-06	WG593545-04 STD	1	1	STD77046	12/01/16 16:41
7	I3_120116-07	WG593545-05 STD	1	1	STD77046	12/01/16 17:02
8	I3_120116-08	WG593545-06 STD	1	1	STD77046	12/01/16 17:22
9	I3_120116-09	WG593545-07 SSCV	1	1	STD79166	12/01/16 17:43
10	I3_120116-10	LCRV @ Lvl 6	1	1	STD79166	12/01/16 18:03
11	I3_120116-11	LCRV @ Lvl 4	1	1	STD79166	12/01/16 18:23
12	I3_120116-12	LCRV @ Lvl 2	1	1	STD79166	12/01/16 18:44
13	I3_120116-13	LCRV @ Lvl 0	1	1		12/01/16 19:04
14	I3_120116-14	WG593357-01 ANION CCV	1	1	STD77046	12/01/16 19:24
15	I3_120116-15	WG593357-02 ANION CCB	1	1		12/01/16 19:45
16	I3_120116-16	WG593355-01 ANION BLANK	1	1		12/01/16 20:05
17	I3_120116-17	WG593355-02 ANION LCS	1	1	STD79166	12/01/16 20:25
18	I3_120116-18	WG593355-03 ANION LCS2	1	1	STD79166	12/01/16 20:46
19	I3_120116-19	L16100002-01 LOD (F,CL,BR,SO4)	1	1		12/01/16 21:06
20	I3_120116-20	L16100002-01 LOD (NO2,NO3)	1	1		12/01/16 21:27
21	I3_120116-21	L16100004-01 LOQ (F,CL,BR,SO4)	1	1		12/01/16 21:47
22	I3_120116-22	L16100004-01 LOQ (NO2,NO3)	1	1		12/01/16 22:07
23	I3_120116-23	L16100004-09 LOQ (F,CL,BR,SO4)	1	1		12/01/16 22:28
24	I3_120116-24	L16100004-09 LOQ (NO2,NO3)	1	1		12/01/16 22:48
25	I3_120116-25	WG593357-03 ANION CCV	1	1	STD77046	12/01/16 23:08
26	I3_120116-26	WG593357-04 ANION CCB	1	1		12/01/16 23:29
27	I3_120116-27	WG593356-01 ANION BLANK-SOIL	7	1		12/01/16 23:49
28	I3_120116-28	WG593356-02 ANION LCS-SOIL	7	1	STD79166	12/02/16 00:09
29	I3_120116-29	WG593356-03 ANION LCS2-SOIL	7	1	STD79166	12/02/16 00:30
30	I3_120116-30	L16100003-01 LOD (F,CL,BR,SO4)	7	1		12/02/16 00:50
31	I3_120116-31	L16100003-01 LOD (NO2,NO3)	7	1		12/02/16 01:11
32	I3_120116-32	L16100005-01 LOQ (F,CL,BR,SO4)	7	1		12/02/16 01:31
33	I3_120116-33	L16100005-01 LOQ (NO2,NO3)	7	1		12/02/16 01:51

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Instrument Run Log

Instrument: IC3 Dataset: 120116 IC3 ICAL.SEQ_OL

Analyst1: CAS Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160109254

Eluent ID#: RGT385836

Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Analytical WGs: 593355 (LOD/LOQ Waters) 593356 (LOD/LOQ Soils)

Internal STD: NA Surrogate STD: NA STD77046 01-DEC-2016

CCV STD: STD77046 LCS STD: STD79166 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I3_120116-34	L16100005-10 LOQ (F,CL,BR,SO4)	7	1		12/02/16 02:12
35	I3_120116-35	L16100005-10 LOQ (NO2,NO3)	7	1		12/02/16 02:32
36	I3_120116-36	WG593357-05 ANION CCV	1	1	STD77046	12/02/16 02:52
37	I3_120116-37	WG593357-06 ANION CCB	1	1		12/02/16 03:13
38	I3_120116-38	END	1	1		12/02/16 03:33

Comments

Seq.	Rerun	Dil.	Reason	Analytes

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 040317 IC3.SEQ
Analyst1: LJH Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160109254
Eluent ID#: RGT39747, 39767
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG608568
Internal STD: NA Surrogate STD: NA Calibration STD STD74524 07-JUN-2016
CCV STD: STD77046 LCS STD: STD77045 MS/MSD STD: STD77045

Comments: All samples that were ran at a dilution were due to the pre-screening analysis performed. Anything over 200ppm for CL and SO4 was automatically diluted for the safety of the instrument.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_040317-01	ELUENT	1	1		04/03/17 15:21
2	I3_040317-02	DI WATER	1	1		04/03/17 15:41
3	I3_040317-03	WG608569-01 ANION CCV	1	1		04/03/17 16:01
4	I3_040317-04	WG608569-02 ANION CCB	1	1		04/03/17 16:22
5	I3_040317-05	WG608568-01 ANION BLANK	1	1		04/03/17 16:42
6	I3_040317-06	WG608568-02 ANION LCS	1	1		04/03/17 17:02
45	I3_040317-07	L17031693-01 REF	1	1		04/03/17 17:23
8	I3_040317-08	WG608568-04 MS	1	1		04/03/17 17:43
9	I3_040317-09	WG608568-05 MSD	1	1		04/03/17 18:03
10	I3_040317-10	WG608568-06 DUP	1	1		04/03/17 18:24
11	I3_040317-11	L17031689-01 10X	1	10		04/03/17 18:44
12	I3_040317-12	L17031689-01 100X	1	100		04/03/17 19:05
13	I3_040317-13	L17031690-01 20X	1	20		04/03/17 19:25
14	I3_040317-14	L17031690-01 200X	1	200		04/03/17 19:45
15	I3_040317-15	WG608569-03 ANION CCV	1	1		04/03/17 20:06
16	I3_040317-16	WG608569-04 ANION CCB	1	1		04/03/17 20:26
17	I3_040317-17	L17031705-01	2	1		04/03/17 20:46
18	I3_040317-18	L17031705-02	2	1		04/03/17 21:07
19	I3_040317-19	L17031705-03	2	1		04/03/17 21:27
20	I3_040317-20	L17040017-01 20X	2	20		04/03/17 21:47
21	I3_040317-21	L17040017-01 200X	2	200		04/03/17 22:08
22	I3_040317-22	L17040017-02 30X	2	30		04/03/17 22:28
23	I3_040317-23	L17040017-02 300X	2	300		04/03/17 22:48
24	I3_040317-24	L17040017-03 50X	2	50		04/03/17 23:09
25	I3_040317-25	L17040017-03 500X	2	500		04/03/17 23:29
26	I3_040317-26	L17040017-04 30X	2	30		04/03/17 23:50
27	I3_040317-27	WG608569-05 ANION CCV	1	1		04/04/17 00:10
28	I3_040317-28	WG608569-06 ANION CCB	1	1		04/04/17 00:30
29	I3_040317-29	L17040017-04 300X	2	300		04/04/17 00:51
30	I3_040317-30	L17040017-05 30X	2	30		04/04/17 01:11
31	I3_040317-31	L17040017-05 300X	2	300		04/04/17 01:31
32	I3_040317-32	L17040017-06 30X	2	30		04/04/17 01:52
33	I3_040317-33	L17040017-06 300X	2	300		04/04/17 02:12

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 040317 IC3.SEQ

Analyst1: LJH Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 19

Maintenance Log ID: Syringe Filter Lot#: 160109254

Eluent ID#: RGT39747, 39767

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG608568

Internal STD: NA Surrogate STD: NA STD74524 07-JUN-2016

CCV STD: STD77046 LCS STD: STD77045 STD77045

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I3_040317-34	WG608569-07 ANION CCV	1	1		04/04/17 02:32
35	I3_040317-35	WG608569-08 ANION CCB	1	1		04/04/17 02:53
36	I3_040317-36	WG608569-09 ANION CCV	1	1		04/04/17 11:42
37	I3_040317-37	WG608569-10 ANION CCB	1	1		04/04/17 12:02
38	I3_040317-38	L17031705-01 2X	2	2		04/04/17 12:22
39	I3_040317-39	L17031705-02 2X	2	2		04/04/17 12:43
40	I3_040317-40	L17031705-03 2X	2	2		04/04/17 13:03
41	I3_040317-41	L17040017-01 300X	2	300		04/04/17 13:23
42	I3_040317-42	WG608569-11 CCV	1	1		04/04/17 13:44
43	I3_040317-43	WG608569-12 CCB	1	1		04/04/17 14:04
44	I3_040317-44	END	1	1		04/04/17 14:24

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	2		
	L17031705-01 will need to be re-ran due to being over 24ppm for CL.			
18	X	2		
	L17031705-02 will need to be re-ran due to being over 24ppm for CL.			
19	X	2		
	L17031705-03 will need to be re-ran due to being over 24ppm for CL.			
21	X	300		
	L17040017-01 200X was over the 24ppm for CL.			

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Microbac Laboratories Inc.

Data Checklist

Date: 01-DEC-2016
Analyst: CAS
Analyst: NA
Method: 300/9056
Instrument: IC3
Curve Workgroup: WG593545
Runlog ID: 79020
Analytical Workgroups: L16100002, L16100003, L16100004, L16100005

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	2166PSI
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	CAS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
05-DEC-2016

Secondary Reviewer:
05-DEC-2016

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-05-2016 16:27:53

Microbac Laboratories Inc.

Data Checklist

Date: 03-APR-2017
Analyst: LJH
Analyst: NA
Method: 300/9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 81342
Analytical Workgroups: L17031689, -1690, -1693, -1705, L17040017

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	LJH
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 04-APR-2017

Secondary Reviewer: 05-APR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: APR-05-2017 09:33:19

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 **AAB#:** WG608568

Login Number: L17031689

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP140-7428-GRAB	01	03/29/17					04/03/2017	5	2	*	04/03/17	5.2	2	*
LH18/24-SP140-7428-GRAB	01	03/29/17					04/03/2017	5	2	*	04/03/17	5.2	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5230263
Report generated 04/05/2017 09:49

METHOD BLANK SUMMARY

Login Number: L17031689
Work Group: WG608568
Blank File ID: I3_040317-05
Blank Sample ID: WG608568-01
Prep Date: 04/03/17 15:00
Instrument ID: IC3
Analyzed Date: 04/03/17 16:42
Method: 9056
Analyst: LJH

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608568-02	I3_040317-06	04/03/17 17:02	01
DUP	WG608568-06	I3_040317-10	04/03/17 18:24	01
LH18/24-SP140-7428-GRAB	L17031689-01	I3_040317-11	04/03/17 18:44	DL01
LH18/24-SP140-7428-GRAB	L17031689-01	I3_040317-12	04/03/17 19:05	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 5230265
Report generated 04/05/2017 09:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031689 Prep Date: 04/03/17 15:00 Sample ID: WG608568-01
Instrument ID: IC3 Run Date: 04/03/17 16:42 Prep Method: 9056
File ID: I3_040317-05 Analyst: LJH Method: 9056
Workgroup (AAB#): WG608568 Matrix: Water Units: mg/L
Contract #: Cal ID: IC3-01-DEC-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5230266
05-APR-2017 09:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031689 Run Date: 04/03/2017 Sample ID: WG608568-02
Instrument ID: IC3 Run Time: 17:02 Prep Method: 9056
File ID: I3_040317-06 Analyst: LJH Method: 9056
Workgroup (AAB#): WG608568 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD79166 Cal ID: IC3-01-DEC-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.27	103	90 - 110	
Sulfate	40.0	41.5	104	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 5230267
Report generated: 04/05/2017 09:49

Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L17031689
Analytical Method: 9056
ICAL Workgroup: WG593545

Instrument ID: IC3
Initial Calibration Date: 01-DEC-16 17:22
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.791	5.91		1.00000
Sulfate		7.754	8.18		1.00000

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 5230268
Report generated 04/05/2017 09:49

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L17031689
Analytical Method: 9056

Instrument ID: IC3
Initial Calibration Date: 01-DEC-16 17:22
Column ID: F

Analyte	WG593545-01			WG593545-02			WG593545-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	0.200	0.0343000000	5.831	1.00	0.162700000	6.146	4.00	0.663600000	6.028
Sulfate	1.00	0.121500000	8.230	5.00	0.598000000	8.361	20.0	2.48560000	8.046

INT_CAL - Modified 03/06/2008
PDF File ID: 5230268
Report generated 04/05/2017 09:49

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L17031689
Analytical Method: 9056
Instrument ID: IC3
Initial Calibration Date: 01-DEC-16 17:22
Column ID: F

Analyte	WG593545-04			WG593545-05			WG593545-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	8.00	1.36840000	5.846	12.0	2.11410000	5.676	24.0	4.60140000	5.216
Sulfate	40.0	5.18840000	7.710	60.0	8.07990000	7.426	120	17.7738000	6.752

INT_CAL - Modified 03/06/2008
PDF File ID: 5230268
Report generated 04/05/2017 09:49

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L17031689 Run Date: 12/01/2016 Sample ID: WG593545-07
Instrument ID: IC3 Run Time: 17:43 Method: 9056
File ID: I3_120116-09 Analyst: CAS QC Key: DOD4
ICal Workgroup: WG593545 Cal ID: IC3 - 01-DEC-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	8.01	mg/L	5.85	0.100	10	
Sulfate		40.0	40.2	mg/L	7.71	0.500	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 5230270
Report generated 04/05/2017 09:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 | Run Date: 04/03/2017 | Sample ID: WG608569-02
Instrument ID: IC3 | Run Time: 16:22 | Method: 9056
File ID: I3_040317-04 | Analyst: LJH | Units: mg/L
Workgroup (AAB#): WG608568 | Cal ID: IC3 - 01-DEC-16
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5230321
Report generated 04/05/2017 09:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031689 | Run Date: 04/03/2017 | Sample ID: WG608569-04
Instrument ID: IC3 | Run Time: 20:26 | Method: 9056
File ID: I3_040317-16 | Analyst: LJH | Units: mg/L
Workgroup (AAB#): WG608568 | Cal ID: IC3 - 01-DEC-16
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5230321
Report generated 04/05/2017 09:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031689 Run Date: 04/03/2017 Sample ID: WG608569-01

Instrument ID: IC3 Run Time: 16:01 Method: 9056

File ID: I3_040317-03 Analyst: LJH QC Key: DOD4

Workgroup (AAB#): WG608568 Cal ID: IC3 - 01-DEC-16

Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.16	mg/L	5.73	2.04	10	
Sulfate		40.0	40.9	mg/L	7.57	2.22	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008

PDF File ID: 5230271

Report generated 04/05/2017 09:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031689 Run Date: 04/03/2017 Sample ID: WG608569-03
Instrument ID: IC3 Run Time: 20:06 Method: 9056
File ID: I3_040317-15 Analyst: LJH QC Key: DOD4
Workgroup (AAB#): WG608568 Cal ID: IC3 - 01-DEC-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.18	mg/L	5.72	2.29	10	
Sulfate		40.0	41.0	mg/L	7.56	2.39	10	

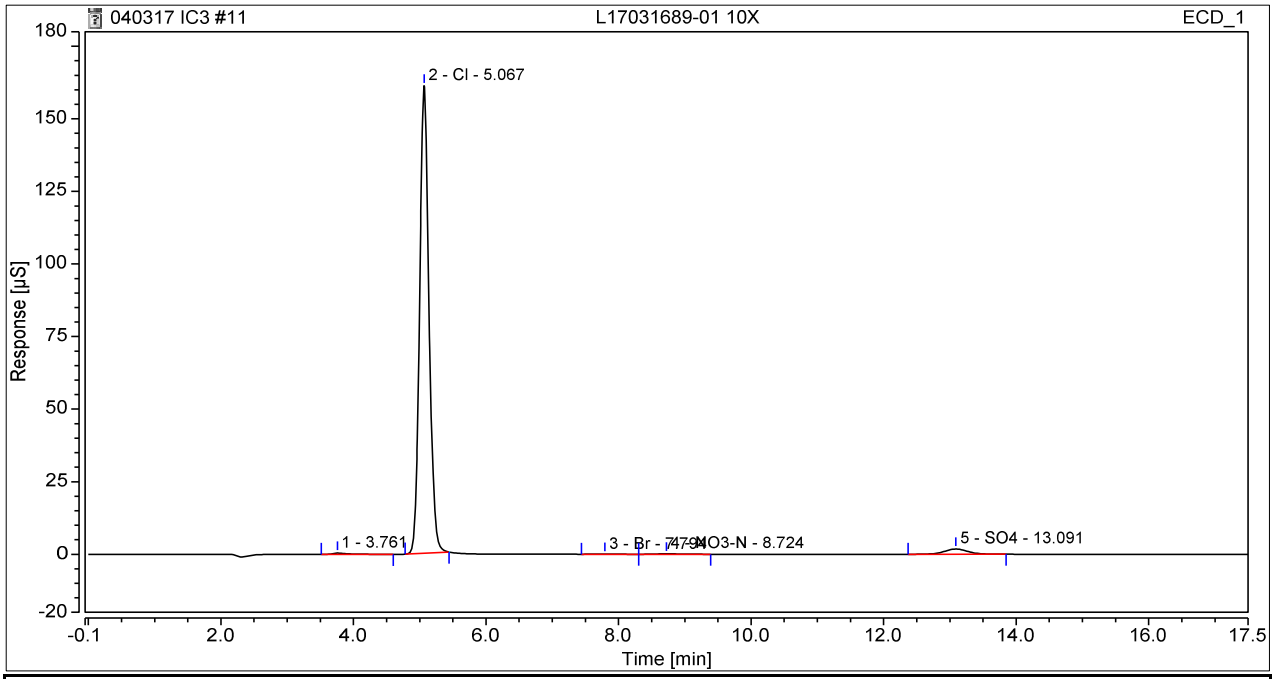
* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 5230271
Report generated 04/05/2017 09:49

2.4.1.3 Sample Data

11 L17031689-01 10X
1,10 LJH

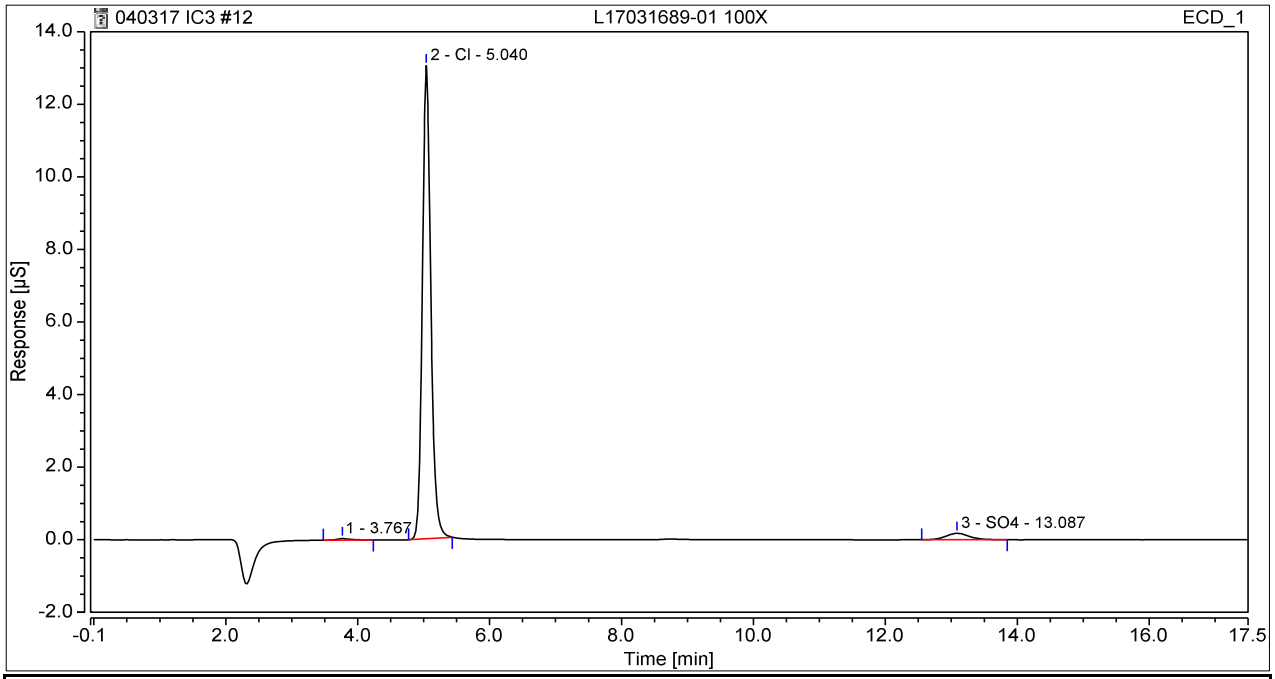
Sample Name:	**L17031689-01 10X**	*Injection Volume:*	**5000.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**04/03/2017 18:44**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	5.07	Cl	161.0255	26.3293	96.7	92.714	M
3	7.79	Br	0.0314	0.0086	0.0	0.141	M
4	8.72	NO3-N	0.1781	0.0555	0.2	0.144	M
5	13.09	SO4	1.8109	0.7470	2.7	6.175	M
Total:			**163.05**	**27.14**	**100**	**99.17**	

12 L17031689-01 100X
1,100 LJH

Sample Name:	**L17031689-01 100X**	*Injection Volume:*	**5000.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**04/03/2017 19:05**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

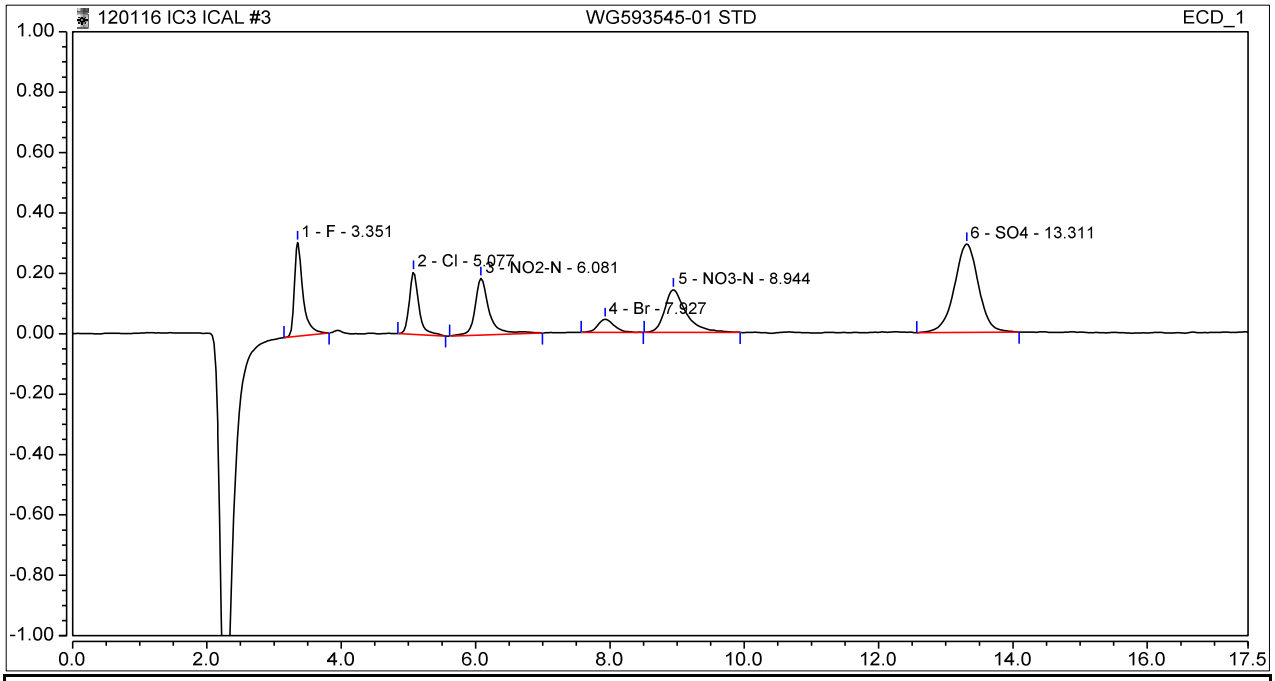


No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	5.04	Cl	13.0361	1.9318	95.8	11.056	BMB
3	13.09	SO4	0.1771	0.0741	3.7	0.605	BMB
Total:			**13.21**	**2.01**	**99**	**11.66**	

2.4.1.4 Standards Data

3 WG593545-01 STD
1,1 CAS STD77046

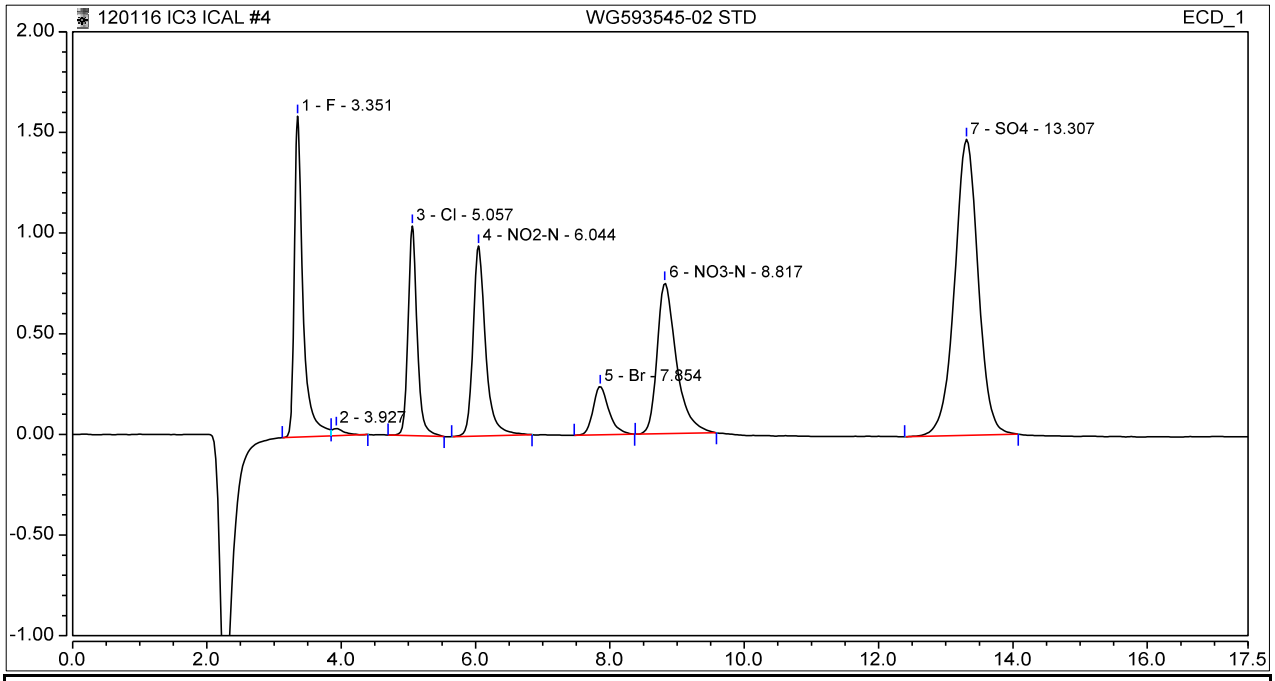
Sample Name:	**WG593545-01 STD**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/01/2016 15:40**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.35	F	0.3102	0.0458	14.6	0.201	M
2	5.08	Cl	0.2073	0.0343	11.0	0.200	M
3	6.08	NO2-N	0.1872	0.0460	14.7	0.122	M
4	7.93	Br	0.0436	0.0125	4.0	0.200	M
5	8.94	NO3-N	0.1417	0.0526	16.8	0.135	M
6	13.31	SO4	0.2923	0.1215	38.9	1.002	M
Total:			**1.18**	**0.31**	**100**	**1.86**	

4 WG593545-02 STD
1,1 CAS STD77046

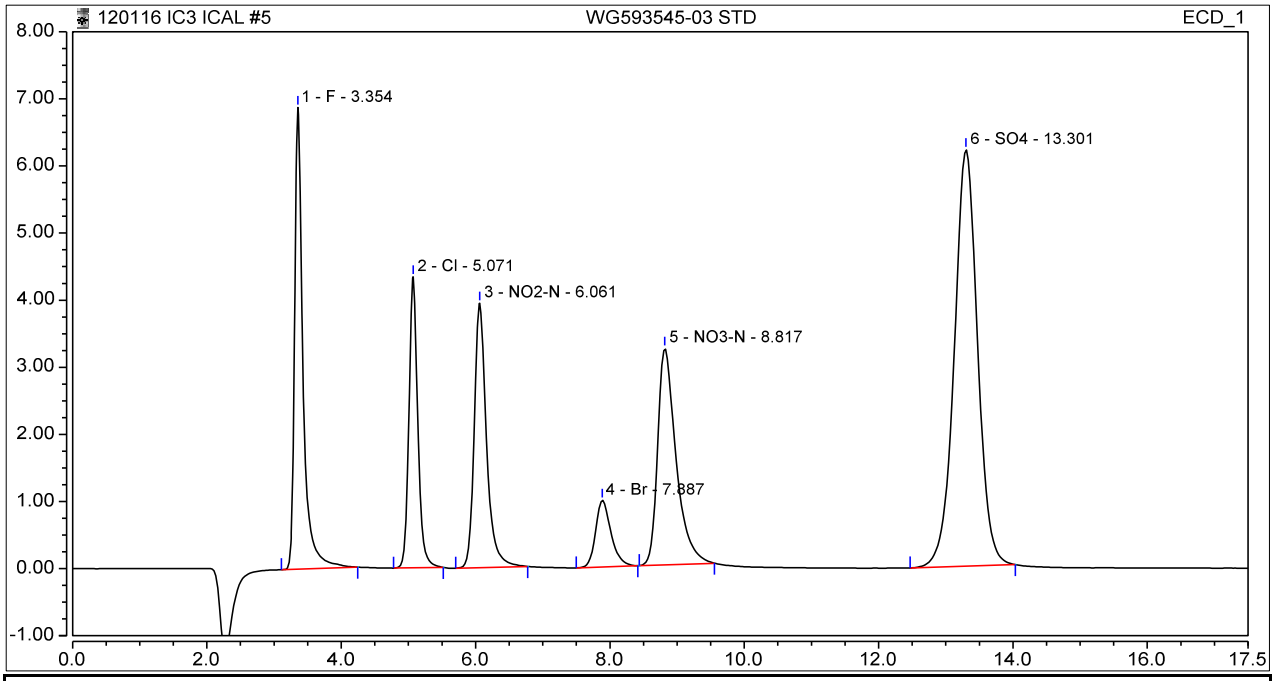
Sample Name:	**WG593545-02 STD**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/01/2016 16:01**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.35	F	1.5946	0.2386	15.6	0.983	M
3	5.06	Cl	1.0416	0.1627	10.7	0.996	M
4	6.04	NO2-N	0.9439	0.2048	13.4	0.598	M
5	7.85	Br	0.2409	0.0658	4.3	1.010	M
6	8.82	NO3-N	0.7490	0.2494	16.3	0.669	M
7	13.31	SO4	1.4700	0.5980	39.2	4.952	M
Total:			**6.04**	**1.52**	**100**	**9.21**	

5 WG593545-03 STD
1,1 CAS STD77046

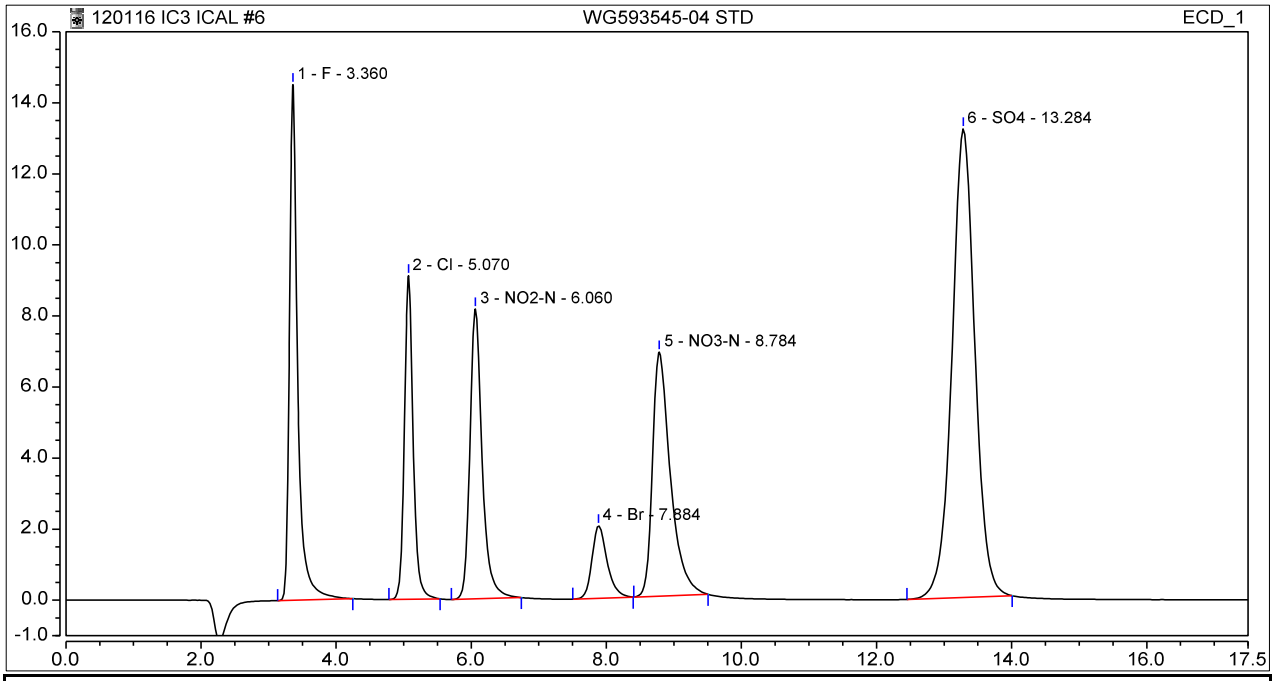
Sample Name:	**WG593545-03 STD**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/01/2016 16:21**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.35	F	6.8792	0.9972	15.9	4.002	M
2	5.07	Cl	4.3366	0.6636	10.6	4.006	M
3	6.06	NO2-N	3.9403	0.8357	13.3	2.447	M
4	7.89	Br	0.9936	0.2638	4.2	3.993	M
5	8.82	NO3-N	3.2267	1.0254	16.4	2.709	M
6	13.30	SO4	6.2072	2.4856	39.6	20.018	M
Total:			**25.58**	**6.27**	**100**	**37.18**	

6 WG593545-04 STD
1,1 CAS STD77046

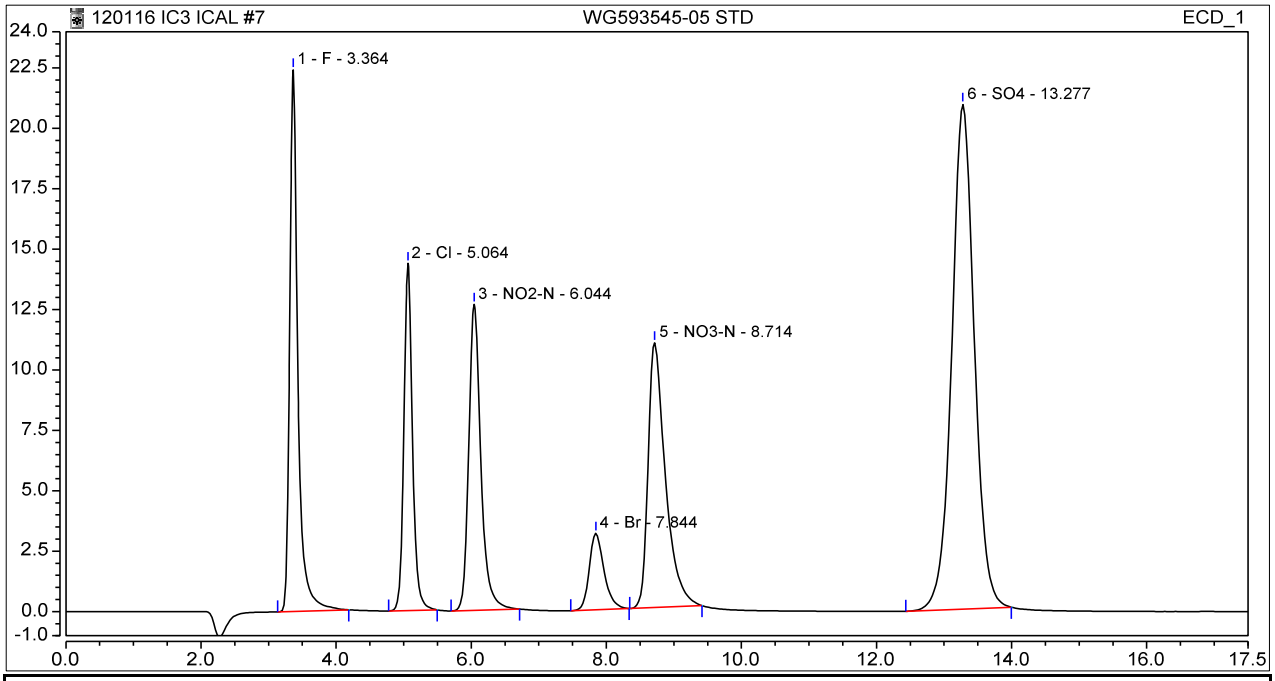
Sample Name:	**WG593545-04 STD**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/01/2016 16:41**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.36	F	14.5129	2.0600	15.9	8.082	M
2	5.07	Cl	9.1102	1.3684	10.6	8.015	M
3	6.06	NO2-N	8.1623	1.7115	13.2	4.908	M
4	7.88	Br	2.0434	0.5309	4.1	7.960	M
5	8.78	NO3-N	6.8691	2.1105	16.3	5.418	M
6	13.28	SO4	13.1891	5.1884	40.0	40.195	M
Total:			**53.89**	**12.97**	**100**	**74.58**	

7 WG593545-05 STD
1,1 CAS STD77046

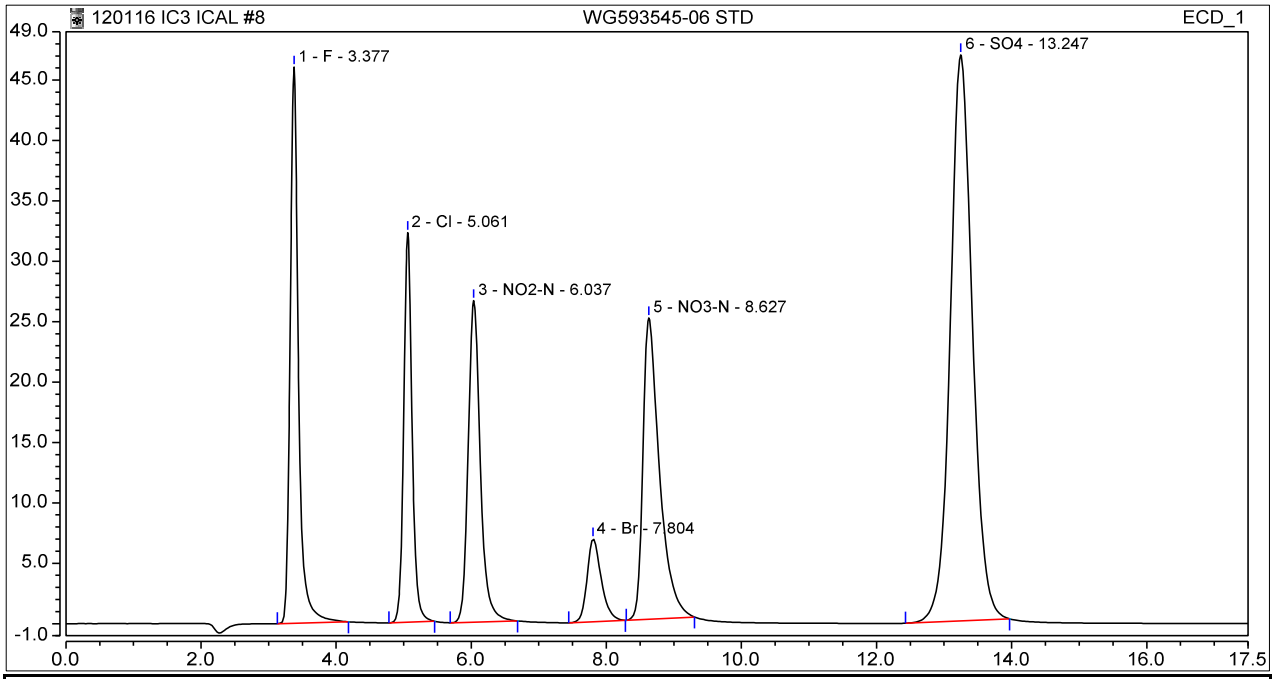
Sample Name:	**WG593545-05 STD**	*Injection Volume:*	**5000.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/01/2016 17:02**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.36	F	22.4169	3.1530	15.7	12.113	M
2	5.06	Cl	14.3675	2.1141	10.6	12.013	M
3	6.04	NO2-N	12.6638	2.6236	13.1	7.357	M
4	7.84	Br	3.1722	0.8036	4.0	11.941	M
5	8.71	NO3-N	10.9613	3.2605	16.3	8.131	M
6	13.28	SO4	20.8901	8.0799	40.3	60.294	M
Total:			**84.47**	**20.03**	**100**	**111.85**	

8 WG593545-06 STD
1,1 CAS STD77046

Sample Name:	**WG593545-06 STD**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/01/2016 17:22**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

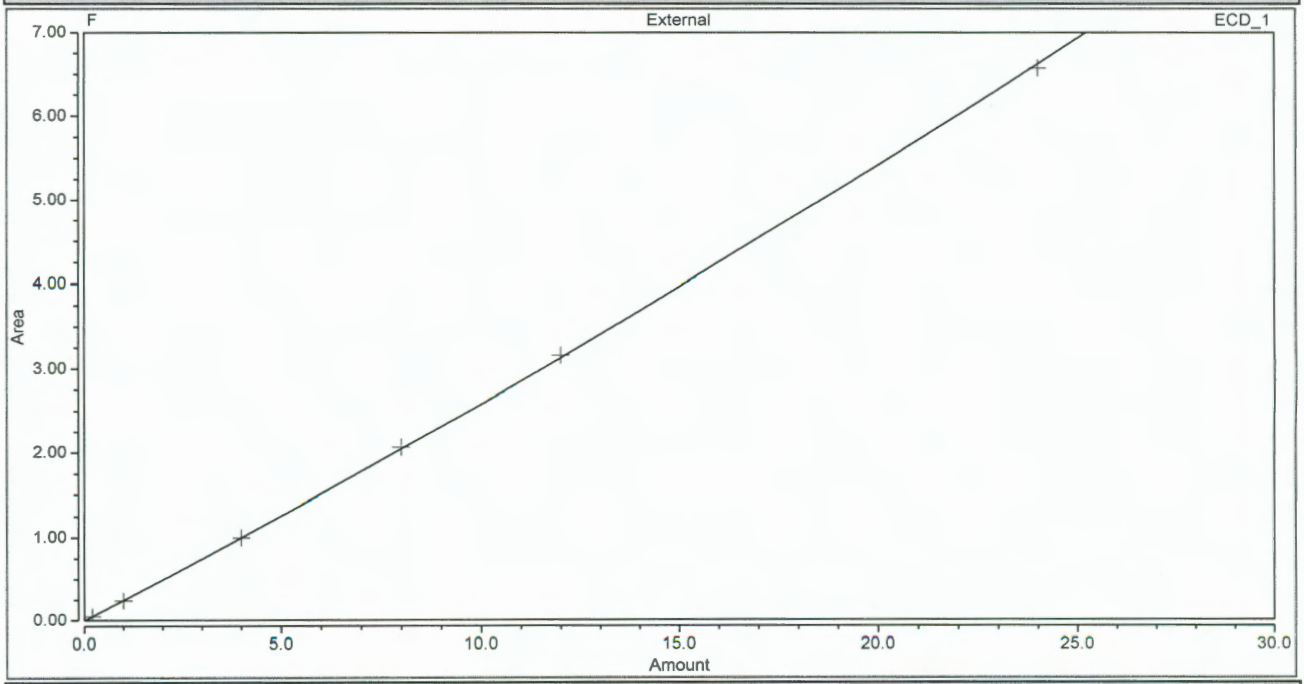


No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	46.0328	6.5724	15.2	23.838	M
2	5.06	Cl	32.2540	4.6014	10.6	23.975	M
3	6.04	NO2-N	26.6066	5.5326	12.8	14.537	M
4	7.80	Br	6.8536	1.6634	3.8	24.092	M
5	8.63	NO3-N	24.9522	7.0863	16.4	16.269	M
6	13.25	SO4	46.8610	17.7738	41.1	119.621	M
Total:			**183.56**	**43.23**	**100**	**222.33**	

Calibration

Calibration Details	F		
Calibration Type	Quad, WithOffset, 1/A²	*Offset (C0)*	-0.0034
Evaluation Type	Area	*Slope (C1)*	0.2448
Number of Calibration Points	6	*Curve (C2)*	0.0013
Number of disabled Calibration Points	0	*R-Square*	0.9999

Calibration Plot F



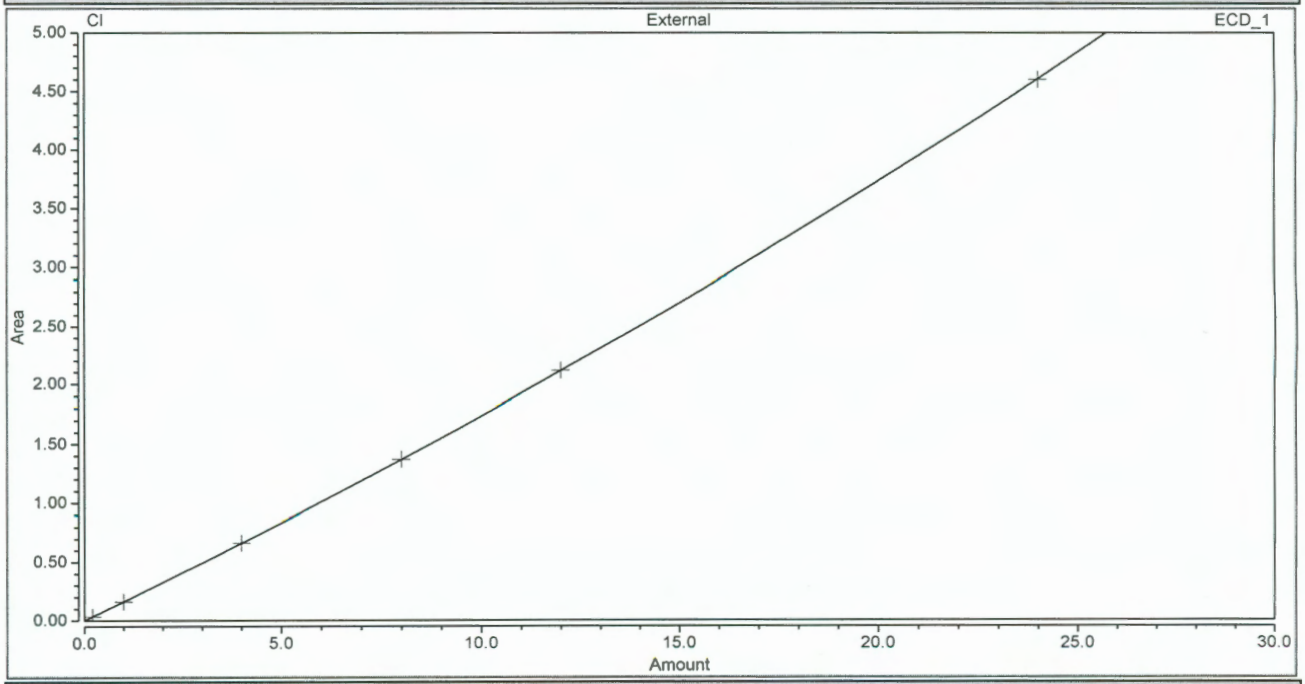
Calibration Results F

No.	Injection Name	Calibration Level	X Value ECD_1 F	Y Value ECD_1 F	Y Value ECD_1 F	Area µS*min ECD_1 F	Height µS ECD_1 F
1	WG593352-01 STD	01	0.2000	0.0458	0.0458	0.046	0.310
2	WG593352-02 STD	02	1.0000	0.2386	0.2386	0.239	1.595
3	WG593352-03 STD	03	4.0000	0.9972	0.9972	0.997	6.879
4	WG593352-04 STD	04	8.0000	2.0600	2.0600	2.060	14.513
5	WG593352-05 STD	05	12.0000	3.1530	3.1530	3.153	22.417
6	WG593352-06 STD	06	24.0000	6.5724	6.5724	6.572	46.033

Calibration

Calibration Details	Cl		
Calibration Type	Quad, WithOffset, 1/A²	*Offset (C0)*	0.0023
Evaluation Type	Area	*Slope (C1)*	0.1597
Number of Calibration Points	6	*Curve (C2)*	0.0013
Number of disabled Calibration Points	0	*R-Square*	1.0000

Calibration Plot Cl



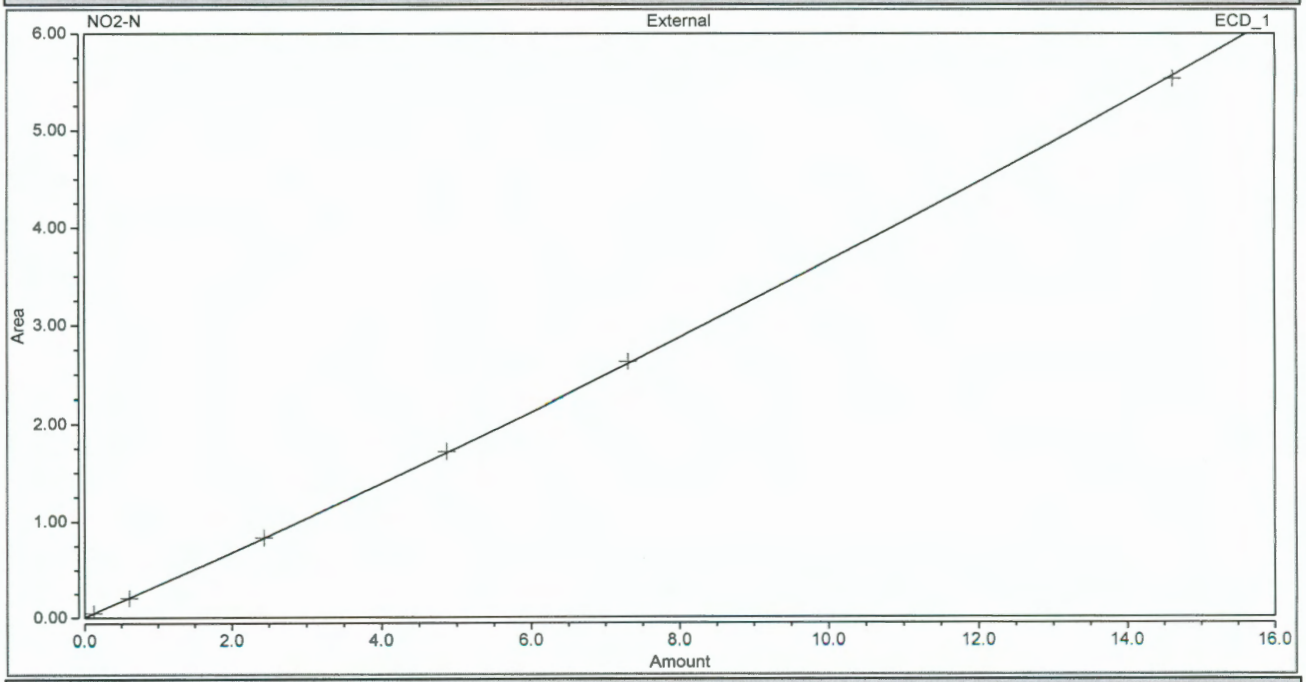
Calibration Results Cl

No.	Injection Name	Calibration Level	X Value ECD_1 Cl	Y Value ECD_1 Cl	Y Value ECD_1 Cl	Area µS*min ECD_1 Cl	Height µS ECD_1 Cl
1	WG593352-01 STD	01	0.2000	0.0343	0.0343	0.034	0.207
2	WG593352-02 STD	02	1.0000	0.1627	0.1627	0.163	1.042
3	WG593352-03 STD	03	4.0000	0.6636	0.6636	0.664	4.337
4	WG593352-04 STD	04	8.0000	1.3684	1.3684	1.368	9.110
5	WG593352-05 STD	05	12.0000	2.1141	2.1141	2.114	14.367
6	WG593352-06 STD	06	24.0000	4.6014	4.6014	4.601	32.254

Calibration

Calibration Details	NO2-N		
Calibration Type	Quad, WithOffset, 1/A²	*Offset (C0)*	0.0055
Evaluation Type	Area	*Slope (C1)*	0.3309
Number of Calibration Points	6	*Curve (C2)*	0.0034
Number of disabled Calibration Points	0	*R-Square*	0.9999

Calibration Plot NO2-N



Calibration Results NO2-N

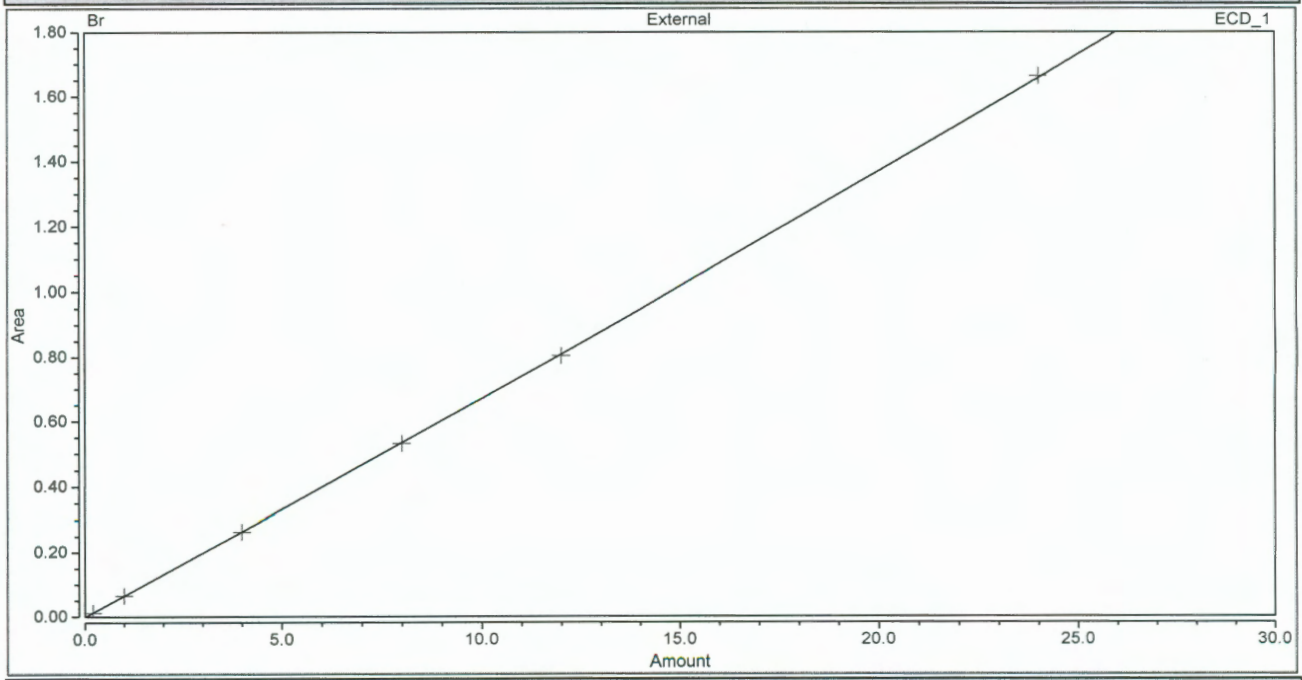
No.	Injection Name	Calibration Level	X Value ECD_1 NO2-N	Y Value ECD_1 NO2-N	Y Value ECD_1 NO2-N	Area µS*min ECD_1 NO2-N	Height µS ECD_1 NO2-N
1	WG593352-01 STD	01	0.1218	0.0460	0.0460	0.046	0.187
2	WG593352-02 STD	02	0.6089	0.2048	0.2048	0.205	0.944
3	WG593352-03 STD	03	2.4356	0.8357	0.8357	0.836	3.940
4	WG593352-04 STD	04	4.8714	1.7115	1.7115	1.711	8.162
5	WG593352-05 STD	05	7.3070	2.6236	2.6236	2.624	12.664
6	WG593352-06 STD	06	14.6140	5.5326	5.5326	5.533	26.607

00851622

Calibration

Calibration Details	Br		
Calibration Type	Quad, WithOffset, 1/A²	*Offset (C0)*	-0.0007
Evaluation Type	Area	*Slope (C1)*	0.0657
Number of Calibration Points	6	*Curve (C2)*	0.0001
Number of disabled Calibration Points	0	*R-Square*	1.0000

Calibration Plot Br



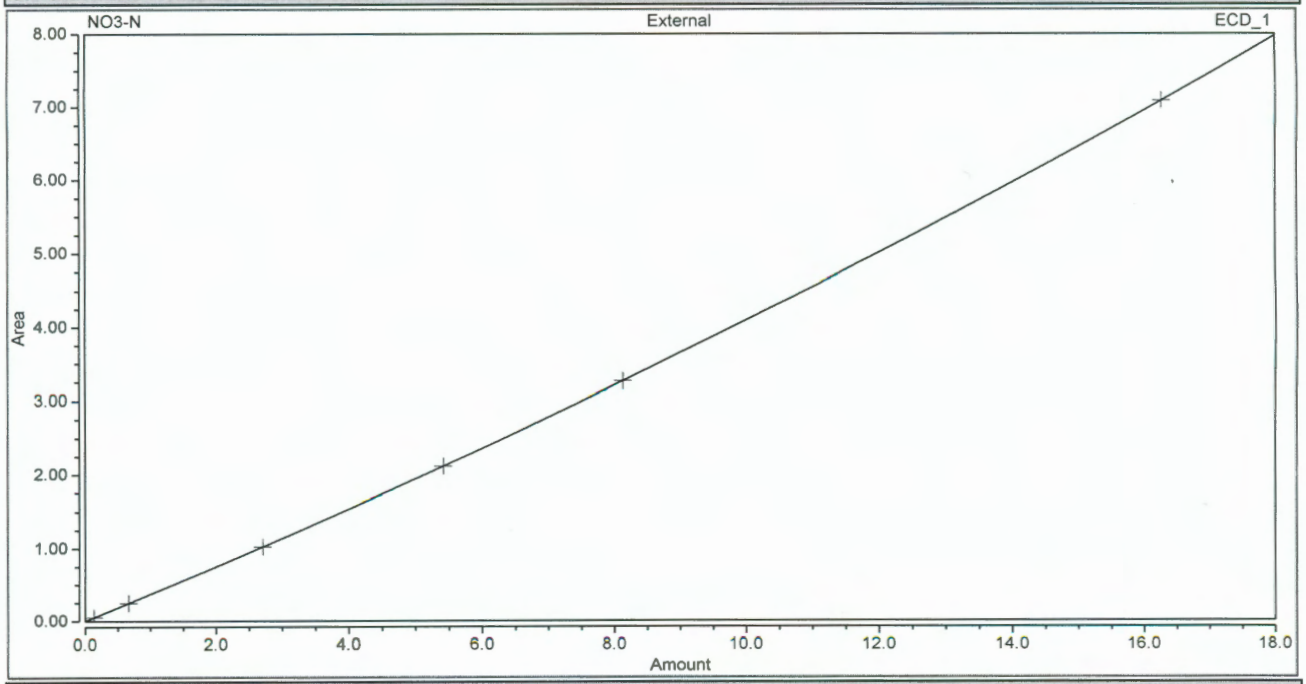
Calibration Results Br

No.	Injection Name	Calibration Level	X Value ECD_1 Br	Y Value ECD_1 Br	Y Value ECD_1 Br	Area µS*min ECD_1 Br	Height µS ECD_1 Br
1	WG593352-01 STD	01	0.2000	0.0125	0.0125	0.012	0.044
2	WG593352-02 STD	02	1.0000	0.0658	0.0658	0.066	0.241
3	WG593352-03 STD	03	4.0000	0.2638	0.2638	0.264	0.994
4	WG593352-04 STD	04	8.0000	0.5309	0.5309	0.531	2.043
5	WG593352-05 STD	05	12.0000	0.8036	0.8036	0.804	3.172
6	WG593352-06 STD	06	24.0000	1.6634	1.6634	1.663	6.854

Calibration

Calibration Details	NO3-N		
Calibration Type	Quad, WithOffset, 1/A²	*Offset (C0)*	0.0029
Evaluation Type	Area	*Slope (C1)*	0.3659
Number of Calibration Points	6	*Curve (C2)*	0.0043
Number of disabled Calibration Points	0	*R-Square*	1.0000

Calibration Plot NO3-N



Calibration Results NO3-N

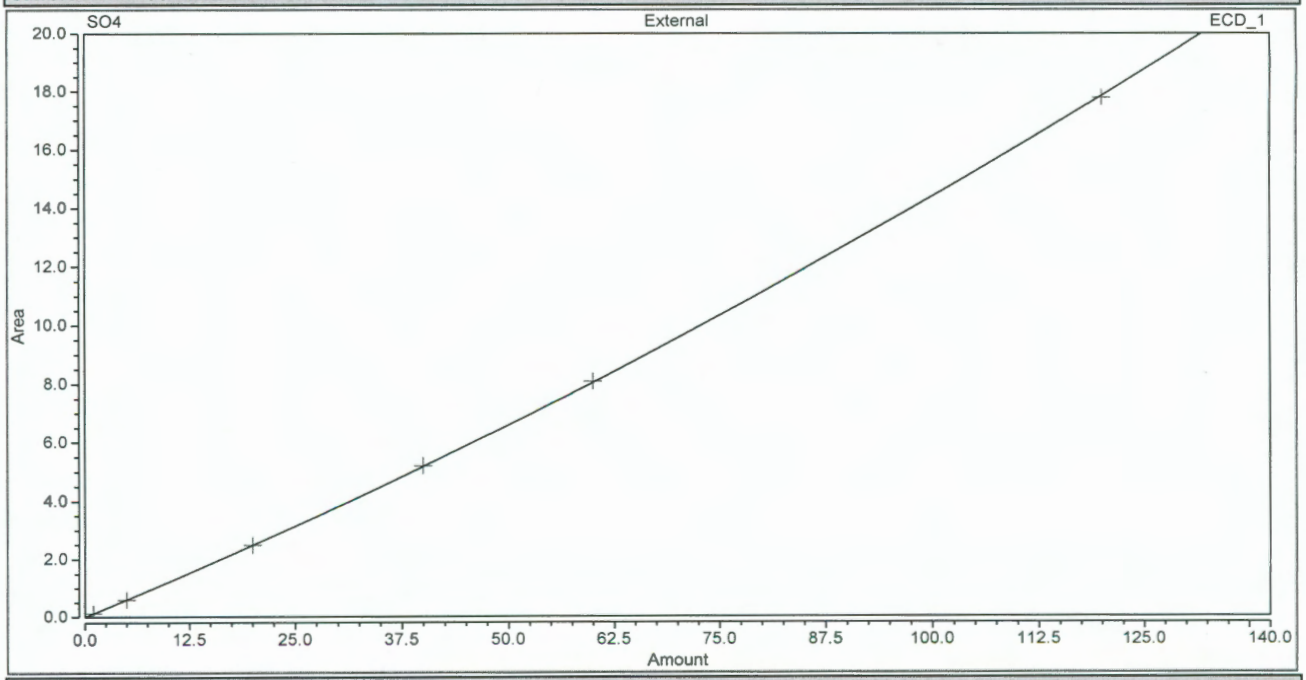
No.	Injection Name	Calibration Level	X Value ECD_1 NO3-N	Y Value ECD_1 NO3-N	Y Value ECD_1 NO3-N	Area µS*min ECD_1 NO3-N	Height µS ECD_1 NO3-N
1	WG593352-01 STD	01	0.1355	0.0526	0.0526	0.053	0.142
2	WG593352-02 STD	02	0.6675	0.2494	0.2494	0.249	0.749
3	WG593352-03 STD	03	2.7108	1.0254	1.0254	1.025	3.227
4	WG593352-04 STD	04	5.4216	2.1105	2.1105	2.111	6.869
5	WG593352-05 STD	05	8.1322	3.2605	3.2605	3.260	10.961
6	WG593352-06 STD	06	16.2644	7.0863	7.0863	7.086	24.952

00851624

Calibration

Calibration Details	SO4		
Calibration Type	Quad, WithOffset, 1/A²	*Offset (C0)*	0.0019
Evaluation Type	Area	*Slope (C1)*	0.1192
Number of Calibration Points	6	*Curve (C2)*	0.0002
Number of disabled Calibration Points	0	*R-Square*	1.0000

Calibration Plot SO4

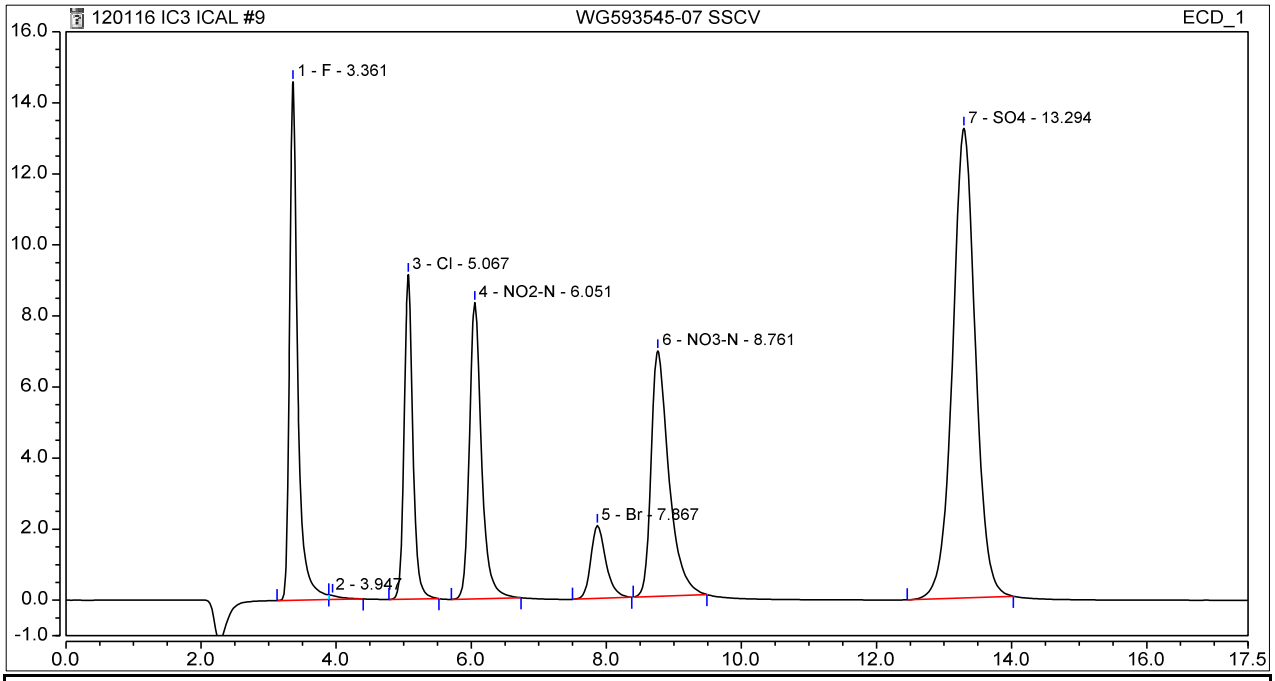


Calibration Results SO4

No.	Injection Name	Calibration Level	X Value ECD_1 SO4	Y Value ECD_1 SO4	Y Value ECD_1 SO4	Area µS*min ECD_1 SO4	Height µS ECD_1 SO4
1	WG593352-01 STD	01	1.0000	0.1215	0.1215	0.121	0.292
2	WG593352-02 STD	02	5.0000	0.5980	0.5980	0.598	1.470
3	WG593352-03 STD	03	20.0000	2.4856	2.4856	2.486	6.207
4	WG593352-04 STD	04	40.0000	5.1884	5.1884	5.188	13.189
5	WG593352-05 STD	05	60.0000	8.0799	8.0799	8.080	20.890
6	WG593352-06 STD	06	120.0000	17.7738	17.7738	17.774	46.861

9 WG593545-07 SSCV
1,1 CAS STD79166

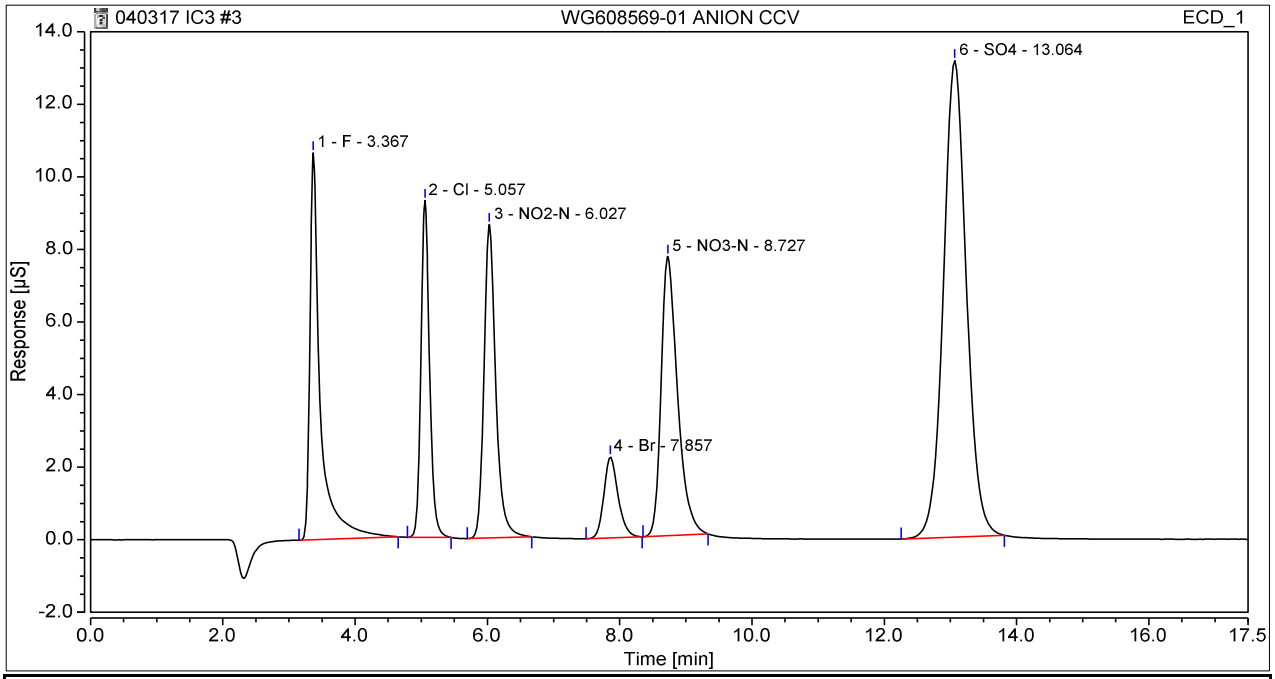
Sample Name:	**WG593545-07 SSCV**	*Injection Volume:*	**5000.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**12/01/2016 17:43**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.36	F	14.5966	2.0475	15.7	8.035	M
3	5.07	Cl	9.1392	1.3673	10.5	8.009	M
4	6.05	NO2-N	8.3363	1.7389	13.4	4.984	M
5	7.87	Br	2.0521	0.5299	4.1	7.945	M
6	8.76	NO3-N	6.9052	2.1121	16.2	5.421	M
7	13.29	SO4	13.2162	5.1895	39.9	40.203	M
Total:			**54.25**	**12.99**	**100**	**74.60**	

3 WG608569-01 ANION CCV
1,1 LJH STD77046 BP=psi

Sample Name:	**WG608569-01 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**04/03/2017 16:01**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	10.6592	1.9395	14.7	7.627	M
2	5.06	Cl	9.2797	1.3952	10.6	8.163	M
3	6.03	NO2-N	8.6368	1.7868	13.6	5.115	M
4	7.86	Br	2.2304	0.5587	4.2	8.368	M
5	8.73	NO3-N	7.6985	2.2150	16.8	5.670	M
6	13.06	SO4	13.1299	5.2850	40.1	40.889	M
Total:			**51.63**	**13.18**	**100**	**75.83**	

3 WG608569-01 ANION CCV
1,1 LJH STD77046 BP=psi

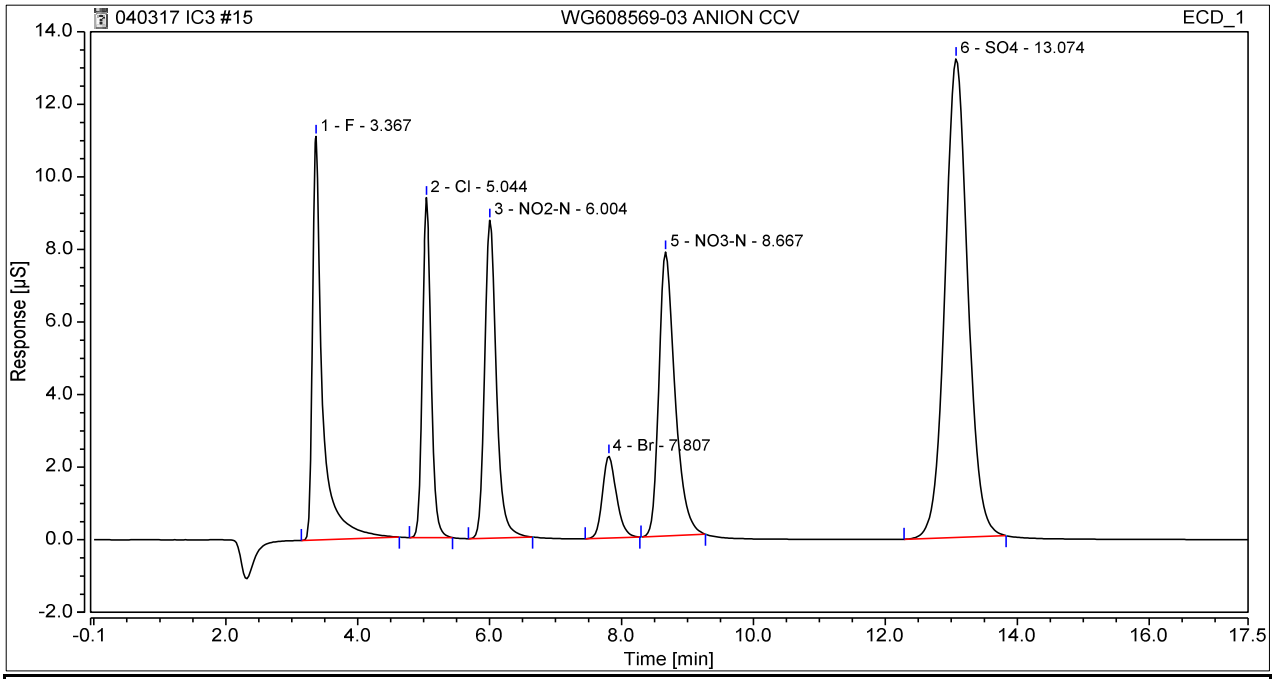
Sequence Details

Name:	**WG608569-01 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**3**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**4/3/2017 16:01**	*Sample Weight:*	**1.0000**

WG608569-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.627249223**	**-4.659384718**	**PASS**
CL	8.00	**8.162710479**	**2.033880985**	**PASS**
NO2	4.87	**5.114742762**	**5.025518728**	**PASS**
BR	8.00	**8.368148152**	**4.601851897**	**PASS**
NO3	5.42	**5.6703742**	**4.601000002**	**PASS**
SO4	40.00	**40.88890019**	**2.222250479**	**PASS**

15 WG608569-03 ANION CCV
1,1 LJH STD77046

Sample Name:	**WG608569-03 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**04/03/2017 20:06**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	11.1224	1.9612	14.8	7.709	M
2	5.04	Cl	9.3676	1.3988	10.6	8.183	M
3	6.00	NO2-N	8.7591	1.7952	13.6	5.138	M
4	7.81	Br	2.2617	0.5591	4.2	8.373	M
5	8.67	NO3-N	7.8266	2.2223	16.8	5.688	M
6	13.07	SO4	13.1961	5.2945	40.0	40.957	M
Total:			**52.53**	**13.23**	**100**	**76.05**	

15 WG608569-03 ANION CCV
1,1 LJH STD77046

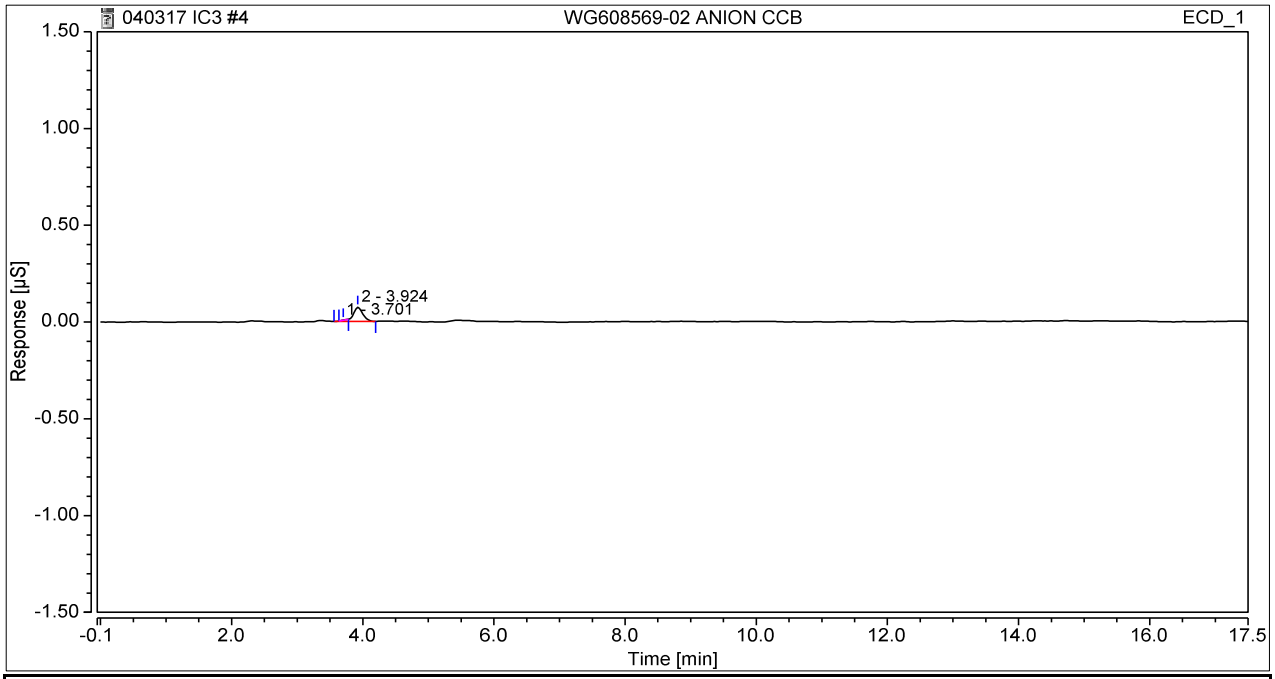
Sequence Details

Name:	**WG608569-03 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**15**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**4/3/2017 20:06**	*Sample Weight:*	**1.0000**

WG608569-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.709256397**	**-3.634295043**	**PASS**
CL	8.00	**8.182719973**	**2.283999659**	**PASS**
NO2	4.87	**5.137597196**	**5.494808956**	**PASS**
BR	8.00	**8.373431546**	**4.667894323**	**PASS**
NO3	5.42	**5.688144615**	**4.928867435**	**PASS**
SO4	40.00	**40.95693358**	**2.392333959**	**PASS**

4 WG608569-02 ANION CCB
1,1 LJH

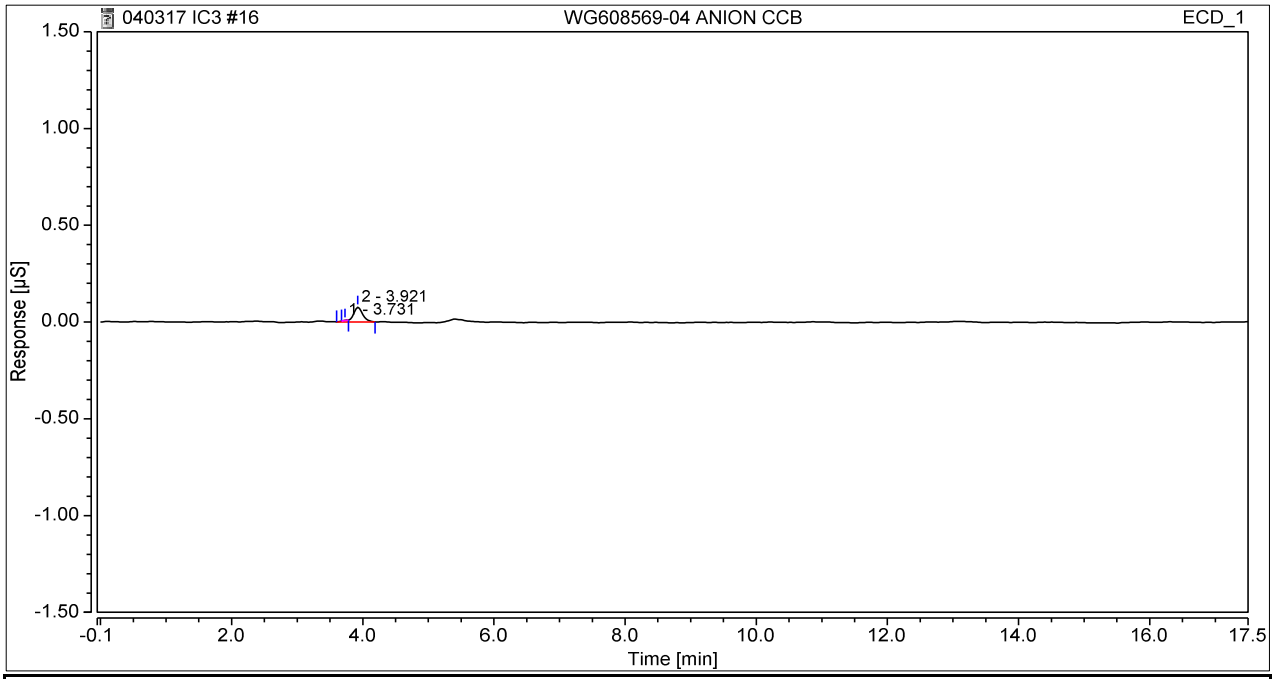
Sample Name:	**WG608569-02 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**04/03/2017 16:22**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

16 WG608569-04 ANION CCB
1,1 LJH

Sample Name:	**WG608569-04 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**04/03/2017 20:26**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

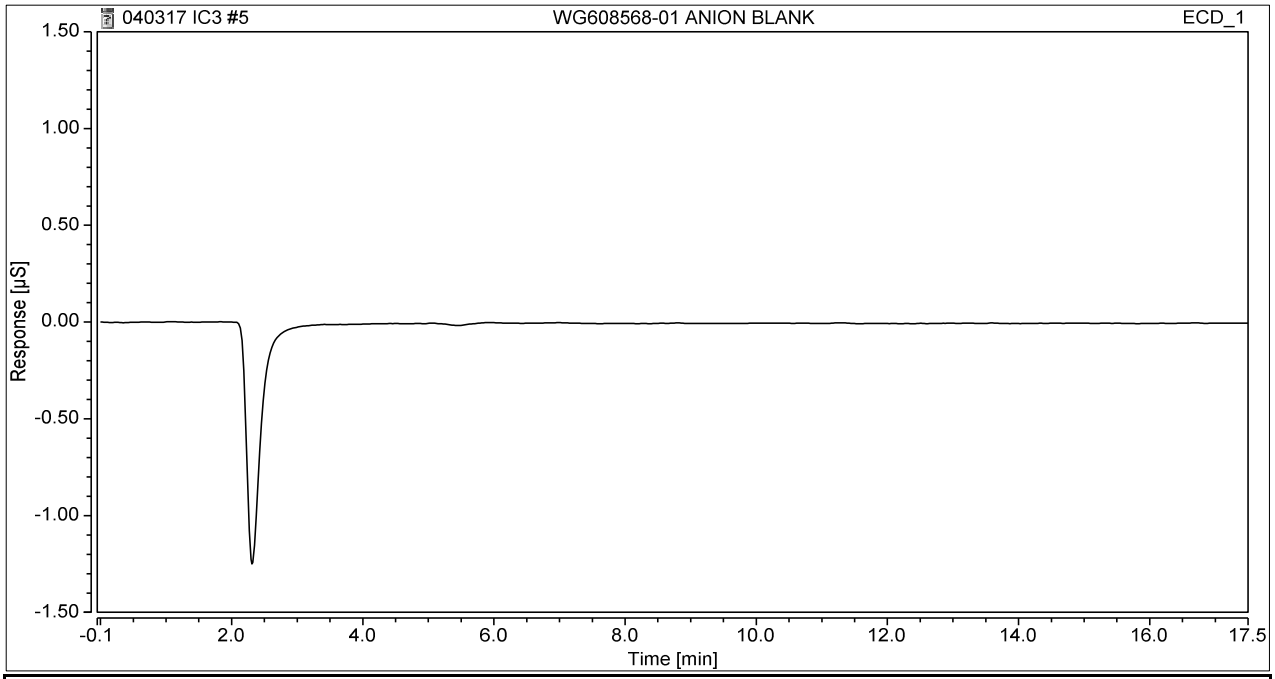
	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.4.1.5 Raw QC Data

5 WG608568-01 ANION BLANK
1,1 LJH

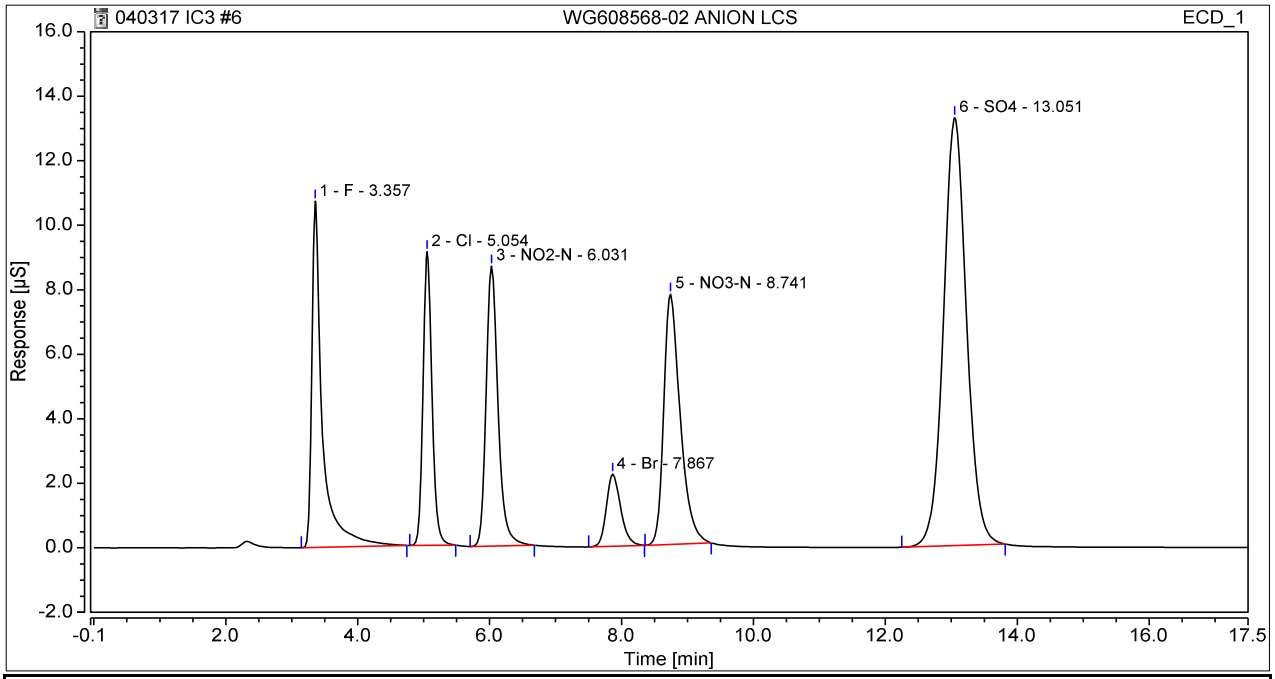
Sample Name:	**WG608568-01 ANION BLANK**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**04/03/2017 16:42**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

6 WG608568-02 ANION LCS
1,1 LJH STD79166

Sample Name:	**WG608568-02 ANION LCS**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC3_120116_9056QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**04/03/2017 17:02**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**



No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.36	F	10.7316	1.9898	14.8	7.817	M
2	5.05	Cl	9.1063	1.4148	10.6	8.271	M
3	6.03	NO2-N	8.6783	1.8115	13.5	5.182	M
4	7.87	Br	2.2348	0.5633	4.2	8.436	M
5	8.74	NO3-N	7.7561	2.2556	16.8	5.768	M
6	13.05	SO4	13.2711	5.3738	40.1	41.526	M
Total:			**51.78**	**13.41**	**100**	**77.00**	

2.4.2 COD Data

2.4.2.1 Summary Data

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	V-1200
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	METHOD	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	410.4 MOD	**Cal Date:**	02/27/2017 11:47
Workgroup #:	WG608824	**Analyst:**	TMM	**Run Date:**	04/05/2017 11:10
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	00.1704051110-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chemical Oxygen Demand	COD	44.2		40.0	20.0	10.0

2.4.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 05-APR-2017
Analyst: TMM
Analyst: NA
Method: COD-LOW
Instrument: V-1200
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG608824

Calibration/Linearity	3/17
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
06-APR-2017

Secondary Reviewer:
06-APR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: APR-06-2017 13:42:00

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 410.4 MOD

AAB#: WG608824

Login Number: L17031689

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP140-7428-GRAB	01	03/29/17					04/05/2017	6.8	28		04/05/17	6.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5232698
Report generated 04/06/2017 10:50

METHOD BLANK SUMMARY

Login Number: L17031689
Work Group: WG608824
Blank File ID: 00.1704051110-03
Blank Sample ID: WG608824-01
Prep Date: 04/05/17 11:10
Instrument ID: V-1200
Analyzed Date: 04/05/17 11:10
Method: 410.4 MOD
Analyst: TMM

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608824-02	00.1704051110-04	04/05/17 11:10	
LCS2	WG608824-03	00.1704051110-05	04/05/17 11:10	
LH18/24-SP140-7428-GRAB	L17031689-01	00.1704051110-18	04/05/17 11:10	
DUP	WG608824-05	00.1704051110-22	04/05/17 11:10	

Report Name: BLANK_SUMMARY
PDF File ID: 5232699
Report generated 04/06/2017 10:50

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031689 Prep Date: 04/05/17 11:10 Sample ID: WG608824-01
Instrument ID: V-1200 Run Date: 04/05/17 11:10 Prep Method: METHOD
File ID: 00.1704051110-03 Analyst: TMM Method: 410.4 MOD
Workgroup (AAB#): WG608824 Matrix: Water Units: mg/L
Contract #: Cal ID: V-1200-16-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chemical Oxygen Demand	10.0	40.0	10.0	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5232700
06-APR-2017 10:50

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031689 Analyst: TMM Prep Method: METHOD
Instrument ID: V-1200 Matrix: Water Method: 410.4 MOD
Workgroup (AAB#): WG608824 Units: mg/L
QC Key: DOD4 Lot #: STD77863

Sample ID: WG608824-02 LCS File ID: 00.1704051110-04 Run Date: 04/05/2017 11:10
Sample ID: WG608824-03 LCS2 File ID: 00.1704051110-05 Run Date: 04/05/2017 11:10

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Chemical Oxygen Demand	100	99.1	99.1	100	98.2	98.2	0.898	90 - 110	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 5232701
Report generated: 04/06/2017 10:50

2.4.2.3 Raw Data

WG604321

Curves - low

Parameter: COD-low

Spectrophotometer: V-1200

Calibration (Curve) standard stock: STD 80541

Concentration: 10,000mg/L

Recipe for preparation of curve standards found in:
SOP: 5465 Revision: 17 Page: 10

Second Source Stock: 77863 (concentration: 1000mg/L)

Daily Preparation: 5(100)/50

concentration = 100

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance	
5 (150)	2mL	1cm	420nm	0.205	0.197
6 (100)				0.326	0.316
7 (50)				0.437	0.442
8 (30)				0.482	0.495
9 (20)				0.505	0.502
BLK				0.541	0.561
2nd source (100)	↓	↓	↓	0.338	0.328

Analyst: Shaelyn Cauley Date/Time: 2-27-17 1145

DCN#124219

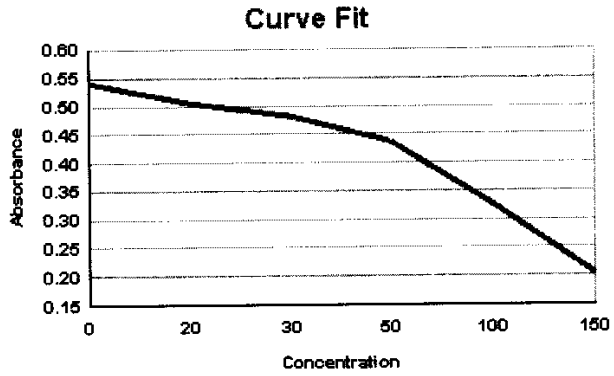
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup:WG604321
Analytical Method:400
Instrument ID:V-1200

Analyst:SDC
Initial Calibration Date:02/27/2017

Analyte: CHEMICAL OXYGEN DEMAND
Number of Points: 6
Slope: -0.00225645
Y-Intercept: 0.547626
Coef. Of Correlation (R^2): 0.998855
Coef. Of Correlation (R): 0.999427

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.541	0.00	0.00	0.547626
20.0	0.505	400	10.1	0.502497
30.0	0.482	900	14.5	0.479933
50.0	0.437	2500	21.9	0.434804
100	0.326	10000	32.6	0.321981
150	0.205	22500	30.8	0.209158



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 02/28/2017 14:28

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG604321
File ID: 00.1702271147-07
CCV ID: WG604321-07
Units: mg/L
Analyte: CHEMICAL OXYGEN DEMAND

Instrument ID: V-1200
Run Date: 02/27/2017
Run Time: 11:47
Analyst: SDC
Cal ID: V-1200 - 27-FEB-17 11:47:06

Analyte	Expected	Found	RF	%D	Q
Chemical Oxygen Demand	100	92.9	0.00338	7.1	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 02/28/2017 14:29

[redacted]

WORKGROUP: WG608824

COD Low

EPA 410.4/SM5220D/HACH 8000 | CCV: 80541 | LCS: 77863 | Spike: 77863

SOP K4105 Revision #: 17 | Daily dilution: 3(10,000)/50 = 600 | Daily dilution: 5(1000)/50 | Daily dilution: 0.1(1000)/2

Curve ID: 604321 | Daily dilution: 5(600)/50 = 60 | Daily dilution: =100 | Daily dilution: =50

Wavelength (nm): 420 | Hot Block Temp: 148 C | Spectrophotometer: V-1200

All samples use 2ml | Hot Block ID: COD-2 | COD vial Lot # A6298C

SAMPLE	DILUTION	ABSORBANCE 1	ABSORBANCE 2
CCV: 60 mg/L		0.404	
BLANK:		0.532	
LCS: 100 mg/L		0.324	
LCS DUP: 100 mg/L		0.326	
03-1592-04		0.520	
07		0.481	
03-1633-01		0.590	
03-1593-02		0.474	
04-116-01		0.442	
04-118-02		0.399	
04-101-01	1/2 CL	4/5/17 ~~0.203~~ 0.211	
02	1/2 CL	0.476	
04-102-01	1/2 CL	0.479	
04-127-04		0.511	
07		0.428	
03-1516-01		0.343	
03-1689-01		0.448	
04-155-02		0.541	
03		0.481	
04-148-06		0.506	
DUP: 04-118-02		0.406	
MS: (50)		0.354	
MDS: (50)		0.358	
CCV: 60 mg/L		0.408	

ANALYST: Jimmy Morris

DATE/TIME: (on) 4/5/17 @ 11:10

DATE/TIME: (off) 13:10

DCN#124981

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG608824 **Analyst:** TMM
Analyte: CHEMICAL OXYGEN DEMAND **Date:** 04/05/2017

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG608824-01	2	2	0.532	-0.002256	0.5476	6.9252	6.9252	1	mg/L
WG608824-02	2	2	0.324	-0.002256	0.5476	99.105	99.105	1	mg/L
WG608824-03	2	2	0.326	-0.002256	0.5476	98.219	98.219	1	mg/L
L17031592-04	2	2	0.520	-0.002256	0.5476	12.243	12.243 F	1	mg/L
L17031592-07	2	2	0.481	-0.002256	0.5476	29.527	29.527	1	mg/L
L17031633-01	2	2	0.590	-0.002256	0.5476	-18.779	ND	1	mg/L
L17031593-02	2	2	0.474	-0.002256	0.5476	32.629	32.629	1	mg/L
L17040116-01	2	2	0.442	-0.002256	0.5476	46.811	46.811	1	mg/L
WG608824-04	2	2	0.399	-0.002256	0.5476	65.867	65.867	1	mg/L
L17040118-02	2	2	0.399	-0.002256	0.5476	65.867	65.867	1	mg/L
L17040101-01	2	2	0.211	-0.002256	0.5476	149.18	298.37	2	mg/L
L17040101-02	2	2	0.476	-0.002256	0.5476	31.743	63.486	2	mg/L
L17040102-01	2	2	0.479	-0.002256	0.5476	30.413	60.827	2	mg/L
L17040127-04	2	2	0.511	-0.002256	0.5476	16.232	16.232 F	1	mg/L
L17040127-07	2	2	0.428	-0.002256	0.5476	53.015	53.015	1	mg/L
L17031516-01	2	2	0.343	-0.002256	0.5476	90.685	90.685	1	mg/L
L17031689-01	2	2	0.448	-0.002256	0.5476	44.152	44.152	1	mg/L
L17040155-02	2	2	0.541	-0.002256	0.5476	2.9367	ND	1	mg/L
L17040155-03	2	2	0.481	-0.002256	0.5476	29.527	29.527	1	mg/L
L17040148-06	2	2	0.506	-0.002256	0.5476	18.448	ND	1	mg/L
WG608824-05	2	2	0.406	-0.002256	0.5476	62.765	62.765	1	mg/L
WG608824-06	2	2	0.354	-0.002256	0.5476	85.810	85.810	1	mg/L
WG608824-07	2	2	0.358	-0.002256	0.5476	84.037	84.037	1	mg/L

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated 04/06/2017 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG608992
File ID: 00.1704051110-01
CCV ID: WG608992-01
Units: mg/L
Analyte: CHEMICAL OXYGEN DEMAND

Instrument ID: V-1200
Run Date: 04/05/2017
Run Time: 11:10
Analyst: TMM
Cal ID: V-1200 - 16-MAR-17

Analyte	Expected	Found	RF	%D	Q
Chemical Oxygen Demand	60	63.7	0.00673	6.2	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 04/06/2017 07:29

[redacted]

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG608992
File ID: 00.1704051110-25
CCV ID: WG608992-03
Units: mg/L
Analyte: CHEMICAL OXYGEN DEMAND

Instrument ID: V-1200
Run Date: 04/05/2017
Run Time: 11:10
Analyst: TMM
Cal ID: V-1200 - 16-MAR-17

Analyte	Expected	Found	RF	%D	Q
Chemical Oxygen Demand	60	61.9	0.00680	3.2	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 04/06/2017 07:29

[redacted]

2.4.3 Oil and Grease Data

2.4.3.1 Summary Data

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031689-01	**PrePrep Method:**	N/A	**Instrument:**	HORIZON
Client ID:	LH18/24-SP140-7428-GRAB	**Prep Method:**	1664A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	1664A	**Cal Date:**	
Workgroup #:	WG608382	**Analyst:**	AWE	**Run Date:**	03/31/2017 09:19
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	ON.1703310919-19
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Hexane Extractable Material (HEM)	OILGREASE	2.80	U	5.60	2.80	1.40

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031689
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.4.3.2 QC Summary Data

Example Oil and Grease - HEM Calculations

[(WT2 - WT1) * 1000000]/volume = mg/L

where:

WT1 = weight (grams) of empty container.
WT2 = weight (grams) of dried sample and container.
1000000 = factor to get to mg/L.
volume = mL of sample used.

The samples are not blank corrected.

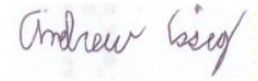
Microbac Laboratories Inc.

Data Checklist

Date: 31-MAR-2017
Analyst: AWE
Analyst: NA
Method: HEM
Instrument: HORIZON
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG608382

Calibration/Linearity	03/31/17
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AWE
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
31-MAR-2017



Secondary Reviewer:
04-APR-2017



CHECKLIST1 - Modified 03/05/2008
Generated: APR-04-2017 11:49:32

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 1664A AAB#: WG608382

Login Number: L17031689

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP140-7428-GRAB	01	03/29/17					03/31/2017	1.8	28		03/31/17	1.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5239398
Report generated 04/11/2017 08:32

METHOD BLANK SUMMARY

Login Number:	L17031689	**Work Group:**	WG608382
Blank File ID:	ON.1703310919-01	**Blank Sample ID:**	WG608382-01
Prep Date:	03/31/17 09:19	**Instrument ID:**	HORIZON
Analyzed Date:	03/31/17 09:19	**Method:**	1664A
Analyst:	AWE		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608382-02	ON.1703310919-02	03/31/17 09:19	
LCS2	WG608382-03	ON.1703310919-03	03/31/17 09:19	
LH18/24-SP140-7428-GRAB	L17031689-01	ON.1703310919-19	03/31/17 09:19	

Report Name: BLANK_SUMMARY
PDF File ID: 5239399
Report generated 04/11/2017 08:32

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L17031689 Prep Date: 03/31/17 09:19 Sample ID: WG608382-01
Instrument ID: HORIZON Run Date: 03/31/17 09:19 Prep Method: 1664A
File ID: ON.1703310919-01 Analyst: AWE Method: 1664A
Workgroup (AAB#): WG608382 Matrix: Water Units: mg/L
Contract #: Cal ID: HORIZO-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
n-Hexane Extractable Material (HEM)	1.40	5.60	1.40	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5239400
11-APR-2017 08:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031689 Analyst: AWE Prep Method: 1664A
Instrument ID: HORIZON Matrix: Water Method: 1664A
Workgroup (AAB#): WG608382 Units: mg/L
QC Key: DOD4 Lot #: STD80426

Sample ID: WG608382-02 LCS File ID: ON.1703310919-02 Run Date: 03/31/2017 09:19
Sample ID: WG608382-03 LCS2 File ID: ON.1703310919-03 Run Date: 03/31/2017 09:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
n-Hexane Extractable Material (HEM)	40.0	33.7	84.3	40.0	32.6	81.5	3.32	78 - 114	18	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 5239401
Report generated: 04/11/2017 08:33

2.4.3.3 Raw Data

Hexane Extractable Material

SOP K1664 Revision #: 12
EPA Method 1664A HEM or NPM

LCS: STD80426
Daily Dilution: 5(8000)/1000=40

Speed Vap Temperature: 40
Balance: ANDGR-202 / other
Instrument: Horizon 3000XL PFP90V

Matrix Spike: _____
Daily Dilution: _____
All results are mg/L

	Sample	Disk Type	pH Check	EXT. #	Volume (mL)	Initial Weight WT1 (g)	Dry Weight WT2 (g)	Comments
B	BLANK	✓	✓	1	1000			
L	LCS: _____mg/L	✓	✓	2	1000			
12	LCSDUP: _____mg/L	✓	✓	3	1000			
1	031540-02	✓	✓	1	1000			
2	-03	✓	✓	2	970			
3	031541-03	✓	✓	3	970			
* 4	031566-01	✓	✓	1				Sample too dirty to pass all volume through filter.
5	031567-02	✓	✓	2	960			
6	-04	✓	✓	3	940			
7	-06	✓	✓	2	920			
8	031592-01	✓	✓	3	930			
9	-03	✓	✓	1	910			
10	-07	✓	✓	2	940			
11	-04	✓	✓	3	900			
2* 12	031594-01							
13	-02	✓	✓	2	1000			
14	031612-01	✓	✓	3	1000			
16	031685-01	✓	✓	✓	950			
17	031689-01	✓	✓	2	100			
18	031690-01	✓	✓	3	1000			
	DUP							

Beginning weight check
2 mg 0.0020
1 g 1.0000

Ending weight check
2 mg 0.0019
1 g 1.0000

Disk Type:			
P47 (Pacific 47mm)	P90 (Pacific 90mm)	PF (pre filter)	Hexane
Lot: _____	Lot: 516274	Lot: 70616210	Lot: 19521
			Silica Gel: _____
pH paper 15A15621	Lot #: _____		Lot: _____

Analyst: Andrew Ewing Date / Time: 3-31-17 0919 Daily Maintenance Witness: JMM

*Duplicates/MS/MSD are analyzed only if sufficient volume is submitted by the client.

* lost sample due to thickness

2* Had organic layer

DCN#124894

Workgroup (AAB#): WG608382 | Method: 1664A
Analyst: AWE | SOP: 1664A Revison 12
Analyte: OIL & GREASE | Spike Solution: STD80426
Balance: BAL004 | Daily Dilution:
Instrument#: HORIZON

SAMPLE NUMBER		FINAL VOL	INITIAL WT	DRY WT A	DRY WT B	DRY WT C	Anal. Conc	Rep. Conc.	Units
WG608382-01	B	1000	2.2168	2.2169	2.217		0.2000	0.2000	mg/L
WG608382-02	L	1000	2.1995	2.2331	2.2332		33.70	33.70	mg/L
WG608382-03	L2	1000	2.2257	2.258	2.2583		32.60	32.60	mg/L
L17031540-02	1	1000	2.2492	2.2699	2.2701		20.90	20.90	mg/L
L17031540-03	2	970	2.2318	2.2358	2.2362		4.536	4.536	mg/L
L17031541-03	3	970	2.246	2.2465	2.2468		0.8247	ND	mg/L
L17031566-01	4	1000	2.2042						mg/L
L17031567-02	5	960	2.2109	2.2113	2.2115		0.6250	ND	mg/L
L17031567-04	6	940	2.2146	2.2149	2.2152		0.6383	ND	mg/L
L17031567-06	7	920	2.2422	2.2425	2.2429		0.7609	ND	mg/L
L17031592-01	8	930	2.2097	2.2102	2.2101		0.4301	ND	mg/L
L17031592-03	9	910	2.2285	2.2289	2.2287		0.2198	ND	mg/L
L17031592-07	10	940	2.2491	2.2491	2.2493		0.2128	ND	mg/L
L17031592-09	11	900	2.2161	2.2164	2.2166		0.5556	ND	mg/L
L17031594-01	12	1000	2.2668						mg/L
L17031594-02	13	1000	2.225	2.2253	2.2253		0.3000	ND	mg/L
L17031612-01	14	1000	2.2275	2.2277	2.2278		0.3000	ND	mg/L
L17031685-01	16	950	2.2262	2.2262	2.2264		0.2105	ND	mg/L
L17031689-01	17	1000	2.2387	2.2392	2.2394		0.7000	ND	mg/L
L17031690-01	18	1000	2.2516	2.252	2.252		0.4000	ND	mg/L

L17031540-02	Clear shiny layer in bottom of pan.

Analyst: Andrew Esieg

*Duplicate required on 10% of samples

Date/Time (on) : 03/31/2017 09:19
Date/Time (off): 03/31/2017 11:41
Date/Time (off): 03/31/2017 12:11
Date/Time (off):

CONT_GRAV_REPORT - Modified 02/18/2011
PDF ID: 5226504
Report generated: 03/31/2017 15:46

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
April 11, 2017

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001 – BIO-CHEM TESTING WVDEP 220	002 – REIC Consultants, Inc. WVDEP 060
003 – Sturm Environmental	004 – MICROBAC PITTSBURGH
005 – ES LABORATORIES	006 – ALCOSAN LABORATORIES
007 – ALS LABORATORIES	008 – BENCHMARK LABORATORIES
010 – MICROBAC CHICAGOLAND	AC – AMBER R. CARMICHAEL
ADC – ANTHONY D. CANTER	ADG – APRIL D. GREENE
ALS – ADRIANE L. STEED	AWE – ANDREW W. ESSIG
AZH – AFTER HOURS	BJO – BRIAN J. OGDEN
BLG – BRENDA L. GREENWALT	BNB – Brandi N. Bentley
BRG – BRENDA R. GREGORY	CAS – Craig A. Smith
CEB – CHAD E. BARNES	CLC – CHRYS L. CRAWFORD
CLS – CARA L. STRICKLER	CPD – CHAD P. DAVIS
CSH – CHRIS S. HILL	CV – Carl Volkman
DAK – DEAN A. KETELSEN	DCM – DAVID C. MERCKLE
DEV – DAVID E. VANDENBERG	DIH – DEANNA I. HESSON
DLB – DAVID L. BUMGARNER	DLP – DOROTHY L. PAYNE
DSM – DAVID S. MOSSOR	DTG – DOMINIC T. GEHRET
ECL – ERIC C. LAWSON	EPT – ETHAN P. TIDD
ERP – ERIN R. PORTER	FJB – FRANCES J. BOLDEN
HRF – HEATHER R. FAIRCHILD	JDH – JUSTIN D. HESSON
JDS – JARED D. SMITH	JKP – JACQUELINE K. PARSONS
JLD – JESSICA L. DELONG	JST – JOSHUA S. TAYLOR
JTP – JOSHUA T. PEMBERTON	JWR – JOHN W. RICHARDS
JWS – JACK W. SHEAVES	JYH – JI Y. HU
KAK – KATHY A. KIRBY	KDD – Katelyn D. Daley
KEB – KATIE E. BARNES	KHR – KIM H. RHODES
KKB – KERRI K. BUCK	KRA – KATHY R. ALBERTSON
KRP – KATHY R. PARSONS	LJH – Lacey J. Hendershot
LLS – LARRY L. STEPHENS	LSB – LESLIE S. BUCINA
LSJ – LAURA S. JONES	MAP – MARLA A. PORTER
MBK – MORGAN B. KNOWLTON	MES – MARY E. SCHILLING
MMB – MAREN M. BEERY	MRT – MICHELLE R. TAYLOR
PDM – PIERCE D. MORRIS	PIT – MICROBAC WARRENDALE
REK – BOB E. KYER	RLB – BOB BUCHANAN
RNP – RICK N. PETTY	SAV – SARAH A. VANDENBERG
SCB – SARAH C. BOGOLIN	SCJ – SUE ELLEN C. JOHNSON
SDC – SHALYN D. CONLEY	TB – TODD BOYLE
TMB – TIFFANY M. BAILEY	TMM – TAMMY M. MORRIS
VC – VICKI COLLIER	WTD – WADE T. DELONG
XXX – UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
April 11, 2017

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
>,H1	Result is greater than the associated numerical value. Sample analysis performed past holding time.
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound

Microbac Laboratories Inc.
List of Valid Qualifiers
April 11, 2017

Qualkey: DOD

TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

L17031689 / Revision: 0 / 1347 total pages

Page 1341

CHAIN OF CUSTODY

Name Of Lab Shipping To: MICROBAC (740) 373-4071 ATTN: STEPHANIE MOSSBURG

Project: AECOM
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
60256135.GWTPT
HRUMAR16

Job:
GROUNDWATER TREATMENT PLANT QUARTERLY INFLUENT SAMPLES

Prepared By:
Scott Beesinger

P. O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: ROD Volatiles	Total Metals	Oil & Grease	Chemnical Oxygen Demand	Chloride & Sulfate	1, 4 - DIOXANE					Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP140-7428-GRAB	Water	03/29/17 / 15:00		5	3		2								HCL	
LH18/24-SP140-7428-GRAB	Water	03/29/17 / 15:00		1		1									HNO3	
LH18/24-SP140-7428-GRAB	Water	03/29/17 / 15:00		2					1	1					NONE	
LH18/24-SP140-7428-GRAB	Water	03/29/17 / 15:00		1				1							H2SO4	
Trip Blank	Water	03/29/17		2	2										HCL	

Additional Remarks: **STANDARD TURN AROUND TIME**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	03/29/17	15:45									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

Microbac OVD
Received: 03/31/2017 09:42
By: CARA STRICKLER 221000098987

Cara Strickler

(Word) S:\I-ces\Forms\Chain of Custody - BiWeekly

Generated: 04/11/2017 11:16

00851672

COOLER TEMP >6° C LOG

Cooler ID 8987

SAMPLE ID	Bottle 1 °C	Bottle 2 °C	Bottle 3 °C	Bottle 4 °C	Bottle 5 °C	Bottle 6 °C

CWD 3/31/17

pH Exceptions

pH Lot # HC693124

SAMPLE ID	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6

CWD 3/31/17

PRESERVATIVE EXCEPTIONS

✓ NONE

AS NOTED

CWD 3/31/17

Document Control # 1957
Last 10-07-2016

Issued to: Document Master File

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031689
Account: 2551
Project: 2551.096
Samples: 2
Due Date: 11-APR-2017

Samplenum	Container ID	Products
L17031689-01	888299	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	31-MAR-2017 13:42	CLS		
2	ANALYZ	V1	ORG4	31-MAR-2017 14:09	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	31-MAR-2017 13:42	CLS		
2	ANALYZ	V1	ORG4	31-MAR-2017 14:09	HRF	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	31-MAR-2017 13:42	CLS		
2	ANALYZ	V1	ORG4	31-MAR-2017 14:09	HRF	CLS	

Samplenum	Container ID	Products
L17031689-01	888300	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	31-MAR-2017 13:42	CLS		
2	PREP	W1	EXT	03-APR-2017 11:43	JDH	CLS	
3	ANALYZ*	EXT	SEMI	04-APR-2017 17:40	SCB	JDH	

***Sample extract/digestate/leachate**

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		31-MAR-2017 13:42	CLS		

***Sample extract/digestate/leachate**

Samplenum	Container ID	Products
L17031689-01	888301	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	31-MAR-2017 13:42	CLS		
2	PREP	A1	SEM	03-APR-2017 10:41	LJH	CLS	
3	ANALYZ*	SEM	SEMI	04-APR-2017 17:40	SCB	LJH	

***Sample extract/digestate/leachate**

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031689
Account: 2551
Project: 2551.096
Samples: 2
Due Date: 11-APR-2017

Samplenum	Container ID	Products
L17031689-01	888302	COD-HIGH COD-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	31-MAR-2017 13:42	CLS		
2	ANALYZ	W1	WET	05-APR-2017 07:54	TMM	CLS	

Samplenum	Container ID	Products
L17031689-01	888303	826-SPE 827-DIOXANE 9056 OG-HEM

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	31-MAR-2017 13:42	CLS		
2	ANALYZ	W1	WET	31-MAR-2017 14:02	AWE	CLS	

Samplenum	Container ID	Products
L17031689-01	888304	AG-MS AL AS-MS BA-MS CD-MS CO-MS CR-MS FE MN-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	31-MAR-2017 13:42	CLS		
2	PREP	W1	DIG	31-MAR-2017 14:53	ERP	CLS	
3	STORE	DIG	A1	03-APR-2017 13:57	CLS	ERP	
4	ANALYZ*	DIG	METALS	04-APR-2017 09:10	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L17031689-02	888305	826-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	31-MAR-2017 13:42	CLS		
2	ANALYZ	V1	ORG4	31-MAR-2017 14:09	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	31-MAR-2017 13:42	CLS		
2	ANALYZ	V1	ORG4	31-MAR-2017 14:09	HRF	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac



Laboratory Report Number: L17031690

Linda Raabe
AECOM Technical Services, Inc.
1950 N Stemmons FWY
Dallas, TX 75207

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Adriane Steed – Client Services Specialist
(740) 373-4071
Adriane.Steed@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on April 11 2017

Leslie Bucina – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113761	I	5.0		J4616882210	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
LH18/24-SP650-6428-GRAB	L17031690-01	03/29/2017 15:00	03/31/2017 09:51
TRIP BLANK	L17031690-02	03/29/2017 00:01	03/31/2017 09:51

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L17031690
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	8260
Prep Batch Number(s):	608987	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2017-04-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2017-04-07 19:00:10

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	8260
Prep Batch Number(s):	608987	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2017-04-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	8260
Prep Batch Number(s):	608987	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2017-04-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	8260
Prep Batch Number(s):	608987	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2017-04-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	8260
Prep Batch Number(s):	608987	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2017-04-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	8260
Prep Batch Number(s):	608987	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2017-04-07 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2017-04-06 19:46:58

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?		X			1
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG608522	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The RPD was greater than the acceptance limit, however the LCS/LCS2 results were both within acceptance limits.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Kerri Buck	Kerri K Buck		2017-04-10 19:17:30

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6010
Prep Batch Number(s):	608524	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Kerri Buck	Kerri K Buck		2017-04-10 19:18:29

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	6020
Prep Batch Number(s):	608583	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-04-10 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Due to the low level continuing calibration verification failure for thallium on 04-Apr-2017 at 13:51, client sample 01 along with the batch QA/QC were reanalyzed on a later calibration which was compliant for thallium.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2017-04-05 15:05:02

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG608568	**Reviewer Name:**	Eric Lawson
LRC Date:	2017-04-05 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608825	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2017-04-11 12:22:08

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608825	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608825	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608825	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608825	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	COD
Prep Batch Number(s):	WG608825	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2017-04-11 12:21:26

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

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3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031690
Project Name:		**Method:**	OG-HEM
Prep Batch Number(s):	WG608382	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-04-11 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/05/2017 22:09
Workgroup #:	WG608987	**Analyst:**	TMB	**Run Date:**	04/06/2017 22:04
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	6M146252
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	0.500	0.250	0.125
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
Acetone	67-64-1	9.07	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	0.500	0.250	0.125
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chloroform	67-66-3	0.250	U	0.500	0.250	0.125
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
Methylene chloride	75-09-2	1.04		1.00	0.500	0.250
m,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
Styrene	100-42-5	0.250	U	0.500	0.250	0.125
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.74		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	102	70	120	
4-Bromofluorobenzene	103	75	120	
Dibromofluoromethane	101	85	115	
Toluene-d8	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	3520C	**Prep Date:**	04/03/2017 09:30
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	03/21/2017 13:29
Workgroup #:	WG608809	**Analyst:**	SCB	**Run Date:**	04/05/2017 12:49
Collect Date:	03/29/2017 15:00	**Dilution:**	5	**File ID:**	15M20981
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	19.8		11.1	5.56	2.78

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	78.8	20	129	

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO4
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 12:02
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	04/04/2017 14:05
Workgroup #:	WG608728	**Analyst:**	KKB	**Run Date:**	04/04/2017 17:02
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	T4.040417.170218
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.200	U	0.200	0.200	0.100
Iron, Total	7439-89-6	0.682		0.100	0.100	0.0500
Selenium, Total	7782-49-2	0.0200	U	0.0200	0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 15:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	04/04/2017 11:44
Workgroup #:	WG608658	**Analyst:**	JYH	**Run Date:**	04/04/2017 13:07
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	NI.040417.130715
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00107	J	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00100	U	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.187		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0125		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00467		0.00200	0.00100	0.000500
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.111		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0172		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0727		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 15:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	04/06/2017 10:24
Workgroup #:	WG608658	**Analyst:**	JYH	**Run Date:**	04/06/2017 13:12
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	NI.040617.131257
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	9056	**Prep Date:**	04/03/2017 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	12/01/2016 17:22
Workgroup #:	WG608568	**Analyst:**	LJH	**Run Date:**	04/03/2017 19:25
Collect Date:	03/29/2017 15:00	**Dilution:**	20	**File ID:**	I3_040317-13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfate	14808-79-8	91.1		40.0	20.0	10.0

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	9056	**Prep Date:**	04/03/2017 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	12/01/2016 17:22
Workgroup #:	WG608568	**Analyst:**	LJH	**Run Date:**	04/03/2017 19:45
Collect Date:	03/29/2017 15:00	**Dilution:**	200	**File ID:**	I3_040317-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2580		80.0	40.0	20.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	V-1200
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	HACH	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	410.4 MOD	**Cal Date:**	02/27/2017 11:45
Workgroup #:	WG608825	**Analyst:**	TMM	**Run Date:**	04/05/2017 10:00
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	00.1704051000-19
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chemical Oxygen Demand	COD	807		150	20.0	10.0

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	HORIZON
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	1664A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	1664A	**Cal Date:**	
Workgroup #:	WG608382	**Analyst:**	AWE	**Run Date:**	03/31/2017 09:19
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	ON.1703310919-20
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Hexane Extractable Material (HEM)	OILGREASE	2.80	U	5.60	2.80	1.40

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/05/2017 22:09
Workgroup #:	WG608987	**Analyst:**	TMB	**Run Date:**	04/06/2017 20:33
Collect Date:	03/29/2017 00:01	**Dilution:**	1	**File ID:**	6M146249
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	0.500	0.250	0.125
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	0.500	0.250	0.125
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chloroform	67-66-3	0.250	U	0.500	0.250	0.125
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
m,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
Styrene	100-42-5	0.250	U	0.500	0.250	0.125
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	101	70	120	
4-Bromofluorobenzene	103	75	120	
Dibromofluoromethane	102	85	115	
Toluene-d8	104	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/05/2017 22:09
Workgroup #:	WG608987	**Analyst:**	TMB	**Run Date:**	04/06/2017 22:04
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	6M146252
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	0.500	0.250	0.125
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
Acetone	67-64-1	9.07	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	0.500	0.250	0.125
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chloroform	67-66-3	0.250	U	0.500	0.250	0.125
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
Methylene chloride	75-09-2	1.04		1.00	0.500	0.250
m,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
Styrene	100-42-5	0.250	U	0.500	0.250	0.125
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.74		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	102	70	120	
4-Bromofluorobenzene	103	75	120	
Dibromofluoromethane	101	85	115	
Toluene-d8	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/05/2017 22:09
Workgroup #:	WG608987	**Analyst:**	TMB	**Run Date:**	04/06/2017 20:33
Collect Date:	03/29/2017 00:01	**Dilution:**	1	**File ID:**	6M146249
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	0.500	0.250	0.125
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	0.500	0.250	0.125
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chloroform	67-66-3	0.250	U	0.500	0.250	0.125
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
m,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
Styrene	100-42-5	0.250	U	0.500	0.250	0.125
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	101	70	120	
4-Bromofluorobenzene	103	75	120	
Dibromofluoromethane	102	85	115	
Toluene-d8	104	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

	Example
where:	
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

	Example
where:	
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

	Example
where:	
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**
Dry weight correction:	
Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Analyst(s): BVB
Date: 4-5-17
Filter Lot #: 9803210

Agitator Speed 30 ± 2 rpm ☑

Balance ID: BAL020
pH Probe ID: T5
Temp probe ID: ☒1025 ☐ 1023

Analyst / Date		Analyst / Date	
BVB 4-5-17		BVB 4-6-17	
Time On	Temp On °C	Time Off	Temp Off °C
14:45	22.9	7:10	22.1

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A	04-0175-03	✓	10	10	1311	F1-225	S	100		✓	25.01	500
B	04-0175-05	✓	↓	↓	↓	↓	↓	↓		✓	25.00	500
C	04-0175-07	✓	↓	↓	↓	↓	↓	↓		✓	25.02	500
D	04-0175-09	✓	↓	↓	↓	↓	↓	↓		✓	25.01	500
E	04-0175-11	✓	↓	↓	↓	↓	↓	↓		✓	25.04	500
F	04-0175-13	✓	↓	↓	↓	↓	↓	↓		✓	25.01	500
G												
H												
I												
J												
K												
L												
M												
N												
O												
P												
Q	04-0173-01	✓	10	10	1311	F1-225	S	100		✓	25.00	500
R	04-0174-01	✓	↓	↓	↓	↓	↓	↓		✓	25.00	500
S	04-0175-01	✓	10	10	1311	F1-225	↓	↓		✓	25.03	500
NA	FBLK	NA	NA	NA	↓	↓	NA	NA	NA	NA	40	40

BVB 4-6-17

BVB 4-6-17

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

Comments: NA

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 011217
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 54037

Internal Standard: STD79772 Surrogate Standard: STD79772
CCV: STD79829; STD79571 LCS: STD79908; STD79496 MS/MSD: STD79909

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG598323; WG598431

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M144707	WG598323-01 50ng BFB STD 8260	NA	1	1	STD79474	01/12/17 08:36
6M144708	WG598323-02 5ug/L A9/FOO STD	NA	1	1	STD79571	01/12/17 09:02
6M144709	WG598323-03 20ug/L A9/FOO STD	NA	1	1	STD79571	01/12/17 09:37
6M144710	WG598323-04 50ug/L A9/FOO STD	NA	1	1	STD79571	01/12/17 10:10
6M144711	WG598323-05 100ug/L A9/FOO STD	NA	1	1	STD79571	01/12/17 10:42
6M144712	WG598323-06 200ug/L A9/FOO STD	NA	1	1	STD79571	01/12/17 11:14
6M144713	WG598323-07 300ug/L A9/FOO STD	NA	1	1	STD79571	01/12/17 11:47
6M144714	WG598323-08 400ug/L A9/FOO STD	NA	1	1	STD79571	01/12/17 12:19
6M144715	WG598323-09 500ug/L A9/FOO STD	NA	1	1	STD79571	01/12/17 12:52
6M144716	rinse	NA	1	1		01/12/17 13:25
6M144717	WG598323-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD79496	01/12/17 13:56
6M144718	WG598430-01 50ng BFB STD 8260	NA	1	1	STD79474	01/12/17 14:27
6M144719	WG598430-02 50ug/L CCV STD 8260	NA	1	1	STD79829	01/12/17 14:52
6M144720	WG598452-01 100ug/L A9 CCV STD 8260	NA	1	1	STD79571	01/12/17 15:27
6M144721	WG598431-01 VBLK0112 BLANK STD 826	NA	1	1		01/12/17 15:59
6M144722	WG598431-02 20ug/L LCS STD 8260	NA	1	1	STD79908	01/12/17 16:32
6M144723	L16120615-05 B MS 826-A9-SPE	7	1	1	STD79909	01/12/17 17:04
6M144724	L16120615-06 B MSD 826-A9-SPE	7	1	1	STD79909	01/12/17 17:37
6M144725	WG598431-03 100ug/L A9/FOO LCS	NA	1	1	STD79496	01/12/17 18:09
6M144726	L16120718-01 B TB 826-AP-SPE	<2	1	1		01/12/17 18:42
6M144727	L16120973-01 B TB 826-AP-SPE	<2	1	1		01/12/17 19:14
6M144728	L16120615-01 B 826-AP-SPE	7	1	1		01/12/17 19:46
6M144729	L16120615-02 B 826-AP-SPE	7	1	1		01/12/17 20:19
6M144730	L16120615-03 B EB 826-AP-SPE	4	1	1		01/12/17 20:51
6M144731	L16120615-04 B RS 826-AP-SPE	7	1	1		01/12/17 21:23
6M144732	L16120615-07 B 826-AP-SPE	4	1	1		01/12/17 21:55
6M144733	L16120615-08 B 826-AP-SPE	7	1	1		01/12/17 22:27
6M144734	L16120615-09 B 826-AP-SPE	7	1	1		01/12/17 22:59
6M144735	L16120718-02 B 826-AP-SPE	7	1	1		01/12/17 23:31
6M144736	L16120718-03 B 826-AP-SPE	7	1	1		01/13/17 00:03
6M144737	L16120718-04 B 826-AP-SPE	4	1	1		01/13/17 00:36
6M144738	L16120718-05 B 826-AP-SPE	4	1	1		01/13/17 01:08
6M144739	L16120718-06 B 826-AP-SPE	7	1	1		01/13/17 01:40
6M144740	L16120718-07 B 826-AP-SPE	7	1	1		01/13/17 02:12

Approved: January 13, 2017

Sarah Vandenberg

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 011217
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 54037

Internal Standard: STD79772 Surrogate Standard: STD79772
CCV: STD79829; STD79571 LCS: STD79908; STD79496 MS/MSD: STD79909

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG598323; WG598431

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M144741	RINSE	NA	1	1		01/13/17 02:44
6M144742	WG598431-07 VBLK0112 BLANK STD 624	NA	2	1		01/13/17 03:16
6M144743	L17010300-04 A 624	7	2	1		01/13/17 03:47
6M144744	L17010466-03 A 624-SPE	7	2	1		01/13/17 04:20
6M144745	L17010446-02 A 624-SPE1	7	2	1		01/13/17 04:52
6M144746	CCV	NA	1	1		01/13/17 05:24
6M144747	RINSE	NA	1	1		01/13/17 05:56
6M144748	RINSE	NA	1	1		01/13/17 06:28

Approved: January 13, 2017
Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 040517
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01/ OVAP MSV01 Rev: 24/0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01/ OVAP PAT01 Rev: 18/1
Maintenance Log ID: 54116

Internal Standard: STD81235 Surrogate Standard: STD81235
CCV: STD81194 LCS: STD81257 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG608938

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M146219	WG608938-01 50ng BFB STD 8260	NA	1	1	STD80989	04/05/17 14:24
6M146220	WG608938-01 50ng BFB STD 8260	NA	1	1	STD80989	04/05/17 14:38
6M146221	WG608938-01 50ng BFB STD 8260	NA	1	1	STD80989	04/05/17 16:29
6M146222	RINSE	NA	1	1	STD80989	04/05/17 16:54
6M146223	WG608938-02 0.3ug/L STD 8260	NA	1	1	STD81194	04/05/17 17:25
6M146224	WG608938-03 0.4ug/L STD 8260	NA	1	1	STD81194	04/05/17 17:57
6M146225	WG608938-04 1ug/L STD 8260	NA	1	1	STD81194	04/05/17 18:28
6M146226	WG608938-05 2ug/L STD 8260	NA	1	1	STD81194	04/05/17 19:00
6M146227	WG608938-06 5ug/L STD 8260	NA	1	1	STD81194	04/05/17 19:31
6M146228	WG608938-07 20ug/L STD 8260	NA	1	1	STD81194	04/05/17 20:02
6M146229	WG608938-08 50ug/L STD 8260	NA	1	1	STD81194	04/05/17 20:34
6M146230	WG608938-09 100ug/L STD 8260	NA	1	1	STD81194	04/05/17 21:06
6M146231	WG608938-10 200ug/L STD 8260	NA	1	1	STD81194	04/05/17 21:37
6M146232	WG608938-11 300ug/L STD 8260	NA	1	1	STD81194	04/05/17 22:09
6M146233	RINSE	NA	1	1		04/05/17 22:40

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 6M146219				
	Tune failed, DNR.			
2	X			
File ID: 6M146220				
	Tune failed, DNR. Clipped the column and repalced the ferrule on the column.			

Approved: April 07, 2017

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 040617
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01/ OVAP MSV01 Rev: 24/0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01/ OVAP PAT01 Rev: 18/1
Maintenance Log ID:

Internal Standard: STD81235 Surrogate Standard: STD81235
CCV: STD81194; STD80642 LCS: STD81257 MS/MSD: STD81257

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG608987

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M146234	RINSE	NA	1	1		04/06/17 12:16
6M146235	RINSE	NA	1	1		04/06/17 13:19
6M146236	WG609128-01 50ng BFB STD 8260	NA	1	1	STD80989	04/06/17 13:59
6M146237	WG609128-02 50ug/L CCV STD 8260	NA	1	1	STD81194	04/06/17 14:24
6M146238	WG608979-01 100ug/L A9 CCV STD 8260	NA	1	1	STD80642	04/06/17 14:54
6M146239	WG608987-01 VBLK0406 BLANK STD 826	NA	1	1		04/06/17 15:26
6M146240	WG608938-12 20ug/L ALT SRC STD 8260	NA	1	1	STD81257	04/06/17 15:57
6M146241	WG608987-02 20ug/L LCS STD 8260	NA	1	1	STD81257	04/06/17 16:28
6M146242	L17040128-01 B 1000X 826-SPE D1	<2	1	1000		04/06/17 16:59
6M146243	L17031533-15 A 826-SPE	<2	1	1		04/06/17 17:30
6M146244	L17031574-17 A RS 826-SPE	NA	1	1		04/06/17 18:01
6M146245	L17031574-18 A MS 826-SPE	NA	1	1	STD81257	04/06/17 18:32
6M146246	L17031574-19 A MSD 826-SPE	NA	1	1	STD81257	04/06/17 19:02
6M146247	L17040128-02 B 200X 826-SPE D1	10	1	200		04/06/17 19:32
6M146248	L17031574-28 TB A 826-SPE	<2	1	1		04/06/17 20:03
6M146249	L17031690-02 TB A 826-SPE	<2	1	1		04/06/17 20:33
6M146250	L17040002-01 LOQ 826-SPE	NA	1	1	STD81310	04/06/17 21:03
6M146251	L17040004-01 LOD 826-SPE	NA	1	1	STD81310	04/06/17 21:33
6M146252	L17031690-01 A 826-SPE	<2	1	1		04/06/17 22:04
6M146253	L17031574-25 A 826-SPE	<2	1	1		04/06/17 22:34
6M146254	L17031574-24 A 826-SPE	<2	1	1		04/06/17 23:04
6M146255	L17031574-27 A 2.5X 826-SPE	<2	1	2.5		04/06/17 23:35
6M146256	L17031574-26 A 826-SPE	<2	1	1		04/07/17 00:05
6M146257	L17031574-23 A 826-SPE	<2	1	1		04/07/17 00:35
6M146258	L17040173-01 A 10X 826-TC	5	17	10		04/07/17 01:06
6M146259	ccv	NA	1	1		04/07/17 01:36
6M146260	rinse	NA	1	1		04/07/17 02:06
6M146261	rinse	NA	1	1		04/07/17 02:36
6M146262	WG608867-01 A FBLK 10X 826-TC	NA	17	10		04/07/17 03:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X	1000	Over Calibration Range	D.ETHER

Approved: April 07, 2017
Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 040617
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01/ OVAP MSV01 Rev: 24/0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01/ OVAP PAT01 Rev: 18/1
Maintenance Log ID:

Internal Standard: STD81235 Surrogate Standard: STD81235
CCV: STD81194; STD80642 LCS: STD81257 MS/MSD: STD81257

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG608987

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 6M146247				
20	X	5	Over Calibration Range	CIS12-DCE
File ID: 6M146253				
21	X	5	Over Calibration Range	CIS12-DCE
File ID: 6M146254				

Approved: April 07, 2017
Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 12-JAN-2017
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 79799
Analytical Workgroups: WG598323; WG598431

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-JAN-2017
Tiffany Bailey

Secondary Reviewer:
13-JAN-2017
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-13-2017 13:54:15

Microbac Laboratories Inc.

Data Checklist

Date: 05-APR-2017
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 81399
Analytical Workgroups: WG608938

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
06-APR-2017
Tiffany Bailey

Secondary Reviewer:
07-APR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: APR-07-2017 14:59:30

Microbac Laboratories Inc.

Data Checklist

Date: 06-APR-2017
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 81412
Analytical Workgroups: WG608987

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
07-APR-2017
Tiffany Bailey

Secondary Reviewer:
07-APR-2017
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: APR-07-2017 14:09:55

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B AAB#: WG608987

Login Number: L17031690

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP650-6428-GRAB	01	03/29/17					04/06/2017	8.3	14		04/06/17	8.3	14	
TRIP BLANK	02	03/29/17					04/06/2017	8.9	14		04/06/17	8.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5235100
Report generated 04/07/2017 13:55

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L17031690
Instrument Id: HPMS6
Workgroup (AAB#): WG608987

Method: 8260
CAL ID: HPMS6-05-APR-17
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L17031690-01	1.00	01	102	101	103	102
L17031690-02	1.00	01	101	102	103	104
WG608987-01	1.00	01	103	103	103	103
WG608987-02	1.00	01	102	105	98.4	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 5235116
Report generated: 04/07/2017 13:55

METHOD BLANK SUMMARY

Login Number:	L17031690	**Work Group:**	WG608987
Blank File ID:	6M146239	**Blank Sample ID:**	WG608987-01
Prep Date:	04/06/17 15:26	**Instrument ID:**	HPMS6
Analyzed Date:	04/06/17 15:26	**Method:**	8260B
Analyst:	TMB		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608987-02	6M146241	04/06/17 16:28	01
TRIP BLANK	L17031690-02	6M146249	04/06/17 20:33	01
LH18/24-SP650-6428-GRAB	L17031690-01	6M146252	04/06/17 22:04	01

Report Name: BLANK_SUMMARY
PDF File ID: 5235769
Report generated 04/07/2017 13:55

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031690 Prep Date: 04/06/17 15:26 Sample ID: WG608987-01
Instrument ID: HPMS6 Run Date: 04/06/17 15:26 Prep Method: 5030B/5030C/503
File ID: 6M146239 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG608987 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-05-APR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	0.500	0.125	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	0.500	0.125	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chloroform	0.125	0.500	0.125	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
Methylene chloride	0.250	1.00	0.250	1	U
m,p-Xylene	0.500	2.00	0.500	1	U
o-Xylene	0.250	1.00	0.250	1	U
Styrene	0.125	0.500	0.125	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits			Qualifier
1,2-Dichloroethane-d4	103	70	-	120	PASS
4-Bromofluorobenzene	103	75	-	120	PASS
Dibromofluoromethane	103	85	-	115	PASS
Toluene-d8	103	85	-	120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5235101
07-APR-2017 13:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031690 Run Date: 04/06/2017 Sample ID: WG608987-02
Instrument ID: HPMS6 Run Time: 16:28 Prep Method: 5030B/5030C/503
File ID: 6M146241 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG608987 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD81257 Cal ID: HPMS6-05-APR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,1,1-Trichloroethane	20.0	20.3	101	65 - 130	
1,1,2-Trichloroethane	20.0	19.1	95.7	75 - 125	
1,1-Dichloroethane	20.0	19.9	99.3	70 - 135	
1,1-Dichloroethene	20.0	20.3	101	70 - 130	
1,2-Dichloroethane	20.0	19.4	97.1	70 - 130	
Acetone	20.0	21.0	105	40 - 140	
Benzene	20.0	18.8	94.0	80 - 120	
Carbon tetrachloride	20.0	21.2	106	65 - 140	
Chloroform	20.0	18.5	92.3	65 - 135	
Ethylbenzene	20.0	18.9	94.3	75 - 125	
Methylene chloride	20.0	19.5	97.4	55 - 140	
m,p-Xylene	40.0	37.3	93.2	75 - 130	
o-Xylene	20.0	19.0	95.2	80 - 120	
Styrene	20.0	19.3	96.6	65 - 135	
Tetrachloroethene	20.0	20.0	99.9	45 - 150	
Trichloroethene	20.0	18.8	93.9	70 - 125	
Toluene	20.0	18.6	92.9	75 - 120	
Vinyl chloride	20.0	21.9	110	50 - 145	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,2-Dichloroethane-d4	102	70 - 120	PASS
4-Bromofluorobenzene	98.4	75 - 120	PASS
Dibromofluoromethane	105	85 - 115	PASS
Toluene-d8	100	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 5235102
Report generated: 04/07/2017 13:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031690
Instrument: HPMS6
Analyst: TMB
Workgroup: WG598323

Tune ID: WG598323-01
Run Date: 01/12/2017
Run Time: 08:36
File ID: 6M144707
Cal ID: HPMS6-12-JAN-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.2	7923	PASS
75.0	95.0	30.0	60.0	54.8	22651	PASS
95.0	95.0	100	100	100	41304	PASS
96.0	95.0	5.00	9.00	7.28	3007	PASS
173	174	0	2.00	0.352	116	PASS
174	95.0	50.0	100	79.8	32963	PASS
175	174	5.00	9.00	8.22	2709	PASS
176	174	95.0	101	97.3	32071	PASS
177	176	5.00	9.00	6.69	2147	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG598323-02	STD	01	01/12/2017 09:02	
WG598323-03	STD	01	01/12/2017 09:37	
WG598323-04	STD	01	01/12/2017 10:10	
WG598323-05	STD-CCV	01	01/12/2017 10:42	
WG598323-06	STD	01	01/12/2017 11:14	
WG598323-07	STD	01	01/12/2017 11:47	
WG598323-08	STD	01	01/12/2017 12:19	
WG598323-09	STD	01	01/12/2017 12:52	
WG598323-10	SSCV	01	01/12/2017 13:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5235114
Report generated 04/07/2017 13:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031690
Instrument: HPMS6
Analyst: TMB
Workgroup: WG608938

Tune ID: WG608938-01
Run Date: 04/05/2017
Run Time: 16:29
File ID: 6M146221
Cal ID: HPMS6-05-APR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.3	4043	PASS
75.0	95.0	30.0	60.0	46.5	10875	PASS
95.0	95.0	100	100	100	23389	PASS
96.0	95.0	5.00	9.00	7.16	1674	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.5	17883	PASS
175	174	5.00	9.00	7.58	1356	PASS
176	174	95.0	101	96.1	17186	PASS
177	176	5.00	9.00	7.35	1263	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG608938-02	STD	01	04/05/2017 17:25	
WG608938-03	STD	01	04/05/2017 17:57	
WG608938-04	STD	01	04/05/2017 18:28	
WG608938-05	STD	01	04/05/2017 19:00	
WG608938-06	STD	01	04/05/2017 19:31	
WG608938-07	STD	01	04/05/2017 20:02	
WG608938-08	STD-CCV	01	04/05/2017 20:34	
WG608938-09	STD	01	04/05/2017 21:06	
WG608938-10	STD	01	04/05/2017 21:37	
WG608938-11	STD	01	04/05/2017 22:09	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5235114
Report generated 04/07/2017 13:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031690
Instrument: HPMS6
Analyst: TMB
Workgroup: WG609128

Tune ID: WG609128-01
Run Date: 04/06/2017
Run Time: 13:59
File ID: 6M146236
Cal ID: HPMS6-05-APR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.6	6056	PASS
75.0	95.0	30.0	60.0	47.8	16465	PASS
95.0	95.0	100	100	100	34464	PASS
96.0	95.0	5.00	9.00	7.14	2460	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.9	26498	PASS
175	174	5.00	9.00	7.37	1953	PASS
176	174	95.0	101	98.9	26205	PASS
177	176	5.00	9.00	6.88	1804	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG609128-02	CCV	01	04/06/2017 14:24	
WG608979-01	CCV	01	04/06/2017 14:54	
WG608987-01	BLANK	01	04/06/2017 15:26	
WG608938-12	SSCV	01	04/06/2017 15:57	
WG608987-02	LCS	01	04/06/2017 16:28	
L17031690-02	TRIP BLANK	01	04/06/2017 20:33	
L17031690-01	LH18/24-SP650-6428-GRAB	01	04/06/2017 22:04	
WG608867-01	FBLK1	DL01	04/07/2017 03:06	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5235114
Report generated 04/07/2017 13:55

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 011217 - HPMS6
Last Calibration: Thu Jan 12 13:53:06 2017
Curve: WG598323
Calibration Files

	Compound	5 6M144708.D	20 6M144709.D	50 6M144710.D	100 6M144711.D	200 6M144712.D	300 6M144713.D	400 6M144714.D	500 6M144715.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.021	0.019	0.018	0.017	0.018	0.016	0.017	0.017	0.018	8.729
T	3-Chloro-1-propene	0.301	0.305	0.307	0.308	0.306	0.295	0.287	0.289	0.300	2.763
T	2-Chloro-1,3-butadiene	0.348	0.368	0.380	0.385	0.382	0.371	0.361	0.364	0.370	3.335
T	Ethyl Acetate	0.144	0.163	0.169	0.166	0.171	0.152	0.159	0.159	0.160	5.700
T	Methacrylonitrile	0.076	0.087	0.089	0.088	0.089	0.080	0.083	0.083	0.084	5.535
T	Isobutyl Alcohol	0.004	0.006	0.006	0.005	0.005	0.004	0.005	0.006	0.005	13.176
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.146	0.173	0.185	0.185	0.188	0.171	0.177	0.178	0.175	7.640
T	2-Nitropropane		0.063	0.071	0.071	0.076	0.070	0.075	0.074	0.071	6.228
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.008	0.009	0.008	0.010	0.009	0.011	0.012	0.009	14.808

Fri Jan 13 10:37:15 2017

Calibration Table Report
Method: 8260BWT.M
Title: 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Calibration: Thu Apr 06 09:55:03 2017
Curve: WG608938
Calibration Files

	Compound	0.3 6M146223.D	0.4 6M146224.D	1 6M146225.D	2 6M146226.D	5 6M146227.D	20 6M146228.D	50 6M146229.D	100 6M146230.D	200 6M146231.D	300 6M146232.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.381	0.345	0.365	0.434	0.430	0.411	0.412		0.397	8.516		
P	Chloromethane			0.725	0.639	0.561	0.528	0.467	0.463	0.448		0.547	18.885	0.999	
C	Vinyl Chloride		0.564	0.506	0.438	0.420	0.464	0.451	0.364	0.420		0.454	13.323		
T	1,3-Butadiene					0.220	0.212	0.176	0.135	0.148	0.118	0.168	24.710		0.990
T	Bromomethane			0.176	0.159	0.179	0.196	0.221	0.211	0.228		0.196	13.055		
T	Chloroethane			0.192	0.183	0.199	0.207	0.203	0.189	0.193		0.195	4.273		
T	Trichlorofluoromethane		0.432	0.460	0.431	0.458	0.479	0.482	0.482	0.492		0.465	5.013		
T	Diethyl ether			0.191	0.192	0.193	0.189	0.192	0.197		0.202	0.194	2.274		
T	Isoprene					0.366	0.355	0.386	0.387	0.385	0.414	0.382	5.221		
T	Acrolein				0.021	0.021	0.020	0.021	0.023		0.021	0.021	4.175		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.269	0.247	0.261	0.264	0.264	0.265	0.271		0.263	2.932		
T	Acetone					0.057	0.058	0.055	0.053	0.056	0.045	0.054	8.929		
C	1,1-Dichloroethene		0.380	0.369	0.368	0.387	0.390	0.386	0.377	0.392		0.381	2.398		
T	Tert-Butyl Alcohol				0.017	0.018	0.016	0.014	0.018		0.017	0.017	8.130		
T	Dimethyl Sulfide					0.267	0.261	0.276	0.270	0.280	0.281	0.272	2.955		
T	Iodomethane			0.108	0.126	0.150	0.197	0.214	0.251	0.224	0.221	0.186	27.720	0.997	
T	Methyl acetate					0.129	0.125	0.134	0.140	0.141	0.143	0.135	5.216		
T	Methylene Chloride			0.311	0.287	0.287	0.286	0.285	0.274	0.287		0.288	3.813		
T	Carbon Disulfide			0.835	0.817	0.814	0.779	0.841	0.818	0.842	0.816	0.820	2.481		
T	Acrylonitrile			0.058	0.059	0.063	0.063	0.066	0.067		0.060	0.063	5.597		
T	Methyl Tert Butyl Ether			0.650	0.621	0.661	0.659	0.631	0.620	0.582		0.632	4.438		
T	trans-1,2-Dichloroethene		0.269	0.274	0.273	0.272	0.276	0.276	0.271	0.283		0.274	1.519		
T	n-Hexane					0.313	0.290	0.312	0.311	0.316	0.319	0.310	3.309		
T	Diisopropyl ether			0.719	0.724	0.709	0.699	0.694	0.699		0.699	0.706	1.627		
T	Vinyl Acetate					0.192	0.169	0.166	0.232	0.223	0.194	0.196	13.694		
P	1,1-Dichloroethane		0.460	0.450	0.445	0.457	0.465	0.452	0.444	0.462		0.454	1.740		
T	Ethyl-Tert-Butyl ether			0.716	0.722	0.718	0.705	0.702	0.724		0.720	0.715	1.185		
T	2-Butanone					0.068	0.068	0.066	0.071	0.069	0.067	0.068	2.393		
T	Propionitrile			0.020	0.022	0.023	0.022	0.023	0.023		0.023	0.022	5.579		
T	2,2-Dichloropropane		0.387	0.403	0.350	0.359	0.297	0.277	0.350	0.342		0.346	12.129		
T	cis-1,2-Dichloroethene		0.303	0.299	0.296	0.301	0.302	0.301	0.298	0.312		0.302	1.628		
C	Chloroform	0.658	0.590	0.542	0.485	0.482	0.482	0.476	0.463	0.481		0.518	12.803		
T	1-Bromopropane			0.041	0.052	0.052	0.056	0.057	0.058	0.053	0.060	0.053	11.075		
T	Bromochloromethane		0.132	0.144	0.150	0.165	0.170	0.168	0.171	0.170		0.159	9.183		
T	Tetrahydrofuran			0.050	0.044	0.045	0.043	0.043	0.045		0.043	0.045	5.367		
S	Dibromofluoromethane			0.245	0.236	0.256	0.262	0.259	0.257	0.262	0.265	0.255	3.868		
T	1,1,1-Trichloroethane		0.405	0.424	0.407	0.410	0.424	0.424	0.425	0.447		0.421	3.239		
T	Cyclohexane			0.387	0.368	0.384	0.366	0.397	0.394	0.411	0.406	0.389	4.204		
T	1,1-Dichloropropene			0.357	0.349	0.355	0.358	0.357	0.352	0.362		0.356	1.233		
T	Tert-Amyl-Methyl ether			0.684	0.674	0.681	0.663	0.669	0.698		0.685	0.679	1.728		
T	Carbon Tetrachloride			0.282	0.274	0.323	0.351	0.366	0.377	0.35		0.33183	12.2386		
S	1,2-Dichloroethane-d4				0.244	0.246	0.257	0.253	0.252	0.254	0.254	0.25153	1.86029		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.327	0.326	0.306	0.328	0.323	0.321	0.32	0.325		0.32202	2.174		
T	Benzene		1.21	1.101	1.077	1.063	1.054	1.025	1.007	1.019		1.06965	6.04095		
T	Trichloroethene		0.288	0.284	0.274	0.29	0.299	0.302	0.292	0.3		0.29115	3.19828		
T	Methylcyclohexane					0.413	0.393	0.422	0.423	0.432	0.44	0.42065	3.83804		
C	1,2-Dichloropropane		0.232	0.251	0.254	0.257	0.263	0.256	0.249	0.258		0.25244	3.71187		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.00184	6.16966		
T	Bromodichloromethane		0.334	0.34	0.341	0.358	0.37	0.369	0.364	0.376		0.35636	4.47459		
T	Dibromomethane		0.122	0.155	0.145	0.155	0.154	0.153	0.153	0.153		0.14868	7.44253		
T	2-Chloroethyl Vinyl Ether				0.076	0.1	0.106	0.106	0.109	0.088	0.107	0.09902	12.5245		
T	4-Methyl-2-Pentanone					0.063	0.064	0.064	0.068	0.065	0.065	0.06495	2.52742		
T	cis-1,3-Dichloropropene		0.346	0.382	0.37	0.401	0.412	0.407	0.409	0.413		0.39243	6.25845		
T	Dimethyl Disulfide					0.227	0.225	0.247	0.252	0.264	0.27	0.24758	7.53484		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.282	1.288	1.306	1.276	1.265	1.243	1.262	1.283	1.27569	1.48449		
C	Toluene		1.652	1.626	1.556	1.57	1.551	1.537	1.51	1.503		1.56301	3.34424		
T	Ethyl Methacrylate			0.354	0.349	0.379	0.362	0.386	0.4	0.394	0.402	0.37824	5.56152		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.466	0.427	0.489	0.494	0.497	0.503	0.498		0.48194	5.63896		
T	1,1,2-Trichloroethane		0.273	0.296	0.289	0.303	0.3	0.298	0.298	0.3		0.29455	3.27325		
T	2-Hexanone					0.142	0.14	0.14	0.146	0.139	0.141	0.14144	1.87214		
T	1,3-Dichloropropane		0.484	0.508	0.475	0.504	0.5	0.497	0.495	0.494		0.49443	2.17868		
T	Tetrachloroethene		0.355	0.38	0.375	0.383	0.381	0.385	0.382	0.389		0.37875	2.7685		
T	Dibromochloromethane		0.322	0.345	0.344	0.362	0.378	0.381	0.388	0.394		0.36412	6.97018		
T	1,2-Dibromoethane		0.284	0.282	0.277	0.28	0.281	0.286	0.29	0.283		0.28283	1.39806		
T	1-Chlorohexane		0.501	0.501	0.486	0.499	0.469	0.513	0.509	0.521	0.544	0.50473	4.18396		
P	Chlorobenzene		1.095	1.077	1.019	1.044	1.045	1.064	1.071	1.141		1.06977	3.47515		
T	1,1,1,2-Tetrachloroethane		0.348	0.357	0.345	0.371	0.385	0.4	0.413	0.446		0.3831	9.19348		
C	Ethylbenzene		0.6	0.536	0.538	0.559	0.564	0.581	0.595	0.659		0.57912	6.92495		
T	m-,p-Xylene		0.711	0.677	0.667	0.681	0.673	0.697	0.701	0.731		0.69221	3.13862		
T	o-Xylene			0.671	0.642	0.655	0.669	0.678	0.657	0.704		0.66797	2.95161		
T	Styrene		1.073	1.059	1.076	1.12	1.133	1.168	1.147	1.193		1.12136	4.31921		
P	Bromoform			0.2	0.2	0.214	0.226	0.238	0.239	0.237		0.22189	7.90635		
T	Isopropylbenzene		1.776	1.697	1.623	1.674	1.668	1.699	1.625	1.612		1.67159	3.22323		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.698	0.661	0.65	0.674	0.635	0.606	0.637	0.648		0.65111	4.24655		
S	p-Bromofluorobenzene			0.963	0.993	0.912	0.973	0.934	0.902	0.947	0.972	0.94951	3.31848		

T	1,2,3-Trichloropropane			0.195	0.177	0.197	0.197	0.19	0.193	0.197		0.19228	3.72212
T	trans-1,4-Dichloro-2-Butene			0.124	0.117	0.135	0.132	0.142	0.151	0.15	0.155	0.13826	10.0162
T	n-Propylbenzene		4.071	3.929	3.827	3.847	3.789	3.738	3.585	3.496		3.78518	4.83282
T	Bromobenzene	0.861	0.852	0.867	0.84	0.843	0.856	0.84	0.822	0.872		0.85035	1.84632
T	1,3,5-Trimethylbenzene		2.773	2.744	2.708	2.654	2.661	2.647	2.591	2.682		2.68251	2.16658
T	2-Chlorotoluene		2.733	2.689	2.575	2.498	2.579	2.388	2.346	2.355		2.52034	5.92259
T	4-Chlorotoluene		2.395	2.337	2.248	2.223	2.051	2.189	2.093	2.284		2.22752	5.21159
T	a-Methylstyrene					1.445	1.366	1.463	1.473	1.542	1.611	1.48341	5.66686
T	tert-Butylbenzene			0.551	0.564	0.544	0.568	0.565	0.555	0.589		0.56208	2.558
T	1,2,4-Trimethylbenzene			2.798	2.729	2.745	2.76	2.745	2.714	2.793		2.75494	1.13121
T	sec-Butylbenzene			3.56	3.327	3.322	3.297	3.276	3.197	3.178		3.30805	3.79322
T	p-Isopropyltoluene			2.879	2.746	2.749	2.779	2.779	2.76	2.787		2.78269	1.6223
T	1,3-Dichlorobenzene		1.745	1.595	1.607	1.558	1.601	1.574	1.559	1.608		1.60589	3.7263
T	1,4-Dichlorobenzene	1.858	1.642	1.613	1.574	1.578	1.594	1.578	1.564	1.615		1.62397	5.60487
T	n-Butylbenzene			2.643	2.479	2.524	2.512	2.536	2.56	2.533		2.54099	2.02916
T	1,2-Dichlorobenzene	1.566	1.589	1.537	1.453	1.471	1.497	1.472	1.477	1.484		1.50524	3.15458
T	1,2-Dibromo-3-Chloropropane				0.103	0.12	0.121	0.119	0.128	0.117		0.11794	7.07341
T	1,2,4-Trichlorobenzene		1.219	1.11	1.06	1.059	1.082	1.083	1.092	1.105		1.10135	4.63701
T	Hexachlorobutadiene		0.476	0.446	0.394	0.418	0.403	0.409	0.409	0.41		0.42065	6.42356
T	Naphthalene		2.283	2.179	2.049	2.212	2.236	2.219	2.289	2.175		2.20527	3.4468
T	1,2,3-Trichlorobenzene	1.267	1.197	1.116	1.005	0.999	0.994	0.992	1.004	0.995		1.06323	9.83782

Thu Apr 06 14:39:00 2017

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L17031690 Run Date: 04/06/2017 Sample ID: WG608938-12
Instrument ID: HPMS6 Run Time: 15:57 Method: 8260B
File ID: 6M146240 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG608938 Cal ID: HPMS6 - 05-APR-17

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,1-Dichloroethene	CCC	20.0	20.0	ug/L	0.381	0.100	20	
Chloroform	CCC	20.0	18.5	ug/L	0.479	7.50	20	
Ethylbenzene	CCC	20.0	18.6	ug/L	0.538	7.10	20	
Toluene	CCC	20.0	18.5	ug/L	1.45	7.30	20	
Vinyl Chloride	CCC	20.0	22.0	ug/L	0.499	10.0	20	
1,1,2,2-Tetrachloroethane	SPCC	20.0	19.6	ug/L	0.638	2.00	20	
Chloromethane	SPCC	20.0	22.5	ug/L	0.529	12.3	20	
Bromoform	SPCC	20.0	18.7	ug/L	0.208	6.30	20	
Chlorobenzene	SPCC	20.0	18.3	ug/L	0.981	8.30	20	
1,1-Dichloroethane	SPCC	20.0	19.7	ug/L	0.448	1.50	20	
1,1,1-Trichloroethane		20.0	20.1	ug/L	0.423	0.600	20	
1,1,2-Trichloroethane		20.0	18.9	ug/L	0.278	5.50	20	
1,2-Dichloroethane		20.0	19.5	ug/L	0.314	2.60	20	
Acetone		20.0	19.0	ug/L	0.0513	4.90	20	
Benzene		20.0	18.8	ug/L	1.01	5.90	20	
Carbon Tetrachloride		20.0	20.6	ug/L	0.342	3.10	20	
Methylene Chloride		20.0	19.4	ug/L	0.280	3.00	20	
m-,p-Xylene		40.0	37.4	ug/L	0.646	6.60	20	
o-Xylene		20.0	18.9	ug/L	0.631	5.50	20	
Styrene		20.0	19.3	ug/L	1.08	3.50	20	
Tetrachloroethene		20.0	19.4	ug/L	0.367	3.00	20	
Trichloroethene		20.0	18.6	ug/L	0.271	6.80	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 5235103
Report generated 04/07/2017 13:55

Login Number: L17031690 Run Date: 04/06/2017 Sample ID: WG609128-02
Instrument ID: HPMS6 Run Time: 14:24 Method: 8260B
File ID: 6M146237 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG608987 Cal ID: HPMS6 - 05-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,2-Dichloropropane	CCC	50.0	48.9	ug/L	0.247	2.14	20	
1,1-Dichloroethene	CCC	50.0	50.1	ug/L	0.382	0.257	20	
Chloroform	CCC	50.0	44.3	ug/L	0.459	11.4	20	
Ethylbenzene	CCC	50.0	47.1	ug/L	0.545	5.86	20	
Toluene	CCC	50.0	45.7	ug/L	1.43	8.65	20	
Vinyl Chloride	CCC	50.0	47.4	ug/L	0.430	5.13	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.1	ug/L	0.613	5.86	20	
Bromoform	SPCC	50.0	48.3	ug/L	0.215	3.31	20	
Chlorobenzene	SPCC	50.0	46.4	ug/L	0.994	7.11	20	
Chloromethane	SPCC	50.0	47.4	ug/L	0.439	5.14	20	
1,1-Dichloroethane	SPCC	50.0	48.9	ug/L	0.445	2.10	20	
Xylenes		150	141	ug/L	0.639	6.04	20	
1,1,1-Trichloroethane		50.0	48.6	ug/L	0.409	2.86	20	
1,1,2-Trichloroethane		50.0	46.7	ug/L	0.275	6.68	20	
1,2-Dichloroethane		50.0	47.6	ug/L	0.307	4.74	20	
Acetone		50.0	48.8	ug/L	0.0526	2.48	20	
Benzene		50.0	46.2	ug/L	0.987	7.70	20	
Carbon Tetrachloride		50.0	53.1	ug/L	0.352	6.10	20	
Methylene Chloride		50.0	47.7	ug/L	0.275	4.69	20	
m-,p-Xylene		100	93.9	ug/L	0.650	6.11	20	
o-Xylene		50.0	47.1	ug/L	0.629	5.89	20	
Styrene		50.0	48.1	ug/L	1.08	3.82	20	
Tetrachloroethene		50.0	47.3	ug/L	0.359	5.30	20	
Trichloroethene		50.0	46.9	ug/L	0.273	6.28	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 5235115
Report generated 04/07/2017 13:55

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031690
Instrument ID: HPMS6
Workgroup (AAB#): WG608987

ICAL CCV Number: WG608938-08
CAL ID: HPMS6-05-APR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG608938-08	NA	NA	244954	452398	643185
Upper Limit	NA	NA	489908	904796	1286370
Lower Limit	NA	NA	122477	226199	321593
L17031690-01	1.00	01	231591	455258	640959
L17031690-02	1.00	01	228319	444920	639452
WG608987-01	1.00	01	243331	469729	670846
WG608987-02	1.00	01	257942	478929	661794

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 5235770
Report generated 04/07/2017 13:55

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031690
Instrument ID: HPMS6
Workgroup (AAB#): WG608987

ICAL CCV Number: WG608938-08
CAL ID: HPMS6-05-APR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG608938-08	NA	NA	18.17	15.14	11.26
Upper Limit	NA	NA	18.67	15.64	11.76
Lower Limit	NA	NA	17.67	14.64	10.76
L17031690-01	1.00	01	18.17	15.13	11.25
L17031690-02	1.00	01	18.17	15.14	11.26
WG608987-01	1.00	01	18.17	15.14	11.26
WG608987-02	1.00	01	18.16	15.13	11.25

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 5235771
Report generated: 04/07/2017 13:55

2.1.1.3 Sample Data

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146252.D Vial: 17
Acq On : 6 Apr 2017 22:04 Operator: TMB
Sample : L17031690-01 A 826-SPE Inst : Hpms6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 08:26:46 2017 Quant Results File: 8260BWT.RES

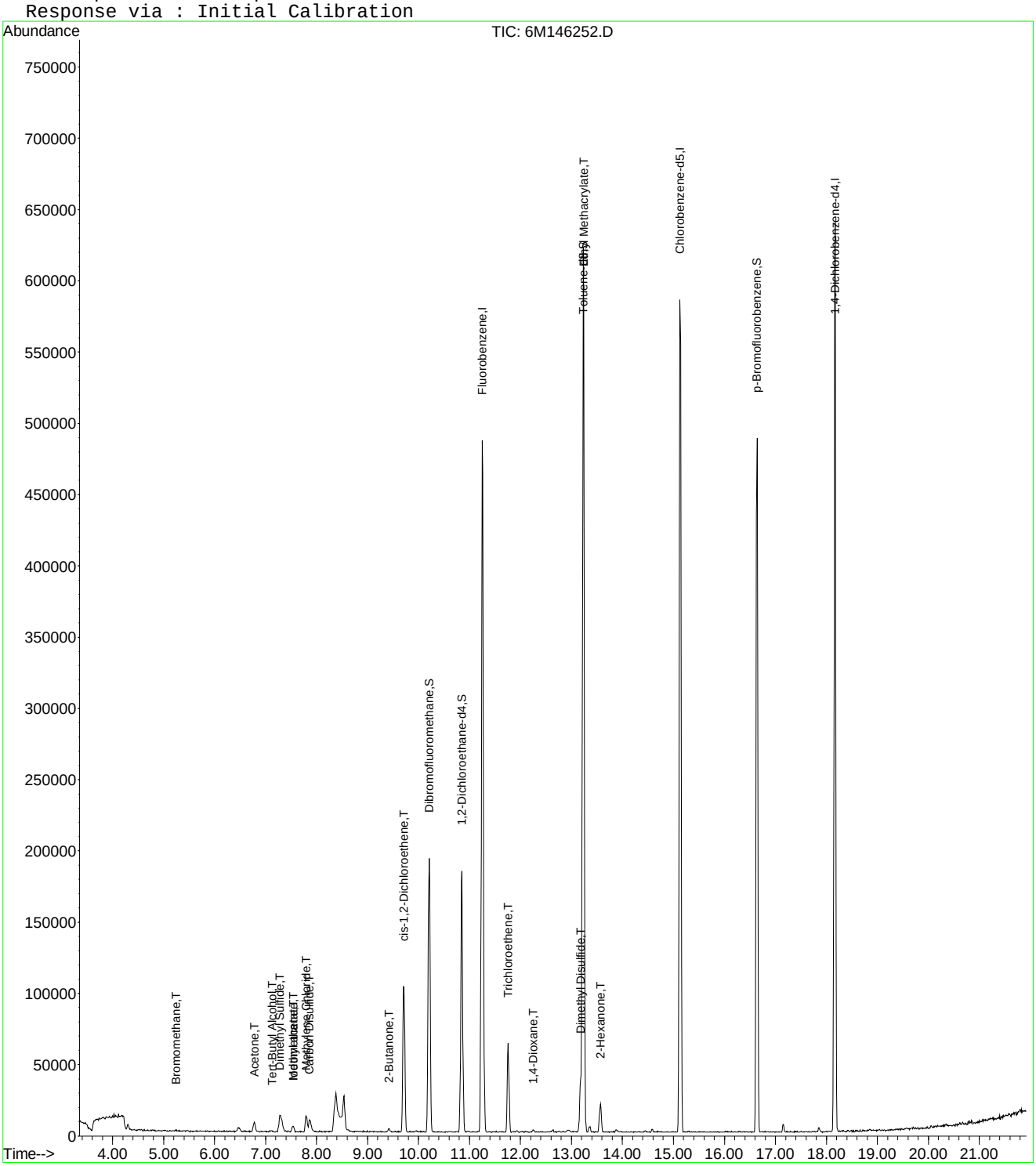
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

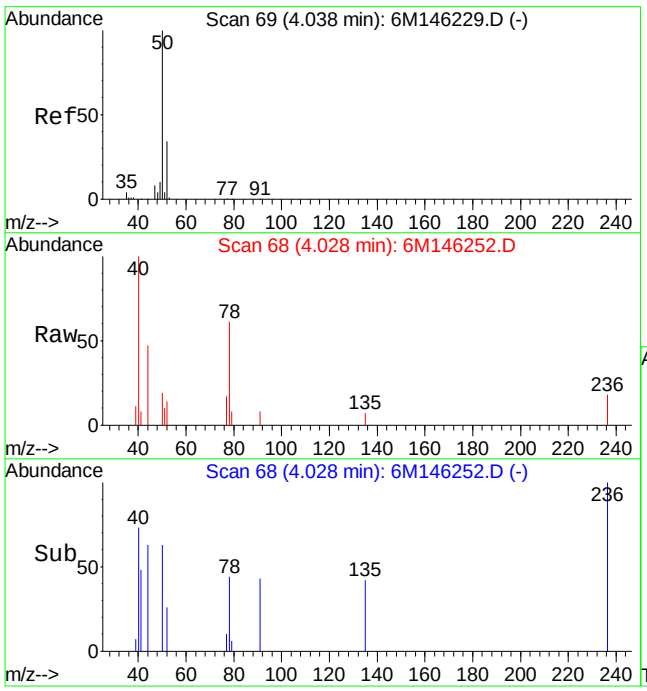
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.25	96	640959	25.00	ug/L	0.00
57) Chlorobenzene-d5	15.13	117	455258	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	231591	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	10.21	111	165201	25.2481	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.00%			
43) 1,2-Dichloroethane-d4	10.85	65	165101	25.6020	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.40%			
58) Toluene-d8	13.23	98	592304	25.4965	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.00%			
80) p-Bromofluorobenzene	16.64	95	227078	25.8163	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.28%			
Target Compounds						Qvalue
3) Chloromethane	4.03	50	1682	Below Cal	#	13
6) Bromomethane	5.24	94	719	0.1432	ug/L	75
13) Acetone	6.78	43	12540	9.0664	ug/L	92
15) Tert-Butyl Alcohol	7.12	59	920	2.1444	ug/L #	57
16) Dimethyl Sulfide	7.28	62	8702	1.2463	ug/L	95
17) Iodomethane	7.54	142	858	0.9326	ug/L #	32
18) Methyl acetate	7.54	43	6940	2.0006	ug/L #	84
19) Methylene Chloride	7.80	84	7684	1.0401	ug/L	65
20) Carbon Disulfide	7.86	76	8190	0.3894	ug/L	97
29) 2-Butanone	9.42	43	4179	2.3973	ug/L	96
32) cis-1,2-Dichloroethene	9.72	96	65226	8.4362	ug/L	80
47) Trichloroethene	11.76	130	27932	3.7419	ug/L	88
50) 1,4-Dioxane	12.25	88	1865	39.6304	ug/L #	46
56) Dimethyl Disulfide	13.18	79	15905	2.5057	ug/L	86
60) Ethyl Methacrylate	13.24	69	1472	0.2137	ug/L #	57
64) 2-Hexanone	13.57	43	25210	9.7877	ug/L #	28

(#) = qualifier out of range (m) = manual integration
6M146252.D 8260BWT.M Fri Apr 07 08:26:49 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146252.D Vial: 17
Acq On : 6 Apr 2017 22:04 Operator: TMB
Sample : L17031690-01 A 826-SPE Inst : Hpms6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 8:26 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration

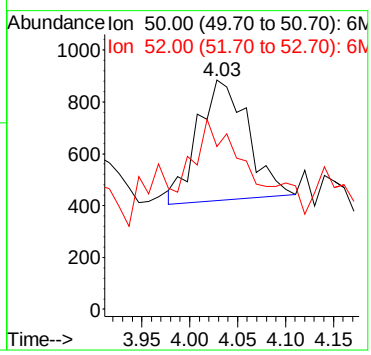


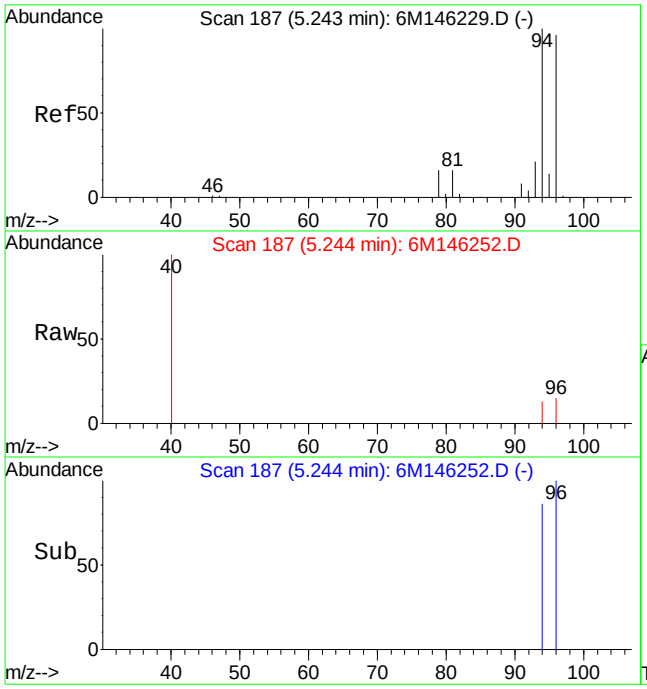


#3
Chloromethane
Concen: Below Cal
RT: 4.03 min Scan# 68
Delta R.T. 0.01 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 50 Resp: 1682

Ion	Ratio	Lower	Upper
50	100		
52	82.1	19.8	46.2#

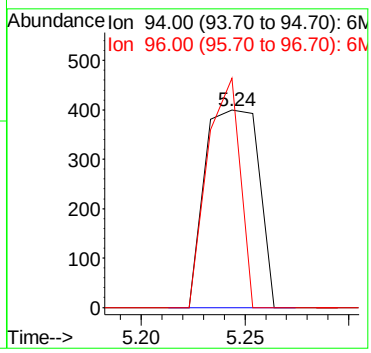


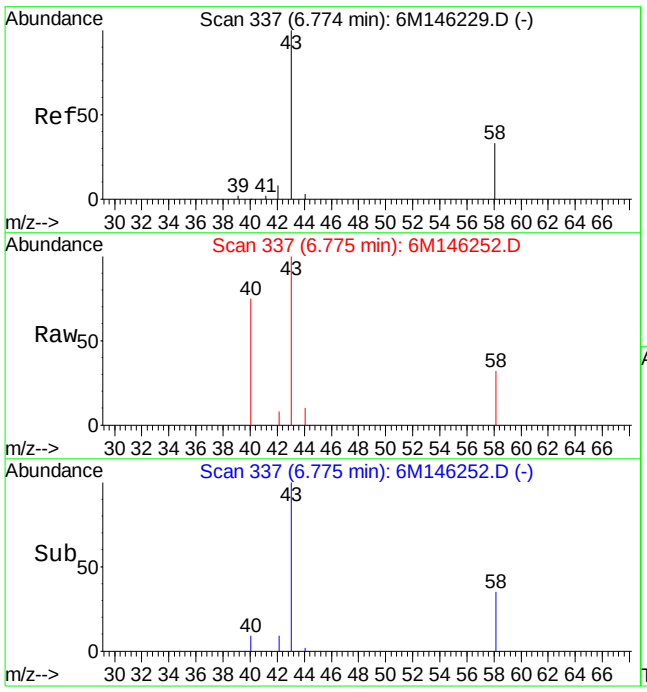


#6
Bromomethane
Concen: 0.14 ug/L
RT: 5.24 min Scan# 187
Delta R.T. 0.03 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 94 Resp: 719

Ion	Ratio	Lower	Upper
94	100		
96	70.2	56.7	132.3

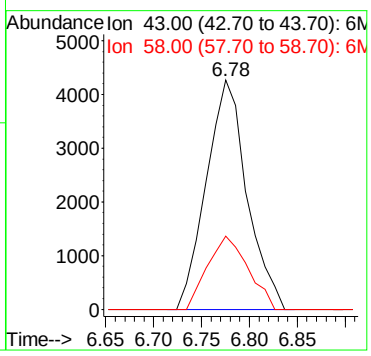


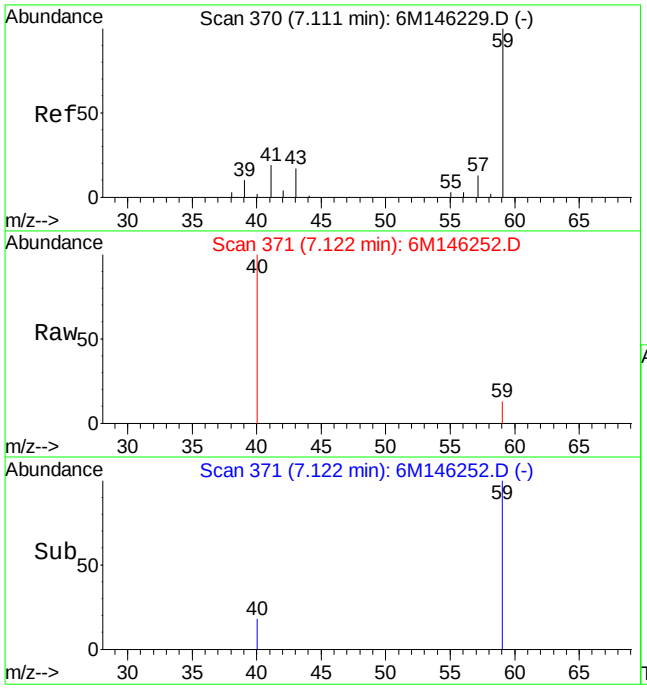


#13
Acetone
Concen: 9.07 ug/L
RT: 6.78 min Scan# 337
Delta R.T. -0.00 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 43 Resp: 12540

Ion	Ratio	Lower	Upper
43	100		
58	31.6	16.4	38.2

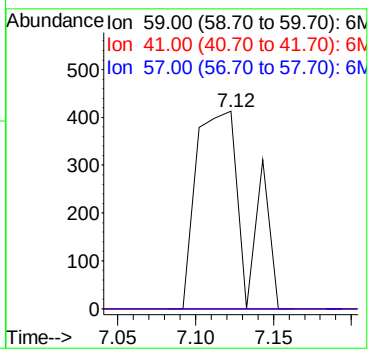


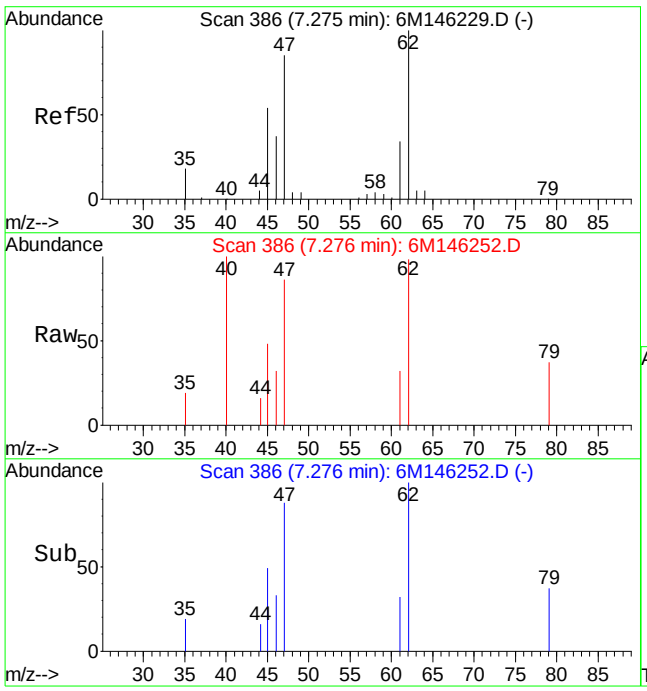


#15
Tert-Butyl Alcohol
Concen: 2.14 ug/L
RT: 7.12 min Scan# 371
Delta R.T. -0.00 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 59 Resp: 920

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.6	34.0#
57	0.0	6.4	14.8#

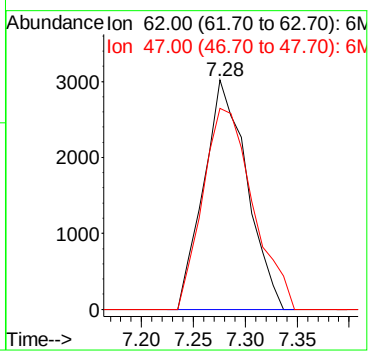


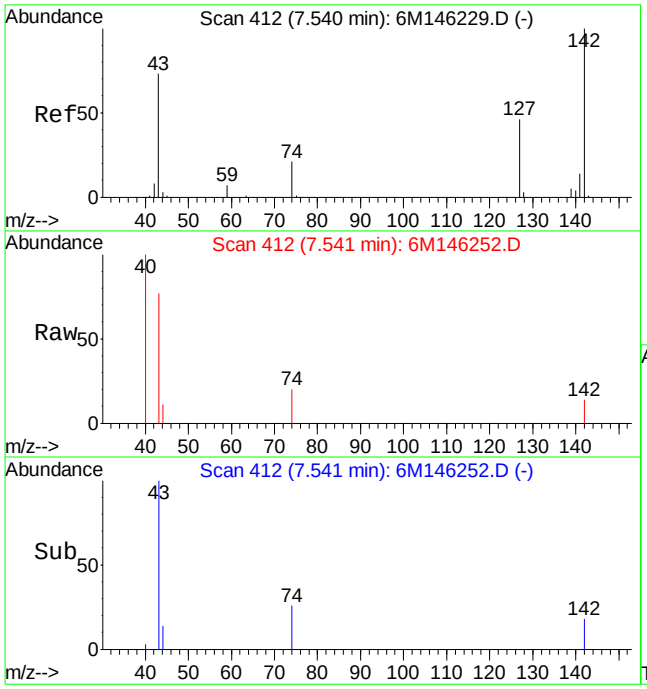


#16
Dimethyl Sulfide
Concen: 1.25 ug/L
RT: 7.28 min Scan# 386
Delta R.T. -0.00 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 62 Resp: 8702

Ion	Ratio	Lower	Upper
62	100		
47	102.2	64.7	151.1

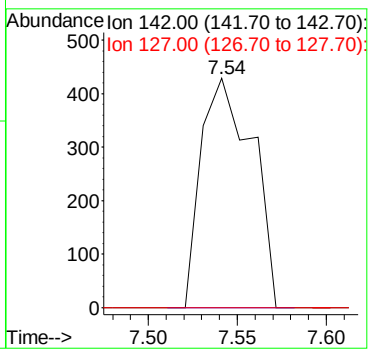


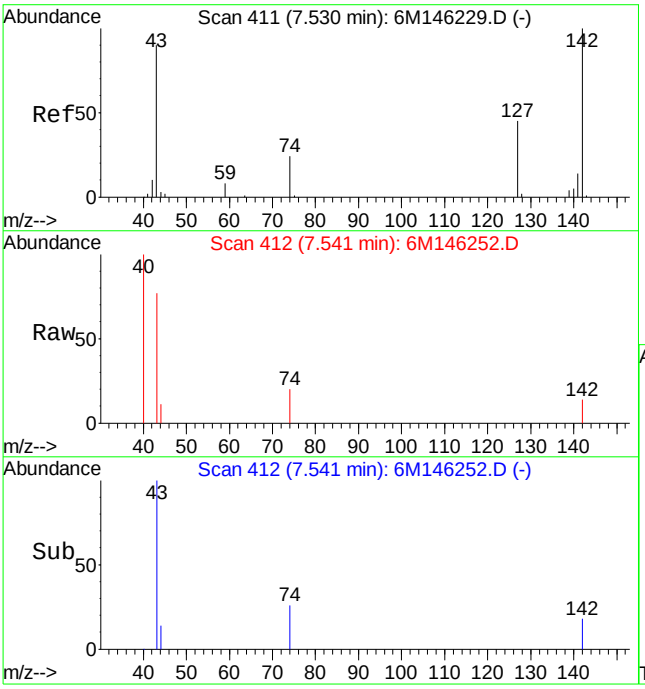


#17
Iodomethane
Concen: 0.93 ug/L
RT: 7.54 min Scan# 412
Delta R.T. 0.01 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion:142 Resp: 858

Ion	Ratio	Lower	Upper
142	100		
127	0.0	26.4	61.6#

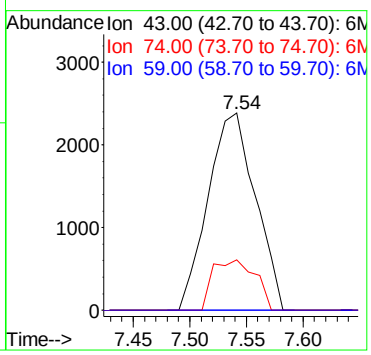


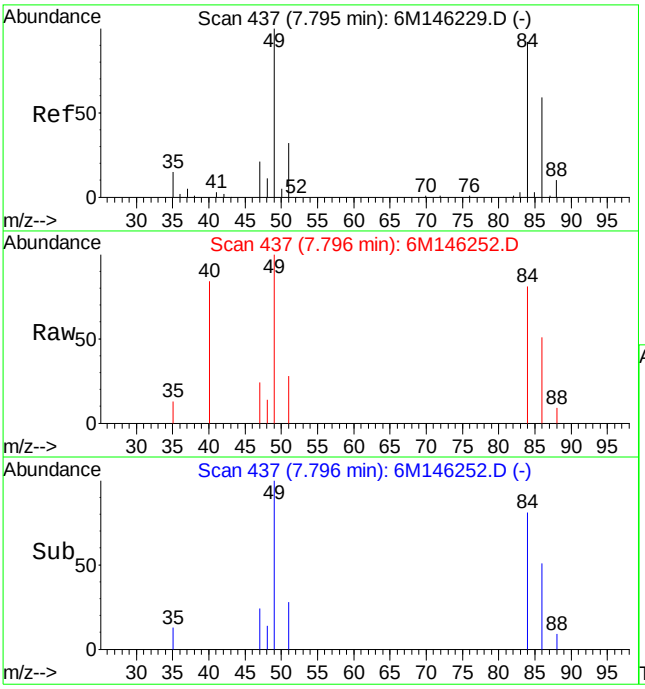


#18
Methyl acetate
Concen: 2.00 ug/L
RT: 7.54 min Scan# 412
Delta R.T. 0.01 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 43 Resp: 6940

Ion	Ratio	Lower	Upper
43	100		
74	22.9	10.3	23.9
59	0.0	4.4	10.2#

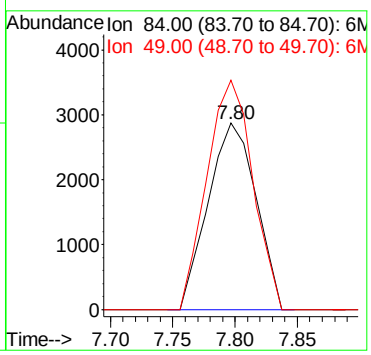


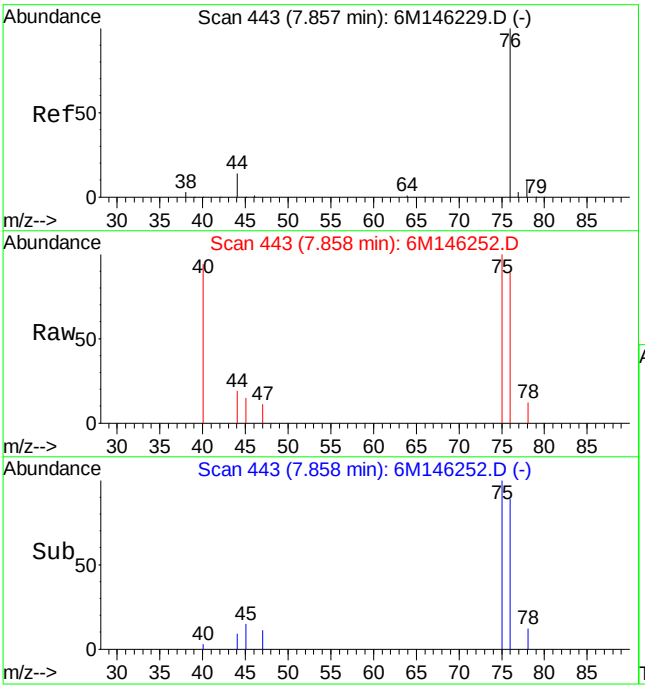


#19
Methylene Chloride
Concen: 1.04 ug/L
RT: 7.80 min Scan# 437
Delta R.T. 0.01 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 84 Resp: 7684

Ion	Ratio	Lower	Upper
84	100		
49	117.7	99.3	231.7

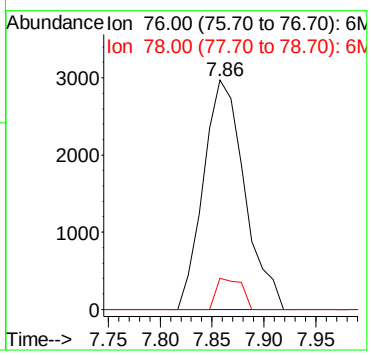


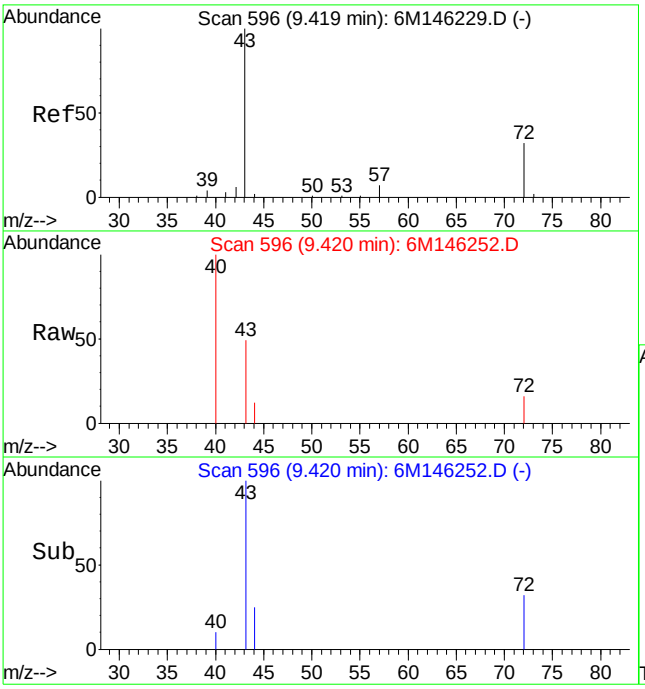


#20
Carbon Disulfide
Concen: 0.39 ug/L
RT: 7.86 min Scan# 443
Delta R.T. 0.01 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 76 Resp: 8190

Ion	Ratio	Lower	Upper
76	100		
78	8.4	5.7	13.3

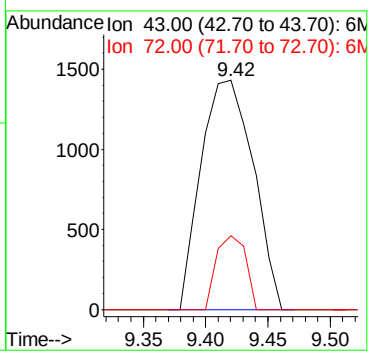


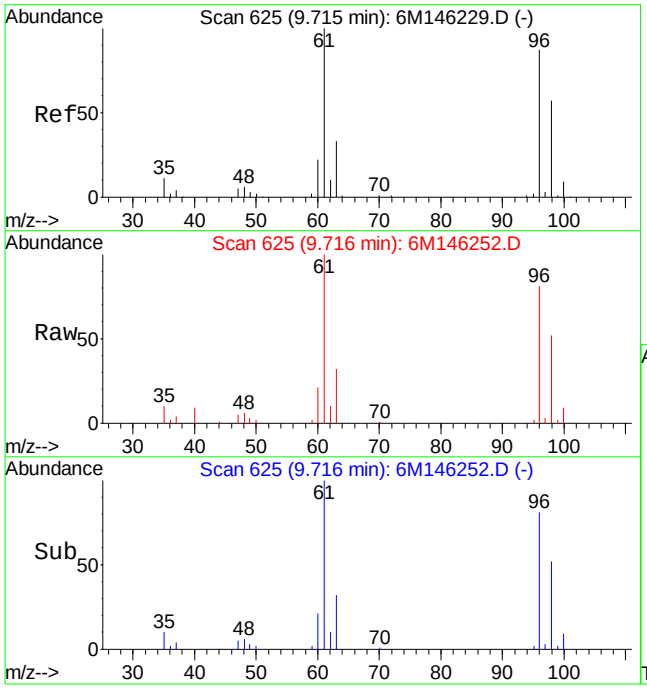


#29
2-Butanone
Concen: 2.40 ug/L
RT: 9.42 min Scan# 596
Delta R.T. 0.01 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 43 Resp: 4179

Ion	Ratio	Lower	Upper
43	100		
72	18.1	11.9	27.9

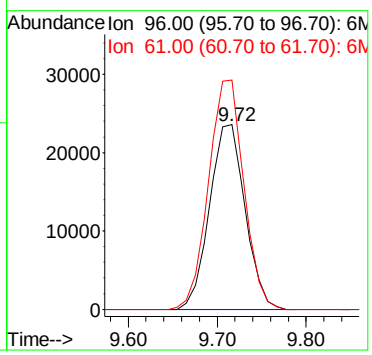


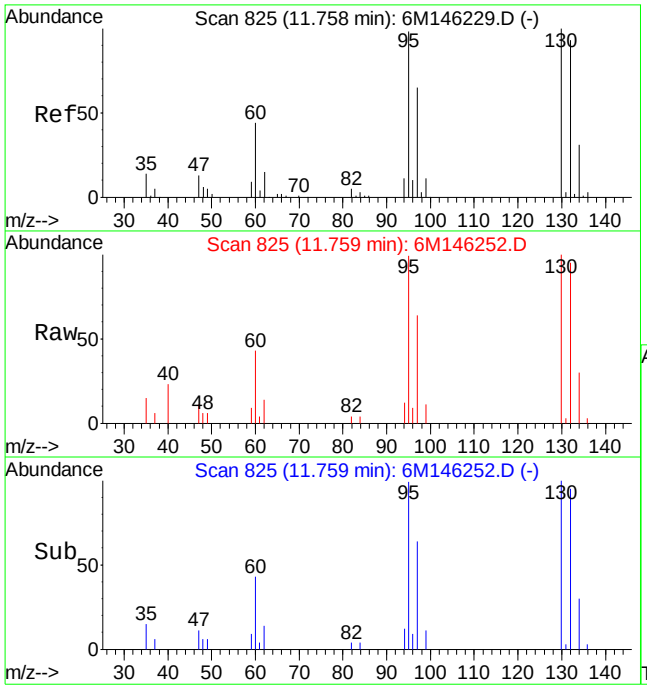


#32
cis-1,2-Dichloroethene
Concen: 8.44 ug/L
RT: 9.72 min Scan# 625
Delta R.T. 0.01 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 96 Resp: 65226

Ion	Ratio	Lower	Upper
96	100		
61	123.6	89.2	208.2

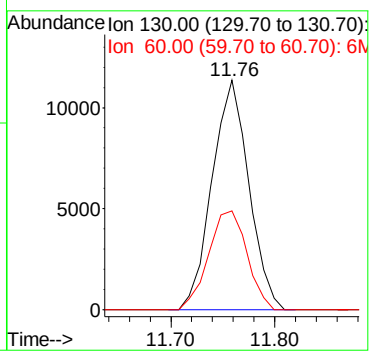


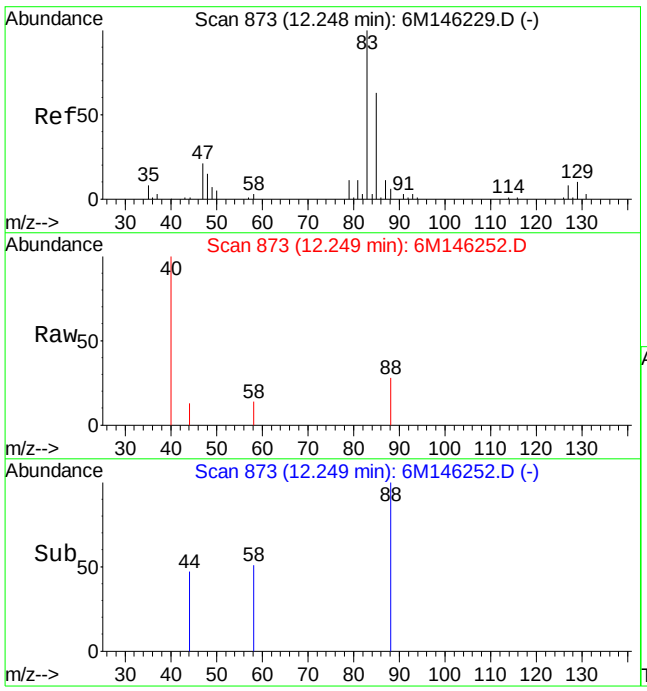


#47
Trichloroethene
Concen: 3.74 ug/L
RT: 11.76 min Scan# 825
Delta R.T. 0.01 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion:130 Resp: 27932

Ion	Ratio	Lower	Upper
130	100		
60	44.9	32.0	74.6

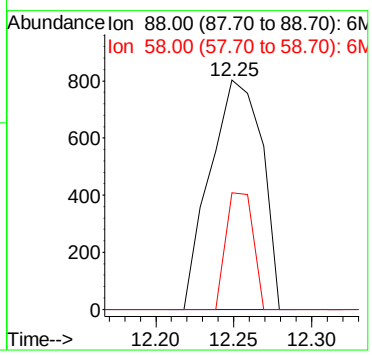


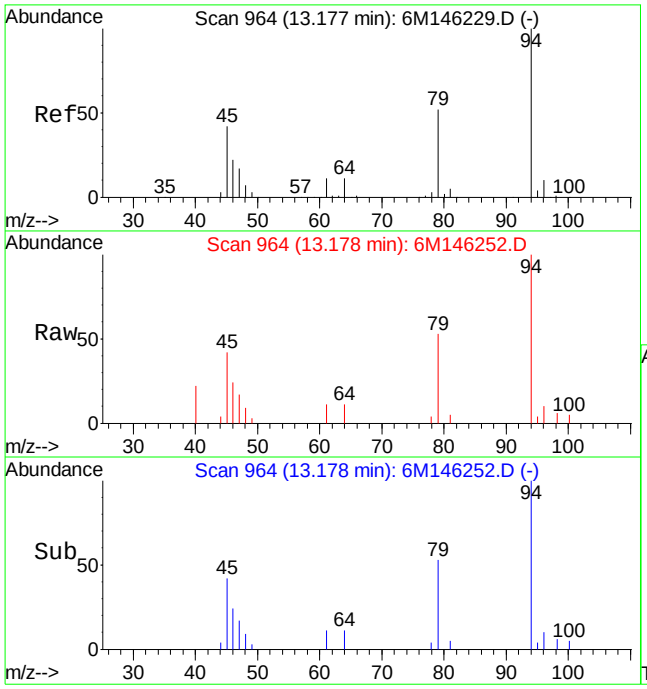


#50
1,4-Dioxane
Concen: 39.63 ug/L
RT: 12.25 min Scan# 873
Delta R.T. -0.00 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 88 Resp: 1865

Ion	Ratio	Lower	Upper
88	100		
58	26.6	42.6	99.4#

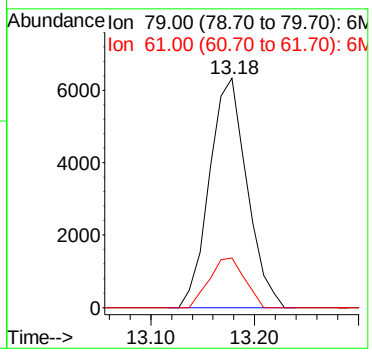


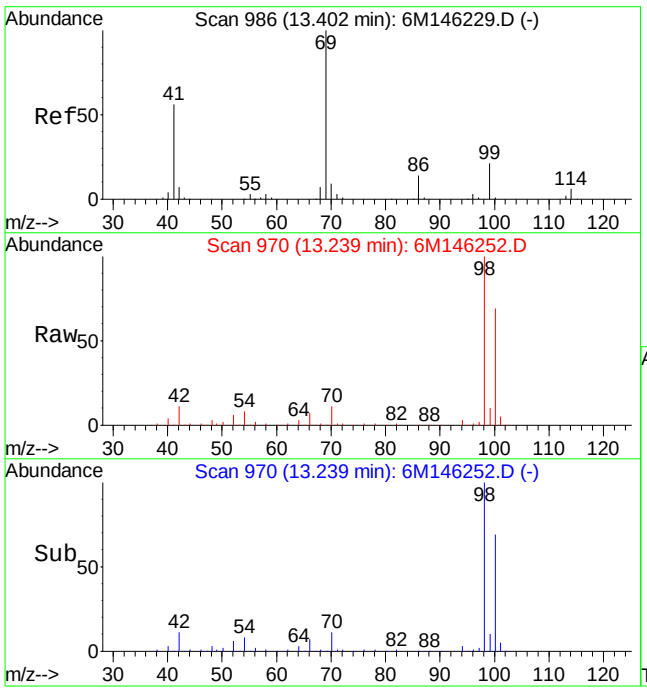


#56
Dimethyl Disulfide
Concen: 2.51 ug/L
RT: 13.18 min Scan# 964
Delta R.T. -0.00 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 79 Resp: 15905

Ion	Ratio	Lower	Upper
79	100		
61	20.3	16.4	38.4

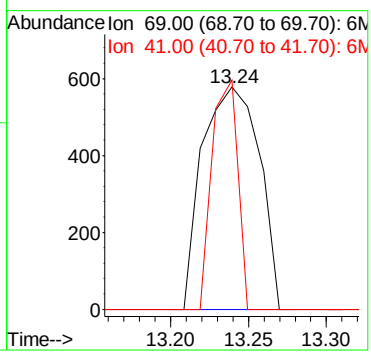


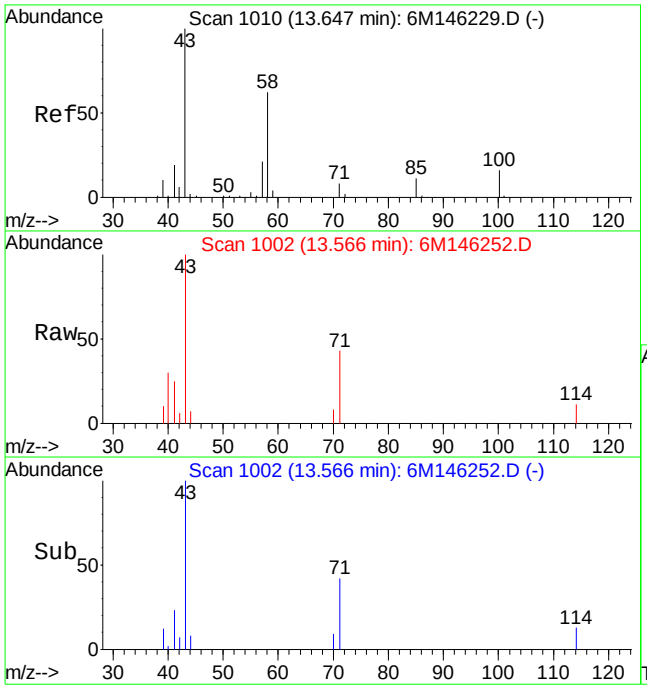


#60
Ethyl Methacrylate
Concen: 0.21 ug/L
RT: 13.24 min Scan# 970
Delta R.T. -0.16 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 69 Resp: 1472

Ion	Ratio	Lower	Upper
69	100		
41	46.6	51.4	120.0#

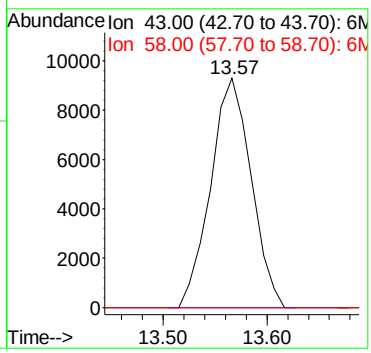




#64
2-Hexanone
Concen: 9.79 ug/L
RT: 13.57 min Scan# 1002
Delta R.T. -0.07 min
Lab File: 6M146252.D
Acq: 6 Apr 2017 22:04

Tgt Ion: 43 Resp: 25210

Ion	Ratio	Lower	Upper
43	100		
58	0.0	29.6	69.2#



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146249.D Vial: 14
Acq On : 6 Apr 2017 20:33 Operator: TMB
Sample : L17031690-02 TB A 826-SPE Inst : Hpms6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 08:26:05 2017 Quant Results File: 8260BWT.RES

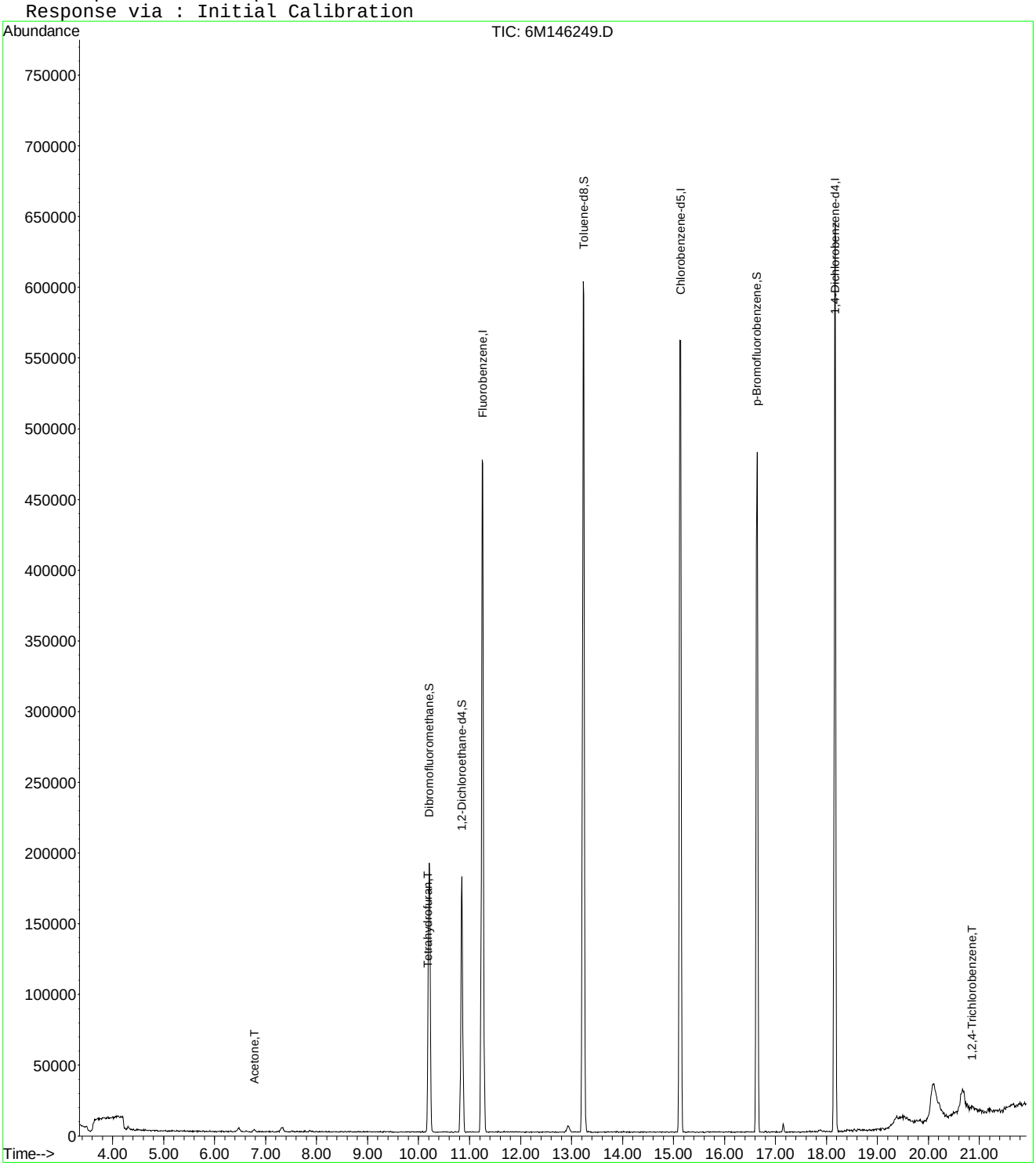
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

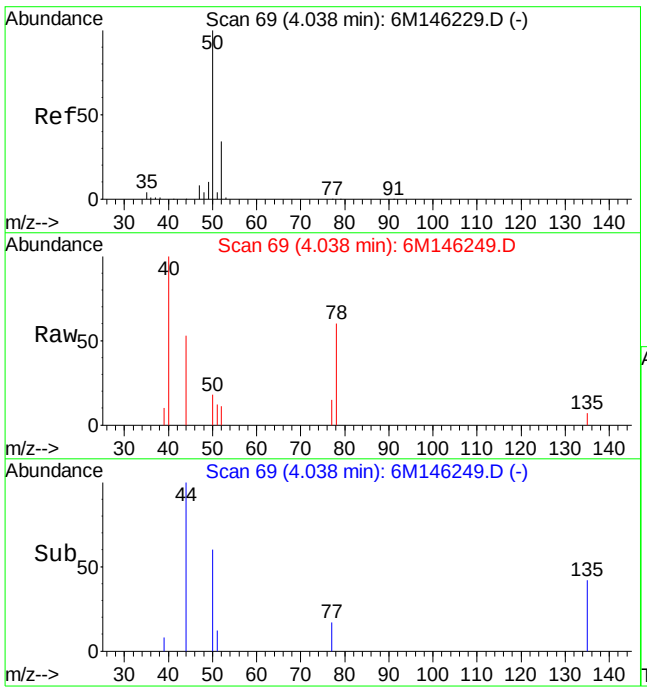
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.26	96	639452	25.00	ug/L	0.00
57) Chlorobenzene-d5	15.14	117	444920	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	228319	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	10.21	111	166544	25.5133	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.04%			
43) 1,2-Dichloroethane-d4	10.85	65	161769	25.1444	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.56%			
58) Toluene-d8	13.24	98	587521	25.8783	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.52%			
80) p-Bromofluorobenzene	16.64	95	223893	25.8189	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.28%			
Target Compounds						Qvalue
3) Chloromethane	4.04	50	2123	Below Cal	#	42
13) Acetone	6.77	43	2942	2.1321	ug/L	86
36) Tetrahydrofuran	10.19	42	1187	1.0364	ug/L #	41
98) 1,2,4-Trichlorobenzene	20.86	180	1621	0.1612	ug/L #	12

(#) = qualifier out of range (m) = manual integration
6M146249.D 8260BWT.M Fri Apr 07 08:26:07 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146249.D Vial: 14
Acq On : 6 Apr 2017 20:33 Operator: TMB
Sample : L17031690-02 TB A 826-SPE Inst : Hpms6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 8:26 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration

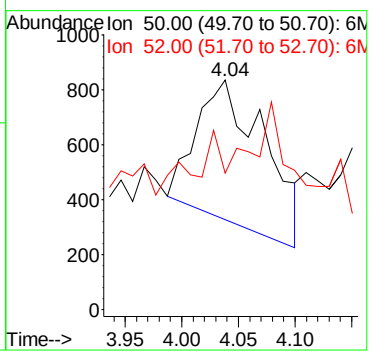


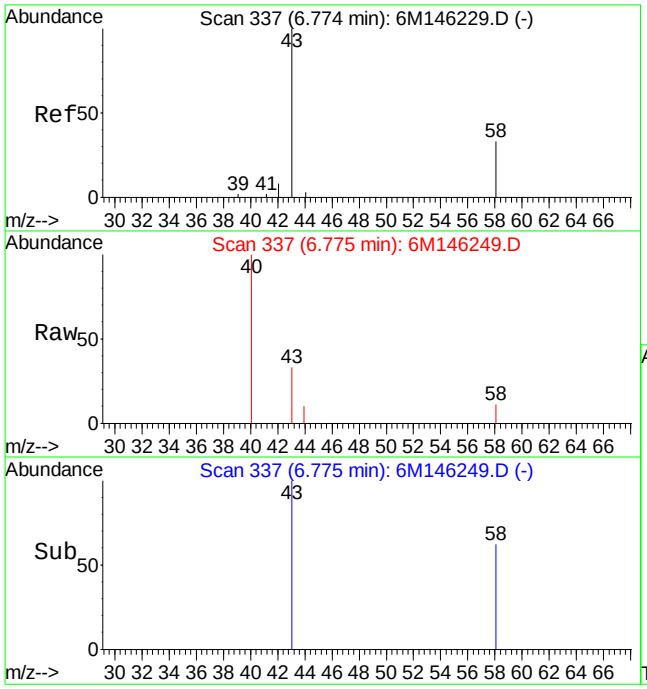


#3
Chloromethane
Concen: Below Cal
RT: 4.04 min Scan# 69
Delta R.T. 0.02 min
Lab File: 6M146249.D
Acq: 6 Apr 2017 20:33

Tgt Ion: 50 Resp: 2123

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.8	46.2#

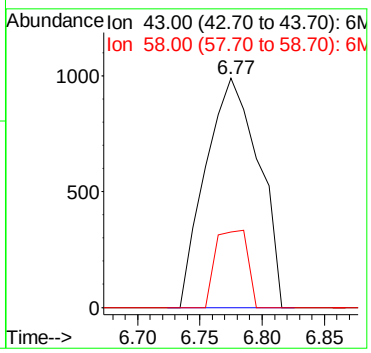


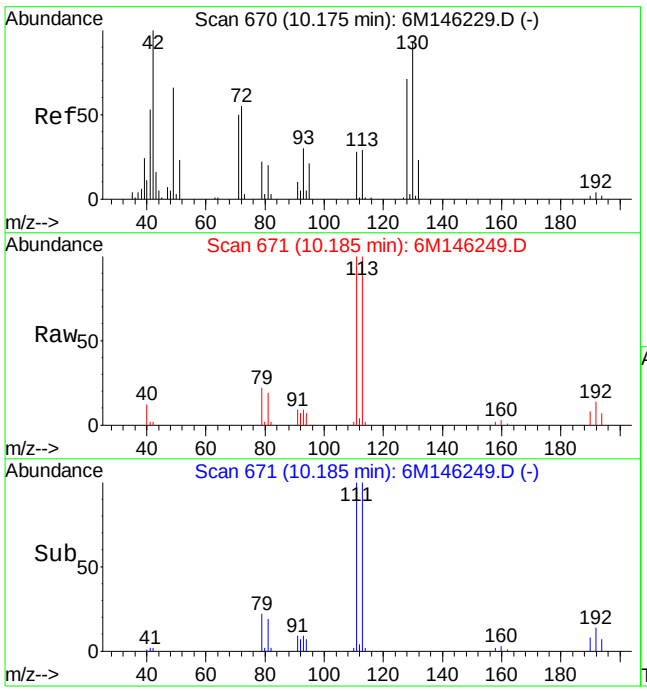


#13
Acetone
Concen: 2.13 ug/L
RT: 6.77 min Scan# 337
Delta R.T. -0.00 min
Lab File: 6M146249.D
Acq: 6 Apr 2017 20:33

Tgt Ion: 43 Resp: 2942

Ion	Ratio	Lower	Upper
43	100		
58	20.3	16.4	38.2

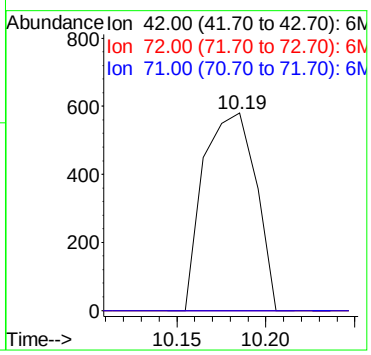


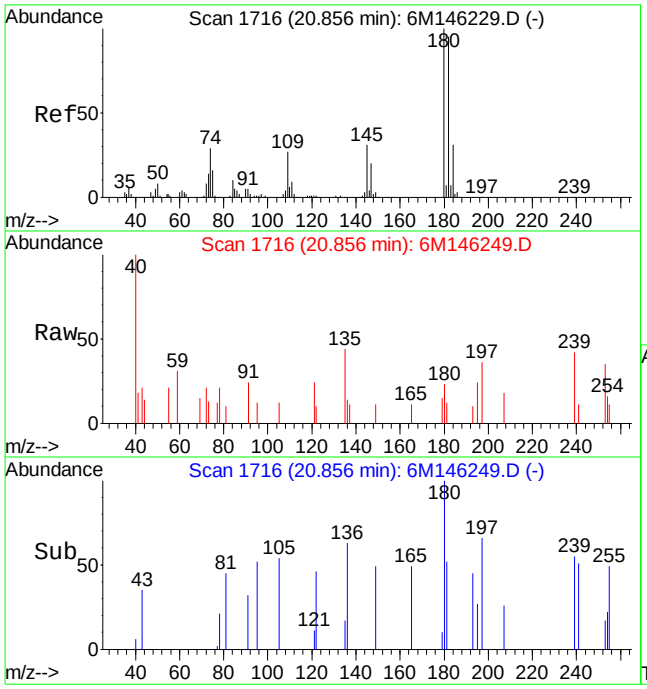


#36
Tetrahydrofuran
Concen: 1.04 ug/L
RT: 10.19 min Scan# 671
Delta R.T. 0.01 min
Lab File: 6M146249.D
Acq: 6 Apr 2017 20:33

Tgt Ion: 42 Resp: 1187

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

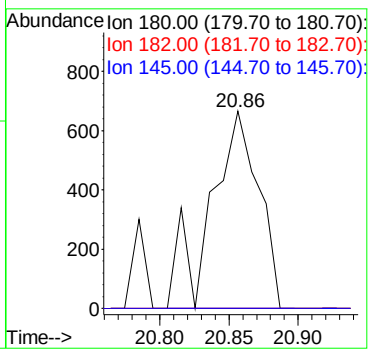




#98
1,2,4-Trichlorobenzene
Concen: 0.16 ug/L
RT: 20.86 min Scan# 1716
Delta R.T. -0.00 min
Lab File: 6M146249.D
Acq: 6 Apr 2017 20:33

Tgt Ion:180 Resp: 1621

Ion	Ratio	Lower	Upper
180	100		
182	0.0	57.7	134.5#
145	0.0	19.0	44.4#



2.1.1.4 Standards Data

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144708.D Vial: 2
Acq On : 12 Jan 2017 9:02 Operator: TMB
Sample : WG598323-02 5ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 09:26:27 2017 Quant Results File: 8260BWT.RES

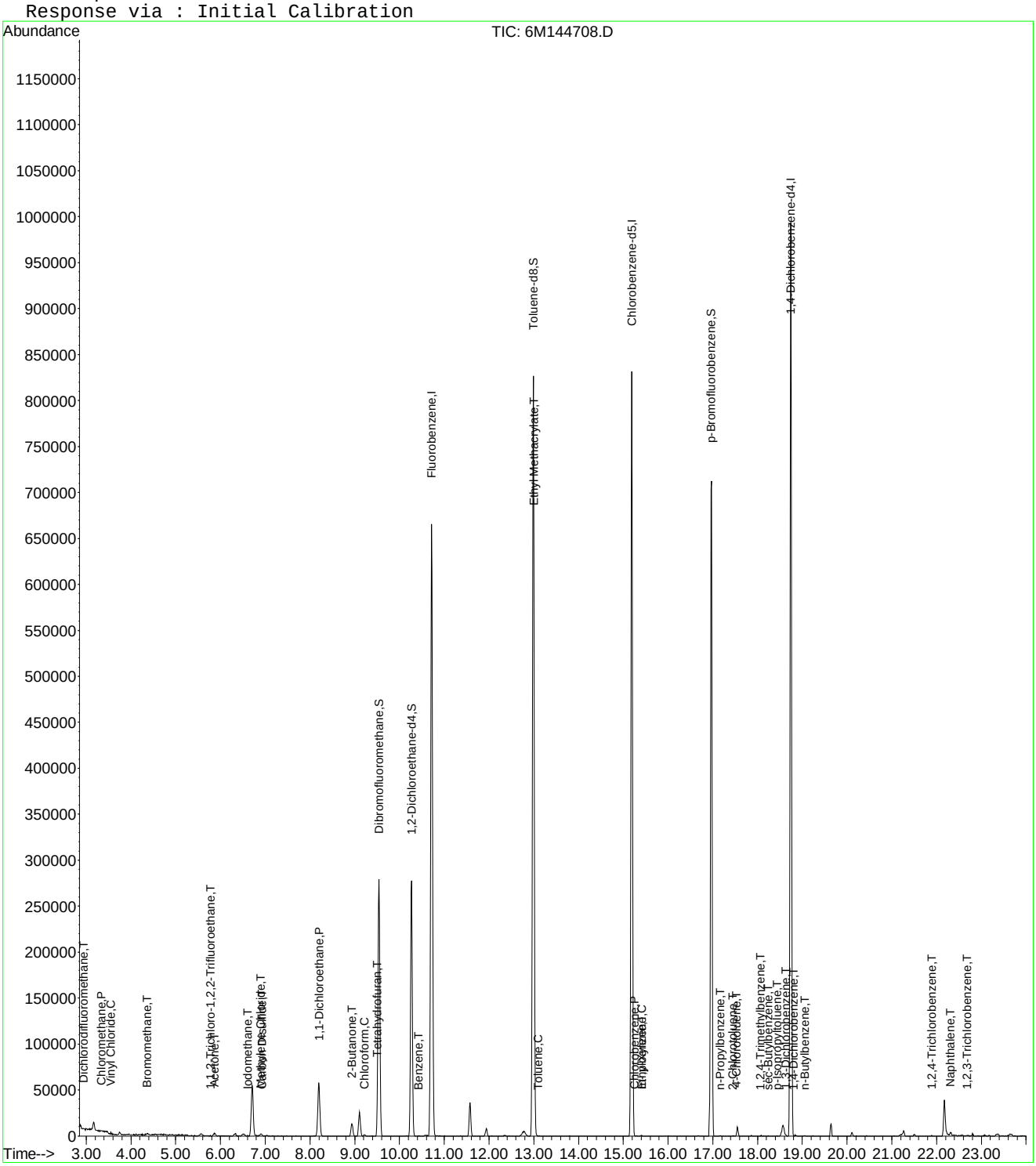
Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 010917 - HPMS6
Last Update : Tue Jan 10 09:16:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.72	96	865370	25.00	ug/L	0.00
57) Chlorobenzene-d5	15.19	117	638669	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.74	152	353919	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.54	111	251922	22.6400	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.56%			
43) 1,2-Dichloroethane-d4	10.27	65	306645	22.0966	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.40%			
58) Toluene-d8	12.99	98	820097	24.3403	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.36%			
80) p-Bromofluorobenzene	16.96	95	339309	24.6555	ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.64%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	2.94	85	453	0.0238	ug/L	# 64
3) Chloromethane	3.33	50	1143	0.1071	ug/L	# 42
4) Vinyl Chloride	3.55	62	660	0.0491	ug/L	# 42
6) Bromomethane	4.35	94	2182	0.3066	ug/L	79
12) 1,1,2-Trichloro-1,2,2-Trif	5.77	101	191	0.0181	ug/L	# 12
13) Acetone	5.87	43	6888	3.7948	ug/L	92
17) Iodomethane	6.60	142	813	1.1251	ug/L	# 32
19) Methylene Chloride	6.90	84	1235	0.1198	ug/L	52
20) Carbon Disulfide	6.93	76	2512	0.0846	ug/L	# 74
27) 1,1-Dichloroethane	8.20	63	455	0.0254	ug/L	# 43
29) 2-Butanone	8.93	43	21398	9.1111	ug/L	# 57
33) Chloroform	9.22	83	2185	0.0974	ug/L	# 63
36) Tetrahydrofuran	9.50	42	1270	0.8856	ug/L	# 67
46) Benzene	10.42	78	199	0.0051	ug/L	# 56
59) Toluene	13.10	91	189	0.0050	ug/L	# 20
60) Ethyl Methacrylate	13.00	69	903	0.0983	ug/L	# 7
70) Chlorobenzene	15.25	112	187	0.0071	ug/L	# 11
72) Ethylbenzene	15.41	106	417	0.0299	ug/L	38
73) m-,p-Xylene	15.41	106	417	0.0248	ug/L	94
83) n-Propylbenzene	17.16	91	729	0.0155	ug/L	# 58
86) 2-Chlorotoluene	17.45	91	187	0.0057	ug/L	# 48
87) 4-Chlorotoluene	17.53	91	187	0.0060	ug/L	# 48
90) 1,2,4-Trimethylbenzene	18.07	105	377	0.0103	ug/L	# 30
91) sec-Butylbenzene	18.23	105	221	0.0055	ug/L	# 55
92) p-Isopropyltoluene	18.44	119	290	0.0084	ug/L	# 48
93) 1,3-Dichlorobenzene	18.63	146	457	0.0208	ug/L	# 35
94) 1,4-Dichlorobenzene	18.80	146	193	0.0088	ug/L	# 36
95) n-Butylbenzene	19.06	91	915	0.0294	ug/L	# 48
98) 1,2,4-Trichlorobenzene	21.89	180	189	0.0133	ug/L	# 78
100) Naphthalene	22.31	128	1249	0.0458	ug/L	# 67
101) 1,2,3-Trichlorobenzene	22.68	180	197	0.0146	ug/L	# 83

(#) = qualifier out of range (m) = manual integration
6M144708.D A9FOOWT.M Fri Jan 13 08:26:27 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144708.D Vial: 2
Acq On : 12 Jan 2017 9:02 Operator: TMB
Sample : WG598323-02 5ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 9:26 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144708.D Vial: 2
Acq On : 12 Jan 2017 9:02 Operator: TMB
Sample : WG598323-02 5ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 08:31:41 2017 Quant Results File: A9FOOWT.RES

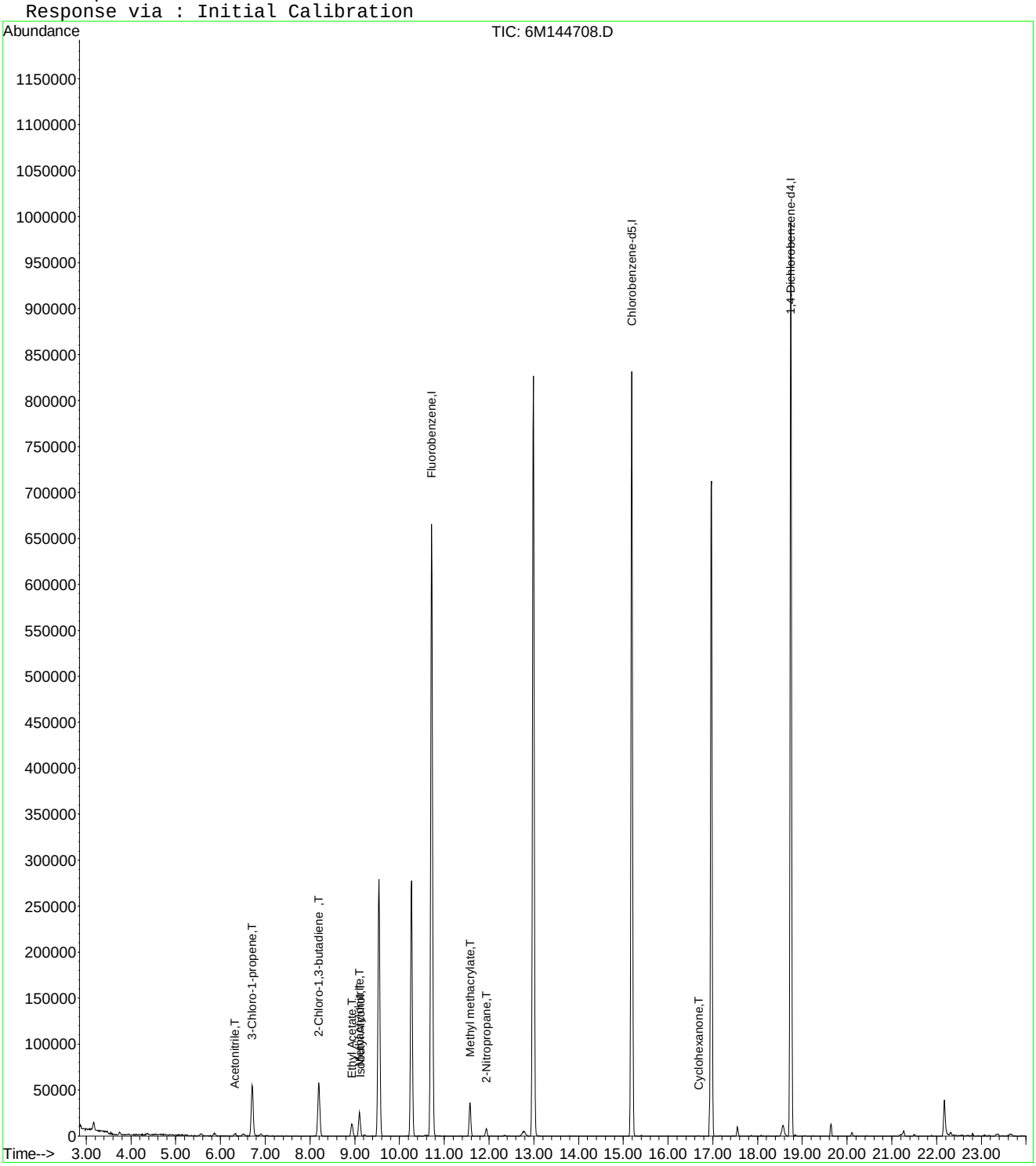
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.72	96	865370	25.00	ug/L		0.00
11) Chlorobenzene-d5	15.19	117	638669	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	18.74	152	353919	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.33	41	3679	5.9467	ug/L		88
3) 3-Chloro-1-propene	6.70	41	52014	5.0135	ug/L		95
4) 2-Chloro-1,3-butadiene	8.19	53	60212	4.7023	ug/L		97
5) Ethyl Acetate	8.93	43	24851	4.4777	ug/L		98
6) Methacrylonitrile	9.10	67	13164	4.5054	ug/L		95
7) Isobutyl Alcohol	9.12	43	1340	7.4492	ug/L	#	85
9) Methyl methacrylate	11.57	41	25255	4.1589	ug/L		95
10) 2-Nitropropane	11.94	43	9310	3.7703	ug/L		96
13) Cyclohexanone	16.69	55	637	4.7569	ug/L	#	25

(#) = qualifier out of range (m) = manual integration
6M144708.D A9FOOWT.M Fri Jan 13 08:34:12 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144708.D Vial: 2
Acq On : 12 Jan 2017 9:02 Operator: TMB
Sample : WG598323-02 5ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 8:31 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144708.D Vial: 2
Acq On : 12 Jan 2017 9:02 Operator: TMB
Sample : WG598323-02 5ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	5.9467	-18.9	100	0.00
3	T	3-Chloro-1-propene	5.0000	5.0135	-0.3	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.7023	6.0	100	0.00
5	T	Ethyl Acetate	5.0000	4.4778	10.4	100	0.00
6	T	Methacrylonitrile	5.0000	4.5054	9.9	100	0.00
7	T	Isobutyl Alcohol	10.0000	7.4492	25.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-0.01
9	T	Methyl methacrylate	5.0000	4.1589	16.8	100	0.00
10	T	2-Nitropropane	-1.0000	3.7703	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	4.7569	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M144708.D A9FOOWT.M Fri Jan 13 08:34:56 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144709.D Vial: 3
Acq On : 12 Jan 2017 9:37 Operator: TMB
Sample : WG598323-03 20ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 10:01:58 2017 Quant Results File: 8260BWT.RES

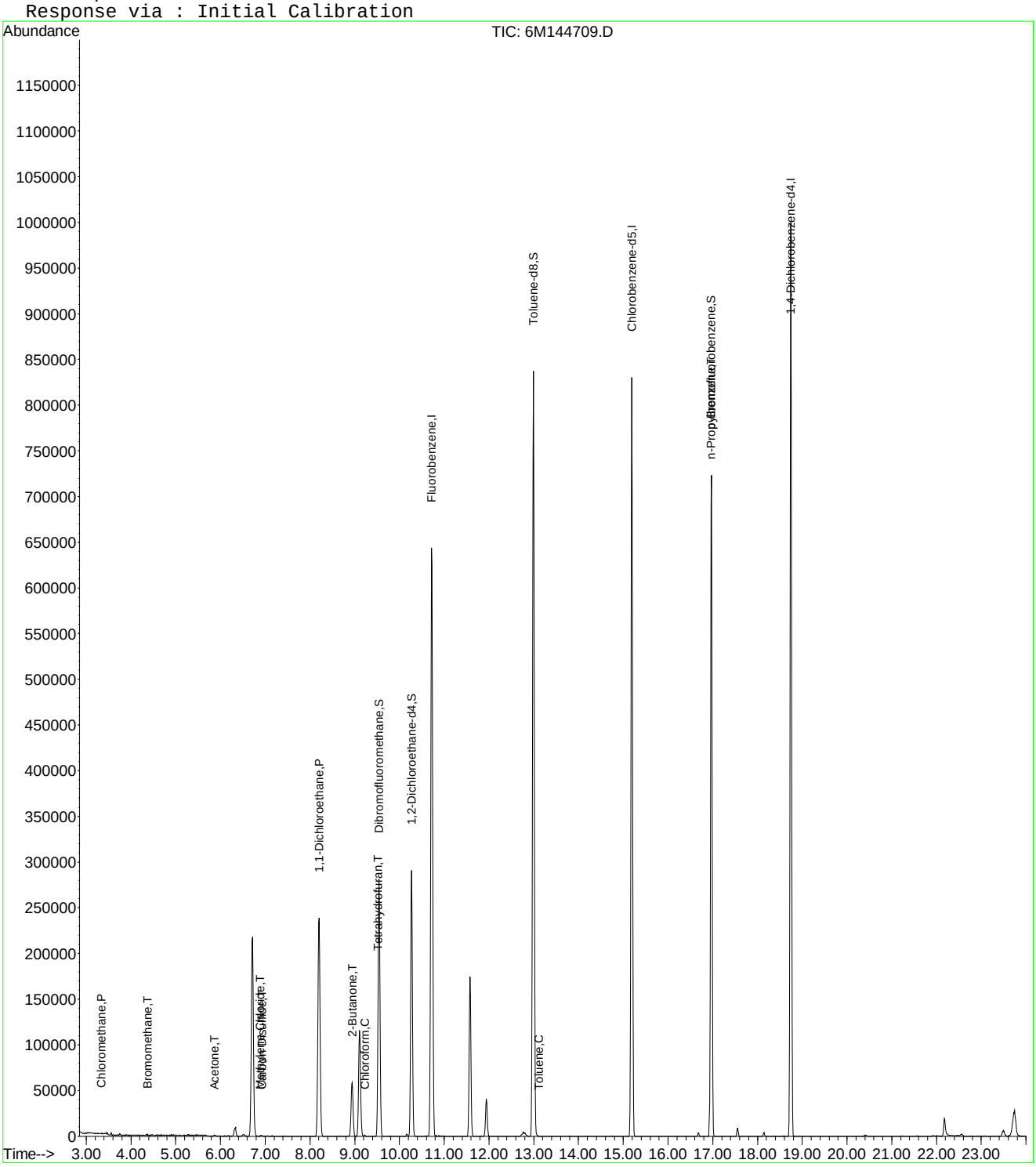
Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 010917 - HPMS6
Last Update : Tue Jan 10 09:16:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	858255	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.19	117	632728	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.74	152	350367	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.54	111	254445	23.0563 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.24%		
43) 1,2-Dichloroethane-d4	10.27	65	319547	23.2172 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.88%		
58) Toluene-d8	12.99	98	812069	24.3283 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.32%		
80) p-Bromofluorobenzene	16.97	95	339726	24.9361 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.76%		
Target Compounds					Qvalue
3) Chloromethane	3.33	50	415	0.0392 ug/L #	42
6) Bromomethane	4.37	94	216	0.0306 ug/L	94
13) Acetone	5.87	43	1739	0.9660 ug/L #	48
19) Methylene Chloride	6.89	84	212	0.0207 ug/L #	8
20) Carbon Disulfide	6.93	76	1398	0.0475 ug/L #	74
27) 1,1-Dichloroethane	8.21	63	3854	0.2169 ug/L #	43
29) 2-Butanone	8.94	43	92857	39.8654 ug/L #	57
33) Chloroform	9.23	83	1262	0.0567 ug/L #	62
36) Tetrahydrofuran	9.52	42	1090	0.7664 ug/L #	71
59) Toluene	13.12	91	200	0.0053 ug/L #	20
83) n-Propylbenzene	16.96	91	1246	0.0268 ug/L #	58

(#) = qualifier out of range (m) = manual integration
6M144709.D A9FOOWT.M Fri Jan 13 08:26:30 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144709.D Vial: 3
Acq On : 12 Jan 2017 9:37 Operator: TMB
Sample : WG598323-03 20ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 10:01 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144709.D Vial: 3
Acq On : 12 Jan 2017 9:37 Operator: TMB
Sample : WG598323-03 20ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 08:32:06 2017 Quant Results File: A9FOOWT.RES

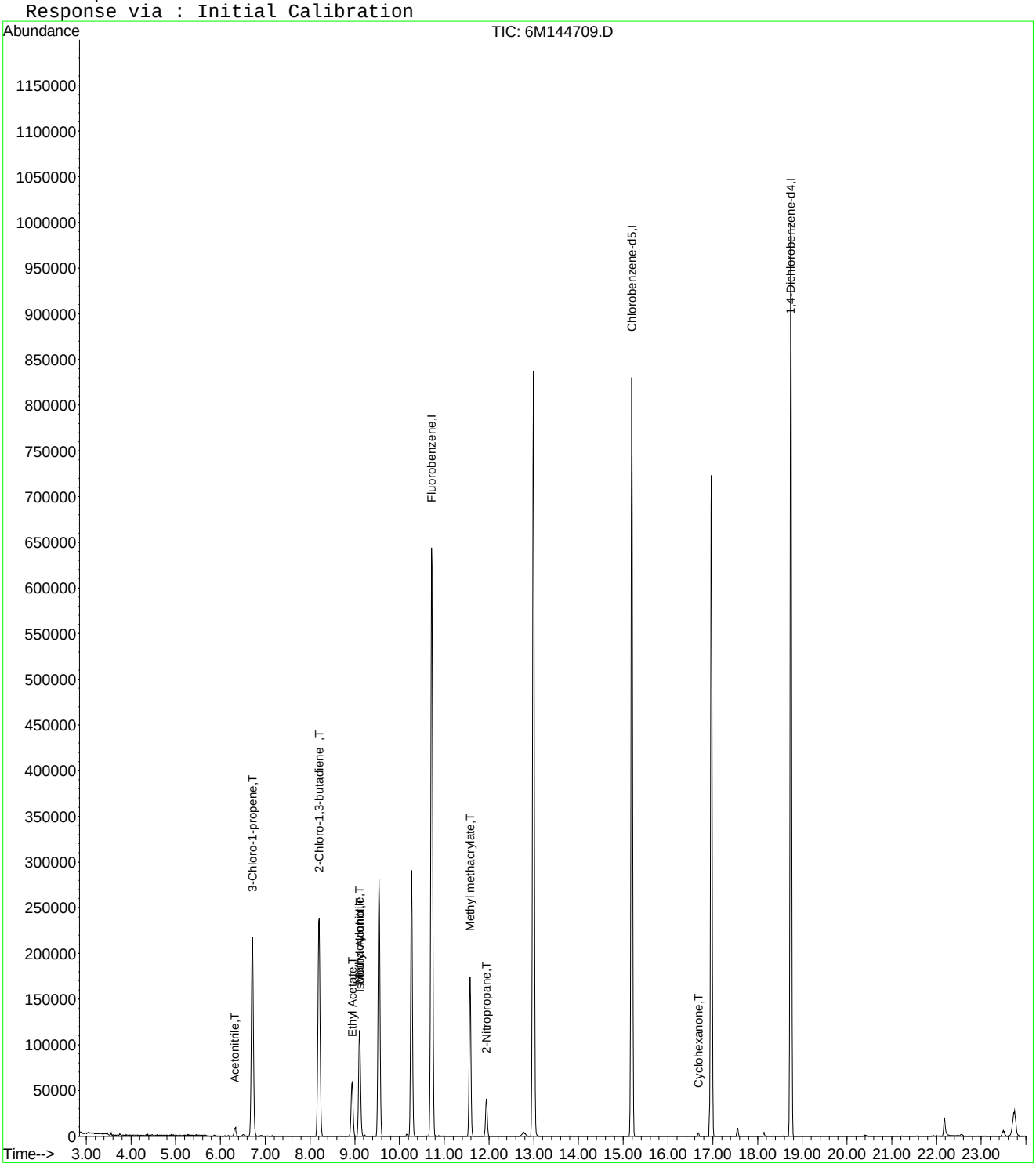
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.72	96	858255	25.00	ug/L		0.00
11) Chlorobenzene-d5	15.19	117	632728	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	18.74	152	350367	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.33	41	12918	21.0537	ug/L		97
3) 3-Chloro-1-propene	6.71	41	209633	20.3736	ug/L		94
4) 2-Chloro-1,3-butadiene	8.21	53	252913	19.9152	ug/L		96
5) Ethyl Acetate	8.94	43	112226	20.3889	ug/L		97
6) Methacrylonitrile	9.10	67	59955	20.6898	ug/L		93
7) Isobutyl Alcohol	9.11	43	8059	45.1723	ug/L	#	85
9) Methyl methacrylate	11.58	41	119041	19.7660	ug/L		97
10) 2-Nitropropane	11.94	43	43188	17.6351	ug/L		96
13) Cyclohexanone	16.68	55	2248	16.9576	ug/L		90

(#) = qualifier out of range (m) = manual integration
6M144709.D A9FOOWT.M Fri Jan 13 08:34:15 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144709.D Vial: 3
Acq On : 12 Jan 2017 9:37 Operator: TMB
Sample : WG598323-03 20ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 8:32 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144709.D Vial: 3
Acq On : 12 Jan 2017 9:37 Operator: TMB
Sample : WG598323-03 20ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	21.0537	-5.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.3736	-1.9	100	0.01
4	T	2-Chloro-1,3-butadiene	20.0000	19.9152	0.4	100	0.01
5	T	Ethyl Acetate	20.0000	20.3890	-1.9	100	0.01
6	T	Methacrylonitrile	20.0000	20.6898	-3.4	100	0.00
7	T	Isobutyl Alcohol	40.0000	45.1723	-12.9	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	19.7660	1.2	100	0.00
10	T	2-Nitropropane	20.0000	17.6351	11.8	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	16.9576	15.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M144709.D A9FOOWT.M Fri Jan 13 08:35:08 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144710.D Vial: 4
Acq On : 12 Jan 2017 10:10 Operator: TMB
Sample : WG598323-04 50ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 10:34:22 2017 Quant Results File: 8260BWT.RES

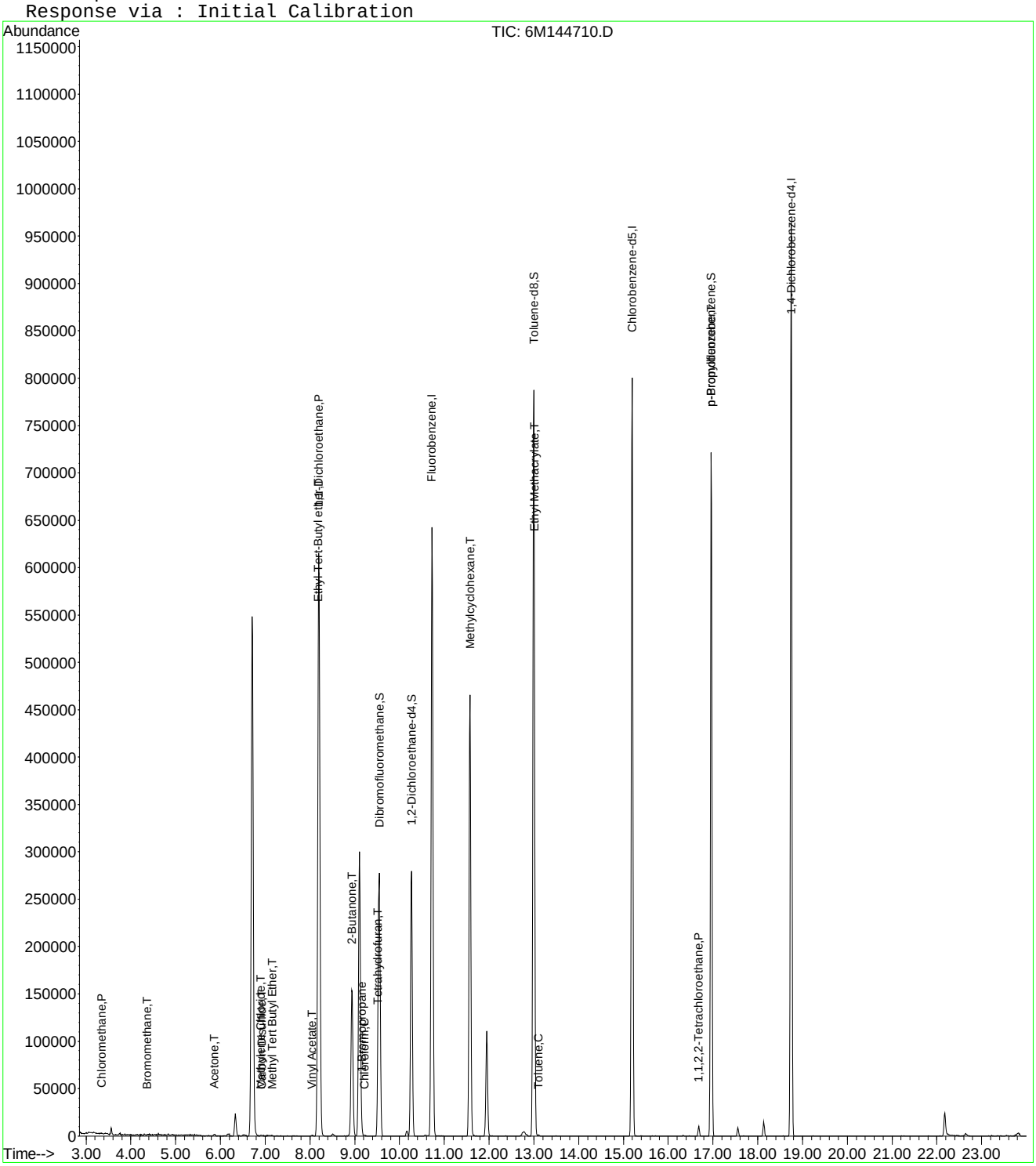
Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 010917 - HPMS6
Last Update : Tue Jan 10 09:16:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	838990	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.19	117	618534	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.75	152	341738	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.54	111	247499	22.9419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.76%		
43) 1,2-Dichloroethane-d4	10.27	65	314390	23.3670 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.48%		
58) Toluene-d8	13.00	98	793030	24.3031 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.20%		
80) p-Bromofluorobenzene	16.96	95	330832	24.8964 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.60%		
Target Compounds					Qvalue
3) Chloromethane	3.35	50	224	0.0217 ug/L #	42
6) Bromomethane	4.36	94	654	0.0948 ug/L #	40
13) Acetone	5.86	43	3605	2.0485 ug/L #	74
19) Methylene Chloride	6.90	84	594	0.0594 ug/L #	6
20) Carbon Disulfide	6.92	76	1430	0.0497 ug/L #	74
22) Methyl Tert Butyl Ether	7.16	73	2146	0.0836 ug/L #	49
26) Vinyl Acetate	8.04	43	1368	0.1273 ug/L #	78
27) 1,1-Dichloroethane	8.20	63	10377	0.5973 ug/L #	43
28) Ethyl-Tert-Butyl ether	8.19	59	198	0.0076 ug/L #	1
29) 2-Butanone	8.93	43	244038	107.1763 ug/L #	57
33) Chloroform	9.22	83	1377	0.0633 ug/L #	65
34) 1-Bromopropane	9.16	122	901	0.4597 ug/L #	1
36) Tetrahydrofuran	9.51	42	1519	1.0925 ug/L #	68
48) Methylcyclohexane	11.58	83	901	0.0663 ug/L #	1
59) Toluene	13.10	91	1757	0.0479 ug/L #	61
60) Ethyl Methacrylate	13.01	69	1412	0.1587 ug/L #	42
79) 1,1,2,2-Tetrachloroethane	16.67	83	221	0.0274 ug/L #	17
83) n-Propylbenzene	16.96	91	960	0.0212 ug/L #	58

(#) = qualifier out of range (m) = manual integration
6M144710.D A9FOOWT.M Fri Jan 13 08:26:34 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144710.D Vial: 4
Acq On : 12 Jan 2017 10:10 Operator: TMB
Sample : WG598323-04 50ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 10:34 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144710.D Vial: 4
Acq On : 12 Jan 2017 10:10 Operator: TMB
Sample : WG598323-04 50ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 08:32:24 2017 Quant Results File: A9FOOWT.RES

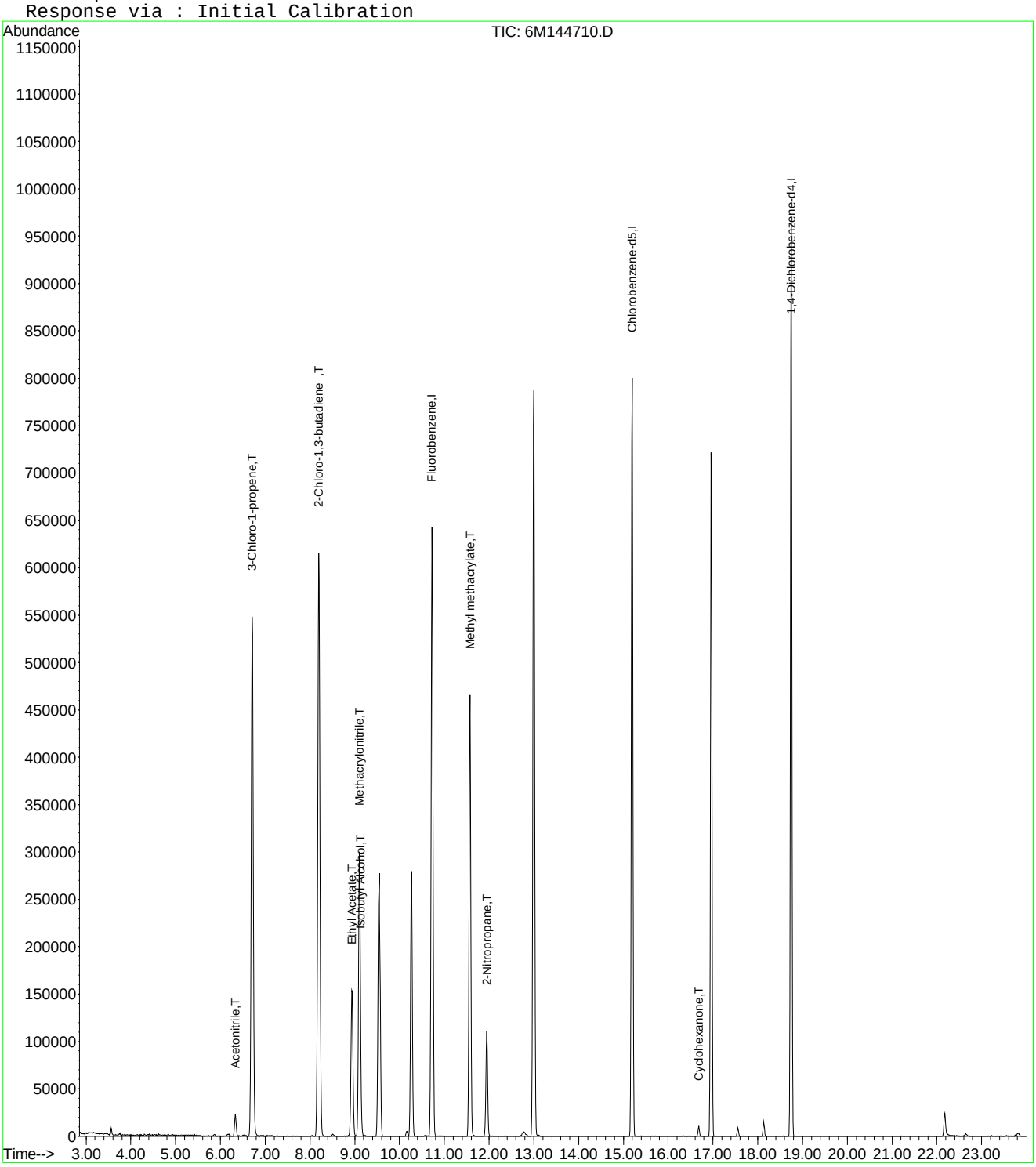
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.72	96	838990	25.00	ug/L		0.00
11) Chlorobenzene-d5	15.19	117	618534	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	18.75	152	341738	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.33	41	29692	49.5030	ug/L		97
3) 3-Chloro-1-propene	6.71	41	515211	51.2215	ug/L		94
4) 2-Chloro-1,3-butadiene	8.20	53	637594	51.3592	ug/L		97
5) Ethyl Acetate	8.93	43	283978	52.7771	ug/L		97
6) Methacrylonitrile	9.11	67	149634	52.8227	ug/L		95
7) Isobutyl Alcohol	9.13	43	18800	107.7975	ug/L	#	86
9) Methyl methacrylate	11.58	41	310762	52.7848	ug/L		96
10) 2-Nitropropane	11.94	43	119051	49.7288	ug/L		97
13) Cyclohexanone	16.68	55	5849	45.2354	ug/L		91

(#) = qualifier out of range (m) = manual integration
6M144710.D A9FOOWT.M Fri Jan 13 08:34:17 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144710.D Vial: 4
Acq On : 12 Jan 2017 10:10 Operator: TMB
Sample : WG598323-04 50ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 8:32 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144710.D Vial: 4
Acq On : 12 Jan 2017 10:10 Operator: TMB
Sample : WG598323-04 50ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	49.5030	1.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	51.2215	-2.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	51.3592	-2.7	100	0.00
5	T	Ethyl Acetate	50.0000	52.7771	-5.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.8227	-5.6	100	0.00
7	T	Isobutyl Alcohol	100.0000	107.7975	-7.8	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	52.7848	-5.6	100	0.00
10	T	2-Nitropropane	50.0000	49.7289	0.5	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	45.2354	9.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M144710.D A9FOOWT.M Fri Jan 13 08:35:22 2017 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144711.D Vial: 5
Acq On : 12 Jan 2017 10:42 Operator: TMB
Sample : WG598323-05 100ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 11:06:27 2017 Quant Results File: 8260BWT.RES

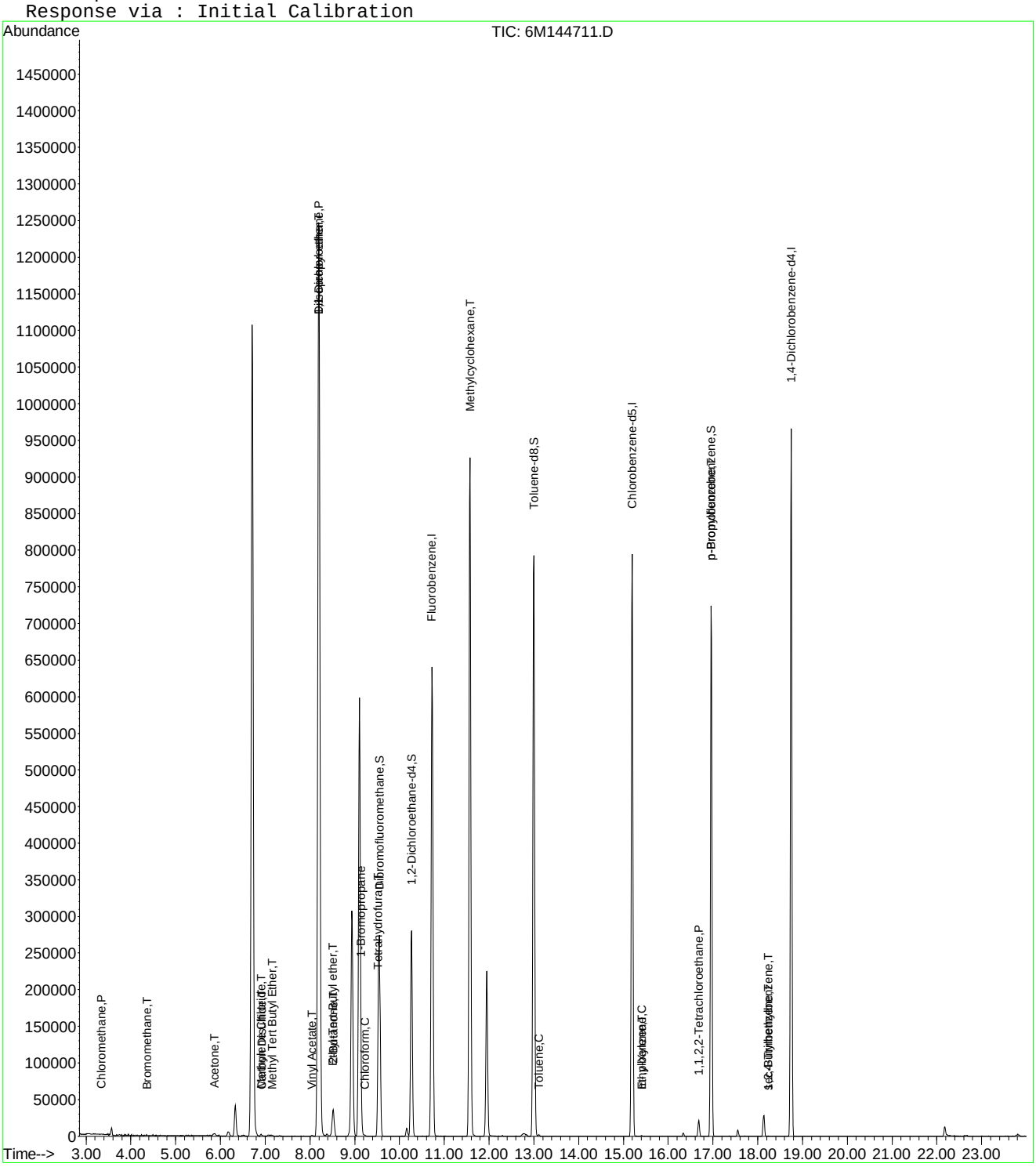
Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 010917 - HPMS6
Last Update : Tue Jan 10 09:16:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	845255	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.19	117	616939	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.75	152	346170	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.55	111	248905	22.9012 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.60%		
43) 1,2-Dichloroethane-d4	10.27	65	313581	23.1342 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.52%		
58) Toluene-d8	13.00	98	796824	24.4825 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.92%		
80) p-Bromofluorobenzene	16.96	95	332754	24.7205 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		
Target Compounds					Qvalue
3) Chloromethane	3.34	50	379	0.0364 ug/L #	42
6) Bromomethane	4.36	94	209	0.0301 ug/L #	1
13) Acetone	5.87	43	7499	4.2297 ug/L	95
19) Methylene Chloride	6.91	84	846	0.0840 ug/L #	44
20) Carbon Disulfide	6.92	76	2779	0.0958 ug/L #	74
22) Methyl Tert Butyl Ether	7.16	73	3950	0.1528 ug/L #	72
25) Diisopropyl ether	8.20	45	6433	0.2809 ug/L #	1
26) Vinyl Acetate	8.04	43	2790	0.2577 ug/L #	78
27) 1,1-Dichloroethane	8.20	63	21555	1.2315 ug/L #	43
28) Ethyl-Tert-Butyl ether	8.50	59	6251	0.2385 ug/L #	44
29) 2-Butanone	8.51	43	8331	3.6317 ug/L #	1
33) Chloroform	9.23	83	1251	0.0571 ug/L #	54
34) 1-Bromopropane	9.14	122	2114	1.0705 ug/L #	1
36) Tetrahydrofuran	9.52	42	1190	0.8496 ug/L #	80
48) Methylcyclohexane	11.58	83	2236	0.1634 ug/L #	1
59) Toluene	13.11	91	2782	0.0761 ug/L	88
72) Ethylbenzene	15.41	106	195	0.0145 ug/L #	1
73) m-,p-Xylene	15.41	106	195	0.0120 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	16.68	83	1012	0.1238 ug/L #	17
83) n-Propylbenzene	16.96	91	1284	0.0280 ug/L #	55
90) 1,2,4-Trimethylbenzene	18.24	105	194	0.0054 ug/L #	30
91) sec-Butylbenzene	18.24	105	194	0.0050 ug/L #	55

(#) = qualifier out of range (m) = manual integration
6M144711.D A9FOOWT.M Fri Jan 13 08:26:38 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144711.D Vial: 5
Acq On : 12 Jan 2017 10:42 Operator: TMB
Sample : WG598323-05 100ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 11:06 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144711.D Vial: 5
Acq On : 12 Jan 2017 10:42 Operator: TMB
Sample : WG598323-05 100ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 08:32:39 2017 Quant Results File: A9FOOWT.RES

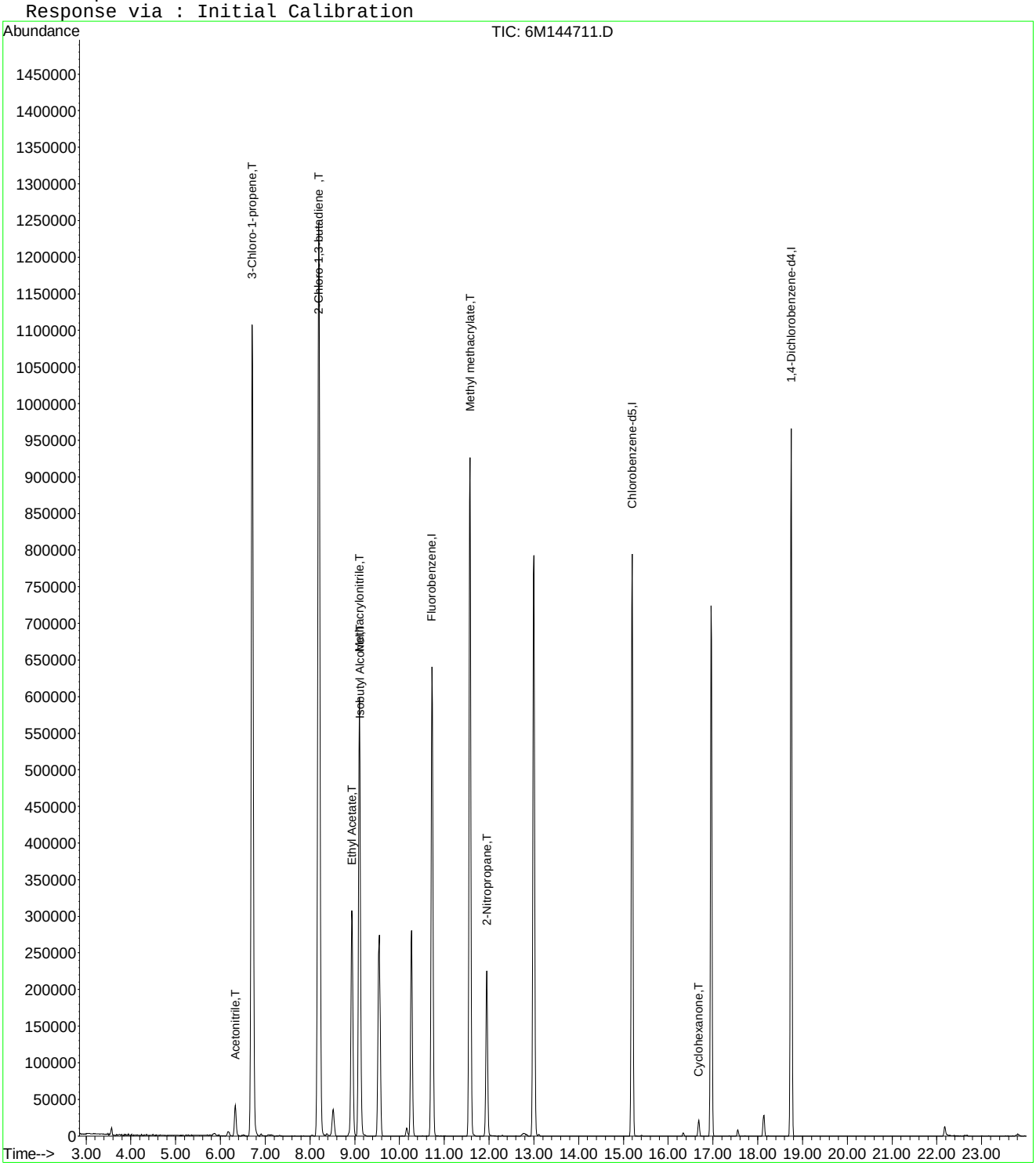
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.72	96	845255	25.00	ug/L		0.00
11) Chlorobenzene-d5	15.19	117	616939	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	18.75	152	346170	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.33	41	58942	97.5407	ug/L		93
3) 3-Chloro-1-propene	6.71	41	1040500	102.6782	ug/L		93
4) 2-Chloro-1,3-butadiene	8.20	53	1300845	104.0084	ug/L		97
5) Ethyl Acetate	8.93	43	561745	103.6261	ug/L		97
6) Methacrylonitrile	9.11	67	297800	104.3479	ug/L		93
7) Isobutyl Alcohol	9.12	43	36945	210.2692	ug/L	#	73
9) Methyl methacrylate	11.58	41	625487	105.4552	ug/L		96
10) 2-Nitropropane	11.94	43	239604	99.3433	ug/L		96
13) Cyclohexanone	16.67	55	11266	86.0143	ug/L		74

(#) = qualifier out of range (m) = manual integration
6M144711.D A9FOOWT.M Fri Jan 13 08:34:22 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144711.D Vial: 5
Acq On : 12 Jan 2017 10:42 Operator: TMB
Sample : WG598323-05 100ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 8:32 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144711.D Vial: 5
Acq On : 12 Jan 2017 10:42 Operator: TMB
Sample : WG598323-05 100ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 09:36:00 2017 Quant Results File: A9FOOWT.RES

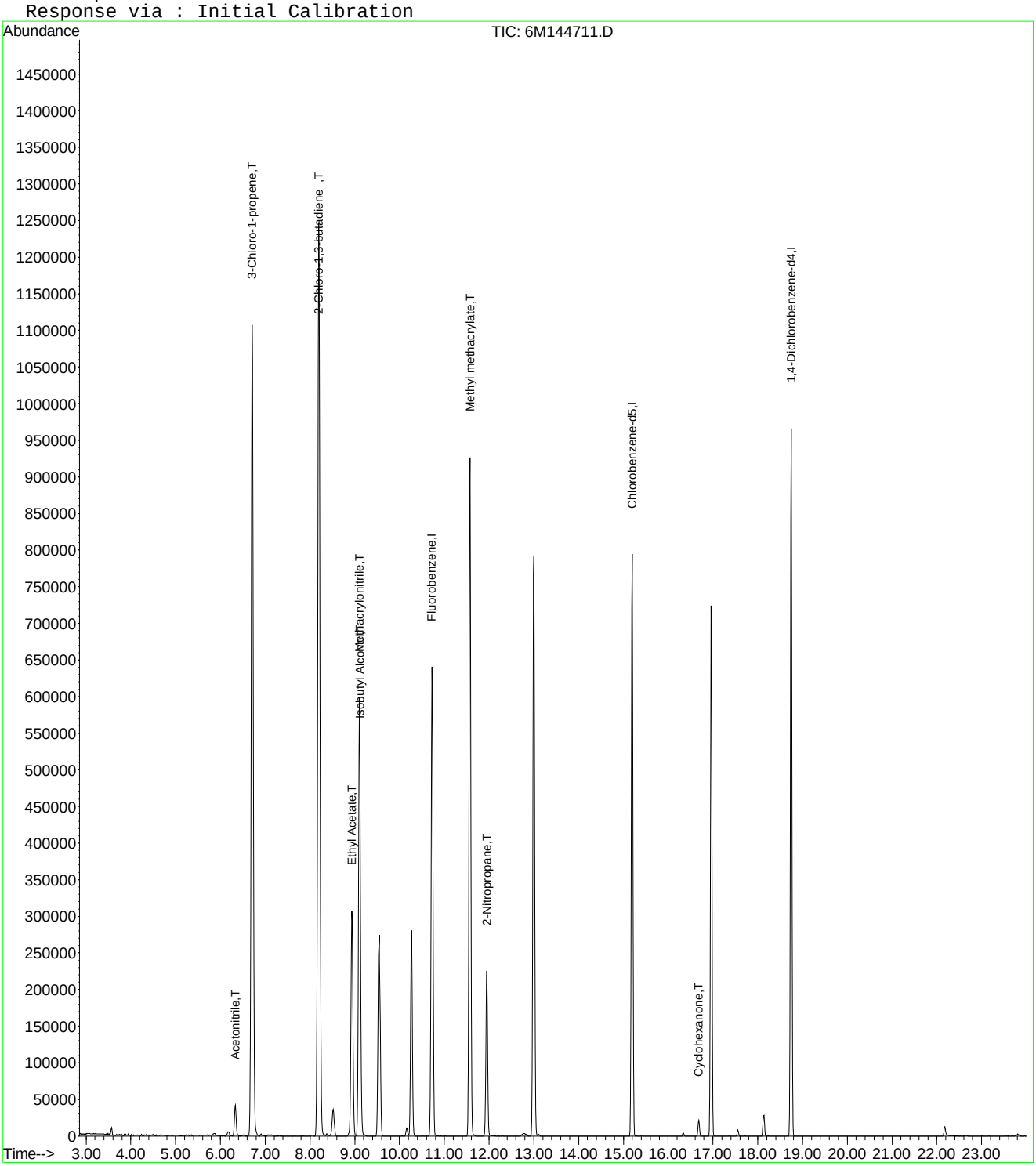
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.72	96	845255	25.00	ug/L		0.00
11) Chlorobenzene-d5	15.19	117	616939	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	18.75	152	346170	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.33	41	58942	97.5407	ug/L		93
3) 3-Chloro-1-propene	6.71	41	1040500	102.6782	ug/L		93
4) 2-Chloro-1,3-butadiene	8.20	53	1300845	104.0084	ug/L		97
5) Ethyl Acetate	8.93	43	561745	103.6261	ug/L		97
6) Methacrylonitrile	9.11	67	297800	104.3479	ug/L		93
7) Isobutyl Alcohol	9.12	43	36945	210.2692	ug/L	#	73
9) Methyl methacrylate	11.58	41	625487	105.4552	ug/L		96
10) 2-Nitropropane	11.94	43	239604	99.3433	ug/L		96
13) Cyclohexanone	16.67	55	11266	86.0143	ug/L		74

(#) = qualifier out of range (m) = manual integration
6M144711.D A9FOOWT.M Fri Jan 13 09:36:01 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144711.D Vial: 5
Acq On : 12 Jan 2017 10:42 Operator: TMB
Sample : WG598323-05 100ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 9:35 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144711.D Vial: 5
Acq On : 12 Jan 2017 10:42 Operator: TMB
Sample : WG598323-05 100ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	97.5407	2.5	100	0.00
3	T	3-Chloro-1-propene	100.0000	102.6783	-2.7	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.0084	-4.0	100	0.00
5	T	Ethyl Acetate	100.0000	103.6261	-3.6	100	0.00
6	T	Methacrylonitrile	100.0000	104.3479	-4.3	100	0.00
7	T	Isobutyl Alcohol	200.0000	210.2692	-5.1	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	105.4552	-5.5	100	0.00
10	T	2-Nitropropane	100.0000	99.3433	0.7	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	86.0143	14.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M144711.D A9FOOWT.M Fri Jan 13 09:36:05 2017 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144712.D Vial: 6
Acq On : 12 Jan 2017 11:14 Operator: TMB
Sample : WG598323-06 200ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 11:38:58 2017 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 010917 - HPMS6
Last Update : Tue Jan 10 09:16:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

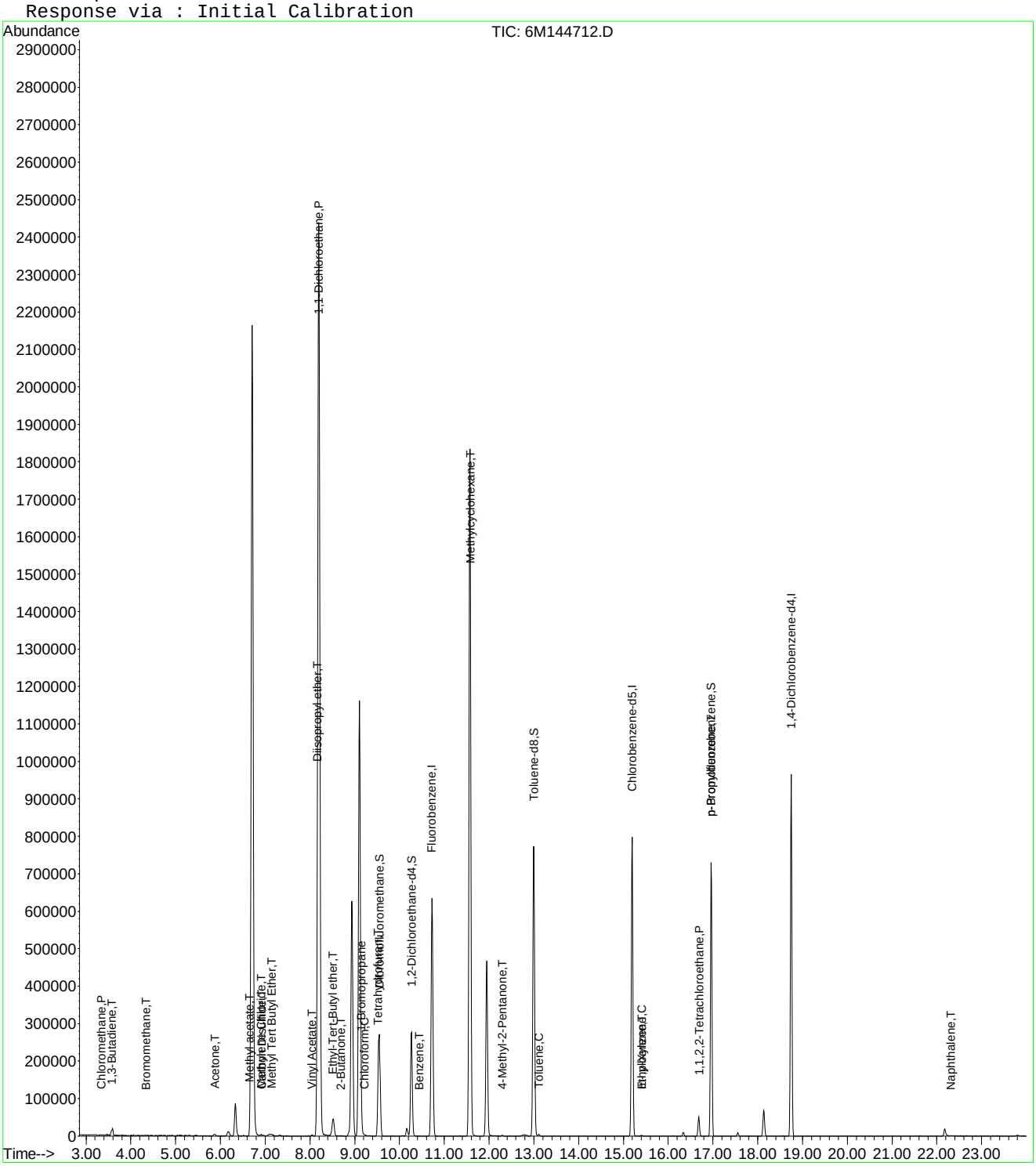
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.72	96	831063	25.00	ug/L	0.00
57) Chlorobenzene-d5	15.19	117	617643	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.75	152	346241	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.54	111	247709	23.1804	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.72%			
43) 1,2-Dichloroethane-d4	10.27	65	312585	23.4545	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.80%			
58) Toluene-d8	13.00	98	792685	24.3276	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.32%			
80) p-Bromofluorobenzene	16.96	95	336613	25.0020	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.00%			

Target Compounds						Qvalue
3) Chloromethane	3.34	50	260	0.0254	ug/L #	42
5) 1,3-Butadiene	3.57	54	438	0.0426	ug/L #	1
6) Bromomethane	4.34	94	200	0.0293	ug/L #	1
13) Acetone	5.88	43	10083	5.7843	ug/L	99
18) Methyl acetate	6.64	43	211	0.0508	ug/L #	66
19) Methylene Chloride	6.91	84	1088	0.1099	ug/L	96
20) Carbon Disulfide	6.92	76	5791	0.2030	ug/L #	74
22) Methyl Tert Butyl Ether	7.15	73	9116	0.3587	ug/L #	49
25) Diisopropyl ether	8.17	45	7271	0.3230	ug/L #	1
26) Vinyl Acetate	8.04	43	5632	0.5291	ug/L #	88
27) 1,1-Dichloroethane	8.20	63	42665	2.4792	ug/L #	44
28) Ethyl-Tert-Butyl ether	8.50	59	7078	0.2747	ug/L #	45
29) 2-Butanone	8.69	43	703	0.3117	ug/L #	57
33) Chloroform	9.22	83	1589	0.0737	ug/L #	73
34) 1-Bromopropane	9.15	122	3183	1.6394	ug/L #	1
36) Tetrahydrofuran	9.52	42	2134	1.5495	ug/L #	69
46) Benzene	10.44	78	255	0.0068	ug/L #	56
48) Methylcyclohexane	11.59	83	4675	0.3475	ug/L #	1
54) 4-Methyl-2-Pentanone	12.29	58	202	0.0959	ug/L #	38
59) Toluene	13.11	91	6482	0.1771	ug/L	92
72) Ethylbenzene	15.41	106	1073	0.0795	ug/L	58
73) m-,p-Xylene	15.41	106	1073	0.0661	ug/L	80
79) 1,1,2,2-Tetrachloroethane	16.69	83	3060	0.3743	ug/L #	17
83) n-Propylbenzene	16.96	91	1111	0.0242	ug/L #	53
100) Naphthalene	22.31	128	208	0.0078	ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M144712.D A9FOOWT.M Fri Jan 13 08:26:42 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144712.D Vial: 6
Acq On : 12 Jan 2017 11:14 Operator: TMB
Sample : WG598323-06 200ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 11:38 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144712.D Vial: 6
Acq On : 12 Jan 2017 11:14 Operator: TMB
Sample : WG598323-06 200ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 08:32:55 2017 Quant Results File: A9FOOWT.RES

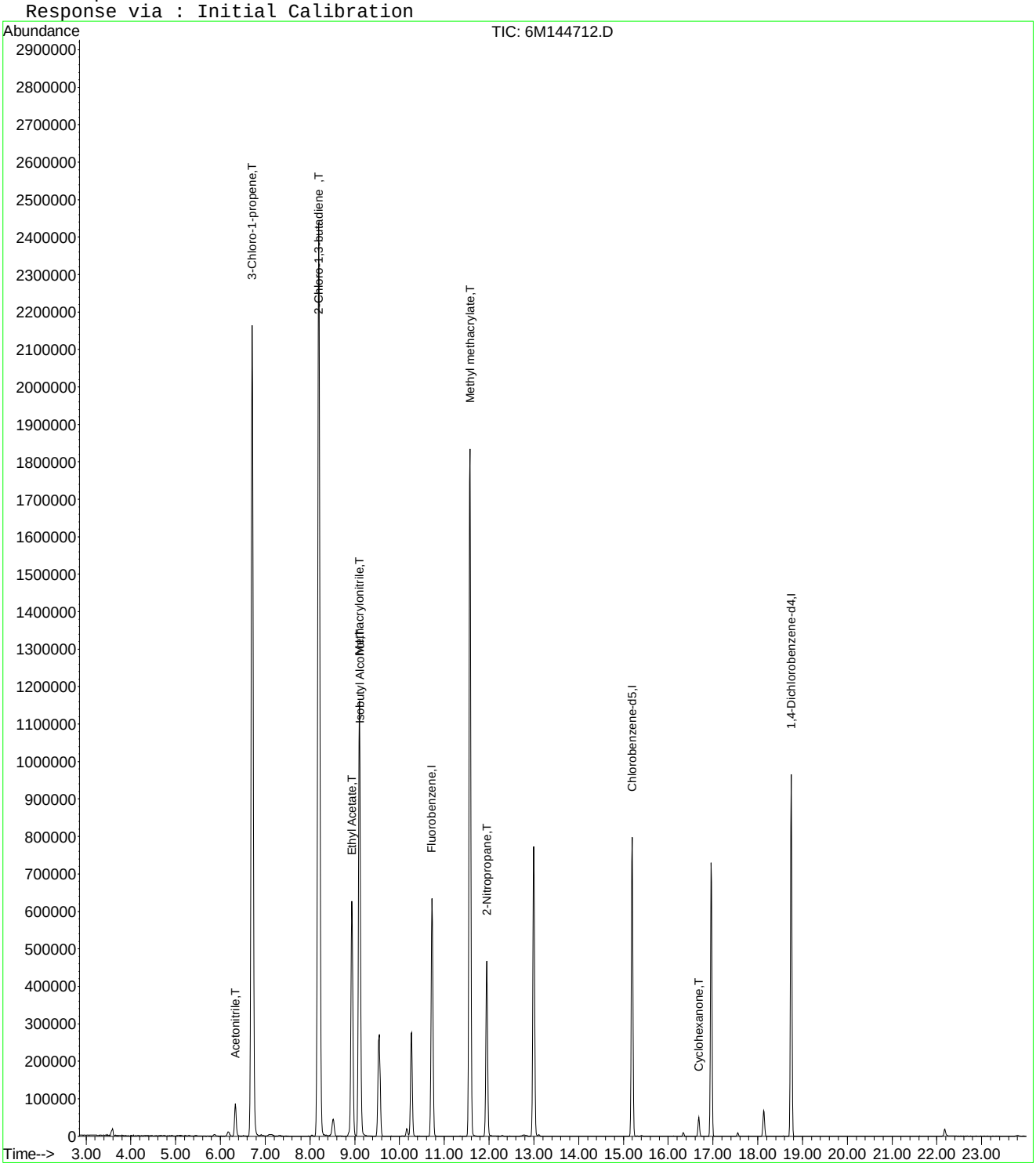
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.72	96	831063	25.00	ug/L		0.00
11) Chlorobenzene-d5	15.19	117	617643	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	18.75	152	346241	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.33	41	117408	197.6116	ug/L		95
3) 3-Chloro-1-propene	6.71	41	2031969	203.9423	ug/L		93
4) 2-Chloro-1,3-butadiene	8.20	53	2539389	206.5027	ug/L		96
5) Ethyl Acetate	8.93	43	1134089	212.7800	ug/L		97
6) Methacrylonitrile	9.11	67	588766	209.8242	ug/L		92
7) Isobutyl Alcohol	9.12	43	69700	403.4656	ug/L	#	77
9) Methyl methacrylate	11.58	41	1251118	214.5369	ug/L		96
10) 2-Nitropropane	11.94	43	508471	214.4196	ug/L		98
13) Cyclohexanone	16.68	55	26625	203.2365	ug/L		79

(#) = qualifier out of range (m) = manual integration
6M144712.D A9FOOWT.M Fri Jan 13 08:34:25 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144712.D Vial: 6
Acq On : 12 Jan 2017 11:14 Operator: TMB
Sample : WG598323-06 200ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 8:32 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144713.D Vial: 7
Acq On : 12 Jan 2017 11:47 Operator: TMB
Sample : WG598323-07 300ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 12:11:33 2017 Quant Results File: 8260BWT.RES

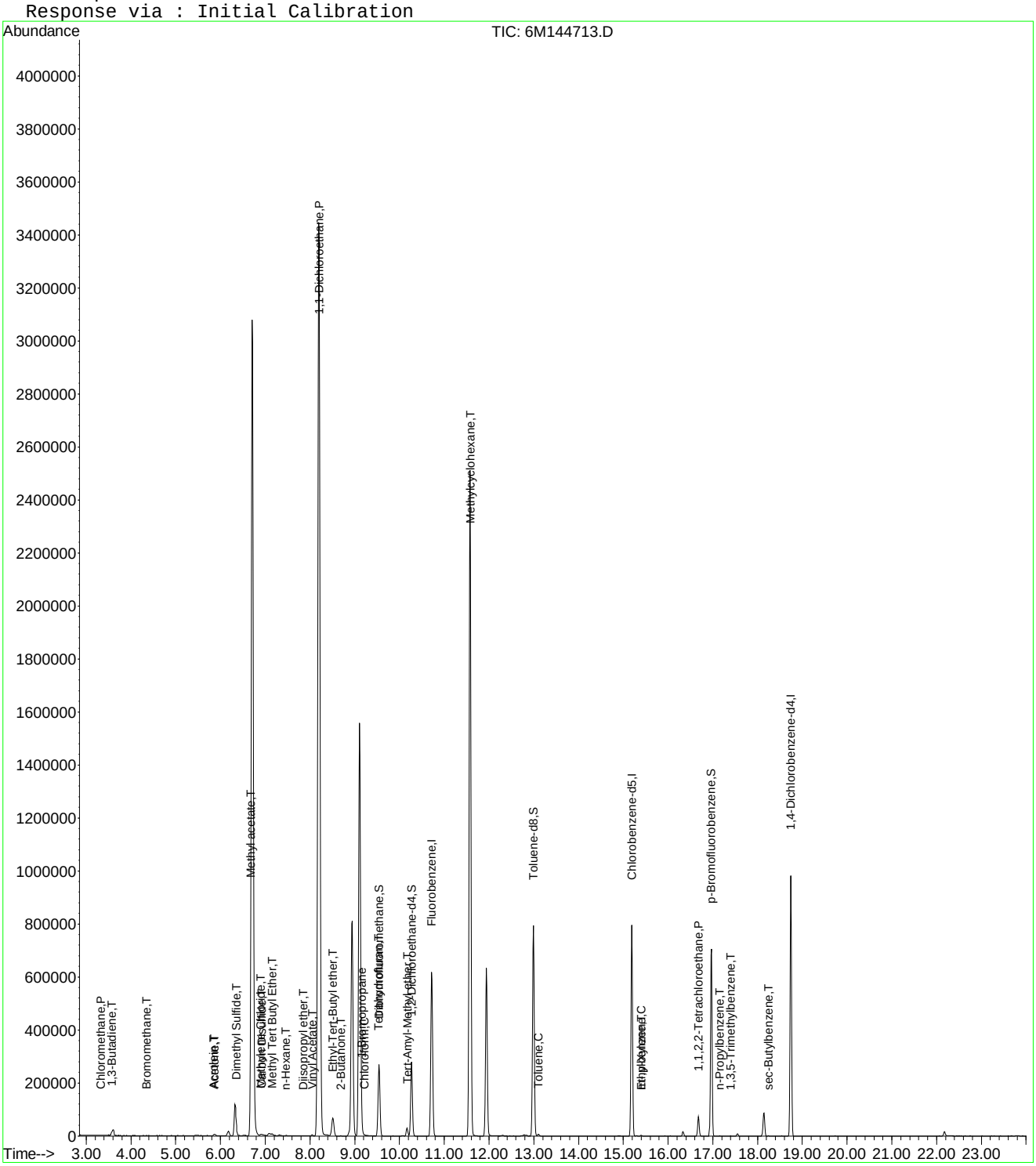
Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 010917 - HPMS6
Last Update : Tue Jan 10 09:16:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.72	96	820441	25.00	ug/L	0.00
57) Chlorobenzene-d5	15.19	117	609250	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.74	152	347545	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.54	111	246333	23.3501	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.40%			
43) 1,2-Dichloroethane-d4	10.27	65	305388	23.2111	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.84%			
58) Toluene-d8	12.99	98	785624	24.4430	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.76%			
80) p-Bromofluorobenzene	16.97	95	335319	24.8125	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.24%			
Target Compounds						Qvalue
3) Chloromethane	3.32	50	260	0.0257	ug/L	# 42
5) 1,3-Butadiene	3.57	54	417	0.0411	ug/L	# 1
6) Bromomethane	4.34	94	461	0.0683	ug/L	# 47
11) Acrolein	5.85	56	912	1.2132	ug/L	# 15
13) Acetone	5.87	43	12690	7.3741	ug/L	94
16) Dimethyl Sulfide	6.36	62	238	0.0337	ug/L	# 1
18) Methyl acetate	6.67	43	2577	0.6281	ug/L	# 1
19) Methylene Chloride	6.90	84	1521	0.1556	ug/L	84
20) Carbon Disulfide	6.92	76	7137	0.2535	ug/L	# 86
22) Methyl Tert Butyl Ether	7.15	73	14896	0.5937	ug/L	# 49
24) n-Hexane	7.46	57	657	0.0729	ug/L	# 54
25) Diisopropyl ether	7.85	45	287	0.0129	ug/L	# 38
26) Vinyl Acetate	8.05	43	8761	0.8337	ug/L	92
27) 1,1-Dichloroethane	8.20	63	62763	3.6943	ug/L	# 46
28) Ethyl-Tert-Butyl ether	8.51	59	10071	0.3959	ug/L	# 43
29) 2-Butanone	8.69	43	507	0.2277	ug/L	# 57
33) Chloroform	9.22	83	1659	0.0780	ug/L	# 77
34) 1-Bromopropane	9.15	122	3745	1.9538	ug/L	# 1
36) Tetrahydrofuran	9.53	42	2024	1.4887	ug/L	# 41
41) Tert-Amyl-Methyl ether	10.18	73	194	0.0084	ug/L	# 1
48) Methylcyclohexane	11.58	83	6375	0.4800	ug/L	# 1
59) Toluene	13.11	91	8559	0.2370	ug/L	93
72) Ethylbenzene	15.40	106	1274	0.0957	ug/L	69
73) m-,p-Xylene	15.40	106	1274	0.0795	ug/L	65
79) 1,1,2,2-Tetrachloroethane	16.68	83	4027	0.4907	ug/L	# 17
83) n-Propylbenzene	17.15	91	235	0.0051	ug/L	# 58
85) 1,3,5-Trimethylbenzene	17.39	105	189	0.0056	ug/L	# 27
91) sec-Butylbenzene	18.24	105	455	0.0116	ug/L	# 55

(#) = qualifier out of range (m) = manual integration
6M144713.D A9FOOWT.M Fri Jan 13 08:26:47 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144713.D Vial: 7
Acq On : 12 Jan 2017 11:47 Operator: TMB
Sample : WG598323-07 300ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 12:11 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144713.D Vial: 7
Acq On : 12 Jan 2017 11:47 Operator: TMB
Sample : WG598323-07 300ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 08:33:06 2017 Quant Results File: A9FOOWT.RES

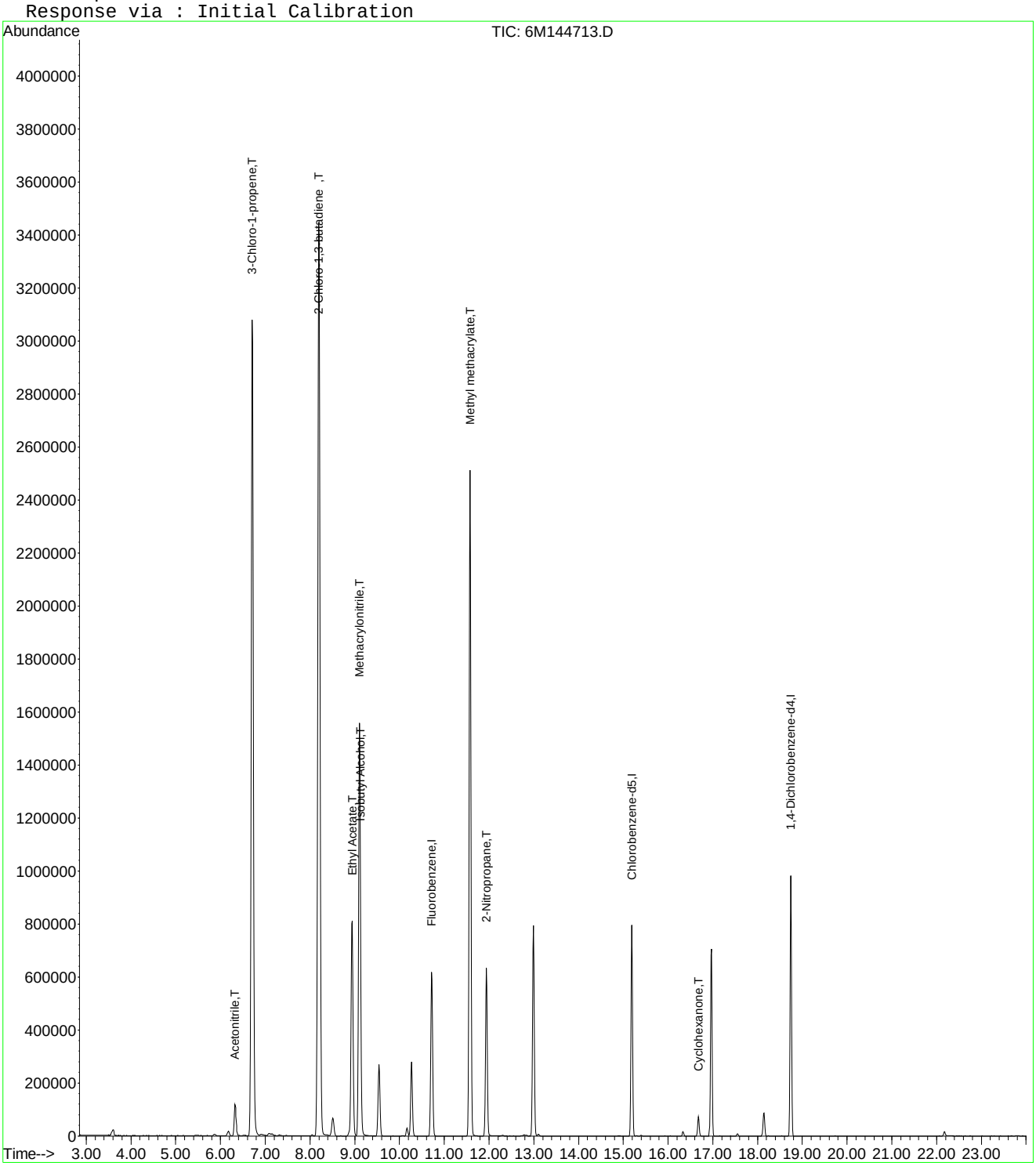
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.72	96	820441	25.00	ug/L		0.00
11) Chlorobenzene-d5	15.19	117	609250	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	18.74	152	347545	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.33	41	159684	272.2468	ug/L		94
3) 3-Chloro-1-propene	6.70	41	2909215	295.7689	ug/L		93
4) 2-Chloro-1,3-butadiene	8.19	53	3653381	300.9387	ug/L		97
5) Ethyl Acetate	8.94	43	1494846	284.0971	ug/L		98
6) Methacrylonitrile	9.10	67	791160	285.6036	ug/L		92
7) Isobutyl Alcohol	9.12	43	88161	516.9360	ug/L	#	85
9) Methyl methacrylate	11.57	41	1679549	291.7313	ug/L		97
10) 2-Nitropropane	11.94	43	685276	292.7186	ug/L		98
13) Cyclohexanone	16.68	55	38739	294.5967	ug/L		82

(#) = qualifier out of range (m) = manual integration
6M144713.D A9FOOWT.M Fri Jan 13 08:34:28 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144713.D Vial: 7
Acq On : 12 Jan 2017 11:47 Operator: TMB
Sample : WG598323-07 300ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 8:33 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration



6M144713.D A9FOOWT.M Fri Jan 13 08:34:28 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144714.D Vial: 8
Acq On : 12 Jan 2017 12:19 Operator: TMB
Sample : WG598323-08 400ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 12:44:04 2017 Quant Results File: 8260BWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 010917 - HPMS6
Last Update : Tue Jan 10 09:16:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

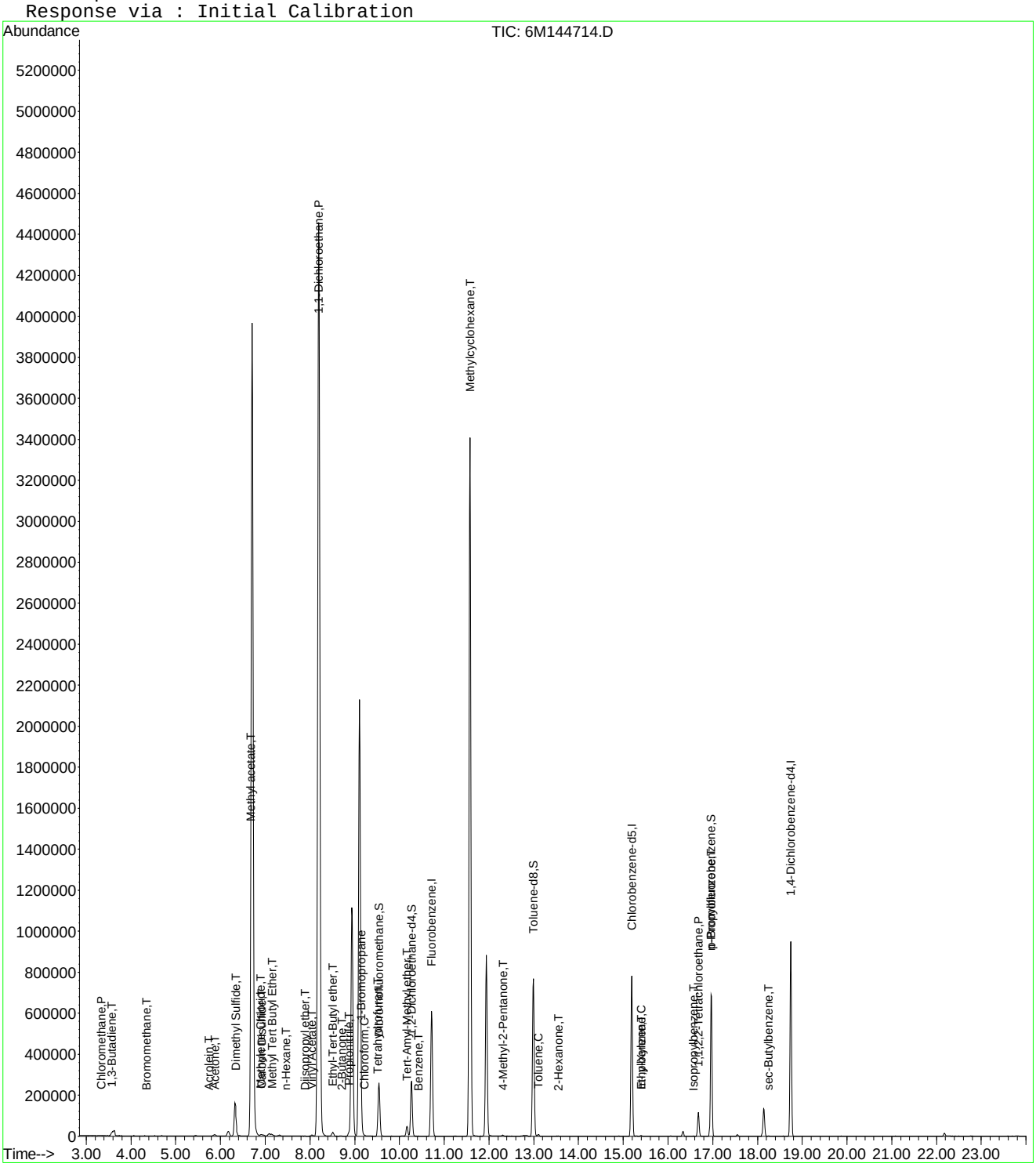
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.72	96	806744	25.00	ug/L	0.00
57) Chlorobenzene-d5	15.19	117	606622	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.74	152	341512	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.54	111	239069	23.0462	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.20%			
43) 1,2-Dichloroethane-d4	10.27	65	300506	23.2279	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.92%			
58) Toluene-d8	12.99	98	765108	23.9079	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.64%			
80) p-Bromofluorobenzene	16.96	95	328261	24.7193	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%			

Target Compounds						Qvalue
3) Chloromethane	3.33	50	272	0.0273	ug/L #	42
5) 1,3-Butadiene	3.57	54	757	0.0758	ug/L #	5
6) Bromomethane	4.35	94	667	0.1005	ug/L	75
11) Acrolein	5.74	56	677	0.9159	ug/L #	15
13) Acetone	5.88	43	14477	8.5554	ug/L	96
16) Dimethyl Sulfide	6.35	62	1111	0.1598	ug/L #	1
18) Methyl acetate	6.67	43	4930	1.2219	ug/L #	1
19) Methylene Chloride	6.90	84	2103	0.2188	ug/L	60
20) Carbon Disulfide	6.92	76	9158	0.3308	ug/L #	82
22) Methyl Tert Butyl Ether	7.15	73	21582	0.8748	ug/L #	49
24) n-Hexane	7.47	57	817	0.0921	ug/L #	48
25) Diisopropyl ether	7.89	45	639	0.0292	ug/L #	38
26) Vinyl Acetate	8.04	43	12569	1.2164	ug/L #	87
27) 1,1-Dichloroethane	8.20	63	80426	4.8143	ug/L #	46
28) Ethyl-Tert-Butyl ether	8.51	59	3100	0.1239	ug/L #	44
29) 2-Butanone	8.71	43	1976	0.9025	ug/L #	57
30) Propionitrile	8.87	54	457	0.7838	ug/L #	1
33) Chloroform	9.22	83	1277	0.0611	ug/L #	72
34) 1-Bromopropane	9.14	122	3848	2.0416	ug/L #	1
36) Tetrahydrofuran	9.51	42	1568	1.1729	ug/L #	64
41) Tert-Amyl-Methyl ether	10.17	73	656	0.0288	ug/L #	1
46) Benzene	10.42	78	199	0.0055	ug/L #	56
48) Methylcyclohexane	11.58	83	8789	0.6731	ug/L #	1
54) 4-Methyl-2-Pentanone	12.32	58	1061	0.5190	ug/L #	70
59) Toluene	13.11	91	10746	0.2989	ug/L	98
64) 2-Hexanone	13.55	43	428	0.1239	ug/L #	28
72) Ethylbenzene	15.40	106	2074	0.1565	ug/L	49
73) m-,p-Xylene	15.40	106	2074	0.1300	ug/L	92
77) Isopropylbenzene	16.57	105	192	0.0048	ug/L #	48
79) 1,1,2,2-Tetrachloroethane	16.68	83	7098	0.8802	ug/L #	17
83) n-Propylbenzene	16.97	91	910	0.0201	ug/L #	58
91) sec-Butylbenzene	18.24	105	1003	0.0261	ug/L #	55

(#) = qualifier out of range (m) = manual integration
6M144714.D A9FOOWT.M Fri Jan 13 08:26:51 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144714.D Vial: 8
Acq On : 12 Jan 2017 12:19 Operator: TMB
Sample : WG598323-08 400ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 12:44 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144714.D Vial: 8
Acq On : 12 Jan 2017 12:19 Operator: TMB
Sample : WG598323-08 400ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 08:33:16 2017 Quant Results File: A9FOOWT.RES

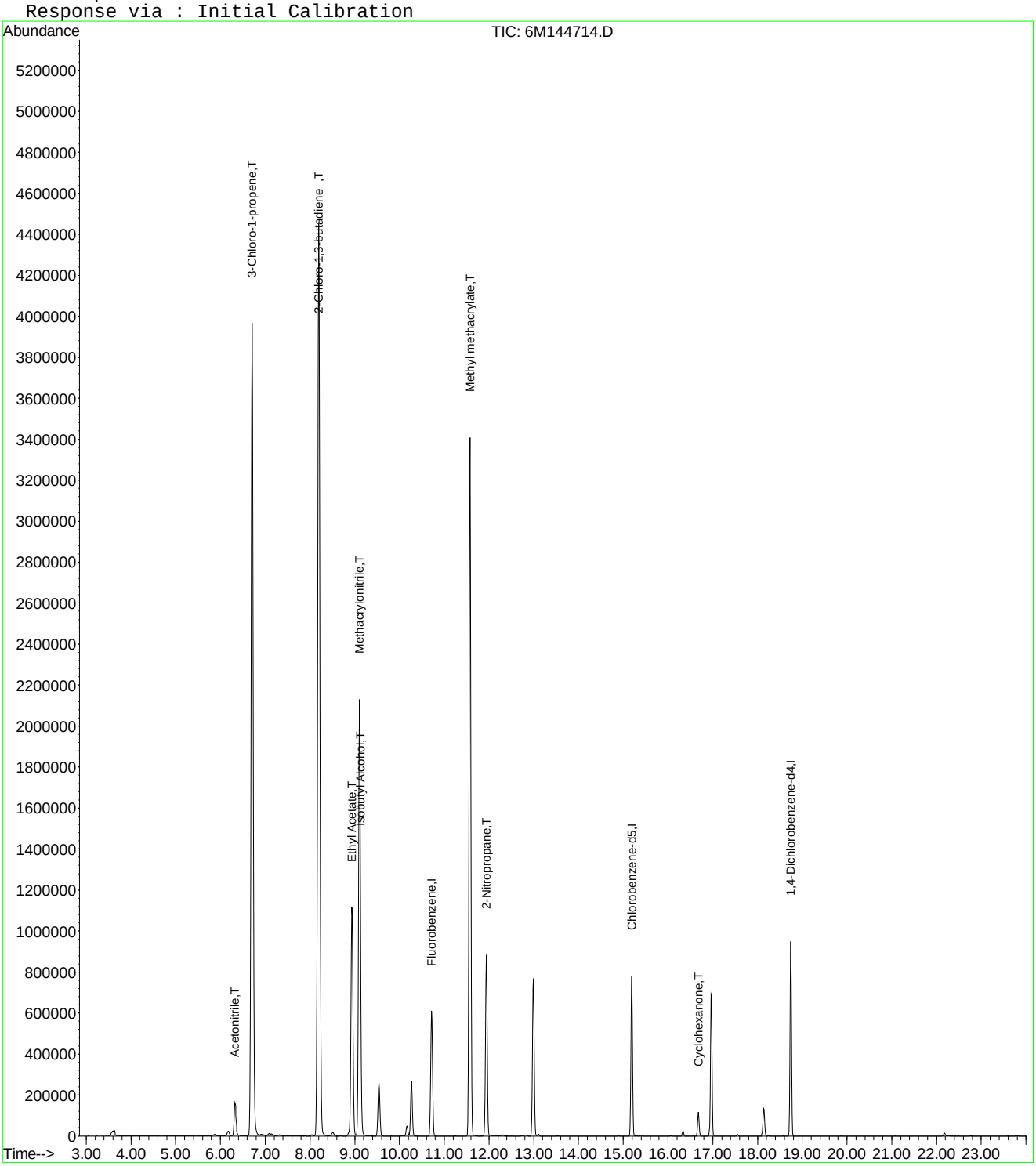
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.72	96	806744	25.00	ug/L		0.00
11) Chlorobenzene-d5	15.19	117	606622	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	18.74	152	341512	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.33	41	218566	378.9620	ug/L		95
3) 3-Chloro-1-propene	6.70	41	3703442	382.9075	ug/L		93
4) 2-Chloro-1,3-butadiene	8.20	53	4659517	390.3333	ug/L		97
5) Ethyl Acetate	8.93	43	2048087	395.8497	ug/L		97
6) Methacrylonitrile	9.10	67	1071225	393.2708	ug/L		92
7) Isobutyl Alcohol	9.12	43	136765	815.5430	ug/L	#	75
9) Methyl methacrylate	11.58	41	2287798	404.1286	ug/L		96
10) 2-Nitropropane	11.94	43	962802	418.2475	ug/L		98
13) Cyclohexanone	16.68	55	59579	461.0815	ug/L		81

(#) = qualifier out of range (m) = manual integration
6M144714.D A9FOOWT.M Fri Jan 13 08:34:31 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144714.D Vial: 8
Acq On : 12 Jan 2017 12:19 Operator: TMB
Sample : WG598323-08 400ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 8:33 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144715.D Vial: 9
Acq On : 12 Jan 2017 12:52 Operator: TMB
Sample : WG598323-09 500ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 13:16:50 2017 Quant Results File: 8260BWT.RES

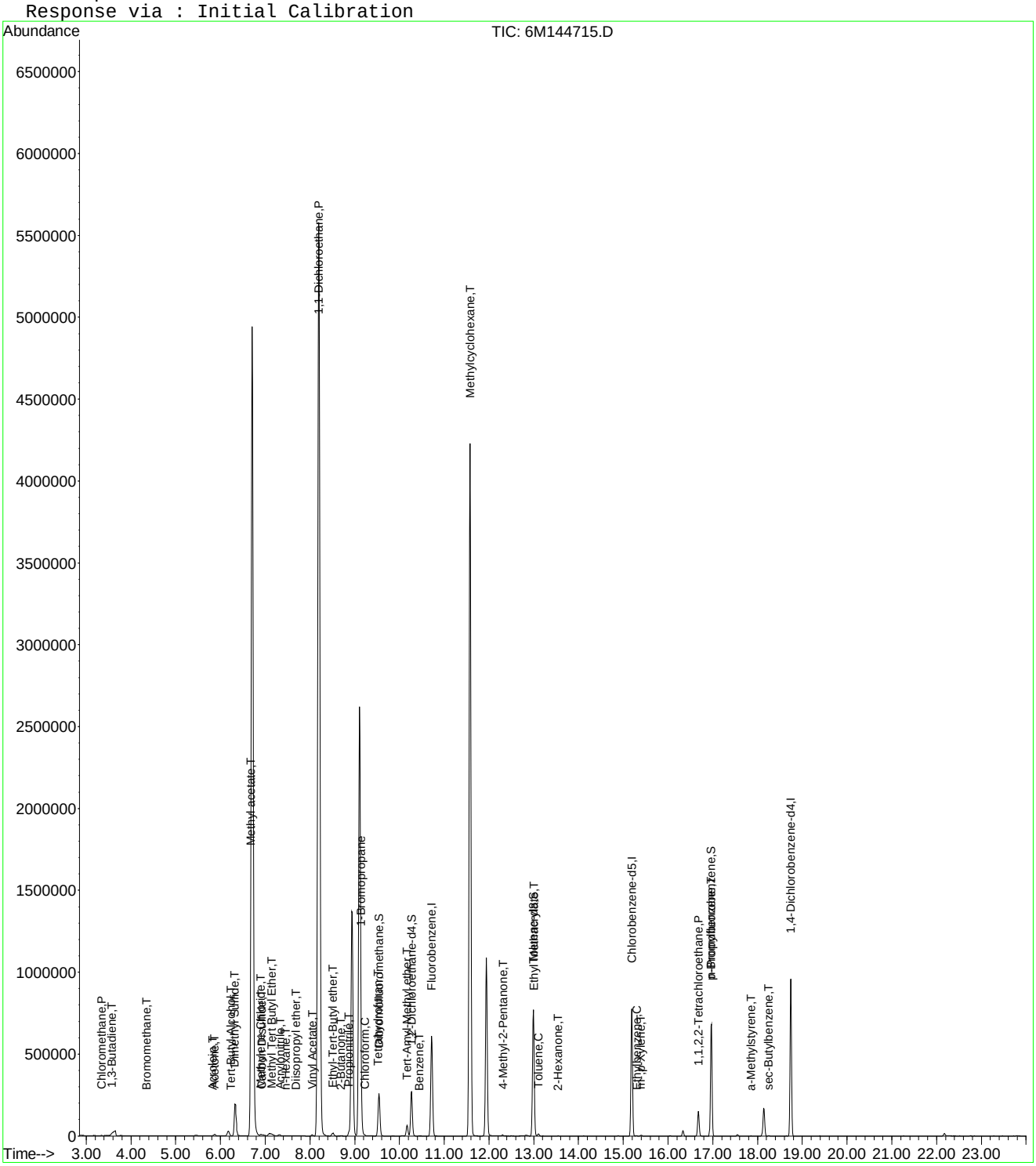
Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 010917 - HPMS6
Last Update : Tue Jan 10 09:16:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	800443	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.19	117	596335	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.74	152	335040	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.54	111	237060	23.0325 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.12%		
43) 1,2-Dichloroethane-d4	10.27	65	302572	23.5717 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.28%		
58) Toluene-d8	12.99	98	765801	24.3423 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.36%		
80) p-Bromofluorobenzene	16.96	95	329261	25.2735 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.08%		
Target Compounds					Qvalue
3) Chloromethane	3.34	50	496	0.0503 ug/L	80
5) 1,3-Butadiene	3.57	54	808	0.0816 ug/L #	1
6) Bromomethane	4.35	94	1192	0.1811 ug/L #	42
11) Acrolein	5.83	56	3283	4.4764 ug/L	89
13) Acetone	5.87	43	17355	10.3369 ug/L	98
15) Tert-Butyl Alcohol	6.23	59	386	0.9591 ug/L #	57
16) Dimethyl Sulfide	6.32	62	911	0.1321 ug/L #	1
18) Methyl acetate	6.67	43	3863	0.9650 ug/L #	1
19) Methylene Chloride	6.90	84	2314	0.2426 ug/L	61
20) Carbon Disulfide	6.92	76	10355	0.3769 ug/L	93
21) Acrylonitrile	7.34	53	388	0.2134 ug/L #	12
22) Methyl Tert Butyl Ether	7.14	73	29086	1.1883 ug/L #	49
24) n-Hexane	7.46	57	1820	0.2069 ug/L	97
25) Diisopropyl ether	7.68	45	507	0.0234 ug/L #	38
26) Vinyl Acetate	8.05	43	13896	1.3554 ug/L	91
27) 1,1-Dichloroethane	8.20	63	102688	6.1953 ug/L #	46
28) Ethyl-Tert-Butyl ether	8.51	59	2497	0.1006 ug/L #	32
29) 2-Butanone	8.70	43	1535	0.7066 ug/L #	57
30) Propionitrile	8.86	54	605	1.0458 ug/L #	1
33) Chloroform	9.23	83	2049	0.0987 ug/L #	76
34) 1-Bromopropane	9.13	122	3541	1.8935 ug/L #	1
36) Tetrahydrofuran	9.52	42	1620	1.2213 ug/L #	41
41) Tert-Amyl-Methyl ether	10.17	73	874	0.0386 ug/L #	1
46) Benzene	10.44	78	708	0.0197 ug/L #	56
48) Methylcyclohexane	11.58	83	11601	0.8954 ug/L #	1
54) 4-Methyl-2-Pentanone	12.31	58	1412	0.6962 ug/L	88
59) Toluene	13.11	91	14561	0.4120 ug/L	98
60) Ethyl Methacrylate	13.00	69	1039	0.1211 ug/L #	7
64) 2-Hexanone	13.54	43	460	0.1354 ug/L #	28
72) Ethylbenzene	15.30	106	221	0.0170 ug/L #	1
73) m-,p-Xylene	15.39	106	2299	0.1466 ug/L	74
79) 1,1,2,2-Tetrachloroethane	16.68	83	9272	1.1720 ug/L #	17
83) n-Propylbenzene	16.97	91	929	0.0209 ug/L #	58
88) a-Methylstyrene	17.86	118	184	0.0107 ug/L #	7
91) sec-Butylbenzene	18.24	105	1137	0.0301 ug/L #	55

(#) = qualifier out of range (m) = manual integration
6M144715.D A9FOOWT.M Fri Jan 13 08:26:56 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144715.D Vial: 9
Acq On : 12 Jan 2017 12:52 Operator: TMB
Sample : WG598323-09 500ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 13:16 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144715.D Vial: 9
Acq On : 12 Jan 2017 12:52 Operator: TMB
Sample : WG598323-09 500ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 08:33:28 2017 Quant Results File: A9FOOWT.RES

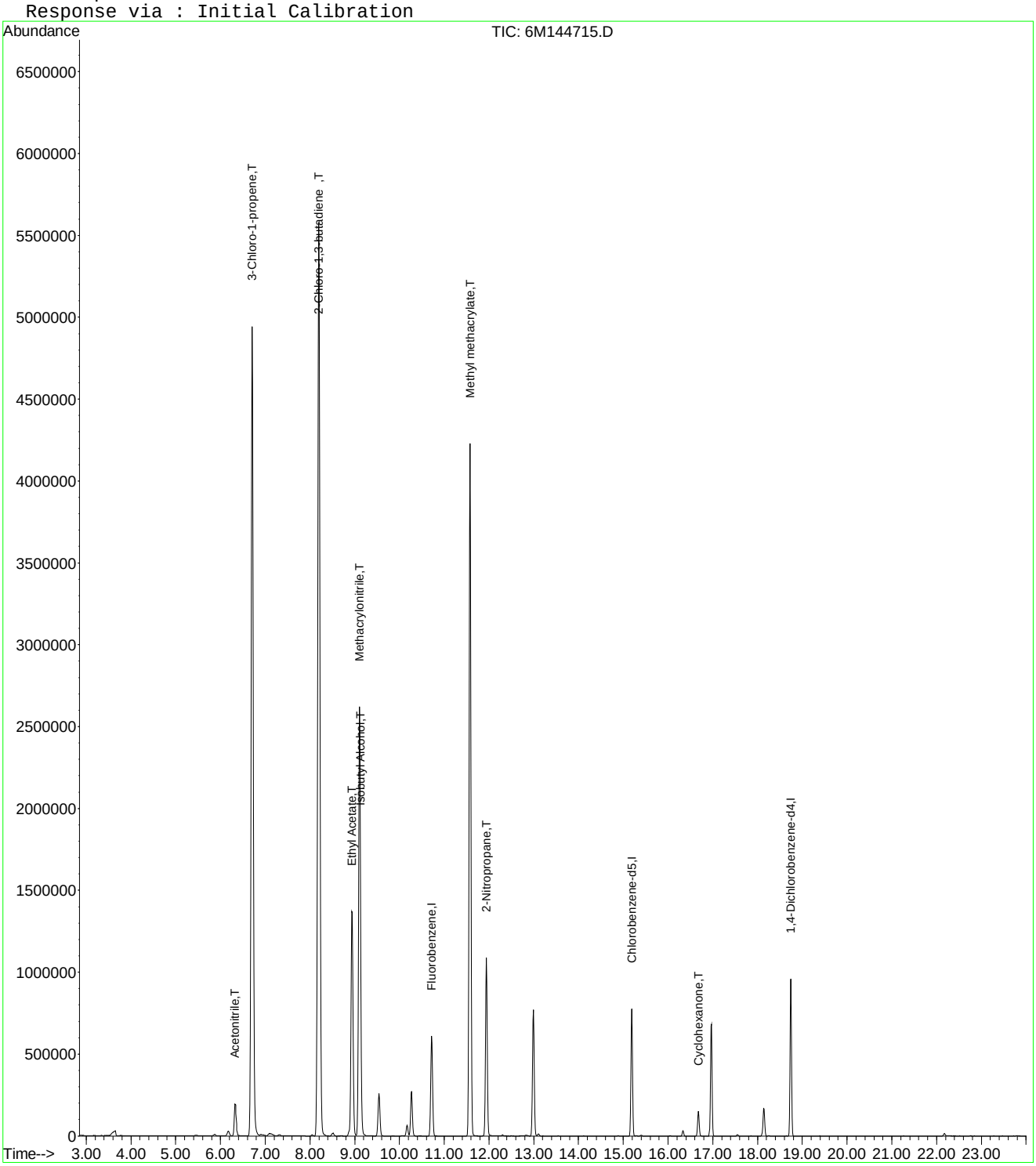
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.72	96	800443	25.00	ug/L		0.00
11) Chlorobenzene-d5	15.19	117	596335	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	18.74	152	335040	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.33	41	271689	474.7778	ug/L		94
3) 3-Chloro-1-propene	6.70	41	4627976	482.2639	ug/L		93
4) 2-Chloro-1,3-butadiene	8.20	53	5833383	492.5163	ug/L		97
5) Ethyl Acetate	8.93	43	2547971	496.3428	ug/L		97
6) Methacrylonitrile	9.10	67	1324536	490.0948	ug/L		92
7) Isobutyl Alcohol	9.12	43	184158	1106.7966	ug/L	#	75
9) Methyl methacrylate	11.58	41	2848365	507.1108	ug/L		97
10) 2-Nitropropane	11.94	43	1184018	518.3941	ug/L		98
13) Cyclohexanone	16.68	55	78367	618.1972	ug/L		79

(#) = qualifier out of range (m) = manual integration
6M144715.D A9FOOWT.M Fri Jan 13 08:34:33 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144715.D Vial: 9
Acq On : 12 Jan 2017 12:52 Operator: TMB
Sample : WG598323-09 500ug/L A9/FOO STD Inst : Hpms6
Misc : 1,1 STD79571 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 8:33 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144717.D Vial: 11
Acq On : 12 Jan 2017 13:56 Operator: TMB
Sample : WG598323-10 100ug/L ALT SRC STD A9/FOO Inst : Hpms6
Misc : 1,1 STD79496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 14:20:42 2017 Quant Results File: 8260BWT.RES

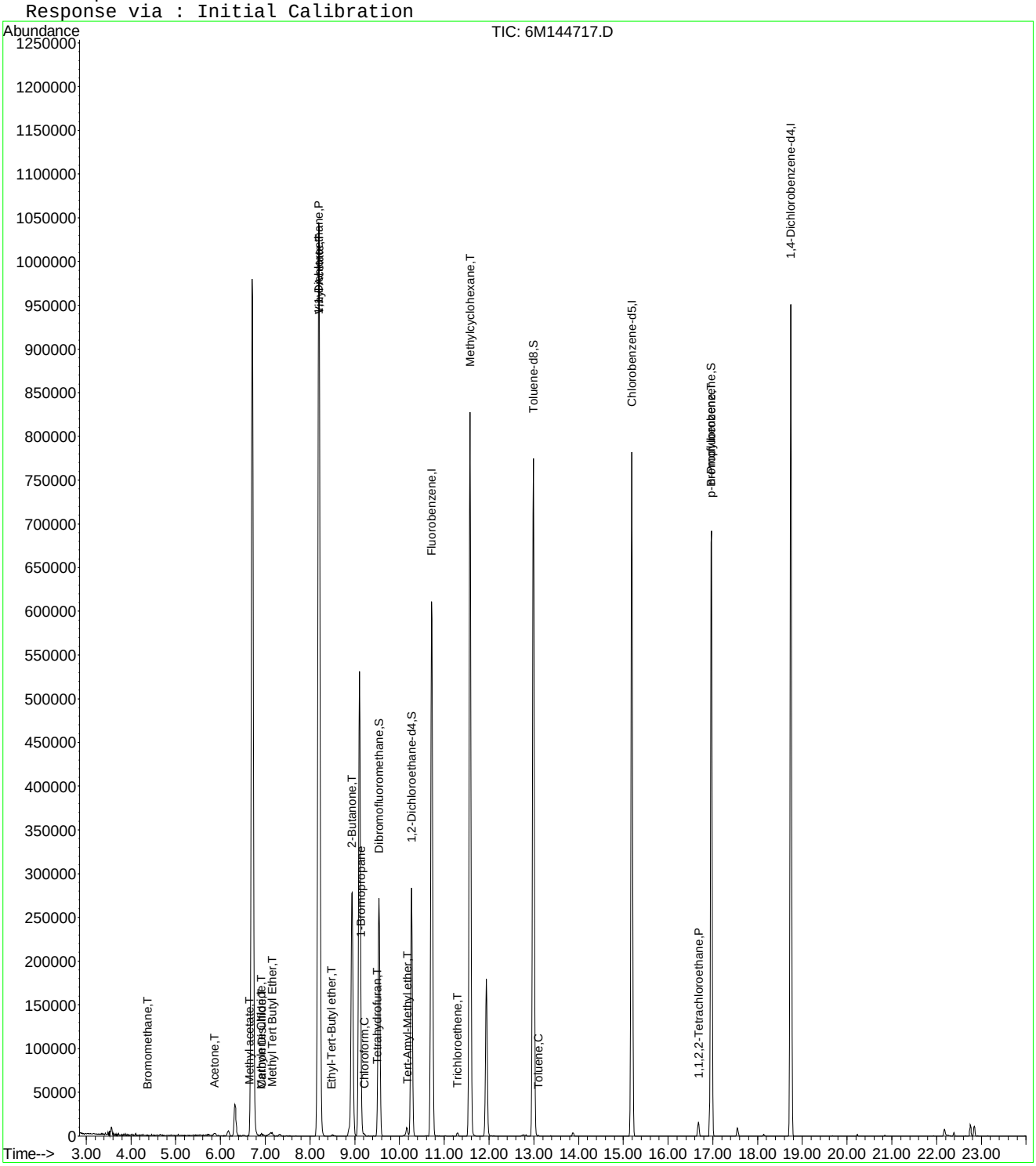
Quant Method : C:\MSDCHEM\1\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 010917 - HPMS6
Last Update : Tue Jan 10 09:16:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	814360	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.19	117	596096	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.74	152	332903	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.54	111	243877	23.2899 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.16%		
43) 1,2-Dichloroethane-d4	10.27	65	311245	23.8329 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.32%		
58) Toluene-d8	12.99	98	768623	24.4418 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.76%		
80) p-Bromofluorobenzene	16.96	95	326262	25.2041 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.80%		
Target Compounds					Qvalue
6) Bromomethane	4.36	94	249	0.0372 ug/L	# 10
13) Acetone	5.87	43	5113	2.9933 ug/L	99
18) Methyl acetate	6.64	43	221	0.0543 ug/L	# 66
19) Methylene Chloride	6.91	84	418	0.0431 ug/L	# 45
20) Carbon Disulfide	6.92	76	2678	0.0958 ug/L	# 74
22) Methyl Tert Butyl Ether	7.15	73	8470	0.3401 ug/L	# 49
26) Vinyl Acetate	8.20	43	1652	0.1584 ug/L	# 1
27) 1,1-Dichloroethane	8.19	63	18039	1.0697 ug/L	# 43
28) Ethyl-Tert-Butyl ether	8.48	59	1153	0.0457 ug/L	# 58
29) 2-Butanone	8.93	43	432733	195.7950 ug/L	# 57
33) Chloroform	9.22	83	1764	0.0836 ug/L	# 70
34) 1-Bromopropane	9.13	122	648	0.3406 ug/L	# 1
36) Tetrahydrofuran	9.50	42	1677	1.2427 ug/L	88
41) Tert-Amyl-Methyl ether	10.18	73	2503	0.1087 ug/L	# 58
47) Trichloroethene	11.29	130	2092	0.2019 ug/L	84
48) Methylcyclohexane	11.57	83	2143	0.1626 ug/L	# 1
59) Toluene	13.11	91	1027	0.0291 ug/L	# 46
79) 1,1,2,2-Tetrachloroethane	16.69	83	996	0.1267 ug/L	# 17
83) n-Propylbenzene	16.97	91	849	0.0192 ug/L	# 58

(#) = qualifier out of range (m) = manual integration
6M144717.D A9FOOWT.M Fri Jan 13 08:26:59 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144717.D Vial: 11
Acq On : 12 Jan 2017 13:56 Operator: TMB
Sample : WG598323-10 100ug/L ALT SRC STD A9/FOO Inst : Hpms6
Misc : 1,1 STD79496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 12 14:20 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Thu Jan 12 13:53:06 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144717.D Vial: 11
Acq On : 12 Jan 2017 13:56 Operator: TMB
Sample : WG598323-10 100ug/L ALT SRC STD A9/FOO Inst : Hpms6
Misc : 1,1 STD79496 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 08:33:45 2017 Quant Results File: A9FOOWT.RES

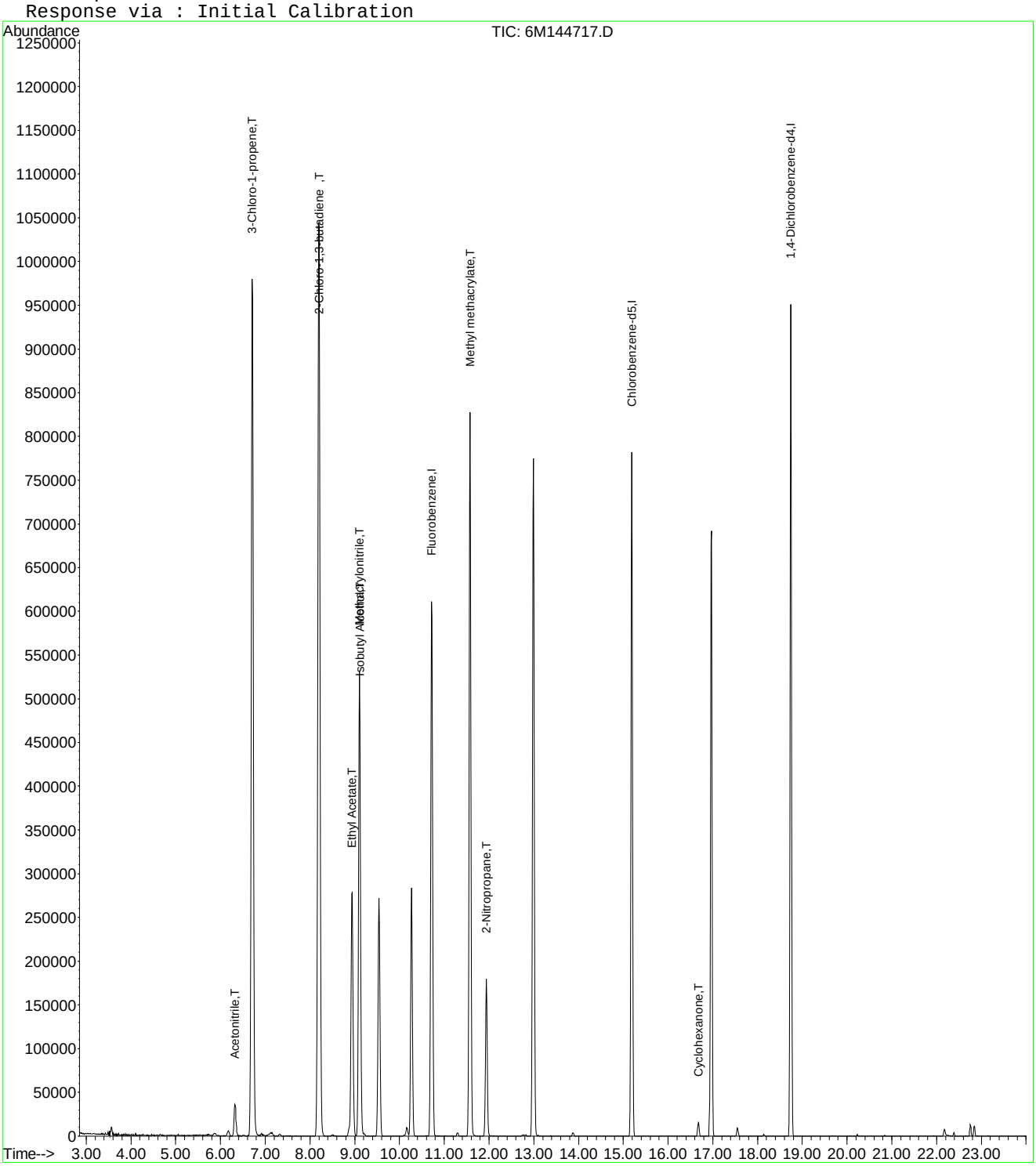
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.72	96	814360	25.00	ug/L		0.00
11) Chlorobenzene-d5	15.19	117	596096	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	18.74	152	332903	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.33	41	50370	86.5176	ug/L		93
3) 3-Chloro-1-propene	6.70	41	925364	94.7808	ug/L		93
4) 2-Chloro-1,3-butadiene	8.20	53	1105734	91.7624	ug/L		97
5) Ethyl Acetate	8.93	43	511531	97.9429	ug/L		98
6) Methacrylonitrile	9.10	67	268526	97.6600	ug/L		92
7) Isobutyl Alcohol	9.11	43	30815	182.0344	ug/L	#	85
9) Methyl methacrylate	11.57	41	547496	95.8081	ug/L		96
10) 2-Nitropropane	11.94	43	194232	83.5866	ug/L		98
13) Cyclohexanone	16.68	55	8825	70.0628	ug/L		79

(#) = qualifier out of range (m) = manual integration
6M144717.D A9FOOWT.M Fri Jan 13 08:34:35 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144717.D Vial: 11
Acq On : 12 Jan 2017 13:56 Operator: TMB
Sample : WG598323-10 100ug/L ALT SRC STD A9/FOO Inst : Hpms6
Misc : 1,1 STD79496 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 13 8:33 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\011217\6M144717.D Vial: 11
Acq On : 12 Jan 2017 13:56 Operator: TMB
Sample : WG598323-10 100ug/L ALT SRC STD A9/FOO Inst : Hpms6
Misc : 1,1 STD79496 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Fri Jan 13 08:29:29 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	96	0.00
2	T	Acetonitrile	100.0000	86.5176	13.5	85	0.00
3	T	3-Chloro-1-propene	100.0000	94.7808	5.2	89	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	91.7624	8.2	85	0.00
5	T	Ethyl Acetate	100.0000	97.9429	2.1	91	0.00
6	T	Methacrylonitrile	100.0000	97.6600	2.3	90	0.00
7	T	Isobutyl Alcohol	200.0000	182.0344	9.0	83	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-0.01
9	T	Methyl methacrylate	100.0000	95.8081	4.2	88	0.00
10	T	2-Nitropropane	100.0000	83.5866	16.4	81	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	70.0628	29.9	78	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M144717.D A9FOOWT.M Fri Jan 13 08:36:19 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146223.D Vial: 3
Acq On : 5 Apr 2017 17:25 Operator: TMB
Sample : WG608938-02 0.3ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:57:43 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.25	96	640408	25.00	ug/L	0.00
57) Chlorobenzene-d5	15.13	117	444925	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	226775	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#		
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#		
58) Toluene-d8	13.23	98	192	0.0085	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#		
80) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.52	85	2815	0.2769	ug/L #	64
3) Chloromethane	4.03	50	6905	Below Cal		88
4) Vinyl Chloride	4.28	62	3256	0.2803	ug/L	87
5) 1,3-Butadiene	4.33	54	2170	Below Cal		73
6) Bromomethane	5.23	94	1315	0.2622	ug/L	87
7) Chloroethane	5.40	64	1308	0.2617	ug/L #	43
8) Trichlorofluoromethane	5.90	101	3191	0.2680	ug/L #	92
10) Isoprene	6.49	67	2782	0.2840	ug/L #	60
12) 1,1,2-Trichloro-1,2,2-Trif	6.68	101	1282	0.1902	ug/L #	63
13) Acetone	6.76	43	1442	1.0435	ug/L #	48
14) 1,1-Dichloroethene	7.02	61	2988	0.3060	ug/L	96
16) Dimethyl Sulfide	7.28	62	1851	0.2653	ug/L	61
17) Iodomethane	7.54	142	460	0.8640	ug/L #	32
19) Methylene Chloride	7.79	84	2606	0.3531	ug/L	59
20) Carbon Disulfide	7.86	76	6466	0.3077	ug/L	98
22) Methyl Tert Butyl Ether	8.01	73	5425	0.3352	ug/L #	49
23) trans-1,2-Dichloroethene	8.26	96	1807	0.2572	ug/L	86
24) n-Hexane	8.33	57	2597	0.3268	ug/L	76
27) 1,1-Dichloroethane	8.87	63	3092	0.2656	ug/L	88
31) 2,2-Dichloropropane	9.64	77	1800	0.2033	ug/L #	31
32) cis-1,2-Dichloroethene	9.72	96	2213	0.2865	ug/L	84
33) Chloroform	9.92	83	5055	0.3812	ug/L #	83
35) Bromochloromethane	10.14	130	638	0.1569	ug/L	91
38) 1,1,1-Trichloroethane	10.45	97	3279	0.3042	ug/L #	50
39) Cyclohexane	10.48	56	2906	0.2915	ug/L #	75
40) 1,1-Dichloropropene	10.65	75	2741	0.3008	ug/L	77
45) 1,2-Dichloroethane	10.96	62	2340	0.2837	ug/L #	52
46) Benzene	11.01	78	9356	0.3415	ug/L #	79
47) Trichloroethene	11.75	130	2089	0.2801	ug/L #	65
48) Methylcyclohexane	11.85	83	3351	0.3110	ug/L	80
49) 1,2-Dichloropropane	11.97	63	2128	0.3291	ug/L #	53
51) Bromodichloromethane	12.27	83	2341	0.2564	ug/L	98
52) Dibromomethane	12.35	93	743	0.1951	ug/L	91
55) cis-1,3-Dichloropropene	12.90	75	2460	0.2447	ug/L #	77
56) Dimethyl Disulfide	13.17	79	1308	0.2062	ug/L #	47
59) Toluene	13.33	91	9335	0.3356	ug/L	99
60) Ethyl Methacrylate	13.40	69	1912	0.2840	ug/L	78
62) trans-1,3-Dichloropropene	13.48	75	2047	0.2387	ug/L #	51
63) 1,1,2-Trichloroethane	13.72	97	1325	0.2528	ug/L	83
64) 2-Hexanone	13.64	43	717	0.2848	ug/L #	28

(#) = qualifier out of range (m) = manual integration
6M146223.D 8260BWT.M Thu Apr 06 14:57:46 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146223.D Vial: 3
Acq On : 5 Apr 2017 17:25 Operator: TMB
Sample : WG608938-02 0.3ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:57:43 2017 Quant Results File: 8260BWT.RES

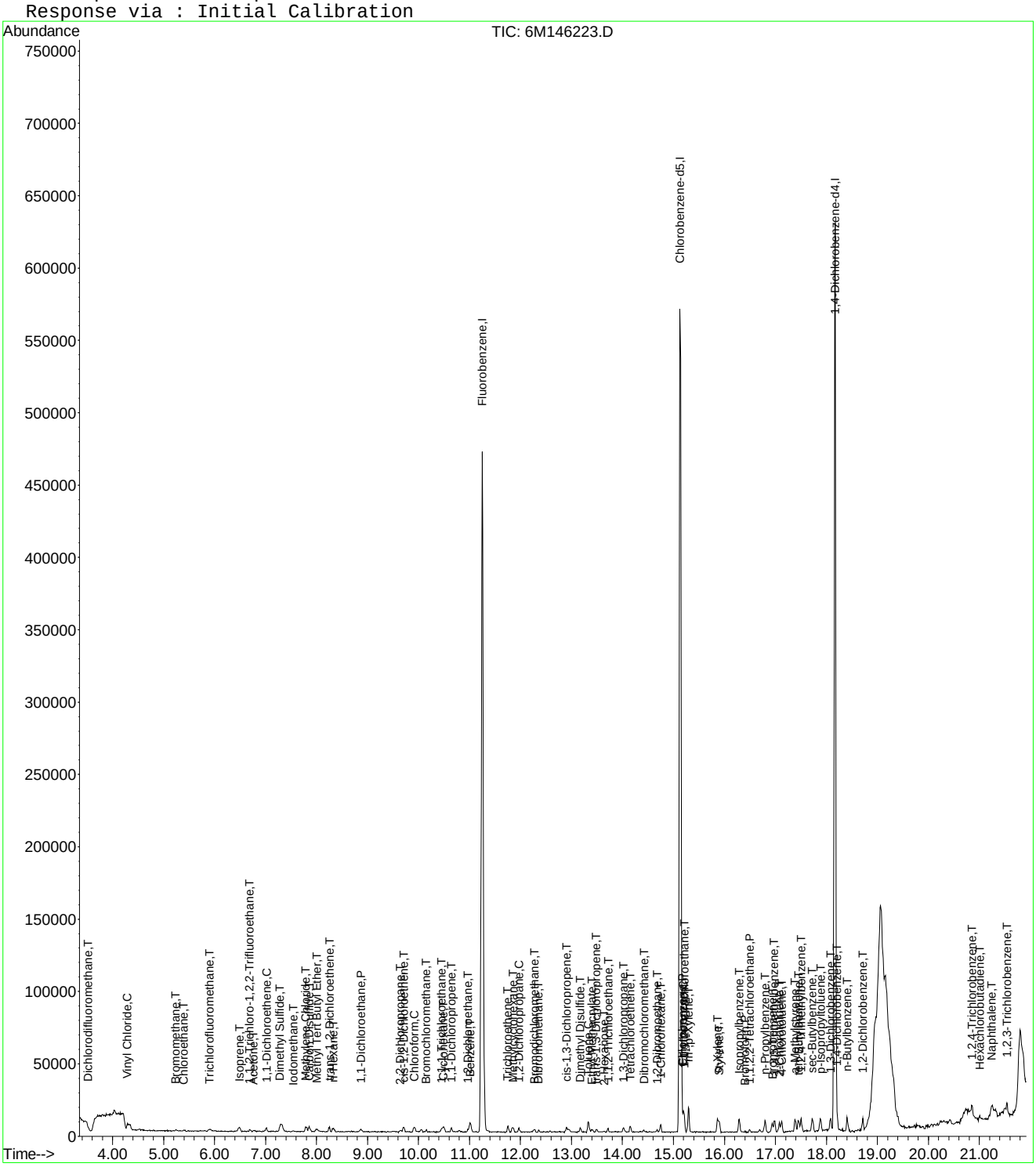
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
65)	1,3-Dichloropropane	14.03	76	2632	0.2991	ug/L		73
66)	Tetrachloroethene	14.16	166	2146	0.3184	ug/L		92
67)	Dibromochloromethane	14.42	129	1611	0.2486	ug/L		96
68)	1,2-Dibromoethane	14.68	107	1255	0.2493	ug/L		83
69)	1-Chlorohexane	14.75	91	2852	0.3175	ug/L		77
70)	Chlorobenzene	15.18	112	5819	0.3056	ug/L		90
71)	1,1,1,2-Tetrachloroethane	15.21	131	1834	0.2690	ug/L	#	36
72)	Ethylbenzene	15.20	106	3131	0.3038	ug/L		92
73)	m-,p-Xylene	15.29	106	7511	0.6097	ug/L		97
74)	o-Xylene	15.86	106	3485	0.2932	ug/L		89
75)	Styrene	15.89	104	6272	0.3143	ug/L		93
76)	Bromoform	16.40	173	562	0.1423	ug/L	#	35
77)	Isopropylbenzene	16.29	105	10184	0.3423	ug/L		93
79)	1,1,2,2-Tetrachloroethane	16.50	83	1871	0.3168	ug/L		77
83)	n-Propylbenzene	16.79	91	11774	0.3429	ug/L	#	93
84)	Bromobenzene	16.95	156	2344	0.3039	ug/L	#	63
85)	1,3,5-Trimethylbenzene	16.98	105	7944	0.3265	ug/L		95
86)	2-Chlorotoluene	17.08	91	7914	0.3462	ug/L		93
87)	4-Chlorotoluene	17.12	91	6658	0.3295	ug/L	#	94
88)	a-Methylstyrene	17.38	118	3803	0.2826	ug/L		94
89)	tert-Butylbenzene	17.46	134	1349	0.2646	ug/L		32
90)	1,2,4-Trimethylbenzene	17.51	105	8218	0.3289	ug/L		89
91)	sec-Butylbenzene	17.72	105	10323	0.3440	ug/L		91
92)	p-Isopropyltoluene	17.89	119	8482	0.3360	ug/L		97
93)	1,3-Dichlorobenzene	18.08	146	4887	0.3355	ug/L		99
94)	1,4-Dichlorobenzene	18.21	146	5055	0.3432	ug/L	#	53
95)	n-Butylbenzene	18.41	91	8369	0.3631	ug/L		92
96)	1,2-Dichlorobenzene	18.71	146	4262	0.3121	ug/L		90
98)	1,2,4-Trichlorobenzene	20.86	180	3679	0.3683	ug/L		84
99)	Hexachlorobutadiene	21.01	225	1397	0.3661	ug/L		82
100)	Naphthalene	21.23	128	6133	0.3066	ug/L		94
101)	1,2,3-Trichlorobenzene	21.54	180	3447	0.3574	ug/L	#	77

(#) = qualifier out of range (m) = manual integration
6M146223.D 8260BWT.M Thu Apr 06 14:57:46 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146223.D Vial: 3
Acq On : 5 Apr 2017 17:25 Operator: TMB
Sample : WG608938-02 0.3ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 14:57 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146223.D Vial: 3
Acq On : 5 Apr 2017 17:25 Operator: TMB
Sample : WG608938-02 0.3ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2769	0.0	100	0.00
3	P	Chloromethane	-1.0000	-0.2012	0.0	0	0.01
4	C	Vinyl Chloride	-1.0000	0.2803	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.2622	0.0	0	0.02
7	T	Chloroethane	-1.0000	0.2617	0.0	100	0.02
8	T	Trichlorofluoromethane	-1.0000	0.2680	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.44#
10	T	Isoprene	-1.0000	0.2840	0.0	100	0.02
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.67#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.1902	0.0	100	0.00
13	T	Acetone	-1.0000	1.0435	0.0	100	-0.01
14	C	1,1-Dichloroethene	-1.0000	0.3060	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-7.12#
16	T	Dimethyl Sulfide	-1.0000	0.2653	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.8640	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.0537	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.3531	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3077	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.97#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3352	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.2572	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3268	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.66#
26	T	Vinyl Acetate	-1.0000	0.0000	0.0	0	-8.83#
27	P	1,1-Dichloroethane	-1.0000	0.2656	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-9.41#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.52#
31	T	2,2-Dichloropropane	-1.0000	0.2033	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.2865	0.0	100	0.00
33	C	Chloroform	0.3000	0.3812	-27.1#	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.05#
35	T	Bromochloromethane	-1.0000	0.1569	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-10.18#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-10.21#
38	T	1,1,1-Trichloroethane	-1.0000	0.3042	0.0	100	-0.01
39	T	Cyclohexane	-1.0000	0.2915	0.0	100	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.3008	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.75#
42	T	Carbon Tetrachloride	-1.0000	0.1105	0.0	0	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.84#
44		Heptane	-1.0000	0.0000	0.0	0	-10.75#
45	T	1,2-Dichloroethane	-1.0000	0.2837	0.0	100	0.00
46	T	Benzene	-1.0000	0.3415	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2801	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3110	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3291	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.25#
51	T	Bromodichloromethane	-1.0000	0.2564	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1951	0.0	100	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.56#
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.59#

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146223.D Vial: 3
Acq On : 5 Apr 2017 17:25 Operator: TMB
Sample : WG608938-02 0.3ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2447	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2062	0.0	100	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0085	0.0	100	0.00
59	C	Toluene	-1.0000	0.3356	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2840	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.24#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2387	0.0	100	-0.01
63	T	1,1,2-Trichloroethane	-1.0000	0.2528	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2848	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.2991	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3184	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2486	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2493	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3175	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3056	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2690	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3038	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.6097	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2932	0.0	100	0.00
75	T	Styrene	-1.0000	0.3143	0.0	100	-0.01
76	P	Bromoform	-1.0000	0.1423	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3423	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.3168	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.64#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.69#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.73#
83	T	n-Propylbenzene	-1.0000	0.3429	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.3039	-1.3	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3265	0.0	100	-0.01
86	T	2-Chlorotoluene	-1.0000	0.3462	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3295	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2826	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2646	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3289	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3440	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3360	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3355	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3432	-14.4	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3631	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3121	-4.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.70#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3683	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3661	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3066	0.0	100	-0.01
101	T	1,2,3-Trichlorobenzene	0.3000	0.3574	-19.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M146223.D 8260BWT.M Thu Apr 06 15:02:18 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146224.D Vial: 4
Acq On : 5 Apr 2017 17:57 Operator: TMB
Sample : WG608938-03 0.4ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:57:47 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.25	96	626609	25.00	ug/L	0.00
57) Chlorobenzene-d5	15.14	117	442971	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	226791	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#		
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#		
58) Toluene-d8	0.00	98	0	0.0000	ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#		
80) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.52	85	3419	0.3437	ug/L #	64
3) Chloromethane	4.04	50	7947	Below Cal		96
4) Vinyl Chloride	4.29	62	5656	0.4976	ug/L	98
5) 1,3-Butadiene	4.34	54	2862	Below Cal	#	60
6) Bromomethane	5.23	94	1597	0.3254	ug/L	99
7) Chloroethane	5.40	64	1845	0.3772	ug/L #	43
8) Trichlorofluoromethane	5.91	101	4335	0.3721	ug/L #	93
10) Isoprene	6.48	67	3687	0.3847	ug/L	68
12) 1,1,2-Trichloro-1,2,2-Trif	6.69	101	2169	0.3289	ug/L	74
13) Acetone	6.77	43	782	0.5783	ug/L #	48
14) 1,1-Dichloroethene	7.01	61	3813	0.3991	ug/L	83
16) Dimethyl Sulfide	7.28	62	2499	0.3661	ug/L #	56
17) Iodomethane	7.55	142	506	0.8739	ug/L #	32
18) Methyl acetate	7.54	43	953	0.2810	ug/L #	66
19) Methylene Chloride	7.79	84	3151	0.4363	ug/L	69
20) Carbon Disulfide	7.86	76	8568	0.4167	ug/L	96
22) Methyl Tert Butyl Ether	8.00	73	6676	0.4215	ug/L #	68
23) trans-1,2-Dichloroethene	8.25	96	2699	0.3926	ug/L	77
24) n-Hexane	8.32	57	3415	0.4392	ug/L	70
26) Vinyl Acetate	8.83	43	1421	0.2892	ug/L #	78
27) 1,1-Dichloroethane	8.87	63	4613	0.4050	ug/L #	77
29) 2-Butanone	9.41	43	260	0.1526	ug/L #	57
31) 2,2-Dichloropropane	9.64	77	3882	0.4480	ug/L	72
32) cis-1,2-Dichloroethene	9.72	96	3041	0.4023	ug/L	76
33) Chloroform	9.92	83	5917	0.4561	ug/L #	88
35) Bromochloromethane	10.15	130	1328	0.3338	ug/L	91
36) Tetrahydrofuran	10.17	42	200	0.1782	ug/L #	41
38) 1,1,1-Trichloroethane	10.45	97	4059	0.3848	ug/L	83
39) Cyclohexane	10.49	56	3820	0.3916	ug/L	75
40) 1,1-Dichloropropene	10.64	75	3280	0.3679	ug/L	86
42) Carbon Tetrachloride	10.80	117	2236	0.2688	ug/L #	79
45) 1,2-Dichloroethane	10.97	62	3278	0.4061	ug/L #	68
46) Benzene	11.01	78	12127	0.4523	ug/L	84
47) Trichloroethene	11.76	130	2885	0.3953	ug/L	71
48) Methylcyclohexane	11.85	83	4224	0.4006	ug/L	83
49) 1,2-Dichloropropane	11.97	63	2324	0.3673	ug/L	84
51) Bromodichloromethane	12.27	83	3345	0.3745	ug/L	82
52) Dibromomethane	12.36	93	1227	0.3293	ug/L	99
53) 2-Chloroethyl Vinyl Ether	12.55	63	709	0.2857	ug/L #	41
55) cis-1,3-Dichloropropene	12.90	75	3464	0.3522	ug/L #	77

(#) = qualifier out of range (m) = manual integration
6M146224.D 8260BWT.M Thu Apr 06 14:57:49 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146224.D Vial: 4
Acq On : 5 Apr 2017 17:57 Operator: TMB
Sample : WG608938-03 0.4ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:57:47 2017 Quant Results File: 8260BWT.RES

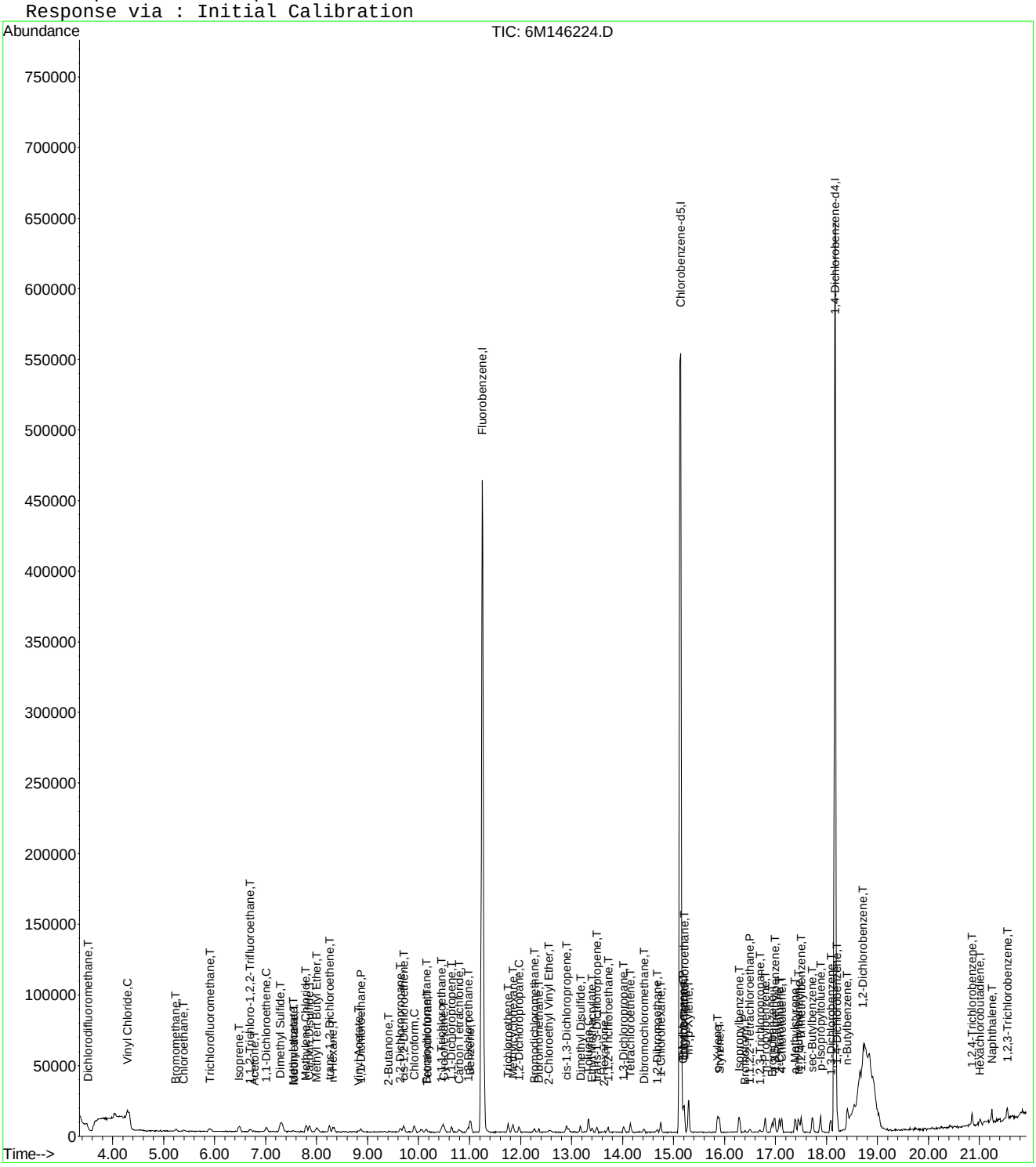
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	13.18	79	1794	0.2891 ug/L	#	47
59)	Toluene	13.33	91	11706	0.4227 ug/L		96
60)	Ethyl Methacrylate	13.40	69	2704	0.4035 ug/L		71
62)	trans-1,3-Dichloropropene	13.49	75	3001	0.3514 ug/L		88
63)	1,1,2-Trichloroethane	13.72	97	1935	0.3708 ug/L		97
64)	2-Hexanone	13.64	43	838	0.3344 ug/L	#	28
65)	1,3-Dichloropropane	14.02	76	3430	0.3915 ug/L		80
66)	Tetrachloroethene	14.16	166	2515	0.3748 ug/L		90
67)	Dibromochloromethane	14.42	129	2281	0.3536 ug/L		87
68)	1,2-Dibromoethane	14.68	107	2013	0.4017 ug/L		91
69)	1-Chlorohexane	14.75	91	3553	0.3973 ug/L		75
70)	Chlorobenzene	15.19	112	7763	0.4095 ug/L		93
71)	1,1,1,2-Tetrachloroethane	15.21	131	2463	0.3628 ug/L	#	36
72)	Ethylbenzene	15.20	106	4250	0.4142 ug/L		92
73)	m-,p-Xylene	15.29	106	10084	0.8222 ug/L		94
74)	o-Xylene	15.86	106	4446	0.3756 ug/L		95
75)	Styrene	15.90	104	7608	0.3829 ug/L		91
76)	Bromoform	16.40	173	1201	0.3055 ug/L	#	50
77)	Isopropylbenzene	16.29	105	12585	0.4249 ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.50	83	2532	0.4287 ug/L		74
81)	1,2,3-Trichloropropane	16.70	110	576	0.3302 ug/L	#	1
83)	n-Propylbenzene	16.80	91	14774	0.4303 ug/L	#	96
84)	Bromobenzene	16.93	156	3090	0.4006 ug/L		70
85)	1,3,5-Trimethylbenzene	16.99	105	10064	0.4136 ug/L		97
86)	2-Chlorotoluene	17.08	91	9917	0.4337 ug/L		94
87)	4-Chlorotoluene	17.12	91	8689	0.4300 ug/L		97
88)	a-Methylstyrene	17.38	118	4762	0.3539 ug/L		99
89)	tert-Butylbenzene	17.46	134	1902	0.3730 ug/L		48
90)	1,2,4-Trimethylbenzene	17.51	105	10085	0.4035 ug/L		86
91)	sec-Butylbenzene	17.72	105	13346	0.4447 ug/L		93
92)	p-Isopropyltoluene	17.88	119	10657	0.4222 ug/L		97
93)	1,3-Dichlorobenzene	18.09	146	6333	0.4347 ug/L		99
94)	1,4-Dichlorobenzene	18.21	146	5959	0.4045 ug/L		98
95)	n-Butylbenzene	18.41	91	10090	0.4377 ug/L		88
96)	1,2-Dichlorobenzene	18.71	146	5766	0.4223 ug/L		99
98)	1,2,4-Trichlorobenzene	20.86	180	4424	0.4428 ug/L		85
99)	Hexachlorobutadiene	21.01	225	1728	0.4528 ug/L		78
100)	Naphthalene	21.24	128	8285	0.4141 ug/L		94
101)	1,2,3-Trichlorobenzene	21.55	180	4343	0.4503 ug/L		83

(#) = qualifier out of range (m) = manual integration
6M146224.D 8260BWT.M Thu Apr 06 14:57:50 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146224.D Vial: 4
Acq On : 5 Apr 2017 17:57 Operator: TMB
Sample : WG608938-03 0.4ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 14:57 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146224.D Vial: 4
Acq On : 5 Apr 2017 17:57 Operator: TMB
Sample : WG608938-03 0.4ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3437	0.0	100	0.00
3	P	Chloromethane	-1.0000	-0.0968	0.0	0	0.02
4	C	Vinyl Chloride	0.4000	0.4976	-24.4#	100	0.02
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3254	0.0	0	0.02
7	T	Chloroethane	-1.0000	0.3772	0.0	100	0.02
8	T	Trichlorofluoromethane	0.4000	0.3721	7.0	100	0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.44#
10	T	Isoprene	-1.0000	0.3847	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.67#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3289	0.0	100	0.00
13	T	Acetone	-1.0000	0.5783	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.3991	0.2	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-7.12#
16	T	Dimethyl Sulfide	-1.0000	0.3661	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.8739	0.0	0	0.02
18	T	Methyl acetate	-1.0000	0.2810	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4363	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4167	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.97#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4215	0.0	100	-0.02
23	T	trans-1,2-Dichloroethene	0.4000	0.3926	1.9	100	0.00
24	T	n-Hexane	-1.0000	0.4392	0.0	100	-0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.66#
26	T	Vinyl Acetate	-1.0000	0.2892	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4051	-1.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.1526	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.52#
31	T	2,2-Dichloropropane	0.4000	0.4480	-12.0	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4023	-0.6	100	0.00
33	C	Chloroform	0.4000	0.4561	-14.0	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.05#
35	T	Bromochloromethane	0.4000	0.3338	16.6	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1782	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-10.21#
38	T	1,1,1-Trichloroethane	0.4000	0.3848	3.8	100	-0.01
39	T	Cyclohexane	-1.0000	0.3916	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3679	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.75#
42	T	Carbon Tetrachloride	-1.0000	0.2688	0.0	0	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.84#
44		Heptane	-1.0000	0.0000	0.0	0	-10.75#
45	T	1,2-Dichloroethane	0.4000	0.4061	-1.5	100	0.00
46	T	Benzene	0.4000	0.4523	-13.1	100	0.00
47	T	Trichloroethene	0.4000	0.3953	1.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4006	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3673	8.2	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.25#
51	T	Bromodichloromethane	0.4000	0.3745	6.4	100	0.00
52	T	Dibromomethane	0.4000	0.3293	17.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2857	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1142	0.0	100	0.00

(#) = Out of Range
6M146224.D 8260BWT.M Thu Apr 06 15:02:29 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146224.D Vial: 4
Acq On : 5 Apr 2017 17:57 Operator: TMB
Sample : WG608938-03 0.4ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3522	12.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2891	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-13.23#
59	C	Toluene	0.4000	0.4227	-5.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4035	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.24#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3514	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3708	7.3	100	0.00
64	T	2-Hexanone	-1.0000	0.3344	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.3915	2.1	100	0.00
66	T	Tetrachloroethene	0.4000	0.3748	6.3	100	0.00
67	T	Dibromochloromethane	0.4000	0.3535	11.6	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.4017	-0.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.3973	0.7	100	0.00
70	P	Chlorobenzene	0.4000	0.4096	-2.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3628	9.3	100	0.00
72	C	Ethylbenzene	0.4000	0.4142	-3.5	100	0.00
73	T	m-,p-Xylene	0.8000	0.8222	-2.8	100	0.00
74	T	o-Xylene	-1.0000	0.3756	0.0	100	0.00
75	T	Styrene	0.4000	0.3829	4.3	100	0.00
76	P	Bromoform	-1.0000	0.3055	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4287	-7.2	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.64#
81	T	1,2,3-Trichloropropane	-1.0000	0.3302	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.73#
83	T	n-Propylbenzene	0.4000	0.4303	-7.6	100	0.00
84	T	Bromobenzene	0.4000	0.4006	-0.1	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4136	-3.4	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4338	-8.4	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4300	-7.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3539	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3730	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4035	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4447	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4222	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4347	-8.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4045	-1.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4377	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4223	-5.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.70#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4428	-10.7	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4528	-13.2	100	0.00
100	T	Naphthalene	0.4000	0.4141	-3.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4503	-12.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M146224.D 8260BWT.M Thu Apr 06 15:02:29 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146225.D Vial: 5
Acq On : 5 Apr 2017 18:28 Operator: TMB
Sample : WG608938-04 1ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:57:51 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.25	96	632181	25.00	ug/L	0.00
57) Chlorobenzene-d5	15.14	117	444070	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	224733	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	10.21	111	3097	0.4799	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.92%#		
43) 1,2-Dichloroethane-d4	10.85	65	2998	0.4714	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.88%#		
58) Toluene-d8	13.24	98	11387	0.5025	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.00%#		
80) p-Bromofluorobenzene	16.64	95	4328	0.5071	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.04%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.52	85	9629	0.9593	ug/L #	85
3) Chloromethane	4.04	50	18344	0.8003	ug/L	93
4) Vinyl Chloride	4.28	62	12799	1.1160	ug/L	96
5) 1,3-Butadiene	4.34	54	8885	0.7170	ug/L	88
6) Bromomethane	5.24	94	4461	0.9009	ug/L	95
7) Chloroethane	5.40	64	4858	0.9845	ug/L	80
8) Trichlorofluoromethane	5.91	101	11643	0.9905	ug/L	95
9) Diethyl ether	6.44	59	24166	4.9333	ug/L	82
10) Isoprene	6.48	67	8997	0.9306	ug/L	79
11) Acrolein	6.68	56	678	1.2633	ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.68	101	6814	1.0241	ug/L	88
13) Acetone	6.77	43	1642	1.2036	ug/L #	48
14) 1,1-Dichloroethene	7.01	61	9339	0.9690	ug/L	75
15) Tert-Butyl Alcohol	7.10	59	3988	9.4246	ug/L #	57
16) Dimethyl Sulfide	7.27	62	6552	0.9514	ug/L	98
17) Iodomethane	7.55	142	2740	1.2641	ug/L	83
18) Methyl acetate	7.54	43	3105	0.9075	ug/L #	66
19) Methylene Chloride	7.80	84	7857	1.0783	ug/L	64
20) Carbon Disulfide	7.86	76	21108	1.0176	ug/L	95
21) Acrylonitrile	7.97	53	3676	2.3254	ug/L	83
22) Methyl Tert Butyl Ether	8.01	73	16436	1.0286	ug/L	88
23) trans-1,2-Dichloroethene	8.26	96	6924	0.9982	ug/L	75
24) n-Hexane	8.32	57	8671	1.1054	ug/L	80
25) Diisopropyl ether	8.66	45	90855	5.0880	ug/L #	90
26) Vinyl Acetate	8.83	43	4307	0.8689	ug/L #	78
27) 1,1-Dichloroethane	8.87	63	11386	0.9909	ug/L	100
28) Ethyl-Tert-Butyl ether	9.24	59	90588	5.0069	ug/L	90
29) 2-Butanone	9.42	43	1578	0.9178	ug/L #	57
30) Propionitrile	9.52	54	2484	4.4300	ug/L #	56
31) 2,2-Dichloropropane	9.65	77	10191	1.1658	ug/L	75
32) cis-1,2-Dichloroethene	9.72	96	7549	0.9899	ug/L	90
33) Chloroform	9.92	83	13696	1.0463	ug/L	91
34) 1-Bromopropane	10.06	122	1026	0.7587	ug/L	54
35) Bromochloromethane	10.15	130	3643	0.9075	ug/L	100
36) Tetrahydrofuran	10.17	42	6307	5.5703	ug/L	83
38) 1,1,1-Trichloroethane	10.45	97	10730	1.0083	ug/L	83
39) Cyclohexane	10.49	56	9783	0.9941	ug/L	78
40) 1,1-Dichloropropene	10.64	75	9021	1.0028	ug/L	85
41) Tert-Amyl-Methyl ether	10.75	73	86495	5.0351	ug/L	93
42) Carbon Tetrachloride	10.80	117	7124	0.8490	ug/L	95

(#) = qualifier out of range (m) = manual integration
6M146225.D 8260BWT.M Thu Apr 06 14:57:53 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146225.D Vial: 5
Acq On : 5 Apr 2017 18:28 Operator: TMB
Sample : WG608938-04 1ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:57:51 2017 Quant Results File: 8260BWT.RES

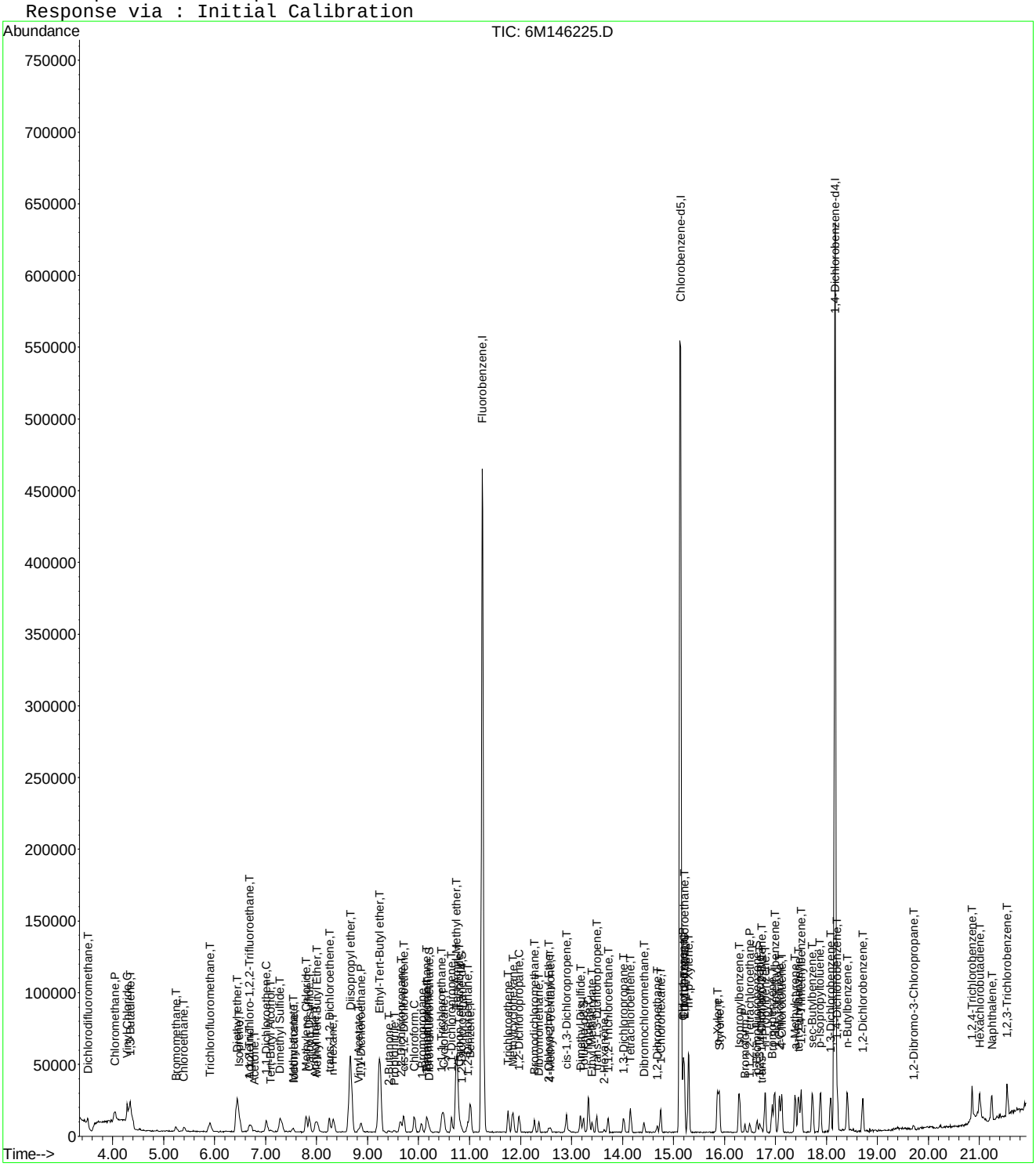
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.96	62	8252	1.0134	ug/L	#	79
46)	Benzene	11.01	78	27830	1.0289	ug/L		85
47)	Trichloroethene	11.76	130	7188	0.9763	ug/L		86
48)	Methylcyclohexane	11.85	83	10430	0.9805	ug/L		81
49)	1,2-Dichloropropane	11.97	63	6337	0.9927	ug/L		93
51)	Bromodichloromethane	12.27	83	8602	0.9546	ug/L		100
52)	Dibromomethane	12.36	93	3907	1.0392	ug/L		88
53)	2-Chloroethyl Vinyl Ether	12.55	63	2066	0.8251	ug/L		85
54)	4-Methyl-2-Pentanone	12.58	58	1310	0.7976	ug/L	#	38
55)	cis-1,3-Dichloropropene	12.90	75	9650	0.9724	ug/L	#	91
56)	Dimethyl Disulfide	13.18	79	5152	0.8229	ug/L		84
59)	Toluene	13.33	91	28882	1.0403	ug/L		97
60)	Ethyl Methacrylate	13.40	69	6287	0.9358	ug/L		73
62)	trans-1,3-Dichloropropene	13.49	75	8281	0.9673	ug/L		98
63)	1,1,2-Trichloroethane	13.72	97	5263	1.0059	ug/L		98
64)	2-Hexanone	13.64	43	2640	1.0508	ug/L		100
65)	1,3-Dichloropropane	14.02	76	9029	1.0281	ug/L		71
66)	Tetrachloroethene	14.16	166	6743	1.0023	ug/L		96
67)	Dibromochloromethane	14.42	129	6126	0.9472	ug/L		94
68)	1,2-Dibromoethane	14.68	107	5001	0.9955	ug/L		97
69)	1-Chlorohexane	14.75	91	8893	0.9919	ug/L		81
70)	Chlorobenzene	15.19	112	19139	1.0072	ug/L		80
71)	1,1,1,2-Tetrachloroethane	15.21	131	6334	0.9308	ug/L	#	45
72)	Ethylbenzene	15.21	106	9526	0.9260	ug/L		96
73)	m-,p-Xylene	15.29	106	24042	1.9553	ug/L		95
74)	o-Xylene	15.86	106	11918	1.0045	ug/L		97
75)	Styrene	15.90	104	18813	0.9445	ug/L		97
76)	Bromoform	16.40	173	3544	0.8992	ug/L	#	94
77)	Isopropylbenzene	16.29	105	30143	1.0152	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.50	83	5946	1.0159	ug/L		93
81)	1,2,3-Trichloropropane	16.69	110	1751	1.0131	ug/L	#	44
82)	trans-1,4-Dichloro-2-Buten	16.73	53	1111	0.8939	ug/L	#	1
83)	n-Propylbenzene	16.80	91	35315	1.0379	ug/L		100
84)	Bromobenzene	16.93	156	7797	1.0200	ug/L		78
85)	1,3,5-Trimethylbenzene	16.99	105	24668	1.0230	ug/L		97
86)	2-Chlorotoluene	17.08	91	24173	1.0670	ug/L		97
87)	4-Chlorotoluene	17.12	91	21009	1.0492	ug/L		97
88)	a-Methylstyrene	17.38	118	11540	0.8654	ug/L		96
89)	tert-Butylbenzene	17.46	134	4954	0.9805	ug/L		75
90)	1,2,4-Trimethylbenzene	17.51	105	25152	1.0156	ug/L		87
91)	sec-Butylbenzene	17.72	105	32001	1.0761	ug/L		95
92)	p-Isopropyltoluene	17.87	119	25877	1.0345	ug/L		98
93)	1,3-Dichlorobenzene	18.08	146	14335	0.9930	ug/L		96
94)	1,4-Dichlorobenzene	18.21	146	14500	0.9933	ug/L	#	52
95)	n-Butylbenzene	18.42	91	23762	1.0403	ug/L		100
96)	1,2-Dichlorobenzene	18.71	146	13818	1.0212	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.71	75	1139	1.0744	ug/L		87
98)	1,2,4-Trichlorobenzene	20.86	180	9978	1.0078	ug/L		93
99)	Hexachlorobutadiene	21.01	225	4008	1.0599	ug/L		89
100)	Naphthalene	21.24	128	19584	0.9879	ug/L		98
101)	1,2,3-Trichlorobenzene	21.54	180	10033	1.0497	ug/L		89

(#) = qualifier out of range (m) = manual integration
6M146225.D 8260BWT.M Thu Apr 06 14:57:54 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146225.D Vial: 5
Acq On : 5 Apr 2017 18:28 Operator: TMB
Sample : WG608938-04 1ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 14:57 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146225.D Vial: 5
Acq On : 5 Apr 2017 18:28 Operator: TMB
Sample : WG608938-04 1ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9593	4.1	100	0.00
3	P	Chloromethane	1.0000	0.8003	20.0	100	0.02
4	C	Vinyl Chloride	1.0000	1.1160	-11.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.7170	0.0	0	0.03
6	T	Bromomethane	1.0000	0.9009	9.9	100	0.03
7	T	Chloroethane	1.0000	0.9845	1.5	100	0.02
8	T	Trichlorofluoromethane	1.0000	0.9905	0.9	100	0.02
9	T	Diethyl ether	5.0000	4.9333	1.3	100	0.00
10	T	Isoprene	-1.0000	0.9306	0.0	100	0.00
11	T	Acrolein	-1.0000	1.2633	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0241	-2.4	100	0.00
13	T	Acetone	-1.0000	1.2036	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	0.9690	3.1	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	9.4246	0.0	100	-0.02
16	T	Dimethyl Sulfide	-1.0000	0.9514	0.0	100	0.00
17	T	Iodomethane	1.0000	1.2641	-26.4#	100	0.02
18	T	Methyl acetate	-1.0000	0.9075	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0783	-7.8	100	0.00
20	T	Carbon Disulfide	1.0000	1.0176	-1.8	100	0.00
21	T	Acrylonitrile	2.5000	2.3254	7.0	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	1.0286	-2.9	100	-0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9982	0.2	100	0.00
24	T	n-Hexane	-1.0000	1.1054	0.0	100	-0.01
25	T	Diisopropyl ether	5.0000	5.0880	-1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8689	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9909	0.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.0069	-0.1	100	0.00
29	T	2-Butanone	-1.0000	0.9178	0.0	100	0.00
30	T	Propionitrile	5.0000	4.4300	11.4	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.1658	-16.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9899	1.0	100	0.00
33	C	Chloroform	1.0000	1.0463	-4.6	100	0.00
34		1-Bromopropane	1.0000	0.7587	24.1#	100	0.00
35	T	Bromochloromethane	1.0000	0.9075	9.2	100	0.00
36	T	Tetrahydrofuran	5.0000	5.5703	-11.4	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4799	4.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0083	-0.8	100	-0.01
39	T	Cyclohexane	1.0000	0.9941	0.6	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0028	-0.3	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0351	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.8490	15.1	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.4714	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	1.0000	1.0134	-1.3	100	0.00
46	T	Benzene	1.0000	1.0289	-2.9	100	0.00
47	T	Trichloroethene	1.0000	0.9763	2.4	100	0.00
48	T	Methylcyclohexane	-1.0000	0.9805	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9927	0.7	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.25#
51	T	Bromodichloromethane	1.0000	0.9546	4.5	100	0.00
52	T	Dibromomethane	1.0000	1.0392	-3.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8251	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7976	0.0	100	0.00

(#) = Out of Range
6M146225.D 8260BWT.M Thu Apr 06 15:02:41 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146225.D Vial: 5
Acq On : 5 Apr 2017 18:28 Operator: TMB
Sample : WG608938-04 1ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9724	2.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8229	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5025	-0.5	100	0.00
59	C	Toluene	1.0000	1.0403	-4.0	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.9358	6.4	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.10
62	T	trans-1,3-Dichloropropene	1.0000	0.9673	3.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	1.0059	-0.6	100	0.00
64	T	2-Hexanone	-1.0000	1.0508	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0281	-2.8	100	0.00
66	T	Tetrachloroethene	1.0000	1.0023	-0.2	100	0.00
67	T	Dibromochloromethane	1.0000	0.9472	5.3	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9954	0.5	100	0.00
69	T	1-Chlorohexane	1.0000	0.9919	0.8	100	0.00
70	P	Chlorobenzene	1.0000	1.0072	-0.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9308	6.9	100	0.00
72	C	Ethylbenzene	1.0000	0.9260	7.4	100	0.00
73	T	m-,p-Xylene	2.0000	1.9553	2.2	100	0.00
74	T	o-Xylene	1.0000	1.0045	-0.4	100	0.00
75	T	Styrene	1.0000	0.9445	5.5	100	0.00
76	P	Bromoform	1.0000	0.8992	10.1	100	0.00
77	T	Isopropylbenzene	1.0000	1.0152	-1.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0159	-1.6	100	0.00
80	S	p-Bromofluorobenzene	0.5000	0.5071	-1.4	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	1.0131	-1.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.8939	10.6	100	0.00
83	T	n-Propylbenzene	1.0000	1.0379	-3.8	100	0.00
84	T	Bromobenzene	1.0000	1.0200	-2.0	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0230	-2.3	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0670	-6.7	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0492	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8654	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9805	2.0	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0156	-1.6	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0761	-7.6	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0345	-3.4	100	-0.01
93	T	1,3-Dichlorobenzene	1.0000	0.9930	0.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9933	0.7	100	0.00
95	T	n-Butylbenzene	1.0000	1.0403	-4.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0212	-2.1	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.0744	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	1.0078	-0.8	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0599	-6.0	100	0.00
100	T	Naphthalene	1.0000	0.9879	1.2	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0497	-5.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M146225.D 8260BWT.M Thu Apr 06 15:02:41 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146226.D Vial: 6
Acq On : 5 Apr 2017 19:00 Operator: TMB
Sample : WG608938-05 2ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:57:55 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	11.25	96	622575	25.00	ug/L		0.00
57) Chlorobenzene-d5	15.14	117	435125	25.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	222815	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	10.21	111	5872	0.9239	ug/L		0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.68%#			
43) 1,2-Dichloroethane-d4	10.85	65	6086	0.9716	ug/L		0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.88%#			
58) Toluene-d8	13.23	98	22416	1.0096	ug/L		0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.04%#			
80) p-Bromofluorobenzene	16.64	95	8846	1.0453	ug/L		0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.20%#			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.52	85	17204	1.7405	ug/L		90
3) Chloromethane	4.04	50	31810	2.0127	ug/L		90
4) Vinyl Chloride	4.28	62	21813	1.9313	ug/L		100
5) 1,3-Butadiene	4.32	54	13563	1.8365	ug/L		98
6) Bromomethane	5.24	94	7916	1.6233	ug/L		98
7) Chloroethane	5.41	64	9130	1.8788	ug/L		79
8) Trichlorofluoromethane	5.91	101	21485	1.8560	ug/L		98
9) Diethyl ether	6.44	59	119329	24.7359	ug/L		81
10) Isoprene	6.48	67	17497	1.8377	ug/L		78
11) Acrolein	6.67	56	6469	12.2399	ug/L		91
12) 1,1,2-Trichloro-1,2,2-Trif	6.70	101	12320	1.8801	ug/L		96
13) Acetone	6.77	43	2910	2.1660	ug/L		88
14) 1,1-Dichloroethene	7.02	61	18326	1.9308	ug/L		82
15) Tert-Butyl Alcohol	7.11	59	21089	50.6073	ug/L		91
16) Dimethyl Sulfide	7.28	62	13289	1.9594	ug/L		85
17) Iodomethane	7.55	142	6278	1.9004	ug/L		87
18) Methyl acetate	7.54	43	6217	1.8451	ug/L	#	93
19) Methylene Chloride	7.80	84	14280	1.9900	ug/L		58
20) Carbon Disulfide	7.86	76	40699	1.9924	ug/L		98
21) Acrylonitrile	7.97	53	18438	11.8437	ug/L		95
22) Methyl Tert Butyl Ether	8.01	73	30909	1.9643	ug/L		90
23) trans-1,2-Dichloroethene	8.26	96	13599	1.9908	ug/L		73
24) n-Hexane	8.33	57	15204	1.9682	ug/L		83
25) Diisopropyl ether	8.66	45	450794	25.6347	ug/L	#	90
26) Vinyl Acetate	8.82	43	6597	1.3515	ug/L	#	78
27) 1,1-Dichloroethane	8.87	63	22151	1.9576	ug/L		100
28) Ethyl-Tert-Butyl ether	9.24	59	449659	25.2364	ug/L		91
29) 2-Butanone	9.42	43	3106	1.8344	ug/L		84
30) Propionitrile	9.52	54	13656	24.7299	ug/L		97
31) 2,2-Dichloropropane	9.64	77	17425	2.0241	ug/L		79
32) cis-1,2-Dichloroethene	9.72	96	14760	1.9654	ug/L		85
33) Chloroform	9.92	83	24171	1.8751	ug/L		93
34) 1-Bromopropane	10.05	122	2578	1.9358	ug/L		99
35) Bromochloromethane	10.15	130	7493	1.8954	ug/L		94
36) Tetrahydrofuran	10.18	42	27217	24.4090	ug/L	#	70
38) 1,1,1-Trichloroethane	10.46	97	20272	1.9343	ug/L		87
39) Cyclohexane	10.49	56	18307	1.8890	ug/L		77
40) 1,1-Dichloropropene	10.65	75	17358	1.9593	ug/L		84
41) Tert-Amyl-Methyl ether	10.75	73	419848	24.8173	ug/L		93
42) Carbon Tetrachloride	10.80	117	13633	1.6498	ug/L		96

(#) = qualifier out of range (m) = manual integration
6M146226.D 8260BWT.M Thu Apr 06 14:57:58 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146226.D Vial: 6
Acq On : 5 Apr 2017 19:00 Operator: TMB
Sample : WG608938-05 2ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:57:55 2017 Quant Results File: 8260BWT.RES

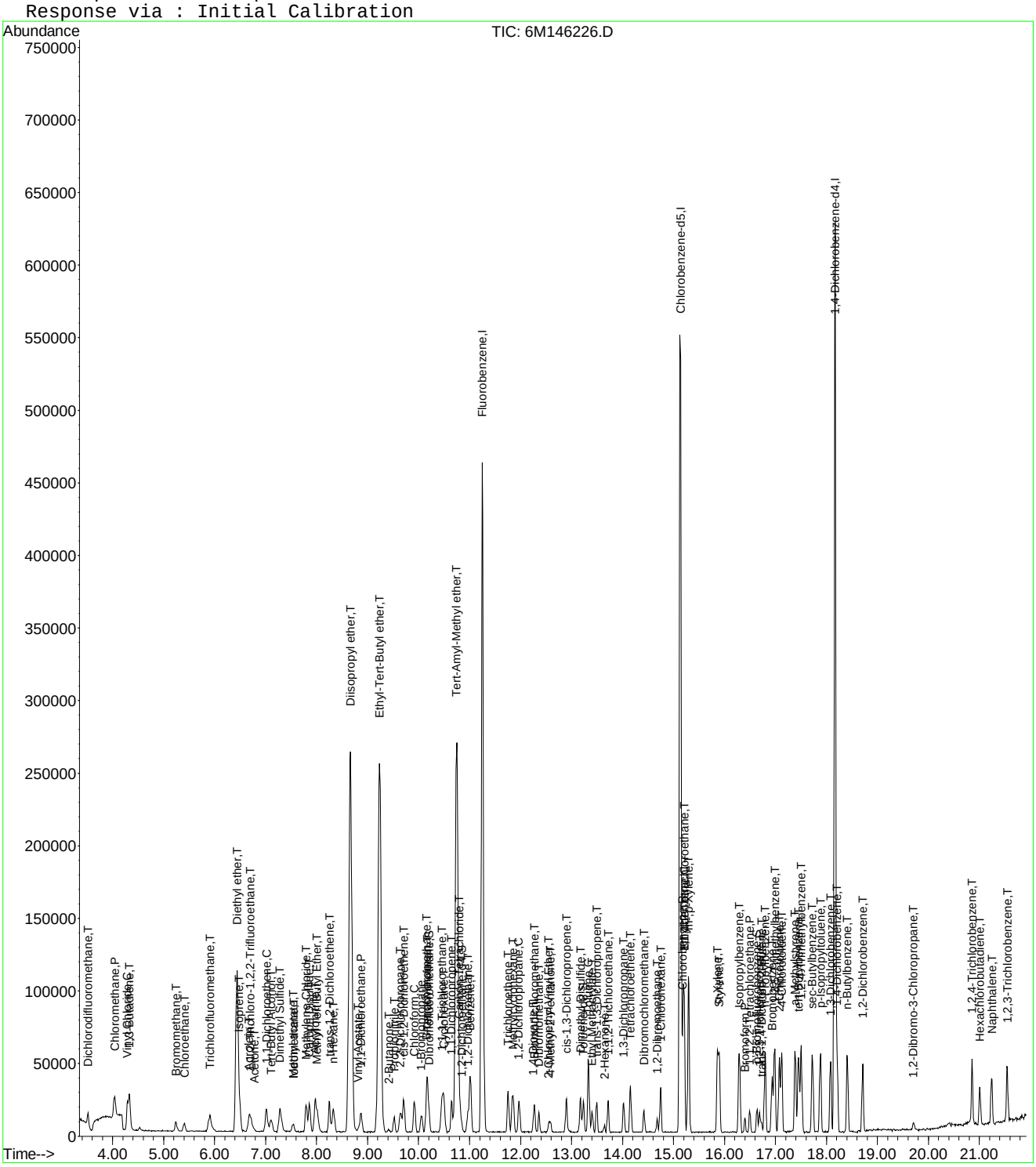
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.96	62	15260	1.9029	ug/L		88
46)	Benzene	11.01	78	53642	2.0138	ug/L		84
47)	Trichloroethene	11.76	130	13662	1.8843	ug/L		86
48)	Methylcyclohexane	11.85	83	20180	1.9264	ug/L		83
49)	1,2-Dichloropropane	11.96	63	12672	2.0157	ug/L		96
50)	1,4-Dioxane	12.25	88	2094	45.8104	ug/L		79
51)	Bromodichloromethane	12.27	83	16986	1.9140	ug/L		100
52)	Dibromomethane	12.36	93	7229	1.9525	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.54	63	3804	1.5427	ug/L		93
54)	4-Methyl-2-Pentanone	12.59	58	2633	1.6278	ug/L		97
55)	cis-1,3-Dichloropropene	12.90	75	18417	1.8845	ug/L		93
56)	Dimethyl Disulfide	13.18	79	10342	1.6774	ug/L		85
59)	Toluene	13.33	91	54153	1.9906	ug/L		99
60)	Ethyl Methacrylate	13.40	69	12139	1.8439	ug/L		74
62)	trans-1,3-Dichloropropene	13.49	75	14848	1.7701	ug/L		98
63)	1,1,2-Trichloroethane	13.72	97	10051	1.9605	ug/L		100
64)	2-Hexanone	13.65	43	4642	1.8856	ug/L		83
65)	1,3-Dichloropropane	14.03	76	16522	1.9199	ug/L		72
66)	Tetrachloroethene	14.16	166	13068	1.9824	ug/L		97
67)	Dibromochloromethane	14.42	129	11966	1.8881	ug/L		99
68)	1,2-Dibromoethane	14.68	107	9631	1.9565	ug/L		98
69)	1-Chlorohexane	14.75	91	16906	1.9245	ug/L		76
70)	Chlorobenzene	15.18	112	35469	1.9050	ug/L		90
71)	1,1,1,2-Tetrachloroethane	15.21	131	12013	1.8016	ug/L		88
72)	Ethylbenzene	15.21	106	18719	1.8571	ug/L		98
73)	m-,p-Xylene	15.29	106	46470	3.8571	ug/L		92
74)	o-Xylene	15.86	106	22349	1.9223	ug/L		97
75)	Styrene	15.89	104	37462	1.9194	ug/L		98
76)	Bromoform	16.40	173	6961	1.8024	ug/L		93
77)	Isopropylbenzene	16.29	105	56507	1.9422	ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.50	83	11588	1.9969	ug/L		99
81)	1,2,3-Trichloropropane	16.69	110	3156	1.8416	ug/L	#	45
82)	trans-1,4-Dichloro-2-Buten	16.73	53	2077	1.6855	ug/L	#	1
83)	n-Propylbenzene	16.79	91	68212	2.0219	ug/L		100
84)	Bromobenzene	16.94	156	14979	1.9764	ug/L		81
85)	1,3,5-Trimethylbenzene	16.99	105	48272	2.0191	ug/L		98
86)	2-Chlorotoluene	17.08	91	45900	2.0434	ug/L		97
87)	4-Chlorotoluene	17.12	91	40071	2.0184	ug/L		97
88)	a-Methylstyrene	17.38	118	23772	1.7980	ug/L		98
89)	tert-Butylbenzene	17.46	134	10046	2.0053	ug/L		75
90)	1,2,4-Trimethylbenzene	17.51	105	48653	1.9815	ug/L		86
91)	sec-Butylbenzene	17.72	105	59307	2.0115	ug/L		96
92)	p-Isopropyltoluene	17.88	119	48956	1.9740	ug/L		96
93)	1,3-Dichlorobenzene	18.08	146	28643	2.0012	ug/L		99
94)	1,4-Dichlorobenzene	18.21	146	28060	1.9387	ug/L		82
95)	n-Butylbenzene	18.41	91	44182	1.9509	ug/L		97
96)	1,2-Dichlorobenzene	18.71	146	25901	1.9307	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.70	75	1831	1.7419	ug/L		85
98)	1,2,4-Trichlorobenzene	20.86	180	18897	1.9251	ug/L		96
99)	Hexachlorobutadiene	21.01	225	7029	1.8748	ug/L		95
100)	Naphthalene	21.24	128	36518	1.8580	ug/L		99
101)	1,2,3-Trichlorobenzene	21.55	180	17908	1.8898	ug/L		95

(#) = qualifier out of range (m) = manual integration
6M146226.D 8260BWT.M Thu Apr 06 14:57:58 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146226.D Vial: 6
Acq On : 5 Apr 2017 19:00 Operator: TMB
Sample : WG608938-05 2ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 14:57 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146226.D Vial: 6
Acq On : 5 Apr 2017 19:00 Operator: TMB
Sample : WG608938-05 2ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7405	13.0	100	0.00
3	P	Chloromethane	2.0000	2.0127	-0.6	100	0.02
4	C	Vinyl Chloride	2.0000	1.9313	3.4	100	0.01
5	T	1,3-Butadiene	-1.0000	1.8365	0.0	0	0.01
6	T	Bromomethane	2.0000	1.6233	18.8	100	0.03
7	T	Chloroethane	2.0000	1.8788	6.1	100	0.03
8	T	Trichlorofluoromethane	2.0000	1.8560	7.2	100	0.02
9	T	Diethyl ether	25.0000	24.7359	1.1	100	0.00
10	T	Isoprene	-1.0000	1.8377	0.0	100	0.00
11	T	Acrolein	12.5000	12.2399	2.1	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8801	6.0	100	0.02
13	T	Acetone	-1.0000	2.1660	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	1.9308	3.5	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	50.6073	-1.2	100	-0.01
16	T	Dimethyl Sulfide	-1.0000	1.9594	0.0	100	0.00
17	T	Iodomethane	2.0000	1.9004	5.0	100	0.02
18	T	Methyl acetate	-1.0000	1.8451	0.0	100	0.00
19	T	Methylene Chloride	2.0000	1.9900	0.5	100	0.00
20	T	Carbon Disulfide	2.0000	1.9924	0.4	100	0.00
21	T	Acrylonitrile	12.5000	11.8437	5.3	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9643	1.8	100	-0.01
23	T	trans-1,2-Dichloroethene	2.0000	1.9908	0.5	100	0.00
24	T	n-Hexane	-1.0000	1.9682	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.6347	-2.5	100	0.00
26	T	Vinyl Acetate	-1.0000	1.3515	0.0	100	-0.01
27	P	1,1-Dichloroethane	2.0000	1.9576	2.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.2364	-0.9	100	0.00
29	T	2-Butanone	-1.0000	1.8344	0.0	100	0.00
30	T	Propionitrile	25.0000	24.7299	1.1	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.0241	-1.2	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9654	1.7	100	0.00
33	C	Chloroform	2.0000	1.8751	6.2	100	0.00
34		1-Bromopropane	2.0000	1.9358	3.2	100	0.00
35	T	Bromochloromethane	2.0000	1.8954	5.2	100	0.00
36	T	Tetrahydrofuran	25.0000	24.4090	2.4	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9239	7.6	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9343	3.3	100	0.00
39	T	Cyclohexane	2.0000	1.8890	5.5	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9593	2.0	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	24.8173	0.7	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.6498	17.5	100	-0.01
43	S	1,2-Dichloroethane-d4	1.0000	0.9716	2.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	2.0000	1.9029	4.9	100	0.00
46	T	Benzene	2.0000	2.0138	-0.7	100	0.00
47	T	Trichloroethene	2.0000	1.8843	5.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.9264	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0158	-0.8	100	-0.01
50	T	1,4-Dioxane	-1.0000	45.8104	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	1.9140	4.3	100	0.00
52	T	Dibromomethane	2.0000	1.9525	2.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.5427	22.9#	100	-0.01
54	T	4-Methyl-2-Pentanone	-1.0000	1.6278	0.0	100	0.00

(#) = Out of Range
6M146226.D 8260BWT.M Thu Apr 06 15:02:50 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146226.D Vial: 6
Acq On : 5 Apr 2017 19:00 Operator: TMB
Sample : WG608938-05 2ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8845	5.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6774	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0096	-1.0	100	0.00
59	C	Toluene	2.0000	1.9906	0.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.8439	7.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.09
62	T	trans-1,3-Dichloropropene	2.0000	1.7701	11.5	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9605	2.0	100	0.00
64	T	2-Hexanone	-1.0000	1.8856	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	1.9199	4.0	100	0.00
66	T	Tetrachloroethene	2.0000	1.9824	0.9	100	0.00
67	T	Dibromochloromethane	2.0000	1.8882	5.6	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9565	2.2	100	0.00
69	T	1-Chlorohexane	2.0000	1.9245	3.8	100	0.00
70	P	Chlorobenzene	2.0000	1.9050	4.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.8016	9.9	100	0.00
72	C	Ethylbenzene	2.0000	1.8571	7.1	100	0.00
73	T	m-,p-Xylene	4.0000	3.8571	3.6	100	0.00
74	T	o-Xylene	2.0000	1.9223	3.9	100	0.00
75	T	Styrene	2.0000	1.9194	4.0	100	-0.01
76	P	Bromoform	2.0000	1.8024	9.9	100	0.00
77	T	Isopropylbenzene	2.0000	1.9422	2.9	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9969	0.2	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0453	-4.5	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.8416	7.9	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.6855	15.7	100	0.00
83	T	n-Propylbenzene	2.0000	2.0219	-1.1	100	0.00
84	T	Bromobenzene	2.0000	1.9764	1.2	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0191	-1.0	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0434	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0184	-0.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7980	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0053	-0.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.9815	0.9	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0115	-0.6	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.9740	1.3	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0012	-0.1	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.9387	3.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.9509	2.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.9307	3.5	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.7419	12.9	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.9251	3.7	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.8748	6.3	100	0.00
100	T	Naphthalene	2.0000	1.8580	7.1	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.8898	5.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M146226.D 8260BWT.M Thu Apr 06 15:02:51 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146227.D Vial: 7
Acq On : 5 Apr 2017 19:31 Operator: TMB
Sample : WG608938-06 5ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:57:59 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.25	96	624930	25.00	ug/L	0.00
57) Chlorobenzene-d5	15.14	117	437844	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	229708	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	10.21	111	16009	2.5095	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.04%#			
43) 1,2-Dichloroethane-d4	10.85	65	15355	2.4422	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 9.76%#			
58) Toluene-d8	13.24	98	57180	2.5593	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.24%#			
80) p-Bromofluorobenzene	16.64	95	20953	2.4017	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.60%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.52	85	45599	4.5957	ug/L	94
3) Chloromethane	4.04	50	70172	5.3733	ug/L	92
4) Vinyl Chloride	4.28	62	52481	4.6291	ug/L	100
5) 1,3-Butadiene	4.33	54	27485	5.0651	ug/L	93
6) Bromomethane	5.24	94	22408	4.5778	ug/L	98
7) Chloroethane	5.41	64	24876	5.0998	ug/L	86
8) Trichlorofluoromethane	5.91	101	57306	4.9318	ug/L	99
9) Diethyl ether	6.44	59	241182	49.8065	ug/L	81
10) Isoprene	6.48	67	45799	4.7920	ug/L	80
11) Acrolein	6.67	56	13253	24.9813	ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.69	101	32606	4.9572	ug/L	97
13) Acetone	6.77	43	7120	5.2798	ug/L	90
14) 1,1-Dichloroethene	7.01	61	48384	5.0784	ug/L	84
15) Tert-Butyl Alcohol	7.11	59	45515	108.8107	ug/L	90
16) Dimethyl Sulfide	7.28	62	33336	4.8967	ug/L	83
17) Iodomethane	7.54	142	18689	4.0940	ug/L	98
18) Methyl acetate	7.53	43	16127	4.7683	ug/L	90
19) Methylene Chloride	7.80	84	35921	4.9870	ug/L	61
20) Carbon Disulfide	7.86	76	101736	4.9617	ug/L	99
21) Acrylonitrile	7.97	53	39515	25.2869	ug/L	94
22) Methyl Tert Butyl Ether	8.01	73	82575	5.2279	ug/L	89
23) trans-1,2-Dichloroethene	8.26	96	34052	4.9661	ug/L	78
24) n-Hexane	8.33	57	39086	5.0408	ug/L	81
25) Diisopropyl ether	8.66	45	886670	50.2311	ug/L #	90
26) Vinyl Acetate	8.83	43	24007	4.8995	ug/L #	91
27) 1,1-Dichloroethane	8.87	63	57099	5.0271	ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	897158	50.1618	ug/L	90
29) 2-Butanone	9.42	43	8484	4.9917	ug/L	88
30) Propionitrile	9.52	54	29088	52.4775	ug/L	99
31) 2,2-Dichloropropane	9.65	77	44879	5.1936	ug/L	78
32) cis-1,2-Dichloroethene	9.71	96	37579	4.9850	ug/L	89
33) Chloroform	9.92	83	60253	4.6565	ug/L	95
34) 1-Bromopropane	10.06	122	6559	4.9064	ug/L	100
35) Bromochloromethane	10.15	130	20571	5.1839	ug/L	98
36) Tetrahydrofuran	10.17	42	56370	50.3637	ug/L #	72
38) 1,1,1-Trichloroethane	10.46	97	51277	4.8743	ug/L	91
39) Cyclohexane	10.49	56	47949	4.9291	ug/L	78
40) 1,1-Dichloropropene	10.64	75	44354	4.9877	ug/L	81
41) Tert-Amyl-Methyl ether	10.75	73	851603	50.1488	ug/L	93
42) Carbon Tetrachloride	10.80	117	40401	4.8706	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M146227.D 8260BWT.M Thu Apr 06 14:58:02 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146227.D Vial: 7
Acq On : 5 Apr 2017 19:31 Operator: TMB
Sample : WG608938-06 5ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:57:59 2017 Quant Results File: 8260BWT.RES

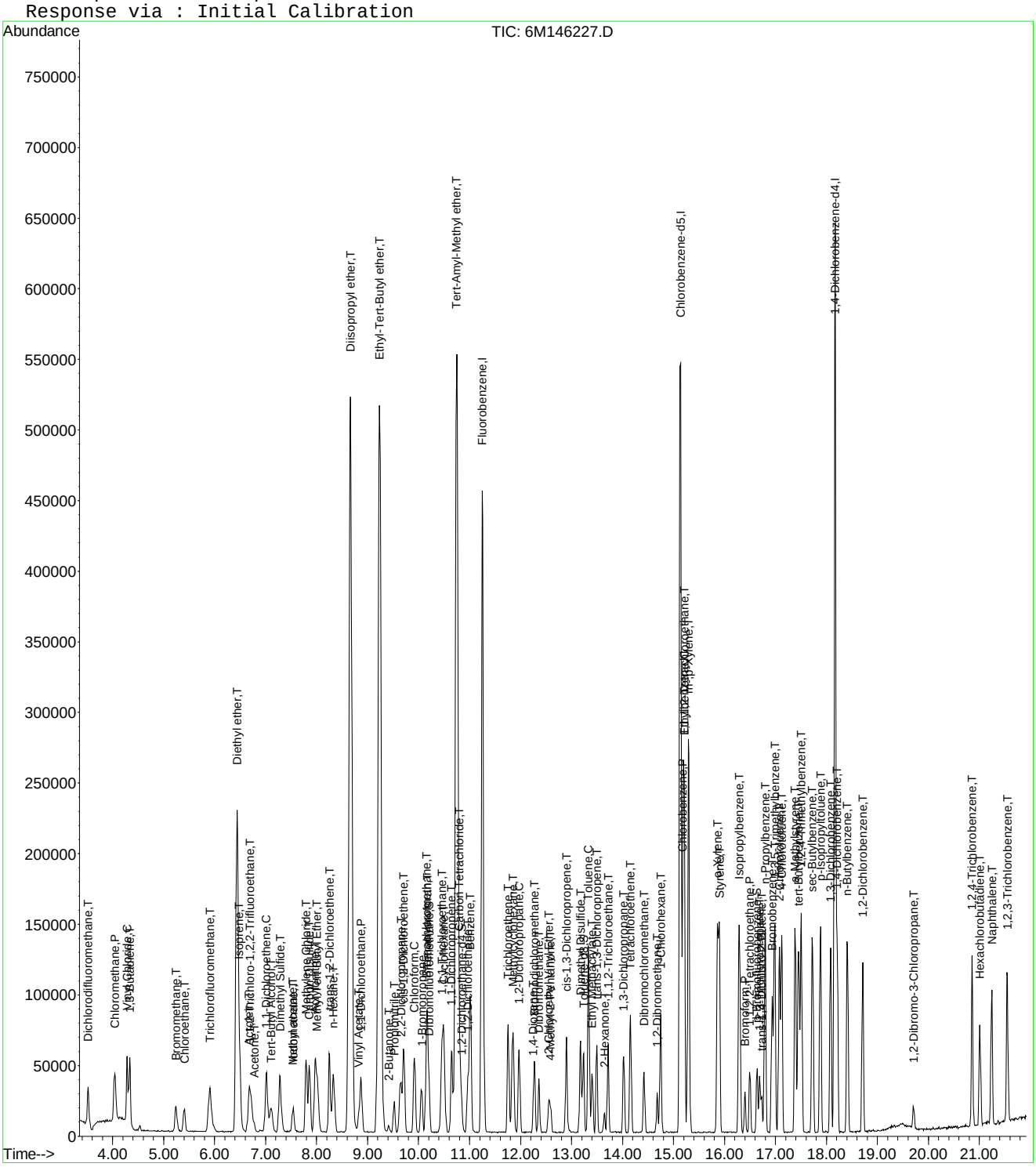
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.96	62	40993	5.0925	ug/L		88
46)	Benzene	11.01	78	132914	4.9709	ug/L		86
47)	Trichloroethene	11.76	130	36216	4.9761	ug/L		84
48)	Methylcyclohexane	11.85	83	51654	4.9123	ug/L		82
49)	1,2-Dichloropropane	11.97	63	32123	5.0906	ug/L		96
50)	1,4-Dioxane	12.25	88	4272	93.1064	ug/L		79
51)	Bromodichloromethane	12.27	83	44761	5.0248	ug/L		99
52)	Dibromomethane	12.36	93	19386	5.2162	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.55	63	12476	5.0404	ug/L		98
54)	4-Methyl-2-Pentanone	12.58	58	7903	4.8674	ug/L		86
55)	cis-1,3-Dichloropropene	12.90	75	50089	5.1061	ug/L		95
56)	Dimethyl Disulfide	13.18	79	28390	4.5874	ug/L		89
59)	Toluene	13.33	91	137485	5.0224	ug/L		100
60)	Ethyl Methacrylate	13.40	69	33232	5.0167	ug/L		72
62)	trans-1,3-Dichloropropene	13.49	75	42828	5.0741	ug/L		96
63)	1,1,2-Trichloroethane	13.72	97	26530	5.1428	ug/L		99
64)	2-Hexanone	13.65	43	12468	5.0332	ug/L		86
65)	1,3-Dichloropropane	14.02	76	44093	5.0920	ug/L		70
66)	Tetrachloroethene	14.16	166	33551	5.0579	ug/L		98
67)	Dibromochloromethane	14.42	129	31682	4.9681	ug/L		99
68)	1,2-Dibromoethane	14.68	107	24528	4.9517	ug/L		99
69)	1-Chlorohexane	14.75	91	43721	4.9460	ug/L		79
70)	Chlorobenzene	15.18	112	91449	4.8810	ug/L		100
71)	1,1,1,2-Tetrachloroethane	15.21	131	32496	4.8433	ug/L		89
72)	Ethylbenzene	15.21	106	48984	4.8296	ug/L		96
73)	m-,p-Xylene	15.29	106	119341	9.8441	ug/L		94
74)	o-Xylene	15.86	106	57354	4.9026	ug/L		97
75)	Styrene	15.90	104	98078	4.9940	ug/L		95
76)	Bromoform	16.40	173	18699	4.8117	ug/L		99
77)	Isopropylbenzene	16.29	105	146585	5.0070	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.50	83	30970	5.1767	ug/L		98
81)	1,2,3-Trichloropropane	16.69	110	9050	5.1225	ug/L	#	50
82)	trans-1,4-Dichloro-2-Buten	16.73	53	6208	4.8867	ug/L	#	1
83)	n-Propylbenzene	16.80	91	176740	5.0817	ug/L		100
84)	Bromobenzene	16.93	156	38734	4.9575	ug/L		83
85)	1,3,5-Trimethylbenzene	16.99	105	121939	4.9473	ug/L		99
86)	2-Chlorotoluene	17.08	91	114766	4.9559	ug/L		97
87)	4-Chlorotoluene	17.12	91	102125	4.9897	ug/L		97
88)	a-Methylstyrene	17.38	118	66394	4.8711	ug/L		96
89)	tert-Butylbenzene	17.46	134	24993	4.8393	ug/L		71
90)	1,2,4-Trimethylbenzene	17.51	105	126114	4.9821	ug/L		87
91)	sec-Butylbenzene	17.72	105	152633	5.0216	ug/L		97
92)	p-Isopropyltoluene	17.88	119	126283	4.9391	ug/L		97
93)	1,3-Dichlorobenzene	18.08	146	71556	4.8495	ug/L		97
94)	1,4-Dichlorobenzene	18.21	146	72485	4.8577	ug/L		94
95)	n-Butylbenzene	18.41	91	115961	4.9668	ug/L		99
96)	1,2-Dichlorobenzene	18.71	146	67580	4.8863	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.71	75	5531	5.1041	ug/L		98
98)	1,2,4-Trichlorobenzene	20.86	180	48642	4.8067	ug/L		98
99)	Hexachlorobutadiene	21.01	225	19187	4.9642	ug/L		98
100)	Naphthalene	21.24	128	101621	5.0152	ug/L		99
101)	1,2,3-Trichlorobenzene	21.55	180	45886	4.6970	ug/L		99

(#) = qualifier out of range (m) = manual integration
6M146227.D 8260BWT.M Thu Apr 06 14:58:02 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146227.D Vial: 7
Acq On : 5 Apr 2017 19:31 Operator: TMB
Sample : WG608938-06 5ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 14:58 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



6M146227.D 8260BWT.M Thu Apr 06 14:58:03 2017 Page 3

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146227.D Vial: 7
Acq On : 5 Apr 2017 19:31 Operator: TMB
Sample : WG608938-06 5ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5957	8.1	100	0.00
3	P	Chloromethane	5.0000	5.3733	-7.5	100	0.02
4	C	Vinyl Chloride	5.0000	4.6291	7.4	100	0.00
5	T	1,3-Butadiene	5.0000	5.0651	-1.3	100	0.02
6	T	Bromomethane	5.0000	4.5778	8.4	100	0.03
7	T	Chloroethane	5.0000	5.0998	-2.0	100	0.03
8	T	Trichlorofluoromethane	5.0000	4.9318	1.4	100	0.02
9	T	Diethyl ether	50.0000	49.8065	0.4	100	0.00
10	T	Isoprene	5.0000	4.7920	4.2	100	0.00
11	T	Acrolein	25.0000	24.9813	0.1	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9572	0.9	100	0.00
13	T	Acetone	5.0000	5.2798	-5.6	100	0.00
14	C	1,1-Dichloroethene	5.0000	5.0784	-1.6	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	108.8107	-8.8	100	-0.01
16	T	Dimethyl Sulfide	5.0000	4.8967	2.1	100	0.00
17	T	Iodomethane	5.0000	4.0940	18.1	100	0.00
18	T	Methyl acetate	5.0000	4.7683	4.6	100	0.00
19	T	Methylene Chloride	5.0000	4.9870	0.3	100	0.00
20	T	Carbon Disulfide	5.0000	4.9617	0.8	100	0.00
21	T	Acrylonitrile	25.0000	25.2869	-1.1	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	5.2279	-4.6	100	-0.01
23	T	trans-1,2-Dichloroethene	5.0000	4.9661	0.7	100	0.00
24	T	n-Hexane	5.0000	5.0408	-0.8	100	0.00
25	T	Diisopropyl ether	50.0000	50.2311	-0.5	100	0.00
26	T	Vinyl Acetate	5.0000	4.8995	2.0	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.0271	-0.5	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.1618	-0.3	100	0.00
29	T	2-Butanone	5.0000	4.9917	0.2	100	0.00
30	T	Propionitrile	50.0000	52.4775	-5.0	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1936	-3.9	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.9850	0.3	100	0.00
33	C	Chloroform	5.0000	4.6565	6.9	100	0.00
34		1-Bromopropane	5.0000	4.9064	1.9	100	0.00
35	T	Bromochloromethane	5.0000	5.1839	-3.7	100	0.00
36	T	Tetrahydrofuran	50.0000	50.3637	-0.7	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5095	-0.4	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8743	2.5	100	0.00
39	T	Cyclohexane	5.0000	4.9291	1.4	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9877	0.2	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.1488	-0.3	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8706	2.6	100	-0.01
43	S	1,2-Dichloroethane-d4	2.5000	2.4421	2.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	5.0000	5.0925	-1.9	100	0.00
46	T	Benzene	5.0000	4.9709	0.6	100	0.00
47	T	Trichloroethene	5.0000	4.9761	0.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.9123	1.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.0906	-1.8	100	0.00
50	T	1,4-Dioxane	100.0000	93.1064	6.9	100	0.00
51	T	Bromodichloromethane	5.0000	5.0248	-0.5	100	0.00
52	T	Dibromomethane	5.0000	5.2162	-4.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.0404	-0.8	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.8674	2.7	100	0.00

(#) = Out of Range
6M146227.D 8260BWT.M Thu Apr 06 15:03:01 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146227.D Vial: 7
Acq On : 5 Apr 2017 19:31 Operator: TMB
Sample : WG608938-06 5ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	5.1061	-2.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.5874	8.3	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.5593	-2.4	100	0.00
59	C	Toluene	5.0000	5.0224	-0.4	100	0.00
60	T	Ethyl Methacrylate	5.0000	5.0167	-0.3	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.09
62	T	trans-1,3-Dichloropropene	5.0000	5.0741	-1.5	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.1428	-2.9	100	0.00
64	T	2-Hexanone	5.0000	5.0332	-0.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0920	-1.8	100	0.00
66	T	Tetrachloroethene	5.0000	5.0579	-1.2	100	0.00
67	T	Dibromochloromethane	5.0000	4.9681	0.6	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.9517	1.0	100	0.00
69	T	1-Chlorohexane	5.0000	4.9460	1.1	100	0.00
70	P	Chlorobenzene	5.0000	4.8810	2.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8433	3.1	100	0.00
72	C	Ethylbenzene	5.0000	4.8296	3.4	100	0.00
73	T	m-,p-Xylene	10.0000	9.8441	1.6	100	0.00
74	T	o-Xylene	5.0000	4.9026	1.9	100	0.00
75	T	Styrene	5.0000	4.9940	0.1	100	0.00
76	P	Bromoform	5.0000	4.8117	3.8	100	0.00
77	T	Isopropylbenzene	5.0000	5.0070	-0.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.1767	-3.5	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4017	3.9	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1225	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.8867	2.3	100	0.00
83	T	n-Propylbenzene	5.0000	5.0817	-1.6	100	0.00
84	T	Bromobenzene	5.0000	4.9575	0.9	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9473	1.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9558	0.9	100	0.00
87	T	4-Chlorotoluene	5.0000	4.9897	0.2	100	0.00
88	T	a-Methylstyrene	5.0000	4.8711	2.6	100	0.00
89	T	tert-Butylbenzene	5.0000	4.8393	3.2	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	4.9821	0.4	100	0.00
91	T	sec-Butylbenzene	5.0000	5.0216	-0.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	4.9391	1.2	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.8495	3.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8577	2.8	100	0.00
95	T	n-Butylbenzene	5.0000	4.9668	0.7	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8863	2.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1041	-2.1	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.8067	3.9	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.9642	0.7	100	0.00
100	T	Naphthalene	5.0000	5.0152	-0.3	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6970	6.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M146227.D 8260BWT.M Thu Apr 06 15:03:02 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146228.D Vial: 8
Acq On : 5 Apr 2017 20:02 Operator: TMB
Sample : WG608938-07 20ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:58:03 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.25	96	627241	25.00	ug/L	0.00
57) Chlorobenzene-d5	15.13	117	447577	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	235510	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	10.21	111	65613	10.2471	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.00%#			
43) 1,2-Dichloroethane-d4	10.84	65	64459	10.2142	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.84%#			
58) Toluene-d8	13.23	98	228384	9.9998	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.00%#			
80) p-Bromofluorobenzene	16.63	95	91659	10.2472	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.00%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.52	85	217664	21.8564	ug/L	93
3) Chloromethane	4.03	50	264881	22.3981	ug/L	99
4) Vinyl Chloride	4.29	62	233054	20.4810	ug/L	99
5) 1,3-Butadiene	4.33	54	106373	23.7613	ug/L	88
6) Bromomethane	5.24	94	98255	19.9988	ug/L	97
7) Chloroethane	5.40	64	103887	21.2191	ug/L	84
8) Trichlorofluoromethane	5.91	101	240343	20.6080	ug/L	99
9) Diethyl ether	6.44	59	380286	78.2436	ug/L	82
10) Isoprene	6.48	67	178379	18.5952	ug/L	80
11) Acrolein	6.68	56	20488	38.4767	ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.71	101	132626	20.0893	ug/L	98
13) Acetone	6.78	43	28940	21.3811	ug/L	93
14) 1,1-Dichloroethene	7.01	61	195653	20.4603	ug/L	83
15) Tert-Butyl Alcohol	7.11	59	64817	154.3843	ug/L	90
16) Dimethyl Sulfide	7.28	62	130765	19.1371	ug/L	78
17) Iodomethane	7.54	142	98959	18.2438	ug/L	99
18) Methyl acetate	7.53	43	62843	18.5124	ug/L #	82
19) Methylene Chloride	7.80	84	143369	19.8310	ug/L	60
20) Carbon Disulfide	7.86	76	390904	18.9942	ug/L	100
21) Acrylonitrile	7.96	53	63296	40.3559	ug/L	97
22) Methyl Tert Butyl Ether	8.01	73	330905	20.8726	ug/L	90
23) trans-1,2-Dichloroethene	8.25	96	138532	20.1290	ug/L	77
24) n-Hexane	8.33	57	145559	18.7032	ug/L	83
25) Diisopropyl ether	8.66	45	1403454	79.2147	ug/L #	90
26) Vinyl Acetate	8.83	43	85023	17.2882	ug/L #	87
27) 1,1-Dichloroethane	8.87	63	233405	20.4736	ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	1415029	78.8255	ug/L	91
29) 2-Butanone	9.41	43	34173	20.0320	ug/L #	81
30) Propionitrile	9.52	54	43958	79.0122	ug/L	100
31) 2,2-Dichloropropane	9.65	77	149189	17.2012	ug/L	79
32) cis-1,2-Dichloroethene	9.71	96	151702	20.0499	ug/L	88
33) Chloroform	9.91	83	241705	18.6109	ug/L	94
34) 1-Bromopropane	10.06	122	28065	20.9166	ug/L	97
35) Bromochloromethane	10.15	130	85288	21.4135	ug/L	99
36) Tetrahydrofuran	10.18	42	86703	77.1792	ug/L #	71
38) 1,1,1-Trichloroethane	10.45	97	212928	20.1661	ug/L	91
39) Cyclohexane	10.49	56	183893	18.8342	ug/L	77
40) 1,1-Dichloropropene	10.65	75	179871	20.1524	ug/L	81
41) Tert-Amyl-Methyl ether	10.75	73	1330159	78.0412	ug/L	93
42) Carbon Tetrachloride	10.80	117	176032	21.1436	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M146228.D 8260BWT.M Thu Apr 06 14:58:06 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146228.D Vial: 8
Acq On : 5 Apr 2017 20:02 Operator: TMB
Sample : WG608938-07 20ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:58:03 2017 Quant Results File: 8260BWT.RES

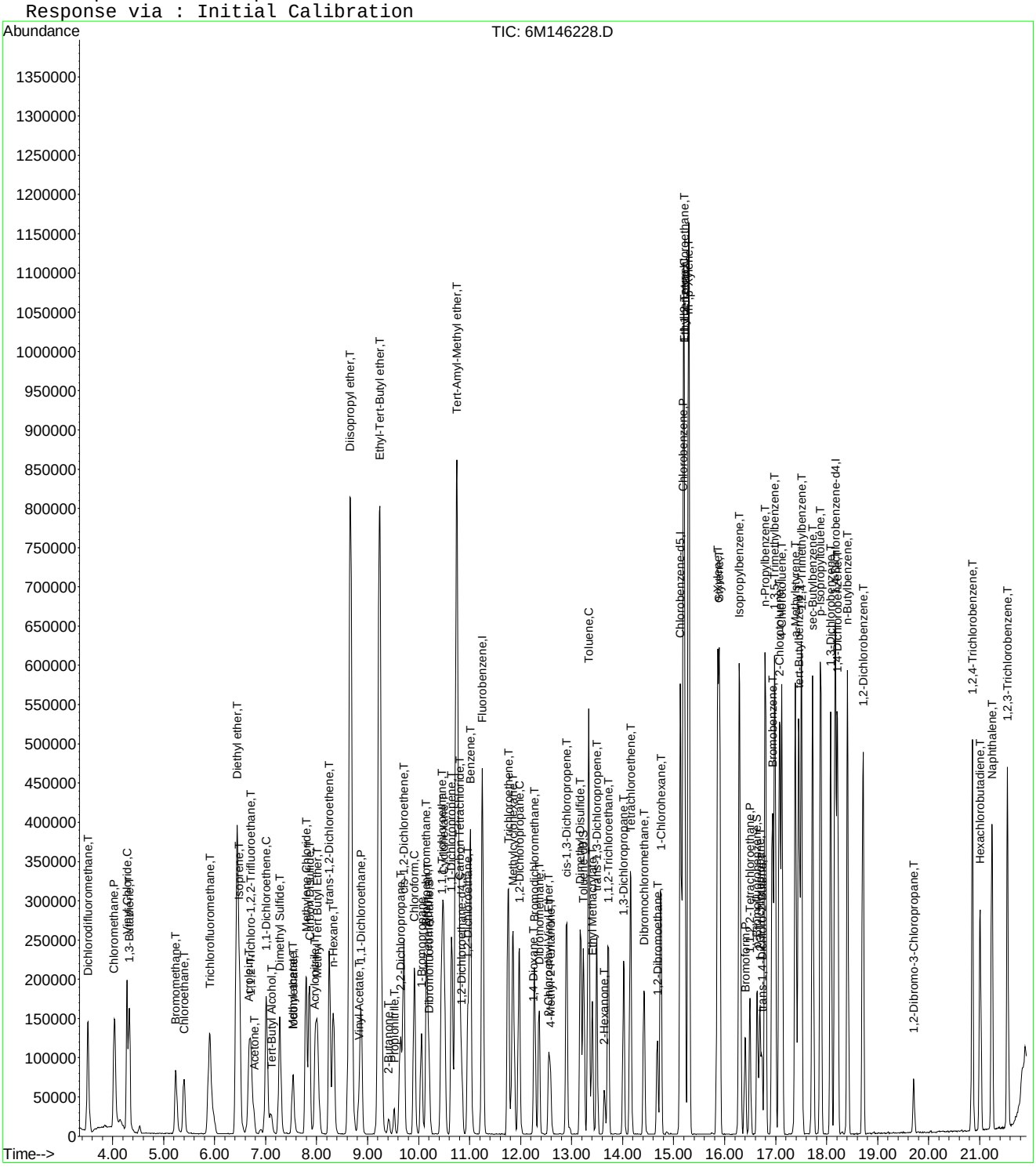
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.96	62	162109	20.0644	ug/L		89
46)	Benzene	11.02	78	529115	19.7158	ug/L		86
47)	Trichloroethene	11.76	130	150238	20.5667	ug/L		87
48)	Methylcyclohexane	11.85	83	197423	18.7059	ug/L		81
49)	1,2-Dichloropropane	11.98	63	131909	20.8268	ug/L		95
50)	1,4-Dioxane	12.25	88	7005	152.1084	ug/L		87
51)	Bromodichloromethane	12.27	83	185470	20.7439	ug/L		99
52)	Dibromomethane	12.36	93	77214	20.6995	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.55	63	53194	21.4116	ug/L		99
54)	4-Methyl-2-Pentanone	12.59	58	32212	19.7660	ug/L		82
55)	cis-1,3-Dichloropropene	12.90	75	206895	21.0133	ug/L		96
56)	Dimethyl Disulfide	13.17	79	112927	18.1801	ug/L		89
59)	Toluene	13.33	91	555221	19.8416	ug/L		100
60)	Ethyl Methacrylate	13.40	69	129462	19.1184	ug/L		71
62)	trans-1,3-Dichloropropene	13.50	75	176914	20.5042	ug/L		96
63)	1,1,2-Trichloroethane	13.72	97	107303	20.3482	ug/L		99
64)	2-Hexanone	13.64	43	50259	19.8477	ug/L		85
65)	1,3-Dichloropropane	14.02	76	178966	20.2181	ug/L		71
66)	Tetrachloroethene	14.16	166	136246	20.0929	ug/L		96
67)	Dibromochloromethane	14.42	129	135202	20.7404	ug/L		99
68)	1,2-Dibromoethane	14.68	107	100778	19.9028	ug/L		98
69)	1-Chlorohexane	14.75	91	167924	18.5834	ug/L		76
70)	Chlorobenzene	15.18	112	374272	19.5421	ug/L		95
71)	1,1,1,2-Tetrachloroethane	15.21	131	138016	20.1228	ug/L		94
72)	Ethylbenzene	15.21	106	202068	19.4896	ug/L		96
73)	m-,p-Xylene	15.29	106	481680	38.8682	ug/L		93
74)	o-Xylene	15.87	106	239598	20.0353	ug/L		93
75)	Styrene	15.90	104	405734	20.2101	ug/L		95
76)	Bromoform	16.41	173	81039	20.4000	ug/L		99
77)	Isopropylbenzene	16.28	105	597096	19.9520	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.50	83	119591	19.4973	ug/L		99
81)	1,2,3-Trichloropropane	16.69	110	37129	20.4983	ug/L		64
82)	trans-1,4-Dichloro-2-Buten	16.73	53	24964	19.1666	ug/L	#	1
83)	n-Propylbenzene	16.80	91	713905	20.0209	ug/L		99
84)	Bromobenzene	16.94	156	161202	20.1236	ug/L		85
85)	1,3,5-Trimethylbenzene	16.98	105	501322	19.8384	ug/L		100
86)	2-Chlorotoluene	17.07	91	485880	20.4645	ug/L		97
87)	4-Chlorotoluene	17.12	91	386400	18.4139	ug/L		95
88)	a-Methylstyrene	17.39	118	257428	18.4215	ug/L		99
89)	tert-Butylbenzene	17.46	134	106931	20.1945	ug/L		81
90)	1,2,4-Trimethylbenzene	17.51	105	519993	20.0363	ug/L		87
91)	sec-Butylbenzene	17.72	105	621099	19.9306	ug/L		98
92)	p-Isopropyltoluene	17.88	119	523649	19.9759	ug/L		99
93)	1,3-Dichlorobenzene	18.08	146	301598	19.9362	ug/L		99
94)	1,4-Dichlorobenzene	18.21	146	300266	19.6272	ug/L		97
95)	n-Butylbenzene	18.41	91	473351	19.7747	ug/L		100
96)	1,2-Dichlorobenzene	18.71	146	282119	19.8957	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.71	75	22784	20.5074	ug/L		91
98)	1,2,4-Trichlorobenzene	20.86	180	203918	19.6545	ug/L		98
99)	Hexachlorobutadiene	21.01	225	76009	19.1810	ug/L		99
100)	Naphthalene	21.24	128	421214	20.2755	ug/L		99
101)	1,2,3-Trichlorobenzene	21.54	180	187267	18.6967	ug/L		100

(#) = qualifier out of range (m) = manual integration
6M146228.D 8260BWT.M Thu Apr 06 14:58:06 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146228.D Vial: 8
Acq On : 5 Apr 2017 20:02 Operator: TMB
Sample : WG608938-07 20ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 14:58 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146229.D Vial: 9
Acq On : 5 Apr 2017 20:34 Operator: TMB
Sample : WG608938-08 50ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:58:08 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	11.26	96	643185	25.00	ug/L		0.00
57) Chlorobenzene-d5	15.14	117	452398	25.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	244954	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	10.21	111	166582	25.3710	ug/L		0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.48%				
43) 1,2-Dichloroethane-d4	10.85	65	162624	25.1306	ug/L		0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.52%				
58) Toluene-d8	13.24	98	572476	24.7988	ug/L		0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.20%				
80) p-Bromofluorobenzene	16.64	95	228722	24.5846	ug/L		0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.32%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.52	85	553692	54.2200	ug/L		93
3) Chloromethane	4.04	50	600762	50.5019	ug/L		96
4) Vinyl Chloride	4.28	62	580327	49.7355	ug/L		98
5) 1,3-Butadiene	4.32	54	226006	52.2463	ug/L		89
6) Bromomethane	5.24	94	282558	56.0861	ug/L		99
7) Chloroethane	5.40	64	261262	52.0405	ug/L		86
8) Trichlorofluoromethane	5.91	101	620646	51.8976	ug/L		99
9) Diethyl ether	6.44	59	492985	98.9169	ug/L		81
10) Isoprene	6.48	67	496738	50.4991	ug/L		80
11) Acrolein	6.67	56	27556	50.4676	ug/L		96
12) 1,1,2-Trichloro-1,2,2-Trif	6.70	101	339922	50.2127	ug/L		99
13) Acetone	6.77	43	71305	51.3749	ug/L		91
14) 1,1-Dichloroethene	7.02	61	496978	50.6828	ug/L		82
15) Tert-Butyl Alcohol	7.11	59	73877	171.6018	ug/L		92
16) Dimethyl Sulfide	7.27	62	354958	50.6595	ug/L		78
17) Iodomethane	7.54	142	275688	48.2182	ug/L		99
18) Methyl acetate	7.53	43	172494	49.5541	ug/L	#	83
19) Methylene Chloride	7.80	84	366519	49.4406	ug/L		58
20) Carbon Disulfide	7.86	76	1082478	51.2943	ug/L		99
21) Acrylonitrile	7.97	53	85120	52.9250	ug/L		99
22) Methyl Tert Butyl Ether	8.01	73	811828	49.9385	ug/L		90
23) trans-1,2-Dichloroethene	8.26	96	354872	50.2856	ug/L		76
24) n-Hexane	8.33	57	401945	50.3665	ug/L		84
25) Diisopropyl ether	8.66	45	1784496	98.2249	ug/L	#	89
26) Vinyl Acetate	8.83	43	213738	42.3833	ug/L	#	86
27) 1,1-Dichloroethane	8.87	63	581534	49.7460	ug/L		98
28) Ethyl-Tert-Butyl ether	9.24	59	1807267	98.1798	ug/L		90
29) 2-Butanone	9.42	43	84730	48.4371	ug/L	#	77
30) Propionitrile	9.52	54	58459	102.4722	ug/L		99
31) 2,2-Dichloropropane	9.65	77	356297	40.0620	ug/L		78
32) cis-1,2-Dichloroethene	9.72	96	387448	49.9382	ug/L		85
33) Chloroform	9.92	83	612607	46.0004	ug/L		95
34) 1-Bromopropane	10.06	122	73633	53.5176	ug/L		100
35) Bromochloromethane	10.15	130	215507	52.7668	ug/L		100
36) Tetrahydrofuran	10.17	42	110912	96.2816	ug/L	#	70
38) 1,1,1-Trichloroethane	10.46	97	545213	50.3562	ug/L		90
39) Cyclohexane	10.49	56	510981	51.0369	ug/L		77
40) 1,1-Dichloropropene	10.65	75	459189	50.1714	ug/L		81
41) Tert-Amyl-Methyl ether	10.75	73	1722091	98.5314	ug/L		92
42) Carbon Tetrachloride	10.80	117	471043	55.1754	ug/L		99

(#) = qualifier out of range (m) = manual integration
6M146229.D 8260BWT.M Thu Apr 06 14:58:10 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146229.D Vial: 9
Acq On : 5 Apr 2017 20:34 Operator: TMB
Sample : WG608938-08 50ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:58:08 2017 Quant Results File: 8260BWT.RES

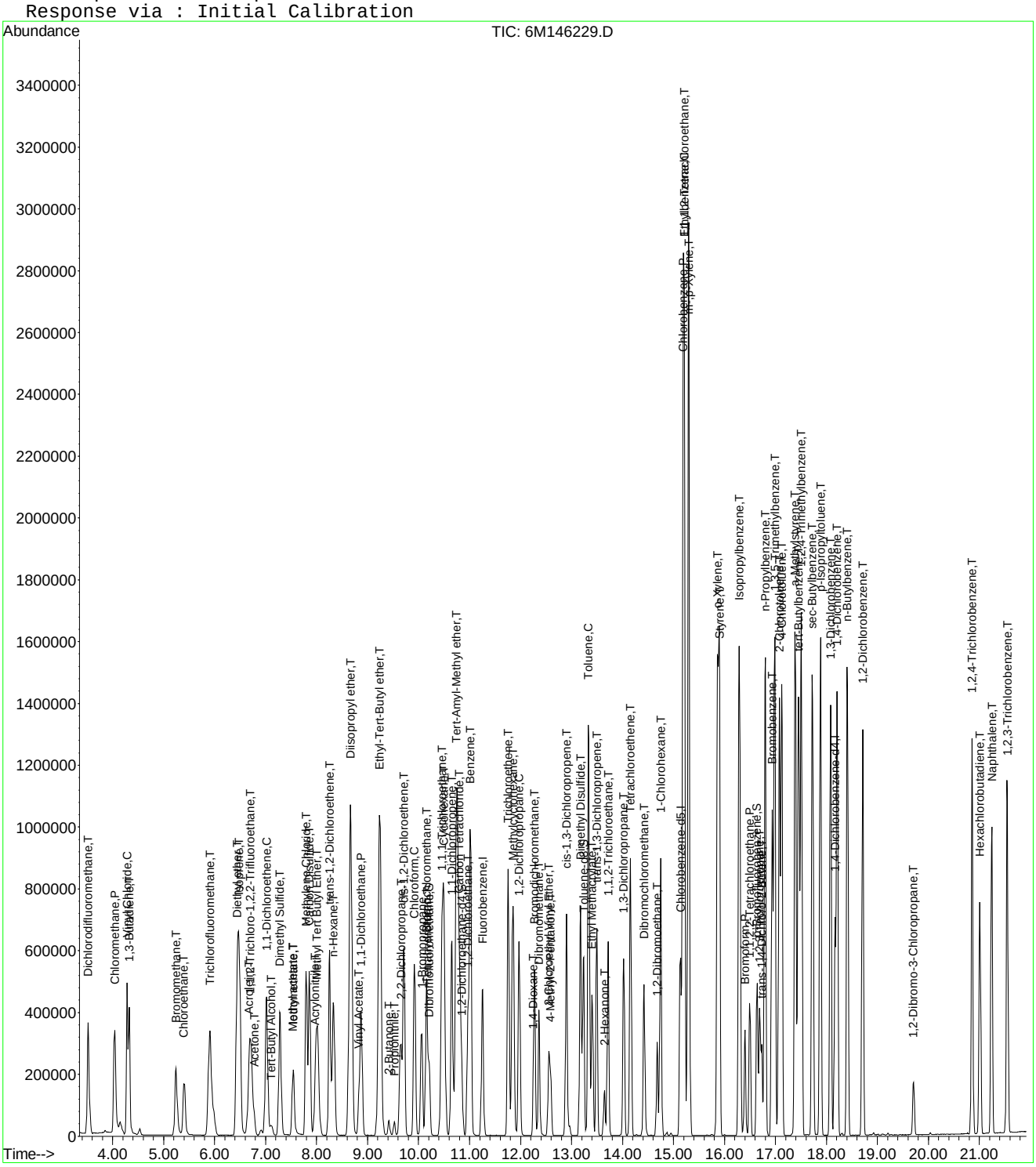
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.96	62	412436	49.7821	ug/L		89
46)	Benzene	11.01	78	1319158	47.9357	ug/L		87
47)	Trichloroethene	11.76	130	387869	51.7807	ug/L		87
48)	Methylcyclohexane	11.85	83	542828	50.1582	ug/L		81
49)	1,2-Dichloropropane	11.97	63	328985	50.6551	ug/L		93
50)	1,4-Dioxane	12.25	88	9841	208.3929	ug/L		83
51)	Bromodichloromethane	12.27	83	474501	51.7551	ug/L		99
52)	Dibromomethane	12.36	93	196449	51.3585	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.55	63	136743	53.6772	ug/L		98
54)	4-Methyl-2-Pentanone	12.58	58	82093	49.1253	ug/L		81
55)	cis-1,3-Dichloropropene	12.90	75	524104	51.9110	ug/L		95
56)	Dimethyl Disulfide	13.18	79	317578	49.8595	ug/L		90
59)	Toluene	13.33	91	1390320	49.1555	ug/L		99
60)	Ethyl Methacrylate	13.40	69	348973	50.9857	ug/L		71
62)	trans-1,3-Dichloropropene	13.49	75	449513	51.5430	ug/L		95
63)	1,1,2-Trichloroethane	13.72	97	269281	50.5203	ug/L		99
64)	2-Hexanone	13.65	43	126266	49.3321	ug/L		84
65)	1,3-Dichloropropane	14.02	76	449481	50.2374	ug/L		71
66)	Tetrachloroethene	14.16	166	348547	50.8542	ug/L		96
67)	Dibromochloromethane	14.42	129	344760	52.3235	ug/L		100
68)	1,2-Dibromoethane	14.68	107	258841	50.5741	ug/L		99
69)	1-Chlorohexane	14.75	91	464382	50.8434	ug/L		76
70)	Chlorobenzene	15.19	112	963037	49.7477	ug/L		94
71)	1,1,1,2-Tetrachloroethane	15.21	131	362017	52.2198	ug/L		100
72)	Ethylbenzene	15.21	106	525624	50.1565	ug/L		94
73)	m-,p-Xylene	15.30	106	1260386	100.6206	ug/L		93
74)	o-Xylene	15.86	106	613404	50.7466	ug/L		93
75)	Styrene	15.90	104	1057078	52.0932	ug/L		95
76)	Bromoform	16.40	173	214895	53.5191	ug/L		100
77)	Isopropylbenzene	16.29	105	1536873	50.8076	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.50	83	296759	46.5163	ug/L		98
81)	1,2,3-Trichloropropane	16.69	110	93220	49.4809	ug/L		56
82)	trans-1,4-Dichloro-2-Buten	16.73	53	69453	51.2682	ug/L	#	1
83)	n-Propylbenzene	16.80	91	1831263	49.3764	ug/L		99
84)	Bromobenzene	16.93	156	411541	49.3938	ug/L		85
85)	1,3,5-Trimethylbenzene	16.99	105	1296579	49.3302	ug/L		99
86)	2-Chlorotoluene	17.08	91	1170064	47.3812	ug/L		97
87)	4-Chlorotoluene	17.12	91	1072560	49.1422	ug/L		95
88)	a-Methylstyrene	17.38	118	716903	49.3235	ug/L		100
89)	tert-Butylbenzene	17.46	134	276611	50.2256	ug/L		89
90)	1,2,4-Trimethylbenzene	17.51	105	1344827	49.8208	ug/L		86
91)	sec-Butylbenzene	17.72	105	1604756	49.5099	ug/L		98
92)	p-Isopropyltoluene	17.88	119	1361479	49.9346	ug/L		99
93)	1,3-Dichlorobenzene	18.08	146	771343	49.0216	ug/L		99
94)	1,4-Dichlorobenzene	18.21	146	773205	48.5928	ug/L		98
95)	n-Butylbenzene	18.41	91	1242193	49.8932	ug/L		100
96)	1,2-Dichlorobenzene	18.71	146	721223	48.9013	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.70	75	58274	50.4290	ug/L		91
98)	1,2,4-Trichlorobenzene	20.86	180	530769	49.1854	ug/L		99
99)	Hexachlorobutadiene	21.01	225	200495	48.6445	ug/L		100
100)	Naphthalene	21.24	128	1087303	50.3204	ug/L		100
101)	1,2,3-Trichlorobenzene	21.55	180	486226	46.6732	ug/L		100

(#) = qualifier out of range (m) = manual integration
6M146229.D 8260BWT.M Thu Apr 06 14:58:10 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146229.D Vial: 9
Acq On : 5 Apr 2017 20:34 Operator: TMB
Sample : WG608938-08 50ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 14:58 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146230.D Vial: 10
Acq On : 5 Apr 2017 21:06 Operator: TMB
Sample : WG608938-09 100ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:58:12 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.25	96	664065	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.13	117	468638	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	250611	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.21	111	341745	50.4124 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 201.64%#		
43) 1,2-Dichloroethane-d4	10.85	65	335061	50.1496 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 200.60%#		
58) Toluene-d8	13.23	98	1165336	48.7313 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 194.92%#		
80) p-Bromofluorobenzene	16.64	95	452319	47.5209 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.08%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.52	85	1092279	103.5976 ug/L	93
3) Chloromethane	4.04	50	1229045	100.8473 ug/L	98
4) Vinyl Chloride	4.27	62	967994	80.3511 ug/L	98
5) 1,3-Butadiene	4.32	54	358708	83.9572 ug/L	89
6) Bromomethane	5.23	94	557041	107.0928 ug/L	99
7) Chloroethane	5.40	64	501046	96.6647 ug/L	86
8) Trichlorofluoromethane	5.90	101	1280944	103.7431 ug/L	99
9) Diethyl ether	6.44	59	1046407	203.3587 ug/L	80
10) Isoprene	6.48	67	1028447	101.2660 ug/L	80
11) Acrolein	6.67	56	60742	107.7484 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.69	101	703798	100.6949 ug/L	99
13) Acetone	6.78	43	140983	98.3836 ug/L	90
14) 1,1-Dichloroethene	7.01	61	1000191	98.7943 ug/L	81
15) Tert-Butyl Alcohol	7.11	59	188168	423.3346 ug/L	91
16) Dimethyl Sulfide	7.28	62	716529	99.0473 ug/L	78
17) Iodomethane	7.54	142	665529	111.6922 ug/L	98
18) Methyl acetate	7.53	43	370733	103.1554 ug/L #	80
19) Methylene Chloride	7.80	84	728236	95.1448 ug/L	58
20) Carbon Disulfide	7.86	76	2173570	99.7583 ug/L	99
21) Acrylonitrile	7.97	53	179187	107.9098 ug/L	100
22) Methyl Tert Butyl Ether	8.01	73	1646227	98.0813 ug/L	91
23) trans-1,2-Dichloroethene	8.25	96	720013	98.8182 ug/L	75
24) n-Hexane	8.33	57	825655	100.2073 ug/L	84
25) Diisopropyl ether	8.66	45	3713047	197.9529 ug/L #	89
26) Vinyl Acetate	8.83	43	615132	118.1426 ug/L #	85
27) 1,1-Dichloroethane	8.87	63	1179111	97.6929 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	3847795	202.4591 ug/L	90
29) 2-Butanone	9.41	43	187675	103.9136 ug/L #	77
30) Propionitrile	9.52	54	123101	208.9977 ug/L	100
31) 2,2-Dichloropropane	9.64	77	930942	101.3837 ug/L	78
32) cis-1,2-Dichloroethene	9.71	96	791312	98.7853 ug/L	87
33) Chloroform	9.92	83	1229915	89.4500 ug/L	95
34) 1-Bromopropane	10.06	122	153107	107.7815 ug/L	99
35) Bromochloromethane	10.16	130	453837	107.6278 ug/L	99
36) Tetrahydrofuran	10.18	42	239360	201.2527 ug/L #	68
38) 1,1,1-Trichloroethane	10.45	97	1128754	100.9745 ug/L	90
39) Cyclohexane	10.49	56	1047823	101.3662 ug/L	76
40) 1,1-Dichloropropene	10.65	75	936238	99.0778 ug/L	81
41) Tert-Amyl-Methyl ether	10.75	73	3710771	205.6403 ug/L	92
42) Carbon Tetrachloride	10.80	117	1002331	113.7160 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M146230.D 8260BWT.M Thu Apr 06 14:58:14 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146230.D Vial: 10
Acq On : 5 Apr 2017 21:06 Operator: TMB
Sample : WG608938-09 100ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:58:12 2017 Quant Results File: 8260BWT.RES

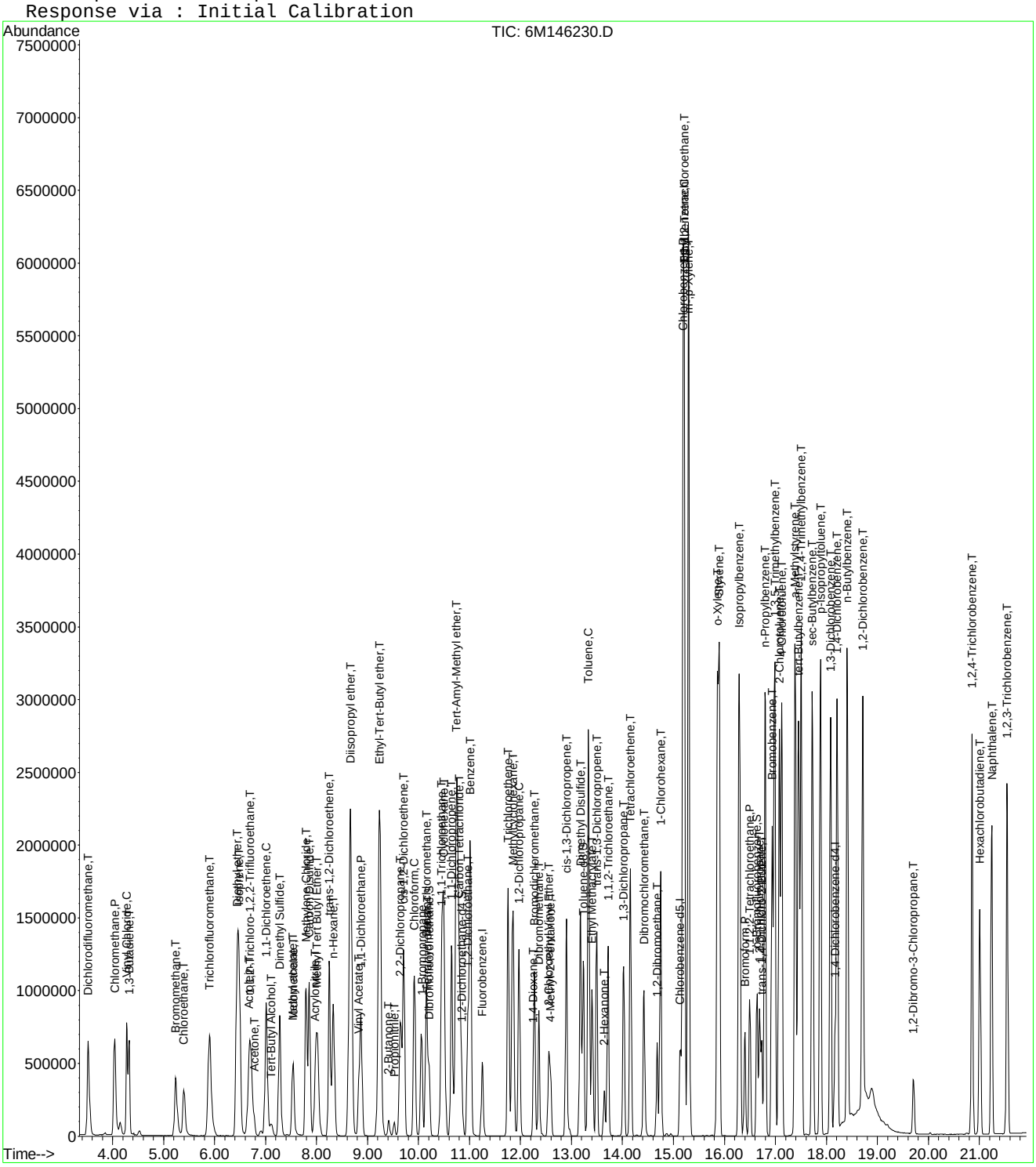
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.96	62	848725	99.2223	ug/L		88
46)	Benzene	11.01	78	2675533	94.1668	ug/L		87
47)	Trichloroethene	11.76	130	775075	100.2194	ug/L		86
48)	Methylcyclohexane	11.85	83	1124227	100.6142	ug/L		81
49)	1,2-Dichloropropane	11.97	63	661802	98.6962	ug/L		92
50)	1,4-Dioxane	12.25	88	21047	431.6772	ug/L		82
51)	Bromodichloromethane	12.27	83	965686	102.0182	ug/L		100
52)	Dibromomethane	12.36	93	405664	102.7198	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.56	63	290699	110.5233	ug/L		99
54)	4-Methyl-2-Pentanone	12.59	58	180197	104.4413	ug/L		81
55)	cis-1,3-Dichloropropene	12.90	75	1085875	104.1711	ug/L		95
56)	Dimethyl Disulfide	13.18	79	668834	101.7047	ug/L		90
59)	Toluene	13.33	91	2831304	96.6334	ug/L		99
60)	Ethyl Methacrylate	13.40	69	750754	105.8857	ug/L		71
62)	trans-1,3-Dichloropropene	13.49	75	942608	104.3378	ug/L		95
63)	1,1,2-Trichloroethane	13.72	97	558224	101.1002	ug/L		99
64)	2-Hexanone	13.64	43	274093	103.3770	ug/L		83
65)	1,3-Dichloropropane	14.03	76	927364	100.0574	ug/L		71
66)	Tetrachloroethene	14.16	166	715953	100.8400	ug/L		95
67)	Dibromochloromethane	14.42	129	727778	106.6258	ug/L		100
68)	1,2-Dibromoethane	14.68	107	543243	102.4642	ug/L		99
69)	1-Chlorohexane	14.75	91	954085	100.8392	ug/L		75
70)	Chlorobenzene	15.19	112	2008196	100.1428	ug/L		94
71)	1,1,1,2-Tetrachloroethane	15.21	131	774570	107.8575	ug/L		100
72)	Ethylbenzene	15.21	106	1116135	102.8139	ug/L		91
73)	m-,p-Xylene	15.29	106	2626638	202.4261	ug/L		89
74)	o-Xylene	15.86	106	1232018	98.3922	ug/L		94
75)	Styrene	15.89	104	2150597	102.3095	ug/L		96
76)	Bromoform	16.40	173	448000	107.7070	ug/L		99
77)	Isopropylbenzene	16.29	105	3046400	97.2211	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.50	83	638495	97.8234	ug/L		99
81)	1,2,3-Trichloropropane	16.69	110	193544	100.4136	ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.73	53	151702	109.4542	ug/L	#	1
83)	n-Propylbenzene	16.79	91	3593480	94.7040	ug/L		98
84)	Bromobenzene	16.94	156	823903	96.6540	ug/L		85
85)	1,3,5-Trimethylbenzene	16.99	105	2597441	96.5926	ug/L		99
86)	2-Chlorotoluene	17.08	91	2351484	93.0729	ug/L		97
87)	4-Chlorotoluene	17.12	91	2098144	93.9621	ug/L		95
88)	a-Methylstyrene	17.39	118	1476708	99.3054	ug/L		99
89)	tert-Butylbenzene	17.46	134	556423	98.7517	ug/L		90
90)	1,2,4-Trimethylbenzene	17.51	105	2720771	98.5191	ug/L		86
91)	sec-Butylbenzene	17.72	105	3204852	96.6442	ug/L		99
92)	p-Isopropyltoluene	17.89	119	2766683	99.1824	ug/L		99
93)	1,3-Dichlorobenzene	18.08	146	1563276	97.1091	ug/L		98
94)	1,4-Dichlorobenzene	18.21	146	1568190	96.3298	ug/L		98
95)	n-Butylbenzene	18.41	91	2566638	100.7630	ug/L		100
96)	1,2-Dichlorobenzene	18.71	146	1480882	98.1422	ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.70	75	128198	108.4355	ug/L		91
98)	1,2,4-Trichlorobenzene	20.86	180	1094628	99.1474	ug/L		100
99)	Hexachlorobutadiene	21.01	225	409810	97.1846	ug/L		99
100)	Naphthalene	21.25	128	2294953	103.8129	ug/L		99
101)	1,2,3-Trichlorobenzene	21.54	180	1006776	94.4596	ug/L		100

(#) = qualifier out of range (m) = manual integration
6M146230.D 8260BWT.M Thu Apr 06 14:58:14 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146230.D Vial: 10
Acq On : 5 Apr 2017 21:06 Operator: TMB
Sample : WG608938-09 100ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 14:58 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146231.D Vial: 11
Acq On : 5 Apr 2017 21:37 Operator: TMB
Sample : WG608938-10 200ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:58:16 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	11.25	96	690233	25.00	ug/L		0.00
57) Chlorobenzene-d5	15.14	117	498674	25.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	255138	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	10.21	111	723475	102.6772	ug/L		0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 410.72%#				
43) 1,2-Dichloroethane-d4	10.85	65	702452	101.1521	ug/L		0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 404.60%#				
58) Toluene-d8	13.24	98	2516915	98.9113	ug/L		0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 395.64%#				
80) p-Bromofluorobenzene	16.64	95	966850	99.7755	ug/L		0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 399.12%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.52	85	2275311	207.6213	ug/L		93
3) Chloromethane	4.04	50	2474245	196.0665	ug/L		98
4) Vinyl Chloride	4.27	62	2319895	185.2689	ug/L		98
5) 1,3-Butadiene	4.31	54	816680	218.8754	ug/L		89
6) Bromomethane	5.23	94	1250039	231.2125	ug/L		99
7) Chloroethane	5.40	64	1064300	197.5465	ug/L		86
8) Trichlorofluoromethane	5.90	101	2718616	211.8320	ug/L		99
9) Diethyl ether	6.44	59	4640	0.8676	ug/L	#	53
10) Isoprene	6.48	67	2127378	201.5306	ug/L		80
11) Acrolein	6.67	56	9706	16.5644	ug/L		98
12) 1,1,2-Trichloro-1,2,2-Trif	6.69	101	1494747	205.7510	ug/L		99
13) Acetone	6.77	43	308579	207.1749	ug/L		90
14) 1,1-Dichloroethene	7.01	61	2162367	205.4912	ug/L		81
15) Tert-Butyl Alcohol	7.12	59	25996	56.2677	ug/L		92
16) Dimethyl Sulfide	7.27	62	1547256	205.7718	ug/L		78
17) Iodomethane	7.54	142	1235435	198.8594	ug/L		98
18) Methyl acetate	7.53	43	780560	208.9546	ug/L	#	80
19) Methylene Chloride	7.80	84	1587097	199.4946	ug/L		58
20) Carbon Disulfide	7.86	76	4648119	205.2426	ug/L		98
21) Acrylonitrile	8.01	53	30991	17.9558	ug/L	#	37
22) Methyl Tert Butyl Ether	8.01	73	3211564	184.0891	ug/L		91
23) trans-1,2-Dichloroethene	8.24	96	1562245	206.2818	ug/L		75
24) n-Hexane	8.33	57	1747043	203.9948	ug/L		84
25) Diisopropyl ether	8.66	45	2991	0.1534	ug/L	#	78
26) Vinyl Acetate	8.83	43	1230567	227.3831	ug/L	#	84
27) 1,1-Dichloroethane	8.87	63	2550945	203.3406	ug/L		98
28) Ethyl-Tert-Butyl ether	9.24	59	7221	0.3655	ug/L		93
29) 2-Butanone	9.42	43	378724	201.7454	ug/L	#	77
30) Propionitrile	9.52	54	2541	4.1505	ug/L	#	56
31) 2,2-Dichloropropane	9.64	77	1886252	197.6333	ug/L		77
32) cis-1,2-Dichloroethene	9.72	96	1724251	207.0903	ug/L		86
33) Chloroform	9.92	83	2655020	185.7753	ug/L		95
34) 1-Bromopropane	10.06	122	290747	196.9152	ug/L		99
35) Bromochloromethane	10.15	130	939086	214.2618	ug/L		100
36) Tetrahydrofuran	10.18	42	5089	4.1166	ug/L		86
38) 1,1,1-Trichloroethane	10.46	97	2469058	212.4998	ug/L		89
39) Cyclohexane	10.49	56	2270992	211.3662	ug/L	#	75
40) 1,1-Dichloropropene	10.64	75	2000053	203.6322	ug/L		80
41) Tert-Amyl-Methyl ether	10.75	73	11602	0.6186	ug/L		88
42) Carbon Tetrachloride	10.80	117	1931578	210.8325	ug/L		99

(#) = qualifier out of range (m) = manual integration
6M146231.D 8260BWT.M Thu Apr 06 14:58:18 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146231.D Vial: 11
Acq On : 5 Apr 2017 21:37 Operator: TMB
Sample : WG608938-10 200ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:58:16 2017 Quant Results File: 8260BWT.RES

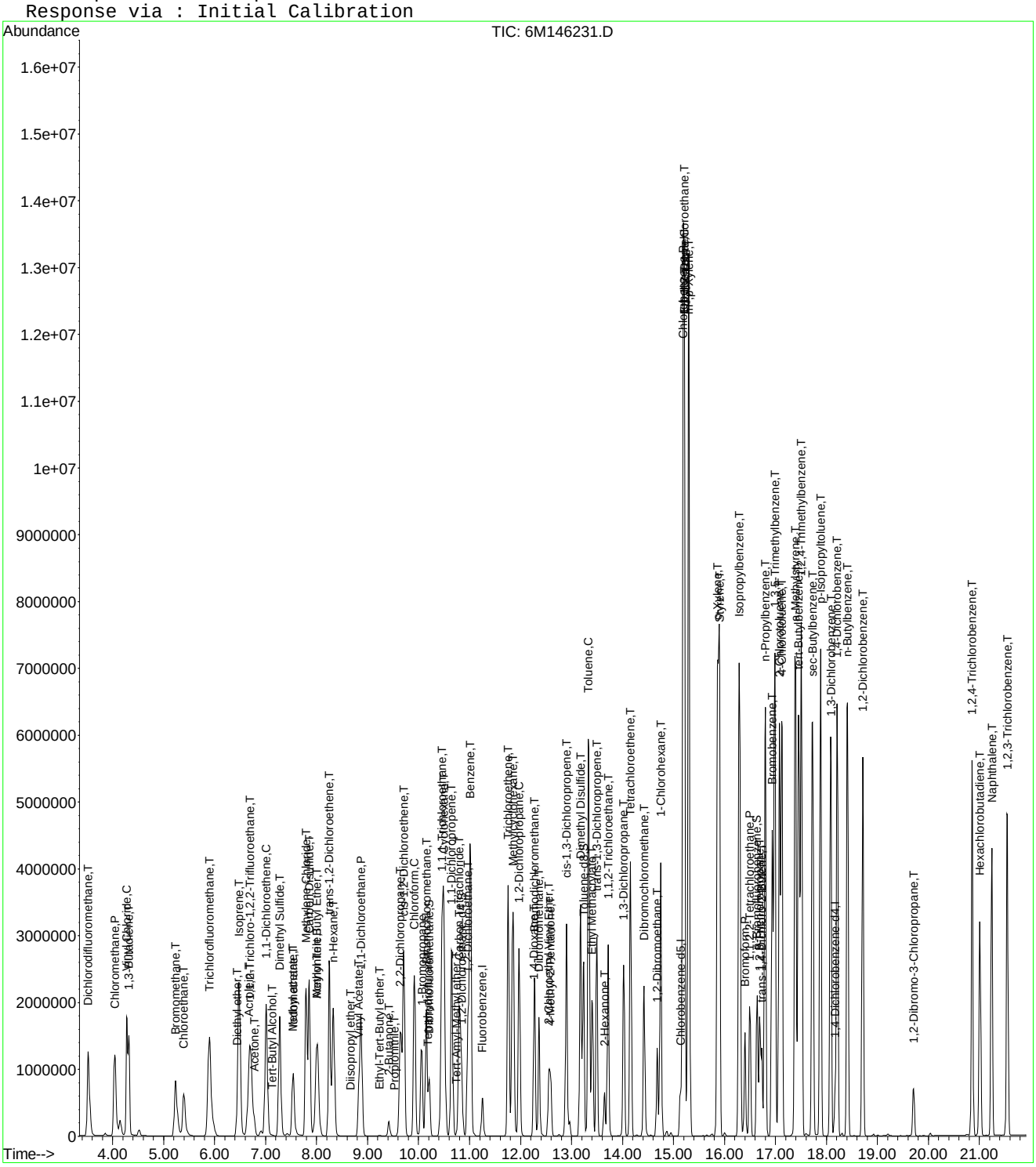
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.96	62	1796420	202.0529 ug/L		88
46)	Benzene	11.01	78	5629098	190.6080 ug/L		88
47)	Trichloroethene	11.76	130	1658935	206.3727 ug/L		87
48)	Methylcyclohexane	11.85	83	2386424	205.4792 ug/L		81
49)	1,2-Dichloropropane	11.97	63	1424092	204.3268 ug/L		91
50)	1,4-Dioxane	12.26	88	5637	111.2325 ug/L	#	42
51)	Bromodichloromethane	12.27	83	2075418	210.9415 ug/L		100
52)	Dibromomethane	12.36	93	844625	205.7626 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.55	63	484387	177.1812 ug/L		98
54)	4-Methyl-2-Pentanone	12.58	58	361541	201.6031 ug/L		79
55)	cis-1,3-Dichloropropene	12.90	75	2281875	210.6076 ug/L		95
56)	Dimethyl Disulfide	13.18	79	1458790	213.4177 ug/L		90
59)	Toluene	13.33	91	5996618	192.3392 ug/L		96
60)	Ethyl Methacrylate	13.40	69	1573548	208.5646 ug/L		71
62)	trans-1,3-Dichloropropene	13.49	75	1986746	206.6682 ug/L		95
63)	1,1,2-Trichloroethane	13.72	97	1198048	203.9100 ug/L		99
64)	2-Hexanone	13.65	43	554015	196.3669 ug/L		83
65)	1,3-Dichloropropane	14.02	76	1969579	199.7070 ug/L		71
66)	Tetrachloroethene	14.16	166	1553218	205.5897 ug/L		94
67)	Dibromochloromethane	14.42	129	1570999	216.3018 ug/L		99
68)	1,2-Dibromoethane	14.68	107	1128869	200.0979 ug/L		100
69)	1-Chlorohexane	14.75	91	2077549	206.3548 ug/L		76
70)	Chlorobenzene	15.19	112	4552595	213.3503 ug/L		97
71)	1,1,1,2-Tetrachloroethane	15.21	131	1778263	232.7054 ug/L		99
72)	Ethylbenzene	15.21	106	2629830	227.6583 ug/L		78
73)	m-,p-Xylene	15.30	106	5831651	422.3560 ug/L		72
74)	o-Xylene	15.86	106	2806681	210.6481 ug/L		89
75)	Styrene	15.90	104	4761074	212.8544 ug/L		99
76)	Bromoform	16.40	173	946995	213.9608 ug/L		98
77)	Isopropylbenzene	16.29	105	6429037	192.8147 ug/L		96
79)	1,1,2,2-Tetrachloroethane	16.50	83	1322669	199.0497 ug/L		98
81)	1,2,3-Trichloropropane	16.69	110	401464	204.5900 ug/L		56
82)	trans-1,4-Dichloro-2-Buten	16.73	53	305769	216.7003 ug/L	#	1
83)	n-Propylbenzene	16.80	91	7135293	184.7099 ug/L		94
84)	Bromobenzene	16.93	156	1779598	205.0645 ug/L		84
85)	1,3,5-Trimethylbenzene	16.99	105	5473541	199.9363 ug/L		97
86)	2-Chlorotoluene	17.08	91	4805990	186.8483 ug/L		96
87)	4-Chlorotoluene	17.12	91	4663827	205.1564 ug/L		94
88)	a-Methylstyrene	17.39	118	3146362	207.8317 ug/L		99
89)	tert-Butylbenzene	17.46	134	1201485	209.4513 ug/L		81
90)	1,2,4-Trimethylbenzene	17.51	105	5700578	202.7553 ug/L		82
91)	sec-Butylbenzene	17.73	105	6486144	192.1230 ug/L		99
92)	p-Isopropyltoluene	17.88	119	5687835	200.2844 ug/L		98
93)	1,3-Dichlorobenzene	18.09	146	3282192	200.2687 ug/L		95
94)	1,4-Dichlorobenzene	18.21	146	3295686	198.8532 ug/L		96
95)	n-Butylbenzene	18.42	91	5169144	199.3335 ug/L		98
96)	1,2-Dichlorobenzene	18.71	146	3028833	197.1676 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.71	75	238291	197.9807 ug/L		91
98)	1,2,4-Trichlorobenzene	20.86	180	2255491	200.6692 ug/L		99
99)	Hexachlorobutadiene	21.01	225	836245	194.7931 ug/L		99
100)	Naphthalene	21.24	128	4440092	197.2852 ug/L		98
101)	1,2,3-Trichlorobenzene	21.55	180	2031369	187.2092 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M146231.D 8260BWT.M Thu Apr 06 14:58:19 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146231.D Vial: 11
Acq On : 5 Apr 2017 21:37 Operator: TMB
Sample : WG608938-10 200ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 14:58 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146232.D Vial: 12
Acq On : 5 Apr 2017 22:09 Operator: TMB
Sample : WG608938-11 300ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:58:20 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	11.25	96	670280	25.00	ug/L		0.00
57) Chlorobenzene-d5	15.13	117	474156	25.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	251420	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	10.21	111	1065288	155.6886	ug/L		0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 622.76%#				
43) 1,2-Dichloroethane-d4	10.84	65	1022057	151.5559	ug/L		0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 606.24%#				
58) Toluene-d8	13.23	98	3651048	150.9004	ug/L		0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 603.60%#				
80) p-Bromofluorobenzene	16.64	95	1466208	153.5450	ug/L		0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 614.20%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.52	85	3198	0.3005	ug/L	#	64
3) Chloromethane	4.02	50	124029	9.3687	ug/L		97
4) Vinyl Chloride	4.27	62	2879	0.2368	ug/L		96
5) 1,3-Butadiene	4.31	54	952750	291.3161	ug/L		90
6) Bromomethane	5.21	94	256997	48.9503	ug/L		98
8) Trichlorofluoromethane	5.89	101	1832	0.1470	ug/L	#	92
9) Diethyl ether	6.44	59	1626336	313.1315	ug/L		80
10) Isoprene	6.47	67	3326056	324.4632	ug/L		81
11) Acrolein	6.67	56	83031	145.9205	ug/L		96
12) 1,1,2-Trichloro-1,2,2-Trif	6.68	101	1896	0.2688	ug/L	#	63
13) Acetone	6.78	43	359192	248.3344	ug/L		88
14) 1,1-Dichloroethene	7.01	61	2982	0.2918	ug/L		94
15) Tert-Butyl Alcohol	7.12	59	274170	611.1000	ug/L		90
16) Dimethyl Sulfide	7.28	62	2259113	309.3863	ug/L		78
17) Iodomethane	7.53	142	1774336	293.7287	ug/L		98
18) Methyl acetate	7.53	43	1146284	315.9929	ug/L	#	79
19) Methylene Chloride	7.79	84	3453	0.4470	ug/L		74
20) Carbon Disulfide	7.85	76	6560949	298.3296	ug/L		98
21) Acrylonitrile	7.97	53	242452	144.6554	ug/L		93
22) Methyl Tert Butyl Ether	8.02	73	17659	1.0424	ug/L	#	49
23) trans-1,2-Dichloroethene	8.25	96	3508	0.4770	ug/L		84
24) n-Hexane	8.33	57	2563085	308.1896	ug/L		84
25) Diisopropyl ether	8.66	45	5624093	297.0560	ug/L	#	88
26) Vinyl Acetate	8.83	43	1560345	296.9020	ug/L	#	86
27) 1,1-Dichloroethane	8.87	63	1658	0.1361	ug/L	#	43
28) Ethyl-Tert-Butyl ether	9.24	59	5792489	301.9568	ug/L		90
29) 2-Butanone	9.41	43	537846	295.0381	ug/L	#	77
30) Propionitrile	9.52	54	181548	305.3695	ug/L		99
32) cis-1,2-Dichloroethene	9.71	96	2592	0.3206	ug/L		71
33) Chloroform	9.91	83	3316	0.2389	ug/L	#	81
34) 1-Bromopropane	10.05	122	479000	334.0712	ug/L		100
35) Bromochloromethane	10.16	130	2635	0.6191	ug/L		93
36) Tetrahydrofuran	10.18	42	348793	290.5441	ug/L	#	69
39) Cyclohexane	10.49	56	3263442	312.7774	ug/L		77
40) 1,1-Dichloropropene	10.65	75	3347	0.3509	ug/L	#	34
41) Tert-Amyl-Methyl ether	10.75	73	5509448	302.4868	ug/L		92
45) 1,2-Dichloroethane	10.96	62	6370	0.7378	ug/L	#	78
46) Benzene	11.01	78	5876	0.2049	ug/L	#	70
47) Trichloroethene	11.75	130	2541	0.3255	ug/L		78
48) Methylcyclohexane	11.85	83	3537517	313.6594	ug/L		81

(#) = qualifier out of range (m) = manual integration
6M146232.D 8260BWT.M Thu Apr 06 14:58:22 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146232.D Vial: 12
Acq On : 5 Apr 2017 22:09 Operator: TMB
Sample : WG608938-11 300ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 14:58:20 2017 Quant Results File: 8260BWT.RES

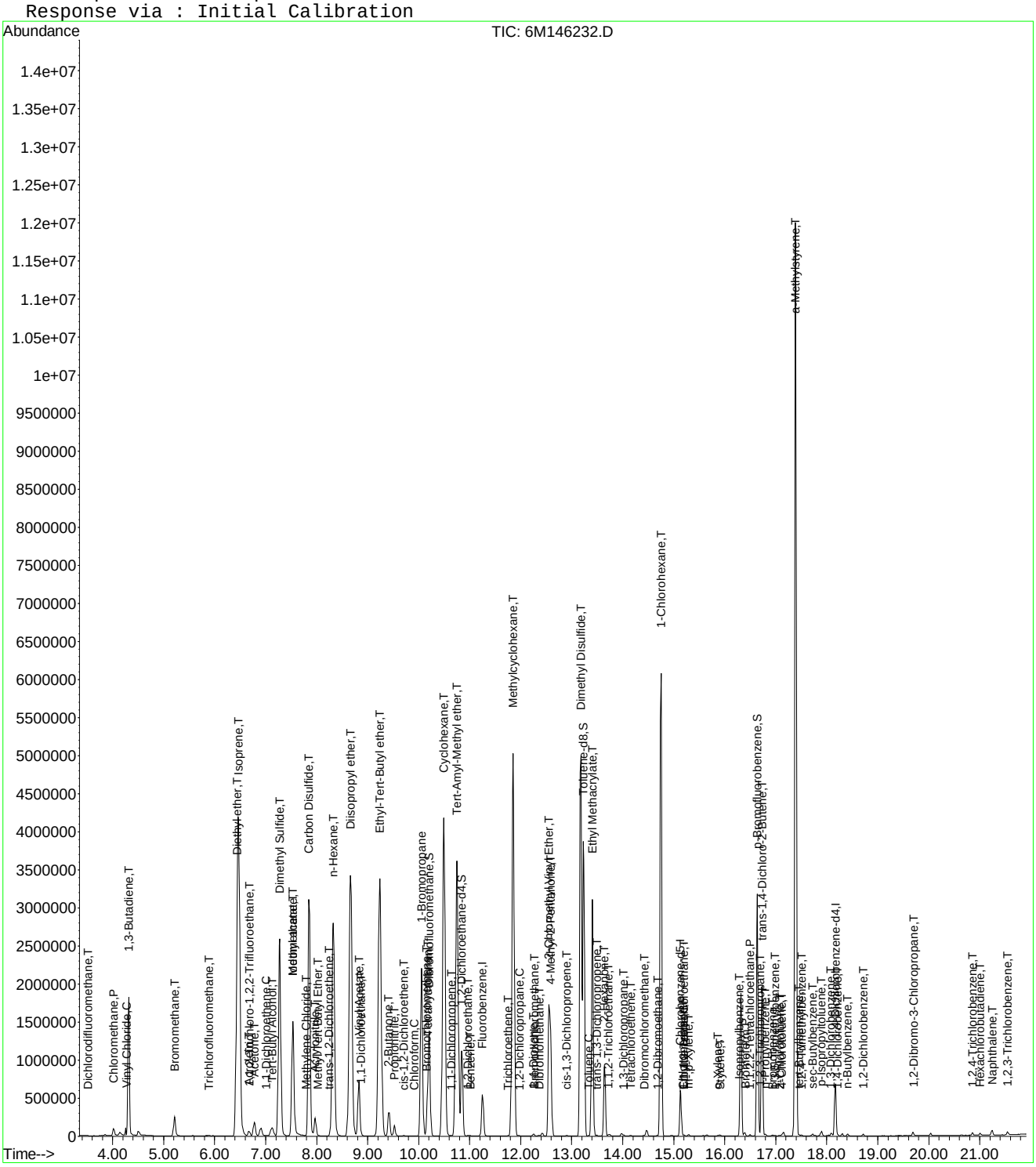
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

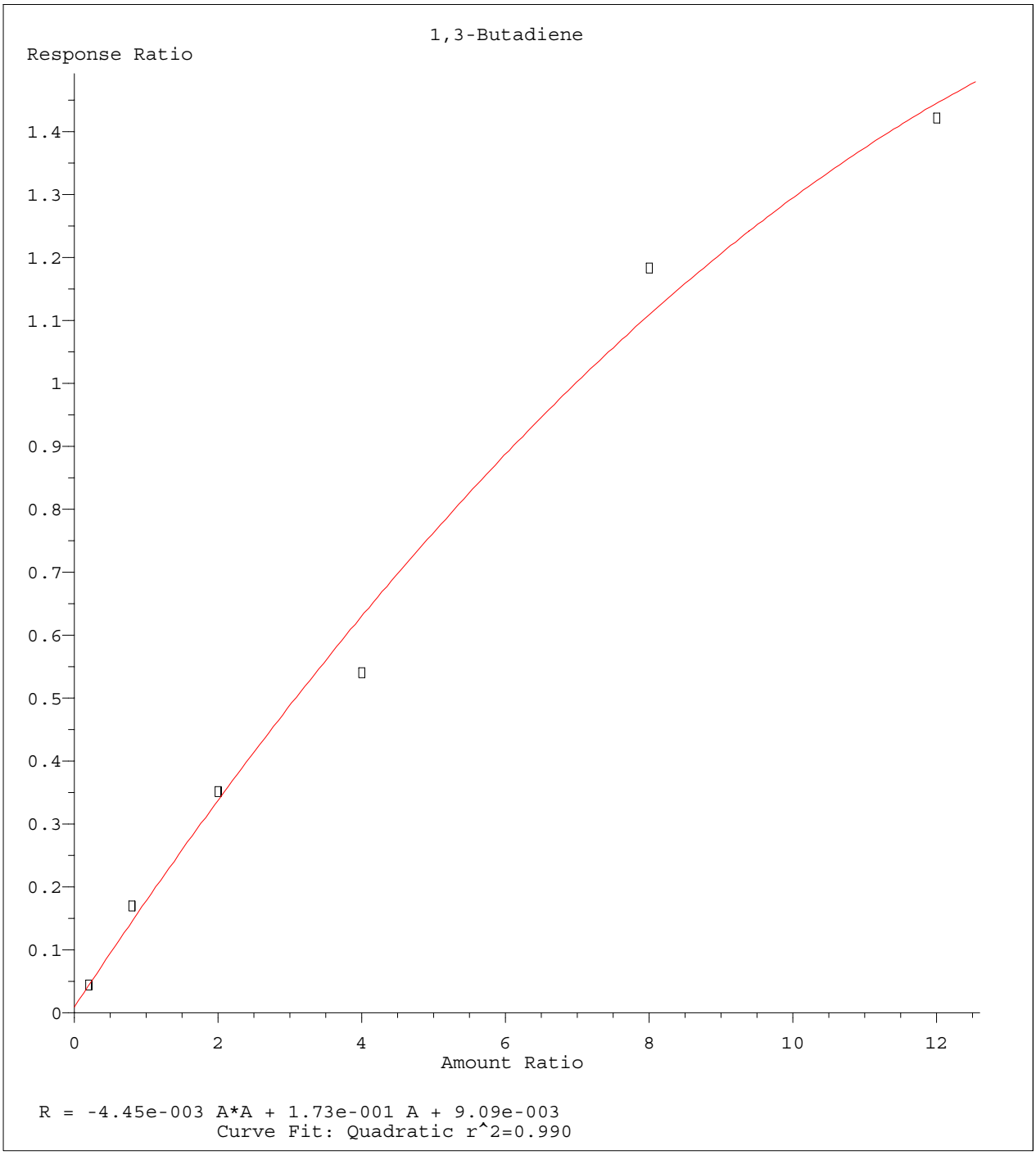
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
49)	1,2-Dichloropropane	11.97	63	846	0.1250	ug/L	#	35
50)	1,4-Dioxane	12.25	88	29442	598.2608	ug/L		83
51)	Bromodichloromethane	12.27	83	2460	0.2575	ug/L		95
52)	Dibromomethane	12.36	93	4528	1.1359	ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.56	63	864405	325.5982	ug/L		99
54)	4-Methyl-2-Pentanone	12.59	58	524164	300.9860	ug/L		80
55)	cis-1,3-Dichloropropene	12.90	75	4329	0.4114	ug/L		88
56)	Dimethyl Disulfide	13.18	79	2174908	327.6559	ug/L		91
59)	Toluene	13.33	91	8304	0.2801	ug/L		97
60)	Ethyl Methacrylate	13.40	69	2284715	318.4843	ug/L		71
62)	trans-1,3-Dichloropropene	13.49	75	8074	0.8833	ug/L		92
63)	1,1,2-Trichloroethane	13.72	97	5984	1.0712	ug/L		96
64)	2-Hexanone	13.64	43	803768	299.6215	ug/L		83
65)	1,3-Dichloropropane	14.02	76	10167	1.0842	ug/L		86
66)	Tetrachloroethene	14.16	166	2501	0.3482	ug/L		97
67)	Dibromochloromethane	14.42	129	5257	0.7612	ug/L		98
68)	1,2-Dibromoethane	14.68	107	7804	1.4548	ug/L		95
69)	1-Chlorohexane	14.75	91	3093710	323.1754	ug/L		77
70)	Chlorobenzene	15.18	112	6402	0.3155	ug/L		89
71)	1,1,1,2-Tetrachloroethane	15.20	131	1051	0.1446	ug/L	#	24
72)	Ethylbenzene	15.20	106	2758	0.2511	ug/L		82
73)	m-,p-Xylene	15.29	106	7899	0.6017	ug/L		94
74)	o-Xylene	15.86	106	2490	0.1965	ug/L		71
75)	Styrene	15.90	104	7614	0.3580	ug/L		91
76)	Bromoform	16.41	173	6944	1.6500	ug/L		95
77)	Isopropylbenzene	16.28	105	23768	0.7497	ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.50	83	12720	1.9426	ug/L		97
81)	1,2,3-Trichloropropane	16.69	110	5207	2.6928	ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.73	53	468972	337.2782	ug/L	#	50
83)	n-Propylbenzene	16.79	91	25834	0.6786	ug/L		98
84)	Bromobenzene	16.94	156	4350	0.5087	ug/L		80
85)	1,3,5-Trimethylbenzene	16.99	105	9549	0.3540	ug/L		94
86)	2-Chlorotoluene	17.08	91	10250	0.4044	ug/L		85
87)	4-Chlorotoluene	17.12	91	10678	0.4767	ug/L		93
88)	a-Methylstyrene	17.39	118	4860473	325.8044	ug/L		98
89)	tert-Butylbenzene	17.46	134	3329	0.5889	ug/L	#	1
90)	1,2,4-Trimethylbenzene	17.51	105	10602	0.3827	ug/L		84
91)	sec-Butylbenzene	17.72	105	27629	0.8305	ug/L		96
92)	p-Isopropyltoluene	17.89	119	16184	0.5783	ug/L		93
93)	1,3-Dichlorobenzene	18.08	146	10117	0.6264	ug/L		99
94)	1,4-Dichlorobenzene	18.21	146	11412	0.6988	ug/L		90
95)	n-Butylbenzene	18.41	91	21424	0.8384	ug/L		95
96)	1,2-Dichlorobenzene	18.71	146	10357	0.6842	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.70	75	4375	3.6887	ug/L		97
98)	1,2,4-Trichlorobenzene	20.86	180	14842	1.3400	ug/L		97
99)	Hexachlorobutadiene	21.01	225	8098	1.9142	ug/L		93
100)	Naphthalene	21.25	128	71843	3.2394	ug/L		99
101)	1,2,3-Trichlorobenzene	21.54	180	18787	1.7570	ug/L		95

(#) = qualifier out of range (m) = manual integration
6M146232.D 8260BWT.M Thu Apr 06 14:58:23 2017 Page 2

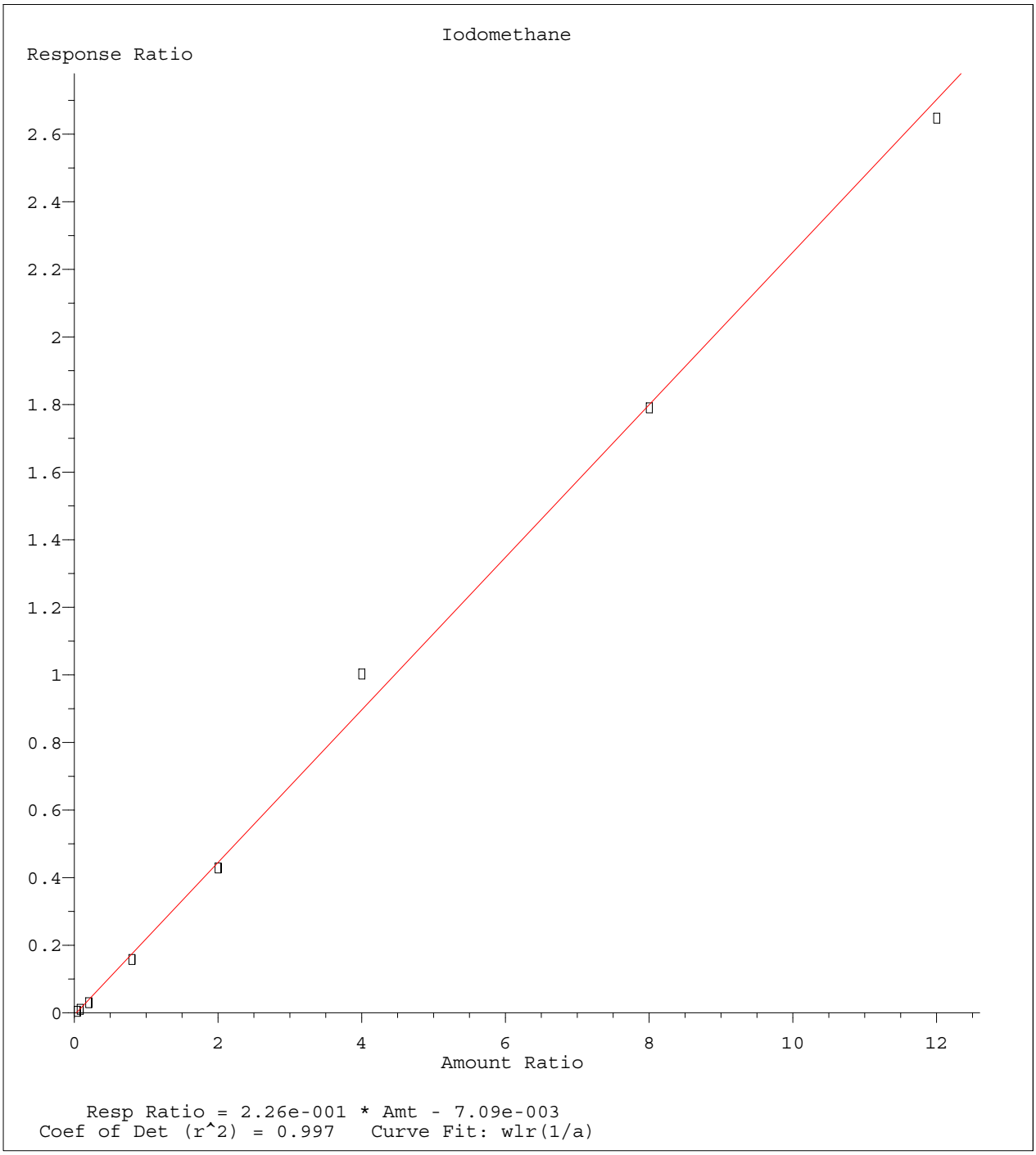
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146232.D Vial: 12
Acq On : 5 Apr 2017 22:09 Operator: TMB
Sample : WG608938-11 300ug/L STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 14:58 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration

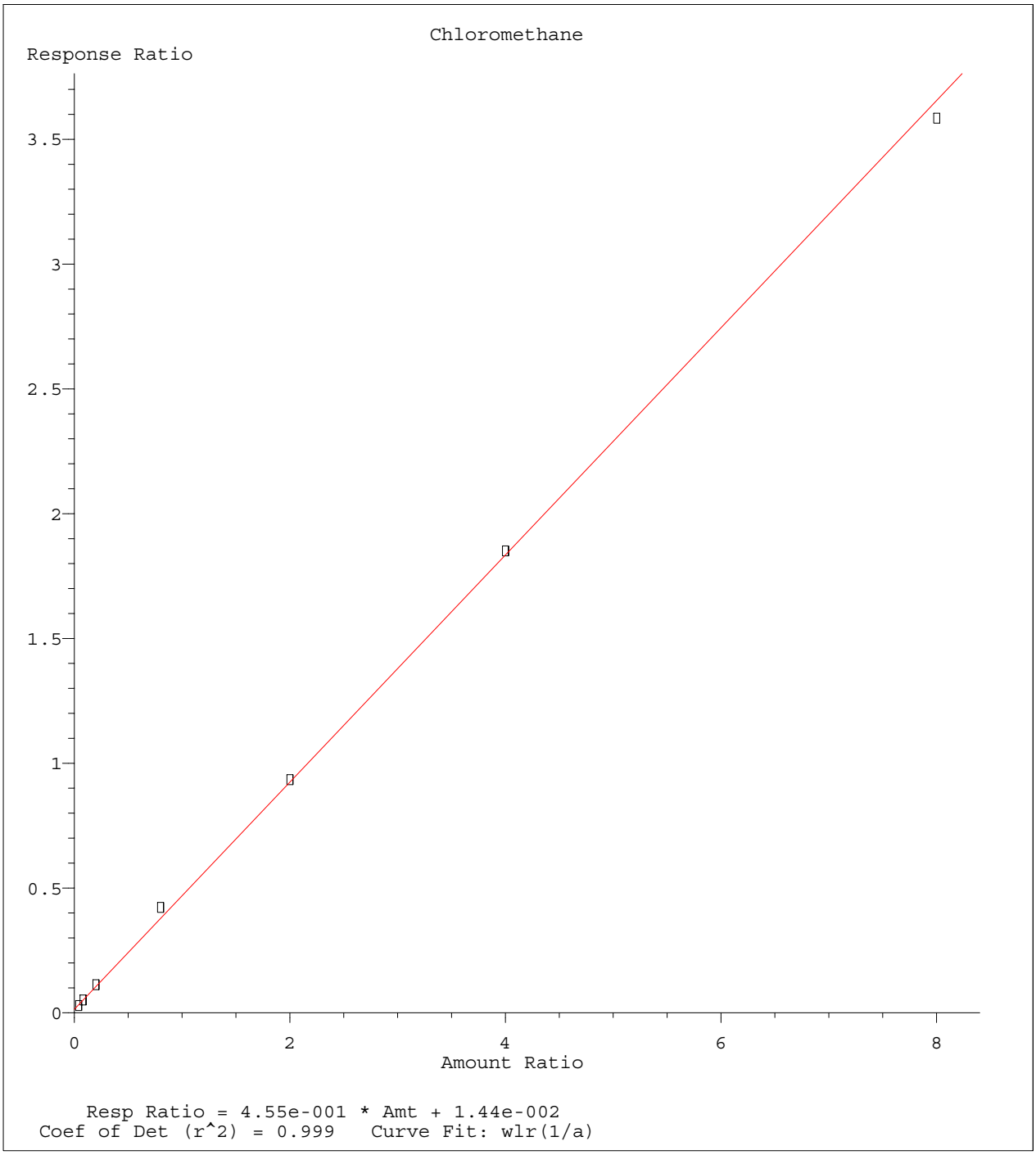




Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M
Calibration Table Last Updated: Thu Apr 06 09:55:03 2017



Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M
Calibration Table Last Updated: Thu Apr 06 09:55:03 2017



Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M
Calibration Table Last Updated: Thu Apr 06 09:55:03 2017

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146240.D Vial: 5
Acq On : 6 Apr 2017 15:57 Operator: TMB
Sample : WG608938-12 20ug/L ALT SRC STD 8260 Inst : Hpms6
Misc : 1,1 STD81257 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 16:54:41 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.26	96	670831	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.14	117	482468	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	257501	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.21	111	178273	26.0327 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.12%		
43) 1,2-Dichloroethane-d4	10.85	65	171804	25.4551 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.84%		
58) Toluene-d8	13.24	98	618189	25.1100 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	16.64	95	243106	24.8575 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.44%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.52	85	261278	24.5311 ug/L	94
3) Chloromethane	4.04	50	284057	22.4610 ug/L	99
4) Vinyl Chloride	4.27	62	267730	21.9996 ug/L	98
5) 1,3-Butadiene	4.31	54	117985	24.7175 ug/L	89
6) Bromomethane	5.23	94	93039	17.7066 ug/L	98
7) Chloroethane	5.40	64	119687	22.8578 ug/L	85
8) Trichlorofluoromethane	5.90	101	262422	21.0391 ug/L	99
9) Diethyl ether	6.44	59	528084	101.5927 ug/L	82
10) Isoprene	6.48	67	201796	19.6694 ug/L	81
11) Acrolein	6.67	56	92591	162.5878 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.69	101	153538	21.7457 ug/L	98
13) Acetone	6.77	43	27527	19.0157 ug/L	88
14) 1,1-Dichloroethene	7.01	61	204274	19.9737 ug/L	84
15) Tert-Butyl Alcohol	7.12	59	102016	227.1976 ug/L	91
16) Dimethyl Sulfide	7.27	62	152875	20.9191 ug/L	78
17) Iodomethane	7.54	142	153036	26.0301 ug/L	99
18) Methyl acetate	7.53	43	73917	20.3598 ug/L #	82
19) Methylene Chloride	7.80	84	150043	19.4056 ug/L	61
20) Carbon Disulfide	7.86	76	355422	16.1479 ug/L	99
21) Acrylonitrile	7.97	53	36232	21.5995 ug/L	100
22) Methyl Tert Butyl Ether	8.01	73	352993	20.8190 ug/L	92
23) trans-1,2-Dichloroethene	8.25	96	144008	19.5650 ug/L	78
24) n-Hexane	8.33	57	166297	19.9794 ug/L	85
25) Diisopropyl ether	8.66	45	1988872	104.9629 ug/L #	90
26) Vinyl Acetate	8.83	43	160945	30.5994 ug/L #	87
27) 1,1-Dichloroethane	8.87	63	240190	19.6997 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	1886475	98.2593 ug/L	90
29) 2-Butanone	9.42	43	36957	20.2563 ug/L #	79
30) Propionitrile	9.52	54	63234	106.2742 ug/L	100
31) 2,2-Dichloropropane	9.65	77	204249	22.0193 ug/L	80
32) cis-1,2-Dichloroethene	9.72	96	157553	19.4701 ug/L	90
33) Chloroform	9.92	83	257055	18.5067 ug/L	94
34) 1-Bromopropane	10.06	122	38246	26.6522 ug/L	98
35) Bromochloromethane	10.15	130	91199	21.4098 ug/L	99
36) Tetrahydrofuran	10.17	42	123208	102.5478 ug/L #	71
38) 1,1,1-Trichloroethane	10.46	97	227236	20.1227 ug/L	91
39) Cyclohexane	10.49	56	186905	17.8988 ug/L	77
40) 1,1-Dichloropropene	10.65	75	187277	19.6188 ug/L	83
41) Tert-Amyl-Methyl ether	10.75	73	1887460	103.5427 ug/L	92
42) Carbon Tetrachloride	10.80	117	183539	20.6128 ug/L	99

(#) = qualifier out of range (m) = manual integration

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146240.D Vial: 5
Acq On : 6 Apr 2017 15:57 Operator: TMB
Sample : WG608938-12 20ug/L ALT SRC STD 8260 Inst : Hpms6
Misc : 1,1 STD81257 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 16:54:41 2017 Quant Results File: 8260BWT.RES

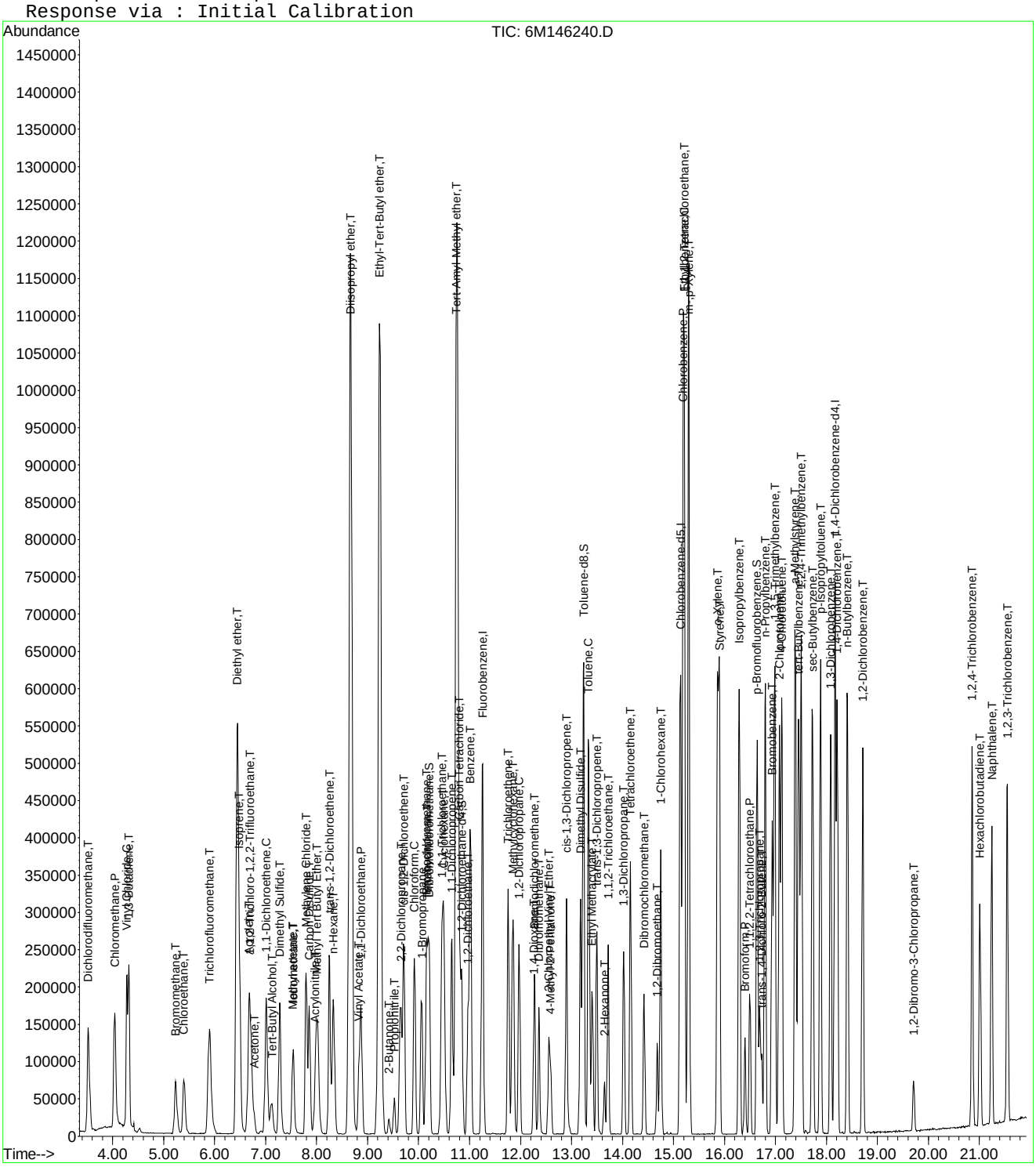
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.96	62	168256	19.4720	ug/L		89
46)	Benzene	11.01	78	540364	18.8266	ug/L		86
47)	Trichloroethene	11.76	130	145590	18.6353	ug/L		88
48)	Methylcyclohexane	11.85	83	208804	18.4987	ug/L		82
49)	1,2-Dichloropropane	11.97	63	132922	19.6231	ug/L		94
50)	1,4-Dioxane	12.26	88	10470	212.5754	ug/L		89
51)	Bromodichloromethane	12.27	83	185813	19.4319	ug/L		99
52)	Dibromomethane	12.36	93	81782	20.4995	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.55	63	67812	25.5220	ug/L		100
54)	4-Methyl-2-Pentanone	12.58	58	36319	20.8380	ug/L		84
55)	cis-1,3-Dichloropropene	12.90	75	227477	21.6024	ug/L		94
56)	Dimethyl Disulfide	13.18	79	134164	20.1956	ug/L		89
59)	Toluene	13.33	91	559021	18.5327	ug/L		99
60)	Ethyl Methacrylate	13.40	69	152544	20.8980	ug/L		71
62)	trans-1,3-Dichloropropene	13.49	75	184754	19.8643	ug/L		96
63)	1,1,2-Trichloroethane	13.72	97	107408	18.8951	ug/L		99
64)	2-Hexanone	13.65	43	58431	21.4061	ug/L		83
65)	1,3-Dichloropropane	14.02	76	192119	20.1344	ug/L		71
66)	Tetrachloroethene	14.16	166	141756	19.3936	ug/L		96
67)	Dibromochloromethane	14.42	129	136028	19.3580	ug/L		98
68)	1,2-Dibromoethane	14.68	107	106469	19.5061	ug/L		100
69)	1-Chlorohexane	14.75	91	199484	20.4795	ug/L		76
70)	Chlorobenzene	15.19	112	378551	18.3361	ug/L		95
71)	1,1,1,2-Tetrachloroethane	15.21	131	137413	18.5860	ug/L		97
72)	Ethylbenzene	15.21	106	207722	18.5860	ug/L		92
73)	m-,p-Xylene	15.30	106	498999	37.3538	ug/L		92
74)	o-Xylene	15.86	106	243704	18.9049	ug/L		94
75)	Styrene	15.90	104	417768	19.3046	ug/L		96
76)	Bromoform	16.40	173	80208	18.7306	ug/L		98
77)	Isopropylbenzene	16.29	105	603691	18.7136	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.50	83	131416	19.5954	ug/L		98
81)	1,2,3-Trichloropropane	16.69	110	38665	19.5232	ug/L		71
82)	trans-1,4-Dichloro-2-Buten	16.73	53	25343	17.7959	ug/L	#	1
83)	n-Propylbenzene	16.80	91	714710	18.3318	ug/L		99
84)	Bromobenzene	16.93	156	162348	18.5358	ug/L		83
85)	1,3,5-Trimethylbenzene	16.99	105	512320	18.5422	ug/L		99
86)	2-Chlorotoluene	17.08	91	450684	17.3610	ug/L		97
87)	4-Chlorotoluene	17.12	91	432917	18.8688	ug/L		96
88)	a-Methylstyrene	17.38	118	306134	20.0360	ug/L		98
89)	tert-Butylbenzene	17.46	134	110255	19.0440	ug/L		91
90)	1,2,4-Trimethylbenzene	17.51	105	530643	18.7005	ug/L		86
91)	sec-Butylbenzene	17.73	105	623072	18.2864	ug/L		99
92)	p-Isopropyltoluene	17.88	119	543701	18.9695	ug/L		99
93)	1,3-Dichlorobenzene	18.08	146	304800	18.4272	ug/L		99
94)	1,4-Dichlorobenzene	18.21	146	308581	18.4481	ug/L		98
95)	n-Butylbenzene	18.41	91	494571	18.8967	ug/L		100
96)	1,2-Dichlorobenzene	18.71	146	287359	18.5345	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.71	75	23576	19.4080	ug/L		93
98)	1,2,4-Trichlorobenzene	20.86	180	212338	18.7182	ug/L		99
99)	Hexachlorobutadiene	21.01	225	80592	18.6006	ug/L		100
100)	Naphthalene	21.24	128	425467	18.7312	ug/L		100
101)	1,2,3-Trichlorobenzene	21.55	180	199388	18.2068	ug/L		98

(#) = qualifier out of range (m) = manual integration
6M146240.D 8260BWT.M Thu Apr 06 16:54:44 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146240.D Vial: 5
Acq On : 6 Apr 2017 15:57 Operator: TMB
Sample : WG608938-12 20ug/L ALT SRC STD 8260 Inst : Hpms6
Misc : 1,1 STD81257 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 16:54 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146240.D Vial: 5
Acq On : 6 Apr 2017 15:57 Operator: TMB
Sample : WG608938-12 20ug/L ALT SRC STD 8260 Inst : Hpms6
Misc : 1,1 STD81257 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	20.0000	24.5311	-22.7#	120	0.00
3	P	Chloromethane	20.0000	22.4610	-12.3	107	0.02
4	C	Vinyl Chloride	20.0000	21.9995	-10.0	115	0.00
5	T	1,3-Butadiene	20.0000	24.7175	-23.6#	111	0.00
6	T	Bromomethane	20.0000	17.7066	11.5	95	0.02
7	T	Chloroethane	20.0000	22.8578	-14.3	115	0.02
8	T	Trichlorofluoromethane	20.0000	21.0391	-5.2	109	0.00
9	T	Diethyl ether	80.0000	101.5927	-27.0#	139	0.00
10	T	Isoprene	20.0000	19.6694	1.7	113	0.00
11	T	Acrolein	40.0000	162.5878	-306.5#	452	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	20.0000	21.7457	-8.7	116	0.00
13	T	Acetone	20.0000	19.0157	4.9	95	0.00
14	C	1,1-Dichloroethene	20.0000	19.9737	0.1	104	0.00
15	T	Tert-Butyl Alcohol	160.0000	227.1976	-42.0#	157	0.00
16	T	Dimethyl Sulfide	20.0000	20.9191	-4.6	117	0.00
17	T	Iodomethane	20.0000	26.0301	-30.2#	155	0.00
18	T	Methyl acetate	20.0000	20.3597	-1.8	118	0.00
19	T	Methylene Chloride	20.0000	19.4056	3.0	105	0.00
20	T	Carbon Disulfide	20.0000	16.1479	19.3	91	0.00
21	T	Acrylonitrile	40.0000	21.5995	46.0#	57	0.00
22	T	Methyl Tert Butyl Ether	20.0000	20.8190	-4.1	107	-0.01
23	T	trans-1,2-Dichloroethene	20.0000	19.5650	2.2	104	0.00
24	T	n-Hexane	20.0000	19.9794	0.1	114	0.00
25	T	Diisopropyl ether	80.0000	104.9629	-31.2#	142	0.00
26	T	Vinyl Acetate	20.0000	30.5994	-53.0#	189	0.00
27	P	1,1-Dichloroethane	20.0000	19.6997	1.5	103	0.00
28	T	Ethyl-Tert-Butyl ether	80.0000	98.2593	-22.8#	133	0.00
29	T	2-Butanone	20.0000	20.2563	-1.3	108	0.00
30	T	Propionitrile	80.0000	106.2742	-32.8#	144	0.00
31	T	2,2-Dichloropropane	20.0000	22.0193	-10.1	137	0.00
32	T	cis-1,2-Dichloroethene	20.0000	19.4701	2.6	104	0.00
33	C	Chloroform	20.0000	18.5067	7.5	106	0.00
34		1-Bromopropane	20.0000	26.6522	-33.3#	136	0.00
35	T	Bromochloromethane	20.0000	21.4098	-7.0	107	0.00
36	T	Tetrahydrofuran	80.0000	102.5478	-28.2#	142	0.00
37	S	Dibromofluoromethane	10.0000	26.0327	-160.3#	272	0.00
38	T	1,1,1-Trichloroethane	20.0000	20.1227	-0.6	107	0.00
39	T	Cyclohexane	20.0000	17.8988	10.5	102	0.00
40	T	1,1-Dichloropropene	20.0000	19.6188	1.9	104	0.00
41	T	Tert-Amyl-Methyl ether	80.0000	103.5426	-29.4#	142	0.00
42	T	Carbon Tetrachloride	20.0000	20.6128	-3.1	104	-0.01
43	S	1,2-Dichloroethane-d4	10.0000	25.4551	-154.6#	267	0.00
44		Heptane	-1.0000	0.0000	0.0	142	0.00
45	T	1,2-Dichloroethane	20.0000	19.4720	2.6	104	0.00
46	T	Benzene	20.0000	18.8266	5.9	102	0.00
47	T	Trichloroethene	20.0000	18.6353	6.8	97	0.00
48	T	Methylcyclohexane	20.0000	18.4987	7.5	106	0.00
49	C	1,2-Dichloropropane	20.0000	19.6231	1.9	101	0.00
50	T	1,4-Dioxane	160.0000	212.5754	-32.9#	149	0.00
51	T	Bromodichloromethane	20.0000	19.4319	2.8	100	0.00
52	T	Dibromomethane	20.0000	20.4995	-2.5	106	0.00
53	T	2-Chloroethyl Vinyl Ether	20.0000	25.5220	-27.6#	127	0.00
54	T	4-Methyl-2-Pentanone	20.0000	20.8380	-4.2	113	0.00

(#) = Out of Range
6M146240.D 8260BWT.M Thu Apr 06 17:39:18 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146240.D Vial: 5
Acq On : 6 Apr 2017 15:57 Operator: TMB
Sample : WG608938-12 20ug/L ALT SRC STD 8260 Inst : Hpms6
Misc : 1,1 STD81257 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	20.0000	21.6024	-8.0	110	0.00
56	T	Dimethyl Disulfide	20.0000	20.1956	-1.0	119	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	108	0.00
58	S	Toluene-d8	10.0000	25.1100	-151.1#	271	0.00
59	C	Toluene	20.0000	18.5327	7.3	101	0.00
60	T	Ethyl Methacrylate	20.0000	20.8980	-4.5	118	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	103	0.09
62	T	trans-1,3-Dichloropropene	20.0000	19.8643	0.7	104	0.00
63	T	1,1,2-Trichloroethane	20.0000	18.8951	5.5	100	0.00
64	T	2-Hexanone	20.0000	21.4061	-7.0	116	0.00
65	T	1,3-Dichloropropane	20.0000	20.1344	-0.7	107	0.00
66	T	Tetrachloroethene	20.0000	19.3936	3.0	104	0.00
67	T	Dibromochloromethane	20.0000	19.3580	3.2	101	0.00
68	T	1,2-Dibromoethane	20.0000	19.5061	2.5	106	0.00
69	T	1-Chlorohexane	20.0000	20.4795	-2.4	119	0.00
70	P	Chlorobenzene	20.0000	18.3361	8.3	101	0.00
71	T	1,1,1,2-Tetrachloroethane	20.0000	18.5860	7.1	100	0.00
72	C	Ethylbenzene	20.0000	18.5860	7.1	103	0.00
73	T	m-,p-Xylene	40.0000	37.3538	6.6	104	0.00
74	T	o-Xylene	20.0000	18.9049	5.5	102	0.00
75	T	Styrene	20.0000	19.3046	3.5	103	0.00
76	P	Bromoform	20.0000	18.7306	6.3	99	0.00
77	T	Isopropylbenzene	20.0000	18.7136	6.4	101	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	109	0.00
79	P	1,1,2,2-Tetrachloroethane	20.0000	19.5954	2.0	110	0.00
80	S	p-Bromofluorobenzene	10.0000	24.8575	-148.6#	265	0.00
81	T	1,2,3-Trichloropropane	20.0000	19.5233	2.4	104	0.00
82	T	trans-1,4-Dichloro-2-Butene	20.0000	17.7959	11.0	102	0.00
83	T	n-Propylbenzene	20.0000	18.3318	8.3	100	0.00
84	T	Bromobenzene	20.0000	18.5358	7.3	101	0.00
85	T	1,3,5-Trimethylbenzene	20.0000	18.5422	7.3	102	0.00
86	T	2-Chlorotoluene	20.0000	17.3610	13.2	93	0.00
87	T	4-Chlorotoluene	20.0000	18.8688	5.7	112	0.00
88	T	a-Methylstyrene	20.0000	20.0360	-0.2	119	0.00
89	T	tert-Butylbenzene	20.0000	19.0440	4.8	103	0.00
90	T	1,2,4-Trimethylbenzene	20.0000	18.7005	6.5	102	0.00
91	T	sec-Butylbenzene	20.0000	18.2864	8.6	100	0.00
92	T	p-Isopropyltoluene	20.0000	18.9695	5.2	104	0.00
93	T	1,3-Dichlorobenzene	20.0000	18.4272	7.9	101	0.00
94	T	1,4-Dichlorobenzene	20.0000	18.4481	7.8	103	0.00
95	T	n-Butylbenzene	20.0000	18.8967	5.5	104	0.00
96	T	1,2-Dichlorobenzene	20.0000	18.5345	7.3	102	0.00
97	T	1,2-Dibromo-3-Chloropropane	20.0000	19.4080	3.0	103	0.00
98	T	1,2,4-Trichlorobenzene	20.0000	18.7182	6.4	104	0.00
99	T	Hexachlorobutadiene	20.0000	18.6007	7.0	106	0.00
100	T	Naphthalene	20.0000	18.7312	6.3	101	0.00
101	T	1,2,3-Trichlorobenzene	20.0000	18.2068	9.0	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M146240.D 8260BWT.M Thu Apr 06 17:39:18 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146237.D Vial: 2
Acq On : 6 Apr 2017 14:24 Operator: TMB
Sample : WG609128-02 50ug/L CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 15:26:17 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.26	96	691654	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.14	117	501052	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	262882	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.21	111	184125	26.0777 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.32%		
43) 1,2-Dichloroethane-d4	10.85	65	172562	24.7976 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.20%		
58) Toluene-d8	13.24	98	638779	24.9840 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.92%		
80) p-Bromofluorobenzene	16.64	95	249708	25.0099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.04%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.52	85	601452	54.7695 ug/L	94
3) Chloromethane	4.04	50	607319	47.4279 ug/L	97
4) Vinyl Chloride	4.28	62	595219	47.4371 ug/L	98
5) 1,3-Butadiene	4.32	54	237317	50.9100 ug/L	88
6) Bromomethane	5.24	94	238003	43.9316 ug/L	98
7) Chloroethane	5.40	64	280427	51.9436 ug/L	86
8) Trichlorofluoromethane	5.91	101	665951	51.7837 ug/L	99
9) Diethyl ether	6.44	59	524732	97.9087 ug/L	81
10) Isoprene	6.48	67	542693	51.3047 ug/L	80
11) Acrolein	6.67	56	29843	50.8260 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.70	101	366307	50.3183 ug/L	99
13) Acetone	6.77	43	72773	48.7582 ug/L	91
14) 1,1-Dichloroethene	7.01	61	528586	50.1287 ug/L	82
15) Tert-Butyl Alcohol	7.10	59	86391	186.6071 ug/L	90
16) Dimethyl Sulfide	7.27	62	386488	51.2940 ug/L	78
17) Iodomethane	7.54	142	421111	68.1617 ug/L	99
18) Methyl acetate	7.53	43	181496	48.4863 ug/L #	82
19) Methylene Chloride	7.80	84	379913	47.6561 ug/L	60
20) Carbon Disulfide	7.86	76	1174340	51.7477 ug/L	99
21) Acrylonitrile	7.97	53	87488	50.5853 ug/L	99
22) Methyl Tert Butyl Ether	8.01	73	866358	49.5582 ug/L	91
23) trans-1,2-Dichloroethene	8.25	96	371216	48.9154 ug/L	77
24) n-Hexane	8.33	57	464833	54.1651 ug/L	84
25) Diisopropyl ether	8.66	45	1918694	98.2107 ug/L #	90
26) Vinyl Acetate	8.83	43	374602	69.0764 ug/L #	87
27) 1,1-Dichloroethane	8.87	63	615339	48.9491 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1935739	97.7899 ug/L	90
29) 2-Butanone	9.42	43	89592	47.6274 ug/L #	78
30) Propionitrile	9.52	54	58049	94.6229 ug/L	100
31) 2,2-Dichloropropane	9.64	77	485441	50.7579 ug/L	79
32) cis-1,2-Dichloroethene	9.72	96	403077	48.3119 ug/L	89
33) Chloroform	9.92	83	634720	44.3210 ug/L	95
34) 1-Bromopropane	10.06	122	79482	53.7205 ug/L	100
35) Bromochloromethane	10.15	130	228049	51.9248 ug/L	100
36) Tetrahydrofuran	10.17	42	113440	91.5752 ug/L #	70
38) 1,1,1-Trichloroethane	10.46	97	565501	48.5699 ug/L	90
39) Cyclohexane	10.49	56	547700	50.8709 ug/L	78
40) 1,1-Dichloropropene	10.65	75	473327	48.0920 ug/L	82
41) Tert-Amyl-Methyl ether	10.75	73	1816274	96.6378 ug/L	92
42) Carbon Tetrachloride	10.80	117	487044	53.0518 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M146237.D 8260BWT.M Thu Apr 06 15:26:20 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146237.D Vial: 2
Acq On : 6 Apr 2017 14:24 Operator: TMB
Sample : WG609128-02 50ug/L CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 15:26:17 2017 Quant Results File: 8260BWT.RES

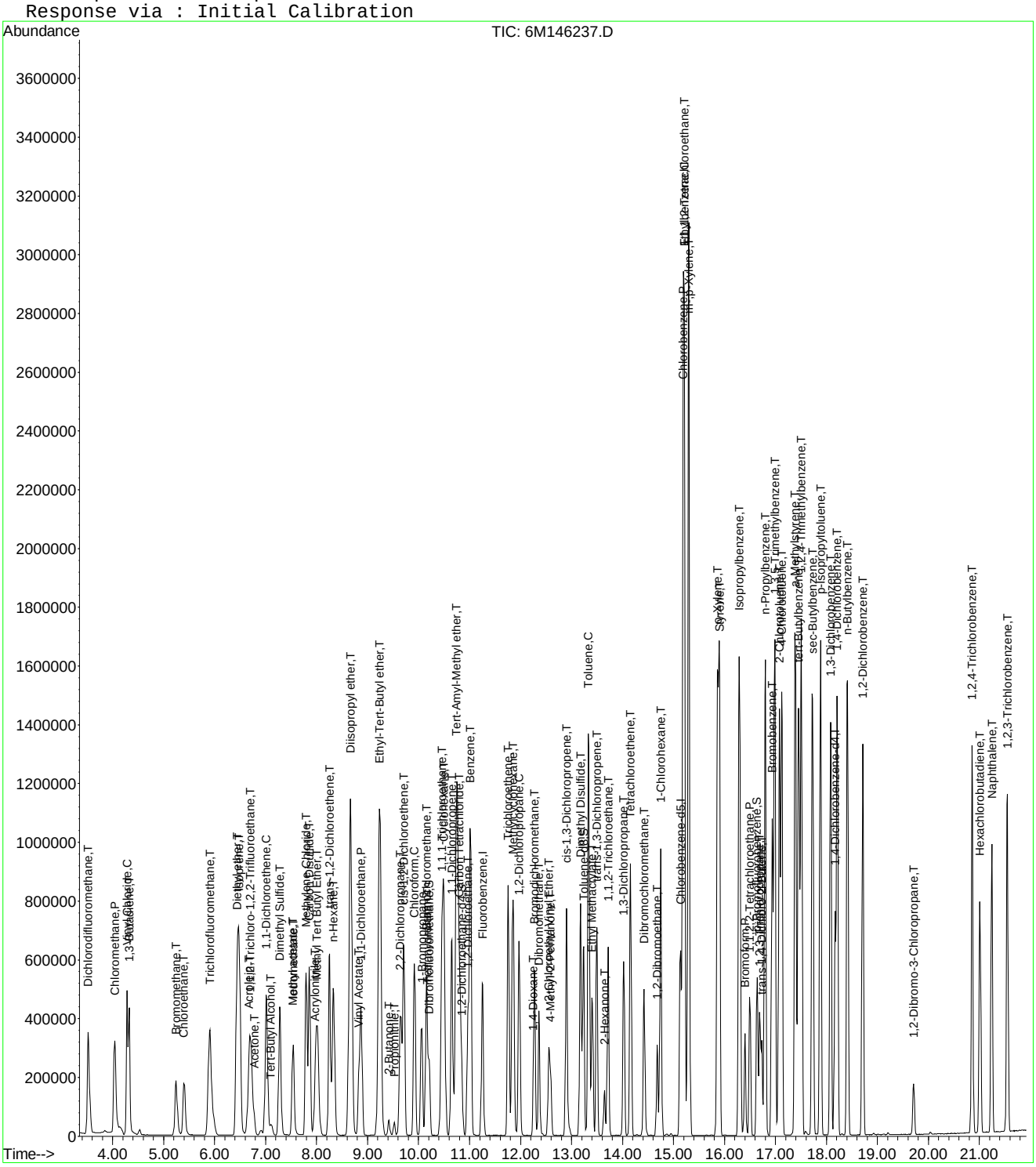
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.96	62	424350	47.6308	ug/L		89
46)	Benzene	11.01	78	1365740	46.1506	ug/L		87
47)	Trichloroethene	11.76	130	377450	46.8586	ug/L		88
48)	Methylcyclohexane	11.85	83	582755	50.0741	ug/L		82
49)	1,2-Dichloropropane	11.97	63	341735	48.9309	ug/L		92
50)	1,4-Dioxane	12.25	88	10271	202.2569	ug/L		82
51)	Bromodichloromethane	12.27	83	489886	49.6888	ug/L		100
52)	Dibromomethane	12.36	93	201912	49.0876	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.55	63	154370	56.3501	ug/L		100
54)	4-Methyl-2-Pentanone	12.58	58	85804	47.7479	ug/L		84
55)	cis-1,3-Dichloropropene	12.90	75	562169	51.7793	ug/L		95
56)	Dimethyl Disulfide	13.18	79	336617	49.1451	ug/L		89
59)	Toluene	13.33	91	1430832	45.6756	ug/L		99
60)	Ethyl Methacrylate	13.40	69	359996	47.4889	ug/L		72
62)	trans-1,3-Dichloropropene	13.49	75	480366	49.7322	ug/L		96
63)	1,1,2-Trichloroethane	13.72	97	275462	46.6616	ug/L		99
64)	2-Hexanone	13.65	43	132604	46.7775	ug/L		85
65)	1,3-Dichloropropane	14.02	76	461256	46.5474	ug/L		71
66)	Tetrachloroethene	14.16	166	359416	47.3479	ug/L		96
67)	Dibromochloromethane	14.42	129	353219	48.4019	ug/L		99
68)	1,2-Dibromoethane	14.68	107	265598	46.8552	ug/L		99
69)	1-Chlorohexane	14.75	91	499068	49.3352	ug/L		76
70)	Chlorobenzene	15.19	112	995803	46.4453	ug/L		94
71)	1,1,1,2-Tetrachloroethane	15.21	131	367596	47.8757	ug/L		98
72)	Ethylbenzene	15.21	106	546354	47.0721	ug/L		92
73)	m-,p-Xylene	15.30	106	1302562	93.8900	ug/L		92
74)	o-Xylene	15.86	106	629939	47.0540	ug/L		93
75)	Styrene	15.90	104	1080767	48.0888	ug/L		96
76)	Bromoform	16.40	173	214998	48.3454	ug/L		99
77)	Isopropylbenzene	16.29	105	1573345	46.9626	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.50	83	322269	47.0699	ug/L		98
81)	1,2,3-Trichloropropane	16.69	110	92454	45.7275	ug/L	#	50
82)	trans-1,4-Dichloro-2-Buten	16.73	53	75595	51.9964	ug/L	#	1
83)	n-Propylbenzene	16.80	91	1885085	47.3613	ug/L		99
84)	Bromobenzene	16.93	156	419976	46.9686	ug/L		83
85)	1,3,5-Trimethylbenzene	16.99	105	1333759	47.2841	ug/L		99
86)	2-Chlorotoluene	17.08	91	1178841	44.4811	ug/L		97
87)	4-Chlorotoluene	17.12	91	1124972	48.0285	ug/L		96
88)	a-Methylstyrene	17.38	118	765895	49.1006	ug/L		98
89)	tert-Butylbenzene	17.46	134	280612	47.4772	ug/L		87
90)	1,2,4-Trimethylbenzene	17.51	105	1378030	47.5693	ug/L		85
91)	sec-Butylbenzene	17.73	105	1639486	47.1319	ug/L		99
92)	p-Isopropyltoluene	17.88	119	1411203	48.2285	ug/L		99
93)	1,3-Dichlorobenzene	18.08	146	788867	46.7162	ug/L		98
94)	1,4-Dichlorobenzene	18.21	146	789937	46.2587	ug/L		98
95)	n-Butylbenzene	18.42	91	1283482	48.0359	ug/L		100
96)	1,2-Dichlorobenzene	18.71	146	733412	46.3364	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.71	75	58113	46.8601	ug/L		92
98)	1,2,4-Trichlorobenzene	20.86	180	548175	47.3340	ug/L		99
99)	Hexachlorobutadiene	21.01	225	213390	48.2423	ug/L		100
100)	Naphthalene	21.24	128	1057264	45.5932	ug/L		100
101)	1,2,3-Trichlorobenzene	21.55	180	496623	44.4201	ug/L		99

(#) = qualifier out of range (m) = manual integration

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146237.D Vial: 2
Acq On : 6 Apr 2017 14:24 Operator: TMB
Sample : WG609128-02 50ug/L CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 15:26 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



Continuing Calibration Area and RT check

Instrument: Hpms6
Initial cal date: 5 Apr 2017 20:34
CCV date: 6 Apr 2017 14:24
CCV Filename: 6M146237.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	643185	11.26	452398	15.14	244954	18.17
CCV	691654	11.26	501052	15.14	262882	18.17

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146237.D Vial: 2
Acq On : 6 Apr 2017 14:24 Operator: TMB
Sample : WG609128-02 50ug/L CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	0.3969	0.4348	-9.5	109	0.00
3	P	Chloromethane	0.5473	0.4390	19.8	101	0.02
4	C	Vinyl Chloride	0.4535	0.4303	5.1	103	0.00
5	T	1,3-Butadiene	0.1682	0.1716	-2.0	105	0.00
6	T	Bromomethane	0.1958	0.1721	12.1	84	0.03
7	T	Chloroethane	0.1951	0.2027	-3.9	107	0.02
8	T	Trichlorofluoromethane	0.4648	0.4814	-3.6	107	0.02
9	T	Diethyl ether	0.1937	0.1897	2.1	106	0.00
10	T	Isoprene	0.3823	0.3923	-2.6	109	0.00
11	T	Acrolein	0.0212	0.0216	-1.6	108	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2631	0.2648	-0.6	108	0.02
13	T	Acetone	0.0539	0.0526	2.5	102	0.00
14	C	1,1-Dichloroethene	0.3811	0.3821	-0.3	106	0.00
15	T	Tert-Butyl Alcohol	0.0167	0.0156	6.7	117	-0.02
16	T	Dimethyl Sulfide	0.2723	0.2794	-2.6	109	0.00
17	T	Iodomethane	0.1863	0.3044	-63.4#	153	0.00
18	T	Methyl acetate	0.1353	0.1312	3.0	105	0.00
19	T	Methylene Chloride	0.2882	0.2746	4.7	104	0.00
20	T	Carbon Disulfide	0.8203	0.8489	-3.5	108	0.00
21	T	Acrylonitrile	0.0625	0.0633	-1.2	103	0.00
22	T	Methyl Tert Butyl Ether	0.6319	0.6263	0.9	107	-0.01
23	T	trans-1,2-Dichloroethene	0.2743	0.2683	2.2	105	0.00
24	T	n-Hexane	0.3102	0.3360	-8.3	116	0.00
25	T	Diisopropyl ether	0.7062	0.6935	1.8	108	0.00
26	T	Vinyl Acetate	0.1960	0.2708	-38.1#	175	0.00
27	P	1,1-Dichloroethane	0.4544	0.4448	2.1	106	0.00
28	T	Ethyl-Tert-Butyl ether	0.7155	0.6997	2.2	107	0.00
29	T	2-Butanone	0.0680	0.0648	4.7	106	0.00
30	T	Propionitrile	0.0222	0.0210	5.4	99	0.00
31	T	2,2-Dichloropropane	0.3457	0.3509	-1.5	136	0.00
32	T	cis-1,2-Dichloroethene	0.3016	0.2914	3.4	104	0.00
33	C	Chloroform	0.5176	0.4588	11.4	104	0.00
34		1-Bromopropane	0.0535	0.0575	-7.4	108	0.00
35	T	Bromochloromethane	0.1588	0.1649	-3.8	106	0.00
36	T	Tetrahydrofuran	0.0448	0.0410	8.4	102	0.00
37	S	Dibromofluoromethane	0.2552	0.2662	-4.3	111	0.00
38	T	1,1,1-Trichloroethane	0.4208	0.4088	2.9	104	0.00
39	T	Cyclohexane	0.3892	0.3959	-1.7	107	0.00
40	T	1,1-Dichloropropene	0.3558	0.3422	3.8	103	0.00
41	T	Tert-Amyl-Methyl ether	0.6793	0.6565	3.4	105	0.00
42	T	Carbon Tetrachloride	0.3318	0.3521	-6.1	103	-0.01
43	S	1,2-Dichloroethane-d4	0.2515	0.2495	0.8	106	0.00
44		Heptane	0.0000	0.0000	0.0	109	0.00
45	T	1,2-Dichloroethane	0.3220	0.3068	4.7	103	0.00
46	T	Benzene	1.0697	0.9873	7.7	104	0.00
47	T	Trichloroethene	0.2912	0.2729	6.3	97	0.00
48	T	Methylcyclohexane	0.4207	0.4213	-0.1	107	0.00
49	C	1,2-Dichloropropane	0.2524	0.2470	2.1	104	0.00
50	T	1,4-Dioxane	0.0018	0.0019	-1.1	104	0.00
51	T	Bromodichloromethane	0.3564	0.3541	0.6	103	0.00
52	T	Dibromomethane	0.1487	0.1460	1.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0990	0.1116	-12.7	113	0.00
54	T	4-Methyl-2-Pentanone	0.0649	0.0620	4.5	105	0.00

(#) = Out of Range
6M146237.D 8260BWT.M Thu Apr 06 15:26:45 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146237.D Vial: 2
Acq On : 6 Apr 2017 14:24 Operator: TMB
Sample : WG609128-02 50ug/L CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3924	0.4064	-3.6	107	0.00
56	T	Dimethyl Disulfide	0.2476	0.2433	1.7	106	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	111	0.00
58	S	Toluene-d8	1.2757	1.2749	0.1	112	0.00
59	C	Toluene	1.5630	1.4278	8.6	103	0.00
60	T	Ethyl Methacrylate	0.3782	0.3592	5.0	103	0.00
61		Paraldehyde	0.0000	0.0000	0.0	101	0.09
62	T	trans-1,3-Dichloropropene	0.4819	0.4794	0.5	107	0.00
63	T	1,1,2-Trichloroethane	0.2945	0.2749	6.7	102	0.00
64	T	2-Hexanone	0.1414	0.1323	6.4	105	0.00
65	T	1,3-Dichloropropane	0.4944	0.4603	6.9	103	0.00
66	T	Tetrachloroethene	0.3787	0.3587	5.3	103	0.00
67	T	Dibromochloromethane	0.3641	0.3525	3.2	102	0.00
68	T	1,2-Dibromoethane	0.2828	0.2650	6.3	103	0.00
69	T	1-Chlorohexane	0.5047	0.4980	1.3	107	0.00
70	P	Chlorobenzene	1.0698	0.9937	7.1	103	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3831	0.3668	4.2	102	0.00
72	C	Ethylbenzene	0.5791	0.5452	5.9	104	0.00
73	T	m-,p-Xylene	0.6922	0.6499	6.1	103	0.00
74	T	o-Xylene	0.6680	0.6286	5.9	103	0.00
75	T	Styrene	1.1214	1.0785	3.8	102	0.00
76	P	Bromoform	0.2219	0.2145	3.3	100	0.00
77	T	Isopropylbenzene	1.6716	1.5700	6.1	102	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6511	0.6129	5.9	109	0.00
80	S	p-Bromofluorobenzene	0.9495	0.9499	-0.0	109	0.00
81	T	1,2,3-Trichloropropane	0.1923	0.1759	8.5	99	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1383	0.1438	-4.0	109	0.00
83	T	n-Propylbenzene	3.7852	3.5854	5.3	103	0.00
84	T	Bromobenzene	0.8504	0.7988	6.1	102	0.00
85	T	1,3,5-Trimethylbenzene	2.6825	2.5368	5.4	103	0.00
86	T	2-Chlorotoluene	2.5203	2.2422	11.0	101	0.00
87	T	4-Chlorotoluene	2.2275	2.1397	3.9	105	0.00
88	T	a-Methylstyrene	1.4834	1.4567	1.8	107	0.00
89	T	tert-Butylbenzene	0.5621	0.5337	5.0	101	0.00
90	T	1,2,4-Trimethylbenzene	2.7549	2.6210	4.9	102	0.00
91	T	sec-Butylbenzene	3.3081	3.1183	5.7	102	0.00
92	T	p-Isopropyltoluene	2.7827	2.6841	3.5	104	0.00
93	T	1,3-Dichlorobenzene	1.6059	1.5004	6.6	102	0.00
94	T	1,4-Dichlorobenzene	1.6240	1.5025	7.5	102	0.00
95	T	n-Butylbenzene	2.5410	2.4412	3.9	103	0.00
96	T	1,2-Dichlorobenzene	1.5052	1.3949	7.3	102	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1179	0.1105	6.3	100	0.00
98	T	1,2,4-Trichlorobenzene	1.1014	1.0426	5.3	103	0.00
99	T	Hexachlorobutadiene	0.4207	0.4059	3.5	106	0.00
100	T	Naphthalene	2.2053	2.0109	8.8	97	0.00
101	T	1,2,3-Trichlorobenzene	1.0632	0.9446	11.2	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M146237.D 8260BWT.M Thu Apr 06 15:26:45 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146237.D Vial: 2
Acq On : 6 Apr 2017 14:24 Operator: TMB
Sample : WG609128-02 50ug/L CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.7695	-9.5	109	0.00
3	P	Chloromethane	50.0000	47.4279	5.1	101	0.02
4	C	Vinyl Chloride	50.0000	47.4371	5.1	103	0.00
5	T	1,3-Butadiene	50.0000	50.9100	-1.8	105	0.00
6	T	Bromomethane	50.0000	43.9316	12.1	84	0.03
7	T	Chloroethane	50.0000	51.9436	-3.9	107	0.02
8	T	Trichlorofluoromethane	50.0000	51.7837	-3.6	107	0.02
9	T	Diethyl ether	100.0000	97.9087	2.1	106	0.00
10	T	Isoprene	50.0000	51.3047	-2.6	109	0.00
11	T	Acrolein	50.0000	50.8260	-1.7	108	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.3183	-0.6	108	0.02
13	T	Acetone	50.0000	48.7582	2.5	102	0.00
14	C	1,1-Dichloroethene	50.0000	50.1287	-0.3	106	0.00
15	T	Tert-Butyl Alcohol	200.0000	186.6071	6.7	117	-0.02
16	T	Dimethyl Sulfide	50.0000	51.2940	-2.6	109	0.00
17	T	Iodomethane	50.0000	68.1617	-36.3#	153	0.00
18	T	Methyl acetate	50.0000	48.4864	3.0	105	0.00
19	T	Methylene Chloride	50.0000	47.6561	4.7	104	0.00
20	T	Carbon Disulfide	50.0000	51.7477	-3.5	108	0.00
21	T	Acrylonitrile	50.0000	50.5853	-1.2	103	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.5582	0.9	107	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	48.9153	2.2	105	0.00
24	T	n-Hexane	50.0000	54.1651	-8.3	116	0.00
25	T	Diisopropyl ether	100.0000	98.2107	1.8	108	0.00
26	T	Vinyl Acetate	50.0000	69.0764	-38.2#	175	0.00
27	P	1,1-Dichloroethane	50.0000	48.9491	2.1	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.7899	2.2	107	0.00
29	T	2-Butanone	50.0000	47.6274	4.7	106	0.00
30	T	Propionitrile	100.0000	94.6229	5.4	99	0.00
31	T	2,2-Dichloropropane	50.0000	50.7579	-1.5	136	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.3119	3.4	104	0.00
33	C	Chloroform	50.0000	44.3210	11.4	104	0.00
34		1-Bromopropane	50.0000	53.7205	-7.4	108	0.00
35	T	Bromochloromethane	50.0000	51.9248	-3.8	106	0.00
36	T	Tetrahydrofuran	100.0000	91.5752	8.4	102	0.00
37	S	Dibromofluoromethane	25.0000	26.0777	-4.3	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.5699	2.9	104	0.00
39	T	Cyclohexane	50.0000	50.8709	-1.7	107	0.00
40	T	1,1-Dichloropropene	50.0000	48.0920	3.8	103	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	96.6378	3.4	105	0.00
42	T	Carbon Tetrachloride	50.0000	53.0518	-6.1	103	-0.01
43	S	1,2-Dichloroethane-d4	25.0000	24.7976	0.8	106	0.00
44		Heptane	-1.0000	0.0000	0.0	109	0.00
45	T	1,2-Dichloroethane	50.0000	47.6308	4.7	103	0.00
46	T	Benzene	50.0000	46.1506	7.7	104	0.00
47	T	Trichloroethene	50.0000	46.8586	6.3	97	0.00
48	T	Methylcyclohexane	50.0000	50.0741	-0.1	107	0.00
49	C	1,2-Dichloropropane	50.0000	48.9309	2.1	104	0.00
50	T	1,4-Dioxane	200.0000	202.2569	-1.1	104	0.00
51	T	Bromodichloromethane	50.0000	49.6888	0.6	103	0.00
52	T	Dibromomethane	50.0000	49.0876	1.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	56.3501	-12.7	113	0.00
54	T	4-Methyl-2-Pentanone	50.0000	47.7479	4.5	105	0.00

(#) = Out of Range
6M146237.D 8260BWT.M Thu Apr 06 15:26:47 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146237.D Vial: 2
Acq On : 6 Apr 2017 14:24 Operator: TMB
Sample : WG609128-02 50ug/L CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD81194 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.7793	-3.6	107	0.00
56	T	Dimethyl Disulfide	50.0000	49.1451	1.7	106	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	111	0.00
58	S	Toluene-d8	25.0000	24.9840	0.1	112	0.00
59	C	Toluene	50.0000	45.6756	8.6	103	0.00
60	T	Ethyl Methacrylate	50.0000	47.4889	5.0	103	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	101	0.09
62	T	trans-1,3-Dichloropropene	50.0000	49.7322	0.5	107	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.6616	6.7	102	0.00
64	T	2-Hexanone	50.0000	46.7775	6.4	105	0.00
65	T	1,3-Dichloropropane	50.0000	46.5474	6.9	103	0.00
66	T	Tetrachloroethene	50.0000	47.3479	5.3	103	0.00
67	T	Dibromochloromethane	50.0000	48.4019	3.2	102	0.00
68	T	1,2-Dibromoethane	50.0000	46.8552	6.3	103	0.00
69	T	1-Chlorohexane	50.0000	49.3352	1.3	107	0.00
70	P	Chlorobenzene	50.0000	46.4453	7.1	103	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	47.8757	4.2	102	0.00
72	C	Ethylbenzene	50.0000	47.0721	5.9	104	0.00
73	T	m-,p-Xylene	100.0000	93.8900	6.1	103	0.00
74	T	o-Xylene	50.0000	47.0540	5.9	103	0.00
75	T	Styrene	50.0000	48.0888	3.8	102	0.00
76	P	Bromoform	50.0000	48.3454	3.3	100	0.00
77	T	Isopropylbenzene	50.0000	46.9626	6.1	102	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.0699	5.9	109	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0099	-0.0	109	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.7275	8.5	99	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	51.9964	-4.0	109	0.00
83	T	n-Propylbenzene	50.0000	47.3613	5.3	103	0.00
84	T	Bromobenzene	50.0000	46.9686	6.1	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	47.2841	5.4	103	0.00
86	T	2-Chlorotoluene	50.0000	44.4811	11.0	101	0.00
87	T	4-Chlorotoluene	50.0000	48.0285	3.9	105	0.00
88	T	a-Methylstyrene	50.0000	49.1006	1.8	107	0.00
89	T	tert-Butylbenzene	50.0000	47.4772	5.0	101	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	47.5693	4.9	102	0.00
91	T	sec-Butylbenzene	50.0000	47.1319	5.7	102	0.00
92	T	p-Isopropyltoluene	50.0000	48.2285	3.5	104	0.00
93	T	1,3-Dichlorobenzene	50.0000	46.7162	6.6	102	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.2587	7.5	102	0.00
95	T	n-Butylbenzene	50.0000	48.0359	3.9	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.3364	7.3	102	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.8601	6.3	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.3340	5.3	103	0.00
99	T	Hexachlorobutadiene	50.0000	48.2423	3.5	106	0.00
100	T	Naphthalene	50.0000	45.5932	8.8	97	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.4201	11.2	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M146237.D 8260BWT.M Thu Apr 06 15:26:47 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146238.D Vial: 3
Acq On : 6 Apr 2017 14:54 Operator: TMB
Sample : WG608979-01 100ug/L A9 CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD80642 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 15:26:21 2017 Quant Results File: 8260BWT.RES

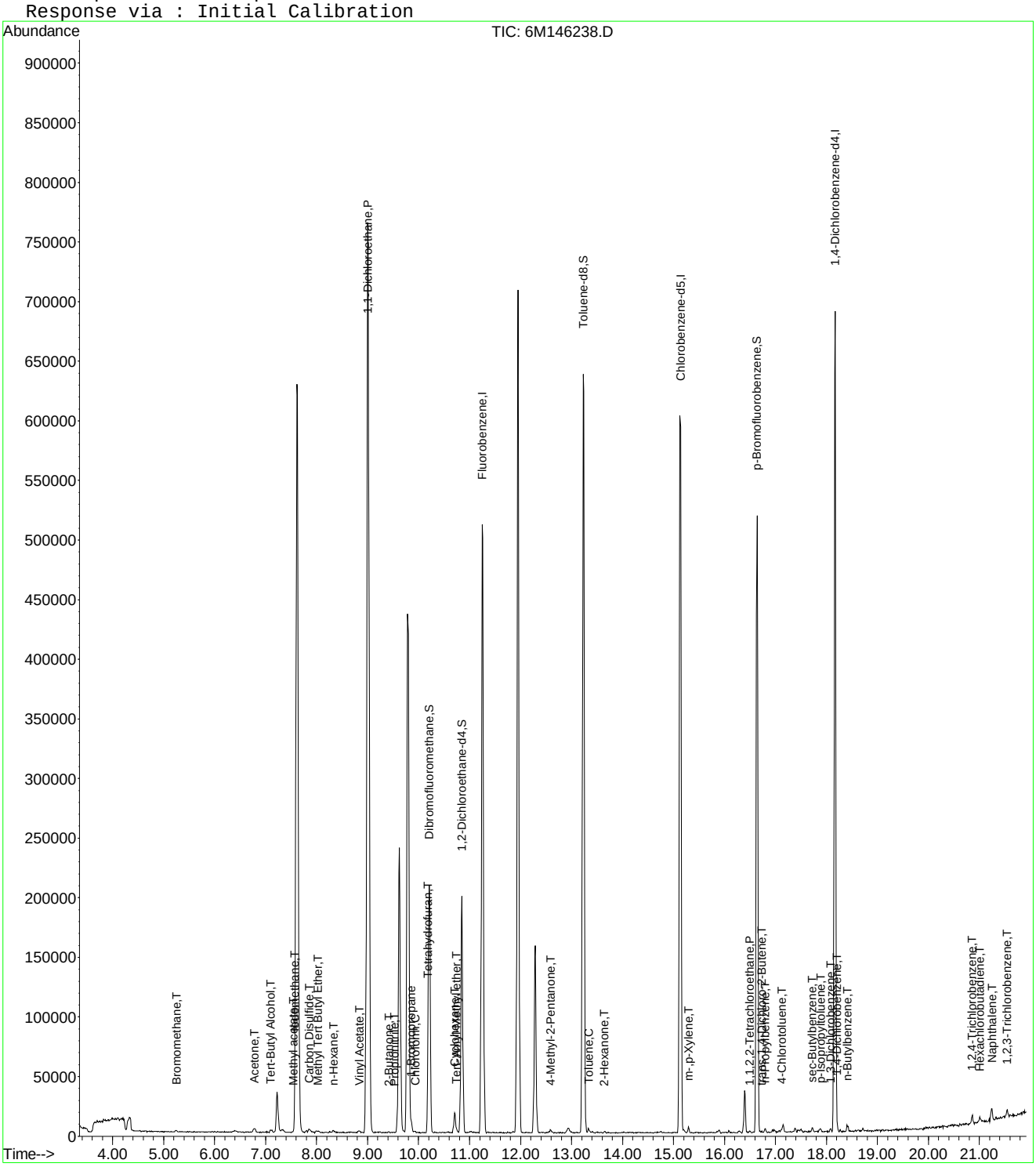
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.25	96	684113	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.14	117	478681	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	245058	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.21	111	179947	25.7669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.08%		
43) 1,2-Dichloroethane-d4	10.85	65	173694	25.2354 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.96%		
58) Toluene-d8	13.23	98	621922	25.4615 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.84%		
80) p-Bromofluorobenzene	16.64	95	240940	25.8869 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.56%		
Target Compounds					Qvalue
3) Chloromethane	4.02	50	3043	Below Cal	88
5) 1,3-Butadiene	4.33	54	419	Below Cal #	1
6) Bromomethane	5.25	94	958	0.1788 ug/L #	56
13) Acetone	6.78	43	6999	4.7411 ug/L	95
15) Tert-Butyl Alcohol	7.10	59	1885	4.1165 ug/L #	1
17) Iodomethane	7.57	142	828	0.9184 ug/L #	32
18) Methyl acetate	7.54	43	1369	0.3698 ug/L #	66
20) Carbon Disulfide	7.86	76	5398	0.2405 ug/L #	84
22) Methyl Tert Butyl Ether	8.02	73	4441	0.2568 ug/L #	49
24) n-Hexane	8.34	57	1978	0.2330 ug/L #	53
26) Vinyl Acetate	8.84	43	3146	0.5865 ug/L #	78
27) 1,1-Dichloroethane	9.00	63	13336	1.0725 ug/L #	43
29) 2-Butanone	9.42	43	1162	0.6245 ug/L #	57
30) Propionitrile	9.52	54	396	0.6526 ug/L #	56
33) Chloroform	9.93	83	1816	0.1282 ug/L #	75
34) 1-Bromopropane	9.86	122	1298	0.8870 ug/L #	1
36) Tetrahydrofuran	10.19	42	1715	1.3997 ug/L #	74
39) Cyclohexane	10.71	56	12878	1.2093 ug/L #	47
41) Tert-Amyl-Methyl ether	10.75	73	2861	0.1539 ug/L #	6
54) 4-Methyl-2-Pentanone	12.60	58	594	0.3342 ug/L #	38
59) Toluene	13.34	91	4332	0.1448 ug/L	97
64) 2-Hexanone	13.64	43	1237	0.4568 ug/L #	58
73) m-,p-Xylene	15.29	106	2129	0.1606 ug/L	86
79) 1,1,2,2-Tetrachloroethane	16.50	83	1019	0.1597 ug/L	70
82) trans-1,4-Dichloro-2-Buten	16.73	53	208	0.1535 ug/L #	1
83) n-Propylbenzene	16.79	91	4669	0.1258 ug/L #	89
87) 4-Chlorotoluene	17.12	91	3443	0.1577 ug/L #	74
91) sec-Butylbenzene	17.72	105	4103	0.1265 ug/L	90
92) p-Isopropyltoluene	17.89	119	3531	0.1295 ug/L	87
93) 1,3-Dichlorobenzene	18.08	146	1974	0.1254 ug/L	74
94) 1,4-Dichlorobenzene	18.21	146	2691	0.1690 ug/L #	1
95) n-Butylbenzene	18.42	91	5316	0.2134 ug/L	79
98) 1,2,4-Trichlorobenzene	20.86	180	3777	0.3499 ug/L	86
99) Hexachlorobutadiene	21.01	225	2190	0.5311 ug/L	84
100) Naphthalene	21.24	128	11224	0.5192 ug/L	97
101) 1,2,3-Trichlorobenzene	21.54	180	4179	0.4010 ug/L #	76

(#) = qualifier out of range (m) = manual integration
6M146238.D 8260BWT.M Thu Apr 06 15:26:24 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146238.D Vial: 3
Acq On : 6 Apr 2017 14:54 Operator: TMB
Sample : WG608979-01 100ug/L A9 CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD80642 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 15:26 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146238.D Vial: 3
Acq On : 6 Apr 2017 14:54 Operator: TMB
Sample : WG608979-01 100ug/L A9 CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD80642 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 07 08:30:35 2017 Quant Results File: A9FOOWT.RES

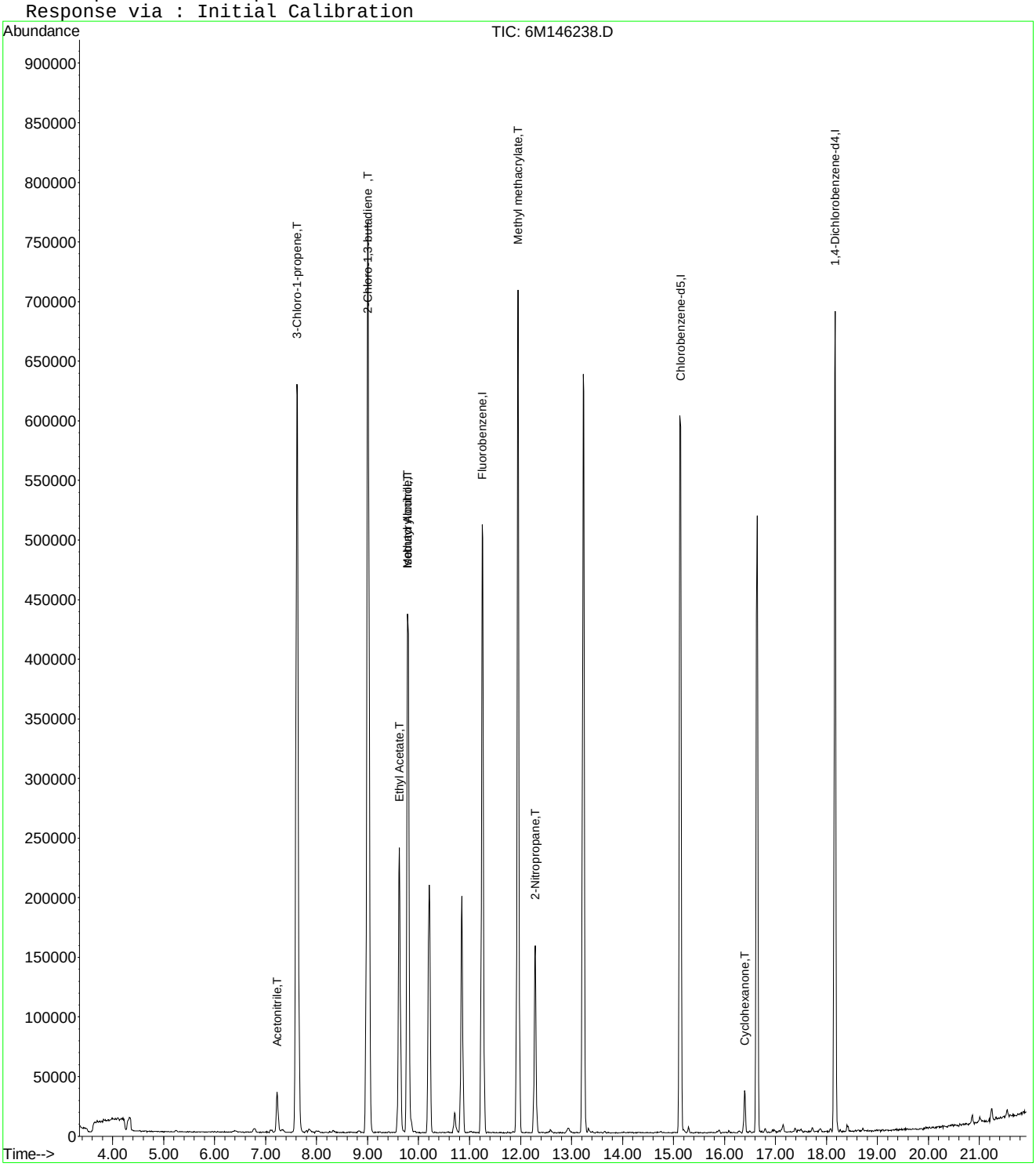
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Wed Apr 05 08:56:10 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.25	96	684113	25.00	ug/L	-0.02
11) Chlorobenzene-d5	15.14	117	478681	25.00	ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	18.17	152	245058	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	7.22	41	47947	98.0353	ug/L	93
3) 3-Chloro-1-propene	7.61	41	625487	76.2631	ug/L	91
4) 2-Chloro-1,3-butadiene	9.00	53	709380	70.0780	ug/L	89
5) Ethyl Acetate	9.62	43	388069	88.4502	ug/L	97
6) Methacrylonitrile	9.79	67	209939	90.8892	ug/L	92
7) Isobutyl Alcohol	9.79	43	42646	299.8873	ug/L #	75
9) Methyl methacrylate	11.95	41	428879	89.3397	ug/L	88
10) 2-Nitropropane	12.29	43	160423	82.1809	ug/L	95
13) Cyclohexanone	16.39	55	20364	219.6265	ug/L	89

(#) = qualifier out of range (m) = manual integration
6M146238.D A9FOOWT.M Fri Apr 07 08:30:37 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146238.D Vial: 3
Acq On : 6 Apr 2017 14:54 Operator: TMB
Sample : WG608979-01 100ug/L A9 CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD80642 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 7 8:30 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Wed Apr 05 08:56:10 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146238.D Vial: 3
Acq On : 6 Apr 2017 14:54 Operator: TMB
Sample : WG608979-01 100ug/L A9 CCV STD 8260 Inst : Hpms6
Misc : 1,1 STD80642 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Wed Apr 05 08:56:10 2017
Response via : Multiple Level Calibration

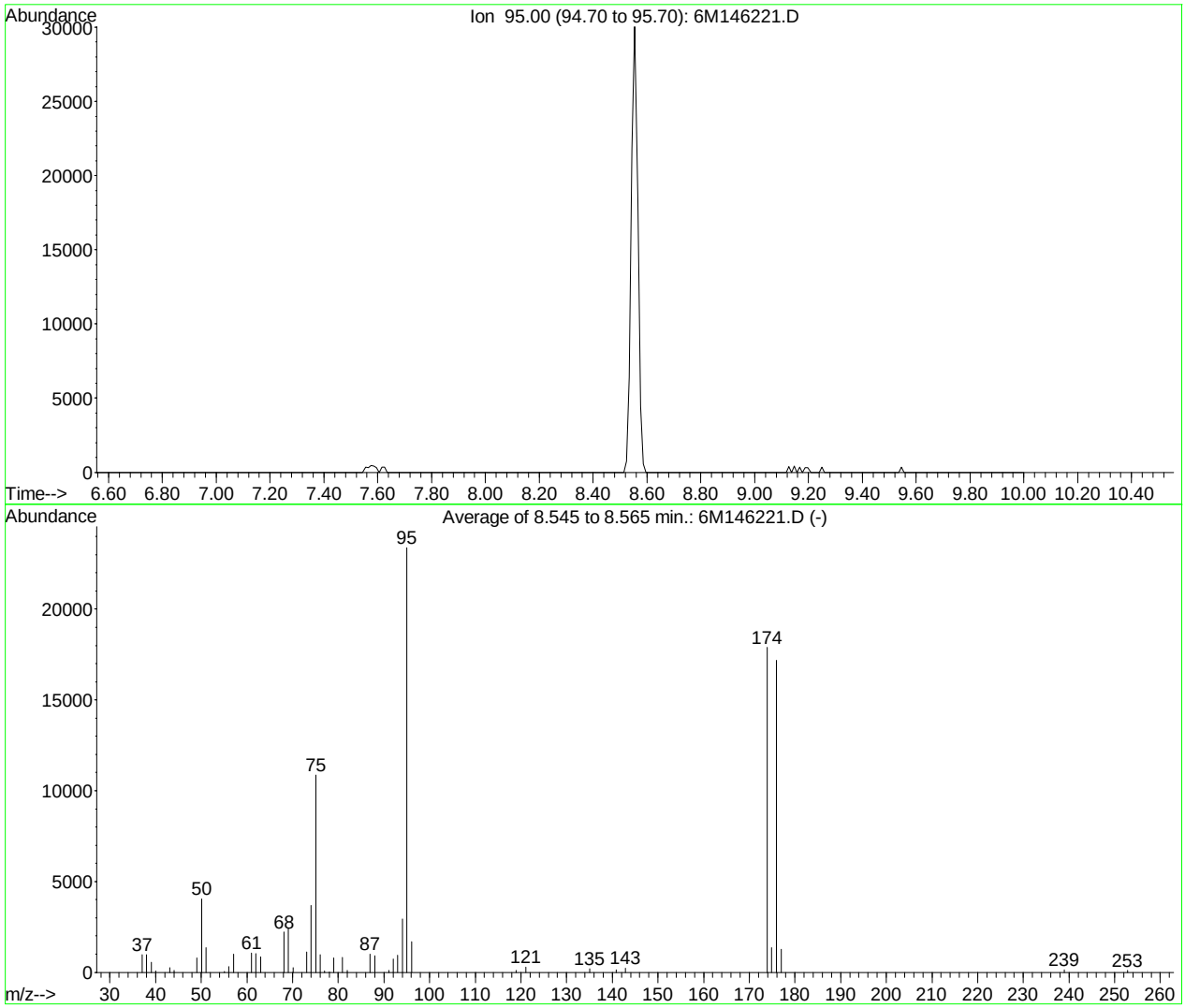
Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	81	-0.02
2	T	Acetonitrile	100.0000	98.0353	2.0	81	0.00
3	T	3-Chloro-1-propene	100.0000	76.2631	23.7	60	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	70.0780	29.9	55	0.00
5	T	Ethyl Acetate	100.0000	88.4502	11.5	69	0.00
6	T	Methacrylonitrile	100.0000	90.8892	9.1	70	-0.01
7	T	Isobutyl Alcohol	200.0000	299.8873	-49.9	115	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.16
9	T	Methyl methacrylate	100.0000	89.3397	10.7	69	0.00
10	T	2-Nitropropane	100.0000	82.1809	17.8	67	-0.01
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	78	-0.01
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	71	0.00
13	T	Cyclohexanone	100.0000	219.6265	-119.6#	181	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M146238.D A9FOOWT.M Fri Apr 07 08:31:20 2017 Page 1

2.1.1.5 Raw QC Data

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040517\6M146221.D Vial: 3
Acq On : 5 Apr 2017 16:29 Operator: TMB
Sample : WG608938-01 50ng BFB STD 8260 Inst : Hpms6
Misc : 1,1 STD80989 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6



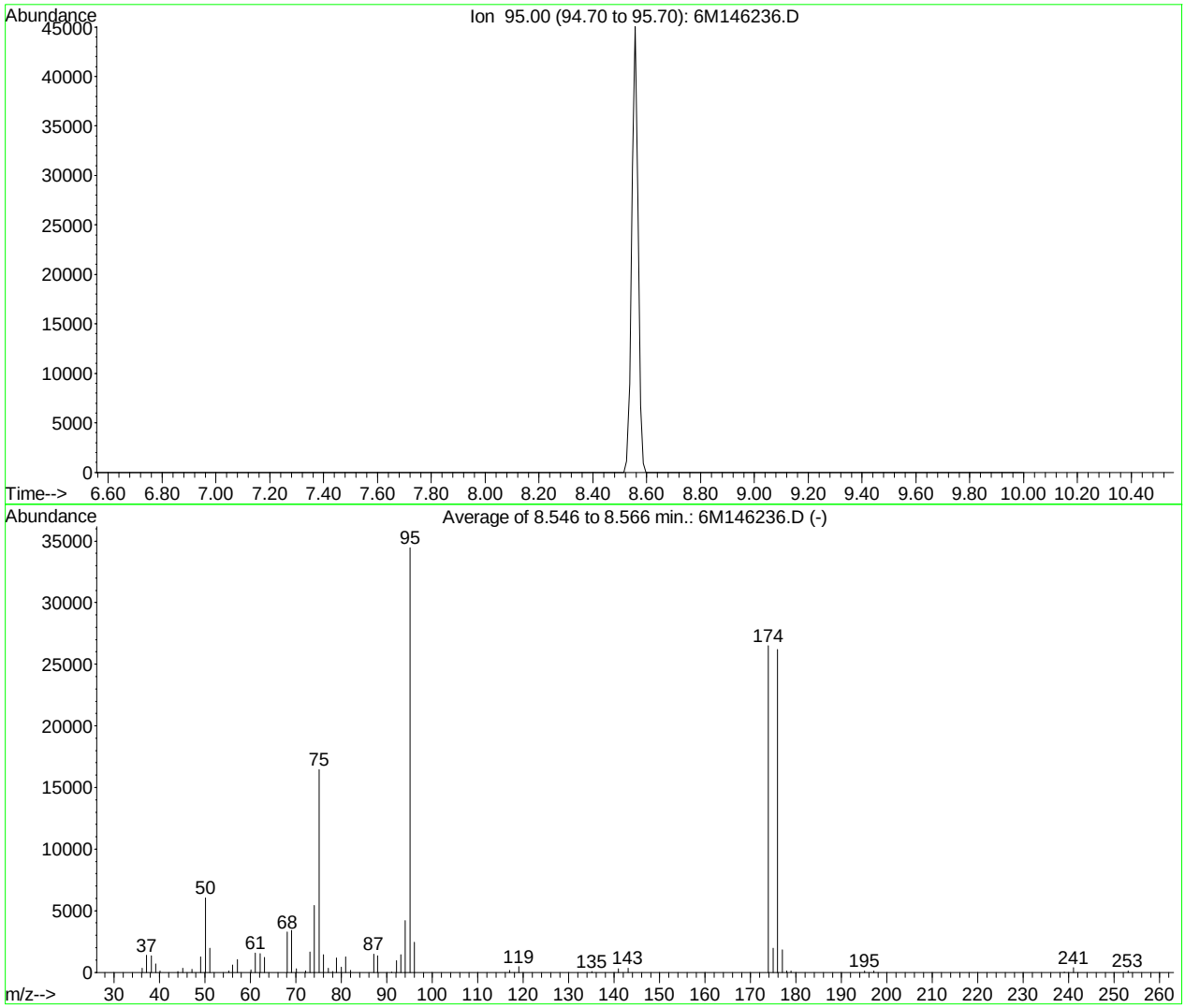
AutoFind: Scans 339, 340, 341; Background Corrected with Scan 334

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.3	4043	PASS
75	95	30	60	46.5	10875	PASS
95	95	100	100	100.0	23389	PASS
96	95	5	9	7.2	1674	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.5	17883	PASS
175	174	5	9	7.6	1356	PASS
176	174	95	101	96.1	17186	PASS
177	176	5	9	7.3	1263	PASS

6M146221.D 8260BWT.M Thu Apr 06 14:59:20 2017

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146236.D Vial: 1
Acq On : 6 Apr 2017 13:59 Operator: TMB
Sample : WG609128-01 50ng BFB STD 8260 Inst : Hpms6
Misc : 1,1 STD80989 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6



AutoFind: Scans 339, 340, 341; Background Corrected with Scan 334

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.6	6056	PASS
75	95	30	60	47.8	16465	PASS
95	95	100	100	100.0	34464	PASS
96	95	5	9	7.1	2460	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.9	26498	PASS
175	174	5	9	7.4	1953	PASS
176	174	95	101	98.9	26205	PASS
177	176	5	9	6.9	1804	PASS

6M146236.D 8260BWT.M Thu Apr 06 15:26:05 2017

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146239.D Vial: 4
Acq On : 6 Apr 2017 15:26 Operator: TMB
Sample : WG608987-01 VBLK0406 BLANK STD 8260 Inst : Hpms6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 08:25:26 2017 Quant Results File: 8260BWT.RES

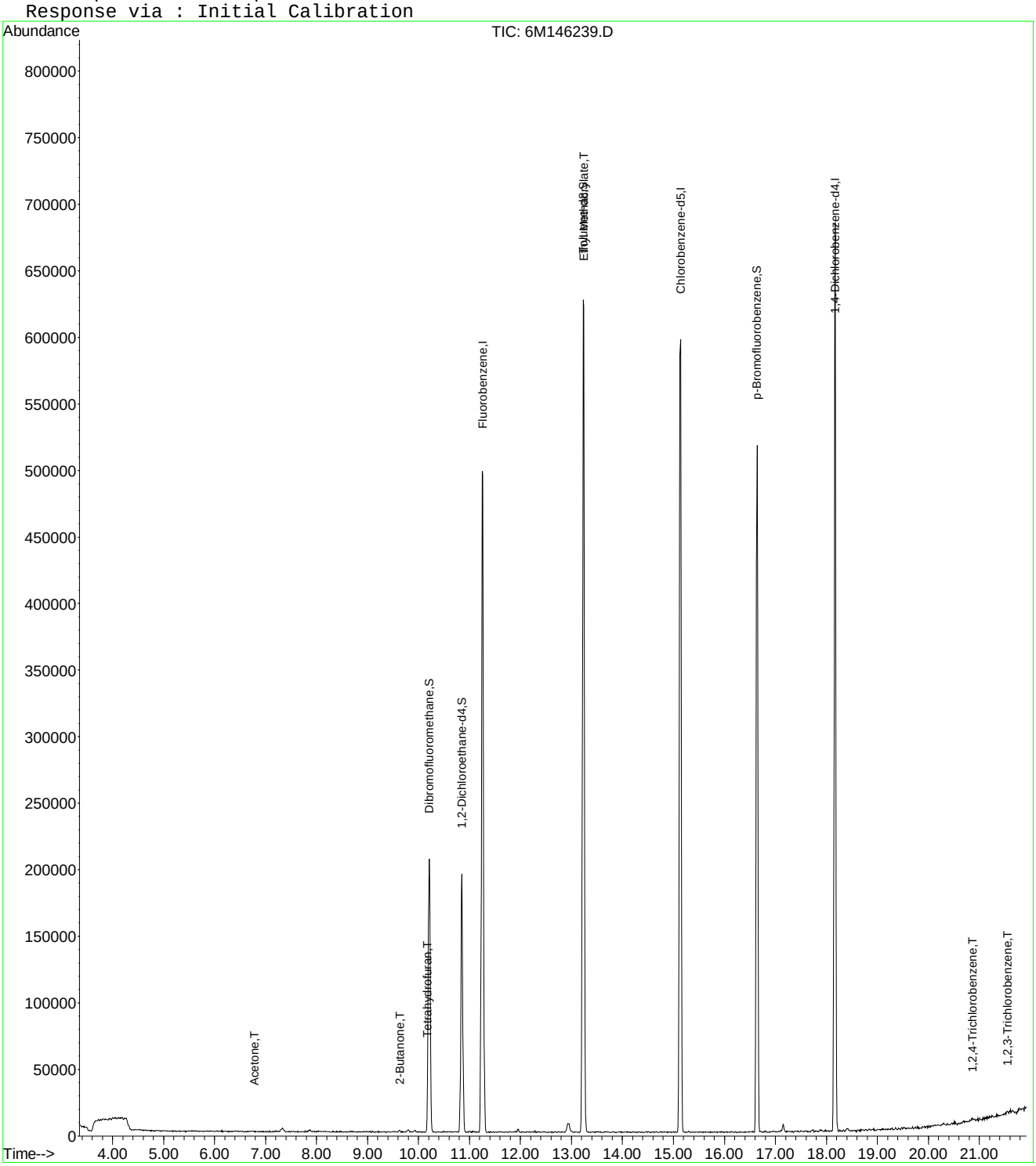
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

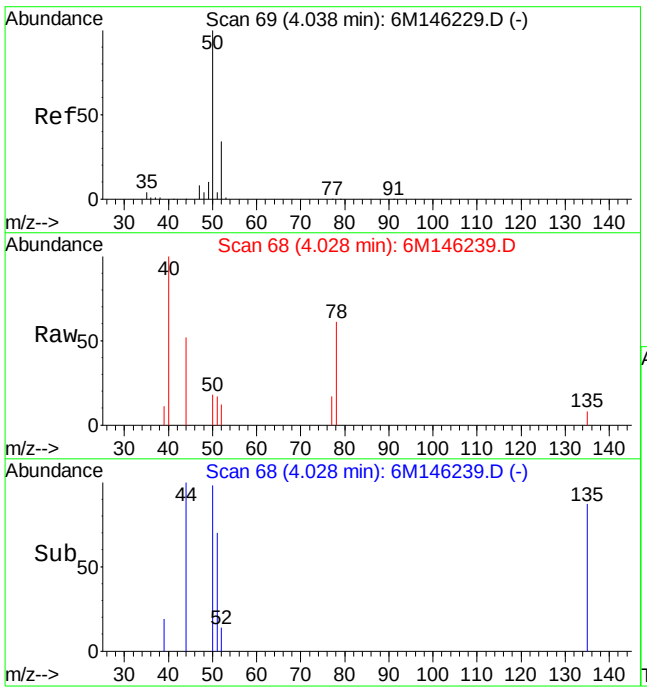
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.26	96	670846	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.14	117	469729	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.17	152	243331	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.21	111	175655	25.6498 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.60%		
43) 1,2-Dichloroethane-d4	10.85	65	173206	25.6622 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.64%		
58) Toluene-d8	13.23	98	617904	25.7791 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.12%		
80) p-Bromofluorobenzene	16.64	95	238386	25.7943 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.16%		
Target Compounds					Qvalue
3) Chloromethane	4.03	50	1749	Below Cal	# 71
13) Acetone	6.78	43	235	0.1623 ug/L	# 48
29) 2-Butanone	9.63	43	2195	1.2031 ug/L	# 57
36) Tetrahydrofuran	10.18	42	409	0.3404 ug/L	# 41
60) Ethyl Methacrylate	13.24	69	1056	0.1486 ug/L	69
98) 1,2,4-Trichlorobenzene	20.87	180	1507	0.1406 ug/L	# 55
101) 1,2,3-Trichlorobenzene	21.55	180	2862	0.2766 ug/L	# 25

(#) = qualifier out of range (m) = manual integration
6M146239.D 8260BWT.M Fri Apr 07 08:25:29 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146239.D Vial: 4
Acq On : 6 Apr 2017 15:26 Operator: TMB
Sample : WG608987-01 VBLK0406 BLANK STD 8260 Inst : Hpms6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 8:25 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration

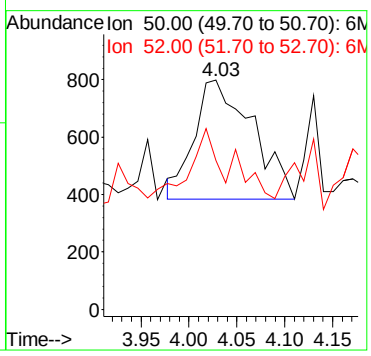


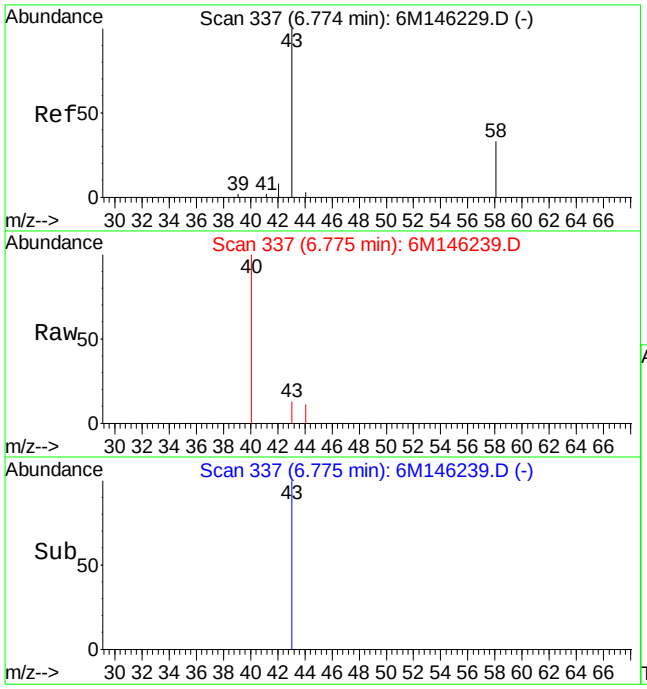


#3
Chloromethane
Concen: Below Cal
RT: 4.03 min Scan# 68
Delta R.T. 0.01 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion: 50 Resp: 1749

Ion	Ratio	Lower	Upper
50	100		
52	16.4	19.8	46.2#

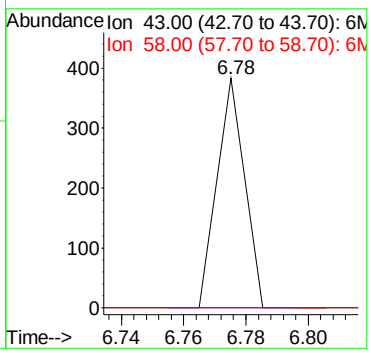


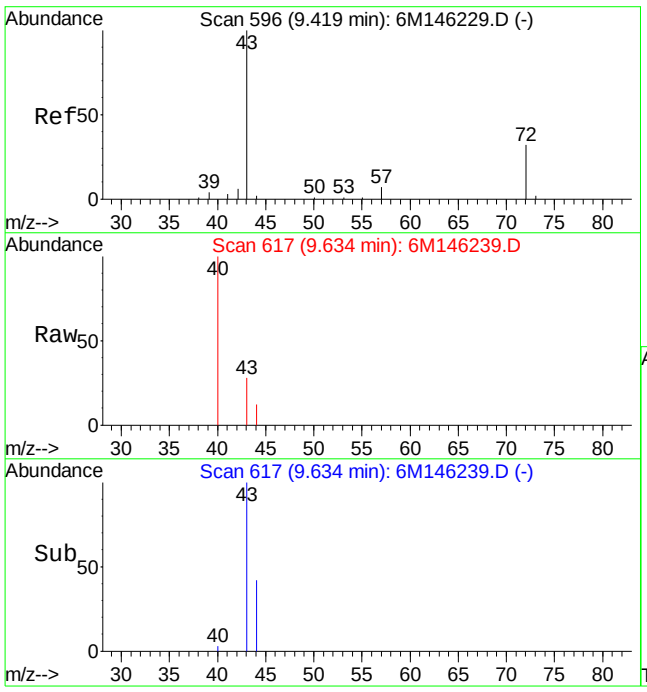


#13
Acetone
Concen: 0.16 ug/L
RT: 6.78 min Scan# 337
Delta R.T. -0.00 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion: 43 Resp: 235

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

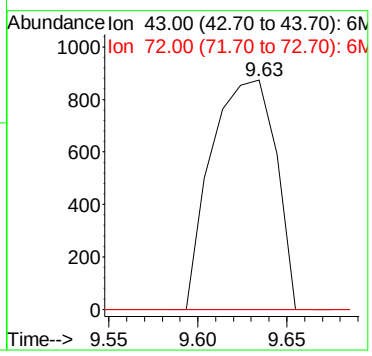


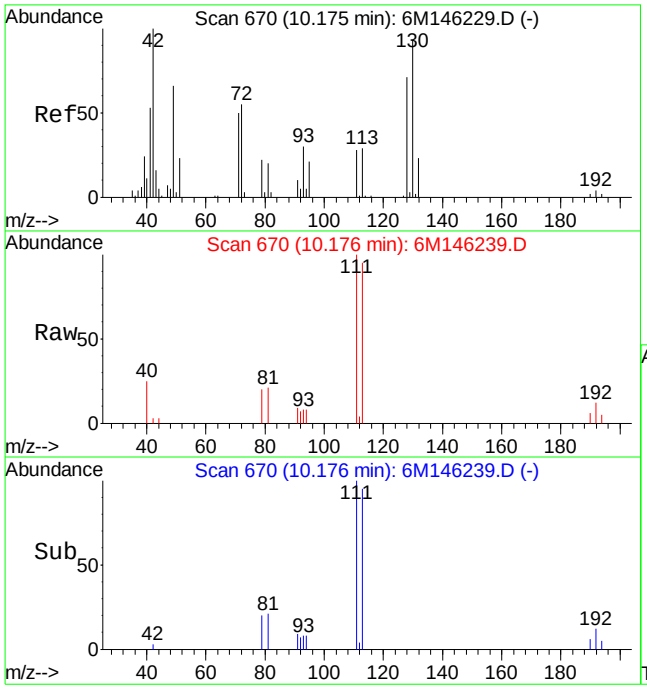


#29
2-Butanone
Concen: 1.20 ug/L
RT: 9.63 min Scan# 617
Delta R.T. 0.22 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion: 43 Resp: 2195

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

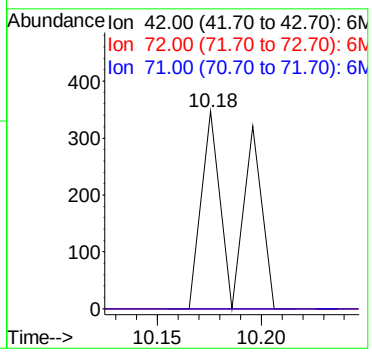


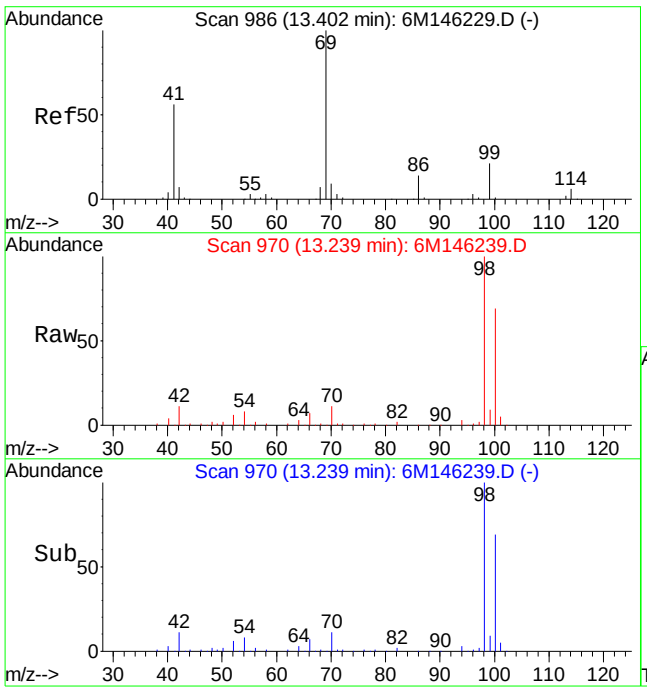


#36
Tetrahydrofuran
Concen: 0.34 ug/L
RT: 10.18 min Scan# 670
Delta R.T. -0.00 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion: 42 Resp: 409

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

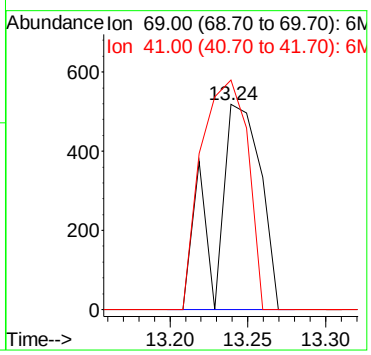


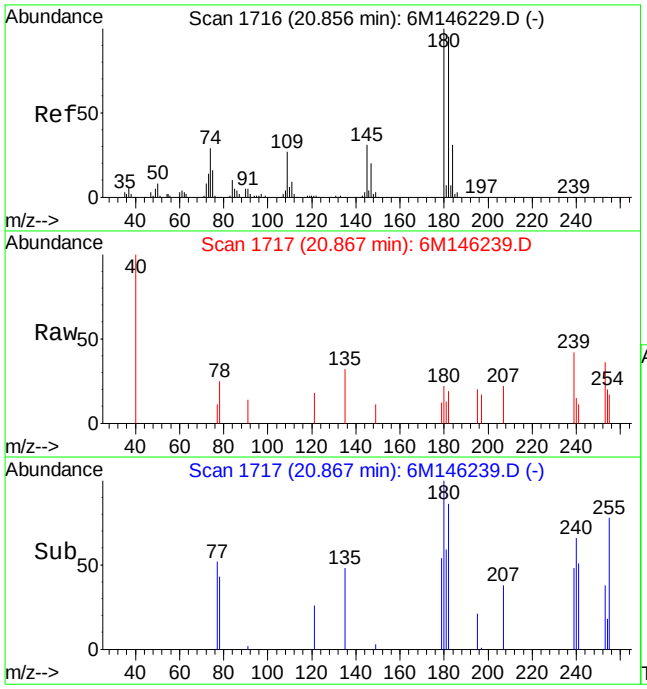


#60
Ethyl Methacrylate
Concen: 0.15 ug/L
RT: 13.24 min Scan# 970
Delta R.T. -0.16 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion: 69 Resp: 1056

Ion	Ratio	Lower	Upper
69	100		
41	114.3	51.4	120.0

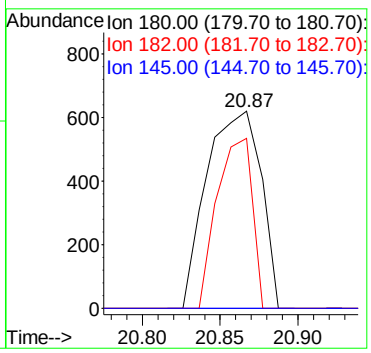


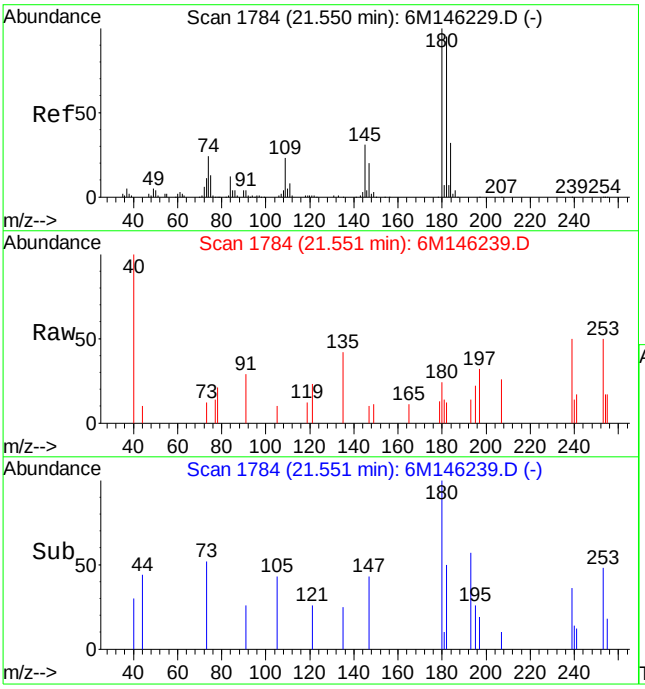


#98
1,2,4-Trichlorobenzene
Concen: 0.14 ug/L
RT: 20.87 min Scan# 1717
Delta R.T. 0.01 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion:180 Resp: 1507

Ion	Ratio	Lower	Upper
180	100		
182	55.9	57.7	134.5#
145	0.0	19.0	44.4#

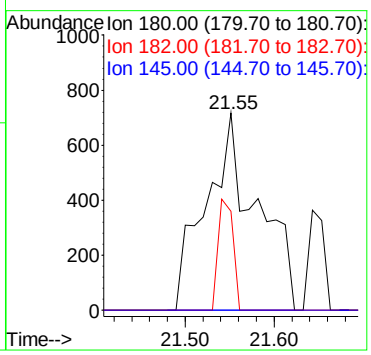




#101
1,2,3-Trichlorobenzene
Concen: 0.28 ug/L
RT: 21.55 min Scan# 1784
Delta R.T. 0.01 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion:180 Resp: 2862

Ion	Ratio	Lower	Upper
180	100		
182	16.3	57.2	133.4#
145	0.0	19.6	45.6#



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146239.D Vial: 4
Acq On : 6 Apr 2017 15:26 Operator: TMB
Sample : WG608987-01 VBLK0406 BLANK STD 8260 Inst : Hpms6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 07 08:31:45 2017 Quant Results File: A9FOOWT.RES

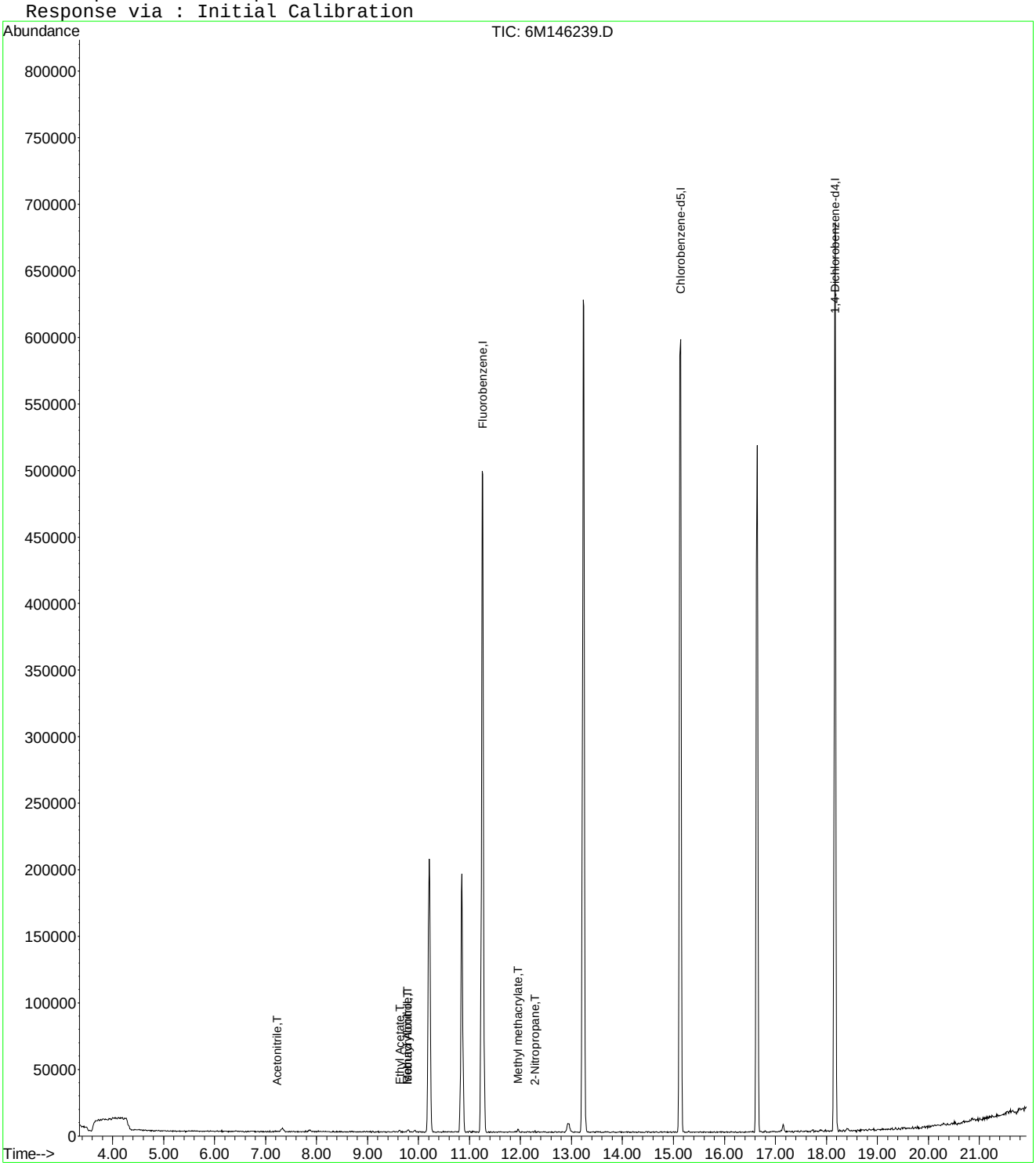
Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Wed Apr 05 08:56:10 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

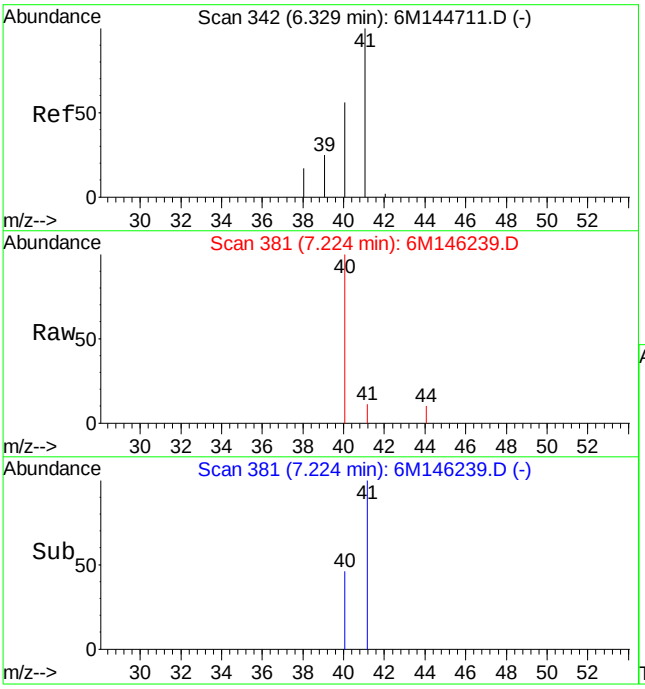
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.26	96	670846	25.00	ug/L	-0.01
11) Chlorobenzene-d5	15.14	117	469729	25.00	ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	18.17	152	243331	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	7.22	41	200	0.4170	ug/L #	1
5) Ethyl Acetate	9.63	43	2195	0.5102	ug/L #	68
6) Methacrylonitrile	9.79	67	433	0.1912	ug/L #	1
7) Isobutyl Alcohol	9.79	43	197	1.4127	ug/L #	85
9) Methyl methacrylate	11.95	41	1661	0.3528	ug/L	84
10) 2-Nitropropane	12.28	43	518	0.2706	ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M146239.D A9FOOWT.M Fri Apr 07 08:31:46 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146239.D Vial: 4
Acq On : 6 Apr 2017 15:26 Operator: TMB
Sample : WG608987-01 VBLK0406 BLANK STD 8260 Inst : Hpms6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 7 8:31 2017 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 011217 - HPMS6
Last Update : Wed Apr 05 08:56:10 2017
Response via : Initial Calibration

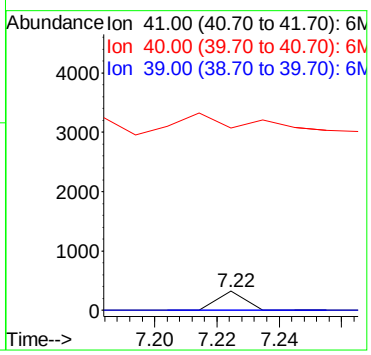


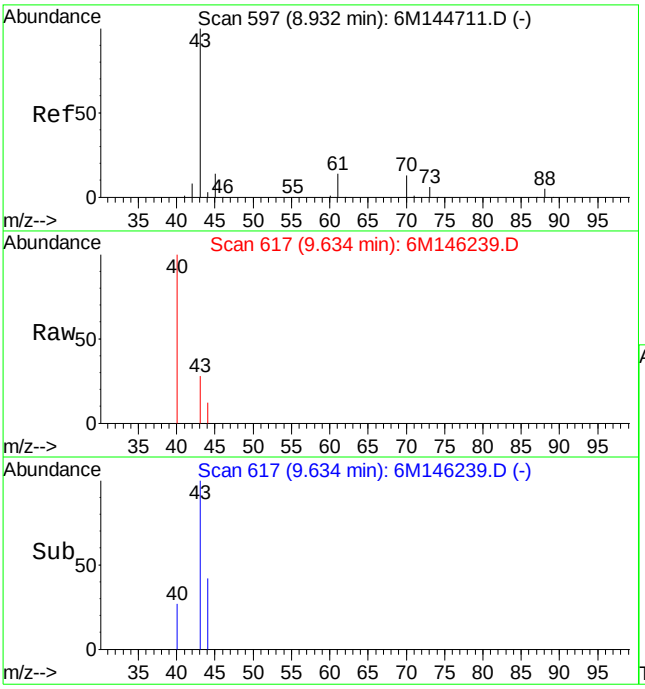


#2
Acetonitrile
Concen: 0.42 ug/L
RT: 7.22 min Scan# 381
Delta R.T. -0.01 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion: 41 Resp: 200

Ion	Ratio	Lower	Upper
41	100		
40	746.0	19.8	99.8#
39	0.0	0.0	57.7

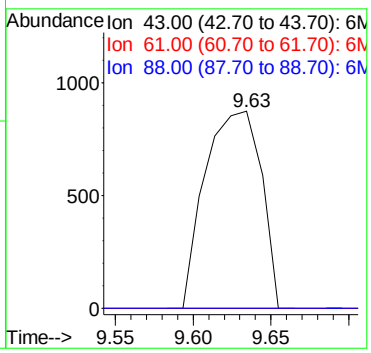


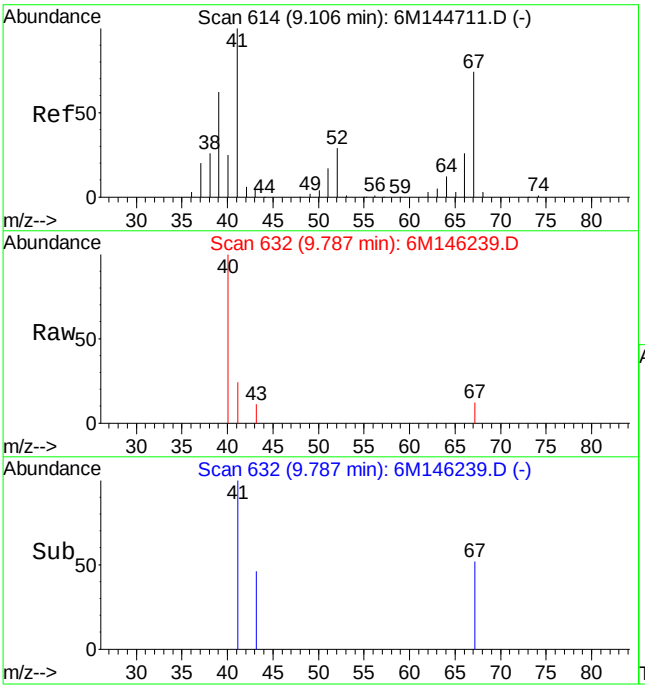


#5
Ethyl Acetate
Concen: 0.51 ug/L
RT: 9.63 min Scan# 617
Delta R.T. 0.00 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion: 43 Resp: 2195

Ion	Ratio	Lower	Upper
43	100		
61	0.0	9.5	22.1#
88	0.0	2.8	6.4#

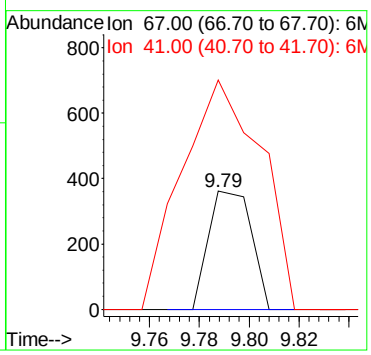


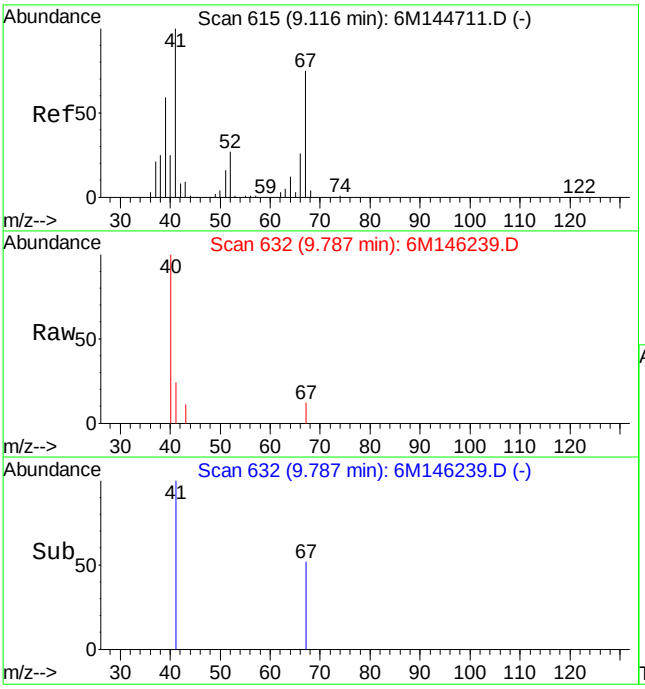


#6
Methacrylonitrile
Concen: 0.19 ug/L
RT: 9.79 min Scan# 632
Delta R.T. -0.01 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion: 67 Resp: 433

Ion	Ratio	Lower	Upper
67	100		
41	359.8	112.0	192.0#

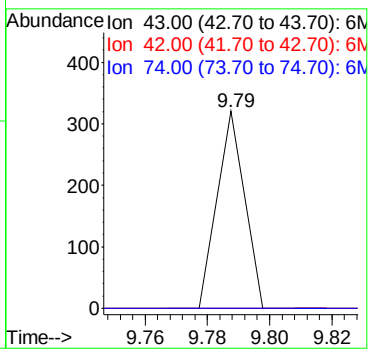


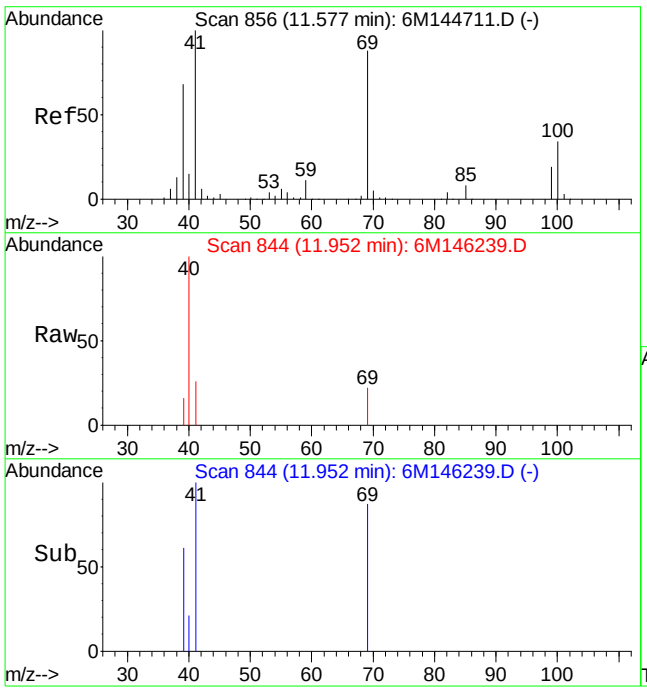


#7
Isobutyl Alcohol
Concen: 1.41 ug/L
RT: 9.79 min Scan# 632
Delta R.T. -0.01 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion: 43 Resp: 197

Ion	Ratio	Lower	Upper
43	100		
42	0.0	0.0	40.0
74	0.0	0.0	44.8

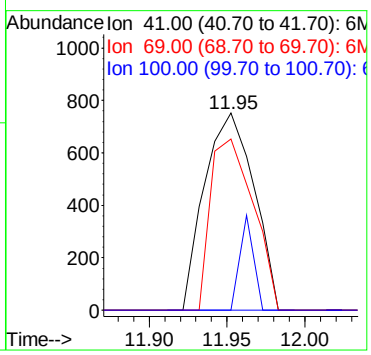


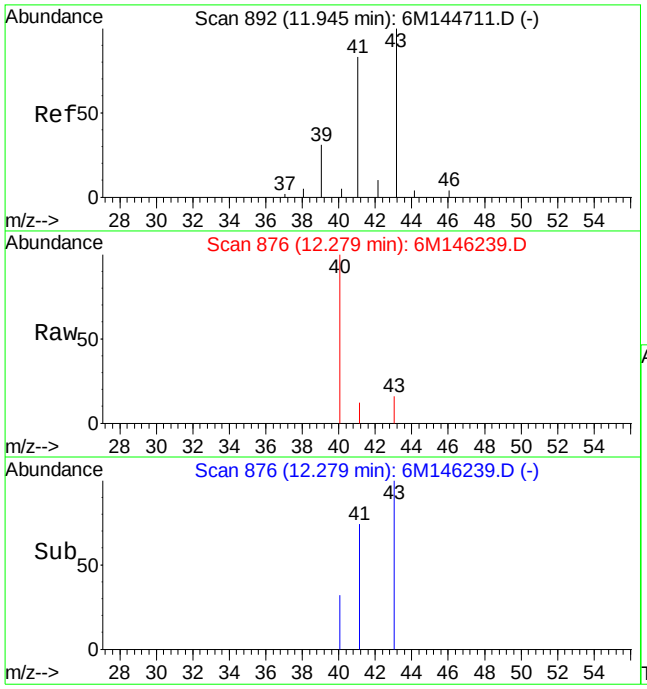


#9
Methyl methacrylate
Concen: 0.35 ug/L
RT: 11.95 min Scan# 844
Delta R.T. -0.01 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion: 41 Resp: 1661

Ion	Ratio	Lower	Upper
41	100		
69	75.3	42.7	122.7
100	13.4	0.0	73.7

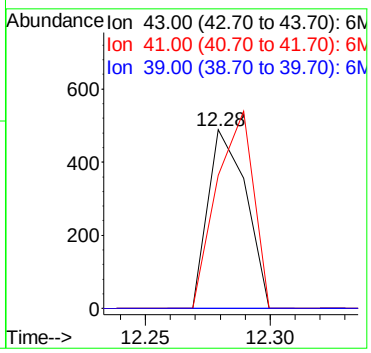




#10
2-Nitropropane
Concen: 0.27 ug/L
RT: 12.28 min Scan# 876
Delta R.T. -0.02 min
Lab File: 6M146239.D
Acq: 6 Apr 2017 15:26

Tgt Ion: 43 Resp: 518

Ion	Ratio	Lower	Upper
43	100		
41	106.8	50.0	116.8
39	0.0	16.6	38.8#



Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146241.D Vial: 6
Acq On : 6 Apr 2017 16:28 Operator: TMB
Sample : WG608987-02 20ug/L LCS STD 8260 Inst : Hpms6
Misc : 1,1 STD81257 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 17:39:05 2017 Quant Results File: 8260BWT.RES

Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.25	96	661794	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.13	117	478929	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.16	152	257942	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.21	111	176791	26.1688 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.68%		
43) 1,2-Dichloroethane-d4	10.84	65	169502	25.4569 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.84%		
58) Toluene-d8	13.23	98	613579	25.1069 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	16.63	95	241075	24.6076 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.44%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.52	85	261915	24.9267 ug/L	93
3) Chloromethane	4.04	50	282521	22.6511 ug/L	98
4) Vinyl Chloride	4.28	62	263076	21.9123 ug/L	98
5) 1,3-Butadiene	4.32	54	116326	24.7015 ug/L	88
6) Bromomethane	5.24	94	99271	19.1506 ug/L	97
7) Chloroethane	5.40	64	116159	22.4870 ug/L	86
8) Trichlorofluoromethane	5.90	101	258668	21.0213 ug/L	99
9) Diethyl ether	6.44	59	530044	103.3622 ug/L	81
10) Isoprene	6.48	67	198527	19.6150 ug/L	80
11) Acrolein	6.68	56	94087	167.4708 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.70	101	152652	21.9154 ug/L	99
13) Acetone	6.78	43	30039	21.0344 ug/L	90
14) 1,1-Dichloroethene	7.01	61	204347	20.2537 ug/L	83
15) Tert-Butyl Alcohol	7.12	59	104517	235.9460 ug/L	91
16) Dimethyl Sulfide	7.28	62	148341	20.5759 ug/L	78
17) Iodomethane	7.54	142	158212	27.2404 ug/L	100
18) Methyl acetate	7.53	43	71838	20.0573 ug/L #	82
19) Methylene Chloride	7.79	84	148577	19.4784 ug/L	62
20) Carbon Disulfide	7.86	76	345675	15.9196 ug/L	99
21) Acrylonitrile	7.97	53	36139	21.8383 ug/L	98
22) Methyl Tert Butyl Ether	8.01	73	345434	20.6514 ug/L	91
23) trans-1,2-Dichloroethene	8.25	96	144129	19.8489 ug/L	77
24) n-Hexane	8.33	57	169520	20.6447 ug/L	82
25) Diisopropyl ether	8.67	45	1965056	105.1221 ug/L #	90
26) Vinyl Acetate	8.83	43	158621	30.5694 ug/L #	86
27) 1,1-Dichloroethane	8.87	63	238795	19.8528 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	1895583	100.0820 ug/L	90
29) 2-Butanone	9.42	43	36736	20.4101 ug/L #	81
30) Propionitrile	9.53	54	65763	112.0339 ug/L	100
31) 2,2-Dichloropropane	9.65	77	184394	20.1502 ug/L	79
32) cis-1,2-Dichloroethene	9.71	96	155741	19.5090 ug/L	89
33) Chloroform	9.92	83	253021	18.4650 ug/L	95
34) 1-Bromopropane	10.06	122	38522	27.2111 ug/L	99
35) Bromochloromethane	10.16	130	92331	21.9715 ug/L	99
36) Tetrahydrofuran	10.18	42	125385	105.7848 ug/L #	70
38) 1,1,1-Trichloroethane	10.45	97	226079	20.2937 ug/L	91
39) Cyclohexane	10.50	56	182485	17.7141 ug/L	77
40) 1,1-Dichloropropene	10.65	75	188967	20.0661 ug/L	81
41) Tert-Amyl-Methyl ether	10.75	73	1873382	104.1737 ug/L	92
42) Carbon Tetrachloride	10.80	117	185982	21.1724 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M146241.D 8260BWT.M Thu Apr 06 17:39:08 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146241.D Vial: 6
Acq On : 6 Apr 2017 16:28 Operator: TMB
Sample : WG608987-02 20ug/L LCS STD 8260 Inst : Hpms6
Misc : 1,1 STD81257 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 17:39:05 2017 Quant Results File: 8260BWT.RES

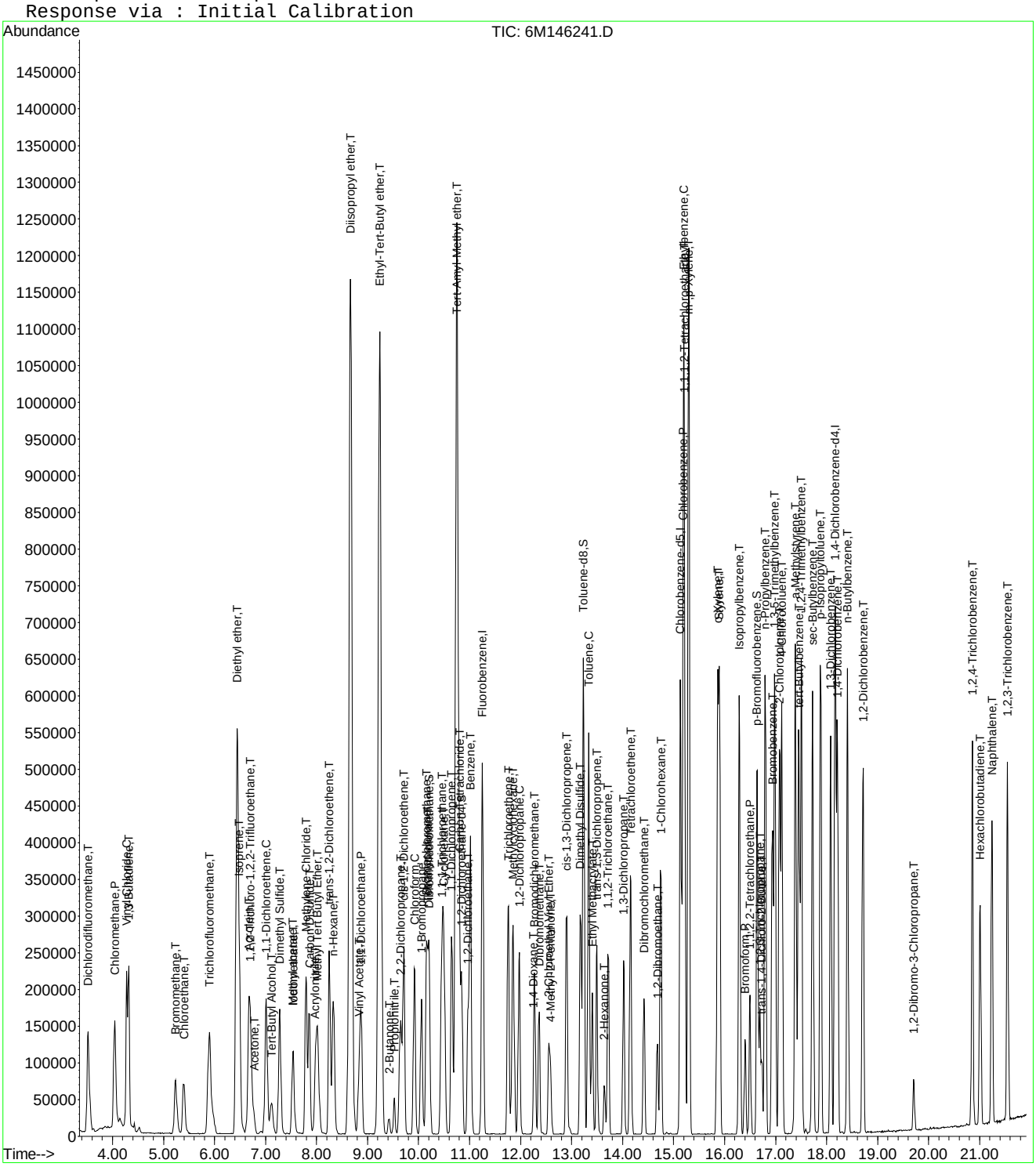
Quant Method : K:\ORGANICS\V...\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260BWT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.97	62	165609	19.4274	ug/L		89
46)	Benzene	11.02	78	532196	18.7952	ug/L		87
47)	Trichloroethene	11.76	130	144716	18.7764	ug/L		87
48)	Methylcyclohexane	11.85	83	207494	18.6337	ug/L		82
49)	1,2-Dichloropropane	11.98	63	131382	19.6606	ug/L		93
50)	1,4-Dioxane	12.25	88	12441	256.0425	ug/L		83
51)	Bromodichloromethane	12.27	83	184652	19.5742	ug/L		99
52)	Dibromomethane	12.36	93	79860	20.2911	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.56	63	63600	24.2636	ug/L		99
54)	4-Methyl-2-Pentanone	12.59	58	36660	21.3209	ug/L		84
55)	cis-1,3-Dichloropropene	12.91	75	226942	21.8459	ug/L		95
56)	Dimethyl Disulfide	13.17	79	129235	19.7193	ug/L		89
59)	Toluene	13.33	91	556100	18.5721	ug/L		100
60)	Ethyl Methacrylate	13.41	69	149463	20.6272	ug/L		71
62)	trans-1,3-Dichloropropene	13.50	75	182472	19.7639	ug/L		96
63)	1,1,2-Trichloroethane	13.71	97	108004	19.1403	ug/L		99
64)	2-Hexanone	13.64	43	57603	21.2587	ug/L		86
65)	1,3-Dichloropropane	14.02	76	190543	20.1168	ug/L		72
66)	Tetrachloroethene	14.16	166	144929	19.9742	ug/L		97
67)	Dibromochloromethane	14.42	129	132665	19.0189	ug/L		99
68)	1,2-Dibromoethane	14.68	107	106014	19.5663	ug/L		99
69)	1-Chlorohexane	14.75	91	195152	20.1828	ug/L		76
70)	Chlorobenzene	15.18	112	375204	18.3083	ug/L		95
71)	1,1,1,2-Tetrachloroethane	15.21	131	135057	18.4023	ug/L		95
72)	Ethylbenzene	15.20	106	209188	18.8555	ug/L		93
73)	m-,p-Xylene	15.29	106	494157	37.2647	ug/L		93
74)	o-Xylene	15.87	106	243770	19.0498	ug/L		94
75)	Styrene	15.90	104	415246	19.3299	ug/L		96
76)	Bromoform	16.40	173	82428	19.3913	ug/L		99
77)	Isopropylbenzene	16.29	105	603627	18.8499	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.50	83	132995	19.7970	ug/L		99
81)	1,2,3-Trichloropropane	16.69	110	38450	19.3815	ug/L		65
82)	trans-1,4-Dichloro-2-Buten	16.72	53	24481	17.1612	ug/L	#	1
83)	n-Propylbenzene	16.80	91	718678	18.4020	ug/L		99
84)	Bromobenzene	16.94	156	163464	18.6313	ug/L		85
85)	1,3,5-Trimethylbenzene	16.98	105	515052	18.6092	ug/L		99
86)	2-Chlorotoluene	17.07	91	493683	18.9849	ug/L		97
87)	4-Chlorotoluene	17.12	91	388515	16.9045	ug/L		96
88)	a-Methylstyrene	17.39	118	293836	19.1982	ug/L		99
89)	tert-Butylbenzene	17.46	134	110158	18.9948	ug/L		91
90)	1,2,4-Trimethylbenzene	17.50	105	532514	18.7343	ug/L		86
91)	sec-Butylbenzene	17.73	105	634231	18.5820	ug/L		98
92)	p-Isopropyltoluene	17.88	119	550673	19.1799	ug/L		99
93)	1,3-Dichlorobenzene	18.08	146	304092	18.3530	ug/L		99
94)	1,4-Dichlorobenzene	18.22	146	305797	18.2504	ug/L		96
95)	n-Butylbenzene	18.41	91	504718	19.2515	ug/L		99
96)	1,2-Dichlorobenzene	18.72	146	287116	18.4872	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.71	75	24681	20.2829	ug/L		97
98)	1,2,4-Trichlorobenzene	20.86	180	217490	19.1396	ug/L		99
99)	Hexachlorobutadiene	21.01	225	83584	19.2582	ug/L		100
100)	Naphthalene	21.24	128	439937	19.3351	ug/L		100
101)	1,2,3-Trichlorobenzene	21.54	180	202640	18.4721	ug/L		100

(#) = qualifier out of range (m) = manual integration
6M146241.D 8260BWT.M Thu Apr 06 17:39:08 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\040617\6M146241.D Vial: 6
Acq On : 6 Apr 2017 16:28 Operator: TMB
Sample : WG608987-02 20ug/L LCS STD 8260 Inst : Hpms6
Misc : 1,1 STD81257 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 17:39 2017 Quant Results File: 8260BWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260BWT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-05-17 - HPMS6
Last Update : Thu Apr 06 09:55:03 2017
Response via : Initial Calibration



2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	3520C	**Prep Date:**	04/03/2017 09:30
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	03/21/2017 13:29
Workgroup #:	WG608809	**Analyst:**	SCB	**Run Date:**	04/05/2017 12:49
Collect Date:	03/29/2017 15:00	**Dilution:**	5	**File ID:**	15M20981
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	19.8		11.1	5.56	2.78

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	78.8	20	129	

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG608522
Analyst: JDH
Spike Analyst: JDH
Method: 3520C
Run Date: 04/03/2017 09:30
SOP: EXB01 Revison 20
Spike Witness: JLD
Surr Solution: STD80323

TIME ON: 14:30 OFF: 08:30 ON: _____ OFF: _____
Methylene Chloride Lot #: COA19595
Sodium Sulfate , Anhydrous , Granul Lot #: COA19381
1:1 H2SO4 Lot #: RGT39543

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L17031689-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Colored
2	L17031690-01	SAMP		827-DIOXANE	<2	900 mL	.05 mL			1 mL	Colored
3	L17040002-01	ML01		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD77209	1 mL	Transparent
4	L17040004-01	ML01		827-DIOXANE	<2	1000 mL	.05 mL	.01 mL	STD77209	1 mL	Transparent
5	WG608522-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	WG608522-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD77209	1 mL	Transparent
7	WG608522-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD77209	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.
pH 0-3 Lot#230515
TV1P5,6

L17040002-01	LOD
L17040004-01	LOQ

Analyst: Justin Hixson

Reviewer: Jessica DeLong

EXTRACT - Modified 01/23/2009
PDF ID: 5230380
Report generated: 04/04/2017 16:02

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 032117
Analyst1: SCB Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 28

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG606959, WG606673

Internal STD: STD81022 Surrogate STD: NA Calibration STD
CCV STD: STD80097 LCS STD: MS/MSD STD:

Comments: File 15M20885 does not exist

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M20882	BAKE OUT	1	1		03/21/17 08:57
2	15M20883	WG606959-01 5PPM LL DFTPP	1	1	STD80383	03/21/17 09:16
3	15M20884	WG606959-01 5PPM LL DFTPP	1	1	STD80383	03/21/17 09:33
4	15M20886	WG606959-01 5PPM LL DFTPP	1	1	STD80383	03/21/17 10:43
5	15M20887	WG606959-01 5PPM LL DFTPP	1	1	STD80383	03/21/17 11:00
6	15M20888	WG606959-01 5PPM LL DFTPP	1	1	STD80383	03/21/17 11:17
7	15M20889	WG606959-02 5PPM 1,4-DIOXSTD	1	1	STD80097	03/21/17 11:36
8	15M20890	WG606959-03 10PPM 1,4-DIOX STD	1	1	STD80097	03/21/17 11:59
9	15M20891	WG606959-04 7.5PPM 1,4-DIOX STD	1	1	STD80097	03/21/17 12:22
10	15M20892	WG606959-05 2.5PPM 1,4-DIOX STD	1	1	STD80097	03/21/17 12:44
11	15M20893	WG606959-06 1PPM 1,4-DIOX STD	1	1	STD80097	03/21/17 13:07
12	15M20894	WG606959-07 0.4PPM 1,4-DIOX STD	1	1	STD80097	03/21/17 13:29
13	15M20895	WG606959-08 5PPM 1,4-DIOX ALT SRC	1	1	STD80098	03/21/17 13:51
14	15M20896	WG606465-01 BLANK 3/16	1	1		03/21/17 14:14
15	15M20897	WG606465-02 LCS 3/16	1	1		03/21/17 14:37
16	15M20898	WG606465-03 LCS2 3/16	1	1		03/21/17 15:00
17	15M20899	L17030724-01	1	1		03/21/17 15:22
18	15M20900	L17030724-01 10X	1	10		03/21/17 15:45
19	15M20901	BAKE OUT	1	1		03/21/17 16:07
20	15M20902	BAKE OUT	1	1		03/21/17 16:30
21	15M20903	BAKE OUT	1	1		03/21/17 16:53
22	15M20904	CH2CL2 CHECK	1	1		03/21/17 17:15

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG606959-01 5PPM LL DFTPP has an ion failure, DNR			
3				
	WG606959-01 5PPM LL DFTPP has an ion failure, changed liner, DNR			
4				
	WG606959-01 5PPM LL DFTPP benzidine tailing is >2, DNR			
5				
	WG606959-01 5PPM LL DFTPP has two ion failures, tightened nuts, DNR			

Page: 1 Approved: 22-MAR-17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 032117

Analyst1: SCB Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 28

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG606959, WG606673

Internal STD: STD81022 Surrogate STD: NA

CCV STD: STD80097 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
	WG606465-02 LCS 3/16 has high %REC and high surrogate recovery			
16				
	WG606465-03 LCS2 3/16 has high %REC and high surrogate recovery			
17	X	10	Over Calibration Range	2
	L17030724-01 the surrogate recovery is high, needs re-extracted			
18				
	L17030724-01 10X the surrogate recovery is hgh			

Page: 2 Approved: 22-MAR-17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 040517
Analyst1: SCB Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 28

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:
Column 1 ID: RXI-5MS Column 2 ID: NA
Workgroups: WG608809
Internal STD: STD81022 Surrogate STD: NA Calibration STD
CCV STD: STD80097 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M20970	BAKE OUT	1	1		04/05/17 08:40
2	15M20971	WG608842-01 5PPM LL DFTPP	1	1	STD80383	04/05/17 09:00
3	15M20972	WG608842-02 5PPM 1,4-DIOX STD	1	1	STD80097	04/05/17 09:18
4	15M20973	WG608522-01 BLANK 4/3	1	1		04/05/17 09:47
5	15M20974	WG608522-02 LCS 4/3	1	1		04/05/17 10:10
6	15M20975	WG608522-03 LCS2 4/3	1	1		04/05/17 10:33
7	15M20976	L17040002-01 LOD	1	1		04/05/17 10:56
8	15M20977	L17040004-01 LOQ	1	1		04/05/17 11:18
9	15M20978	L17031689-01	1	1		04/05/17 11:41
10	15M20979	L17031690-01	1	1		04/05/17 12:04
11	15M20980	L17031689-01 5X	1	5		04/05/17 12:27
12	15M20981	L17031690-01 5X	1	5		04/05/17 12:49
13	15M20982	BAKE OUT	1	1		04/05/17 13:12
14	15M20983	BAKE OUT	1	1		04/05/17 13:35
15	15M20984	BAKE OUT	1	1		04/05/17 13:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9	X	5	Over Calibration Range	2
	L17031689-01 has a high surrogate recovery			
10	X	5	Over Calibration Range	2
	L17031690-01			
11				
	L17031689-01 5X has a high surrogate recovery due to SMI. OK to narrate per the client.			

Page: 1 Approved: 06-APR-17

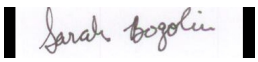
Microbac Laboratories Inc.

Data Checklist

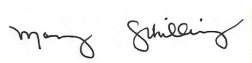
Date: 21-MAR-2017
Analyst: SCB
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 81082
Analytical Workgroups: WG606959, L17030724

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer:
22-MAR-2017



Secondary Reviewer:
22-MAR-2017



CHECKLIST1 - Modified 03/05/2008
Generated: MAR-22-2017 11:13:35

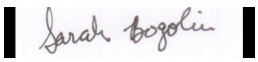
Microbac Laboratories Inc.

Data Checklist

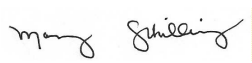
Date: 05-APR-2017
Analyst: SCB
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 81379
Analytical Workgroups: L17040002, L17040004, L17031689, L17031690

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer:
06-APR-2017



Secondary Reviewer:
06-APR-2017



CHECKLIST1 - Modified 03/05/2008
Generated: APR-06-2017 15:31:14

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D **AAB#:** WG608809

Login Number: L17031690

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP650-6428-GRAB	01	03/29/17					04/03/2017	4.8	7		04/05/17	2.1	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5232947
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L17031690
Instrument Id: HPMS15
Workgroup (AAB#): WG608809

Method: 827-DIOXANE
CAL ID: HPMS15-21-MAR-17
Matrix: Water

Sample Number	Dilution	Tag	1
L17031690-01	5.00	DL01	78.8
WG608522-01	1.00	01	68.4
WG608522-02	1.00	01	44.2
WG608522-03	1.00	01	65.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 5232960
Report generated: 04/07/2017 10:14

METHOD BLANK SUMMARY

Login Number:	L17031690	**Work Group:**	WG608809
Blank File ID:	15M20973	**Blank Sample ID:**	WG608522-01
Prep Date:	04/03/17 09:30	**Instrument ID:**	HPMS15
Analyzed Date:	04/05/17 09:47	**Method:**	8270D
Analyst:	SCB		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608522-02	15M20974	04/05/17 10:10	01
LCS2	WG608522-03	15M20975	04/05/17 10:33	01
LH18/24-SP650-6428-GRAB	L17031690-01	15M20981	04/05/17 12:49	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5232948
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031690 Prep Date: 04/03/17 09:30 Sample ID: WG608522-01
Instrument ID: HPMS15 Run Date: 04/05/17 09:47 Prep Method: 3520C
File ID: 15M20973 Analyst: SCB Method: 8270D
Workgroup (AAB#): WG608809 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	68.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5232949
07-APR-2017 10:14

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031690 Analyst: SCB Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG608809 Units: ug/L
QC Key: DOD4 Lot #: STD77209

Sample ID: WG608522-02 LCS File ID: 15M20974 Run Date: 04/05/2017 10:10
Sample ID: WG608522-03 LCS2 File ID: 15M20975 Run Date: 04/05/2017 10:33

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	2.02	40.4	5.00	2.92	58.4	36.4	30 - 104	30	#

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	44.2	65.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 5232951
Report generated: 04/07/2017 10:14

DFTPP

Login Number: L17031690
Instrument: HPMS15
Analyst: SCB
Workgroup: WG606959

Tune ID: WG606959-01
Run Date: 03/21/2017
Run Time: 11:17
File ID: 15M20888
Cal ID: HPMS15 - 21-MAR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	37.4	124900	PASS
68.0	69.0	0	2.00	1.56	2066	PASS
69.0	198	0	100	39.8	132696	PASS
70.0	69.0	0	2.00	0.730	969	PASS
127	198	40.0	60.0	55.0	183360	PASS
197	198	0	1.00	0.456	1521	PASS
198	198	100	100	100	333568	PASS
199	198	5.00	9.00	6.67	22252	PASS
275	198	10.0	30.0	26.9	89573	PASS
365	198	1.00	100	3.82	12731	PASS
441	443	0.0100	100	76.8	35691	PASS
442	198	40.0	100	72.5	241941	PASS
443	442	17.0	23.0	19.2	46461	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG606959-02	STD-CCV	01	03/21/2017 11:36	
WG606959-03	STD	01	03/21/2017 11:59	
WG606959-04	STD	01	03/21/2017 12:22	
WG606959-05	STD	01	03/21/2017 12:44	
WG606959-06	STD	01	03/21/2017 13:07	
WG606959-07	STD	01	03/21/2017 13:29	
WG606959-08	SSCV	01	03/21/2017 13:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5232957
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L17031690
Instrument: HPMS15
Analyst: SCB
Workgroup: WG608842

Tune ID: WG608842-01
Run Date: 04/05/2017
Run Time: 09:00
File ID: 15M20971
Cal ID: HPMS15 - 21-MAR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	37.5	135228	PASS
68.0	69.0	0	2.00	1.54	2197	PASS
69.0	198	0	100	39.6	142579	PASS
70.0	69.0	0	2.00	0.339	484	PASS
127	198	40.0	60.0	54.2	195218	PASS
197	198	0	1.00	0.935	3368	PASS
198	198	100	100	100	360220	PASS
199	198	5.00	9.00	7.02	25276	PASS
275	198	10.0	30.0	25.7	92736	PASS
365	198	1.00	100	3.63	13078	PASS
441	443	0.0100	100	79.4	38928	PASS
442	198	40.0	100	71.6	257835	PASS
443	442	17.0	23.0	19.0	49032	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG608842-02	CCV	01	04/05/2017 09:18	
WG608522-01	BLANK	01	04/05/2017 09:47	
WG608522-02	LCS	01	04/05/2017 10:10	
WG608522-03	LCS2	01	04/05/2017 10:33	
L17031690-01	LH18/24-SP650-6428-GRAB	DL01	04/05/2017 12:49	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5232957
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L17031690
Analytical Method: 8270D
ICAL Workgroup: WG606959

Instrument ID: HPMS15
Initial Calibration Date: 21-MAR-17 13:29
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3028	1.79		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 5232952
Report generated 04/07/2017 10:14

Login Number: L17031690
Analytical Method: 8270D
Instrument ID: HPMS15
Initial Calibration Date: 21-MAR-17 13:29
Column ID: F

Analyte	WG606959-02			WG606959-03			WG606959-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	212168.000	0.3040	10.0	413045.000	0.3069	7.50	289607.000	0.3055

INT_CAL - Modified 03/06/2008
PDF File ID: 5232952
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L17031690
Analytical Method: 8270D
Instrument ID: HPMS15
Initial Calibration Date: 21-MAR-17 13:29
Column ID: F

Analyte	WG606959-05			WG606959-06			WG606959-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	79286.0000	0.3015	1.00	32819.0000	0.3066	0.400	15800.0000	0.2925

INT_CAL - Modified 03/06/2008
PDF File ID: 5232952
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L17031690 Run Date: 03/21/2017 Sample ID: WG606959-08
Instrument ID: HPMS15 Run Time: 13:51 Method: 8270D
File ID: 15M20895 Analyst: SCB QC Key: DOD4
ICal Workgroup: WG606959 Cal ID: HPMS15 - 21-MAR-17

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	4630	ug/L	0.280	7.40	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 5232956
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031690 Run Date: 04/05/2017 Sample ID: WG608842-02
Instrument ID: HPMS15 Run Time: 09:18 Method: 8270D
File ID: 15M20972 Analyst: SCB QC Key: DOD4
Workgroup (AAB#): WG608809 Cal ID: HPMS15 - 21-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4890	ug/L	0.296	2.23	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 5232958
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031690
Instrument ID: HPMS15
Workgroup (AAB#): WG608809

ICAL CCV Number: WG606959-02
CAL ID: HPMS15-21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG606959-02	NA	NA	139587
Upper Limit	NA	NA	279174
Lower Limit	NA	NA	69794
L17031690-01	5.00	DL01	119300
WG608522-01	1.00	01	115831
WG608522-02	1.00	01	116681
WG608522-03	1.00	01	115106

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 5232959
Report generated 04/07/2017 10:14

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031690
Instrument ID: HPMS15
Workgroup (AAB#): WG608809

ICAL CCV Number: WG606959-02
CAL ID: HPMS15-21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG606959-02	NA	NA	7.05
Upper Limit	NA	NA	7.55
Lower Limit	NA	NA	6.55
L17031690-01	5.00	DL01	7.058
WG608522-01	1.00	01	7.054
WG608522-02	1.00	01	7.054
WG608522-03	1.00	01	7.054

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 5232961
Report generated: 04/07/2017 10:14

2.2.1.3 Sample Data

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20981.D
Acq On : 5 Apr 2017 12:49 pm
Operator : SCB
Sample : L17031690-01 5X
Misc : 1,5 DL
ALS Vial : 11 Sample Multiplier: 5

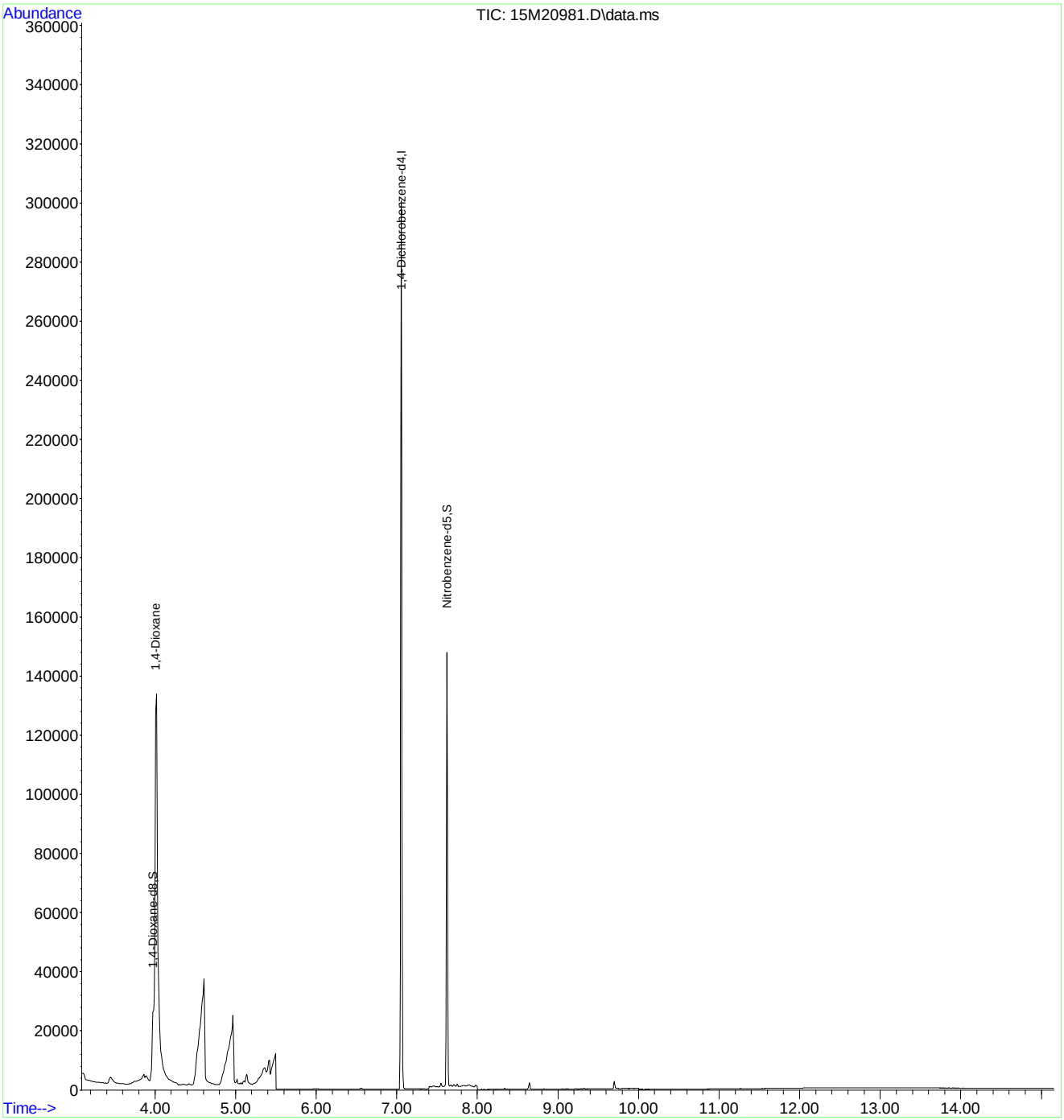
Quant Time: Apr 06 08:33:50 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

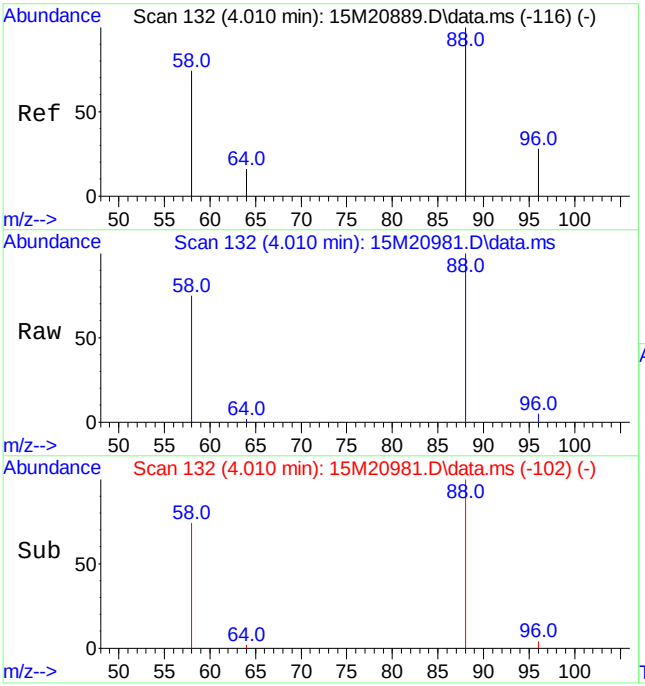
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.058	152	119300	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.975	96	36751	3.9416	ug/L	0.00
Spiked Amount 5.000			Recovery = 78.80%			
4) Nitrobenzene-d5	7.624	82	120263	4.7259	ug/L	0.08
Spiked Amount 5.000			Recovery = 94.60%			
5) 2-Fluorobiphenyl	8.827	172	116	0.0022	ug/L	-0.22
Spiked Amount 5.000			Recovery = 0.00%			
6) p-Terphenyl-d14	12.317	244	97	0.0018	ug/L	0.02
Spiked Amount 5.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.010	58	128793	3.5648	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20981.D
Acq On : 5 Apr 2017 12:49 pm
Operator : SCB
Sample : L17031690-01 5X
Misc : 1,5 DL
ALS Vial : 11 Sample Multiplier: 5

Quant Time: Apr 06 08:33:50 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

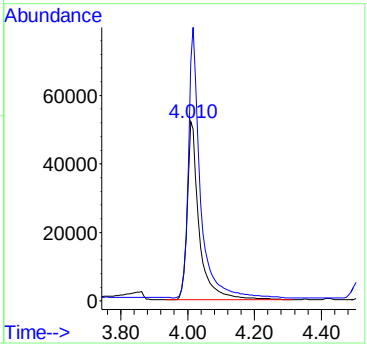




#2
1,4-Dioxane
Concen: 3.56 ug/L
RT: 4.010 min Scan# 132
Delta R.T. 0.000 min
Lab File: 15M20981.D
Acq: 5 Apr 2017 12:49 pm

Tgt Ion: 58 Resp: 128793

Ion	Ratio	Lower	Upper
58	100		
88	148.6	88.6	206.8



2.2.1.4 Standards Data

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20889.D
Acq On : 21 Mar 2017 11:36 am
Operator : SCB
Sample : WG606959-02 5PPM 1,4-DIOXSTD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

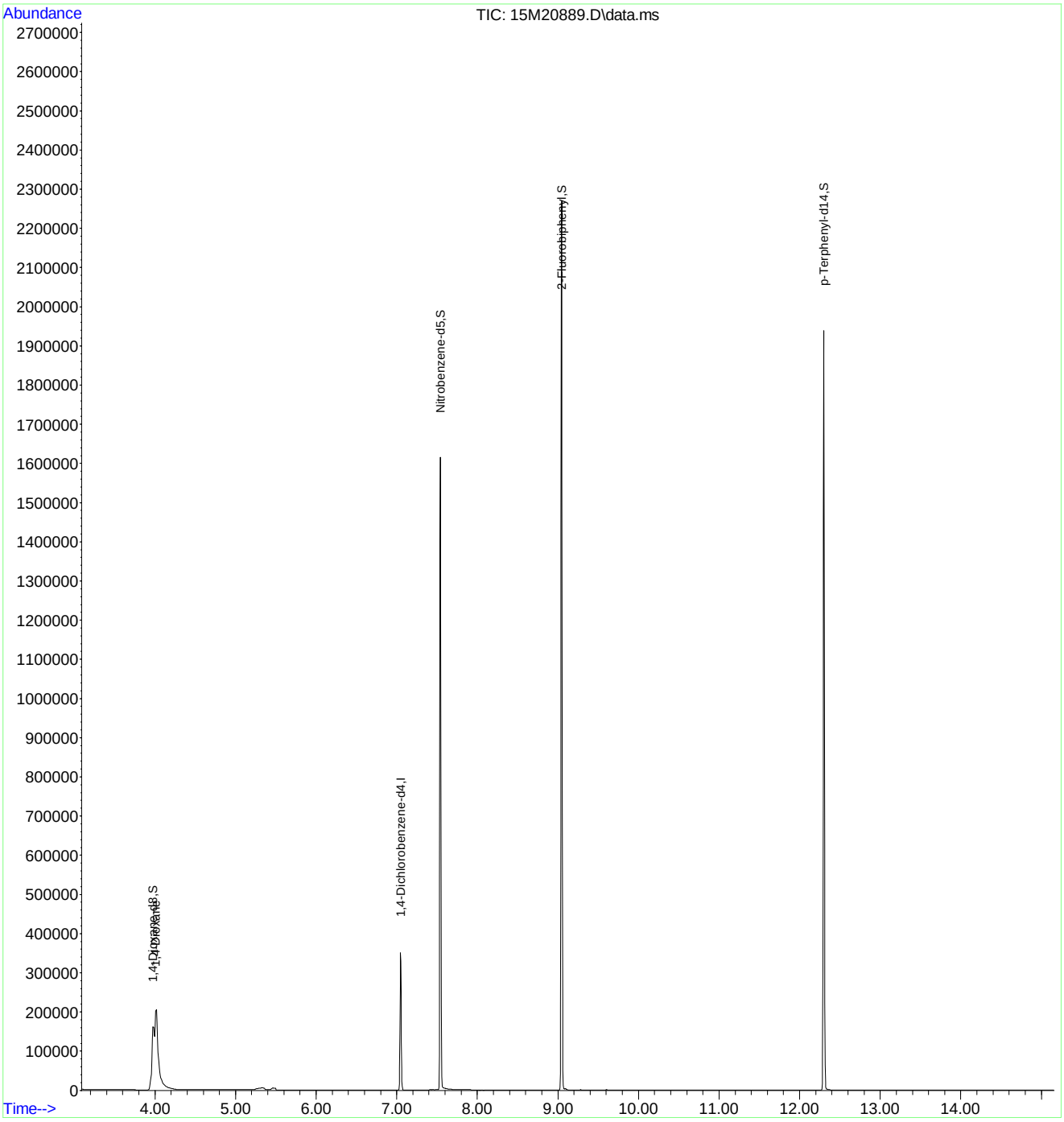
Quant Time: Mar 21 11:52:07 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032017
QLast Update : Tue Mar 21 08:23:00 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.051	152	139587	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.975	96	273434	4.9111	ug/L	0.06
Spiked Amount 5.000			Recovery = 98.20%			
4) Nitrobenzene-d5	7.544	82	772044	5.4825	ug/L	0.00
Spiked Amount 5.000			Recovery = 109.60%			
5) 2-Fluorobiphenyl	9.048	172	1542568	4.9879	ug/L	0.00
Spiked Amount 5.000			Recovery = 99.80%			
6) p-Terphenyl-d14	12.299	244	1602914	4.7952	ug/L	0.00
Spiked Amount 5.000			Recovery = 96.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.010	58	212168	4.9180	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20889.D
Acq On : 21 Mar 2017 11:36 am
Operator : SCB
Sample : WG606959-02 5PPM 1,4-DIOXSTD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 21 11:52:07 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032017
QLast Update : Tue Mar 21 08:23:00 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20890.D
Acq On : 21 Mar 2017 11:59 am
Operator : SCB
Sample : WG606959-03 10PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 3 Sample Multiplier: 1

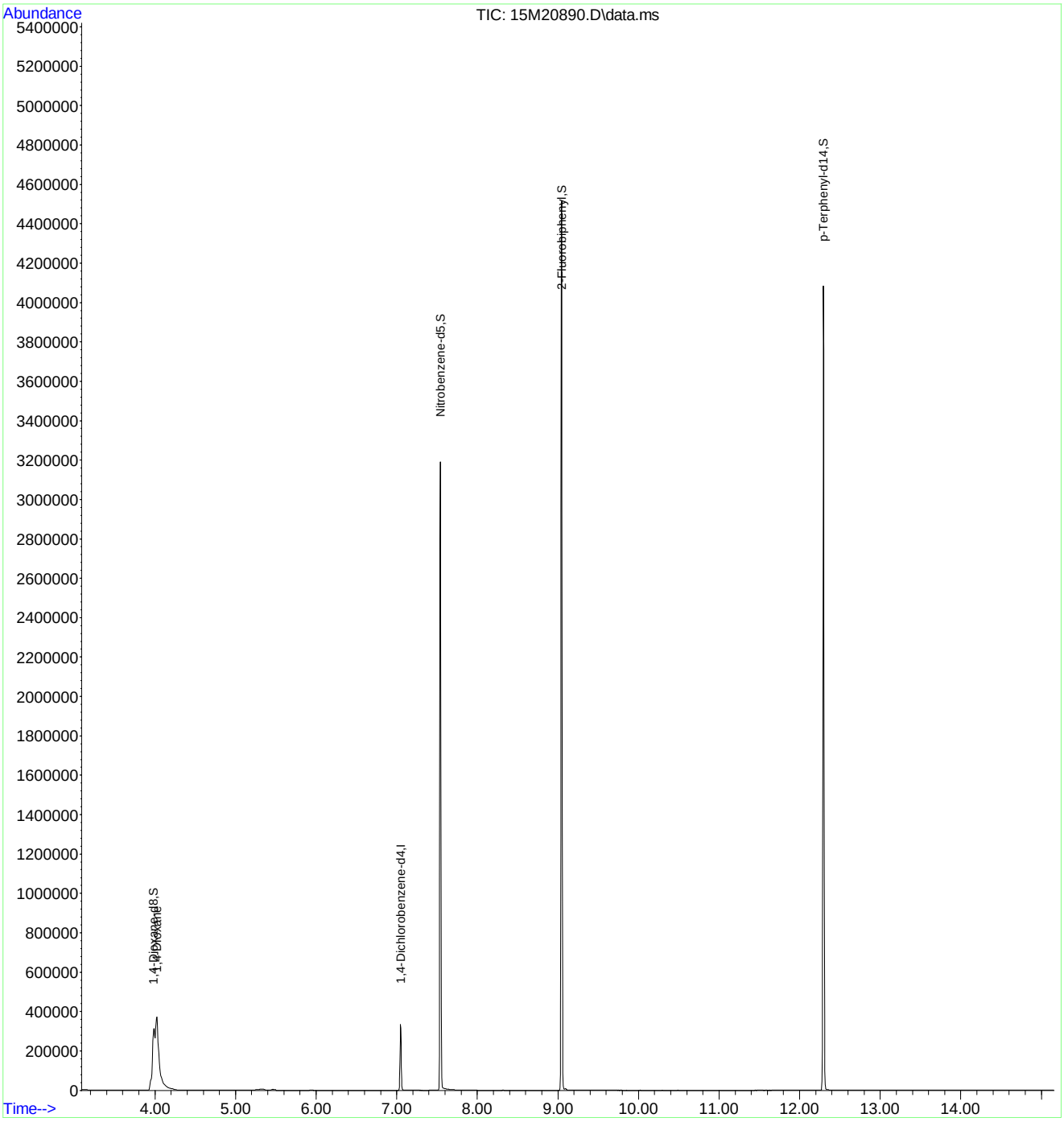
Quant Time: Mar 21 13:04:57 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 12:01:58 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.051	152	134604	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.982	96	531542	9.9382	ug/L	0.00
Spiked Amount 5.000			Recovery = 198.80%			
4) Nitrobenzene-d5	7.544	82	1518935	11.1141	ug/L	0.00
Spiked Amount 5.000			Recovery = 222.20%			
5) 2-Fluorobiphenyl	9.048	172	3039962	10.2007	ug/L	0.00
Spiked Amount 5.000			Recovery = 204.00%			
6) p-Terphenyl-d14	12.295	244	3286803	10.2842	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.024	58	413045	9.9666	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20890.D
Acq On : 21 Mar 2017 11:59 am
Operator : SCB
Sample : WG606959-03 10PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 21 13:04:57 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 12:01:58 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20891.D
Acq On : 21 Mar 2017 12:22 pm
Operator : SCB
Sample : WG606959-04 7.5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 4 Sample Multiplier: 1

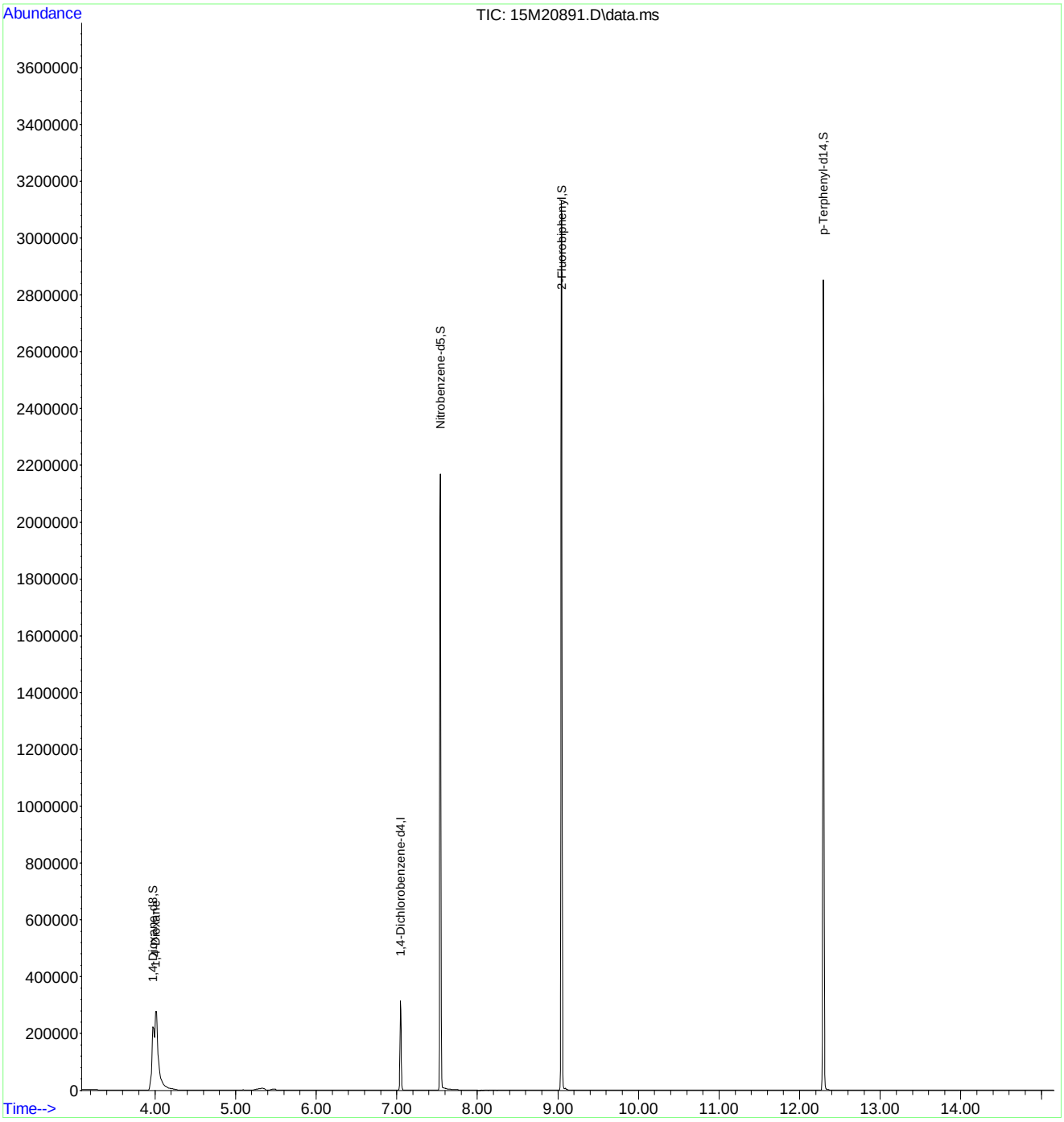
Quant Time: Mar 21 13:05:17 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:03 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.047	152	126394	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.975	96	370638	7.4104	ug/L	0.00
Spiked Amount 5.000			Recovery = 148.20%			
4) Nitrobenzene-d5	7.544	82	1062693	8.2685	ug/L	0.00
Spiked Amount 5.000			Recovery = 165.40%			
5) 2-Fluorobiphenyl	9.048	172	2137834	7.6518	ug/L	0.00
Spiked Amount 5.000			Recovery = 153.00%			
6) p-Terphenyl-d14	12.295	244	2249330	7.5428	ug/L	0.00
Spiked Amount 5.000			Recovery = 150.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.010	58	289607	7.4740	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20891.D
Acq On : 21 Mar 2017 12:22 pm
Operator : SCB
Sample : WG606959-04 7.5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 21 13:05:17 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:03 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20892.D
Acq On : 21 Mar 2017 12:44 pm
Operator : SCB
Sample : WG606959-05 2.5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 5 Sample Multiplier: 1

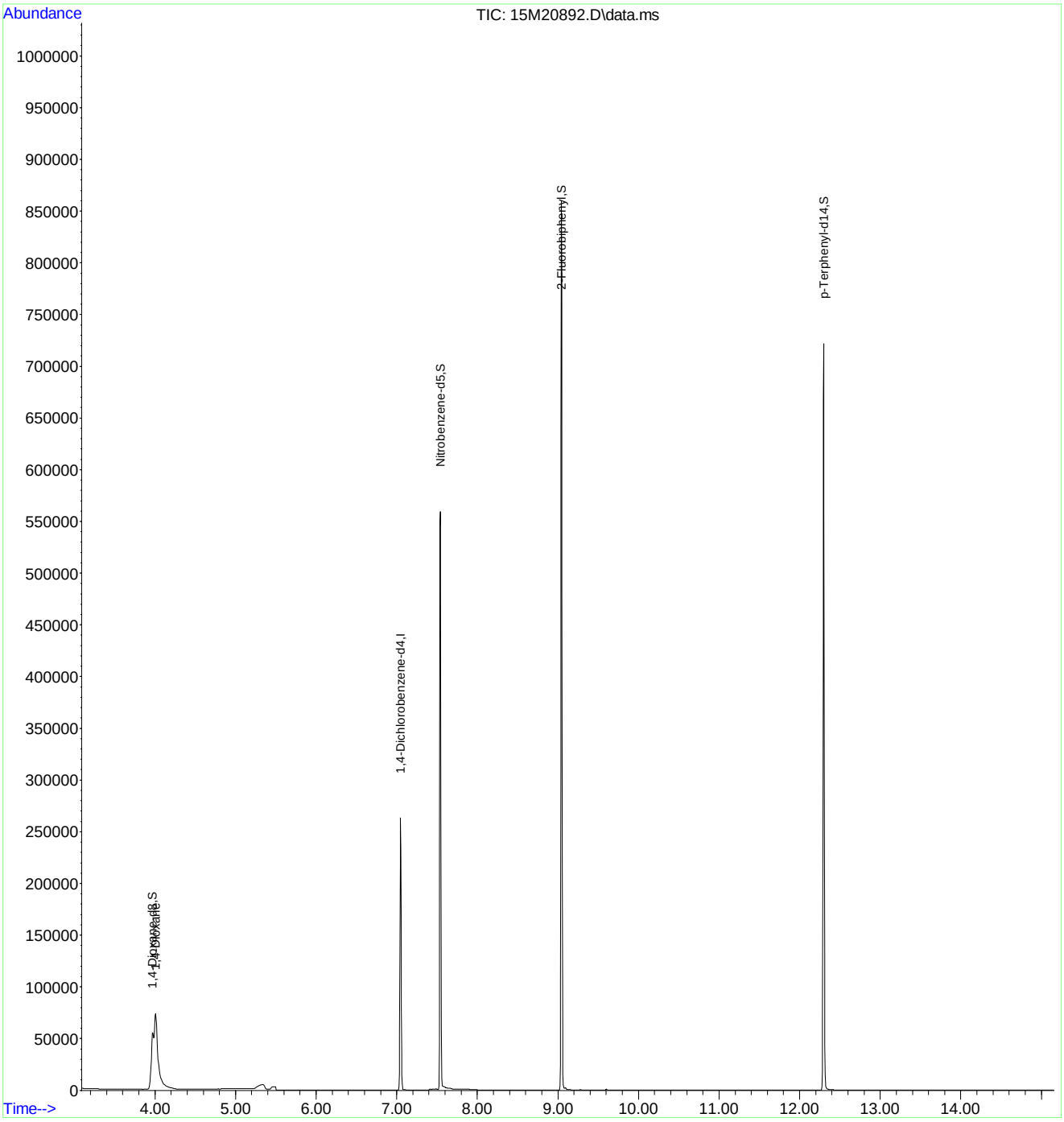
Quant Time: Mar 21 13:05:36 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:22 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.047	152	105174	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.968	96	101713	2.4531	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.00%			
4) Nitrobenzene-d5	7.544	82	282253	2.6276	ug/L	0.00
Spiked Amount 5.000			Recovery = 52.60%			
5) 2-Fluorobiphenyl	9.044	172	580576	2.4941	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.80%			
6) p-Terphenyl-d14	12.298	244	600130	2.4274	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.010	58	79286	2.4683	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20892.D
Acq On : 21 Mar 2017 12:44 pm
Operator : SCB
Sample : WG606959-05 2.5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 21 13:05:36 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:22 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20893.D
Acq On : 21 Mar 2017 1:07 pm
Operator : SCB
Sample : WG606959-06 1PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 6 Sample Multiplier: 1

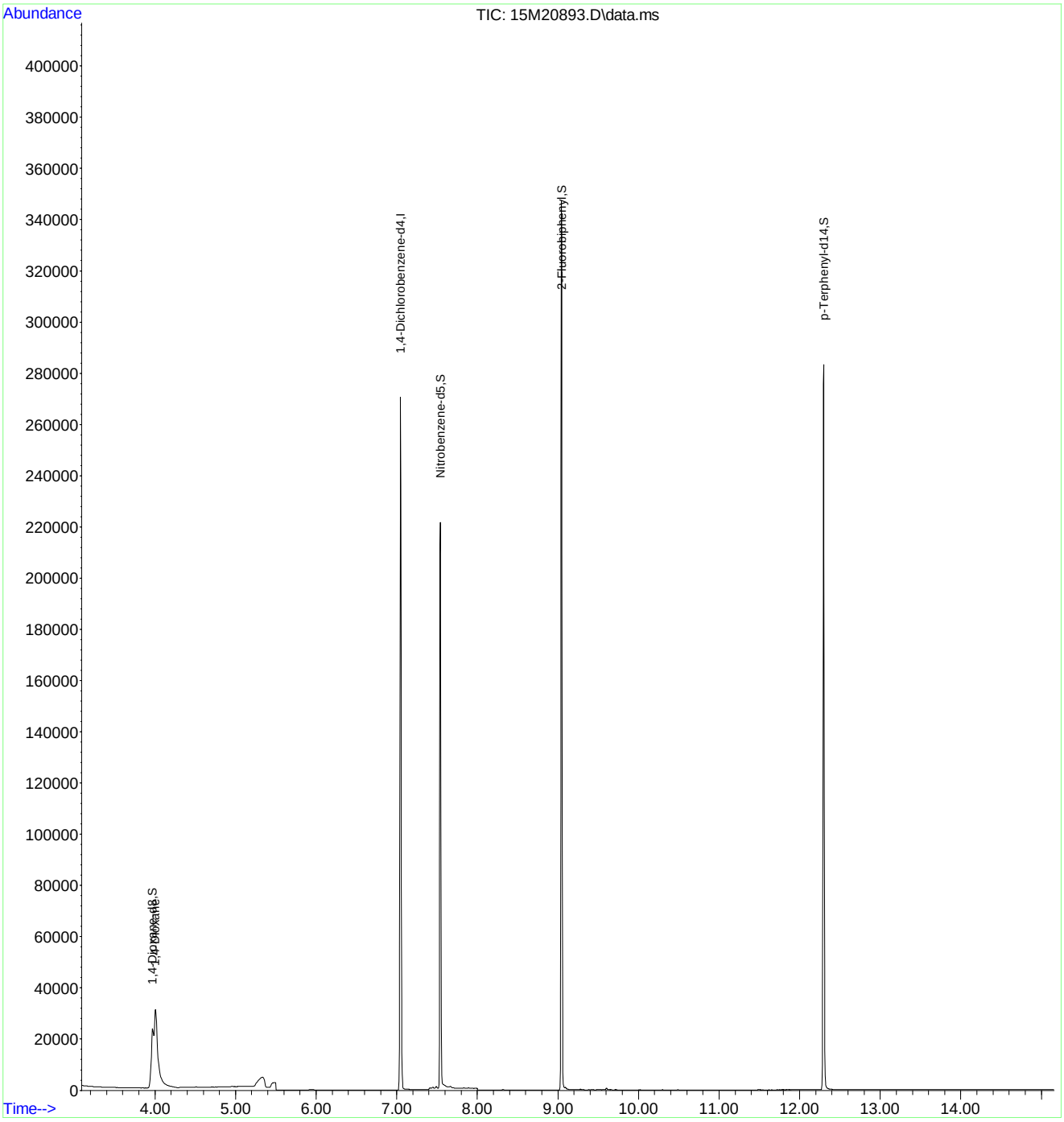
Quant Time: Mar 21 13:29:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:40 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.047	152	107027	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.968	96	41676	0.9900	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.80%			
4) Nitrobenzene-d5	7.544	82	110837	1.0035	ug/L	0.00
Spiked Amount 5.000			Recovery = 20.00%			
5) 2-Fluorobiphenyl	9.048	172	235176	0.9936	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.80%			
6) p-Terphenyl-d14	12.299	244	242621	0.9712	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.003	58	32819	1.0075	ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20893.D
Acq On : 21 Mar 2017 1:07 pm
Operator : SCB
Sample : WG606959-06 1PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 21 13:29:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:05:40 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20894.D
Acq On : 21 Mar 2017 1:29 pm
Operator : SCB
Sample : WG606959-07 0.4PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 7 Sample Multiplier: 1

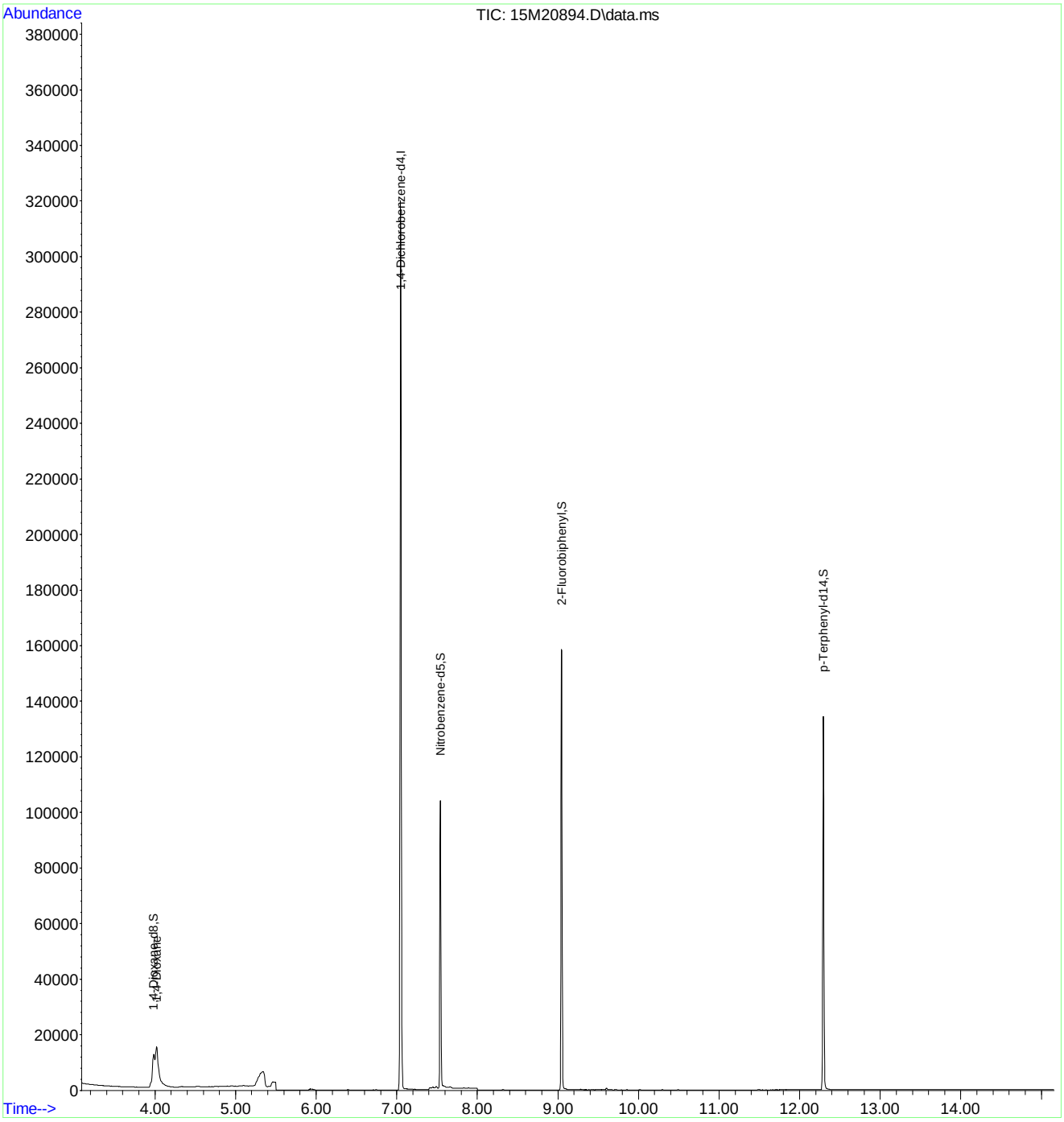
Quant Time: Mar 21 13:45:12 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:29:27 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.051	152	135041	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.982	96	19918	0.3774	ug/L	0.00
Spiked Amount 5.000			Recovery =	7.60%		
4) Nitrobenzene-d5	7.544	82	50480	0.3556	ug/L	0.00
Spiked Amount 5.000			Recovery =	7.20%		
5) 2-Fluorobiphenyl	9.048	172	109232	0.3664	ug/L	0.00
Spiked Amount 5.000			Recovery =	7.40%		
6) p-Terphenyl-d14	12.295	244	111976	0.3578	ug/L	0.00
Spiked Amount 5.000			Recovery =	7.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	4.017	58	15800	0.3852	ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20894.D
Acq On : 21 Mar 2017 1:29 pm
Operator : SCB
Sample : WG606959-07 0.4PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 21 13:45:12 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:29:27 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20895.D
Acq On : 21 Mar 2017 1:51 pm
Operator : SCB
Sample : WG606959-08 5PPM 1,4-DIOX ALT SRC
Misc : 1,1 STD80098
ALS Vial : 8 Sample Multiplier: 1

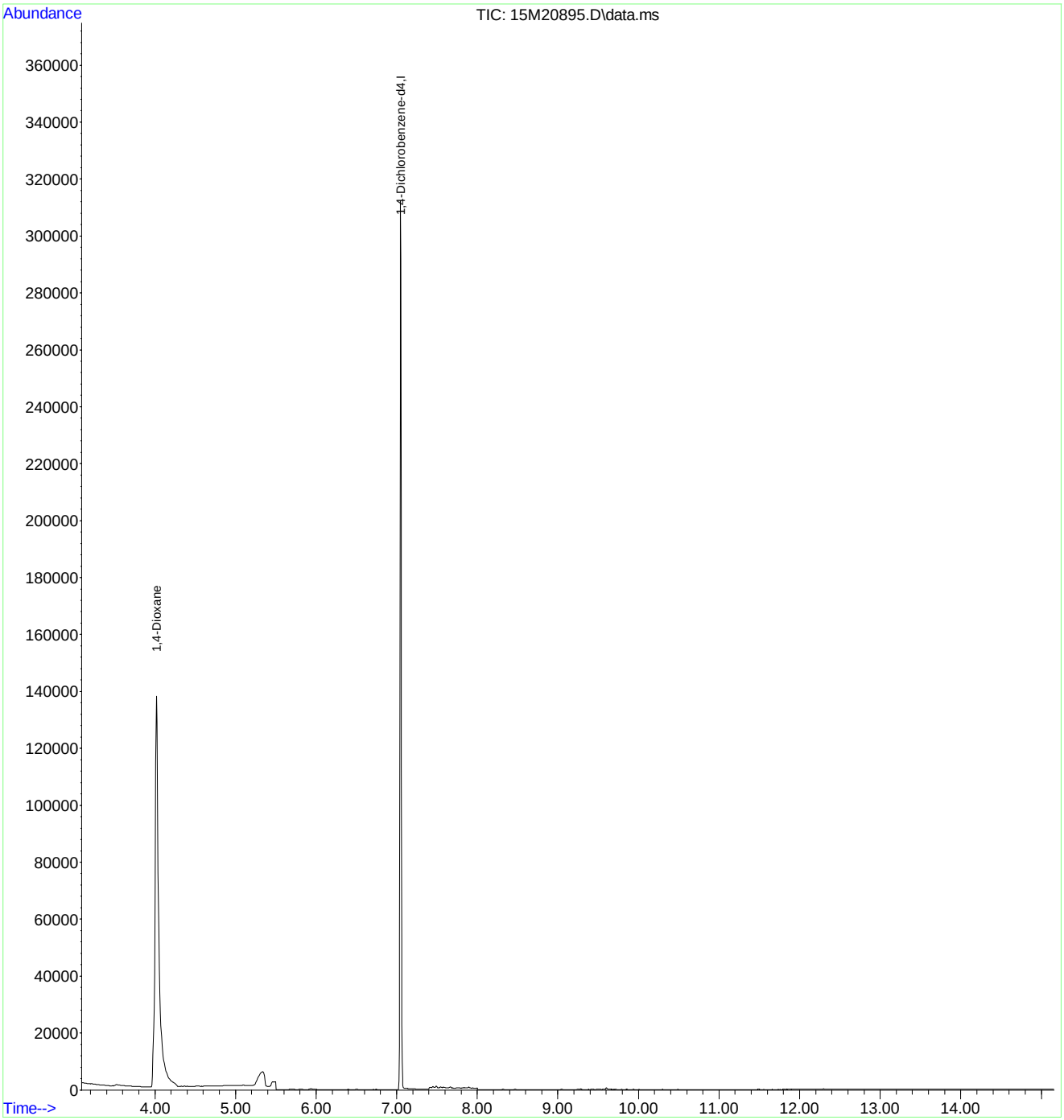
Quant Time: Mar 21 14:07:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.051	152	127276	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.989	96	40	0.0008	ug/L	0.01
Spiked Amount 5.000			Recovery =	0.00%		
4) Nitrobenzene-d5	7.447	82	447	0.0033	ug/L	-0.10
Spiked Amount 5.000			Recovery =	0.00%		
5) 2-Fluorobiphenyl	9.048	172	92	0.0003	ug/L	0.00
Spiked Amount 5.000			Recovery =	0.00%		
6) p-Terphenyl-d14	12.295	244	227	0.0008	ug/L	0.00
Spiked Amount 5.000			Recovery =	0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	4.017	58	178401	4.6284	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20895.D
Acq On : 21 Mar 2017 1:51 pm
Operator : SCB
Sample : WG606959-08 5PPM 1,4-DIOX ALT SRC
Misc : 1,1 STD80098
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 21 14:07:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\032117\
Data File : 15M20895.D
Acq On : 21 Mar 2017 1:51 pm
Operator : SCB
Sample : WG606959-08 5PPM 1,4-DIOX ALT SRC
Misc : 1,1 STD80098
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 21 14:07:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	91	0.00
2		1,4-Dioxane	0.303	0.280	7.6	84	0.00
3	S	1,4-Dioxane-d8	0.391	0.000	100.0#	0#	0.01
4	S	Nitrobenzene-d5	1.067	0.001	99.9#	0#	-0.10
5	S	2-Fluorobiphenyl	2.192	0.000	100.0#	0#	0.00
6	S	p-Terphenyl-d14	2.289	0.000	100.0#	0#	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20895.D
Acq On : 21 Mar 2017 1:51 pm
Operator : SCB
Sample : WG606959-08 5PPM 1,4-DIOX ALT SRC
Misc : 1,1 STD80098
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 21 14:07:21 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	91	0.00
2		1,4-Dioxane	5.000	4.628	7.4	84	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	0.01
4	S	Nitrobenzene-d5	5.000	0.003	99.9#	0	-0.10
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20972.D
Acq On : 5 Apr 2017 9:18 am
Operator : SCB
Sample : WG608842-02 5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

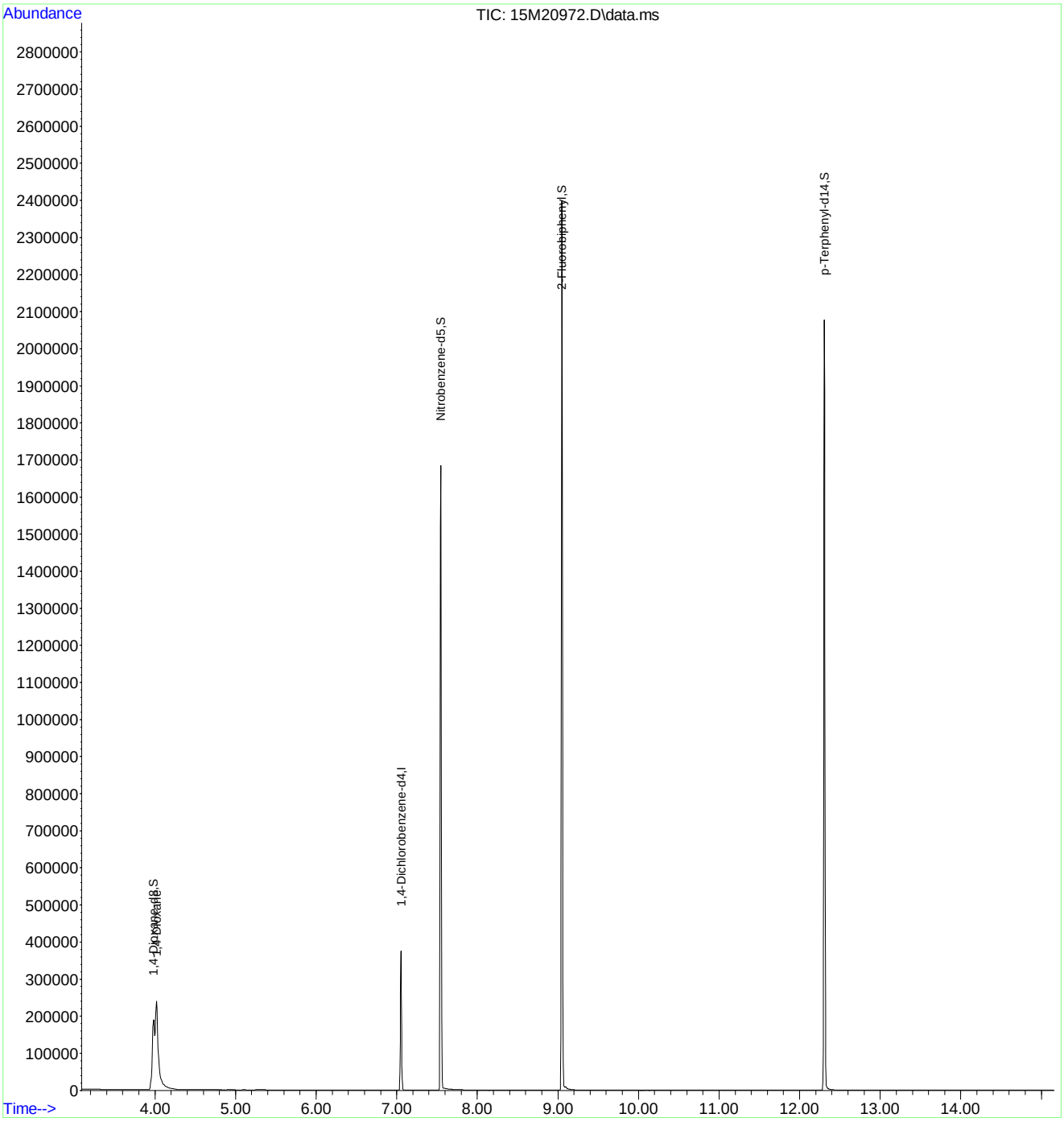
Quant Time: Apr 05 09:42:24 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.054	152	151426	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.982	96	290004	4.9009	ug/L	0.00
Spiked Amount 5.000			Recovery = 98.00%			
4) Nitrobenzene-d5	7.549	82	811944	5.0274	ug/L	0.00
Spiked Amount 5.000			Recovery = 100.60%			
5) 2-Fluorobiphenyl	9.051	172	1596137	4.8089	ug/L	0.00
Spiked Amount 5.000			Recovery = 96.20%			
6) p-Terphenyl-d14	12.306	244	1700869	4.9072	ug/L	0.00
Spiked Amount 5.000			Recovery = 98.20%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.017	58	224179	4.8885	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20972.D
Acq On : 5 Apr 2017 9:18 am
Operator : SCB
Sample : WG608842-02 5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:42:24 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\040517\
Data File : 15M20972.D
Acq On : 5 Apr 2017 9:18 am
Operator : SCB
Sample : WG608842-02 5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:42:24 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	0.00
2		1,4-Dioxane	0.303	0.296	2.3	106	0.00
3	S	1,4-Dioxane-d8	0.391	0.383	2.0	106	0.00
4	S	Nitrobenzene-d5	1.067	1.072	-0.5	105	0.00
5	S	2-Fluorobiphenyl	2.192	2.108	3.8	103	0.00
6	S	p-Terphenyl-d14	2.289	2.246	1.9	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20972.D
Acq On : 5 Apr 2017 9:18 am
Operator : SCB
Sample : WG608842-02 5PPM 1,4-DIOX STD
Misc : 1,1 STD80097
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 05 09:42:24 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	0.00
2		1,4-Dioxane	5.000	4.889	2.2	106	0.00
3	S	1,4-Dioxane-d8	5.000	4.901	2.0	106	0.00
4	S	Nitrobenzene-d5	5.000	5.027	-0.5	105	0.00
5	S	2-Fluorobiphenyl	5.000	4.809	3.8	103	0.00
6	S	p-Terphenyl-d14	5.000	4.907	1.9	106	0.00

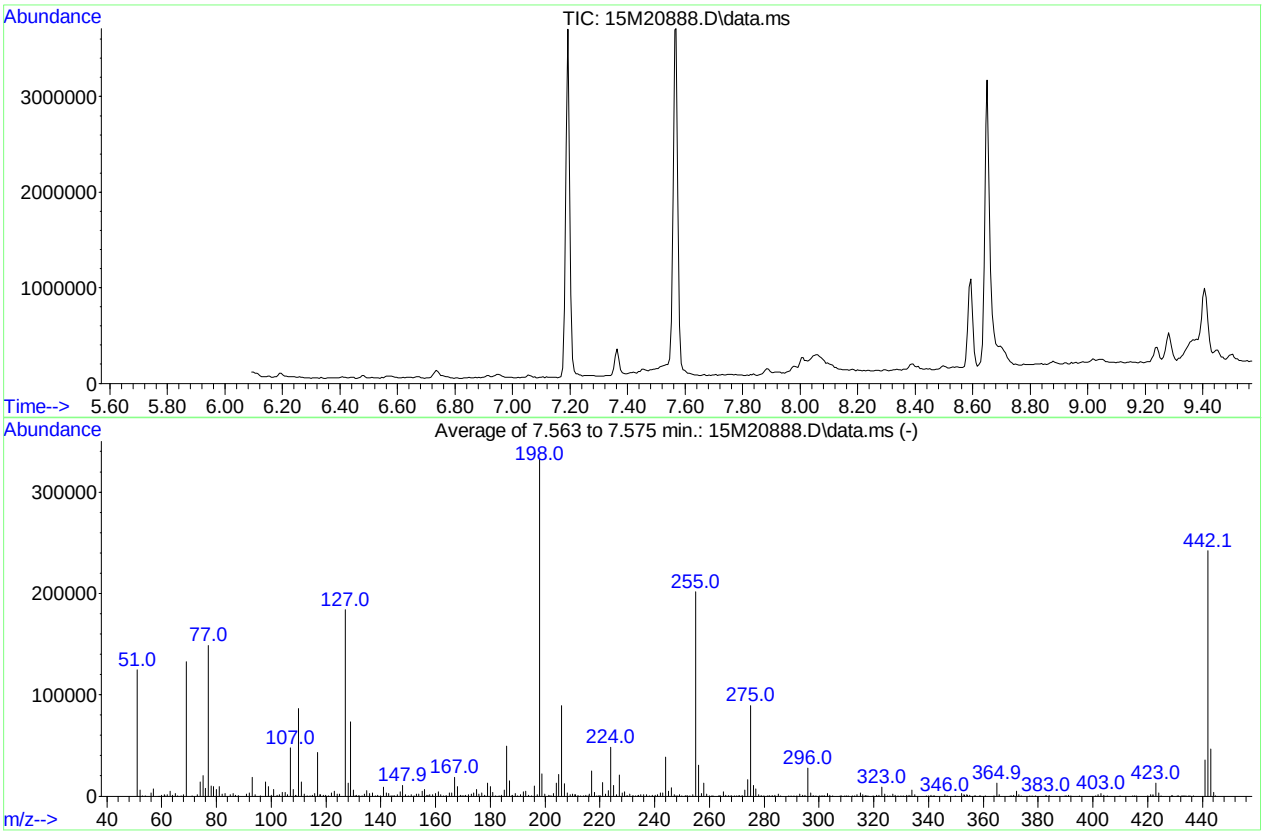
(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20888.D
Acq On : 21 Mar 2017 11:17 am
Operator : SCB
Sample : WG606959-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Tue Sep 13 14:03:54 2016



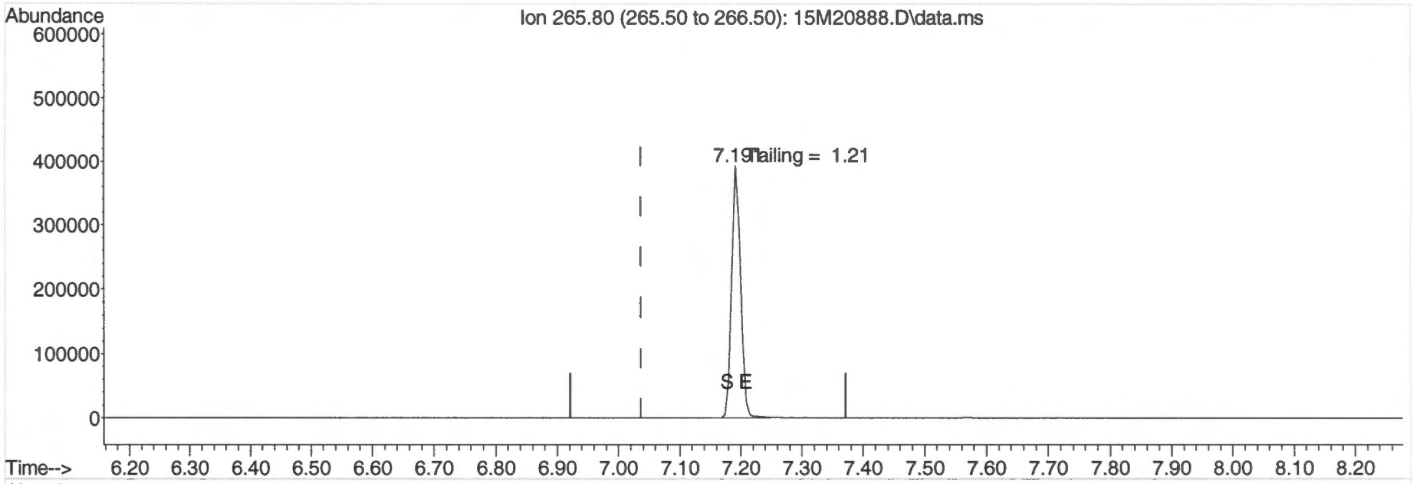
AutoFind: Scans 258, 259, 260; Background Corrected with Scan 252

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	37.4	124854	PASS
68	69	0.00	2	1.3	1708	PASS
69	198	0.00	100	39.8	132801	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	55.2	184234	PASS
197	198	0.00	1	0.4	1460	PASS
198	198	100	100	100.0	333568	PASS
199	198	5	9	6.7	22252	PASS
275	198	10	30	26.9	89573	PASS
365	198	1	100	3.8	12731	PASS
441	443	0.01	100	76.8	35691	PASS
442	198	40	100	72.5	241941	PASS
443	442	17	23	19.2	46461	PASS

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20888.D
Acq On : 21 Mar 2017 11:17 am
Operator : SCB
Sample : WG606959-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 21 11:34:37 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration



TIC: 15M20888.D\data.ms

(1) Pentachlorophenol

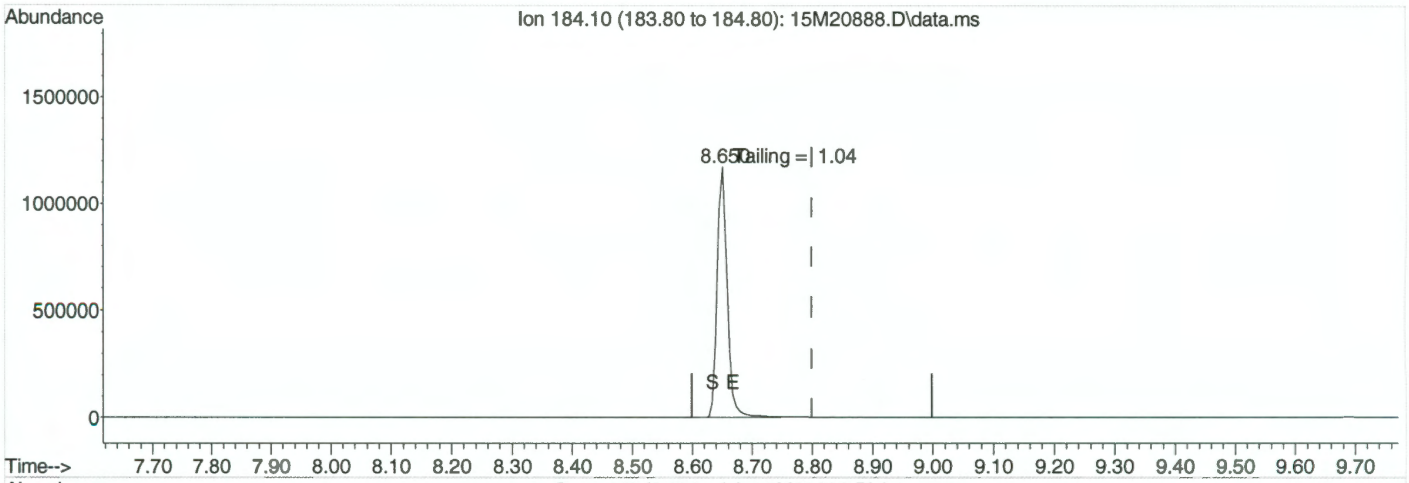
7.191min (+ 0.154) 0.00 ug/ml

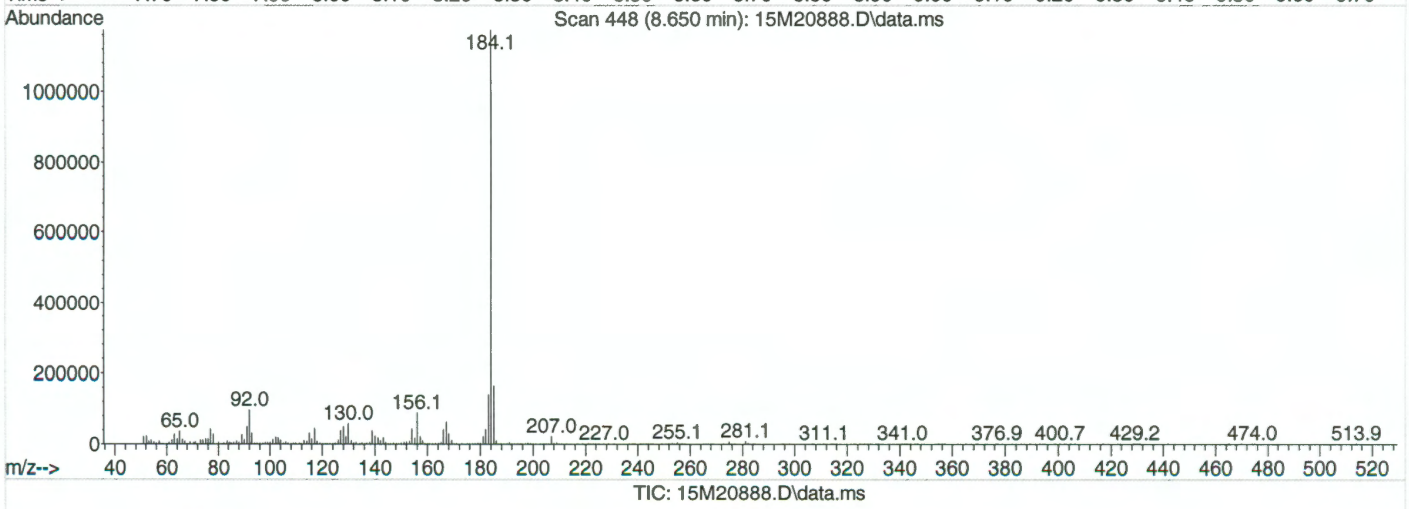
response 397953

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20888.D
Acq On : 21 Mar 2017 11:17 am
Operator : SCB
Sample : WG606959-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 21 11:34:37 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration





TIC: 15M20888.D\data.ms

(2) Benzidine

8.650min (-0.149) 0.00 ug/ml

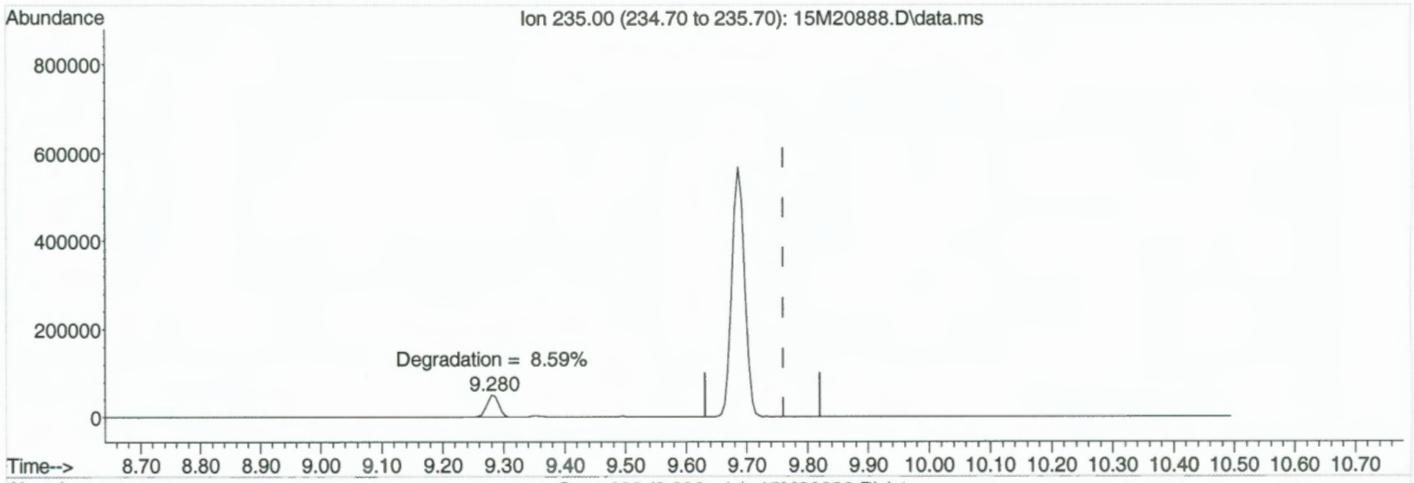
response 1362919

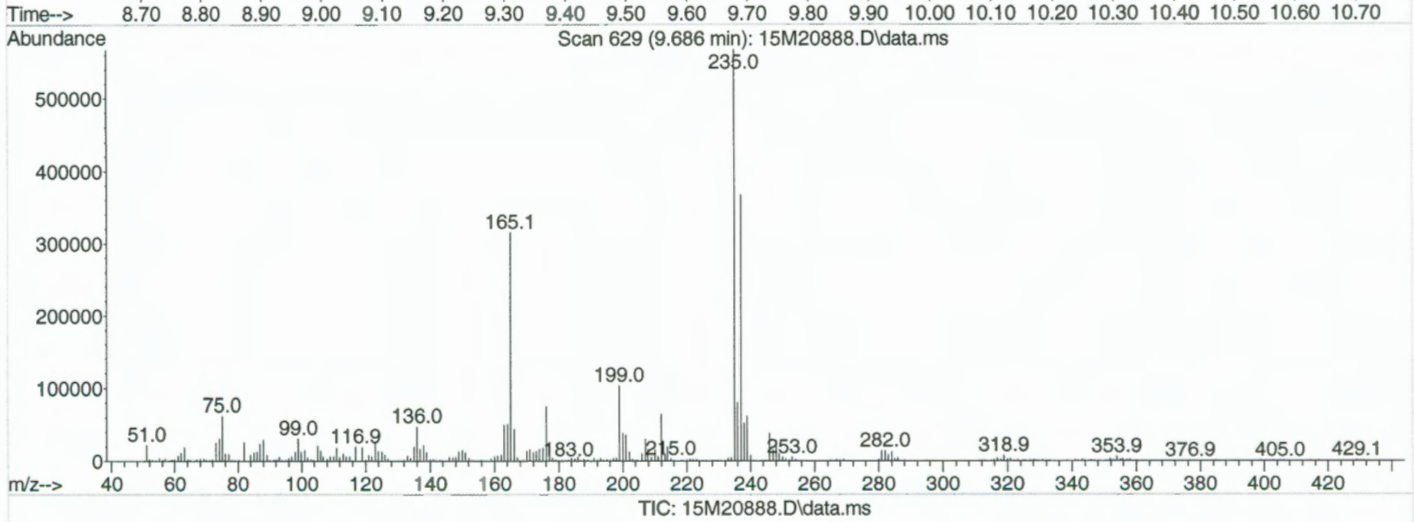
Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032117\
Data File : 15M20888.D
Acq On : 21 Mar 2017 11:17 am
Operator : SCB
Sample : WG606959-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 21 11:34:37 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration





TIC: 15M20888.D\data.ms

(3) DDT

9.686min (-0.074) 0.00 ug/ml

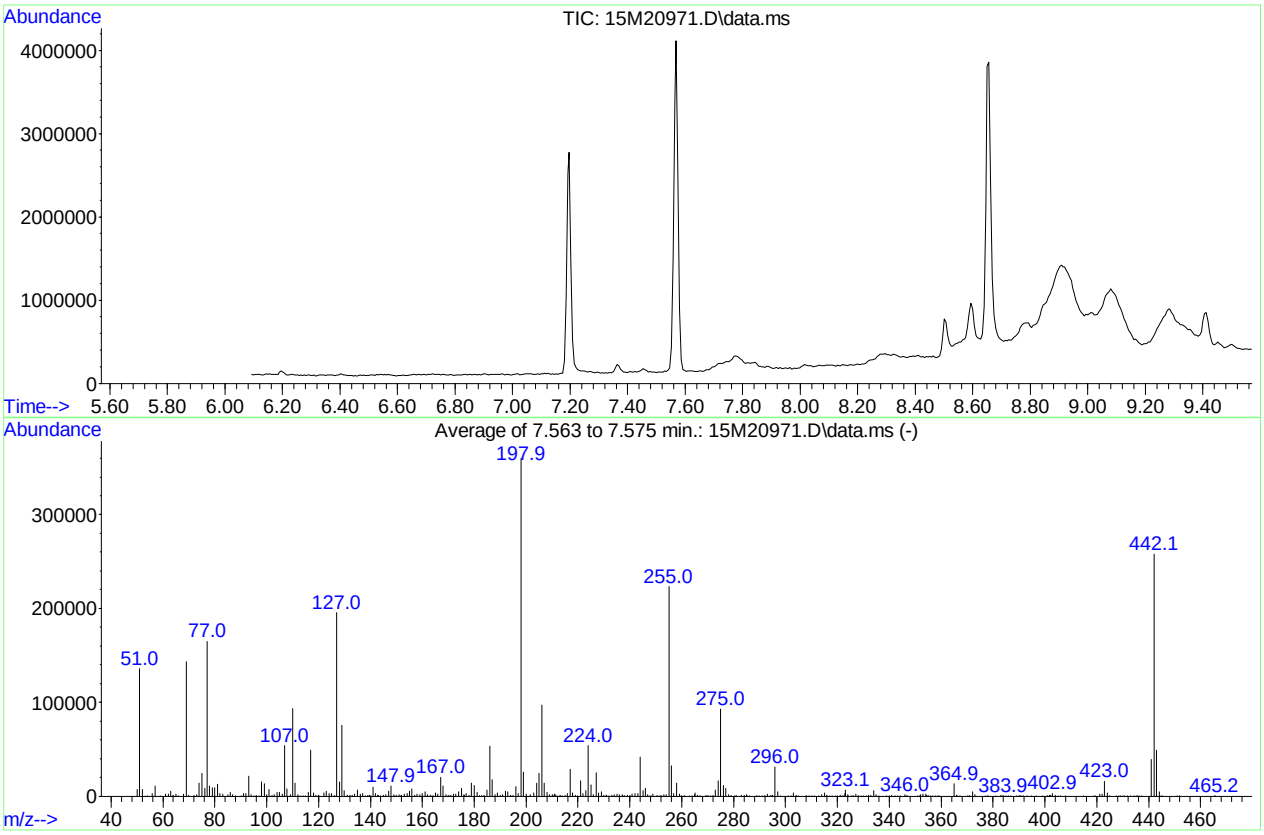
response 823625

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20971.D
Acq On : 5 Apr 2017 9:00 am
Operator : SCB
Sample : WG608842-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Tue Sep 13 14:03:54 2016

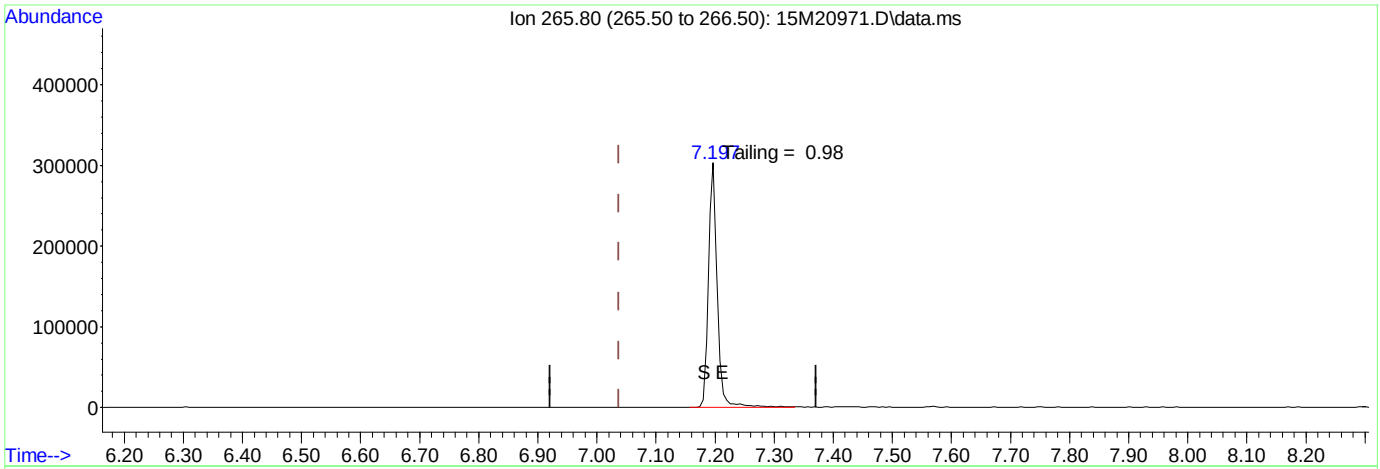


AutoFind: Scans 258, 259, 260; Background Corrected with Scan 250

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	37.6	135558	PASS
68	69	0.00	2	1.6	2275	PASS
69	198	0.00	100	39.7	143072	PASS
70	69	0.00	2	0.6	902	PASS
127	198	40	60	54.3	195437	PASS
197	198	0.00	1	0.9	3065	PASS
198	198	100	100	100.0	360204	PASS
199	198	5	9	7.1	25515	PASS
275	198	10	30	25.7	92736	PASS
365	198	1	100	3.6	13078	PASS
441	443	0.01	100	79.4	38928	PASS
442	198	40	100	71.6	257835	PASS
443	442	17	23	19.0	49032	PASS

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20971.D
Acq On : 5 Apr 2017 9:00 am
Operator : SCB
Sample : WG608842-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:13:26 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration



TIC: 15M20971.D\data.ms

(1) Pentachlorophenol

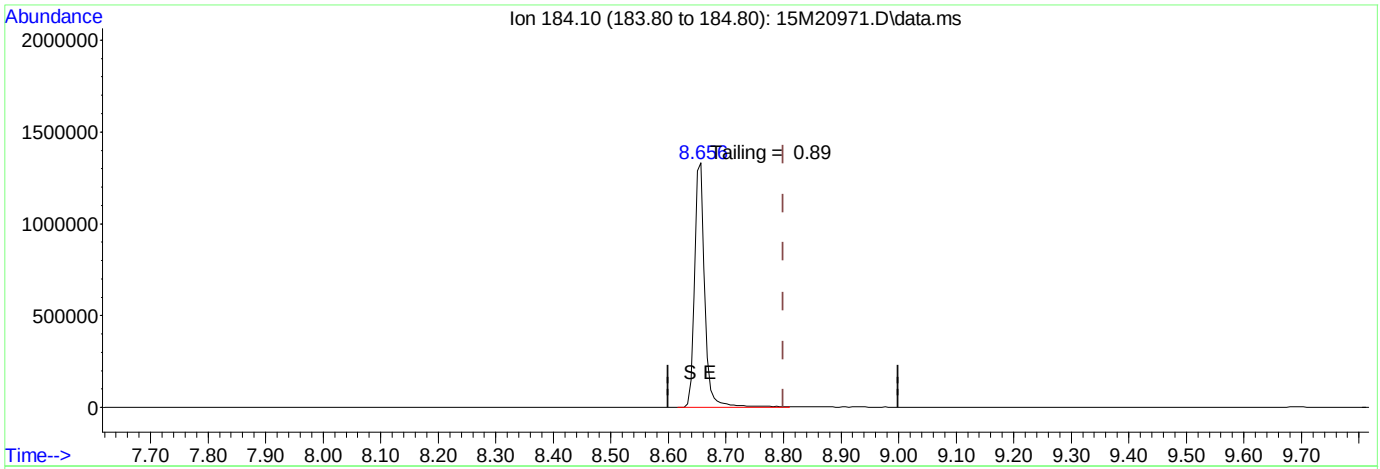
7.197min (+ 0.160) 0.00 ug/ml

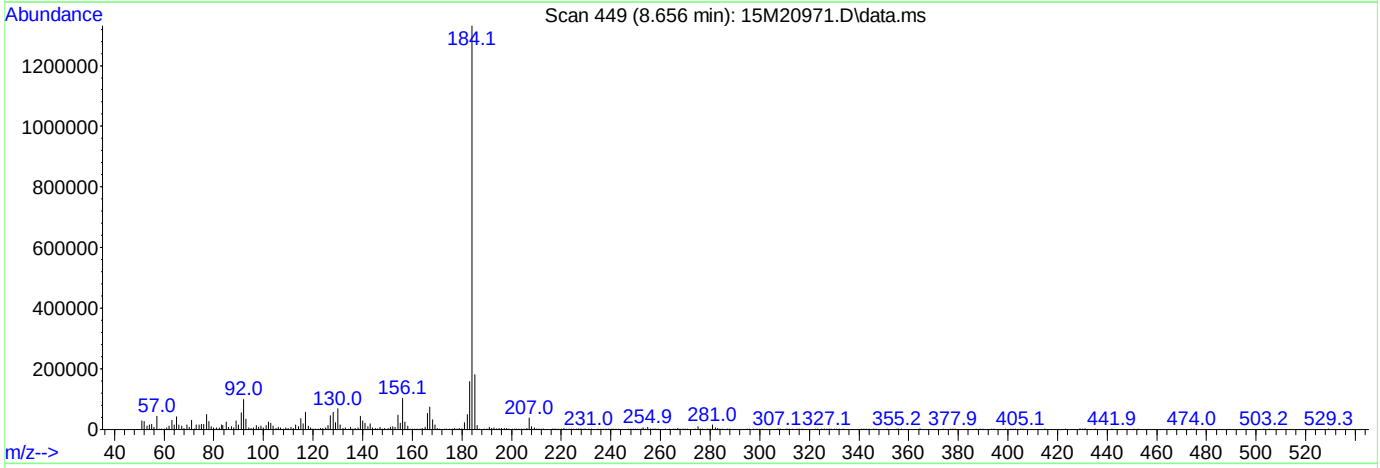
response 319123

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20971.D
Acq On : 5 Apr 2017 9:00 am
Operator : SCB
Sample : WG608842-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:13:26 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration





TIC: 15M20971.D\data.ms

(2) Benzidine

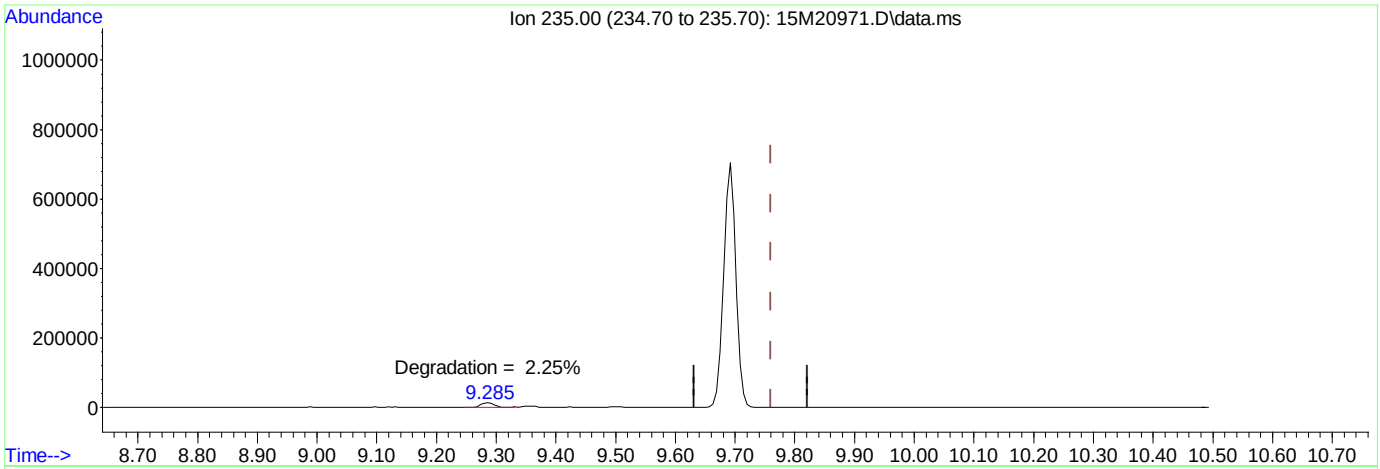
8.656min (-0.143) 0.00 ug/ml

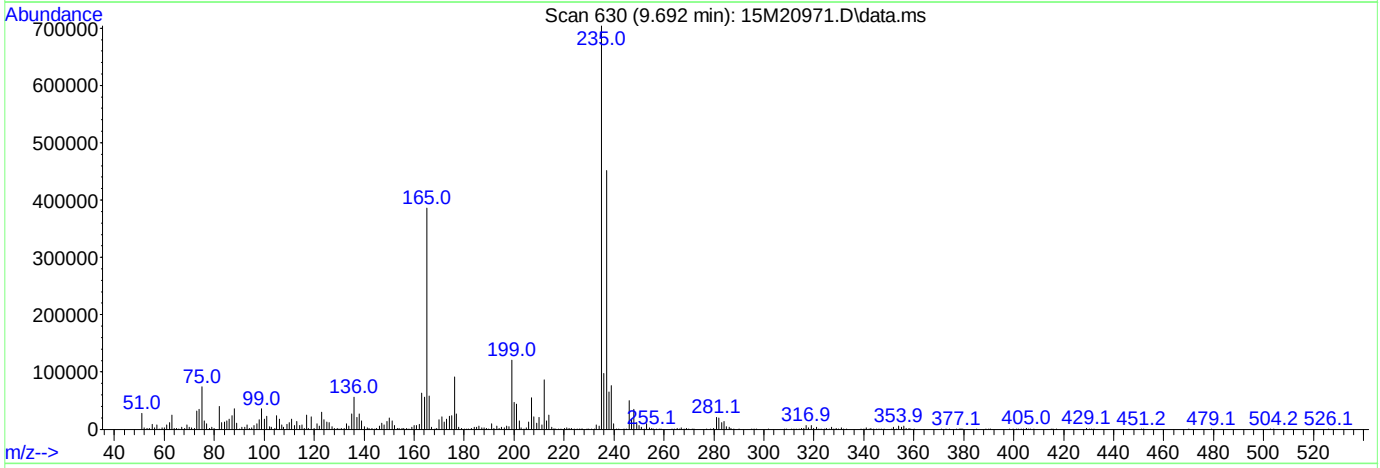
response 1646806

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20971.D
Acq On : 5 Apr 2017 9:00 am
Operator : SCB
Sample : WG608842-01 5PPM LL DFTPP
Misc : 1,1 STD80383
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 05 09:13:26 2017
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Tue Sep 13 14:03:54 2016
Response via : Initial Calibration





TIC: 15M20971.D\data.ms

(3) DDT

9.692min (-0.068) 0.00 ug/ml

response 1009020

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20973.D
Acq On : 5 Apr 2017 9:47 am
Operator : SCB
Sample : WG608522-01 BLANK 4/3
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

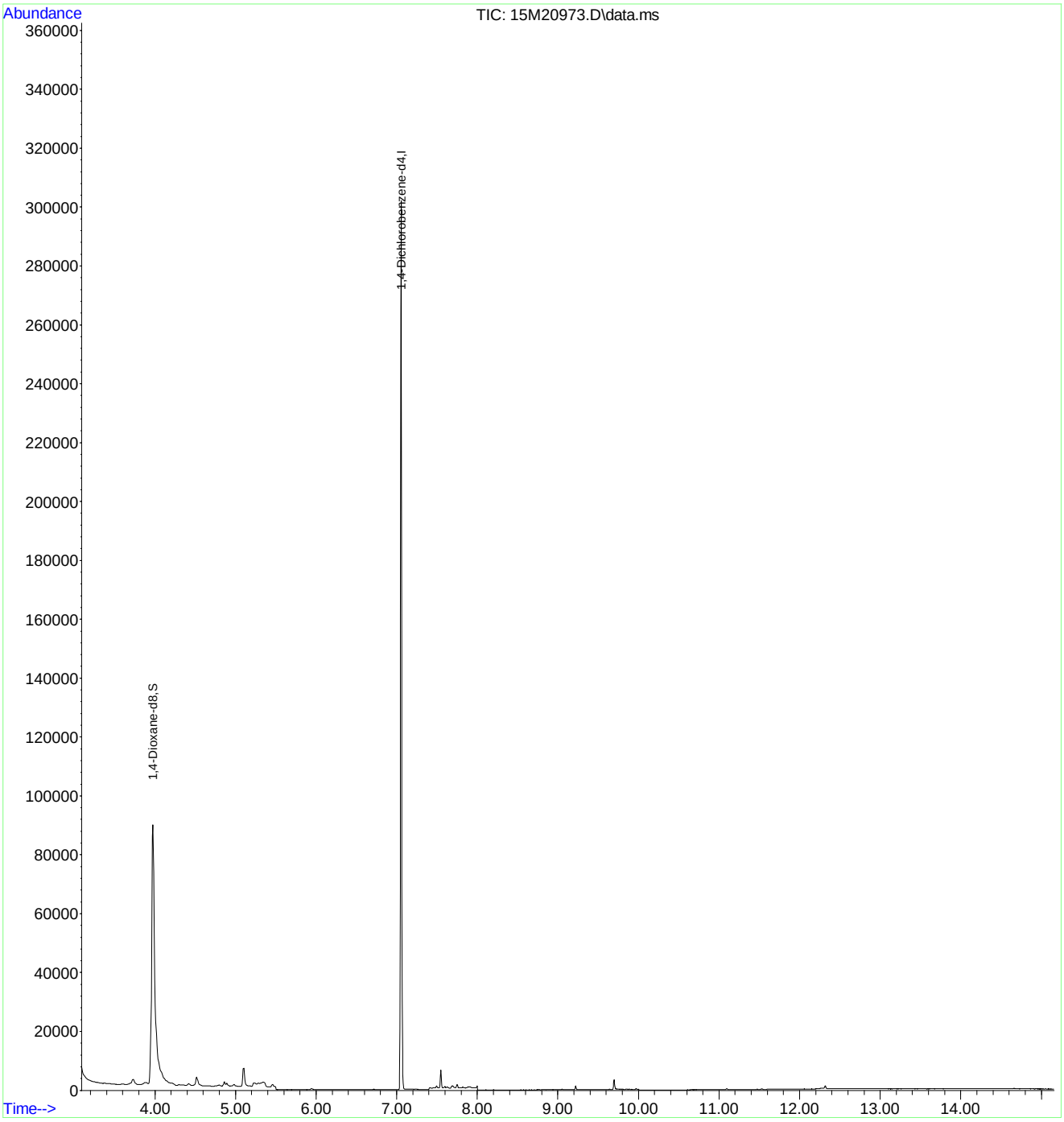
Quant Time: Apr 06 08:33:38 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.054	152	115831	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.975	96	154757	3.4190	ug/L	0.00
Spiked Amount 5.000			Recovery = 68.40%			
4) Nitrobenzene-d5	7.549	82	3340	0.0270	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.60%			
5) 2-Fluorobiphenyl	9.052	172	171	0.0007	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.00%			
6) p-Terphenyl-d14	12.317	244	861	0.0032	ug/L	0.02
Spiked Amount 5.000			Recovery = 0.00%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20973.D
Acq On : 5 Apr 2017 9:47 am
Operator : SCB
Sample : WG608522-01 BLANK 4/3
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 06 08:33:38 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\040517\
Data File : 15M20974.D
Acq On : 5 Apr 2017 10:10 am
Operator : SCB
Sample : WG608522-02 LCS 4/3
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

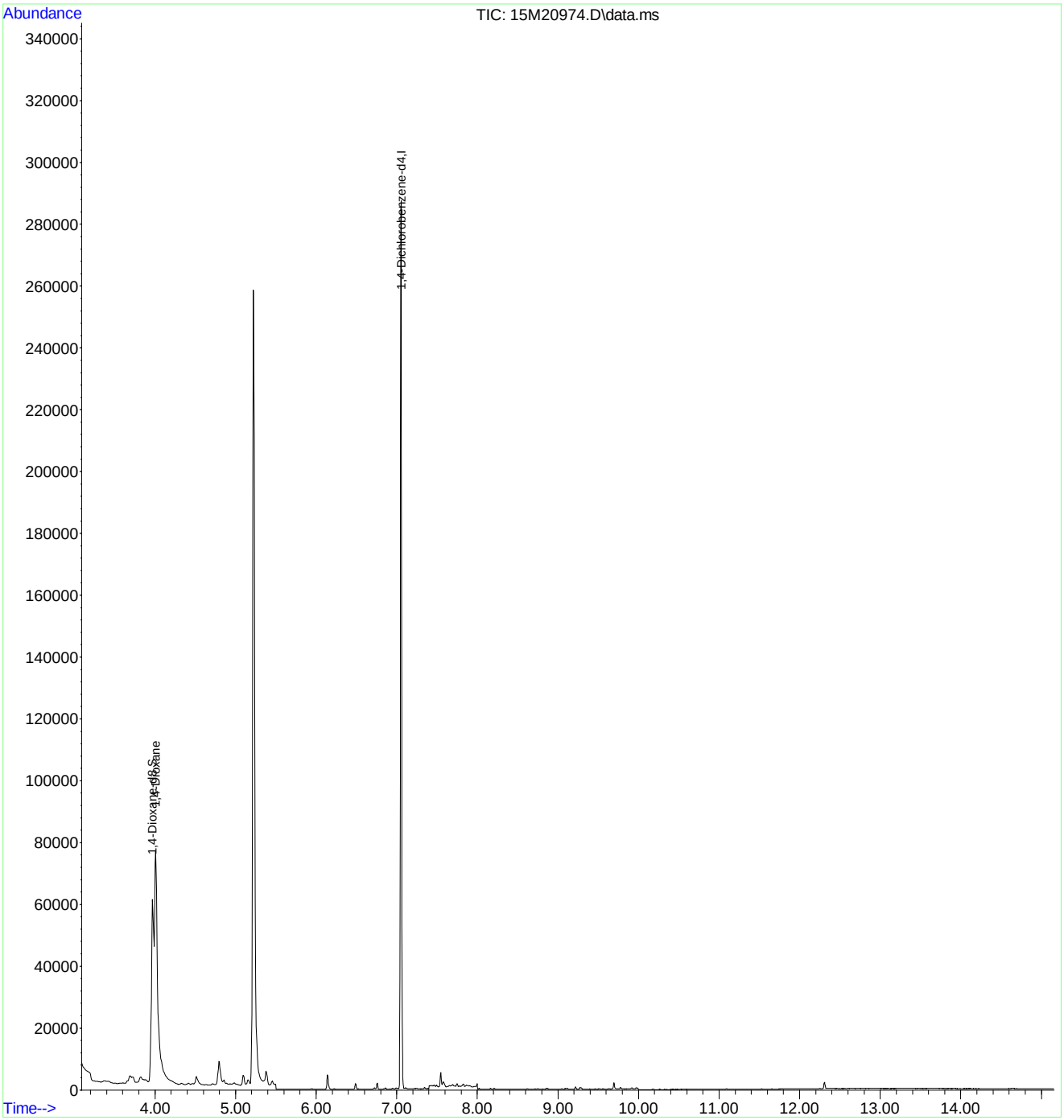
Quant Time: Apr 06 08:32:48 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.054	152	116681	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.968	96	100791	2.2105	ug/L	0.00
Spiked Amount 5.000			Recovery = 44.20%			
4) Nitrobenzene-d5	7.549	82	2947	0.0237	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.40%			
5) 2-Fluorobiphenyl	9.052	172	159	0.0006	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.00%			
6) p-Terphenyl-d14	12.310	244	1819	0.0068	ug/L	0.01
Spiked Amount 5.000			Recovery = 0.20%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.010	58	71412	2.0210	ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20974.D
Acq On : 5 Apr 2017 10:10 am
Operator : SCB
Sample : WG608522-02 LCS 4/3
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Apr 06 08:32:48 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\040517\
Data File : 15M20975.D
Acq On : 5 Apr 2017 10:33 am
Operator : SCB
Sample : WG608522-03 LCS2 4/3
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

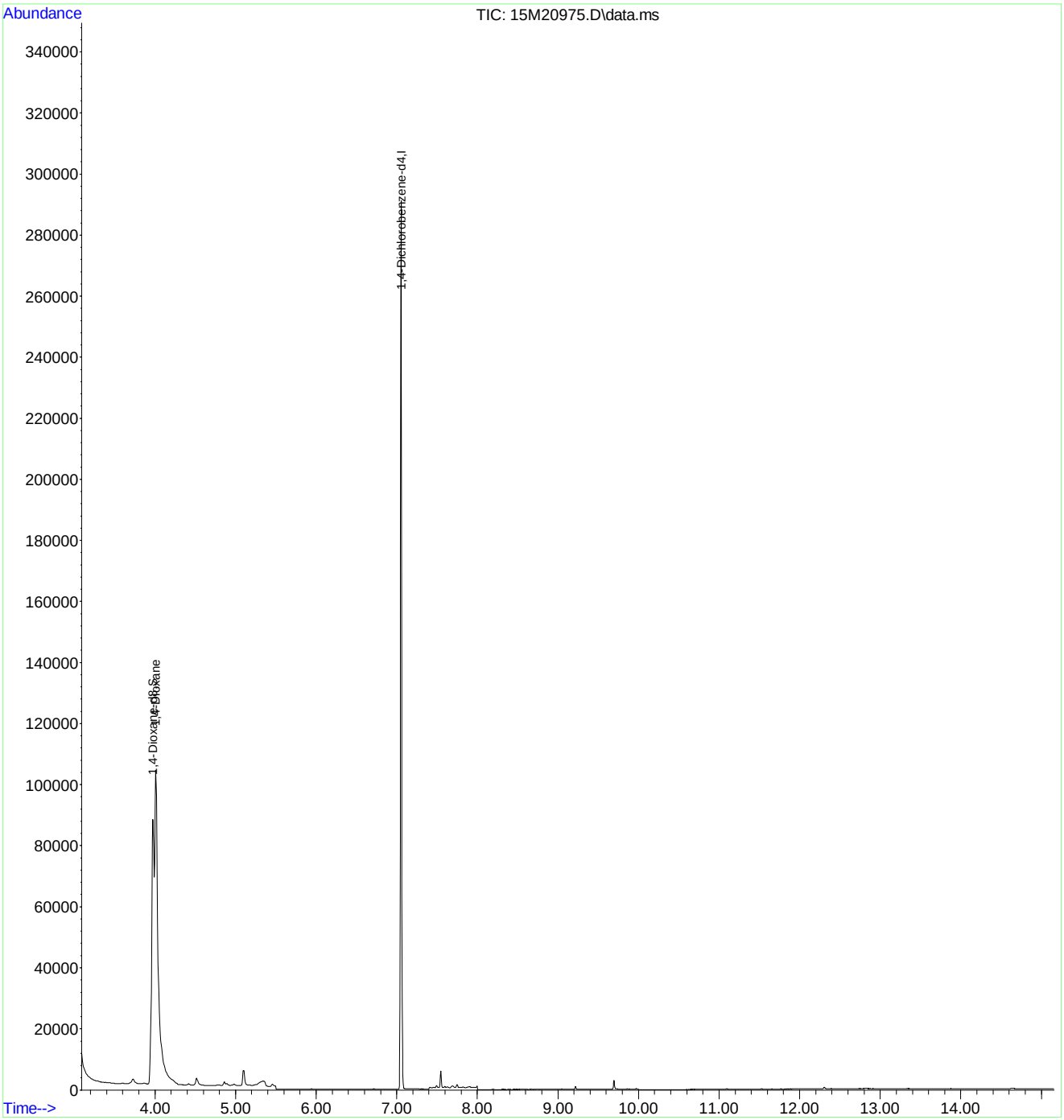
Quant Time: Apr 06 08:32:51 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	7.054	152	115106	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.975	96	148304	3.2970	ug/L	0.00
Spiked Amount 5.000			Recovery = 66.00%			
4) Nitrobenzene-d5	7.549	82	3035	0.0247	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.40%			
5) 2-Fluorobiphenyl	8.816	172	72	0.0003	ug/L	-0.23
Spiked Amount 5.000			Recovery = 0.00%			
6) p-Terphenyl-d14	12.306	244	432	0.0016	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.00%			
Target Compounds						Qvalue
2) 1,4-Dioxane	4.010	58	101749	2.9189	ug/L #	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\040517\
Data File : 15M20975.D
Acq On : 5 Apr 2017 10:33 am
Operator : SCB
Sample : WG608522-03 LCS2 4/3
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 06 08:32:51 2017
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 032117
QLast Update : Tue Mar 21 13:45:17 2017
Response via : Initial Calibration



2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031690-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO4
Client ID:	LH18/24-SP650-6428-GRAB	**Prep Method:**	3015A	**Prep Date:**	04/03/2017 12:02
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	04/04/2017 14:05
Workgroup #:	WG608728	**Analyst:**	KKB	**Run Date:**	04/04/2017 17:02
Collect Date:	03/29/2017 15:00	**Dilution:**	1	**File ID:**	T4.040417.170218
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.200	U	0.200	0.200	0.100
Iron, Total	7439-89-6	0.682		0.100	0.100	0.0500
Selenium, Total	7782-49-2	0.0200	U	0.0200	0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031690
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup:	WG608524	SOP:	ME407 Revison 19
Analyst:	AC	Spike Solution:	STD80805
Spike Analyst:	AC	Spike Witness:	VC
Run Date:	04/03/2017 12:02	HNO3 Lot #:	COA19483
Method:	3015A	HCL Lot #:	COA19441
Balance:	BAL019	ICP FILTERS LOT#R6EA4780	RGT38286
Instrument:	MW-1	40 & 50 ML. DIGESTION TU	COA19487
Instrument Start:	04/03/2017 11:59		

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG608524-02	BLANK	1	40 mL	50 mL	207.601 g	207.588 g		
2	WG608524-03	LCS	1	40 mL	50 mL	213.108 g	213.104 g	5 mL	
3	L17031664-01	SAMP	1	40 mL	50 mL	208.46 g	208.445 g		04/07/17
4	L17031664-02	SAMP	1	40 mL	50 mL	206.275 g	206.263 g		04/07/17
5	L17031664-03	SAMP	1	40 mL	50 mL	206.075 g	206.062 g		04/07/17
6	L17031664-04	SAMP	1	40 mL	50 mL	206.333 g	206.32 g		04/07/17
7	L17031664-05	SAMP	1	40 mL	50 mL	207.555 g	207.541 g		04/07/17
8	L17031664-06	SAMP	1	40 mL	50 mL	203.835 g	203.816 g		04/07/17
9	L17031666-01	SAMP	1	40 mL	50 mL	206.618 g	206.599 g		04/07/17
10	L17031676-01	SAMP	1	40 mL	50 mL	206.917 g	206.886 g		04/11/17
11	L17031676-02	SAMP	1	40 mL	50 mL	204.769 g	204.736 g		04/11/17
12	L17031676-03	SAMP	1	40 mL	50 mL	203.554 g	203.494 g		04/11/17
13	WG608524-01	REF	1	40 mL	50 mL	207.35 g	207.322 g		
14	L17031676-04	RS01	1	40 mL	50 mL	207.35 g	207.322 g		04/11/17
15	WG608524-04	MS	1	40 mL	50 mL	213.178 g	213.153 g	5 mL	
16	L17031676-05	MS01	1	40 mL	50 mL	213.178 g	213.153 g	5 mL	04/11/17
17	WG608524-05	MSD	1	40 mL	50 mL	210.417 g	210.392 g	5 mL	
18	L17031676-06	SD01	1	40 mL	50 mL	210.417 g	210.392 g	5 mL	04/11/17
19	L17031689-01	SAMP	1	40 mL	50 mL	207.385 g	207.35 g		04/11/17
20	L17031690-01	SAMP	1	40 mL	50 mL	204.623 g	204.599 g		04/11/17
21	L17031699-01	SAMP	12	1 mL	50 mL	207.826 g	207.795 g		04/07/17
22	L17040001-01	SAMP	1	40 mL	50 mL	205.034 g	204.996 g		04/07/17
23	L17040019-01	SAMP	1	40 mL	50 mL	205.174 g	205.149 g		04/07/17
24	L17040019-02	SAMP	1	40 mL	50 mL	203.833 g	203.821 g		04/07/17
25	L17040020-01	SAMP	1	40 mL	50 mL	206.652 g	206.624 g		04/10/17
26	L17040021-01	SAMP	1	40 mL	50 mL	205.577 g	205.538 g		04/10/17
27	L17040021-03	SAMP	1	40 mL	50 mL	206.099 g	206.063 g		04/10/17

L17031666-01	Filtered Digestate
L17031676-03	Filtered Digestate
L17031689-01	Filtered Digestate
L17031690-01	Filtered Digestate
L17031699-01	Filtered Digestate
L17040019-01	Filtered Digestate
L17040021-01	Filtered Digestate

MW_DIG - Modified 09/30/2009
PDF ID: 5227612
Report generated: 04/03/2017 16:02

Microbac Laboratories Inc.
Microwave Digestion Log

Analyst:

SOP:
Spike Solution:
Reviewer:
Spike Witness:

Method:
Balance:
Instrument:
Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 5227612
Report generated: 04/03/2017 16:02

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO4 Dataset: 040417T4.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80806
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT39282
CCV: ST81186 LLCCV: COA19158 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 608728,608563,608769,608730

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T4.040417.135126	WG608899-01	Calibration Point		1		04/04/17 13:51
2	T4.040417.135501	WG608899-02	Calibration Point		1		04/04/17 13:55
3	T4.040417.135835	WG608899-03	Calibration Point		1		04/04/17 13:58
4	T4.040417.140211	WG608899-04	Calibration Point		1		04/04/17 14:02
5	T4.040417.140541	WG608899-05	Calibration Point		1		04/04/17 14:05
6	T4.040417.140912	WG608899-06	Initial Calibration Verification		1		04/04/17 14:09
7	T4.040417.141246	WG608899-07	Initial Calib Blank		1		04/04/17 14:12
8	T4.040417.141620	WG608899-08	Low Level Initial Calibration V		1		04/04/17 14:16
9	T4.040417.141951	WG608899-09	LLICV		1		04/04/17 14:19
10	T4.040417.142321	WG608899-10	LLICV		1		04/04/17 14:23
11	T4.040417.142651	WG608899-11	Interference Check		1		04/04/17 14:26
12	T4.040417.143029	WG608899-12	Interference Check		1		04/04/17 14:30
13	T4.040417.143402	WG608899-13	CCV		1		04/04/17 14:34
14	T4.040417.143726	WG608899-14	CCB		1		04/04/17 14:37
15	T4.040417.154622	WG608899-15	CCV		1		04/04/17 15:46
16	T4.040417.154943	WG608899-16	CCB		1		04/04/17 15:49
17	T4.040417.155314	WG608524-02	Method/Prep Blank	40/50	1		04/04/17 15:53
18	T4.040417.155646	WG608524-03	Laboratory Control S	40/50	1		04/04/17 15:56
19	T4.040417.160010	L17031664-01	2212-155 W3	40/50	1		04/04/17 16:00
20	T4.040417.160339	L17031664-02	2212-155 W3	40/50	1		04/04/17 16:03
21	T4.040417.160707	L17031664-03	2212-156-A S1	40/50	1		04/04/17 16:07
22	T4.040417.161036	L17031664-04	2212-156-A S1	40/50	1		04/04/17 16:10
23	T4.040417.161405	L17031664-05	2212-156-A W1	40/50	1		04/04/17 16:14
24	T4.040417.161734	L17031664-06	2212-156-A W1	40/50	1		04/04/17 16:17
25	T4.040417.162102	WG608728-01	Post Digestion Spike		1	L17031664-06	04/04/17 16:21
26	T4.040417.162426	WG608728-02	Serial Dilution		5	L17031664-06	04/04/17 16:24
27	T4.040417.162755	WG608899-17	CCV		1		04/04/17 16:27
28	T4.040417.163115	WG608899-18	CCB		1		04/04/17 16:31
29	T4.040417.163445	L17031666-01	GAREY SPRING	40/50	1		04/04/17 16:34
30	T4.040417.163812	L17031676-01	MNA-GMW-706	40/50	1		04/04/17 16:38
31	T4.040417.164141	L17031676-02	MNA-GMW-707	40/50	1		04/04/17 16:41
32	T4.040417.164509	L17031676-03	MNA-GMW-906	40/50	1		04/04/17 16:45
33	T4.040417.164836	WG608524-01	Reference Sample		1	L17031676-04	04/04/17 16:48
34	T4.040417.165204	WG608524-04	Matrix Spike	40/50	1	L17031676-04	04/04/17 16:52

Page: 1 Approved: April 06, 2017

Kym H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO4 Dataset: 040417T4.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

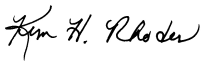
Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80806
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT39282
CCV: ST81186 LLCCV: COA19158 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 608728,608563,608769,608730

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T4.040417.165529	WG608524-05	Matrix Spike Duplica	40/50	1	L17031676-04	04/04/17 16:55
36	T4.040417.165852	L17031689-01	LH18/24-SP140-7428-GRAB	40/50	1		04/04/17 16:58
37	T4.040417.170218	L17031690-01	LH18/24-SP650-6428-GRAB	40/50	1		04/04/17 17:02
38	T4.040417.170555	L17031699-01	17C1634-01	1/50	1		04/04/17 17:05
39	T4.040417.170927	WG608899-19	CCV		1		04/04/17 17:09
40	T4.040417.171247	WG608899-20	CCB		1		04/04/17 17:12
41	T4.040417.171618	L17040001-01	GH55_GOLACINSKI_03-04	40/50	1		04/04/17 17:16
42	T4.040417.171945	L17040019-01	17C1636-01	40/50	1		04/04/17 17:19
43	T4.040417.172315	L17040019-02	17C1636-02	40/50	1		04/04/17 17:23
44	T4.040417.172644	L17040020-01	1805-105-A-W1	40/50	1		04/04/17 17:26
45	T4.040417.173011	L17040021-01	1001-138-S8	40/50	1		04/04/17 17:30
46	T4.040417.173338	L17040021-03	1001-138-S6	40/50	1		04/04/17 17:33
47	T4.040417.173706	WG608366-03	Method/Prep Blank	50/50	1		04/04/17 17:37
48	T4.040417.174037	WG608366-04	Laboratory Control S	50/50	1		04/04/17 17:40
49	T4.040417.174402	L17030513-01	S248-698	50/50	1		04/04/17 17:44
50	T4.040417.174734	WG608563-03	Serial Dilution		5	L17030513-01	04/04/17 17:47
51	T4.040417.175105	WG608899-21	CCV		1		04/04/17 17:51
52	T4.040417.175425	WG608899-22	CCB		1		04/04/17 17:54
53	T4.040417.175755	WG608703-02	Method/Prep Blank	40/50	1		04/04/17 17:57
54	T4.040417.180126	WG608703-03	Laboratory Control S	40/50	1		04/04/17 18:01
55	T4.040417.180451	WG608511-01	Fluid Blank 1		1		04/04/17 18:04
56	T4.040417.180823	WG608511-02	Fluid Blank 2		1		04/04/17 18:08
57	T4.040417.181153	L17031660-01	T9143	5/50	1		04/04/17 18:11
58	T4.040417.181524	WG608703-01	Reference Sample		1	L17040016-01	04/04/17 18:15
59	T4.040417.181853	WG608703-04	Matrix Spike	5/50	1	L17040016-01	04/04/17 18:18
60	T4.040417.182217	WG608703-05	Matrix Spike Duplica	5/50	1	L17040016-01	04/04/17 18:22
61	T4.040417.182542	L17040025-04	J7C1652-04	5/50	1		04/04/17 18:25
62	T4.040417.182910	L17040027-01	033017-BB	5/50	1		04/04/17 18:29
63	T4.040417.183239	WG608899-23	CCV		1		04/04/17 18:32
64	T4.040417.183559	WG608899-24	CCB		1		04/04/17 18:35
65	T4.040417.183930	L17040027-03	033017-CH	5/50	1		04/04/17 18:39
66	T4.040417.184301	L17040064-01	2402-102-B-W1	40/50	1		04/04/17 18:43
67	T4.040417.184630	L17040071-01	2212-113 W1	40/50	1		04/04/17 18:46
68	T4.040417.184956	L17040071-02	2212-113 S1	40/50	1		04/04/17 18:49

Page: 2 Approved: April 06, 2017



Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO4 Dataset: 040417T4.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80806
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT39282
CCV: ST81186 LLCCV: COA19158 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 608728,608563,608769,608730

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T4.040417.185325	L17040071-03	2212-121-A W1	40/50	1		04/04/17 18:53
70	T4.040417.185654	L17040071-04	2211-103 S7	40/50	1		04/04/17 18:56
71	T4.040417.190023	L17040071-05	2211-103 S8	40/50	1		04/04/17 19:00
72	T4.040417.190355	L17040071-06	2211-103-B W1	40/50	1		04/04/17 19:03
73	T4.040417.190723	L17040071-07	2211-103-A S1	40/50	1		04/04/17 19:07
74	T4.040417.191051	L17040072-01	1801-143 S2	40/50	1		04/04/17 19:10
75	T4.040417.191419	WG608899-25	CCV		1		04/04/17 19:14
76	T4.040417.191741	WG608899-26	CCB		1		04/04/17 19:17
77	T4.040417.192112	L17040072-02	1801-143 S3/S2	40/50	1		04/04/17 19:21
78	T4.040417.192441	L17040072-03	1801-143 S4	40/50	1		04/04/17 19:24
79	T4.040417.192809	L17040072-04	1801-143 S1	40/50	1		04/04/17 19:28
80	T4.040417.193137	L17040072-05	1801-143 P1	40/50	1		04/04/17 19:31
81	T4.040417.193504	WG608769-01	Post Digestion Spike		1	L17040072-05	04/04/17 19:35
82	T4.040417.193828	WG608769-02	Serial Dilution		5	L17040072-05	04/04/17 19:38
83	T4.040417.194157	WG608899-27	CCV		1		04/04/17 19:41
84	T4.040417.194518	WG608899-28	CCB		1		04/04/17 19:45
85	T4.040417.194848	WG608899-29	Low Level Continuing Calibra		1		04/04/17 19:48
86	T4.040417.195215	WG608899-30	LLCCV		1		04/04/17 19:52
87	T4.040417.195543	WG608899-31	LLCCV		1		04/04/17 19:55
88	T4.040417.195914	WG608508-02	Method/Prep Blank	40/50	1		04/04/17 19:59
89	T4.040417.200249	WG608508-03	Laboratory Control S	40/50	1		04/04/17 20:02
90	T4.040417.200619	L17031657-01	2402-100-W2	40/50	1		04/04/17 20:06
91	T4.040417.200947	L17031657-02	2402-100-P1	40/50	1		04/04/17 20:09
92	T4.040417.201319	L17031657-03	2402-100-S14	40/50	1		04/04/17 20:13
93	T4.040417.201648	L17031657-04	2402-100-S1	40/50	1		04/04/17 20:16
94	T4.040417.202016	L17031657-05	2402-100-S2	40/50	1		04/04/17 20:20
95	T4.040417.202346	L17031658-01	2212-138B-W1	40/50	1		04/04/17 20:23
96	T4.040417.202713	WG608730-01	Post Digestion Spike		1	L17031658-01	04/04/17 20:27
97	T4.040417.203036	WG608730-02	Serial Dilution		5	L17031658-01	04/04/17 20:30
98	T4.040417.203403	WG608899-32	CCV		1		04/04/17 20:34
99	T4.040417.203723	WG608899-33	CCB		1		04/04/17 20:37
100	T4.040417.204053	L17031658-02	2212-138B-S1	40/50	1		04/04/17 20:40
101	T4.040417.204424	L17031662-01	59-5-2-1-6	40/50	1		04/04/17 20:44
102	T4.040417.204751	L17031662-02	59-5-2-1-6	40/50	1		04/04/17 20:47

Page: 3 Approved: April 06, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO4 Dataset: 040417T4.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80806
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT39282
CCV: ST81186 LLCCV: COA19158 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 608728,608563,608769,608730

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T4.040417.205119	L17031662-03	6-10-10 W1	40/50	1		04/04/17 20:51
104	T4.040417.205447	L17031662-04	6-8-15 W1	40/50	1		04/04/17 20:54
105	T4.040417.205815	L17031662-05	6-10-22 W1	40/50	1		04/04/17 20:58
106	T4.040417.210143	L17031662-06	59-11-10.10 W1	40/50	1		04/04/17 21:01
107	T4.040417.210511	L17031662-07	59-5-2-2-1 W1	40/50	1		04/04/17 21:05
108	T4.040417.210839	L17031662-08	59-2-2-4 W1	40/50	1		04/04/17 21:08
109	T4.040417.211207	L17031663-01	15-18-22 S1	40/50	1		04/04/17 21:12
110	T4.040417.211538	WG608899-34	CCV		1		04/04/17 21:15
111	T4.040417.211900	WG608899-35	CCB		1		04/04/17 21:19
112	T4.040417.212231	L17031665-01	59-11-11.05 W1	40/50	1		04/04/17 21:22
113	T4.040417.212558	L17031685-01	LF 6-7 SW11	40/50	1		04/04/17 21:25
114	T4.040417.212928	L17031685-02	LF 6-7 SW11	40/50	1		04/04/17 21:29
115	T4.040417.213257	L17031704-01	0317PRE-59 RAILROAD PA		1	WG608508-01	04/04/17 21:32
116	T4.040417.213624	WG608508-04	Matrix Spike	40/50	1	L17031704-01	04/04/17 21:36
117	T4.040417.213947	WG608508-05	Matrix Spike Duplica	40/50	1	L17031704-01	04/04/17 21:39
118	T4.040417.214310	WG608899-36	CCV		1		04/04/17 21:43
119	T4.040417.214630	WG608899-37	CCB		1		04/04/17 21:46

Page: 4 Approved: April 06, 2017

Kym H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 04-APR-2017
Analyst: KKB
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO4
Curve Workgroup: 608899
Runlog ID: 81355
Analytical Workgroups: 608728,608563,608769,608730

Add'l Workgroups	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1704
Level 4	513,1676,1689,1690,1685
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KKB
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
05-APR-2017

Secondary Reviewer:
06-APR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: APR-06-2017 08:17:27

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C AAB#: WG608728

Login Number: L17031690

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP650-6428-GRAB	01	03/29/17					04/03/2017	4.9	180		04/04/17	6.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5231336
Report generated 04/05/2017 11:08

METHOD BLANK SUMMARY

Login Number:	L17031690	**Work Group:**	WG608728
Blank File ID:	T4.040417.155314	**Blank Sample ID:**	WG608524-02
Prep Date:	04/03/17 12:02	**Instrument ID:**	ICP-THERMO4
Analyzed Date:	04/04/17 15:53	**Method:**	6010C
Analyst:	KKB		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608524-03	T4.040417.155646	04/04/17 15:56	01
LH18/24-SP650-6428-GRAB	L17031690-01	T4.040417.170218	04/04/17 17:02	01

Report Name: BLANK_SUMMARY
PDF File ID: 5231337
Report generated 04/05/2017 11:11

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031690 Prep Date: 04/03/17 12:02 Sample ID: WG608524-02
Instrument ID: ICP-THERMO4 Run Date: 04/04/17 15:53 Prep Method: 3015A
File ID: T4.040417.155314 Analyst: KKB Method: 6010C
Workgroup (AAB#): WG608728 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-04-APR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.100	0.200	0.100	1	U
Iron, Total	0.0500	0.100	0.0500	1	U
Selenium, Total	0.0100	0.0200	0.0100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5231338
05-APR-2017 11:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031690 **Run Date:** 04/04/2017 **Sample ID:** WG608524-03
Instrument ID: ICP-THERMO4 **Run Time:** 15:56 **Prep Method:** 3015A
File ID: T4.040417.155646 **Analyst:** KKB **Method:** 6010C
Workgroup (AAB#): WG608728 **Matrix:** Water **Units:** mg/L
QC Key: DOD4 **Lot#:** STD80805 **Cal ID:** ICP-TH-04-APR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.55	105	80 - 120	
Iron, Total	2.50	2.59	104	80 - 120	
Selenium, Total	0.250	0.244	97.4	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5231339
Report generated: 04/05/2017 11:11

Microbac Laboratories Inc.

MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum:L17031690 Cal ID:ICP-THERMO4- Worknum:WG608728

Instrument ID:ICP-THERMO4 Contract #: Method:6010C

Parent ID:WG608524-01 File ID:T4.040417.164836 Dil:1 Matrix:WATER

Sample ID:WG608524-04 MS File ID:T4.040417.165204 Dil:1 Units:mg/L

Sample ID:WG608524-05 MSD File ID:T4.040417.165529 Dil:1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum, Total	0.647	6.25	8.02	118	6.25	7.29	106	9.54	80 - 120	20	
Iron, Total	0.618	2.50	4.07	138	2.50	3.60	119	12.3	80 - 120	20	*
Selenium, Total	ND	0.250	0.238	95.0	0.250	0.242	97.0	2.01	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011

PDF File ID: 5231340

Report generated 04/05/2017 11:11

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031690 **Worknum:** WG608728
Instrument: ICP-THERMO4 **Method:** 6010C
Serial Dil: WG608728-02 **File ID:** T4.040417.162426 **Dil:** 5 **Units:** ug/L
Sample: L17031664-06 **File ID:** T4.040417.161734 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	ND	U	ND	U		
Iron	ND	U	97.1		1360.00	
Selenium	ND	U	3.75		270.00	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5231334
04/05/2017 11:11

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031690 **Worknum:** WG608728
Instrument ID: ICP-THERMO4 **Method:** 6010C
Post Spike ID: WG608728-01 **File ID:** T4.040417.162102 **Dil:** 1 **Units:** ug/L
Sample ID: L17031664-06 **File ID:** T4.040417.161734 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5100		0	U	5000	101.9	75 - 125	
IRON	2090		0	U	2000	104.4	75 - 125	
SELENIUM	197		0	U	200	98.4	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5231335
Report generated: 04/05/2017 11:11

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031690**	Workgroup (AAB#):	**WG608728**
Analytical Method:	**6010C**	Instrument ID:	**ICP-THERMO4**
ICAL Worknum:	**WG608899**	Initial Calibration Date:	**04-APR-2017 14:05**

	WG608899-01		WG608899-02		WG608899-03		WG608899-04		WG608899-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00127	.1	0.00243	.2	0.00350	10	0.131	20	0.253	.999862	
IRON	0	0.000170	.04	0.000900	.08	0.000920	4	0.0677	8	0.137	.999571	
SELENIUM	0	0	NA	NA	.008	0.0000600	.4	0.00645	.8	0.0129	.999516	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5231343
Report generated: 05-APR-2017 11:11

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031690 Run Date: 04/04/2017 Sample ID: WG608899-07
Instrument ID: ICP-THERMO4 Run Time: 14:12 Method: 6010C
File ID: T4.040417.141246 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-THERI - 04-APR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.08	.16	.08	U
IRON	.04	.08	.04	U
SELENIUM	.008	.016	.008	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5231345
Report generated 04/05/2017 11:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031690 | Run Date: 04/04/2017 | Sample ID: WG608899-14
Instrument ID: ICP-THERMO4 | Run Time: 14:37 | Method: 6010C
File ID: T4.040417.143726 | Analyst: KKB | Units: mg/L
Workgroup (AAB#): WG608728 | Cal ID: ICP-TH - 04-APR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0800	0.160	0.0800	U
Iron	0.0400	0.0800	0.0400	U
Selenium	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5231348
Report generated 04/05/2017 11:12

Login Number: L17031690 | Run Date: 04/04/2017 | Sample ID: WG608899-16
Instrument ID: ICP-THERMO4 | Run Time: 15:49 | Method: 6010C
File ID: T4.040417.154943 | Analyst: KKB | Units: mg/L
Workgroup (AAB#): WG608728 | Cal ID: ICP-TH - 04-APR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0800	0.160	0.0800	U
Iron	0.0400	0.0800	0.0400	U
Selenium	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5231348
Report generated 04/05/2017 11:12

Login Number: L17031690 Run Date: 04/04/2017 Sample ID: WG608899-18
Instrument ID: ICP-THERMO4 Run Time: 16:31 Method: 6010C
File ID: T4.040417.163115 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0800	0.160	0.0800	U
Iron	0.0400	0.0800	0.0400	U
Selenium	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5231348
Report generated 04/05/2017 11:12

Login Number: L17031690 Run Date: 04/04/2017 Sample ID: WG608899-20
Instrument ID: ICP-THERMO4 Run Time: 17:12 Method: 6010C
File ID: T4.040417.171247 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0800	0.160	0.0800	U
Iron	0.0400	0.0800	0.0400	U
Selenium	0.00800	0.0160	0.00800	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5231348
Report generated 04/05/2017 11:12

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031690 Run Date: 04/04/2017 Sample ID: WG608899-06
Instrument ID: ICP-THERMO4 Run Time: 14:09 Method: 6010C
File ID: T4.040417.140912 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.99	99.9	90 - 110	
Iron		4	3.96	99.1	90 - 110	
Selenium		.4	0.391	97.8	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5231344
Report generated 04/05/2017 11:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031690 Run Date: 04/04/2017 Sample ID: WG608899-13

Instrument ID: ICP-THERMO4 Run Time: 14:34 Method: 6010C

File ID: T4.040417.143402 Analyst: KKB QC Key: DOD4

Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Iron		4.00	3.95	mg/L	98.6	90 - 110		
Selenium		0.400	0.401	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5231347

Report generated 04/05/2017 11:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031690 Run Date: 04/04/2017 Sample ID: WG608899-15

Instrument ID: ICP-THERMO4 Run Time: 15:46 Method: 6010C

File ID: T4.040417.154622 Analyst: KKB QC Key: DOD4

Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.05	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5231347

Report generated 04/05/2017 11:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031690 Run Date: 04/04/2017 Sample ID: WG608899-17

Instrument ID: ICP-THERMO4 Run Time: 16:27 Method: 6010C

File ID: T4.040417.162755 Analyst: KKB QC Key: DOD4

Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.06	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5231347

Report generated 04/05/2017 11:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031690 Run Date: 04/04/2017 Sample ID: WG608899-19

Instrument ID: ICP-THERMO4 Run Time: 17:09 Method: 6010C

File ID: T4.040417.170927 Analyst: KKB QC Key: DOD4

Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.03	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5231347

Report generated 04/05/2017 11:11

Login Number: L17031690 Run Date: 04/04/2017 Sample ID: WG608899-08
Instrument ID: ICP-THERMO4 Run Time: 14:16 Method: 6010C
File ID: T4.040417.141620 Analyst: KKB QC Key: DOD4
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.187	mg/L	117	70 - 130		
Iron		0.0800	0.0711	mg/L	88.9	70 - 130		
Selenium		0.0160	0.0173	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5231349
Report generated 04/05/2017 11:14

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031690 Run Date: 04/04/2017 Sample ID: WG608899-29
Instrument ID: ICP-THERMO4 Run Time: 19:48 Method: 6010C
File ID: T4.040417.194848 Analyst: KKB QC Key: DOD4
Workgroup (AAB#): WG608728 Cal ID: ICP-TH - 04-APR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.174	mg/L	109	70 - 130		
Iron		0.0800	0.0848	mg/L	106	70 - 130		
Selenium		0.0160	0.0140	mg/L	87.4	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5231349
Report generated 04/05/2017 11:14

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031690 **Workgroup (AAB#):** WG608728
Instrument ID: ICP-THERMO4 **Method:** 6010C
Sol. A : WG608899-11 **File ID:** T4.040417.142651 **Units:** mg/L
Sol. AB : WG608899-12 **File ID:** T4.040417.143029 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	240	96.0	250	234	93.6	
Iron	100	97.1	97.1	100	96.7	96.7	
Selenium	NS	-0.00218	NS	0.250	0.235	94.0	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5231346
Report generated 04/05/2017 11:11

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031690 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0145	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000378	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0	0.0000140	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.10	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000320	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031690 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0260
ARSENIC	189.00	0	0	0	0	-0.00730
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.10	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00350
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031690 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000490	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000648	0	0	0
CADMIUM	228.80	0	-0.00000500	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000400	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00139	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000220
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	0.0390	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.10	0	-0.000118	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000200	0	0	0
VANADIUM	292.40	0	0.0000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031690 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	0.000910	0	-0.00190	0
ARSENIC	189.00	0	0.000139	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.000610	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0.0000300	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0.000600	0.000580	0	0	0
SILICON	212.40	0	-0.354	0	0	0
SILVER	328.10	0	-0.0000100	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00160	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031690 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0320
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.10	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031690 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0720	0
ANTIMONY	206.80	0	0.000500	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00170	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.10	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.10	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.10	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.00100	0	-0.0420	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 04/05/2017 11:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031690 **Date:** 01/04/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.10	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.10	0
SILICON	212.40	0
SILVER	328.10	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5231342
Report generated: 04/05/2017 11:08

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L17031690 **Date:** 01/24/2017
Insturment ID: ICP-THERMO4 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	8.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	8.00	720.0
Lead	20.00	225.0
Lithium	8.00	36.0
Magnesium	8.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	8.00	360.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	4.5
Sodium	8.00	270.0
Strontium	8.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	8.00	45.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

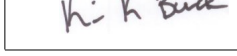
Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 5231341
Report generated: 04/05/2017 11:08

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000188	0.042372	0.000000	1.000000
Al 308.215 {109}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.001274	0.012623	0.000000	1.000000
As 189.042 {478}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000007	0.025441	0.000000	1.000000
B 249.678 {135}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000141	0.023279	0.000000	1.000000
Ba 455.403 { 74}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.024358	1.227028	0.000000	1.000000
Be 313.107 {108}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000336	1.013376	0.000000	1.000000
Ca 422.673 { 80}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000246	0.030179	0.000000	1.000000
Cd 228.802 {447}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000421	0.387108	0.000000	1.000000
Co 228.616 {447}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000314	0.309492	0.000000	1.000000
Cr 267.716 {126}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000197	0.061202	0.000000	1.000000
Cu 224.700 {450}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000747	0.094870	0.000000	1.000000
Fe 261.187 {129}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000171	0.016991	0.000000	1.000000
K 766.490 { 44}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.010754	0.030860	0.000000	1.000000
Li 670.784 { 50}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000575	0.682142	0.000000	1.000000
Mg 279.079 {121}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.001111	0.005247	0.000000	1.000000
Mn 257.610 {131}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000541	0.154990	0.000000	1.000000
Mo 202.030 {467}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000104	0.128665	0.000000	1.000000
Na 589.592 { 57}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.054793	0.103036	0.000000	1.000000
Ni 231.604 {446}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.001000	0.086073	0.000000	1.000000
P 214.914 {457}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000072	0.011291	0.000000	1.000000
Pb 220.353 {453}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000290	0.054131	0.000000	1.000000
Sb 206.833 {463}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000649	0.023335	0.000000	1.000000
Se 196.090 {472}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000003	0.016020	0.000000	1.000000
Si 212.412 {459}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000312	0.027375	0.000000	1.000000
Sn 189.989 {477}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.003551	0.076764	0.000000	1.000000
Sr 407.771 { 83}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.005209	2.087507	0.000000	1.000000
Ti 337.280 {100}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.001437	0.104319	0.000000	1.000000
Tl 190.856 {477}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.000296	0.020208	0.000000	1.000000
V 292.402 {115}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000050	0.072657	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	0.000403	0.512042	0.000000	1.000000
Zr 339.198 { 99}	4/4/2017 14:09:07	4/4/2017 14:09:07	Linear	1/Conc	-0.008717	0.006999	0.000000	1.000000

Approved: April 05, 2017



	Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
							Slope	Y-int	Slope factor	Offset
	Ag 328.068 {103}	0.999529	0.000003	0.001854	0.006179	OK.	1.000000	0.000000	1	0
	Al 308.215 {109}	0.999862	0.000013	0.005173	0.017244	OK.	1.000000	0.000000	1	0
	As 189.042 {478}	0.999969	0.000001	0.002221	0.007402	OK.	1.000000	0.000000	1	0
	B 249.678 {135}	0.999912	0.000002	0.002089	0.006963	OK.	1.000000	0.000000	1	0
	Ba 455.403 { 74}	0.999815	0.000150	0.001544	0.005147	OK.	1.000000	0.000000	1	0
	Be 313.107 {108}	0.999979	0.000002	0.000056	0.000188	OK.	1.000000	0.000000	1	0
	Ca 422.673 { 80}	0.999912	0.000025	0.047183	0.157277	OK.	1.000000	0.000000	1	0
	Cd 228.802 {447}	0.999997	0.000000	0.000237	0.000789	OK.	1.000000	0.000000	1	0
	Co 228.616 {447}	0.999981	0.000002	0.000346	0.001154	OK.	1.000000	0.000000	1	0
	Cr 267.716 {126}	0.999962	0.000002	0.000901	0.003005	OK.	1.000000	0.000000	1	0
	Cu 224.700 {450}	0.999936	0.000003	0.001254	0.004180	OK.	1.000000	0.000000	1	0
	Fe 261.187 {129}	0.999571	0.000013	0.027692	0.092305	OK.	1.000000	0.000000	1	0
	K 766.490 { 44}	0.999323	0.000360	0.133436	0.444788	OK.	1.000000	0.000000	1	0
	Li 670.784 { 50}	0.999812	0.000130	0.006020	0.020066	OK.	1.000000	0.000000	1	0
	Mg 279.079 {121}	0.998016	0.000032	0.093807	0.312691	OK.	1.000000	0.000000	1	0
	Mn 257.610 {131}	0.999978	0.000003	0.003722	0.012405	OK.	1.000000	0.000000	1	0
	Mo 202.030 {467}	1.000000	0.000000	0.000418	0.001393	OK.	1.000000	0.000000	1	0
	Na 589.592 { 57}	0.999983	0.000191	0.040575	0.135252	OK.	1.000000	0.000000	1	0
	Ni 231.604 {446}	0.999919	0.000003	0.001126	0.003752	OK.	1.000000	0.000000	1	0
	P 214.914 {457}	0.999991	0.000003	0.005857	0.019524	OK.	1.000000	0.000000	1	0
	Pb 220.353 {453}	0.999951	0.000002	0.002875	0.009585	OK.	1.000000	0.000000	1	0
	Sb 206.833 {463}	0.999939	0.000002	0.004049	0.013497	OK.	1.000000	0.000000	1	0
	Se 196.090 {472}	0.999516	0.000002	0.004839	0.016131	OK.	1.000000	0.000000	1	0
	Si 212.412 {459}	0.999994	0.000003	0.002231	0.007435	OK.	1.000000	0.000000	1	0
	Sn 189.989 {477}	0.999995	0.000002	0.000615	0.002049	OK.	1.000000	0.000000	1	0
	Sr 407.771 { 83}	0.999998	0.000024	0.000692	0.002305	OK.	1.000000	0.000000	1	0
	Ti 337.280 {100}	0.999481	0.000021	0.008551	0.028502	OK.	1.000000	0.000000	1	0
	Tl 190.856 {477}	0.999886	0.000001	0.002885	0.009618	OK.	1.000000	0.000000	1	0
	V 292.402 {115}	0.999991	0.000002	0.000799	0.002665	OK.	1.000000	0.000000	1	0
	Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
	Zn 206.200 {463}	1.000000	0.000003	0.000129	0.000429	OK.	1.000000	0.000000	1	0
	Zr 339.198 { 99}	0.601367	0.000059	0.272220	0.907399	OK.	1.000000	0.000000	1	0

Approved: April 05, 2017

Kirk Buck

Sample Name: S0 Acquired: 4/4/2017 13:51:26 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00019**	**.00127**	**.00001**	**-.00014**	**.02436**	**.00034**	**.00025**
Stddev	.00004	.00001	.00003	.00001	.00130	.00003	.00131
%RSD	20.056	.85610	395.67	8.9893	5.3310	8.6837	531.40
#1	-.00015	.00129	.00002	-.00013	.02360	.00035	.00077
#2	-.00022	.00126	.00002	-.00016	.02363	.00030	-.00124
#3	-.00020	.00127	-.00002	-.00014	.02586	.00036	.00121

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00042**	**.00031**	**.00020**	**-.00075**	**.00017**	**.01076**	**.00058**
Stddev	.00001	.00009	.00006	.00007	.00015	.00114	.00186
%RSD	3.5570	29.552	30.186	9.8963	88.734	10.568	322.50
#1	.00044	.00022	.00019	-.00077	.00010	.01207	.00134
#2	.00041	.00041	.00026	-.00066	.00034	.01003	.00194
#3	.00042	.00031	.00014	-.00080	.00007	.01019	-.00155

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00111**	**.00054**	**.00010**	**-.05479**	**-.00100**	**-.00007**	**-.00029**
Stddev	.00047	.00018	.00005	.00195	.00004	.00003	.00010
%RSD	42.701	32.644	44.557	3.5541	4.2152	37.508	34.705
#1	-.00069	.00034	.00010	-.05630	-.00102	-.00004	-.00019
#2	-.00101	.00063	.00015	-.05259	-.00095	-.00008	-.00029
#3	-.00163	.00065	.00006	-.05548	-.00103	-.00009	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00065**	**.00000**	**.00031**	**.00355**	**.00521**	**-.00144**	**-.00030**
Stddev	.00009	.00004	.00005	.00006	.00168	.00090	.00008
%RSD	13.267	1417.2	16.402	1.6120	32.328	62.961	27.499
#1	.00073	.00001	.00030	.00349	.00710	-.00077	-.00027
#2	.00056	-.00004	.00027	.00356	.00466	-.00247	-.00023
#3	.00065	.00004	.00037	.00360	.00387	-.00107	-.00039

Approved: April 05, 2017

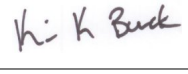
Kristi K Buck

Sample Name: S0 Acquired: 4/4/2017 13:51:26 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00005**	**.00040**	**-.00872**
Stddev	.00006	.00004	.00454
%RSD	115.27	9.7447	52.063
#1	.00011	.00042	-.00928
#2	-.00000	.00043	-.00392
#3	.00004	.00036	-.01294

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22811.**	**150290.**	**4474.5**
Stddev	68.	289.	150.3
%RSD	.29991	.19244	3.3586
#1	22890.	150400.	4345.9
#2	22773.	149960.	4639.7
#3	22770.	150510.	4437.8

Approved: April 05, 2017



Sample Name: S1 Acquired: 4/4/2017 13:55:01 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

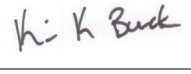
Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**.00243**	**.03057**	**.00076**	**.00207**	**.00058**	**.00083**
Stddev	.00005	.00007	.00272	.00004	.00118	.00005	.00004
%RSD	111.50	3.0582	8.9113	5.2340	57.216	9.2852	4.8162
#1	-.00001	.00236	.03367	.00081	.00171	.00052	.00087
#2	-.00003	.00251	.02856	.00074	.00339	.00059	.00083
#3	-.00010	.00242	.02947	.00074	.00110	.00062	.00079

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00040**	**-.00030**	**.00090**	**.01448**	**.00111**	**.00113**	**-.01738**
Stddev	.00005	.00005	.00043	.00484	.00063	.00002	.00166
%RSD	12.174	18.276	47.382	33.420	56.376	1.9014	9.5322
#1	.00034	-.00024	.00137	.01300	.00127	.00111	-.01845
#2	.00043	-.00029	.00080	.01055	.00164	.00115	-.01822
#3	.00043	-.00035	.00053	.01989	.00042	.00114	-.01547

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00070**	**.00087**	**-.00005**	**.00082**	**.00136**	**.00417**	**.02167**
Stddev	.00012	.00006	.00014	.00001	.00004	.00008	.00197
%RSD	16.784	6.4769	308.78	1.6352	2.6053	1.8808	9.1003
#1	-.00063	.00083	-.00021	.00082	.00140	.00409	.01971
#2	-.00083	.00093	.00004	.00081	.00132	.00425	.02164
#3	-.00063	.00083	.00004	.00084	.00136	.00416	.02365

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00099**	**.00064**	**.00456**	**-.01006**
Stddev	.00007	.00004	.00001	.00152
%RSD	6.9474	6.6306	.28240	15.124
#1	-.00095	.00068	.00455	-.00861
#2	-.00095	.00065	.00456	-.01164
#3	-.00107	.00060	.00457	-.00993

Approved: April 05, 2017



Sample Name: S1 Acquired: 4/4/2017 13:55:01 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22561.**	**152730.**	**4624.2**
Stddev	280.	1522.	50.5
%RSD	1.2421	.99628	1.0927
#1	22879.	153910.	4602.7
#2	22354.	153280.	4682.0
#3	22448.	151010.	4588.0

Approved: April 05, 2017

Sample Name: S2 Acquired: 4/4/2017 13:58:35 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

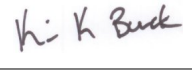
Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00350**	**.00018**	**.00001**	**.04306**	**.00110**	**.00489**
Stddev	.00006	.00003	.00006	.00002	.00129	.00006	.00083
%RSD	198.40	.93341	32.329	131.40	3.0015	5.5056	16.888
#1	-.00010	.00352	.00019	.00001	.04406	.00107	.00520
#2	.00000	.00352	.00012	.00003	.04352	.00117	.00551
#3	.00001	.00346	.00024	-.00000	.04160	.00107	.00395

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00077**	**.00126**	**.00068**	**.00007**	**.00092**	**.03660**	**.00863**
Stddev	.00013	.00004	.00002	.00002	.00046	.00145	.00276
%RSD	17.495	3.2141	2.9099	36.824	50.418	3.9543	31.958
#1	.00084	.00122	.00065	.00009	.00065	.03701	.00718
#2	.00085	.00130	.00069	.00007	.00065	.03499	.00689
#3	.00061	.00124	.00069	.00004	.00145	.03780	.01181

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00045**	**.00186**	**.00215**	**.03093**	**-.00021**	**.00169**	**.00011**
Stddev	.00089	.00113	.00003	.00318	.00005	.00004	.00006
%RSD	200.01	60.449	1.2369	10.289	21.861	2.4640	52.359
#1	.00125	.00193	.00218	.03117	-.00017	.00170	.00017
#2	-.00052	.00071	.00213	.02763	-.00026	.00172	.00005
#3	.00062	.00296	.00214	.03398	-.00021	.00164	.00012

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00107**	**.00006**	**.00239**	**.00478**	**.03907**	**.00070**	**-.00015**
Stddev	.00003	.00005	.00003	.00002	.00129	.00018	.00002
%RSD	2.3684	86.365	1.2727	.38194	3.2927	25.207	14.478
#1	.00109	.00005	.00240	.00478	.04034	.00053	-.00013
#2	.00104	.00002	.00236	.00476	.03912	.00069	-.00014
#3	.00107	.00012	.00242	.00479	.03777	.00088	-.00017

Approved: April 05, 2017

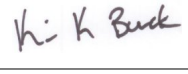


Sample Name: S2 Acquired: 4/4/2017 13:58:35 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00118**	**.00855**	**-.00812**
Stddev	.00003	.00004	.00098
%RSD	2.3856	.51423	12.034
#1	.00116	.00851	-.00836
#2	.00121	.00860	-.00704
#3	.00117	.00855	-.00895

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22814.**	**151550.**	**4694.4**
Stddev	55.	291.	57.0
%RSD	.23947	.19213	1.2135
#1	22808.	151220.	4691.2
#2	22871.	151670.	4752.9
#3	22762.	151760.	4639.1

Approved: April 05, 2017



Sample Name: S3 Acquired: 4/4/2017 14:02:11 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01678**	**.13093**	**.01005**	**.01141**	**1.2526**	**.05176**	**.30109**
Stddev	.00007	.00035	.00009	.00007	.0036	.00029	.00157
%RSD	.43191	.26445	.88365	.58723	.28933	.56471	.52148
#1	.01671	.13062	.01001	.01135	1.2558	.05146	.30277
#2	.01678	.13130	.00999	.01141	1.2487	.05204	.29966
#3	.01686	.13088	.01016	.01148	1.2533	.05179	.30082

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02160**	**.06251**	**.03082**	**.04690**	**.06771**	**1.5407**	**.68642**
Stddev	.00016	.00024	.00011	.00015	.00043	.0125	.00487
%RSD	.74864	.37767	.35810	.31662	.63650	.80892	.71011
#1	.02145	.06256	.03070	.04675	.06756	1.5331	.69010
#2	.02159	.06226	.03090	.04690	.06738	1.5340	.68089
#3	.02177	.06272	.03088	.04704	.06820	1.5551	.68827

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.05132**	**.07821**	**.12871**	**5.0845**	**.04227**	**.11263**	**.02722**
Stddev	.00149	.00006	.00067	.0211	.00025	.00062	.00021
%RSD	2.9112	.07541	.52280	.41541	.59609	.55045	.76221
#1	.05007	.07814	.12832	5.0855	.04198	.11217	.02698
#2	.05091	.07825	.12833	5.0629	.04237	.11238	.02732
#3	.05297	.07824	.12949	5.1051	.04246	.11333	.02736

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02821**	**.00645**	**.12793**	**.08052**	**2.0965**	**.10172**	**.00915**
Stddev	.00012	.00005	.00049	.00040	.0089	.00044	.00005
%RSD	.41667	.78628	.38405	.49079	.42504	.42824	.58123
#1	.02812	.00639	.12751	.08016	2.0931	.10218	.00915
#2	.02818	.00648	.12781	.08046	2.0899	.10166	.00910
#3	.02834	.00648	.12847	.08094	2.1067	.10131	.00921

Approved: April 05, 2017

Kristi K Buck

Sample Name: S3 Acquired: 4/4/2017 14:02:11 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.07215**	**.51224**	**-.00234**
Stddev	.00022	.00280	.00095
%RSD	.30860	.54658	40.376
#1	.07191	.50978	-.00344
#2	.07219	.51164	-.00175
#3	.07235	.51529	-.00185

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22666.**	**149540.**	**4666.3**
Stddev	486.	416.	51.1
%RSD	2.1424	.27788	1.0944
#1	23104.	149170.	4637.3
#2	22750.	149470.	4725.3
#3	22144.	149990.	4636.4

Approved: April 05, 2017

Sample Name: S4 Acquired: 4/4/2017 14:05:41 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03364**	**.25331**	**.02029**	**.02311**	**2.4818**	**.10395**	**.60554**	**.04270**
Stddev	.00011	.00149	.00015	.00014	.0095	.00042	.00155	.00029
%RSD	.33861	.58909	.71531	.58703	.38355	.40579	.25612	.68734
#1	.03351	.25161	.02041	.02300	2.4737	.10347	.60468	.04297
#2	.03371	.25437	.02033	.02308	2.4793	.10415	.60733	.04274
#3	.03370	.25396	.02013	.02327	2.4923	.10424	.60460	.04239

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.12353**	**.06149**	**.09397**	**.13665**	**3.1172**	**1.3640**	**.10273**	**.15535**
Stddev	.00083	.00027	.00064	.00089	.0201	.0072	.00055	.00082
%RSD	.67174	.44103	.68337	.64840	.64624	.52597	.53127	.52939
#1	.12438	.06120	.09463	.13563	3.0939	1.3577	.10316	.15469
#2	.12349	.06155	.09394	.13728	3.1296	1.3718	.10291	.15627
#3	.12272	.06173	.09335	.13703	3.1280	1.3625	.10212	.15509

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.25746**	**10.262**	**.08478**	**.22686**	**.05410**	**.05565**	**.01287**	**.25418**
Stddev	.00192	.032	.00064	.00161	.00051	.00038	.00010	.00185
%RSD	.74460	.31038	.75990	.70827	.93573	.67893	.80996	.72928
#1	.25945	10.230	.08536	.22845	.05455	.05605	.01298	.25589
#2	.25731	10.293	.08489	.22690	.05420	.05560	.01285	.25443
#3	.25562	10.263	.08409	.22524	.05355	.05530	.01278	.25221

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.15643**	**4.1765**	**.20799**	**.01802**	**.14542**	**1.0238**	**.00682**
Stddev	.00126	.0103	.00040	.00020	.00054	.0076	.00070
%RSD	.80789	.24629	.19320	1.1273	.37429	.73981	10.206
#1	.15775	4.1663	.20831	.01818	.14480	1.0315	.00748
#2	.15631	4.1763	.20812	.01808	.14564	1.0235	.00609
#3	.15523	4.1868	.20754	.01779	.14582	1.0163	.00688

Approved: April 05, 2017
Kim K Buck

Sample Name: S4 Acquired: 4/4/2017 14:05:41 Type: Cal
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22144.**	**146450.**	**4548.2**
Stddev	85.	745.	34.7
%RSD	.38375	.50852	.76218
#1	22237.	146980.	4586.9
#2	22070.	145600.	4537.8
#3	22127.	146780.	4519.9

Approved: April 05, 2017

Kristi K Buck

Sample Name: ICV Acquired: 4/4/2017 14:09:12 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38822**	**9.9911**	**.39060**	**.48549**	**.99865**	**.04862**	**10.071**
Stddev	.00205	.0611	.00226	.00265	.00514	.00013	.050
%RSD	.52810	.61134	.57852	.54644	.51438	.26636	.49779
#1	.38811	9.9210	.39310	.48662	1.0020	.04848	10.098
#2	.38623	10.032	.38870	.48738	1.0012	.04867	10.013
#3	.39033	10.020	.39001	.48246	.99273	.04872	10.102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04874**	**.19560**	**.49375**	**.49870**	**3.9631**	**49.077**	**1.0107**
Stddev	.00029	.00049	.00044	.00060	.0246	.196	.0063
%RSD	.59271	.25061	.08915	.11983	.62195	.39906	.62582
#1	.04858	.19516	.49348	.49808	3.9373	49.034	1.0045
#2	.04856	.19551	.49352	.49875	3.9865	48.906	1.0172
#3	.04907	.19613	.49426	.49927	3.9655	49.290	1.0105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9123**	**.50125**	F **.94735**	**49.005**	**.49535**	**9.6934**	**.50147**
Stddev	.0398	.00172	.00186	.065	.00129	.0063	.00101
%RSD	.40126	.34261	.19618	.13172	.25980	.06471	.20128
#1	9.8678	.50187	.94524	48.989	.49393	9.6958	.50226
#2	9.9246	.50258	.94811	49.077	.49642	9.6863	.50182
#3	9.9444	.49931	.94872	48.951	.49571	9.6981	.50033
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			1.0000				
Range			-5.0000%				

Approved: April 05, 2017

Sample Name: ICV Acquired: 4/4/2017 14:09:12 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2173**	**.39138**	**4.8819**	**1.0071**	**.99951**	**1.0016**	**.50048**
Stddev	.0016	.00327	.0018	.0013	.00281	.0021	.00211
%RSD	.13130	.83646	.03654	.13229	.28090	.20550	.42063
#1	1.2185	.39457	4.8798	1.0058	1.0025	1.0033	.50146
#2	1.2179	.38803	4.8825	1.0085	.99919	1.0021	.49807
#3	1.2155	.39154	4.8832	1.0069	.99688	.99930	.50193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97788**	**.99119**	**.97999**
Stddev	.00087	.00173	.26578
%RSD	.08849	.17478	27.120
#1	.97694	.98925	.81531
#2	.97808	.99173	1.2866
#3	.97864	.99259	.83806
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23003.**	**150840.**	**4639.3**
Stddev	39.	809.	31.4
%RSD	.16889	.53646	.67701
#1	23027.	151520.	4626.2
#2	22958.	151050.	4616.6
#3	23023.	149940.	4675.2

Approved: April 05, 2017

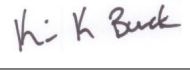
Sample Name: ICB Acquired: 4/4/2017 14:12:46 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**-.00039**	**.00044**	**.00430**	**-.00039**	**.00002**	**.02653**
Stddev	.00046	.00351	.00155	.00121	.00086	.00004	.06335
%RSD	38.874	889.47	354.78	28.225	218.35	247.68	238.79
#1	-.00093	-.00281	-.00133	.00290	-.00137	.00004	.06845
#2	-.00092	-.00200	.00106	.00510	-.00005	-.00003	.05749
#3	-.00173	.00363	.00158	.00490	.00024	.00004	-.04635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00010**	**-.00045**	**.00178**	**-.03367**	**.21242**	**-.00758**
Stddev	.00007	.00006	.00075	.00130	.01265	.11643	.00294
%RSD	49.476	56.420	167.04	72.958	37.563	54.812	38.791
#1	.00017	-.00007	-.00131	.00127	-.01998	.13057	-.00628
#2	.00007	-.00017	.00010	.00081	-.03613	.34571	-.00552
#3	.00021	-.00006	-.00015	.00326	-.04492	.16098	-.01095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.13746**	**-.00126**	**-.00000**	**.08663**	**.00090**	**-.00272**	**-.00026**
Stddev	.04024	.00544	.00022	.02260	.00035	.00529	.00159
%RSD	29.275	432.06	81680.	26.084	38.921	194.80	615.01
#1	.16209	.00410	.00016	.11137	.00115	.00329	-.00008
#2	.15926	-.00677	-.00025	.06709	.00105	-.00474	.00123
#3	.09102	-.00111	.00009	.08142	.00050	-.00669	-.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: ICB Acquired: 4/4/2017 14:12:46 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00484**	**-.00240**	**.00242**	**.00015**	**-.00032**	**-.00237**	**.00148**
Stddev	.00132	.00092	.00068	.00051	.00017	.00456	.00199
%RSD	27.361	38.258	28.079	330.25	52.444	192.22	133.79
#1	-.00610	-.00156	.00302	.00063	-.00013	-.00758	.00021
#2	-.00346	-.00338	.00254	.00020	-.00043	-.00051	.00047
#3	-.00496	-.00226	.00168	-.00038	-.00041	.00096	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00005**	**.00063**	F **-.09465**
Stddev	.00031	.00007	.16817
%RSD	605.42	11.113	177.68
#1	.00030	.00071	.09612
#2	-.00020	.00061	-.22144
#3	-.00026	.00058	-.15862
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23635.**	**155830.**	**4687.6**
Stddev	32.	410.	39.7
%RSD	.13632	.26312	.84655
#1	23669.	156290.	4643.6
#2	23631.	155500.	4720.8
#3	23604.	155690.	4698.3

Approved: April 05, 2017

Kristi K Buck

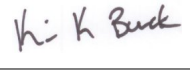
Sample Name: LLICV Acquired: 4/4/2017 14:16:20 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00730**	**.18654**	**.00737**	**.08003**	**.00804**	**.00165**	**.44086**	**.00078**
Stddev	.00118	.00136	.00156	.00038	.00120	.00003	.01447	.00005
%RSD	16.189	.72731	21.156	.47549	14.937	1.5358	3.2822	6.0065
#1	.00646	.18795	.00784	.08008	.00767	.00165	.42510	.00073
#2	.00679	.18524	.00863	.08038	.00938	.00163	.44393	.00081
#3	.00865	.18644	.00563	.07963	.00707	.00168	.45355	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00399**	**.00354**	**.00509**	**.07112**	**.68709**	**.08523**	**.52801**	**.00927**
Stddev	.00010	.00037	.00073	.04000	.08342	.00777	.07532	.00248
%RSD	2.4882	10.497	14.326	56.237	12.142	9.1211	14.266	26.793
#1	.00388	.00385	.00559	.02678	.60037	.08125	.56888	.01008
#2	.00404	.00364	.00543	.08210	.76678	.09418	.57406	.01125
#3	.00405	.00312	.00425	.10448	.69411	.08025	.44109	.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00773**	**.41413**	**.01661**	**.80994**	**.00634**	**.08295**	**.01727**	**.75367**
Stddev	.00020	.02603	.00132	.00721	.00102	.00258	.00376	.00148
%RSD	2.5414	6.2853	7.9753	.89042	16.039	3.1055	21.760	.19625
#1	.00777	.42657	.01725	.81293	.00666	.08042	.01936	.75196
#2	.00751	.38422	.01509	.81517	.00520	.08557	.01952	.75445
#3	.00790	.43160	.01750	.80171	.00716	.08288	.01293	.75459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LLICV Acquired: 4/4/2017 14:16:20 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41549**	**.04298**	**.02232**	**.16775**	**.00818**	**.01944**	**38.823**
Stddev	.00102	.00080	.00720	.00274	.00022	.00011	.253
%RSD	.24596	1.8605	32.246	1.6354	2.7180	.57018	.65079
#1	.41666	.04271	.03018	.17085	.00800	.01957	38.786
#2	.41504	.04388	.02075	.16673	.00843	.01935	39.093
#3	.41476	.04236	.01604	.16566	.00811	.01942	38.591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23005.**	**148830.**	**4473.2**
Stddev	188.	579.	35.1
%RSD	.81651	.38890	.78578
#1	23214.	149470.	4501.7
#2	22950.	148650.	4433.9
#3	22851.	148350.	4483.9

Approved: April 05, 2017

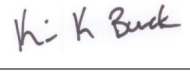
Sample Name: LLICV Acquired: 4/4/2017 14:19:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00720**	**.17252**	**.00922**	**.07934**	**.00733**	**.00165**	**.42581**	**.00092**
Stddev	.00020	.00291	.00161	.00139	.00155	.00003	.06779	.00010
%RSD	2.7195	1.6854	17.453	1.7489	21.203	1.8505	15.921	10.926
#1	.00737	.17164	.00736	.08092	.00829	.00164	.41699	.00099
#2	.00725	.17576	.01012	.07878	.00554	.00169	.49758	.00096
#3	.00699	.17015	.01017	.07832	.00817	.00163	.36286	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00398**	**.00361**	**.00616**	**.06067**	**.85732**	**.08383**	**.50782**	**.01269**
Stddev	.00027	.00045	.00070	.03449	.07243	.00617	.06900	.00427
%RSD	6.6944	12.476	11.390	56.843	8.4483	7.3615	13.587	33.685
#1	.00382	.00367	.00572	.06006	.77776	.08356	.43163	.01621
#2	.00429	.00313	.00697	.09546	.91943	.09012	.56607	.00793
#3	.00383	.00402	.00580	.02649	.87478	.07779	.52576	.01392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00774**	**.47292**	**.01710**	**.81237**	**.00812**	**.08011**	**.01710**	**.75969**
Stddev	.00003	.00985	.00042	.00385	.00304	.00293	.00247	.00370
%RSD	.35761	2.0821	2.4342	.47414	37.458	3.6616	14.452	.48747
#1	.00774	.47997	.01734	.81637	.00757	.08318	.01920	.76208
#2	.00771	.46167	.01734	.81206	.01140	.07734	.01438	.75543
#3	.00777	.47711	.01662	.80869	.00539	.07980	.01772	.76157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LLICV Acquired: 4/4/2017 14:19:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41733**	**.04326**	**.01904**	**.16999**	**.00843**	**.01789**	**39.844**
Stddev	.00101	.00012	.00382	.00163	.00051	.00008	.492
%RSD	.24202	.27965	20.080	.95967	6.0457	.43141	1.2345
#1	.41788	.04315	.02196	.17123	.00790	.01797	40.162
#2	.41794	.04325	.02046	.17060	.00846	.01790	39.278
#3	.41616	.04339	.01471	.16814	.00892	.01782	40.092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23549.**	**152680.**	**4560.3**
Stddev	40.	1414.	78.9
%RSD	.17026	.92583	1.7305
#1	23542.	154300.	4617.5
#2	23513.	151760.	4593.1
#3	23592.	151960.	4470.3

Approved: April 05, 2017

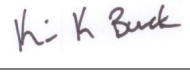
Sample Name: LLICV Acquired: 4/4/2017 14:23:21 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00749**	**.17752**	**.00923**	**.07790**	**.00749**	**.00159**	**.40066**	**.00083**
Stddev	.00106	.00608	.00232	.00035	.00067	.00003	.04342	.00016
%RSD	14.146	3.4231	25.174	.44527	8.9166	1.6867	10.836	18.946
#1	.00630	.17052	.01186	.07765	.00734	.00156	.44811	.00068
#2	.00787	.18147	.00837	.07775	.00822	.00158	.36291	.00081
#3	.00831	.18056	.00745	.07829	.00691	.00162	.39097	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00395**	**.00359**	**.00575**	**.08213**	**.89885**	**.06877**	**.56154**	**.01001**
Stddev	.00020	.00051	.00056	.01905	.08937	.00513	.07002	.00318
%RSD	5.0957	14.256	9.7797	23.192	9.9431	7.4636	12.469	31.748
#1	.00376	.00403	.00535	.09203	.94002	.07467	.56777	.00741
#2	.00393	.00371	.00639	.06017	.79631	.06534	.62823	.00908
#3	.00416	.00303	.00550	.09419	.96022	.06630	.48862	.01356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00812**	**.45850**	**.01819**	**.81118**	**.00392**	**.08337**	**.01677**	**.75467**
Stddev	.00042	.03690	.00064	.00329	.00197	.00273	.00181	.00263
%RSD	5.1392	8.0491	3.5250	.40559	50.369	3.2733	10.775	.34823
#1	.00856	.43229	.01799	.81484	.00547	.08487	.01474	.75744
#2	.00809	.50070	.01767	.80848	.00170	.08503	.01736	.75438
#3	.00772	.44251	.01891	.81021	.00459	.08022	.01821	.75221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LLICV Acquired: 4/4/2017 14:23:21 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41631**	**.04106**	**.02183**	**.16958**	**.00874**	**.01770**	**38.784**
Stddev	.00097	.00086	.00301	.00251	.00045	.00016	.494
%RSD	.23297	2.1001	13.793	1.4789	5.1377	.87976	1.2731
#1	.41697	.04040	.01929	.16857	.00918	.01788	39.350
#2	.41676	.04074	.02516	.17243	.00828	.01758	38.442
#3	.41520	.04203	.02105	.16773	.00877	.01764	38.561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23446.**	**154710.**	**4699.6**
Stddev	88.	393.	60.3
%RSD	.37516	.25399	1.2833
#1	23369.	154260.	4636.6
#2	23426.	155000.	4756.8
#3	23542.	154860.	4705.4

Approved: April 05, 2017

Kristi K Buck

Sample Name: ICSA Acquired: 4/4/2017 14:26:51 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**239.69**	**-.00309**	**.00925**	**-.00157**	**.00000**	**237.26**
Stddev	.00039	2.99	.00241	.00039	.00211	.00004	.70
%RSD	1241.5	1.2477	78.139	4.1890	134.32	3322.7	.29503
#1	-.00008	243.07	-.00576	.00932	-.00251	.00004	236.48
#2	-.00039	238.61	-.00108	.00883	.00085	-.00003	237.84
#3	.00038	237.39	-.00242	.00959	-.00305	.00000	237.47
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00086**	**-.00098**	**.00009**	**97.121**	**.18781**	**-.00300**
Stddev	.00013	.00012	.00073	.00095	.117	.07379	.00230
%RSD	240.76	14.217	74.146	1024.3	.12076	39.288	76.401
#1	.00002	-.00093	-.00095	.00033	96.987	.10634	-.00050
#2	-.00005	-.00093	-.00173	.00090	97.208	.25016	-.00500
#3	.00019	-.00072	-.00027	-.00095	97.166	.20693	-.00352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**240.49**	**.00131**	**-.00039**	**.11104**	**-.00166**	**.04282**	**-.00009**
Stddev	.81	.00461	.00045	.03951	.00060	.00512	.00351
%RSD	.33652	350.76	114.04	35.579	36.510	11.963	3858.6
#1	239.56	.00497	-.00079	.13293	-.00156	.04533	-.00413
#2	240.87	-.00386	.00009	.13476	-.00230	.03693	.00213
#3	241.04	.00284	-.00047	.06544	-.00111	.04620	.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017
Kim K Buck

Sample Name: ICSA Acquired: 4/4/2017 14:26:51 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00261**	**-.00218**	**.00948**	**-.00234**	**.00055**	**-.00529**	**.00193**
Stddev	.00633	.00537	.00175	.00042	.00029	.00229	.00397
%RSD	242.57	246.60	18.491	17.994	53.354	43.397	205.66
#1	.00468	.00389	.01005	-.00229	.00022	-.00277	.00584
#2	-.00586	-.00414	.01088	-.00278	.00065	-.00725	.00205
#3	-.00666	-.00629	.00751	-.00195	.00078	-.00584	-.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00167**	**-.00600**	F **-4.3123**
Stddev	.00084	.00018	.1793
%RSD	50.068	3.0472	4.1574
#1	-.00072	-.00619	-4.5019
#2	-.00228	-.00597	-4.1455
#3	-.00201	-.00583	-4.2895
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21731.**	**139730.**	**4572.0**
Stddev	24.	182.	9.7
%RSD	.10998	.13029	.21323
#1	21721.	139700.	4570.5
#2	21714.	139570.	4563.1
#3	21759.	139930.	4582.4

Approved: April 05, 2017

Kristi K Buck

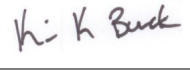
Sample Name: ICSAB Acquired: 4/4/2017 14:30:29 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51588**	**234.24**	**.23765**	**.50482**	**.25055**	**.25897**	**236.97**
Stddev	.00097	3.24	.00068	.00349	.00124	.00028	1.52
%RSD	.18714	1.3843	.28793	.69181	.49546	.10980	.64092
#1	.51495	232.04	.23821	.50085	.24984	.25901	238.64
#2	.51688	237.97	.23689	.50614	.24983	.25924	235.68
#3	.51583	232.72	.23786	.50745	.25198	.25867	236.59
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43227**	**.23487**	**.24726**	**.24222**	**96.665**	**5.2674**	**-.00573**
Stddev	.00036	.00041	.00146	.00116	.309	.0089	.00443
%RSD	.08248	.17452	.58867	.48006	.31988	.16915	77.284
#1	.43268	.23533	.24558	.24303	97.004	5.2755	-.00780
#2	.43203	.23454	.24803	.24089	96.593	5.2690	-.00065
#3	.43210	.23474	.24817	.24275	96.398	5.2578	-.00875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**239.36**	**.24260**	**-.00043**	**5.1658**	**.47351**	**-.04237**	**.48292**
Stddev	1.87	.00463	.00014	.0250	.00187	.00231	.00303
%RSD	.78240	1.9078	32.805	.48296	.39556	5.4412	.62686
#1	241.46	.24607	-.00041	5.1714	.47146	-.04340	.48593
#2	237.85	.24438	-.00058	5.1385	.47394	-.03973	.47988
#3	238.78	.23735	-.00030	5.1875	.47513	-.04399	.48294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: ICSAB Acquired: 4/4/2017 14:30:29 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48430**	**.23548**	**.00785**	**.48093**	**.00126**	**.00502**	**.45343**
Stddev	.00141	.00487	.00096	.00074	.00055	.00661	.00729
%RSD	.29018	2.0668	12.189	.15286	43.418	131.74	1.6070
#1	.48345	.24071	.00685	.48178	.00070	-.00253	.45346
#2	.48593	.23109	.00796	.48058	.00179	.00980	.44612
#3	.48353	.23465	.00875	.48044	.00128	.00779	.46070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.25126**	**.47363**	F **-4.5484**
Stddev	.00080	.00108	.4016
%RSD	.31885	.22807	8.8283
#1	.25067	.47461	-4.9968
#2	.25094	.47382	-4.2219
#3	.25218	.47247	-4.4266
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21565.**	**138780.**	**4498.9**
Stddev	84.	142.	50.5
%RSD	.38998	.10252	1.1223
#1	21473.	138890.	4464.4
#2	21584.	138830.	4556.9
#3	21638.	138620.	4475.5

Approved: April 05, 2017

Kristi K Buck

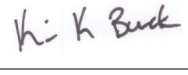
Sample Name: CCV Acquired: 4/4/2017 14:34:02 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40127**	**10.045**	**.39651**	**.49806**	**1.0092**	**.04991**	**9.9855**
Stddev	.00179	.030	.00238	.00143	.0042	.00008	.0098
%RSD	.44627	.30237	.59963	.28664	.41582	.15193	.09867
#1	.40279	10.055	.39383	.49949	1.0107	.04983	9.9860
#2	.39930	10.011	.39836	.49663	1.0045	.04998	9.9754
#3	.40171	10.069	.39734	.49805	1.0125	.04991	9.9951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05028**	**.20067**	**.49861**	**.50047**	**3.9458**	**50.368**	**1.0052**
Stddev	.00019	.00029	.00131	.00094	.0287	.081	.0039
%RSD	.37666	.14600	.26321	.18835	.72799	.15994	.38712
#1	.05046	.20034	.49719	.50101	3.9689	50.447	1.0067
#2	.05008	.20090	.49887	.50102	3.9136	50.286	1.0008
#3	.05031	.20078	.49978	.49938	3.9548	50.370	1.0081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.015**	**.49400**	**.99544**	**50.387**	**.50109**	**9.9053**	**.50039**
Stddev	.069	.00580	.00076	.013	.00055	.0248	.00139
%RSD	.69191	1.1735	.07621	.02613	.11011	.25031	.27786
#1	10.086	.49331	.99542	50.397	.50123	9.8774	.50118
#2	9.9476	.50012	.99622	50.392	.50155	9.9250	.49878
#3	10.011	.48859	.99470	50.372	.50048	9.9134	.50121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017



Sample Name: CCV Acquired: 4/4/2017 14:34:02 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2161**	**.40062**	**4.9999**	**1.0004**	**1.0020**	**.99848**	**.50857**
Stddev	.0017	.00514	.0080	.0023	.0027	.01061	.00226
%RSD	.13936	1.2840	.16025	.23320	.26671	1.0631	.44381
#1	1.2142	.39850	4.9909	.99937	.99898	.98922	.50660
#2	1.2165	.40649	5.0022	.99874	1.0041	.99615	.51103
#3	1.2175	.39688	5.0064	1.0031	1.0029	1.0101	.50807
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99490**	**1.0010**	F **1.6836**
Stddev	.00189	.0016	.3086
%RSD	.19030	.15704	18.331
#1	.99292	.99991	1.4382
#2	.99508	1.0003	1.5826
#3	.99670	1.0028	2.0301
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23166.**	**149950.**	**4559.7**
Stddev	54.	687.	52.9
%RSD	.23227	.45784	1.1599
#1	23167.	149350.	4535.7
#2	23219.	149800.	4523.0
#3	23111.	150700.	4620.3

Approved: April 05, 2017

Kristi K Buck

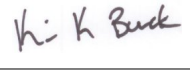
Sample Name: CCB Acquired: 4/4/2017 14:37:26 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00347**	**.00062**	**.00380**	**-.00255**	**-.00003**	**.03711**
Stddev	.00061	.00260	.00273	.00159	.00097	.00001	.07557
%RSD	145.38	74.910	442.41	41.859	38.061	27.103	203.64
#1	-.00020	.00227	.00148	.00556	-.00305	-.00002	.09880
#2	.00045	.00169	.00281	.00334	-.00317	-.00003	-.04718
#3	.00101	.00646	-.00244	.00249	-.00143	-.00004	.05971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00000**	**-.00028**	**.00116**	**-.02017**	**.18626**	**-.00055**
Stddev	.00027	.00008	.00064	.00076	.02806	.25607	.00478
%RSD	447.50	3528.1	226.15	65.690	139.16	137.48	863.17
#1	.00013	-.00004	-.00017	.00154	.01211	.19718	-.00582
#2	-.00037	-.00005	-.00097	.00028	-.03378	.43670	.00064
#3	.00006	.00010	.00029	.00166	-.03883	-.07510	.00352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.14536**	**.00071**	**-.00004**	**.28973**	**.00053**	**.00200**	**-.00164**
Stddev	.10088	.00156	.00024	.06138	.00066	.00745	.00242
%RSD	69.398	219.42	571.44	21.184	123.92	372.30	147.00
#1	.13455	.00172	-.00004	.28329	.00069	.00163	-.00024
#2	.05032	.00149	-.00029	.23182	.00110	.00963	-.00443
#3	.25120	-.00108	.00019	.35407	-.00019	-.00526	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: CCB Acquired: 4/4/2017 14:37:26 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**-.00400**	**.00167**	**.00051**	**-.00001**	**-.00462**	**.00001**
Stddev	.00338	.00105	.00156	.00043	.00064	.00275	.00170
%RSD	141.11	26.190	93.179	84.808	5091.6	59.370	31591.
#1	-.00004	-.00482	.00098	.00096	-.00063	-.00342	.00189
#2	-.00626	-.00437	.00058	.00046	.00065	-.00269	-.00045
#3	-.00088	-.00282	.00345	.00010	-.00005	-.00777	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00034**	**.00063**	F **.18830**
Stddev	.00032	.00008	.28568
%RSD	95.917	12.883	151.72
#1	.00067	.00059	.32122
#2	.00003	.00058	.38331
#3	.00031	.00072	-.13963
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24065.**	**159380.**	**4814.6**
Stddev	200.	1212.	16.6
%RSD	.82954	.76064	.34428
#1	23988.	160510.	4826.1
#2	24292.	159540.	4795.6
#3	23916.	158100.	4822.1

Approved: April 05, 2017

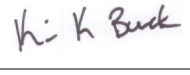
Sample Name: CCV Acquired: 4/4/2017 15:46:22 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40795**	**10.183**	**.40248**	**.50344**	**1.0187**	**.05079**	**10.128**
Stddev	.00130	.064	.00147	.00303	.0018	.00012	.018
%RSD	.31865	.62412	.36604	.60088	.17899	.23793	.18238
#1	.40662	10.127	.40295	.50208	1.0168	.05066	10.142
#2	.40922	10.171	.40367	.50133	1.0204	.05083	10.135
#3	.40800	10.252	.40083	.50690	1.0188	.05089	10.107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05043**	**.20223**	**.50667**	**.50382**	**4.0522**	**49.932**	**1.0279**
Stddev	.00017	.00139	.00216	.00348	.0222	.387	.0100
%RSD	.33595	.68644	.42579	.69141	.54803	.77590	.97557
#1	.05038	.20231	.50418	.50442	4.0491	49.503	1.0286
#2	.05062	.20357	.50796	.50697	4.0758	50.256	1.0375
#3	.05030	.20080	.50787	.50008	4.0317	50.038	1.0175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.096**	**.49989**	**1.0065**	**50.795**	**.50628**	**9.9245**	**.50427**
Stddev	.145	.00399	.0069	.281	.00368	.0578	.00625
%RSD	1.4387	.79733	.68074	.55328	.72600	.58193	1.2392
#1	10.053	.50387	1.0098	50.924	.50886	9.9441	.50781
#2	10.257	.49991	1.0110	50.988	.50791	9.9699	.50796
#3	9.9764	.49590	.99861	50.472	.50207	9.8595	.49706
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017



Sample Name: CCV Acquired: 4/4/2017 15:46:22 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2359**	**.40611**	**5.0249**	**1.0116**	**1.0050**	**.99799**	**.51780**
Stddev	.0130	.00331	.0382	.0056	.0043	.00543	.00166
%RSD	1.0533	.81385	.76047	.55265	.43152	.54386	.32133
#1	1.2446	.40992	5.0447	1.0130	1.0031	.99914	.51972
#2	1.2422	.40396	5.0491	1.0163	1.0100	.99207	.51688
#3	1.2210	.40446	4.9809	1.0054	1.0020	1.0027	.51680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0084**	**1.0135**	F **1.1217**
Stddev	.0038	.0054	.1803
%RSD	.38061	.53713	16.072
#1	1.0049	1.0164	1.3204
#2	1.0079	1.0168	.96854
#3	1.0125	1.0072	1.0763
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23050.**	**148840.**	**4508.3**
Stddev	81.	183.	65.4
%RSD	.35137	.12302	1.4504
#1	22957.	148730.	4467.4
#2	23088.	148740.	4473.8
#3	23104.	149050.	4583.7

Approved: April 05, 2017

Sample Name: CCB Acquired: 4/4/2017 15:49:43 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00157**	**.00081**	**.00029**	**.00046**	**-.00073**	**.00000**	**.03493**
Stddev	.00126	.00323	.00111	.00186	.00202	.00006	.01581
%RSD	80.200	396.50	377.19	407.14	276.02	1283.0	45.252
#1	-.00243	.00445	.00024	-.00106	.00021	-.00001	.05192
#2	-.00012	-.00170	.00143	-.00010	-.00305	-.00005	.03221
#3	-.00217	-.00032	-.00079	.00253	.00064	.00007	.02066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00008**	**-.00037**	**.00032**	**.00709**	**-.18048**	**-.00518**
Stddev	.00011	.00030	.00047	.00027	.04722	.18535	.00272
%RSD	44.461	357.54	128.10	85.308	665.99	102.70	52.520
#1	-.00031	.00005	-.00059	.00013	-.04739	.02901	-.00594
#2	-.00012	-.00043	.00017	.00020	.03618	-.24727	-.00216
#3	-.00032	.00013	-.00070	.00063	.03248	-.32318	-.00745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11937**	**-.00388**	**-.00008**	**.19535**	**.00166**	**.00859**	**-.00112**
Stddev	.07315	.00205	.00046	.06926	.00086	.00234	.00182
%RSD	61.283	52.860	567.95	35.455	51.985	27.291	162.42
#1	.08955	-.00598	-.00061	.21987	.00074	.00866	.00055
#2	.06584	-.00377	.00019	.24901	.00245	.01090	-.00085
#3	.20273	-.00188	.00018	.11716	.00178	.00621	-.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: CCB Acquired: 4/4/2017 15:49:43 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00269**	**-.00163**	**.00197**	**-.00011**	**.00006**	**-.00010**	**.00101**
Stddev	.00183	.00199	.00242	.00010	.00058	.01281	.00041
%RSD	67.961	121.99	123.14	92.821	1047.4	12326.	40.300
#1	-.00472	-.00130	.00417	-.00009	.00057	.00214	.00089
#2	-.00117	-.00376	.00236	-.00002	-.00057	.01143	.00146
#3	-.00219	.00017	-.00063	-.00022	.00017	-.01389	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00024**	**.00075**	F **-.28390**
Stddev	.00054	.00003	.08299
%RSD	221.29	3.5637	29.231
#1	.00086	.00072	-.36815
#2	-.00002	.00075	-.28132
#3	-.00011	.00077	-.20223
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23383.**	**153480.**	**4559.7**
Stddev	16.	493.	21.2
%RSD	.06756	.32154	.46423
#1	23365.	152940.	4583.8
#2	23394.	153910.	4551.1
#3	23391.	153590.	4544.2

Approved: April 05, 2017

Kristi K Buck

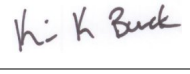
Sample Name: PBW FB Acquired: 4/4/2017 15:53:14 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00177**	**-.00241**	**.00034**	**-.00048**	**-.00143**	**-.00004**	**.04475**	**-.00009**
Stddev	.00231	.00248	.00094	.00103	.00174	.00005	.03866	.00005
%RSD	130.59	102.70	276.30	212.38	121.28	133.98	86.390	62.259
#1	.00056	-.00510	.00020	-.00091	-.00336	-.00009	.02950	-.00005
#2	-.00181	-.00021	.00134	-.00123	.00003	-.00003	.08871	-.00015
#3	-.00406	-.00194	-.00052	.00069	-.00097	.00001	.01605	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00006**	**.00155**	**-.00119**	**-.17415**	**.00021**	**.13522**	**.00279**
Stddev	.00031	.00038	.00054	.01100	.04644	.00112	.10325	.00346
%RSD	123.15	692.25	35.161	926.22	26.666	544.10	76.360	123.98
#1	-.00025	-.00039	.00142	.00294	-.18531	.00144	.03072	-.00062
#2	-.00056	.00036	.00108	.00716	-.21400	-.00075	.13777	.00630
#3	.00006	-.00013	.00214	-.01366	-.12315	-.00008	.23718	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**-.00014**	**.00152**	**-.00844**	**-.00073**	**-.00387**	**.00195**	**.00122**
Stddev	.00027	.04069	.00017	.00733	.00459	.00292	.00230	.00152
%RSD	153.74	29004.	11.015	86.811	633.46	75.362	118.34	124.59
#1	.00004	.04679	.00151	-.01409	.00390	-.00186	.00050	.00136
#2	.00049	-.02561	.00169	-.01108	-.00079	-.00254	.00460	-.00037
#3	.00000	-.02160	.00135	-.00016	-.00528	-.00722	.00074	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: PBW FB Acquired: 4/4/2017 15:53:14 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00014**	**-.00073**	**-.00238**	**-.00028**	**.00062**	**.19771**
Stddev	.00049	.00029	.00574	.00246	.00038	.00001	.42511
%RSD	89.802	203.94	788.50	103.67	139.13	2.1110	215.01
#1	-.00106	.00043	-.00159	.00042	.00009	.00062	.15483
#2	-.00049	-.00016	-.00599	-.00333	-.00024	.00062	-.20433
#3	-.00008	.00016	.00539	-.00422	-.00067	.00060	.64264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23268.**	**154070.**	**4594.7**
Stddev	98.	425.	26.7
%RSD	.42256	.27592	.58129
#1	23156.	154310.	4570.6
#2	23340.	154330.	4590.1
#3	23309.	153580.	4623.4

Approved: April 05, 2017

Kim K Buck

Sample Name: LCSW FB Acquired: 4/4/2017 15:56:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20349**	**5.2408**	**.19515**	**.95638**	**.52060**	**.02510**	**5.1458**	**.02526**
Stddev	.00183	.0190	.00101	.00189	.00353	.00003	.0536	.00022
%RSD	.90144	.36252	.51993	.19745	.67790	.11597	1.0421	.88226
#1	.20508	5.2573	.19610	.95632	.52452	.02513	5.1977	.02548
#2	.20148	5.2200	.19527	.95452	.51961	.02509	5.1491	.02503
#3	.20391	5.2452	.19408	.95830	.51767	.02508	5.0906	.02528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10236**	**.25781**	**.25417**	**2.0746**	**25.369**	**.52790**	**5.3482**	**.25712**
Stddev	.00045	.00038	.00053	.0264	.201	.00619	.0673	.00345
%RSD	.44351	.14576	.21037	1.2725	.79345	1.1727	1.2578	1.3409
#1	.10284	.25824	.25475	2.0677	25.400	.52148	5.3848	.25314
#2	.10193	.25760	.25370	2.1038	25.553	.52840	5.3893	.25910
#3	.10231	.25758	.25406	2.0524	25.154	.53383	5.2706	.25911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49916**	**26.082**	**.25788**	**4.8336**	**.25618**	**.61153**	**.19488**	**2.5426**
Stddev	.00125	.128	.00087	.0189	.00186	.00295	.00340	.0088
%RSD	.25072	.49225	.33562	.39062	.72447	.48309	1.7423	.34663
#1	.50037	26.230	.25864	4.8525	.25821	.61164	.19142	2.5523
#2	.49787	26.002	.25694	4.8148	.25458	.60852	.19820	2.5351
#3	.49924	26.015	.25805	4.8334	.25574	.61443	.19502	2.5406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: LCSW FB Acquired: 4/4/2017 15:56:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51305**	**.51922**	**.50764**	**.26033**	**.51100**	**.50766**	**.35783**
Stddev	.00107	.00260	.00107	.00075	.00217	.00127	.28156
%RSD	.20893	.50085	.21085	.28903	.42414	.24921	78.687
#1	.51415	.52117	.50803	.25952	.51327	.50850	.19460
#2	.51201	.52023	.50846	.26101	.50895	.50621	.68295
#3	.51298	.51627	.50643	.26045	.51077	.50828	.19594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23420.**	**149880.**	**4532.3**
Stddev	323.	803.	42.2
%RSD	1.3799	.53597	.93049
#1	23072.	149010.	4490.9
#2	23710.	150600.	4575.2
#3	23480.	150040.	4530.8

Approved: April 05, 2017

Kim K Buck

Sample Name: L1703166401 Acquired: 4/4/2017 16:00:10 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00102**	**.70604**	**.00653**	**.11387**	**.42987**	**.00002**	**25.688**	**.00021**
Stddev	.00064	.00053	.00086	.00104	.00161	.00001	.045	.00020
%RSD	62.822	.07470	13.162	.91557	.37557	70.615	.17465	94.269
#1	-.00151	.70665	.00678	.11449	.43157	.00003	25.645	.00044
#2	-.00127	.70570	.00723	.11267	.42968	.00001	25.735	.00010
#3	-.00029	.70578	.00557	.11447	.42836	.00001	25.685	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00087**	**.01171**	**.48263**	**.67080**	**.01574**	**4.0327**	**.14135**
Stddev	.00021	.00045	.00092	.01512	.14374	.00276	.0612	.00329
%RSD	150.16	51.573	7.8872	3.1325	21.429	17.508	1.5171	2.3277
#1	.00010	.00053	.01129	.49978	.77200	.01313	4.1019	.14499
#2	-.00027	.00070	.01107	.47123	.73413	.01547	3.9857	.13861
#3	-.00026	.00138	.01277	.47688	.50627	.01862	4.0106	.14044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00941**	**118.43**	**.00087**	**.01704**	**-.00155**	**-.00321**	**-.00091**	**4.2646**
Stddev	.00034	.32	.00057	.00130	.00074	.00248	.00389	.0084
%RSD	3.6071	.27270	64.879	7.6243	47.605	77.348	426.56	.19748
#1	.00925	118.13	.00043	.01849	-.00099	-.00216	.00348	4.2578
#2	.00980	118.77	.00069	.01668	-.00238	-.00142	-.00232	4.2619
#3	.00918	118.40	.00151	.01596	-.00126	-.00604	-.00390	4.2740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1703166401 Acquired: 4/4/2017 16:00:10 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.25986**	**.01562**	**-.00403**	**.00124**	**.00749**	**.71873**
Stddev	.00022	.00154	.00907	.00110	.00109	.00005	.19343
%RSD	19.058	.59440	58.046	27.174	87.416	.63275	26.913
#1	-.00121	.25823	.00624	-.00285	.00066	.00748	.73728
#2	-.00129	.26131	.02434	-.00424	.00058	.00754	.90223
#3	-.00088	.26004	.01628	-.00501	.00250	.00745	.51670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22913.**	**149490.**	**4640.5**
Stddev	23.	284.	40.3
%RSD	.09973	.18978	.86818
#1	22889.	149290.	4684.2
#2	22915.	149360.	4632.4
#3	22935.	149810.	4604.8

Approved: April 05, 2017

Sample Name: L1703166402 Acquired: 4/4/2017 16:03:39 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00100**	**.00624**	**.00431**	**.10684**	**.36764**	**-.00002**	**24.168**
Stddev	.00252	.00467	.00283	.00075	.00266	.00004	.046
%RSD	250.41	74.773	65.578	.69863	.72379	191.92	.19149
#1	.00184	.00091	.00703	.10619	.36837	.00002	24.165
#2	-.00190	.00959	.00139	.10667	.36469	-.00006	24.124
#3	-.00295	.00821	.00450	.10766	.36985	-.00003	24.216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00038**	**-.00021**	**.00055**	**.01257**	**.61778**	**.01057**
Stddev	.00023	.00028	.00069	.00064	.01948	.08961	.00273
%RSD	1139.4	73.726	324.49	114.75	155.06	14.505	25.801
#1	-.00024	-.00045	-.00071	.00093	.01648	.71159	.01113
#2	-.00003	-.00061	.00058	.00092	.02980	.53307	.00761
#3	.00021	-.00007	-.00051	-.00018	-.00858	.60867	.01298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.7650**	**.12499**	**.00936**	**112.14**	**.00158**	**.00383**	**-.00045**
Stddev	.0682	.00187	.00024	.18	.00028	.00132	.00082
%RSD	1.8106	1.4925	2.5841	.16094	17.851	34.592	183.02
#1	3.8051	.12675	.00948	112.13	.00151	.00533	-.00033
#2	3.6863	.12303	.00953	111.97	.00133	.00283	.00031
#3	3.8037	.12520	.00908	112.33	.00189	.00333	-.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1703166402 Acquired: 4/4/2017 16:03:39 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**-.00089**	**3.1180**	**-.00140**	**.24194**	**-.00236**	**-.00098**
Stddev	.00277	.00030	.0044	.00017	.00049	.00252	.00239
%RSD	253.91	34.329	.13989	11.945	.20316	106.74	244.97
#1	.00057	-.00091	3.1216	-.00121	.24192	-.00159	-.00250
#2	.00044	-.00057	3.1132	-.00147	.24243	-.00032	-.00221
#3	-.00429	-.00118	3.1193	-.00152	.24145	-.00517	.00178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00018**	**.00406**	F **-.12553**
Stddev	.00095	.00010	.19869
%RSD	540.92	2.3506	158.28
#1	.00112	.00396	-.31858
#2	.00019	.00415	-.13637
#3	-.00078	.00406	.07836
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23055.**	**150370.**	**4592.2**
Stddev	40.	638.	75.3
%RSD	.17328	.42423	1.6406
#1	23035.	150630.	4508.7
#2	23029.	149640.	4612.8
#3	23101.	150840.	4655.1

Approved: April 05, 2017

Sample Name: L1703166403 Acquired: 4/4/2017 16:07:07 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00076**	**.14534**	**-.00101**	**.02289**	**.04771**	**.00002**	**36.876**	**.00010**
Stddev	.00086	.00259	.00010	.00137	.00077	.00002	.264	.00004
%RSD	112.51	1.7810	10.249	5.9862	1.6156	143.42	.71551	38.557
#1	-.00130	.14258	-.00113	.02265	.04715	.00000	37.013	.00012
#2	-.00122	.14771	-.00093	.02165	.04738	.00000	36.572	.00012
#3	.00023	.14573	-.00098	.02436	.04859	.00005	37.043	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.00115**	**.00197**	**.24679**	**.76193**	**.00643**	**4.8676**	**.00052**
Stddev	.00025	.00018	.00066	.03494	.05956	.00257	.1219	.00417
%RSD	69.586	15.420	33.226	14.158	7.8174	40.005	2.5037	797.48
#1	-.00063	.00131	.00202	.27015	.79074	.00413	5.0080	-.00427
#2	-.00017	.00117	.00260	.26359	.69344	.00596	4.7901	.00325
#3	-.00026	.00096	.00130	.20662	.80161	.00921	4.8045	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**11.302**	**.00167**	**.02057**	**-.00100**	**-.00215**	**.00084**	**3.3577**
Stddev	.00021	.072	.00057	.00330	.00115	.00460	.00456	.0113
%RSD	16.103	.64000	33.883	16.031	115.61	214.25	541.74	.33511
#1	.00143	11.233	.00178	.01896	.00033	.00209	-.00373	3.3586
#2	.00104	11.377	.00106	.01838	-.00171	-.00704	.00088	3.3460
#3	.00136	11.297	.00217	.02436	-.00161	-.00149	.00538	3.3685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

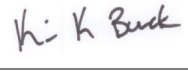
Approved: April 05, 2017

Sample Name: L1703166403 Acquired: 4/4/2017 16:07:07 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.13512**	**.00881**	**.00060**	**.00085**	**.00341**	**-.01442**
Stddev	.00090	.00082	.00218	.00388	.00047	.00009	.22824
%RSD	163.85	.60750	24.722	642.13	54.501	2.7497	1582.5
#1	-.00131	.13418	.00942	.00507	.00121	.00347	-.04993
#2	-.00080	.13550	.00639	-.00186	.00033	.00330	-.22282
#3	.00045	.13568	.01061	-.00140	.00103	.00345	.22948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23290.**	**155310.**	**4682.4**
Stddev	243.	695.	80.4
%RSD	1.0435	.44741	1.7165
#1	23441.	154530.	4667.0
#2	23010.	155880.	4769.3
#3	23419.	155510.	4610.8

Approved: April 05, 2017



Sample Name: L1703166404 Acquired: 4/4/2017 16:10:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00210**	**.00516**	**.00063**	**.02057**	**.05882**	**-.00005**	**36.737**
Stddev	.00031	.00600	.00134	.00054	.00136	.00006	.046
%RSD	14.665	116.30	213.90	2.6383	2.3205	105.65	.12458
#1	-.00195	.00528	.00127	.02104	.05766	-.00011	36.769
#2	-.00190	-.00090	.00152	.01998	.06033	-.00005	36.757
#3	-.00245	.01111	-.00091	.02071	.05848	.00000	36.684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00023**	**-.00011**	**.00248**	**.01213**	**.59554**	**.00391**
Stddev	.00004	.00020	.00060	.00057	.00395	.15988	.00971
%RSD	28.785	85.276	549.56	23.181	32.556	26.847	248.33
#1	.00020	-.00016	.00058	.00216	.00938	.48001	.00444
#2	.00015	-.00008	-.00038	.00213	.01036	.52859	-.00606
#3	.00011	-.00046	-.00053	.00314	.01666	.77801	.01335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.9385**	**.00730**	**.00074**	**11.171**	**.00055**	**.00272**	**-.00121**
Stddev	.1208	.00623	.00016	.018	.00131	.00191	.00228
%RSD	2.4457	85.324	22.326	.15937	238.52	70.232	187.90
#1	4.8707	.01410	.00056	11.187	-.00094	.00230	-.00164
#2	5.0779	.00185	.00088	11.174	.00154	.00105	.00125
#3	4.8668	.00597	.00078	11.152	.00104	.00480	-.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703166404 Acquired: 4/4/2017 16:10:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00306**	**.00170**	**3.1613**	**-.00154**	**.13582**	**-.00509**	**.00012**
Stddev	.00435	.00266	.0062	.00037	.00111	.00422	.00250
%RSD	142.40	156.79	.19750	23.879	.81772	82.935	2063.1
#1	.00151	.00426	3.1607	-.00146	.13492	-.00037	-.00239
#2	-.00716	.00189	3.1678	-.00122	.13547	-.00642	.00261
#3	-.00351	-.00105	3.1553	-.00194	.13706	-.00850	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00036**	**.00322**	F **-.11616**
Stddev	.00047	.00005	.26097
%RSD	130.72	1.4238	224.66
#1	.00090	.00327	.18224
#2	.00011	.00319	-.30172
#3	.00007	.00320	-.22901
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23179.**	**156830.**	**4671.4**
Stddev	194.	451.	19.0
%RSD	.83677	.28746	.40588
#1	23402.	156470.	4655.8
#2	23084.	156680.	4692.5
#3	23050.	157330.	4665.8

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Kristi K Buck

Sample Name: L1703166405 Acquired: 4/4/2017 16:14:05 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00154**	**.01131**	**.00036**	**.02007**	**.14518**	**.00000**	**49.913**
Stddev	.00014	.00049	.00097	.00183	.00144	.00002	.266
%RSD	9.3100	4.2906	267.76	9.1280	.99151	1968.8	.53293
#1	-.00170	.01078	.00131	.01897	.14352	-.00000	49.606
#2	-.00142	.01140	-.00063	.02218	.14597	.00002	50.079
#3	-.00149	.01174	.00040	.01904	.14606	-.00002	50.054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**-.00028**	**-.00034**	**.05028**	**.01022**	**.62446**	**.00845**
Stddev	.00005	.00027	.00100	.00048	.01432	.06503	.00341
%RSD	142.67	97.351	295.73	.95353	140.16	10.414	40.358
#1	.00000	-.00042	-.00101	.05030	.02250	.61792	.00724
#2	-.00002	-.00045	-.00081	.04979	.01367	.69251	.01229
#3	-.00009	.00003	.00081	.05074	-.00551	.56295	.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.364**	**.08947**	**.00033**	**9.0129**	**.00213**	**-.02645**	**.00414**
Stddev	.151	.00407	.00033	.0471	.00014	.00252	.00098
%RSD	1.4589	4.5493	100.47	.52198	6.4367	9.5429	23.695
#1	10.340	.08601	.00057	9.0172	.00227	-.02670	.00329
#2	10.525	.09396	.00046	9.0576	.00213	-.02884	.00393
#3	10.225	.08844	-.00005	8.9638	.00199	-.02381	.00522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

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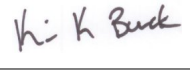


Sample Name: L1703166405 Acquired: 4/4/2017 16:14:05 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00556**	**-.00031**	**4.3757**	**-.00088**	**.43256**	**.00027**	**-.00158**
Stddev	.00192	.00324	.0044	.00033	.00159	.00271	.00075
%RSD	34.466	1031.9	.10108	37.984	.36787	986.91	47.479
#1	-.00415	-.00250	4.3764	-.00120	.43231	.00316	-.00095
#2	-.00774	.00340	4.3798	-.00053	.43427	-.00221	-.00138
#3	-.00479	-.00185	4.3710	-.00089	.43111	-.00013	-.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00059**	**.02453**	F **-.18224**
Stddev	.00027	.00018	.22460
%RSD	45.865	.73539	123.24
#1	.00090	.02440	-.37805
#2	.00042	.02445	-.23161
#3	.00044	.02474	.06294
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23561.**	**149070.**	**4624.0**
Stddev	23.	1294.	89.0
%RSD	.09705	.86777	1.9246
#1	23549.	150190.	4713.0
#2	23587.	149360.	4624.1
#3	23547.	147660.	4535.0

Approved: April 05, 2017

Sample Name: L1703166406 Acquired: 4/4/2017 16:17:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00096**	**-.00023**	**.02113**	**.13788**	**-.00000**	**49.260**
Stddev	.00027	.00333	.00079	.00189	.00046	.00004	.087
%RSD	1565.2	348.78	340.63	8.9489	.33332	4779.8	.17630
#1	.00002	-.00464	.00010	.01930	.13820	-.00003	49.341
#2	-.00030	.00185	-.00113	.02101	.13809	.00005	49.271
#3	.00023	-.00008	.00034	.02308	.13735	-.00001	49.168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**-.00044**	**.00081**	**.03688**	**-.00770**	**1.2759**	**.00554**
Stddev	.00021	.00026	.00004	.00066	.02168	.1988	.00305
%RSD	63.759	60.532	4.6777	1.7778	281.51	15.578	55.053
#1	.00024	-.00027	.00082	.03713	.01678	1.3719	.00903
#2	.00058	-.00030	.00076	.03613	-.02444	1.4085	.00423
#3	.00019	-.00074	.00083	.03737	-.01545	1.0474	.00337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.206**	**.08606**	**.00041**	**8.8875**	**.00214**	**-.00960**	**.00289**
Stddev	.032	.00351	.00041	.0473	.00052	.00390	.00024
%RSD	.31805	4.0801	97.881	.53183	24.293	40.587	8.3673
#1	10.188	.08761	.00088	8.9100	.00222	-.01009	.00273
#2	10.244	.08854	.00016	8.9193	.00262	-.00548	.00317
#3	10.187	.08204	.00021	8.8332	.00159	-.01323	.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Ki K Buck

Sample Name: L1703166406 Acquired: 4/4/2017 16:17:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00389**	**-.00221**	**4.2839**	**-.00097**	**.42233**	**-.00886**	**-.00143**
Stddev	.00312	.00402	.0234	.00040	.00202	.00454	.00476
%RSD	80.194	182.34	.54659	40.999	.47879	51.209	332.42
#1	-.00134	.00240	4.3077	-.00134	.42221	-.00719	.00289
#2	-.00737	-.00505	4.2831	-.00055	.42441	-.01399	-.00066
#3	-.00297	-.00397	4.2609	-.00102	.42037	-.00539	-.00653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00016**	**.01892**	F **-.06447**
Stddev	.00052	.00003	.35347
%RSD	326.17	.16366	548.27
#1	-.00019	.01891	-.25093
#2	.00076	.01895	-.28566
#3	-.00009	.01889	.34319
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23721.**	**156450.**	**4694.8**
Stddev	242.	1169.	9.7
%RSD	1.0210	.74721	.20710
#1	23490.	155340.	4684.6
#2	23700.	156350.	4695.8
#3	23973.	157670.	4704.0

Approved: April 05, 2017

Kristi K Buck

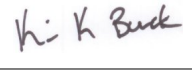
Sample Name: L1703166406PS Acquired: 4/4/2017 16:21:02 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608728-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20432**	**5.0966**	**.19599**	**.99604**	**.64538**	**.02550**	**49.298**	**.02541**
Stddev	.00148	.0085	.00118	.00225	.00132	.00007	.218	.00014
%RSD	.72417	.16739	.60411	.22616	.20407	.27806	.44310	.55995
#1	.20571	5.1061	.19502	.99705	.64636	.02553	49.048	.02530
#2	.20448	5.0940	.19731	.99346	.64388	.02542	49.397	.02557
#3	.20276	5.0897	.19564	.99761	.64589	.02555	49.449	.02535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10077**	**.25700**	**.28246**	**2.0871**	**26.743**	**.53194**	**14.153**	**.33541**
Stddev	.00019	.00107	.00168	.0223	.081	.00644	.016	.00084
%RSD	.18468	.41738	.59425	1.0679	.30386	1.2107	.11354	.24950
#1	.10055	.25817	.28053	2.0831	26.655	.53220	14.169	.33637
#2	.10088	.25605	.28325	2.0671	26.815	.52538	14.137	.33499
#3	.10087	.25680	.28360	2.1111	26.759	.53825	14.154	.33486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50062**	**33.930**	**.25493**	**4.9168**	**.25604**	**.61144**	**.19672**	**6.4130**
Stddev	.00108	.155	.00108	.0168	.00156	.00352	.00184	.0172
%RSD	.21491	.45602	.42199	.34144	.60949	.57512	.93506	.26813
#1	.49980	33.751	.25573	4.9063	.25430	.61206	.19596	6.4003
#2	.50183	34.029	.25534	4.9362	.25731	.61460	.19538	6.4326
#3	.50022	34.008	.25370	4.9080	.25652	.60765	.19882	6.4061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703166406PS Acquired: 4/4/2017 16:21:02 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608728-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51292**	**.89466**	**.51391**	**.25622**	**.51596**	**.52159**	**.42086**
Stddev	.00106	.00249	.00667	.00348	.00051	.00141	.30092
%RSD	.20583	.27799	1.2976	1.3598	.09903	.27123	71.502
#1	.51262	.89309	.51533	.25369	.51650	.52064	.70426
#2	.51410	.89753	.51975	.26019	.51548	.52322	.45326
#3	.51205	.89337	.50664	.25478	.51590	.52092	.10504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23434.**	**154190.**	**4709.3**
Stddev	153.	561.	17.0
%RSD	.65420	.36378	.36172
#1	23575.	153640.	4689.9
#2	23271.	154170.	4721.9
#3	23457.	154760.	4716.1

Approved: April 05, 2017

Kristi K Buck

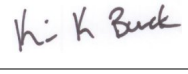
Sample Name: L1703166406SDL Acquired: 4/4/2017 16:24:26 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608728-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00208**	**-.00469**	**-.00140**	**.00748**	**.02424**	**-.00004**	**9.6712**	**.00001**
Stddev	.00046	.00176	.00146	.00160	.00084	.00002	.0188	.00007
%RSD	22.018	37.594	104.15	21.389	3.4733	60.884	.19441	568.34
#1	-.00261	-.00524	-.00021	.00929	.02460	-.00005	9.6499	-.00006
#2	-.00181	-.00611	-.00097	.00627	.02327	-.00006	9.6852	.00003
#3	-.00183	-.00272	-.00303	.00687	.02484	-.00001	9.6786	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**-.00069**	**.00803**	**.01942**	**.15307**	**-.00189**	**2.1009**	**.01881**
Stddev	.00034	.00052	.00085	.01128	.08295	.00454	.0566	.00378
%RSD	150.74	74.904	10.618	58.104	54.193	240.17	2.6949	20.083
#1	-.00055	-.00028	.00892	.01747	.07303	-.00542	2.0932	.01477
#2	.00013	-.00128	.00795	.00924	.23866	.00323	2.0485	.01942
#3	-.00026	-.00052	.00722	.03154	.14753	-.00347	2.1610	.02225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**1.7294**	**.00043**	**.00189**	**.00003**	**-.00533**	**.00075**	**.86012**
Stddev	.00017	.0182	.00059	.00419	.00107	.00362	.00313	.00370
%RSD	82.332	1.0555	138.07	222.07	3169.9	67.901	417.39	.43043
#1	.00025	1.7161	.00035	-.00217	.00051	-.00580	.00160	.85616
#2	.00002	1.7219	.00106	.00621	.00078	-.00870	-.00272	.86071
#3	.00034	1.7502	-.00012	.00162	-.00120	-.00150	.00336	.86349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703166406SDL Acquired: 4/4/2017 16:24:26 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608728-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.08268**	**.00221**	**.00242**	**.00066**	**.00443**	**-.01589**
Stddev	.00037	.00118	.01045	.00115	.00062	.00010	.37876
%RSD	3288.7	1.4217	472.74	47.630	93.709	2.2940	2384.0
#1	-.00027	.08132	.00090	.00138	.00019	.00439	-.00328
#2	.00041	.08327	.01326	.00222	.00043	.00436	.35641
#3	-.00017	.08344	-.00752	.00365	.00137	.00455	-.40079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24263.**	**159250.**	**4701.5**
Stddev	472.	213.	80.3
%RSD	1.9439	.13367	1.7082
#1	24742.	159030.	4688.2
#2	24247.	159270.	4628.6
#3	23799.	159450.	4787.6

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 16:27:55 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40817**	**10.175**	**.40007**	**.50622**	**1.0184**	**.05094**	**10.146**	**.05011**
Stddev	.00424	.032	.00114	.00297	.0037	.00024	.100	.00030
%RSD	1.0376	.31756	.28388	.58687	.36744	.46333	.98960	.58908
#1	.40595	10.168	.40136	.50478	1.0143	.05073	10.031	.05044
#2	.40551	10.147	.39961	.50423	1.0193	.05088	10.216	.04987
#3	.41305	10.210	.39923	.50963	1.0217	.05120	10.192	.05003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20156**	**.50733**	**.50197**	**4.0586**	**50.477**	**1.0387**	**10.087**	**.50186**
Stddev	.00093	.00160	.00372	.0717	.263	.0066	.134	.00912
%RSD	.46180	.31486	.74101	1.7677	.52084	.64013	1.3243	1.8165
#1	.20261	.50648	.50626	3.9932	50.286	1.0461	9.9335	.49169
#2	.20123	.50633	.50003	4.0472	50.777	1.0333	10.175	.50930
#3	.20084	.50917	.49962	4.1353	50.368	1.0367	10.153	.50458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0019**	**51.156**	**.50449**	**9.9214**	**.50528**	**1.2175**	**.40630**	**5.0070**
Stddev	.0059	.081	.00195	.0584	.00194	.0049	.00401	.0239
%RSD	.58559	.15849	.38588	.58858	.38446	.39986	.98687	.47705
#1	1.0086	51.081	.50649	9.9882	.50746	1.2231	.40847	5.0342
#2	.99921	51.147	.50260	9.8799	.50464	1.2145	.40168	4.9977
#3	.99783	51.242	.50439	9.8961	.50374	1.2148	.40876	4.9892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: April 05, 2017

Kristi K Buck

Sample Name: CCV Acquired: 4/4/2017 16:27:55 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0069**	**1.0120**	**1.0093**	**.51294**	**1.0117**	**1.0068**	**.93078**
Stddev	.0072	.0036	.0067	.00298	.0027	.0057	.33950
%RSD	.71408	.35956	.66724	.58106	.26628	.56189	36.475
#1	1.0148	1.0080	1.0035	.51628	1.0098	1.0133	1.2254
#2	1.0054	1.0130	1.0167	.51201	1.0105	1.0043	.55951
#3	1.0006	1.0151	1.0078	.51054	1.0148	1.0029	1.0074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23098.**	**150340.**	**4735.5**
Stddev	117.	642.	53.0
%RSD	.50545	.42680	1.1186
#1	23233.	150770.	4789.6
#2	23028.	150650.	4733.4
#3	23032.	149600.	4683.7

Approved: April 05, 2017

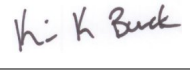
Sample Name: CCB Acquired: 4/4/2017 16:31:15 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00199**	**-.00788**	**.00060**	**.00379**	**-.00126**	**-.00004**	**.04887**
Stddev	.00061	.00210	.00124	.00200	.00142	.00004	.01195
%RSD	30.938	26.678	208.94	52.854	112.62	98.992	24.464
#1	-.00268	-.00551	-.00078	.00520	.00004	-.00004	.04605
#2	-.00151	-.00952	.00164	.00150	-.00105	-.00000	.03857
#3	-.00177	-.00860	.00093	.00466	-.00277	-.00008	.06198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.00018**	**-.00029**	**.00049**	**.02957**	**-.22626**	**-.00046**
Stddev	.00002	.00020	.00041	.00066	.01469	.05174	.00466
%RSD	14.297	113.38	142.11	134.52	49.686	22.866	1003.7
#1	-.00009	-.00029	-.00010	.00065	.03655	-.20088	-.00543
#2	-.00012	.00005	-.00000	-.00023	.01269	-.28578	.00382
#3	-.00011	-.00030	-.00076	.00107	.03948	-.19211	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17930**	**-.00118**	**-.00009**	**.26721**	**.00124**	**-.00405**	**-.00341**
Stddev	.04725	.00087	.00018	.07688	.00076	.00128	.00102
%RSD	26.354	73.795	194.28	28.773	61.320	31.661	30.012
#1	.23384	-.00120	-.00016	.34460	.00036	-.00351	-.00225
#2	.15330	-.00030	.00011	.26619	.00164	-.00552	-.00417
#3	.15075	-.00205	-.00023	.19085	.00172	-.00313	-.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: CCB Acquired: 4/4/2017 16:31:15 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00348**	**-.00051**	**.00047**	**.00027**	**.00062**	**-.00517**	**.00193**
Stddev	.00041	.00422	.00123	.00034	.00014	.00460	.00067
%RSD	11.813	820.17	264.86	125.67	22.177	89.038	34.581
#1	-.00345	-.00525	-.00084	.00031	.00050	-.00084	.00127
#2	-.00308	.00287	.00063	-.00009	.00058	-.01001	.00261
#3	-.00390	.00084	.00160	.00059	.00077	-.00466	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00016**	**.00066**	F **.13790**
Stddev	.00043	.00002	.36431
%RSD	262.65	2.6956	264.17
#1	.00037	.00067	-.24769
#2	-.00033	.00064	.18508
#3	.00046	.00067	.47632
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23904.**	**158520.**	**4783.5**
Stddev	148.	772.	9.2
%RSD	.61994	.48679	.19203
#1	23904.	158740.	4789.3
#2	23756.	159150.	4788.3
#3	24053.	157660.	4772.9

Approved: April 05, 2017

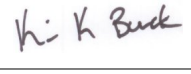
Sample Name: L1703166601 Acquired: 4/4/2017 16:34:45 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00134**	**1.4171**	**.00009**	**.01518**	**.11672**	**.00006**	**59.251**	**.00018**
Stddev	.00098	.0023	.00166	.00169	.00039	.00001	.449	.00022
%RSD	72.672	.16465	1836.6	11.137	.33632	23.340	.75794	123.40
#1	-.00022	1.4154	.00179	.01399	.11702	.00005	59.768	-.00007
#2	-.00201	1.4161	-.00153	.01443	.11627	.00008	59.019	.00026
#3	-.00179	1.4198	.00001	.01711	.11685	.00006	58.965	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00148**	**.00237**	**1.8106**	**1.0614**	**-.00188**	**9.4440**	**.14489**
Stddev	.00025	.00015	.00129	.0121	.0656	.00277	.1024	.00158
%RSD	45.771	10.148	54.554	.66915	6.1780	147.53	1.0847	1.0890
#1	.00034	.00134	.00195	1.7981	.98575	-.00447	9.5578	.14310
#2	.00083	.00146	.00382	1.8223	1.0962	.00104	9.3591	.14609
#3	.00047	.00164	.00134	1.8115	1.1022	-.00220	9.4151	.14547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**10.470**	**.00270**	**.05676**	**.00269**	**-.00352**	**-.00174**	**4.4673**
Stddev	.00038	.014	.00105	.00410	.00111	.00109	.00324	.0144
%RSD	60.403	.13830	38.934	7.2152	41.409	31.079	186.24	.32253
#1	.00021	10.477	.00388	.05348	.00359	-.00296	-.00125	4.4779
#2	.00096	10.453	.00235	.06135	.00303	-.00281	-.00520	4.4730
#3	.00073	10.479	.00187	.05546	.00144	-.00477	.00123	4.4509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

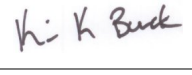


Sample Name: L1703166601 Acquired: 4/4/2017 16:34:45 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.27996**	**.00712**	**-.00153**	**.00237**	**.03715**	**.39412**
Stddev	.00060	.00115	.00785	.00046	.00051	.00042	.21170
%RSD	58.204	.41114	110.30	29.904	21.320	1.1317	53.714
#1	-.00085	.28125	.01438	-.00204	.00243	.03706	.28814
#2	-.00054	.27905	-.00121	-.00142	.00285	.03760	.25634
#3	-.00170	.27957	.00818	-.00114	.00184	.03678	.63788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23300.**	**152880.**	**4644.8**
Stddev	32.	745.	30.5
%RSD	.13713	.48752	.65680
#1	23272.	153730.	4615.1
#2	23335.	152510.	4643.0
#3	23294.	152380.	4676.1

Approved: April 05, 2017



Sample Name: L1703167601 Acquired: 4/4/2017 16:38:12 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**.93184**	**-.00031**	**.01405**	**.18829**	**.00001**	**34.942**	**.00020**
Stddev	.00213	.00691	.00065	.00024	.00150	.00005	.192	.00017
%RSD	214.85	.74106	209.47	1.7363	.79918	376.71	.54872	82.706
#1	.00035	.92494	-.00092	.01433	.18818	-.00003	34.779	.00039
#2	.00013	.93184	.00038	.01392	.18684	-.00000	34.894	.00007
#3	-.00344	.93875	-.00040	.01390	.18984	.00007	35.154	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00120**	**.00667**	**.60093**	**4.5367**	**.00809**	**2.3685**	**.00772**
Stddev	.00025	.00055	.00086	.04061	.1180	.00849	.1140	.00167
%RSD	158.11	45.616	12.863	6.7572	2.6019	104.93	4.8142	21.658
#1	-.00035	.00059	.00764	.58854	4.5193	.00491	2.2641	.00835
#2	.00012	.00166	.00603	.56796	4.4283	.00165	2.4902	.00582
#3	-.00025	.00134	.00634	.64629	4.6624	.01772	2.3513	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**3.1597**	**.00274**	**.07924**	**-.00130**	**-.00242**	**.00324**	**8.4580**
Stddev	.00029	.0335	.00054	.00306	.00132	.00083	.00149	.0248
%RSD	431.90	1.0604	19.686	3.8562	101.81	34.410	45.903	.29343
#1	-.00026	3.1886	.00334	.07968	-.00180	-.00188	.00191	8.4629
#2	.00030	3.1676	.00228	.07599	-.00229	-.00338	.00485	8.4800
#3	.00017	3.1230	.00261	.08206	.00020	-.00200	.00297	8.4311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703167601 Acquired: 4/4/2017 16:38:12 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	**.21399**	**.01410**	**-.00194**	**.00919**	**.25560**	**.57802**
Stddev	.00011	.00069	.00319	.00177	.00067	.00050	.25498
%RSD	10.351	.32290	22.643	91.227	7.2986	.19413	44.113
#1	-.00117	.21474	.01644	-.00346	.00994	.25595	.79521
#2	-.00109	.21386	.01046	-.00237	.00865	.25581	.29727
#3	-.00095	.21338	.01540	.00000	.00898	.25503	.64158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23235.**	**153500.**	**4644.1**
Stddev	95.	812.	78.3
%RSD	.40743	.52920	1.6868
#1	23330.	153950.	4613.0
#2	23235.	153990.	4733.2
#3	23141.	152560.	4586.1

Approved: April 05, 2017

Sample Name: L1703167602 Acquired: 4/4/2017 16:41:41 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00086**	**.07544**	**.00181**	**.02621**	**.27554**	**.00001**	**86.737**
Stddev	.00084	.00246	.00115	.00042	.00189	.00003	.396
%RSD	97.253	3.2647	63.456	1.5926	.68519	615.11	.45691
#1	-.00092	.07828	.00304	.02669	.27382	-.00003	86.315
#2	.00000	.07413	.00076	.02594	.27524	.00004	86.797
#3	-.00166	.07391	.00164	.02599	.27756	.00001	87.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**-.00034**	**.00415**	**.00081**	**.02606**	**2.1403**	**.02886**
Stddev	.00016	.00029	.00022	.00052	.01719	.0445	.00434
%RSD	43.331	84.867	5.3473	64.489	65.973	2.0778	15.041
#1	.00051	-.00059	.00422	.00117	.00968	2.1163	.03298
#2	.00020	-.00040	.00433	.00106	.04395	2.1916	.02433
#3	.00038	-.00003	.00390	.00021	.02454	2.1130	.02926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**15.820**	**.00260**	**.00099**	**22.378**	**.00039**	**.02918**	**.00016**
Stddev	.196	.00317	.00010	.159	.00019	.00386	.00188
%RSD	1.2417	121.90	10.443	.70972	47.511	13.241	1184.5
#1	15.681	-.00018	.00099	22.226	.00046	.03356	-.00066
#2	16.045	.00605	.00109	22.365	.00018	.02770	.00231
#3	15.735	.00193	.00088	22.542	.00054	.02627	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1703167602 Acquired: 4/4/2017 16:41:41 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00064**	**.00286**	**15.169**	**-.00117**	**1.2695**	**-.00170**	**-.00013**
Stddev	.00234	.00020	.014	.00022	.0111	.00564	.00105
%RSD	364.64	6.9820	.08915	18.489	.87183	331.65	816.45
#1	-.00278	.00299	15.168	-.00112	1.2625	.00341	-.00027
#2	-.00101	.00263	15.156	-.00141	1.2638	-.00076	-.00110
#3	.00186	.00297	15.183	-.00098	1.2823	-.00775	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01188**	**.01346**	F **-.05078**
Stddev	.00051	.00007	.13055
%RSD	4.3171	.49727	257.07
#1	.01246	.01343	.04107
#2	.01171	.01354	.00681
#3	.01147	.01341	-.20022
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23159.**	**150040.**	**4453.3**
Stddev	60.	4470.	34.9
%RSD	.25714	2.9793	.78379
#1	23212.	145070.	4463.7
#2	23095.	151330.	4414.4
#3	23171.	153720.	4481.9

Approved: April 05, 2017

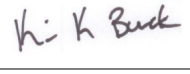
Sample Name: L1703167603 Acquired: 4/4/2017 16:45:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.71605**	**-.00003**	**.02542**	**.14012**	**.00005**	**37.971**	**.00036**
Stddev	.00146	.00542	.00212	.00033	.00047	.00002	.205	.00027
%RSD	321.24	.75717	6136.4	1.2810	.33744	37.792	.53947	74.759
#1	-.00078	.71982	-.00106	.02505	.13980	.00006	38.062	.00051
#2	.00008	.71850	-.00145	.02553	.14067	.00003	38.115	.00050
#3	.00206	.70984	.00240	.02567	.13990	.00007	37.736	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00137**	**.00759**	**.64301**	**3.9817**	**.01123**	**5.5666**	**.02982**
Stddev	.00023	.00121	.00014	.01207	.1973	.00101	.1264	.00307
%RSD	745.09	88.401	1.8125	1.8769	4.9560	8.9738	2.2701	10.304
#1	.00012	.00176	.00761	.64120	3.8582	.01225	5.5370	.03113
#2	-.00023	.00235	.00744	.65589	4.2093	.01120	5.7051	.02631
#3	.00021	.00001	.00771	.63196	3.8777	.01024	5.4576	.03201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00241**	**14.785**	**.00311**	**.04296**	**.00230**	**-.00029**	**-.00152**	**8.5349**
Stddev	.00030	.128	.00106	.00505	.00105	.00251	.00508	.0273
%RSD	12.458	.86477	34.158	11.749	45.591	871.05	333.73	.31958
#1	.00240	14.823	.00377	.04208	.00345	-.00120	-.00612	8.5052
#2	.00272	14.889	.00368	.04839	.00205	-.00221	-.00237	8.5404
#3	.00212	14.642	.00188	.03841	.00140	.00255	.00393	8.5589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

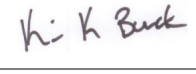


Sample Name: L1703167603 Acquired: 4/4/2017 16:45:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.64366**	**.01239**	**-.00236**	**.00646**	**1.2721**	**.46757**
Stddev	.00050	.00277	.01179	.00299	.00080	.0043	.24313
%RSD	38.483	.43024	95.128	126.32	12.315	.34162	51.998
#1	-.00090	.64467	.02562	.00069	.00625	1.2671	.33370
#2	-.00186	.64579	.00855	-.00528	.00734	1.2741	.74822
#3	-.00114	.64053	.00301	-.00250	.00579	1.2751	.32080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23073.**	**153840.**	**4675.9**
Stddev	56.	161.	44.8
%RSD	.24206	.10450	.95824
#1	23029.	153880.	4659.5
#2	23053.	153990.	4641.6
#3	23136.	153670.	4726.6

Approved: April 05, 2017



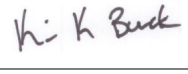
Sample Name: L1703167604 Acquired: 4/4/2017 16:48:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.51782**	**-.00026**	**.04499**	**.18407**	**.00006**	**79.637**	**.00042**
Stddev	.00170	.00769	.00154	.00103	.00147	.00002	.295	.00012
%RSD	255.90	1.4850	598.26	2.2939	.79885	34.130	.37061	29.043
#1	-.00166	.52422	-.00030	.04382	.18537	.00008	79.956	.00033
#2	-.00164	.50929	.00131	.04538	.18438	.00004	79.374	.00038
#3	.00130	.51994	-.00178	.04577	.18247	.00007	79.580	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00459**	**.00295**	**.49420**	**2.2493**	**.04790**	**20.666**	**.00870**
Stddev	.00024	.00047	.00035	.02801	.0139	.00313	.196	.00392
%RSD	178.15	10.165	11.775	5.6681	.61613	6.5297	.94902	45.028
#1	-.00032	.00485	.00311	.46274	2.2455	.04537	20.861	.00476
#2	.00014	.00405	.00319	.51643	2.2647	.04694	20.469	.01260
#3	-.00022	.00488	.00255	.50344	2.2378	.05140	20.668	.00874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**16.703**	**.00025**	**.03647**	**.00034**	**-.00259**	**-.00186**	**19.544**
Stddev	.00018	.069	.00082	.00247	.00210	.00173	.00159	.093
%RSD	12.032	.41461	333.26	6.7824	626.05	66.501	85.563	.47453
#1	.00151	16.644	-.00025	.03867	-.00141	-.00167	-.00306	19.584
#2	.00135	16.686	.00119	.03694	.00267	-.00458	-.00246	19.438
#3	.00172	16.780	-.00020	.03379	-.00025	-.00153	-.00005	19.610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703167604 Acquired: 4/4/2017 16:48:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00133**	**1.7887**	**.00163**	**-.00363**	**.01094**	**.17439**	**.38108**
Stddev	.00046	.0040	.00518	.00238	.00058	.00093	.26579
%RSD	34.919	.22219	318.22	65.496	5.2680	.53178	69.745
#1	-.00179	1.7926	-.00435	-.00361	.01161	.17511	.67922
#2	-.00086	1.7888	.00467	-.00601	.01062	.17334	.16894
#3	-.00133	1.7847	.00457	-.00126	.01060	.17471	.29509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22788.**	**149910.**	**4410.2**
Stddev	191.	1182.	15.6
%RSD	.83920	.78820	.35407
#1	22723.	150770.	4423.2
#2	22638.	150410.	4414.4
#3	23003.	148570.	4392.9

Approved: April 05, 2017

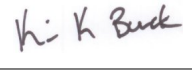
Sample Name: L1703167605MS Acquired: 4/4/2017 16:52:04 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20552**	**6.4157**	**.20044**	**1.0244**	**.70958**	**.02590**	**82.703**	**.02520**
Stddev	.00086	.0180	.00187	.0015	.00236	.00012	.439	.00014
%RSD	.41980	.28027	.93465	.15057	.33196	.44824	.53066	.55725
#1	.20545	6.3950	.19981	1.0261	.71176	.02580	82.310	.02506
#2	.20642	6.4251	.20255	1.0234	.70990	.02586	83.177	.02522
#3	.20470	6.4270	.19897	1.0235	.70708	.02603	82.622	.02534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10031**	**.26405**	**.25328**	**3.2569**	**28.262**	**.56663**	**24.855**	**.28107**
Stddev	.00032	.00135	.00197	.0327	.136	.00907	.168	.00153
%RSD	.31920	.51129	.77887	1.0042	.48012	1.5999	.67620	.54424
#1	.10054	.26249	.25216	3.2513	28.315	.56417	24.768	.28216
#2	.09994	.26480	.25213	3.2920	28.362	.57667	25.049	.28173
#3	.10044	.26485	.25556	3.2273	28.107	.55904	24.749	.27932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49949**	**41.704**	**.25213**	**4.9808**	**.25567**	**.60732**	**.19005**	**23.665**
Stddev	.00178	.157	.00099	.0152	.00080	.00505	.00315	.072
%RSD	.35665	.37693	.39358	.30452	.31461	.83211	1.6593	.30252
#1	.50044	41.602	.25267	4.9846	.25630	.60506	.18850	23.697
#2	.49743	41.885	.25098	4.9641	.25593	.60380	.18796	23.583
#3	.50059	41.625	.25273	4.9937	.25476	.61311	.19367	23.715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703167605MS Acquired: 4/4/2017 16:52:04 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50974**	**2.2338**	**.52852**	**.25398**	**.52837**	**.56416**	**2.7014**
Stddev	.00248	.0077	.00715	.00235	.00205	.00150	.3303
%RSD	.48630	.34559	1.3529	.92640	.38819	.26666	12.227
#1	.50934	2.2351	.52864	.25532	.52808	.56420	2.3201
#2	.50749	2.2408	.53561	.25126	.52649	.56263	2.8894
#3	.51240	2.2255	.52131	.25535	.53056	.56564	2.8948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22871.**	**148490.**	**4487.5**
Stddev	186.	1440.	56.9
%RSD	.81133	.96953	1.2673
#1	22928.	146850.	4537.5
#2	23021.	149120.	4499.4
#3	22663.	149520.	4425.6

Approved: April 05, 2017

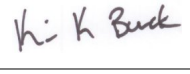
Sample Name: L1703167606MSD Acquired: 4/4/2017 16:55:29 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20567**	**5.8318**	**.19868**	**1.0308**	**.71305**	**.02590**	**84.076**	**.02520**
Stddev	.00163	.0096	.00222	.0042	.00209	.00004	.107	.00024
%RSD	.79410	.16423	1.1190	.40330	.29291	.16186	.12728	.94170
#1	.20414	5.8372	.20065	1.0354	.71255	.02595	84.097	.02511
#2	.20739	5.8374	.19912	1.0274	.71125	.02590	84.171	.02503
#3	.20548	5.8207	.19627	1.0295	.71534	.02586	83.960	.02547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10044**	**.26396**	**.25297**	**2.8802**	**28.659**	**.57639**	**25.028**	**.27022**
Stddev	.00050	.00077	.00054	.0262	.214	.00679	.185	.00246
%RSD	.49885	.29353	.21212	.91091	.74518	1.1772	.73754	.90978
#1	.10014	.26428	.25350	2.8522	28.444	.58301	24.815	.27260
#2	.10102	.26452	.25297	2.8843	28.871	.57670	25.129	.27036
#3	.10017	.26308	.25243	2.9042	28.661	.56945	25.140	.26769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50052**	**42.281**	**.25046**	**4.9781**	**.25275**	**.61088**	**.19390**	**22.474**
Stddev	.00169	.054	.00080	.0141	.00131	.00360	.00218	.063
%RSD	.33759	.12698	.31748	.28220	.51869	.58869	1.1268	.28026
#1	.50206	42.251	.25134	4.9874	.25171	.60943	.19309	22.496
#2	.50079	42.343	.24979	4.9850	.25422	.61498	.19224	22.524
#3	.49871	42.249	.25026	4.9620	.25232	.60824	.19638	22.403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703167606MSD Acquired: 4/4/2017 16:55:29 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608524-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50931	2.2751	.53252	.25346	.52683	.54569	1.5974
Stddev	.00245	.0032	.00737	.00301	.00145	.00157	.1527
%RSD	.48120	.14068	1.3834	1.1866	.27505	.28807	9.5594
#1	.51033	2.2720	.53291	.25073	.52573	.54614	1.6450
#2	.51109	2.2784	.53969	.25668	.52847	.54699	1.7206
#3	.50651	2.2749	.52497	.25297	.52630	.54394	1.4266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	22251.	148300.	4597.5
Stddev	95.	590.	49.3
%RSD	.42544	.39814	1.0722
#1	22344.	148520.	4555.3
#2	22155.	148740.	4651.7
#3	22255.	147630.	4585.4

Approved: April 05, 2017

Sample Name: L1703168901 Acquired: 4/4/2017 16:58:52 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00093**	**.37000**	**.00126**	**.07413**	**.68039**	**.00048**	**66.012**
Stddev	.00145	.00189	.00077	.00218	.00305	.00003	.358
%RSD	156.38	.51178	61.148	2.9411	.44858	6.6912	.54174
#1	-.00218	.37146	.00089	.07665	.67694	.00049	65.847
#2	-.00126	.36786	.00215	.07290	.68275	.00050	66.422
#3	.00066	.37069	.00075	.07285	.68147	.00044	65.767
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00135**	**.02144**	**.03397**	**.01630**	**9.9437**	**1.4928**	**.02450**
Stddev	.00019	.00013	.00057	.00074	.0498	.0709	.00721
%RSD	14.384	.62402	1.6667	4.5324	.50092	4.7507	29.435
#1	.00146	.02146	.03459	.01654	9.8862	1.4116	.01969
#2	.00113	.02157	.03348	.01548	9.9738	1.5245	.03280
#3	.00148	.02130	.03386	.01690	9.9710	1.5424	.02103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**43.669**	**1.1917**	**.00487**	F **399.18**	**.03918**	**.32683**	**.00116**
Stddev	.278	.0106	.00061	1.99	.00024	.00362	.00036
%RSD	.63759	.88806	12.520	.49838	.60195	1.1089	31.056
#1	43.610	1.1844	.00496	397.44	.03904	.32871	.00147
#2	43.971	1.2039	.00423	401.35	.03945	.32914	.00124
#3	43.424	1.1870	.00544	398.76	.03903	.32266	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703168901 Acquired: 4/4/2017 16:58:52 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00169**	**-.00079**	**17.856**	**-.00185**	**1.3134**	**-.00015**	**.00204**
Stddev	.00218	.00296	.042	.00021	.0077	.00653	.00201
%RSD	128.83	376.63	.23618	11.565	.58502	4482.1	98.393
#1	-.00356	.00037	17.870	-.00203	1.3056	.00333	.00180
#2	.00070	-.00415	17.809	-.00161	1.3210	.00391	.00416
#3	-.00220	.00142	17.889	-.00191	1.3135	-.00768	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00293**	**.52043**	F **-.60567**
Stddev	.00052	.00064	.12256
%RSD	17.635	.12251	20.236
#1	.00233	.52109	-.46624
#2	.00323	.51981	-.69637
#3	.00323	.52038	-.65442
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22246.**	**144250.**	**4577.1**
Stddev	188.	699.	16.5
%RSD	.84625	.48487	.35987
#1	22295.	144100.	4576.4
#2	22038.	143630.	4561.0
#3	22404.	145010.	4593.9

Approved: April 05, 2017

Sample Name: L1703169001 Acquired: 4/4/2017 17:02:18 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00264**	**.04226**	**-.00060**	**.10295**	**.15795**	**-.00001**	**26.960**
Stddev	.00140	.00467	.00163	.00313	.00088	.00005	.100
%RSD	52.947	11.062	272.99	3.0367	.55397	679.27	.37223
#1	-.00405	.04468	-.00032	.10656	.15819	.00003	27.001
#2	-.00125	.03687	.00088	.10110	.15698	-.00006	27.033
#3	-.00263	.04522	-.00235	.10119	.15868	.00001	26.845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00342**	**.00631**	**.00158**	**.54543**	**4.2913**	**.02297**
Stddev	.00025	.00041	.00128	.00160	.01796	.1386	.00601
%RSD	103.29	11.929	20.286	101.34	3.2925	3.2289	26.173
#1	-.00004	.00319	.00527	.00041	.56493	4.1439	.01735
#2	.00033	.00318	.00592	.00092	.54178	4.3111	.02932
#3	.00044	.00389	.00774	.00341	.52958	4.4189	.02225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**23.125**	**.09451**	**.00236**	F **1522.0**	**.01217**	**3.5508**	**-.00135**
Stddev	.135	.00385	.00015	16.8	.00109	.0102	.00204
%RSD	.58327	4.0686	6.2201	1.1017	8.9411	.28654	151.94
#1	23.276	.09442	.00240	1541.0	.01092	3.5512	.00101
#2	23.082	.09071	.00249	1516.0	.01292	3.5404	-.00260
#3	23.017	.09840	.00220	1509.1	.01266	3.5608	-.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: April 05, 2017

Ki K Buck

Sample Name: L1703169001 Acquired: 4/4/2017 17:02:18 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00325**	**.00004**	**7.8685**	**-.00258**	**1.4227**	**-.00216**	**-.00138**
Stddev	.00421	.00292	.0305	.00031	.0058	.00509	.00354
%RSD	129.61	7971.6	.38752	12.016	.40830	235.13	256.63
#1	-.00181	-.00246	7.8680	-.00224	1.4248	.00245	.00001
#2	-.00799	.00325	7.8383	-.00263	1.4272	-.00132	-.00540
#3	.00005	-.00068	7.8992	-.00285	1.4161	-.00762	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00085**	**.06230**	F **-.51776**
Stddev	.00051	.00042	.13316
%RSD	60.267	.67523	25.718
#1	.00070	.06251	-.36952
#2	.00142	.06182	-.62724
#3	.00043	.06257	-.55652
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21286.**	**134410.**	**4535.9**
Stddev	273.	1039.	18.9
%RSD	1.2835	.77288	.41579
#1	20988.	135280.	4520.0
#2	21523.	134680.	4556.8
#3	21348.	133260.	4531.0

Approved: April 05, 2017

Kristi K Buck

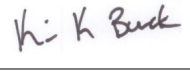
Sample Name: L1703169901 Acquired: 4/4/2017 17:05:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00116**	**.06719**	**-.00156**	**.00844**	**.07330**	**-.00008**	**1.1048**	**.00021**
Stddev	.00042	.00267	.00089	.00069	.00091	.00002	.0142	.00023
%RSD	36.168	3.9698	57.119	8.1202	1.2417	25.078	1.2887	110.00
#1	-.00069	.07006	-.00225	.00814	.07428	-.00011	1.1127	.00046
#2	-.00128	.06671	-.00187	.00922	.07313	-.00006	1.0884	.00013
#3	-.00150	.06480	-.00055	.00795	.07248	-.00009	1.1134	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00133**	**.08201**	**.54105**	**-.11466**	**.00986**	**.18509**	**.00746**
Stddev	.00011	.00040	.00054	.02058	.09873	.00291	.02893	.00182
%RSD	18.693	29.803	.65994	3.8033	86.107	29.492	15.632	24.351
#1	-.00066	.00150	.08164	.51900	-.00290	.00693	.20178	.00956
#2	-.00063	.00088	.08263	.54442	-.19004	.01274	.15168	.00633
#3	-.00046	.00162	.08177	.55974	-.15105	.00990	.20181	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00152**	**.97023**	**.00611**	**.40983**	**.01043**	**-.00395**	**.00061**	**.05751**
Stddev	.00036	.07377	.00045	.00719	.00110	.00436	.00161	.00064
%RSD	23.950	7.6034	7.3584	1.7550	10.514	110.24	264.95	1.1102
#1	.00133	1.0544	.00559	.41718	.01044	.00065	-.00039	.05724
#2	.00194	.93948	.00637	.40281	.01152	-.00449	.00247	.05706
#3	.00129	.91680	.00637	.40949	.00933	-.00802	-.00025	.05824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703169901 Acquired: 4/4/2017 17:05:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00376**	**.00202**	**.00550**	**-.00150**	**.00175**	**4.2047**	**.19653**
Stddev	.00025	.00060	.01380	.00184	.00033	.0026	.09341
%RSD	6.7523	29.691	251.14	122.14	19.095	.06272	47.530
#1	.00405	.00261	.01894	-.00059	.00137	4.2077	.17419
#2	.00357	.00204	-.00864	-.00030	.00195	4.2027	.11632
#3	.00367	.00141	.00619	-.00362	.00195	4.2037	.29908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**25100.**	**165230.**	**4920.9**
Stddev	47.	817.	9.5
%RSD	.18745	.49431	.19343
#1	25123.	166160.	4927.4
#2	25131.	164860.	4925.3
#3	25046.	164660.	4910.0

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 17:09:27 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40459**	**10.067**	**.39779**	**.49938**	**1.0186**	**.05024**	**10.187**
Stddev	.00142	.022	.00407	.00214	.0021	.00010	.028
%RSD	.35034	.21450	1.0230	.42898	.20666	.18999	.27667
#1	.40622	10.090	.39501	.49796	1.0164	.05035	10.155
#2	.40372	10.047	.39590	.49834	1.0188	.05017	10.198
#3	.40382	10.063	.40246	.50185	1.0205	.05021	10.208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05047**	**.20179**	**.50043**	**.50170**	**4.0311**	**50.898**	**1.0414**
Stddev	.00025	.00125	.00293	.00219	.0176	.214	.0079
%RSD	.50099	.61719	.58630	.43743	.43666	.42040	.76182
#1	.05020	.20036	.50381	.49944	4.0134	50.751	1.0323
#2	.05051	.20263	.49848	.50184	4.0486	50.800	1.0455
#3	.05070	.20238	.49901	.50383	4.0311	51.143	1.0465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9270**	**.50282**	**1.0012**	**51.624**	**.50513**	**9.9261**	**.50389**
Stddev	.1050	.00461	.0037	.184	.00336	.0307	.00319
%RSD	1.0572	.91612	.36992	.35664	.66432	.30968	.63325
#1	9.8076	.50165	.99698	51.477	.50128	9.8934	.50234
#2	10.005	.49891	1.0031	51.565	.50665	9.9304	.50178
#3	9.9690	.50789	1.0037	51.830	.50746	9.9545	.50756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 17:09:27 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2168**	**.40567**	**5.0182**	**1.0058**	**1.0085**	**1.0143**	**.51543**
Stddev	.0058	.00133	.0233	.0044	.0015	.0069	.00148
%RSD	.47326	.32712	.46423	.44134	.14556	.68012	.28718
#1	1.2102	.40413	4.9934	1.0014	1.0069	1.0122	.51511
#2	1.2193	.40647	5.0216	1.0058	1.0089	1.0220	.51414
#3	1.2208	.40640	5.0396	1.0103	1.0098	1.0086	.51704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99902**	**1.0059**	F **.80018**
Stddev	.00223	.0050	.23924
%RSD	.22273	.49965	29.898
#1	1.0015	1.0003	.81522
#2	.99835	1.0074	.55378
#3	.99721	1.0101	1.0315
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23572.**	**154870.**	**4768.9**
Stddev	125.	468.	20.9
%RSD	.52902	.30208	.43898
#1	23689.	154490.	4762.7
#2	23586.	155390.	4751.7
#3	23441.	154740.	4792.2

Approved: April 05, 2017

Kristi K Buck

Sample Name: CCB Acquired: 4/4/2017 17:12:47 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**-.00107**	**.00009**	**.00334**	**-.00041**	**-.00004**	**-.00602**
Stddev	.00091	.00275	.00283	.00028	.00134	.00000	.02294
%RSD	74.886	257.69	3143.4	8.3313	326.01	8.3832	381.03
#1	-.00019	-.00066	.00333	.00346	.00101	-.00004	-.03192
#2	-.00193	.00146	-.00185	.00354	-.00164	-.00005	.01172
#3	-.00154	-.00400	-.00121	.00302	-.00060	-.00004	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00028**	**.00001**	**.00172**	**-.01563**	**-.26766**	**.00023**
Stddev	.00005	.00029	.00012	.00050	.02692	.02852	.00110
%RSD	41.437	105.39	830.64	29.082	172.22	10.656	488.33
#1	-.00015	-.00058	-.00001	.00163	-.04498	-.23913	.00012
#2	-.00017	.00001	-.00009	.00227	-.00983	-.26767	-.00082
#3	-.00007	-.00026	.00015	.00128	.00791	-.29618	.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11649**	**-.00059**	**.00019**	**.33548**	**.00170**	**.00212**	**-.00230**
Stddev	.09010	.00448	.00024	.07902	.00101	.00505	.00350
%RSD	77.344	762.36	126.00	23.555	59.053	238.70	152.03
#1	.02946	-.00066	.00040	.42572	.00199	-.00094	-.00262
#2	.20937	.00393	.00023	.27869	.00254	.00795	.00134
#3	.11065	-.00503	-.00007	.30202	.00059	-.00066	-.00563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: CCB Acquired: 4/4/2017 17:12:47 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00623**	**.00082**	**.00058**	**.00029**	**.00059**	**-.00953**	**-.00059**
Stddev	.00242	.00108	.00045	.00034	.00050	.00958	.00209
%RSD	38.901	131.44	77.691	117.81	85.394	100.55	354.96
#1	-.00834	.00116	.00106	.00007	.00026	-.00540	-.00277
#2	-.00358	-.00039	.00054	.00012	.00034	-.02048	-.00041
#3	-.00676	.00170	.00016	.00068	.00117	-.00270	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00078**	**.00071**	F **-.04661**
Stddev	.00026	.00009	.39330
%RSD	33.231	12.002	843.81
#1	.00050	.00062	-.08033
#2	.00081	.00074	.36246
#3	.00102	.00078	-.42196
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24023.**	**155960.**	**4547.2**
Stddev	134.	3152.	76.8
%RSD	.55902	2.0212	1.6891
#1	24171.	152410.	4563.2
#2	23987.	157070.	4463.6
#3	23910.	158410.	4614.7

Approved: April 05, 2017

Sample Name: L1704000101 Acquired: 4/4/2017 17:16:18 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.05629**	**.00099**	**.01771**	**.02304**	**.00002**	**47.810**
Stddev	.00145	.00191	.00476	.00127	.00119	.00001	.052
%RSD	212.47	3.3888	479.21	7.1746	5.1581	21.022	.10896
#1	-.00122	.05409	.00603	.01745	.02318	.00002	47.752
#2	.00096	.05749	.00038	.01909	.02178	.00002	47.853
#3	-.00179	.05729	-.00343	.01659	.02415	.00003	47.825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00043**	**.00047**	**.00858**	**.07507**	**.87923**	**.00280**
Stddev	.00008	.00012	.00093	.00091	.01165	.13440	.00527
%RSD	793.63	27.572	200.07	10.559	15.523	15.286	188.14
#1	.00002	-.00042	.00154	.00947	.08131	1.0344	.00888
#2	-.00007	-.00031	-.00006	.00863	.08229	.80402	-.00010
#3	.00009	-.00055	-.00009	.00766	.06163	.79928	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6397**	**-.00039**	**.00140**	**4.2593**	**.00186**	**.00050**	**.00195**
Stddev	.0437	.00469	.00030	.0554	.00039	.00136	.00151
%RSD	.45313	1200.1	21.237	1.3019	20.973	271.36	77.478
#1	9.6144	.00385	.00108	4.1959	.00141	.00097	.00071
#2	9.6901	-.00543	.00166	4.2828	.00214	.00157	.00363
#3	9.6146	.00041	.00145	4.2991	.00202	-.00103	.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1704000101 Acquired: 4/4/2017 17:16:18 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00436**	**.00206**	**3.2198**	**-.00085**	**.19597**	**-.00022**	**-.00268**
Stddev	.00347	.00379	.0126	.00049	.00070	.00364	.00298
%RSD	79.557	183.64	.39058	57.349	.35888	1656.8	111.22
#1	-.00040	.00592	3.2121	-.00054	.19598	-.00014	.00031
#2	-.00581	-.00165	3.2343	-.00141	.19666	.00338	-.00565
#3	-.00688	.00192	3.2129	-.00059	.19526	-.00390	-.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00014**	**.00527**	F **-.34696**
Stddev	.00074	.00009	.16067
%RSD	522.65	1.6510	46.307
#1	.00041	.00532	-.30640
#2	.00071	.00532	-.52402
#3	-.00069	.00516	-.21046
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23067.**	**152090.**	**4551.2**
Stddev	135.	367.	14.8
%RSD	.58627	.24110	.32521
#1	22975.	152410.	4541.1
#2	23223.	151690.	4544.2
#3	23004.	152170.	4568.2

Approved: April 05, 2017

Sample Name: L1704001901 Acquired: 4/4/2017 17:19:45 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**1.1714**	**-.00227**	**.01051**	**.02718**	**.00014**	**8.4361**	**.00036**
Stddev	.00053	.0020	.00032	.00169	.00164	.00003	.0617	.00006
%RSD	1258.7	.17003	13.919	16.064	6.0192	20.493	.73129	17.273
#1	.00036	1.1735	-.00252	.00862	.02638	.00012	8.4771	.00041
#2	.00016	1.1695	-.00237	.01106	.02907	.00014	8.4660	.00029
#3	-.00065	1.1711	-.00191	.01186	.02611	.00017	8.3651	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00339**	**.00310**	**.02249**	**1.8773**	**2.7210**	**.02698**	**2.0730**	**.13629**
Stddev	.00032	.00082	.00084	.0622	.0944	.00487	.0890	.00360
%RSD	9.5055	26.348	3.7225	3.3109	3.4675	18.047	4.2913	2.6402
#1	.00373	.00404	.02297	1.8192	2.7475	.02212	2.1747	.13410
#2	.00309	.00272	.02153	1.9429	2.7993	.02697	2.0093	.13432
#3	.00335	.00254	.02298	1.8698	2.6162	.03185	2.0351	.14044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00060**	**5.8642**	**.00585**	**.06718**	**.00086**	**-.00175**	**.00148**	**6.2876**
Stddev	.00025	.0257	.00103	.00214	.00200	.00142	.00475	.0187
%RSD	41.948	.43757	17.660	3.1856	232.15	80.962	320.90	.29754
#1	.00069	5.8677	.00703	.06583	-.00015	-.00242	.00533	6.3063
#2	.00032	5.8880	.00511	.06607	-.00043	-.00012	-.00383	6.2875
#3	.00079	5.8370	.00541	.06965	.00317	-.00271	.00294	6.2689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704001901 Acquired: 4/4/2017 17:19:45 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03568**	**.02257**	**.02481**	**-.00114**	**.00354**	**.04681**	**.60452**
Stddev	.00044	.00055	.00635	.00337	.00061	.00009	.10187
%RSD	1.2250	2.4396	25.604	295.43	17.206	.19468	16.852
#1	.03605	.02202	.02344	.00081	.00323	.04674	.68967
#2	.03579	.02256	.03173	-.00504	.00424	.04691	.49166
#3	.03519	.02312	.01925	.00080	.00314	.04678	.63221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24477.**	**162190.**	**4675.7**
Stddev	59.	254.	51.4
%RSD	.23939	.15646	1.1000
#1	24410.	162400.	4681.4
#2	24506.	162260.	4724.0
#3	24516.	161910.	4621.6

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704001902 Acquired: 4/4/2017 17:23:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**.23450**	**-.00188**	**1.3252**	**.09493**	**.00025**	**20.977**	**.00028**
Stddev	.00160	.00839	.00035	.0034	.00057	.00005	.135	.00029
%RSD	139.32	3.5788	18.710	.25333	.59546	18.904	.64228	105.94
#1	.00070	.24403	-.00226	1.3282	.09496	.00022	20.951	.00032
#2	-.00204	.23126	-.00181	1.3259	.09435	.00024	21.123	-.00004
#3	-.00211	.22822	-.00156	1.3216	.09548	.00031	20.857	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06976**	**.00072**	**.00427**	**.18630**	**6.3834**	**.02483**	**3.1715**	**1.8255**
Stddev	.00045	.00016	.00113	.00350	.0998	.00632	.1194	.0236
%RSD	.65068	22.116	26.352	1.8790	1.5635	25.439	3.7633	1.2902
#1	.07009	.00056	.00474	.18696	6.3226	.02585	3.0521	1.8137
#2	.06996	.00073	.00509	.18252	6.4986	.01807	3.1715	1.8526
#3	.06925	.00088	.00299	.18942	6.3290	.03058	3.2908	1.8102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**27.817**	**.00991**	**-.00487**	**-.00033**	**-.00359**	**.00192**	**5.9508**
Stddev	.00009	.142	.00097	.00348	.00238	.00147	.00417	.0078
%RSD	47.912	.51027	9.7881	71.483	733.09	40.986	217.92	.13158
#1	-.00025	27.791	.00955	-.00303	-.00274	-.00509	.00438	5.9599
#2	-.00024	27.971	.00916	-.00888	-.00027	-.00214	.00427	5.9466
#3	-.00008	27.690	.01100	-.00270	.00203	-.00355	-.00290	5.9460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704001902 Acquired: 4/4/2017 17:23:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00812**	**.05015**	**.00097**	**.00153**	**.00054**	**.01431**	**.30251**
Stddev	.00035	.00104	.00401	.00180	.00062	.00017	.52636
%RSD	4.3664	2.0795	411.55	117.79	113.29	1.2165	174.00
#1	.00772	.05031	.00263	.00300	.00038	.01418	.02695
#2	.00840	.05111	.00389	.00207	.00123	.01425	-.02886
#3	.00823	.04904	-.00360	-.00048	.00003	.01451	.90945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23553.**	**151630.**	**4589.4**
Stddev	109.	2099.	74.5
%RSD	.46179	1.3841	1.6229
#1	23679.	150820.	4503.4
#2	23494.	150050.	4631.9
#3	23487.	154010.	4632.8

Approved: April 05, 2017

Sample Name: L1704002001 Acquired: 4/4/2017 17:26:44 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.14712**	**.00153**	**.01890**	**.19965**	**.00000**	**42.020**	**.00028**
Stddev	.00074	.00758	.00070	.00037	.00208	.00001	.121	.00023
%RSD	127.80	5.1535	45.799	1.9505	1.0429	284.48	.28901	82.746
#1	.00021	.15296	.00075	.01933	.20003	.00001	42.159	.00012
#2	-.00127	.14984	.00210	.01871	.20152	-.00001	41.960	.00018
#3	-.00069	.13855	.00174	.01867	.19741	.00001	41.940	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00085**	**.03179**	**1.1947**	**.71594**	**.00013**	**8.3957**	**.72568**
Stddev	.00008	.00075	.00173	.0223	.01854	.00363	.0300	.00198
%RSD	27.569	88.372	5.4510	1.8687	2.5895	2758.1	.35727	.27217
#1	-.00031	-.00001	.03315	1.1894	.73321	.00371	8.4036	.72622
#2	-.00035	.00122	.03239	1.1754	.71826	.00022	8.3625	.72733
#3	-.00020	.00135	.02984	1.2191	.69635	-.00354	8.4209	.72349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**6.6212**	**.00045**	**.01936**	**.00192**	**-.00351**	**-.00025**	**6.5000**
Stddev	.00016	.0327	.00084	.00109	.00077	.00350	.00193	.0144
%RSD	391.30	.49376	187.08	5.6355	40.159	99.580	764.67	.22111
#1	.00021	6.6589	-.00051	.01947	.00253	-.00612	.00164	6.4856
#2	.00002	6.6039	.00104	.02039	.00217	-.00487	-.00223	6.5001
#3	-.00010	6.6009	.00083	.01822	.00105	.00046	-.00017	6.5144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704002001 Acquired: 4/4/2017 17:26:44 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00075**	**.22886**	**.00120**	**-.00070**	**.00069**	**.00368**	**.05157**
Stddev	.00058	.00059	.00606	.00186	.00021	.00004	.28523
%RSD	77.693	.25627	503.14	266.65	29.838	1.1168	553.06
#1	-.00074	.22942	-.00561	.00126	.00051	.00370	.01827
#2	-.00018	.22890	.00325	-.00244	.00091	.00371	-.21554
#3	-.00134	.22825	.00598	-.00091	.00064	.00363	.35199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23181.**	**155690.**	**4521.3**
Stddev	133.	1507.	26.0
%RSD	.57444	.96766	.57484
#1	23288.	154480.	4491.3
#2	23222.	155220.	4535.4
#3	23032.	157380.	4537.2

Approved: April 05, 2017

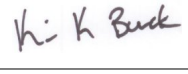
Sample Name: L1704002101 Acquired: 4/4/2017 17:30:11 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.06102**	**.00100**	**.00852**	**.03948**	**-.00001**	**53.472**
Stddev	.00052	.00243	.00218	.00032	.00082	.00001	.200
%RSD	65.776	3.9883	218.53	3.7926	2.0862	129.45	.37384
#1	-.00135	.06312	.00322	.00833	.03853	.00001	53.577
#2	-.00067	.06158	-.00113	.00833	.03985	-.00002	53.598
#3	-.00034	.05835	.00090	.00889	.04005	-.00002	53.242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00019**	**.00039**	**.00200**	**.05966**	**.35983**	**.00422**
Stddev	.00014	.00016	.00031	.00067	.02050	.06777	.00425
%RSD	98.000	85.826	79.851	33.411	34.362	18.833	100.76
#1	.00028	-.00002	.00074	.00188	.08332	.28203	.00144
#2	.00000	-.00020	.00031	.00271	.04714	.40602	.00211
#3	.00014	-.00035	.00013	.00139	.04852	.39143	.00912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.8822**	**.00883**	**.00064**	**1.9269**	**.00035**	**.02514**	**.00012**
Stddev	.0998	.00056	.00028	.0119	.00042	.00213	.00176
%RSD	1.6969	6.3865	43.881	.61725	120.42	8.4636	1528.6
#1	5.8865	.00830	.00062	1.9326	.00026	.02378	.00077
#2	5.9798	.00942	.00094	1.9132	.00081	.02404	.00146
#3	5.7803	.00877	.00037	1.9349	-.00002	.02759	-.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: L1704002101 Acquired: 4/4/2017 17:30:11 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00489**	**.00065**	**3.0319**	**-.00127**	**.11007**	**.00381**	**-.00072**
Stddev	.00143	.00248	.0058	.00039	.00013	.00417	.00080
%RSD	29.179	379.52	.19000	30.243	.11434	109.56	111.16
#1	-.00568	.00093	3.0267	-.00126	.10997	.00672	-.00079
#2	-.00324	-.00195	3.0310	-.00167	.11021	-.00097	.00011
#3	-.00574	.00298	3.0381	-.00090	.11003	.00567	-.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00061**	**.01522**	F **-.06927**
Stddev	.00034	.00004	.06473
%RSD	56.513	.28935	93.439
#1	.00085	.01518	-.12941
#2	.00076	.01521	-.07763
#3	.00021	.01527	-.00077
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23438.**	**155080.**	**4558.8**
Stddev	129.	459.	68.6
%RSD	.55164	.29605	1.5047
#1	23583.	155370.	4618.4
#2	23397.	154550.	4574.2
#3	23334.	155330.	4483.8

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704002103 Acquired: 4/4/2017 17:33:38 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.49899**	**.00081**	**.01261**	**.03903**	**.00006**	**39.826**	**.00028**
Stddev	.00238	.00357	.00061	.00043	.00123	.00004	.058	.00014
%RSD	160.98	.71470	75.309	3.4029	3.1497	70.326	.14454	50.602
#1	.00119	.49935	.00150	.01268	.04000	.00001	39.810	.00018
#2	-.00222	.49526	.00063	.01300	.03765	.00008	39.778	.00045
#3	-.00341	.50236	.00031	.01215	.03945	.00008	39.890	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00041**	**.00281**	**.40311**	**.83357**	**-.00227**	**7.6391**	**.00991**
Stddev	.00010	.00038	.00108	.03827	.09021	.00477	.1366	.00472
%RSD	135.64	91.066	38.258	9.4930	10.822	210.13	1.7880	47.645
#1	-.00018	-.00001	.00183	.42353	.93771	-.00424	7.6042	.01009
#2	.00003	.00071	.00264	.42683	.78337	-.00573	7.7897	.00510
#3	-.00009	.00053	.00396	.35896	.77963	.00317	7.5233	.01453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	**2.6532**	**.00233**	**.02092**	**.00045**	**-.00330**	**-.00104**	**3.4976**
Stddev	.00017	.0173	.00136	.00236	.00218	.00360	.00145	.0186
%RSD	28.286	.65336	58.451	11.304	485.37	108.92	139.59	.53097
#1	.00068	2.6724	.00184	.02126	-.00189	-.00743	-.00270	3.4890
#2	.00073	2.6485	.00128	.01840	.00083	-.00167	-.00025	3.4849
#3	.00041	2.6387	.00386	.02310	.00241	-.00081	-.00015	3.5189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704002103 Acquired: 4/4/2017 17:33:38 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.15489**	**.00704**	**-.00246**	**.00074**	**.00228**	**.10813**
Stddev	.00023	.00159	.00673	.00128	.00108	.00016	.07068
%RSD	33.747	1.0240	95.639	51.893	145.14	7.0637	65.368
#1	-.00064	.15602	.01154	-.00135	.00094	.00246	.04205
#2	-.00092	.15308	.01027	-.00217	.00170	.00220	.09969
#3	-.00047	.15558	-.00070	-.00385	-.00042	.00217	.18266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23292.**	**151790.**	**4531.4**
Stddev	92.	613.	44.9
%RSD	.39677	.40405	.99034
#1	23308.	151840.	4479.6
#2	23375.	151160.	4556.9
#3	23192.	152380.	4557.6

Approved: April 05, 2017

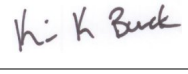
Sample Name: PBW R5 Acquired: 4/4/2017 17:37:06 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608366-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**-.00281**	**.00062**	**.00151**	**-.00145**	**-.00004**	**.00660**
Stddev	.00186	.00257	.00095	.00171	.00166	.00003	.04122
%RSD	510.16	91.567	153.42	113.73	114.22	72.449	624.90
#1	.00154	-.00552	.00172	.00259	-.00010	-.00003	.05286
#2	-.00046	-.00042	.00009	.00240	-.00095	-.00008	-.02619
#3	-.00218	-.00248	.00006	-.00047	-.00330	-.00003	-.00688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**-.00029**	**-.00025**	**.00100**	**.01303**	**-.16744**	**.00053**
Stddev	.00003	.00025	.00039	.00025	.02848	.21508	.00345
%RSD	18.836	87.194	160.45	25.432	218.57	128.45	652.93
#1	-.00012	-.00046	.00016	.00125	.04392	.07495	-.00122
#2	-.00018	.00000	-.00027	.00101	.00736	-.24179	.00451
#3	-.00016	-.00042	-.00063	.00074	-.01219	-.33549	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11074**	**-.00179**	**-.00007**	**.03046**	**.00113**	**.00378**	**.00110**
Stddev	.08635	.00093	.00039	.03286	.00016	.00148	.00285
%RSD	77.975	51.744	601.51	107.91	13.951	39.219	258.84
#1	.05706	-.00151	-.00018	-.00268	.00106	.00549	-.00205
#2	.21034	-.00104	.00037	.06305	.00101	.00299	.00187
#3	.06481	-.00282	-.00039	.03100	.00131	.00286	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: PBW R5 Acquired: 4/4/2017 17:37:06 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608366-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00296**	**-.00105**	**.00247**	**-.00083**	**.00001**	**.00611**	**.00242**
Stddev	.00300	.00261	.00222	.00035	.00033	.00554	.00125
%RSD	101.26	249.89	89.883	42.688	2395.9	90.595	51.835
#1	-.00394	-.00010	.00046	-.00064	.00025	.01250	.00314
#2	.00041	-.00400	.00486	-.00123	-.00037	.00312	.00315
#3	-.00535	.00096	.00210	-.00060	.00016	.00272	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00037**	**.00077**	F **-.09772**
Stddev	.00036	.00003	.16951
%RSD	97.019	3.4385	173.46
#1	-.00065	.00074	-.25193
#2	.00003	.00080	-.12502
#3	-.00048	.00077	.08378
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24671.**	**163660.**	**4730.4**
Stddev	129.	475.	153.2
%RSD	.52404	.29037	3.2396
#1	24769.	164200.	4553.4
#2	24525.	163380.	4818.5
#3	24719.	163380.	4819.2

Approved: April 05, 2017

Sample Name: LCSW R5 Acquired: 4/4/2017 17:40:37 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608366-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20402**	**5.2313**	**.19640**	**.98983**	**.49930**	**.02450**	**4.9459**	**.02494**
Stddev	.00217	.0040	.00210	.00148	.00102	.00005	.0378	.00030
%RSD	1.0654	.07625	1.0706	.14904	.20481	.19878	.76363	1.1870
#1	.20202	5.2268	.19876	.98822	.49831	.02455	4.9072	.02508
#2	.20370	5.2345	.19471	.99017	.49924	.02446	4.9827	.02514
#3	.20633	5.2326	.19574	.99111	.50035	.02447	4.9477	.02460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09918**	**.24644**	**.24928**	**1.9622**	**25.092**	**.50918**	**5.0533**	**.24727**
Stddev	.00057	.00057	.00203	.0084	.029	.00321	.1162	.00299
%RSD	.57481	.23045	.81261	.42741	.11572	.63013	2.2992	1.2087
#1	.09983	.24582	.25047	1.9569	25.063	.50738	4.9194	.24982
#2	.09880	.24659	.25043	1.9578	25.121	.50728	5.1137	.24398
#3	.09890	.24692	.24694	1.9718	25.093	.51289	5.1269	.24800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47705**	**25.470**	**.25014**	**4.8967**	**.25233**	**.61493**	**.20286**	**2.5154**
Stddev	.00206	.112	.00178	.0258	.00308	.00684	.00490	.0138
%RSD	.43173	.44080	.71161	.52671	1.2218	1.1129	2.4147	.55053
#1	.47931	25.343	.25219	4.9219	.25568	.61977	.20754	2.5303
#2	.47655	25.556	.24903	4.8977	.24961	.61792	.20326	2.5130
#3	.47529	25.512	.24920	4.8704	.25169	.60710	.19777	2.5030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: LCSW R5 Acquired: 4/4/2017 17:40:37 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608366-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49730**	**.49737**	**.49368**	**.25982**	**.49126**	**.49744**	**.99780**
Stddev	.00379	.00235	.00515	.00226	.00108	.00238	.35732
%RSD	.76165	.47318	1.0430	.86835	.21932	.47854	35.811
#1	.50115	.49469	.49214	.26172	.49170	.49987	1.3858
#2	.49716	.49913	.49942	.26042	.49003	.49733	.68226
#3	.49358	.49829	.48947	.25733	.49205	.49511	.92534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24265.**	**159190.**	**4809.6**
Stddev	280.	880.	21.0
%RSD	1.1556	.55283	.43765
#1	24190.	158380.	4830.2
#2	24031.	159050.	4810.5
#3	24576.	160130.	4788.1

Approved: April 05, 2017

Kristi K Burck

Sample Name: L1703051301 Acquired: 4/4/2017 17:44:02 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00292**	**.00693**	**.00327**	F **45.350**	**-.00177**	**-.00004**	**.01988**
Stddev	.00107	.00707	.00211	.365	.00071	.00007	.02865
%RSD	36.610	101.98	64.501	.80510	39.967	196.99	144.11
#1	-.00184	.01449	.00571	45.771	-.00145	.00004	-.00399
#2	-.00398	.00582	.00211	45.162	-.00129	-.00005	.05165
#3	-.00293	.00049	.00199	45.117	-.00259	-.00009	.01197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				45.000			
Low Limit				-.10000			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**-.00016**	**-.00029**	**.00140**	**.00604**	**32.529**	**-.00392**
Stddev	.00035	.00016	.00089	.00077	.02965	.310	.00180
%RSD	73.238	99.850	304.12	55.056	490.74	.95319	45.923
#1	-.00022	-.00009	-.00124	.00224	-.02534	32.827	-.00380
#2	-.00088	-.00005	.00053	.00072	.03359	32.551	-.00578
#3	-.00033	-.00035	-.00017	.00124	.00987	32.208	-.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.14321**	**-.00282**	**.00028**	**228.84**	**.00061**	**.00759**	**.00306**
Stddev	.08904	.00265	.00033	1.02	.00022	.00513	.00042
%RSD	62.172	93.930	119.25	.44767	35.636	67.555	13.670
#1	.20495	-.00272	-.00008	230.02	.00057	.01151	.00266
#2	.04115	-.00023	.00057	228.21	.00085	.00947	.00350
#3	.18354	-.00552	.00035	228.28	.00042	.00179	.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1703051301 Acquired: 4/4/2017 17:44:02 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00278**	**-.00724**	**.00338**	**-.00060**	**.00020**	**.00133**	**.00332**
Stddev	.00154	.00616	.00099	.00016	.00026	.00972	.00032
%RSD	55.260	85.148	29.169	26.063	130.42	728.52	9.5826
#1	-.00434	-.00104	.00229	-.00043	-.00009	-.00467	.00346
#2	-.00274	-.00730	.00365	-.00073	.00029	-.00387	.00355
#3	-.00127	-.01337	.00421	-.00064	.00041	.01254	.00296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00028**	**.00092**	**-.03784**
Stddev	.00034	.00003	.19987
%RSD	120.06	3.6660	528.21
#1	.00067	.00096	.17143
#2	.00008	.00091	-.22676
#3	.00009	.00090	-.05819
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23661.**	**151820.**	**4694.3**
Stddev	21.	4141.	47.8
%RSD	.08777	2.7273	1.0177
#1	23662.	147050.	4714.3
#2	23640.	154030.	4728.8
#3	23682.	154400.	4639.8

Approved: April 05, 2017

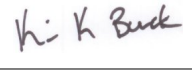
Sample Name: L1703051301 Acquired: 4/4/2017 17:47:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608563-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.00372**	**.00375**	**9.0681**	**-.00102**	**-.00001**	**-.01677**	**-.00037**
Stddev	.00126	.00513	.00092	.0333	.00112	.00006	.03101	.00011
%RSD	236.69	137.81	24.628	.36713	109.66	379.26	184.91	30.067
#1	-.00126	.00252	.00349	9.0582	-.00001	.00005	-.00843	-.00045
#2	.00092	-.00070	.00477	9.0408	-.00222	-.00006	.00922	-.00041
#3	-.00125	.00934	.00298	9.1052	-.00083	-.00003	-.05110	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**-.00085**	**.00039**	**-.00813**	**6.2755**	**-.00315**	**.18024**	**.00212**
Stddev	.00004	.00069	.00046	.00382	.1457	.00410	.07708	.00299
%RSD	13.101	81.586	117.48	47.022	2.3223	130.38	42.763	140.73
#1	-.00026	-.00145	.00078	-.01200	6.3514	-.00324	.14122	.00165
#2	-.00025	-.00009	.00051	-.00804	6.3676	.00100	.26902	.00532
#3	-.00032	-.00100	-.00012	-.00436	6.1075	-.00720	.13047	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**46.560**	**-.00014**	**.00604**	**-.00210**	**-.00631**	**-.00269**	**-.00194**
Stddev	.00014	.044	.00050	.00240	.00312	.00307	.00150	.00067
%RSD	147.14	.09449	355.39	39.703	148.38	48.743	55.949	34.732
#1	.00002	46.598	-.00071	.00477	-.00333	-.00625	-.00101	-.00211
#2	-.00005	46.569	.00006	.00881	.00144	-.00326	-.00392	-.00119
#3	-.00026	46.512	.00023	.00455	-.00443	-.00941	-.00314	-.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703051301 Acquired: 4/4/2017 17:47:34 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608563-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**.00034**	**.00495**	**.00475**	**.00043**	**.00056**	**.24550**
Stddev	.00041	.00022	.01488	.00198	.00059	.00005	.14907
%RSD	41.907	64.872	300.70	41.660	134.95	8.2656	60.719
#1	-.00051	.00055	.02135	.00265	.00111	.00061	.23633
#2	-.00117	.00037	.00119	.00502	.00013	.00055	.39895
#3	-.00126	.00011	-.00769	.00658	.00006	.00052	.10124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23190.**	**156810.**	**4848.7**
Stddev	157.	3791.	72.8
%RSD	.67756	2.4174	1.5018
#1	23116.	160160.	4767.5
#2	23371.	157590.	4870.2
#3	23084.	152690.	4908.3

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 17:51:05 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40920**	**10.179**	**.40296**	F **.61217**	**1.0182**	**.05064**	**10.228**
Stddev	.00259	.067	.00112	.02714	.0026	.00013	.049
%RSD	.63199	.65847	.27786	4.4333	.25960	.25249	.48046
#1	.40686	10.110	.40268	.59487	1.0161	.05051	10.183
#2	.40876	10.182	.40200	.59820	1.0173	.05076	10.280
#3	.41197	10.244	.40419	.64345	1.0212	.05067	10.221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				.50000			
Range				10.000%			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05073**	**.20339**	**.50388**	**.50527**	**3.9996**	**51.194**	**1.0437**
Stddev	.00037	.00133	.00050	.00141	.0256	.478	.0135
%RSD	.73234	.65163	.09925	.27818	.63999	.93279	1.2940
#1	.05106	.20491	.50393	.50689	4.0163	50.723	1.0285
#2	.05079	.20246	.50435	.50434	4.0123	51.180	1.0482
#3	.05033	.20281	.50335	.50458	3.9701	51.678	1.0544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.096**	**.50610**	**1.0101**	**51.658**	**.50701**	**10.027**	**.50839**
Stddev	.008	.00087	.0031	.272	.00182	.047	.00298
%RSD	.07955	.17223	.30288	.52600	.35815	.47042	.58651
#1	10.087	.50564	1.0137	51.386	.50842	10.078	.51121
#2	10.098	.50710	1.0084	51.657	.50496	9.9849	.50527
#3	10.103	.50556	1.0083	51.930	.50766	10.018	.50870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 17:51:05 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2324**	**.40569**	**5.0583**	**1.0151**	**1.0118**	**1.0124**	**.51582**
Stddev	.0046	.00125	.0212	.0036	.0013	.0026	.00273
%RSD	.37646	.30882	.41824	.35163	.13046	.25348	.52923
#1	1.2376	.40709	5.0810	1.0191	1.0104	1.0134	.51797
#2	1.2310	.40466	5.0391	1.0137	1.0120	1.0143	.51673
#3	1.2287	.40534	5.0548	1.0124	1.0130	1.0094	.51275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0069**	**1.0161**	F **.89234**
Stddev	.0028	.0035	.17300
%RSD	.27905	.34171	19.387
#1	1.0037	1.0201	.71439
#2	1.0080	1.0147	1.0599
#3	1.0090	1.0136	.90269
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22557.**	**150620.**	**4722.5**
Stddev	283.	2847.	59.3
%RSD	1.2535	1.8900	1.2565
#1	22249.	153340.	4781.6
#2	22617.	150840.	4722.8
#3	22805.	147660.	4662.9

Approved: April 05, 2017

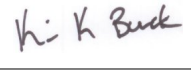
Sample Name: CCB Acquired: 4/4/2017 17:54:25 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00110**	**-.00630**	**-.00103**	**.05147**	**-.00067**	**.00000**	**-.01695**	**-.00013**
Stddev	.00211	.00204	.00036	.00303	.00200	.00003	.04172	.00013
%RSD	191.15	32.407	35.358	5.8775	299.79	1257.3	246.09	98.939
#1	.00076	-.00820	-.00065	.05418	.00149	.00002	.02330	-.00016
#2	-.00068	-.00414	-.00105	.05203	-.00103	.00003	-.01415	-.00024
#3	-.00339	-.00656	-.00138	.04821	-.00247	-.00004	-.06001	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**-.00026**	**.00067**	**.00546**	**.00929**	**.00223**	**.19100**	**-.00294**
Stddev	.00016	.00070	.00023	.01978	.07035	.00510	.07502	.00131
%RSD	162.96	274.01	34.499	362.00	757.58	229.03	39.277	44.652
#1	-.00025	.00055	.00060	-.01343	-.00594	-.00099	.12138	-.00243
#2	-.00011	-.00056	.00048	.00379	-.05220	.00811	.18118	-.00196
#3	.00007	-.00076	.00093	.02603	.08600	-.00044	.27045	-.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.31969**	**.00103**	**-.00395**	**-.00063**	**-.00235**	**-.00136**	**.00290**
Stddev	.00038	.01522	.00042	.00180	.00211	.00299	.00095	.00326
%RSD	391.45	4.7608	40.987	45.414	335.22	127.12	69.564	112.45
#1	-.00032	.33366	.00149	-.00490	-.00277	-.00480	-.00243	.00663
#2	.00034	.30347	.00066	-.00188	-.00055	.00098	-.00102	.00146
#3	-.00031	.32195	.00094	-.00508	.00144	-.00323	-.00064	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: CCB Acquired: 4/4/2017 17:54:25 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00026**	**-.00338**	**.00123**	**.00024**	**.00070**	**.00901**
Stddev	.00023	.00041	.00331	.00130	.00079	.00006	.23337
%RSD	60.774	159.92	97.894	105.78	334.77	8.5807	2589.6
#1	.00045	-.00003	-.00627	.00236	-.00067	.00076	.05186
#2	.00012	.00073	-.00410	.00151	.00078	.00070	.21798
#3	.00057	.00007	.00023	-.00019	.00060	.00064	-.24281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23008.**	**154670.**	**4619.1**
Stddev	127.	396.	44.2
%RSD	.55156	.25611	.95596
#1	22947.	155110.	4646.4
#2	22923.	154350.	4642.7
#3	23154.	154540.	4568.1

Approved: April 05, 2017

Kim K Buck

Sample Name: PBW A4 Acquired: 4/4/2017 17:57:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.00239**	**-.00061**	**.03117**	**-.00082**	**-.00001**	**.00204**
Stddev	.00146	.00300	.00065	.00215	.00014	.00005	.00761
%RSD	99.025	125.25	107.50	6.9070	16.811	475.81	373.79
#1	-.00036	.00573	-.00131	.03348	-.00094	-.00003	.01014
#2	-.00314	.00151	-.00049	.02921	-.00084	.00005	.00091
#3	-.00094	-.00006	-.00002	.03083	-.00067	-.00005	-.00495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00041**	**.00003**	**.00119**	F **-.02401**	**.15359**	**-.00248**
Stddev	.00032	.00027	.00057	.00127	.01954	.11718	.00207
%RSD	166.27	67.133	1933.5	106.62	81.359	76.289	83.517
#1	-.00018	-.00056	-.00058	.00138	-.01316	.05346	-.00136
#2	.00037	-.00009	.00013	-.00016	-.01231	.28247	-.00121
#3	.00039	-.00058	.00054	.00237	-.04657	.12486	-.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.14339**	F **-.00327**	**.00037**	**.10595**	**.00140**	**-.01189**	**-.00163**
Stddev	.03937	.00189	.00012	.06308	.00023	.00228	.00309
%RSD	27.456	57.793	32.271	59.536	16.173	19.196	189.99
#1	.14922	-.00109	.00023	.07053	.00155	-.01237	-.00342
#2	.10143	-.00448	.00042	.17878	.00114	-.01389	.00194
#3	.17951	-.00424	.00045	.06855	.00150	-.00941	-.00340
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: April 05, 2017

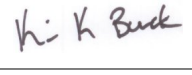
Sample Name: PBW A4 Acquired: 4/4/2017 17:57:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00628**	**.00146**	**.00257**	**-.00028**	**.00058**	**.00237**	**-.00215**
Stddev	.00081	.00175	.00178	.00026	.00024	.00377	.00009
%RSD	12.967	120.01	69.341	90.699	41.524	159.02	4.1912
#1	-.00722	.00165	.00460	.00001	.00048	-.00194	-.00221
#2	-.00593	.00311	.00182	-.00038	.00086	.00506	-.00204
#3	-.00571	-.00038	.00129	-.00048	.00041	.00400	-.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00080**	**.00085**	**.08286**
Stddev	.00070	.00011	.28194
%RSD	86.890	12.476	340.27
#1	.00022	.00081	-.10211
#2	.00062	.00097	-.05668
#3	.00158	.00076	.40736
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23432.**	**155780.**	**4566.7**
Stddev	50.	266.	18.8
%RSD	.21417	.17104	.41153
#1	23376.	155470.	4575.1
#2	23446.	155910.	4545.2
#3	23473.	155950.	4579.9

Approved: April 05, 2017



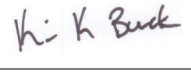
Sample Name: LCSW A4 Acquired: 4/4/2017 18:01:26 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20304**	**5.2074**	**.19479**	**.98284**	**.52287**	**.02479**	**5.1515**	**.02465**
Stddev	.00300	.0139	.00382	.00541	.00220	.00012	.0557	.00011
%RSD	1.4779	.26671	1.9621	.55053	.42117	.48283	1.0809	.44481
#1	.20604	5.2232	.19145	.98448	.52464	.02482	5.1796	.02472
#2	.20305	5.2018	.19396	.97679	.52041	.02466	5.0873	.02453
#3	.20004	5.1972	.19895	.98723	.52357	.02489	5.1875	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10164**	**.25415**	**.25371**	**2.0725**	**25.887**	**.52986**	**5.1877**	**.25984**
Stddev	.00022	.00035	.00094	.0350	.139	.00208	.1480	.00283
%RSD	.21450	.13696	.36881	1.6875	.53661	.39249	2.8523	1.0895
#1	.10160	.25419	.25473	2.0948	25.869	.53075	5.2553	.26004
#2	.10145	.25447	.25289	2.0906	25.758	.52749	5.2898	.25692
#3	.10188	.25378	.25352	2.0322	26.034	.53135	5.0180	.26257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49551**	**26.332**	**.25608**	**4.8145**	**.25572**	**.60380**	**.19171**	**2.5458**
Stddev	.00084	.132	.00014	.0156	.00224	.00157	.00063	.0055
%RSD	.17016	.49982	.05541	.32424	.87423	.26032	.32738	.21748
#1	.49489	26.445	.25603	4.7968	.25339	.60300	.19104	2.5409
#2	.49518	26.188	.25624	4.8204	.25785	.60279	.19183	2.5518
#3	.49647	26.365	.25597	4.8263	.25592	.60561	.19228	2.5448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LCSW A4 Acquired: 4/4/2017 18:01:26 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51036**	**.51831**	**.51406**	**.25948**	**.50727**	**.50436**	**.40146**
Stddev	.00035	.00068	.00581	.00327	.00188	.00025	.24693
%RSD	.06815	.13028	1.1307	1.2585	.37100	.05012	61.507
#1	.50998	.51764	.51484	.25646	.50867	.50434	.11877
#2	.51067	.51831	.51945	.25904	.50513	.50463	.57503
#3	.51043	.51899	.50790	.26294	.50801	.50412	.51057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23197.**	**148890.**	**4458.8**
Stddev	6.	3331.	42.7
%RSD	.02701	2.2374	.95845
#1	23198.	146260.	4446.6
#2	23203.	147770.	4506.3
#3	23191.	152630.	4423.5

Approved: April 05, 2017

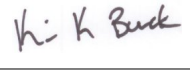
Sample Name: FBLK1 Acquired: 4/4/2017 18:04:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608511-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00185**	**.01175**	**.00070**	**.02194**	**-.00086**	**-.00002**	**.03675**	**-.00014**
Stddev	.00199	.00418	.00148	.00187	.00219	.00002	.03985	.00009
%RSD	107.69	35.555	212.25	8.5103	253.34	93.097	108.44	65.411
#1	-.00320	.01244	-.00077	.02394	-.00277	-.00001	.02405	-.00020
#2	-.00278	.01553	.00068	.02164	.00153	-.00004	.08140	-.00003
#3	.00044	.00726	.00219	.02025	-.00134	-.00001	.00480	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**-.00033**	**.00083**	**-.01696**	**.10438**	**-.00064**	**.11081**	**.00092**
Stddev	.00014	.00092	.00122	.03565	.12500	.00705	.07007	.00130
%RSD	43.192	279.86	146.48	210.21	119.76	1099.9	63.230	141.50
#1	-.00048	.00038	.00208	-.05698	.22161	-.00397	.17405	-.00027
#2	-.00027	-.00137	.00076	-.00529	-.02716	-.00541	.03549	.00230
#3	-.00021	.00000	-.00035	.01139	.11869	.00745	.12289	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**143.62**	**.00056**	**-.00277**	**-.00174**	**-.00456**	**.00211**	**.00051**
Stddev	.00029	.68	.00053	.00471	.00087	.00277	.00321	.00096
%RSD	269.67	.47034	95.643	170.35	50.124	60.665	151.87	189.76
#1	.00003	144.40	.00062	.00258	-.00257	-.00766	-.00123	-.00026
#2	-.00044	143.26	.00106	-.00631	-.00181	-.00368	.00517	.00020
#3	.00009	143.20	-.00000	-.00458	-.00083	-.00234	.00239	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: FBLK1 Acquired: 4/4/2017 18:04:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608511-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.00097**	**-.00002**	**-.00111**	**.00009**	**.00310**	**.01766**
Stddev	.00050	.00066	.00453	.00137	.00007	.00007	.14928
%RSD	33.748	68.560	26392.	123.32	79.712	2.1085	845.39
#1	-.00116	.00162	.00519	-.00241	.00017	.00304	-.15436
#2	-.00123	.00098	-.00217	-.00127	.00004	.00308	.11322
#3	-.00206	.00030	-.00307	.00033	.00006	.00317	.09412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22847.**	**149400.**	**4497.7**
Stddev	49.	2692.	61.7
%RSD	.21411	1.8021	1.3724
#1	22902.	146310.	4536.3
#2	22833.	150590.	4530.3
#3	22807.	151290.	4426.5

Approved: April 05, 2017
Kim K Buck

Sample Name: FBLK2 Acquired: 4/4/2017 18:08:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608511-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00154**	**.00654**	**-.00081**	**.01423**	**-.00040**	**-.00002**	**.02089**
Stddev	.00044	.00269	.00105	.00114	.00071	.00002	.01284
%RSD	28.679	41.155	130.24	8.0024	177.79	86.976	61.446
#1	-.00171	.00453	-.00194	.01442	-.00014	-.00003	.02000
#2	-.00104	.00549	.00014	.01526	.00014	-.00003	.00852
#3	-.00187	.00959	-.00062	.01301	-.00120	.00000	.03415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00042**	**.00033**	**.00101**	**-.00017**	**-.12082**	**.00176**
Stddev	.00026	.00021	.00095	.00058	.02045	.11990	.00398
%RSD	67463.	50.065	286.08	57.324	12049.	99.236	225.77
#1	-.00007	-.00054	.00129	.00088	.02317	-.24233	.00181
#2	.00029	-.00018	-.00062	.00051	-.00868	-.11753	.00571
#3	-.00021	-.00055	.00033	.00165	-.01499	-.00260	-.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18576**	**.00069**	**.00019**	**.16228**	**.00117**	**-.00972**	**-.00171**
Stddev	.02662	.00476	.00040	.02793	.00025	.00357	.00356
%RSD	14.331	690.04	213.10	17.211	21.307	36.783	207.78
#1	.18188	-.00236	-.00024	.13296	.00117	-.00804	-.00075
#2	.21411	-.00174	.00055	.16532	.00142	-.00730	.00126
#3	.16129	.00617	.00025	.18857	.00092	-.01382	-.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: FBLK2 Acquired: 4/4/2017 18:08:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608511-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00224**	**.00175**	**.00345**	**-.00021**	**-.00063**	**-.00307**	**-.00268**
Stddev	.00205	.00728	.00142	.00050	.00056	.01256	.00094
%RSD	91.678	416.36	41.139	234.05	88.334	409.57	35.210
#1	-.00175	.00726	.00507	.00006	-.00013	-.01129	-.00270
#2	-.00449	-.00650	.00280	-.00079	-.00052	-.00931	-.00172
#3	-.00048	.00449	.00247	.00009	-.00124	.01139	-.00361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00059**	**.00283**	F **-.06319**
Stddev	.00059	.00006	.34924
%RSD	100.63	2.0176	552.67
#1	.00022	.00289	-.36521
#2	.00027	.00282	-.14361
#3	.00128	.00278	.31924
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23353.**	**154770.**	**4599.8**
Stddev	102.	137.	62.7
%RSD	.43570	.08864	1.3634
#1	23318.	154930.	4563.2
#2	23273.	154660.	4672.2
#3	23468.	154730.	4564.0

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703166001 Acquired: 4/4/2017 18:11:53 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01129**	**.03847**	**-.00045**	**.02939**	**-.00231**	**-.00004**	**.27339**	**.00001**
Stddev	.00013	.00387	.00037	.00065	.00043	.00003	.07290	.00018
%RSD	1.1256	10.066	82.735	2.2028	18.458	67.945	26.663	1354.6
#1	.01141	.03578	-.00086	.02953	-.00194	-.00005	.32467	-.00010
#2	.01116	.04290	-.00034	.02997	-.00277	-.00001	.18995	.00022
#3	.01128	.03671	-.00014	.02869	-.00221	-.00006	.30556	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00045**	**.00108**	**-.00712**	**.01691**	**-.00224**	**.26975**	**.00075**
Stddev	.00001	.00060	.00035	.01962	.01902	.00923	.09484	.00097
%RSD	28.852	132.56	31.989	275.49	112.51	412.53	35.157	129.37
#1	-.00005	-.00108	.00121	.00349	.01240	.00600	.36718	-.00030
#2	-.00003	-.00040	.00134	.00491	.00054	-.00050	.17773	.00162
#3	-.00005	.00012	.00069	-.02977	.03777	-.01221	.26435	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**146.53**	**.00175**	**.37550**	**.00003**	**-.00151**	**-.00260**	**.03602**
Stddev	.00033	.16	.00069	.00629	.00039	.00410	.00252	.00453
%RSD	365.97	.10840	39.581	1.6752	1232.7	271.52	96.986	12.585
#1	-.00047	146.61	.00103	.37463	.00048	-.00167	-.00390	.03452
#2	.00010	146.63	.00242	.36969	-.00024	.00267	-.00419	.03242
#3	.00010	146.35	.00180	.38218	-.00015	-.00552	.00031	.04111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1703166001 Acquired: 4/4/2017 18:11:53 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**.00042**	**.00094**	**-.00147**	**-.00020**	**.00387**	**.09272**
Stddev	.00040	.00035	.00417	.00107	.00114	.00007	.07449
%RSD	37.310	84.843	444.68	72.889	561.89	1.8028	80.334
#1	-.00136	.00081	.00301	-.00076	-.00024	.00381	.08650
#2	-.00127	.00032	.00366	-.00095	.00096	.00387	.02154
#3	-.00062	.00013	-.00386	-.00271	-.00132	.00395	.17013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23156.**	**153500.**	**4725.8**
Stddev	57.	197.	25.0
%RSD	.24688	.12855	.52867
#1	23199.	153620.	4700.7
#2	23179.	153600.	4750.6
#3	23091.	153270.	4725.9

Approved: April 05, 2017

Sample Name: L1704001601 Acquired: 4/4/2017 18:15:24 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**7.7485**	**.00452**	**.02270**	**.51753**	**.00006**	F **659.42**
Stddev	.00094	.0167	.00093	.00150	.00430	.00002	1.74
%RSD	82.810	.21497	20.511	6.5974	.83055	42.599	.26330
#1	-.00205	7.7441	.00559	.02326	.52248	.00006	660.32
#2	-.00017	7.7670	.00406	.02101	.51537	.00008	657.42
#3	-.00118	7.7345	.00392	.02385	.51473	.00003	660.53
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00004**	**.00059**	**.01016**	F **-.02306**	**297.21**	**.00762**
Stddev	.00011	.00026	.00047	.00058	.05154	1.29	.00597
%RSD	17.034	661.42	79.389	5.7190	223.50	.43429	78.364
#1	.00063	.00028	.00006	.01083	-.07163	297.91	.00257
#2	.00057	-.00024	.00097	.00977	-.02855	295.72	.01421
#3	.00079	.00008	.00075	.00988	.03100	298.01	.00607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18433**	**.00196**	**.00968**	F **334.37**	**-.00080**	**.05321**	**.00001**
Stddev	.08043	.00057	.00059	.84	.00046	.00319	.00269
%RSD	43.632	28.946	6.1454	.24997	57.219	6.0002	49635.
#1	.14777	.00155	.00989	334.79	-.00029	.05057	.00257
#2	.27654	.00261	.00901	333.41	-.00118	.05231	.00025
#3	.12867	.00172	.01015	334.91	-.00094	.05676	-.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: April 05, 2017

Sample Name: L1704001601 Acquired: 4/4/2017 18:15:24 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00401**	**.13470**	**-.00237**	**.60737**	F **-.05891**	**-.00533**
Stddev	.00241	.00122	.00106	.00022	.00477	.01011	.00190
%RSD	603.93	30.309	.78470	9.2538	.78556	17.170	35.691
#1	.00305	.00541	.13350	-.00211	.61258	-.06732	-.00333
#2	-.00165	.00341	.13549	-.00249	.60321	-.04768	-.00712
#3	-.00020	.00321	.13512	-.00250	.60633	-.06172	-.00555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00020**	**.00240**	F **-.51858**
Stddev	.00038	.00007	.19486
%RSD	190.25	3.0379	37.576
#1	-.00017	.00248	-.73861
#2	.00018	.00234	-.36781
#3	.00058	.00238	-.44932
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21157.**	**141450.**	**4615.4**
Stddev	179.	139.	60.6
%RSD	.84830	.09813	1.3123
#1	21080.	141360.	4557.3
#2	21029.	141380.	4678.1
#3	21362.	141610.	4610.8

Approved: April 05, 2017

Sample Name: L1704001601MS Acquired: 4/4/2017 18:18:53 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20412**	**12.135**	**.20732**	**.99527**	**1.0260**	**.02571**	F **662.58**
Stddev	.00157	.046	.00114	.00616	.0032	.00021	1.59
%RSD	.77157	.37839	.55090	.61893	.30692	.82133	.23927
#1	.20381	12.122	.20801	.99542	1.0231	.02561	661.42
#2	.20273	12.097	.20600	.98903	1.0256	.02557	664.39
#3	.20583	12.186	.20796	1.0013	1.0293	.02596	661.94
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02571**	**.09729**	**.24886**	**.25433**	**1.9406**	**322.02**	**.54130**
Stddev	.00017	.00047	.00136	.00266	.0237	.93	.00863
%RSD	.67627	.48037	.54647	1.0464	1.2228	.29024	1.5939
#1	.02560	.09761	.24886	.25712	1.9533	320.99	.54345
#2	.02591	.09676	.24750	.25406	1.9132	322.82	.54866
#3	.02562	.09751	.25022	.25182	1.9552	322.25	.53181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.8878**	**.24297**	**.50484**	F **357.99**	**.24352**	**5.1571**	**.24229**
Stddev	.1036	.00178	.00187	1.01	.00130	.0202	.00263
%RSD	2.1189	.73389	.37065	.28272	.53420	.39223	1.0849
#1	4.7693	.24411	.50687	357.28	.24498	5.1804	.24386
#2	4.9337	.24092	.50318	359.15	.24309	5.1467	.23926
#3	4.9605	.24390	.50448	357.53	.24248	5.1442	.24376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: April 05, 2017

Kristi K Burck

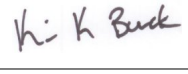
Sample Name: L1704001601MS Acquired: 4/4/2017 18:18:53 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60699**	**.20742**	**2.6913**	**.49058**	**1.0997**	**.45401**	**.23207**
Stddev	.00285	.00247	.0143	.00266	.0024	.00146	.00395
%RSD	.46891	1.1904	.53101	.54260	.22193	.32088	1.7016
#1	.60884	.20700	2.7067	.49345	1.0977	.45449	.23587
#2	.60371	.20519	2.6785	.48820	1.0989	.45516	.23236
#3	.60841	.21007	2.6886	.49010	1.1024	.45237	.22799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51168**	**.50385**	**-.01896**
Stddev	.00433	.00244	.06823
%RSD	.84702	.48405	359.93
#1	.51034	.50607	-.09682
#2	.50818	.50124	.03041
#3	.51653	.50423	.00953
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21092.**	**135310.**	**4264.5**
Stddev	166.	2318.	14.1
%RSD	.78659	1.7128	.33155
#1	20902.	133830.	4258.7
#2	21164.	134120.	4280.6
#3	21209.	137980.	4254.2

Approved: April 05, 2017



Sample Name: L1704001601MSD Acquired: 4/4/2017 18:22:17 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20779**	**12.275**	**.20179**	**1.0041**	**1.0351**	**.02602**	F **667.87**
Stddev	.00056	.056	.00328	.0052	.0019	.00013	3.79
%RSD	.26849	.45627	1.6265	.51526	.18858	.50111	.56777
#1	.20716	12.262	.20442	1.0035	1.0344	.02587	671.22
#2	.20822	12.337	.20284	1.0096	1.0335	.02610	668.64
#3	.20800	12.227	.19812	.99927	1.0372	.02609	663.76
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02555**	**.09755**	**.25259**	**.25493**	**1.9159**	**328.86**	**.54546**
Stddev	.00018	.00044	.00079	.00158	.0218	.14	.00937
%RSD	.69027	.44712	.31277	.61787	1.1369	.04394	1.7184
#1	.02545	.09772	.25180	.25604	1.9251	328.92	.55112
#2	.02575	.09787	.25338	.25562	1.9315	328.97	.55063
#3	.02545	.09705	.25260	.25312	1.8910	328.70	.53464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.7680**	**.23618**	**.50515**	F **364.14**	**.24336**	**5.1566**	**.23934**
Stddev	.0600	.00456	.00213	1.12	.00029	.0186	.00201
%RSD	1.2594	1.9313	.42129	.30823	.12063	.36110	.83805
#1	4.6994	.24143	.50607	364.86	.24342	5.1708	.24164
#2	4.7939	.23395	.50666	364.72	.24304	5.1634	.23843
#3	4.8109	.23317	.50272	362.84	.24362	5.1355	.23794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: April 05, 2017

Sample Name: L1704001601MSD Acquired: 4/4/2017 18:22:17 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608703-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60867**	**.20572**	**2.6877**	**.48906**	**1.1144**	**.45471**	**.23088**
Stddev	.00165	.00196	.0088	.00134	.0015	.00464	.00177
%RSD	.27097	.95068	.32832	.27368	.13738	1.0212	.76861
#1	.60701	.20794	2.6940	.49008	1.1126	.45187	.23291
#2	.60868	.20427	2.6915	.48955	1.1150	.46007	.23010
#3	.61031	.20494	2.6776	.48754	1.1155	.45220	.22962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51849**	**.50363**	**.23171**
Stddev	.00151	.00189	.46387
%RSD	.29190	.37513	200.19
#1	.51846	.50445	-.10637
#2	.52001	.50498	.76054
#3	.51698	.50147	.04096
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**21334.**	**136730.**	**4374.8**
Stddev	124.	1317.	35.9
%RSD	.58288	.96283	.82100
#1	21239.	136800.	4335.8
#2	21288.	135380.	4382.2
#3	21474.	138020.	4406.5

Approved: April 05, 2017

Sample Name: L1704002504 Acquired: 4/4/2017 18:25:42 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00156**	**.01148**	**.00021**	**.03140**	**.01555**	**-.00000**	**231.04**
Stddev	.00170	.00074	.00256	.00100	.00017	.00005	1.39
%RSD	108.84	6.4538	1224.6	3.1707	1.1001	2600.5	.60218
#1	-.00138	.01163	.00312	.03175	.01543	.00002	230.12
#2	-.00333	.01213	-.00167	.03218	.01575	-.00006	232.64
#3	.00004	.01067	-.00083	.03028	.01548	.00003	230.36
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00190**	**.00060**	**.00349**	**.00629**	**.85012**	**.00185**
Stddev	.00010	.00038	.00049	.00013	.03252	.15450	.00444
%RSD	64.268	19.970	81.074	3.7949	517.28	18.173	239.91
#1	.00016	.00181	.00087	.00341	-.02138	.95742	.00411
#2	.00025	.00157	.00090	.00364	.04211	.67304	-.00326
#3	.00005	.00231	.00004	.00342	-.00187	.91988	.00470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2922**	**.27480**	**.00042**	**1.5895**	**.00272**	**.00039**	**-.00284**
Stddev	.1023	.00539	.00024	.0344	.00079	.00565	.00107
%RSD	3.1086	1.9599	55.678	2.1649	28.946	1447.3	37.648
#1	3.2150	.27336	.00049	1.6292	.00302	-.00029	-.00310
#2	3.4083	.28075	.00016	1.5684	.00330	-.00489	-.00167
#3	3.2533	.27027	.00062	1.5708	.00182	.00635	-.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1704002504 Acquired: 4/4/2017 18:25:42 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00530**	**-.00207**	**.07939**	**-.00092**	**.24602**	**-.01351**	**-.00081**
Stddev	.00112	.00266	.00125	.00039	.00016	.00181	.00199
%RSD	21.064	128.82	1.5717	42.593	.06642	13.412	245.85
#1	-.00557	-.00495	.07893	-.00106	.24586	-.01454	-.00300
#2	-.00407	-.00155	.08080	-.00048	.24619	-.01142	-.00031
#3	-.00626	.00030	.07844	-.00123	.24600	-.01456	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00072**	**.01314**	F **-.19329**
Stddev	.00042	.00009	.18634
%RSD	58.255	.68723	96.401
#1	.00051	.01323	-.37653
#2	.00045	.01305	-.00401
#3	.00121	.01313	-.19934
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23076.**	**152470.**	**4497.1**
Stddev	41.	178.	4.9
%RSD	.17923	.11669	.10882
#1	23081.	152270.	4492.6
#2	23115.	152600.	4502.3
#3	23033.	152540.	4496.4

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704002701 Acquired: 4/4/2017 18:29:10 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00258**	**.22096**	**-.00085**	**.02835**	**.01828**	**-.00002**	**2.6926**
Stddev	.00132	.00198	.00176	.00222	.00028	.00003	.3315
%RSD	51.268	.89573	206.75	7.8437	1.5412	169.14	12.310
#1	-.00121	.22166	-.00098	.02987	.01860	.00000	2.5055
#2	-.00385	.21873	-.00255	.02939	.01817	-.00006	2.4970
#3	-.00270	.22249	.00097	.02580	.01807	-.00000	3.0753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00030**	**.00031**	**.01907**	**.34698**	**.72732**	**-.00194**
Stddev	.00007	.00020	.00031	.00051	.01069	.06235	.00616
%RSD	165.35	67.511	99.969	2.6951	3.0813	8.5724	316.87
#1	-.00001	.00050	-.00003	.01861	.34838	.73811	-.00904
#2	-.00013	.00009	.00038	.01899	.33566	.66028	.00200
#3	.00001	.00031	.00057	.01962	.35690	.78357	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43771**	**.01958**	**.00001**	**148.93**	**.01223**	**-.01307**	**.00099**
Stddev	.09091	.00463	.00036	.40	.00044	.00233	.00296
%RSD	20.770	23.663	2546.2	.26883	3.6246	17.825	299.09
#1	.44451	.01423	-.00033	149.12	.01172	-.01432	.00302
#2	.34359	.02216	-.00002	149.20	.01254	-.01452	-.00241
#3	.52502	.02234	.00039	148.47	.01243	-.01039	.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704002701 Acquired: 4/4/2017 18:29:10 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00114**	**.44462**	**-.00102**	**.00785**	**.00256**	**-.00302**
Stddev	.00315	.00371	.00088	.00049	.00092	.01224	.00303
%RSD	3868.5	326.85	.19744	47.984	11.756	478.26	100.35
#1	.00259	.00542	.44395	-.00089	.00699	.00423	-.00209
#2	.00072	-.00089	.44430	-.00156	.00774	-.01043	-.00641
#3	-.00356	-.00112	.44561	-.00061	.00882	.01388	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00034**	**.08622**	F **-.24152**
Stddev	.00029	.00045	.19035
%RSD	84.983	.51813	78.811
#1	.00062	.08589	-.36345
#2	.00036	.08672	-.02219
#3	.00004	.08603	-.33893
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22549.**	**148620.**	**4397.7**
Stddev	499.	1875.	4.1
%RSD	2.2148	1.2616	.09371
#1	22009.	149910.	4393.8
#2	22645.	149490.	4397.1
#3	22993.	146470.	4402.0

Approved: April 05, 2017
Kristi K Buck

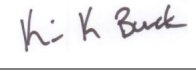
Sample Name: CCV Acquired: 4/4/2017 18:32:39 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40814**	**10.168**	**.40064**	**.50750**	**1.0287**	**.05085**	**10.326**
Stddev	.00034	.020	.00392	.00078	.0016	.00006	.062
%RSD	.08283	.19189	.97791	.15431	.15451	.11292	.60019
#1	.40782	10.157	.39621	.50766	1.0303	.05090	10.395
#2	.40849	10.156	.40365	.50665	1.0287	.05085	10.274
#3	.40811	10.190	.40206	.50820	1.0271	.05079	10.310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05071**	**.20299**	**.50595**	**.50513**	**3.9054**	**53.053**	**1.0637**
Stddev	.00027	.00104	.00082	.00280	.0386	.288	.0049
%RSD	.52328	.51108	.16293	.55472	.98810	.54308	.46406
#1	.05040	.20216	.50502	.50222	3.9313	53.031	1.0645
#2	.05087	.20415	.50627	.50781	3.8610	52.777	1.0583
#3	.05085	.20267	.50658	.50535	3.9238	53.352	1.0681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8927**	**.48346**	**1.0077**	**53.152**	**.50620**	**9.9551**	**.50843**
Stddev	.1555	.00157	.0036	.295	.00189	.0537	.00350
%RSD	1.5721	.32521	.35974	.55510	.37301	.53973	.68885
#1	9.9386	.48518	1.0040	53.104	.50424	9.9165	.50620
#2	9.7193	.48211	1.0113	52.884	.50801	10.016	.51246
#3	10.020	.48308	1.0077	53.468	.50636	9.9325	.50662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017



Sample Name: CCV Acquired: 4/4/2017 18:32:39 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2241**	**.40587**	**5.0238**	**1.0127**	**1.0173**	**1.0072**	**.51666**
Stddev	.0038	.00624	.0199	.0038	.0037	.0102	.00224
%RSD	.31095	1.5386	.39554	.37912	.36627	1.0096	.43355
#1	1.2198	.39986	5.0013	1.0088	1.0147	.99557	.51810
#2	1.2270	.41232	5.0389	1.0165	1.0157	1.0116	.51408
#3	1.2256	.40542	5.0312	1.0128	1.0216	1.0144	.51780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0078**	**1.0145**	F **.86551**
Stddev	.0006	.0041	.46765
%RSD	.05518	.40290	54.032
#1	1.0084	1.0106	.58776
#2	1.0073	1.0188	.60334
#3	1.0077	1.0141	1.4054
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22587.**	**149890.**	**4422.9**
Stddev	308.	1225.	37.7
%RSD	1.3648	.81708	.85146
#1	22896.	151130.	4392.6
#2	22280.	149860.	4465.1
#3	22585.	148680.	4411.1

Approved: April 05, 2017

Sample Name: CCB Acquired: 4/4/2017 18:35:59 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00243**	**-.00172**	**-.00030**	**.00589**	**-.00061**	**-.00001**	**.00024**	**-.00023**
Stddev	.00044	.00164	.00196	.00133	.00064	.00004	.03898	.00004
%RSD	18.162	95.266	647.92	22.637	103.81	474.80	15920.	19.406
#1	-.00274	-.00307	-.00169	.00468	-.00036	-.00005	-.01235	-.00025
#2	-.00263	.00010	-.00116	.00732	-.00014	-.00002	.04397	-.00026
#3	-.00193	-.00219	.00194	.00568	-.00134	.00004	-.03088	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**-.00023**	**.00088**	**.00373**	**.21976**	**.00082**	**.18122**	**.00219**
Stddev	.00030	.00143	.00083	.02095	.08402	.00733	.01992	.00259
%RSD	134.20	624.62	94.176	561.79	38.232	898.25	10.993	118.31
#1	-.00022	.00132	.00159	-.01328	.20749	.00718	.16394	.00066
#2	-.00052	-.00150	.00109	.02713	.30924	.00247	.20302	.00072
#3	.00008	-.00051	-.00003	-.00267	.14255	-.00720	.17672	.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.17531**	**.00057**	**-.00009**	**-.00099**	**-.00334**	**-.00037**	**.00211**
Stddev	.00008	.02480	.00050	.00287	.00221	.00285	.00271	.00073
%RSD	29.755	14.144	87.904	3116.8	223.62	85.394	733.66	34.624
#1	.00033	.16327	.00095	-.00294	.00108	-.00232	-.00291	.00249
#2	.00028	.20383	.00000	-.00012	-.00332	-.00657	-.00067	.00258
#3	.00018	.15883	.00077	.00279	-.00073	-.00114	.00248	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: CCB Acquired: 4/4/2017 18:35:59 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00014**	**-.00449**	**.00054**	**.00029**	**.00009**	**.02403**
Stddev	.00034	.00045	.00589	.00180	.00089	.00013	.43951
%RSD	226.48	322.26	131.12	335.68	312.15	155.24	1829.3
#1	.00019	.00065	-.00247	.00033	.00110	.00023	.11689
#2	-.00048	-.00021	.00012	.00244	-.00066	-.00003	-.45450
#3	-.00015	-.00002	-.01112	-.00116	.00042	.00005	.40969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22601.**	**149110.**	**4401.6**
Stddev	24.	1068.	115.0
%RSD	.10617	.71632	2.6131
#1	22628.	150340.	4400.4
#2	22592.	148450.	4287.1
#3	22582.	148540.	4517.1

Approved: April 05, 2017

Sample Name: L1704002703 Acquired: 4/4/2017 18:39:30 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00141**	**.00847**	**.00225**	**.02579**	**.02176**	**.00002**	F **313.61**
Stddev	.00076	.00325	.00085	.00228	.00297	.00007	1.26
%RSD	53.553	38.321	37.663	8.8493	13.636	431.04	.40201
#1	-.00229	.00488	.00211	.02322	.02130	-.00004	312.49
#2	-.00096	.01120	.00317	.02659	.02492	.00000	314.98
#3	-.00099	.00933	.00149	.02756	.01904	.00009	313.37
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**-.00018**	**.00091**	**.00350**	F **-.02192**	**.51539**	**-.00178**
Stddev	.00012	.00012	.00099	.00154	.01942	.05928	.00568
%RSD	14.103	65.942	109.27	43.972	88.605	11.501	318.50
#1	.00092	-.00016	.00199	.00344	-.04433	.53448	.00151
#2	.00069	-.00030	.00006	.00199	-.01005	.44892	.00148
#3	.00085	-.00007	.00067	.00506	-.01138	.56277	-.00834
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.16883**	**.00100**	**.00057**	**92.558**	**.00082**	**-.00652**	**.00027**
Stddev	.01257	.00419	.00043	.405	.00080	.00081	.00222
%RSD	7.4469	417.62	74.107	.43721	97.290	12.407	824.32
#1	.16713	-.00197	.00068	92.123	-.00007	-.00592	-.00050
#2	.15719	.00579	.00010	92.923	.00105	-.00620	.00277
#3	.18216	-.00082	.00093	92.628	.00147	-.00744	-.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1704002703 Acquired: 4/4/2017 18:39:30 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00682**	**-.00070**	**.04308**	**.00459**	**.04816**	**-.02791**	**-.00184**
Stddev	.00300	.00088	.00127	.00044	.00062	.00635	.00075
%RSD	43.911	125.38	2.9538	9.5234	1.2903	22.744	40.692
#1	-.00966	-.00107	.04450	.00429	.04839	-.03523	-.00256
#2	-.00713	-.00134	.04268	.00510	.04746	-.02429	-.00189
#3	-.00369	.00030	.04205	.00440	.04864	-.02419	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00029**	**.00265**	F **-.30429**
Stddev	.00108	.00014	.24373
%RSD	368.60	5.3196	80.098
#1	.00095	.00249	-.53672
#2	-.00079	.00272	-.05064
#3	-.00104	.00275	-.32551
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22207.**	**142870.**	**4372.5**
Stddev	313.	556.	29.4
%RSD	1.4100	.38926	.67210
#1	22124.	143000.	4361.4
#2	22554.	142260.	4350.3
#3	21944.	143350.	4405.8

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704006401 Acquired: 4/4/2017 18:43:01 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.03240**	**.00052**	**.08326**	**.12138**	**-.00003**	**3.4409**
Stddev	.00083	.00156	.00286	.00171	.00045	.00002	.0525
%RSD	105.48	4.8269	554.15	2.0536	.37332	47.639	1.5272
#1	-.00147	.03385	.00305	.08130	.12124	-.00003	3.4625
#2	-.00102	.03074	-.00258	.08443	.12101	-.00002	3.4793
#3	.00013	.03261	.00108	.08405	.12188	-.00005	3.3810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**-.00011**	**-.00054**	**.00053**	**-.00557**	**.66960**	**.00471**
Stddev	.00011	.00017	.00066	.00015	.02838	.07100	.00312
%RSD	185.55	159.89	123.35	28.276	509.24	10.604	66.341
#1	-.00019	.00001	-.00027	.00041	.02494	.72685	.00117
#2	.00004	-.00002	-.00005	.00070	-.03118	.59015	.00710
#3	-.00003	-.00031	-.00129	.00048	-.01048	.69179	.00586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0451**	**.00663**	**.00015**	**119.48**	**.00050**	**.01530**	**-.00009**
Stddev	.0906	.00468	.00007	.20	.00088	.00157	.00251
%RSD	8.6669	70.591	44.939	.16381	174.13	10.283	2902.3
#1	1.1477	.00124	.00023	119.68	.00125	.01349	.00273
#2	.97615	.00891	.00014	119.29	-.00046	.01640	-.00089
#3	1.0115	.00972	.00009	119.48	.00073	.01599	-.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1704006401 Acquired: 4/4/2017 18:43:01 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.00065**	**3.8154**	**-.00101**	**.11392**	**-.00284**	**-.00214**
Stddev	.00101	.00443	.0040	.00039	.00023	.00434	.00442
%RSD	179.71	678.52	.10475	39.145	.20008	152.82	206.34
#1	.00005	.00299	3.8196	-.00146	.11372	.00103	.00269
#2	-.00001	.00342	3.8150	-.00078	.11386	-.00754	-.00315
#3	-.00172	-.00445	3.8117	-.00078	.11417	-.00202	-.00597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00068**	**.03050**	F **-.15209**
Stddev	.00111	.00005	.22369
%RSD	162.61	.16623	147.07
#1	.00122	.03052	-.28869
#2	.00142	.03053	-.27365
#3	-.00059	.03044	.10606
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23118.**	**150970.**	**4525.0**
Stddev	327.	2719.	4.9
%RSD	1.4138	1.8012	.10857
#1	23483.	149050.	4523.2
#2	22855.	149780.	4521.2
#3	23015.	154080.	4530.5

Approved: April 05, 2017

Kristi K Buck

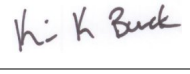
Sample Name: L1704007101 Acquired: 4/4/2017 18:46:30 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**.20134**	**-.00066**	**.06509**	**.04745**	**.00003**	**44.820**	**.00012**
Stddev	.00236	.00444	.00175	.00076	.00014	.00002	.457	.00017
%RSD	215.82	2.2033	267.43	1.1656	.30471	46.326	1.0199	143.90
#1	-.00204	.20642	.00081	.06427	.04747	.00005	44.886	.00031
#2	.00159	.19937	-.00260	.06577	.04759	.00002	45.241	.00007
#3	-.00284	.19823	-.00018	.06522	.04730	.00003	44.334	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00015**	**.00432**	**.12725**	**2.2045**	**-.00284**	**2.7430**	**.00539**
Stddev	.00021	.00104	.00057	.00913	.0566	.00502	.1618	.00265
%RSD	464.57	689.19	13.124	7.1777	2.5672	176.86	5.8968	49.216
#1	.00020	-.00028	.00491	.13276	2.1487	.00223	2.6635	.00428
#2	-.00013	-.00061	.00377	.11671	2.2031	-.00781	2.9291	.00842
#3	-.00020	.00133	.00429	.13229	2.2618	-.00294	2.6364	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**2.4809**	**.00195**	**.07142**	**.00025**	**-.00032**	**-.00254**	**2.2963**
Stddev	.00023	.0164	.00104	.00597	.00211	.00160	.00172	.0125
%RSD	288.93	.66266	53.151	8.3593	827.91	504.92	67.648	.54325
#1	.00015	2.4970	.00283	.07778	.00186	-.00035	-.00104	2.3107
#2	.00027	2.4641	.00081	.06594	-.00213	.00130	-.00216	2.2905
#3	-.00018	2.4814	.00222	.07054	.00103	-.00190	-.00442	2.2879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

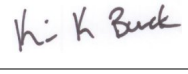


Sample Name: L1704007101 Acquired: 4/4/2017 18:46:30 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.13508**	**.00119**	**-.00237**	**.00066**	**.00740**	**.07469**
Stddev	.00072	.00045	.00612	.00287	.00053	.00017	.11722
%RSD	306.55	.32964	515.00	121.29	80.053	2.3029	156.93
#1	-.00043	.13542	.00286	-.00334	.00121	.00757	.16152
#2	.00013	.13524	-.00560	-.00463	.00059	.00723	-.05864
#3	.00101	.13457	.00630	.00086	.00017	.00739	.12119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23131.**	**152140.**	**4485.5**
Stddev	245.	457.	30.8
%RSD	1.0607	.30042	.68565
#1	23075.	152080.	4467.6
#2	22918.	152630.	4467.8
#3	23399.	151720.	4521.0

Approved: April 05, 2017



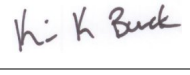
Sample Name: L1704007102 Acquired: 4/4/2017 18:49:56 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**.29494**	**.00021**	**.01208**	**.02801**	**-.00001**	**25.231**	**.00003**
Stddev	.00169	.00558	.00212	.00079	.00019	.00003	.071	.00013
%RSD	71.477	1.8920	992.44	6.5097	.67919	201.75	.27978	403.85
#1	-.00316	.30098	.00249	.01221	.02815	-.00000	25.166	-.00009
#2	-.00042	.29386	-.00172	.01123	.02810	.00001	25.220	.00003
#3	-.00350	.28998	-.00013	.01279	.02780	-.00005	25.306	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00025**	**.00176**	**.14926**	**1.0377**	**-.00888**	**3.2676**	**.00578**
Stddev	.00028	.00090	.00034	.01800	.0787	.00210	.0287	.00114
%RSD	191.25	360.22	19.569	12.059	7.5843	23.692	.87934	19.811
#1	.00010	-.00076	.00197	.15537	.95355	-.01053	3.2759	.00710
#2	-.00044	.00093	.00195	.16342	1.0502	-.00961	3.2912	.00521
#3	-.00009	.00058	.00136	.12901	1.1095	-.00651	3.2356	.00503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**2.1386**	**.00125**	**.01078**	**.00027**	**.00047**	**.00149**	**2.8568**
Stddev	.00014	.0769	.00070	.00088	.00224	.00401	.00371	.0130
%RSD	2477.9	3.5939	55.772	8.1837	820.15	862.11	249.90	.45455
#1	.00014	2.0540	.00152	.01178	.00126	.00386	-.00057	2.8432
#2	-.00015	2.1576	.00046	.01014	.00186	.00150	-.00075	2.8582
#3	-.00000	2.2041	.00177	.01041	-.00230	-.00396	.00577	2.8691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

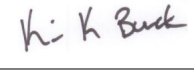


Sample Name: L1704007102 Acquired: 4/4/2017 18:49:56 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00085**	**.07354**	**.00922**	**-.00306**	**.00097**	**.00158**	**.44540**
Stddev	.00011	.00016	.00762	.00237	.00054	.00006	.01154
%RSD	12.434	.21279	82.600	77.581	55.816	3.5664	2.5900
#1	-.00075	.07343	.01341	-.00123	.00035	.00159	.45843
#2	-.00083	.07372	.01383	-.00574	.00130	.00164	.44129
#3	-.00096	.07346	.00043	-.00220	.00127	.00153	.43648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23070.**	**150950.**	**4377.9**
Stddev	95.	664.	18.8
%RSD	.41254	.43971	.42951
#1	22962.	151480.	4367.4
#2	23144.	150210.	4399.6
#3	23104.	151170.	4366.7

Approved: April 05, 2017



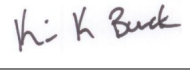
Sample Name: L1704007103 Acquired: 4/4/2017 18:53:25 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**.28922**	**-.00089**	**.02223**	**.03968**	**-.00001**	**33.448**	**.00015**
Stddev	.00173	.00344	.00137	.00246	.00103	.00004	.026	.00020
%RSD	109.59	1.1895	154.37	11.051	2.5889	309.43	.07678	137.54
#1	.00028	.28639	-.00064	.01943	.03850	-.00006	33.438	.00029
#2	-.00316	.28823	.00034	.02322	.04016	-.00000	33.430	.00023
#3	-.00187	.29305	-.00237	.02404	.04038	.00002	33.478	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.00065**	**.00157**	**.13986**	**1.0049**	**-.00315**	**4.7488**	**.00020**
Stddev	.00024	.00048	.00048	.02215	.1413	.00408	.1401	.00298
%RSD	51.123	72.717	30.322	15.838	14.057	129.50	2.9502	1476.8
#1	-.00064	.00119	.00117	.11963	1.1615	-.00610	4.5895	.00105
#2	-.00019	.00048	.00144	.16353	.96613	-.00486	4.8530	.00266
#3	-.00058	.00029	.00210	.13642	.88712	.00151	4.8038	-.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**7.0304**	**.00120**	**.02569**	**.00134**	**-.00229**	**-.00235**	**2.8335**
Stddev	.00028	.0769	.00028	.00397	.00190	.00431	.00244	.0069
%RSD	316.29	1.0938	23.021	15.459	141.71	187.77	103.90	.24177
#1	.00004	7.0551	.00118	.02143	-.00074	.00116	-.00422	2.8377
#2	.00040	7.0919	.00094	.02928	.00178	-.00712	.00041	2.8256
#3	-.00017	6.9442	.00149	.02637	.00298	-.00092	-.00323	2.8371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1704007103 Acquired: 4/4/2017 18:53:25 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.15022**	**.00500**	**-.00148**	**.00050**	**.00526**	**.02271**
Stddev	.00034	.00056	.00610	.00113	.00056	.00005	.35538
%RSD	38.336	.37509	122.07	76.195	112.42	.95736	1565.0
#1	-.00126	.15079	.01062	-.00174	.00084	.00520	-.38720
#2	-.00061	.15022	.00585	-.00246	.00080	.00530	.24425
#3	-.00078	.14966	-.00149	-.00025	-.00015	.00528	.21107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22986.**	**153880.**	**4514.9**
Stddev	467.	942.	43.9
%RSD	2.0305	.61247	.97288
#1	22549.	154770.	4487.0
#2	22933.	153970.	4565.6
#3	23477.	152890.	4492.2

Approved: April 05, 2017

Sample Name: L1704007104 Acquired: 4/4/2017 18:56:54 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.57914**	**-.00032**	**.00689**	**.04039**	**.00003**	**24.884**	**.00016**
Stddev	.00174	.00869	.00119	.00180	.00076	.00002	.024	.00025
%RSD	15588.	1.5011	373.05	26.045	1.8725	52.405	.09790	157.38
#1	-.00011	.58677	.00098	.00838	.03977	.00003	24.906	.00020
#2	.00178	.56968	-.00135	.00490	.04123	.00004	24.858	-.00011
#3	-.00170	.58098	-.00059	.00741	.04018	.00001	24.887	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.00081**	**.00258**	**.31359**	**.68858**	**-.00175**	**3.0286**	**.01224**
Stddev	.00022	.00067	.00187	.01222	.06841	.00857	.0440	.00114
%RSD	59.947	81.899	72.683	3.8973	9.9355	488.95	1.4513	9.2951
#1	-.00013	.00014	.00380	.30328	.64209	.00813	2.9784	.01317
#2	-.00040	.00147	.00351	.32709	.76713	-.00717	3.0471	.01097
#3	-.00057	.00084	.00042	.31040	.65651	-.00623	3.0602	.01259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**1.4471**	**.00157**	**-.00140**	**-.00050**	**-.00243**	**-.00072**	**3.6163**
Stddev	.00023	.0128	.00034	.00200	.00076	.00533	.00188	.0128
%RSD	137.26	.88733	21.712	142.49	153.98	219.02	260.90	.35425
#1	-.00006	1.4547	.00148	-.00263	-.00098	.00341	-.00181	3.6015
#2	.00016	1.4543	.00195	.00090	-.00089	-.00368	-.00180	3.6244
#3	.00040	1.4323	.00128	-.00248	.00038	-.00703	.00145	3.6229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

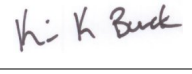
Kristi K Buck

Sample Name: L1704007104 Acquired: 4/4/2017 18:56:54 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.05371**	**.00866**	**.00083**	**.00123**	**.00214**	**.31254**
Stddev	.00069	.00038	.00411	.00188	.00041	.00009	.37363
%RSD	70.704	.71085	47.394	225.99	32.995	4.3244	119.55
#1	-.00146	.05409	.01040	.00275	.00163	.00219	.03904
#2	-.00019	.05332	.01162	-.00102	.00124	.00204	.73825
#3	-.00127	.05372	.00397	.00077	.00082	.00221	.16034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23868.**	**152920.**	**4493.1**
Stddev	191.	1413.	34.7
%RSD	.79888	.92407	.77214
#1	23661.	152960.	4505.1
#2	23907.	151490.	4520.1
#3	24036.	154310.	4453.9

Approved: April 05, 2017



Sample Name: L1704007105 Acquired: 4/4/2017 19:00:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	**.27764**	**-.00135**	**.00862**	**.05091**	**-.00003**	**30.697**	**.00030**
Stddev	.00163	.00328	.00182	.00180	.00064	.00003	.176	.00019
%RSD	199.07	1.1797	134.53	20.942	1.2485	88.033	.57338	62.431
#1	-.00228	.27407	-.00283	.00788	.05150	-.00000	30.880	.00029
#2	.00094	.27832	.00068	.01067	.05101	-.00004	30.528	.00049
#3	-.00111	.28052	-.00191	.00729	.05024	-.00006	30.684	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00025**	**.00174**	**.12507**	**.73693**	**-.00126**	**4.1389**	**.00083**
Stddev	.00005	.00036	.00143	.03383	.15962	.00365	.0609	.00216
%RSD	34.965	140.09	82.008	27.052	21.661	290.42	1.4720	259.03
#1	-.00013	.00009	.00096	.14132	.55740	-.00165	4.1211	-.00060
#2	-.00022	.00066	.00088	.08618	.86284	-.00469	4.2068	.00332
#3	-.00012	.00001	.00339	.14771	.79054	.00257	4.0889	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**2.0399**	**.00061**	**.00258**	**.00024**	**.00056**	**-.00023**	**3.7274**
Stddev	.00030	.0471	.00054	.00673	.00157	.00193	.00277	.0023
%RSD	809.30	2.3069	88.430	261.31	659.69	341.42	1189.6	.06061
#1	.00016	1.9861	.00017	.00605	.00165	.00034	-.00182	3.7295
#2	.00011	2.0734	.00122	-.00518	-.00145	-.00124	.00296	3.7278
#3	-.00038	2.0602	.00045	.00686	.00052	.00259	-.00184	3.7250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704007105 Acquired: 4/4/2017 19:00:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00081**	**.06063**	**.00134**	**-.00033**	**.00006**	**.00187**	**.11368**
Stddev	.00044	.00072	.00013	.00048	.00069	.00003	.14476
%RSD	54.264	1.1856	9.6911	145.60	1110.7	1.6744	127.34
#1	-.00031	.06002	.00138	.00012	-.00073	.00186	-.04280
#2	-.00114	.06045	.00145	-.00028	.00037	.00190	.14101
#3	-.00098	.06142	.00120	-.00083	.00055	.00184	.24282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23728.**	**157170.**	**4659.7**
Stddev	43.	2021.	47.0
%RSD	.18230	1.2856	1.0085
#1	23756.	158510.	4610.9
#2	23750.	158160.	4704.7
#3	23678.	154850.	4663.4

Approved: April 05, 2017

Sample Name: L1704007106 Acquired: 4/4/2017 19:03:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.13681**	**.00022**	**.00994**	**.06615**	**-.00001**	**43.989**
Stddev	.00095	.00589	.00193	.00077	.00154	.00004	.178
%RSD	319.02	4.3076	881.24	7.7294	2.3316	510.77	.40447
#1	-.00137	.13868	.00164	.01021	.06786	.00002	44.149
#2	.00006	.14154	.00099	.01053	.06574	-.00006	44.020
#3	.00042	.13021	-.00198	.00907	.06485	.00001	43.797
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00039**	**.00025**	**.00200**	**.25071**	**1.0133**	**.00183**
Stddev	.00016	.00021	.00073	.00116	.01184	.0127	.00106
%RSD	694.28	54.879	293.39	58.263	4.7234	1.2582	57.871
#1	.00005	-.00015	.00051	.00221	.26216	1.0044	.00174
#2	.00008	-.00055	-.00058	.00074	.23851	1.0077	.00292
#3	-.00020	-.00047	.00081	.00304	.25148	1.0279	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.7149**	**.00647**	**.00070**	**2.5820**	**.00126**	**.02484**	**-.00017**
Stddev	.1274	.00344	.00027	.0317	.00049	.00585	.00179
%RSD	1.6511	53.151	38.781	1.2283	39.104	23.549	1078.6
#1	7.8486	.00269	.00052	2.6090	.00119	.02984	.00172
#2	7.5950	.00731	.00057	2.5471	.00080	.02628	-.00036
#3	7.7011	.00941	.00101	2.5901	.00178	.01841	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017
Kim K Buck

Sample Name: L1704007106 Acquired: 4/4/2017 19:03:55 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**-.00340**	**3.3902**	**-.00029**	**.16311**	**.00117**	**-.00114**
Stddev	.00359	.00116	.0037	.00038	.00054	.00494	.00136
%RSD	824.85	34.044	.11015	132.40	.33225	421.66	120.04
#1	.00345	-.00395	3.3932	-.00073	.16313	-.00452	-.00268
#2	-.00112	-.00418	3.3860	-.00013	.16364	.00433	-.00064
#3	-.00362	-.00207	3.3914	-.00001	.16255	.00371	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00097**	**.00221**	F **-.06278**
Stddev	.00073	.00009	.32892
%RSD	74.980	4.1157	523.91
#1	.00151	.00211	-.13281
#2	.00126	.00229	.29551
#3	.00014	.00224	-.35105
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23283.**	**153760.**	**4464.5**
Stddev	69.	698.	49.1
%RSD	.29776	.45387	1.1003
#1	23318.	152960.	4418.1
#2	23328.	154050.	4459.6
#3	23203.	154260.	4516.0

Approved: April 05, 2017

Sample Name: L1704007107 Acquired: 4/4/2017 19:07:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00080**	**.85828**	**.00059**	**.01202**	**.04314**	**-.00002**	**38.603**	**.00010**
Stddev	.00263	.00575	.00186	.00113	.00102	.00005	.167	.00001
%RSD	330.18	.66949	312.00	9.4298	2.3645	286.65	.43138	9.5788
#1	.00046	.85200	.00047	.01311	.04235	-.00007	38.636	.00010
#2	.00097	.86327	.00251	.01208	.04278	.00002	38.422	.00009
#3	-.00382	.85959	-.00119	.01085	.04429	.00000	38.750	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00098**	**.00252**	**.70332**	**1.3114**	**-.00323**	**6.5211**	**.01700**
Stddev	.00027	.00082	.00048	.02171	.1825	.00904	.0834	.00769
%RSD	191.28	83.325	19.071	3.0871	13.915	280.04	1.2794	45.248
#1	-.00003	.00154	.00210	.68049	1.1187	-.00636	6.5283	.01423
#2	.00046	.00004	.00304	.72371	1.3337	-.01029	6.4343	.02569
#3	.00000	.00136	.00242	.70577	1.4816	.00696	6.6007	.01108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**3.2465**	**.00123**	**.01881**	**-.00172**	**.00081**	**.00296**	**4.4487**
Stddev	.00040	.0061	.00035	.00241	.00322	.00361	.00421	.0133
%RSD	207.60	.18829	28.702	12.836	186.50	444.33	142.49	.29830
#1	-.00024	3.2535	.00164	.02086	.00038	-.00183	.00225	4.4387
#2	.00026	3.2422	.00106	.01615	-.00543	.00493	-.00086	4.4436
#3	.00056	3.2438	.00100	.01942	-.00012	-.00066	.00748	4.4637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704007107 Acquired: 4/4/2017 19:07:23 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	**.13771**	**.01170**	**-.00315**	**.00149**	**.00399**	**.45477**
Stddev	.00062	.00119	.00595	.00220	.00034	.00010	.45405
%RSD	75.573	.86692	50.863	69.636	22.622	2.5576	99.841
#1	-.00154	.13906	.00798	-.00063	.00161	.00393	-.06939
#2	-.00041	.13678	.01857	-.00424	.00175	.00411	.70698
#3	-.00053	.13730	.00856	-.00460	.00111	.00393	.72673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22911.**	**152390.**	**4437.5**
Stddev	192.	1507.	17.4
%RSD	.83650	.98857	.39206
#1	22877.	153880.	4417.9
#2	22739.	150870.	4451.1
#3	23117.	152420.	4443.4

Approved: April 05, 2017

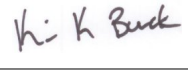
Sample Name: L1704007201 Acquired: 4/4/2017 19:10:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.29092**	**-.00158**	**.01280**	**.02709**	**-.00002**	**27.346**	**-.00006**
Stddev	.00026	.00444	.00075	.00058	.00145	.00006	.035	.00016
%RSD	45.399	1.5261	47.291	4.5234	5.3435	246.08	.12916	274.21
#1	-.00030	.28780	-.00157	.01214	.02805	-.00004	27.338	-.00024
#2	-.00058	.29600	-.00083	.01323	.02779	-.00007	27.316	.00007
#3	-.00081	.28896	-.00233	.01302	.02542	.00004	27.385	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.00021**	**.00099**	**.11793**	**.98939**	**-.00150**	**5.5434**	**.00080**
Stddev	.00029	.00027	.00090	.00040	.08674	.00604	.0892	.00291
%RSD	68.442	128.68	91.391	.34258	8.7667	401.47	1.6087	362.16
#1	-.00070	.00048	.00203	.11840	.94545	.00309	5.5771	.00179
#2	-.00012	-.00006	.00040	.11768	.93342	.00075	5.6108	-.00247
#3	-.00043	.00020	.00053	.11773	1.0893	-.00835	5.4423	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**20.172**	**.00086**	**.02337**	**-.00132**	**-.00454**	**-.00055**	**3.4908**
Stddev	.00022	.023	.00058	.00281	.00082	.00237	.00345	.0057
%RSD	85.509	.11159	66.834	12.032	61.800	52.158	626.54	.16470
#1	.00052	20.152	.00046	.02095	-.00068	-.00255	.00064	3.4940
#2	.00012	20.166	.00153	.02646	-.00224	-.00392	.00214	3.4841
#3	.00014	20.196	.00061	.02272	-.00104	-.00716	-.00443	3.4942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1704007201 Acquired: 4/4/2017 19:10:51 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.07041**	**.00264**	**-.00173**	**.00050**	**.00138**	**.06811**
Stddev	.00092	.00047	.00516	.00209	.00017	.00012	.01922
%RSD	126.91	.67451	195.28	121.17	34.824	8.6836	28.218
#1	-.00035	.07090	.00468	-.00414	.00041	.00150	.04885
#2	-.00177	.06996	-.00323	-.00037	.00038	.00126	.08729
#3	-.00005	.07035	.00647	-.00067	.00070	.00140	.06818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23664.**	**158300.**	**4528.7**
Stddev	447.	1664.	164.4
%RSD	1.8877	1.0513	3.6294
#1	23731.	159310.	4339.1
#2	23188.	159210.	4616.3
#3	24074.	156380.	4630.8

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 19:14:19 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41038**	**10.193**	**.40221**	**.50796**	**1.0245**	**.05101**	**10.172**
Stddev	.00134	.035	.00044	.00178	.0030	.00024	.040
%RSD	.32574	.34747	.10942	.35099	.29572	.47847	.39791
#1	.41038	10.222	.40236	.50789	1.0243	.05127	10.154
#2	.41172	10.203	.40171	.50977	1.0277	.05096	10.218
#3	.40904	10.154	.40255	.50621	1.0217	.05079	10.144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05029**	**.20143**	**.50905**	**.50035**	**3.9208**	**52.394**	**1.0237**
Stddev	.00018	.00089	.00176	.00315	.0399	.170	.0022
%RSD	.35054	.44302	.34548	.62946	1.0190	.32451	.21723
#1	.05049	.20219	.51104	.50293	3.9120	52.321	1.0235
#2	.05021	.20165	.50838	.50127	3.8860	52.588	1.0260
#3	.05016	.20045	.50771	.49684	3.9644	52.273	1.0216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8118**	**.48559**	**1.0007**	**52.204**	**.50403**	**9.8544**	**.50199**
Stddev	.1714	.00665	.0045	.198	.00304	.0563	.00297
%RSD	1.7469	1.3701	.44854	.37974	.60383	.57151	.59221
#1	9.8548	.48602	1.0057	52.053	.50694	9.9005	.50479
#2	9.9576	.49202	.99934	52.429	.50427	9.8711	.50231
#3	9.6230	.47873	.99706	52.132	.50087	9.7916	.49887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017

Sample Name: CCV Acquired: 4/4/2017 19:14:19 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2325**	**.40890**	**4.9830**	**1.0121**	**1.0080**	**.99899**	**.51644**
Stddev	.0058	.00359	.0223	.0060	.0024	.00548	.00250
%RSD	.46822	.87909	.44785	.58893	.23944	.54867	.48396
#1	1.2348	.41054	5.0056	1.0181	1.0073	.99777	.51651
#2	1.2367	.41138	4.9826	1.0119	1.0107	1.0050	.51890
#3	1.2259	.40478	4.9610	1.0062	1.0060	.99423	.51390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0104**	**1.0152**	F **.88614**
Stddev	.0025	.0047	.26423
%RSD	.24323	.45968	29.818
#1	1.0131	1.0202	1.0110
#2	1.0098	1.0144	1.0648
#3	1.0083	1.0110	.58262
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23298.**	**153010.**	**4701.4**
Stddev	84.	809.	46.1
%RSD	.35995	.52851	.98143
#1	23384.	152180.	4749.0
#2	23217.	153070.	4698.6
#3	23294.	153790.	4656.8

Approved: April 05, 2017

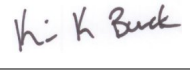
Sample Name: CCB Acquired: 4/4/2017 19:17:41 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**-.00361**	**.00239**	**.00349**	**-.00045**	**.00000**	**.00919**	**-.00021**
Stddev	.00196	.00161	.00037	.00053	.00082	.00005	.00498	.00007
%RSD	97.346	44.774	15.525	15.118	182.89	1079.8	54.187	35.036
#1	-.00394	-.00183	.00209	.00327	.00050	-.00002	.00344	-.00013
#2	-.00209	-.00399	.00227	.00310	-.00085	-.00003	.01215	-.00023
#3	-.00001	-.00499	.00280	.00409	-.00100	.00006	.01197	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00006**	**.00123**	**.00009**	**.15503**	**-.01248**	**.13492**	**.00114**
Stddev	.00032	.00064	.00155	.04110	.18017	.00325	.06109	.00253
%RSD	434.39	1007.5	125.51	43259.	116.22	26.051	45.276	222.45
#1	-.00029	-.00074	-.00013	.03176	.00703	-.01498	.16223	-.00174
#2	.00029	.00003	.00091	.01487	.10240	-.01366	.17759	.00300
#3	.00022	.00052	.00292	-.04635	.35565	-.00880	.06494	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.13007**	**.00085**	**-.00246**	**.00002**	**.00068**	**-.00181**	**.00125**
Stddev	.00025	.04646	.00039	.00600	.00034	.00315	.00193	.00152
%RSD	462.64	35.719	46.092	244.14	1677.5	462.12	106.67	121.78
#1	-.00029	.11669	.00129	-.00273	-.00004	.00296	-.00386	.00293
#2	-.00008	.09176	.00053	.00367	-.00029	-.00291	-.00004	.00082
#3	.00021	.18175	.00072	-.00831	.00039	.00199	-.00152	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: CCB Acquired: 4/4/2017 19:17:41 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00043**	**-.00484**	**-.00001**	**.00055**	**.00004**	**-.02345**
Stddev	.00028	.00066	.00768	.00203	.00113	.00005	.39249
%RSD	993.24	153.40	158.78	19315.	204.34	109.94	1673.5
#1	-.00028	.00005	-.00221	.00231	.00156	.00010	.41288
#2	.00028	.00118	-.01349	-.00090	-.00067	.00001	-.34771
#3	.00009	.00005	.00119	-.00144	.00077	.00002	-.13554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23517.**	**152330.**	**4393.6**
Stddev	279.	1039.	50.3
%RSD	1.1874	.68218	1.1439
#1	23618.	153130.	4434.3
#2	23202.	152700.	4409.1
#3	23732.	151150.	4337.4

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704007202 Acquired: 4/4/2017 19:21:12 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.17854**	**-.00030**	**.01432**	**.02548**	**-.00004**	**32.953**
Stddev	.00153	.00508	.00136	.00271	.00098	.00002	.255
%RSD	229.87	2.8438	457.48	18.918	3.8553	57.949	.77266
#1	-.00131	.17396	-.00040	.01579	.02573	-.00001	32.980
#2	.00108	.18400	-.00160	.01598	.02631	-.00005	33.192
#3	-.00177	.17767	.00111	.01119	.02440	-.00005	32.685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00011**	**-.00042**	**.00070**	**.09578**	**1.1577**	**-.00165**
Stddev	.00016	.00007	.00103	.00103	.01618	.0876	.00815
%RSD	313.20	61.648	244.21	147.21	16.897	7.5683	492.30
#1	.00013	-.00012	-.00112	.00135	.10902	1.1339	.00765
#2	-.00014	-.00017	-.00091	-.00049	.07774	1.2548	-.00751
#3	.00016	-.00004	.00076	.00122	.10059	1.0844	-.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.3776**	**.00314**	**.00028**	**28.411**	**.00088**	**.01059**	**-.00079**
Stddev	.1017	.00194	.00049	.208	.00058	.00214	.00284
%RSD	1.5940	61.758	178.99	.73358	65.691	20.222	357.64
#1	6.4439	.00266	.00074	28.512	.00067	.01089	-.00199
#2	6.4284	.00527	.00033	28.551	.00153	.01256	.00245
#3	6.2606	.00148	-.00024	28.172	.00043	.00831	-.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704007202 Acquired: 4/4/2017 19:21:12 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**-.00195**	**3.3732**	**-.00080**	**.08698**	**-.00180**	**-.00026**
Stddev	.00095	.00404	.0023	.00100	.00073	.00428	.00238
%RSD	65.525	207.92	.06735	125.26	.83660	237.96	902.87
#1	-.00083	-.00549	3.3758	.00032	.08771	-.00274	.00190
#2	-.00097	.00246	3.3718	-.00159	.08626	.00287	.00013
#3	-.00254	-.00280	3.3719	-.00112	.08698	-.00553	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00056**	**.00106**	F **-.31409**
Stddev	.00064	.00017	.21110
%RSD	114.01	16.221	67.209
#1	.00103	.00123	-.41909
#2	-.00017	.00106	-.07108
#3	.00081	.00089	-.45209
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23263.**	**150900.**	**4402.9**
Stddev	301.	769.	45.8
%RSD	1.2954	.50958	1.0412
#1	22915.	151690.	4352.5
#2	23444.	150840.	4414.1
#3	23430.	150160.	4442.1

Approved: April 05, 2017

Sample Name: L1704007203 Acquired: 4/4/2017 19:24:41 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.18561**	**-.00029**	**.01272**	**.03017**	**-.00005**	**27.429**
Stddev	.00227	.00638	.00130	.00131	.00085	.00006	.041
%RSD	869.34	3.4353	442.34	10.333	2.8270	124.08	.14933
#1	-.00222	.18582	-.00037	.01269	.03115	-.00004	27.429
#2	-.00223	.17914	.00104	.01143	.02976	-.00010	27.388
#3	-.00078	.19188	-.00156	.01406	.02960	.00001	27.470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**-.00028**	**-.00027**	**.00082**	**.11666**	**1.0900**	**-.00488**
Stddev	.00009	.00027	.00053	.00195	.01523	.1562	.00581
%RSD	230.95	97.791	198.05	236.34	13.059	14.332	119.11
#1	.00004	-.00033	-.00082	.00149	.11978	.93058	-.01105
#2	-.00005	-.00052	.00023	-.00137	.10011	1.0966	-.00405
#3	.00012	.00002	-.00021	.00235	.13010	1.2428	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.7671**	**.00756**	**.00013**	**15.246**	**.00026**	**.01130**	**-.00250**
Stddev	.0796	.00286	.00022	.049	.00030	.00474	.00114
%RSD	1.6691	37.877	164.36	.31934	115.98	41.948	45.501
#1	4.7024	.01075	-.00012	15.219	.00018	.01656	-.00125
#2	4.8560	.00669	.00022	15.216	.00060	.00998	-.00280
#3	4.7429	.00523	.00029	15.302	.00001	.00736	-.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704007203 Acquired: 4/4/2017 19:24:41 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**-.00067**	**3.1568**	**-.00023**	**.10205**	**.00389**	**-.00150**
Stddev	.00145	.00139	.0034	.00054	.00036	.01037	.00142
%RSD	121.43	205.73	.10862	239.72	.35339	266.80	94.670
#1	.00042	-.00017	3.1529	-.00007	.10218	.00706	-.00297
#2	-.00239	.00039	3.1592	-.00083	.10233	-.00770	-.00013
#3	-.00161	-.00224	3.1584	.00022	.10165	.01230	-.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00076**	**.00175**	F **-.11481**
Stddev	.00049	.00009	.34053
%RSD	64.584	4.8788	296.60
#1	.00048	.00176	-.47595
#2	.00132	.00184	.20046
#3	.00047	.00167	-.06895
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23707.**	**156430.**	**4581.9**
Stddev	155.	2078.	60.5
%RSD	.65429	1.3285	1.3195
#1	23722.	157070.	4515.0
#2	23854.	158110.	4598.3
#3	23545.	154110.	4632.5

Approved: April 05, 2017

Sample Name: L1704007204 Acquired: 4/4/2017 19:28:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.24671**	**.00108**	**.01287**	**.07507**	**-.00002**	**49.719**	**.00007**
Stddev	.00041	.00370	.00208	.00229	.00182	.00004	.149	.00016
%RSD	49.477	1.5010	192.80	17.783	2.4205	153.15	.30024	223.21
#1	-.00080	.24382	.00021	.01096	.07682	-.00007	49.868	.00009
#2	-.00126	.25088	.00345	.01541	.07518	.00000	49.569	.00022
#3	-.00044	.24544	-.00042	.01224	.07320	-.00001	49.719	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00043**	**.00090**	**.19869**	**.76437**	**.00217**	**5.9730**	**.00640**
Stddev	.00015	.00027	.00125	.01808	.06311	.00229	.1732	.00283
%RSD	157.93	62.681	138.16	9.0974	8.2564	105.36	2.8999	44.239
#1	.00025	.00018	.00216	.20062	.81975	.00467	6.0441	.00595
#2	.00008	.00039	.00089	.21572	.77768	.00166	5.7755	.00942
#3	-.00005	.00071	-.00034	.17972	.69566	.00018	6.0993	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**24.225**	**.00139**	**.01881**	**-.00122**	**-.00501**	**.00150**	**3.3918**
Stddev	.00049	.096	.00113	.00541	.00350	.00369	.00156	.0050
%RSD	142.71	.39422	81.140	28.758	286.15	73.626	103.98	.14835
#1	.00079	24.334	.00103	.02355	-.00341	-.00877	.00184	3.3976
#2	.00042	24.156	.00265	.01292	.00282	-.00139	-.00020	3.3887
#3	-.00018	24.185	.00048	.01995	-.00308	-.00488	.00285	3.3892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704007204 Acquired: 4/4/2017 19:28:09 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.15534**	**.00461**	**-.00013**	**.00128**	**.00154**	**.15292**
Stddev	.00040	.00171	.00250	.00347	.00037	.00005	.64796
%RSD	91.400	1.1008	54.124	2711.6	28.983	3.5004	423.72
#1	-.00049	.15636	.00295	-.00306	.00099	.00153	.84322
#2	-.00081	.15337	.00340	-.00102	.00115	.00160	.05772
#3	-.00001	.15629	.00748	.00370	.00169	.00149	-.44217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23418.**	**154330.**	**4694.1**
Stddev	617.	1571.	48.4
%RSD	2.6345	1.0180	1.0317
#1	23899.	156100.	4645.2
#2	23634.	153110.	4742.1
#3	22723.	153790.	4694.9

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704007205 Acquired: 4/4/2017 19:31:37 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.18316**	**-.00049**	**.01512**	**.04700**	**-.00003**	**49.378**	**-.00002**
Stddev	.00158	.00063	.00122	.00155	.00173	.00001	.266	.00009
%RSD	388.83	.34573	249.20	10.269	3.6779	33.536	.53828	427.52
#1	-.00142	.18341	.00067	.01608	.04823	-.00004	49.359	.00006
#2	.00132	.18364	-.00038	.01332	.04502	-.00004	49.122	-.00001
#3	.00132	.18245	-.00175	.01594	.04774	-.00002	49.652	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00003**	**.00159**	**.33766**	**.93895**	**.00494**	**8.1976**	**.06334**
Stddev	.00019	.00027	.00105	.05073	.07761	.00245	.0994	.00269
%RSD	196.09	798.17	66.187	15.025	8.2655	49.552	1.2130	4.2397
#1	.00001	.00030	.00243	.35720	1.0008	.00284	8.2616	.06157
#2	-.00031	.00002	.00192	.37572	.96417	.00435	8.0831	.06643
#3	.00002	-.00023	.00041	.28006	.85187	.00763	8.2482	.06202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**22.052**	**.00061**	**.03754**	**-.00166**	**-.00019**	**-.00487**	**3.4359**
Stddev	.00015	.057	.00079	.00314	.00208	.00167	.00224	.0089
%RSD	34.213	.25652	129.06	8.3524	125.31	872.43	45.986	.25946
#1	.00032	22.074	.00150	.03727	-.00177	-.00109	-.00433	3.4438
#2	.00061	21.988	.00001	.04080	-.00368	-.00122	-.00295	3.4378
#3	.00040	22.094	.00032	.03454	.00047	.00174	-.00733	3.4262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1704007205 Acquired: 4/4/2017 19:31:37 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00152**	**.19830**	**.00560**	**-.00101**	**.00098**	**.00157**	**-.01949**
Stddev	.00017	.00007	.00762	.00129	.00030	.00013	.30918
%RSD	11.372	.03317	136.19	128.50	30.849	7.9966	1586.3
#1	-.00149	.19828	-.00179	-.00089	.00100	.00159	-.13124
#2	-.00136	.19825	.01343	.00023	.00066	.00168	-.25725
#3	-.00171	.19837	.00515	-.00235	.00126	.00143	.33002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**22972.**	**150820.**	**4523.4**
Stddev	98.	58.	19.0
%RSD	.42613	.03835	.42063
#1	23033.	150890.	4524.6
#2	23024.	150780.	4541.8
#3	22859.	150790.	4503.8

Approved: April 05, 2017

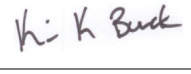
Sample Name: L1704007205PS Acquired: 4/4/2017 19:35:04 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608769-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20863**	**5.3196**	**.19907**	**1.0066**	**.56766**	**.02604**	**49.641**	**.02508**
Stddev	.00177	.0065	.00199	.0024	.00125	.00005	.252	.00019
%RSD	.84677	.12242	.99767	.23314	.21935	.18313	.50795	.76120
#1	.20869	5.3250	.19945	1.0048	.56683	.02608	49.356	.02491
#2	.21036	5.3216	.19693	1.0057	.56909	.02606	49.835	.02529
#3	.20683	5.3124	.20084	1.0092	.56706	.02599	49.732	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10118**	**.26071**	**.25271**	**2.3403**	**27.427**	**.54380**	**12.368**	**.30858**
Stddev	.00023	.00022	.00102	.0168	.148	.00867	.129	.00346
%RSD	.22993	.08282	.40250	.71781	.53985	1.5947	1.0392	1.1221
#1	.10109	.26096	.25155	2.3240	27.302	.54192	12.456	.30972
#2	.10145	.26060	.25344	2.3575	27.590	.53622	12.427	.31134
#3	.10101	.26057	.25314	2.3393	27.388	.55325	12.220	.30470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50071**	**46.543**	**.25434**	**4.9423**	**.25582**	**.61756**	**.19413**	**5.5791**
Stddev	.00108	.177	.00065	.0032	.00135	.00263	.00176	.0094
%RSD	.21578	.37990	.25383	.06452	.52687	.42619	.90915	.16899
#1	.50196	46.344	.25490	4.9436	.25708	.61461	.19210	5.5726
#2	.50011	46.602	.25363	4.9387	.25440	.61840	.19531	5.5747
#3	.50007	46.682	.25447	4.9446	.25597	.61967	.19498	5.5899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

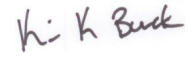


Sample Name: L1704007205PS Acquired: 4/4/2017 19:35:04 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608769-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51590**	**.69724**	**.51588**	**.25809**	**.52268**	**.51227**	**.46212**
Stddev	.00045	.00236	.00653	.00135	.00126	.00047	.33317
%RSD	.08693	.33898	1.2661	.52446	.24127	.09249	72.097
#1	.51632	.69580	.50919	.25653	.52362	.51179	.76803
#2	.51543	.69594	.52224	.25892	.52317	.51274	.10713
#3	.51596	.69996	.51622	.25883	.52124	.51227	.51120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23123.**	**151380.**	**4526.9**
Stddev	193.	712.	57.5
%RSD	.83471	.47030	1.2711
#1	23324.	151400.	4492.9
#2	23108.	152090.	4494.4
#3	22939.	150660.	4593.3

Approved: April 05, 2017



Sample Name: L1704007205SDL Acquired: 4/4/2017 19:38:28 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608769-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00256**	**.03471**	**.00206**	**.00615**	**.00795**	**.00002**	**10.023**
Stddev	.00248	.00613	.00157	.00112	.00136	.00002	.056
%RSD	96.713	17.670	76.374	18.251	17.125	86.887	.56172
#1	-.00135	.03007	.00067	.00744	.00931	.00001	10.086
#2	-.00541	.03240	.00174	.00561	.00795	.00001	10.005
#3	-.00092	.04167	.00376	.00539	.00659	.00004	9.9781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00018**	**-.00045**	**.00049**	**.05791**	**.28538**	**-.00418**
Stddev	.00021	.00011	.00024	.00082	.02552	.08196	.00842
%RSD	120.91	60.410	53.787	166.18	44.066	28.720	201.49
#1	.00002	-.00021	-.00025	.00139	.08626	.30315	.00156
#2	-.00015	-.00027	-.00071	-.00021	.05073	.19599	-.00025
#3	-.00039	-.00006	-.00038	.00029	.03675	.35699	-.01385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.8223**	**.01631**	**.00001**	**4.5172**	**.00043**	**.01263**	**-.00136**
Stddev	.0184	.00212	.00034	.0446	.00137	.00047	.00174
%RSD	1.0102	12.992	2352.7	.98828	319.24	3.7356	127.79
#1	1.8353	.01485	-.00029	4.5102	.00156	.01229	-.00331
#2	1.8304	.01874	-.00004	4.5650	.00082	.01242	.00002
#3	1.8012	.01534	.00038	4.4765	-.00109	.01317	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1704007205SDL Acquired: 4/4/2017 19:38:28 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608769-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00591**	**-.00485**	**.68517**	**-.00064**	**.04012**	**.00253**	**.00212**
Stddev	.00111	.00163	.00153	.00076	.00070	.00228	.00100
%RSD	18.795	33.621	.22339	117.81	1.7459	90.017	47.133
#1	-.00692	-.00621	.68390	-.00132	.03941	.00516	.00181
#2	-.00610	-.00304	.68687	-.00079	.04016	.00118	.00131
#3	-.00472	-.00530	.68473	.00018	.04081	.00125	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00034**	**.00084**	F **-.22138**
Stddev	.00028	.00001	.11984
%RSD	81.458	1.5157	54.136
#1	.00002	.00085	-.26330
#2	.00054	.00083	-.08620
#3	.00045	.00084	-.31463
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23963.**	**153950.**	**4462.7**
Stddev	478.	49.	17.9
%RSD	1.9940	.03186	.40165
#1	23860.	153910.	4466.4
#2	23545.	154000.	4478.5
#3	24484.	153930.	4443.2

Approved: April 05, 2017

Kristi K Buck

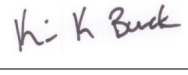
Sample Name: CCV Acquired: 4/4/2017 19:41:57 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41842**	**10.409**	**.40207**	**.52044**	**1.0382**	**.05190**	**10.307**
Stddev	.00331	.067	.00144	.00468	.0035	.00023	.064
%RSD	.79166	.64151	.35899	.89949	.33832	.44552	.62115
#1	.41513	10.333	.40350	.51515	1.0342	.05166	10.350
#2	.41837	10.439	.40208	.52216	1.0400	.05193	10.337
#3	.42175	10.456	.40062	.52402	1.0405	.05212	10.234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05043**	**.20238**	**.51555**	**.50446**	**3.9626**	**52.361**	**1.0470**
Stddev	.00015	.00084	.00363	.00188	.0257	.057	.0030
%RSD	.29442	.41543	.70366	.37185	.64993	.10907	.28594
#1	.05055	.20332	.51176	.50616	3.9922	52.400	1.0504
#2	.05027	.20211	.51590	.50245	3.9500	52.295	1.0449
#3	.05048	.20170	.51899	.50477	3.9456	52.388	1.0458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9937**	**.48941**	**1.0021**	**52.822**	**.50653**	**9.9961**	**.50652**
Stddev	.0833	.00594	.0026	.120	.00030	.0161	.00110
%RSD	.83315	1.2130	.26223	.22701	.05939	.16094	.21659
#1	9.9186	.49627	1.0050	52.948	.50637	10.014	.50589
#2	10.083	.48586	1.0013	52.811	.50688	9.9839	.50779
#3	9.9792	.48611	.99994	52.709	.50634	9.9901	.50589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: April 05, 2017



Sample Name: CCV Acquired: 4/4/2017 19:41:57 Type: QC
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2429**	**.41214**	**5.0098**	**1.0203**	**1.0266**	**1.0074**	**.52095**
Stddev	.0058	.00239	.0086	.0026	.0043	.0068	.00162
%RSD	.46618	.57922	.17157	.25005	.41410	.67784	.31093
#1	1.2488	.41326	5.0197	1.0233	1.0239	.99968	.52178
#2	1.2428	.41375	5.0042	1.0188	1.0245	1.0128	.52198
#3	1.2372	.40939	5.0056	1.0189	1.0315	1.0097	.51908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0251**	**1.0235**	F **.87560**
Stddev	.0039	.0016	.09380
%RSD	.37700	.15433	10.712
#1	1.0208	1.0253	.94930
#2	1.0265	1.0224	.77002
#3	1.0281	1.0227	.90748
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23579.**	**153600.**	**4727.0**
Stddev	118.	1476.	77.0
%RSD	.50167	.96098	1.6299
#1	23708.	155170.	4661.9
#2	23476.	153380.	4707.0
#3	23552.	152240.	4812.0

Approved: April 05, 2017
Ki K Buck

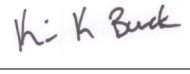
Sample Name: CCB Acquired: 4/4/2017 19:45:18 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00120**	**-.00637**	**.00075**	**.00408**	**-.00340**	**-.00003**	**.04369**
Stddev	.00181	.00457	.00165	.00112	.00214	.00003	.04593
%RSD	150.78	71.757	219.03	27.500	62.814	97.089	105.13
#1	-.00065	-.00659	.00016	.00295	-.00137	-.00006	-.00832
#2	.00027	-.00170	.00261	.00519	-.00321	-.00004	.06070
#3	-.00322	-.01083	-.00052	.00409	-.00563	.00000	.07869
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.00002**	**-.00037**	**.00001**	**-.02646**	**-.16741**	**.00123**
Stddev	.00010	.00020	.00118	.00091	.00867	.08396	.00410
%RSD	32.356	986.66	319.66	17645.	32.749	50.150	334.64
#1	-.00041	-.00017	-.00166	-.00104	-.02768	-.21168	-.00190
#2	-.00026	-.00000	.00066	.00055	-.01725	-.07059	.00587
#3	-.00023	.00023	-.00010	.00051	-.03446	-.21997	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11763**	**.00219**	**-.00028**	**.07761**	**.00046**	**-.00091**	**-.00234**
Stddev	.10131	.00479	.00036	.02719	.00053	.00181	.00110
%RSD	86.125	219.17	128.50	35.036	113.74	198.19	47.068
#1	.14810	.00406	-.00038	.05078	.00093	.00060	-.00143
#2	.20021	.00576	-.00059	.10515	.00057	-.00042	-.00203
#3	.00458	-.00326	.00012	.07692	-.00011	-.00292	-.00356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: CCB Acquired: 4/4/2017 19:45:18 Type: Blank
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00283**	**-.00391**	**.00482**	**.00049**	**-.00024**	**.00214**	**-.00002**
Stddev	.00169	.00743	.00059	.00016	.00076	.01002	.00118
%RSD	59.879	190.13	12.153	33.270	316.15	468.28	5793.4
#1	-.00193	-.00697	.00442	.00060	-.00028	-.00908	-.00094
#2	-.00177	-.00931	.00455	.00031	-.00097	.01020	.00131
#3	-.00478	.00456	.00549	.00057	.00054	.00530	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00039**	**.00000**	F **-.12241**
Stddev	.00040	.00003	.06653
%RSD	104.09	5800.9	54.351
#1	.00051	-.00004	-.10161
#2	-.00006	.00001	-.19686
#3	.00072	.00003	-.06876
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23634.**	**157080.**	**4657.6**
Stddev	219.	1137.	49.8
%RSD	.92799	.72364	1.0702
#1	23500.	156130.	4674.0
#2	23887.	158340.	4697.2
#3	23515.	156790.	4601.6

Approved: April 05, 2017

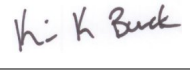
Sample Name: LLCCV Acquired: 4/4/2017 19:48:48 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00692**	**.17404**	**.00798**	**.08154**	**.00614**	**.00159**	**.50776**	**.00066**
Stddev	.00168	.00291	.00095	.00245	.00183	.00007	.05427	.00013
%RSD	24.288	1.6748	11.857	3.0024	29.752	4.5097	10.689	19.449
#1	.00647	.17218	.00823	.08432	.00803	.00166	.50889	.00063
#2	.00552	.17255	.00877	.07968	.00439	.00158	.56146	.00054
#3	.00879	.17740	.00693	.08063	.00599	.00152	.45293	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00438**	**.00417**	**.00526**	**.08480**	**.85365**	**.08017**	**.56355**	**.01093**
Stddev	.00039	.00030	.00066	.01798	.17651	.00169	.02041	.00294
%RSD	8.8541	7.1012	12.482	21.206	20.677	2.1033	3.6212	26.913
#1	.00477	.00428	.00462	.07075	.74418	.07865	.55990	.01148
#2	.00400	.00439	.00593	.07859	.75949	.07988	.58554	.00775
#3	.00436	.00383	.00524	.10507	1.0573	.08199	.54522	.01356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00795**	**.54906**	**.01801**	**.80666**	**.00646**	**.08733**	**.01399**	**.74899**
Stddev	.00029	.03211	.00024	.00545	.00299	.00277	.00380	.00409
%RSD	3.6747	5.8473	1.3268	.67536	46.254	3.1728	27.185	.54634
#1	.00777	.51260	.01780	.81030	.00820	.09053	.01004	.74822
#2	.00779	.57308	.01795	.80927	.00817	.08584	.01762	.74534
#3	.00829	.56152	.01827	.80039	.00301	.08563	.01431	.75341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

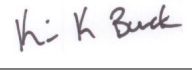


Sample Name: LLCCV Acquired: 4/4/2017 19:48:48 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42032**	**.04267**	**.02353**	**.17036**	**.00847**	**.01884**	**41.735**
Stddev	.00180	.00040	.00672	.00153	.00033	.00007	.748
%RSD	.42709	.93944	28.571	.89982	3.9047	.38303	1.7923
#1	.42022	.04300	.01606	.17212	.00863	.01889	41.793
#2	.41858	.04222	.02909	.16966	.00870	.01876	40.960
#3	.42216	.04277	.02543	.16931	.00809	.01888	42.453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24202.**	**158220.**	**4481.3**
Stddev	50.	1195.	70.1
%RSD	.20711	.75550	1.5651
#1	24157.	157370.	4510.3
#2	24193.	157710.	4532.3
#3	24256.	159590.	4401.3

Approved: April 05, 2017



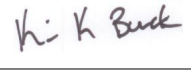
Sample Name: LLCCV Acquired: 4/4/2017 19:52:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00780**	**.17945**	**.00988**	**.08318**	**.00484**	**.00161**	**.44049**	**.00077**
Stddev	.00130	.00519	.00156	.00115	.00145	.00004	.05507	.00009
%RSD	16.651	2.8901	15.834	1.3845	29.854	2.3230	12.503	12.209
#1	.00746	.17492	.01070	.08269	.00542	.00164	.42389	.00069
#2	.00670	.18511	.00808	.08449	.00320	.00157	.50195	.00075
#3	.00923	.17833	.01086	.08234	.00591	.00163	.39563	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00405**	**.00357**	**.00455**	**.06565**	**.81618**	**.08838**	**.61761**	**.00949**
Stddev	.00039	.00047	.00033	.01001	.08585	.01030	.12861	.00042
%RSD	9.7108	13.282	7.3046	15.255	10.518	11.652	20.824	4.4348
#1	.00383	.00318	.00444	.07643	.81109	.07689	.60916	.00934
#2	.00451	.00344	.00429	.05664	.73299	.09145	.75024	.00997
#3	.00382	.00410	.00493	.06386	.90446	.09678	.49344	.00917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00784**	**.49102**	**.01720**	**.80973**	**.00944**	**.08507**	**.01522**	**.75113**
Stddev	.00032	.02065	.00061	.00547	.00094	.00248	.00311	.00113
%RSD	4.0688	4.2065	3.5254	.67568	9.9851	2.9169	20.457	.15052
#1	.00778	.50885	.01658	.81079	.00877	.08630	.01787	.75241
#2	.00818	.46838	.01779	.80381	.01052	.08221	.01179	.75026
#3	.00755	.49582	.01724	.81459	.00904	.08669	.01600	.75074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LLCCV Acquired: 4/4/2017 19:52:15 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42475**	**.04228**	**.02092**	**.17174**	**.00847**	**.01874**	**40.913**
Stddev	.00042	.00087	.00549	.00159	.00015	.00005	.729
%RSD	.09809	2.0498	26.235	.92377	1.8180	.28949	1.7810
#1	.42523	.04196	.02699	.17189	.00831	.01870	41.073
#2	.42447	.04161	.01631	.17008	.00848	.01880	40.117
#3	.42455	.04326	.01946	.17324	.00862	.01873	41.548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23373.**	**153190.**	**4558.9**
Stddev	169.	921.	84.9
%RSD	.72328	.60110	1.8614
#1	23556.	154240.	4577.0
#2	23338.	152500.	4633.3
#3	23224.	152840.	4466.5

Approved: April 05, 2017

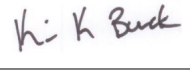
Sample Name: LLCCV Acquired: 4/4/2017 19:55:43 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00688**	**.18065**	**.01039**	**.08306**	**.00678**	**.00164**	**.47019**	**.00088**
Stddev	.00013	.00111	.00092	.00210	.00080	.00001	.02223	.00021
%RSD	1.8353	.61360	8.8208	2.5230	11.736	.63553	4.7277	23.834
#1	.00678	.18172	.00968	.08065	.00737	.00165	.49398	.00065
#2	.00683	.18074	.01007	.08404	.00710	.00163	.46666	.00094
#3	.00702	.17950	.01143	.08448	.00587	.00164	.44994	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00418**	**.00422**	**.00523**	**.06024**	**.81265**	**.08584**	**.57843**	**.01103**
Stddev	.00014	.00013	.00026	.02977	.14935	.00469	.06982	.00105
%RSD	3.4608	3.1336	4.8830	49.414	18.378	5.4688	12.071	9.5282
#1	.00434	.00435	.00513	.09037	.70115	.08536	.58968	.00986
#2	.00412	.00422	.00504	.05952	.75448	.09076	.50367	.01191
#3	.00407	.00408	.00552	.03084	.98233	.08141	.64194	.01131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00773**	**.50527**	**.01794**	**.81242**	**.00899**	**.08396**	**.01491**	**.75772**
Stddev	.00016	.04986	.00027	.00212	.00280	.00155	.00295	.00835
%RSD	2.1001	9.8679	1.4839	.26045	31.138	1.8517	19.784	1.1015
#1	.00791	.52634	.01802	.81401	.01096	.08470	.01313	.76292
#2	.00762	.44834	.01765	.81002	.01021	.08217	.01328	.74809
#3	.00765	.54115	.01816	.81322	.00578	.08500	.01832	.76214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: LLCCV Acquired: 4/4/2017 19:55:43 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42359**	**.04259**	**.02357**	**.17465**	**.00812**	**.01952**	**41.839**
Stddev	.00325	.00016	.00059	.00042	.00014	.00015	.892
%RSD	.76764	.37169	2.5071	.24007	1.6764	.78710	2.1327
#1	.42664	.04262	.02412	.17447	.00821	.01970	42.473
#2	.42017	.04273	.02364	.17513	.00797	.01940	42.227
#3	.42396	.04242	.02294	.17435	.00819	.01947	40.819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23564.**	**151590.**	**4432.8**
Stddev	89.	1156.	39.5
%RSD	.37722	.76232	.89040
#1	23634.	152920.	4396.2
#2	23464.	150850.	4427.5
#3	23596.	150990.	4474.6

Approved: April 05, 2017

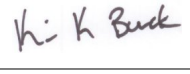
Sample Name: PBW 1C Acquired: 4/4/2017 19:59:14 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**-.00336**	**-.00087**	**.00136**	**-.00253**	**-.00006**	**.01160**
Stddev	.00125	.00195	.00304	.00076	.00105	.00004	.02349
%RSD	96.594	57.954	350.53	55.658	41.393	58.895	202.48
#1	-.00274	-.00113	.00109	.00062	-.00159	-.00009	.02094
#2	-.00047	-.00424	.00068	.00132	-.00235	-.00007	.02898
#3	-.00069	-.00472	-.00438	.00214	-.00366	-.00002	-.01512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00001**	**-.00119**	**.00091**	**.02359**	**.17275**	**-.00785**
Stddev	.00017	.00026	.00049	.00090	.04623	.14853	.00286
%RSD	186.47	1948.0	41.317	99.079	195.94	85.982	36.382
#1	-.00010	-.00029	-.00172	.00193	.07447	.14770	-.01000
#2	.00016	.00022	-.00075	.00057	.01214	.03833	-.00895
#3	.00020	.00003	-.00110	.00023	-.01584	.33221	-.00461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19833**	**.00137**	**-.00019**	**.09836**	**.00096**	**-.00921**	**-.00034**
Stddev	.02544	.00328	.00013	.00423	.00089	.00625	.00303
%RSD	12.826	239.96	67.863	4.3015	92.764	67.809	883.47
#1	.20872	.00191	-.00006	.09797	-.00005	-.00394	.00312
#2	.16934	-.00215	-.00020	.09434	.00162	-.00758	-.00162
#3	.21693	.00435	-.00032	.10278	.00131	-.01611	-.00253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: PBW 1C Acquired: 4/4/2017 19:59:14 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**-.00345**	**.00326**	**-.00010**	**-.00054**	**.00330**	**-.00215**
Stddev	.00559	.00362	.00146	.00032	.00073	.00861	.00235
%RSD	2593.1	104.87	44.659	326.83	136.97	261.30	109.04
#1	.00622	-.00227	.00389	-.00014	-.00136	-.00138	-.00024
#2	-.00073	-.00057	.00429	.00024	.00004	-.00196	-.00478
#3	-.00484	-.00751	.00159	-.00040	-.00028	.01323	-.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00020**	**.00086**	F **-.12824**
Stddev	.00020	.00007	.08763
%RSD	102.89	7.9390	68.338
#1	-.00042	.00093	-.22928
#2	-.00003	.00082	-.07293
#3	-.00014	.00081	-.08250
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24461.**	**161190.**	**4649.4**
Stddev	538.	1128.	105.3
%RSD	2.2004	.69969	2.2651
#1	23851.	161290.	4537.8
#2	24869.	160020.	4663.3
#3	24662.	162270.	4747.0

Approved: April 05, 2017

Sample Name: LCSW 1C Acquired: 4/4/2017 20:02:49 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20902**	**5.3069**	**.19717**	**.98663**	**.52360**	**.02567**	**5.2016**	**.02496**
Stddev	.00102	.0223	.00182	.00563	.00405	.00011	.0681	.00003
%RSD	.48875	.42071	.92264	.57017	.77355	.42106	1.3090	.13993
#1	.21020	5.2832	.19642	.98037	.51936	.02579	5.1258	.02493
#2	.20839	5.3276	.19924	.98825	.52400	.02558	5.2576	.02499
#3	.20846	5.3097	.19584	.99126	.52743	.02566	5.2213	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10288**	**.26102**	**.25649**	**2.0353**	**25.806**	**.53064**	**5.2776**	**.25598**
Stddev	.00055	.00106	.00078	.0205	.374	.00909	.1032	.00501
%RSD	.53058	.40502	.30512	1.0088	1.4502	1.7129	1.9547	1.9578
#1	.10225	.26091	.25561	2.0158	25.404	.52024	5.1772	.25113
#2	.10318	.26003	.25677	2.0335	25.869	.53707	5.3833	.26114
#3	.10321	.26213	.25710	2.0567	26.145	.53461	5.2721	.25568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49839**	**26.595**	**.26039**	**4.8599**	**.25947**	**.62338**	**.19644**	**2.5315**
Stddev	.00338	.275	.00208	.0178	.00186	.00488	.00124	.0110
%RSD	.67778	1.0322	.79890	.36605	.71533	.78354	.63153	.43375
#1	.49488	26.319	.25807	4.8441	.25737	.61941	.19680	2.5197
#2	.49867	26.597	.26103	4.8563	.26012	.62883	.19746	2.5335
#3	.50161	26.868	.26208	4.8792	.26091	.62190	.19506	2.5413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: LCSW 1C Acquired: 4/4/2017 20:02:49 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608508-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52080**	**.51474**	**.50922**	**.26378**	**.51752**	**.52068**	**1.2775**
Stddev	.00162	.00373	.01616	.00188	.00082	.00265	.1879
%RSD	.31066	.72553	3.1742	.71456	.15762	.50841	14.708
#1	.51893	.51093	.52235	.26161	.51742	.51779	1.0930
#2	.52179	.51490	.49117	.26489	.51675	.52126	1.2708
#3	.52168	.51839	.51414	.26485	.51838	.52299	1.4686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23792.**	**155580.**	**4779.6**
Stddev	227.	714.	77.9
%RSD	.95489	.45861	1.6295
#1	24049.	156400.	4869.3
#2	23713.	155070.	4729.4
#3	23616.	155280.	4740.2

Approved: April 05, 2017

Sample Name: L1703165701 Acquired: 4/4/2017 20:06:19 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.12256**	**-.00013**	**.01956**	**.11351**	**-.00005**	**10.241**
Stddev	.00073	.00221	.00177	.00065	.00285	.00004	.069
%RSD	127.16	1.8017	1381.7	3.3031	2.5111	71.470	.67733
#1	-.00132	.12010	.00065	.02023	.11514	-.00010	10.283
#2	-.00051	.12435	-.00215	.01952	.11516	-.00003	10.279
#3	.00012	.12324	.00112	.01894	.11021	-.00003	10.161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00009**	**-.00029**	**.00170**	**.31048**	**2.0349**	**.00172**
Stddev	.00007	.00002	.00047	.00066	.02942	.1351	.00085
%RSD	627.03	26.001	163.97	39.093	9.4764	6.6415	49.365
#1	-.00006	.00007	-.00077	.00123	.34177	1.9609	.00124
#2	.00009	.00011	-.00025	.00246	.30632	1.9530	.00122
#3	.00000	.00007	.00016	.00141	.28337	2.1909	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1815**	**.03023**	**.00042**	**26.253**	**.00180**	**.02363**	**.00342**
Stddev	.0915	.00206	.00010	.157	.00051	.00131	.00104
%RSD	4.1940	6.8196	24.563	.59967	28.232	5.5336	30.385
#1	2.0889	.02958	.00049	26.394	.00133	.02508	.00461
#2	2.1837	.02858	.00048	26.283	.00172	.02253	.00279
#3	2.2719	.03254	.00030	26.083	.00233	.02328	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017
Kri K Buck

Sample Name: L1703165701 Acquired: 4/4/2017 20:06:19 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**-.00120**	**1.8455**	**-.00055**	**.20175**	**.00342**	**-.00256**
Stddev	.00081	.00343	.0025	.00050	.00166	.01660	.00177
%RSD	54.646	286.71	.13759	91.172	.82251	485.86	69.051
#1	-.00130	.00190	1.8437	-.00070	.20340	.02111	-.00236
#2	-.00078	-.00061	1.8484	-.00097	.20178	-.01182	-.00090
#3	-.00238	-.00488	1.8444	.00001	.20008	.00096	-.00442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00083**	**.01724**	F **-.13257**
Stddev	.00060	.00001	.34498
%RSD	71.362	.07167	260.21
#1	.00016	.01724	-.27470
#2	.00105	.01723	-.38378
#3	.00129	.01726	.26076
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23729.**	**156070.**	**4535.2**
Stddev	172.	361.	99.1
%RSD	.72283	.23129	2.1855
#1	23886.	156120.	4471.5
#2	23756.	155680.	4484.7
#3	23546.	156390.	4649.4

Approved: April 05, 2017

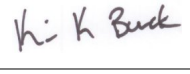
Sample Name: L1703165702 Acquired: 4/4/2017 20:09:47 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00052**	**.24876**	**.00121**	**.01112**	**.00736**	**-.00006**	**18.216**	**.00011**
Stddev	.00129	.00547	.00169	.00182	.00236	.00005	.083	.00027
%RSD	248.51	2.2007	139.68	16.409	32.099	87.372	.45453	233.15
#1	-.00096	.25498	-.00007	.01256	.00843	-.00010	18.179	.00033
#2	.00108	.24663	.00312	.00907	.00465	-.00000	18.157	-.00018
#3	.00143	.24467	.00058	.01172	.00900	-.00007	18.310	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00043**	**.00173**	**.31901**	**1.5331**	**-.00439**	**2.5313**	**.05404**
Stddev	.00019	.00091	.00135	.01975	.0769	.00486	.0364	.00185
%RSD	1637.0	211.78	77.959	6.1908	5.0150	110.66	1.4380	3.4280
#1	.00005	.00122	.00151	.31300	1.5678	-.00278	2.4893	.05197
#2	-.00019	.00063	.00051	.34106	1.5865	-.00054	2.5529	.05554
#3	.00018	-.00057	.00318	.30296	1.4450	-.00986	2.5518	.05460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**3.4888**	**.00186**	**.02140**	**-.00246**	**-.00153**	**-.00247**	**.55991**
Stddev	.00031	.0375	.00089	.00217	.00053	.00390	.00360	.00243
%RSD	199.38	1.0754	48.067	10.141	21.744	254.80	145.52	.43478
#1	-.00007	3.5217	.00279	.02121	-.00232	-.00135	-.00231	.55927
#2	.00003	3.4967	.00101	.01934	-.00201	-.00552	.00104	.55786
#3	.00052	3.4479	.00178	.02367	-.00305	.00228	-.00615	.56260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

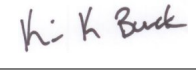


Sample Name: L1703165702 Acquired: 4/4/2017 20:09:47 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00142**	**.05685**	**.00555**	**-.00273**	**.00067**	**.00182**	**.25038**
Stddev	.00040	.00109	.01306	.00061	.00009	.00006	.11245
%RSD	28.037	1.9160	235.33	22.459	14.005	3.4375	44.912
#1	-.00149	.05809	.00279	-.00243	.00073	.00181	.25840
#2	-.00179	.05604	.01978	-.00344	.00072	.00177	.13414
#3	-.00100	.05643	-.00591	-.00233	.00056	.00189	.35861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23464.**	**157710.**	**4550.3**
Stddev	499.	1919.	30.2
%RSD	2.1254	1.2168	.66394
#1	23923.	155540.	4583.6
#2	23536.	159170.	4524.6
#3	22933.	158430.	4542.6

Approved: April 05, 2017



Sample Name: L1703165703 Acquired: 4/4/2017 20:13:19 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00127**	**.81250**	**-.00137**	**.01245**	**.04518**	**-.00002**	**41.217**
Stddev	.00046	.01136	.00212	.00276	.00061	.00002	.126
%RSD	36.065	1.3979	154.34	22.147	1.3524	117.10	.30506
#1	-.00083	.80312	.00058	.01477	.04455	-.00004	41.130
#2	-.00123	.80925	-.00107	.01317	.04520	-.00002	41.159
#3	-.00174	.82512	-.00362	.00940	.04577	.00000	41.361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00033**	**.00020**	**.00311**	**1.0895**	**1.1319**	**.00283**
Stddev	.00012	.00033	.00028	.00026	.0209	.0367	.00753
%RSD	61.352	99.558	140.00	8.2173	1.9150	3.2444	266.36
#1	.00010	.00061	-.00011	.00287	1.1131	1.1309	.01009
#2	.00032	-.00003	.00028	.00338	1.0819	1.0957	-.00494
#3	.00014	.00041	.00042	.00307	1.0734	1.1692	.00332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.2221**	**.05409**	**.00016**	**3.0905**	**.00176**	**.06071**	**.00140**
Stddev	.0498	.00153	.00006	.0314	.00076	.00729	.00318
%RSD	1.1789	2.8368	35.093	1.0165	43.221	12.012	226.50
#1	4.1985	.05325	.00013	3.0547	.00214	.06811	.00505
#2	4.1885	.05586	.00022	3.1035	.00088	.05353	-.00077
#3	4.2793	.05315	.00013	3.1134	.00224	.06050	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

Sample Name: L1703165703 Acquired: 4/4/2017 20:13:19 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00161**	**4.5926**	**-.00106**	**.11702**	**.00825**	**-.00214**
Stddev	.00412	.00027	.0200	.00039	.00062	.00808	.00115
%RSD	9964.5	17.017	.43542	36.502	.53025	97.973	53.599
#1	.00426	-.00160	4.5700	-.00135	.11647	.00000	-.00293
#2	-.00043	-.00189	4.5998	-.00062	.11689	.01615	-.00083
#3	-.00395	-.00134	4.6081	-.00120	.11769	.00859	-.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00179**	**.02283**	F **-.07472**
Stddev	.00039	.00016	.32918
%RSD	21.930	.71165	440.58
#1	.00221	.02272	-.03970
#2	.00173	.02276	.23556
#3	.00143	.02302	-.42001
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23825.**	**156130.**	**4546.4**
Stddev	48.	488.	35.2
%RSD	.20066	.31258	.77441
#1	23843.	155950.	4514.2
#2	23861.	156680.	4584.0
#3	23771.	155750.	4540.9

Approved: April 05, 2017

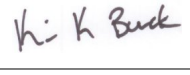
Sample Name: L1703165704 Acquired: 4/4/2017 20:16:48 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00183**	**.13053**	**.00002**	**.01402**	**.01992**	**-.00003**	**41.844**
Stddev	.00144	.00186	.00119	.00112	.00099	.00004	.084
%RSD	78.595	1.4254	6173.1	7.9919	4.9680	124.86	.20056
#1	-.00037	.13211	-.00001	.01531	.01935	.00001	41.772
#2	-.00325	.13100	.00123	.01332	.01935	-.00007	41.824
#3	-.00189	.12848	-.00116	.01343	.02106	-.00003	41.936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00005**	**.00013**	**.00183**	**.07600**	**.79831**	**.00234**
Stddev	.00003	.00037	.00041	.00057	.02734	.06647	.00243
%RSD	69.220	686.94	309.88	31.119	35.976	8.3267	103.53
#1	-.00005	-.00010	.00060	.00130	.09702	.72167	.00114
#2	-.00001	-.00022	-.00016	.00176	.04509	.84026	.00514
#3	-.00006	.00047	-.00004	.00244	.08589	.83300	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.1107**	**.00464**	**.00047**	**4.3925**	**.00154**	**.01200**	**-.00124**
Stddev	.0842	.00150	.00022	.0467	.00018	.00271	.00131
%RSD	1.3772	32.196	46.150	1.0626	11.826	22.595	106.06
#1	6.2032	.00578	.00043	4.3471	.00174	.01457	-.00203
#2	6.0387	.00520	.00028	4.3899	.00149	.00917	-.00195
#3	6.0903	.00295	.00071	4.4404	.00138	.01226	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017



Sample Name: L1703165704 Acquired: 4/4/2017 20:16:48 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**-.00456**	**3.1006**	**-.00045**	**.12547**	**.00274**	**-.00031**
Stddev	.00253	.00560	.0095	.00029	.00076	.00955	.00219
%RSD	107.37	122.86	.30801	65.230	.60578	348.66	711.71
#1	.00054	-.00326	3.0954	-.00024	.12512	.01238	.00088
#2	-.00346	.00028	3.1116	-.00078	.12494	-.00672	.00103
#3	-.00416	-.01069	3.0948	-.00031	.12634	.00256	-.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00109**	**.00249**	F **-.08774**
Stddev	.00048	.00004	.21236
%RSD	44.552	1.4793	242.04
#1	.00119	.00249	-.19764
#2	.00056	.00246	-.22263
#3	.00151	.00253	.15705
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24290.**	**156230.**	**4614.5**
Stddev	74.	1878.	51.7
%RSD	.30284	1.2021	1.1208
#1	24308.	154140.	4567.3
#2	24210.	156770.	4669.8
#3	24354.	157770.	4606.4

Approved: April 05, 2017

Kristi K Buck

Sample Name: L1703165705 Acquired: 4/4/2017 20:20:16 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00192**	**.12671**	**-.00125**	**.01013**	**.02903**	**-.00012**	**36.467**	**.00023**
Stddev	.00062	.00064	.00088	.00125	.00074	.00002	.314	.00006
%RSD	32.286	.50453	70.126	12.353	2.5459	20.074	.86033	27.174
#1	-.00184	.12666	-.00203	.01132	.02961	-.00009	36.199	.00028
#2	-.00135	.12610	-.00030	.00882	.02819	-.00013	36.390	.00025
#3	-.00258	.12738	-.00141	.01024	.02928	-.00013	36.812	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00045**	**-.00005**	**.06515**	**.64613**	**.01024**	**4.3608**	**.00065**
Stddev	.00032	.00018	.00136	.01069	.09750	.00221	.1324	.00035
%RSD	279.94	39.475	2619.9	16.408	15.090	21.550	3.0365	53.544
#1	-.00046	-.00026	.00064	.05651	.73845	.01214	4.2486	.00034
#2	.00018	-.00050	-.00162	.06184	.54416	.00782	4.3270	.00102
#3	-.00007	-.00060	.00082	.07710	.65577	.01077	4.5069	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**3.8969**	**.00106**	**.01162**	**-.00080**	**-.00382**	**.00183**	**3.1283**
Stddev	.00045	.0187	.00071	.00239	.00174	.00094	.00235	.0056
%RSD	100.25	.47890	67.021	20.597	217.15	24.712	128.51	.17969
#1	.00097	3.8833	.00037	.00888	.00101	-.00474	.00269	3.1299
#2	.00025	3.9182	.00179	.01270	-.00246	-.00285	-.00083	3.1330
#3	.00014	3.8892	.00101	.01328	-.00096	-.00386	.00362	3.1221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

Sample Name: L1703165705 Acquired: 4/4/2017 20:20:16 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.09604**	**-.00396**	**-.00111**	**.00020**	**.00170**	**-.02685**
Stddev	.00059	.00089	.00659	.00239	.00044	.00008	.37093
%RSD	153.57	.92684	166.33	215.73	220.21	4.9585	1381.5
#1	-.00103	.09587	-.00740	-.00014	.00063	.00163	-.45165
#2	.00011	.09701	-.00813	-.00384	-.00025	.00167	.23297
#3	-.00023	.09526	.00364	.00064	.00021	.00179	.13813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**24404.**	**158260.**	**4805.3**
Stddev	74.	2017.	125.4
%RSD	.30363	1.2748	2.6088
#1	24331.	159810.	4664.7
#2	24479.	159000.	4905.6
#3	24401.	155980.	4845.5

Approved: April 05, 2017

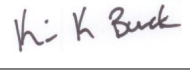
Sample Name: L1703165801 Acquired: 4/4/2017 20:23:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00157**	**.05178**	**-.00045**	**.05892**	**.21682**	**-.00004**	**32.007**	**.00023**
Stddev	.00086	.00194	.00165	.00060	.00299	.00003	.262	.00013
%RSD	54.788	3.7432	362.97	1.0252	1.3786	85.909	.81821	56.910
#1	-.00132	.05120	-.00149	.05962	.21362	-.00002	31.736	.00035
#2	-.00085	.05020	-.00132	.05858	.21955	-.00002	32.026	.00024
#3	-.00252	.05394	.00144	.05856	.21727	-.00008	32.259	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00023**	**.00202**	**.52428**	**1.2502**	**.00892**	**5.9364**	**.30615**
Stddev	.00015	.00041	.00081	.00697	.1880	.00208	.0362	.00307
%RSD	112.63	177.87	40.151	1.3287	15.040	23.372	.60967	1.0013
#1	.00004	-.00027	.00158	.52169	1.3874	.01072	5.9776	.30957
#2	-.00022	.00020	.00153	.51898	1.3274	.00939	5.9096	.30521
#3	-.00022	-.00062	.00296	.53217	1.0359	.00664	5.9220	.30366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00470**	**90.049**	**-.00001**	**.01801**	**-.00245**	**.00112**	**-.00093**	**3.6577**
Stddev	.00015	.465	.00088	.00318	.00320	.00275	.00427	.0294
%RSD	3.1616	.51587	6607.8	17.649	130.73	244.78	457.57	.80289
#1	.00483	89.521	-.00047	.01573	-.00436	-.00153	.00373	3.6784
#2	.00454	90.396	.00100	.01665	.00125	.00396	-.00187	3.6241
#3	.00471	90.230	-.00057	.02164	-.00423	.00094	-.00466	3.6705
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017



Sample Name: L1703165801 Acquired: 4/4/2017 20:23:46 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	**.55934**	**.00064**	**-.00133**	**.00085**	**.00123**	**.06000**
Stddev	.00016	.00378	.00356	.00204	.00021	.00017	.11996
%RSD	19.925	.67596	555.61	153.44	25.119	13.646	199.95
#1	-.00095	.55498	-.00097	.00055	.00076	.00136	-.07844
#2	-.00087	.56133	.00473	-.00351	.00110	.00104	.12519
#3	-.00063	.56171	-.00184	-.00103	.00070	.00130	.13325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23167.**	**151700.**	**4590.2**
Stddev	368.	712.	61.0
%RSD	1.5904	.46938	1.3298
#1	23349.	151480.	4572.3
#2	23408.	152490.	4540.2
#3	22743.	151120.	4658.2

Approved: April 05, 2017

Sample Name: L1703165801PS Acquired: 4/4/2017 20:27:13 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608730-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20848**	**5.1693**	**.20054**	**1.0608**	**.72057**	**.02627**	**34.309**	**.02491**
Stddev	.00160	.0164	.00084	.0048	.00215	.00009	.159	.00015
%RSD	.76978	.31797	.41866	.45218	.29778	.34265	.46329	.62193
#1	.20983	5.1820	.19963	1.0597	.71824	.02629	34.144	.02508
#2	.20671	5.1508	.20072	1.0567	.72247	.02618	34.461	.02477
#3	.20891	5.1752	.20128	1.0661	.72100	.02635	34.322	.02488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10135**	**.26290**	**.25325**	**2.5119**	**27.437**	**.52751**	**10.334**	**.53076**
Stddev	.00068	.00106	.00189	.0196	.034	.00453	.106	.00499
%RSD	.66740	.40261	.74475	.78138	.12535	.85930	1.0218	.94098
#1	.10072	.26251	.25223	2.5319	27.477	.52779	10.244	.52504
#2	.10127	.26210	.25210	2.5112	27.424	.52284	10.307	.53305
#3	.10207	.26410	.25543	2.4926	27.412	.53190	10.450	.53421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50525**	**108.15**	**.25499**	**4.9546**	**.25268**	**.62231**	**.19811**	**5.8492**
Stddev	.00219	.53	.00129	.0228	.00035	.00655	.00431	.0258
%RSD	.43353	.48935	.50472	.45974	.13723	1.0531	2.1758	.44123
#1	.50349	107.71	.25388	4.9414	.25268	.62077	.20233	5.8277
#2	.50456	108.74	.25468	4.9416	.25233	.61665	.19372	5.8422
#3	.50770	108.01	.25640	4.9809	.25303	.62949	.19827	5.8778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: April 05, 2017

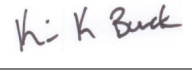
Kristi K Burck

Sample Name: L1703165801PS Acquired: 4/4/2017 20:27:13 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG608730-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51599**	**1.0186**	**.52194**	**.25839**	**.52460**	**.51800**	**.52712**
Stddev	.00206	.0021	.01438	.00277	.00122	.00220	.29399
%RSD	.39903	.20543	2.7543	1.0737	.23249	.42515	55.772
#1	.51458	1.0167	.51317	.25519	.52475	.51629	.19968
#2	.51503	1.0183	.53853	.25994	.52331	.51723	.76839
#3	.51835	1.0209	.51412	.26004	.52574	.52049	.61330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**23086.**	**150600.**	**4576.6**
Stddev	286.	625.	53.5
%RSD	1.2388	.41486	1.1697
#1	23296.	150630.	4515.4
#2	23202.	151210.	4599.3
#3	22760.	149970.	4615.0

Approved: April 05, 2017



Sample Name: L1703165801SDL Acquired: 4/4/2017 20:30:36 Type: Unk
Method: ICP-THERMO4_6010_200.7WATER_3YLINES(v308) Mode: CONC Corr. Factor: 1.00000(
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG608730-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00595**	**.00010**	**.01408**	**.03991**	**-.00002**	**6.2616**
Stddev	.00296	.00744	.00096	.00054	.00039	.00003	.0472
%RSD	1623.4	125.03	1006.9	3.8127	.96742	173.89	.75422
#1	.00221	-.00247	-.00076	.01428	.03973	.00002	6.2688
#2	-.00321	.00868	.00113	.01448	.03965	-.00004	6.2112
#3	.00155	.01165	-.00008	.01347	.04036	-.00003	6.3048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**-.00007**	**-.00086**	**.00088**	**.08521**	**.39614**	**-.00917**
Stddev	.00019	.00024	.00099	.00122	.03722	.09114	.00368
%RSD	120.95	325.65	115.54	138.28	43.678	23.008	40.098
#1	-.00001	-.00001	-.00040	-.00051	.11964	.48703	-.01151
#2	-.00009	-.00034	-.00018	.00139	.04572	.39664	-.00493
#3	-.00038	.00013	-.00200	.00176	.09026	.30474	-.01107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2964**	**.05763**	**.00053**	**18.060**	**.00064**	**.01176**	**.00023**
Stddev	.0272	.00134	.00028	.113	.00095	.00476	.00291
%RSD	2.0979	2.3199	52.185	.62719	147.37	40.460	1292.9
#1	1.3204	.05758	.00046	18.103	-.00033	.00632	-.00303
#2	1.3018	.05631	.00084	17.931	.00069	.01383	.00112
#3	1.2669	.05899	.00030	18.145	.00157	.01513	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: April 05, 2017

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