LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 24

2023

Bate Stamp Numbers
01177559 – 01179518

Prepared for

Department of the Army
Longhorn Army Ammunition Plant

1976–2023

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

VOLUME 24

2023

A. Title: Draft Final Pre-Design Investigation Step-Drawdown Test Abbreviated Work Plan, LHAAP-47, Plant 3 Area, Solid Rocket Motor Fuel Production, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): Department of the Army
Recipient: Environmental Protection Agency and Texas Commission on Environmental Quality
Date: June 14, 2023
Bate Stamp: 01177559–01177573

The above Work Plan was omitted in the previous Admin Record, so that is why it is out of date sequence and added to this July thru September 2023 Admin Record.

B. Title: Minutes – Final Monthly Managers' Meeting (MMM), Longhorn Army Ammunition Plant, May 18, 2023
Author(s): Department of the Army
Recipient: All Parties
Date: July 10, 2023
Bate Stamp: 01177574– 01177592

C. Title: Minutes – Final Monthly Managers' Meeting (MMM), Longhorn Army Ammunition Plant, June 22, 2023
Author(s): Department of the Army
Recipient: All Parties
Date: July 14, 2023
Bate Stamp: 01177593–01177622

D. Title: Report – Quarterly Evaluation Report, 1st Quarter (January–March) 2023 Groundwater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): Department of the Army
Recipient: Environmental Protection Agency and Texas Commission on Environmental Quality
Date: December 15, 2023
Bate Stamp: 01177623–01177946

The above Quarterly Evaluation Report was originally published on July 25, 2023, within the July thru September 2023 Admin Record (AR) window, but was revised on December 15, 2023. The Army opted to place this revised report in the July thru September 2023 AR since the previous edition had not yet been printed.

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

VOLUME 24 (Continued)

2023

E.	Title:	Report (Cont'd) – Appendix C LHAAP-18-24 Lab Reports to Quarterly Evaluation Report, 1st Quarter (January–March) 2023 Groundwater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas
	Author(s):	Department of the Army
	Recipient:	Environmental Protection Agency and Texas Commission on Environmental Quality
	Date:	December 15, 2023
	Bate Stamp:	01177947 – 01179518

The above Quarterly Evaluation Report was originally published on July 25, 2023, within the July thru September 2023 Admin Record (AR) window, but was revised on December 15, 2023. The Army opted to place this revised report in the July thru September 2023 AR since the previous edition had not yet been printed.

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY ENVIRONMENTAL COMMAND
2455 REYNOLDS ROAD
JOINT BASE SAN ANTONIO FORT SAM HOUSTON, TX 78234-7588

June 14, 2023

SUBJECT: Draft Final Pre-Design Investigation Step-Drawdown Test Abbreviated Work Plan, LHAAP-47, Plant 3 Area, Solid Rocket Motor Fuel Production, Longhorn Army Ammunition Plant, Karnack, Texas

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

Dear Ms. Palmie,

The above-referenced document is being transmitted to you for review. The Draft Final document includes revisions based upon the Environmental Protection Agency (EPA) comments on the Draft version received on May 22, 2023, and the Texas Commission on Environmental Quality (TCEQ) comments received on May 15, 2023. Tables of responses to the EPA and TCEQ comments on the Draft version are included with this Draft Final document. In accordance with Federal Facility Agreement, this Draft Final will be considered Final after 30 days without further comment.

The document was prepared by HDR Environmental, Operations and Construction, Inc. (HDR) on behalf of the Army as part of HDR's contract for the facility. I ask that Greg Kelly, HDR's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at (726) 999-0505, or by email at lena.j.sierocinski.civ@army.mil.

Sincerely,

Lena Sierocinski

Lena Sierocinski
LHAAP Environmental Support Manager
U.S. Army Environmental Command

Electronic copies furnished:
B. Follin, USEPA Region 6, Dallas, TX
E. Duerkop, USFWS, Caddo Lake NWR, TX (1 hard copy and 1 CD)

C. Montoya, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
M. Bowlby, USAEC, San Antonio, TX
K. Russell, BRAC, Huntsville, AL

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
US ARMY ENVIRONMENTAL COMMAND
2455 REYNOLDS ROAD
JOINT BASE SAN ANTONIO FORT SAM HOUSTON, TX 78234-7588

June 14, 2023

SUBJECT: Draft Final Pre-Design Investigation Step-Drawdown Test Abbreviated Work Plan, LHAAP-47, Plant 3 Area, Solid Rocket Motor Fuel Production, Longhorn Army Ammunition Plant, Karnack, Texas

Mr. Brian Follin
U.S. Environmental Protection Agency
1201 Elm Street, Suite 500
Dallas, TX 75270-2002

Dear Mr. Follin,

The above-referenced document is being transmitted to you for review. The Draft Final document includes revisions based upon the Environmental Protection Agency (EPA) comments on the Draft version received on May 22, 2023, and the Texas Commission on Environmental Quality (TCEQ) comments received on May 15, 2023. Tables of responses to the EPA and TCEQ comments on the Draft version are included with this Draft Final document. In accordance with Federal Facility Agreement, this Draft Final will be considered Final after 30 days without further comment.

The document was prepared by HDR Environmental, Operations and Construction, Inc. (HDR) on behalf of the Army as part of HDR's contract for the facility. I ask that Greg Kelly, HDR's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at (726) 999-0505, or by email at lena.j.sierocinski.civ@army.mil.

Sincerely,

Lena Sierocinski

Lena Sierocinski
LHAAP Environmental Support Manager
U.S. Army Environmental Command

Electronic copies furnished:
A. Palmie, TCEQ, Austin, TX
E. Duerkop, USFWS, Caddo Lake NWR, TX (1 hard copy and 1 CD)

C. Montoya, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
M. Bowlby, USAEC, San Antonio, TX
K. Russell, BRAC, Huntsville, AL

Draft Final
Pre-Design Investigation
Step-Drawdown Test
Abbreviated Work Plan

LHAAP-47, Plant 3 Area, Solid Rocket Motor Fuel Production
Longhorn Army Ammunition Plant
Karnack, Texas

June 2023

Prepared For:

U.S. Army Corps of Engineers – Tulsa District

Prepared By:

HDR Environmental, Operations and Construction, Inc.
369 Inverness Parkway, Suite 325
Englewood, Colorado 80112

Contract No. W912BV19D0016
Task Order No. W912BV22F0113
Modification No. P00001

This page intentionally left blank.

Draft Final
Pre-Design Investigation
Step-Drawdown Test
Abbreviated Work Plan
for
LHAAP-47, PLANT 3 AREA,
SOLID ROCKET MOTOR FUEL PRODUCTION
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:
U.S. Army Corp of Engineers, Tulsa District

Prepared By:
HDR Environmental, Operations and Construction, Inc.
369 Inverness Parkway, Suite 325
Englewood, Colorado 80112

Contract No. W912BV19D0016
Task Order No. W912BV22F0113
Modification No. P00001

June 2023

This page intentionally left blank.

Table of Contents

1 Introduction 1-1

2 Scope 2-1

2.1 Test Methodology 2-2
2.2 Data Evaluation 2-2
2.3 Investigative Derived Waste Handling and Disposal 2-3
2.4 Reporting 2-3

3 References 3-1

Acronyms and Abbreviations

EISB	enhanced in-situ bioremediation
gpm	gallons per minute
GWTP	groundwater treatment plant
HDR	HDR Environmental, Operations and Construction, Inc.
IDW	investigative derived waste
ISTD	in-situ thermal desorption
IWWP	Installation Wide Work Plan
LUCs	Land Use Controls
MNA	Monitored Natural Attenuation
PDI	Pre-Design Investigation
PSI	Post Screening Investigation
PPE	personal protective equipment
ROD	Record of Decision
USACE	U.S. Army Corps of Engineers

1 Introduction

The Army has requested HDR Environmental, Operations and Construction, Inc. (HDR) to develop an aquifer test approach for the shallow aquifer (approximately 40 feet deep) at site LHAAP-47 in support of the Remedial Design. The technical approach and proposed location of the pumping test was based on a review of the selected remedial alternatives presented in the Record of Decision (ROD)(HDR, 2022). Remedial alternatives taken into consideration for this work plan were in-situ thermal desorption (ISTD), enhanced in-situ bioremediation (EISB), and bio-barriers. Not taken into consideration for this work plan were excavation of perchlorate impacted soil, monitored natural attenuation (MNA), and land use controls (LUCs).

The location best suited to conduct the aquifer testing is the proposed bio-barrier area located near the central portion of the main TCE plume near intermediate wells LHSMW43R, LHSMW45 and LHSMW46R. Based on the 2018 Post Screening Investigation (PSI) groundwater elevation data, this area has the greatest groundwater elevation gradient and is downgradient of the Building 46-A source area (HDR, 2019). Additionally, the area has a sufficient monitoring well network nearby to capture water elevation data during the step-drawdown tests. The aquifer test data collected from this area will be used to aid in the design of the EISB and bio-barriers remedy.

Another area considered for the step-drawdown tests was in the ISTD treatment area. ISTD will be implemented in a relatively smaller footprint than the EISB bio-barrier areas proposed in the ROD. ISTD will only be implemented in the on-site source area near Building 46-A where the groundwater elevation gradient appears to be flat. Therefore, the collection of hydraulic properties data for the ISTD area is not considered critical to the implementation of the remedy.

This abbreviated work plan describes the procedures to be employed in the execution of the step-drawdown tests at LHAAP-47 and is the companion document to the Draft Final Pre-Design Investigation (PDI) Work Plan (HDR, 2023). General field procedures will be conducted in accordance with the procedures specified in the Installation-Wide Work Plan (IWWP) (Bhate, 2018). The results of the step-drawdown testing will be presented in the PDI Report to support development of the Remedial Design specification package and cost estimates.

This work is being conducted under the U.S. Army Corps of Engineers (USACE) - Tulsa District Unrestricted Environmental Remediation Services MEGA Multiple Award Task Order Contract Number W912BV19D0016; Task Order No. W912BV22F0113; Modification No. P00001.

2 Scope

The scope of the step-drawdown tests will include the following activities:

1. A step-drawdown test will be conducted on one shallow zone and one shallow/intermediate zone well at LHAAP-47. As described previously, review of groundwater data from the 2018 PSI, indicate the location best suited to conduct the aquifer testing is the proposed bio-barrier area located near the central portion of the main TCE plume near intermediate wells LHSMW43R, LHSMW45 and LHSMW46R. Selected wells will be located outside current/historic highest concentration contaminant plumes if possible and near potential treatment areas identified in the ROD. Monitoring wells will be selected for the step-drawdown tests based on the following criteria:

    a. Potential test wells will be identified in the field after water levels are measured in all wells listed in the PDI Work Plan. This step will be conducted to determine whether wells have sufficient hydraulic head to perform the test.

    b. Shallow zone wells are unconfined, typically have completion depths of 20 feet or less, and are generally found to be dry (11 wells during the PSI field investigation) or have 2 feet or less of water (5 wells during the PSI field investigation). A shallow well will be selected based on the vertical location/depth and saturated thickness (available drawdown) in the well screen within the shallow zone.

    c. Shallow/intermediate wells have completion depths that generally range between 35 and 55 feet with saturated well screens and potentiometric groundwater heads in the overlying clay (Feasibility Study cross section A-A' [HDR, 2021]). This clay layer, or aquitard, separates the shallow zone from the shallow/intermediate. The shallow/intermediate well will be biased to a well with the greatest saturated thickness screened interval of the available wells to test.

    d. Given that EISB, bio-barriers, and ISTD are the remedial alternatives listed in the ROD, wells selected for testing will be biased towards higher K/T lithology (based on review of lithologic logs from wells and/or other information such as known well yields).

    e. Once test wells have been identified, the proposed well list will be shared with the regulators for approval.

2. The step-drawdown test will involve pumping the selected wells at an initially low constant rate and then through a sequence of pumping intervals (steps) of progressively higher constant rates (0.1 gallons per minute [gpm], 0.25 gpm, and 0.5 gpm). Previous aquifer tests conducted at Longhorn used similar pumping rates; however, when higher pump rates were attempted, the hydraulic head was drawn down to levels that would dewater the well. To avoid this problem, the three rates (0.1 gpm, 0.25 gpm, and 0.5 gpm) have been selected. Each step will be of equal duration, lasting for approximately 1 hour. Groundwater level readings will be recorded by an In-Situ Troll transducer (vented) every 10 seconds throughout the test. A water level tape will be used to collect depth to water measurements every 5 minutes to verify the readings collected by the transducer.

3. Water level recovery will be recorded at the end of the tests after the pump has been stopped at the same frequency recorded during pumping.

4. Well data will be used to estimate transmissivity and hydraulic conductivity.

2.1 Test Methodology

The step-drawdown test will be conducted by pumping water from the monitoring well at three increasing rates. The duration will be the same for each pumping rate. Prior to initiating the step test, water-level measurements from the monitoring well will be collected to the depth to water and for total depth of the well, with reference to the top of casing. All measurements will be recorded to the nearest 0.01-foot. The duration of each step will be at least 1 hour. Water elevation changes in the recovery well during the step tests will be recorded at a minimum of 5-minute intervals. Groundwater time drawdown data from the step tests will be interpreted by computer software or manual graph methods. Water generated from the step tests will be pumped to a 100-gallon poly tank which will be transferred to the groundwater treatment plant (GWTP) for treatment.

The monitoring well will be pumped with a 2-inch diameter Grundfos Redi-Flo 2 pump equipped with a cooling shroud and controlled by a variable speed pump controller. Electricity will be supplied to the pump by a gas-powered generator. A data logger (Troll Data Logger™ or equivalent) connected to a laptop running the In-Situ Virtual software will be placed in the well and triggered to begin recording at the beginning of the test. The Troll sensor will be calibrated to the actual water level (depth below top of casing) using manual measurements collected immediately prior to initiating the test. Groundwater level readings will be collected by the Troll sensor every 10 seconds throughout the test while a water level meter will be used to collect depth to water approximately every 5 minutes to verify the readings collected by the Troll.

Discharge will be measured frequently and adjusted, if necessary, to maintain a constant discharge rate during each step as the test progresses and hydraulic head declines. The discharge rate will be increased and maintained at a higher rate for each successive step. A flow meter will be used for measuring discharge flow rate and total amount of water discharged. Timed container filling may provide a cross-check for low-flow pumping rates.

Water levels will be allowed to recover to the static level (typically 90% recovery) between each step which generally will equal, in time, the duration of the step-drawdown test. Care will be taken to ensure that pumping rates do not result in drawing the water level below the top of the well screen of the monitoring well, thereby causing cascading water and entrained air in the well or result in a level drawdown to the water-entry section of the pump.

2.2 Data Evaluation

Data will be analyzed to estimate hydraulic properties of the aquifer, including transmissivity and hydraulic conductivity. Although step-drawdown tests are commonly used for optimizing a constant-rate testing program, step-drawdown tests can also be used to determine the aquifer transmissivity and the well loss component of the drawdown in the tested well. The aquifer storage coefficient and hydraulic conductivity may also be estimated if well and aquifer characteristics are known, such as aquifer type and thickness and well construction.

Step-drawdown test data will be plotted and evaluated using various analytical methods employing mathematical equations to describe the relationship between the drawdown and hydraulic properties of the aquifer. Time drawdown and potentially distance drawdown data from each step test (one or more steps) will be interpreted by manual or computer graphing methods. Analysis will likely be conducted with, but not limited to, methods such as the Theis non-equilibrium well equation (Theis 1935), the Hantush-Jacob method for leaky confined/semi-confined aquifers (Hantush-Jacob, 1955), and the Cooper-Jacob straight line analysis for estimating values of transmissivity and storativity (Cooper-Jacob 1946). In addition, quantitative analysis be conducted with hydrogeological software such as AQTESOLV (Duffield, 2007).

2.3 Investigative Derived Waste Handling and Disposal

Investigative derived waste (IDW) generated during the step-drawdown testing will include purge water and personal protective equipment (PPE). Purge water will be containerized in a poly tank or equivalent containers and treated at the GWTP. PPE will be bagged and disposed as sanitary waste.

2.4 Reporting

Plots of the step-drawn test data will be presented as figures utilizing the applicable mathematical evaluation method. Results of the step-drawdown tests will be summarized and incorporated into the PDI Report to support development of the Remedial Design.

3 References

Bhate, 2018. Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant, Karnack, Texas. May.

Cooper, H.H. and C.E. Jacob, 1946. A Generalized Graphical Method for Evaluating Formation Constants and Summarizing Well Field History, Am. Geophys. Union Trans., vol. 27, pp. 526-534.

Duffield, G. M. 2007. AQTESOLV for Windows Version 4.50 Professional. Reston, VA: 15 HydroSOLV, Inc.

Hantush, M.S. and C.E. Jacob, 1955. Non-steady Radial Flow in an Infinite Leaky Aquifer, Am. Geophys. Union Trans., vol. 36, no. 1, pp. 95-100.

HDR, 2019. Draft Final Post Screening Investigation Report, LHAAP-47, Longhorn Army Ammunition Plant, Karnack, Texas. March.

HDR, 2021. Draft Final LHAAP-47 Building 46A, Plant 3 Area, Solid Rocket Motor Fuel Production Feasibility Study Addendum. March.

HDR, 2022. Revised Final Record of Decision for LHAAP-47, Plant 3 Area, Solid Rocket Motor Fuel Production, Longhorn Army Ammunition Plant Karnack, Texas. April.

HDR, 2023. Draft Final Pre-Design Investigation Work Plan, LHAAP-47, Longhorn Army Ammunition Plant, Karnack, Texas. April.

Theis, C.V., 1935. The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Groundwater Storage, Am. Geophys. Union Trans., vol. 16, pp. 519-524.

PCIbhate

Subject:	**Final Monthly Managers' Meeting (MMM), Longhorn Army Ammunition Plant (LHAAP)**
Location of Meeting:	**Microsoft Teams Videoconference**
Date of Meeting:	**18 May 2023 – 10:00 AM Central Standard Time (CST)**

Attendees:

USAEC:	Lena Sierocinski (LS)
USEPA:	Brian Follin (BF)
BRAC:	Kyle Russell (KR)
USACE:	Aaron Williams (AW)
TCEQ:	April Palmie (ABP)
PCI/Bhate JV:	Scott Beesinger (SB), Zachary Beck (ZB), and Tom Zinck
APTIM:	William Foss (WF) and Praveen Srivastav (PS)
HDR:	Gregory Kelly (GK) and Phil Werner (PW)

Introduction

Mr. Zachary Beck (ZB) introduced the Poarch Creek Indians, Governmental Services, LLC /Bhate Environmental Associates Joint Venture (PBJV) team. ZB introduced Aptim Federal Services (APTIM) as a key subcontractor to the PBJV who supports work at multiple sites at LHAAP. Mr. Phil Werner introduced HDR as a separate contractor from the PBJV. Mr. Aaron Williams (AW) introduced himself as the U.S. Army Corps of Engineers (USACE) Technical Manager for LHAAP. Ms. Lena Sierocinski (LS) introduced herself as the U.S. Army Environmental Command (USAEC) Environmental Support Manager. Mr. Kyle Russell (KR) introduced himself as the Base Realignment and Closure (BRAC) program manager for LHAAP. Ms. April Palmie (ABP) introduced herself as the Texas Commission on Environmental Quality (TCEQ) project manager for LHAAP, while Mr. Brian Follin (BF) introduced himself and the U.S. Environmental Protection Agency (USEPA) project manager for LHAAP.

Defense Environmental Restoration Program (DERP) Performance-Based Remediation Update

There were no outstanding action items to discuss.

Groundwater Treatment Plant (GWTP) – SB stated that overhead electrical power was restored to the GWTP which has been restarted after the contract transition which resulted in the GWTP being shut down for much of April 2023. SB said that operating parameters including pH and oxidation reduction potential (ORP) indicate that the Fluidized Bed Reactor (FBR) is recovering well which will be confirmed via the effluent analytical results. SB said that the GWTP was operated on Monday 15 May 2023, and pending effluent analytical results, treated effluent will be discharged to Harrison Bayou. SB said that with the GWTP being offline during the contract transition the sand filter partially dried out. This has resulted in a decrease of flow through the sand filter. SB said that the sand filter needs to be backwashed until flow can be restored to normal rates. SB summarized the repairs completed on the interception collection trenches (ICTs) at site LHAAP-18/24. Repairs included replacement of a flow meter at ICT-13F and replacement of a pump at ICT-2.

Field Work – ZB said that the semiannual Remedial Action Operation (RA-O) event at LHAAP-50 in scheduled for May 2023. ZB said that performance monitoring at LHAAP-17, and annual sampling events at LHAAP-18/24 and LHAAP-58 are scheduled for June 2023.

ZB asked everyone to refer to the Document and Issues (DI) Tracking Table dated 18 May 2023.

- **Tasks 1 -5** (Project Management) – ZB said that the March 2023 Monthly Manager's Meeting (MMM) minutes were submitted for regulatory review on 13 April 2023. ZB said that TCEQ provided no comment via email on 30 April 2023. BF confirmed that USEPA has not provided comment to date. ZB said that the February 2023 Restoration Advisory Board (RAB) meeting minutes were submitted for regulatory review 9 March 2023. ZB said that USEPA provided a no comment email 17 March 2023, and TCEQ review is still pending. ZB said that the next RAB meeting is planned to be held on 22 June 2023.
- **Task 6** (LHAAP-04) – WF stated that the Year 3 Remedial Action-Operation (RA-O) Report was submitted to the Regulators on 27 February 2023. WF said that TCEQ provided no comment via email on 3 April 2023, and USEPA provided comment 14 April 2023. WF said that the response to USEPA comment was in preparation with an estimated delivery date in May 2023.
- **Task 7** (LHAAP-12) – WF said that LHAAP-12 2022 Annual RAO Report was submitted for regulatory review on 3 April 2023. WF said that USEPA comments were received 27 April 2023, and TCEQ provided no comment via email on 4 May 2023. WF said that the response to USEPA comment was in preparation with an estimated delivery date in May 2023.
- **Task 8** (LHAAP-16) –WF said that the Year 3 Semiannual 2 RA-O Sampling was completed in January/February 2023, with the validated data to be presented at the June 2023 MMM. WF said that the Draft Final Year 2 RA-O Report was submitted on 13 March 2023. WF said that regulatory approval was received on 14 April 2023 with a minor comment from TCEQ. The revised Draft Final Year 2 RA-O Report was resubmitted to the shared portal on 19 April 2023.
- **Task 9** (LHAAP-18/24/GWTP) –ZB said the next semiannual sampling event will be completed in June 2023 with the validated data package estimated for the August 2023 MMM. ZB said that the the 1st Quarter 2023 GWTP Report is also in process and will include the LHAAP-18/24 December 2022/January 2023 analytical results, with a tentative delivery date in June 2023.
- **Table 10** (LHAAP-19) - ZB said that the next LUC Inspection is scheduled for September 2023.
- **Task 11** (LHAAP-37) – WF said that the Draft Year 6 Annual RA-O Report is under preparation with a tentative delivery date in June 2023.
- **Task 12** (LHAAP-46) – WF stated that Draft Year 8 RA-O report was submitted for Regulatory review on 27 February 2023. WF said that regulatory review comments were received on 18 April 2023 and a response is in progress, with a tentative delivery date in June 2023.
- **Task 13** (LHAAP-50) **–** WF said that the Year 9 semiannual RA-O Sampling is scheduled for May 2023 and the validated data deliverable will be presented at the July 2023 MMM.
- **Task 14** (LHAAP-58) – ZB said that the Year 9 2nd semiannual RA-O Sampling event is scheduled for June 2023 with the validated data deliverable to be presented at the August 2023 MMM. ZB said that an additional well is scheduled to be installed in June 2023 during the sampling event.
- **Task 15** (LHAAP-67) – WF said that the Draft Year 9 Annual RA-O Report is in progress with an anticipated delivery date to the Regulators in May 2023.

- **Task 16** (LHAAP-001-R-01 and LHAAP-003-R-01) – ZB said that the next inspection is planned for the fall 2023.
- **Task 17** (Surface Water) – ZB said that the 2nd Quarter 2023 surface water sampling is scheduled for May/June 2023.
- **Task 18** (2022 LUC Management Plan) – ZB said that the 2023 LUC Management Plan Update is scheduled for regulatory submittal in November 2023.
- **Task 19** (Administrative Record [AR]) – WF said that the October through December 2022 is being printed with a delivery date anticipated in May 2023.

Update on other DERP Sites:

- **LHAAP 18/24 –** PW stated that the 90 percent (%) remedial design (RD) was submitted to the Regulators 7 February 2023, with comments received from TCEQ on 29 March 2023 and on 30 March 2023 USEPA. PW said that the responses are in progress with the 100% RD to be submitted for regulatory review by 23 June 2023.
- **LHAAP-29** – PW stated that the 90% RD was submitted for regulatory review on 14 April 2023 and noted that TCEQ requested a 20-day extension. ZB said that a groundwater monitoring event separate from the remedial design is scheduled under the PBJV contract. ABP asked if the groundwater data would be incorporated into the LHAAP-29 RD. ZB said that the groundwater monitoring analytical results would be presented in a separate deliverable from the RD. AW requested that the LHAAP-29 groundwater monitoring event occur as soon as possible.
- **LHAAP-47** – GK said that the Draft Final Pre-Design Investigation (PDI) Field Work commenced on 4 May 2023. GK said that 9 of the shallow monitoring wells were dry. GK said that monitoring well drilling has also commenced, with 6 wells installed with the option to install 4 additional wells. GK that the topographic survey is underway with the well monuments and perimeter still to be completed. ABP said that one of TCEQs comments was whether the step-drawdown testing would provide adequate hydraulic conductivity information at the site. GK indicated that a response was in process.
- **LHAAP-17** – ZB said that the Draft Interim Remedial Action Completion Report (RACR) is in process with an anticipated delivery date in May 2023. AW added that the Draft Interim RACR is ready for transmittal and that Jonathan Tatman with TLI would be submitting for regulatory review. ZB stated that the 6th LHAAP-17 monthly performance monitoring event was completed in March 2023. ZB presented the March 2023 validated data package. ZB said that the perchlorate concentrations at each performance well continue to trend down with 17WW06 perchlorate concentrations had been trending down at 65,900 micrograms per liter (µg/L) in March 2023. The March 2023 perchlorate detection at 17WW06 is the lowest since groundwater extraction began. ZB noted that the performance objective was to reduce perchlorate detections below 40,000 µg/L after 18 months of system operation. ZB said that the LHAAP-17 extraction system has been operational for approximately 9 months.

  ZB said that the next quarterly performance monitoring event is scheduled for June 2023. ZB said that the Draft Year 1 RA-O Report is in process and will cover the performance monitoring completed through the end of December 2022.

Community Implementation Plan (CIP):

LS stated that the Final CIP is in under Army review.

PCIbhate

Five-Year Review (FYR):

LS stated that the FYR is in progress with interviews ongoing with the U.S. Fish and Wildlife. LS said that the FYR document is scheduled for submittal in the Winter 2024.

Per- and polyfluoroalkyl substances (PFAS) Update:

AW said that the Army Draft PFAS Report is under Army review. AW noted that 8 of the 12 areas of potential interest investigated had PFAS detected.

Transfer Update:

KR provided a transfer update and that he has met with Erik Duerkop with U.S. Fish and Wildlife. KR said that a new point of contact with U.S. Fish and Wildlife has not been identified.

Schedule Next Managers' Meeting: ZB said the next MMM will be held on in person on Thursday 22 June 2023. AW recommended the MMM be held in the afternoon at 1 pm CST. AW suggested meeting at the Karnack Community Center at 8am and do a tour of the sites in the morning. ZB recommended holding the MMM at the Karnack community center after the tour with the Army trailer was an alternate site for the MMM. ZB said that the June 2023 RAB would be held at 6 pm CST at the Karnack Community Center following the MMM.

Meeting concluded at approximately 10:55 AM CST.

PCIbhate

ACRONYM LIST

%	percent
µg/L	micrograms per liter
ABP	April Palmie
APTIM	APTIM Federal Services, LLC
AR	Administrative Record
AW	Aaron Williams
BF	Brian Follin
BRAC	Base Realignment and Closure
CIP	Community Implementation Plan
CST	Central Standard Time
DERP	Defense Environmental Restoration Program
DI	Documents and Issues
FBR	Fluidized Bed Reactor
FYR	Five Year Review
GK	Gregory Kelly
GWTP	Groundwater Treatment Plant
ICT	Interceptor Collection Trench
KR	Kyle Russell
LHAAP	Longhorn Army Ammunition Plant
LS	Lena Sierocinski
LUC	Land Use Control
MMM	Monthly Managers' Meeting
ORP	Oxidation Reduction Potential
PBJV	Poarch Creek Indians, Governmental Services, LLC /Bhate Environmental Associates Joint Venture
PDI	Pre-Design Investigation
PW	Phil Werner
RAB	Restoration Advisory Board
RACR	Remedial Action Completion Report
RA-O	Remedial Action – Operation
RD	Remedial Design
SB	Scott Beesinger
TCEQ	Texas Commission on Environmental Quality
USACE	United States Army Corps of Engineers
USAEC	United States Army Environmental Command
USEPA	United States Environmental Protection Agency
WF	William (Bill) Foss
ZB	Zachary Beck

LHAAP Validated Data Packages for May 2023 Monthly Manager's Meeting

LHAAP Area	Analytical Method
GWTP Quarterly	*Influent and Effluent – March 2023*
	Oil and Grease (1664A)
	Perchlorate (6850)
	Metals (6020A/7470A)
	1,4-Dioxane (8270D-SIM)
	Chemical Oxygen Demand (410.4)
	VOC (8260C)
	Anions (9056A)
GWTP Effluent	*Weekly Perchlorate Sampling –March 2023*
	Perchlorate (6850)
GWTP Effluent	*Weekly, Bi-Weekly, and Monthly Sampling – March 2023*
	Ammonia (350.3)
	Ortho-Phosphate (365.3)
	Total Organic Carbon (415.1)
	VOC (8260C)
	Metals (6020A)
	Hexavalent Chromium (7196A)
	1,4-Dioxane (8270D-SIM)
	Anions (9056)
GWTP Influent	*Monthly Sampling – March 2023*
	Metals (6020A)
	Perchlorate (6850)
	Hexavalent Chromium (7196A)
LHAAP 17	*Monthly Perchlorate Sampling - March 2023*
	Perchlorate (6850)

GWTP Quarterly Effluent Sampling - March 2023

Location ID: / Sample Date:	Units	Daily Maximum Conc	(INF pond) MCL	LH18/24-SP650_032123 3/21/23
Location Description				**GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled quarterly**
Oil and Grease (1664A)				
Oil & Grease	mg/L	15	NV	**0.900 J**
Chemical Oxygen Demand (410.4)				
Chemical Oxygen Demand	mg/L	200	NV	**25.0**
Volatile Organic Compounds (8260C)				
1,1,1-Trichloroethane	µg/L	7,230	200	< 1.0 U
1,1,2-Trichloroethane	µg/L	216.9	5	< 1.0 U
1,1-Dichloroethane	µg/L	14,032	NV	< 1.0 UJ
1,1-Dichloroethene	µg/L	253	7	< 1.0 U
1,2-Dichloroethane	µg/L	181	5	< 1.0 U
1,2-Dichloropropane	µg/L	5	5	< 1.0 U
Acetone	µg/L	2,395	NV	< 1.0 U
Benzene	µg/L	181	5	< 1.0 U
Carbon tetrachloride	µg/L	181	5	< 1.0 U
Chlorobenzene	µg/L	47,180	100	< 1.0 U
Chloroform	µg/L	3,615	NV	< 1.0 UJ
cis-1,2-dichloroethene	mg/L	NV	70	**0.87 J**
Ethylbenzene	µg/L	57,025	700	< 1.0 U
m,p-Xylene	µg/L	83.6	NV	< 1.0 U
Methylene chloride	µg/L	1,699	5	< 1.0 UJ
o-Xylene	µg/L	83.6	NV	< 1.0 U
Styrene	µg/L	5,987	100	< 1.0 U
Tetrachloroethene	µg/L	180.7	5	< 1.0 U
Toluene	µg/L	4,189	10	< 1.0 U
Trichloroethene	µg/L	181	5	< 1.0 U
Vinyl chloride	µg/L	72	2	< 1.0 U
Metals (6020A)				
Aluminum	mg/L	1.644	NV	**0.0125**
Antimony	mg/L	NV	0.006	< 0.00125 U
Arsenic	mg/L	0.722	0.01	< 0.00125 U
Barium	mg/L	2	2	**0.0924**
Beryllium	mg/L	NV	0.004	< 0.000500 U
Cadmium	mg/L	0.0034	0.005	< 0.000500 U
Calcium	mg/L	NV	NV	**12.5**
Chromium	mg/L	0.752	0.1	< 0.00125 U
Cobalt	mg/L	11.495	NV	**0.000558 J**
Iron	mg/L	2.395	NV	**0.316**
Lead	mg/L	0.0046	0.015	< 0.00125 U
Magnesium	mg/L	NV	NV	**12.0**
Manganese	mg/L	15.494	NV	**0.0648**

Nickel	mg/L	0.184	NV	**0.00350 J**
Potassium	mg/L	NV	NV	**1.86**
Selenium	mg/L	0.012	0.05	< 0.00250 U
Silver	mg/L	0.003	NV	< 0.000500 U
Sodium	mg/L	NV	NV	**574**
Thallium	mg/L	NV	NV	**0.000335 J**
Vanadium	mg/L	3.592	NV	< 0.00125 U
Zinc	mg/L	0.31	NV	**0.0111**
Mercury	mg/L	NV	0.002	< 0.000100 U
Anions (9056)				
Chloride	mg/L	NV	NV	**800**
Sulfate	mg/L	NV	NV	**47.3**
Semi-Volatile Organic Compounds (8270D SIM)				
1,4-Dioxane	µg/L	134.2	NV	**1.3 J**

µg/L - micrograms per liter

mg/L - milligrams per liter

J - estimated value between the detection limit and limit of quantitation and/or due to quality contol issues

NV - No Value

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

UJ - estimated non-detect due to quality control issues

GWTP Quarterly Influent Sampling - March 2023

Location ID: / Sample Date:	Units	LH18/24-SP140_032123 3/21/23
Location Description		**GWTP – Collected from a spigot on the influent to TK-140. Sampled Quarterly.**
Oil and Grease (1664A)		
Oil & Grease	mg/L	< 1.00 U
Chemical Oxygen Demand (410.4)		
Chemical Oxygen Demand	mg/L	**20.0**
Perchlorate (6850)		
Perchlorate	µg/L	**16,700**
Volatile Organic Compounds (8260C)		
1,1,1,2-Tetrachloroethane	µg/L	< 5.0 U
1,1,1-Trichloroethane	µg/L	< 5.0 U
1,1,2,2-Tetrachloroethane	µg/L	< 5.0 U
1,1,2-Trichloroethane	µg/L	< 5.0 U
1,1-Dichloroethane	µg/L	**4.7 J**
1,1-Dichloroethene	µg/L	< 5.0 U
1,1-Dichloropropene	µg/L	< 5.0 U
1,2,3-Trichlorobenzene	µg/L	< 5.0 U
1,2,3-Trichloropropane	µg/L	< 5.0 U
1,2,4-Trichlorobenzene	µg/L	< 5.0 U
1,2,4-Trimethylbenzene	µg/L	< 5.0 U
1,2-Dibromo-3-chloropropane	µg/L	< 5.0 U
1,2-Dibromoethane	µg/L	< 5.0 U
1,2-Dichlorobenzene	µg/L	< 5.0 U
1,2-Dichloroethane	µg/L	**19**
1,2-Dichloropropane	µg/L	< 5.0 U
1,3,5-Trimethylbenzene	µg/L	< 5.0 U
1,3-Dichlorobenzene	µg/L	< 5.0 U
1,3-Dichloropropane	µg/L	< 5.0 U
1,4-Dichlorobenzene	µg/L	< 5.0 U
2,2-Dichloropropane	µg/L	< 5.0 U
2-Butanone	µg/L	< 5.0 U
2-Chlorotoluene	µg/L	< 5.0 U
2-Hexanone	µg/L	< 5.0 U
4-Chlorotoluene	µg/L	< 5.0 U
4-Isopropyltoluene	µg/L	< 5.0 U
4-Methyl-2-pentanone	µg/L	< 5.0 U
Acetone	µg/L	< 5.0 U
Benzene	µg/L	< 5.0 U
Bromobenzene	µg/L	< 5.0 U
Bromochloromethane	µg/L	< 5.0 U
Bromodichloromethane	µg/L	< 5.0 U

Bromoform	µg/L	< 5.0 U
Bromomethane	µg/L	< 5.0 U
Carbon disulfide	µg/L	< 5.0 U
Carbon tetrachloride	µg/L	**3.6 J**
Chlorobenzene	µg/L	< 5.0 U
Chloroethane	µg/L	< 5.0 U
Chloroform	µg/L	**6.0**
Chloromethane	µg/L	< 5.0 U
cis-1,2-Dichloroethene	µg/L	**1,200**
cis-1,3-Dichloropropene	µg/L	< 5.0 U
Dibromochloromethane	µg/L	< 5.0 U
Dibromomethane	µg/L	< 5.0 U
Dichlorodifluoromethane	µg/L	< 5.0 U
Ethylbenzene	µg/L	< 5.0 U
Hexachlorobutadiene	µg/L	< 5.0 U
Isopropylbenzene	µg/L	< 5.0 U
m,p-Xylene	µg/L	< 5.0 U
Methylene chloride	µg/L	**770**
Naphthalene	µg/L	< 5.0 U
n-Butylbenzene	µg/L	< 5.0 U
n-Propylbenzene	µg/L	< 5.0 U
o-Xylene	µg/L	< 5.0 U
sec-Butylbenzene	µg/L	< 5.0 U
Styrene	µg/L	< 5.0 U
tert-Butylbenzene	µg/L	< 5.0 U
Tetrachloroethene	µg/L	**16**
Toluene	µg/L	< 2.5 U
trans-1,2-Dichloroethene	µg/L	**4.4 J**
trans-1,3-Dichloropropene	µg/L	< 2.5 U
Trichloroethene	µg/L	**2,800**
Trichlorofluoromethane	µg/L	< 5.0 U
Vinyl chloride	µg/L	**95**
Metals (6020A)		
Aluminum	mg/L	**0.0332**
Antimony	mg/L	**0.000407 J**
Arsenic	mg/L	**0.000623 J**
Barium	mg/L	**0.288**
Beryllium	mg/L	< 0.000500 U
Cadmium	mg/L	< 0.000500 U
Calcium	mg/L	**33.2**
Chromium	mg/L	< 0.00125 U
Cobalt	mg/L	**0.00404 J**
Iron	mg/L	**0.219**
Lead	mg/L	< 0.00125 U
Magnesium	mg/L	**25.8**
Manganese	mg/L	**0.295**

Nickel	mg/L	**0.00990**
Potassium	mg/L	**0.995**
Selenium	mg/L	< 0.00250 U
Silver	mg/L	< 0.000500 U
Sodium	mg/L	**167**
Thallium	mg/L	< 0.000500 U
Vanadium	mg/L	< 0.00125 U
Zinc	mg/L	**0.0141**
Mercury	mg/L	< 0.000100 U
Anions (9056)		
Chloride	mg/L	**337**
Sulfate	mg/L	**43.0**
Semi-Volatile Organic Compounds (8270D SIM)		
1,4-Dioxane	µg/L	**1.2 J**

µg/L - micrograms per liter

mg/L - milligrams per liter

J -estimated value between the detection limit and limit of quantitation and/or due to quality contol issues

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

GWTP Weekly/Effluent Perchlorate Sampling - Marchy 2023

Location ID: / Sample Date:	Units	Daily Maximum Conc	PCL	LH18/24-SP650_030723_BIX 3/7/23	LH18/24-SP650_030723_AIX 3/7/23	LH18/24-SP650_030723_AIX 3/7/23	LH18/24-SP650_031423_BIX 3/14/23	LH18/24-SP650_031423_AIX 3/14/23	LH18/24-SP650_032123_BIX 3/21/23	LH18/24-SP650_032123_AIX 3/21/23	LH18/24-SP650_032123_AIX 3/21/23	LH18/24-SP650_032823_BIX 3/28/23	LH18/24-SP650_032823_AIX 3/28/23
Location Description				Weekly	Weekly	Monthly Eff	Weekly	Weekly	Weekly	Weekly	Quarterly Eff	Weekly	Weekly
Perchlorate (6850)													
Perchlorate	µg/L	589	17	**3420**	**39.2**	**9.22**	**24.0**	**0.0764 J**	**26.1**	**0.0858 J**	**0.0471**	**2.35**	**0.0593 J**

µg/L - micrograms per liter

BIX - before ion exchange/AIX - after ion exchange

J - estimated detection between the detection limit and limit of quantitation

GWTP Weekly Sampling - March 2023

Location ID: Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650_030723 3/7/23	LH18/24-SP650_031423 3/14/23	LH18/24-SP650_032123 3/21/23	LH18/24-SP650_032823 3/28/23
Location Description			**GWTP–Collected from a spigot on the discharge of effluent TK-650. Sampled Weekly.**			
Ammonia as N (350.3)						
Ammonia as N	mg/L	NV	**31**	**15**	**6.9**	**1.2**
Ortho-Phosphate (365.3)						
Ortho-Phosphate	mg/L	NV	**4.46**	**8.27**	**2.72**	**3.88**
Organic Carbon (415.1)						
Total Organic Carbon (TOC)	mg/L	NV	**17.6**	**12.0**	**2.90 J**	**7.23 J**

mg/L - milligrams per liter

NV - No Value

J - estimated; result between the detection limit and limit of quantitation or due to quality control discrepancies

GWTP Bi-Weekly Sampling - March 2023

Location ID: Sample Date:	Units	(Bayou) Daily Maximum Conc	(INF pond) MCL	LH18/24-SP650_031423 3/14/23	LH18/24-SP650_032823 3/28/23
Location Description				**GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled Biweekly.**	**GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled Biweekly.**
Volatile Organic Compounds (8260C)					
1,1,1-Trichloroethane	µg/L	7,230	200	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	µg/L	216.9	5	< 1.0 U	< 1.0 U
1,1-Dichloroethane	µg/L	14,032	NV	< 1.0 U	< 1.0 UJ
1,1-Dichloroethene	µg/L	253	7	< 1.0 U	< 1.0 UJ
1,2-Dichloroethane	µg/L	181	5	< 1.0 U	< 1.0 U
1,2-Dichloropropane	µg/L	5	5	< 1.0 U	< 1.0 U
Acetone	µg/L	2,395	NV	< 1.0 U	< 1.0 UJ
Benzene	µg/L	181	5	< 1.0 U	< 1.0 U
Carbon tetrachloride	µg/L	181	5	< 1.0 U	< 1.0 U
Chlorobenzene	µg/L	47,180	100	< 1.0 U	< 1.0 U
Chloroform	µg/L	3,615	NV	< 1.0 U	< 1.0 UJ
cis-1,2-Dichloroethene	µg/L	NV	70	**1.4**	**1.2 J**
Ethylbenzene	µg/L	57,025	700	< 1.0 U	< 1.0 U
m,p-Xylene	µg/L	83.6	NV	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	1,699	5	< 1.0 U	< 1.0 UJ
o-Xylene	µg/L	83.6	NV	< 1.0 U	< 1.0 U
Styrene	µg/L	5,987	100	< 1.0 U	< 1.0 U
Tetrachloroethene	µg/L	180.7	5	< 1.0 U	< 1.0 U
Toluene	µg/L	4,189	10	< 1.0 U	< 1.0 U
Trichloroethene	µg/L	181	5	< 1.0 U	< 1.0 U
Vinyl chloride	µg/L	72	2	< 1.0 U	< 1.0 UJ
Anions (9056)					
Chloride	mg/L	NV	NV	**763**	**871**
Sulfate	mg/L	NV	NV	**45.9**	**33.1**

µg/L - micrograms per liter

mg/L - milligrams per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

NV - No Value

UJ - estimated non-detect due to quality control discrepancies

J - estimated; result between the detection limit and limit of quantitation or due to quality control discrepancies

GWTP Monthly Effluent Sampling - March 2023

Location ID: / Sample Date:	Units	Daily Maximum Conc	(INF pond) MCL	LH18/24-SP650_030723 3/7/23
Location Description				**GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled monthly**
Volatile Organic Compounds (8260C)				
1,1,1-Trichloroethane	µg/L	7,230	200	< 1.0 U
1,1,2-Trichloroethane	µg/L	216.9	5	< 1.0 U
1,1-Dichloroethane	µg/L	14,032	NV	< 1.0 U
1,1-Dichloroethene	µg/L	253	7	< 1.0 U
1,2-Dichloroethane	µg/L	181	5	< 1.0 U
1,2-Dichloropropane	µg/L	5	5	< 1.0 U
Acetone	µg/L	2,395	NV	< 1.0 U
Benzene	µg/L	181	5	< 1.0 U
Carbon tetrachloride	µg/L	181	5	< 1.0 U
Chlorobenzene	µg/L	47,180	100	< 1.0 U
Chloroform	µg/L	3,615	NV	< 1.0 U
cis-1,2-dichloroethene	µg/L	NV	70	**1.7**
Ethylbenzene	µg/L	57,025	700	< 1.0 U
m,p-Xylene	µg/L	83.6	NV	< 1.0 U
Methylene chloride	µg/L	1,699	5	< 1.0 U
o-Xylene	µg/L	83.6	NV	< 1.0 U
Styrene	µg/L	5,987	100	< 1.0 U
Tetrachloroethene	µg/L	180.7	5	< 1.0 U
Toluene	µg/L	4,189	10	< 1.0 U
Trichloroethene	µg/L	181	5	< 1.0 U
Vinyl chloride	µg/L	72	2	< 1.0 U
Metals (6020A)				
Barium	mg/L	2	2	**0.228**
Lead	mg/L	0.0046	0.015	< 0.00125 U
Selenium	mg/L	0.012	0.05	< 0.00250 U
Silver	mg/L	0.003	0.1	< 0.000500 U
Hexavalent Chromium (7196A)				
Hexavalent Chromium	mg/L	0.1244	NV	< 0.00600 U
Semi-Volatile Organic Compounds (8270D SIM)				
1,4-Dioxane	µg/L	134.2	NV	**0.72 J**

µg/L - micrograms per liter

mg/L - milligrams per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

NV - no value

J - estimated, due to quality control discrepancies

GWTP Monthly Influent Sampling - March 2023

Location ID: Sample Date:	Units	LH18/24-SP140_030723 3/7/23
Location Description		**GWTP – Collected from a spigot on the influent to TK-140. Sampled Monthly.**
Metals (6020A)		
Selenium	mg/L	< 0.00250 U
Silver	mg/L	< 0.000500 U
Hexavalent Chromium (7196A)		
Hexavalent Chromium	mg/L	< 0.00600 U
Perchlorate (6850)		
Perchlorate	µg/L	**12,600**

mg/L - milligrams per liter

µg/L - micrograms per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

Perchlorate Groundwater Analytical Results
LHAAP-17 March 2023

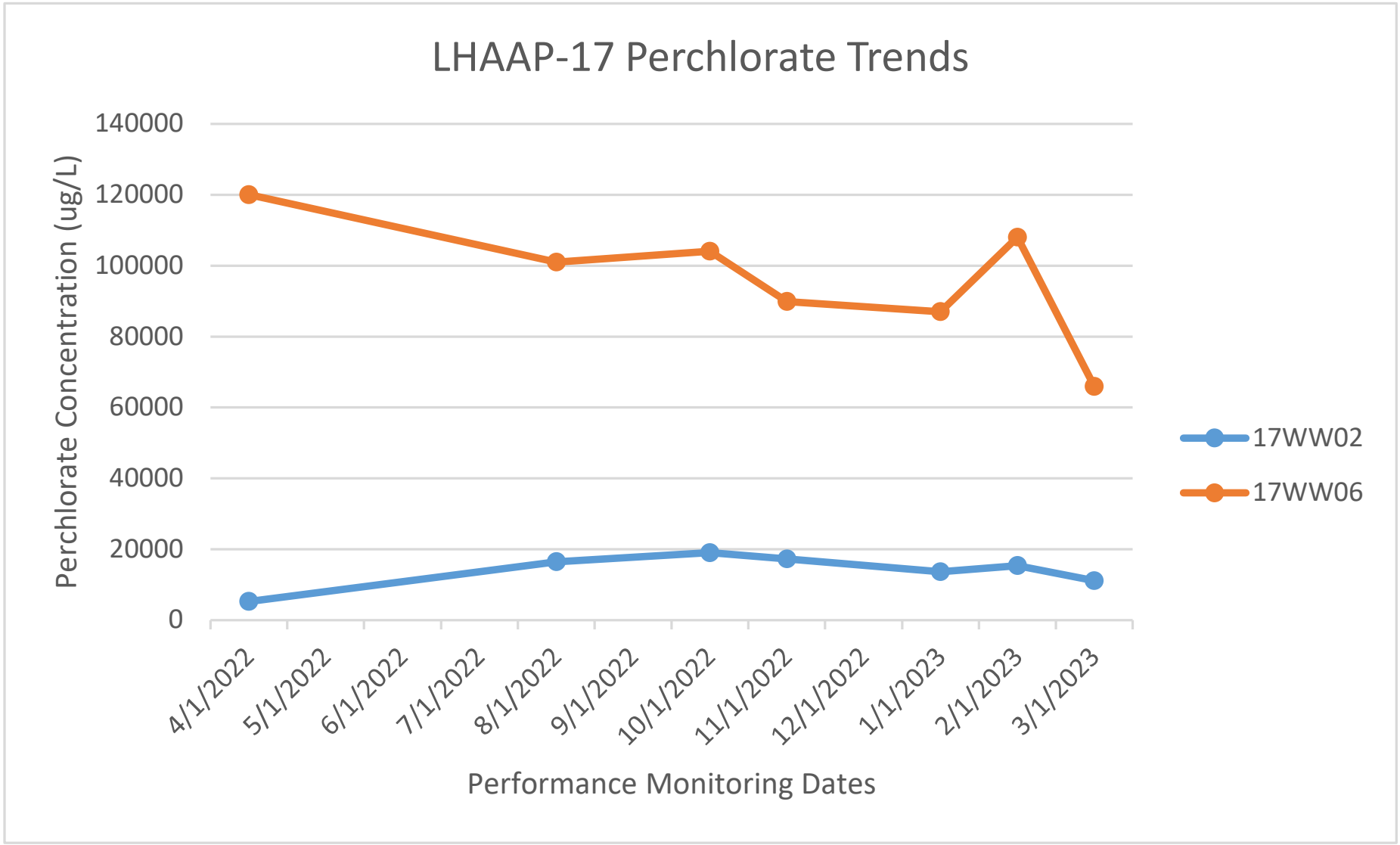
Location ID: / Sample Date:	Units	PCL	130_030923 3/9/23	130_030923_a 3/9/23	17WW01_030923 3/9/23	17WW02_030923 3/9/23	17WW03_030923 3/9/23	17WW06_030923 3/9/23
Perchlorate (6850)								
Perchlorate	µg/L	17	**1.10**	**1.36**	**0.0332 J**	**11,100**	< 0.0500 U	**65,900**

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

Highlighted results exceed the perchlorate PCL

µg/L - micrograms per liter

J - Estimated Value. Concentration found below the limit of quantitation


LHAAP-17 Perchlorate Trends
Perchlorate Concentration (ug/L)
140000
120000
100000
80000
60000
40000
20000
0
4/1/2022
5/1/2022
6/1/2022
7/1/2022
8/1/2022
9/1/2022
10/1/2022
11/1/2022
12/1/2022
1/1/2023
2/1/2023
3/1/2023
Performance Monitoring Dates
17WW02
17WW06

17WW02		4/8/2022
COC	PCL	Result
Perchlorate	17	5,250

130		4/8/2022
COC	PCL	Result
Perchlorate	17	15.0

17WW06		4/8/2022
COC	PCL	Result
Perchlorate	17	120,000

17WW01		4/8/2022	4/21/2022
COC	PCL	Result	Result
Perchlorate	17	239	46.8

17WW03		4/8/2022
COC	PCL	Result
Perchlorate	17	44.7 J / 7.78 J

COCs shown on this figure	
COC	PCL
Perchlorate	17

Notes:
PCL – TRRP Tier 1 Groundwater Residential Protective Concentration Level
TRRP - Texas Risk Reduction Program
Bold Red values exceed the PCL
J - Estimated Value. Concentration found below the limit of quantitation
All results and PCLs are reported in micrograms per liter (µg/L)

Legend

- Extraction Well
- Shallow Monitoring Well
- Intermediate Monitoring Well
- LHAAP-17 Boundary
- Road
- Stream

Longhorn Army Ammunition Plant
Karnack, Texas

Figure X
Baseline Groundwater Sampling Analytical Results (April 2022)

0 50 100 200 Feet

1 inch = 100 feet

Prepared By: MMG / TLI JOINT VENTURE

Map Date: 9/27/2022

Service Layer Credits: Google satellite imagery

Document Path: Z:\Projects\MSC20200016 Longhorn\0002 RIP\0031 RA RACR\AB Extraction LHAAP 17\Figure X.mxd

PCIbhate

Subject: **Final Monthly Managers' Meeting (MMM), Longhorn Army Ammunition Plant (LHAAP)**
Location of Meeting: **Karnack Community Center**
Date of Meeting: **22 June 2023 – 3:30 PM Central Standard Time (CST)**

Attendees:

USAEC:	Lena Sierocinski (LS) and Mike Bowlby (MB)
USEPA:	Brian Follin (BF)
USGS:	Chris Braun and Tim Bartos (remote call in)
BRAC:	Kyle Russell (KR)
USACE:	Aaron Williams (AW) and Chelsea Montoya
TCEQ:	April Palmie (ABP) (remote call in)
PCI/Bhate JV:	Scott Beesinger (SB), Zachary Beck (ZB), Kim Nemmers (remote call in) and Tom Zinck (remote call in)
APTIM:	William Foss (WF)
HDR:	Gregory Kelly (GK)
TLI:	Jonathan Tatman

Defense Environmental Restoration Program (DERP) Performance-Based Remediation Update

There were no outstanding action items to discuss.

Groundwater Treatment Plant (GWTP) – SB stated that the GWTP was last operated on 8 June 2023. SB said that with the GWTP being offline during the contract transition the sand filter partially dried out to a hardened/cemented layer at the surface. This has resulted in a decrease of flow through the sand filter. SB said that the sand filter is currently being backwashed to improve flow which currently allows approximately 75 gallons per minute. This reduced flow is in contrast to the 200 gallons per minute that the GWTP is capable of producing. SB said that the next step is to use compressed air to break up the cemented sands. SB explained that the GWTP is otherwise operating well with no pump problem after the shutdown. SB said that the Fluidized Bed Reactor (FBR) is recovering well but will work most efficiently when fresh groundwater can be more regularly introduced. SB said that additional biomass has been observed which is another indication that the FBR is successfully treating perchlorate contaminated groundwater. MB asked what the risk is due to the decreased flow through the sand filter. SB explained that the decrease in flow through the GWTP results in a decrease in influent being pumped from the well field. Therefore, the GWTP isn't treating as much groundwater as is possible. MB asked if there is a monthly requirement of volume to be treated. AW confirmed that there is no volume requirement. ABP said that the concern is that the interim remedy at LHAAP-18/24 is hydraulic control and noted that if we are pumping only half of the volume the hydraulic control may be affected. MB asked how the hydraulic control is monitored. ZB explained that the semiannual sampling monitors how effective the interception collection trench (ICT) extraction at site LHAAP-18/24 is. BF asked if this discussion can speed up the timeframe for the installation of new monitoring wells at LHAAP-18/24. ZB said that a new monitoring well (1824DPTMW07) downgradient of 18WW08 has already been installed. However, no discussion to date has been made regarding installation of additional wells. SB outlined upcoming repairs to be completed which includes replacement of the clarifier diaphragm pump and an air actuated valve. SB added that this equipment is currently operable but is needing replacement due to the age of the

equipment. ZB said that wireless internet will also be installed to the Army job trailer adjacent to the GWTP.

Field Work – ZB said that performance monitoring at LHAAP-17 and the annual event at LHAAP-58 were completed in June 2023. ZB said that annual sampling events at LHAAP-18/24 is ongoing and scheduled to be completed in June 2023. ZB said that a new well at LHAAP-18/24 (1824DPTMW07) and a new well at LHAAP-58 (35AW0027) were installed in June 2023. ZB added that these two wells would be developed and sampled as part of the respective annual events in June 2023.

ZB asked everyone to refer to the Document and Issues (DI) Tracking Table dated 22 June 2023.

- **Tasks 1 -5** (Project Management) – ZB said that no Monthly Manager's Meeting (MMM) was held in April 2023 during contract transition. ZB said that the May 2023 minutes were submitted for regulatory review on 14 June 2023. ZB said that Texas Commission on Environmental Quality (TCEQ) provided no comment via email on 20 June 2023. BF confirmed that United States Environmental Protection Agency (USEPA) has not provided comment to date. ZB said that the Draft Final February 2023 Restoration Advisory Board (RAB) meeting minutes were submitted to the RAB members for review on 25 May 2023. ZB said that the February 2023 RAB meeting minutes would be finalized by the RAB members at the meeting to be held on 22 June 2023.
- **Task 6** (LHAAP-04) – WF stated that the Draft Final Year 3 Remedial Action-Operation (RA-O) Report was submitted to the Regulators on 22 May 2023. WF said that TCEQ provided no comment on the Draft via email on 3 April 2023, and USEPA provided comments 14 April 2023 that were addressed in the Draft Final report. WF said that the Year 4, 2nd semiannual RA-O sampling event is scheduled for August 2023, with the validated data to be presented at the September 2023 MMM.
- **Task 7** (LHAAP-12) – WF said that the Draft LHAAP-12 2022 Annual RAO Report was submitted for regulatory review on 6 June 2023.
- **Task 8** (LHAAP-16) –WF said that the Year 3 Semiannual 2 RA-O Sampling was completed in January/February 2023, with the validated data included in the June 2023 package. WF summarized the analytical results. WF noted that significant dehalococcoides microbe concentrations are observed where previous sampling did not indicate similar microbial population densities. WF said that at wells with higher concentrations of trichloroethene there has been some reductive dechlorination observed with increases in dichloroethene. WF said that the Draft Final Year 2 RA-O Report was submitted in March 2023 and will be included in the January through March 2023 administrative record update. WF said that the Year 3 RA-O Report has been started.
- **Task 9** (LHAAP-18/24/GWTP) – ZB said the semiannual sampling event has been started and is scheduled to be completed in June 2023 with the validated data package estimated for the August 2023 MMM. ZB said that a new monitoring well (1824DPTMW07) downgradient of 18WW08 has been installed to help define the shallow zone contaminants of concern between the ICT boundary and Harrison Bayou. ZB said this well will be developed and sampled as part of the June 2023 semiannual sampling event. ZB said that the 1st Quarter 2023 GWTP Report is under Army review, with a tentative delivery date in June 2023.
- **Table 10** (LHAAP-19) - ZB said that the next land use control (LUC) Inspection is scheduled for September 2023. SB said that seeding after the landfill is burned is advisable, however, LHAAP-19 did not make the 2023 burn list. SB said that he had discussed with U.S. Fish and

Wildlife (USFW) that LHAAP-19 be included. AW requested that LHAAP-19 be added to the next burn cycle.

- **Task 11** (LHAAP-37) – WF said that the Year 5 Annual RA-O Report was finalized in February 2023 and will be included in the January through March 2023 AR update. WF said that the Draft Year 6 Annual RA-O Report is under preparation with a tentative delivery date in June 2023.
- **Task 12** (LHAAP-46) – WF stated that Draft Final Year 8 RA-O report was submitted for Regulatory review on 14 June 2023.
- **Task 13** (LHAAP-50) **–** ZB said that the Year 9 semiannual RA-O Sampling was completed in May 2023 and the validated data deliverable will be presented at the July 2023 MMM.
- **Task 14** (LHAAP-58) – ZB said that the Year 9 2nd semiannual RA-O Sampling event was completed June 2023 with the validated data deliverable to be presented at the August 2023 MMM. ZB said that an additional well (35AWW27) was also installed in June 2023 during the sampling event. ZB added that 35AWW27 will be developed and sampled as part of the June 2023 event.
- **Task 15** (LHAAP-67) – WF said that the Draft Year 9 Annual RA-O Report was submitted to the Regulators on 30 May 2023.
- **Task 16** (LHAAP-001-R-01 and LHAAP-003-R-01) – ZB said that the next inspection is planned for the fall 2023.
- **Task 17** (Surface Water) – ZB said that the 2nd Quarter 2023 surface water sampling was completed in May 2023 and the validated data is included in the June 2023 package. ZB summarized the 2nd Quarter 2023 results and noted that all detections were below 1 microgram per liter.
- **Task 18** (2022 LUC Management Plan) – ZB said that the 2023 LUC Management Plan Update is scheduled for regulatory submittal in November 2023.
- **Task 19** (Administrative Record [AR]) – WF said that the October through December 2022 has been printed and was delivered to LHAAP in June 2023. WF said the January through March 2023 AR tracking list is currently under Army Review.

Update on other DERP Sites:

- **LHAAP 18/24 –** GK stated that the 90 percent (%) remedial design (RD) response to comments (RTCs) are under Army review. LS requested an extension on review of the 90% RD RTCs. TCEQ confirmed that an extension was acceptable.
- **LHAAP-29** – GK stated that the 90% RD, Regulator comments were received on 6 June 2023. GK said that the RTCs are being prepared to address comments and the 100% RD has a tentative submittal date of 18 August 2023.
- **LHAAP-47** – GK said that the Draft Final Pre-Design Investigation (PDI) Field Work commenced on 4 May 2023. GK said that 6 new monitoring wells were installed and 56 monitoring wells were sampled, 13 other monitoring wells were dry. GK said that laboratory data is pending. AW added that there are options to install 4 additional wells, and HDR has drafted proposed locations for these additional wells.
- **LHAAP-17** – ZB said that the Draft Interim Remedial Action Completion Report was submitted for Regulator review on 14 June 2023. ZB said that the Year 1 RA-O Report is in progress with a tentative delivery data in September 2023. ZB stated that the 7th performance monitoring event was completed in June 2023, with the validated data to be presented at the July 2023 MMM.

PCIbhate

Per- and polyfluoroalkyl substances (PFAS) Update:

AW said that the Draft PFAS Report is in progress.

Transfer Update:

KR said that a new point of contact with USFW has not been identified. KR said that once that person is established a transfer update can be discussed at that time.

Schedule Next Managers' Meeting: ZB said the next MMM will be held via WebEx on Wednesday 19 July 2023 at 10:00 central standard time. ZB said that the next in person RAB meeting would be held on Thursday 16 November 2023.

Meeting concluded at approximately 4:20 PM CST.

PCIbhate

ACRONYM LIST

%	percent
ABP	April Palmie
AR	Administrative Record
AW	Aaron Williams
BF	Brian Follin
BRAC	Base Realignment and Closure
CST	Central Standard Time
DERP	Defense Environmental Restoration Program
DI	Documents and Issues
FBR	Fluidized Bed Reactor
GK	Gregory Kelly
GWTP	Groundwater Treatment Plant
ICT	Interceptor Collection Trench
KR	Kyle Russell
LHAAP	Longhorn Army Ammunition Plant
LS	Lena Sierocinski
LUC	Land Use Control
MMM	Monthly Managers' Meeting
PBJV	Poarch Creek Indians, Governmental Services, LLC /Bhate Environmental Associates Joint Venture
PDI	Pre-Design Investigation
RAB	Restoration Advisory Board
RA-O	Remedial Action – Operation
RD	Remedial Design
SB	Scott Beesinger
TCEQ	Texas Commission on Environmental Quality
USACE	United States Army Corps of Engineers
USAEC	United States Army Environmental Command
USEPA	United States Environmental Protection Agency
WF	William (Bill) Foss
ZB	Zachary Beck

LHAAP Validated Data
June 2023 MMM

LHAAP-16	*Remedial Performance Monitoring (Year 3, Semiannual 2)-January 2023* Volatile Organic Compounds (8260C) Perchlorate (EPA 6850) Dissolved Gases (RSK-175) Nitrate/Sulfate (SW9056A) Total Organic Carbon (SM5310B) Dechlorinating Bacteria (Census) Field Measurements (Dissolved Oxygen, Oxidation Reduction Potential, and pH)
LHAAP-46	*Annual Remedial Action Operation Monitoring (Year 9) - February 2023* Volatile Organic Compounds (8260C) Dissolved Gases (RSK-175) Nitrate, Chloride, and Sulfate (SW9056A) Total Organic Carbon (SM5310B) Field Measurements (Dissolved Oxygen, Oxidation Reduction Potential, and pH)
GWTP Effluent	*Weekly Perchlorate Sampling –May 2023* Perchlorate (6850)
GWTP Effluent	*Weekly, and Monthly Sampling – May 2023* Ammonia (350.3) Ortho-Phosphate (365.3) Total Organic Carbon (415.1) VOC (8260C) Metals (6020A) Hexavalent Chromium (7196A) 1,4-Dioxane (8270D-SIM)
GWTP Influent	*Monthly Sampling – May 2023* Metals (6020A) Perchlorate (6850) Hexavalent Chromium (7196A)
Surface Water	*Quarterly Sampling - May 2023* Perchlorate (6850)

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

Injection Area:			**Landfill Biobarrier #1**											
Location Code			**16IW09**		**16RW01**		**16RW04**		**16RW05**		**16WW26**		**16WW42**	
Sample ID			**16IW09-230119**		**16RW01-230123**		**16RW04-230119**		**16RW05-230123**		**16WW26-230123**		**16WW42-230121**	
Sample Date			**1/19/2023**		**1/23/2023**		**1/19/2023**		**1/23/2023**		**1/23/2023**		**1/21/2023**	
Sample Type			**REG**		**REG**		**REG**		**REG**		**REG**		**REG**	
Location Description:			**Performance Data Within Landfill Biobarrier #1; Shallow Zone**		**Upgradient Well for Landfill Biobarrier #1; Shallow Zone**		**Downgradient Well for Landfill Biobarrier #1; Shallow Zone**		**Downgradient Well for Landfill Biobarrier #1; Shallow Zone**		**Downgradient Well for Landfill Biobarrier #1; Shallow Zone**		**Downgradient Well for Landfill Biobarrier #1; Shallow Zone**	
Analyte	**Units**	**MCL/PCL/UTL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Dechlorinating Bacteria (Census)														
Dehalococcoides	cells/mL	NV	2.1		NA		NA		NA		NA		NA	
Field Measurements														
Dissolved oxygen	mg/L	NV	0.07		1		2.49		1		0.7		0.02	
Oxidation Reduction Potential	mV	NV	-111		258		153		76		196		215	
pH	SU	NV	6.72		5.08		5.52		6.66		5		5.65	
Dissolved Gases (RSK-175)														
Carbon Dioxide	µg/L	NV	150,000	J	NA		NA		NA		NA		NA	
Ethane	µg/L	NV	< 0.5	U	NA		1.86	J	936		NA		NA	
Ethylene	µg/L	NV	< 0.5	UJ	NA		1.7	J	1,350	J	NA		NA	
Methane	µg/L	NV	9,720		NA		101		4,540		NA		NA	
General Chemistry (SM5310B/SW9056A)														
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		NA	
Nitrogen (Nitrate+Nitrite) [a]	mg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	0.241	J	NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	103		NA		NA		NA		1.68		NA	
Metals (6020)														
Manganese [b]	mg/L	1.100 [c]	NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)														
Perchlorate	µg/L	17	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U	0.0572	
Volatile Organic Compounds (8260C)														
1,1,2-Trichloroethane	µg/L	5	< 1	U	< 10	U	< 1	U	< 1	U	< 1	U	< 1	U
1,1-Dichloroethene	µg/L	7	< 1	U	< 10	U	3.5		< 1	U	1.2		< 1	U
1,2-Dichloroethane	µg/L	5	< 1	U	< 10	U	< 1	U	< 1	U	< 1	U	< 1	U
cis-1,2-Dichloroethene	µg/L	70	1.9		**73**		**160**		2		57		44	
Methylene chloride	µg/L	5	< 1	U	< 10	U	< 1	U	< 1	U	< 1	U	< 1	U
Trichloroethene	µg/L	5	1.6		**2,000**		**3,300**		**6.1**		**710**		**27**	
Vinyl chloride	µg/L	2	< 1	U	< 10	U	**6.2**		0.51	J	**3.6**		< 1	U

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

Injection Area:			**Landfill Biobarrier #2**											
Location Code			**16IW03**				**16PM02**		**16PM03**		**16PM06**		**16PM09**	
Sample ID			**16IW03-230123**		**16IW03-230123-FD**		**16PM02-230121**		**16PM03-230121**		**16PM06-230121**		**16PM09-230121**	
Sample Date			**1/23/2023**		**1/23/2023**		**1/21/2023**		**1/21/2023**		**1/21/2023**		**1/21/2023**	
Sample Type			**REG**		**FD**		**REG**		**REG**		**REG**		**REG**	
Location Description:			**Performance Data Within Landfill Biobarrier #2; Shallow Zone**				**Upgradient Well for Landfill Biobarrier #2; Shallow Zone**		**Upgradient Well for Landfill Biobarrier #2; Shallow Zone**		**Downgradient Well for Landfill Biobarrier #2; Shallow Zone**		**Downgradient Well for Landfill Biobarrier #2; Shallow Zone**	
Analyte	**Units**	**MCL/PCL/UTL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Dechlorinating Bacteria (Census)														
Dehalococcoides	cells/mL	NV	80,600		NA		NA		NA		NA		NA	
Field Measurements														
Dissolved oxygen	mg/L	NV	0.06		0.06		0.5		0.5		0.6		0.6	
Oxidation Reduction Potential	mV	NV	-26		-26		104		110		-18		121	
pH	SU	NV	6		6		5.73		6.4		6.05		5.7	
Dissolved Gases (RSK-175)														
Carbon Dioxide	µg/L	NV	670,000	J	480,000	J	NA		NA		NA		NA	
Ethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		71.1		NA	
Ethylene	µg/L	NV	816	J	1,590	J	NA		NA		548	J	NA	
Methane	µg/L	NV	4,280		5,080		NA		NA		865		NA	
General Chemistry (SM5310B/SW9056A)														
Nitrate	mg/L	NV	3.54	J	2.29	J	NA		NA		NA		NA	
Nitrogen (Nitrate+Nitrite) [a]	mg/L	NV	NA		NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	2.3	J	2.59		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	1,930		1,660		NA		NA		NA		NA	
Metals (6020)														
Manganese [b]	mg/L	1.100 [c]	NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)														
Perchlorate	µg/L	17	< 0.05	U	< 0.05	U	< 0.05	U	**285**		0.036	J	< 0.05	U
Volatile Organic Compounds (8260C)														
1,1,2-Trichloroethane	µg/L	5	< 50	U	< 50	U	< 250	U	< 50	U	< 250	U	< 25	U
1,1-Dichloroethene	µg/L	7	**48**	J	< 50	U	< 250	U	< 50	U	< 250	U	**41**	
1,2-Dichloroethane	µg/L	5	< 50	U	< 50	U	< 250	U	< 50	U	< 250	U	< 25	U
cis-1,2-Dichloroethene	µg/L	70	**18,000**		**16,000**		**7,100**		**4,200**		**29,000**		**700**	
Methylene chloride	µg/L	5	< 50	U	< 50	U	< 250	U	< 50	U	< 250	U	< 25	U
Trichloroethene	µg/L	5	**3,600**	J	**1,200**	J	**80,000**		**9,100**		**85,000**		**2,100**	
Vinyl chloride	µg/L	2	**1,600**		**1,300**		**160**	J	**220**		**1,100**		**26**	

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

		Injection Area:	Landfill Biobarrier #2						Landfill Biobarrier #3					
		Location Code	16PM14		16WW36				16RW06		16RW07		16RW09	
		Sample ID	16PM14-230121		16WW36-230125		16WW36-230125-FD		16RW06-230119		16RW07-230119		16RW09-230125	
		Sample Date	1/21/2023		1/25/2023		1/25/2023		1/19/2023		1/19/2023		1/25/2023	
		Sample Type	REG		REG		FD		REG		REG		REG	
		Location Description:	Downgradient Well for Landfill Biobarrier #2; Shallow Zone		Downgradient Well for Landfill Biobarrier #2; Shallow Zone				Upgradient Well for Landfill Biobarrier #3; Shallow Zone		Upgradient Well for Landfill Biobarrier #3; Shallow Zone		Downgradient Well for Landfill Biobarrier #3; Shallow Zone	
Analyte	**Units**	**MCL/PCL/UTL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Dechlorinating Bacteria (Census)														
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		NA	
Field Measurements														
Dissolved oxygen	mg/L	NV	0.4		0.04		0.04		0.7		0.5		0.08	
Oxidation Reduction Potential	mV	NV	-999		39		39		134		24		-67	
pH	SU	NV	6.47		6.67		6.67		6.44		6.74		7.08	
Dissolved Gases (RSK-175)														
Carbon Dioxide	µg/L	NV	NA		NA		NA		NA		NA		NA	
Ethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U
Ethylene	µg/L	NV	NA		NA		NA		NA		NA		26.1	J
Methane	µg/L	NV	NA		NA		NA		NA		NA		1,060	J
General Chemistry (SM5310B/SW9056A)														
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		NA	
Nitrogen (Nitrate+Nitrite) [a]	mg/L	NV	NA		NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	NA		18.9		19		NA		NA		4.1	
Metals (6020)														
Manganese [b]	mg/L	1.100 [c]	NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)														
Perchlorate	µg/L	17	< 0.05	U	< 0.05	U	< 0.05	U	< 0.05	U	0.633		< 0.05	U
Volatile Organic Compounds (8260C)														
1,1,2-Trichloroethane	µg/L	5	< 50	U	< 50	U	< 50	U	< 1	U	< 1	U	< 1	U
1,1-Dichloroethene	µg/L	7	< 50	U	**140**		**140**		< 1	U	**14**		4.8	
1,2-Dichloroethane	µg/L	5	**30**	J	< 50	U	< 50	U	< 1	U	< 1	U	< 1	U
cis-1,2-Dichloroethene	µg/L	70	**5,300**		**16,000**		**16,000**		15		**130**		**170**	
Methylene chloride	µg/L	5	< 50	U	< 50	U	< 50	U	< 1	U	< 1	U	< 1	U
Trichloroethene	µg/L	5	**5,400**		**22,000**		**22,000**		**160**		**2,200**		**590**	
Vinyl chloride	µg/L	2	**170**		**190**		**210**		**5.1**		**100**		**71**	

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

		Injection Area:	Landfill Biobarrier #3				Bayou Biobarrier							
		Location Code	16RW10		16IW10		16IW20		16RW12				16WW12	
		Sample ID	16RW10-230125		16IW10-230123		16IW20-230119		16RW12-230120		16RW12-230120-FD		16WW12-230125	
		Sample Date	1/25/2023		1/23/2023		1/19/2023		1/20/2023		1/20/2023		1/25/2023	
		Sample Type	REG		REG		REG		REG		FD		REG	
		Location Description:	Downgradient Well for Landfill Biobarrier #3; Shallow Zone		Performance Data Within Landfill Biobarrier #3; Shallow Zone		Performance Data Within the Bayou Biobarrier; Shallow Zone		Downgradient Well for Bayou Biobarrier; Shallow Zone				Upgradient Well for Bayou Biobarrier; Shallow Zone	
Analyte	**Units**	**MCL/PCL/UTL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Dechlorinating Bacteria (Census)														
Dehalococcoides	cells/mL	NV	NA		2,840		1,540		NA		NA		NA	
Field Measurements														
Dissolved oxygen	mg/L	NV	0.12		0.03		0.04		0.5		0.5		0.02	
Oxidation Reduction Potential	mV	NV	-15		-148		-104		54		54		50	
pH	SU	NV	7.04		7.18		6.9		6.38		6.38		6.85	
Dissolved Gases (RSK-175)														
Carbon Dioxide	µg/L	NV	NA		590,000		130,000	J	NA		NA		NA	
Ethane	µg/L	NV	< 0.5	U	< 0.5	U	< 0.5	U	NA		NA		NA	
Ethylene	µg/L	NV	19.3	J	< 0.5	UJ	33.6	J	NA		NA		NA	
Methane	µg/L	NV	655	J	5,350		6,270		NA		NA		NA	
General Chemistry (SM5310B/SW9056A)														
Nitrate	mg/L	NV	NA		< 0.25	U	NA		NA		NA		NA	
Nitrogen (Nitrate+Nitrite) [a]	mg/L	NV	NA		NA		< 0.5	U	NA		NA		NA	
Sulfate	mg/L	NV	NA		1.47	J	190		NA		NA		NA	
Total organic carbon	mg/L	NV	NA		122		9		NA		NA		NA	
Metals (6020)														
Manganese [b]	mg/L	1.100 [c]	NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)														
Perchlorate	µg/L	17	3.39		< 0.05	U	< 0.05	U	0.0598	J	0.0597	J	**21.9**	
Volatile Organic Compounds (8260C)														
1,1,2-Trichloroethane	µg/L	5	< 5	U	< 1	U	< 1	U	< 1	U	< 1	U	< 5	U
1,1-Dichloroethene	µg/L	7	**33**		< 1	U	< 1	U	0.86	J	0.84	J	4	J
1,2-Dichloroethane	µg/L	5	3.1	J	< 1	U	< 1	U	< 1	U	< 1	U	5	
cis-1,2-Dichloroethene	µg/L	70	**260**		1.9	J	7.8		37		37		**160**	
Methylene chloride	µg/L	5	< 5	U	< 1	UJ	< 1	U	< 1	U	< 1	U	< 5	U
Trichloroethene	µg/L	5	**1,100**		1.6		2.5		**130**		**130**		**1,400**	
Vinyl chloride	µg/L	2	**180**		**4.2**		**18**		**9.5**		**10**		**16**	

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

		Injection Area:	Bayou Biobarrier				Mid Plume and Bayou Biobarrier		Mid Plume Area					
		Location Code	16WW22		16WW40		16WW39		16EW01		16EW02		16EW03	
		Sample ID	16WW22-230120		16WW40-230121		16WW39-230125		16EW01-230119		16EW02-230119		16EW03-230119	
		Sample Date	1/20/2023		1/21/2023		1/25/2023		1/19/2023		1/19/2023		1/19/2023	
		Sample Type	REG		REG		REG		REG		REG		REG	
		Location Description:	Upgradient Well for Bayou Biobarrier; Shallow Zone		Downgradient Well for Bayou Biobarrier; Shallow Zone		Upgradient Well for Bayou Biobarrier and Downgradient Well for Mid-Plume; Shallow Zone		Performance Data Within Mid-Plume ISB Injection Area; Shallow Zone		Performance Data Within Mid-Plume ISB Injection Area; Shallow Zone		Performance Data Within Mid-Plume ISB Injection Area; Shallow Zone	
Analyte	**Units**	**MCL/PCL/UTL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Dechlorinating Bacteria (Census)														
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		21,000		NA	
Field Measurements														
Dissolved oxygen	mg/L	NV	0.7		0.04		0.8		0.1		0.03		0.02	
Oxidation Reduction Potential	mV	NV	13		34		146		-25		-26		12	
pH	SU	NV	6.37		6.7		6.36		6.78		6.6		6.9	
Dissolved Gases (RSK-175)														
Carbon Dioxide	µg/L	NV	NA		NA		NA		NA		170,000	J	170,000	J
Ethane	µg/L	NV	NA		2.96	J	NA		NA		< 0.5	U	< 0.5	U
Ethylene	µg/L	NV	NA		5.34	J	NA		NA		436	J	354	J
Methane	µg/L	NV	NA		909		NA		NA		437		2160	
General Chemistry (SM5310B/SW9056A)														
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		NA	
Nitrogen (Nitrate+Nitrite) [a]	mg/L	NV	NA		NA		NA		NA		< 0.5	UJ	< 0.5	U
Sulfate	mg/L	NV	NA		NA		NA		NA		2,770		2,270	
Total organic carbon	mg/L	NV	NA		5		NA		17.3		10.9		15.7	
Metals (6020)														
Manganese [b]	mg/L	1.100 [c]	NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)														
Perchlorate	µg/L	17	0.488		0.0305		7.03		**30.7**		< 0.05	U	0.0379	J
Volatile Organic Compounds (8260C)														
1,1,2-Trichloroethane	µg/L	5	< 1	U	< 1	U	< 1	U	< 5	U	**120**		< 1	U
1,1-Dichloroethene	µg/L	7	< 1	U	2.6		1.6		**28**		**2,800**		6.6	
1,2-Dichloroethane	µg/L	5	< 1	U	2.8		0.72	J	**18**		**950**		1.1	
cis-1,2-Dichloroethene	µg/L	70	6.7		**200**		40		**7,000**		**39,000**		**1,200**	
Methylene chloride	µg/L	5	< 1	U	< 1	U	< 1	U	< 5	U	< 100	U	< 1	U
Trichloroethene	µg/L	5	**47**		**480**		**490**		**2,400**		**32,000**		**420**	
Vinyl chloride	µg/L	2	0.94	J	**4.7**		**5.3**		**890**		**1,100**		**630**	

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

Injection Area:			**Mid Plume Area**											
Location Code			**16EW04**		**16EW08**		**16IW26**		**16WW29**		**16WW30**		**16WW48**	
Sample ID			**16EW04-230121**		**16EW08-230121**		**16IW26-230123**		**16WW29-230123**		**16WW30-230123**		**16WW48-230119**	
Sample Date			**1/21/2023**		**1/21/2023**		**1/23/2023**		**1/23/2023**		**1/23/2023**		**1/19/2023**	
Sample Type			**REG**		**REG**		**REG**		**REG**		**REG**		**REG**	
Location Description:			**Performance Data Within Mid-Plume ISB Injection Area; Shallow Zone**		**Performance Data Within Mid-Plume ISB Injection Area; Intermediate Zone**		**Performance Data Within Mid-Plume ISB Injection Area; Inetermediate Zone**		**Downgradient Well for Mid-Plume; Intermediate Zone**		**Downgradient Well for Mid-Plume; Shallow Zone**		**Downgradient Well for Mid-Plume; Shallow Zone**	
Analyte	**Units**	**MCL/PCL/UTL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Dechlorinating Bacteria (Census)														
Dehalococcoides	cells/mL	NV	NA		NA		204,000		NA		NA		NA	
Field Measurements														
Dissolved oxygen	mg/L	NV	0.02		0.03		0.1		0.4		2.1		0.06	
Oxidation Reduction Potential	mV	NV	39		-70		-150		-56		93		119	
pH	SU	NV	6.19		6.57		7.4		6.27		6.49		6.65	
Dissolved Gases (RSK-175)														
Carbon Dioxide	µg/L	NV	NA		NA		490,000		NA		NA		170,000	J
Ethane	µg/L	NV	NA		NA		< 0.5	U	NA		NA		< 0.5	U
Ethylene	µg/L	NV	NA		NA		52.3	J	NA		NA		15.6	J
Methane	µg/L	NV	NA		NA		5,780		NA		NA		25.8	
General Chemistry (SM5310B/SW9056A)														
Nitrate	mg/L	NV	NA		NA		< 0.25	U	NA		NA		NA	
Nitrogen (Nitrate+Nitrite) [a]	mg/L	NV	NA		NA		NA		NA		NA		< 0.5	U
Sulfate	mg/L	NV	NA		NA		3.5		NA		NA		2,380	
Total organic carbon	mg/L	NV	NA		NA		110		NA		NA		NA	
Metals (6020)														
Manganese [b]	mg/L	1.100 [c]	NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)														
Perchlorate	µg/L	17	< 0.05		< 0.05		< 0.05	U	< 0.05	U	< 0.05	U	2.35	
Volatile Organic Compounds (8260C)														
1,1,2-Trichloroethane	µg/L	5	< 100	U	< 1	U	< 5	U	< 1	U	< 1	U	< 100	U
1,1-Dichloroethene	µg/L	7	< 100	U	< 1	U	< 5	U	< 1	U	< 1	U	**60**	J
1,2-Dichloroethane	µg/L	5	< 100	U	< 1	U	< 5	U	< 1	U	< 1	U	**50**	J
cis-1,2-Dichloroethene	µg/L	70	**6,300**		0.91	J	< 5	U	< 1	U	3.3		**23,000**	
Methylene chloride	µg/L	5	< 100	U	< 1	U	< 5	U	< 1	U	< 1	U	< 100	U
Trichloroethene	µg/L	5	**28,000**		2.2		< 5	U	2.8		**120**		**13,000**	
Vinyl chloride	µg/L	2	**180**		< 1	U	2	J	< 1	U	< 1	U	**180**	

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

		Injection Area:	Mid Plume Area				MNA and LTM Performance Wells from RAWP Table 4-9					
		Location Code	16WW49		16WW51		16WW13		16WW16			
		Sample ID	16WW49-230125		16WW51-230120		16WW13-230121		16WW16-230119		16WW16-230119-FD	
		Sample Date	1/25/2023		1/20/2023		1/21/2023		1/19/2023		1/19/2023	
		Sample Type	REG		REG		REG		REG		FD	
		Location Description:	Performance Data for Mid-Plume ISB Injection Area; Intermediate Zone		Performance Data for Mid-Plume ISB Injection Area; Intermediate Zone		MNA Evaluation; Downgradient of Landfill Biobarrier #1; Intermediate Zone		MNA Evaluation; Upgradient of Landfill Biobarrier #2; Shallow Zone			
Analyte	Units	MCL/PCL/UTL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Dechlorinating Bacteria (Census)												
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA	
Field Measurements												
Dissolved oxygen	mg/L	NV	0.13		0.9		0.07		0.9		0.9	
Oxidation Reduction Potential	mV	NV	8		-41		121		175		175	
pH	SU	NV	6.65		6.22		5.88		6.77		6.77	
Dissolved Gases (RSK-175)												
Carbon Dioxide	µg/L	NV	NA		NA		NA		97,000	J	92,000	J
Ethane	µg/L	NV	NA		NA		NA		6.8		6.71	
Ethylene	µg/L	NV	NA		NA		NA		12	J	11.2	J
Methane	µg/L	NV	NA		NA		NA		1,310		1,330	
General Chemistry (SM5310B/SW9056A)												
Nitrate	mg/L	NV	NA		NA		NA		NA		NA	
Nitrogen (Nitrate+Nitrite) [a]	mg/L	NV	NA		NA		NA		0.424	J	0.45	J
Sulfate	mg/L	NV	NA		NA		NA		371		372	
Total organic carbon	mg/L	NV	NA		NA		NA		5.17		5.05	
Metals (6020)												
Manganese [b]	mg/L	1.100 [c]	NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)												
Perchlorate	µg/L	17	< 0.05	U	< 0.05	U	< 0.05		**630**		**650**	
Volatile Organic Compounds (8260C)												
1,1,2-Trichloroethane	µg/L	5	< 1	U	< 1	U	< 1	U	< 100	U	< 100	U
1,1-Dichloroethene	µg/L	7	< 1	U	**9.5**		< 1	UJ	**87**	J	**91**	J
1,2-Dichloroethane	µg/L	5	< 1	U	1.5		< 1	UJ	**64**	J	**63**	J
cis-1,2-Dichloroethene	µg/L	70	41		**900**		**610**	J	**24,000**		**25,000**	
Methylene chloride	µg/L	5	< 1	U	< 1	U	< 1	UJ	< 100	U	< 100	U
Trichloroethene	µg/L	5	**73**		**5,900**		**89**	J	**63,000**		**63,000**	
Vinyl chloride	µg/L	2	< 1	U	**17**		**2.9**	J	**520**		**500**	

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

Injection Area:			**MNA and LTM Performance Wells from RAWP Table 4-9**											
Location Code			**16WW23**				**16WW24**		**16WW25**		**16WW27**		**16WW31**	
Sample ID			**16WW23-230121**		**16WW23-230121-FD**		**16WW24-230121**		**16WW25-230123**		**16WW27-230121**		**16WW31-230125**	
Sample Date			**1/21/2023**		**1/21/2023**		**1/21/2023**		**1/23/2023**		**1/21/2023**		**1/25/2023**	
Sample Type			**REG**		**FD**		**REG**		**REG**		**REG**		**REG**	
Location Description:			**MNA Evaluation; Intermediate Zone**				**MNA Evaluation; Shallow Zone**		**MNA Evaluation; Intermediate Zone**		**MNA Evaluation; Downgradient of Landfill Biobarrier #2; Intermediate Zone**		**MNA Evaluation; Intermediate Zone**	
Analyte	**Units**	**MCL/PCL/UTL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Dechlorinating Bacteria (Census)														
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		NA	
Field Measurements														
Dissolved oxygen	mg/L	NV	0.08		0.08		0.04		0.4		0.09		0.5	
Oxidation Reduction Potential	mV	NV	-44		-44		447		40		-77		128	
pH	SU	NV	6.4		6.4		3.74		5.87		6.46		6.17	
Dissolved Gases (RSK-175)														
Carbon Dioxide	µg/L	NV	NA		NA		NA		NA		NA		NA	
Ethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		NA		NA		NA		NA	
Methane	µg/L	NV	NA		NA		NA		NA		NA		NA	
General Chemistry (SM5310B/SW9056A)														
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		NA	
Nitrogen (Nitrate+Nitrite) [a]	mg/L	NV	NA		NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	NA		NA		NA		NA		NA		NA	
Metals (6020)														
Manganese [b]	mg/L	1.100 [c]	NA		NA		6.2 [c]		NA		NA		NA	
Perchlorate (EPA 6850)														
Perchlorate	µg/L	17	< 0.05		< 0.05		< 0.05		< 0.05	U	< 0.05		< 0.05	U
Volatile Organic Compounds (8260C)														
1,1,2-Trichloroethane	µg/L	5	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U
1,1-Dichloroethene	µg/L	7	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U
1,2-Dichloroethane	µg/L	5	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U
cis-1,2-Dichloroethene	µg/L	70	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U
Methylene chloride	µg/L	5	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U
Trichloroethene	µg/L	5	< 1	U	0.64	J	< 1	U	4.9		1.9		< 1	U
Vinyl chloride	µg/L	2	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

		Injection Area:	MNA and LTM Performance Wells from RAWP Table 4-9									
		Location Code	16WW32		16WW33		16WW34		16WW35		16WW37	
		Sample ID	16WW32-230125		16WW33-230125		16WW34-230125		16WW35-230119		16WW37-230120	
		Sample Date	1/25/2023		1/25/2023		1/25/2023		1/19/2023		1/20/2023	
		Sample Type	REG		REG		REG		REG		REG	
		Location Description:	MNA Evaluation; Upgradient of Bayou Biobarrier; Shallow Zone		MNA Evaluation; Intermediate Zone		MNA Evaluation; Shallow Zone		MNA Evaluation; Downgradient of Landfill Biobarrier #3; Intermediate Zone		MNA Evaluation; Intermediate Zone	
Analyte	**Units**	**MCL/PCL/UTL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Dechlorinating Bacteria (Census)												
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA	
Field Measurements												
Dissolved oxygen	mg/L	NV	1		0.4		0.6		0.5		1	
Oxidation Reduction Potential	mV	NV	18		88		10		167		79	
pH	SU	NV	6.44		6.33		6.19		6.65		6.32	
Dissolved Gases (RSK-175)												
Carbon Dioxide	µg/L	NV	NA		NA		NA		130,000	J	NA	
Ethane	µg/L	NV	NA		NA		NA		< 0.5	U	NA	
Ethylene	µg/L	NV	NA		NA		NA		7.75	J	NA	
Methane	µg/L	NV	NA		NA		NA		69.6		NA	
General Chemistry (SM5310B/SW9056A)												
Nitrate	mg/L	NV	NA		NA		NA		NA		NA	
Nitrogen (Nitrate+Nitrite) [a]	mg/L	NV	NA		NA		NA		< 0.5	UJ	NA	
Sulfate	mg/L	NV	NA		NA		NA		9,540		NA	
Total organic carbon	mg/L	NV	NA		NA		NA		42.8		NA	
Metals (6020)												
Manganese [b]	mg/L	1.100 [c]	NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)												
Perchlorate	µg/L	17	< 0.05	U	< 0.05	U	< 0.05	U	**94.9**		11.3	
Volatile Organic Compounds (8260C)												
1,1,2-Trichloroethane	µg/L	5	< 1	U	< 1	U	< 1	U	< 100	UJ	< 1	U
1,1-Dichloroethene	µg/L	7	< 1	U	< 1	U	< 1	U	**150**		1.2	
1,2-Dichloroethane	µg/L	5	< 1	U	< 1	U	< 1	U	< 100	U	< 1	U
cis-1,2-Dichloroethene	µg/L	70	< 1	U	< 1	U	< 1	U	**8,800**		12	
Methylene chloride	µg/L	5	< 1	U	< 1	U	< 1	U	< 100	UJ	< 1	U
Trichloroethene	µg/L	5	0.82	J	< 1	U	< 1	U	**17,000**		**200**	
Vinyl chloride	µg/L	2	< 1	U	< 1	U	< 1	U	**120**		**7.1**	

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

		Injection Area:	MNA and LTM Performance Wells from RAWP Table 4-9											
		Location Code	16WW38				16WW41		16WW43		16WW44		16WW46	
		Sample ID	16WW38-230120		16WW38-230120-FD		16WW41-230119		16WW43-230121		16WW44-230121		16WW46-230125	
		Sample Date	1/20/2023		1/20/2023		1/19/2023		1/21/2023		1/21/2023		1/25/2023	
		Sample Type	REG		FD		REG		REG		REG		REG	
		Location Description:	MNA evaluation; Shallow Zone				MNA Evaluation; Upgradient of the Bayou Biobarrier; Intermediate Zone		MNA Evaluation; Shallow Zone		MNA Evaluation; Shallow Zone		MNA Evaluation; Shallow Zone	
Analyte	**Units**	**MCL/PCL/UTL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Dechlorinating Bacteria (Census)														
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		NA	
Field Measurements														
Dissolved oxygen	mg/L	NV	1.1		1.1		0.8		0.07		0.7		0.03	
Oxidation Reduction Potential	mV	NV	-48		-48		197		31		34		11	
pH	SU	NV	6.04		6.04		6.71		6.73		5.71		7.11	
Dissolved Gases (RSK-175)														
Carbon Dioxide	µg/L	NV	NA		NA		170,000	J	NA		NA		NA	
Ethane	µg/L	NV	NA		NA		< 0.5	U	NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		32	J	NA		NA		NA	
Methane	µg/L	NV	NA		NA		12.2		NA		NA		NA	
General Chemistry (SM5310B/SW9056A)														
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		NA	
Nitrogen (Nitrate+Nitrite) [a]	mg/L	NV	NA		NA		< 0.5	U	NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		9,880		NA		NA		NA	
Total organic carbon	mg/L	NV	NA		NA		48.4		NA		NA		NA	
Metals (6020)														
Manganese [b]	mg/L	1.100 [c]	NA		NA		NA		NA		NA		NA	
Perchlorate (EPA 6850)														
Perchlorate	µg/L	17	2.14	J	1.38	J	11		0.105		< 0.05	U	< 0.05	U
Volatile Organic Compounds (8260C)														
1,1,2-Trichloroethane	µg/L	5	< 20	U	< 20	U	< 5	U	< 1	U	< 1	U	< 1	U
1,1-Dichloroethene	µg/L	7	**19**	J	**14**	J	**25**		< 1	U	< 1	U	< 1	U
1,2-Dichloroethane	µg/L	5	< 20	U	< 20	U	4.4	J	< 1	U	< 1	U	< 1	U
cis-1,2-Dichloroethene	µg/L	70	**460**		**390**		**3,400**		< 1	U	< 1	U	< 1	U
Methylene chloride	µg/L	5	< 20	U	< 20	U	< 5	U	< 1	U	< 1	U	< 1	U
Trichloroethene	µg/L	5	**3,700**		**3,300**		**6,800**		0.63	J	2.2		0.71	J
Vinyl chloride	µg/L	2	**110**		**99**		**720**		< 1	U	< 1	U	< 1	U

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

		Injection Area:	MNA and LTM Performance Wells from RAWP Table 4-9							
		Location Code	16WW55		16WW56		16WW57		16WW58	
		Sample ID	16WW55-230119		16WW56-230120		16WW57-230123		16WW58-230123	
		Sample Date	1/19/2023		1/20/2023		1/23/2023		1/23/2023	
		Sample Type	REG		REG		REG		REG	
		Location Description:	MNA Evaluation; Shallow Zone		MNA Evaluation; Downgradient of the Bayou Biobarrier; Shallow Zone		MNA Evaluation; Intermediate Zone		MNA Evaluation; Intermediate Zone	
Analyte	**Units**	**MCL/PCL/UTL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Dechlorinating Bacteria (Census)										
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA	
Field Measurements										
Dissolved oxygen	mg/L	NV	0.5		0.8		0.08		0.05	
Oxidation Reduction Potential	mV	NV	131		107		-24		-88	
pH	SU	NV	6.82		6.27		6.37		6.52	
Dissolved Gases (RSK-175)										
Carbon Dioxide	µg/L	NV	89,000	J	NA		170,000		120,000	
Ethane	µg/L	NV	< 0.5	U	NA		< 0.5	U	< 0.5	U
Ethylene	µg/L	NV	20.6	J	NA		1.1	J	< 0.5	UJ
Methane	µg/L	NV	1,100		NA		3.35		7.47	
General Chemistry (SM5310B/SW9056A)										
Nitrate	mg/L	NV	NA		NA		< 0.25	U	< 0.25	U
Nitrogen (Nitrate+Nitrite) [a]	mg/L	NV	< 0.5	U	NA		NA		NA	
Sulfate	mg/L	NV	846		NA		3,140		758	
Total organic carbon	mg/L	NV	5.56		NA		19.9		6.48	
Metals (6020)										
Manganese [b]	mg/L	1.100 [c]	NA		NA		NA		NA	
Perchlorate (EPA 6850)										
Perchlorate	µg/L	17	**55.5**		0.167		< 0.05	U	0.0371	J
Volatile Organic Compounds (8260C)										
1,1,2-Trichloroethane	µg/L	5	< 1	U	< 1	U	< 5	U	< 50	U
1,1-Dichloroethene	µg/L	7	**8.9**		< 1	U	< 5	U	< 50	U
1,2-Dichloroethane	µg/L	5	2.4		< 1	U	< 5	U	< 50	U
cis-1,2-Dichloroethene	µg/L	70	**500**		1.4		< 5	U	**200**	
Methylene chloride	µg/L	5	< 1	U	< 1	U	< 5	U	< 50	U
Trichloroethene	µg/L	5	**2,100**		**27**		**160**		**7,000**	
Vinyl chloride	µg/L	2	**100**		< 1	U	< 5	U	< 50	U

LHAAP-16 Year 3 Semiannual RA-O Event #2
(January 2023)

Notes:

[a] The samples for nitrate from one sample group could not be analyzed within the holding time due to an intrument outage at the lab. The samples were instead analyzed for nitrogen (combined nitrate/nitrite) and where concetrations were detected, they were below the detection level for nitrate.

b The manganese analysis for 16WW24 was performed in January 2023 because the well was incorrectly analyzed for Magnesium by the laboratory during the Five Year Review sampling event for metals performed at LHAAP-16 in June 2022.

[c] Cleanup Level for manganese identifed in Table 1-1 of the Remedial Action Work Plan is the 95% upper tolerance limit value from the *Final Evaluation of Perimeter Well Data for Use as Groundwater Background* (Shaw, 2007)

Blue highlighting indicates the concentration (bolded) or detection level (unbolded) exceeds the MCL/PCL

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

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

UJ – Undetected estimated. The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

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

MCL - Maximum Contaminant Limit

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate, manganese, and nickel where no MCL has been established)

mg/L - milligrams per liter

µg/L - micrograms per liter

ID - Identification

REG - Regular sample

FD - Field duplicate sample

< - The analyte was not detected above the concentration shown

NV - No MCL/PCL is shown for analytes that are not contaminants of concern

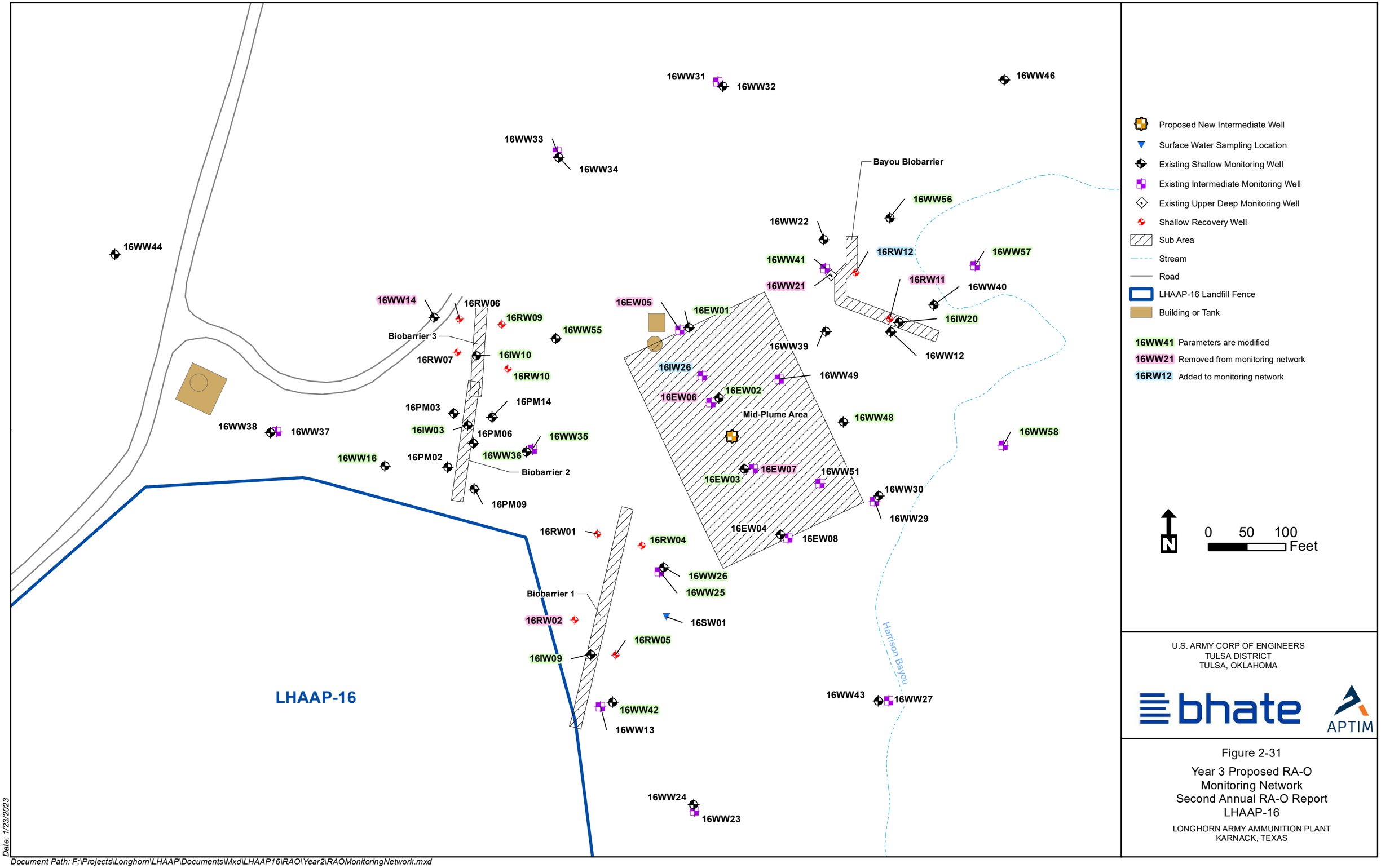
NA - not analyzed

SU - standard pH Units

mV - millivolts

cells/mL - cells per milliliter

UTL - upper tolerance limit



U.S. ARMY CORP OF ENGINEERS
TULSA DISTRICT
TULSA, OKLAHOMA

bhate APTIM

Figure 2-31

Year 3 Proposed RA-O
Monitoring Network
Second Annual RA-O Report
LHAAP-16

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 1/23/2023

Document Path: F:\Projects\Longhorn\LHAAP\Documents\Mxd\LHAAP16\RAO\Year2\RAOMonitoringNetwork.mxd

LHAAP-46 Year 9 Annual RA-O Sampling
February 2023

			Location Code	46WW02		46WW03		46WW05				46WW06		46WW07	
			Sample ID	46WW02-230206		46WW03-230206		46WW05-230207		46WW05-230228		46WW06-230209		46WW07-230206	
			Sample Date	2/6/2023		2/6/2023		2/7/2023		2/28/2023		2/9/2023		2/6/2023	
			Location Description	Site 46 - Central, Within Site Boundary, Intermediate Zone		Site 46 - Central, Within Site Boundary, Deep Zone		Site 46 - North, Within Site Boundary, Intermediate Zone				Site 46 - West, Within Site Boundary, Intermediate Zone		Site 46 - North, Within Site Boundary. Intermediate Zone	
Analyte	**Units**	**MCL**		**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Field Measurements															
Dissolved oxygen	mg/L	NV		0.02		0.03		0.09		1.64		0.12		0.08	
Oxidation Reduction Potential	mV	NV		158		-3		275		322		5		112	
pH	Std. Units	NV		5.29		8.19		4.36		4.86		6.28		6.57	
Dissolved Gases (RSK-175)															
Carbon dioxide	µg/L	NV		90,000	J	NA		150,000		NA		NA		NA	
Ethane	µg/L	NV		< 0.5	U	NA		< 0.5	U	NA		NA		NA	
Ethylene	µg/L	NV		< 0.5	UJ	NA		1.32	J	NA		NA		NA	
Methane	µg/L	NV		1.74		NA		3.32		NA		NA		NA	
General Chemistry (SM5310B/SW9056A)															
Chloride	mg/L	NV		54.4		NA		172		NA		NA		NA	
Nitrate	mg/L	NV		< 0.05	U	NA		NA[1]		< 0.25	U	NA		NA	
Sulfate	mg/L	NV		270		NA		4,440		NA		NA		NA	
Total organic carbon	mg/L	NV		10.3		NA		7.38		NA		NA		NA	
Volatile Organic Compounds (Method SW8260C)															
cis-1,2-Dichloroethene	µg/L	70		1.8	J	< 0.5	U	1.8		NA		< 1	U	< 0.5	U
Trichloroethene	µg/L	5		**29**		< 0.5	U	**33**		NA		< 1	U	< 0.5	U
Vinyl chloride	µg/L	2		0.43	J	< 0.5	U	< 1	U	NA		< 1	U	< 0.5	U

Notes:

Blue highlighting indicates concentrations above the MCL

1 - Samples for nitrate from 2/7/2023 and 2/9/2023 could not be analyzed within the hold time due to an instrument outage. Samples were recollected for nitrate from the affected locations on 2/28/23.

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

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

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Limit

ug/L - micrograms per liter

mg/L - milligrams per liter

mV - millivolts

Std. Units - standard pH units

< - The analyte was not detected above the concentration shown

Val Qual - Validation Qualifier

NA - not analyzed

NV - no value; MCLs only shown for constituents of concern

ID - identification

FD - field duplicate

LHAAP-46 Year 9 Annual RA-O Sampling
February 2023

	Location Code	46WW08		46WW09								46WW11			
	Sample ID	46WW08-230209		46WW09-230207		46WW09-230207-FD		46WW09-230228		46WW09-230228-FD		46WW11-230209		46WW11-230228	
	Sample Date	2/9/2023		2/7/2023		2/7/2023		2/28/2023		2/28/2023		2/9/2023		2/28/2023	
	Location Description	Site 46 - NNW, Inside Site Boundary. Intermediate Zone		Site 46 - Central, Within Site Boundary. Intermediate Zone								Site 46 - Central, Within Site Boundary, Shallow Zone			
Analyte	**Units**	**MCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Field Measurements																
Dissolved oxygen	mg/L	NV	0.1		0.01		0.01		1.12		1.12		0.04		2.2	
Oxidation Reduction Potential	mV	NV	-31		204		204		151		151		91		159	
pH	Std. Units	NV	6.29		6.29		6.29		6.73		6.73		5.59		5.9	
Dissolved Gases (RSK-175)																
Carbon dioxide	µg/L	NV	NA		54,000		59,000		NA		NA		66,000		NA	
Ethane	µg/L	NV	NA		< 0.5	U	0.958	J	NA		NA		< 0.5	U	NA	
Ethylene	µg/L	NV	NA		1.17	J	< 0.5	UJ	NA		NA		< 0.5	UJ	NA	
Methane	µg/L	NV	NA		1.85	J	1.12	J	NA		NA		22.9		NA	
General Chemistry (SM5310B/SW9056A)																
Chloride	mg/L	NV	NA		473		465		NA		NA		142		NA	
Nitrate	mg/L	NV	NA		NA[1]		NA[1]		< 0.25	U	< 0.25	U	NA[1]		< 0.05	U
Sulfate	mg/L	NV	NA		2,270		2,250		NA		NA		265		NA	
Total organic carbon	mg/L	NV	NA		3.95		4.24		NA		NA		1.74		NA	
Volatile Organic Compounds (Method SW8260C)																
cis-1,2-Dichloroethene	µg/L	70	< 1	U	< 1	U	< 1	U	NA		NA		< 1	U	NA	
Trichloroethene	µg/L	5	< 1	U	< 1	U	< 1	U	NA		NA		**22**		NA	
Vinyl chloride	µg/L	2	< 1	U	< 1	U	< 1	U	NA		NA		< 1	U	NA	

Notes:

Blue highlighting indicates concentrations above the MCL

1 - Samples for nitrate from 2/7/2023 and 2/9/2023 could not be analyzed within the hold time due to an instrument outage. Samples were recollected for nitrate from the affected locations on 2/28/23.

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

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

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Limit

ug/L - micrograms per liter

mg/L - milligrams per liter

mV - millivolts

Std. Units - standard pH units

< - The analyte was not detected above the concentration shown

Val Qual - Validation Qualifier

NA - not analyzed

NV - no value; MCLs only shown for constituents of concern

ID - identification

FD - field duplicate

LHAAP-46 Year 9 Annual RA-O Sampling
February 2023

	Location Code	46WW14		46WW16		46WW17		LHSMW19				LHSMW21	
	Sample ID	46WW14-230206		46WW16-230206		46WW17-230209		LHSMW19-230209		LHSMW19-230209-FD		LHSMW21-230206	
	Sample Date	2/6/2023		2/6/2023		2/9/2023		2/9/2023		2/9/2023		2/6/2023	
	Location Description	Site 45 - Northeast, Within Site Boundary, Intermediate Zone		Site 46 - North, Within Site Boundary, Intermediate Zone		Site 46 - Northeast, Within Site Boundary, Shallow/Intermediate Zone		Site 46 - Central, Within Site Boundary, Shallow Zone				Site 46 - North, Within Site Boundary, Shallow Zone	
Analyte	**Units**	**MCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Field Measurements														
Dissolved oxygen	mg/L	NV	0.05		0.04		0.02		0.08		0.08		0.07	
Oxidation Reduction Potential	mV	NV	-78		-126		75		32		32		128	
pH	Std. Units	NV	6.77		10.57		6.42		6.53		6.53		6.98	
Dissolved Gases (RSK-175)														
Carbon dioxide	µg/L	NV	NA		< 12,000	U	NA		NA		NA		46,000	
Ethane	µg/L	NV	NA		< 0.5	U	NA		NA		NA		< 0.5	U
Ethylene	µg/L	NV	NA		< 0.5	UJ	NA		NA		NA		< 0.5	UJ
Methane	µg/L	NV	NA		6.58		NA		NA		NA		1.89	
General Chemistry (SM5310B/SW9056A)														
Chloride	mg/L	NV	NA		266		NA		NA		NA		92.4	
Nitrate	mg/L	NV	NA		< 0.05	U	NA		NA		NA		< 0.05	U
Sulfate	mg/L	NV	NA		569		NA		NA		NA		851	
Total organic carbon	mg/L	NV	NA		5.96		NA		NA		NA		1.61	
Volatile Organic Compounds (Method SW8260C)														
cis-1,2-Dichloroethene	µg/L	70	< 0.5	U	< 0.5	U	< 1	U	11		11		**200**	
Trichloroethene	µg/L	5	< 0.5	U	< 0.5	U	< 1	U	**24**		**26**		**61**	
Vinyl chloride	µg/L	2	< 0.5	U	< 0.5	U	< 1	U	< 1	U	< 1	U	**8**	

Notes:

Blue highlighting indicates concentrations above the MCL

1 - Samples for nitrate from 2/7/2023 and 2/9/2023 could not be analyzed within the hold time due to an instrument outage. Samples were recollected for nitrate from the affected locations on 2/28/23.

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

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

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Limit

ug/L - micrograms per liter

mg/L - milligrams per liter

mV - millivolts

Std. Units - standard pH units

< - The analyte was not detected above the concentration shown

Val Qual - Validation Qualifier

NA - not analyzed

NV - no value; MCLs only shown for constituents of concern

ID - identification

FD - field duplicate

LHAAP-46 Year 9 Annual RA-O Sampling
February 2023

	Location Code	LHSMW23R				LHSMW25	
	Sample ID	LHSMW23R-230209		LHSMW23R-230209-FD		LHSMW25-230209	
	Sample Date	2/9/2023		2/9/2023		2/9/2023	
	Location Description	Site 46 - South, Within Site Boundary, Intermediate Zone				Site 46 - East, Within Site Boundary, Intermediate Zone	
Analyte	**Units**	**MCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Field Measurements								
Dissolved oxygen	mg/L	NV	0.03		0.03		0.05	
Oxidation Reduction Potential	mV	NV	105		105		18	
pH	Std. Units	NV	5.8		5.8		6.43	
Dissolved Gases (RSK-175)								
Carbon dioxide	µg/L	NV	NA		NA		NA	
Ethane	µg/L	NV	NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		NA	
Methane	µg/L	NV	NA		NA		NA	
General Chemistry (SM5310B/SW9056A)								
Chloride	mg/L	NV	NA		NA		NA	
Nitrate	mg/L	NV	NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		NA	
Total organic carbon	mg/L	NV	NA		NA		NA	
Volatile Organic Compounds (Method SW8260C)								
cis-1,2-Dichloroethene	µg/L	70	0.77	J	0.86	J	< 1	U
Trichloroethene	µg/L	5	0.76	J	0.78	J	< 1	U
Vinyl chloride	µg/L	2	< 1	U	< 1	U	< 1	U

Notes:

Blue highlighting indicates concentrations above the MCL

1 - Samples for nitrate from 2/7/2023 and 2/9/2023 could not be analyzed within the hold time due to an instrument outage. Samples were recollected for nitrate from the affected locations on 2/28/23.

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

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

UJ - Undetected estimated: The analyte was analyzed for but, was not detected. Even though the analyte was not detected, certain discrepancies in meeting analyte specific quality control were not met.

MCL - Maximum Contaminant Limit

ug/L - micrograms per liter

mg/L - milligrams per liter

mV - millivolts

Std. Units - standard pH units

< - The analyte was not detected above the concentration shown

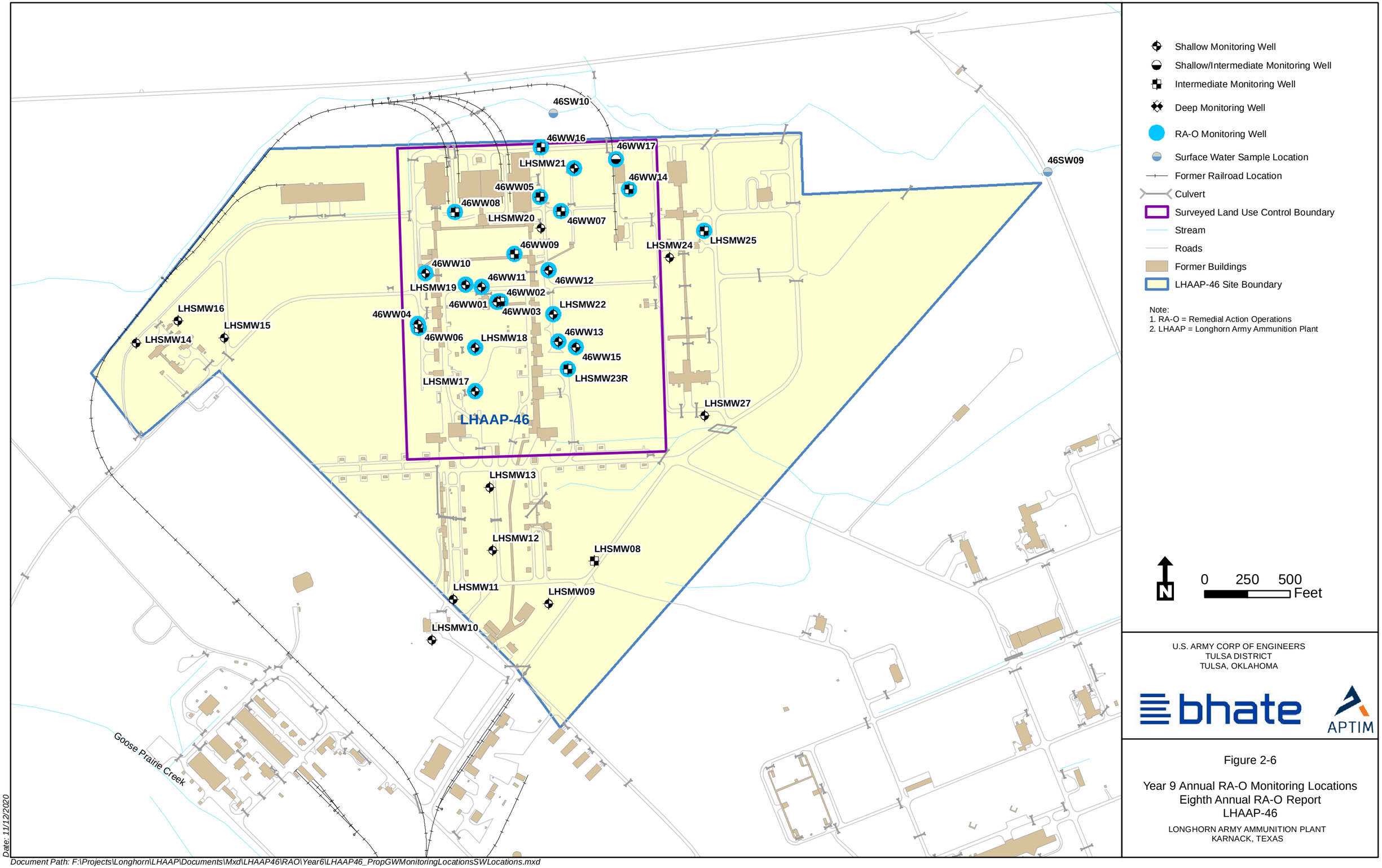
Val Qual - Validation Qualifier

NA - not analyzed

NV - no value; MCLs only shown for constituents of concern

ID - identification

FD - field duplicate



U.S. ARMY CORP OF ENGINEERS
TULSA DISTRICT
TULSA, OKLAHOMA

bhate APTIM

Figure 2-6

Year 9 Annual RA-O Monitoring Locations
Eighth Annual RA-O Report
LHAAP-46

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 11/12/2020

Document Path: F:\Projects\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year6\LHAAP46_PropGWMonitoringLocationsSWLocations.mxd

GWTP Weekly/Effluent Perchlorate Sampling - Mayy 2023

Location ID: Sample Date:	Units	Daily Maximum Conc	PCL	LH18/24-SP650_052223_BIX 5/22/23	LH18/24-SP650_052223_AIX 5/22/23	LH18/24-SP650_052223_AIX 5/22/23
Location Description						
				Weekly	Weekly	Monthly Eff
Perchlorate (6850)						
Perchlorate	µg/L	589	17	**0.874**	**0.184 J**	**0.244 J**

µg/L - micrograms per liter

BIX - before ion exchange/AIX - after ion exchange

J - estimated detection between the detection limit and limit of quantitation

GWTP Weekly Sampling - May 2023

Location ID: Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650_052223 5/22/23
Location Description			**GWTP–Collected from a spigot on the discharge of effluent TK-650. Sampled Weekly.**
Ammonia as N (350.3)			
Ammonia as N	mg/L	NV	**46**
Ortho-Phosphate (365.3)			
Ortho-Phosphate	mg/L	NV	**4.1**
Organic Carbon (415.1)			
Total Organic Carbon (TOC)	mg/L	NV	**158**

mg/L - milligrams per liter

NV - No Value

GWTP Monthly Effluent Sampling - May 2023

Location ID: Sample Date:	Units	Daily Maximum Conc	(INF pond) MCL	LH18/24-SP650_052223 5/22/23
Location Description				**GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled monthly**
Volatile Organic Compounds (8260C)				
1,1,1-Trichloroethane	µg/L	7,230	200	< 0.50 U
1,1,2-Trichloroethane	µg/L	216.9	5	< 0.50 U
1,1-Dichloroethane	µg/L	14,032	NV	< 0.50 U
1,1-Dichloroethene	µg/L	253	7	< 0.50 U
1,2-Dichloroethane	µg/L	181	5	< 0.50 U
1,2-Dichloropropane	µg/L	5	5	< 0.50 U
Acetone	µg/L	2,395	NV	< 0.50 U
Benzene	µg/L	181	5	< 0.50 U
Carbon tetrachloride	µg/L	181	5	< 0.50 U
Chlorobenzene	µg/L	47,180	100	< 0.50 U
Chloroform	µg/L	3,615	NV	< 0.50 U
cis-1,2-dichloroethene	µg/L	NV	70	**1.2**
Ethylbenzene	µg/L	57,025	700	< 0.50 U
m,p-Xylene	µg/L	83.6	NV	< 1.0 U
Methylene chloride	µg/L	1,699	5	< 0.50 U
o-Xylene	µg/L	83.6	NV	< 0.50 U
Styrene	µg/L	5,987	100	< 0.50 U
Tetrachloroethene	µg/L	180.7	5	< 0.50 U
Toluene	µg/L	4,189	10	< 0.50 U
Trichloroethene	µg/L	181	5	< 0.50 U
Vinyl chloride	µg/L	72	2	< 0.50 U
Metals (6020A)				
Barium	mg/L	2	2	**0.129**
Lead	mg/L	0.0046	0.015	< 0.00125 U
Selenium	mg/L	0.012	0.05	< 0.00250 U
Silver	mg/L	0.003	0.1	< 0.000500 U
Hexavalent Chromium (7196A)				
Hexavalent Chromium	mg/L	0.1244	NV	< 0.00600 U
Semi-Volatile Organic Compounds (8270D SIM)				
1,4-Dioxane	µg/L	134.2	NV	**0.018**

µg/L - micrograms per liter

mg/L - milligrams per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

NV - no value

GWTP Monthly Influent Sampling - May 2023

Location ID: / Sample Date:	Units	LH18/24-SP140_052223 5/22/23
Location Description		**GWTP – Collected from a spigot on the influent to TK-140. Sampled Monthly.**
Metals (6020A)		
Selenium	mg/L	< 0.00250 U
Silver	mg/L	< 0.000500 U
Hexavalent Chromium (7196A)		
Hexavalent Chromium	mg/L	< 0.00600 U
Perchlorate (6850)		
Perchlorate	µg/L	**79,900**

mg/L - milligrams per liter

µg/L - micrograms per liter

U- Undetected: The analyte was analyzed for, but not detected and reported to the limit of detection.

LHAAP-Quarterly Surface Water Sampling

May 2023 (Quarter 2)

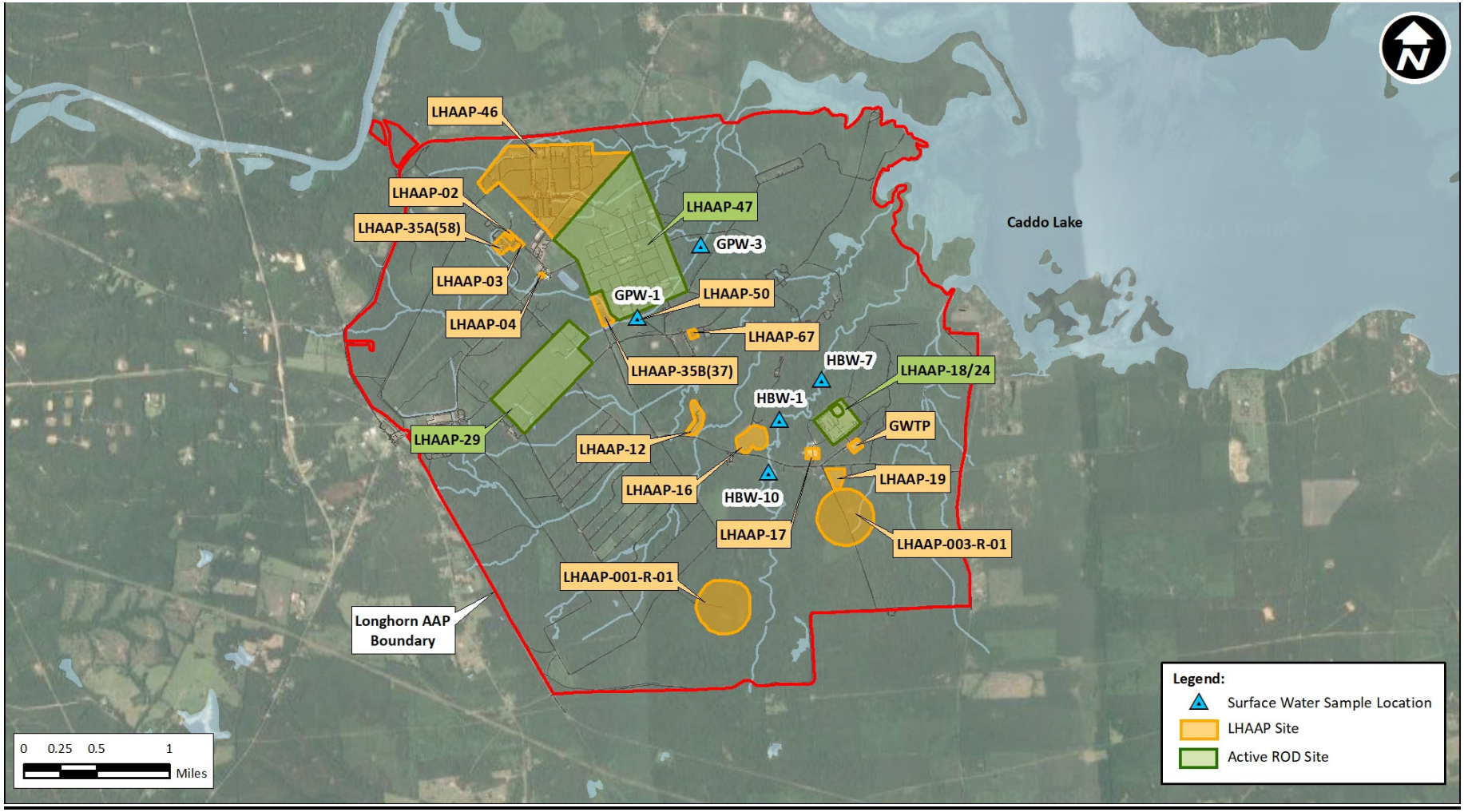
Location ID: / Sample Date:	Units	PCL	HBW7_052623 5/26/23	HBW7_052623_a 5/26/23	HBW10_052623 5/26/23	HBW1_052623 5/26/23	GPW1_052623 5/26/23	GPW3_052623 5/26/23
Perchlorate (6850)			Harrison Bayou				Goose Prairie Creek	
Perchlorate	µg/L	17	< 0.0500 U	< 0.0500 U	< 0.0500 U	< 0.0500 U	**0.0286 J**	< 0.0500 U

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

J - estimated value between the detection limit and limit of quanitation

U - non-detect reported to the limit of detection

Longhorn Army Ammuntion Plant Creek Sampling Locations



QUARTERLY EVALUATION REPORT
1ST QUARTER (JANUARY – MARCH) 2023
GROUNDWATER TREATMENT PLANT
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

December 2023

Prepared For:

U.S. Army Corps of Engineers
Tulsa District

Contract No. W9128F-13-D-0012
Task Order No. W912BV17F0150
Bhate Project No. NWO1312.0150.016.0001.03

Prepared By:

1608 13th Avenue South, Suite 300
Birmingham, Alabama 35205
1-800-806-4001 • www.bhate.com

This page intentionally left blank.

TABLE OF CONTENTS

Acronyms and Abbreviations iii

Executive Summary v

1 Evaluation of Groundwater Treatment Plant 1-1

1.1 Treatment Configuration 1-2
1.1.1 Historical GWTP Operation 1-3
1.1.2 1st Quarter 2023 GWTP Operation 1-8
1.2 Work Performed at the GWTP 1-9
1.2.1 Major Maintenance 1-10
1.2.2 Routine Maintenance 1-10
1.2.3 Routine Maintenance (Potable Water Wells) 1-11
1.3 Filter Cake Operations and Management 1-11
1.4 Fluidized Bed Reactor Operations 1-12
1.5 Process Chemical Usage at GWTP 1-14

2 Evaluation of LHAAP-18/24 ICT Effectiveness 2-1

2.1 Groundwater Elevation 2-1
2.2 Performance of Plume Capture 2-1
2.3 Quantity of Water Extracted from LHAAP-18/24 and LHAAP-17 2-3
2.4 Sampling Activities at LHAAP-18/24 2-4
2.4.1 LHAAP-18/24 Analytical Results (December 2022/January 2023) 2-4
2.4.2 LHAAP-18/24 Trend Analysis 2-6
2.5 Groundwater Treatment Plant Sampling and Analysis 2-9
2.5.1 Weekly Perchlorate Sampling 2-10
2.5.2 Monthly VOC Sampling 2-10
2.5.3 Monthly Metals Sampling 2-10
2.5.4 Quarterly Sampling 2-10

3 Quality Control 3-1

4 Treated Groundwater Discharged 4-1

5 Air Monitoring 5-1

5.1 Summary of Air Monitoring Approach 5-1
5.2 Air Monitoring Results for the 1st Quarter of 2023 5-2
5.2.1 Summa Canister Monitoring Results 5-2
5.2.2 PID Results 5-3

6 Comments and Responses 6-1

Figures

Figure ES-1: Groundwater Recovery from March 2018 through March 2023 LHAAP-18/24, LHAAP-17, and LHAAP-16..... ix
Figure ES-2: Treated Groundwater Discharged Monthly from January 2017 through March 2023..... ..x
Figure 2-1: Quarterly Extraction Rate..... 2-11

Tables

Table ES-1: Discharge Information to Harrison Bayou during 1st Quarter 2023..... xv
Table 1. Enhanced Fluidized Bed Reactor Operating Parameters – 1st Quarter 2023..... 1-12
Table 2. Chemical Usage and Delivery Table 1-14
Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water 2-13
Table 4. Treated Groundwater Discharged – January through March 2023..... 2-18
Table 5. Monthly Groundwater Extraction Quantities – January through March 2023 2-22
Table 6. LHAAP-18/24 Analytical Results – December 2022/January 2023 2-24
Table 7. Weekly Perchlorate Sample Results – 1st Quarter 2023 2-32
Table 8. Biweekly GWTP Analytical Sampling Results for March 2023 2-33
Table 9. Quarterly GWTP Analytical Sampling Results – 1st Quarter 2023..... 2-34

Appendices

Appendix A ICT Layout and GWTP Process Flow Diagram
Appendix B Groundwater Elevation Contour Maps
Appendix C Laboratory Analytical Results for LHAAP-18/24
Appendix D Isopleth Contour Maps
Appendix E Monitoring Well Trend Charts
Appendix F GWTP Water Sampling Laboratory Analytical Results
Appendix G Quality Control Summary Report
Appendix H Air Monitoring Analytical Laboratory Report
Appendix I Protocol for Discharging GWTP Effluent
Appendix J Air Data Tables, PID Readings, and Calibration Logs

ACRONYMS AND ABBREVIATIONS

<	Less than
≤	Less than or equal to
%	Percent
(§)	Section
AECOM	AECOM Technical Services, Inc.
AIX	Sample collected after the first IX vessel
AMCV(s)	Air Monitoring Comparison Value(s)
amsl	Above mean sea level
Ark-La-Tex	Ark-La-Tex Electric
bgs	Below ground surface
Bhate	Bhate Environmental Associates, Inc.
BIX	Sample collected before the first IX vessel
BLOC	Bloc Design Build, LLC
COC	Chemical of Concern
DCA	Dichloroethane
DCE	Dichloroethene
Envirogen	Envirogen Technologies
ESD	Explanation of Significant Difference
ESL(s)	Effects Screening Level(s)
FBR	Fluidized bed reactor
ft	Feet or foot
GAC	Granular activated carbon
gpd	Gallons per day
gph	Gallons per hour
gpm	Gallons per minute
GWTP	Groundwater Treatment Plant
HCl	Hydrochloric acid
HDPE	High density polyethylene
ICT(s)	Interception-collection trench(es)
IX	Ion exchange
J	Estimated concentration

lbs/hr	Pounds per hour
LHAAP	Longhorn Army Ammunition Plant
MC	Methylene chloride
MCL(s)	Maximum Contaminant Level(s)
µg/L	Micrograms per liter
$Mg(OH)_2$	Magnesium hydroxide
mV	Millivolts
NA	Not applicable
NaOH	Sodium hydroxide
NM	Not measured
No.	Number
ORP	Oxidation-reduction potential
PCE	Tetrachloroethene
PCL	Protective Concentration Level
pH	Potential of Hydrogen
PID	Photoionization detector
PLC	Programmable Logic Controller
psi	Pounds per square inch
PVC	Polyvinyl chloride
ROD	Record of Decision
S.U.	Standard Unit
SWEPCO	Southwestern Electric Power Company
TAC	Texas Administrative Code
TCE	Trichloroethene
TCEQ	Texas Commission on Environmental Quality
tpy	Tons per year
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VC	Vinyl chloride
VOC(s)	Volatile Organic Compound(s)

EXECUTIVE SUMMARY

The operation of the Groundwater Treatment Plant (GWTP) is part of the Interim Remedial Action at Burning Ground Number (No.) 3, also referred to as Longhorn Army Ammunition Plant (LHAAP)-18/24. A historical pilot test for nearby landfill LHAAP-16 resulted in the installation of eight extraction wells which also contributed groundwater to the GWTP, but ceased after implementation of the final remedy in September 2019. The groundwater treated from LHAAP-18/24 is discussed in detail within this report. However, the GWTP also receives and treats groundwater extracted from LHAAP-17, which began in August 2022, which is discussed as part of the overall volume of water received and discharged.

The groundwater remediation processing for Burning Ground No. 3 at LHAAP includes the following operable systems:

- Equalization tank (water storage) pretreatment system (metals removal);
- Air stripper system;
- Sludge treatment system (thickening, devolatilization, and belt filter press);
- Perchlorate treatment system (fluidized bed reactor [FBR] and ion exchange [IX] vessels);
- Various pumps, meters, piping, and valves tying the treatment systems together; and
- Programmable Logic Controller (PLC) that communicates the status of the operable systems, including the extraction wells, to a central computer that can then notify the operators of shut-downs and similar issues remotely.

Contaminated water from the extraction wells and interception-collection trenches (ICTs) is pumped into the GWTP and stored in the equalization storage tank. The contaminated water is then pumped to the pretreatment system for precipitation of metals. The sludge from the pretreatment system is delivered to the sludge treatment system to be thickened, air stripped of volatile organic compounds (VOCs), and filter pressed for disposal in a landfill. The water from the pretreatment system is delivered to the air stripper system for air stripping of VOCs. Water from the air stripper is stored in the effluent storage tank for further treatment by the perchlorate system, which consists of a FBR and IX vessels.

To provide the integration necessary for proper water process management, a stand-alone central PLC and operator console is used to control the operating systems of the GWTP. The belt filter press operates independently with a polymer pump and sludge feed pump interfaced with the central PLC.

The pretreatment system and air stripper system are equipped with instrument junction boxes and motor starter control panels. The control panels contain a transformer, run indication lights, motor starters, hand or automatic switches, and relays to interface with the central PLC. The control panels have monitors and/or logic to monitor the operating parameters and determine when abnormal conditions occur.

Interface relays will indicate to the central PLC that there is a problem within the systems. The central PLC will provide the logic for the proper action required for that specific set of circumstances.

Groundwater extraction, treatment, discharge, and monitoring activities consist of:

- Continuous extraction of groundwater from multiple ICTs and extraction wells at LHAAP-18/24;
- Continuous extraction of groundwater from two extraction wells at LHAAP-17;
- Treatment of extracted groundwater for heavy metals, chlorinated compounds, and perchlorate using precipitation, air stripping, and biological methods, respectively;
- Evaluation of the hydraulic effectiveness of the extraction system by groundwater monitoring and groundwater elevation measurements;
- Monitoring and analysis of treated groundwater to ensure compliance with the discharge limits; and
- Discharge of treated water to Harrison Bayou or to a holding pond (INF Pond), or the treated water may be released as irrigation water on LHAAP-18/24.

The location of the extraction wells and ICTs at LHAAP-18/24 are shown on **Figure A-1** in **Appendix A**. The process flow diagram of the GWTP is shown on **Figure A-2** in **Appendix A**. **Figure ES-1** shows the monthly total volume of groundwater that was extracted from the ICTs and extraction wells at LHAAP-18/24 between March 2018 and March 2023, at LHAAP-16 between March 2018 and September 2019, and at LHAAP-17 between August 2022 and March 2023. Historical details regarding the operation of the GWTP, including downtime and resolutions are discussed in Section 1.1.1 of this Quarterly Evaluation Report.

During the 3rd Quarter 2022 (July – September), the adjacent site (LHAAP-17) groundwater extraction system was brought online and integrated into the GWTP. The LHAAP-17 groundwater extraction system was plumbed into the existing underground piping infrastructure that runs between LHAAP-16 and the GWTP. The LHAAP-17 extraction system was started up on 5 August 2022.

At the beginning of January 2023, the GWTP was under repairs to address freeze damage sustained at the end of December 2022. Repairs, which were initiated in December 2022, included: replacing broken 3-inch and 4-inch flanges, pipe and fittings; installing a new 3-inch polyvinyl chloride (PVC) ball valve on the bottom of the FBR feed tank, TK-630; replacing broken 1.5-inch valve, tee, and pipe on backwash line; and replacing leaking 2-inch brass ball valve on potable water line where it enters the GWTP. As a result of the repair activities completed, the GWTP only operated 32.50 hours in January 2023. Untreated groundwater within the GWTP had discharged into the secondary containment basin due to this damage and to facilitate repairs. Therefore, GWTP operations during January 2023 only treated groundwater and rainwater stored in the secondary containment basin and groundwater from LHAAP-17 but did not treat extracted groundwater from LHAAP-18/24. The extraction system from the ICT network at LHAAP-18/24 remained off throughout January 2023.

In early February 2023, the secondary containment basin was emptied of rainwater, and additional GWTP repairs were completed. On 15 February 2023, an inspection of piping in the metals pretreatment process between tanks TK-200A, TK-200B, and TK-200C was initiated to determine if repairs were needed. A sediment blockage was identified between tanks TK-200B and TK-200C. Scale and debris were removed from an 8-inch pipe, from the outlet of tank TK-200B, and from the inlet of tank TK-200C. The piping was reinstalled and the manways on tanks TK-200B and TK-200C were closed and tightened. On 22 February 2023, the pre-treatment system was tested and ran at 200 gallons per minute (gpm) with no leaks. The GWTP returned to full operation on 28 February 2023.

As shown on **Figure ES-1**, the total extracted groundwater volume from LHAAP-18/24 during the 1st Quarter of 2023 was 439,128 gallons and 170,375 gallons from LHAAP-17. The extracted groundwater volume was recorded on a monthly basis as the sum of the difference between the flow meter totalizer reading at each ICT between the beginning and end of each month. Extraction quantities in LHAAP-18/24 were 82,847 gallons in February 2023 and 356,281 gallons in March 2023. No groundwater was extracted from LHAAP-18/24 in January 2023.

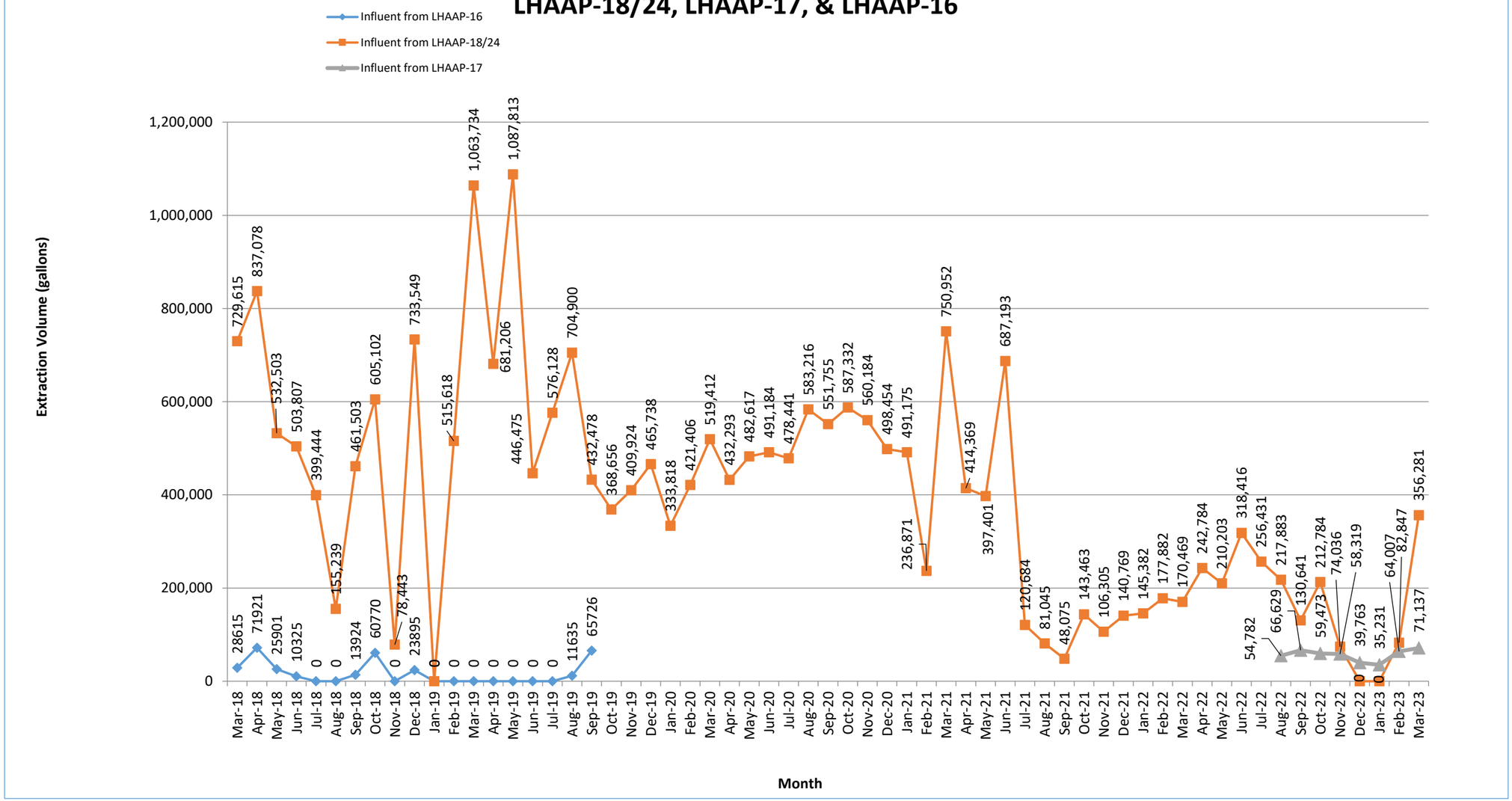
The average discharge flow rate from the GWTP was estimated as 149 gpm during the 1st Quarter of 2023. As shown in **Table ES-1**, approximately 398,731 gallons of groundwater was treated and discharged from the GWTP to the Harrison Bayou. In addition, approximately 145,321 gallons of previously treated groundwater, stored in the INF pond, was also discharged to Harrison Bayou. No treated groundwater from the GWTP was discharged to the INF pond or returned to LHAAP-18/24 via the sprinkler system. **Table ES-1** also presents the INF Pond staff gauge readings by date, which is used to determine the freeboard available in the pond.

During the 1st Quarter 2023, a quarterly GWTP influent sample was collected for perchlorate analysis on 21 March 2023. In addition, a monthly GWTP influent sample was collected for perchlorate analysis on 7 March 2023. No monthly influent samples were collected in January 2023 or February 2023 during repairs, as discussed above, as a minimal amount of groundwater was being extracted from LHAAP-17 and LHAAP-18/24. The perchlorate levels were measured at 12,600 micrograms per liter (µg/L) on 7 March 2023 and 16,700 µg/L on 21 March 2023. Considering the monthly and quarterly influent perchlorate results, the average perchlorate concentration in the GWTP influent during the quarter was 14,650 µg/L. Grab perchlorate samples from the GWTP effluent were collected weekly prior to and after the first IX vessel to confirm perchlorate treatment prior to discharge. None of the perchlorate concentrations in any effluent samples discharged to the Harrison Bayou exceeded the Harrison Bayou Maximum Allowable Daily Discharge Perchlorate Concentration (589 µg/L). Although not a requirement, prior to discharge to the Harrison Bayou, treated groundwater was also processed through the IX vessels to ensure adequate perchlorate treatment.

The treated water quantities each month since January 2017 and discharged into the Harrison Bayou are shown on **Figure ES-2**.

This page intentionally left blank.

Figure ES-1. Groundwater Recovery from March 2018 through March 2023
LHAAP-18/24, LHAAP-17, & LHAAP-16



Note: Starting in September 2019, no groundwater was extracted subsequent to the final remedy of injections being implemented at LHAAP-16.

Figure ES-2. Treated Groundwater Discharged Monthly from January 2017 through March 2023

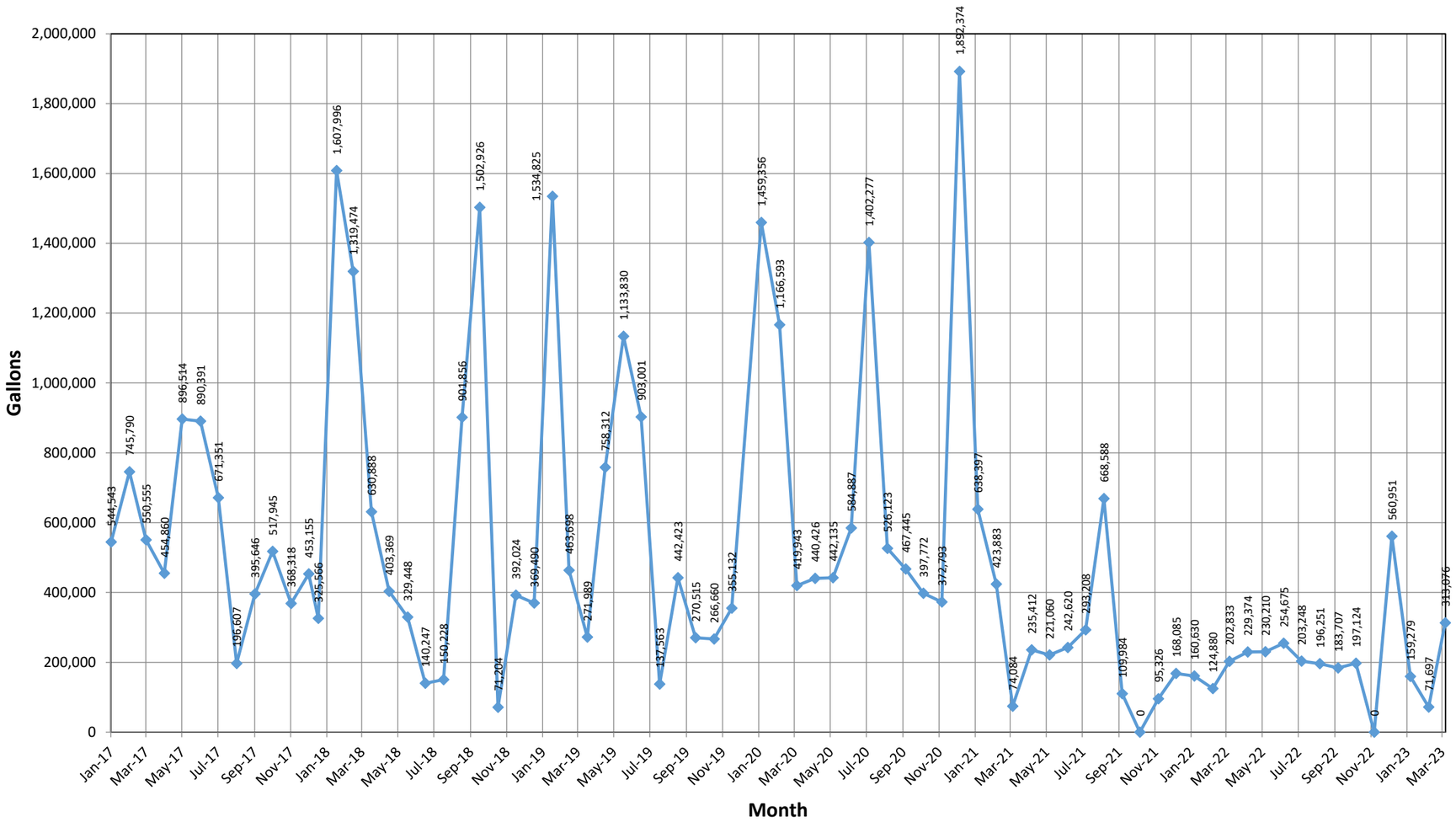


Table ES-1. Discharge Information to Harrison Bayou during 1st Quarter 2023

Date	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou (gallons)	Released From INF Pond to Harrison Bayou (gallons)	Released From GWTP to INF Pond (gallons)	Combined Total Released to Harrison Bayou (gallons)	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
01/01/2023	7,123	65,602	0	30,240	0	30,240	2.30
01/02/2023*	6,728	61,964	0	29,520	0	29,520	2.19
01/03/2023	6,394	57,554	0	27,246	0	27,246	2.21
01/04/2023	4,945	44,507	0	25,776	0	25,776	2.11
01/05/2023	9,667	87,007	0	23,953	0	23,953	1.95
01/06/2023	6,701	75,389	0	8,586	0	8,586	1.89
01/07/2023	NA	NA	0	0	0	0	1.89
01/08/2023	NA	NA	0	0	0	0	1.88
01/09/2023	NA	NA	0	0	0	0	1.88
01/10/2023	NA	NA	0	0	0	0	1.88
01/11/2023	NA	NA	0	0	0	0	1.87
01/12/2023	NA	NA	0	0	0	0	1.87
01/13/2023	NA	NA	0	0	0	0	1.87
01/14/2023	NA	NA	0	0	0	0	1.86
01/15/2023	NA	NA	0	0	0	0	1.86
01/16/2023	NA	NA	0	0	0	0	1.86
01/17/2023	NA	NA	0	0	0	0	1.85
01/18/2023	NA	NA	0	0	0	0	1.85
01/19/2023	NA	NA	0	0	0	0	2.45
01/20/2023	NA	NA	0	0	0	0	2.45
01/21/2023	NA	NA	0	0	0	0	2.44
01/22/2023	NA	NA	0	0	0	0	2.44
01/23/2023	NA	NA	0	0	0	0	2.44

Table ES-1. Discharge Information to Harrison Bayou during 1st Quarter 2023

Date	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou (gallons)	Released From INF Pond to Harrison Bayou (gallons)	Released From GWTP to INF Pond (gallons)	Combined Total Released to Harrison Bayou (gallons)	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
01/24/2023	NA	NA	0	0	0	0	2.43
01/25/2023	NA	NA	0	0	0	0	3.19
01/26/2023	NA	NA	0	0	0	0	3.19
01/27/2023	NA	NA	0	0	0	0	3.18
01/28/2023	NA	NA	0	0	0	0	3.26
01/29/2023	NA	NA	0	0	0	0	3.42
01/30/2023	NA	NA	0	0	0	0	3.42
01/31/2023	Maximum	Maximum	13,958	0	0	13,958	3.51
02/01/2023	Maximum	Maximum	12,013	0	0	12,013	3.59
02/02/2023	Maximum	Maximum	12,007	0	0	12,007	3.73
02/03/2023	NA	NA	0	0	0	0	3.75
02/04/2023	NA	NA	0	0	0	0	3.75
02/05/2023	NA	NA	0	0	0	0	3.75
02/06/2023	NA	NA	0	0	0	0	3.74
02/07/2023	NA	NA	0	0	0	0	3.74
02/08/2023	NA	NA	0	0	0	0	3.73
02/09/2023	NA	NA	0	0	0	0	3.73
02/10/2023	NA	NA	0	0	0	0	3.72
02/11/2023	NA	NA	0	0	0	0	3.72
02/12/2023	NA	NA	0	0	0	0	3.71
02/13/2023	NA	NA	0	0	0	0	3.71
02/14/2023	NA	NA	0	0	0	0	3.71
02/15/2023	NA	NA	0	0	0	0	3.70
02/16/2023	NA	NA	0	0	0	0	3.70
02/17/2023	NA	NA	0	0	0	0	3.69

Table ES-1. Discharge Information to Harrison Bayou during 1st Quarter 2023

Date	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou (gallons)	Released From INF Pond to Harrison Bayou (gallons)	Released From GWTP to INF Pond (gallons)	Combined Total Released to Harrison Bayou (gallons)	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
02/18/2023	NA	NA	0	0	0	0	3.69
02/19/2023	NA	NA	0	0	0	0	3.68
02/20/2023	NA	NA	0	0	0	0	3.68
02/21/2023	3,859	804	3,755	0	0	3,755	3.67
02/22/2023	3,335	694	26,325	0	0	26,325	3.67
02/23/2023	3,895	811	17,597	0	0	17,597	3.65
02/24/2023	NA	NA	0	0	0	0	3.65
02/25/2023	NA	NA	0	0	0	0	3.64
02/26/2023	NA	NA	0	0	0	0	3.64
02/27/2023	NA	NA	0	0	0	0	3.63
02/28/2023	NA	NA	0	0	0	0	3.63
03/01/2023	1,557	343	1,071	0	0	1,071	3.62
03/02/2023	1,902	419	15,585	0	0	15,585	3.62
03/03/2023	4,139	913	13,319	0	0	13,319	3.64
03/04/2023	3,660	808	0	0	0	0	3.64
03/05/2023	3,122	689	0	0	0	0	3.63
03/06/2023*	2,659	586	50,290	0	0	50,290	3.62
03/07/2023	2,284	503	13,423	0	0	13,423	3.61
03/08/2023	1,872	412	17,094	0	0	17,094	3.61
03/09/2023	1,770	390	0	0	0	0	3.60
03/10/2023	6,656	1,468	13,528	0	0	13,528	3.73
03/11/2023	Maximum	Maximum	0	0	0	0	3.72
03/12/2023	19,238	4,950	0	0	0	0	3.71
03/13/2023*	15,338	3,383	49,478	0	0	49,478	3.87
03/14/2023	13,528	2,984	11,764	0	0	11,764	3.86

Table ES-1. Discharge Information to Harrison Bayou during 1st Quarter 2023

Date	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou (gallons)	Released From INF Pond to Harrison Bayou (gallons)	Released From GWTP to INF Pond (gallons)	Combined Total Released to Harrison Bayou (gallons)	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
03/15/2023	9,355	2,063	11,962	0	0	11,962	3.85
03/16/2023	7,157	1,578	9,312	0	0	9,312	3.85
03/17/2023	Maximum	Maximum	0	0	0	0	3.84
03/18/2023	18,298	3,805	0	0	0	0	3.84
03/19/2023	14,528	3,021	0	0	0	57,600	3.83
03/20/2023*	10,439	2,302	58,663	0	0	54,720	3.83
03/21/2023	7,933	1,750	0	0	0	53,280	3.82
03/22/2023	5,867	1,294	1,060	0	0	1,060	3.82
03/23/2023	4,413	973	8,691	0	0	8,691	3.80
03/24/2023	3,275	722	0	0	0	0	3.80
03/25/2023	2,869	596	0	0	0	0	3.79
03/26/2023	2,503	520	0	0	0	0	3.77
03/27/2023*	2,225	490	37,836	0	0	37,836	3.75
03/28/2023	NA	NA	0	0	0	0	3.74
03/29/2023	NA	NA	0	0	0	0	3.73
03/30/2023	NA	NA	0	0	0	0	3.72
03/31/2023	NA	NA	0	0	0	0	3.71
TOTALS			**398,731**	**145,321**	**0**	**650,989**	

Notes: The maximum discharge rate from the INF Pond is 170 gallons per minute (gpm) and the maximum discharge rate from the GWTP is 30 gpm.
NA = Not applicable
Treated groundwater volume released over the weekend is included in the total for the next working day. These dates are marked with an asterisk (*).

1 EVALUATION OF GROUNDWATER TREATMENT PLANT

The Groundwater Treatment Plant (GWTP) was constructed as part of the Interim Remedial Action at Burning Ground Number (No.) 3, also referred to as Longhorn Army Ammunition Plant (LHAAP)-18/24, to treat groundwater extracted from interception-collection trenches (ICTs) and extraction wells. **Figure A-1** located in **Appendix A** presents the layout of the ICTs and extraction wells at LHAAP-18/24. The groundwater contamination at LHAAP-18/24 likely resulted from infiltration from an Unlined Evaporation Pond that was used to store manufacturing wastewater and from burning trenches and other industrial processes used to flash pyrotechnic, propellant, and explosive waste streams. The groundwater at LHAAP-18/24 is contaminated mainly with chlorinated ethenes and perchlorate, and with lesser concentrations of 1,4-dioxane.

During the 3rd Quarter 2022 (July – September), the adjacent site (LHAAP-17) groundwater extraction system was brought online and integrated into the GWTP. The LHAAP-17 groundwater extraction system was plumbed into the existing underground piping infrastructure that runs between LHAAP-16 and the GWTP. The LHAAP-17 extraction system was started up on 5 August 2022. The groundwater at LHAAP-17 is primarily impacted with perchlorate.

The GWTP no longer receives flow from LHAAP-16 due to injections completed as a part of the final remedy implementation, which commenced in September 2019. The GWTP had previously received flow from eight extraction wells installed at LHAAP-16 as part of a historical treatability study. The extraction wells were installed in 1996 and 1997 at LHAAP-16.

At the beginning of January 2023, the GWTP was under repairs to address freeze damage sustained at the end of December 2022. Repairs, which were initiated in December 2022, included: replacing broken 3-inch and 4-inch flanges, pipe and fittings; installing a new 3-inch PVC ball valve on the bottom of the fluidized bed reactor (FBR) feed tank, TK-630; replacing broken 1.5-inch valve, tee, and pipe on backwash line; and replacing leaking 2-inch brass ball valve on potable water line where it enters the GWTP. As a result of the repair activities completed, the GWTP only operated 32.50 hours in January 2023. Furthermore, as a result of the broken piping and valves from freezing conditions, untreated groundwater within the GWTP had to be discharged into the secondary containment basin. Therefore, the GWTP was treating groundwater and rainwater stored in the secondary containment basin and groundwater from LHAAP-17 in January 2023, but not extracted groundwater from LHAAP-18/24. The extraction wells and ICT network at LHAAP-18/24 remained off throughout January 2023.

In early February 2023, additional GWTP repairs were completed once the containment basin was emptied of rainwater. On 15 February 2023, the metals pretreatment process piping between tanks TK-200A, TK-200B, and TK-200C was inspected. A sediment blockage was identified between tanks TK-200B and TK-200C. Scale and debris were removed from an 8-inch pipe, from the outlet of tank TK-200B, and from inlet of tank TK-200C. The piping was reinstalled, and the manways on tanks TK-200B and TK-200C were closed and tightened. On 22 February 2023, the pre-treatment system was tested and ran at 200 gallons per minute (gpm) with no leaks. The GWTP returned to full operation on 28 February 2023.

1.1 Treatment Configuration

The process flow diagram for the GWTP is presented in **Appendix A, Figure A-2**. Groundwater extraction, treatment, discharge, and monitoring activities consist of the following:

- Continuous extraction of groundwater from multiple ICTs and extraction wells located at LHAAP-18/24;
- Continuous extraction of groundwater from two extraction wells located at LHAAP-17;
- Treatment of extracted groundwater for heavy metals, chlorinated compounds, and perchlorate using precipitation, air stripping, and biological methods, respectively;
- Evaluation of the hydraulic effectiveness of the extraction system by groundwater monitoring and groundwater elevation measurements;
- Monitoring and analysis of treated groundwater to ensure compliance with the discharge limits; and
- Discharge of treated water to Harrison Bayou or to a holding pond (INF Pond) or the treated water may be released as irrigation water on LHAAP-18/24.

Contaminated water from the extraction wells and ICTs is pumped into the GWTP and stored in the equalization storage tank. The contaminated water is then pumped to the pretreatment system for precipitation of metals. The sludge from the pretreatment system is delivered to the sludge treatment system to be thickened, air stripped of volatile organic compounds (VOCs), and filter pressed for disposal in a landfill. The water from the pretreatment system is delivered to the air stripper system for air stripping of VOCs. Water from the air stripper is stored in the effluent storage tank for further treatment by the perchlorate system, which consists of a fluidized bed reactor (FBR) and ion exchange (IX) vessels. The process flow diagram for the GWTP is presented in **Appendix A, Figure A-2**.

To provide the integration necessary for proper water process management, a stand-alone central Programmable Logic Controller (PLC) and operator console is used to control all of the operating systems of the GWTP. The belt filter press operates independently with a polymer pump and sludge feed pump interfaced with the central PLC.

The pretreatment system and air stripper system are equipped with instrument junction boxes and motor starter control panels. The control panels contain a transformer, run indication lights, motor starters, hand or automatic switches, and relays to interface with the central PLC. The control panels have monitors and/or logic to monitor the operating parameters and determine when abnormal conditions occur. Interface relays will indicate to the central PLC that there is a problem within the systems. The central PLC will provide the logic for the proper action required for that specific set of circumstances.

The GWTP was not operational between 24 May 2012 and 6 September 2012, due to malfunction of the scrubber unit associated with the catalytic oxidizer. Since 6 September 2012, the GWTP has operated without air abatement equipment. Although major repairs were conducted on the GWTP (e.g., replacement of level alarms, repair of the hydrochloric acid [HCl] tank, replacement of TK-650, replacement of malfunctioning valves and flow meters, replacement of metering

pumps, repair or replacement of various system pumps, rust removal and repainting of various tanks, and replacement and repair of various extraction pumps, motors, and level switches), the GWTP treatment configuration has remained relatively unchanged. The only exception to this is that IX vessels were installed in November 2018 following the FBR to further remove perchlorate prior to discharging to the INF pond.

1.1.1 Historical GWTP Operation

The GWTP was not operational from 24 May 2012 until 6 September 2012. This was related to meltdown of the scrubber system, associated with the catalytic oxidizer, due to system overheating. Overheating occurred when the blower became inoperable after the bearing on the scrubber blower unit was shattered and damaged the blower. This occurred around 1300 on 21 May 2012.

After developing an interim air monitoring plan and obtaining concurrence from the Texas Commission on Environmental Quality (TCEQ) and the United States Environmental Protection Agency (USEPA) to operate the GWTP without use of air abatement equipment, a pilot run of the GWTP was conducted on 6 September 2012. In that first pilot run, 85,170 gallons of water that had been stored in the influent equalization tank (TK-140) were treated. The treated water was re-circulated through the FBR to revive the FBR after 3 months of dormancy. Treated groundwater samples were collected and analyzed, respectively, for perchlorate, metals, and VOCs. Air samples were collected and analyzed for VOCs only.

On 19 September 2012, a second pilot run was performed at the GWTP, and 107,264 gallons of water were treated. Based on the successful re-start of the GWTP, continuous groundwater extraction began again on 24 September 2012. While groundwater extraction occurs on a continuous basis, operation of the GWTP occurs intermittently due to the low volume of water available for treatment with respect to the design capacity of the GWTP. During the 3rd Quarter of 2012, groundwater extraction occurred only from LHAAP-18/24. Groundwater extraction from LHAAP-16 was not performed due to equipment failure. However, extraction from LHAAP-16 began in October 2012 and the extraction volumes increased steadily throughout the 4th Quarter of 2012, as pumping equipment was gradually repaired/replaced. The GWTP operated under normal conditions until September 2015.

On 14 September 2015, at 1115, the blower on the air stripper (BL-340) malfunctioned during routine operation. The wiring on the blower was repaired and the blower operated for less than 2 hours on 17 September 2015, when the blower malfunctioned again. It was determined that the blower needed to be replaced, and groundwater extraction and operation of the GWTP ceased beginning 18 September 2015, as the influent equalization tank (TK-140) became full. Beginning on 2 October 2015, it was determined that the GWTP could operate without the blower at a reduced extraction rate. The operation of the GWTP allowed extraction of groundwater from ICTs 12E, 13A, 13B, and 13C (13C was changed to 13E on 12 October 2015), which were considered critical ICTs to prevent migration of contaminants to Harrison Bayou. Groundwater extraction was switched frequently between ICTs 12E, 13A, 13B, and 13E to ICTs 14B, 14C, and 14D beginning on 14 December 2015.

Malfunction of the blower on the air stripper (BL-340), on 14 September 2015 and 17 September 2015, disrupted continuous extraction and routine operations of the GWTP, which lasted through 7 January 2016. Prior to this occurrence, the GWTP performed as designed and the GWTP was operated on an as needed basis (i.e., semi-continuous operational basis). During the 4th Quarter of 2015, groundwater was extracted from a limited number of ICTs (ICTs 12E, 13A, 13B, 13C, and/or 13E, or ICTs 14B, 14C, and 14D). Operation of the GWTP occurred on a batch basis through the FBR. After replacement of the blower, attempts were made to restore continuous operations to the FBR, but they remained predominantly on a batch basis throughout January 2016.

On 12 December 2016, flange bolts at TK-380 failed and allowed HCl to drain into the sump. The secondary containment area was washed down, and the sump contents were transferred into the influent equalization tank (TK-140). Because of the acid release, extraction of groundwater from the ICTs was halted, and the GWTP was put into recycle mode (effluent sent back as influent) until the acid was neutralized and perchlorate, metals, and VOCs were below discharge criteria on 17 March 2017. The FBR performance was challenged by the increased chlorides in the neutralized wastewater, but performance gradually returned to normal in the 1st Quarter of 2017. Groundwater extraction was gradually increased to full rates during the 2nd Quarter of 2017.

On 12 August 2017, severe storms caused a power outage at LHAAP-18/24. When electrical service was restored, the main transformer failed due to a manufacturing defect. A portable emergency generator was brought on-site on 21 August 2017, to allow the FBR to operate in full recycle mode. After a replacement transformer was installed on 12 September 2017, extraction began from ICTs 13B, 13C, 13D, 13E, 13F, 7, and EW01 and the FBR was put into normal operation. Beginning on 21 September 2017, groundwater was extracted from all of the ICTs.

On 27 December 2018, severe storms caused a power outage in Karnack, Texas. When electrical service was restored, the main transformer was determined to have failed. A portable emergency generator was brought on-site on 28 December 2018, to allow the FBR to operate in full recycle mode. On 5 February 2019, the smaller generator mobilized in December 2018 was replaced with a larger generator capable of powering the LHAAP-18/24 well field and the entire GWTP.

On 8 February 2019, the transformer at the GWTP was tested to ensure that it could handle back feeding necessary to power the LHAAP-18/24 well field due to the necessary step-down in power from the generator. Following additional system modifications based upon the testing, the well field at LHAAP-18/24 had power restored on 11 February 2019, using the generator and transformer at the GWTP.

From 11 June to 17 June 2019, a double-walled pipe in the burning grounds (ICTs 14C and 14D) was found to be leaking at a joint and repaired. In addition, the line to well 18WW17 was cut off due to leaks identified following repair of the other section of pipe. The ground was too wet to dig and replace the other double-walled pipe at that time. From 28 October to 31 October 2019, a new double-walled pipe to well 18WW17 was installed by Palmetto Services.

Groundwater is no longer extracted from LHAAP-16 because in situ bioremediation injections were completed in September 2019 as part of the final remedial action. The only groundwater treated and discussed within this report is from LHAAP-18/24 and LHAAP-17.

On 11 January 2020, a possible tornado and straight-line winds came through the area and broke the power lines. The breaker was shut off at the transformer until power lines could be repaired on 14 and 15 January 2020, by Ark-La-Tex Electric (Ark-La-Tex). On 18 January 2020, power was lost to the GWTP, and it was discovered that there was a blown fuse on the power lines. Ark-La-Tex was called to the site to replace the fuse and power was restored to the GWTP the same day. On 29 March 2020, there was a power glitch that caused the air compressors to shut down. The air compressors and FBR were restarted on the same day. On 13 April 2020, two trees fell across a power line and caused loss of power to the plant. Ark-La-Tex removed the trees and restored power at 0945 on 14 April 2020. On 2 May 2020, a tree fell across Southwestern Electric Power Company's (SWEPCO's) line inside the plant that feeds the GWTP. SWEPCO came out and removed the tree from the line. Power was restored the same day. On 29 December 2020, housing was built for the acetic acid pump associated with the FBR to prevent rainwater from causing it to shut down.

On 13 February 2021, inclement weather began, and it stayed below freezing until 20 February 2021. The level transmitter on TK-650 froze, making the discharge pump inoperable. The level transmitter was thawed out and pumping was restarted. On 20 February 2021, the air compressors were able to be started again. The FBR began operation in recycle mode, but the oxidation-reduction potential (ORP) was greater than the normal operating requirements. From 21 February through 9 March 2021, repairs from the freeze were made on broken PVC pipes, valves, fittings, and level transmitters. The ORP on the FBR remained elevated and the FBR was in recycle mode until 25 March 2021 when the ORP returned to normal range and discharge to the Harrison Bayou was able to resume.

A power outage occurred on 12 May through 13 May 2021, due to downed power lines. On 14 May 2021, Ark-La-Tex was on-site to replace the broken power pole and repair broken power lines. On 28 May 2021, a power outage occurred at 0430, due to a downed tree. SWEPCO restored power the following day on 29 May 2021. On 2 June 2021, elevated perchlorate effluent results, precipitated replacement on the acetic acid nutrient feed pump. Perchlorate effluent results dropped below discharge limits, but not to expected concentrations. As a result, the FBR was placed in recycle mode from 18 June 2021 through the end of the 2nd Quarter 2021.

On 29 July 2021, Envirogen Technologies (Envirogen) mobilized to the site to troubleshoot the FBR. The plant was brought offline to diagnose why perchlorate effluent results remained elevated. Envirogen found the fluidization flow at 230 gpm and the inlet pressure to the FBR at 14 pounds per square inch (psi) as satisfactory. Envirogen determined that the inline potential of hydrogen (pH) probe was not calibrating properly, and it was giving an incorrect reading of 7.4. In July 2021, the pH reading was 8.24, which is above the optimum FBR operating parameters. Ideally, the pH should be between 7.1 and 7.4 in the FBR. A high pH can inhibit biological activity. Envirogen recommended the installation and calibration of a new pH probe. A new inline pH probe was ordered, and replacement and calibration were completed on 6 April 2022.

Additionally, Envirogen noted that the granular activated carbon (GAC) settled bed height was 6.33 feet (ft) and the expanded bed height was 9 ft. The design settled bed height for the GAC was 9 ft and the design expanded bed height was 15 ft, with the expanded bed height being a key performance indicator for the FBR. Therefore, Envirogen recommended the addition of GAC media. One supersack of GAC was delivered, pre-wetted, and loaded in the FBR on 29 July 2021. After the addition of one supersack of GAC, the settled bed height was measured at 9.1 ft and the expanded bed height was measured at 11.3 ft. Additional GAC was ordered and added to the FBR. The GWTP was brought back online on 3 August 2021.

Palmetto Services was on-site from 20 September through 24 September 2021 to replace sand in the sand filter. The sand in the sand filter collects debris that is filtered out of the water as designed. However, over time the debris restricts the flow of water through the filter. Therefore, the GWTP was taken offline on 20 September 2021 to replace the sand. Palmetto Services removed the sand and screens, acid washed the screens, put the screens back in place, and then added new sand using a crane. Approximately 4.5 tons of 10 x 20 silica sand and 12 tons of 8 x 12 silica sand were placed into the sand filter. While the plant was down for the sand filter activities, the 10-inch PVC line between the clarifier effluent and the sludge tanks was replaced, and the polymer feed line was unclogged. However, before the GWTP could be operated again, the HCl feed pump malfunctioned as discussed below.

On 4 October 2021, the GWTP was unable to operate due to a malfunctioning pump motor on the HCl feed pump (P-390). On 5 October 2021, Bloc Design Build, LLC (BLOC) was on-site to diagnose the problem with the HCl pump motor (P-390) which was seized and inoperable. A new pump motor was ordered and on 14 October 2021, BLOC returned and installed wiring to the new motor on the HCl pump (P-390).

Upon arrival at the GWTP on 5 October 2021, there was no power at the GWTP. A blown fuse was found on SWEPCO's transformer. SWEPCO replaced the fuse, however, only partial power was restored to the GWTP on 5 October 2021. On 7 October 2021, Ark-La-Tex was on-site to troubleshoot the electrical power issue and determined that the load break switch (commonly referred to as an arc strangler) was blown at the transformer at the GWTP and needed to be replaced. The load break switch malfunction had caused the fuse to fail, cutting power to the GWTP. On 11 October 2021, Ark-La-Tex was on-site to repair the load break switch and restore power to the GWTP. Following the restoration of power and replacement of the HCl pump, the GWTP operation resumed on 18 October 2021.

In March 2022, a severe storm blew down a tree damaging two power poles, but there was no power loss at the time of the storm event. On 16 March 2022 and 17 March 2022, Ark-La-Tex arrived on-site to replace the power poles and to repair the power lines. As a result, power was shut off at the plant for approximately 24 hours from 16 March to 17 March 2022, to allow Ark-La-Tex to safely work with the power lines.

On the afternoon of 2 May 2022, there was partial power loss to the GWTP. After an inspection of the overhead power lines, a fuse was found blown on SWEPCO's transformer. SWEPCO was alerted and responded on 2 May 2022 to replace the fuse. The GWTP was completely powered

down as a safety precaution while SWEPCO addressed the blown fuse. In addition to the blown fuse, there was also a small fire observed on the ground at the base of the transformer load breaker switch at the GWTP. The United States Fish and Wildlife Service was alerted, and the fire was put out with a water sprayer on 2 May 2022. The status of the load breaker switch on the transformer could not be assessed until power was fully restored.

However, before power could be restored to the GWTP, a severe storm on 3 May 2022 knocked down another tree. The downed tree fell on the overhead line, breaking the overhead line and two cross arms. Ark-La-Tex repaired the overhead line, cross arms, and assessed the load breaker switch on 11 May 2022. Power was restored to the GWTP on 11 May 2022 and a new load breaker switch was ordered. Ark-La-Tex returned on 17 May 2022 to install the replacement load breaker switch.

On 10 June 2022, the K-701 air compressors went down due to a power glitch. The air compressors were restarted and the FBR returned to normal operating range.

A supersack of GAC (1,000 pounds) was delivered on 17 June 2022. On 20 June 2022, the FBR was topped off with approximately 150 pounds of GAC, expanding the bed height to 15 ft as designed. The expanded bed height is a key performance indicator for optimal performance of the FBR.

On 22 June 2022, a power outage occurred for 1.5 hours on SWEPCO's side. Power was restored and air compressors were restarted and the FBR was returned to normal operating range.

During the 3rd Quarter 2022 (July – September), the adjacent LHAAP-17 groundwater extraction system was brought online and integrated into the GWTP. The LHAAP-17 groundwater extraction system was plumbed into the existing underground piping infrastructure that runs between LHAAP-16 and the GWTP. The LHAAP-17 extraction system was started up on 5 August 2022. Details regarding the installation of the groundwater extraction system at LHAAP-17 are included in the Interim-Remedial Action Completion Report (TLI Solutions, December 2022). Through the end of September 2022, 121,411 gallons of groundwater had been pumped from LHAAP-17 to the GWTP. Monthly performance monitoring completed at LHAAP-17 and an evaluation of the effectiveness of the LHAAP-17 extraction system will be presented in Annual Remedial Action Operation Reports under separate cover.

To address a potential blockage identified during the 2nd Quarter 2022, the GWTP was brought offline and the metals pretreatment process tanks TK-200A, TK-200B, and TK-200C were drained on 12 September 2022. While, each tank had sediment buildup, no blockage was found inside the metals pretreatment tanks. The blockage was believed to be in the overhead 10-inch steel piping between tanks TK-200B and TK-200C. However, to safely access the overhead piping, which is elevated approximately 15 ft in the air, scaffolding is necessary. In the interim, the sediment was removed from the metals' pretreatment tanks and the GWTP was brought back online on 13 September 2022.

On 14 November 2022, a flange on the sodium hydroxide solution tank (TK-100) was identified as being cracked and the material was released within the containment area of the GWTP. The

sodium hydroxide (35 percent [%] weight) was transferred into a 1,500-gallon holding tank. Following the repairs, the sodium hydroxide was pumped back into the storage tank (TK-100) for the system starting on 5 December 2022 and finishing on 8 December 2022.

Unprecedented freezing conditions were observed throughout east Texas in December 2022. Despite attempts to heat tape and freeze protect the GWTP, on 25 December 2022, damage to a number of tanks, piping, and system components was observed due to the freezing temperatures. Starting on 27 December 2022, repairs to the GWTP system due to damage from extreme freeze commenced. Repairs continued into 2023 and included: replacing broken valves and piping on air lines; removing broken fan from K-701; installing new belts on K-701; replacing broken 2-inch valve and flanges on level switch on TK-300; cutting bolts from flanges and installing new 6-inch butterfly valve on TK-300; cutting bolts from flanges on suction and discharge of P-170; replacing broken 3- and 4-inch flange, and elbow on suction of P-170; and replacing broken 4-inch flange, tee, and pipe on discharge of P-170. The repairs continued through the end of December 2022. At the end of the 4th Quarter 2022, the GWTP FBR was in recycle mode, but full operation of the GWTP had not been restored.

1.1.2 1st Quarter 2023 GWTP Operation

During the 1st Quarter 2023 (January – March), the ICT repairs included repairs to frozen piping and replacement of pumps. In February 2023, multiple repairs were completed to replace frozen and cracked polyvinyl chloride (PVC) piping and unions. In March 2023 the pumps were replaced for ICTs 12C and 14E. Previous ICT repairs are summarized in **Table A-2** in **Appendix A.**

In the 1st Quarter 2023, the GWTP processed approximately 1,003,438 gallons of water including influent water from LHAAP-18/24, influent water from LHAAP-17, rainwater from the secondary containment basin, and decanted water from the metals treatment and solids removal processes. In addition, a blockage was restricting flow through the pretreatment process and caused a leak prior to Tank 200A. The volume from this leak, which is also captured in the catch basin, is included in the processed volumes. The sediment blockage within the pretreatment process was identified and removed in February 2023.

During the 1st Quarter 2023, the GWTP operated for 112.25 hours. Due to the freezing conditions experienced at the end of 2022 and beginning of 2023, the GWTP only operated 32.50 hours at the beginning of January 2023. The plant was also brought offline to assess and remove a sediment blockage in the metals pretreatment process and as a result the plant only operated 16.75 hours in February 2023. Flow rates for the treatment processes for metals and VOCs ranged between 143 and 164 gpm.

The treatment configuration of the plant at these rates (with minor variations) is shown in the following tables.

GWTP Metals Precipitation Operating Parameters

Pretreatment Settings	Tank 200-A $Mg(OH)_2$ Mixing	Tank 200-B NaOH Mixing	Tank 200-C Polymer Mixing	Tank 300 feed line to Air Stripper
pH Adjustment	9.0	10.5	NA	5.0 to meet ≤ 8.0 release from stripper
Feed Pump Settings	Speed 100% Stroke 100% 10 gph $Mg(OH)_2$	Speed 100% Stroke 100% 9.0 gph NaOH	Speed 90% Stroke 100% 40 gph water	Speed 80% Stroke 80% 10 gph HCl
Notes: % - percent, ≤ - less than or equal to, gph - gallons per hour, NaOH - sodium hydroxide, $Mg(OH)_2$ - magnesium hydroxide, NA - not applicable				

GWTP Air Compressors Operating Parameters

Air Compressors	K-700A	K-700B	K-701
Air Pressure Settings	88 psi	88 psi	105 psi

GWTP Stripper Operating Parameters

pH Setting	7.4
Inlet Pressure Gauge	Not operational
Stripper Pressure Gauge	Not operational
Air Flow Rate	Not operational

GWTP Fluidized Bed Reactor Operating Parameters

Carbon Bed Height	12 feet and 8 to 11 inches
Recycle Flow Rate	200 gpm
pH	7.1 to 7.4
Recycle ORP	<-430 mV
Note: mV – millivolts	

1.2 Work Performed at the GWTP

Groundwater extraction, treatment, discharge, and monitoring activities consist of:

- Continuous extraction of groundwater from multiple ICTs and extraction wells at LHAAP-18/24 and LHAAP-17;
- Treatment of extracted groundwater for heavy metals, chlorinated compounds, and perchlorate using precipitation, air stripping, and biological methods, respectively;
- Evaluation of the hydraulic effectiveness of the extraction system by groundwater monitoring;
- Monitoring and analysis of treated groundwater to ensure compliance with the discharge limits; and
- Discharge of treated water to Harrison Bayou or to a holding pond (INF Pond).

Maintenance performed at the GWTP during the 1st Quarter of 2023 is described in the following subsections.

1.2.1 Major Maintenance

The following major maintenance was completed at the GWTP during this quarterly reporting period are:

- On 23 January 2023, Bloc was on-site to troubleshoot a problem with pump P-642 and to replace blown fuses in air dryer.
- On 26 January 2023, Bloc was on-site to troubleshoot a problem with flowmeter FIT-140 not its reading.

1.2.2 Routine Maintenance

The following routine maintenance was completed at the GWTP during 1st Quarter 2023:

- Performed housekeeping in GWTP office, Army trailer, around GWTP and containment area, and in GWTP Shop
- Mowed grass around GWTP office, Army trailer, GWTP and containment area, and around the GWTP Shop
- Removed and cleaned basket from 4-inch (“) strainer on discharge of FBR
- Replaced 3” and 4” PVC flanges, pipe and fittings on inlet side of P-680
- Replaced 4” PVC flanges, pipe and fittings on outlet side of P-680
- Installed new 3” PVC ball valve on bottom of TK-630
- Replaced broken 1 ½” PVC valve, tee and pipe on backwash line to sand filter
- Replaced electric motor on P-380
- Patched holes on manway door of TK-200C
- Replaced leaking 2” brass ball valve on potable water lines where it enters the GWTP
- Completed sampling of wells at Site 18/24
- Replaced diaphragm in P-103
- Rebuilt Grundfos pumps
- Completed monthly sampling of wells at Site 17
- Used bush-hog and weed eater around some ICT wells
- Collected bed height in FBR
- Replaced leaking tubing on condensate line at Site 17
- Repaired leak on P-103
- Repaired FIT-140 flow meter
- Changed batteries in weather station
- Inspected piping between TK-200A & TK-200B
- Inspected and removed blockage from piping between TK-200B & TK-200C
- Replaced ¼” tubing on inlet of P-103

1.2.2.1 Lubrication

No lubrication maintenance was conducted during 1st Quarter 2023.

1.2.2.2 Air Compressors

On 4 January 2023 a new fan was installed on the air compressor K-701.

1.2.2.3 Belt Press and Waste Disposal

No belt press or waste disposal was conducted during 1st Quarter 2023.

1.2.2.4 Sand Filter

No maintenance or repairs were conducted on the sand filter (FL-290) during 1st Quarter 2023.

1.2.2.5 Well Field at LHAAP-18/24

The following activities were conducted at the well field at LHAAP-18/24 during the reporting period:

- Measured monthly water levels
- Replaced broken 1" elbow on ICT 7
- Replaced broken 1" union on ICT 11
- Replaced broken 1" elbow on ICT 12A
- Replaced broken 1" elbow on ICT 12C
- Replaced broken 1" flow meter nipple on ICT 12D
- Replaced broken 1" union on ICT 12E
- Replaced broken 1" union on ICT 13B
- Replaced pump in ICT 14E and cleaned level probes
- Replaced pump in ICT 12C and cleaned level probes

1.2.2.6 Miscellaneous Activities

No miscellaneous activities were performed during the 1st Quarter 2023 reporting period.

1.2.3 Routine Maintenance (Potable Water Wells)

During the 1st Quarter 2023, the potable water lines were flushed.

1.3 Filter Cake Operations and Management

No filter cake operations took place during the 1st Quarter 2023 reporting period.

1.4 Fluidized Bed Reactor Operations

The operating parameters for the GWTP FBR are presented in **Table 1**. Measurements indicating pH or ORP values that fell outside of the optimal range are highlighted gray.

Table 1. Enhanced Fluidized Bed Reactor Operating Parameters – 1st Quarter 2023

Date	pH (7.1-7.4 S.U.)	ORP (< -430 mV)	Temperature (Degrees Fahrenheit)
1/1/2023	Recycle	Recycle	Recycle
1/2/2023	Recycle	Recycle	Recycle
1/3/2023	Recycle	Recycle	Recycle
1/4/2023	Recycle	Recycle	Recycle
1/5/2023	Recycle	Recycle	Recycle
1/6/2023	6.8	-317	55
1/7/2023	7.0	-386	57
1/8/2023	7.1	-421	58
1/9/2023	7.2	-427	59
1/10/2023	7.3	-432	61
1/11/2023	7.2	-424	64
1/12/2023	7.4	-444	64
1/13/2023	7.4	-441	60
1/14/2023	7.4	-445	61
1/15/2023	7.4	-452	62
1/16/2023	7.5	-460	60
1/17/2023	7.5	-467	63
1/18/2023	7.5	-471	64
1/19/2023	7.5	-472	63
1/20/2023	7.5	-443	59
1/21/2023	7.5	-420	58
1/22/2023	7.5	-463	57
1/23/2023	7.5	-463	56
1/24/2023	7.5	-429	52
1/25/2023	7.5	-430	52
1/26/2023	7.2	-441	52
1/27/2023	7.4	-455	52
1/28/2023	7.3	-465	52
1/29/2023	7.3	-471	53
1/30/2023	7.3	-482	53
1/31/2023	7.3	-487	51
2/1/2023	7.3	-486	50
2/2/2023	7.0	-425	47

Table 1. Enhanced Fluidized Bed Reactor Operating Parameters – 1st Quarter 2023

Date	pH (7.1-7.4 S.U.)	ORP (< -430 mV)	Temperature (Degrees Fahrenheit)
2/3/2023	7.0	-460	48
2/4/2023	7.2	-478	48
2/5/2023	7.2	-485	49
2/6/2023	7.0	-466	51
2/7/2023	7.3	-497	54
2/8/2023	7.3	-504	58
2/9/2023	7.4	-506	57
2/10/2023	7.4	-514	56
2/11/2023	7.4	-509	56
2/12/2023	7.4	-514	55
2/13/2023	7.4	-518	56
2/14/2023	7.4	-519	57
2/15/2023	7.3	-518	59
2/16/2023	7.2	-518	60
2/17/2023	7.4	-516	57
2/18/2023	7.4	-524	58
2/19/2023	7.4	-525	59
2/20/2023	7.4	-527	62
2/21/2023	7.4	-528	63
2/22/2023	7.4	-534	63
2/23/2023	7.2	-454	65
2/24/2023	7.0	-460	64
2/25/2023	7.2	-500	64
2/26/2023	7.2	-512	65
2/27/2023	7.2	-513	66
2/28/2023	7.3	-516	66
3/1/2023	7.3	-525	67
3/2/2023	7.4	-528	68
3/3/2023	7.4	-524	67
3/4/2023	7.4	-524	67
3/5/2023	7.4	-520	68
3/6/2023	7.2	-446	67
3/7/2023	7.1	-449	66
3/8/2023	7.1	-440	67
3/9/2023	7.2	-428	67
3/10/2023	7.3	-436	66

Table 1. Enhanced Fluidized Bed Reactor Operating Parameters – 1st Quarter 2023

Date	pH (7.1-7.4 S.U.)	ORP (< -430 mV)	Temperature (Degrees Fahrenheit)
3/11/2023	7.4	-443	67
3/12/2023	7.4	-442	67
3/13/2023	7.3	-423	65
3/14/2023	7.4	-438	63
3/15/2023	7.3	-435	63
3/16/2023	7.2	-437	63
3/17/2023	7.4	-444	63
3/18/2023	7.4	-440	62
3/19/2023	7.4	-444	61
3/20/2023	7.2	-404	59
3/21/2023	7.1	-452	59
3/22/2023	7.2	-461	61
3/23/2023	7.0	-429	65
3/24/2023	7.2	-463	67
3/25/2023	7.2	-469	68
3/26/2023	7.2	-476	69
3/27/2023	7.1	-430	68
3/28/2023	7.3	-465	68
3/29/2023	7.3	-477	68
3/30/2023	7.3	-489	69
3/31/2023	7.3	-495	70

Note: S.U. - standard unit; Shaded values - pH or ORP outside of operating parameters

1.5 Process Chemical Usage at GWTP

Approximate chemical consumption and the quantity delivered during the 1st Quarter of 2023 are shown in **Table 2**.

Table 2. Chemical Usage and Delivery Table

Chemical	Usage 1st Quarter 2023	Quantity Delivered 1st Quarter 2023
Hydrochloric acid	350 gallons	0
Sodium hydroxide (35%)	500 gallons	39,880 pounds. (3,300 gallons)
Acetic acid (50%)	55 gallons	0
Phosphoric acid (75%)	9.1 gallons	0
Magnesium hydroxide	125 gallons	0

Chemical	Usage 1st Quarter 2023	Quantity Delivered 1st Quarter 2023
Urea	260.5 pounds	0
Polymer (magnafloc 110-liters)	6.0 liters	0

This page intentionally left blank.

2 EVALUATION OF LHAAP-18/24 ICT EFFECTIVENESS

The ICT system at Burning Ground No. 3 is composed of 14 sections ranging in length from 100 ft to 1,300 ft. A total of approximately 5,000 linear ft of trench was installed within and around three sides of Burning Ground No. 3. The trench sections extend approximately 22 ft to 45 ft below ground surface (bgs). Most, but not all, of the trenches are as deep as the confining clay layer of the shallow groundwater zone. High density polyethylene (HDPE) liners were installed outside of ICTs 12A-12E and 13A-13G, located on the southwestern and northwestern boundaries of LHAAP-18/24, respectively. The locations of the liners are shown on **Figure A-1** and depths of the ICTs are presented on **Table A-1** in **Appendix A**.

2.1 Groundwater Elevation

Water levels from 93 monitoring wells and 11 piezometers are measured monthly to generate potentiometric surface maps that assist in monitoring the effectiveness of the groundwater extraction system on plume containment. Piezometer 12 (BGPZ-12) was damaged and plugged and abandoned in May 2013, and monitoring wells 18WW01 and 18WW16 were plugged and abandoned in August 2020. The potentiometric surface contours are generated using the water levels from the shallow zone and Wilcox Formation wells. The water level data are presented in **Table 3**. No reinjection of treated groundwater or reapplication of groundwater to LHAAP-18/24 grounds via the existing irrigation system occurred during the 1st Quarter of 2023. Groundwater elevations measured during the 1st Quarter of 2023 are discussed in Section 2.2. Potentiometric surface maps based on the groundwater elevations measured during the 1st Quarter of 2023 are contained in **Appendix B**.

2.2 Performance of Plume Capture

The intent of the ICTs is to control horizontal groundwater hydraulic gradients, prevent off-site migration of contaminated groundwater, extract the most highly contaminated groundwater, and reduce the mass of contaminants in groundwater. Liners were installed in the ICTs on the northern (ICT 13) and western (ICT 12) site boundaries to limit migration of contaminated water from the site towards Harrison Bayou. At the same time, the liners reduce or prevent removal of contaminated groundwater that is outside the ICT containment area, between the site and Harrison Bayou. The ICTs are installed within the shallow subsurface at the site and capture primarily shallow zone groundwater (e.g., <]40 ft bgs).

In 2007 and 2008, in consultation with the TCEQ and the USEPA, the Army ceased operations of ICTs 1, 3, 5, 10, 12A, and 13G for groundwater extraction (note that extraction from ICT 12A was resumed after pump replacement in December 2012). Two other ICTs (ICT 6 and ICT 9) were changed from extraction ICTs to re-injection ICTs which ceased in July 2012. Groundwater extraction from well EW-1 located in the northeast central portion of the site began in October 2008 and extraction from well 18WW17 located to the northeast of the ICT containment area began in January 2008. **Table A-2** in **Appendix A** presents a summary of extraction equipment replacement since 2011, as dictated by poor extraction performance (malfunctioning pumps,

poor pump positioning with respect to groundwater elevations, non-operational level probes, scale build up, etc.). Further discussion of extraction performance of various ICTs and extraction wells is presented in Section 2.3.

Potentiometric surface maps of the shallow zone groundwater in the vicinity of LHAAP-18/24, based on groundwater elevations measured on 31 January, 24 February, and 21 March 2023, are shown on **Figures B-1, B-2, and B-3 in Appendix B**, respectively. The potentiometric surface maps of the shallow zone were contoured using the Kriging geostatistical interpolation method included in the Golden Software Surfer® data analysis software.

The HDPE liners in the ICTs, where present, continue to retard groundwater flow. The potentiometric surface maps for January through March 2023 continue to reflect high groundwater elevations in the shallow zone in the northern/northwestern portion of the site, with groundwater flowing radially outward from an area within the ICT containment area with the highest groundwater elevations. Monitoring wells MW-1 and 123, which are installed in the shallow zone, had groundwater elevations in January 2023 of 172.45 ft above mean sea level (amsl) and 172.62 ft amsl, respectively. Monitoring wells MW-1 and 123 are near one another.

Groundwater levels in Wilcox Formation wells (constructed greater than 40 ft bgs) were measured during the 1st Quarter of 2023 groundwater gauging events. Wilcox Formation wells correspond to those wells previously identified as "intermediate" and "deep" wells. "Intermediate" wells are designated as upper Wilcox Formation wells and "Deep" wells are designated as lower Wilcox Formation wells. The upper and lower Wilcox Formation are in hydraulic communication and so can be treated as a single hydrogeologic unit (Remedial Investigation Report, Jacobs Engineering Group, April 2011). Therefore, the groundwater elevations in upper and lower Wilcox wells were used to construct the potentiometric surface maps for the Wilcox Formation. **Figures B-4, B-5, and B-6 in Appendix B** show the locations of the Wilcox Formation monitoring wells and the potentiometric surface of the Wilcox Formation, based on static water levels measured during the January, February, and March 2023 gauging events, respectively. A groundwater high is present in the Wilcox Formation, whereby groundwater flows radially away, in the area of monitoring wells MW-14 and 18CPTMW01SW. Across the rest of the site, Wilcox Formation groundwater flows in a north-northwest direction, towards Caddo Lake and there is a downward vertical hydraulic gradient between the overlying shallow zone and the Wilcox Formation.

The extracted groundwater volume was measured on a monthly basis as the sum of the difference between the flow meter totalizer reading at each ICT between the beginning and end of each month. During the 1st Quarter 2023, approximately 439,128 gallons of groundwater were extracted from the LHAAP-18/24 ICTs for treatment, based on 0 gallons in January 2023; 82,847 gallons in February 2023; and 356,281 gallons in March 2023 (**Table 5**). Additionally, LHAAP-17 contributed another 170,375 gallons to the GWTP over the same three-month period. Note that the sum of the ICT totalizers does not match up to the influent totalizer (FIT-140) at the groundwater treatment plant. As shown on **Figure 2-1,** the influent totalizer volume for the 1st Quarter 2023 was 654,282 gallons. The influent totalizer is higher because the flow meters at

individual wells may need replacement or froze and were not counting properly during the reporting period.

During the 1st Quarter 2023, approximately 398,731 gallons of treated groundwater was discharged to Harrison Bayou from the GWTP. Although, no treated groundwater was discharge from the GWTP to the INF pond during the 1st Quarter 2023, previously treated groundwater, temporarily stored at the INF pond, was released to Harrison Bayou. Approximately 145,321 gallons of treated groundwater from the INF pond was discharged to Harrison Bayou. No treated groundwater from the GWTP was returned to LHAAP-18/24 via the sprinkler system during the 1st Quarter 2023. Throughout the 1st Quarter of 2023, the treated groundwater was processed through the IX vessels to provide additional water treatment for perchlorate prior to discharge to Harrison Bayou. **Table 4** presents the daily discharge rates and volume for the 1st Quarter of 2023.

2.3 Quantity of Water Extracted from LHAAP-18/24 and LHAAP-17

During the 1st Quarter 2023, the GWTP operated for 112.25 hours. Due to the freezing conditions experienced at the end of 2022 and beginning of 2023, the GWTP only operated 32.50 hours in January 2023. In addition, the GWTP was brought offline to assess and remove a sediment blockage in the metals pretreatment process and as a result the plant only operated 16.75 hours in February 2023. Flow rates for the treatment processes for metals and VOCs ranged between 143 and 164 gpm.

The average daily extraction rates from the extraction wells at LHAAP-17 were approximately 1,136 gallons per day (gpd) in January 2023, approximately 2,134 gpd in February 2023 and approximately 2,295 gpd in March 2023 (**Table 5**). The average daily extraction rates from the ICTs at LHAAP-18/24 were approximately 2,762 gpd in February 2023 and approximately 11,876 gpd in March 2023 (**Table 5**). The volume of groundwater removed from LHAAP-17 and LHAAP-18/24 during the 1st Quarter 2023 measured approximately 654,282 gallons based on the influent totalizer (FIT-140). **Figure 2-1** shows the historical trends of extracted volumes based on the influent totalizer by quarter. The processed water measured on the equalization tank (TK-140) effluent totalizer (FIT-172) was recorded at 1,003,438 gallons indicating a difference of 349,156 gallons between influent and processed water. The discrepancy is primarily the result of water present due to system leaks caused by freeze damage in late December 2022, as well as the partial blockage within the pretreatment process causing a leak after the FIT-172 gauge and prior to Tank 200A (Oxidation-Reduction Potential tank). This extra volume of water from these leaks is captured in the secondary containment basin and is also pumped back through the equalization tank via the sump. As discussed in Section 1.1.1, repairs were made to the damaged piping and valves in January 2-23, and scaffolding was used in February 2023 to access the 10-inch overhead piping spanning between Tanks 200B and 200C to remove the sediment blockage and to return the system to full operating flow.

As indicated by **Table 5**, 22 of 28 ICTs and wells produced water in the 1st Quarter 2023. ICTs 1, 3, 5, 10, 13F, and 13G did not produce water in the 1st Quarter of 2023. ICTs 1, 3, 5, and 10 were deactivated on 18 February 2008 as part of a pilot study for system optimization. ICT 13G is dry

and no longer active. ICT 13F needs a new flow meter installed, which is planned for the 2nd Quarter of 2023. Low production at ICTs 14A, 18WW17, 13F, and EW-01, due to low water table, is attributed to the low water levels present in these ICTs. During the 1st Quarter 2023, ICT repairs completed including replacement of broken 1" PVC elbows on ICTs 7, 12A, 12C, and 13C; replacement of broken 1" PVC unions on ICTs 11, 12E and 13B; and the replacement of pumps at ICT 12C and 14E.

2.4 Sampling Activities at LHAAP-18/24

Groundwater sampling was completed at LHAAP-18/24 in accordance with the requirements documented in the Final Revised Installation-Wide Work Plan (Bhate Environmental Associates, Inc. [Bhate], May 2018). The following 84 monitoring wells were sampled between 12 December 2022 and 11 January 2023 at the end of the 4th Quarter 2022 and beginning of the 1st Quarter of 2023: AWD-1, AWD-3, AWD-4, 18CPTMW01SW, 18CPTMW03SW, 18CPTMW04, 18CPTMW04SW, 18CPTMW06, 18CPTMW07, 18CPTMW08SW, 18CPTMW08DW, 18CPTMW10SW, 18CPTMW10DW, 18CPTMW12SW, 18CPTMW12DW, 18CPTMW14, 18CPTMW15, 18CPTMW16, 18CPTMW18, 18CPTMW19, 18CPTMW22R, 18CPTMW22SW, 18CPTMW23, 18CPTMW24, 18WW02, 8WW06, 18WW08, 18WW10, 18WW17, 18WW22, 18WW24, C-03, C-08, C-09, MW-2, MW-3, MW-5, MW-7, MW-8, MW-9, MW-10, MW-14, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21, MW-22, MW-23, 109, 120, 125, and 126.

The analytical results are presented in **Table 6**. Laboratory data packages are provided in **Appendix C**. Parameters exceeding their respective Maximum Contaminant Levels (MCLs), Medium Specific Concentrations, or Protective Concentration Levels (PCLs) are as follows: perchlorate; 1,1,2-trichloroethane; 1,1-dichloroethene (DCE); 1,2-dichloroethane (DCA); carbon tetrachloride; cis-1,2-DCE; methylene chloride (MC); tetrachloroethene (PCE); trichloroethene (TCE); vinyl chloride (VC); arsenic; barium; chromium; manganese; nickel; and 1,4-dioxane.

Groundwater chemicals of concern (COCs) maps showing the results of the December 2022 and January 2023 groundwater sampling event for perchlorate, TCE, and MC are presented by shallow aquifer zone and Wilcox Formation as **Figures D-1 through D-6** in **Appendix D**.

2.4.1 LHAAP-18/24 Analytical Results (December 2022/January 2023)

Perchlorate exceedances of the PCL (17 micrograms per liter [µg/L]) in the shallow zone groundwater ranged from 41.5 µg/L in AWD-3 to 86,200 µg/L in 18WW17 (**Table 6**). The highest perchlorate concentrations in the shallow zone were observed in MW-5, MW-7, MW-23, 120, 18WW08, and 18WW17, with concentrations in these wells ranging between 14,200 µg/L in MW-7 to 86,200 µg/L in 18WW17 (**Figure D-1**). Monitoring well 18WW08 had a detection of perchlorate at 21,300 µg/L which is comparable to the August 2022 result (20,000 µg/L). There is no downgradient monitoring well between 18WW08 and the Harrison Bayou screened within the shallow zone. A new shallow zone monitoring well is recommended to better define the northern portion of the perchlorate plume (**Figure D-1**).

Perchlorate exceedances of the PCL (17 µg/L) in the Wilcox Formation ranged from 5,740 µg/L in 18CPTMW08DW to 24,400 µg/L in MW-14 (**Table 6**). Perchlorate in the Wilcox Formation was

identified at an elevated concentration in MW-14, with a reported December 2022 concentration of 24,400 µg/L. This December 2022 detection is less than the detection in August 2022 of 106,000 µg/L. Perchlorate in the Wilcox Formation was detected in 18CPTMW08SW at a concentration of 15,500 µg/L (**Figure D-2**), which is comparable to the concentrations reported in August 2022 (13,800 µg/L) but lower than the concentrations reported in June 2021 (18,700 µg/L) and December 2021 (19,700 µg/L). The perchlorate concentration decreases rapidly downgradient from 18CPTMW08SW. Monitoring well 18CPTMW08DW contained an elevated concentration of perchlorate at 5,740 µg/L in December 2022, which is comparable to the perchlorate concentrations reported in August 2022 (4,930 µg/L) and December 2021 (4,240 µg/L).

The highest TCE detection in the shallow zone was 9,100 µg/L in monitoring well 120 (**Figure D-3**), which is as high as TCE has been detected at 120, since December 2019 (9,200 µg/L). Detections of TCE in the shallow zone above 300 µg/L were generally confined to inside of the ICT boundary in December 2022/January 2023. However, one monitoring well (18CPTMW23), just outside the northwest ICT boundary, had an elevated detection of TCE at 1,300 µg/L. However, there are two monitoring wells (18CPTMW15 and 18WW24), downgradient of monitoring well 18CPTMW23, that were below the TCE MCL of 3 µg/L. Monitoring well 18WW08 had a detection of TCE at 11 µg/L, which is consistent with the December 2021 result (10 µg/L). As previously discussed above, there is no monitoring well between 18WW08 and the Harrison Bayou screened within the shallow zone. A new shallow zone monitoring well is recommended to better define the northern portion of the TCE and perchlorate plumes (**Figure D-3**).

TCE in the Wilcox Formation was generally present at low concentrations, with the exception of monitoring well MW-14 (**Figure D-4**) with a concentration of 5,500 µg/L in December 2022. This is lower than the TCE concentration reported in August 2022 (8,100 µg/L), December 2021 (6,200 µg/L), and in June 2021 (9,000 µg/L). A TCE concentration of 100 µg/L was reported in December 2022 in 18CPTMW01SW, which is similar to the detection of 91 µg/L in August 2022, but a decrease from 180 µg/L in June 2021 and 230 µg/L in December 2021.

The elevated concentration of MC above the MCL (5 µg/L) in the shallow zone remains centered on MW-2 with a concentration of 130 µg/L. This is a significant decrease in the MC concentration reported in August 2022 at 15,000 µg/L. The concentrations of MC in MW-2 have fluctuated since June 2017; however, MC was 290,000 µg/L as recently as June 2020. A MC concentration of 22 µg/L was detected in monitoring well MW-23 compared to August 2022 when there was no detection. Several other wells were found to have MC concentrations above the MCL (5 µg/L) in the shallow zone compared to August 2022 when there was no level of detection. However, the extent of MC detected in the shallow zone is confined to within the ICT boundary as depicted on **Figure D-5**.

MC in the Wilcox Formation was detected in 18CPTMW01SW at 12,000 µg/L in December 2022, similar to the detection of 11,000 µg/L in August 2022, but a decrease from 21,000 µg/L in December 2021. The concentrations of MC in the Wilcox Formation are shown on **Figure D-6**.

2.4.2 LHAAP-18/24 Trend Analysis

Time-series graphs for the shallow zone and Wilcox Formation wells are presented in **Appendix E**. Graphs for shallow zone wells 18WW08, AWD-3, C-08, MW-2, MW-7, MW-8, MW-16, MW-17, MW-20, MW-21, MW-22, MW-23, MW-109, MW-120, and MW-126 are included. Graphs for Wilcox Formation wells C-03 and MW-14 are also included.

2.4.2.1 Shallow Zone Trend Analysis

The following observations were made for the shallow zone groundwater, based on the December 2022/January 2023 groundwater monitoring results:

- 18WW08 is located north-northwest of the site in the shallow zone. Perchlorate remained consistent at 21,300 µg/L in December 2022 compared to 20,000 µg/L in August 2022 and 23,600 µg/L in December 2021. Perchlorate increased significantly compared to 1,520 µg/L in June 2021. Historical detections have fluctuated from 20,300 µg/L in November 2003, to non-detect in June 2019. Perchlorate detections have seasonal fluctuations at this well. The concentration of MC continues to be non-detect in 18WW08. TCE was detected at 11 µg/L in December 2022, a slight decrease from 14 µg/L in August 2022, but a slight increase from 10 µg/L in December 2021. TCE has increased compared to other recent sampling events including 3.9 µg/L in June 2021 and 3.8 µg/L in December 2020. As mentioned in Section 4.2.1, a new monitoring well is necessary downgradient of 18WW08 to define the perchlorate and TCE plumes in the shallow zone.
- AWD-3 is located inside the ICT containment area near the center of the site in the shallow zone. Perchlorate slightly decreased to 41.5 µg/L in December 2022 compared to 42.3 µg/L in August 2022. However, this is still an increased perchlorate concentration from 1.94 µg/L in June 2021. Historical detections have fluctuated from 14,100 µg/L in September 2012 to 1.8 µg/L in June 2019. TCE increased to 1,300 µg/L in December 2022 from 650 µg/L in August 2022 and 540 µg/L in June 2021. The concentration of MC continues to be non-detect at AWD-3.
- C-08 is located to the northeast of the ICT containment area in the shallow zone. Perchlorate increased slightly to a concentration of 3.46 µg/L in January 2023 compared to 0.135 µg/L in August 2022 and 0.273 µg/L in December 2021. Perchlorate has been non-detect since December 2018. TCE increased in January 2023 to 3.1 µg/L from August 2022 (1.9 µg/L) December 2021 (1.3 µg/L) and June 2021 (0.87 µg/L). MC remained below the detection limit in C-08.
- MW-2 is located inside the ICT containment area in the shallow zone. Perchlorate was below detection limit in December 2022. Perchlorate has been non-detect since December 2018. MC concentration was detected at 130 µg/L in December 2022, which is a significant decrease from 15,000 µg/L in August 2022. This follows the trend where MC has significantly decreased from 510,000 µg/L in June 2019; to 290,000 µg/L in June 2020; to 6,400 µg/L in June 2021; and then to 1,900 µg/L (duplicate result) in December 2021. The TCE concentration increased in December 2022 to 3,500 µg/L from 1,000 µg/L in August

2022 (duplicate result). This is a slight decrease from 3,600 µg/L in December 2021, but still a decrease from 6,200 µg/L in June 2021. Overall TCE concentrations are trending down. Both MC and TCE fluctuate seasonally at this well.

- Monitoring wells MW-7, MW-8, and MW-17 are located to the southwest of the ICT containment area in the shallow zone.
    - Perchlorate decreased at MW-7 to 14,200 µg/L in January 2023 from 17,300 µg/L in August 2022 and from 16,300 µg/L in December 2021. In January 2023, the perchlorate concentration represents an overall decrease from 20,300 µg/L in June 2020 and 25,000 µg/L in December 2019. TCE at MW-7 was consistent at 1,800 µg/L in January 2023 with 1,800 µg/L in August 2022 and 1,700 µg/L in December 2021. Although, TCE concentrations at MW-7 have decreased compared to 2,000 µg/L in June 2021 and 2,700 µg/L in December 2020, TCE has an overall increasing trend from 1,300 µg/L in June 2019. MC was not detected at MW-7 in August 2022. Previously, MC has been non-detect at MW-7 since December 2014.
    - Perchlorate increased in MW-8 to 2,860 µg/L in January 2023 from 1,890 µg/L in August 2022. However, this is a lower concentration than was detected in December 2021 at 3,880 µg/L. Perchlorate concentrations are still trending down from a historical high of 78,000 µg/L in March 2012. TCE at MW-8 was detected at 290 µg/L in January 2023. This is a slightly higher concentration from August 2022 at 200 µg/L where TCE concentrations had been relatively stable since December 2019 (180 µg/L). TCE and perchlorate both fluctuate seasonally at this well. MC remained below the detection limit in MW-8.
    - Perchlorate was not detected at MW-17 in January 2023. The perchlorate concentration in MW-17 had previously remained below the detection limit since June 2016. TCE and MC were not analyzed at MW-17 in August 2022.
- MW-16 is located west of the site in the shallow zone. Perchlorate was not detected (0.05 U µg/L) in January 2023. Perchlorate concentrations have decreased compared to 1.07 µg/L in December of 2020, and a significant decrease from 848 µg/L in June 2020. Historical detections at this well include a low 1.8 J µg/L in December 2019, but the well had a concentration of 2,900 µg/L in June 2019. TCE decreased in January 2023 to 230 µg/L compared to 290 µg/L in August 2022, 380 µg/L in December 2021, and 960 µg/L in June 2021. Historical detections include 440 µg/L in December 2020, 1,200 µg/L in June of 2020, 550 µg/L in December 2019, and 1,200 µg/L in June 2019. This variability in the TCE detection has been observed since 2014. MC remained below the detection limit.
- MW-21 is located on the eastern side of the site in the shallow zone. The perchlorate concentration in MW-21 continued to decrease to 6,220 in December 2022 from 9,080 µg/L in August 2022, 9,660 µg/L in December 2021, and 10,600 µg/L in June 2021. Previous detections include 25,500 µg/L in December 2020, 33,200 µg/L in June 2020, 13,000 µg/L in December 2019, and 24,000 µg/L in June 2019. Perchlorate fluctuates seasonally at this well but was detected at the lowest concentration to date in December 2022. MC remained

below the detection limit. TCE in MW-21 increased to 6,400 µg/L in December 2022 from 6,300 µg/L in August 2022, 4,500 µg/L in December 2021 and 3,900 µg/L in June 2021. However, the December 2022, August 2022, June 2021, and December 2021 TCE detections, represent a decrease from 8,700 µg/L in December 2020, and 7,200 µg/L in June 2020. TCE is trending stable overall.

- MW-22 is located in the east-southeast portion of the site in the shallow zone. Perchlorate increased in January 2023 to 1,460 µg/L compared to 1,330 µg/L in August 2022, 1,060 µg/L in December 2021, and 484 µg/L in June 2021. The TCE concentration in MW-22 increased to 500 µg/L in January 2023 from 380 µg/L in August 2022 and 380 µg/L in December 2021. Previous TCE concentrations include 220 µg/L in June 2021, 420 µg/L in December 2020, 400 µg/L in June 2020, 240 µg/L in December 2019, and 230 µg/L in June 2019. This variability in the TCE detection has been observed since 2013. MC remained below the detection limit.
- MW-23 is located in the south-central portion of the site in the shallow zone. Perchlorate detected in MW-23 increased to 72,900 in December 2022 from 58,400 µg/L in August 2022. However, this is a lower perchlorate concentration from 81,600 µg/L in December 2021 and 76,800 µg/L in June 2021. Perchlorate concentrations have continued to decrease since December 2021. TCE increased to 3,700 µg/L from 2,600 µg/L in August 2022 and from 3,100 µg/L in December 2021. This is the second highest TCE concentration detected since December 2019 where TCE was detected at 4,800 µg/L. Concentrations are relatively stable with historical detections of 2,200 µg/L in June 2021, 2,800 µg/L in December 2020, 2,300 µg/L in June 2020, and 3,000 µg/L in December 2019. MC was detected at 22 µg/L in December 2022, whereas previous historical concentrations from August 2022 to June 2015 had remained below the detection limit.
- Monitoring well 109 is located in the northeastern portion of the site in the shallow zone. Monitoring well 109, saw an increase of perchlorate to 11,100 µg/L in December 2022 from 8,850 µg/L in August 2022. However, this is still a decrease from 21,500 µg/L in December 2021 and 20,400 µg/L in June 2021. The June and December 2021 perchlorate detections are a marked increase from 4,350 µg/L in December 2020, and from the June 2020 concentration of 10,500 µg/L. Conversely, TCE increased to 1,200 µg/L in December 2022 from 890 µg/L in August 2022, 120 µg/L in December 2021, 240 µg/L in June 2021, 400 µg/L in December of 2020, and 310 µg/L in June 2020. December 2019 saw a concentration of 400 µg/L, which was an increase compared to 130 µg/L in June 2019. TCE and perchlorate both fluctuate seasonally at this well. MC remained below the detection limit.
- Monitoring well 120 is located on the west side of the site in the shallow zone. Perchlorate at 120 significantly increased to 22,400 µg/L in December 2022 from 5,770 µg/L in August 2022, 15,200 µg/L in December 2021, 12,000 µg/L in June 2021, and 13,600 µg/L in December 2020. MC concentration was detected at 42 J (estimated detection) µg/L in December 2022, whereas previous MC concentrations have remained below the detection limit since June 2015. TCE increased to 9,100 µg/L in December 2022 from 6,300 µg/L in

August 2022 and from 4,900 µg/L in December 2021. The TCE concentration in December 2022 (9,100 µg/L) increased from August 2022 (6,300 µg/L) but remained slightly below the December 2019 concentration of 9,200 µg/L. 1,4-dioxane at 120 decreased from 49 µg/L in December 2021, to 44 µg/L in August 2022, and then to 26 µg/L in December 2022.

As of January 2023, monitoring well MW-126 had no detections of TCE or MC and perchlorate was detected at a low concentration of 0.25 µg/L. This well confirms that the extent of groundwater contamination in the shallow zone is currently delineated to the south.

2.4.2.2 Wilcox Formation Trend Analysis

The following observations were made for the Wilcox Formation groundwater, based on the December 2022/January 2023 groundwater monitoring results:

- C-03 is a Wilcox Formation well located northeast of the ICT containment area. Perchlorate significantly decreased to 8.54 µg/L, from 69.8 µg/L in August 2022, and from 220 µg/L in December 2021. Perchlorate has decreased compared to 619 µg/L concentration detected in September 2012. TCE was last detected at 0.5 µg/L in December 2019 and has remained non-detect since December 2022. MC has remained non-detect since December 2014.
- MW-14 is located inside the containment area in the Wilcox Formation. The concentration of perchlorate in MW-14 decreased to 24,400 µg/L in December 2022 compared to 106,000 µg/L in August 2022, 164,000 µg/L in December 2021, and 198,000 µg/L in June 2021. Perchlorate has fluctuated historically, with recent detections including 73,800 µg/L in December 2020, 158,000 µg/L in June 2020, and 130,000 µg/L in December 2019. These levels reflect a seasonal fluctuation but are overall trending downward from a historical high concentration of 288,000 µg/L detected in December 2015. The concentration of TCE decreased to 5,500 µg/L in December 2022 from 8,100 µg/L in August 2022 and from 6,200 µg/L in December 2021. Overall, TCE concentrations continue to trend downward at this well. MC remained below the detection limit. 1,4-Dioxane concentration at MW-14 was found to be 96 µg/L in December 2021. The concentration spiked to 430 µg/L in August 2022 then decreased to 63 µg/L in December 2022.

In general, other than the changes observed above in perchlorate, TCE, and MC concentrations, the COC concentration trends indicate that the plumes are stable, supporting the conclusion that the extraction system is effective in minimizing contaminant transport off-site and reducing COC concentrations.

2.5 Groundwater Treatment Plant Sampling and Analysis

Sampling and analysis were conducted in accordance with the requirements specified in the Final Revised Sampling and Analysis Plan (AECOM Technical Services [AECOM], Inc., September 2017). Besides the sampling requirement established in the Record of Decision (ROD) for the Early Interim Remedial Action (United State Army Corps of Engineers [USACE], May 1995), additional sample analyses are typically performed on the influent and effluent samples to monitor the effectiveness of the perchlorate treatment (FBR and/or IX vessels) process. Sections 2.5.1

through 2.5.4 present the results of analyses conducted during the 1st Quarter of 2023. The complete laboratory results are provided in **Appendix F**.

2.5.1 Weekly Perchlorate Sampling

Table 7 presents the weekly effluent perchlorate results for the 1st Quarter of 2023. Throughout the 1st Quarter of 2023, the treated groundwater was processed through the IX vessels to provide additional water treatment for perchlorate prior to discharge to the Harrison Bayou. The weekly effluent perchlorate samples were collected at 2 locations including after FBR treatment and before the first IX vessel (BIX) and after the first IX vessel (AIX). The effluent perchlorate concentrations from samples collected after FBR treatment and before the first IX vessel (BIX), ranged from 0.497 µg/L (7 February 2023) to 3,420 µg/L (7 March 2023). However, in the effluent samples collected after the first IX vessel (AIX), perchlorate was not detected above the Harrison Bayou Maximum Allowable Daily Discharge Perchlorate Concentration (589 µg/L). The effluent perchlorate samples collected after the first IX vessel (AIX) ranged from 0.0593 J µg/L (28 March 2023) to 39.2 µg/L (7 March 2023).

2.5.2 Monthly VOC Sampling

Table 8 presents the effluent VOC results for March 2023. Sampling of the effluent for VOCs was conducted on a biweekly basis in March 2023, and is typically conducted on a monthly basis, per the Final Installation-Wide Work Plan (Bhate, May 2018). However, influent/effluent was not analyzed for VOCs in January or February 2023 because the GWTP was not consistently operational. Table 8 also provides monthly influent concentrations for perchlorate. The monthly and biweekly effluent results from the 1st Quarter 2023 were below the discharge limits.

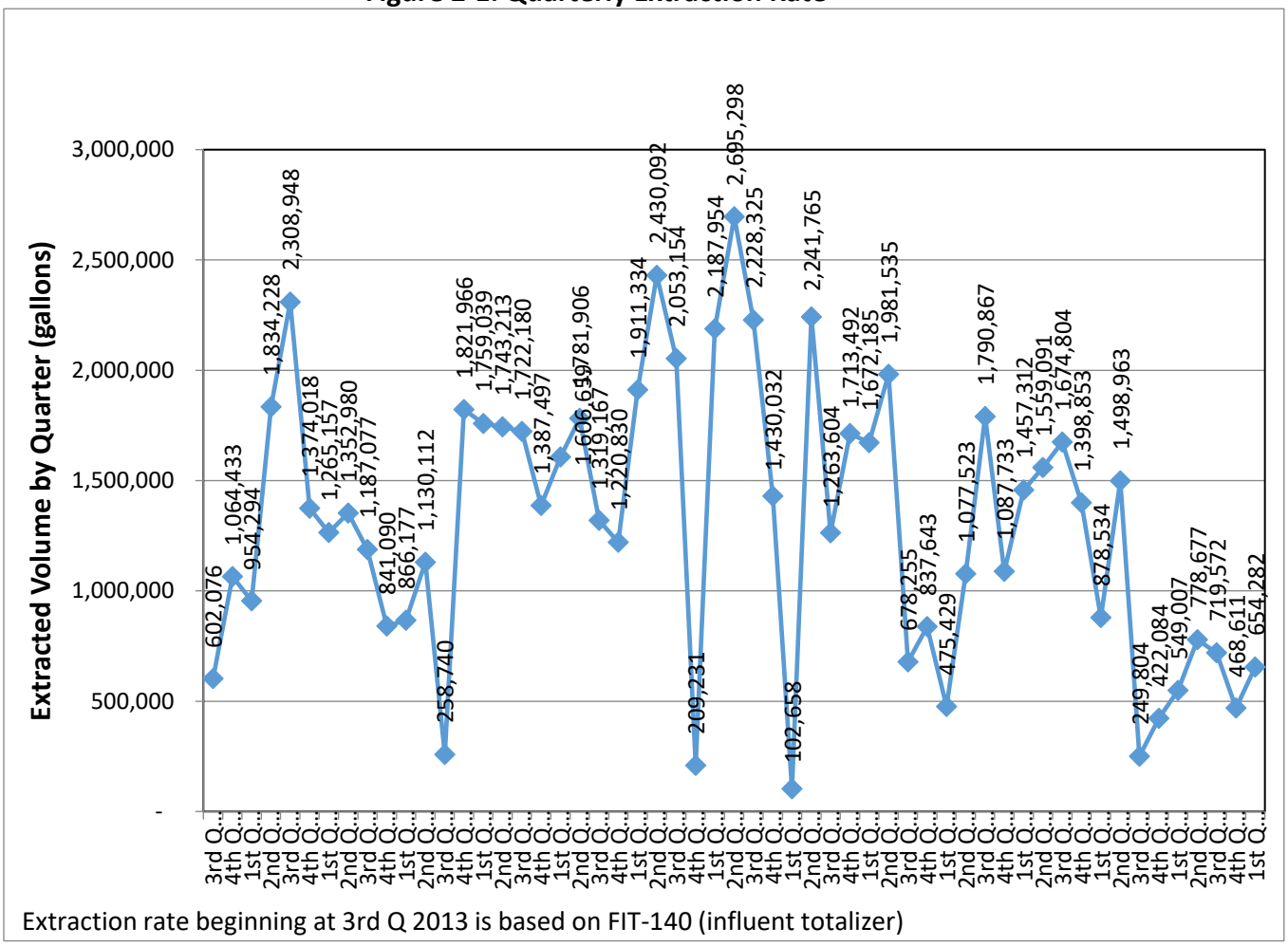
2.5.3 Monthly Metals Sampling

Table 8 presents the monthly influent and effluent metals results for March 2023. Sampling of the influent and effluent for metals is typically conducted on a monthly basis, per the Final Installation-Wide Work Plan (Bhate, May 2018). However, influent/effluent was not analyzed for metals in January or February 2023 because the GWTP was not consistently operational. None of the metals exceeded the effluent discharge limits in the 1st Quarter 2023.

2.5.4 Quarterly Sampling

Quarterly sampling of the effluent for VOCs, anions, chemical oxygen demand, oil and grease, perchlorate, and metals was conducted on 21 March 2023 and the results were below the MCLs. **Table 9** presents the quarterly analytical results for the 1st Quarter of 2023.

Figure 2-1. Quarterly Extraction Rate



Extraction rate beginning at 3rd Q 2013 is based on FIT-140 (influent totalizer)

This page intentionally left blank.

Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water

Location Identification	Type	Reference Elevation (ft amsl)	Depth to Water (feet) 01/31/2023	Groundwater Elevation (feet amsl) 01/31/2023	Depth to Water (feet) 02/24/2023	Groundwater Elevation (feet amsl) 02/24/2023	Depth to Water (feet) 03/21/2023	Groundwater Elevation (feet amsl) 03/21/2023
BGPZ-1	Piezometer	184.99	7.61	177.38	6.91	178.08	6.59	178.40
BGPZ-2	Piezometer	184.39	14.95	169.44	14.53	169.86	14.37	170.02
BGPZ-3	Piezometer	180.35	11.91	168.44	11.59	168.76	11.50	168.85
BGPZ-4	Piezometer	177.77	9.79	167.98	9.45	168.32	9.24	168.53
BGPZ-5	Piezometer	180.76	11.38	169.38	10.80	169.96	10.48	170.28
BGPZ-6	Piezometer	197.82	28.02	169.80	27.71	170.11	27.60	170.22
BGPZ-7	Piezometer	195.96	27.31	168.65	27.02	168.94	26.85	169.11
BGPZ-8	Piezometer	197.08	28.97	168.11	28.58	168.50	28.42	168.66
BGPZ-9	Piezometer	196.45	26.69	169.76	26.25	170.20	26.10	170.35
BGPZ-10	Piezometer	197.00	28.74	168.26	28.37	168.63	28.17	168.83
BGPZ-11	Piezometer	196.99	27.40	169.59	27.04	169.95	26.83	170.16
BGPZ-12	Piezometer	188.17	NA	Plugged	NA	Plugged	NA	Plugged
AWD-1	Monitoring Well	182.27	10.20	172.07	9.85	172.42	9.66	172.61
AWD-2	Monitoring Well	186.78	15.06	171.72	14.72	172.06	14.59	172.19
AWD-3	Monitoring Well	200.13	27.71	172.42	27.35	172.78	27.16	172.97
AWD-4	Monitoring Well	193.89	23.95	169.94	23.60	170.29	23.36	170.53
MW-1	Monitoring Well	199.22	26.77	172.45	26.41	172.81	26.20	173.02
MW-2	Monitoring Well	196.73	25.28	171.45	24.94	171.79	24.75	171.98
MW-3	Monitoring Well	196.54	26.57	169.97	26.15	170.39	25.96	170.58
MW-4	Monitoring Well	197.27	26.43	170.84	26.07	171.20	25.82	171.45
MW-5	Monitoring Well	194.97	25.30	169.67	24.96	170.01	24.80	170.17
MW-6	Monitoring Well	192.18	23.12	169.06	22.75	169.43	22.61	169.57
MW-7	Monitoring Well	188.47	18.27	170.20	17.98	170.49	17.75	170.72

Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water

Location Identification	Type	Reference Elevation (ft amsl)	Depth to Water (feet) 01/31/2023	Groundwater Elevation (feet amsl) 01/31/2023	Depth to Water (feet) 02/24/2023	Groundwater Elevation (feet amsl) 02/24/2023	Depth to Water (feet) 03/21/2023	Groundwater Elevation (feet amsl) 03/21/2023
MW-8	Monitoring Well	187.13	16.89	170.24	16.53	170.60	16.39	170.74
MW-9	Monitoring Well	184.73	14.45	170.28	14.09	170.64	13.91	170.82
MW-10	Monitoring Well	178.12	8.82	169.30	8.42	169.70	8.25	169.87
MW-11	Monitoring Well	184.65	16.37	168.28	16.01	168.64	15.77	168.88
MW-12	Monitoring Well	178.33	8.71	169.62	8.29	170.04	8.12	170.21
MW-13	Monitoring Well	176.72	7.57	169.15	7.14	169.58	6.97	169.75
MW-14	Monitoring Well	186.19	13.63	172.56	13.39	172.80	13.19	173.00
MW-16	Monitoring Well	178.59	9.96	168.63	9.55	169.04	9.33	169.26
MW-17	Monitoring Well	179.03	10.12	168.91	9.77	169.26	9.58	169.45
MW-18	Monitoring Well	178.58	7.92	170.66	7.47	171.11	7.24	171.34
MW-19	Monitoring Well	178.60	8.85	169.75	8.44	170.16	8.24	170.36
MW-20	Monitoring Well	186.64	12.77	173.87	12.40	174.24	12.22	174.42
MW-21	Monitoring Well	198.70	28.41	170.29	28.05	170.65	27.85	170.85
MW-22	Monitoring Well	197.51	26.05	171.46	25.70	171.81	25.47	172.04
MW-23	Monitoring Well	198.79	27.10	171.69	26.74	172.05	26.60	172.19
101	Monitoring Well	197.53	11.33	186.20	10.59	186.94	10.27	187.26
102	Monitoring Well	193.94	20.36	173.58	20.01	173.93	19.82	174.12
109	Monitoring Well	197.02	26.66	170.36	26.29	170.73	26.09	170.93
120	Monitoring Well	184.19	13.22	170.97	12.91	171.28	12.74	171.45
123	Monitoring Well	186.21	13.59	172.62	13.25	172.96	13.20	173.01
125	Monitoring Well	196.28	25.75	170.53	25.40	170.88	25.24	171.04
126	Monitoring Well	199.37	28.30	171.07	27.97	171.40	27.86	171.51
129	Monitoring Well	197.24	26.05	171.19	25.71	171.53	25.55	171.69

Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water

Location Identification	Type	Reference Elevation (ft amsl)	Depth to Water (feet) 01/31/2023	Groundwater Elevation (feet amsl) 01/31/2023	Depth to Water (feet) 02/24/2023	Groundwater Elevation (feet amsl) 02/24/2023	Depth to Water (feet) 03/21/2023	Groundwater Elevation (feet amsl) 03/21/2023
130	Monitoring Well	177.73	7.15	170.58	6.69	171.04	6.58	171.15
C-01	Monitoring Well	193.89	23.52	170.37	23.17	170.72	23.00	170.89
C-02	Monitoring Well	175.95	6.17	169.78	5.78	170.17	5.56	170.39
C-03	Monitoring Well	196.34	26.76	169.58	26.39	169.95	26.22	170.12
C-04	Monitoring Well	194.64	25.95	168.69	25.57	169.07	25.48	169.16
C-04A	Monitoring Well	194.61	25.64	168.97	25.28	169.33	25.16	169.45
C-05	Monitoring Well	180.74	13.84	166.90	13.41	167.33	13.19	167.55
C-06	Monitoring Well	192.22	26.42	165.80	26.09	166.13	25.95	166.27
C-07	Monitoring Well	196.80	28.50	168.30	28.18	168.62	28.07	168.73
C-08	Monitoring Well	193.10	22.73	170.37	22.37	170.73	22.21	170.89
C-09	Monitoring Well	202.35	32.06	170.29	31.84	170.51	31.76	170.59
C-10	Monitoring Well	201.86	32.45	169.41	32.12	169.74	32.03	169.83
17WW08	Monitoring Well	179.72	9.35	170.37	8.89	170.83	8.75	170.97
18WW01	Monitoring Well	201.31	NA	Plugged	NA	Plugged	NA	Plugged
18WW02	Monitoring Well	179.30	9.86	169.44	9.39	169.91	9.21	170.09
18WW03	Monitoring Well	195.59	26.41	169.18	26.06	169.53	25.96	169.63
18WW04	Monitoring Well	183.74	17.59	166.15	17.25	166.49	17.09	166.65
18WW05	Monitoring Well	189.59	23.70	165.89	23.35	166.24	23.29	166.30
18WW06	Monitoring Well	179.70	10.81	168.89	10.43	169.27	10.25	169.45
18WW07	Monitoring Well	183.67	NM	NM	NM	NM	NM	NM
18WW08	Monitoring Well	177.77	9.16	168.61	8.72	169.05	8.58	169.19
18WW09	Monitoring Well	177.51	8.57	168.94	8.20	169.31	8.05	169.46
18WW10	Monitoring Well	182.26	14.17	168.09	13.88	168.38	13.70	168.56

Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water

Location Identification	Type	Reference Elevation (ft amsl)	Depth to Water (feet) 01/31/2023	Groundwater Elevation (feet amsl) 01/31/2023	Depth to Water (feet) 02/24/2023	Groundwater Elevation (feet amsl) 02/24/2023	Depth to Water (feet) 03/21/2023	Groundwater Elevation (feet amsl) 03/21/2023
18WW11	Monitoring Well	182.29	14.31	167.98	13.98	168.31	13.82	168.47
18WW14	Monitoring Well	186.47	16.45	170.02	16.10	170.37	15.94	170.53
18WW15	Monitoring Well	186.24	15.72	170.52	15.36	170.88	15.21	171.03
18WW16	Monitoring Well	201.88	NA	Plugged	NA	Plugged	NA	Plugged
18WW18	Monitoring Well	196.82	27.55	169.27	27.19	169.63	27.04	169.78
18WW19	Monitoring Well	179.56	12.35	167.21	12.00	167.56	11.79	167.77
18WW20	Monitoring Well	180.42	13.29	167.13	12.94	167.48	12.72	167.70
18WW21	Monitoring Well	195.20	27.41	167.79	27.08	168.12	26.93	168.27
18WW22	Monitoring Well	195.37	26.40	168.97	26.02	169.35	25.85	169.52
18WW24	Monitoring Well	176.40	8.63	167.77	8.15	168.25	7.93	168.47
18WW25	Monitoring Well	175.15	8.19	166.96	7.69	167.46	7.51	167.64
18CPTMW01SW	Monitoring Well	198.20	27.69	170.51	27.33	170.87	27.15	171.05
18CPTMW01DW	Monitoring Well	197.92	28.58	169.34	28.21	169.71	28.06	169.86
18CPTMW03SW	Monitoring Well	198.53	25.13	173.40	24.80	173.73	24.60	173.93
18CPTMW04	Monitoring Well	196.60	24.21	172.39	23.85	172.75	23.69	172.91
18CPTMW04SW	Monitoring Well	196.42	27.12	169.30	26.76	169.66	26.59	169.83
18CPTMW06	Monitoring Well	198.12	28.78	169.34	28.38	169.74	28.17	169.95
18CPTMW07	Monitoring Well	197.32	27.68	169.64	27.30	170.02	27.11	170.21
18CPTMW08SW	Monitoring Well	196.38	27.05	169.33	26.68	169.70	26.45	169.93
18CPTMW08DW	Monitoring Well	196.59	27.80	168.79	27.44	169.15	27.35	169.24
18CPTMW10SW	Monitoring Well	186.98	17.51	169.47	17.15	169.83	17.01	169.97
18CPTMW10DW	Monitoring Well	187.38	18.43	168.95	18.07	169.31	17.96	169.42
18CPTMW12SW	Monitoring Well	190.90	21.71	169.19	21.45	169.45	21.29	169.61

Table 3. Groundwater Elevations at LHAAP-18/24 Piezometers, Monitoring Wells, and Surface Water

Location Identification	Type	Reference Elevation (ft amsl)	Depth to Water (feet) 01/31/2023	Groundwater Elevation (feet amsl) 01/31/2023	Depth to Water (feet) 02/24/2023	Groundwater Elevation (feet amsl) 02/24/2023	Depth to Water (feet) 03/21/2023	Groundwater Elevation (feet amsl) 03/21/2023
18CPTMW12DW	Monitoring Well	190.25	21.20	169.05	20.87	169.38	20.70	169.55
18CPTMW14	Monitoring Well	196.69	25.40	171.29	25.09	171.60	24.91	171.78
18CPTMW15	Monitoring Well	179.79	10.33	169.46	9.92	169.87	9.77	170.02
18CPTMW16	Monitoring Well	175.37	7.51	167.86	7.17	168.20	6.96	168.41
18CPTMW18	Monitoring Well	194.53	25.91	168.62	25.54	168.99	25.35	169.18
18CPTMW19	Monitoring Well	193.59	24.11	169.48	23.78	169.81	23.60	169.99
18CPTMW19SW	Monitoring Well	193.29	26.15	167.14	25.83	167.46	25.65	167.64
18CPTMW22SW	Monitoring Well	187.79	18.27	169.52	17.91	169.88	17.68	170.11
18CPTMW22R	Monitoring Well	187.23	8.59	178.64	7.92	179.31	7.53	179.70
18CPTMW22DW	Monitoring Well	188.00	18.37	169.63	18.02	169.98	17.88	170.12
18CPTMW23	Monitoring Well	177.47	8.39	169.08	8.00	169.47	7.79	169.68
18CPTMW23SW	Monitoring Well	177.43	8.07	169.36	7.73	169.70	7.55	169.88
18CPTMW24	Monitoring Well	194.89	24.84	170.05	24.45	170.44	24.29	170.60
18CPTMW26	Monitoring Well	182.60	17.85	164.75	17.48	165.12	17.40	165.20
18CPTMW26SW	Monitoring Well	182.00	12.32	169.68	11.97	170.03	11.75	170.25
1824HBSW7	Surface Water Sample	167.92	6.03	173.95	2.15	170.07	3.39	171.31

Table 4. Treated Groundwater Discharged – January through March 2023

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
01/01/2023	7,123	65,602	0	30,240	0	30,240	2.30
01/02/2023*	6,728	61,964	0	29,520	0	29,520	2.19
01/03/2023	6,394	57,554	0	27,246	0	27,246	2.21
01/04/2023	4,945	44,507	0	25,776	0	25,776	2.11
01/05/2023	9,667	87,007	0	23,953	0	23,953	1.95
01/06/2023	6,701	75,389	0	8,586	0	8,586	1.89
01/07/2023	NA	NA	0	0	0	0	1.89
01/08/2023	NA	NA	0	0	0	0	1.88
01/09/2023	NA	NA	0	0	0	0	1.88
01/10/2023	NA	NA	0	0	0	0	1.88
01/11/2023	NA	NA	0	0	0	0	1.87
01/12/2023	NA	NA	0	0	0	0	1.87
01/13/2023	NA	NA	0	0	0	0	1.87
01/14/2023	NA	NA	0	0	0	0	1.86
01/15/2023	NA	NA	0	0	0	0	1.86
01/16/2023	NA	NA	0	0	0	0	1.86
01/17/2023	NA	NA	0	0	0	0	1.85
01/18/2023	NA	NA	0	0	0	0	1.85
01/19/2023	NA	NA	0	0	0	0	2.45
01/20/2023	NA	NA	0	0	0	0	2.45
01/21/2023	NA	NA	0	0	0	0	2.44
01/22/2023	NA	NA	0	0	0	0	2.44
01/23/2023	NA	NA	0	0	0	0	2.44
01/24/2023	NA	NA	0	0	0	0	2.43
01/25/2023	NA	NA	0	0	0	0	3.19
01/26/2023	NA	NA	0	0	0	0	3.19

Table 4. Treated Groundwater Discharged – January through March 2023

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
01/27/2023	NA	NA	0	0	0	0	3.18
01/28/2023	NA	NA	0	0	0	0	3.26
01/29/2023	NA	NA	0	0	0	0	3.42
01/30/2023	NA	NA	0	0	0	0	3.42
01/31/2023	Maximum	Maximum	13,958	0	0	13,958	3.51
02/01/2023	Maximum	Maximum	12,013	0	0	12,013	3.59
02/02/2023	Maximum	Maximum	12,007	0	0	12,007	3.73
02/03/2023	NA	NA	0	0	0	0	3.75
02/04/2023	NA	NA	0	0	0	0	3.75
02/05/2023	NA	NA	0	0	0	0	3.75
02/06/2023	NA	NA	0	0	0	0	3.74
02/07/2023	NA	NA	0	0	0	0	3.74
02/08/2023	NA	NA	0	0	0	0	3.73
02/09/2023	NA	NA	0	0	0	0	3.73
02/10/2023	NA	NA	0	0	0	0	3.72
02/11/2023	NA	NA	0	0	0	0	3.72
02/12/2023	NA	NA	0	0	0	0	3.71
02/13/2023	NA	NA	0	0	0	0	3.71
02/14/2023	NA	NA	0	0	0	0	3.71
02/15/2023	NA	NA	0	0	0	0	3.70
02/16/2023	NA	NA	0	0	0	0	3.70
02/17/2023	NA	NA	0	0	0	0	3.69
02/18/2023	NA	NA	0	0	0	0	3.69
02/19/2023	NA	NA	0	0	0	0	3.68
02/20/2023	NA	NA	0	0	0	0	3.68
02/21/2023	3,859	804	3,755	0	0	3,755	3.67

Table 4. Treated Groundwater Discharged – January through March 2023

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
02/22/2023	3,335	694	26,325	0	0	26,325	3.67
02/23/2023	3,895	811	17,597	0	0	17,597	3.65
02/24/2023	NA	NA	0	0	0	0	3.65
02/25/2023	NA	NA	0	0	0	0	3.64
02/26/2023	NA	NA	0	0	0	0	3.64
02/27/2023	NA	NA	0	0	0	0	3.63
02/28/2023	NA	NA	0	0	0	0	3.63
03/01/2023	1,557	343	1,071	0	0	1,071	3.62
03/02/2023	1,902	419	15,585	0	0	15,585	3.62
03/03/2023	4,139	913	13,319	0	0	13,319	3.64
03/04/2023	3,660	808	0	0	0	0	3.64
03/05/2023	3,122	689	0	0	0	0	3.63
03/06/2023*	2,659	586	50,290	0	0	50,290	3.62
03/07/2023	2,284	503	13,423	0	0	13,423	3.61
03/08/2023	1,872	412	17,094	0	0	17,094	3.61
03/09/2023	1,770	390	0	0	0	0	3.60
03/10/2023	6,656	1,468	13,528	0	0	13,528	3.73
03/11/2023	Maximum	Maximum	0	0	0	0	3.72
03/12/2023	19,238	4,950	0	0	0	0	3.71
03/13/2023*	15,338	3,383	49,478	0	0	49,478	3.87
03/14/2023	13,528	2,984	11,764	0	0	11,764	3.86
03/15/2023	9,355	2,063	11,962	0	0	11,962	3.85
03/16/2023	7,157	1,578	9,312	0	0	9,312	3.85
03/17/2023	Maximum	Maximum	0	0	0	0	3.84
03/18/2023	18,298	3,805	0	0	0	0	3.84
03/19/2023	14,528	3,021	0	0	0	57,600	3.83

Table 4. Treated Groundwater Discharged – January through March 2023

DATE	Harrison Bayou Flow (gpm)	Maximum Rate Allowed (gpm)	Released From GWTP To Harrison Bayou	Released From INF Pond to Harrison Bayou	Released From GWTP to INF Pond	Combined Total Released to Harrison Bayou	INF Pond Staff Reading (6.20 = 3 ft. Freeboard)
03/20/2023*	10,439	2,302	58,663	0	0	54,720	3.83
03/21/2023	7,933	1,750	0	0	0	53,280	3.82
03/22/2023	5,867	1,294	1,060	0	0	1,060	3.82
03/23/2023	4,413	973	8,691	0	0	8,691	3.80
03/24/2023	3,275	722	0	0	0	0	3.80
03/25/2023	2,869	596	0	0	0	0	3.79
03/26/2023	2,503	520	0	0	0	0	3.77
03/27/2023*	2,225	490	37,836	0	0	37,836	3.75
03/28/2023	NA	NA	0	0	0	0	3.74
03/29/2023	NA	NA	0	0	0	0	3.73
03/30/2023	NA	NA	0	0	0	0	3.72
03/31/2023	NA	NA	0	0	0	0	3.71
Total			398,731	145,321	0	650,989	

Notes: The maximum discharge rate from the INF Pond is 170 gpm and the maximum discharge rate from the GWTP is 30 gpm.
NA = Not applicable
NM = Not measured
Treated groundwater volume released over the weekend is included in the total for the next working day. These dates are marked with an asterisk (*).

Table 5. Monthly Groundwater Extraction Quantities – January through March 2023

ICT or Well Number	January 2023 (gallons)	February 2023 (gallons)	March 2023 (gallons)	Total
1	0	0	0	0
2	0	1,040	10,645	11,685
3	0	0	0	0
4	0	14,139	54,369	68,508
5	0	0	0	0
EW-01	0	35	0	35
7	0	3,094	21,416	24,510
8	0	16,878	66,501	83,379
18WW17	0	2,972	243	3,215
10	0	0	0	0
11	0	6,446	29,140	35,586
12A	0	1,123	5,699	6,822
12B	0	4,891	20,313	25,204
12C	0	1,327	22,560	23,887
12D	0	376	14,706	15,082
12E	0	9,499	21,149	30,648
13A	0	2,310	4,883	7,193
13B	0	2,106	28,557	30,663
13C	0	533	5,614	6,147
13D	0	5,951	17,957	23,908
13E	0	7,062	15,636	22,698
13F	0	0	0	0
13G	0	0	0	0
14A	0	1,179	1,064	2,243
14B	0	1,886	15,829	17,715
14C	0	8,296	30,801	39,097
14D	0	8,719	38,107	46,826
14E	0	0	24,480	24,480
LHAAP-18/24 Total	**0**	***82,847***	***356,281***	***439,128***
Gpd	0	2,762	11,876	4,773
LHAAP-17 Total	***35,231***	***64,007***	***71,137***	***170,375***
Gpd	1,136	2,134	2,295	3,042

Notes:
gpd – gallons per day
ICT 6 & 9 were converted from extraction to infiltration trenches beginning September 18, 2007.
ICTs 1, 3, 5, and 10 were deactivated on February 18, 2008 as part of a pilot study for system optimization.
Low production in ICT 14A, 18WW17, ICT 13F & EW-01 due to low water table.
Replaced broken 1" elbows on ICTs 7, 12A and 12C in February 2023
Replaced broken 1" unions of ICTs 11, 12E and 13B in February 2023
Replaced broken 1" flowmeter nipple on ICT 12D in February 2023
ICT 14E replaced pump in March 2023
ICT 13F requires a new flow meter. To be replaced in 2nd Quarter 2023

Table 6. LHAAP-18/24 Analytical Results - December 2022/January 2023

Sample Identification and Sample Date:	Units	MCL/MSC/ PCL	AWD1_122022 12/20/22	AWD3_121522 12/15/22	AWD3_121522_a 12/15/22	AWD4_122022 12/20/22	18CPTMW01SW_ 122022 12/20/22	18CPTMW03SW _122222 12/22/22	18CPTMW04_12 1622 12/16/22	18CPTMW04SW _121622 12/16/22	18CPTMW06_01 1023 1/10/23	18CPTMW07_12 2222 12/22/22	18CPTMW08SW_ 121522 12/15/22	18CPTMW08DW_ 121522 12/15/22	18CPTMW10SW_ 122022 12/20/22	18CPTMW10DW_ 122022 12/20/22	18CPTMW12SW _010923 1/9/23	18CPTMW12DW_ 010923 1/9/23
Location Description:			Site 18/24- inside CT perimeter	Site 18/24- inside CT perimeter		Site 18/24-outside CT perimeter	Site 18/24-NE, inside the fence line, middle region shallow Wilcox	Site 18/24-S, inside the fence line	Site 18/24-NW, inside the fence line, middle region	Site 18/24- NW, inside the fence line, middle region Shallow Wilcox	Site 18/24-SSE, inside the fence line, middle region	Site 18/24-NNE, inside the fence line, outer region	Site 18/24-N, inside the fence line, outer region Shallow Wilcox	Site 18/24-N, inside the fence line, outer region Deep Wilcox	Site 18/24-WSW, outside the fence line, along the outer loop road. Shallow Wilcox	Site 18/24-WSW, outside the fence line, along the outer loop road. Deep Wilcox	Site 18/24-SW, outside the fence line, along the road surrounding the fence line. Shallow Wilcox	Site 18/24-SW, outside the fence line, along the road surrounding the fence line. Deep Wilcox
Aquifer Zone:			Shallow	Shallow		Shallow	Wilcox	Wilcox	Shallow	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox
Lab Package:			HS22121316-02	HS22120986-04	HS22120986-05	HS22121316-08	HS22121316-01	HS22121478-01	HS22121096-01	HS22121096-02	HS23010489-01	HS22121478-03	HS22120986-03	HS22120986-02	HS22121316-07	HS22121316-06	HS23010411-01	HS23010411-02
Well Identification:			AWD-1	AWD-3	AWD-3	AWD-4	18CPTMW01SW	18CPTMW03SW	18CPTMW04	18CPTMW04SW	18CPTMW06	18CPTMW07	18CPTMW08SW	18CPTMW08DW	18CPTMW10SW	18CPTMW10DW	18CPTMW12SW	18CPTMW12DW
Perchlorate (6850)																		
Perchlorate	µg/L	17*	**0.0491 J**	**41.5**	**37.9**	**1,060**	< 0.0500 U	**0.0808 J**	**75.7**	< 0.0500 U	< 0.0500 U	< 0.0500 U	**15,500**	**5,740**	< 0.0500 U	**0.0558 J**	**1.91**	< 0.0500 U
Volatile Organic Compounds (8260C)																		
1,1,1,2-Tetrachloroethane	µg/L	110	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,1-Trichloroethane	µg/L	200	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	µg/L	14	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	µg/L	5	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	µg/L	10,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	**3.0**	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethene	µg/L	7	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloropropene	µg/L	2.9	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,3-Trichlorobenzene	µg/L	310	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,3-Trichloropropane	µg/L	0.041	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	µg/L	70	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trimethylbenzene	µg/L	5,100	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromoethane	µg/L	0.05	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	µg/L	600	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	µg/L	5	NA	**14**	**13**	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	µg/L	5	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3,5-Trimethylbenzene	µg/L	5,100	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	µg/L	3,100	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichloropropane	µg/L	29	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	µg/L	75	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2,2-Dichloropropane	µg/L	42	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Butanone	µg/L	61,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Chlorotoluene	µg/L	2,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Hexanone	µg/L	6,100	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
4-Chlorotoluene	µg/L	2,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Isopropyltoluene	µg/L	10,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Methyl-2-pentanone	µg/L	8,200	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Acetone	µg/L	92,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Benzene	µg/L	5	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	**1.4**	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromobenzene	µg/L	2,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromochloromethane	µg/L	4,100	NA	< 10 U	< 10 U	< 1.0 U	**13**	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromodichloromethane	µg/L	4.6	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	µg/L	36	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	µg/L	140	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	µg/L	10,000	NA	< 10 U	< 20 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon tetrachloride	µg/L	5	NA	**7.9 J**	**9.0 J**	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chlorobenzene	µg/L	100	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	µg/L	41,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	µg/L	1,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloromethane	µg/L	220	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	µg/L	70	NA	**140**	**130**	**2.8**	**1,500**	**31**	**12**	< 1.0 U	< 1.0 U	< 1.0 U	**8.2**	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,3-Dichloropropene	µg/L	5.3	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dibromochloromethane	µg/L	34	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dibromomethane	µg/L	380	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dichlorodifluoromethane	µg/L	20,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	µg/L	700	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Hexachlorobutadiene	µg/L	20	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Isopropylbenzene	µg/L	10,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
m,p-Xylene	µg/L	10,000**	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	5	NA	< 10 U	< 10 U	< 1.0 U	**12,000**	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Naphthalene	µg/L	2,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
n-Butylbenzene	µg/L	4,100	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
n-Propylbenzene	µg/L	4,100	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
o-Xylene	µg/L	10,000**	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U

Table 6. LHAAP-18/24 Analytical Results - December 2022/January 2023

Sample Identification and Sample Date:	Units	MCL/MSC/ PCL	AWD1_122022 12/20/22	AWD3_121522 12/15/22	AWD3_121522_a 12/15/22	AWD4_122022 12/20/22	18CPTMW01SW_ 122022 12/20/22	18CPTMW03SW _122222 12/22/22	18CPTMW04_12 1622 12/16/22	18CPTMW04SW _121622 12/16/22	18CPTMW06_01 1023 1/10/23	18CPTMW07_12 2222 12/22/22	18CPTMW08SW_ 121522 12/15/22	18CPTMW08DW_ 121522 12/15/22	18CPTMW10SW_ 122022 12/20/22	18CPTMW10DW_ 122022 12/20/22	18CPTMW12SW _010923 1/9/23	18CPTMW12DW_ 010923 1/9/23
Location Description:			Site 18/24- inside CT perimeter	Site 18/24- inside CT perimeter		Site 18/24-outside CT perimeter	Site 18/24-NE, inside the fence line, middle region shallow Wilcox	Site 18/24-S, inside the fence line	Site 18/24-NW, inside the fence line, middle region	Site 18/24- NW, inside the fence line, middle region Shallow Wilcox	Site 18/24-SSE, inside the fence line, middle region	Site 18/24-NNE, inside the fence line, outer region	Site 18/24-N, inside the fence line, outer region Shallow Wilcox	Site 18/24-N, inside the fence line, outer region Deep Wilcox	Site 18/24-WSW, outside the fence line, along the outer loop road. Shallow Wilcox	Site 18/24-WSW, outside the fence line, along the outer loop road. Deep Wilcox	Site 18/24-SW, outside the fence line, along the road surrounding the fence line. Shallow Wilcox	Site 18/24-SW, outside the fence line, along the road surrounding the fence line. Deep Wilcox
	Aquifer Zone:		Shallow	Shallow		Shallow	Wilcox	Wilcox	Shallow	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox	Wilcox
sec-Butylbenzene	µg/L	4,100	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene	µg/L	100	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
tert-Butylbenzene	µg/L	4,100	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	µg/L	5	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	µg/L	1,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethene	µg/L	100	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	**1.0**	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	µg/L	29	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	µg/L	5	NA	**1,300**	**1,300**	**5.8**	**100**	**7.1**	**290**	< 1.0 U	**4.0**	< 1.0 U	**34**	NA	**5.8**	**2.4**	**2.8**	**1.8**
Trichlorofluoromethane	µg/L	31,000	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	µg/L	2	NA	< 10 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 10 U	< 1.0 U	< 1.0 U	< 1.0 U	**0.89 J**	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Metals (6020A/7470A)																		
Aluminum	mg/L	100	**0.366**	**0.564**	**0.577**	**0.627**	**0.0181**	**0.362**	NA	**0.0288**	NA	NA	NA	NA	NA	**0.0433**	**0.0162**	**0.0110**
Antimony	mg/L	0.006	**0.000638 J**	< 0.00125 U	< 0.00125 U	< 0.00125 U	**0.000690 J**	< 0.00125 U	NA	< 0.00125 U	NA	NA	NA	NA	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U
Arsenic	mg/L	0.01	**0.0160**	< 0.00125 U	< 0.00125 U	< 0.00125 U	**0.00769**	**0.00341 J**	NA	**0.00624**	NA	NA	NA	NA	NA	**0.00159 J**	**0.000648 J**	**0.00195 J**
Barium	mg/L	2	**0.231**	**0.0724**	**0.0753**	**0.157**	**1.15**	**0.527**	NA	**0.793**	NA	NA	NA	NA	NA	**0.520**	**0.886**	**0.297**
Beryllium	mg/L	0.004	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	NA	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U
Cadmium	mg/L	0.005	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	NA	NA	NA	NA	NA	< 0.000500 U	**0.000238 J**	< 0.000500 U
Calcium	mg/L	NV	**2.10**	**1.93**	**2.04**	**6.10**	**33.3**	**108**	NA	**23.8**	NA	NA	NA	NA	NA	**77.2**	**61.8**	**28.9**
Chromium	mg/L	0.1	**0.00549**	**0.100**	**0.108**	**0.118**	**0.00233 J**	**0.00754**	NA	**0.0134**	NA	NA	NA	NA	NA	**0.00206 J**	**0.00358 J**	**0.00266 J**
Cobalt	mg/L	6.1	**0.00701**	**0.00163 J**	**0.00171 J**	**0.00654**	**0.000871 J**	**0.00155 J**	NA	**0.00566**	NA	NA	NA	NA	NA	**0.000212 J**	**0.00880**	**0.000292 J**
Copper	mg/L	1.3	< 0.00250 U	< 0.00250 U	**0.00103 J**	**0.00533**	< 0.00250 U	**0.00234 J**	NA	< 0.00250 U	NA	NA	NA	NA	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U
Iron	mg/L	NV	**5.89**	**0.743**	**0.764**	**1.88**	**48.0**	**7.54**	NA	**20.3**	NA	NA	NA	NA	NA	**16.1**	**1.52**	**7.68**
Lead	mg/L	0.015	**0.00110 J**	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA	< 0.00125 U	NA	NA	NA	NA	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U
Magnesium	mg/L	NV	**2.52**	**1.39**	**1.44**	**3.96**	**21.9**	**19.4**	NA	**14.6**	NA	NA	NA	NA	NA	**13.8**	**36.7**	**12.1**
Manganese	mg/L	1.1*	**0.203**	**0.0243**	**0.0254**	**0.0555**	**0.575**	**0.611**	NA	**0.429**	NA	NA	NA	NA	NA	**0.408**	**1.17**	**0.251**
Nickel	mg/L	0.49*	**0.0400**	**0.0920**	**0.0875**	**0.512**	**0.00592**	**0.00387 J**	NA	**0.00592**	NA	NA	NA	NA	NA	**0.00172 J**	**0.0110**	< 0.00125 U
Potassium	mg/L	NV	**2.68**	**0.802**	**0.839**	**0.383**	**10.1**	**103**	NA	**52.7**	NA	NA	NA	NA	NA	**55.3**	**20.6**	**36.5**
Selenium	mg/L	0.05	**0.00313 J**	**0.00398 J**	**0.00431 J**	< 0.00250 U	< 0.00250 U	< 0.00250 U	NA	< 0.00250 U	NA	NA	NA	NA	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U
Silver	mg/L	0.51	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	NA	NA	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U
Sodium	mg/L	NV	**92.2**	**35.3**	**36.6**	**45.6**	**100**	**215**	NA	**100**	NA	NA	NA	NA	NA	**158**	**240**	**152**
Thallium	mg/L	0.002	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	NA	NA	NA	NA	NA	< 0.000500 U	**0.000486 J**	< 0.000500 U
Vanadium	mg/L	0.72	**0.00253 J**	**0.00135 J**	**0.00142 J**	**0.00145 J**	< 0.00125 U	< 0.00125 U	NA	< 0.00125 U	NA	NA	NA	NA	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U
Zinc	mg/L	31	**0.00551**	**0.00273 J**	**0.00407 J**	**0.00512**	**0.00365 J**	**0.00589**	NA	**0.0281**	NA	NA	NA	NA	NA	**0.00392 J**	**0.0173**	< 0.00250 U
Mercury	mg/L	0.002	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	NA	< 0.000100 U	NA	NA	NA	NA	NA	< 0.000100 U	< 0.000100 U	< 0.000100 U
1,4-Dioxane (8270 SIM)																		
1,4-Dioxane	µg/L	9.1	**1.5**	NA	NA	**0.099**	**0.090**	< 0.0050 U	**0.18**	**0.014**	**0.042**	**0.029**	**0.27**	**0.083**	**0.081**	NA	**0.025**	**0.068**

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No Value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

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

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

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

UB- Artifact of blank contamination

Table 6. LHAAP-18/24 Analytical Results - December 2022/January 2023

Sample Identification and Sample Date:	Units	MCL/MSC/ PCL	18CPTMW14_011023 1/10/23	18CPTMW15_122122 12/21/22	18CPTMW16_011123 1/11/23	18CPTMW18_122222 12/22/22	18CPTMW19_122122 12/21/22	18CPTMW22R_121522 12/15/22	18CPTMW22SW_121522 12/15/22	18CPTMW23_122122 12/21/22	18CPTMW24_122222 12/22/22	18WW02_011023 1/10/23	18WW06_011023 1/10/23	18WW08_122122 12/21/22	18WW10_011023 1/10/23	18WW17_122222 12/22/22	18WW22_122222 12/22/22	18WW24_122122 12/21/22
Location Description:			Site 18/24-SE, outside the fence line, along the road surrounding the fence line.	Site 18/24- NW, outside the fence line	Site 18/24 - NW, outside the fence line, near Harrison Bayou	Site 18/24-NE, outside the fence line, in the woods	Site 18/24-N outside of the fence line	Site 18/24-S. outside the fence line, along the outer loop road	Site 18/24-S. outside the fence line, along the outer loop road	Site 18/24 -NW, outside the fence line, near the road surrounding the fence line	Site 18/24 - E, outside the fence line, on the road surrounding the fence line	Site 18/24-NW, outside the fence line Wilcox Well	Site 18/24- W. just outside the fence line	Site 18/24-NNW, outside the fence line	Site 18/24-W, ousitde the fence line	Site 18/24-NE, outside the fence line. Outer region.	Site 18/24-NE, outside the fence line, in the woods	Site 18/24-WNW, outside the fence line, in the woods
Aquifer Zone:			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox	Shallow	Shallow	Wilcox	Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package:			HS23010489-08	HS22121494-06	HS23010632-06	HS22121478-05	HS22121494-08	HS22120986-06	HS22120986-07	HS22121494-04	HS22121478-02	HS23010489-04	HS23010489-03	HS22121494-07	HS23010489-05	HS22121478-07	HS22121478-04	HS22121494-05
Well Identification:			18CPTMW14	18CPTMW15	18CPTMW16	18CPTMW18	18CPTMW19	18CPTMW22R	18CPTMW22SW	18CPTMW23	18CPTMW24	18WW02	18WW06	18WW08	18WW10	18WW17	18WW22	18WW24
Perchlorate (6850)																		
Perchlorate	µg/L	17*	**5,780**	**0.0400 J**	**0.0463 J**	< 0.0500 U	**0.226**	**1.22**	**18,300**	**0.0426 J**	**51.5**	< 0.0500 U	< 0.0500 U	**21,300**	< 0.0500 U	**86,200**	**0.181**	**0.500**
Volatile Organic Compounds (8260C)																		
1,1,1,2-Tetrachloroethane	µg/L	110	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,1-Trichloroethane	µg/L	200	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1,2-Trichloroethane	µg/L	5	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethane	µg/L	10,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	**0.53 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloroethene	µg/L	7	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,1-Dichloropropene	µg/L	2.9	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,3-Trichlorobenzene	µg/L	310	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,3-Trichloropropane	µg/L	0.041	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trichlorobenzene	µg/L	70	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2,4-Trimethylbenzene	µg/L	5,100	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dibromoethane	µg/L	0.05	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichlorobenzene	µg/L	600	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloroethane	µg/L	5	**15**	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**82**	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,2-Dichloropropane	µg/L	5	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3,5-Trimethylbenzene	µg/L	5,100	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichlorobenzene	µg/L	3,100	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,3-Dichloropropane	µg/L	29	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
1,4-Dichlorobenzene	µg/L	75	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2,2-Dichloropropane	µg/L	42	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Butanone	µg/L	61,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Chlorotoluene	µg/L	2,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
2-Hexanone	µg/L	6,100	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Chlorotoluene	µg/L	2,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Isopropyltoluene	µg/L	10,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
4-Methyl-2-pentanone	µg/L	8,200	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Acetone	µg/L	92,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**2.1**
Benzene	µg/L	5	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromobenzene	µg/L	2,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromochloromethane	µg/L	4,100	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 UJ
Bromodichloromethane	µg/L	4.6	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromoform	µg/L	36	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Bromomethane	µg/L	140	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon disulfide	µg/L	10,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Carbon tetrachloride	µg/L	5	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chlorobenzene	µg/L	100	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroethane	µg/L	41,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloroform	µg/L	1,000	**25**	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Chloromethane	µg/L	220	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
cis-1,2-Dichloroethene	µg/L	70	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**240**	**11**	< 1.0 U	< 1.0 U	**2.4**	< 1.0 U	**16**	< 1.0 U	< 1.0 U
cis-1,3-Dichloropropene	µg/L	5.3	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dibromochloromethane	µg/L	34	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dibromomethane	µg/L	380	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Dichlorodifluoromethane	µg/L	20,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Ethylbenzene	µg/L	700	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Hexachlorobutadiene	µg/L	20	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Isopropylbenzene	µg/L	10,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
m,p-Xylene	µg/L	10,000**	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Methylene chloride	µg/L	5	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	**8.8 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Naphthalene	µg/L	2,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
n-Butylbenzene	µg/L	4,100	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
n-Propylbenzene	µg/L	4,100	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
o-Xylene	µg/L	10,000**	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U

Table 6. LHAAP-18/24 Analytical Results - December 2022/January 2023

Sample Identification and Sample Date:	Units	MCL/MSC/ PCL	18CPTMW14_01 1023 1/10/23	18CPTMW15_12212 2 12/21/22	18CPTMW16_01 1123 1/11/23	18CPTMW18_12 2222 12/22/22	18CPTMW19_12 2122 12/21/22	18CPTMW22R_1 21522 12/15/22	18CPTMW22SW_ 121522 12/15/22	18CPTMW23_122 122 12/21/22	18CPTMW24_122 222 12/22/22	18WW02_01102 3 1/10/23	18WW06_011023 1/10/23	18WW08_122122 12/21/22	18WW10_011023 1/10/23	18WW17_12222 2 12/22/22	18WW22_122222 12/22/22	18WW24_122122 12/21/22
Location Description:			Site 18/24-SE, outside the fence line, along the road surrounding the fence line.	Site 18/24- NW, outside the fence line	Site 18/24 - NW, outside the fence line, near Harrison Bayou	Site 18/24-NE, outside the fence line, in the woods	Site 18/24-N outside of the fence line	Site 18/24-S. outside the fence line, along the outer loop road	Site 18/24-S. outside the fence line, along the outer loop road	Site 18/24 -NW, outside the fence line, near the road surrounding the fence line	Site 18/24 - E, outside the fence line, on the road surrounding the fence line	Site 18/24-NW, outside the fence line Wilcox Well	Site 18/24- W. just outside the fence line	Site 18/24-NNW, outside the fence line	Site 18/24-W, ousitde the fence line	Site 18/24-NE, outside the fence line. Outer region.	Site 18/24-NE, outside the fence line, in the woods	Site 18/24-WNW, outside the fence line, in the woods
Aquifer Zone:			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox	Shallow	Shallow	Wilcox	Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow
sec-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Styrene	µg/L	100	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
tert-Butylbenzene	µg/L	4,100	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Tetrachloroethene	µg/L	5	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Toluene	µg/L	1,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,2-Dichloroethene	µg/L	100	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
trans-1,3-Dichloropropene	µg/L	29	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Trichloroethene	µg/L	5	**2,500**	**1.5**	NA	< 1.0 U	< 1.0 U	< 1.0 U	**1.3**	**1,300**	**22**	< 1.0 U	< 1.0 U	**11**	< 1.0 U	**73**	< 1.0 U	**0.58 J**
Trichlorofluoromethane	µg/L	31,000	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U
Vinyl chloride	µg/L	2	< 10 U	< 1.0 U	NA	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 10 U	**35**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**6.8**	< 1.0 U	< 1.0 U
Metals (6020A/7470A)																		
Aluminum	mg/L	100	**0.0819**	NA	NA	**0.0152**	NA	**2.92**	**0.120**	NA	**0.0102**	**0.0652**	NA	NA	NA	**0.0104**	**0.199**	**0.167**
Antimony	mg/L	0.006	< 0.00125 U	NA	NA	< 0.00125 U	NA	< 0.00125 U	**0.000486 J**	NA	< 0.00125 U	< 0.00125 U	NA	NA	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U
Arsenic	mg/L	0.01	**0.00156 J**	NA	NA	**0.00114 J**	NA	**0.000808 J**	**0.00133 J**	NA	**0.00640**	**0.000420 J**	NA	NA	NA	**0.00241 J**	**0.00224 J**	**0.000699 J**
Barium	mg/L	2	**3.33**	NA	NA	**0.575**	NA	**0.0682**	**0.307**	NA	**9.26**	**0.0393**	NA	NA	NA	**3.19**	**0.0427**	**0.0623**
Beryllium	mg/L	0.004	< 0.000500 U	NA	NA	< 0.000500 U	NA	**0.000381 J**	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA	NA	< 0.000500 U	< 0.000500 U	**0.000347 J**
Cadmium	mg/L	0.005	**0.000256 J**	NA	NA	**0.000270 J**	NA	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA	NA	**0.000447 J**	< 0.000500 U	**0.000439 J**
Calcium	mg/L	NV	**352**	NA	NA	**279**	NA	**0.584**	**65.0**	NA	**373**	**6.68**	NA	NA	NA	**335**	**8.51**	**54.0**
Chromium	mg/L	0.1	**0.00633**	NA	NA	**0.00252 J**	NA	**0.00340 J**	**0.0596**	NA	**0.00234 J**	**0.0126**	NA	NA	NA	**0.686**	**0.0235**	**0.00131 J**
Cobalt	mg/L	6.1	**0.00242 J**	NA	NA	**0.0158**	NA	**0.00574**	< 0.000500 U	NA	**0.00277 J**	**0.000108 J**	NA	NA	NA	**0.00626**	**0.000226 J**	**0.0158**
Copper	mg/L	1.3	< 0.00250 U	NA	NA	< 0.00250 U	NA	**0.00262 J**	**0.00130 J**	NA	< 0.00250 U	< 0.00250 U	NA	NA	NA	**0.467**	< 0.00250 U	**0.00167 J**
Iron	mg/L	NV	**0.177 J**	NA	NA	**0.622**	NA	**2.23**	**0.0537 J**	NA	**6.66**	**0.811**	NA	NA	NA	**8.67**	**0.0457 J**	**0.256**
Lead	mg/L	0.015	< 0.00125 U	NA	NA	< 0.00125 U	NA	**0.00114 J**	< 0.00125 U	NA	< 0.00125 U	< 0.00125 U	NA	NA	NA	**0.0203**	< 0.00125 U	< 0.00125 U
Magnesium	mg/L	NV	**107**	NA	NA	**194**	NA	**0.831**	**1.52**	NA	**244**	**1.25**	NA	NA	NA	**216**	**1.12**	**44.6**
Manganese	mg/L	1.1*	**0.137**	NA	NA	**2.33**	NA	**0.0377**	**0.0206**	NA	**0.411**	**0.0821**	NA	NA	NA	**0.137**	**0.00137 J**	**3.66**
Nickel	mg/L	0.49*	**0.00275 J**	NA	NA	**0.0131**	NA	**0.00399 J**	**0.000757 J**	NA	**0.00445 J**	**0.0116**	NA	NA	NA	**0.415**	< 0.00125 U	**0.0865**
Potassium	mg/L	NV	**8.99**	NA	NA	**2.95**	NA	**0.387**	**239**	NA	**2.60**	**1.88**	NA	NA	NA	**1.71**	**3.46**	**0.736**
Selenium	mg/L	0.05	< 0.00250 U	NA	NA	< 0.00250 U	NA	< 0.00250 U	< 0.00250 U	NA	< 0.00250 U	< 0.00250 U	NA	NA	NA	**0.00204 J**	< 0.00250 U	< 0.00250 U
Silver	mg/L	0.51	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	< 0.00500 U	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U
Sodium	mg/L	NV	**621**	NA	NA	**797**	NA	**19.5**	**260**	NA	**979**	**32.3**	NA	NA	NA	**1,120**	**45.8**	**711**
Thallium	mg/L	0.002	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U
Vanadium	mg/L	0.72	**0.00117 J**	NA	NA	**0.000761 J**	NA	**0.00576**	**0.00193 J**	NA	**0.000972 J**	**0.00174 J**	NA	NA	NA	**0.00760**	**0.0205**	**0.00105 J**
Zinc	mg/L	31	**0.00559**	NA	NA	**0.0130**	NA	**0.00885**	**0.00466 J**	NA	**0.00576**	**0.00351 J**	NA	NA	NA	**2.26**	< 0.00250 U	**0.0399**
Mercury	mg/L	0.002	< 0.000100 U	NA	NA	< 0.000100 U	NA	< 0.000100 U	< 0.000100 U	NA	< 0.000100 U	< 0.000100 U	NA	NA	NA	**0.0000340 J**	< 0.000100 U	< 0.000100 U
1,4-Dioxane (8270 SIM)																		
1,4-Dioxane	µg/L	9.1	**0.46**	**0.044**	**0.010**	**0.015**	**0.093**	**0.055**	**0.31**	**0.28**	**0.013**	**0.19**	**0.051**	**0.089**	**0.098**	NA	**0.019**	NA

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No Value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

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

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

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

UB- Artifact of blank contamination

Table 6. LHAAP-18/24 Analytical Results - December 2022/January 2023

Sample Identification and Sample Date:	Units	MCL/MSC/ PCL	CO3_122222 12/22/22	CO8_011023 1/10/23	CO9_010923 1/9/23	CO9_010923_a 1/9/23	MW2_121622 12/16/22	MW3_122122 12/21/22	MW5_121522 12/15/22	MW7_010923 1/9/23	MW8_010923 1/9/23	MW9_010923 1/9/23	MW10_010923 1/9/23	MW14_122022 12/20/22	MW16_011123 1/11/23	MW16_011123_a 1/11/23	MW17_011123 1/11/23	MW17_011123 _a 1/11/23
Location Description:			Site 18/24 - NE, outside the fence line, along the outer loop road	Site 18/24 - E, outside the fence line, along the road heading east-northeast.	Site 18/24 - E, outside the fence line to the south, along Long Point Road		Site 18/24 -West of MW-2, SW of UEP Duplicate	Site 18/24 - N, inside the fence line	Site 18/24 - NNW, inside the fence line	Site 18/24 - SW, outside the fence line, along the road surrounding the fence line	Site 18/24 - SW, outside the fence line	Site 18/24 - WSW, outside the fence line, along the road surrounding the fence line	Site 18/24 -W, outside the fence line, along the outer loop road	LHAAP-18/24-inside containment	Site 18/24-W, outside the fence line, along the road surrounding the fence line		Site 18/24 - W, outside the fence line, along the outer loop road	
Aquifer Zone:			Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox	Shallow	Shallow	Shallow	Shallow
Lab Package:			HS22121478-06	HS23010489-09	HS23010411-08	HS23010411-09	HS22121096-03	HS22121494-03	HS22120986-01	HS23010411-03	HS23010411-04	HS23010411-05	HS23010411-06	HS22121316-04	HS23010632-02	HS23010632-03	HS23010632-04	HS23010632-05
Well Identification:			C-03	C-08	C-09	C-09	MW-2	MW-3	MW-5	MW-7	MW-8	MW-9	MW-10	MW-14	MW-16	MW-16	MW-17	MW-17
Perchlorate (6850)																		
Perchlorate	µg/L	17*	**8.54**	**3.46**	**0.0391 J**	< 0.200 U	< 0.0500 U	**2,390**	**22,100**	**14,200**	**2,860**	**1,240**	< 0.0500 U	**24,400**	< 0.0500 U	< 0.0500 U	< 0.0500 U	< 0.0500 U
Volatile Organic Compounds (8260C)																		
1,1,1,2-Tetrachloroethane	µg/L	110	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,1,1-Trichloroethane	µg/L	200	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,1,2,2-Tetrachloroethane	µg/L	14	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,1,2-Trichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,1-Dichloroethane	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**20 J**	< 5.0 U	**2.8**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**15 J**	**0.41 J**	**0.48 J**	NA	NA
1,1-Dichloroethene	µg/L	7	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**64**	**3.0**	**2.8**	NA	NA
1,1-Dichloropropene	µg/L	2.9	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,2,3-Trichlorobenzene	µg/L	310	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,2,3-Trichloropropane	µg/L	0.041	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,2,4-Trichlorobenzene	µg/L	70	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,2,4-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**13 J**	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,2-Dibromoethane	µg/L	0.05	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,2-Dichlorobenzene	µg/L	600	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,2-Dichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	**18**	**3.6**	**1.1**	< 1.0 U	**37**	**15**	**15**	NA	NA
1,2-Dichloropropane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,3,5-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,3-Dichlorobenzene	µg/L	3,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	**0.50 J**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,3-Dichloropropane	µg/L	29	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
1,4-Dichlorobenzene	µg/L	75	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
2,2-Dichloropropane	µg/L	42	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
2-Butanone	µg/L	61,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
2-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
2-Hexanone	µg/L	6,100	< 1.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 25 U	< 5.0 U	< 1.0 U	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 1.0 UJ	< 25 U	< 1.0 U	< 1.0 U	NA	NA
4-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
4-Isopropyltoluene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
4-Methyl-2-pentanone	µg/L	8,200	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Acetone	µg/L	92,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Benzene	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	**3.0**	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Bromobenzene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Bromochloromethane	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Bromodichloromethane	µg/L	4.6	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Bromoform	µg/L	36	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Bromomethane	µg/L	140	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Carbon disulfide	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Carbon tetrachloride	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	**3.7**	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Chlorobenzene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Chloroethane	µg/L	41,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Chloroform	µg/L	1,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**43**	< 5.0 U	< 1.0 U	**11**	< 1.0 U	**1.1**	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Chloromethane	µg/L	220	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
cis-1,2-Dichloroethene	µg/L	70	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**30,000**	**29**	**10**	**14**	**18**	**44**	< 1.0 U	**1,700**	**8.6**	**8.8**	NA	NA
cis-1,3-Dichloropropene	µg/L	5.3	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Dibromochloromethane	µg/L	34	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Dibromomethane	µg/L	380	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Dichlorodifluoromethane	µg/L	20,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Ethylbenzene	µg/L	700	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**15 J**	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Hexachlorobutadiene	µg/L	20	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Isopropylbenzene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
m,p-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**17 J**	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Methylene chloride	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**130**	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Naphthalene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
n-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
n-Propylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
o-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA

Table 6. LHAAP-18/24 Analytical Results - December 2022/January 2023

Sample Identification and Sample Date:	Units	MCL/MSC/ PCL	CO3_122222 12/22/22	CO8_011023 1/10/23	CO9_010923 1/9/23	CO9_010923_a 1/9/23	MW2_121622 12/16/22	MW3_122122 12/21/22	MW5_121522 12/15/22	MW7_010923 1/9/23	MW8_010923 1/9/23	MW9_010923 1/9/23	MW10_010923 1/9/23	MW14_122022 12/20/22	MW16_011123 1/11/23	MW16_011123_a 1/11/23	MW17_011123 1/11/23	MW17_011123 _a 1/11/23
Location Description:			Site 18/24 - NE, outside the fence line, along the outer loop road	Site 18/24 - E, outside the fence line, along the road heading east-northeast.	Site 18/24 - E, outside the fence line to the south, along Long Point Road		Site 18/24 -West of MW-2, SW of UEP Duplicate	Site 18/24 - N, inside the fence line	Site 18/24 - NNW, inside the fence line	Site 18/24 - SW, outside the fence line, along the road surrounding the fence line	Site 18/24 - SW, outside the fence line	Site 18/24 - WSW, outside the fence line, along the road surrounding the fence line	Site 18/24 -W, outside the fence line, along the outer loop road	LHAAP-18/24-inside containment	Site 18/24-W, outside the fence line, along the road surrounding the fence line		Site 18/24 - W, outside the fence line, along the outer loop road	
Aquifer Zone:			Wilcox	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Wilcox	Shallow	Shallow	Shallow	Shallow
sec-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Styrene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
tert-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Tetrachloroethene	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**30**	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Toluene	µg/L	1,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**21 J**	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
trans-1,2-Dichloroethene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**65**	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
trans-1,3-Dichloropropene	µg/L	29	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Trichloroethene	µg/L	5	< 1.0 U	**3.1**	< 1.0 U	< 1.0 U	**3,500**	**200**	**40**	**1,800**	**290**	**970**	**0.65 J**	**5,500**	**230**	**230**	NA	NA
Trichlorofluoromethane	µg/L	31,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 5.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Vinyl chloride	µg/L	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**20 J**	**14**	**5.3**	**1.2**	< 1.0 U	< 1.0 U	< 1.0 U	< 25 U	< 1.0 U	< 1.0 U	NA	NA
Metals (6020A/7470A)																		
Aluminum	mg/L	100	NA	**0.0861**	**0.0340**	**0.0263**	**0.0134**	**0.00734 J**	0.00795 UB	NA	NA	**0.0162**	NA	**0.0518**	NA	NA	NA	NA
Antimony	mg/L	0.006	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA	NA	< 0.00125 U	NA	< 0.00125 U	NA	NA	NA	NA
Arsenic	mg/L	0.01	NA	**0.000647 J**	< 0.00125 U	< 0.00125 U	**0.0181**	**0.000404 J**	< 0.00125 U	NA	NA	< 0.00125 U	NA	**0.00228 J**	NA	NA	NA	NA
Barium	mg/L	2	NA	**2.67**	**1.17**	**1.22**	**4.32**	**0.260**	**0.958**	NA	NA	**0.0825**	NA	**0.223**	NA	NA	NA	NA
Beryllium	mg/L	0.004	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	**0.000324 J**	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	**0.000638 J**	NA	NA	NA	NA
Cadmium	mg/L	0.005	NA	< 0.000500 U	**0.000373 J**	**0.000368 J**	< 0.000500 U	< 0.000500 U	**0.000841 J**	NA	NA	< 0.000500 U	NA	**0.000964 J**	NA	NA	NA	NA
Calcium	mg/L	NV	NA	**175**	**372**	**383**	**94.6**	**18.0**	**20.4**	NA	NA	**7.11**	NA	**87.5**	NA	NA	NA	NA
Chromium	mg/L	0.1	NA	< 0.00125 U	**0.00649**	**0.00660**	**0.0201**	**0.00105 J**	**0.346**	NA	NA	**0.0553**	NA	**0.0126**	NA	NA	NA	NA
Cobalt	mg/L	6.1	NA	**0.00177 J**	**0.00236 J**	**0.00248 J**	**0.214**	**0.00206 J**	**0.00454 J**	NA	NA	**0.00164 J**	NA	**0.0481**	NA	NA	NA	NA
Copper	mg/L	1.3	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	< 0.00250 U	**0.00336 J**	NA	NA	**0.00198 J**	NA	< 0.00250 U	NA	NA	NA	NA
Iron	mg/L	NV	NA	**1.20**	**0.783**	**0.851**	**36.2**	**0.175 J**	**2.14**	NA	NA	**0.411**	NA	**116**	NA	NA	NA	NA
Lead	mg/L	0.015	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	NA	NA	< 0.00125 U	NA	< 0.00125 U	NA	NA	NA	NA
Magnesium	mg/L	NV	NA	**92.1**	**192**	**198**	**69.8**	**9.75**	**21.4**	NA	NA	**3.16**	NA	**46.1**	NA	NA	NA	NA
Manganese	mg/L	1.1*	NA	**0.178**	**0.229**	**0.252**	**13.3**	**1.23**	**0.113**	NA	NA	**0.0825**	NA	**3.00**	NA	NA	NA	NA
Nickel	mg/L	0.49*	NA	**0.00163 J**	**0.110**	**0.120**	**0.155**	**0.00392 J**	**0.230**	NA	NA	**0.0321**	NA	**0.122**	NA	NA	NA	NA
Potassium	mg/L	NV	NA	**1.78**	**1.34**	**1.44**	**3.21**	**1.18**	**2.09**	NA	NA	**0.285**	NA	**8.84**	NA	NA	NA	NA
Selenium	mg/L	0.05	NA	< 0.00250 U	< 0.00250 U	< 0.00250 U	**0.00119 J**	< 0.00250 U	< 0.00250 U	NA	NA	< 0.00250 U	NA	< 0.00250 U	NA	NA	NA	NA
Silver	mg/L	0.51	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	NA	NA	NA	NA
Sodium	mg/L	NV	NA	**478**	**564**	**581**	**265**	**191**	**105**	NA	NA	**15.6**	NA	**238**	NA	NA	NA	NA
Thallium	mg/L	0.002	NA	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	< 0.000500 U	NA	NA	< 0.000500 U	NA	< 0.000500 U	NA	NA	NA	NA
Vanadium	mg/L	0.72	NA	< 0.00125 U	< 0.00125 U	< 0.00125 U	< 0.00125 U	**0.000818 J**	**0.00150 J**	NA	NA	**0.000740 J**	NA	< 0.00125 U	NA	NA	NA	NA
Zinc	mg/L	31	NA	**0.00551**	**0.0190 J**	**0.00908 J**	**0.0431**	**0.00246 J**	**0.0204**	NA	NA	**0.00564**	NA	**1.49**	NA	NA	NA	NA
Mercury	mg/L	0.002	NA	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 U	< 0.000100 UJ	NA	NA	< 0.000100 U	NA	< 0.000100 U	NA	NA	NA	NA
1,4-Dioxane (8270 SIM)																		
1,4-Dioxane	µg/L	9.1	**0.027**	**0.036**	NA	NA	**1.8**	NA	**0.44**	**2.2 J**	**0.55 J**	**0.64 J**	**0.059**	**63**	**1.4 J**	**1.2 J**	**0.028 J**	**0.10 J**

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No Value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

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

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

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

UB- Artifact of blank contamination

Table 6. LHAAP-18/24 Analytical Results - December 2022/January 2023

Sample Identification and Sample Date:	Units	MCL/MSC/ PCL	MW18_010923 1/9/23	MW19_011023 1/10/23	MW19_011023_a 1/10/23	MW20_121522 12/15/22	MW21_122122 12/21/22	MW22_011023 1/10/23	MW23_122022 12/20/22	109_122122 12/21/22	120_122022 12/20/22	125_122222 12/22/22	126_011123 1/11/23
Location Description:			Site 18/24 - SW, outside the fence line, along the outer loop road	Site 18/24-SSW, outside the fence line, along the outer loop road		Site 18/24- S, outside the fence line, along the outer loop road	Site 18/24 - E, along the fence line	Site 18/24-ESE, inside the fence line	Site 18/24-S, inside the fence line	Site 18/24-NE, just inside the fence line	Site 18/24- W, inside the fence line, outer region	Site 18/24-NW, outside the fence line, long the outer loop road	Site 18/24 0 Northwest of the Groundwater Treatment Plant, along the road
Aquifer Zone:			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
Lab Package:			HS23010411-07	HS23010489-06	HS23010489-07	HS22120986-08	HS22121494-02	HS23010489-02	HS22121316-05	HS22121494-01	HS22121316-03	HS22121478-08	HS23010632-01
Well Identification:			MW-18	MW-19	MW-19	MW-20	MW-21	MW-22	MW-23	109	120	125	126
Perchlorate (6850)													
Perchlorate	µg/L	17*	< 0.0500 U	< 0.0500 U	< 0.0500 U	**0.514**	**6,220**	**1,460**	**72,900**	**11,100**	**22,400**	**3,210**	< 0.250 U
Volatile Organic Compounds (8260C)													
1,1,1,2-Tetrachloroethane	µg/L	110	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,1,1-Trichloroethane	µg/L	200	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,1,2,2-Tetrachloroethane	µg/L	14	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,1,2-Trichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**11**	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,1-Dichloroethane	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**5.7**	< 1.0 U	< 10 U	< 10 U	**21 J**	< 5.0 U	< 1.0 U
1,1-Dichloroethene	µg/L	7	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	**110**	< 5.0 U	< 1.0 U
1,1-Dichloropropene	µg/L	2.9	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,2,3-Trichlorobenzene	µg/L	310	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,2,3-Trichloropropane	µg/L	0.041	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,2,4-Trichlorobenzene	µg/L	70	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,2,4-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,2-Dibromo-3-chloropropane	µg/L	0.2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,2-Dibromoethane	µg/L	0.05	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,2-Dichlorobenzene	µg/L	600	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,2-Dichloroethane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**25**	**7.7**	**83**	< 10 U	**43**	< 5.0 U	< 1.0 U
1,2-Dichloropropane	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,3,5-Trimethylbenzene	µg/L	5,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,3-Dichlorobenzene	µg/L	3,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,3-Dichloropropane	µg/L	29	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
1,4-Dichlorobenzene	µg/L	75	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
2,2-Dichloropropane	µg/L	42	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
2-Butanone	µg/L	61,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
2-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
2-Hexanone	µg/L	6,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
4-Chlorotoluene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
4-Isopropyltoluene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
4-Methyl-2-pentanone	µg/L	8,200	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Acetone	µg/L	92,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Benzene	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	**1.5**	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Bromobenzene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Bromochloromethane	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Bromodichloromethane	µg/L	4.6	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Bromoform	µg/L	36	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Bromomethane	µg/L	140	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Carbon disulfide	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Carbon tetrachloride	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Chlorobenzene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Chloroethane	µg/L	41,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Chloroform	µg/L	1,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**13**	**3.3**	**11**	< 10 U	**21 J**	< 5.0 U	< 1.0 U
Chloromethane	µg/L	220	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
cis-1,2-Dichloroethene	µg/L	70	< 1.0 U	**3.8**	**3.7**	< 1.0 U	**2,600**	**5.2**	**23**	**580**	**1,500**	< 5.0 U	< 1.0 U
cis-1,3-Dichloropropene	µg/L	5.3	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Dibromochloromethane	µg/L	34	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Dibromomethane	µg/L	380	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Dichlorodifluoromethane	µg/L	20,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Ethylbenzene	µg/L	700	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Hexachlorobutadiene	µg/L	20	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Isopropylbenzene	µg/L	10,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
m,p-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Methylene chloride	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	**22**	< 10 U	**42 J**	**8.5 J**	< 1.0 U
Naphthalene	µg/L	2,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
n-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
n-Propylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
o-Xylene	µg/L	10,000**	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U

Table 6. LHAAP-18/24 Analytical Results - December 2022/January 2023

Sample Identification and Sample Date:	Units	MCL/MSC/ PCL	MW18_010923 1/9/23	MW19_011023 1/10/23	MW19_011023_a 1/10/23	MW20_121522 12/15/22	MW21_122122 12/21/22	MW22_011023 1/10/23	MW23_122022 12/20/22	109_122122 12/21/22	120_122022 12/20/22	125_122222 12/22/22	126_011123 1/11/23
Location Description:			Site 18/24 - SW, outside the fence line, along the outer loop road	Site 18/24-SSW, outside the fence line, along the outer loop road		Site 18/24- S, outside the fence line, along the outer loop road	Site 18/24 - E, along the fence line	Site 18/24-ESE, inside the fence line	Site 18/24-S, inside the fence line	Site 18/24-NE, just inside the fence line	Site 18/24- W, inside the fence line, outer region	Site 18/24-NW, outside the fence line, long the outer loop road	Site 18/24 0 Northwest of the Groundwater Treatment Plant, along the road
Aquifer Zone:			Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow	Shallow
sec-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Styrene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
tert-Butylbenzene	µg/L	4,100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Tetrachloroethene	µg/L	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	**0.74 J**	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Toluene	µg/L	1,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
trans-1,2-Dichloroethene	µg/L	100	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**12**	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
trans-1,3-Dichloropropene	µg/L	29	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Trichloroethene	µg/L	5	**6.0**	**2.9**	**3.1**	< 1.0 U	**6,400**	**500**	**3,700**	**1,200**	**9,100**	< 5.0 U	< 1.0 U
Trichlorofluoromethane	µg/L	31,000	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 5.0 U	< 1.0 U	< 10 U	< 10 U	< 25 U	< 5.0 U	< 1.0 U
Vinyl chloride	µg/L	2	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	**41**	< 1.0 U	< 10 U	**8.5 J**	**11 J**	< 5.0 U	< 1.0 U
Metals (6020A/7470A)													
Aluminum	mg/L	100	NA	**0.118**	**0.115**	NA	**0.0196**	**0.0118**	NA	NA	NA	**3.45**	**0.0463**
Antimony	mg/L	0.006	NA	< 0.00125 U	< 0.00125 U	NA	< 0.00125 U	**0.000497 J**	NA	NA	NA	< 0.00125 U	< 0.00125 U
Arsenic	mg/L	0.01	NA	**0.00120 J**	**0.00124 J**	NA	**0.000672 J**	**0.000620 J**	NA	NA	NA	**0.00408 J**	**0.0172**
Barium	mg/L	2	NA	**0.232**	**0.244**	NA	**5.40**	**0.774**	NA	NA	NA	**0.382**	**10.5**
Beryllium	mg/L	0.004	NA	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA	NA	**0.000780 J**	**0.000238 J**
Cadmium	mg/L	0.005	NA	**0.000665 J**	**0.000639 J**	NA	**0.000461 J**	< 0.000500 U	NA	NA	NA	**0.00161 J**	**0.000573 J**
Calcium	mg/L	NV	NA	**147**	**147**	NA	**144**	**82.1**	NA	NA	NA	**4.29**	**328**
Chromium	mg/L	0.1	NA	**0.0728**	**0.0708**	NA	**0.274**	**0.362**	NA	NA	NA	**0.00758**	**0.00218 J**
Cobalt	mg/L	6.1	NA	**0.00914**	**0.00939**	NA	**0.0415**	**0.00401 J**	NA	NA	NA	**0.00723**	**0.0199**
Copper	mg/L	1.3	NA	**0.00337 J**	**0.00325 J**	NA	**0.0172**	**0.00588**	NA	NA	NA	**0.00860**	< 0.00250 U
Iron	mg/L	NV	NA	**92.1**	**92.0**	NA	**4.88**	**3.28**	NA	NA	NA	**5.60**	**16.0**
Lead	mg/L	0.015	NA	< 0.00125 U	< 0.00125 U	NA	< 0.00125 U	< 0.00125 U	NA	NA	NA	**0.0129**	< 0.00125 U
Magnesium	mg/L	NV	NA	**84.8**	**85.9**	NA	**115**	**26.9**	NA	NA	NA	**3.66**	**264**
Manganese	mg/L	1.1*	NA	**2.94**	**3.03**	NA	**1.21**	**0.139**	NA	NA	NA	**0.182**	**0.182**
Nickel	mg/L	0.49*	NA	**0.0713**	**0.0742**	NA	**0.450**	**0.392**	NA	NA	NA	**0.00960**	**0.0143**
Potassium	mg/L	NV	NA	**4.96**	**5.04**	NA	**2.24**	**1.87**	NA	NA	NA	**1.01**	**3.86**
Selenium	mg/L	0.05	NA	< 0.00250 U	< 0.00250 U	NA	< 0.00250 U	< 0.00250 U	NA	NA	NA	**0.00141 J**	< 0.00250 U
Silver	mg/L	0.51	NA	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	< 0.000500 U	NA	NA	NA	< 0.000500 U	< 0.000500 U
Sodium	mg/L	NV	NA	**1,270**	**1,300**	NA	**433**	**360**	NA	NA	NA	**35.5**	**891**
Thallium	mg/L	0.002	NA	< 0.000500 U	< 0.000500 U	NA	< 0.000500 U	**0.000367 J**	NA	NA	NA	< 0.000500 U	< 0.000500 U
Vanadium	mg/L	0.72	NA	< 0.00125 U	< 0.00125 U	NA	**0.00217 J**	**0.00126 J**	NA	NA	NA	**0.0116**	**0.00243 J**
Zinc	mg/L	31	NA	**0.0115**	**0.0115**	NA	**0.0161**	< 0.00250 U	NA	NA	NA	**0.043**	**0.0298**
Mercury	mg/L	0.002	NA	< 0.000100 U	< 0.000100 U	NA	< 0.000100 U	< 0.000100 U	NA	NA	NA	< 0.000100 U	< 0.000100 U
1,4-Dioxane (8270 SIM)													
1,4-Dioxane	µg/L	9.1	NA	NA	NA	NA	**0.80**	NA	NA	**0.20**	**26**	NA	**0.02**

Notes:

Blue highlighting indicates concentrations above the MCL/MSC/PCL

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations/Protective Concentration Level

NA - Not Analyzed/Not Applicable; NV - No Value

µg/L - micrograms per liter; mg/L - milligrams per liter

a - duplicate sample

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

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected at the limit of detection presented.

*Perchlorate, manganese, and nickel compared to the PCL

** Value is for total xylenes

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

UB- Artifact of blank contamination

Table 7. Weekly Perchlorate Sample Results
1st Quarter 2023 Groundwater Treatment Plant Report
Longhorn Army Ammunition Plant

Sample Identification	Lab Package	Date Sampled	Sample Location	Harrison Bayou Maximum Allowable Daily Discharge Perchlorate Concentration (µg/L)	INF Pond Discharge Criteria for Perchlorate (µg/L)	Reporting Limit	Influent Perchlorate (6850)	Effluent Perchlorate (6850)	Does Concentration Meet Discharge Limit? (Yes/No)	No Daily Maximum Concentration		
							Result (µg/L)	Result (µg/L) BIX/AIX		Ammonia as N (350.3) (mg/L)	Ortho-Phosphate (365.3) (mg/L)	Organic Carbon (415.1) (mg/L)
LH18/24-SP650_012523_BIX/AIX	E2300080	1/25/2023	TK-650	589	17	0.1	NA	**54.6/0.392**	Yes	--	--	--
LH18/24-SP650_020723_BIX/AIX	E2300128	2/7/2023	TK-650	589	17	0.1	NA	**0.497/0.383**	Yes	--	--	--
LH18/24-SP650_022423_BIX/AIX	E2300178	2/24/2023	TK-650	589	17	0.1	NA	**1660/1.84**	Yes	--	--	--
LH18/24-SP650_030723_BIX/AIX	HS23030401	3/7/2023	TK-650	589	17	0.1	NA	**3420/39.2**	No	**31**	**4.46**	**17.6**
LH18/24-SP650_030723_AIX (monthly)	HS23030396	3/7/2023	TK-650	589	17	0.1	NA	**NA/9.22**	Yes	--	--	--
LH18/24-SP140_030723 (monthly)	HS23030399	3/7/2023	TK-140	--	--	NA	**12,600**	NA	NA	--	--	--
LH18/24-SP650_031423_BIX/AIX	HS23030817	3/14/2023	TK-650	589	17	0.1	NA	**24/0.0764 J**	Yes	**15**	**8.27**	**12**
LH18/24-SP650_032123_BIX/AIX	HS23031257	3/21/2023	TK-650	589	17	0.1	NA	**26.1/0.0858 J**	Yes	**6.9**	**2.72**	**2.90 J**
LH18/24-SP650_032123_AIX (quarterly)	HS23031291	3/21/2023	TK-650	589	17	0.1	NA	**NA/0.0471**	Yes	--	--	--
LH18/24-SP140_032123 (quarterly)	HS23031294	3/21/2023	TK-140	--	--	NA	**16,700**	NA	NA	--	--	--
LH18/24-SP650_032823_BIX/AIX	HS23031702	3/28/2023	TK-650	589	17	0.1	NA	**2.35/0.0593 J**	Yes	**1.2**	**3.88**	**7.23 J**

Notes:

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

SP140 samples are influent samples.

µg/L - micrograms per liter

J - Estimated concentration between the detection limit and limit of quantitation and/or due to quality control discrepancies

Detected analytes are in bold.

Red font indicates concentrations above the INF Pond Discharge Criteria for Perchlorate

NA - Not Applicable

BIX - Before ion exchange/AIX - After ion exchange

mg/L - milligrams per liter

Table 8. Bi-Weekly GWTP Analytical Sampling Results for March 2023
1st Quarter 2023 Groundwater Treatment Plant Report
Longhorn Army Ammunition Plant

Sample Location				EFFLUENT - Monthly		INFLUENT - Monthly*		EFFLUENT - Biweekly		EFFLUENT - Biweekly		Does Concentration Meet Effluent Discharge Limits? (Yes/No)
Sample Identification				LH18/24-SP650_030723		LH18/24-SP140_030723		LH18/24-SP650_031423		LH18/24-SP650_032823		
Lab Package				HS23030396		HS23030399		HS23030818		HS23031739		
Sample Date				3/7/2023		3/7/2023		3/14/2023		3/28/2023		
Sample Type				GRAB		GRAB		GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L) per Table 2 of ROD			Result	DVQ	Result	DVQ	Result	DVQ	Result	DVQ	
	Daily Average Concentration	Daily Maximum Concentration	INF Pond MCL									
VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**								
1,1,1-Trichloroethane	3,417	7,230	200	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
1,1,2-Trichloroethane	102.5	216.9	5	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
1,1-Dichloroethane	6,633	14,032	NV	< 1.0	U	NA		< 1.0	U	< 1.0	UJ	Yes
1,1-Dichloroethene	119	253	7	< 1.0	U	NA		< 1.0	U	< 1.0	UJ	Yes
1,2-Dichloroethane	85	181	5	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
1,2-Dichloropropane	NV	NV	5	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Acetone	1,132	2,395	NV	< 1.0	U	NA		< 1.0	U	< 1.0	UJ	Yes
Benzene	85	181	5	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Carbon Tetrachloride	85	181	5	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Chlorobenzene	22,300	47,180	100	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Chloroform	1,708	3,615	NV	< 1.0	U	NA		< 1.0	U	< 1.0	UJ	Yes
cis-1,2-Dichloroethene	NV	NV	70	**1.7**		NA		**1.4**		**1.2**	J	Yes
Ethylbenzene	26,954	57,025	700	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
m,p-Xylenes	39.5	83.6	NV	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Methylene Chloride	803	1,699	5	< 1.0	U	NA		< 1.0	U	< 1.0	UJ	Yes
o-Xylene	39.5	83.6	NV	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Styrene	2,829	5,987	100	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Tetrachloroethene	85.4	180.7	5	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Toluene	1,980	4,189	10	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Trichloroethene	85	181	5	< 1.0	U	NA		< 1.0	U	< 1.0	U	Yes
Vinyl Chloride	34	72	2	< 1.0	U	NA		< 1.0	U	< 1.0	UJ	Yes
ANIONS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Chloride	NV	NV	NV	NA		NA		**763**		**871**		NA
Sulfate	NV	NV	NV	NA		NA		**45.9**		**33.1**		NA
PERCHLORATE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
Perchlorate**	278	589	17	**9.22**		**12,600**		NA		NA		Yes
METALS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		**mg/L**		**mg/L**		
Hexavalent Chromium	0.058	0.124	NV	< 0.00600	U	< 0.00600	U	NA		NA		Yes
Barium	1	2	2	**0.228**		NA		NA		NA		Yes
Lead	0.0022	0.0046	0.015	< 0.00125	U	NA		NA		NA		Yes
Selenium	0.0057	0.0120	0.05	< 0.00250	U	< 0.00250	U	NA		NA		Yes
Silver	0.0014	0.0030	0.1	< 0.000500	U	< 0.000500	U	NA		NA		Yes
SEMI-VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		**µg/L**		**µg/L**		
1,4-Dioxane***	NV	134.2	NV	**0.72**	J	NA		NA		NA		Yes

Notes:
µg/L - micrograms per liter
MCL - Maxiumum Contaminant Level
DVQ - Data Validation Qualifier
GWTP - Groundwater Treatment Plant
U - Non-detect reported to the limit of detection
UJ - Estimated non-detect due to quality control discrepancies
mg/L - milligrams per liter
J - Estimated concentration between the detection limit and limit of quantitation and/or due to quality control discrepancy
*Influent sample not compared to discharge limits
**Perchlorate is also collected weekly and reported on the Weekly Results Table
*** Calculated Effluent Limit
Grab samples are compared to the daily maximum
ROD - Record of Decision
NA - Not Applicable or Not Analyzed
NV - No Value

Table 9. Quarterly GWTP Analytical Sampling Results
1st Quarter 2023 Groundwater Treatment Plant Report
Longhorn Army Ammunition Plant

			Sample Location	EFFLUENT		INFLUENT*		Does Concentration Meet Discharge Limits? (Yes/No)
			Sample Identification	LH18/24-SP650_032123		LH18/24-SP140_032123		
			Lab Package	HS23031291		HS23031294		
			Sample Date	3/21/2023		3/21/2023		
			Sample Type	GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L) per Protocol			Result	DVQ	Result	DVQ	
	Daily Average Concentration	Daily Maximum Concentration	INF Pond MCL					
VOLATILES	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		
1,1,1-Trichloroethane	3,417	7,230	200	< 1.0	U	< 5.0	U	Yes
1,1,2-Trichloroethane	102.5	216.9	5	< 1.0	U	< 5.0	U	Yes
1,1-Dichloroethane	6,633	14,032	NV	< 1.0	UJ	**4.7**	J	Yes
1,1-Dichloroethene	119	253	7	< 1.0	U	< 5.0	U	Yes
1,2-Dichloroethane	85	181	5	< 1.0	U	**19**		Yes
1,2-Dichloropropane	NV	NV	5	< 1.0	U	< 5.0	U	Yes
Acetone	1,132	2,395	NV	< 1.0	U	< 5.0	U	Yes
Benzene	85	181	5	< 1.0	U	< 5.0	U	Yes
Carbon Tetrachloride	85	181	5	< 1.0	U	**3.6**	J	Yes
Chlorobenzene	22,300	47,180	100	< 1.0	U	< 5.0	U	Yes
Chloroform	1,708	3,615	NV	< 1.0	UJ	**6.0**		Yes
cis-1,2-dichloroethene	NV	NV	70	**0.87**	J	**1,200**		Yes
Ethylbenzene	26,954	57,025	700	< 1.0	U	< 5.0	U	Yes
m,p-Xylenes	39.5	83.6	NV	< 1.0	U	< 5.0	U	Yes
Methylene Chloride	803	1,699	5	< 1.0	UJ	**770**		Yes
o-Xylene	39.5	83.6	NV	< 1.0	U	< 5.0	U	Yes
Styrene	2,829	5,987	100	< 1.0	U	< 5.0	U	Yes
Tetrachloroethene	85.4	180.7	5	< 1.0	U	**16**		Yes
Toluene	1,980	4,189	10	< 1.0	U	< 5.0	U	Yes
Trichloroethene	85	181	5	< 1.0	U	**2,800**		Yes
Vinyl Chloride	34	72	2	< 1.0	U	**95**		Yes
ANIONS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
Chloride	NA	NA	NV	**800**		**337**		NA
Sulfate	NA	NA	NV	**47.3**		**43**		NA
PERCHLORATE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		
Perchlorate	278	589	17	**0.0471**		**16,700**		Yes
METALS	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
Aluminum	0.777	1.644	NV	**0.0125**		**0.0332**		Yes
Antimony	NV	NV	0.006	< 0.00125	U	**0.000407**	J	NA
Arsenic	0.365	0.772	0.01	< 0.00125	U	**0.000623**	J	Yes

Table 9. Quarterly GWTP Analytical Sampling Results
1st Quarter 2023 Groundwater Treatment Plant Report
Longhorn Army Ammunition Plant

			Sample Location	EFFLUENT		INFLUENT*		Does Concentration Meet Discharge Limits? (Yes/No)
			Sample Identification	LH18/24-SP650_032123		LH18/24-SP140_032123		
			Lab Package	HS23031291		HS23031294		
			Sample Date	3/21/2023		3/21/2023		
			Sample Type	GRAB		GRAB		
	Effluent Limitation for Discharge (µg/L) per Protocol			Result	DVQ	Result	DVQ	
	Daily Average Concentration	Daily Maximum Concentration	INF Pond MCL					
Barium	1	2	2	**0.0924**		**0.288**		Yes
Beryllium	NV	NV	0.004	< 0.000500	U	< 0.000500	U	NA
Cadmium	0.0016	0.0034	0.005	< 0.000500	U	< 0.000500	U	Yes
Calcium	NV	NV	NV	**12.5**		**33.2**		NA
Chromium	0.355	0.752	0.1	< 0.00125	U	< 0.00125	U	Yes
Cobalt	5.433	11.495	NV	**0.000558**	J	**0.00404**	J	Yes
Iron	1.132	2.395	NV	**0.316**		**0.219**		Yes
Lead	0.0022	0.0046	0.015	< 0.00125	U	< 0.00125	U	Yes
Magnesium	NV	NV	NV	**12.0**		**25.8**		NA
Manganese	7.323	15.494	NV	**0.0648**		**0.295**		Yes
Nickel	0.087	0.184	NV	**0.00350**	J	**0.00990**		Yes
Potassium	NV	NV	NV	**1.86**		**0.995**		NA
Selenium	0.0057	0.012	0.05	< 0.00250	U	< 0.00250	U	Yes
Silver	0.0014	0.003	NV	< 0.000500	U	< 0.000500	U	Yes
Sodium	NV	NV	NV	**574**		**167**		NA
Thallium	NV	NV	NV	**0.000335**	J	< 0.000500	U	NA
Vanadium	1.698	3.592	NV	< 0.00125	U	< 0.00125	U	Yes
Zinc	0.146	0.31	NV	**0.0111**		**0.0141**		Yes
Mercury	NV	NV	0.002	< 0.000100	U	< 0.000100	U	NA
1,4-DIOXANE	**µg/L**	**µg/L**	**µg/L**	**µg/L**		**µg/L**		
1,4-Dioxane	NV	134.2	NV	**1.3**	J	**1.2**	J	Yes
CHEMICAL OXYGEN DEMAND (COD)	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
COD	NV	200	NV	**25.0**		**20.0**		Yes
OIL AND GREASE (O&G)	**mg/L**	**mg/L**	**mg/L**	**mg/L**		**mg/L**		
O&G	NV	15	NV	**0.900**	J	< 1.00	U	Yes

Notes:

µg/L - micrograms per liter

DVQ - Data Validation Qualifier

MCL - Maximum Contaminant Level

Grab samples are compared to the daily maximum and composite samples to the daily average

* Only Effluent sample is compared to discharge limits

J - Estimated concentration between the detection limit and limit of quantitation and/or due to quality control discrepancy

U - Non-detect and reported to the limit of detection

UJ - Estimated non-detect due to quality control discrepancy

mg/L - milligrams per liter

GWTP - Groundwater Treatment Plant

NV - No Value

3 QUALITY CONTROL

This report summarizes the data for samples collected during January, February, and March 2023. The samples were reviewed and validated in accordance with the guidelines in the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, January 2017); *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, January 2017); and the quality control criteria specified in the *Basewide Uniform Federal Policy - Quality Assurance Project Plan Longhorn Army Ammunition Plant* which is in Appendix C of the *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant Karnack, Texas* (Bhate, May 2018).

The purpose of the sampling program is to evaluate the effectiveness of the groundwater pump and treatment system, assess water quality within the LHAAP-18/24 ICT containment area, and assure compliance with the Interim Remedial Action (USACE, May 1995) and the Memorandum for Record - Development of Proposed Discharge Limits for Perchlorate for the Groundwater Treatment Plant (AECOM, May 2017). Quality control and quality assurance problems noted in the case narratives received from the laboratory are minor and do not affect the usability of the data for compliance at the GWTP. No sample results from the 1st Quarter of 2023 were rejected due to quality control problems.

ALS Environmental analyzed the compliance samples collected from the GWTP. Independent data verification and validation was performed by the Bhate Project Chemist as described in the Quality Control Summary Report in **Appendix G**. The laboratory reports for the GWTP are included in **Appendix F**. Air monitoring data is presented in **Appendix H**.

This page intentionally left blank.

4 TREATED GROUNDWATER DISCHARGED

Reinjection of groundwater in ICT 6 and ICT 9 was discontinued as of 15 July 2012. The last reinjection occurred on 24 May 2012, immediately prior to the scrubber system malfunction which caused GWTP operation to cease temporarily.

Treated groundwater that met the Harrison Bayou Maximum Allowable Daily Discharge Perchlorate Concentration (589 µg/L) was discharged to the Harrison Bayou in accordance with the Protocol for Discharging GWTP Effluent (**Appendix I**). Although not a requirement, prior to discharge to the Harrison Bayou, treated groundwater was also processed through the IX vessels to ensure adequate perchlorate treatment. As discussed in Section 2.5, additional sample analyses were performed on the effluent samples to monitor the effectiveness of the perchlorate treatment after the FBR and IX processes to evaluate potential optimizations or maintenance requirements. Approximately, 398,731 gallons of treated groundwater was discharged from the GWTP to Harrison Bayou. While an additional 145,321 gallons of treated groundwater stored at the INF pond was discharged to Harrison Bayou. **Table 4** summarizes the daily volume of discharged groundwater from the GWTP or the INF Pond to the Harrison Bayou, the maximum flow rate allowed by chloride and sulfate concentrations, and the approximate volumes discharged for the 1st Quarter of 2023.

This page intentionally left blank.

5 AIR MONITORING

5.1 Summary of Air Monitoring Approach

Operation of the GWTP without air abatement was approved by the TCEQ and USEPA conditioned on collection of air monitoring data to determine the effect of GWTP operation on ambient air quality with respect to potential human health exposure risk. An Interim Air Monitoring Plan was developed by AECOM in August 2012 and used to implement the air monitoring program. The air monitoring program included sampling emission concentrations from the air stripper, ambient air at the GWTP, and ambient air downwind of the GWTP. Collection of air data occurred on a weekly basis from September 2012 through September 2013, on a monthly basis from September 2013 through September 2014, and on a quarterly basis since September 2014. The sampling program includes use of Summa canisters and a photoionization detector (PID) to measure vapor phase concentrations. The air stripper emission sample is collected as a grab sample while the ambient air samples are collected as composite samples. The GWTP sample is collected over 8 hours to represent a workday and the downwind sample is collected over 24 hours to represent potential exposure to an off-site receptor[1]. The downwind sample is collected at the closest downwind property boundary based on prevailing wind direction.

PID data (after system calibration) are collected each time the GWTP is operated and serve as a real-time indicator of ambient air conditions at and downwind of the GWTP. Correlations between definitive analytical air data and PID measurements were established and a method to calculate contaminant concentrations from PID measurements was developed. A PID threshold of 0.4 parts per million by volume in ambient air was established, such that Summa canister measurements would occur when the PID threshold is exceeded.

The Summa canister samples are analyzed for VOCs in accordance with USEPA Method TO-15 from the *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air – Second Edition* (EPA/625/R-96/010b), USEPA, January 1999. The PID measurements are collected after instrument calibration. The air sampling results are summarized and reported to the USEPA and TCEQ in the GWTP quarterly reports; however, the air results are reviewed immediately upon receipt for the potential presence of any exceedances of ambient air concentrations. **Appendix J** (**Tables 1 through 3**) includes a comparison of ambient air concentrations with TCEQ Air Monitoring Comparison Values (AMCVs) or the short-term Effects Screening Levels (ESLs) for chemicals with no published AMCVs, calculations of emission rates

[1] Off-site receptor - Any recreational area, residence, commercial/industrial facility, or other normally occupied structures not used solely by the owner or operator of the facilities or the owner of the site upon which the facilities are located. Measurements of distances to determine compliance with this distance restriction must be taken toward structures that are in use as of the date that a notification is filed with the commission.

from the emission point, and a compilation of PID results and calibration records. The air monitoring results to date indicate that all ambient air concentrations are lower than the AMCVs or ESLs. The stripper stack sample concentrations are used to calculate emission rates in pounds per hour (lbs/hr) and tons per year (tpy). The calculated emission rates in lbs/hr are then compared to the allowable emission rates per 30 Texas Administrative Code (TAC) Section (§)106.533(f)(1). The emission rates have been lower than the allowable emission rates to the conservatively-selected off-site receptor. The calculated emission rate in tpy is compared to the allowable limit of 5 tpy per chemical. All emission rates have been lower than the allowable emission rates.

The air monitoring results from the first few months of operation between September and November 2012 were compiled and submitted in a separate report (December 2012) (along with validated data) to TCEQ to demonstrate compliance with Texas Permit by Rule emission standards. Approval of the analytical results and concurrence that the site will continue to meet Title 30 TAC §106.533 without the use of air abatement using a catalytic oxidation system was obtained from the TCEQ via email on 22 February 2013.

On 18 February 2013, AECOM presented analysis of the approach applicable to obtaining a variance for operating the GWTP without air abatement equipment to the TCEQ and USEPA. The analysis indicated that the use of an Explanation of Significant Difference (ESD) was the appropriate approach for the site. Approval of use of an ESD was obtained from the USEPA via email on 21 March 2013. The ESD was developed, reviewed, and accepted by USEPA and TCEQ. The ESD was signed by the designated parties on 3 April 2014, and concurrence from the TCEQ was obtained in a letter dated 16 April 2014.

5.2 Air Monitoring Results for the 1st Quarter of 2023

During the 1st Quarter of 2023, air sampling was completed on 27 – 28 March 2023. The laboratory data package is presented in **Appendix H.** A summary of the air sampling results is presented in **Appendix J** (**Tables 1, 2,** and **3**). All results met the criteria described in Section 5.1.

5.2.1 Summa Canister Monitoring Results

Air sampling was conducted using Summa canisters on 27 – 28 March 2023. The samples were collected and analyzed as described in Section 5.1 and per the Interim Air Monitoring Plan (AECOM, August 2012). The analytical results were then compiled in spreadsheets where calculations were completed and comparisons to applicable criteria were made as described in Section 5.1.

5.2.1.1 Ambient Air Results

In March 2023, acetone; benzene; cis-1,2-DCE; TCE; VC; n-hexane; toluene; ethylbenzene; m,p-xylenes; o-xylene; propene (C3H6); dichlorodifluoromethane (CFC 12); ethanol; trichlorofluoromethane (CFC 11); trichlorotrifluoroethane (CFC 113); and alpha-pinene were detected in the ambient air at the GWTP.

Compounds originating at the GWTP would be expected to have lower concentrations in the downwind sampling location than at the GWTP sampling location. However, the fact that the compounds acetone; benzene; n-hexane; toluene; CFC 12; CFC 11; CFC 113, and alpha-pinene were detected in downwind ambient air, suggests that they are present in the ambient (background) air.

The ambient air results during the quarter met the ambient air criteria, as presented in **Table 1** within **Appendix J**.

5.2.1.2 Air Stripper Effluent Results

The VOCs present in groundwater that are removed via the air stripper include 1,1-DCE; 1,2-DCA; cis-1,2-DCE; MC; TCE; PCE; VC; CFC 12; and CFC 113. These compounds are frequently reported in groundwater at the site, with the exception of CFC 113 which is not typically a groundwater analyte at LHAAP. The compound CFC 113, however, appears to be present in groundwater as indicated by limited analysis conducted in December 2013, where it was detected in several wells, and from historical accounts. Many of the chemicals that are reported in ambient air are not detected in the air stripper effluent. This is likely because the reporting limit for the air stripper effluent is higher than the reporting limit for the ambient air samples or the source for some of these chemicals are extraneous to groundwater.

In March 2023, 1,1-DCA; 1,1-DCE; 1,2-DCA; chloroform; cis-1,2-DCE; PCE; trans-1,2-DCE; TCE; VC; and CFC 113 were detected in air stripper effluent. The highest concentrations were for cis-1,2-DCE; TCE; VC; and trichlorotrifluoroethane (CFC 113). However, the air stripper effluent concentrations were below the emission criteria, as presented in **Table 2** within **Appendix J**.

5.2.2 PID Results

Along with collection of Summa canister air samples, PID measurements from the same sources/areas were collected and recorded. These simultaneous measurements allowed establishing a correlation between PID readings and VOC concentrations in the Summa canister air samples. Conversion from PID to compound concentrations was established by TCEQ in 30 TAC §106.533(h). The TCEQ equation allows use of a PID to determine individual compound concentrations if the distribution of chemicals in the ambient air is known or assumed. This allows the use of a PID as a tool to measure VOC concentrations and convert the PID results to estimates of compound concentrations. Ambient air PID measurements collected during this quarter were reported at 0.0 parts per million. No VOCs were detected at the GWTP ambient air or downwind PID locations. During 1st Quarter 2023, VOC detections at the air stripper PID location ranged between 20.8 and 24.9 parts per million at each sampling event. The results of the PID readings collected during GWTP operations are presented in **Table 3** within **Appendix J**.

This page intentionally left blank.

6 COMMENTS AND RESPONSES

The 4th Quarter (October - December) 2022 GWTP Evaluation Report was submitted to TCEQ and USEPA on 29 March 2023. The TCEQ provided the following comment on 26 April 2023:

TCEQ Comment 1: Section 1, 2nd paragraph. Please add sentences to include extraction from LHAAP-17 comparable to the LHAAP-16 statements.

> **Response to TCEQ Comment 1:** Concur. The following paragraph will be added to Section 1 ahead of the LHAAP-16 paragraph to discuss LHAAP-17: "*During the 3rd Quarter 2022 (July – September) the adjacent site, LHAAP-17 groundwater extraction system was brought online and integrated into the GWTP. The LHAAP-17 groundwater extraction system was plumbed into the existing underground piping infrastructure that runs between LHAAP-16 and the GWTP. The LHAAP-17 extraction system was started up on 5 August 2022. The groundwater at LHAAP-17 is primarily impacted with perchlorate*."

The USEPA provided an email stating no comments on 27 April 2023.

This page intentionally left blank.

APPENDIX A
ICT LAYOUT AND GWTP PROCESS FLOW DIAGRAM

This page intentionally left blank.

0 100 200 400 Feet

Harrison Bayou

ICT-13G
ICT-13F
ICT-13E
ICT-13D
ICT-13C
ICT-13B
ICT-13A
ICT-12E
ICT-12D
ICT-12C
ICT-12B
ICT-12A
ICT-14A
ICT-14B
ICT-14C
ICT-14D
ICT-14E
ICT-1
ICT-2
ICT-3
ICT-4
ICT-5
ICT-6
ICT-7
ICT-8
ICT-9
ICT-10
ICT-11
EW-1
18WW17
LHAAP-24
LHAAP-18
LHAAP-39
LHAAP-17
Open Burning Pan 157
Open Burning Cage 155
33-X
35-X
37-X
21-X
27-X
22-X
22-X-1
20-X
24-X
25-X
41-X
Groundwater Treatment Plant
Ditch
AVE "Q"
SCUDDAY AVE
LONG POINT RD

Legend:

- Extraction Location
- Deactivated ICT Sump
- Injection Point – Inactive since July 2012
- HDPE — High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line
- 401 — Building Number
- 717 — Former Building Location and Number

bhate

www.bhate.com

Quarterly Evaluation Report
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	5/31/2023	MRM

ICT Layout Map

Figure A-1

PROCESS WATER FROM SUMP COLLECTION

FLOW MONITORING METER FIT-140

GROUNDWATER FROM BURNING GROUNDS AND SITE 17

TK-140 EQUALIZATION 300,700 GAL.

TK-140 Sampling Spigot

FLOW MONITORING METER FIT-172

TK-200A ORP 5,900 GAL.

TK-200B pH 5,700 GAL.

TK-200C POLYMER 3,400 GAL.

POLYMER POTABLE WATER

METALS TREATMENT

TK-240 CLARIFIER 10,000 GAL.

TK-640 BACK WASH TANK

FL-290 SAND FILTER

TK-300 STRIPPER FEED TANK 22,800 GAL.

FLOW MONITORING METER FIT-322

VENT TO ATMOSPHERE

RECYCLE

VENT HEADER

TK-530 8,670 GAL.

TK-510B 8,670 GAL.

TK-510A 8,670 GAL.

DECANT

DECANT

FILTER PRESS MAKEUP WATER SOURCE

SAND FILTER BACKWASH WATER SOURCE

FILTER CAKE FOR DISPOSAL

BELT PRESS BFP-560

SOLIDS REMOVAL

COLLECTION FROM FLOOR DRAINS IN CONTAINMENT AREA AND FROM DECON PAD

SUMP

TO TK 140

ELECTRON DONOR SUBSTRATE TANK 55 GAL. DRUM

TK-103 NUTRIENT TANK

P-104

P-103

FILTER PRESS MAKEUP WATER

SAND FILTER BACKWASH WATER

CARBON FILTER

T-330 AIR STRIPPER

TK-630 EFFLUENT STORAGE 127,000 GAL.

P-175

FLOW MONITORING METER FIT-103

Recycle

Liquid Phase Adsorber Protect™ LM-36 Series

VOLATILE ORGANICS TREATMENT

TO INF POND

TO HARRISON BAYOU

TO IRRIGATION AT BURNING GROUNDS

P-101A

P-101B

T-101 FBR

TK-650 1,000 GAL.

P-641

P-642

PERCHLORATE TREATMENT

TK-650 Sampling Spigot

FLOW MONITORING METER FIT-686

NOTES:

GAL.	GALLON
TK or T	TANK
BFP	BELT FILTER PRESS
P	PUMP
FL	FILTER
FBR	FLUIDIZED BED REACTOR
I/X	ION EXCHANGE

Process Flow Diagram

Figure A-2

Quarterly Evaluation Report
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

DRAWN BY: MRM

DATE: 3/15/2023

SCALE: Not to Scale

PROJECT NO: NWO1312.0150

bhate

www.bhate.com

Table A-1: ICTs Completion Depths

ICT	TOC Elevation	Total Depth	Sump Elevation	Comment
1	186.07	22.5	163.57	Taken out of service in 2007.
2	185.02	29.5	155.52	
3	192.27	37.75	154.52	Taken out of service in 2007.
4	193.51	37.5	156.01	
5	192.67	35	157.67	Taken out of service in 2007.
6	197.30	40.75	156.55	Converted to infiltration in 2007. Ceased reinjection in July 2012.
7	198.03	32.33	165.7	
8	198.97	44.5	154.47	
9	197.64	45.5	152.14	Converted to infiltration in 2007. Ceased reinjection in July 2012.
10	198.07	45.42	152.65	Taken out of service in 2007.
11	198.01	43.33	154.68	
12A	189.06	31.5	157.56	Taken out of service in 2007. Reinstituted in December 2012.
12B	191.97	36.25	155.72	
12C	193.90	34.33	159.57	
12D	185.64	33.75	151.89	
12E	183.38	32.25	151.13	
13A	182.59	28.17	154.42	
13B	184.72	29.58	155.14	
13C	186.13	28.17	157.96	
13D	186.72	26.17	160.55	
13E	191.79	27.08	164.71	
13F	197.81	32.33	165.48	
13G	197.03	27.25	169.78	Taken out of service in 2008.
14A	196.8	43.00	153.8	
14B	197.61	43.42	154.19	
14C	197.86	41.33	156.53	
14D	198.47	44.25	154.22	
14E	198.47	43.08	155.39	

Note(s):

ICT - interception-collection trench

TOC - top of casing, measuring point for groundwater elevations

Elevations are reported as feet above mean sea level.

Total depths are reported as feet below TOC.

Sump elevation calculated by subtracting total depth from TOC elevation.

ICTs were installed in 1998.

ICT 12A was replaced on December 5, 2012, and extraction has resumed.

TOC Elevations and total depth measured in October 2003, 4th Quarter 2003, Groundwater Treatment Plant Report.

Table A-2: Extraction Equipment Maintenance Since 2011

LHAAP-18/24

Well I.D.	Replaced Parts	Date	Contractor
ICT 14E	Pump	3/15/2012	Shaw
ICT 14D	Pump, motor, level probes	3/16/2012	Shaw
ICT 14B	Pump, level probes, level probe wire	3/16/2012	Shaw
ICT 14A	Pump, motor, level probes, level probe wire	3/17/2012	Shaw
ICT 2	Pump, motor	3/17/2012	Shaw
ICT 13D	Pump	3/19/2012	Shaw
ICT 13B	Pump	3/20/2012	Shaw
ICT 14E	Pump, motor, broken piping	11/19/2012	AECOM
ICT 13C	Pump	11/20/2012	AECOM
ICT13E	Pump	11/20/2012	AECOM
ICT 12A	Pump, motor, wiring harness, level probes, level probe wire	12/5/2012	AECOM
ICT 7	Pump, motor, wiring harness, level probes	12/6/2012	AECOM
ICT2	Pump	6/10/2013	AECOM
ICT 13C	Pump	6/11/2013	AECOM
ICT 13D	Pump	6/12/2013	AECOM
ICT 14E	Pump rebuilt	6/15/2013	AECOM
ICT 14E	Replaced low level switch	6/19/2013	AECOM
ICT 13C	Pump, wiring harness, flow meter	4/15/2014	AECOM
ICT 14D	Repaired level probes	6/24/2014	AECOM
ICT 14E	Repaired level probes	6/24/2014	AECOM
ICT 14E	Pump and motor troubleshooting	6/26/2014	AECOM
ICT2, 13F, 14C, 14D, 14E	Repaired level probes	7/7/2014	AECOM
ICT 12E	Pump, motor	10/2/2014	AECOM
ICT 12E	Wiring harness, fixed leak	10/8/2014	AECOM
ICT 12E	Level probes	10/9/2014	AECOM
ICT13A	Pump, piping	10/15/2014	AECOM
ICT 12E	Repaired leaking fittings	10/16/2014	AECOM
ICT 11	1" tee and 1" elbow	1/13/2015	AECOM
ICT 12B	Flow meter	1/13/2015	AECOM
ICT 7	1" tee, repaired 1" pipe	1/13/2015	AECOM
ICT 13A	Flow meter	1/15/2015	AECOM
ICT 13B	Pump	1/15/2015	AECOM
ICT 13C	Pump	1/16/2015	AECOM
ICT 7	Low level probe	1/16/2015	AECOM
ICT 13D	Pump, level probes	1/17/2015	AECOM
ICT 14C	Low level probe	1/17/2015	AECOM
ICT 14C	Low level probe	1/29/2015	AECOM
ICT 14D	Low level probe	1/29/2015	AECOM
ICT 13D	Level probes	1/29/2015	AECOM
ICT 2	Pump	1/30/2015	AECOM
ICT 8	Fuse	3/2/2015	AECOM
ICT 8	Fuse	3/9/2015	AECOM
ICT 12E	Flow meter	3/13/2015	AECOM
ICT 13D	Union	3/13/2015	AECOM
ICT 14C	Cleaned level probes	4/1/2015	AECOM
ICT 14D	Cleaned level probes	4/1/2015	AECOM
ICT 13A	Cleaned level probes	4/21/2015	AECOM
ICT 14C	Cleaned level probes	4/21/2015	AECOM
ICT 8	Low level probe	7/24/2015	AECOM
ICT 13C	Installed New Pump	7/28/2015	AECOM

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
ICT 14C	Installed New Pump and Electric Motor	7/29/2015	AECOM
ICT 14E	Installed New Pump and Electric Motor	7/31/2015	AECOM
ICT 12E	Repaired wiring	8/12/2015	AECOM
ICT 13E	Replaced high and low level probes	8/12/2015	AECOM
ICT 2	Installed Rebuilt Pump	9/9/2015	AECOM
ICT 12 E, ICT 14E	Replaced high level probe and wiring	9/15/2015	AECOM
ICT 13A	Installed new pump	12/23/2015	AECOM
ICT 13B	Installed new pump	12/24/2015	AECOM
ICT 13D	Replaced high level probe	2/11/2016	Aerotek
ICT 14C	Replace low level probe on ICT 14C	2/15/2016	Aerotek
ICT 8	Installed new pump and electric motor	2/19/2016	Aerotek
ICT 14C	Repaired piping leak	3/10/2016	Aerotek
ICT 14E	Installed high and low level probes, level probe wire	3/22/2016	Aerotek
ICT 13D, ICT 14B	Installed high and low level probes, level probe wire	3/24/2016	Aerotek
ICT 14B	Installed new pump and electric motor	3/31/2016	Aerotek
ICT 14C	Installed new low level probe	4/20/2016	Aerotek
ICT 12B	Installed new mechanical flow meter	6/16/2016	Aerotek
ICT 13C	Installed rebuilt pump and new flow meter	8/10/2016	Aerotek
ICT 13A	Installed rebuilt pump, new flow meter, and new 1" unions	8/24/2016	Aerotek
ICT 14E	Installed new mechanical flow meter	8/26/2016	Aerotek
ICT 12C	Repaired flow meter	8/30/2016	Aerotek
ICT 2	Installed rebuilt pump and new flow meter	8/31/2016	Aerotek
ICT 14C	Cleaned and adjusted level probes	9/7/2016	Aerotek
ICT 14C	Replaced level probes	9/12/2016	Aerotek
ICT 14C	Installed new level probe wire and level probes	9/21/2016	Aerotek
ICT 12C	Installed rebuilt pump, new electric motor, new wiring harness, new level probe wire, and new level probes	9/27/2016	Aerotek
ICT 14C	Cleaned and adjusted level probes	10/14/2016	Aerotek
ICT 13C	Cleaned and adjusted level probes	10/21/2016	Aerotek
ICT 13B	Installed rebuilt pump	10/25/2016	Aerotek
ICT 14D	Installed rebuilt pump	10/27/2016	Aerotek
ICT 13C	Replaced low level probe	11/8/2016	Aerotek
ICT 13B	Replaced relay base plate	11/8/2016	Aerotek
ICT 13E	Cleaned and adjusted low level probe	11/15/2016	Aerotek
ICT 13B	Replaced broken relay base plate and bad level probe wire	11/17/2016	Aerotek
ICT 13C	Cleaned & repaired leaking flow meter	11/18/2016	Aerotek
ICT 13B	Cleaned & adjusted low level probe	11/18/2016	Aerotek
ICT 13A, 13B, & 13E	Clean and adjust low level probes	12/2/2016	Aerotek
ICT 13C & 14C	Pulled piping and pumps	2/8/2017	Aerotek
ICT 14C	Installed new electric motor	2/8/2017	Aerotek
ICT 13C & 14C	Installed rebuilt grundfos pumps	2/8/2017	Aerotek
ICT 7, 13A, & 14D	Repaired sample ports	2/9/2017	Aerotek
ICT 13B & 14E	Cleaned and adjusted low level probes	3/30/2017	Aerotek
ICT 13B & 13F	Installed new flow meters	3/30/2017	Aerotek
ICT 12B	Repair flow meter	4/13/2017	Aerotek
ICT 12C	Replace broken 1" tee	5/1/2017	Aerotek
ICT 11	Installed new manual flow meter	5/5/2017	Aerotek
ICT 2	Installed new flow meter	5/9/2017	Aerotek
ICT 14C & 14D	Cleaned and adjusted low level probes	5/31/2017	Aerotek
ICT 14C	Cleaned and adjusted low level probe	6/27/2017	Aerotek
ICT 8	Cleaned low level probe	7/11/2017	Aerotek
ICT 2 & 14D	Cleaned and replaced level probes	7/17/2017	Aerotek
ICT 14C	Cleaned low level probe	7/24/2017	Aerotek

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
ICT 13A	Installed new pump and flow meter	8/8/2017	Aerotek
ICT 13C & 13B	Installed new pump and flow meter	8/9/2017	Aerotek
ICT 13B	Installed new low level probe	8/10/2017	Aerotek
ICT 11	Installed new pump and flow meter	8/11/2017	Aerotek
ICT 4	Replaced low level probe	8/11/2017	Aerotek
ICT 2	Installed rebuilt pump	9/19/2017	Aerotek
ICT 13D	Adjusted level probes	9/22/2017	Aerotek
ICT 14C	Cleaned level probes	10/11/2017	Bhate
ICT 13E	Clean and adjust level probes	10/24/2017	Bhate
ICT 12B	Adjusted level probes	11/15/2017	Bhate
ICT 14D	Cleaned level probes	11/15/2017	Bhate
ICT 8	Cleaned and adjusted level probes	11/28/2017	Bhate
ICT 2	Cleaned level probes	12/20/2017	Bhate
ICT 13C	Install new flow meter	1/30/2018	Bhate
ICT 14C	Cleaned level probes	1/30/2018	Bhate
ICT 13C	Cleaned & adjusted level probes	2/1/2018	Bhate
ICT 13B	Repaired broken 1" union	2/1/2018	Bhate
ICT 14A	Repaired 2 broken 1" elbows & lower high level probe	2/1/2018	Bhate
ICT 14B	Repaired broken 1" tee & lower high level probe	2/1/2018	Bhate
ICT 14D	Installed new flow meter	2/8/2018	Bhate
ICT 8	Replaced broken 1" tee & clened level probes	2/8/2018	Bhate
ICT 14D	Cleaned level probes	2/28/2018	Bhate
ICT 14C	Replaced low level probe	2/28/2018	Bhate
ICT 13B	Cleaned level probes	2/28/2018	Bhate
ICT 13A	Installed new motor & replace leaking 1" union	3/14/2018	Bhate
ICT 13C	Cleaned & adjusted level probes	3/21/2018	Bhate
ICT 12B	Replaced broken 1" elbow & install new flow meter	3/21/2018	Bhate
ICT 2	Installed new pump	3/22/2018	Bhate
ICT 13B	Replaced level probes	3/30/2018	Bhate
ICT 14E	Lowered high level probe	3/30/2018	Bhate
ICT 14C	Cleaned level probes	4/27/2018	Bhate
ICT 11	Installed new breaker	4/27/2018	Bhate
ICT 14E	Cleaned level probes	6/7/2018	Bhate
ICT 12C	Cleaned level probes	6/7/2018	Bhate
EW 01	Cleaned level probes	6/7/2018	Bhate
ICT 14E	Replaced level probes	6/8/2018	Bhate
ICT 11	Installed new electrical wire from breaker to well	6/14/2018	Bhate
ICT 12B	Replaced pump	6/25/2018	Bhate
ICT 14E	Cleaned level probes	6/26/2018	Bhate
ICT 8	Cleaned level probes	6/26/2018	Bhate
ICT 14C	Replaced pump	6/27/2018	Bhate
EW01	Replaced level probes	9/12/2018	Bhate
ICT 7	Cleaned level probes	9/12/2018	Bhate
ICT 12C	Replaced low level probe wire and probe	9/12/2018	Bhate
ICT 14D	Replaced high level probe wire & probe	9/13/2018	Bhate
ICT 12B	Replaced high and low level probe wires & probes	9/13/2018	Bhate
ICT 12B	Replaced electrical relay and relay base plate	9/13/2018	Bhate
ICT 14C	Cleaned level probes	9/13/2018	Bhate
ICT 13E	Replaced flow meter	9/14/2018	Bhate
ICT 14D	Replaced low level probe	10/31/2018	Bhate
ICT 8	Cleaned level probes	10/31/2018	Bhate
ICT 14C	Cleaned level probes	10/31/2018	Bhate
ICT 13A	Replaced broken 1" Tee	12/12/2018	Bhate
ICT 14C	Cleaned level probes	12/12/2018	Bhate
ICT 13A	Installed new flow meters	2/14/2019	Bhate

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
ICT 12D	Replace pump & motor	3/6/2019	Bhate
ICT 13C	Replace pump	3/8/2019	Bhate
ICT 2	Replace pump & flow meter	3/11/2019	Bhate
ICT 14C	Replace pump & motor	3/12/2019	Bhate
ICT 14D	Replace pump	3/12/2019	Bhate
ICT 14E	Replace pump, seal plate & level probes	3/14/2019	Bhate
ICT 14A	Replace pump and repair leaking 1" pipe	3/15/2019	Bhate
ICT 13C	Lower high level probe	3/22/2019	Bhate
ICT 14A	Lower high level probe	3/22/2019	Bhate
EW-01	Replace pump	3/29/2019	Bhate
ICT 8	Clean level probes	4/1/2019	Bhate
ICT 12C	Clean level probes	4/1/2019	Bhate
ICT 13D	Clean level probes	4/1/2019	Bhate
ICT 14E	Replace bad relay	4/2/2019	Bhate
ICT 12A	Replace flow meter	4/3/2019	Bhate
ICT 13F	Replace flow meter	4/3/2019	Bhate
ICT 13D	Replace low level probe	4/3/2019	Bhate
ICT 13C	Clean level probes	5/8/2019	Bhate
ICT 14 C	Clean level probes	5/8/2019	Bhate
ICT 12D	Replace bad relay	5/8/2019	Bhate
ICT 13A	Replace pump	7/10/2019	Bhate
ICT 13D	Replace pump	7/17/2019	Bhate
ICT 14C	Clean level probes	9/25/2019	Bhate
ICT 14D	Clean level probes	9/25/2019	Bhate
ICT 12D	Clean level probes	10/2/2019	Bhate
ICT 13B	Clean level probes	10/2/2019	Bhate
ICT 13C	Clean level probes	10/2/2019	Bhate
ICT 14E	Clean level probes	10/2/2019	Bhate
18WW17	Install double wall pipe	10/28/2019	Bhate
ICT 14C	Clean level probes	4/16/2020	Bhate
ICT 12B	Replace coil in electrical panel	5/5/2020	Bhate
ICT 14D	Replace coil in electrical panel	5/5/2020	Bhate
ICT 11	Replace broken 1" union	5/12/2020	Bhate
ICT 13E	Replace broken 1" union	5/12/2020	Bhate
ICT 14A	Replace broken 1" tee	5/12/2020	Bhate
ICT 14C	Clean level probes	5/12/2020	Bhate
ICT 14A	Clean level probes	5/12/2020	Bhate
ICT 7	Clean level probes	5/12/2020	Bhate
ICT 13C	Replace pump	5/13/2020	Bhate
ICT 13C	Replace broken 1" union and 1" nipple	5/13/2020	Bhate
ICT 13B	Replace pump	5/19/2020	Bhate
ICT 13B	Replace flow meter	5/19/2020	Bhate
ICT 2	Replace pump	5/20/2020	Bhate
ICT 4	Replace flow meter	9/29/2020	Bhate
ICT 8	Replace flow meter	9/29/2020	Bhate
ICT 12C	Repair flow meter	9/29/2020	Bhate
ICT 13C	Replace flow meter	9/30/2020	Bhate
ICT 14B	Replace flow meter	9/30/2020	Bhate
ICT 7	Replace flow meter	9/30/2020	Bhate
ICT 14E	Replace pump	10/6/2020	Bhate
ICT 14C	Replace pump and motor	10/7/2020	Bhate
18WW17	Replace bad coil	12/9/2020	Bhate
ICT 14A	Electrical problem repaired	12/15/2020	Bhate
ICT 13F	Electrical problem repaired	12/15/2020	Bhate
ICT 8	Clean level probes	12/16/2020	Bhate

Table A-2: Extraction Equipment Maintenance Since 2011

Well I.D.	Replaced Parts	Date	Contractor
ICT 14C	Clean level probes	12/16/2020	Bhate
ICT 14B	Replace blown fuse	1/26/2021	Bhate
ICT 13A	Replace pump	1/27/2021	Bhate
ICT 13D	Replace Pump & motor	1/27/2021	Bhate
ICT 2	Replace pump & flowmeter	2/9/2021	Bhate
ICT 12E	Replace pump	2/9/2021	Bhate
ICT14A	Replace broken 1" tee	3/3/2021	Bhate
ICT 8	Replace Pump, repair wiring harness	4/27/2021	Bhate
ICT 14E	Replace pump & motor, spliced in new plug on wiring harness	5/4/2021	Bhate
ICT 14D	Replace pump	5/5/2021	Bhate
ICT 14C	Replace pump	5/5/2021	Bhate
ICT 13A	Repair override switch for electric motor	6/8/2021	Bhate
ICT 2	Replace Flowmeter	2/16/2022	Bhate
ICT 7	Replace Flowmeter	2/16/2022	Bhate
ICT 11	Replace broken nipple on flowmeter	2/16/2022	Bhate
ICT 14E	Replace broken nipple on flowmeter	2/16/2022	Bhate
ICT 8	Replace pump & motor	3/8/2022	Bhate
ICT 13B	Replace pump	3/10/2022	Bhate
ICT 13B	Replace Flowmeter	3/10/2022	Bhate
ICT 13A	Replace Flowmeter	3/10/2022	Bhate
ICT 12B	Replace Flowmeter	3/15/2022	Bhate
ICT 12C	Replace Flowmeter	3/15/2022	Bhate
ICT 14D	Replace pump & motor	3/23/2022	Bhate
ICT 14C	Replace motor	3/23/2022	Bhate
ICT 12D	Replace pump, motor & wiring harness	3/29/2022	Bhate
ICT 12E	Replace Flowmeter	4/29/2022	Bhate
ICT 14E	Clean level probes	11/4/2022	Bhate
ICT 14C	Clean level probes	11/4/2022	Bhate
ICT 7	Replace broken 1" elbow	2/27/2023	Bhate
ICT 11	Replace broken 1" union	2/27/2023	Bhate
ICT 12A	Replace broken 1" elbow	2/27/2023	Bhate
ICT 12C	Replace broken 1" elbow	2/27/2023	Bhate
ICT 12D	Replace broken 1" flowmeter nipple	2/27/2023	Bhate
ICT 12E	Replace broken 1" union	2/27/2023	Bhate
ICT 13B	Replace broken 1" union	2/27/2023	Bhate
ICT 14E	Replace pump & clean level probes	3/7/2023	Bhate
ICT 12C	Replace pump & clean level probes	3/22/2023	Bhate

LHAAP-16

Well I.D.	Replaced Parts	Date	Contractor
EW08	New pump	2/28/2011	Shaw
EW01	Rebuild pump	8/25/2011	Shaw
EW06	Rebuild pump	8/25/2011	Shaw
EW02	Rebuild pump	2/12/2012	Shaw
EW03	Rebuild pump	2/12/2012	Shaw
EW08	Rebuild pump	11/8/2012	AECOM
EW01	Rebuild pump	11/8/2012	AECOM
EW04	Repair pump	11/13/2012	AECOM
EW07	Rebuild pump	11/13/2012	AECOM
EW04	Installed New Pump	11/28/2012	AECOM
EW06	Installed New Pump	11/28/2012	AECOM
EW02	Installed New Pump	12/4/2012	AECOM
EW03	Installed New Pump	12/4/2012	AECOM
EW01	Installed New Pump	12/17/2012	AECOM

Table A-2: Extraction Equipment Maintenance Since 2011

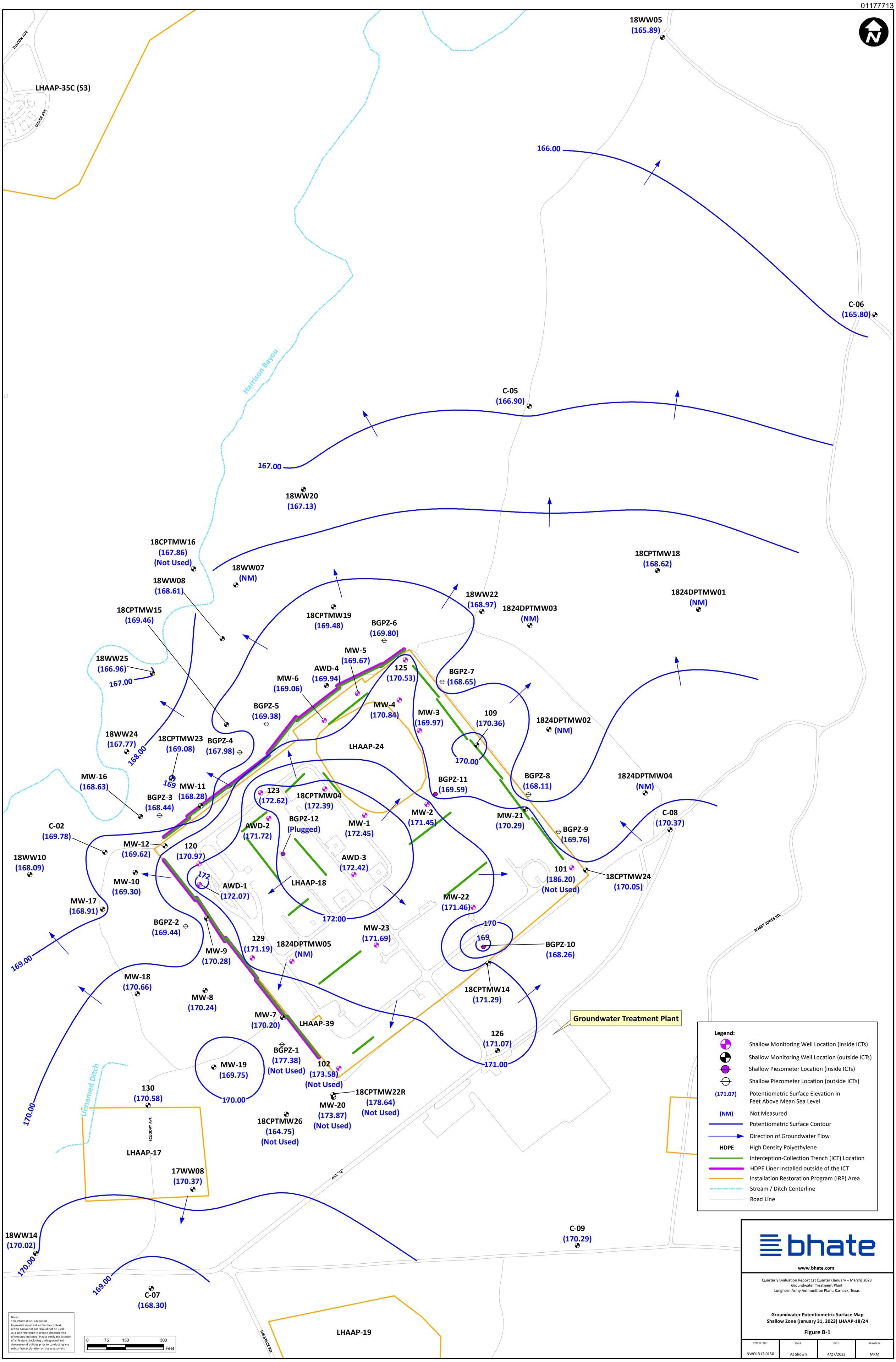
Well I.D.	Replaced Parts	Date	Contractor
EW01	Replaced Low level probe	1/17/2015	AECOM
EW01	Cleaned and adjusted level probes	10/21/2016	Aerotek

This page intentionally left blank.

APPENDIX B
GROUNDWATER ELEVATION CONTOUR MAPS

This page intentionally left blank.

01177713


TUSCON AVE
TALYER AVE
LHAAP-35C (53)
Harrison Bayou
18WW05
(165.89)
166.00
C-06
(165.80)
C-05
(166.90)
167.00
18WW20
(167.13)
18CPTMW16
(167.86)
(Not Used)
18WW07
(NM)
18WW08
(168.61)
18CPTMW15
(169.46)
18CPTMW19
(169.48)
BGPZ-6
(169.80)
18WW22
(168.97)
1824DPTMW03
(NM)
18CPTMW18
(168.62)
1824DPTMW01
(NM)
18WW25
(166.96)
167.00
MW-5
(169.67)
AWD-4
(169.94)
125
(170.53)
BGPZ-7
(168.65)
MW-6
(169.06)
BGPZ-5
(169.38)
MW-4
(170.84)
MW-3
(169.97)
109
(170.36)
1824DPTMW02
(NM)
18WW24
(167.77)
168.00
18CPTMW23
(169.08)
BGPZ-4
(167.98)
LHAAP-24
170.00
MW-16
(168.63)
169
MW-11
(168.28)
BGPZ-3
(168.44)
123
(172.62)
18CPTMW04
(172.39)
BGPZ-11
(169.59)
BGPZ-8
(168.11)
1824DPTMW04
(NM)
MW-2
(171.45)
MW-21
(170.29)
C-08
(170.37)
C-02
(169.78)
AWD-2
(171.72)
BGPZ-12
(Plugged)
MW-1
(172.45)
BGPZ-9
(169.76)
MW-12
(169.62)
120
(170.97)
18WW10
(168.09)
AWD-3
(172.42)
101
(186.20)
(Not Used)
18CPTMW24
(170.05)
MW-10
(169.30)
172
AWD-1
(172.07)
LHAAP-18
MW-17
(168.91)
MW-22
(171.46)
172:00
170
169
BGPZ-10
(168.26)
BGPZ-2
(169.44)
MW-23
(171.69)
129
(171.19)
1824DPTMW05
(NM)
MW-9
(170.28)
169.00
MW-18
(170.66)
18CPTMW14
(171.29)
MW-8
(170.24)
MW-7
(170.20)
LHAAP-39
Groundwater Treatment Plant
126
(171.07)
171.00
BGPZ-1
(177.38)
(Not Used)
MW-19
(169.75)
102
(173.58)
(Not Used)
130
(170.58)
170.00
18CPTMW22R
(178.64)
(Not Used)
MW-20
(173.87)
(Not Used)
18CPTMW26
(164.75)
(Not Used)
Unnamed Ditch
SCUDDAY AVE
LHAAP-17
17WW08
(170.37)
AVE "Q"
18WW14
(170.02)
170.00
169.00
C-07
(168.30)
C-09
(170.29)
HAYSTACK RD.
LHAAP-19
BOBBY JONES RD.
N
Legend:
Shallow Monitoring Well Location (inside ICTs)
Shallow Monitoring Well Location (outside ICTs)
Shallow Piezometer Location (inside ICTs)
Shallow Piezometer Location (outside ICTs)
(171.07) Potentiometric Surface Elevation in Feet Above Mean Sea Level
(NM) Not Measured
Potentiometric Surface Contour
Direction of Groundwater Flow
HDPE High Density Polyethylene
Interception-Collection Trench (ICT) Location
HDPE Liner Installed outside of the ICT
Installation Restoration Program (IRP) Area
Stream / Ditch Centerline
Road Line
Notes:
This information is depicted to provide visual aid within the context of this document and should not be used as a sole reference in precise dimensioning of features indicated. Please verify the location of all features including underground and aboveground utilities prior to conducting any subsurface exploration or site assessment.
0 75 150 300
Feet
bhate
www.bhate.com
Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas
Groundwater Potentiometric Surface Map
Shallow Zone (January 31, 2023) LHAAP-18/24
Figure B-1
PROJECT NO: NWO1312.0150
SCALE: As Shown
DATE: 4/27/2023
DRAWN BY: MRM

01177714

TUSCON AVE
TALVEP AVE
LHAAP-35C (53)
18WW05
(166.24)
C-06
(166.13)
Harrison Bayou
167.00
C-05
(167.33)
18WW20
(167.48)
168.00
18CPTMW16
(168.20)
18WW07
(NM)
18CPTMW19
(169.81)
18CPTMW18
(168.99)
18WW22
(169.35)
1824DPTMW03
(NM)
1824DPTMW01
(NM)
18WW25
(167.46)
18WW08
(169.05)
BGPZ-6
(170.11)
BGPZ-7
(168.94)
AWD-4
(170.29)
125
(170.88)
MW-5
(170.01)
MW-4
(171.20)
171.00
MW-6
(169.43)
170.00
MW-3
(170.39)
169
1824DPTMW02
(NM)
18WW24
(168.25)
BGPZ-4
(168.32)
18CPTMW15
(169.87)
BGPZ-5
(169.96)
BGPZ-3
(168.76)
18CPTMW23
(169.47)
169.00
MW-11
(168.64)
109
(170.73)
LHAAP-24
BGPZ-8
(168.50)
MW-21
(170.65)
1824DPTMW04
(NM)
123
(172.96)
18CPTMW04
(172.75)
170
BGPZ-11
(169.95)
AWD-2
(172.06)
MW-1
(172.81)
MW-2
(171.79)
C-02
(170.17)
MW-16
(169.04)
MW-12
(170.04)
LHAAP-18
BGPZ-9
(170.20)
C-08
(170.73)
18WW10
(168.38)
120
(171.28)
172.00
BGPZ-12
(Plugged)
AWD-3
(172.78)
101
(186.94)
(Not Used)
18CPTMW24
(170.44)
MW-10
(169.70)
MW-22
(171.81)
MW-17
(169.26)
AWD-1
(172.42)
BGPZ-2
(169.86)
MW-23
(172.05)
BGPZ-10
(168.63)
MW-9
(170.64)
129
(171.53)
1824DPTMW05
(NM)
MW-18
(171.11)
MW-8
(170.60)
18CPTMW14
(171.60)
MW-7
(170.49)
LHAAP-39
Groundwater Treatment Plant
BGPZ-1
(178.08)
(Not Used)
126
(171.40)
MW-19
(170.16)
130
(171.04)
102
(173.93)
(Not Used)
18CPTMW22R
(179.31)
(Not Used)
MW-20
(174.24)
(Not Used)
18CPTMW26
(165.12)
(Not Used)
Unnamed Ditch
LHAAP-17
SCUDDAY AVE
17WW08
(170.83)
AVE "Q"
BOBBY JONES RD.
18WW14
(170.37)
C-09
(170.51)
C-07
(168.62)
HAYSTACK RD.
LHAAP-19

Notes:
This information is depicted to provide visual aid within the context of this document and should not be used as a sole reference in precise dimensioning of features indicated. Please verify the location of all features including underground and aboveground utilities prior to conducting any subsurface exploration or site assessment.

0 75 150 300 Feet

Legend:

- Shallow Monitoring Well Location (inside ICTs)
- Shallow Monitoring Well Location (outside ICTs)
- Shallow Piezometer Location (inside ICTs)
- Shallow Piezometer Location (outside ICTs)
- (170.51) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- (NM) Not Measured
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- HDPE High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

bhate
www.bhate.com

Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Groundwater Potentiometric Surface Map
Shallow Zone (February 24, 2023) LHAAP-18/24

Figure B-2

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	4/27/2023	MRM

01177715

TUSCON AVE
TALVEP AVE
LHAAP-35C (53)
Harrison Bayou
Unnamed Ditch
SCUDDAY AVE
AVE "Q"
BOBBY JONES RD.
HAYSTACK RD.
LHAAP-17
LHAAP-18
LHAAP-19
LHAAP-24
LHAAP-39
Groundwater Treatment Plant

18WW05 (166.30)
C-06 (166.27)
C-05 (167.55)
18WW20 (167.70)
18CPTMW16 (168.41)
18WW07 (NM)
18CPTMW19 (169.99)
18CPTMW18 (169.18)
18WW22 (169.52)
1824DPTMW03 (NM)
1824DPTMW01 (NM)
125 (171.04)
18WW08 (169.19)
BGPZ-6 (170.22)
18WW25 (167.64)
AWD-4 (170.53)
MW-6 (169.57)
BGPZ-7 (169.11)
18CPTMW15 (170.02)
BGPZ-5 (170.28)
MW-5 (170.17)
MW-4 (171.45)
1824DPTMW02 (NM)
18WW24 (168.47)
BGPZ-4 (168.53)
MW-3 (170.58)
109 (170.93)
18CPTMW23 (169.68)
MW-11 (168.88)
BGPZ-3 (168.85)
18CPTMW04 (172.91)
123 (173.01)
MW-1 (173.02)
BGPZ-11 (170.16)
BGPZ-8 (168.66)
1824DPTMW04 (NM)
AWD-2 (172.19)
MW-2 (171.98)
MW-21 (170.85)
BGPZ-9 (170.35)
C-08 (170.89)
C-02 (170.39)
MW-16 (169.26)
120 (171.45)
18WW10 (168.56)
BGPZ-12 (Plugged)
AWD-1 (172.61)
AWD-3 (172.97)
MW-22 (172.04)
101 (187.26) (Not Used)
18CPTMW24 (170.60)
MW-10 (169.87)
MW-12 (170.21)
MW-17 (169.45)
BGPZ-2 (170.02)
MW-9 (170.82)
MW-23 (172.19)
BGPZ-10 (168.83)
129 (171.69)
1824DPTMW05 (NM)
18CPTMW14 (171.78)
MW-8 (170.74)
MW-18 (171.34)
MW-7 (170.72)
126 (171.51)
MW-19 (170.36)
BGPZ-1 (178.40) (Not Used)
102 (174.12) (Not Used)
18CPTMW22R (179.70) (Not Used)
130 (171.15)
MW-20 (174.42) (Not Used)
18CPTMW26 (165.20) (Not Used)
17WW08 (170.97)
18WW14 (170.53)
C-09 (170.59)
C-07 (168.73)

167.00
168.00
169.00
170.00
171.00
172.00
173.00

Notes:
This information is depicted to provide visual aid within the context of this document and should not be used as a sole reference in precise dimensioning of features indicated. Please verify the location of all features including underground and aboveground utilities prior to conducting any subsurface exploration or site assessment.

0 75 150 300 Feet

Legend:
- Shallow Monitoring Well Location (inside ICTs)
- Shallow Monitoring Well Location (outside ICTs)
- Shallow Piezometer Location (inside ICTs)
- Shallow Piezometer Location (outside ICTs)
- (170.59) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- (NM) Not Measured
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- HDPE High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

bhate
www.bhate.com

Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Groundwater Potentiometric Surface Map
Shallow Zone (March 21, 2023) LHAAP-18/24

Figure B-3

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	4/27/2023	MRM

01177716

TUSCON AVE

LHAAP-35C (53)

TALVEY AVE

Harrison Bayou

18WW04
(166.15)

166.50

167.00

18WW19
(167.21)

167.50

168.00

18CPTMW19SW
(167.14)

18WW21
(167.79)

C-04A
(168.97)

C-04
(168.69)

168.50

18WW09
(168.94)

18CPTMW08DW
(168.79)
(Not Used)

18CPTMW08SW
(169.33)

18WW18
(169.27)

C-03
(169.58)

18CPTMW01SW
(170.51)

18CPTMW04SW
(169.30)

18WW06
(168.89)
(Not Used)

1824DPTMW06
(NM)

18CPTMW23SW
(169.36)

LHAAP-24

18CPTMW01DW
(169.34)
(Not Used)

18CPTMW07
(169.64)

18WW02
(169.44)

18WW11
(167.98)

18CPTMW03SW
(173.40)

18WW03
(169.18)

MW-13
(169.15)

172.50

MW-14
(172.56)

172.00

LHAAP-18

168.00

18CPTMW06
(169.34)

173.00

172.50

172.00

171.50

171.00

170.50

170.00

168.50

18CPTMW10DW
(168.95)
(Not Used)

18CPTMW10SW
(169.47)

18CPTMW12SW
(169.19)

LHAAP-39

169.00

18CPTMW12DW
(169.05)

Unnamed Ditch

18CPTMW22SW
(169.52)

18CPTMW22DW
(169.63)

18CPTMW26SW
(169.68)

169.50

SCUDDAY AVE

LHAAP-17

AVE "Q"

C-01
(170.37)

170.00

170.50

18WW15
(170.52)

C-10
(169.41)

BOBBY JONES RD.

HAYSTACK RD.

LHAAP-19

Groundwater Treatment Plant

Notes:
This information is depicted to provide visual aid within the context of this document and should not be used as a sole reference in precise dimensioning of features indicated. Please verify the location of all features including underground and aboveground utilities prior to conducting any subsurface exploration or site assessment.

0 75 150 300 Feet

Legend:

- Wilcox Formation Monitoring Well Location
- (170.37) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- (NM) Not Measured
- HDPE High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

bhate

www.bhate.com

Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Groundwater Potentiometric Surface Map
Wilcox Zone (January 31, 2023) LHAAP-18/24

Figure B-4

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	4/26/2023	MRM

01177717

TUSCON AVE

LHAAP-35C (53)

TALVEY AVE

Harrison Bayou

18WW04
(166.49)

166.50

167.00

167.50

18WW19
(167.56)

168.00

18CPTMW19SW
(167.46)

167.50

18WW21
(168.12)

168.50

C-04A
(169.33)

C-04
(169.07)

169.00

18WW09
(169.31)

18CPTMW08DW
(169.15)
(Not Used)

C-03
(169.95)

18WW18
(169.63)

1824DPTMW06
(NM)

18CPTMW23SW
(169.70)

18CPTMW04SW
(169.66)

18CPTMW08SW
(169.70)

18CPTMW01SW
(170.87)

18CPTMW01DW
(169.71)
(Not Used)

LHAAP-24

18WW06
(169.27)
(Not Used)

18WW02
(169.91)

18CPTMW07
(170.02)

18WW11
(168.31)

18CPTMW03SW
(173.73)

18WW03
(169.53)

172.50

MW-13
(169.58)

MW-14
(172.80)

LHAAP-18

18CPTMW06
(169.74)

168.50

173.50
173.00
172.50
172.00
171.50
171.00
170.50

169.00

18CPTMW10DW
(169.31)
(Not Used)

18CPTMW10SW
(169.83)

18CPTMW12SW
(169.45)

LHAAP-39

Groundwater Treatment Plant

BOBBY JONES RD.

169.50

18CPTMW12DW
(169.38)

18CPTMW22SW
(169.88)

18CPTMW22DW
(169.98)

18CPTMW26SW
(170.03)

Unnamed Ditch

SCUDDAY AVE

170.00

LHAAP-17

AVE "Q"

C-01
(170.72)

170.50

18WW15
(170.88)

C-10
(169.74)

HAYSTACK RD.

LHAAP-19

Notes:
This information is depicted to provide visual aid within the context of this document and should not be used as a sole reference in precise dimensioning of features indicated. Please verify the location of all features including underground and aboveground utilities prior to conducting any subsurface exploration or site assessment.

0 75 150 300 Feet

Legend:

- Wilcox Formation Monitoring Well Location
- (170.72) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- (NM) Not Measured
- HDPE High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

bhate

www.bhate.com

Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Groundwater Potentiometric Surface Map
Wilcox Zone (February 24, 2023) LHAAP-18/24

Figure B-5

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	4/26/2023	MRM

01177718

TUSCON AVE

TALVEY AVE

LHAAP-35C (53)

Harrison Bayou

18WW04
(166.65)

167.00

167.50

18WW19
(167.77)

168.00

168.50

18WW21
(168.27)

18CPTMW19SW
(167.64)

C-04A
(169.45)

C-04
(169.16)

169.00

18WW09
(169.46)

18CPTMW08SW
(169.93)

18WW18
(169.78)

C-03
(170.12)

169.50

18CPTMW04SW
(169.83)

18CPTMW08DW
(169.24)
(Not Used)

18CPTMW01SW
(171.05)

1824DPTMW06
(NM)

18WW06
(169.45)
(Not Used)

18CPTMW23SW
(169.88)

LHAAP-24

18CPTMW01DW
(169.86)
(Not Used)

18CPTMW07
(170.21)

18WW02
(170.09)

MW-13
(169.75)

18CPTMW03SW
(173.93)

18WW11
(168.47)

172.50

MW-14
(173.00)

18WW03
(169.63)

LHAAP-18

18CPTMW06
(169.95)

173.50

173.00

172.50

172.00

171.50

171.00

170.50

BOBBY JONES RD.

18CPTMW10DW
(169.42)
(Not Used)

18CPTMW10SW
(169.97)

18CPTMW12SW
(169.61)

LHAAP-39

Groundwater Treatment Plant

18CPTMW12DW
(169.55)

Unnamed Ditch

18CPTMW22DW
(170.12)

18CPTMW22SW
(170.11)

18CPTMW26SW
(170.25)

SCUDDAY AVE

LHAAP-17

AVE "Q"

C-01
(170.89)

C-10
(169.83)

18WW15
(171.03)

HAYSTACK RD.

LHAAP-19

Legend:

- Wilcox Formation Monitoring Well Location
- (170.25) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- (NM) Not Measured
- HDPE High Density Polyethylene
- Interception-Collection Trench (ICT) Location
- HDPE Liner Installed outside of the ICT
- Installation Restoration Program (IRP) Area
- Stream / Ditch Centerline
- Road Line

Notes:
This information is depicted to provide visual aid within the context of this document and should not be used as a sole reference in precise dimensioning of features indicated. Please verify the location of all features including underground and aboveground utilities prior to conducting any subsurface exploration or site assessment.

0 75 150 300 Feet

bhate

www.bhate.com

Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

Groundwater Potentiometric Surface Map
Wilcox Zone (March 21, 2023) LHAAP-18/24

Figure B-6

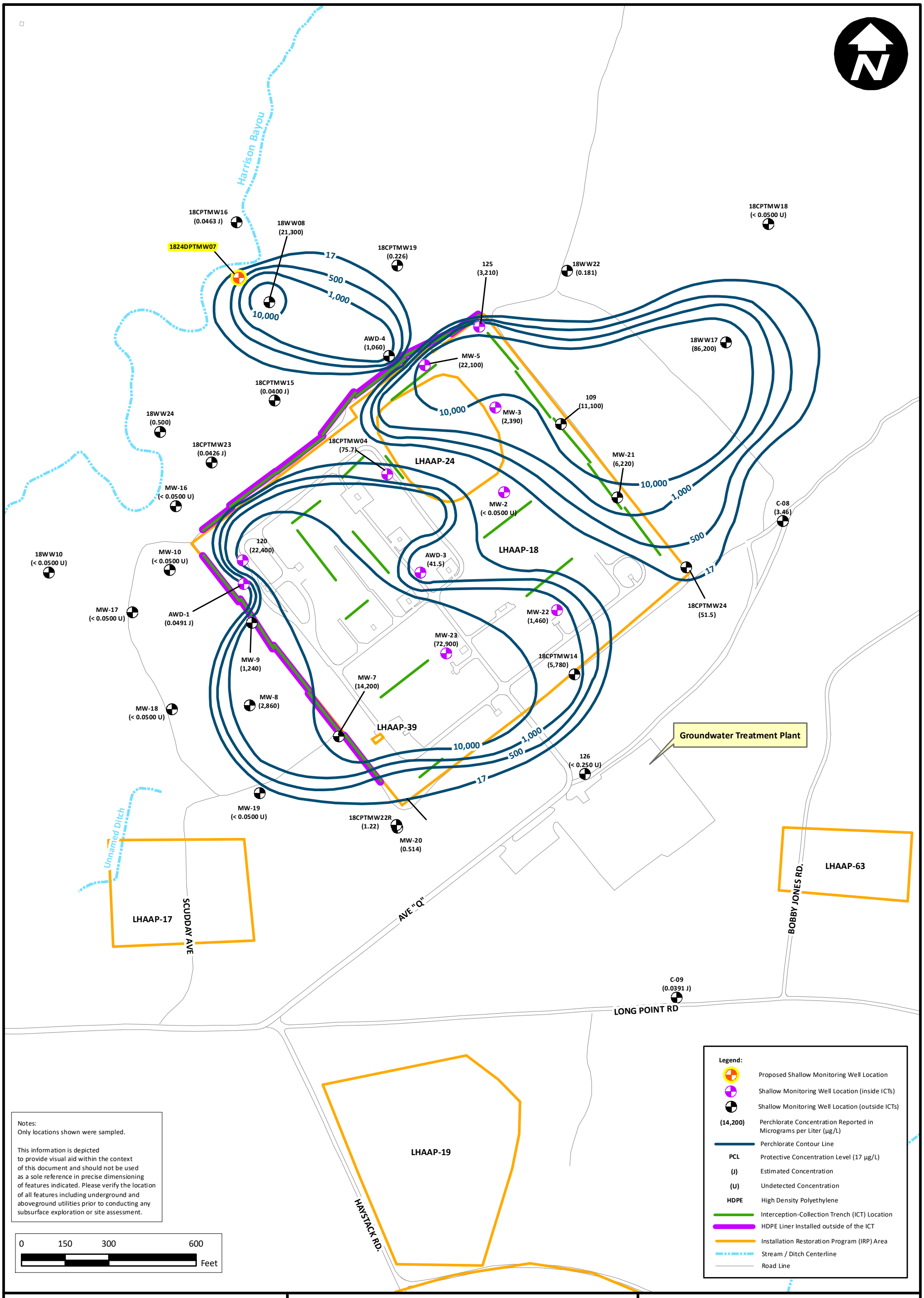
PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	4/26/2023	MRM

APPENDIX C
LABORATORY ANALYTICAL RESULTS FOR LHAAP-18/24

This page intentionally left blank.

APPENDIX D
ISOPLETH CONTOUR MAPS

This page intentionally left blank.



bhate

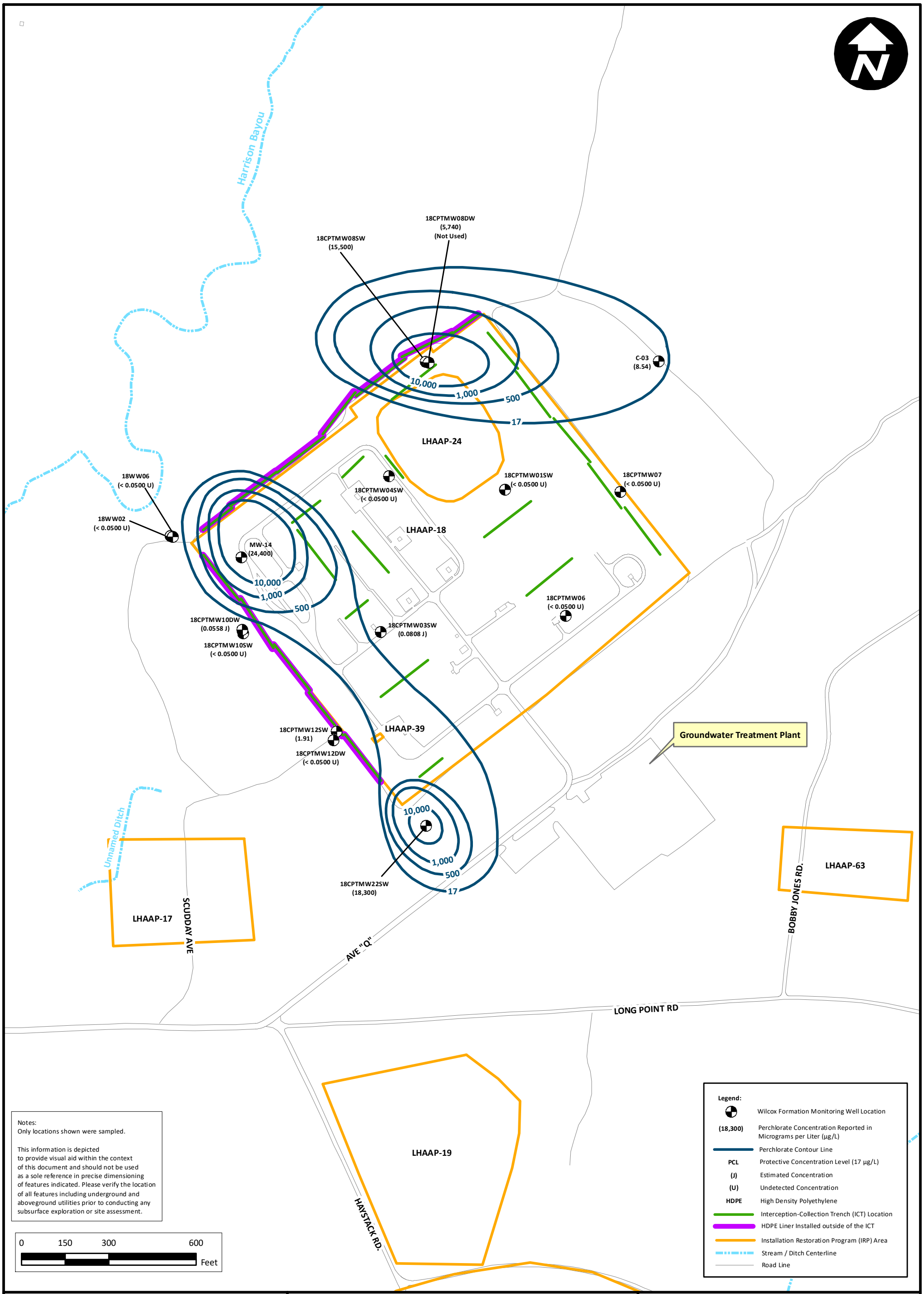
www.bhate.com

Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	5/31/2023	MRM

Perchlorate Isopleth Contours in Shallow Zone (December 2022 - January 2023)

Figure D-1



bhate

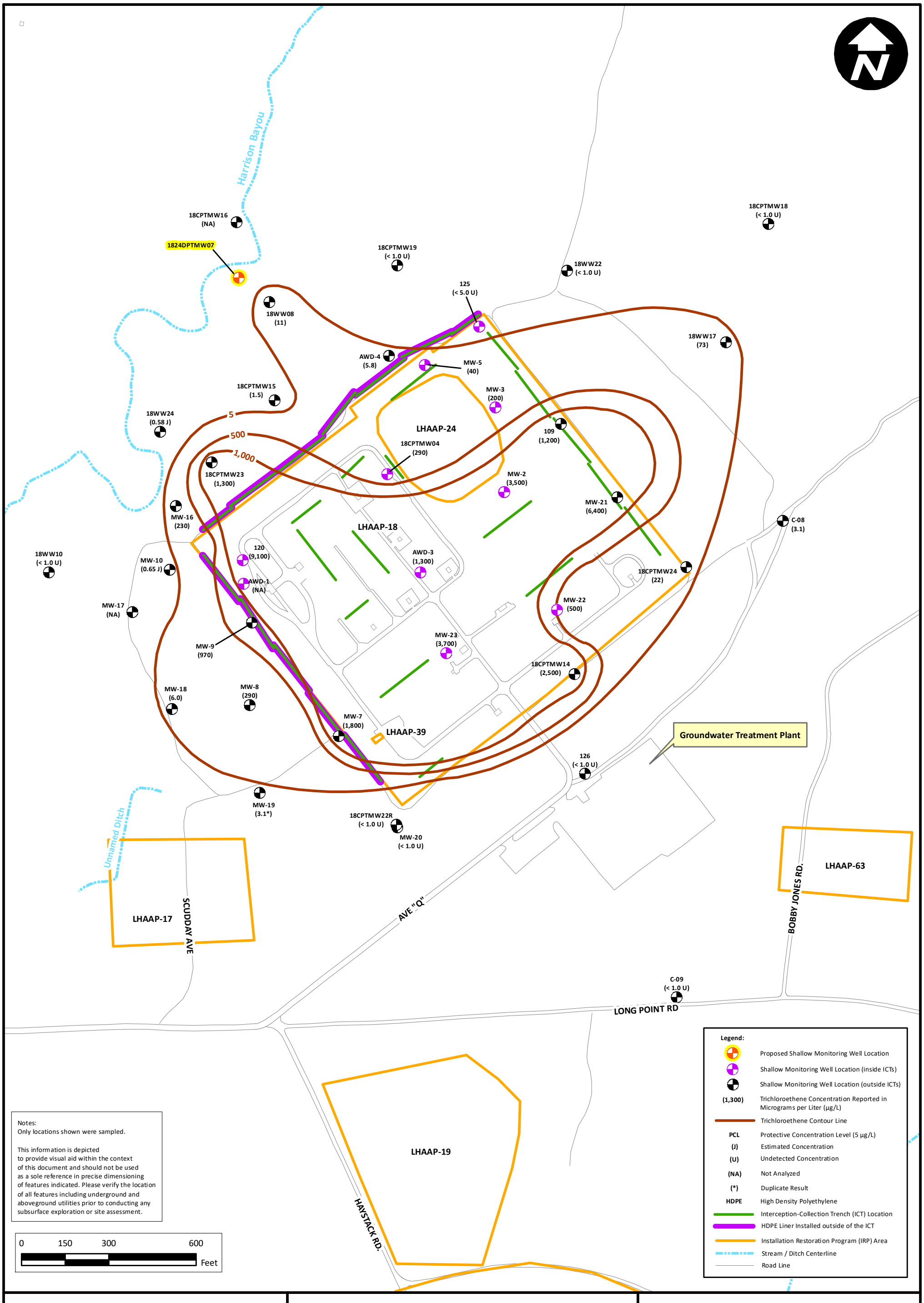
www.bhate.com

Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	3/16/2023	MRM

Perchlorate Isopleth Contours in Wilcox Formation (December 2022 - January 2023)

Figure D-2



bhate

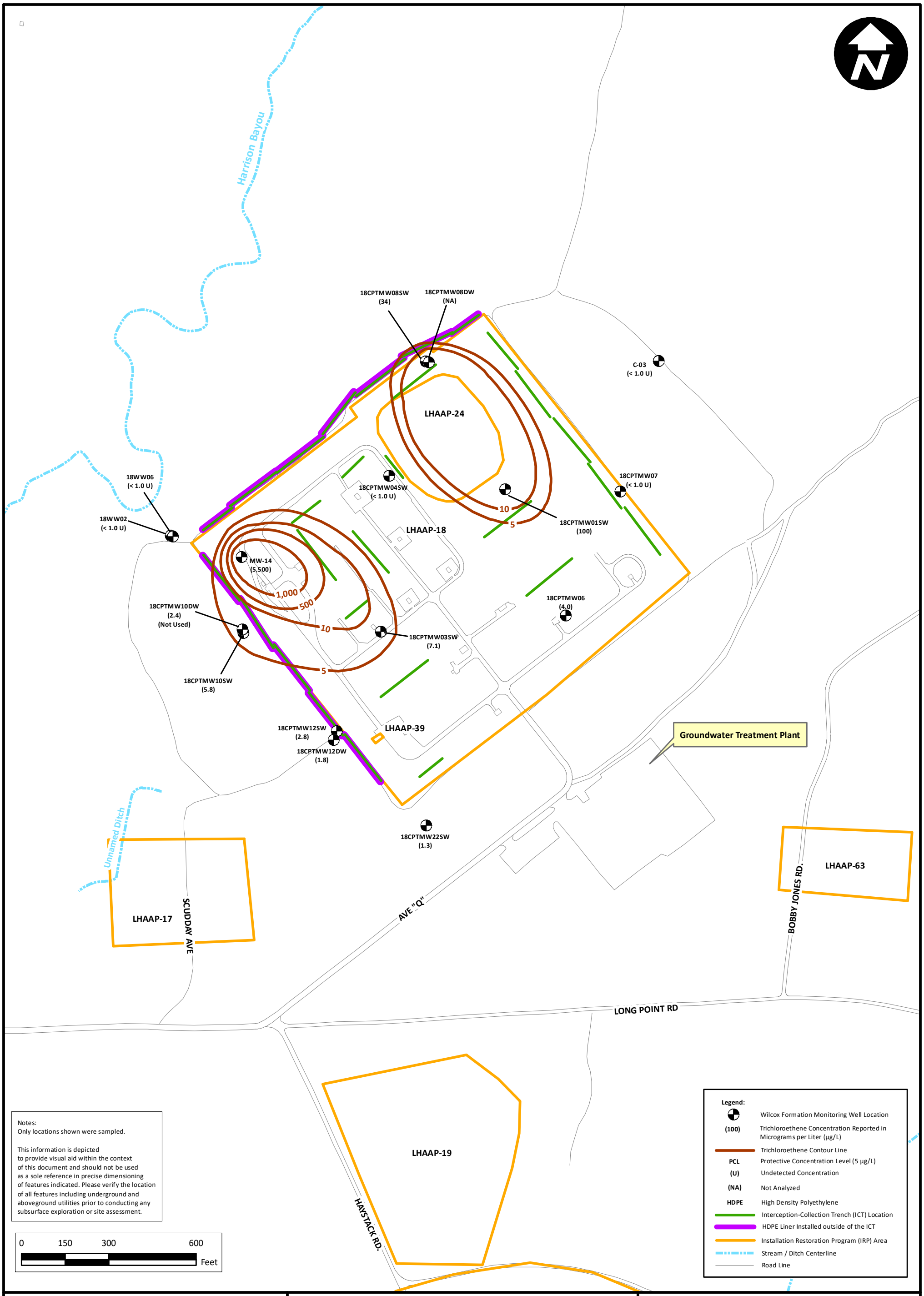
www.bhate.com

Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	5/31/2023	MRM

Trichloroethene Isopleth Contours in Shallow Zone (December 2022 - January 2023)

Figure D-3



bhate

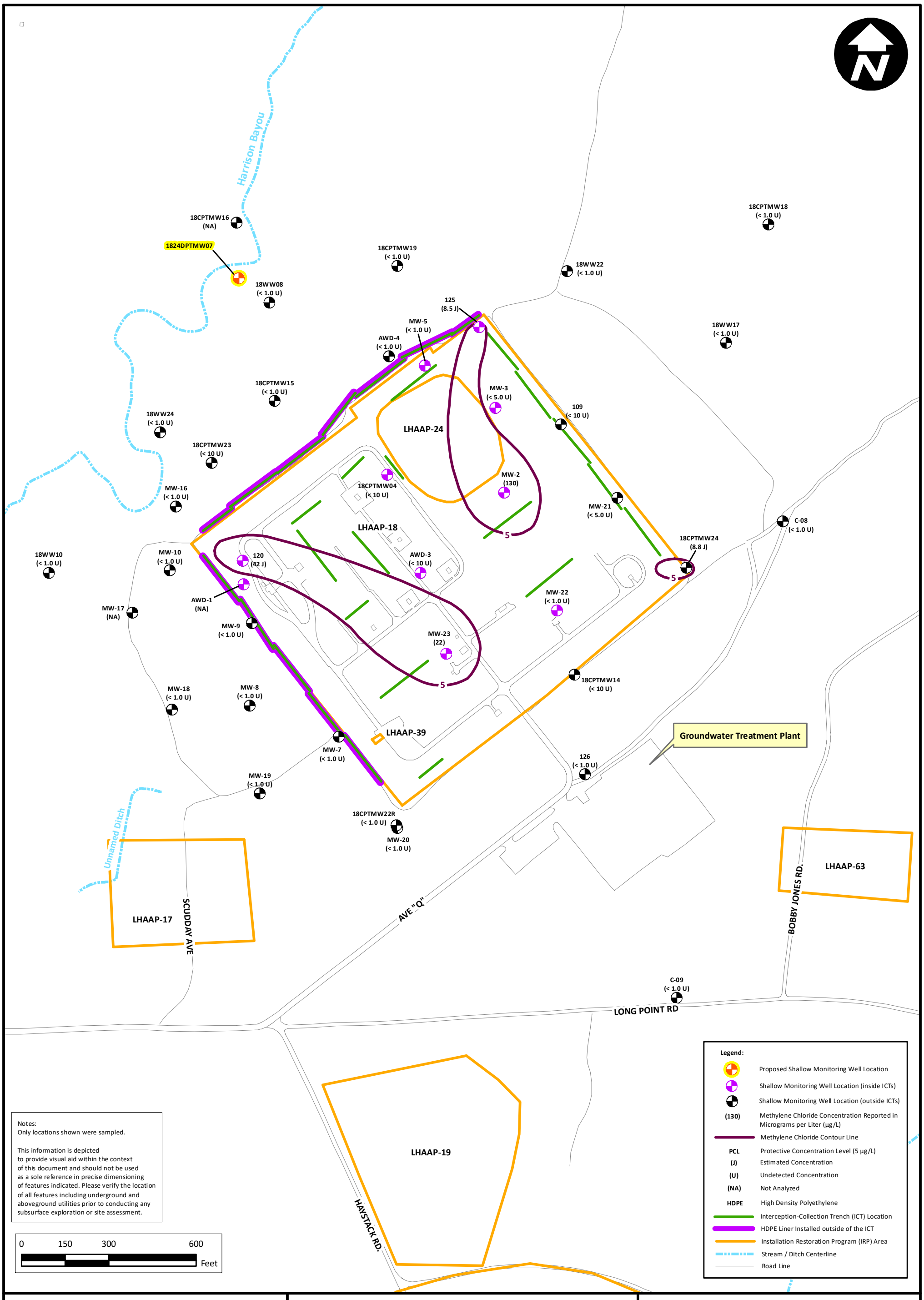
www.bhate.com

Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	3/16/2023	MRM

Trichloroethene Isopleth Contours in Wilcox Formation (December 2022 - January 2023)

Figure D-4



bhate

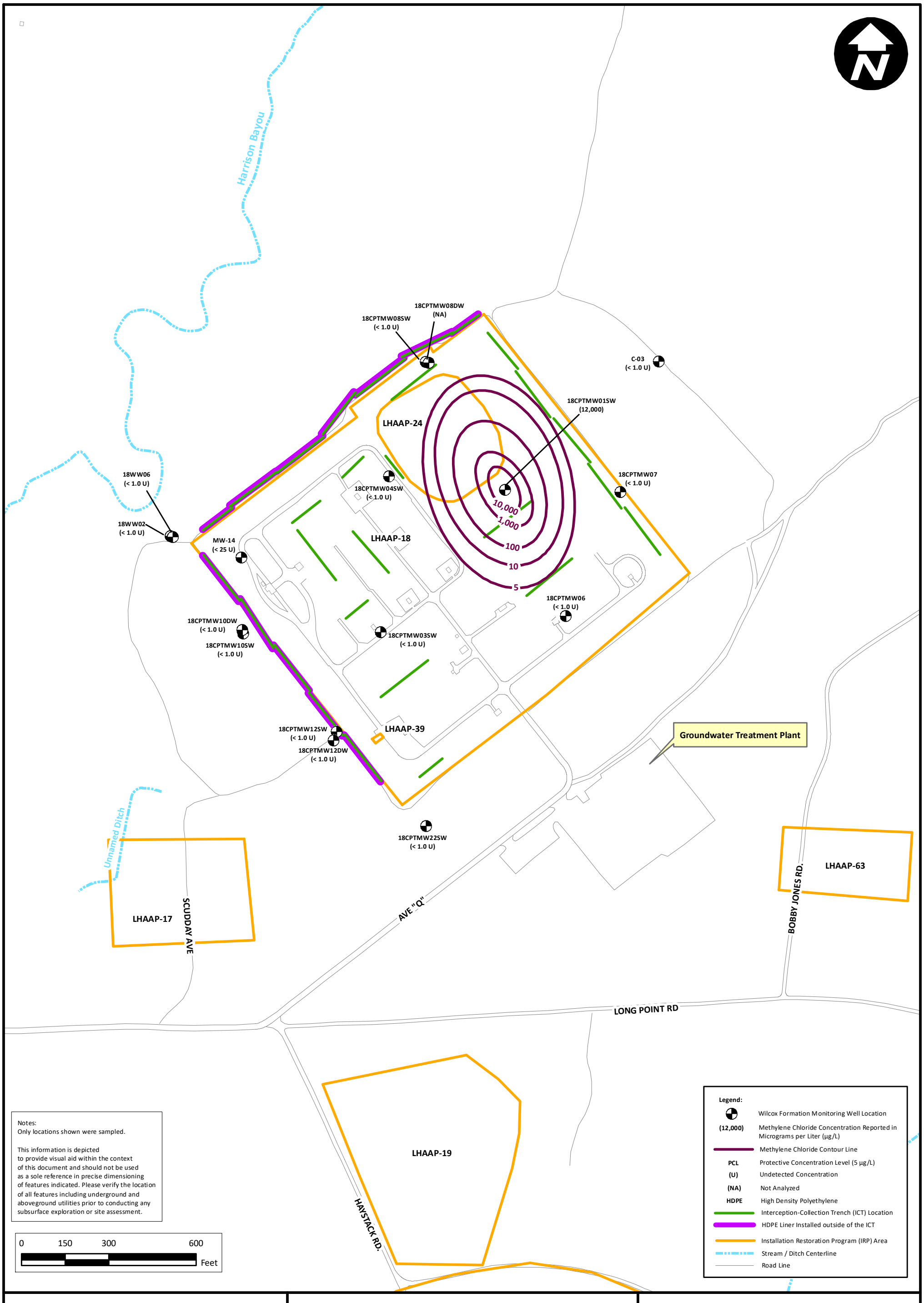
www.bhate.com

Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	5/31/2023	MRM

Methylene Chloride Isopleth Contours in Shallow Zone (December 2022 - January 2023)

Figure D-5



bhate

www.bhate.com

Quarterly Evaluation Report 1st Quarter (January – March) 2023
Groundwater Treatment Plant
Longhorn Army Ammunition Plant, Karnack, Texas

PROJECT NO:	SCALE:	DATE:	DRAWN BY:
NWO1312.0150	As Shown	3/16/2023	MRM

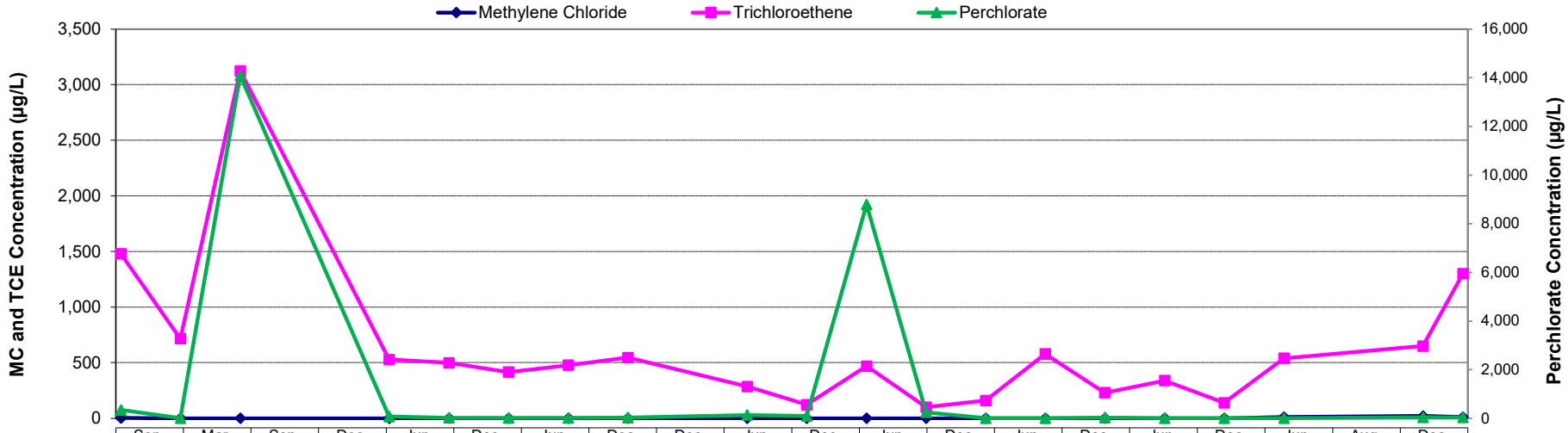
Methylene Chloride Isopleth Contours in Wilcox Formation (December 2022 - January 2023)

Figure D-6

APPENDIX E
MONITORING WELL TREND CHARTS

This page intentionally left blank.

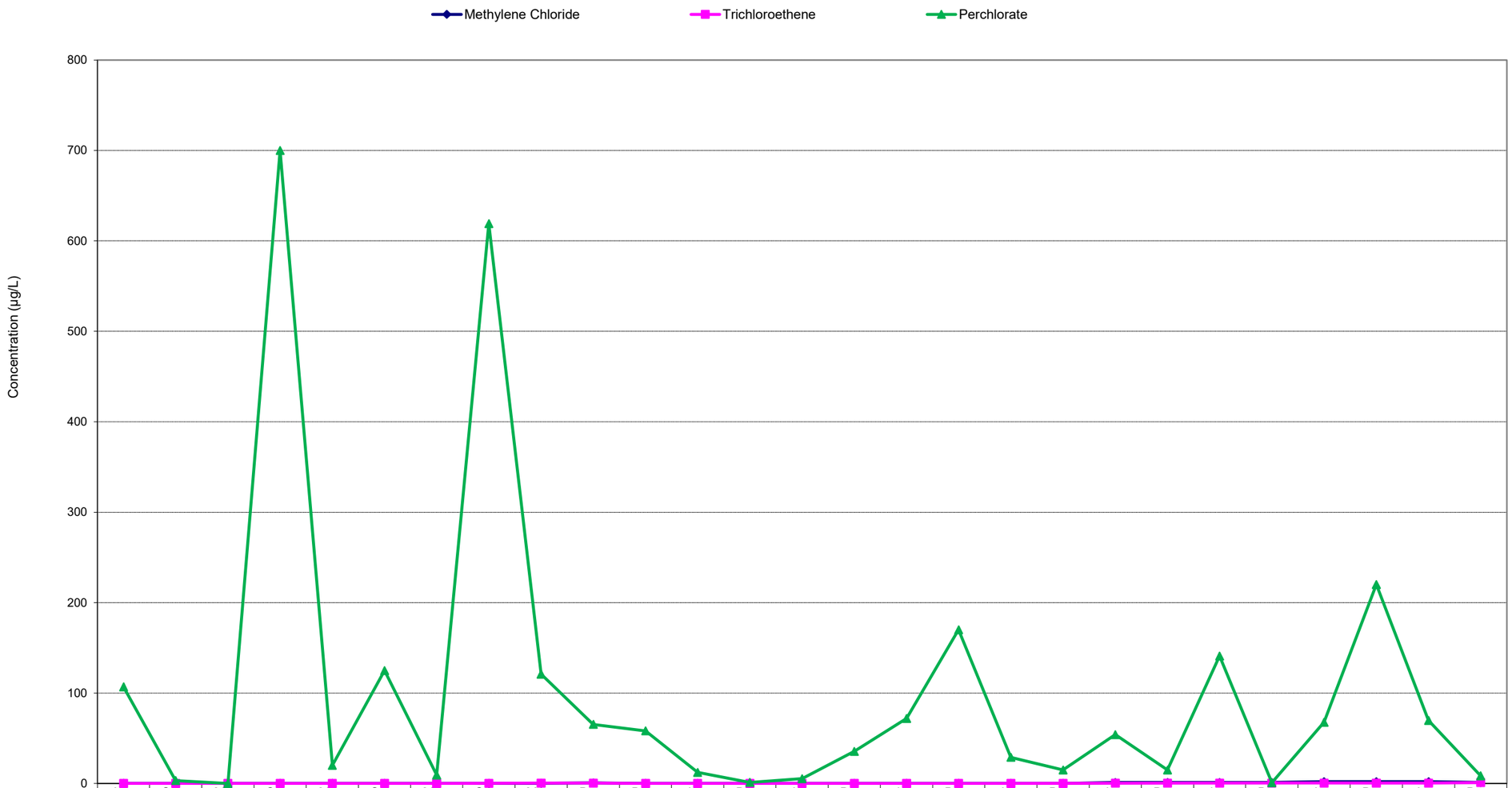
Monitoring Well AWD-3
(Shallow Zone Groundwater - Inside ICT Perimeter)



	Sep-2011	Mar-2012	Sep-2012	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Aug-2022	Dec-2022
Methylene Chloride	2.92J	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	20	10
Trichloroethene	1480	716	3125	530	499	417	477	547	285	122	470	100	160	580	230	340	140	540	650	1300
Perchlorate	342	3.88	14100	67.2	25	13.6	8.33	33.8	140	95.4	8800	250	6.9	1.8	32	4.07	7.56	1.94	42.3	41.5

Sample Date

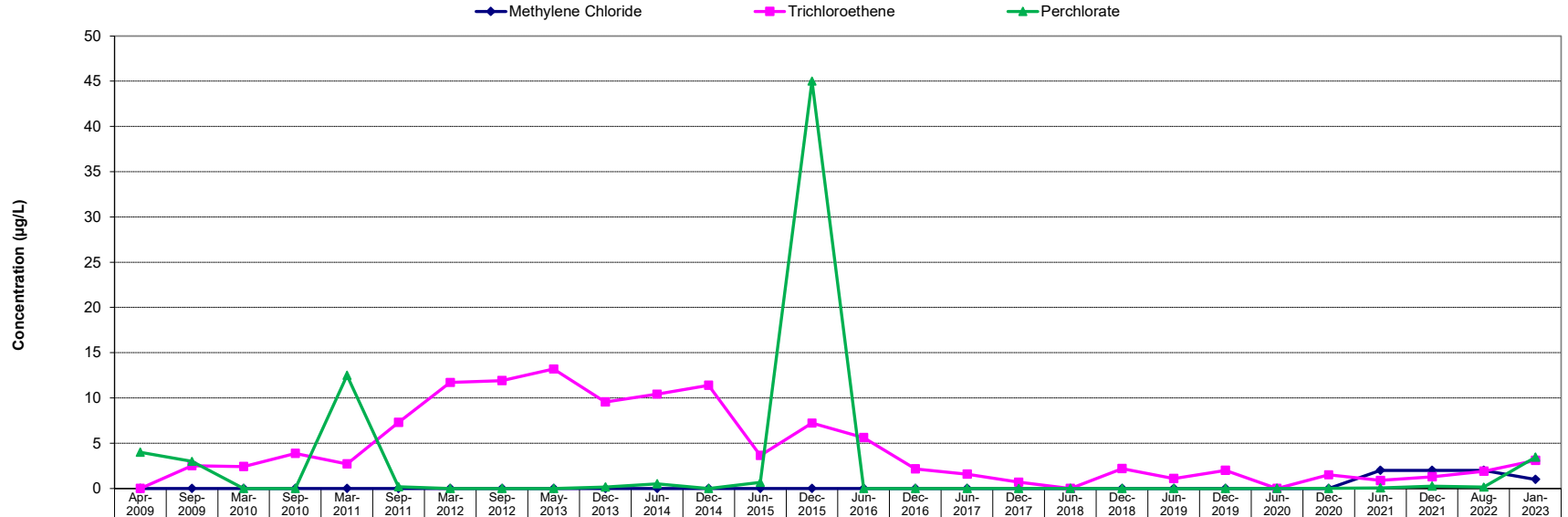
Monitoring Well C-03
(Wilcox Formation - Northest of Site Outside the Fence Line)



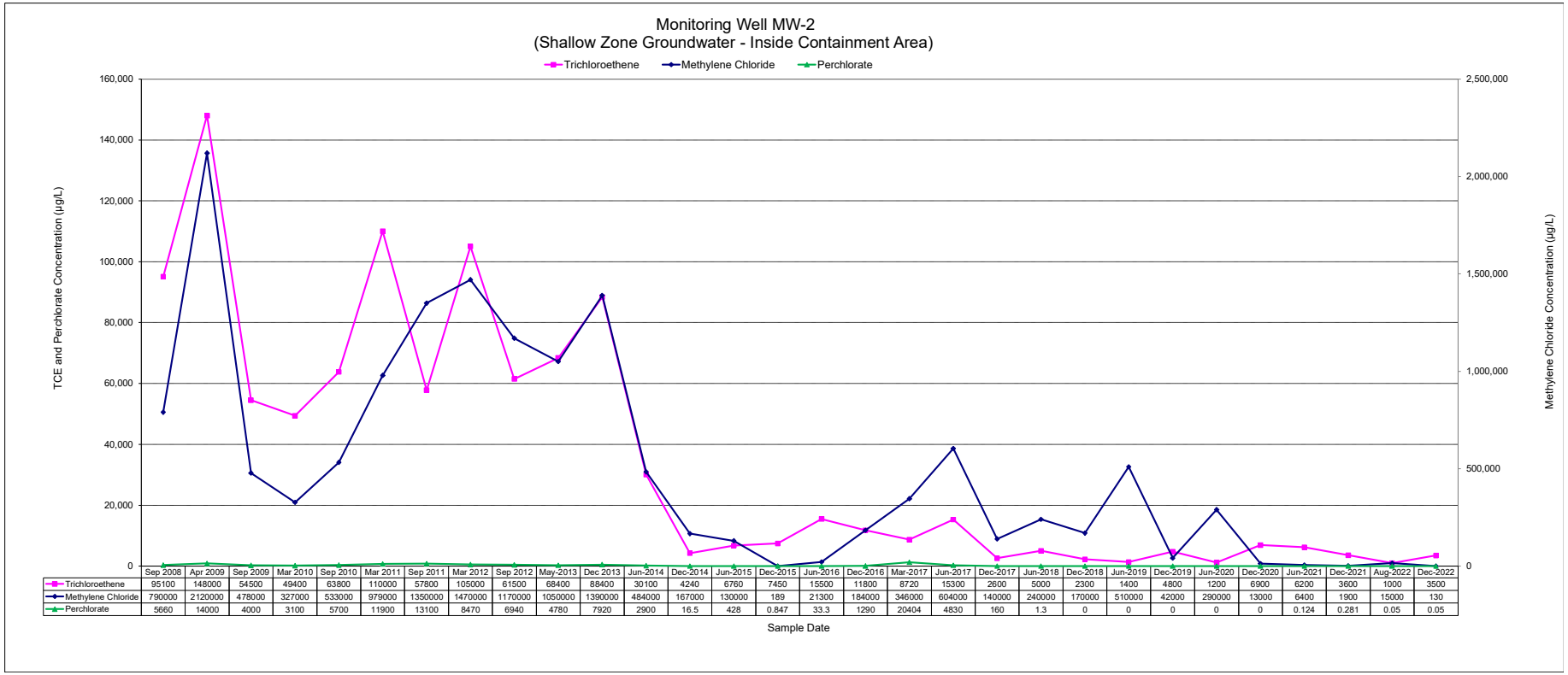
	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2019	Dec-2019	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Dec-2022
Methylene Chloride	0	0	0	0	0	0	0	0	0.336	0.738	0	0	0	0	0	0	0	0	0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	1.0
Trichloroethene	0	0	0	0	0	0	0	0.267	0.476	0.491	0	0	0	0	0	0	0	0	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1
Perchlorate	107	3.2	0	700	20	125	9.45	619	121	65.3	58.3	12.3	1.35	5.48	35.6	72	170	29	15	54	15	141	0.97	67.7	220	69.8	8.54

Sample Date

Monitoring Well C-08
(Shallow Zone Groundwater - East of Site Outside the Fence Line)

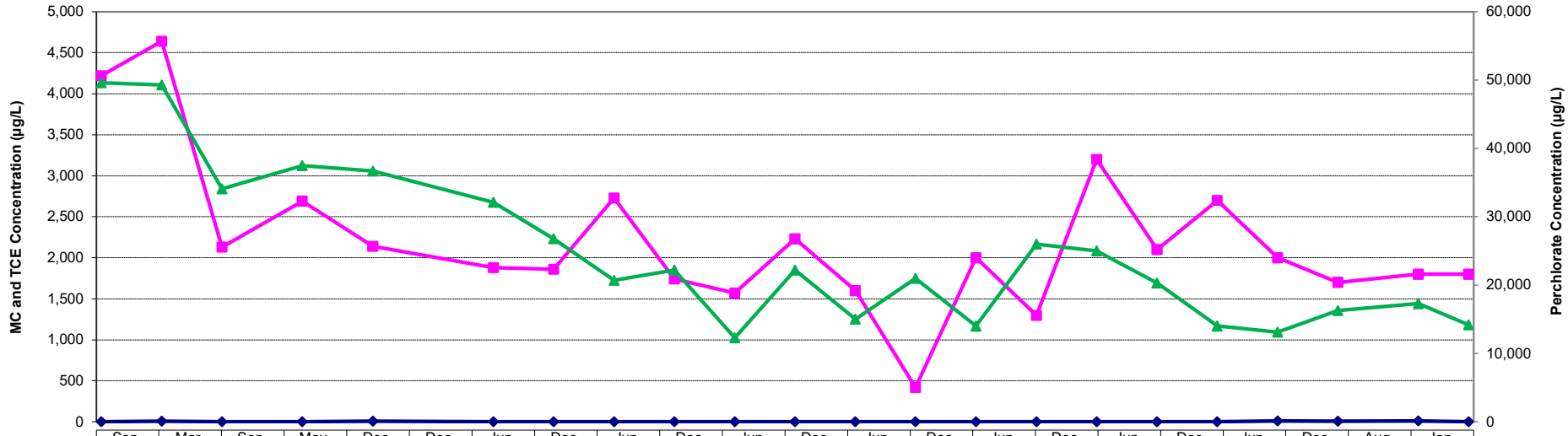


	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Jan-2023
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.0	2.0	2.0	1.0
Trichloroethene	0	2.49	2.41	3.87	2.7	7.3	11.7	11.9	13.2	9.54	10.4	11.4	3.64	7.21	5.61	2.18	1.57	0.7	0	2.2	1.1	2	0	1.5	0.87	1.3	1.9	3.1
Perchlorate	4	3	0	0	12.5	0.179J	0	0	0	0.17	0.501	0	0.648	45	0	0	0	0	0	0	0	0	0	0	0.05	0.273	0.135	3.46



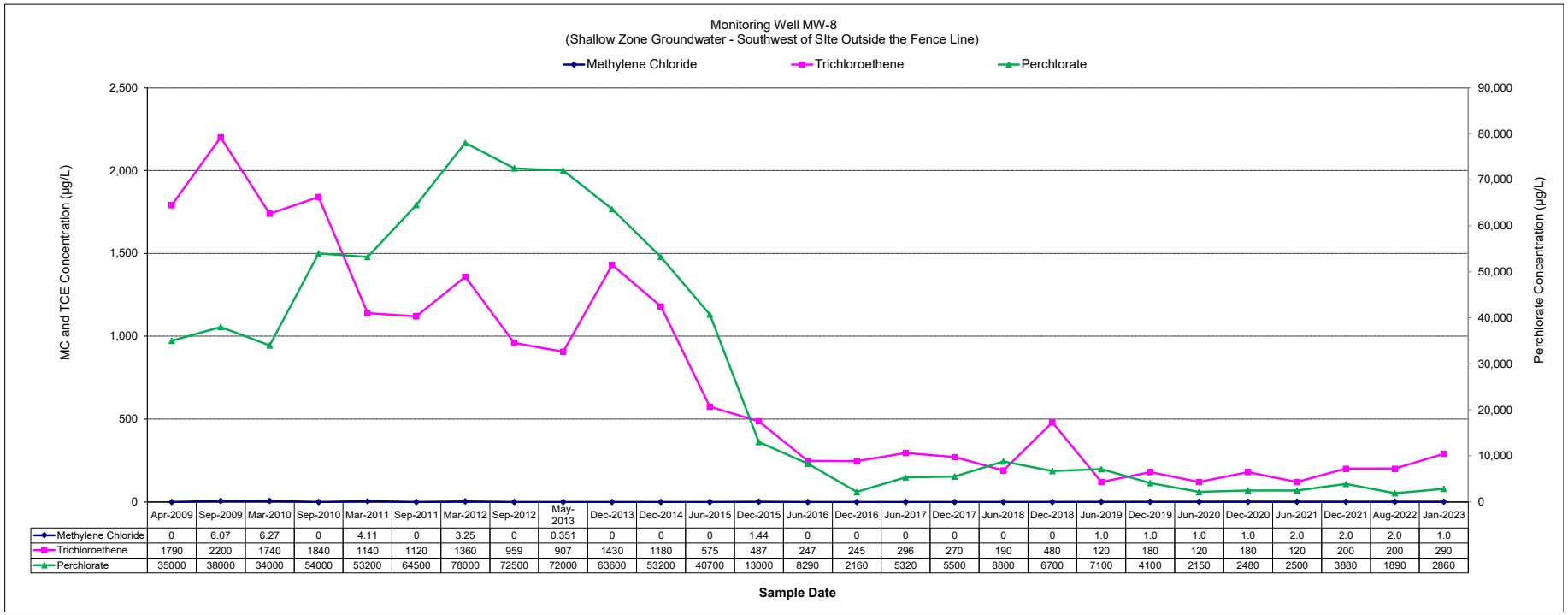
	Sep 2008	Apr 2009	Sep 2009	Mar 2010	Sep 2010	Mar 2011	Sep 2011	Mar 2012	Sep 2012	May-2013	Dec 2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Dec-2022
Trichloroethene	95100	148000	54500	49400	63800	110000	57800	105000	61500	68400	88400	30100	4240	6760	7450	15500	11800	8720	15300	2600	5000	2300	1400	4800	1200	6900	6200	3600	1000	3500
Methylene Chloride	790000	2120000	478000	327000	533000	979000	1350000	1470000	1170000	1050000	1390000	484000	167000	130000	189	21300	184000	346000	604000	140000	240000	170000	510000	42000	290000	13000	6400	1900	15000	130
Perchlorate	5660	14000	4000	3100	5700	11900	13100	8470	6940	4780	7920	2900	16.5	428	0.847	33.3	1290	20404	4830	160	1.3	0	0	0	0	0	0.124	0.281	0.05	0.05

Monitoring Well MW-7
(Shallow Zone Groundwater - Soutwest of Site Outside the Fence Line)



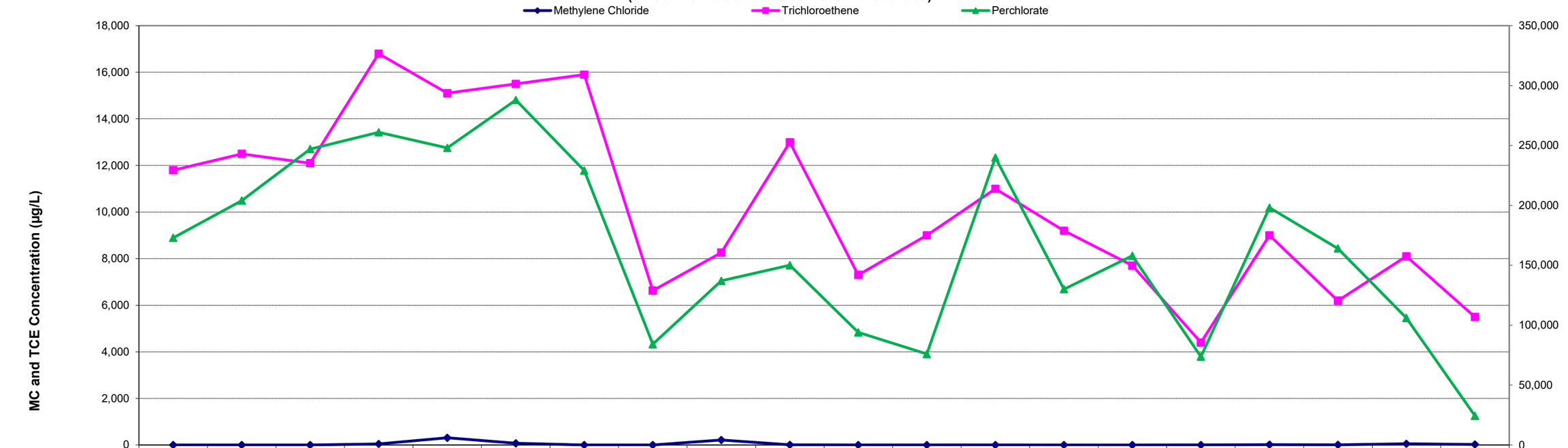
	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Jan-2023
Methylene Chloride	0	7.75	0	0	7.81	0	0.352	0	0	0	0.314	0	0	0	0	1.0	0	0	10	9.2	10	1
Trichloroethene	4220	4640	2130	2690	2140	1880	1860	2730	1740	1570	2230	1600	420	2000	1300	3200	2100	2700	2000	1700	1800	1800
Perchlorate	49600	49300	34100	37500	36700	32100	26800	20700	22200	12300	22200	15000	21000	14000	26000	25000	20300	14000	13100	16300	17300	14200

Sample Date



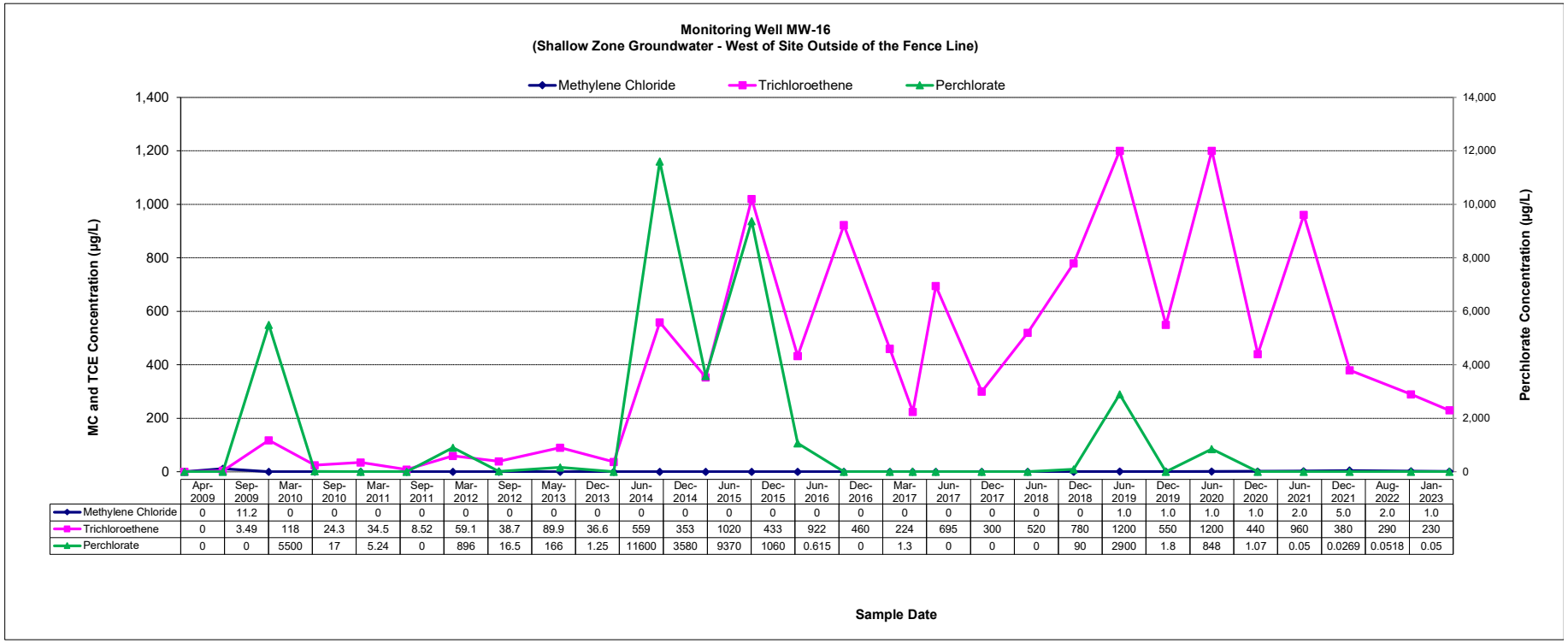
	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Jan-2023
Methylene Chloride	0	6.07	6.27	0	4.11	0	3.25	0	0.351	0	0	0	1.44	0	0	0	0	0	0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	1.0
Trichloroethene	1790	2200	1740	1840	1140	1120	1360	959	907	1430	1180	575	487	247	245	296	270	190	480	120	180	120	180	120	200	200	290
Perchlorate	35000	38000	34000	54000	53200	64500	78000	72500	72000	63600	53200	40700	13000	8290	2160	5320	5500	8800	6700	7100	4100	2150	2480	2500	3880	1890	2860

Monitoring Well MW-14
(Wilcox Formation - Inside Containment Area)



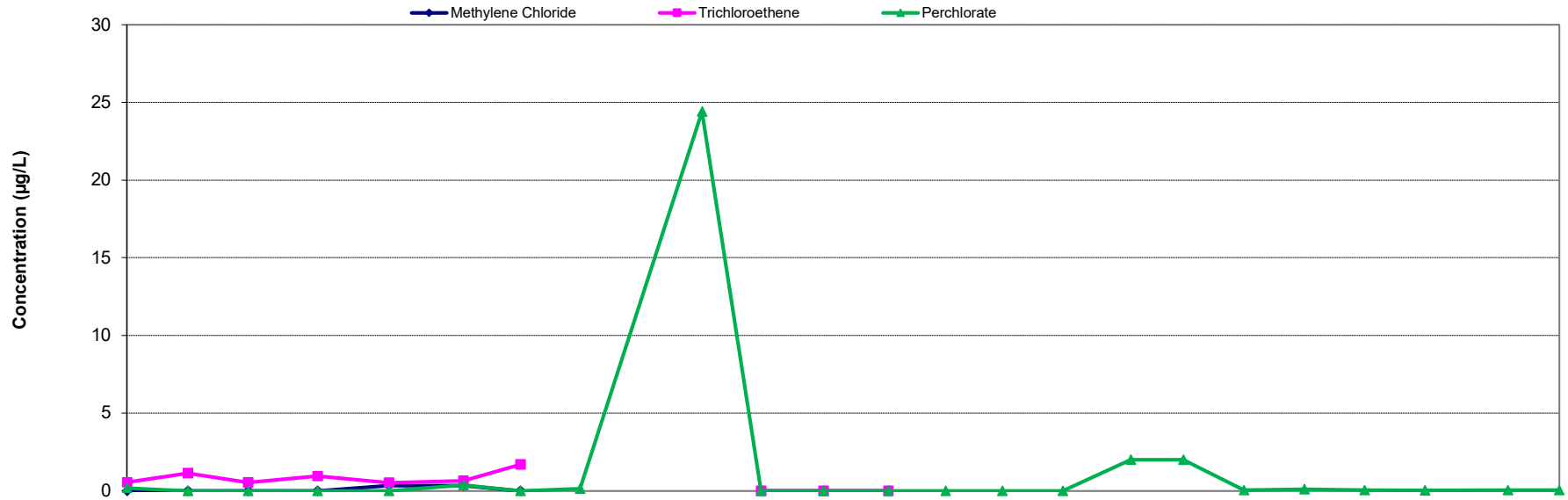
	Sep-2012	Dec-13	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Dec-2022
Methylene Chloride	1.6	0.689	5.65	42.5	312	76.8	0	0	216	11	0	0	0	0	0	0	20	10	50	25
Trichloroethene	11800	12500	12100	16800	15100	15500	15900	6630	8260	13000	7300	9000	11000	9200	7700	4400	9000	6200	8100	5500
Perchlorate	173000	204000	247000	261000	248000	288000	229000	84200	137000	150000	94000	76000	240000	130000	158000	73800	198000	164000	106000	24400

Sample Date



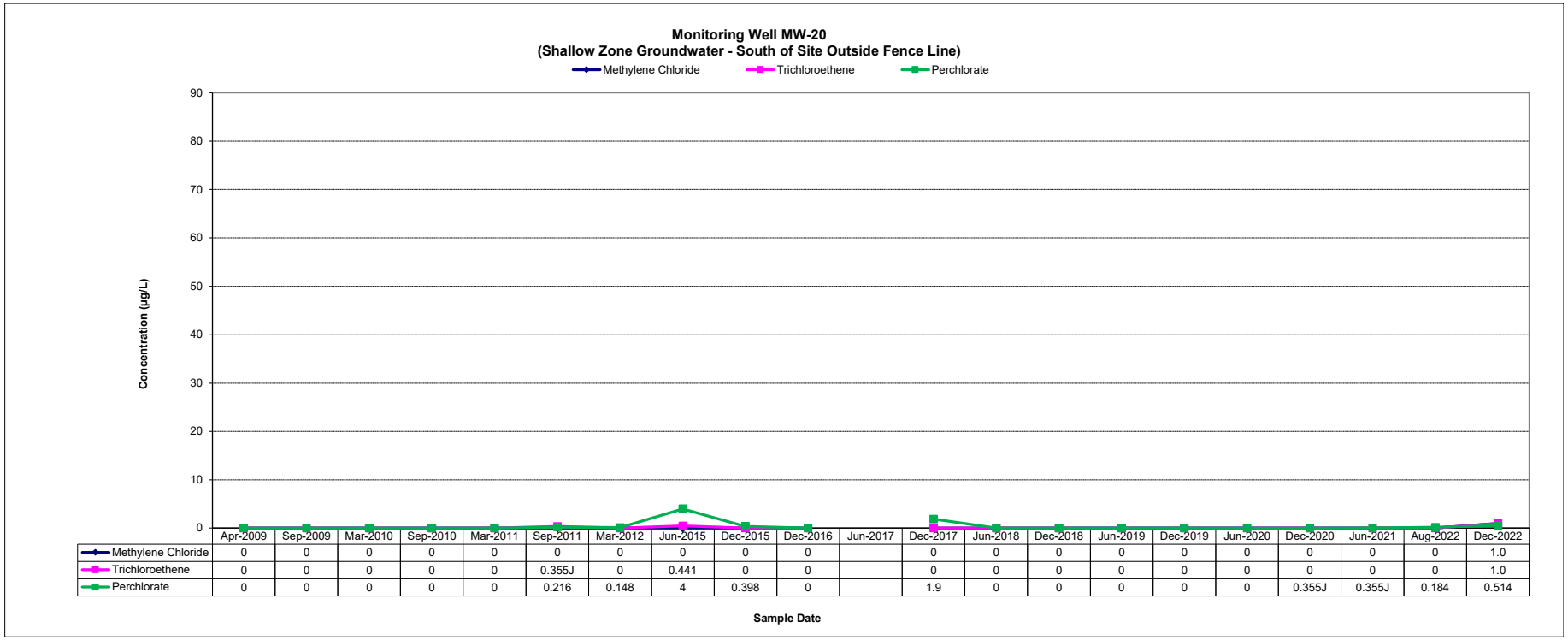
	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Jan-2023
Methylene Chloride	0	11.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0	1.0	1.0	1.0	2.0	5.0	2.0	1.0
Trichloroethene	0	3.49	118	24.3	34.5	8.52	59.1	38.7	89.9	36.6	559	353	1020	433	922	460	224	695	300	520	780	1200	550	1200	440	960	380	290	230
Perchlorate	0	0	5500	17	5.24	0	896	16.5	166	1.25	11600	3580	9370	1060	0.615	0	1.3	0	0	0	90	2900	1.8	848	1.07	0.05	0.0269	0.0518	0.05

Monitoring Well MW-17
(Shallow Zone Groundwater - West of Site Outside of the Fence Line)



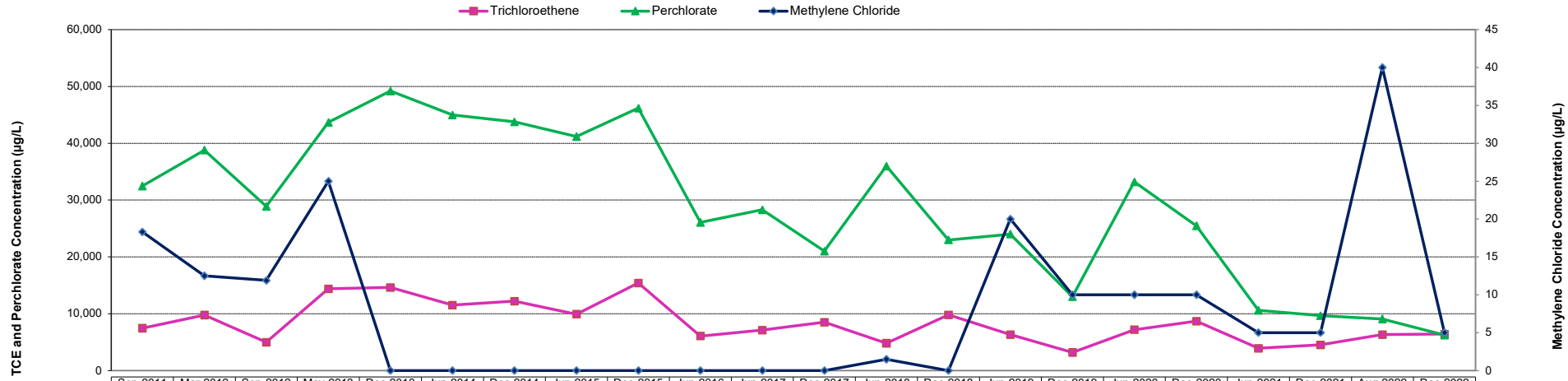
	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Jan-2023
Methylene Chloride	0	0	0	0	0.335	0.346	0			0	0	0											
Trichloroethene	0.551	1.14	0.537	0.943	0.519	0.656	1.69			0	0	0											
Perchlorate	0.179	0	0	0	0	0.376	0	0.143	24.4	0	0	0	0	0	0	2.0	2.0	0.05	0.1	0.05	0.0282	0.05	0.05

Sample Date



	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Jun-2015	Dec-2015	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Aug-2022	Dec-2022
Methylene Chloride	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	1.0
Trichloroethene	0	0	0	0	0	0.355J	0	0.441	0	0		0	0	0	0	0	0	0	0	0	1.0
Perchlorate	0	0	0	0	0	0.216	0.148	4	0.398	0		1.9	0	0	0	0	0	0.355J	0.355J	0.184	0.514

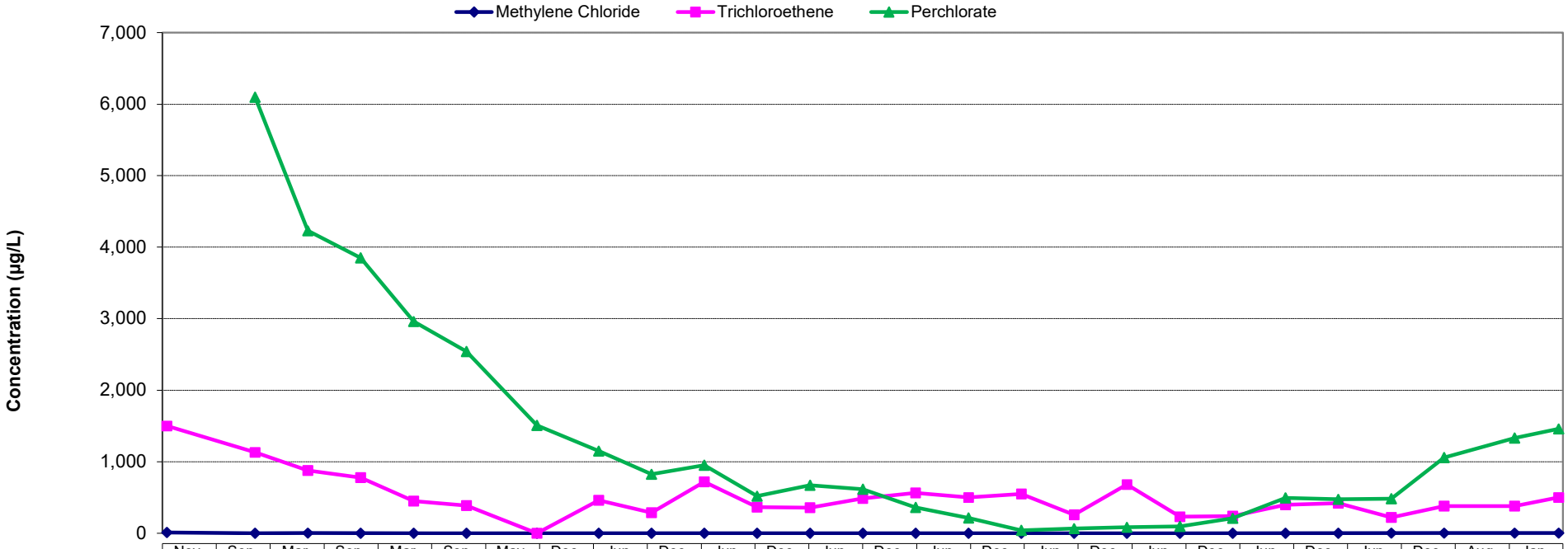
Monitoring Well MW-21
(Shallow Zone Groundwater - Eastern Portion of Site Along the Fence Line)



	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Dec-2022
Trichloroethene	7470	9760	4980	14400	14600	11500	12200	9910	15400	6080	7140	8500	4800	9800	6300	3200	7200	8700	3900	4500	6300	6400
Perchlorate	32500	38800	28900	43700	49200	45000	43800	41200	46200	26100	28300	21000	36000	23000	24000	13000	33200	25500	10600	9660	9080	6220
Methylene Chloride	18.3J	12.5	11.9	25	0	0	0	0	0	0	0	0	1.5	0	20	10	10	10	5.0	5.0	40.0	5.0

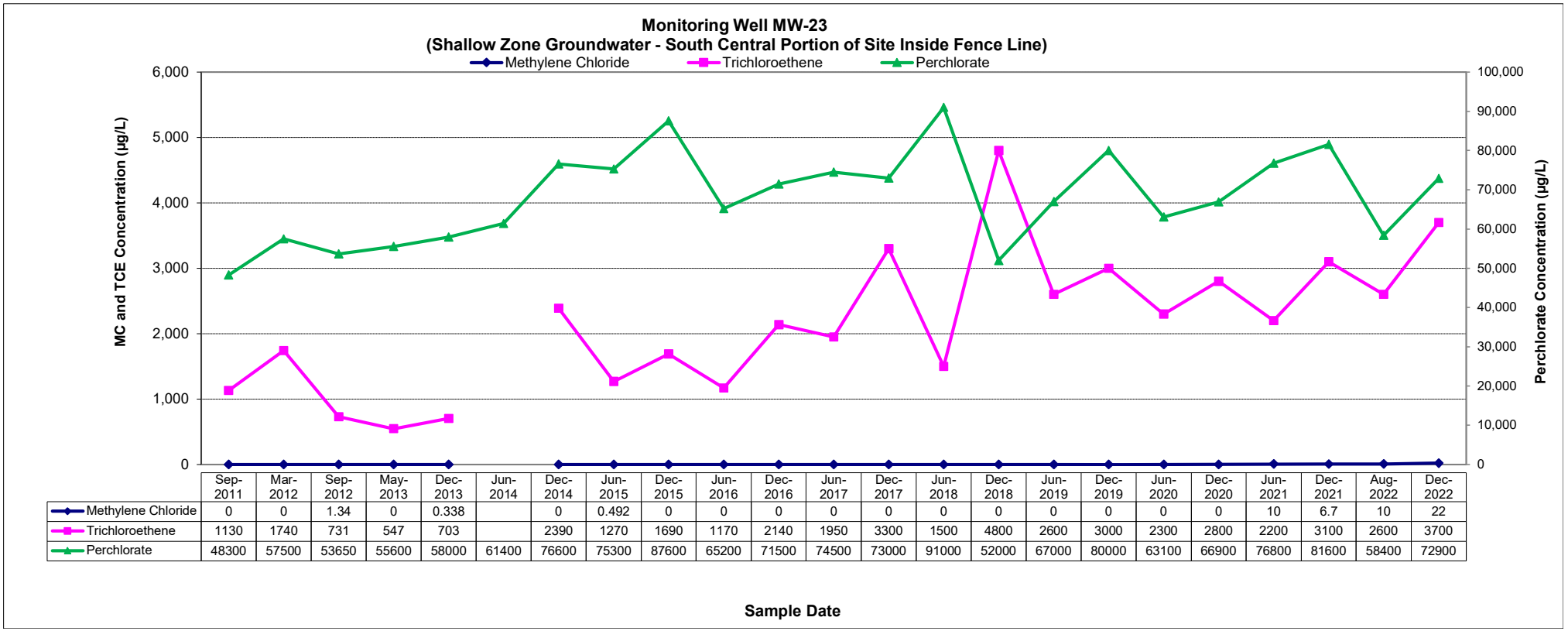
Sample Date

Monitoring Well MW-22
(Shallow Zone Groundwater - East-Southeast Portion of SIte Inside Fence Line)



	Nov-2009	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Jan-2023
Methylene Chloride	12	0	3.04	0	0	0	0.531	0	0	0	0.601	0	0	0	0	0	0	0	0	0	0	0	2.0	1.0	2.0	1.0
Trichloroethene	1500	1130	877	779	450	388	0	463	288	719	364	359	488	566	500	550	260	680	230	240	400	420	220	380	380	500
Perchlorate		6100	4230	3850	2960	2540	1510	1150	824	953	519	671	615	363	214	40	66	84	95	210	493	474	484	1060	1330	1460

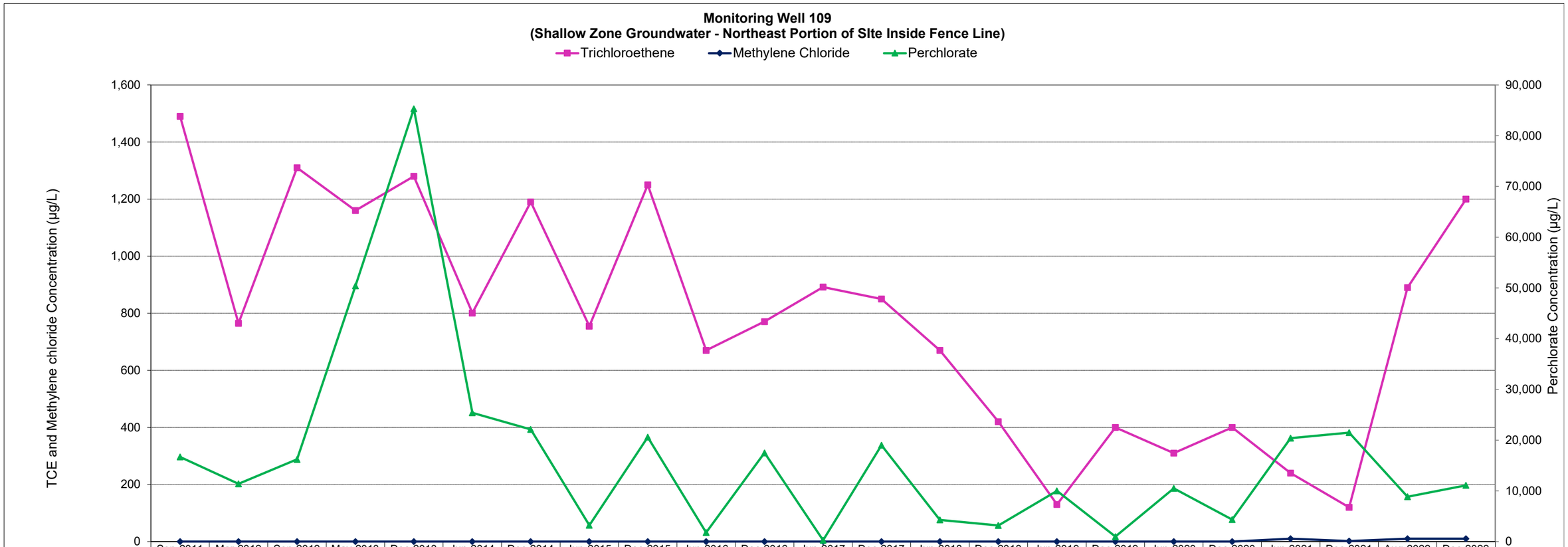
Sample Date



	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Dec-2022
Methylene Chloride	0	0	1.34	0	0.338		0	0.492	0	0	0	0	0	0	0	0	0	0	0	10	6.7	10	22
Trichloroethene	1130	1740	731	547	703		2390	1270	1690	1170	2140	1950	3300	1500	4800	2600	3000	2300	2800	2200	3100	2600	3700
Perchlorate	48300	57500	53650	55600	58000	61400	76600	75300	87600	65200	71500	74500	73000	91000	52000	67000	80000	63100	66900	76800	81600	58400	72900

Sample Date

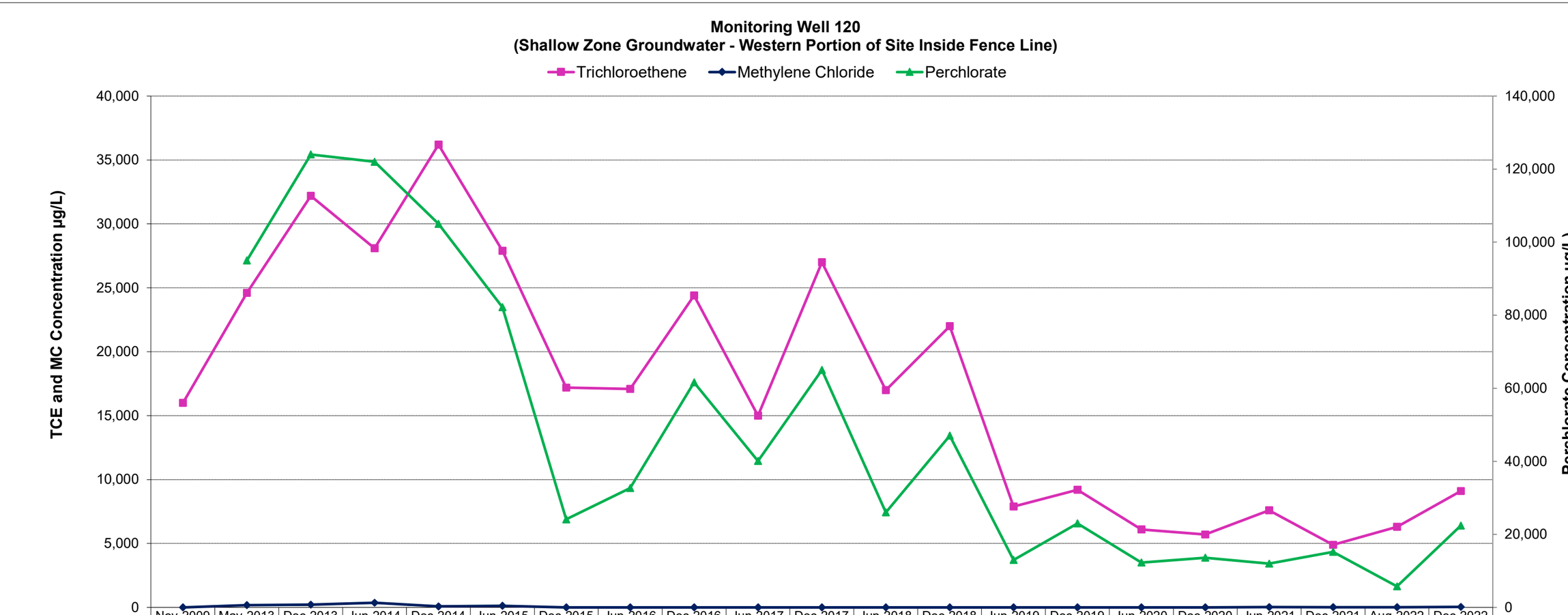
Monitoring Well 109
(Shallow Zone Groundwater - Northeast Portion of SIte Inside Fence Line)



	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Dec-2022
Trichloroethene	1490	765	1310	1160	1280	801	1190	755	1250	670	771	892	850	670	420	130	400	310	400	240	120	890	1200
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	2.0	10.0	10.0
Perchlorate	16700	11400	16200	50400	85300	25400	22100	3220	20600	1810	17500	265	19000	4300	3200	10000	1000	10500	4350	20400	21500	8850	11100

Sample Date

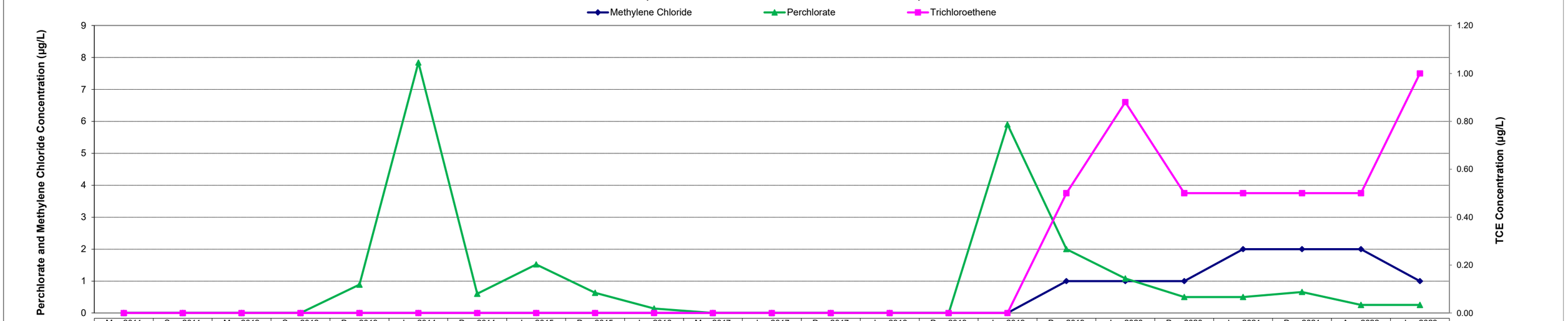
Monitoring Well 120
(Shallow Zone Groundwater - Western Portion of Site Inside Fence Line)



	Nov-2009	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Dec-2022
Trichloroethene	16000	24600	32200	28100	36200	27900	17200	17100	24400	15000	27000	17000	22000	7900	9200	6100	5700	7600	4900	6300	9100
Methylene Chloride	0	170	214	363	71.1	125	0	0	0	0	0	0	0	0	0	0	0	20	10	10	42
Perchlorate		95000	124000	122000	105000	82200	24100	32700	61600	40100	65000	26000	47000	13000	23000	12300	13600	12000	15200	5770	22400

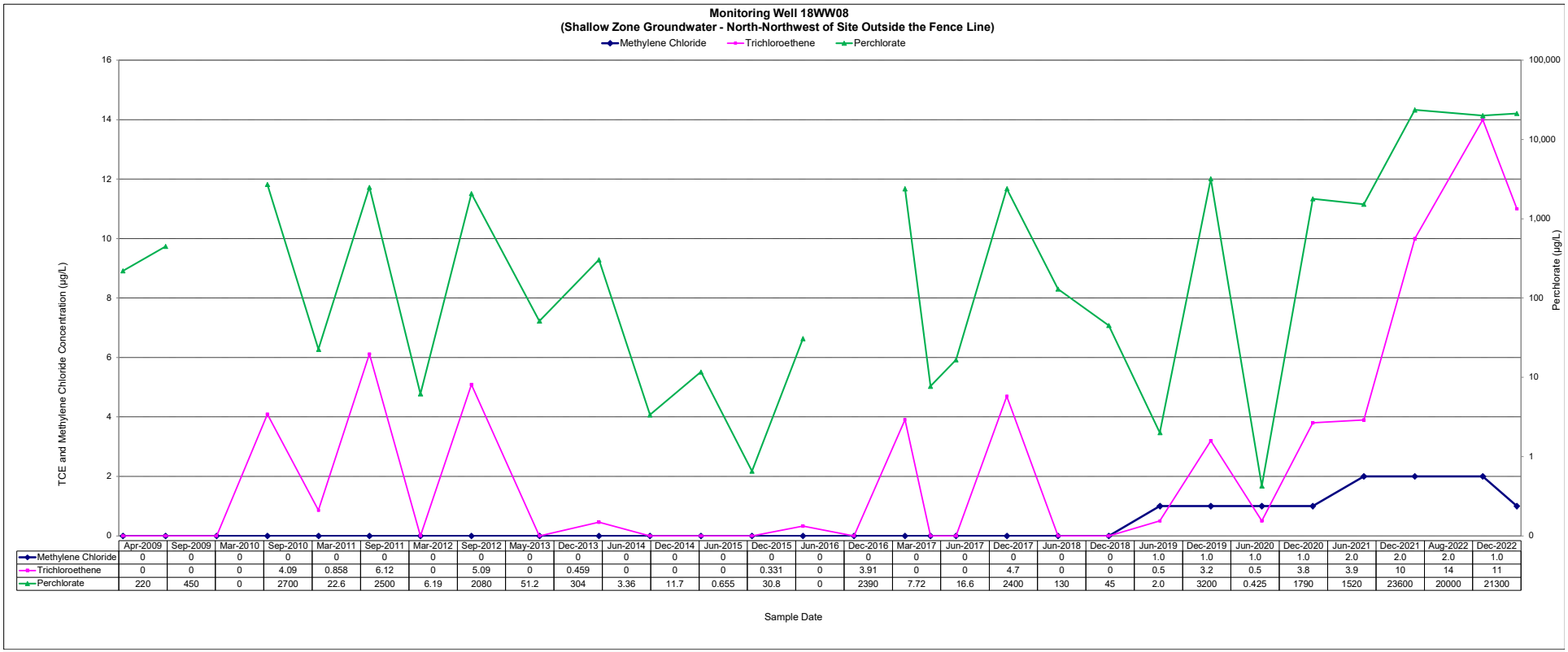
Sample Date

Monitoring Well 126
(Shallow Zone Groundwater - Northwest of GWTP)



	Mar-2011	Sep-2011	Mar-2012	Sep-2012	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Jan-2023
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0	1.0	1.0	2.0	2.0	2.0	1.0
Perchlorate	0	0	0	0	0.887	7.84	0.602	1.52	0.629	0.14	0	0	0	0	0	5.9	2.0	1.08	0.5	0.5	0.658	0.251	0.25
Trichloroethene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.88	0.5	0.5	0.5	0.5	1

Sample Date



	Apr-2009	Sep-2009	Mar-2010	Sep-2010	Mar-2011	Sep-2011	Mar-2012	Sep-2012	May-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Dec-2015	Jun-2016	Dec-2016	Mar-2017	Jun-2017	Dec-2017	Jun-2018	Dec-2018	Jun-2019	Dec-2019	Jun-2020	Dec-2020	Jun-2021	Dec-2021	Aug-2022	Dec-2022
Methylene Chloride	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	1.0
Trichloroethene	0	0	0	4.09	0.858	6.12	0	5.09	0	0.459	0	0	0	0.331	0	3.91	0	0	4.7	0	0	0.5	3.2	0.5	3.8	3.9	10	14	11
Perchlorate	220	450	0	2700	22.6	2500	6.19	2080	51.2	304	3.36	11.7	0.655	30.8	0	2390	7.72	16.6	2400	130	45	2.0	3200	0.425	1790	1520	23600	20000	21300

This page intentionally left blank.

APPENDIX F
GWTP WATER SAMPLING LABORATORY ANALYTICAL RESULTS

This page intentionally left blank.

APPENDIX G
QUALITY CONTROL SUMMARY REPORT

This page intentionally left blank.

QUARTERLY CONTROL SUMMARY REPORT
1st QUARTER (Jan-Mar) 2023
GROUNDWATER TREATMENT PLANT
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

June 2023

Prepared For:

Longhorn Army Ammunition Plant
Karnack, Texas

Under Contract To:

U.S. Army Corps of Engineers
Tulsa District
Tulsa, Oklahoma

Contract Number: W9128F-13-D-0012
Task Order Number: W912BV17F0150

Prepared By:

1608 13th Avenue South, Suite 300
Birmingham, Alabama 35205
1-800-806-4001 • www.bhate.com

Table of Contents

1 INTRODUCTION 3
1.1 Intended Use of Data 3
1.2 Preservation and Holding Times 3
1.3 Calibrations 4
1.3.1 Continuing Calibration Verifications 4
1.4 Blanks 4
1.4.1 Metals 4
1.5 Surrogates 4
1.6 Laboratory Control Sample/Laboratory Control Sample Duplicate 4
1.7 Matrix Spike/Matrix Spike Duplicate Sample 5
1.7.1 Volatiles 5
1.7.2 Total Organic Carbon 5
1.7.3 Metals 5
1.8 Internal Standards 5
1.9 Precision 5
1.9.1 Laboratory Duplicate 5
1.9.2 Field Duplicate 6
2 DATA USABILITY SUMMARY 6

Tables

Table 1: Field Sample Identification and Laboratory Packages
Table 2: Qualified Analytical Data
Table 3: Completeness by Method

1 INTRODUCTION

Bhate reviewed 22 data packages from ALS Environmental, Houston, Texas. Groundwater samples were collected January 25, 2023, through March 28, 2023, at the Groundwater Treatment Plant (GWTP) and December 15, 2022 to January 11, 2023 at Site LHAAP 18/24 at Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. Data were reviewed for conformance to the requirements of the following guidance documents: *USEPA Contract Laboratory Program* [CLP] *National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, November 2020), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, November 2020) and the *Final Basewide Uniform Federal Policy* [UFP] – *Quality Assurance Project Plan* [QAPP] *Longhorn Army Ammunition Plant* which is in Appendix C of the *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant Karnack, Texas* (Bhate, May 2018).

1.1 Intended Use of Data

The objective of sampling at the GWTP is to monitor effluent streams to confirm compliance with discharge limits. The LHAAP 18/24 sampling is part of the annual interim action sampling event.

Analyses performed include:

- SW6850 – Perchlorate
- E350.3– Nitrogen, Ammonia
- E365.3– Orthophosphate
- E415.1 – Total Organic Carbon
- SW8260C- Volatiles
- SW8270D SIM- 1,4-Dioxane
- SW6020A/7470A– Metals
- SW9056A – Chloride (Cl) and Sulfate (SO_4)
- SW7196A – Hexavalent Chromium
- E410.4 – Chemical Oxygen Demand
- E1664A – Oil and Grease
- TO-15 – Volatiles in Air

Table 1 lists the sample identification numbers (IDs) and their associated laboratory package.

Table 2 lists qualified results with the qualification flag and reason code.

The following narrative is a brief synopsis of data that required qualification due to quality control discrepancies.

1.2 Preservation and Holding Times

Sample identification data were evaluated for agreement with the chain-of-custody (COC). All samples were received in appropriate containers, within the proper temperature range, in good

condition, and within the required hold times.

1.3 Calibrations

All analytes reported must be present in the initial and continuing calibration. The calibrations must meet the acceptance criteria specified in Worksheet 24 (Analytical Instrument Calibration) of the QAPP. All results reported must be within the calibration range. Samples were diluted, if necessary, to bring analyte responses within the calibration range.

1.3.1 Continuing Calibration Verifications

The calibrations must meet the following criteria otherwise the compound is qualified J or UJ: The continuing calibration verification (CCV) criteria are 20 percent difference (%D) for VOCs and SVOCs and 50% for closing CCVs. Metals and general chemistry - 10%D; perchlorate - 15%D; and volatiles in air - 30%D.

The CCV %D for acetone and chloroform were outside control limits for sample LH18/24-SP650_032823. The CCV %D for 2-hexanone was outside control limits for samples 18CPTMW12DW_010923, MW7_010923, MW8_010923, MW9_010923, MW10_010923, CO9_010923 and CO9_010923_a. These compounds were flagged estimated “UJ”.

1.4 Blanks

If the analyte result for an associated sample was less than 5X (10X for common laboratory contaminants) the analyte concentration in the blank, that result was qualified “UB” and considered an artifact of blank contamination. Where the sample result for the affected analyte was non-detect or greater than 5X the amount in the blank, no qualifier was applied.

1.4.1 Metals

LHAAP 1824 sample MW5_121522 was affected by the detection of aluminum in the associated method blank. This compound was flagged “UB” and considered an artifact of blank contamination.

1.5 Surrogates

Surrogates were evaluated using limits defined by each method in the project-specific QAPP Worksheet 28.

The 1,4-dioxane surrogate 4-terphenyl-d14 was recovered above control limits in samples LH18/24-SP650_030723, LH18/24-SP140_032123, LH18/24-SP650_032123, MW7_010923, MW8_010923, MW9_010923, MW16_011123 and MW16_011123_a. The results were qualified estimated “J”.

1.6 Laboratory Control Sample/Laboratory Control Sample Duplicate

The Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) recoveries were evaluated using limits defined in the project-specific QAPP
Worksheet 15.

No LCS/LCSD recoveries were outside control limits.

1.7 Matrix Spike/Matrix Spike Duplicate Sample

The Matrix Spike (MS)/Matrix Spike Duplicate (MSD) recoveries were evaluated using limits defined in Worksheet 15 of the project-specific QAPP. When sample results were greater than 4x the spike amount, control limits were not applicable and require no qualification. Furthermore, if a MS/MSD analysis was performed on a batched (unrelated) sample no qualification was made to the sample data. Otherwise, only the sample used for spiking requires qualification.

1.7.1 Volatiles

The matrix spike recovery was reported below control limits for the volatile compounds 1,1-dichloroethane, methylene chloride, chloroform and cis-1,2-dichloroethene in the quarterly effluent samples LH18/24-SP650_032123. The biweekly sample LH18/24-SP650_032823 reported the MS and/or MSD recoveries of 1,1-dichloroethane, 1,1-dichloroethene, acetone, chloroform, cis-1,2-dichloroethene, methylene chloride and vinyl chloride below limits. The matrix spike recovery for LHAAP 18/24 sample 18WW24_122122 reported bromochloromethane below control limits. These compounds were flagged estimated “J/UJ”.

1.7.2 Total Organic Carbon

The weekly samples LH18/24-SP650_032123 and LH18/24-SP650_032823 reported the recoveries of the matrix spike above control limits and were qualified estimated “J”.

1.7.3 Metals

The MS/MSD recoveries for mercury were below control limits in LHAAP 1824 sample MW5_121522. This non-detect compound was flagged “UJ”.

1.8 Internal Standards

If the %R for an internal standard in a sample is not within the limit, the associated sample is qualified for those analytes associated with the internal standard(s) outside of the limit.

Internal standards were within acceptance criteria for the associated compounds.

1.9 Precision

Precision is the measure of variability of individual sample measurements. Evaluation of laboratory and/or field duplicates for precision was done using the relative percent difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. Field duplicate RPD limits were set at <30% for groundwater and air matrices. Laboratory duplicate RPD limits were set at <25% for air matrices.

1.9.1 Laboratory Duplicate

The laboratory duplicate results were within control limits.

1.9.2 Field Duplicate

The field duplicate RPD between AWD3_121522 and its duplicate and CO9_010923 and its duplicate were outside control limits for zinc. The RPD between MW17_011123 and its duplicate was outside for 1,4-dioxane. These compounds we considered estimated "J" in both sample and duplicate.

2 DATA USABILITY SUMMARY

The data are usable for the intended purposes of the project (Table 3). The data quality objectives have been met for the project.

Table 1: Field Sample Identification and Laboratory Packages

Client Sample Identification	Lab Package	SW6850	E350.3	E365.3	E415.1	SW8270D SIM	SW8260C	SW6020A	SW9056A	SW7196A	E410.4	1664A	TO-15
GWTP Samples													
LH18/24-SP650_012523_BIX/AIX	E2300080	X											
LH18/24-SP650_020723_AIX/BIX	E2300128	X											
LH18/24-SP650_022423_AIX/BIX	E2300178	X											
LH18/24-SP650_030723_BIX/AIX	HS23030401	X	X	X	X								
LH18/24-SP650_030723_AIX	HS23030396	X				X	X	X		X			
LH18/24-SP650_030723	HS23030399	X						X		X			
LH18/24-SP650_031423_BIX/AIX	HS23030817	X	X	X	X								
LH18/24-SP650_031423	HS23030818						X		X				
LH18/24-SP650_032123_BIX/AIX	HS23031257	X	X	X	X								
LH18/24-SP650_032123_AIX	HS23031291	X				X	X	X	X		X	X	
LH18/24-SP140_032123	HS23031294	X				X	X	X	X		X	X	
LH18/24-SP650_032823_BIX/AIX	HS23031702	X	X	X	X								
LH18/24-SP650_032823	HS23031739						X		X				
LHAAP 18/24													
AWD1_122022	HS22121316	X				X		X					
AWD3_121522	HS22120986	X					X	X					
AWD3_121522_a	HS22120986	X					X	X					
AWD4_122022	HS22121316	X				X	X	X					
18CPTMW01SW_122022	HS22121316	X				X	X	X					
18CPTMW03SW_122222	HS22121478	X				X	X	X					
18CPTMW04_121622	HS22121096	X				X	X						
18CPTMW04SW_121622	HS22121096	X				X	X	X					
18CPTMW06_011023	HS23010489	X				X	X						
18CPTMW07_122222	HS22121478	X				X	X						
18CPTMW08SW_121522	HS22120986	X				X	X						
18CPTMW08DW_121522	HS22120986	X				X							
18CPTMW10SW_122022	HS22121316	X				X	X						
18CPTMW10DW_122022	HS22121316	X					X	X					
18CPTMW12SW_010923	HS23010411	X				X	X	X					
18CPTMW12DW_010923	HS23010411	X				X	X	X					
18CPTMW14_011023	HS23010489	X				X	X	X					
18CPTMW15_122122	HS22121494	X				X	X						
18CPTMW16_011123	HS23010632	X				X							
18CPTMW18_122222	HS22121478	X				X	X	X					
18CPTMW19_122122	HS22121494	X				X	X						
18CPTMW22R_121522	HS22120986	X				X	X	X					
18CPTMW22SW_121522	HS22120986	X				X	X	X					

18CPTMW23_122122	HS22121494	X				X	X						
18CPTMW24_122222	HS22121478	X				X	X	X					
18WW02_011023	HS23010489	X				X	X	X					
18WW06_011023	HS23010489	X				X	X						
18WW08_122122	HS22121494	X				X	X						
18WW10_010123	HS23010489	X				X	X						
18WW17_122222	HS22121478	X					X	X					
18WW22 _122222	HS22121478	X				X	X	X					
18WW24_122122	HS22121494	X					X	X					
CO3_122222	HS22121478	X				X	X						
CO8_011023	HS23010489	X				X	X	X					
CO9_010923	HS23010411	X					X	X					
CO9_010923_a	HS23010411	X					X	X					
MW2_121622	HS22121096	X				X	X	X					
MW3_122122	HS22121494	X					X	X					
MW5_121522	HS22120986	X				X	X	X					
MW7_010923	HS23010411	X				X	X						
MW8_010923	HS23010411	X				X	X						
MW9_010923	HS23010411	X				X	X	X					
MW10_010923	HS23010411	X				X	X						
MW14_122022	HS22121316	X				X	X	X					
MW16_011123	HS23010632	X				X	X						
MW16_011123_a	HS23010632	X				X	X						
MW17_011123	HS23010632	X				X							
MW17_011123_a	HS23010632	X				X							
MW18_010923	HS23010411	X					X						
MW19_011023	HS23010489	X					X	X					
MW19_011023_a	HS23010489	X					X	X					
MW20_121522	HS22120986	X					X						
MW21_122122	HS22121494	X				X	X	X					
MW22_011023	HS23010489	X					X	X					
MW23_122022	HS22121316	X					X						
109_122122	HS22121494	X				X	X						
120_122022	HS22121316	X				X	X						
125_122222	HS22121478	X					X	X					
126_011123	HS23010632	X				X	X	X					
Air Samples													
LH18/24-Air_032723_Stripper	P2301496												X
LH18/24-Air_032723_Stripper_a	P2301496												X
LH18/24-Air_032723_GWTP	P2301496												X
LH18/24-Air_032723_Downwind	P2301496												X

GWTP – Groundwater Treatment Plant
SIM – Selected Ion Monitoring
SW – Solid Waste (Test Methods for Evaluating Solid Waste)
E – U.S. Environmental Protection Agency Method
BIX/AIX –Before/After Ion Exchange
HS – Houston
a – duplicate sample

Table 2: Qualified Analytical Data

Client Sample Identification	Laboratory Package	Analyte Name	Result and Data Validation Qualifier	Reason Code for Qualification
LHAAP 18/24				
MW5_121522	HS22120986	Aluminum Mercury	0.00795 UB < 0.000100 UJ	MB MS/MSD <
AWD3_121522	HS22120986	Zinc	0.00273 J	Dup RPD
AWD3_121522_a	HS22120986	Zinc	0.00407 J	Dup RPD
18WW24_122122	HS22121494	Bromochloromethane	< 1.0 UJ	MS <
MW7_010923	HS23010411	1,4-Dioxane 2-Hexanone	2.2 J < 1.0 UJ	Surr > CCV
MW8_010923	HS23010411	1,4-Dioxane 2-Hexaonone	0.55 J < 1.0 UJ	Surr > CCV
MW9_010923	HS23010411	1,4-Dioxane 2-Hexanone	0.64 J < 1.0 UJ	Surr > CCV

CO9_010923	HS23010411	Zinc 2-Hexanone	0.0190 J < 1.0 UJ	Dup RPD CCV
CO9_010923_a	HS23010411	Zinc 2-Hexanone	0.00908 J < 1.0 UJ	Dup RPD CCV
18CPTMW12DW_010923	HS23010411	2-Hexanone	< 1.0 UJ	CCV
MW10_010923	HS23010411	2-Hexanone	< 1.0 UJ	CCV
MW16_011123	HS23010632	1,4-Dioxane	1.4 J	Surr >
MW16_011123_a	HS23010632	1,4-Dioxane	1.2 J	Surr >
MW17_011123	HS23010632	1,4-Dioxane	0.028 J	Dup RPD
MW17_011123_a	HS23010632	1,4-Dioxane	0.10 J	Dup RPD
GWTP				
LH18/24-SP650_032123	HS23031291	1,1-dichloroethane Chloroform Cis-1,2-dichloroethene Methylene chloride	< 1.0 UJ < 1.0 UJ 0.87 J < 1.0 UJ	MS <
LH18/24-SP650_032123	HS23031257	TOC	2.90 J	MS >
LH18/24-SP650_030723	HS23030396	1,4-Dioxane	0.72 J	Surr >
LH18/24-SP140_032123	HS23031294	1,4-Dioxane	1.2 J	Surr >
LH18/24-SP650_032123	HS23031291	1,4-Dioxane	1.3 J	Surr >
LH18/24-SP650_032823	HS23031739	1,1-Dichloroethane 1,1-Dichloroethene Acetone Chloroform Cis-1,2-Dichloroethene Methylene Chloride Vinyl Chloride	< 1.0 UJ < 1.0 UJ < 1.0 UJ < 1.0 UJ 1.2 J < 1.0 UJ < 1.0 UJ	MS < MS < MS</CCV MS </CCV MS < MS < MS/MSD <
LH18/24-SP650_032823	HS23031702	TOC	7.23 J	MS >

GWTP – Groundwater Treatment Plant
J – Estimated: The analyte was positively identified; the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
UJ – Estimated not detected; The analyte was not detected but considered estimated due to discrepancies in meeting quality control criteria and reported to the limit of detection.
UB – considered an artifact of blank contamination
Dup RPD – field duplicate relative percent difference above control limits
MS/MSD </> Matrix spike/duplicate below/above control limits
Surr > - surrogate recovery above control limits
MB – method blank contamination
CCV – continuing calibration verification outside control limits

Table 3: Completeness by Method

Method	No. of Rejected Results	% Completeness
SW6850	0	100
E350.3	0	100
E365.3	0	100
E415.1	0	100
SW8270D SIM	0	100
SW8260C	0	100
SW6020A/7470A	0	100
SW9056	0	100
SW7196A	0	100
TO-15	0	100
E1664A	0	100
E410.4	0	100

E – U.S. Environmental Protection Agency method.
SW – Solid Waste (Test Methods for Evaluating Solid Waste)

APPENDIX H
AIR MONITORING ANALYTICAL LABORATORY REPORT

This page intentionally left blank.

ALS Environmental
2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T +1 805 526 7161

right solutions.
right partner.

LABORATORY REPORT

April 19, 2023

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd., Suite 129
Lakewood, CO 80228

RE: LHAAP GWTP / NWO 1312.0150

Dear Marcia:

Enclosed are the results of the samples submitted to our laboratory on April 3, 2023. For your reference, these analyses have been assigned our service request number P2301496.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

ALS | Environmental

By Sue Anderson at 3:55 pm, Apr 19, 2023

Sue Anderson
Project Manager

ALS Environmental
2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T +1 805 526 7161

right solutions.
right partner.

Client: Bhate Environmental Associates, Inc. Service Request No: P2301496
Project: LHAAP GWTP / NWO 1312.0150

CASE NARRATIVE

The samples were received intact under chain of custody on April 3, 2023 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph/mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The upper control criterion was exceeded for Benzyl Chloride and Naphthalene in the Continuing Calibration Verification (CCV) analyzed on April 11, 2023. Since the apparent problem equates to a potential high bias and the field samples analyzed in this sequence did not contain the analytes in question, the data quality has not been affected. No corrective action was required.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.4 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

ALS Environmental
2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T +1 805 526 7161

right solutions.
right partner.

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	https://dec.alaska.gov/spar/csp/lab-approval/list-of-approved-labs	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	https://internet.deq.louisiana.gov/portal/divisions/lelap/accredited-laboratories	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtm	2022028
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	006-999-456
New Jersey DEP (NELAP)	https://dep.nj.gov/dsr/oqa/certified-laboratories/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-011
Pennsylvania DEP	hhttp://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413-22-13
Utah DOH (NELAP)	https://uphl.utah.gov/certifications/environmental-laboratory-certification/	CA016272022-14
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Bhate Environmental Associates, Inc. Service Request: P2301496
Project ID: LHAAP GWTP / NWO 1312.0150

Date Received: 4/3/2023
Time Received: 11:21

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pfl (psig)	TO-15 - VOC Cans
LH18/24-AIR_032723_STRIPPER	P2301496-001	Air	3/27/2023	14:00	AS00931	0.09	3.99	X
LH18/24-AIR_032723_STRIPPER_a	P2301496-002	Air	3/27/2023	14:00	AS00915	0.10	3.85	X
LH18/24-AIR_032723_GWTP	P2301496-003	Air	3/27/2023	14:15	AC02328	-2.33	3.81	X
LH18/24-AIR_032723_DOWNWIND	P2301496-004	Air	3/28/2023	07:00	AC02395	0.10	4.35	X

01177767

Air - Chain of Custody Record & Analytical Service Request

Page 1 of 1

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161

R2301496

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10 Day-Standard

ALS Project No.

Company Name & Address (Reporting Information)	BHATE ENVIRONMENTAL 445 UNION BLVD. STE. 129 LAKEWOOD, CO. 80228
Project Name	LHAAP-GWTP
Project Number	NW01312.0150
Project Manager	Kim Nemmers
P.O. # / Billing Information	
Phone	205-918-4000
Fax	
Email Address for Result Reporting	molive@bhate.com
Sampler (Print & Sign)	Scott Beesinger

ALS Contact:

Analysis Method

TO-15

Comments
e.g. Actual Preservative or specific instructions

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume	TO-15		
LH18/24-AIR_032723_STRipper		3/27/23	1400	AS00931		-28	0	6L	X		
LH18/24-AIR_032723_STRipper_a		3/27/23	1400	AS00915		-29	0	6L	X		
LH18/24-AIR_032723_GWTP		3/27/23	1415	AC02328	SFC00354	-30	-5	6L	X		
LH18/24-AIR_032723_Downwind_		3/28/23	0700	AC02395	SFC00589	-28	0	6L	X		

Report Tier Levels - please select

Tier I - Results (Default if not specified) _____
Tier II (Results + QC Summaries) _____
Tier III (Results + QC & Calibration Summaries) _____
Tier IV (Data Validation Package) 10% Surcharge _____

EDD required Yes / No
Type: _____ Units: _____

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

Project Requirements (MRLs, QAPP)

Relinquished by: (Signature) Scott Beesinger	Date: 3/28/23	Time: 0730	Received by: (Signature) Clara Oliveros	Date: 4/3/23	Time: 1121	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:	Cooler / Blank Temperature ____°C

ALS Environmental
Sample Acceptance Check Form

Client: Bhate Environmental Associates, Inc. Work order: P2301496

Project: LHAAP GWTP /NWO 1312.0150

Sample(s) received on: 4/3/23 Date opened: 4/3/23 by: IOLIVARES

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P2301496-001.01	6.0 L Silonite Can					
P2301496-002.01	6.0 L Silonite Can					
P2301496-003.01	6.0 L Ambient Can					
P2301496-004.01	6.0 L Ambient Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_STRIPPER** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-001

Test Code: EPA TO-15 Date Collected: 3/27/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.025 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AS00931

Initial Pressure (psig): 0.09 Final Pressure (psig): 3.99

Canister Dilution Factor: 1.26

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	27	ND	16	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	27	ND	5.4	
74-87-3	Chloromethane	ND	26	ND	13	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	26	ND	3.8	
75-01-4	Vinyl Chloride	**1,100**	26	**440**	10	
106-99-0	1,3-Butadiene	ND	27	ND	12	
74-83-9	Bromomethane	ND	26	ND	6.6	
75-00-3	Chloroethane	ND	26	ND	9.9	
64-17-5	Ethanol	ND	250	ND	130	
75-05-8	Acetonitrile	ND	50	ND	30	
107-02-8	Acrolein	ND	50	ND	22	
67-64-1	Acetone	ND	270	ND	110	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	26	ND	4.7	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	52	ND	21	
107-13-1	Acrylonitrile	ND	52	ND	24	
75-35-4	1,1-Dichloroethene	**230**	27	**59**	6.9	
75-09-2	Methylene Chloride	ND	27	ND	7.7	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	27	ND	8.5	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**8,400**	140	**1,100**	18	**D**
75-15-0	Carbon Disulfide	ND	54	ND	17	
156-60-5	trans-1,2-Dichloroethene	**46**	27	**12**	6.9	
75-34-3	1,1-Dichloroethane	**34**	27	**8.5**	6.7	
1634-04-4	Methyl tert-Butyl Ether	ND	27	ND	7.6	
108-05-4	Vinyl Acetate	ND	250	ND	72	
78-93-3	2-Butanone (MEK)	ND	52	ND	18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_STRIPPER** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-001

Test Code: EPA TO-15 Date Collected: 3/27/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.025 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AS00931

Initial Pressure (psig): 0.09 Final Pressure (psig): 3.99

Canister Dilution Factor: 1.26

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**7,000**	130	**1,800**	34	**D**
141-78-6	Ethyl Acetate	ND	110	ND	29	
110-54-3	n-Hexane	ND	27	ND	7.6	
67-66-3	Chloroform	**34**	27	**7.0**	5.5	
109-99-9	Tetrahydrofuran (THF)	ND	50	ND	17	
107-06-2	1,2-Dichloroethane	**130**	27	**32**	6.7	
71-55-6	1,1,1-Trichloroethane	ND	27	ND	4.9	
71-43-2	Benzene	ND	27	ND	8.5	
56-23-5	Carbon Tetrachloride	ND	26	ND	4.2	
110-82-7	Cyclohexane	ND	53	ND	15	
78-87-5	1,2-Dichloropropane	ND	27	ND	5.8	
75-27-4	Bromodichloromethane	ND	27	ND	4.1	
79-01-6	Trichloroethene	**8,900**	130	**1,700**	25	**D**
123-91-1	1,4-Dioxane	ND	27	ND	7.4	
80-62-6	Methyl Methacrylate	ND	55	ND	14	
142-82-5	n-Heptane	ND	27	ND	6.5	
10061-01-5	cis-1,3-Dichloropropene	ND	27	ND	6.0	
108-10-1	4-Methyl-2-pentanone	ND	55	ND	14	
10061-02-6	trans-1,3-Dichloropropene	ND	26	ND	5.7	
79-00-5	1,1,2-Trichloroethane	ND	27	ND	4.9	
108-88-3	Toluene	ND	27	ND	7.1	
591-78-6	2-Hexanone	ND	55	ND	14	
124-48-1	Dibromochloromethane	ND	27	ND	3.2	
106-93-4	1,2-Dibromoethane	ND	26	ND	3.4	
123-86-4	n-Butyl Acetate	ND	50	ND	11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_STRIPPER** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-001

Test Code: EPA TO-15 Date Collected: 3/27/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.025 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AS00931

Initial Pressure (psig): 0.09 Final Pressure (psig): 3.99

Canister Dilution Factor: 1.26

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	27	ND	5.8	
127-18-4	Tetrachloroethene	**180**	27	**27**	3.9	
108-90-7	Chlorobenzene	ND	27	ND	5.8	
100-41-4	Ethylbenzene	ND	27	ND	6.2	
179601-23-1	m,p-Xylenes	ND	55	ND	13	
75-25-2	Bromoform	ND	27	ND	2.6	
100-42-5	Styrene	ND	27	ND	6.3	
95-47-6	o-Xylene	ND	27	ND	6.2	
111-84-2	n-Nonane	ND	27	ND	5.1	
79-34-5	1,1,2,2-Tetrachloroethane	ND	27	ND	3.9	
98-82-8	Cumene	ND	27	ND	5.5	
80-56-8	alpha-Pinene	ND	55	ND	10	
103-65-1	n-Propylbenzene	ND	27	ND	5.5	
622-96-8	4-Ethyltoluene	ND	28	ND	5.6	
108-67-8	1,3,5-Trimethylbenzene	ND	27	ND	5.4	
95-63-6	1,2,4-Trimethylbenzene	ND	27	ND	5.4	
100-44-7	Benzyl Chloride	ND	110	ND	20	
541-73-1	1,3-Dichlorobenzene	ND	27	ND	4.4	
106-46-7	1,4-Dichlorobenzene	ND	27	ND	4.4	
95-50-1	1,2-Dichlorobenzene	ND	27	ND	4.5	
5989-27-5	d-Limonene	ND	55	ND	10	
96-12-8	1,2-Dibromo-3-chloropropane	ND	55	ND	5.7	
120-82-1	1,2,4-Trichlorobenzene	ND	55	ND	7.5	
91-20-3	Naphthalene	ND	28	ND	5.3	
87-68-3	Hexachlorobutadiene	ND	27	ND	2.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_STRIPPER_a** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-002

Test Code: EPA TO-15 Date Collected: 3/27/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.025 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AS00915

Initial Pressure (psig): 0.10 Final Pressure (psig): 3.85

Canister Dilution Factor: 1.25

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	27	ND	15	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	27	ND	5.4	
74-87-3	Chloromethane	ND	26	ND	13	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	26	ND	3.7	
75-01-4	Vinyl Chloride	**870**	26	**340**	10	
106-99-0	1,3-Butadiene	ND	27	ND	12	
74-83-9	Bromomethane	ND	26	ND	6.6	
75-00-3	Chloroethane	ND	26	ND	9.9	
64-17-5	Ethanol	ND	250	ND	130	
75-05-8	Acetonitrile	ND	50	ND	30	
107-02-8	Acrolein	ND	50	ND	22	
67-64-1	Acetone	ND	260	ND	110	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	26	ND	4.6	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	51	ND	21	
107-13-1	Acrylonitrile	ND	51	ND	24	
75-35-4	1,1-Dichloroethene	**190**	27	**48**	6.8	
75-09-2	Methylene Chloride	ND	27	ND	7.6	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	27	ND	8.5	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**8,100**	140	**1,100**	18	**D**
75-15-0	Carbon Disulfide	ND	54	ND	17	
156-60-5	trans-1,2-Dichloroethene	**37**	27	**9.2**	6.8	
75-34-3	1,1-Dichloroethane	**29**	27	**7.1**	6.7	
1634-04-4	Methyl tert-Butyl Ether	ND	27	ND	7.5	
108-05-4	Vinyl Acetate	ND	250	ND	71	
78-93-3	2-Butanone (MEK)	ND	52	ND	18	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_STRIPPER_a** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-002

Test Code: EPA TO-15 Date Collected: 3/27/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.025 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AS00915

Initial Pressure (psig): 0.10 Final Pressure (psig): 3.85

Canister Dilution Factor: 1.25

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**6,700**	130	**1,700**	33	**D**
141-78-6	Ethyl Acetate	ND	110	ND	29	
110-54-3	n-Hexane	ND	27	ND	7.5	
67-66-3	Chloroform	**28**	27	**5.7**	5.4	
109-99-9	Tetrahydrofuran (THF)	ND	50	ND	17	
107-06-2	1,2-Dichloroethane	**110**	27	**26**	6.7	
71-55-6	1,1,1-Trichloroethane	ND	27	ND	4.9	
71-43-2	Benzene	ND	27	ND	8.5	
56-23-5	Carbon Tetrachloride	ND	26	ND	4.1	
110-82-7	Cyclohexane	ND	53	ND	15	
78-87-5	1,2-Dichloropropane	ND	27	ND	5.7	
75-27-4	Bromodichloromethane	ND	27	ND	4.0	
79-01-6	Trichloroethene	**8,500**	130	**1,600**	25	**D**
123-91-1	1,4-Dioxane	ND	27	ND	7.4	
80-62-6	Methyl Methacrylate	ND	55	ND	13	
142-82-5	n-Heptane	ND	27	ND	6.5	
10061-01-5	cis-1,3-Dichloropropene	ND	27	ND	5.9	
108-10-1	4-Methyl-2-pentanone	ND	55	ND	13	
10061-02-6	trans-1,3-Dichloropropene	ND	26	ND	5.6	
79-00-5	1,1,2-Trichloroethane	ND	27	ND	4.9	
108-88-3	Toluene	ND	27	ND	7.0	
591-78-6	2-Hexanone	ND	55	ND	13	
124-48-1	Dibromochloromethane	ND	27	ND	3.2	
106-93-4	1,2-Dibromoethane	ND	26	ND	3.4	
123-86-4	n-Butyl Acetate	ND	50	ND	11	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_STRIPPER_a** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-002

Test Code: EPA TO-15 Date Collected: 3/27/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.025 Liter(s)
Test Notes: 0.0050 Liter(s)
Container ID: AS00915

Initial Pressure (psig): 0.10 Final Pressure (psig): 3.85

Canister Dilution Factor: 1.25

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	27	ND	5.8	
127-18-4	Tetrachloroethene	**150**	27	**22**	3.9	
108-90-7	Chlorobenzene	ND	27	ND	5.8	
100-41-4	Ethylbenzene	ND	27	ND	6.1	
179601-23-1	m,p-Xylenes	ND	55	ND	13	
75-25-2	Bromoform	ND	27	ND	2.6	
100-42-5	Styrene	ND	27	ND	6.2	
95-47-6	o-Xylene	ND	27	ND	6.1	
111-84-2	n-Nonane	ND	27	ND	5.1	
79-34-5	1,1,2,2-Tetrachloroethane	ND	27	ND	3.9	
98-82-8	Cumene	ND	27	ND	5.5	
80-56-8	alpha-Pinene	ND	55	ND	9.9	
103-65-1	n-Propylbenzene	ND	27	ND	5.5	
622-96-8	4-Ethyltoluene	ND	28	ND	5.6	
108-67-8	1,3,5-Trimethylbenzene	ND	27	ND	5.4	
95-63-6	1,2,4-Trimethylbenzene	ND	27	ND	5.4	
100-44-7	Benzyl Chloride	ND	110	ND	20	
541-73-1	1,3-Dichlorobenzene	ND	27	ND	4.4	
106-46-7	1,4-Dichlorobenzene	ND	27	ND	4.4	
95-50-1	1,2-Dichlorobenzene	ND	27	ND	4.5	
5989-27-5	d-Limonene	ND	55	ND	9.9	
96-12-8	1,2-Dibromo-3-chloropropane	ND	55	ND	5.7	
120-82-1	1,2,4-Trichlorobenzene	ND	55	ND	7.4	
91-20-3	Naphthalene	ND	28	ND	5.2	
87-68-3	Hexachlorobutadiene	ND	27	ND	2.5	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_GWTP** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-003

Test Code: EPA TO-15 Date Collected: 3/27/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02328

Initial Pressure (psig): -2.33 Final Pressure (psig): 3.81

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	**20**	0.80	**12**	0.46	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.3**	0.80	**0.47**	0.16	
74-87-3	Chloromethane	**0.82**	0.78	**0.40**	0.38	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.78	ND	0.11	
75-01-4	Vinyl Chloride	**0.94**	0.77	**0.37**	0.30	
106-99-0	1,3-Butadiene	ND	0.80	ND	0.36	
74-83-9	Bromomethane	ND	0.77	ND	0.20	
75-00-3	Chloroethane	ND	0.78	ND	0.30	
64-17-5	Ethanol	**30**	7.5	**16**	4.0	
75-05-8	Acetonitrile	ND	1.5	ND	0.89	
107-02-8	Acrolein	ND	1.5	ND	0.65	
67-64-1	Acetone	**34**	7.9	**14**	3.3	
75-69-4	Trichlorofluoromethane (CFC 11)	**1.3**	0.78	**0.23**	0.14	
67-63-0	2-Propanol (Isopropyl Alcohol)	**42**	1.5	**17**	0.63	
107-13-1	Acrylonitrile	ND	1.5	ND	0.71	
75-35-4	1,1-Dichloroethene	ND	0.81	ND	0.20	
75-09-2	Methylene Chloride	ND	0.80	ND	0.23	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.80	ND	0.25	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**15**	0.81	**1.9**	0.11	
75-15-0	Carbon Disulfide	ND	1.6	ND	0.52	
156-60-5	trans-1,2-Dichloroethene	ND	0.81	ND	0.20	
75-34-3	1,1-Dichloroethane	ND	0.81	ND	0.20	
1634-04-4	Methyl tert-Butyl Ether	ND	0.81	ND	0.22	
108-05-4	Vinyl Acetate	ND	7.5	ND	2.1	
78-93-3	2-Butanone (MEK)	**4.7**	1.6	**1.6**	0.53	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_GWTP** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-003

Test Code: EPA TO-15 Date Collected: 3/27/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02328

Initial Pressure (psig): -2.33 Final Pressure (psig): 3.81

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	**8.9**	0.80	**2.3**	0.20	
141-78-6	Ethyl Acetate	**5.1**	3.2	**1.4**	0.87	
110-54-3	n-Hexane	**6.9**	0.80	**2.0**	0.23	
67-66-3	Chloroform	ND	0.80	ND	0.16	
109-99-9	Tetrahydrofuran (THF)	**9.5**	1.5	**3.2**	0.51	
107-06-2	1,2-Dichloroethane	ND	0.81	ND	0.20	
71-55-6	1,1,1-Trichloroethane	ND	0.80	ND	0.15	
71-43-2	Benzene	**1.1**	0.81	**0.36**	0.25	
56-23-5	Carbon Tetrachloride	ND	0.78	ND	0.12	
110-82-7	Cyclohexane	ND	1.6	ND	0.46	
78-87-5	1,2-Dichloropropane	ND	0.80	ND	0.17	
75-27-4	Bromodichloromethane	ND	0.81	ND	0.12	
79-01-6	Trichloroethene	**14**	0.80	**2.6**	0.15	
123-91-1	1,4-Dioxane	ND	0.80	ND	0.22	
80-62-6	Methyl Methacrylate	ND	1.7	ND	0.40	
142-82-5	n-Heptane	**1.3**	0.80	**0.32**	0.19	
10061-01-5	cis-1,3-Dichloropropene	ND	0.81	ND	0.18	
108-10-1	4-Methyl-2-pentanone	ND	1.7	ND	0.40	
10061-02-6	trans-1,3-Dichloropropene	ND	0.77	ND	0.17	
79-00-5	1,1,2-Trichloroethane	ND	0.80	ND	0.15	
108-88-3	Toluene	**8.4**	0.80	**2.2**	0.21	
591-78-6	2-Hexanone	ND	1.7	ND	0.40	
124-48-1	Dibromochloromethane	ND	0.81	ND	0.095	
106-93-4	1,2-Dibromoethane	ND	0.78	ND	0.10	
123-86-4	n-Butyl Acetate	ND	1.5	ND	0.32	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_GWTP** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-003

Test Code: EPA TO-15 Date Collected: 3/27/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02328

Initial Pressure (psig): -2.33 Final Pressure (psig): 3.81

Canister Dilution Factor: 1.50

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.81	ND	0.17	
127-18-4	Tetrachloroethene	ND	0.80	ND	0.12	
108-90-7	Chlorobenzene	ND	0.80	ND	0.17	
100-41-4	Ethylbenzene	**1.3**	0.80	**0.29**	0.18	
179601-23-1	m,p-Xylenes	**3.5**	1.7	**0.80**	0.38	
75-25-2	Bromoform	ND	0.81	ND	0.078	
100-42-5	Styrene	ND	0.80	ND	0.19	
95-47-6	o-Xylene	**1.3**	0.80	**0.31**	0.18	
111-84-2	n-Nonane	ND	0.80	ND	0.15	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.80	ND	0.12	
98-82-8	Cumene	ND	0.81	ND	0.16	
80-56-8	alpha-Pinene	**2.8**	1.7	**0.51**	0.30	
103-65-1	n-Propylbenzene	ND	0.81	ND	0.16	
622-96-8	4-Ethyltoluene	ND	0.83	ND	0.17	
108-67-8	1,3,5-Trimethylbenzene	ND	0.80	ND	0.16	
95-63-6	1,2,4-Trimethylbenzene	**0.84**	0.80	**0.17**	0.16	
100-44-7	Benzyl Chloride	ND	3.2	ND	0.61	
541-73-1	1,3-Dichlorobenzene	ND	0.80	ND	0.13	
106-46-7	1,4-Dichlorobenzene	ND	0.80	ND	0.13	
95-50-1	1,2-Dichlorobenzene	ND	0.81	ND	0.13	
5989-27-5	d-Limonene	ND	1.7	ND	0.30	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.7	ND	0.17	
120-82-1	1,2,4-Trichlorobenzene	ND	1.7	ND	0.22	
91-20-3	Naphthalene	ND	0.83	ND	0.16	
87-68-3	Hexachlorobutadiene	ND	0.80	ND	0.075	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_DOWNWIND** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-004

Test Code: EPA TO-15 Date Collected: 3/28/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02395

Initial Pressure (psig): 0.10 Final Pressure (psig): 4.35

Canister Dilution Factor: 1.29

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.68	ND	0.40	
75-71-8	Dichlorodifluoromethane (CFC 12)	**2.3**	0.68	**0.47**	0.14	
74-87-3	Chloromethane	ND	0.67	ND	0.32	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.67	ND	0.096	
75-01-4	Vinyl Chloride	ND	0.66	ND	0.26	
106-99-0	1,3-Butadiene	ND	0.68	ND	0.31	
74-83-9	Bromomethane	ND	0.66	ND	0.17	
75-00-3	Chloroethane	ND	0.67	ND	0.25	
64-17-5	Ethanol	ND	6.5	ND	3.4	
75-05-8	Acetonitrile	ND	1.3	ND	0.77	
107-02-8	Acrolein	ND	1.3	ND	0.56	
67-64-1	Acetone	**8.7**	6.8	**3.6**	2.9	
75-69-4	Trichlorofluoromethane (CFC 11)	**1.1**	0.67	**0.20**	0.12	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.3	ND	0.54	
107-13-1	Acrylonitrile	ND	1.3	ND	0.61	
75-35-4	1,1-Dichloroethene	ND	0.70	ND	0.18	
75-09-2	Methylene Chloride	ND	0.68	ND	0.20	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.68	ND	0.22	
76-13-1	Trichlorotrifluoroethane (CFC 113)	**0.87**	0.70	**0.11**	0.091	
75-15-0	Carbon Disulfide	ND	1.4	ND	0.44	
156-60-5	trans-1,2-Dichloroethene	ND	0.70	ND	0.18	
75-34-3	1,1-Dichloroethane	ND	0.70	ND	0.17	
1634-04-4	Methyl tert-Butyl Ether	ND	0.70	ND	0.19	
108-05-4	Vinyl Acetate	ND	6.5	ND	1.8	
78-93-3	2-Butanone (MEK)	**1.8**	1.3	**0.62**	0.46	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_DOWNWIND** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-004

Test Code: EPA TO-15 Date Collected: 3/28/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02395

Initial Pressure (psig): 0.10 Final Pressure (psig): 4.35

Canister Dilution Factor: 1.29

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.68	ND	0.17	
141-78-6	Ethyl Acetate	ND	2.7	ND	0.75	
110-54-3	n-Hexane	**2.0**	0.68	**0.56**	0.19	
67-66-3	Chloroform	ND	0.68	ND	0.14	
109-99-9	Tetrahydrofuran (THF)	**1.6**	1.3	**0.55**	0.44	
107-06-2	1,2-Dichloroethane	ND	0.70	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.68	ND	0.13	
71-43-2	Benzene	**0.71**	0.70	**0.22**	0.22	
56-23-5	Carbon Tetrachloride	ND	0.67	ND	0.11	
110-82-7	Cyclohexane	ND	1.4	ND	0.39	
78-87-5	1,2-Dichloropropane	ND	0.68	ND	0.15	
75-27-4	Bromodichloromethane	ND	0.70	ND	0.10	
79-01-6	Trichloroethene	ND	0.68	ND	0.13	
123-91-1	1,4-Dioxane	ND	0.68	ND	0.19	
80-62-6	Methyl Methacrylate	ND	1.4	ND	0.35	
142-82-5	n-Heptane	ND	0.68	ND	0.17	
10061-01-5	cis-1,3-Dichloropropene	ND	0.70	ND	0.15	
108-10-1	4-Methyl-2-pentanone	ND	1.4	ND	0.35	
10061-02-6	trans-1,3-Dichloropropene	ND	0.66	ND	0.14	
79-00-5	1,1,2-Trichloroethane	ND	0.68	ND	0.13	
108-88-3	Toluene	**1.9**	0.68	**0.50**	0.18	
591-78-6	2-Hexanone	ND	1.4	ND	0.35	
124-48-1	Dibromochloromethane	ND	0.70	ND	0.082	
106-93-4	1,2-Dibromoethane	ND	0.67	ND	0.087	
123-86-4	n-Butyl Acetate	ND	1.3	ND	0.27	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **LH18/24-AIR_032723_DOWNWIND** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P2301496-004

Test Code: EPA TO-15 Date Collected: 3/28/23
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: 4/3/23
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02395

Initial Pressure (psig): 0.10 Final Pressure (psig): 4.35

Canister Dilution Factor: 1.29

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.70	ND	0.15	
127-18-4	Tetrachloroethene	ND	0.68	ND	0.10	
108-90-7	Chlorobenzene	ND	0.68	ND	0.15	
100-41-4	Ethylbenzene	ND	0.68	ND	0.16	
179601-23-1	m,p-Xylenes	ND	1.4	ND	0.33	
75-25-2	Bromoform	ND	0.70	ND	0.067	
100-42-5	Styrene	ND	0.68	ND	0.16	
95-47-6	o-Xylene	ND	0.68	ND	0.16	
111-84-2	n-Nonane	ND	0.68	ND	0.13	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.68	ND	0.10	
98-82-8	Cumene	ND	0.70	ND	0.14	
80-56-8	alpha-Pinene	**4.2**	1.4	**0.75**	0.25	
103-65-1	n-Propylbenzene	ND	0.70	ND	0.14	
622-96-8	4-Ethyltoluene	ND	0.71	ND	0.14	
108-67-8	1,3,5-Trimethylbenzene	ND	0.68	ND	0.14	
95-63-6	1,2,4-Trimethylbenzene	ND	0.68	ND	0.14	
100-44-7	Benzyl Chloride	ND	2.7	ND	0.52	
541-73-1	1,3-Dichlorobenzene	ND	0.68	ND	0.11	
106-46-7	1,4-Dichlorobenzene	ND	0.68	ND	0.11	
95-50-1	1,2-Dichlorobenzene	ND	0.70	ND	0.12	
5989-27-5	d-Limonene	ND	1.4	ND	0.25	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.4	ND	0.15	
120-82-1	1,2,4-Trichlorobenzene	ND	1.4	ND	0.19	
91-20-3	Naphthalene	ND	0.71	ND	0.14	
87-68-3	Hexachlorobutadiene	ND	0.68	ND	0.064	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P230411-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
115-07-1	Propene	ND	0.53	ND	0.31	
75-71-8	Dichlorodifluoromethane (CFC 12)	ND	0.53	ND	0.11	
74-87-3	Chloromethane	ND	0.52	ND	0.25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	ND	0.52	ND	0.074	
75-01-4	Vinyl Chloride	ND	0.51	ND	0.20	
106-99-0	1,3-Butadiene	ND	0.53	ND	0.24	
74-83-9	Bromomethane	ND	0.51	ND	0.13	
75-00-3	Chloroethane	ND	0.52	ND	0.20	
64-17-5	Ethanol	ND	5.0	ND	2.7	
75-05-8	Acetonitrile	ND	1.0	ND	0.60	
107-02-8	Acrolein	ND	1.0	ND	0.44	
67-64-1	Acetone	ND	5.3	ND	2.2	
75-69-4	Trichlorofluoromethane (CFC 11)	ND	0.52	ND	0.093	
67-63-0	2-Propanol (Isopropyl Alcohol)	ND	1.0	ND	0.42	
107-13-1	Acrylonitrile	ND	1.0	ND	0.47	
75-35-4	1,1-Dichloroethene	ND	0.54	ND	0.14	
75-09-2	Methylene Chloride	ND	0.53	ND	0.15	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	ND	0.53	ND	0.17	
76-13-1	Trichlorotrifluoroethane (CFC 113)	ND	0.54	ND	0.070	
75-15-0	Carbon Disulfide	ND	1.1	ND	0.34	
156-60-5	trans-1,2-Dichloroethene	ND	0.54	ND	0.14	
75-34-3	1,1-Dichloroethane	ND	0.54	ND	0.13	
1634-04-4	Methyl tert-Butyl Ether	ND	0.54	ND	0.15	
108-05-4	Vinyl Acetate	ND	5.0	ND	1.4	
78-93-3	2-Butanone (MEK)	ND	1.0	ND	0.35	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P230411-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	ND	0.53	ND	0.13	
141-78-6	Ethyl Acetate	ND	2.1	ND	0.58	
110-54-3	n-Hexane	ND	0.53	ND	0.15	
67-66-3	Chloroform	ND	0.53	ND	0.11	
109-99-9	Tetrahydrofuran (THF)	ND	1.0	ND	0.34	
107-06-2	1,2-Dichloroethane	ND	0.54	ND	0.13	
71-55-6	1,1,1-Trichloroethane	ND	0.53	ND	0.097	
71-43-2	Benzene	ND	0.54	ND	0.17	
56-23-5	Carbon Tetrachloride	ND	0.52	ND	0.083	
110-82-7	Cyclohexane	ND	1.1	ND	0.31	
78-87-5	1,2-Dichloropropane	ND	0.53	ND	0.11	
75-27-4	Bromodichloromethane	ND	0.54	ND	0.081	
79-01-6	Trichloroethene	ND	0.53	ND	0.099	
123-91-1	1,4-Dioxane	ND	0.53	ND	0.15	
80-62-6	Methyl Methacrylate	ND	1.1	ND	0.27	
142-82-5	n-Heptane	ND	0.53	ND	0.13	
10061-01-5	cis-1,3-Dichloropropene	ND	0.54	ND	0.12	
108-10-1	4-Methyl-2-pentanone	ND	1.1	ND	0.27	
10061-02-6	trans-1,3-Dichloropropene	ND	0.51	ND	0.11	
79-00-5	1,1,2-Trichloroethane	ND	0.53	ND	0.097	
108-88-3	Toluene	ND	0.53	ND	0.14	
591-78-6	2-Hexanone	ND	1.1	ND	0.27	
124-48-1	Dibromochloromethane	ND	0.54	ND	0.063	
106-93-4	1,2-Dibromoethane	ND	0.52	ND	0.068	
123-86-4	n-Butyl Acetate	ND	1.0	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Method Blank** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P230411-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
111-65-9	n-Octane	ND	0.54	ND	0.12	
127-18-4	Tetrachloroethene	ND	0.53	ND	0.078	
108-90-7	Chlorobenzene	ND	0.53	ND	0.12	
100-41-4	Ethylbenzene	ND	0.53	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.1	ND	0.25	
75-25-2	Bromoform	ND	0.54	ND	0.052	
100-42-5	Styrene	ND	0.53	ND	0.12	
95-47-6	o-Xylene	ND	0.53	ND	0.12	
111-84-2	n-Nonane	ND	0.53	ND	0.10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.53	ND	0.077	
98-82-8	Cumene	ND	0.54	ND	0.11	
80-56-8	alpha-Pinene	ND	1.1	ND	0.20	
103-65-1	n-Propylbenzene	ND	0.54	ND	0.11	
622-96-8	4-Ethyltoluene	ND	0.55	ND	0.11	
108-67-8	1,3,5-Trimethylbenzene	ND	0.53	ND	0.11	
95-63-6	1,2,4-Trimethylbenzene	ND	0.53	ND	0.11	
100-44-7	Benzyl Chloride	ND	2.1	ND	0.41	
541-73-1	1,3-Dichlorobenzene	ND	0.53	ND	0.088	
106-46-7	1,4-Dichlorobenzene	ND	0.53	ND	0.088	
95-50-1	1,2-Dichlorobenzene	ND	0.54	ND	0.090	
5989-27-5	d-Limonene	ND	1.1	ND	0.20	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.1	ND	0.11	
120-82-1	1,2,4-Trichlorobenzene	ND	1.1	ND	0.15	
91-20-3	Naphthalene	ND	0.55	ND	0.10	
87-68-3	Hexachlorobutadiene	ND	0.53	ND	0.050	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **Bhate Environmental Associates, Inc.**
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Project ID: P2301496

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date(s) Collected: 3/27 - 3/28/23
Analyst: Simon Cao Date(s) Received: 4/3/23
Sample Type: 6.0 L Silonite Canister(s) / 6.0 L Summa Canister(s) Date(s) Analyzed: 4/11/23
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P230411-MB	**104**	**107**	**92**	70-130	
Lab Control Sample	P230411-LCS	**104**	**105**	**96**	70-130	
Duplicate Lab Control Sample	P230411-DLCS	**103**	**106**	**96**	70-130	
LH18/24-AIR_032723_STRIPPER	P2301496-001	**99**	**108**	**90**	70-130	
LH18/24-AIR_032723_STRIPPER_a	P2301496-002	**99**	**108**	**91**	70-130	
LH18/24-AIR_032723_GWTP	P2301496-003	**100**	**108**	**92**	70-130	
LH18/24-AIR_032723_DOWNWIND	P2301496-004	**102**	**108**	**92**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P230411-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
115-07-1	Propene	212	216	208	**102**	**98**	56-128	4	25	
75-71-8	Dichlorodifluoromethane (CFC 12)	212	185	181	**87**	**85**	71-112	2	25	
74-87-3	Chloromethane	210	207	202	**99**	**96**	53-126	3	25	
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC 114)	214	169	172	**79**	**80**	62-121	1	25	
75-01-4	Vinyl Chloride	210	176	185	**84**	**88**	63-123	5	25	
106-99-0	1,3-Butadiene	210	185	192	**88**	**91**	63-135	3	25	
74-83-9	Bromomethane	210	179	182	**85**	**87**	71-112	2	25	
75-00-3	Chloroethane	212	197	196	**93**	**92**	66-117	1	25	
64-17-5	Ethanol	1,100	860	860	**78**	**78**	57-117	0	25	
75-05-8	Acetonitrile	214	164	164	**77**	**77**	59-131	0	25	
107-02-8	Acrolein	440	371	370	**84**	**84**	71-123	0	25	
67-64-1	Acetone	1,060	850	841	**80**	**79**	60-117	1	25	
75-69-4	Trichlorofluoromethane (CFC 11)	210	174	170	**83**	**81**	71-114	2	25	
67-63-0	2-Propanol (Isopropyl Alcohol)	414	343	345	**83**	**83**	61-124	0	25	
107-13-1	Acrylonitrile	418	349	348	**83**	**83**	65-130	0	25	
75-35-4	1,1-Dichloroethene	204	181	178	**89**	**87**	74-114	2	25	
75-09-2	Methylene Chloride	204	177	176	**87**	**86**	75-112	1	25	
107-05-1	3-Chloro-1-propene (Allyl Chloride)	212	180	179	**85**	**84**	57-127	1	25	
76-13-1	Trichlorotrifluoroethane (CFC 113)	210	163	162	**78**	**77**	73-114	1	25	
75-15-0	Carbon Disulfide	430	359	357	**83**	**83**	70-113	0	25	
156-60-5	trans-1,2-Dichloroethene	216	182	182	**84**	**84**	76-119	0	25	
75-34-3	1,1-Dichloroethane	216	179	178	**83**	**82**	70-114	1	25	
1634-04-4	Methyl tert-Butyl Ether	216	196	195	**91**	**90**	72-118	1	25	
108-05-4	Vinyl Acetate	1,100	1230	1240	**112**	**113**	56-137	0.9	25	
78-93-3	2-Butanone (MEK)	414	374	374	**90**	**90**	74-121	0	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P230411-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
156-59-2	cis-1,2-Dichloroethene	214	168	168	**79**	**79**	73-117	0	25	
141-78-6	Ethyl Acetate	398	275	275	**69**	**69**	59-161	0	25	
110-54-3	n-Hexane	212	156	157	**74**	**74**	55-130	0	25	
67-66-3	Chloroform	216	171	169	**79**	**78**	71-114	1	25	
109-99-9	Tetrahydrofuran (THF)	402	340	344	**85**	**86**	73-114	1	25	
107-06-2	1,2-Dichloroethane	204	176	174	**86**	**85**	71-119	1	25	
71-55-6	1,1,1-Trichloroethane	210	175	175	**83**	**83**	73-119	0	25	
71-43-2	Benzene	204	173	173	**85**	**85**	72-113	0	25	
56-23-5	Carbon Tetrachloride	210	194	194	**92**	**92**	67-123	0	25	
110-82-7	Cyclohexane	426	346	347	**81**	**81**	70-119	0	25	
78-87-5	1,2-Dichloropropane	214	168	170	**79**	**79**	70-118	0	25	
75-27-4	Bromodichloromethane	216	184	182	**85**	**84**	74-119	1	25	
79-01-6	Trichloroethene	212	170	170	**80**	**80**	74-115	0	25	
123-91-1	1,4-Dioxane	212	189	191	**89**	**90**	77-124	1	25	
80-62-6	Methyl Methacrylate	428	375	375	**88**	**88**	78-126	0	25	
142-82-5	n-Heptane	214	178	179	**83**	**84**	70-119	1	25	
10061-01-5	cis-1,3-Dichloropropene	212	218	219	**103**	**103**	81-126	0	25	
108-10-1	4-Methyl-2-pentanone	426	359	362	**84**	**85**	73-129	1	25	
10061-02-6	trans-1,3-Dichloropropene	196	193	195	**98**	**99**	80-127	1	25	
79-00-5	1,1,2-Trichloroethane	216	176	175	**81**	**81**	78-117	0	25	
108-88-3	Toluene	214	172	174	**80**	**81**	70-118	1	25	
591-78-6	2-Hexanone	426	367	374	**86**	**88**	74-132	2	25	
124-48-1	Dibromochloromethane	214	190	189	**89**	**88**	69-137	1	25	
106-93-4	1,2-Dibromoethane	204	175	176	**86**	**86**	76-128	0	25	
123-86-4	n-Butyl Acetate	424	367	373	**87**	**88**	75-134	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **Bhate Environmental Associates, Inc.**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150** ALS Sample ID: P230411-DLCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Date Received: NA
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/m³	Result LCS µg/m³	Result DLCS µg/m³	% Recovery LCS	% Recovery DLCS	ALS Acceptance Limits	RPD	RPD Limit	Data Qualifier
111-65-9	n-Octane	212	175	177	**83**	**83**	68-120	0	25	
127-18-4	Tetrachloroethene	214	163	164	**76**	**77**	63-130	1	25	
108-90-7	Chlorobenzene	216	173	174	**80**	**81**	70-118	1	25	
100-41-4	Ethylbenzene	218	181	183	**83**	**84**	71-123	1	25	
179601-23-1	m,p-Xylenes	430	361	364	**84**	**85**	67-127	1	25	
75-25-2	Bromoform	218	189	187	**87**	**86**	65-149	1	25	
100-42-5	Styrene	214	189	190	**88**	**89**	76-132	1	25	
95-47-6	o-Xylene	216	182	183	**84**	**85**	69-124	1	25	
111-84-2	n-Nonane	214	177	179	**83**	**84**	64-127	1	25	
79-34-5	1,1,2,2-Tetrachloroethane	216	194	196	**90**	**91**	69-128	1	25	
98-82-8	Cumene	212	180	180	**85**	**85**	69-125	0	25	
80-56-8	alpha-Pinene	216	214	217	**99**	**100**	68-129	1	25	
103-65-1	n-Propylbenzene	212	181	182	**85**	**86**	70-127	1	25	
622-96-8	4-Ethyltoluene	218	185	186	**85**	**85**	69-127	0	25	
108-67-8	1,3,5-Trimethylbenzene	216	183	183	**85**	**85**	66-129	0	25	
95-63-6	1,2,4-Trimethylbenzene	212	182	181	**86**	**85**	63-142	1	25	
100-44-7	Benzyl Chloride	428	472	475	**110**	**111**	73-145	0.9	25	
541-73-1	1,3-Dichlorobenzene	214	165	164	**77**	**77**	67-136	0	25	
106-46-7	1,4-Dichlorobenzene	214	154	154	**72**	**72**	63-134	0	25	
95-50-1	1,2-Dichlorobenzene	212	169	168	**80**	**79**	64-139	1	25	
5989-27-5	d-Limonene	208	194	196	**93**	**94**	63-137	1	25	
96-12-8	1,2-Dibromo-3-chloropropane	416	367	368	**88**	**88**	72-145	0	25	
120-82-1	1,2,4-Trichlorobenzene	440	302	303	**69**	**69**	62-154	0	25	
91-20-3	Naphthalene	220	164	167	**75**	**76**	62-156	1	25	
87-68-3	Hexachlorobutadiene	218	177	175	**81**	**80**	55-142	1	25	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Bhate Environmental Associates, Inc.** ALS Project ID: P2301496
Client Project ID: **LHAAP GWTP / NWO 1312.0150**

Internal Standard Area and RT Summary

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS9 Lab File ID: 04112302.D
Analyst: Simon Cao Date Analyzed: 4/11/23
Sample Type: 6.0 L Silonite Canister(s) Time Analyzed: 09:28
Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	148885	7.24	656345	9.29	151073	14.81
	Upper Limit	208439	7.57	918883	9.62	211502	15.14
	Lower Limit	89331	6.91	393807	8.96	90644	14.48
	Client Sample ID						
01	Method Blank	148696	7.20	656871	9.26	147416	14.81
02	Lab Control Sample	151425	7.24	665297	9.29	151138	14.81
03	Duplicate Lab Control Sample	154171	7.24	676039	9.29	152936	14.81
04	LH18/24-AIR_032723_STRIPPER	170748	7.21	742224	9.28	167017	14.81
05	LH18/24-AIR_032723_STRIPPER_a	168772	7.21	728174	9.27	163828	14.81
06	LH18/24-AIR_032723_STRIPPER (Dilution)	166138	7.20	722925	9.26	163444	14.80
07	LH18/24-AIR_032723_STRIPPER_a (Dilution)	168464	7.20	729835	9.26	163863	14.80
08	LH18/24-AIR_032723_GWTP	158040	7.20	693782	9.27	156598	14.81
09	LH18/24-AIR_032723_DOWNWIND	156576	7.20	689905	9.26	155485	14.81
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112312.D Vial: 8
Acq On : 11 Apr 2023 15:26 Operator: SC
Sample : P2301496-001 (25mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 15:48:50 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/11/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	170748	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	9.28	114	742224	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	167017	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.98	65	359244	12.428	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.44%				
57) Toluene-d8 (SS2)	12.40	98	858246	13.524	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.16%				
73) Bromofluorobenzene (SS3)	16.79	174	292491	11.303	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 90.40%				
Target Compounds							Qvalue
2) Propene	3.28	42	5747	N.D.			
3) Dichlorodifluoromethan...	3.35	85	3491	N.D.			
4) Chloromethane	3.48	50	1371	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	3.66	62	437826	22.061	ng		97
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.28	45	7910	0.488	ng		68
11) Acetonitrile	4.46	41	1045	N.D.			
12) Acrolein	4.56	56	1166	N.D.			
13) Acetone	4.65	58	33248	2.708	ng	#	83
14) Trichlorofluoromethane	4.74	101	2048	N.D.			
15) 2-Propanol (Isopropanol)	4.85	45	7050	N.D.			
16) Acrylonitrile	5.01	53	132	N.D.			
17) 1,1-Dichloroethene	5.24	96	74067	4.661	ng		97
18) 2-Methyl-2-Propanol (t...	5.35	59	632	N.D.			
19) Methylene Chloride	5.33	84	4885	N.D.			
20) 3-Chloro-1-propene (Al...	5.47	41	115	N.D.			
21) Trichlorotrifluoroethane	5.57	151	4724868	265.681	ng		87
22) Carbon Disulfide	5.59	76	8569	N.D.			
23) trans-1,2-Dichloroethene	6.12	61	24401	0.922	ng		100
24) 1,1-Dichloroethane	6.31	63	22153	0.682	ng		99
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.67	72	6890	0.704	ng		96
28) cis-1,2-Dichloroethene	7.05	61	5888744	219.206	ng		98
29) Diisopropyl Ether	7.33	87	2471	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.28	57	1730	N.D.			
32) Chloroform	7.34	83	23389	0.682	ng		98
34) Tetrahydrofuran (THF)	7.78	72	524	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.09	62	76727	2.574	ng		98
38) 1,1,1-Trichloroethane	8.38	97	2412	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.84	56	365	No Calib		#	
41) Benzene	8.88	78	9377	N.D.			
42) Carbon Tetrachloride	9.05	117	4811	N.D.			
43) Cyclohexane	9.20	84	8912	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.	d		
47) Trichloroethene	10.12	130	5098622	274.511	ng		100
48) 1,4-Dioxane	10.13	88	530	N.D.			
49) 2,2,4-Trimethylpentane...	10.20	57	313	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			

Data File : I:\MS09\DATA\2023 04\11\04112312.D Vial: 8
Acq On : 11 Apr 2023 15:26 Operator: SC
Sample : P2301496-001 (25mL) Inst : MS09
Misc : S37-04052305

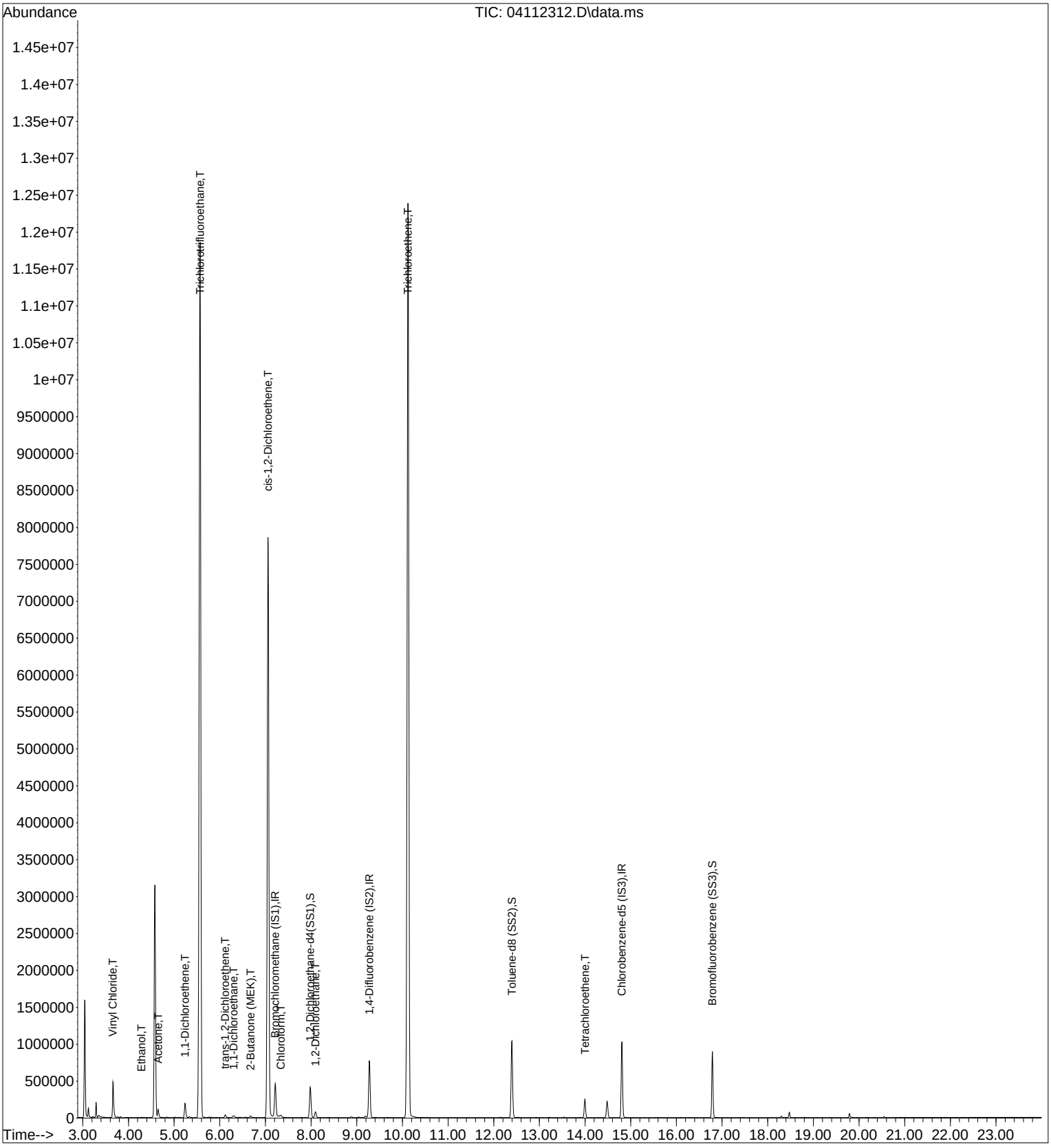
Quant Time: Apr 11 15:48:50 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.54	71	198	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	12.14	97	2050	N.D.	
58) Toluene	12.53	91	4900	N.D.	
59) 2-Hexanone	12.92	43	4536	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	13.88	57	650	N.D.	
64) Tetrachloroethene	14.00	166	85134	3.655 ng	99
65) Chlorobenzene	14.86	112	150	N.D.	
66) Ethylbenzene	15.38	91	1160	N.D.	
67) m- & p-Xylenes	15.61	91	2396	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.21	91	1013	N.D.	
71) n-Nonane	16.57	43	660	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.00	105	321	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.67	91	1526	N.D.	
77) 3-Ethyltoluene	17.00	105	321	No Calib	#
78) 4-Ethyltoluene	17.84	105	442	N.D.	
79) 1,3,5-Trimethylbenzene	17.93	105	297	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.00	105	321	No Calib	#
82) 1,2,4-Trimethylbenzene	18.41	105	727	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.41	91	244	N.D.	
85) 1,3-Dichlorobenzene	18.56	146	242	N.D.	
86) 1,4-Dichlorobenzene	18.64	146	369	N.D.	
87) sec-Butylbenzene	18.71	105	319	N.D.	
88) 4-Isopropyltoluene (p-...	18.90	119	782	N.D.	
89) 1,2,3-Trimethylbenzene	17.00	105	321	No Calib	#
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.06	68	212	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	18.09	58	311	No Calib	#
94) 1,2,4-Trichlorobenzene	20.82	180	469	N.D.	
95) Naphthalene	20.94	128	641	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	21.28	225	138	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.40	119	375	N.D.	
100) n-Butylbenzene	19.36	91	636	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Data File : I:\MS09\DATA\2023 04\11\04112312.D Vial: 8
Acq On : 11 Apr 2023 15:26 Operator: SC
Sample : P2301496-001 (25mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 15:48:50 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112312.D Vial: 8
Acq On : 11 Apr 2023 15:26 Operator: SC
Sample : P2301496-001 (25mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 15:48:50 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/11/23

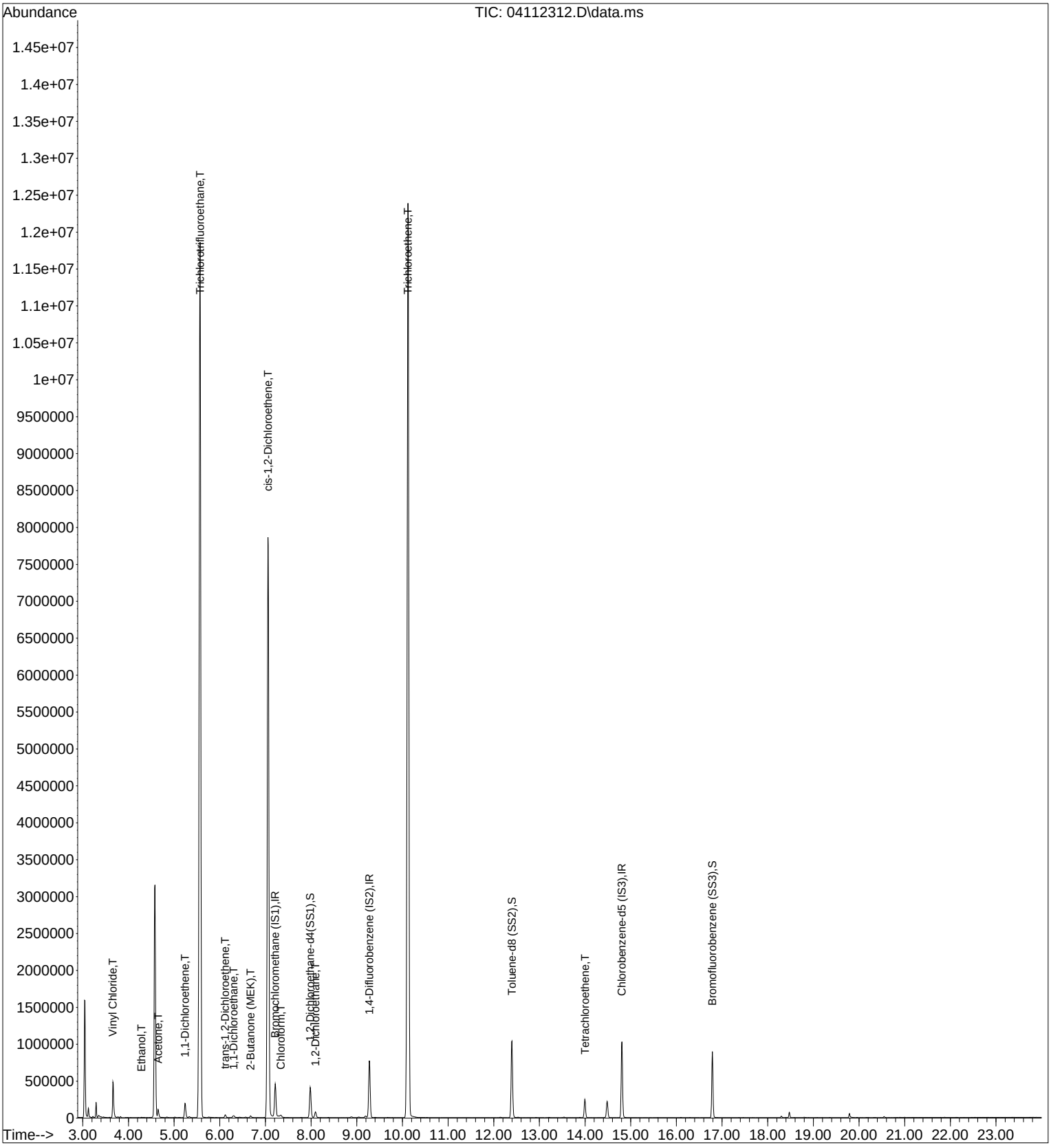
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	170748	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	9.28	114	742224	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	167017	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.98	65	359244	12.428	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.44%				
57) Toluene-d8 (SS2)	12.40	98	858246	13.524	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.16%				
73) Bromofluorobenzene (SS3)	16.79	174	292491	11.303	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 90.40%				
Target Compounds							Qvalue
6) Vinyl Chloride	3.66	62	437826	22.061	ng		97
10) Ethanol	4.28	45	7910	0.488	ng		68
13) Acetone	4.65	58	33248	2.708	ng	#	83
17) 1,1-Dichloroethene	5.24	96	74067	4.661	ng		97
21) Trichlorotrifluoroethane	5.57	151	4724868	265.681	ng		87
23) trans-1,2-Dichloroethene	6.12	61	24401	0.922	ng		100
24) 1,1-Dichloroethane	6.31	63	22153	0.682	ng		99
27) 2-Butanone (MEK)	6.67	72	6890	0.704	ng		96
28) cis-1,2-Dichloroethene	7.05	61	5888744	219.206	ng		98
32) Chloroform	7.34	83	23389	0.682	ng		98
36) 1,2-Dichloroethane	8.09	62	76727	2.574	ng		98
47) Trichloroethene	10.12	130	5098622	274.511	ng		100
64) Tetrachloroethene	14.00	166	85134	3.655	ng		99

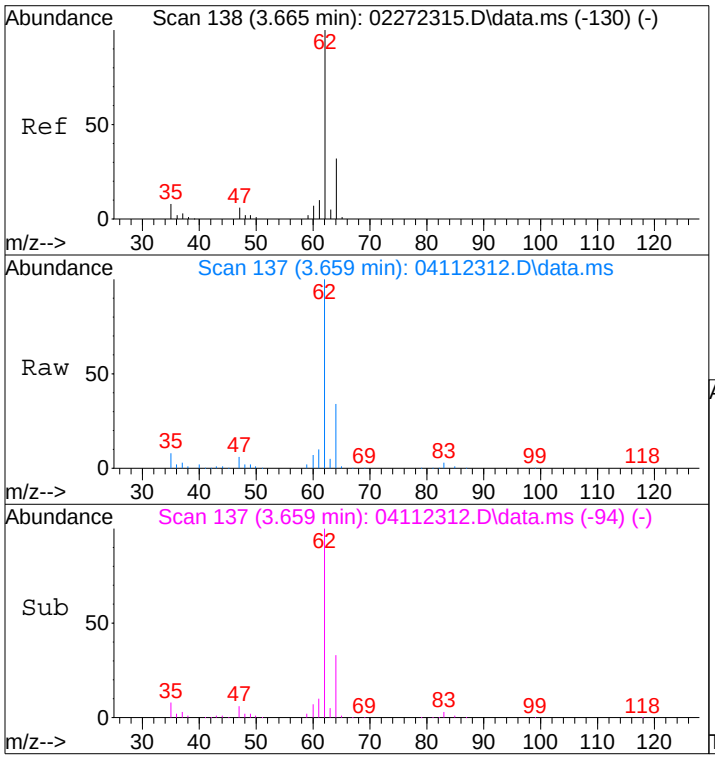
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112312.D Vial: 8
Acq On : 11 Apr 2023 15:26 Operator: SC
Sample : P2301496-001 (25mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 15:48:50 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

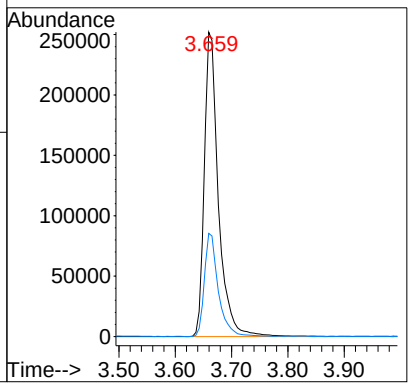


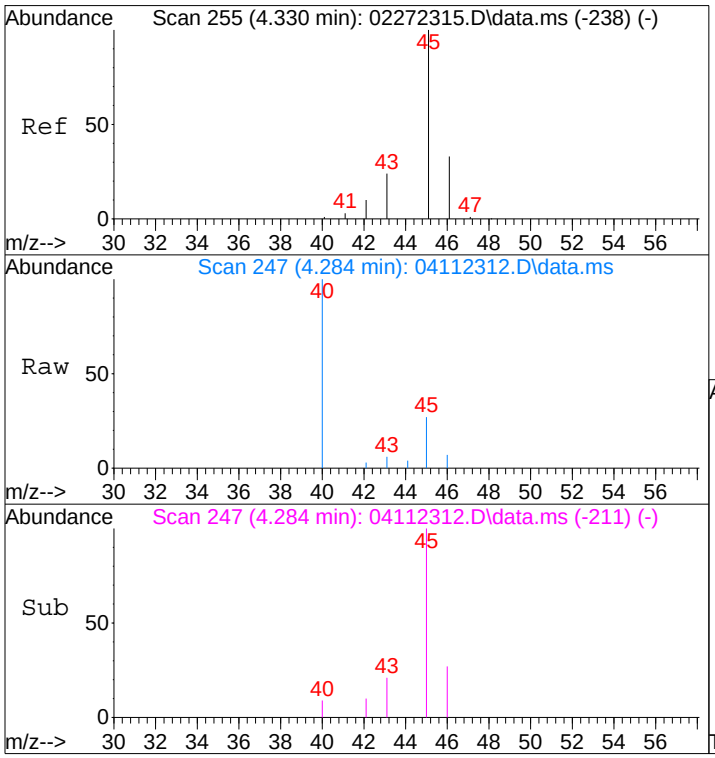


#6
Vinyl Chloride
Concen: 22.06 ng
RT: 3.66 min Scan# 137
Delta R.T. -0.006 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion: 62 Resp: 437826

Ion	Ratio	Lower	Upper
62	100		
64	33.8	12.1	52.1

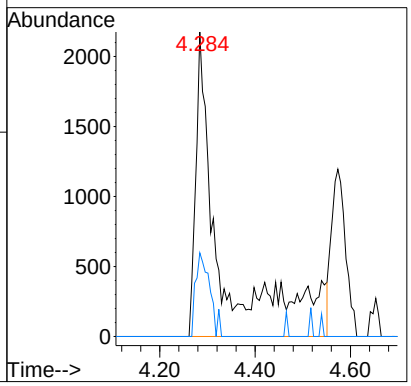


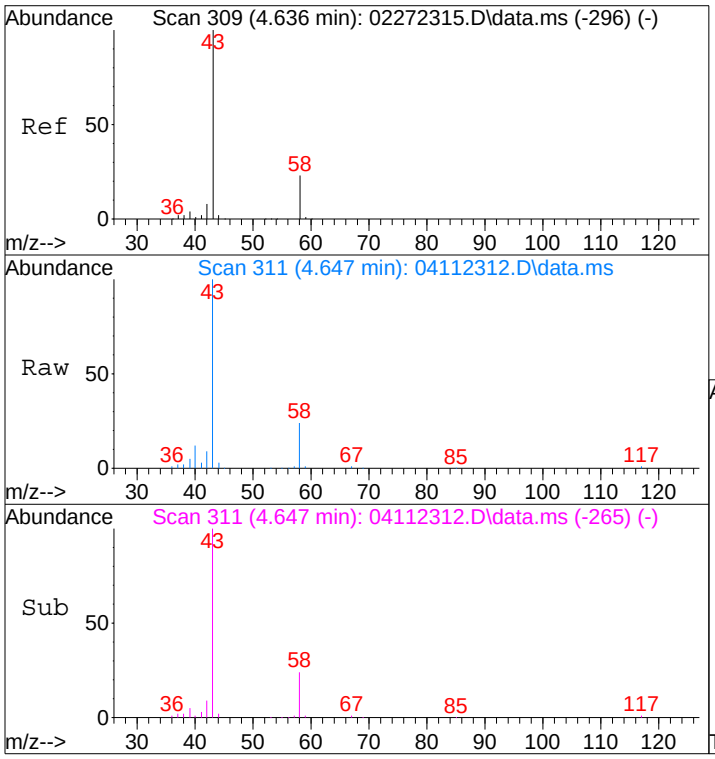


#10
Ethanol
Concen: 0.49 ng
RT: 4.28 min Scan# 247
Delta R.T. -0.046 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion: 45 Resp: 7910

Ion	Ratio	Lower	Upper
45	100		
46	15.5	13.4	53.4

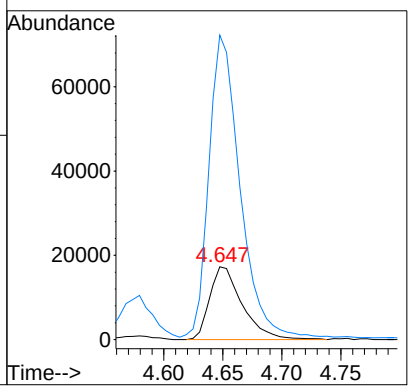


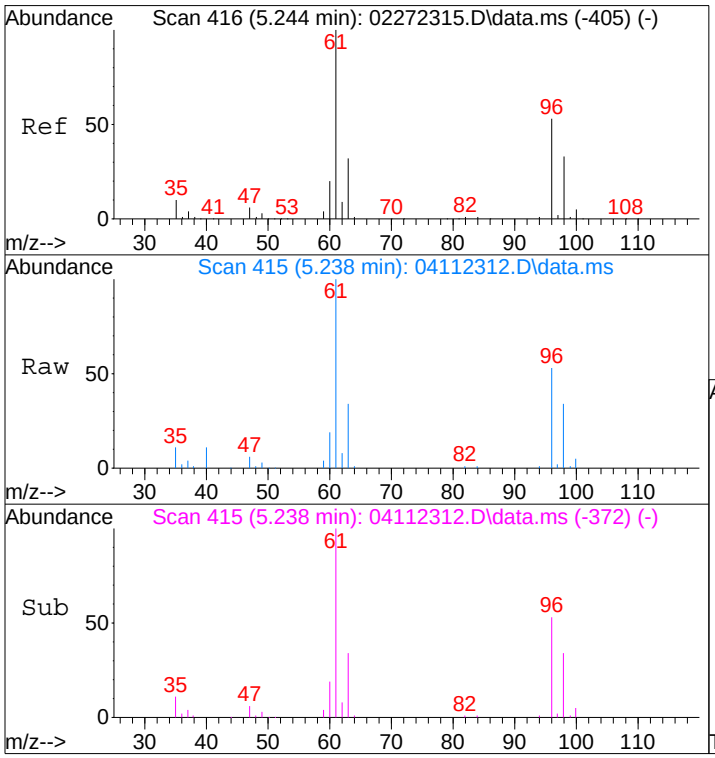


#13
Acetone
Concen: 2.71 ng
RT: 4.65 min Scan# 311
Delta R.T. 0.011 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion: 58 Resp: 33248

Ion	Ratio	Lower	Upper
58	100		
43	400.4	414.4	474.4#

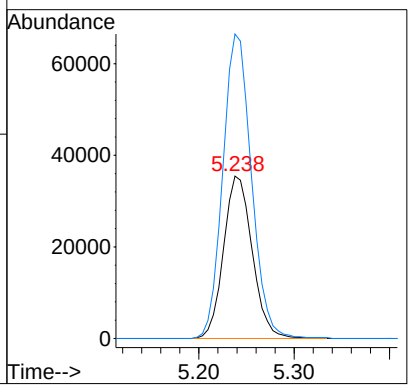


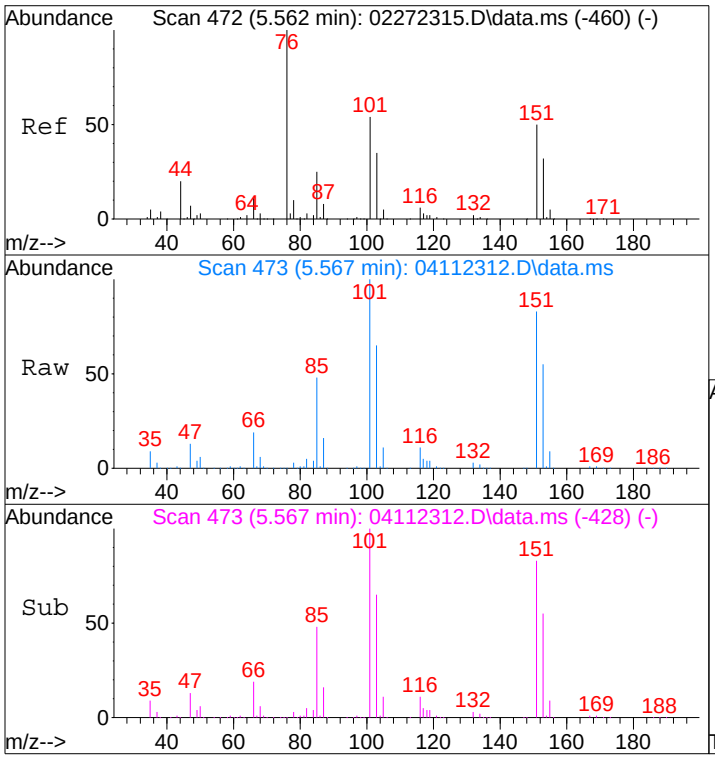


#17
1,1-Dichloroethene
Concen: 4.66 ng
RT: 5.24 min Scan# 415
Delta R.T. -0.006 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion: 96 Resp: 74067

Ion	Ratio	Lower	Upper
96	100		
61	187.4	171.4	211.4

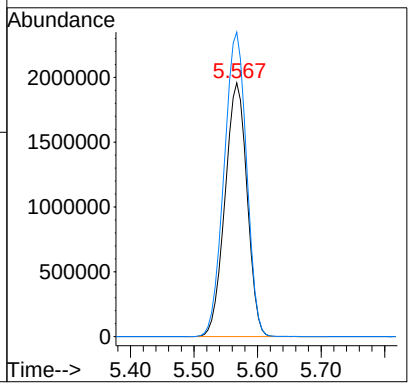


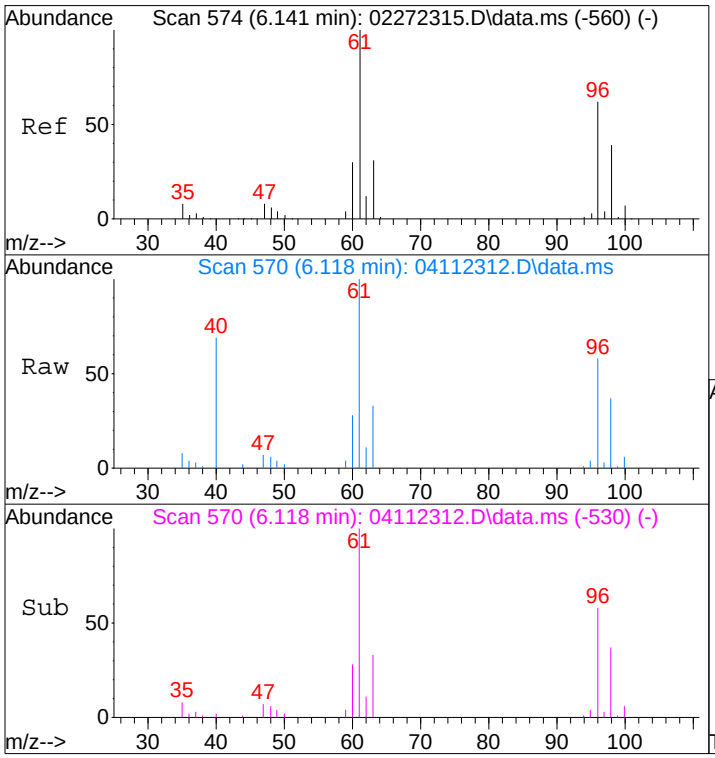


#21
Trichlorotrifluoroethane
Concen: 265.68 ng
RT: 5.57 min Scan# 473
Delta R.T. 0.005 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion:151 Resp: 4724868

Ion	Ratio	Lower	Upper
151	100		
101	122.0	88.2	128.2

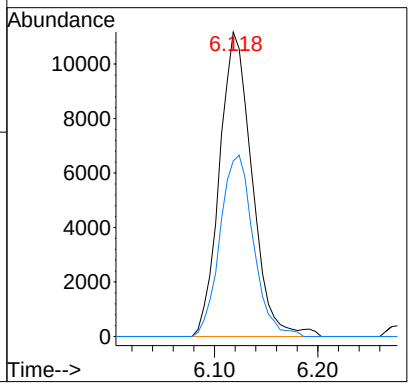


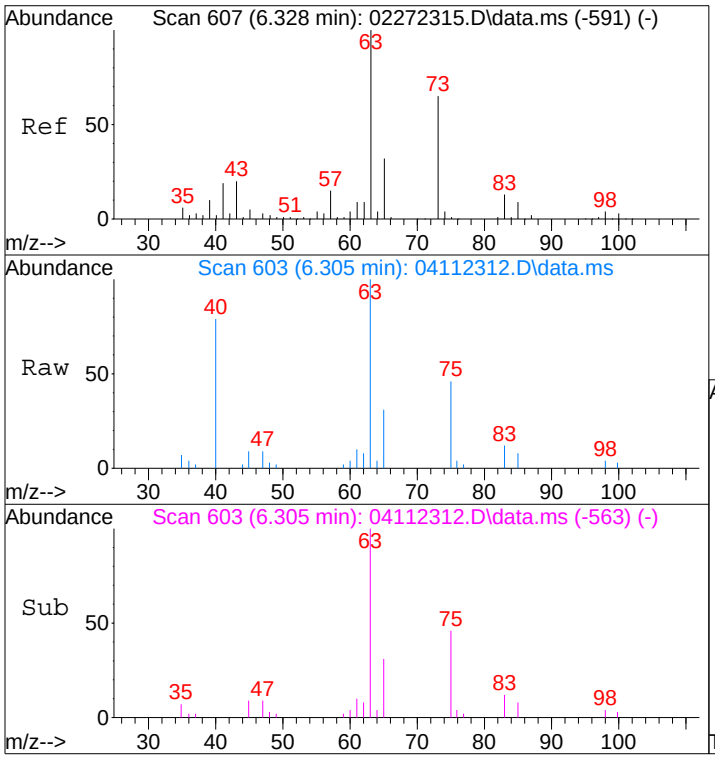


#23
trans-1,2-Dichloroethene
Concen: 0.92 ng
RT: 6.12 min Scan# 570
Delta R.T. -0.023 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion: 61 Resp: 24401

Ion	Ratio	Lower	Upper
61	100		
96	61.2	41.5	81.5

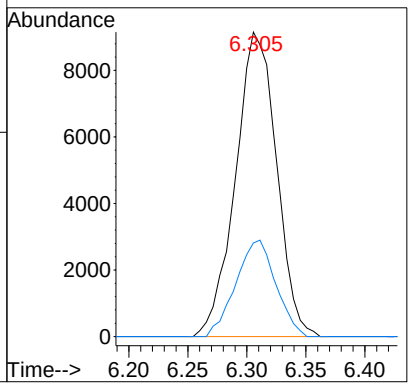


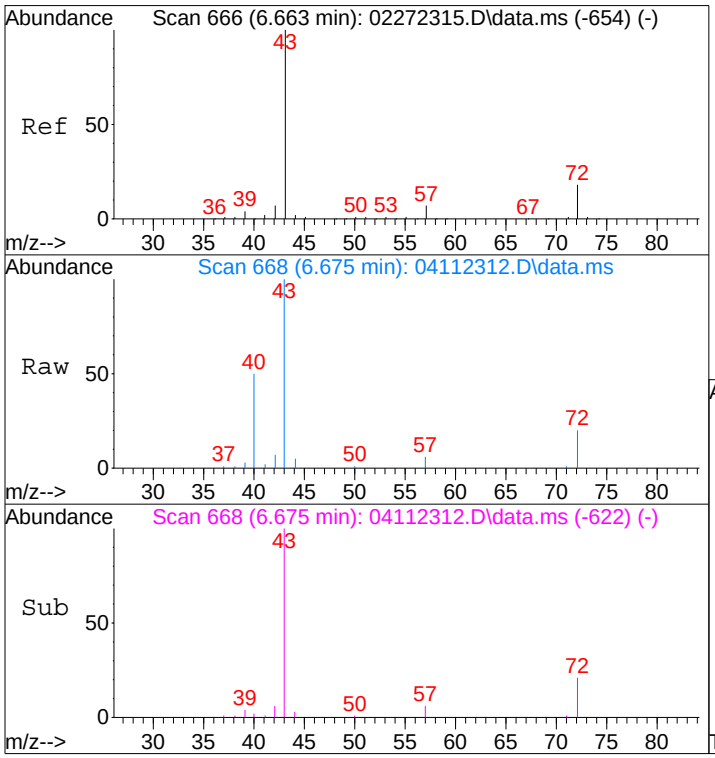


#24
1,1-Dichloroethane
Concen: 0.68 ng
RT: 6.31 min Scan# 603
Delta R.T. -0.023 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion: 63 Resp: 22153

Ion	Ratio	Lower	Upper
63	100		
65	30.8	11.5	51.5

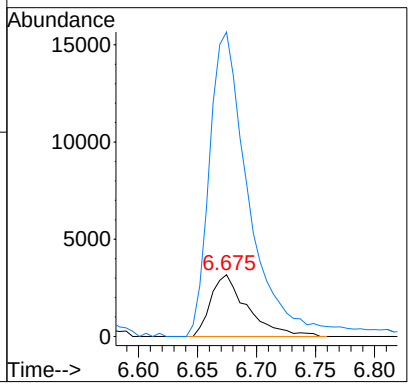


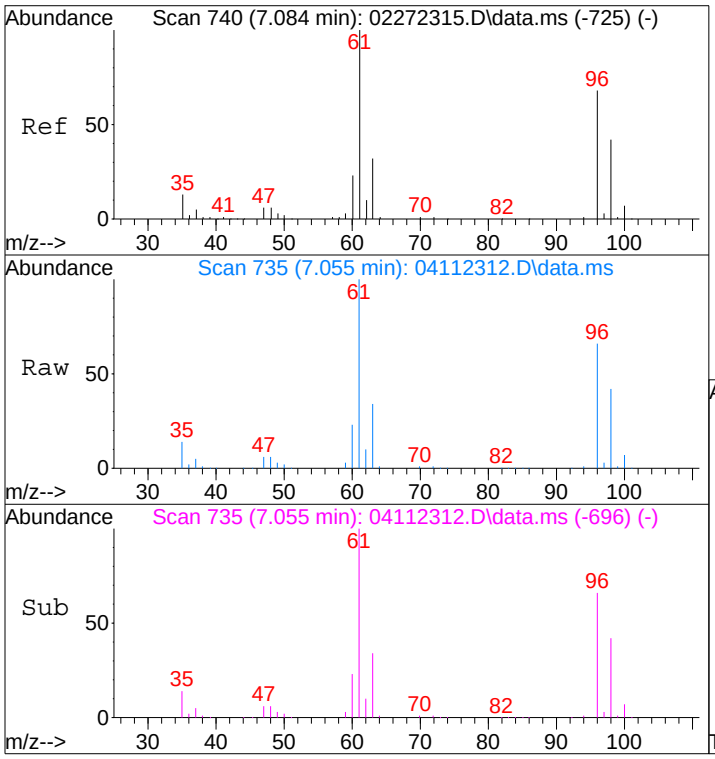


#27
2-Butanone (MEK)
Concen: 0.70 ng
RT: 6.67 min Scan# 668
Delta R.T. 0.011 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion: 72 Resp: 6890

Ion	Ratio	Lower	Upper
72	100		
43	545.4	536.0	576.0

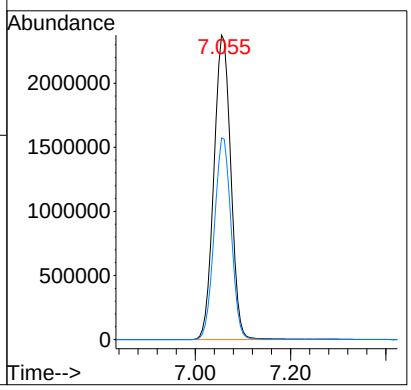


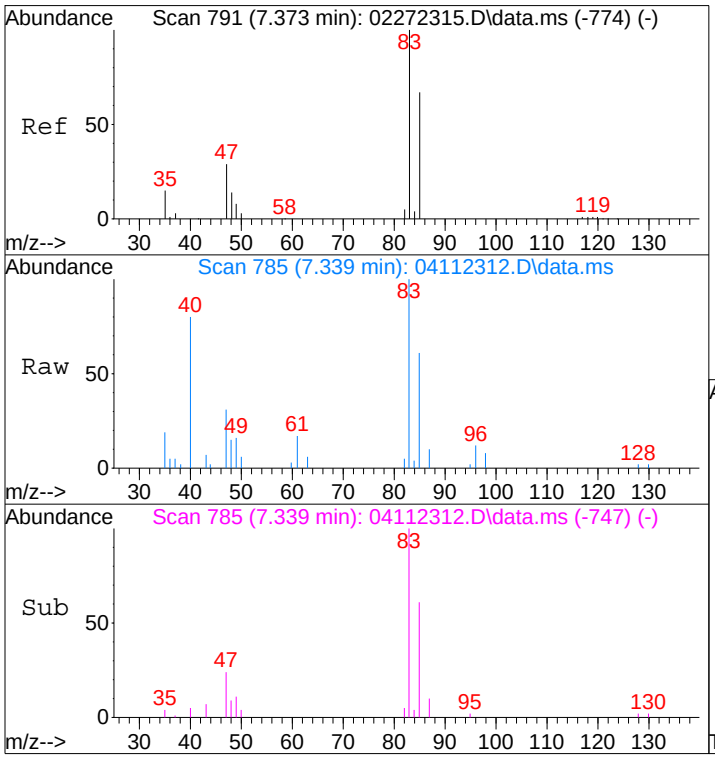


#28
cis-1,2-Dichloroethene
Concen: 219.21 ng
RT: 7.05 min Scan# 735
Delta R.T. -0.029 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion: 61 Resp: 5888744

Ion	Ratio	Lower	Upper
61	100		
96	66.0	47.8	87.8

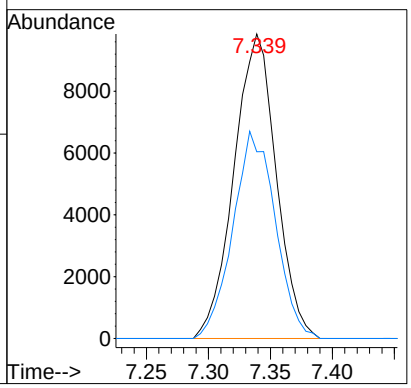


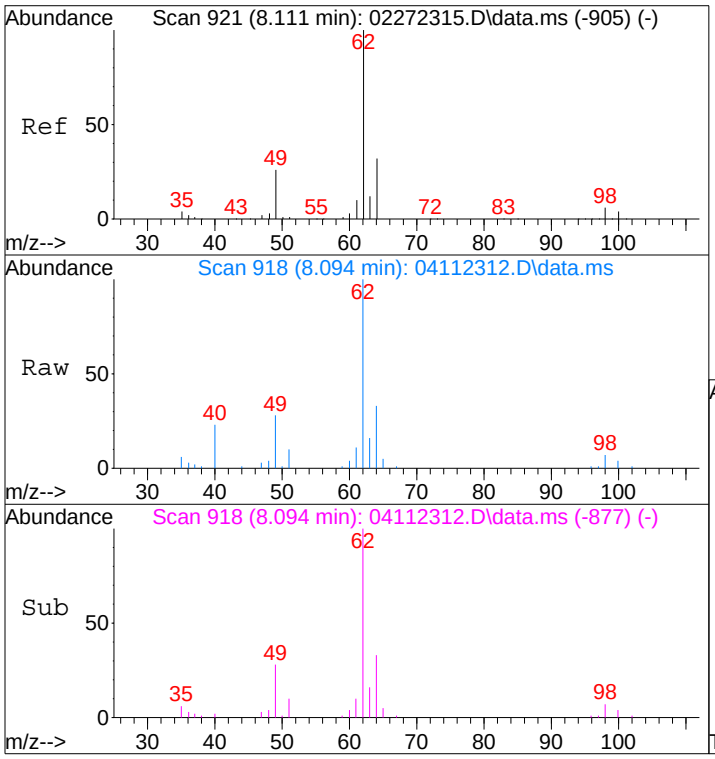


#32
Chloroform
Concen: 0.68 ng
RT: 7.34 min Scan# 785
Delta R.T. -0.034 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion: 83 Resp: 23389

Ion	Ratio	Lower	Upper
83	100		
85	68.1	46.3	86.3

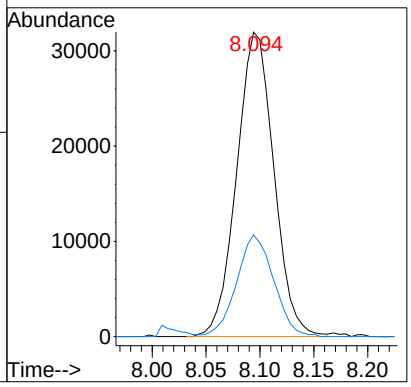


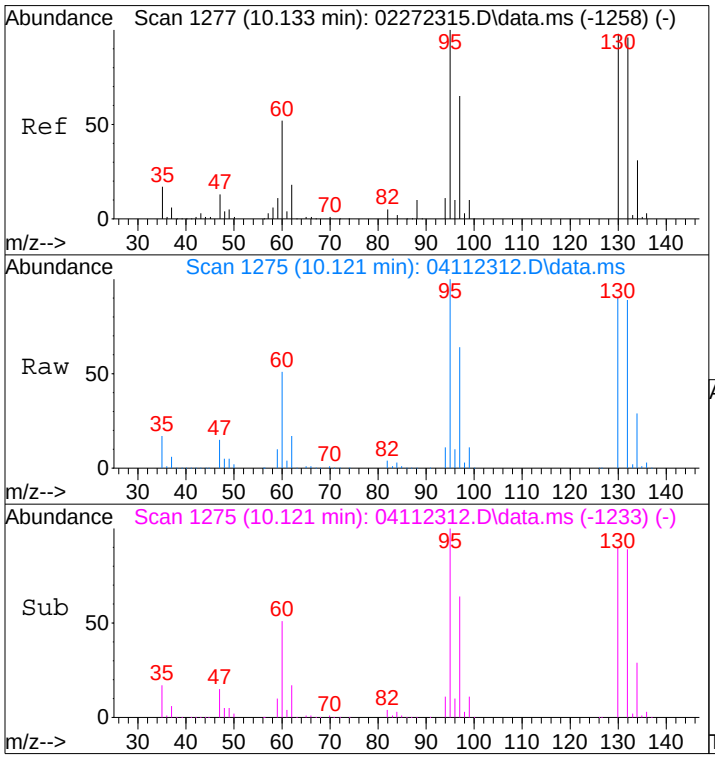


#36
1,2-Dichloroethane
Concen: 2.57 ng
RT: 8.09 min Scan# 918
Delta R.T. -0.017 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion: 62 Resp: 76727

Ion	Ratio	Lower	Upper
62	100		
64	33.2	12.0	52.0

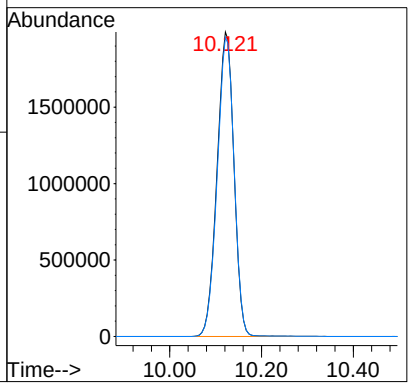


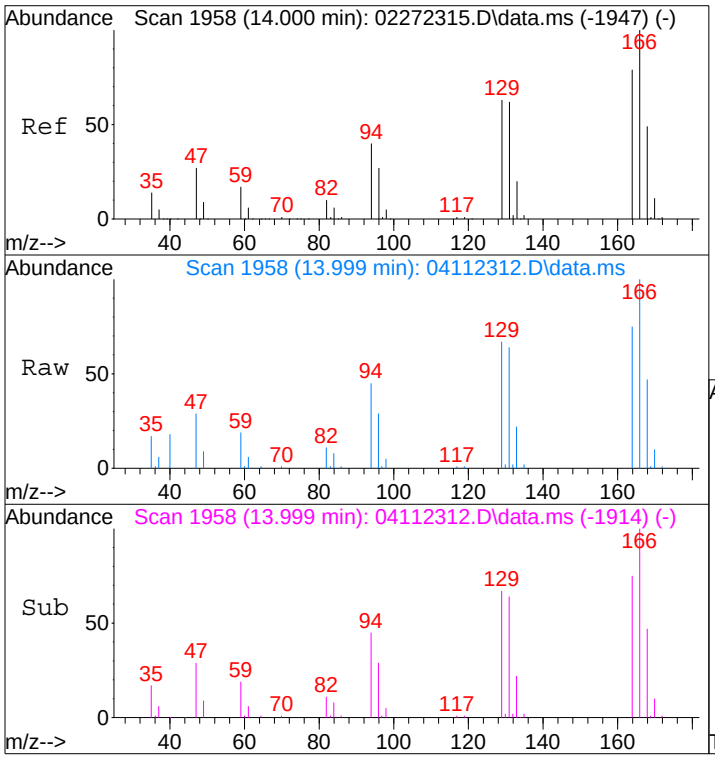


#47
Trichloroethene
Concen: 274.51 ng
RT: 10.12 min Scan# 1275
Delta R.T. -0.012 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion:130 Resp: 5098622

Ion	Ratio	Lower	Upper
130	100		
132	98.3	77.9	117.9

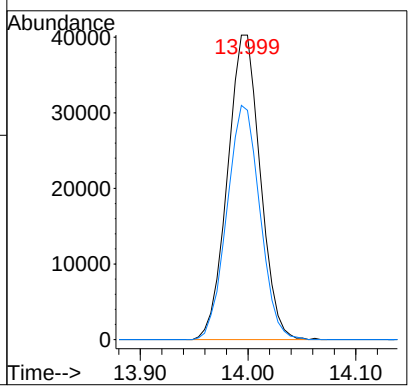




#64
Tetrachloroethene
Concen: 3.65 ng
RT: 14.00 min Scan# 1958
Delta R.T. -0.001 min
Lab File: 04112312.D
Acq: 11 Apr 2023 15:26

Tgt Ion:166 Resp: 85134

Ion	Ratio	Lower	Upper
166	100		
164	77.3	58.6	98.6



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112314.D Vial: 1
Acq On : 11 Apr 2023 16:30 Operator: SC
Sample : P2301496-001Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 17:00:18 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/12/23

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	166138	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	722925	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.80	54	163444	12.500	ng	-0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.96	65	348748	12.399	ng	-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.20%			
57) Toluene-d8 (SS2)	12.39	98	833367	13.419	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.36%			
73) Bromofluorobenzene (SS3)	16.79	174	285406	11.270	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 90.16%			
Target Compounds						Qvalue
2) Propene	3.30	42	1089	N.D.		
3) Dichlorodifluoromethan...	3.31	85	2409	N.D.		
4) Chloromethane	3.36	50	339	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	3.69	62	48120	2.492	ng	97
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	4.31	45	374	N.D.		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	4.65	58	4822	N.D.		
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	4.91	45	181	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	5.24	96	8119	0.525	ng	100
18) 2-Methyl-2-Propanol (t...	5.24	59	453	N.D.		
19) Methylene Chloride	5.34	84	629	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	5.55	151	577205	33.357	ng	83
22) Carbon Disulfide	5.61	76	980	N.D.		
23) trans-1,2-Dichloroethene	6.11	61	2452	N.D.		
24) 1,1-Dichloroethane	6.28	63	2589	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	6.69	72	593	N.D.		
28) cis-1,2-Dichloroethene	7.04	61	724485	27.717	ng	98
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	7.32	83	2718	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.08	62	8961	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	9.26	61	24850	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.87	78	1583	N.D.		
42) Carbon Tetrachloride	9.03	117	395	N.D.		
43) Cyclohexane	9.18	84	896	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	10.10	83	8657	N.D.		
47) Trichloroethene	10.11	130	639506	35.350	ng	99
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS09\DATA\2023 04\11\04112314.D Vial: 1
Acq On : 11 Apr 2023 16:30 Operator: SC
Sample : P2301496-001Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 17:00:18 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

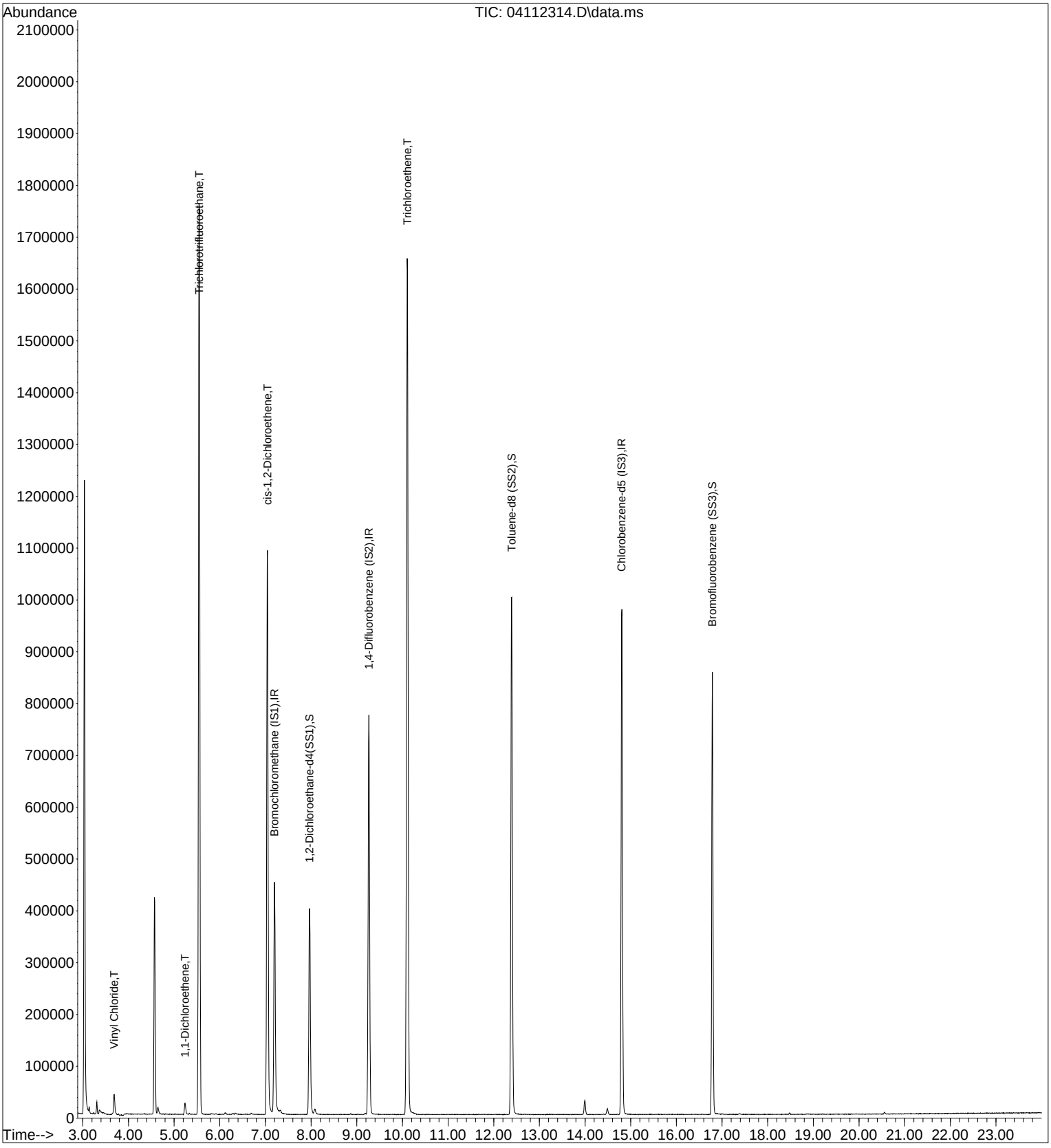
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.53	91	802	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	13.99	166	9942	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	15.39	91	108	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	17.00	105	110	No Calib	#	
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	0.00	91	0	N.D.		
77) 3-Ethyltoluene	17.00	105	110	No Calib	#	
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.00	105	110	No Calib	#	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	18.89	119	118	N.D.		
89) 1,2,3-Trimethylbenzene	17.00	105	110	No Calib	#	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	0.00	128	0	N.D.		
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.28	225	232	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.		

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

Quantitation Report (QT Reviewed)

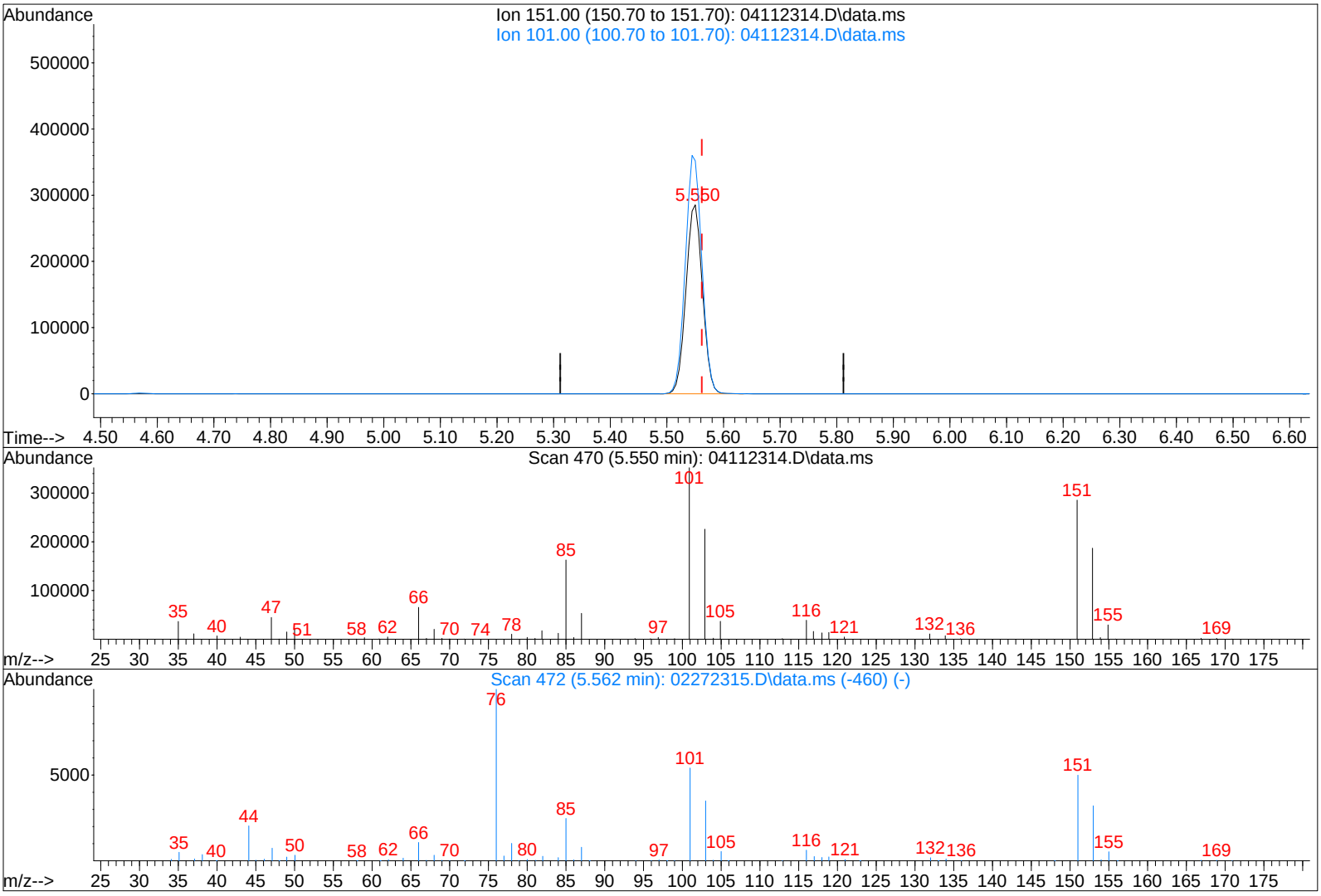
Data File : I:\MS09\DATA\2023 04\11\04112314.D Vial: 1
Acq On : 11 Apr 2023 16:30 Operator: SC
Sample : P2301496-001Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 17:00:18 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS09\DATA\2023 04\11\04112314.D Vial: 1
Acq On : 11 Apr 2023 16:30 Operator: SC
Sample : P2301496-001Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 17:00:18 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 04112314.D\data.ms

(21) Trichlorotrifluoroethane (T)

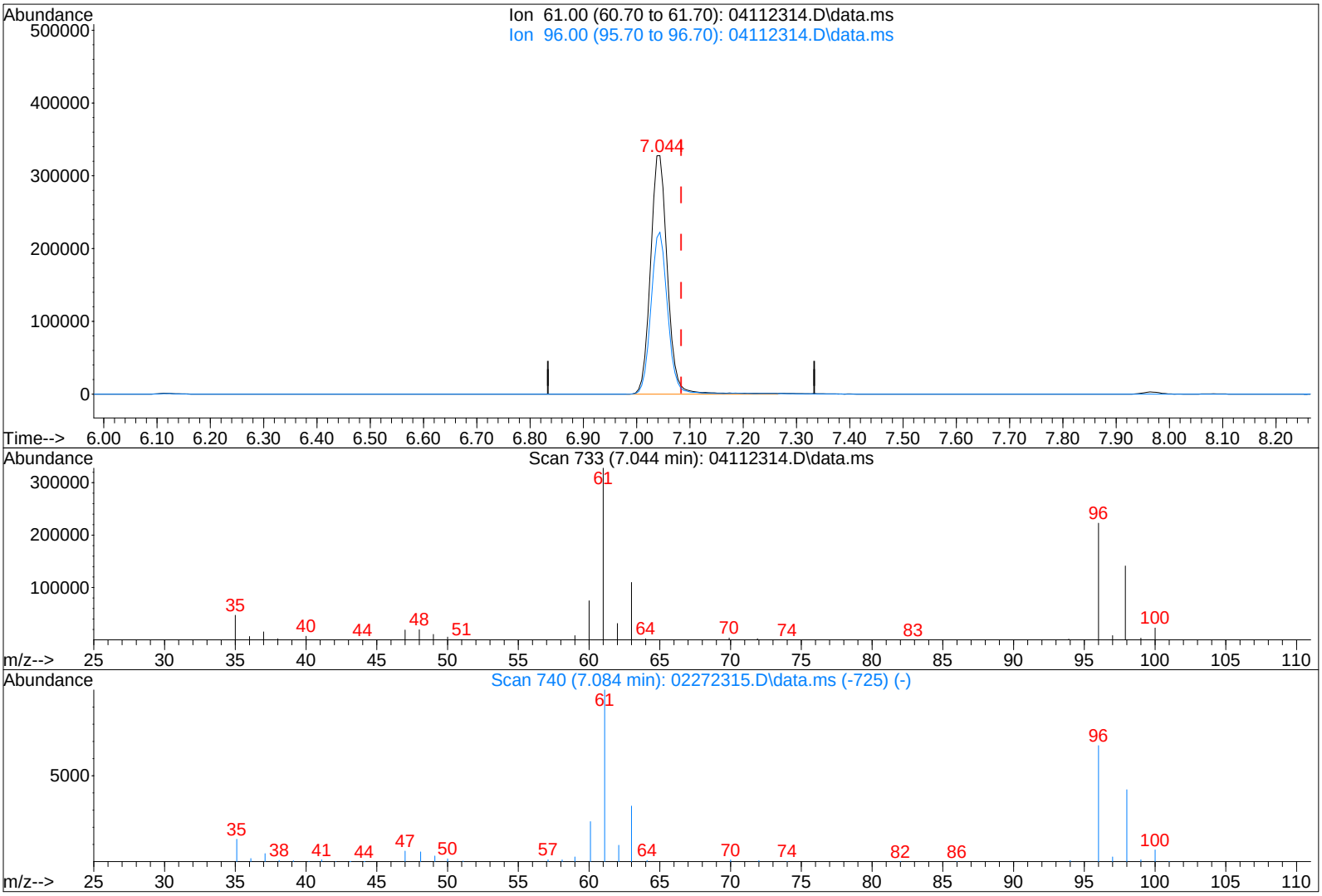
5.550min (-0.012) 33.36ng

response 577205

Ion	Exp%	Act%
151.00	100	100
101.00	108.20	126.33
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS09\DATA\2023 04\11\04112314.D Vial: 1
Acq On : 11 Apr 2023 16:30 Operator: SC
Sample : P2301496-001Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 17:00:18 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 04112314.D\data.ms

(28) cis-1,2-Dichloroethene (T)

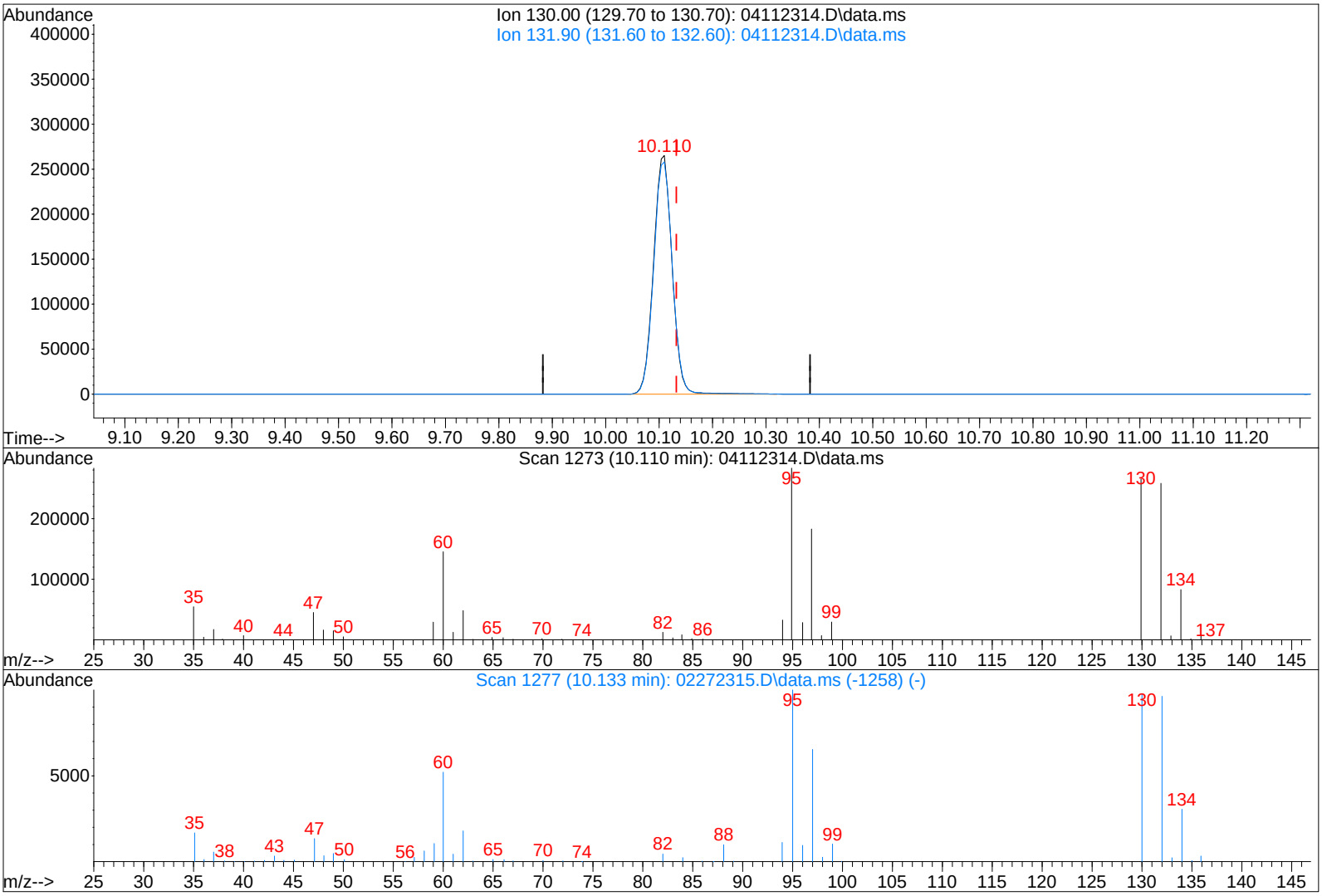
7.044min (-0.040) 27.72ng

response 724485

Ion	Exp%	Act%
61.00	100	100
96.00	67.80	66.47
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS09\DATA\2023 04\11\04112314.D Vial: 1
Acq On : 11 Apr 2023 16:30 Operator: SC
Sample : P2301496-001Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 17:00:18 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 04112314.D\data.ms

(47) Trichloroethene (T)

10.110min (-0.023) 35.35ng

response 639506

Ion	Exp%	Act%
130.00	100	100
131.90	97.90	98.40
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112313.D Vial: 9
Acq On : 11 Apr 2023 15:58 Operator: SC
Sample : P2301496-002 (25mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 16:28:31 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/11/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	168772	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	9.27	114	728174	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	163828	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.97	65	353704	12.379	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.04%				
57) Toluene-d8 (SS2)	12.39	98	836875	13.444	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.52%				
73) Bromofluorobenzene (SS3)	16.79	174	290028	11.426	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.44%				
Target Compounds							Qvalue
2) Propene	3.28	42	2693	N.D.			
3) Dichlorodifluoromethan...	3.35	85	2445	N.D.			
4) Chloromethane	3.48	50	748	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	3.66	62	341971	17.433	ng		99
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.29	45	632	N.D.			
11) Acetonitrile	4.46	41	53	N.D.			
12) Acrolein	4.57	56	382	N.D.			
13) Acetone	4.64	58	21288	1.754	ng	#	85
14) Trichlorofluoromethane	4.74	101	1375	N.D.			
15) 2-Propanol (Isopropanol)	4.87	45	1110	N.D.			
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	5.23	96	59499	3.788	ng		97
18) 2-Methyl-2-Propanol (t...	5.39	59	276	N.D.			
19) Methylene Chloride	5.32	84	3618	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	5.56	151	3867683	220.027	ng		87
22) Carbon Disulfide	5.58	76	20014	N.D.			
23) trans-1,2-Dichloroethene	6.11	61	19091	0.730	ng		100
24) 1,1-Dichloroethane	6.30	63	18483	0.575	ng		98
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.67	72	4932	0.510	ng		94
28) cis-1,2-Dichloroethene	7.05	61	4861168	183.074	ng		98
29) Diisopropyl Ether	7.34	87	1986	N.D.			
30) Ethyl Acetate	0.00	61	0	N.D.			
31) n-Hexane	7.28	57	317	N.D.			
32) Chloroform	7.33	83	18935	0.559	ng		100
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.09	62	63106	2.142	ng		97
38) 1,1,1-Trichloroethane	8.37	97	1953	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.87	78	6022	N.D.			
42) Carbon Tetrachloride	9.04	117	4060	N.D.			
43) Cyclohexane	9.18	84	6754	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D. d			
47) Trichloroethene	10.12	130	4218622	231.514	ng		100
48) 1,4-Dioxane	10.14	88	112	N.D.			
49) 2,2,4-Trimethylpentane...	10.13	57	156	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			

Data File : I:\MS09\DATA\2023 04\11\04112313.D Vial: 9
Acq On : 11 Apr 2023 15:58 Operator: SC
Sample : P2301496-002 (25mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 16:28:31 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

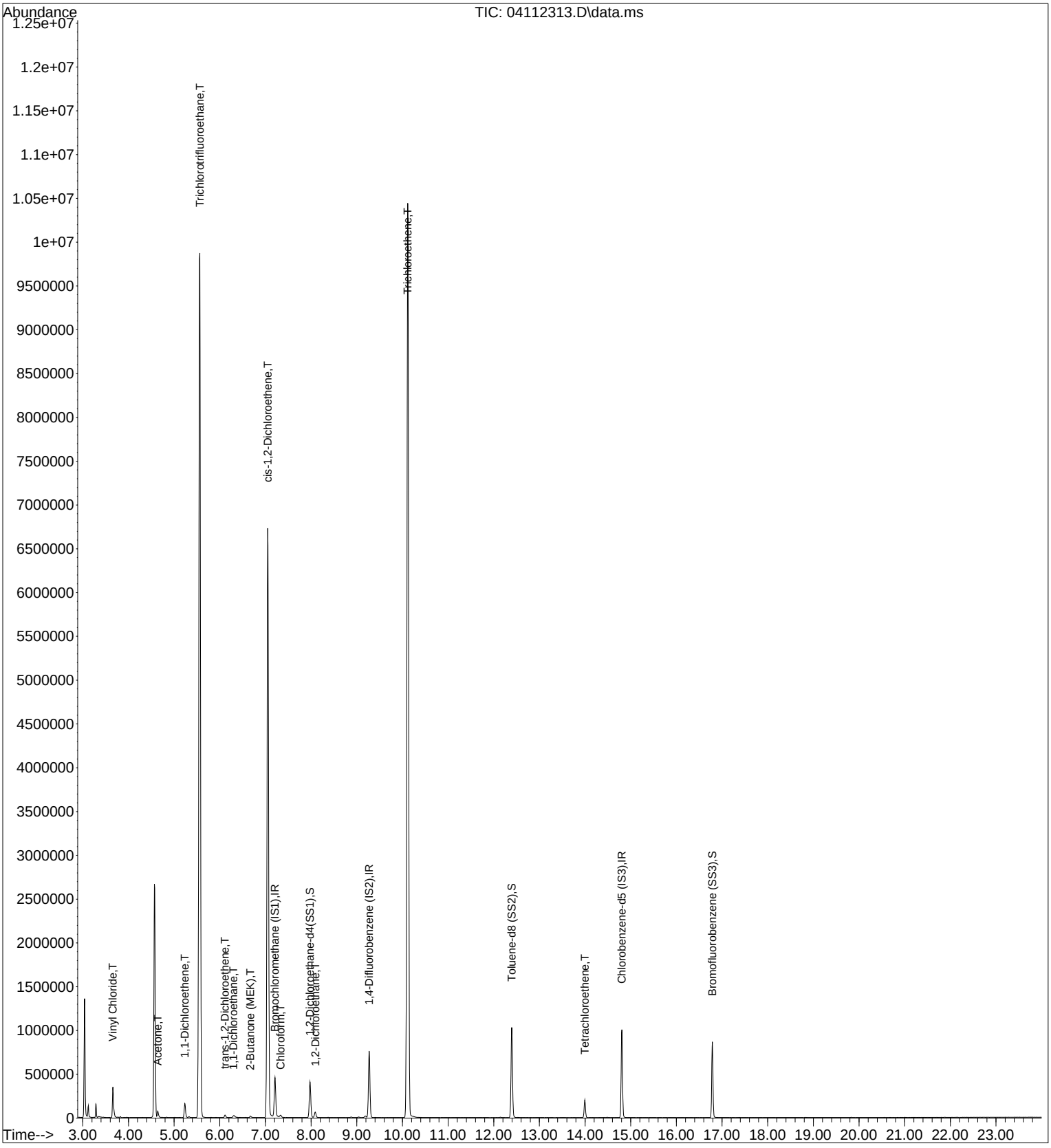
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	12.15	97	1642	N.D.	
58) Toluene	12.53	91	1932	N.D.	
59) 2-Hexanone	12.84	43	174	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	13.99	166	68167	2.983 ng	99
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	15.39	91	400	N.D.	
67) m- & p-Xylenes	15.60	91	577	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.21	91	592	N.D.	
71) n-Nonane	16.57	43	123	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	16.99	105	105	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.66	91	295	N.D.	
77) 3-Ethyltoluene	16.99	105	105	No Calib	#
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	17.94	105	108	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	16.99	105	105	No Calib	#
82) 1,2,4-Trimethylbenzene	18.41	105	304	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	18.72	105	133	N.D.	
88) 4-Isopropyltoluene (p-...	18.91	119	316	N.D.	
89) 1,2,3-Trimethylbenzene	16.99	105	105	No Calib	#
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	21.28	225	186	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.40	119	142	N.D.	
100) n-Butylbenzene	0.00	91	0	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112313.D Vial: 9
Acq On : 11 Apr 2023 15:58 Operator: SC
Sample : P2301496-002 (25mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 16:28:31 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112313.D Vial: 9
Acq On : 11 Apr 2023 15:58 Operator: SC
Sample : P2301496-002 (25mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 16:28:31 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

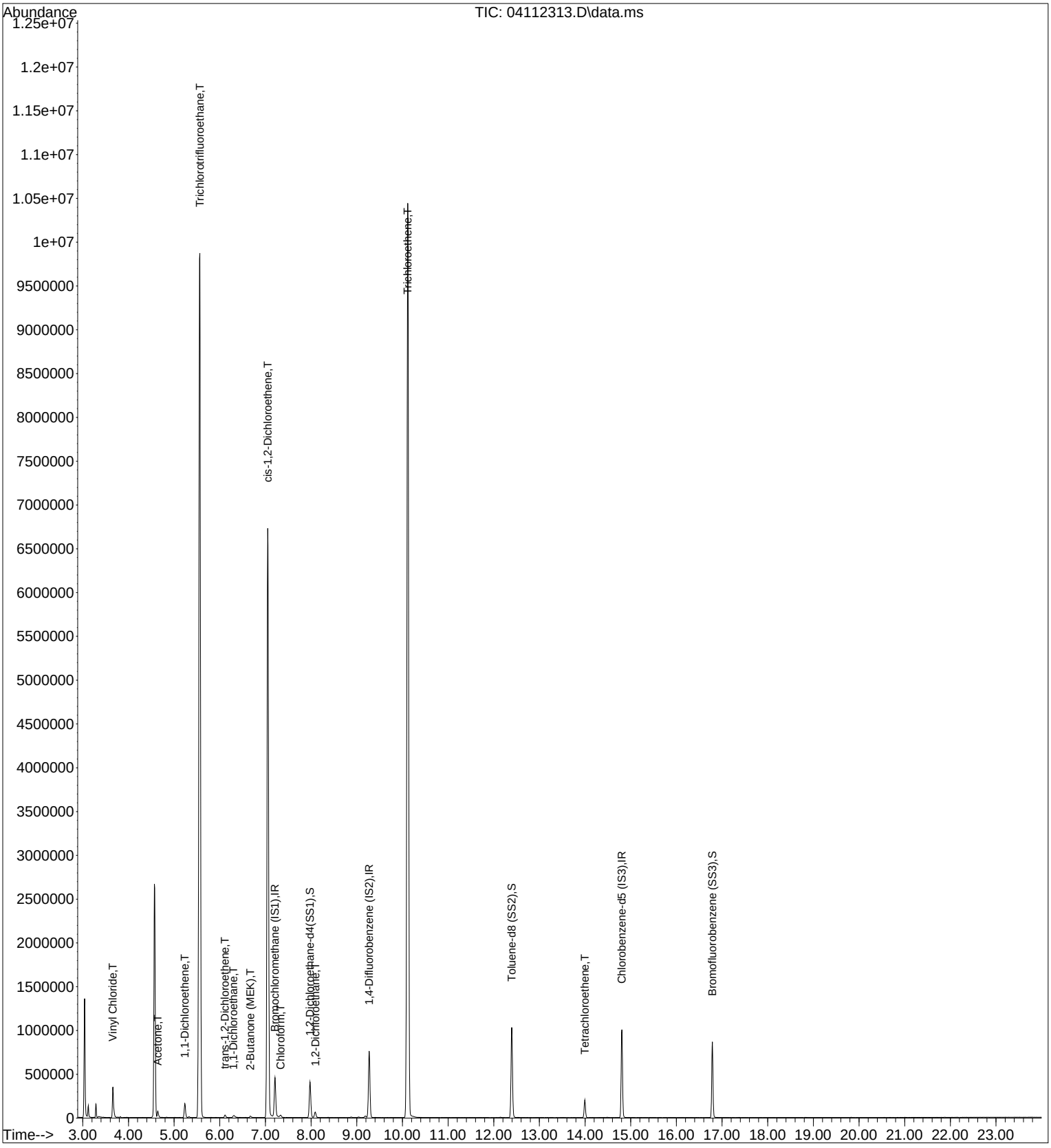
4/11/23

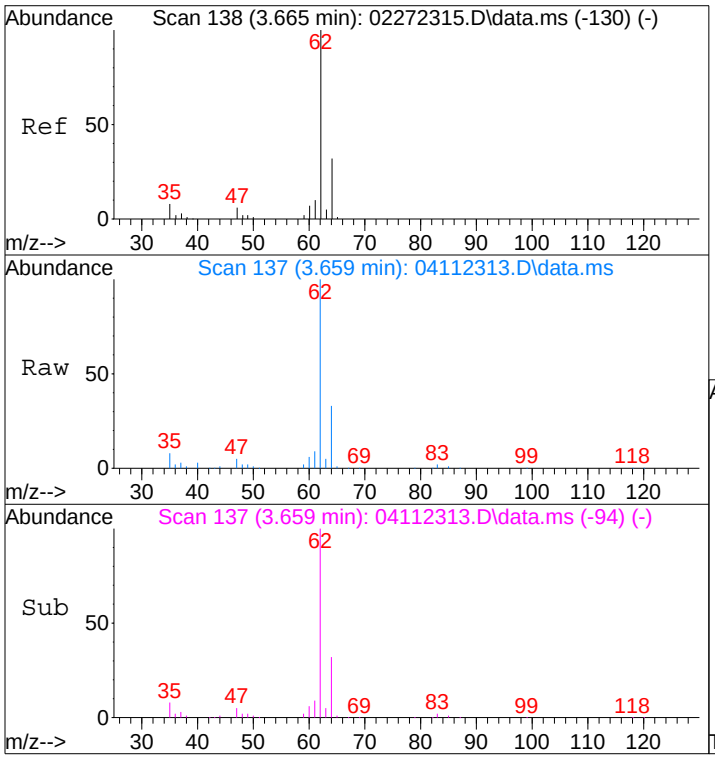
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	168772	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	9.27	114	728174	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	163828	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.97	65	353704	12.379	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.04%				
57) Toluene-d8 (SS2)	12.39	98	836875	13.444	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.52%				
73) Bromofluorobenzene (SS3)	16.79	174	290028	11.426	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.44%				
Target Compounds							Qvalue
6) Vinyl Chloride	3.66	62	341971	17.433	ng		99
13) Acetone	4.64	58	21288	1.754	ng	#	85
17) 1,1-Dichloroethene	5.23	96	59499	3.788	ng		97
21) Trichlorotrifluoroethane	5.56	151	3867683	220.027	ng		87
23) trans-1,2-Dichloroethene	6.11	61	19091	0.730	ng		100
24) 1,1-Dichloroethane	6.30	63	18483	0.575	ng		98
27) 2-Butanone (MEK)	6.67	72	4932	0.510	ng		94
28) cis-1,2-Dichloroethene	7.05	61	4861168	183.074	ng		98
32) Chloroform	7.33	83	18935	0.559	ng		100
36) 1,2-Dichloroethane	8.09	62	63106	2.142	ng		97
47) Trichloroethene	10.12	130	4218622	231.514	ng		100
64) Tetrachloroethene	13.99	166	68167	2.983	ng		99

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

Data File : I:\MS09\DATA\2023 04\11\04112313.D Vial: 9
Acq On : 11 Apr 2023 15:58 Operator: SC
Sample : P2301496-002 (25mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 16:28:31 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

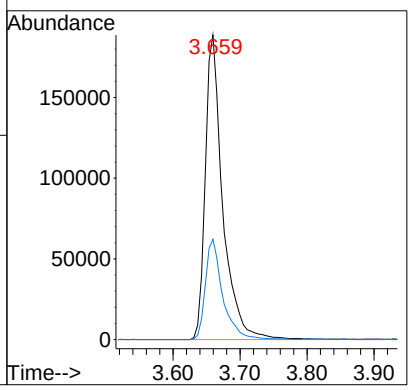


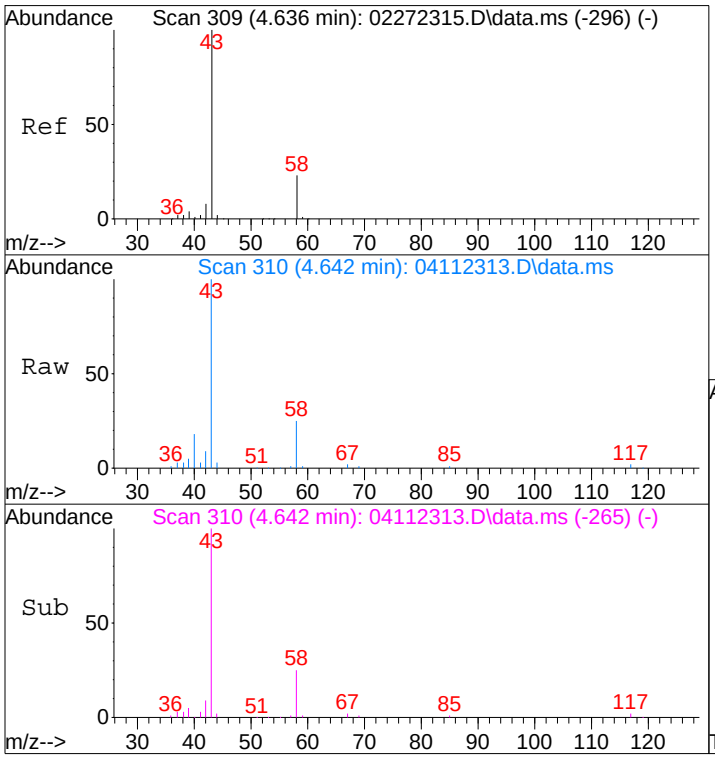


#6
Vinyl Chloride
Concen: 17.43 ng
RT: 3.66 min Scan# 137
Delta R.T. -0.006 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion: 62 Resp: 341971

Ion	Ratio	Lower	Upper
62	100		
64	32.9	12.1	52.1

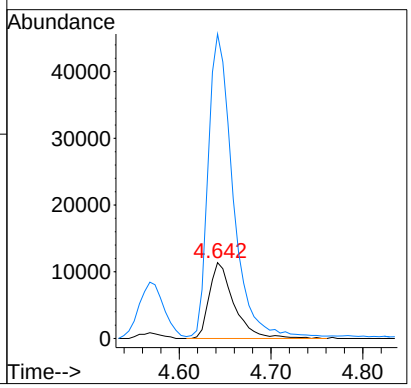


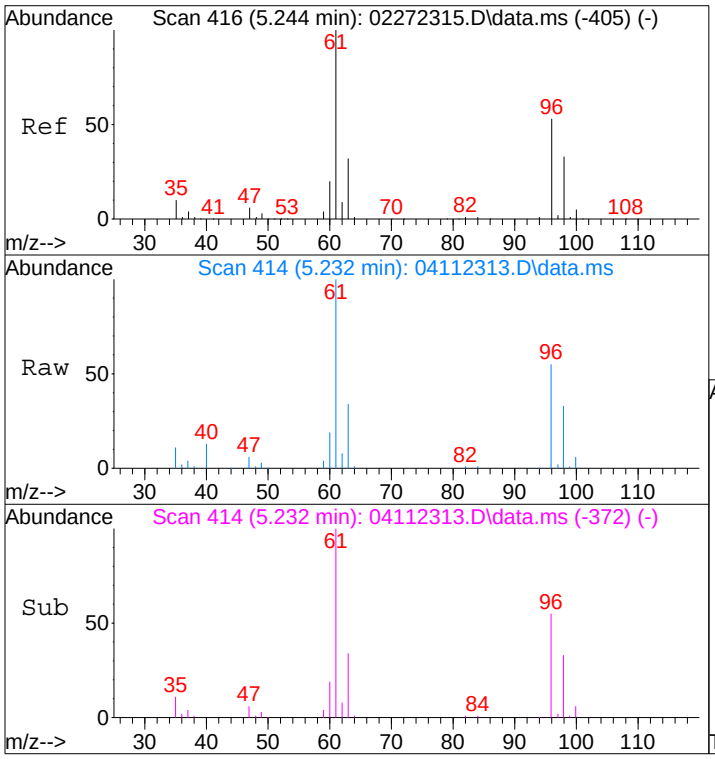


#13
Acetone
Concen: 1.75 ng
RT: 4.64 min Scan# 310
Delta R.T. 0.006 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion: 58 Resp: 21288

Ion	Ratio	Lower	Upper
58	100		
43	407.3	414.4	474.4#

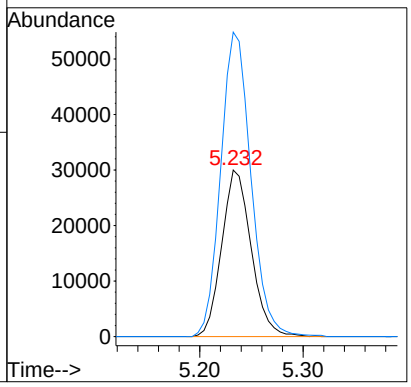


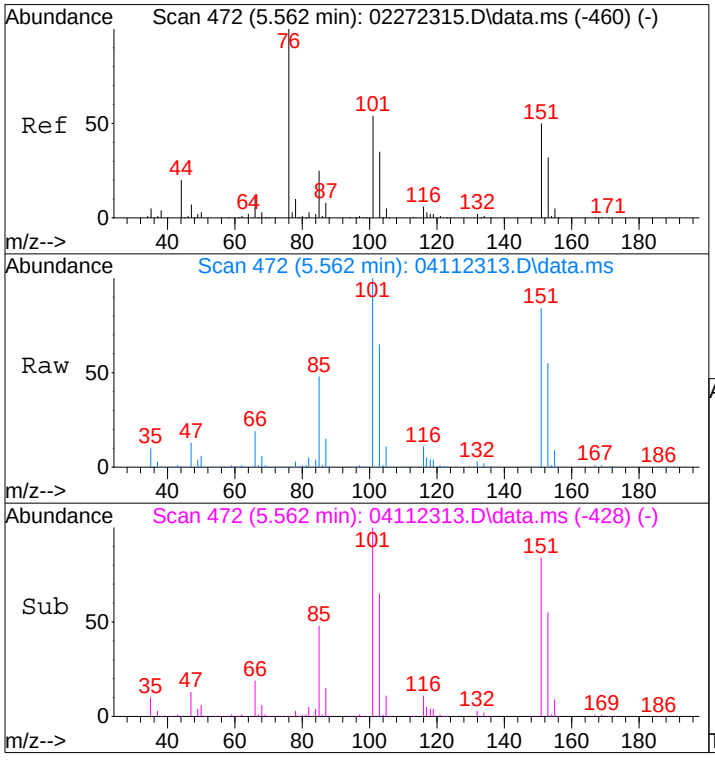


#17
1,1-Dichloroethene
Concen: 3.79 ng
RT: 5.23 min Scan# 414
Delta R.T. -0.012 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion: 96 Resp: 59499

Ion	Ratio	Lower	Upper
96	100		
61	187.3	171.4	211.4

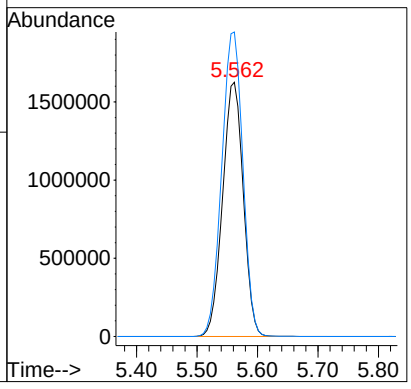


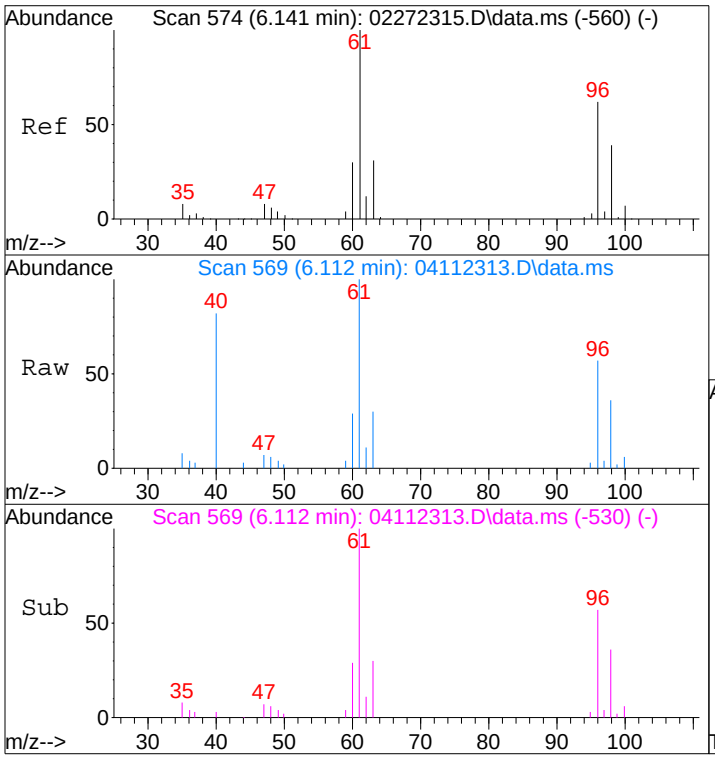


#21
Trichlorotrifluoroethane
Concen: 220.03 ng
RT: 5.56 min Scan# 472
Delta R.T. -0.000 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion:151 Resp: 3867683

Ion	Ratio	Lower	Upper
151	100		
101	122.3	88.2	128.2

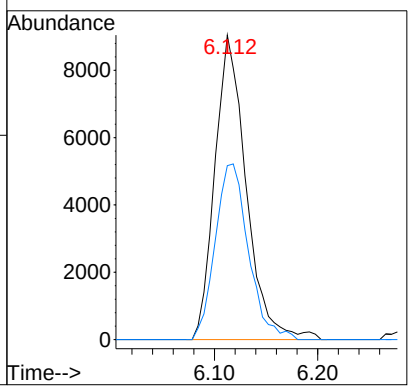


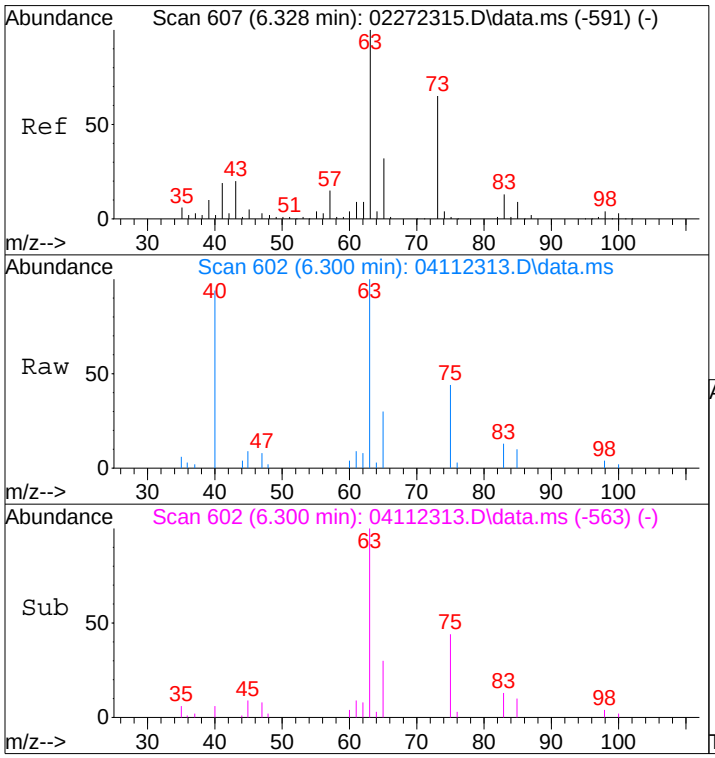


#23
trans-1,2-Dichloroethene
Concen: 0.73 ng
RT: 6.11 min Scan# 569
Delta R.T. -0.029 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion: 61 Resp: 19091

Ion	Ratio	Lower	Upper
61	100		
96	61.2	41.5	81.5

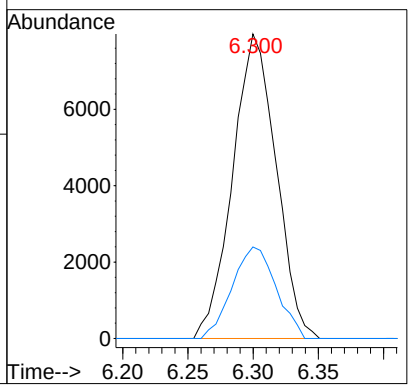


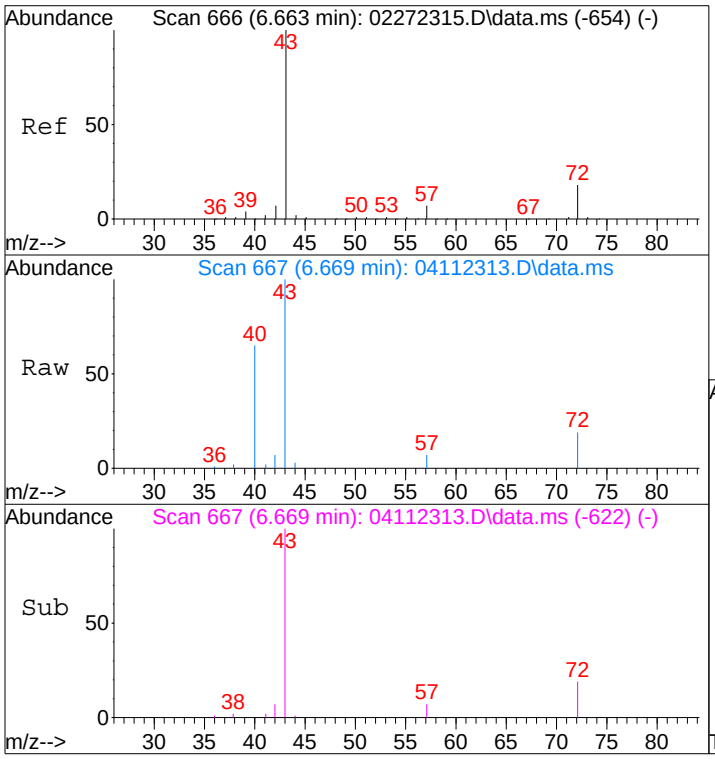


#24
1,1-Dichloroethane
Concen: 0.58 ng
RT: 6.30 min Scan# 602
Delta R.T. -0.029 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion: 63 Resp: 18483

Ion	Ratio	Lower	Upper
63	100		
65	30.4	11.5	51.5

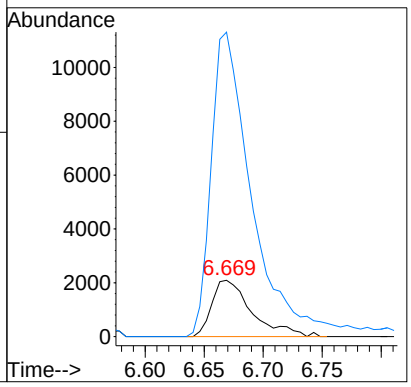


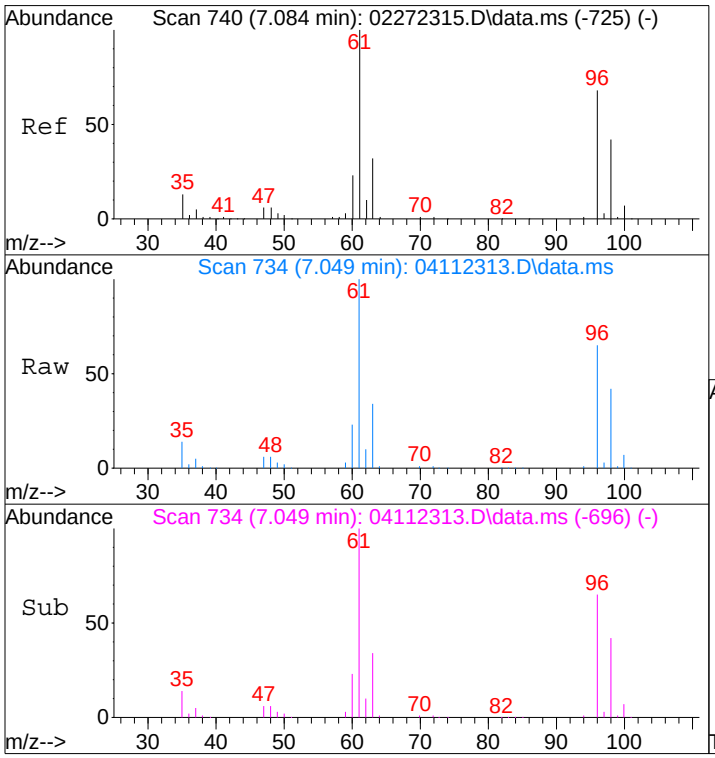


#27
2-Butanone (MEK)
Concen: 0.51 ng
RT: 6.67 min Scan# 667
Delta R.T. 0.006 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion: 72 Resp: 4932

Ion	Ratio	Lower	Upper
72	100		
43	572.7	536.0	576.0

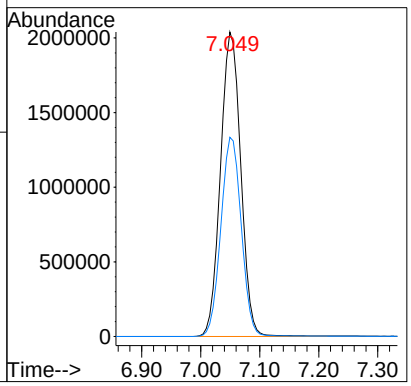


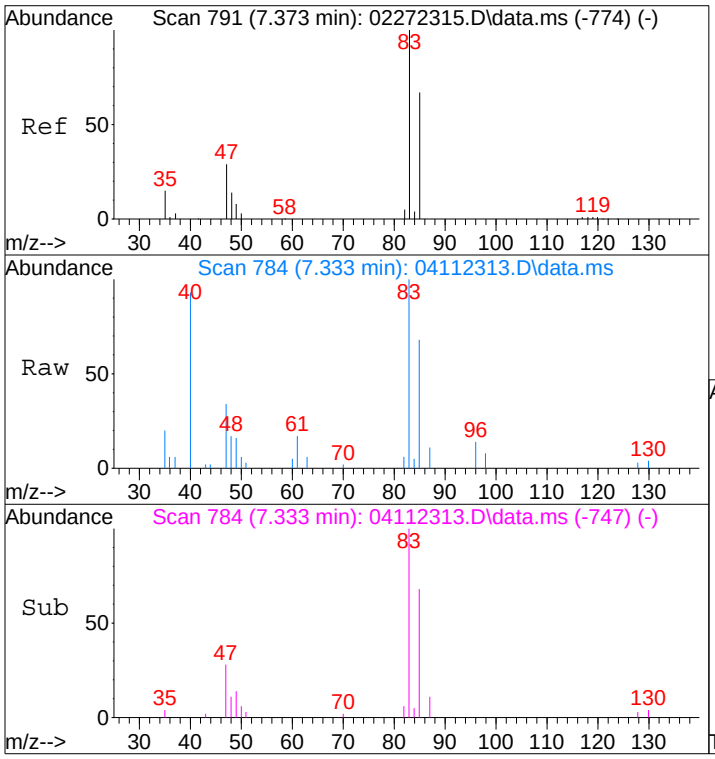


#28
cis-1,2-Dichloroethene
Concen: 183.07 ng
RT: 7.05 min Scan# 734
Delta R.T. -0.034 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion: 61 Resp: 4861168

Ion	Ratio	Lower	Upper
61	100		
96	66.1	47.8	87.8

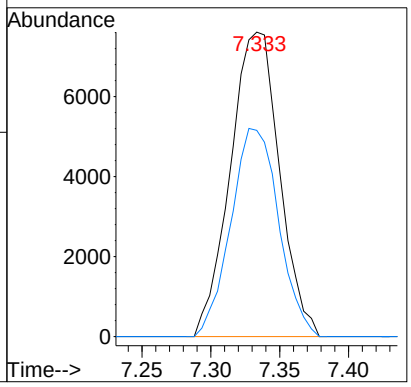


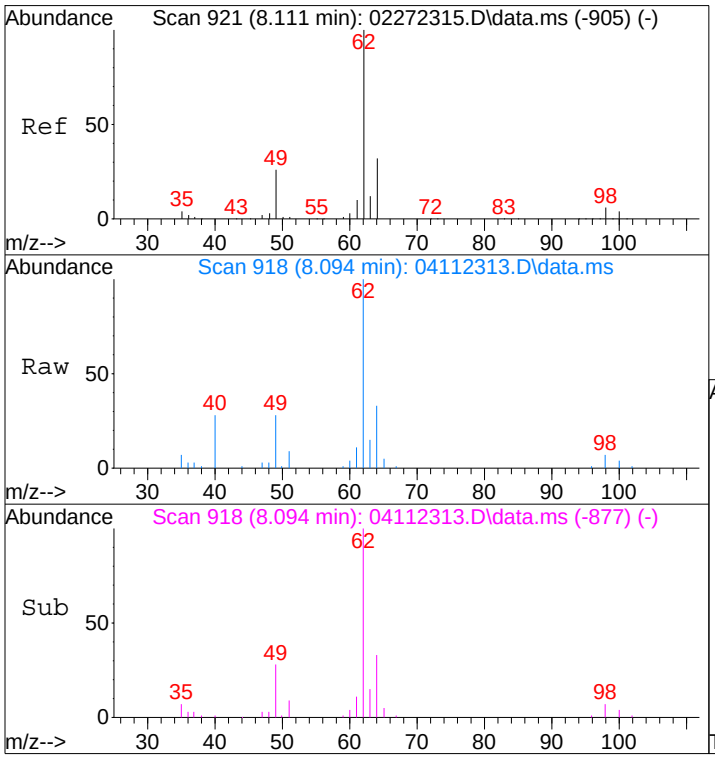


#32
Chloroform
Concen: 0.56 ng
RT: 7.33 min Scan# 784
Delta R.T. -0.040 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion: 83 Resp: 18935

Ion	Ratio	Lower	Upper
83	100		
85	66.4	46.3	86.3

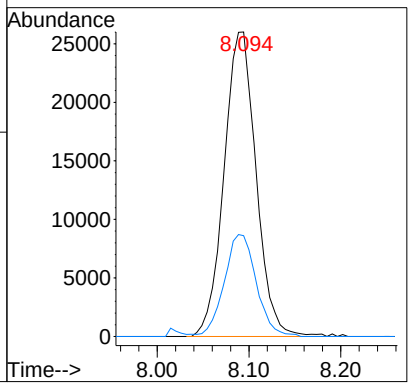


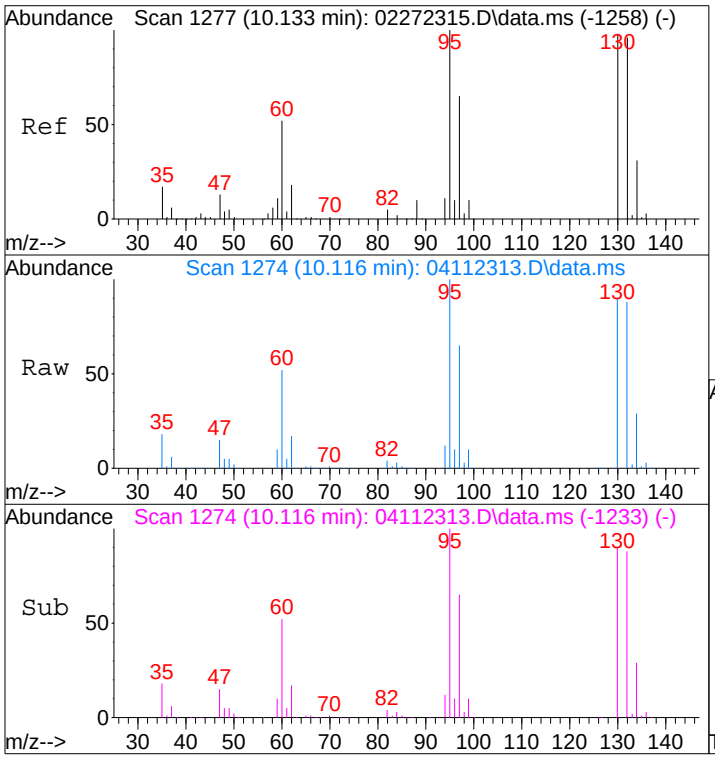


#36
1,2-Dichloroethane
Concen: 2.14 ng
RT: 8.09 min Scan# 918
Delta R.T. -0.017 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion: 62 Resp: 63106

Ion	Ratio	Lower	Upper
62	100		
64	33.4	12.0	52.0

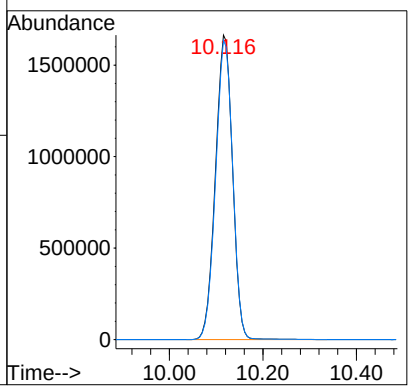


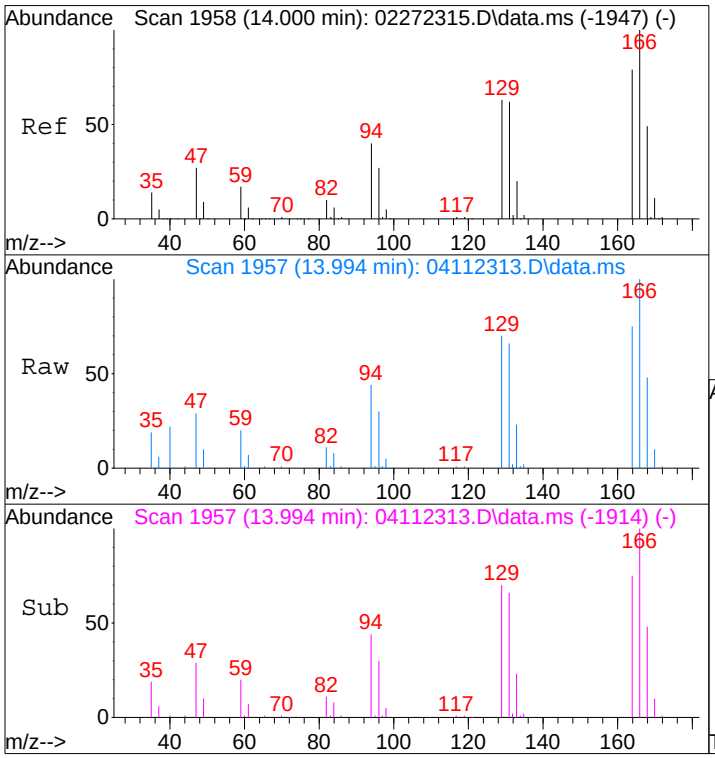


#47
Trichloroethene
Concen: 231.51 ng
RT: 10.12 min Scan# 1274
Delta R.T. -0.017 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion:130 Resp: 4218622

Ion	Ratio	Lower	Upper
130	100		
132	98.2	77.9	117.9

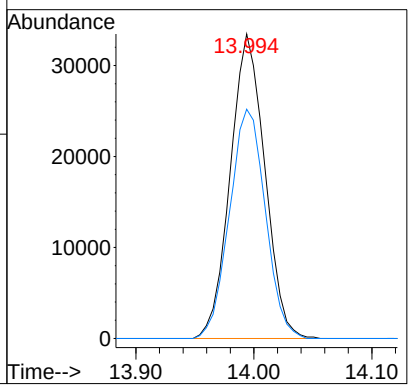




#64
Tetrachloroethene
Concen: 2.98 ng
RT: 13.99 min Scan# 1957
Delta R.T. -0.006 min
Lab File: 04112313.D
Acq: 11 Apr 2023 15:58

Tgt Ion:166 Resp: 68167

Ion	Ratio	Lower	Upper
166	100		
164	78.1	58.6	98.6



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112315.D Vial: 1
Acq On : 11 Apr 2023 17:06 Operator: SC
Sample : P2301496-002Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:31:42 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/12/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	168464	12.500	ng		-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	729835	12.500	ng		-0.03
56) Chlorobenzene-d5 (IS3)	14.80	54	163863	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	355839	12.477	ng		-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.84%				
57) Toluene-d8 (SS2)	12.39	98	839073	13.476	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.84%				
73) Bromofluorobenzene (SS3)	16.79	174	289511	11.403	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.20%				
Target Compounds							Qvalue
2) Propene	3.28	42	31941	1.425	ng	#	80
3) Dichlorodifluoromethan...	3.35	85	1130	N.D.			
4) Chloromethane	3.49	50	110	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	3.68	62	47547	2.428	ng		98
7) 1,3-Butadiene	3.77	54	211	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	4.27	45	21848	1.367	ng		98
11) Acetonitrile	4.46	41	262	N.D.			
12) Acrolein	4.54	56	57	N.D.			
13) Acetone	4.62	58	22462	1.854	ng		98
14) Trichlorofluoromethane	4.74	101	703	N.D.			
15) 2-Propanol (Isopropanol)	4.83	45	29574	0.625	ng		89
16) Acrylonitrile	5.02	53	80	N.D.			
17) 1,1-Dichloroethene	5.23	96	8321	0.531	ng	#	65
18) 2-Methyl-2-Propanol (t...	5.21	59	930	N.D.			
19) Methylene Chloride	5.33	84	829	N.D.			
20) 3-Chloro-1-propene (Al...	5.42	41	551	N.D.			
21) Trichlorotrifluoroethane	5.55	151	567751	32.358	ng		84
22) Carbon Disulfide	5.60	76	3021	N.D.			
23) trans-1,2-Dichloroethene	6.11	61	2587	N.D.			
24) 1,1-Dichloroethane	6.29	63	2535	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D.			
27) 2-Butanone (MEK)	6.65	72	10923	1.131	ng		98
28) cis-1,2-Dichloroethene	7.04	61	707882	26.708	ng		99
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	7.26	61	6481	0.873	ng	#	27
31) n-Hexane	7.27	57	2969	N.D.			
32) Chloroform	7.33	83	2609	N.D.			
34) Tetrahydrofuran (THF)	7.76	72	3036	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.08	62	8685	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	8.83	56	3491	No Calib		#	
41) Benzene	8.87	78	16497	N.D.			
42) Carbon Tetrachloride	9.03	117	476	N.D.			
43) Cyclohexane	9.18	84	2558	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	10.10	83	8472	N.D.			
47) Trichloroethene	10.10	130	623104	34.118	ng		99
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	10.20	57	5874	N.D.			
50) Methyl Methacrylate	0.00	100	0	N.D.			

Data File : I:\MS09\DATA\2023 04\11\04112315.D Vial: 1
Acq On : 11 Apr 2023 17:06 Operator: SC
Sample : P2301496-002Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:31:42 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

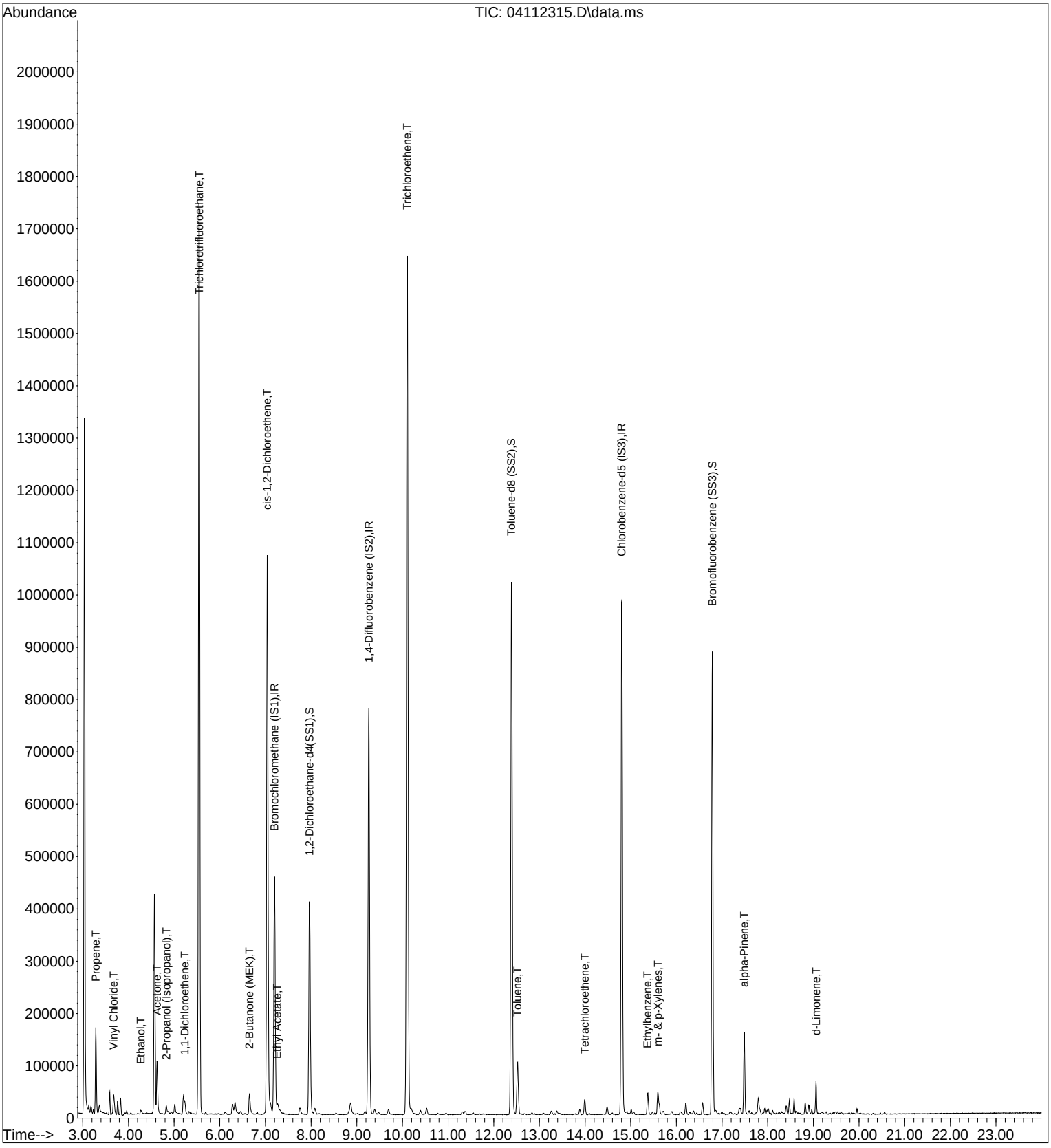
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.52	71	2784	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	11.31	58	1915	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.52	91	87676	1.323 ng	99
59) 2-Hexanone	12.89	43	848	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.77	43	2172	N.D.	
63) n-Octane	13.89	57	1508	N.D.	
64) Tetrachloroethene	13.99	166	10351	0.453 ng	95
65) Chlorobenzene	14.87	112	1013	N.D.	
66) Ethylbenzene	15.37	91	35332	0.465 ng	100
67) m- & p-Xylenes	15.60	91	42182	0.676 ng	100
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.07	104	1362	N.D.	
70) o-Xylene	16.20	91	13761	N.D.	
71) n-Nonane	16.57	43	10127	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.00	105	4645	N.D.	
75) alpha-Pinene	17.49	93	62154	1.946 ng	99
76) n-Propylbenzene	17.65	91	3374	N.D.	
77) 3-Ethyltoluene	17.00	105	4645	No Calib	
78) 4-Ethyltoluene	17.83	105	2444	N.D.	
79) 1,3,5-Trimethylbenzene	17.93	105	2710	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.00	105	4645	No Calib	
82) 1,2,4-Trimethylbenzene	18.41	105	5618	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	0.00	91	0	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	18.64	146	718	N.D.	
87) sec-Butylbenzene	18.72	105	737	N.D.	
88) 4-Isopropyltoluene (p-...	18.90	119	7808	N.D.	
89) 1,2,3-Trimethylbenzene	17.00	105	4645	No Calib	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.06	68	11965	0.546 ng	96
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	0.00	128	0	N.D.	
96) n-Dodecane	0.00	58	0	N.D.	
97) Hexachlorobutadiene	21.28	225	174	N.D.	
98) Cyclohexanone	15.35	55	320	No Calib #	
99) tert-Butylbenzene	18.40	119	974	N.D.	
100) n-Butylbenzene	19.37	91	620	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

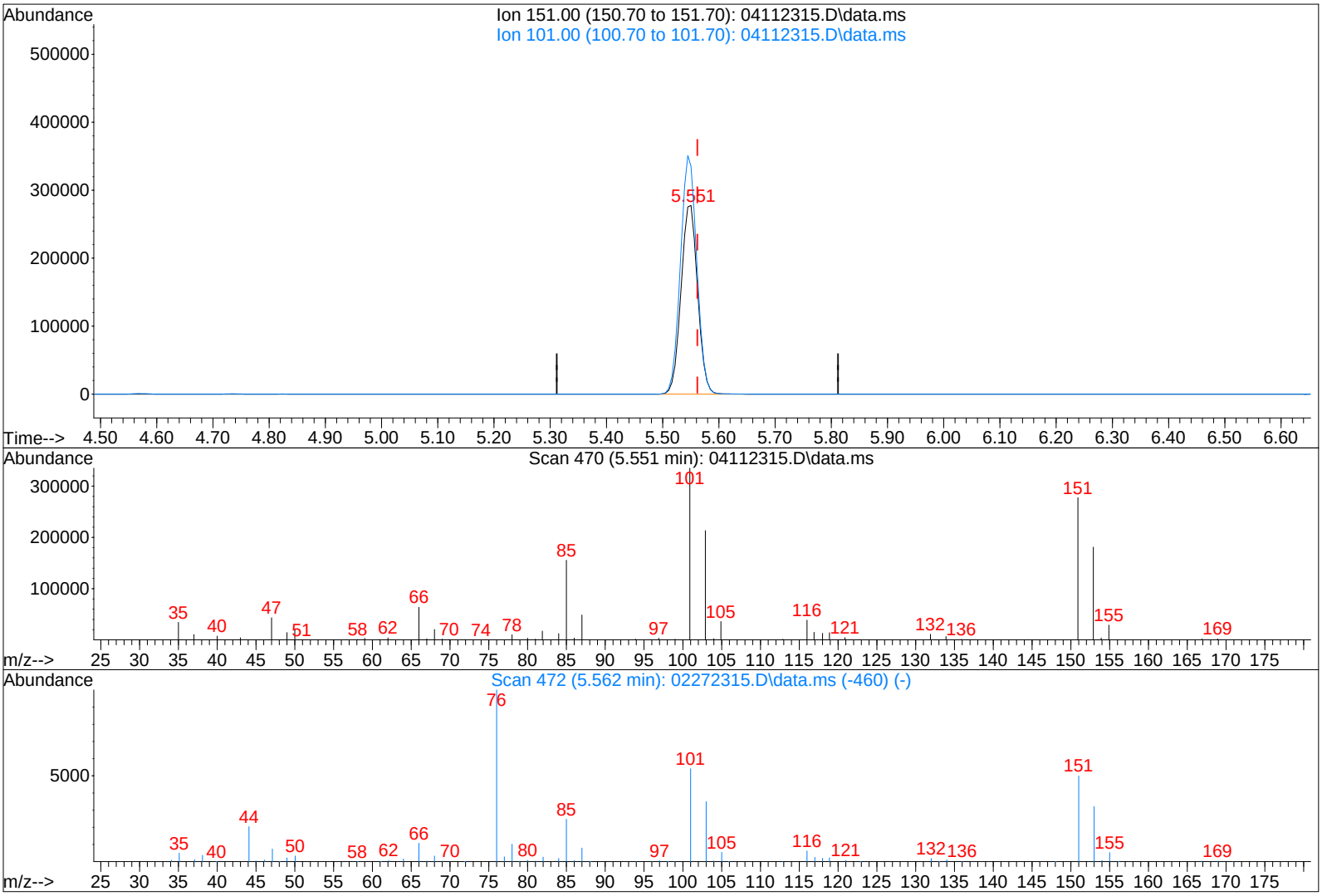
Data File : I:\MS09\DATA\2023 04\11\04112315.D Vial: 1
Acq On : 11 Apr 2023 17:06 Operator: SC
Sample : P2301496-002Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:31:42 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS09\DATA\2023 04\11\04112315.D Vial: 1
Acq On : 11 Apr 2023 17:06 Operator: SC
Sample : P2301496-002Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:31:42 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 04112315.D\data.ms

(21) Trichlorotrifluoroethane (T)

5.551min (-0.011) 32.36ng

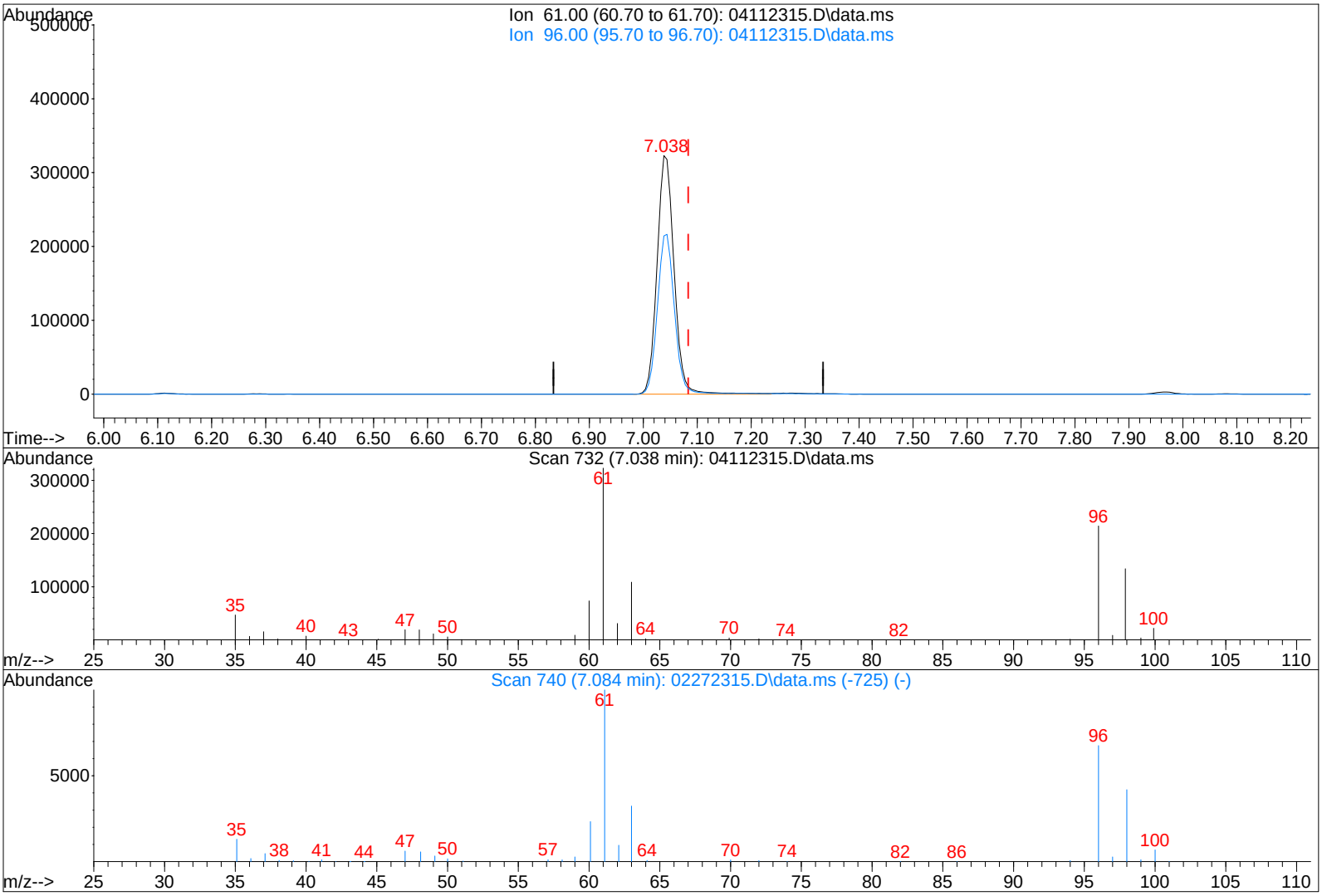
response 567751

Ion	Exp%	Act%
151.00	100	100
101.00	108.20	124.65
0.00	0.00	0.00
0.00	0.00	0.00

01177822

Data File : I:\MS09\DATA\2023 04\11\04112315.D Vial: 1
Acq On : 11 Apr 2023 17:06 Operator: SC
Sample : P2301496-002Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:31:42 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 04112315.D\data.ms

(28) cis-1,2-Dichloroethene (T)

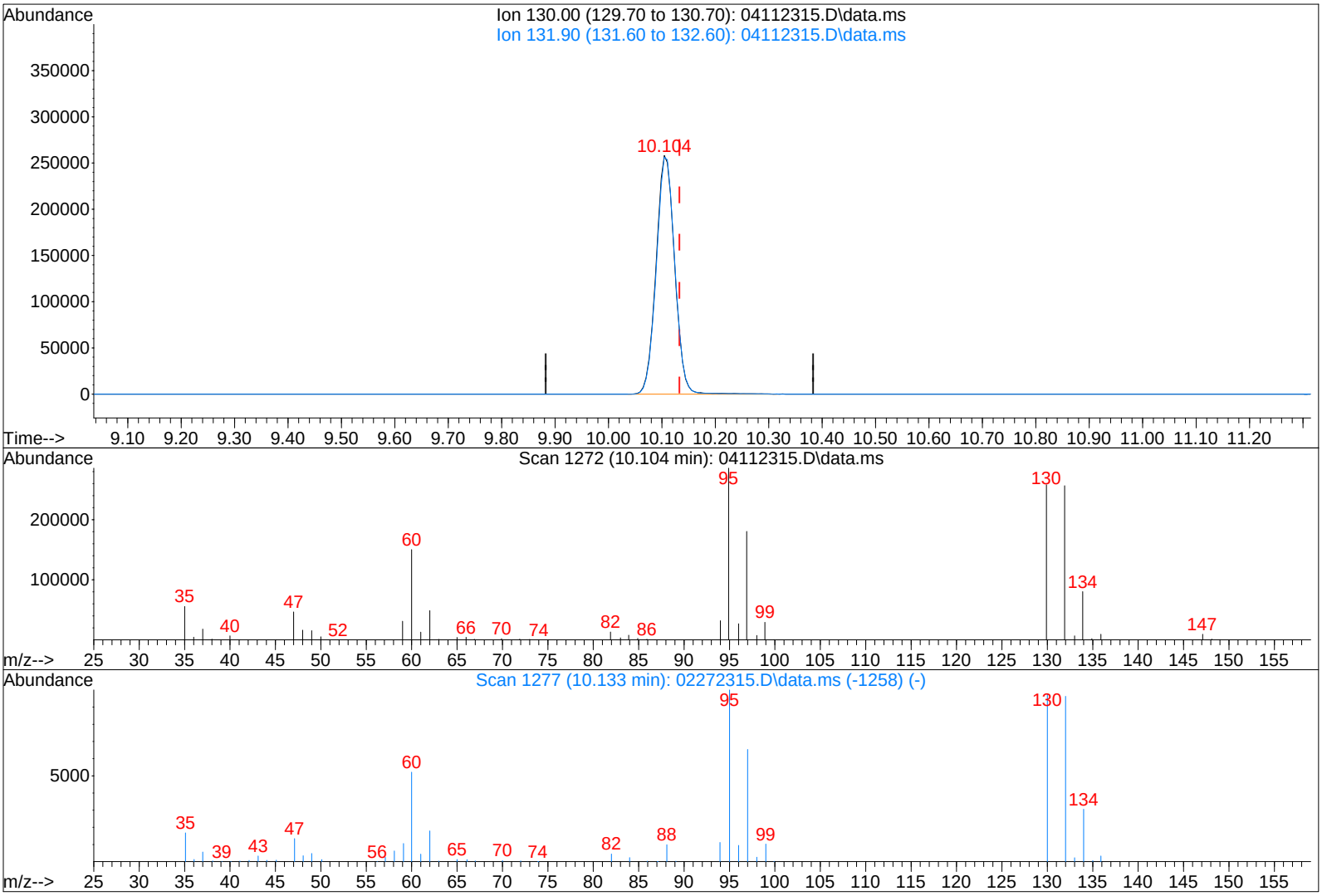
7.038min (-0.045) 26.71ng

response 707882

Ion	Exp%	Act%
61.00	100	100
96.00	67.80	67.27
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS09\DATA\2023 04\11\04112315.D Vial: 1
Acq On : 11 Apr 2023 17:06 Operator: SC
Sample : P2301496-002Dil (5.0mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:31:42 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



TIC: 04112315.D\data.ms

(47) Trichloroethene (T)

10.104min (-0.028) 34.12ng

response 623104

Ion	Exp%	Act%
130.00	100	100
131.90	97.90	99.01
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112316.D Vial: 10
Acq On : 11 Apr 2023 17:38 Operator: SC
Sample : P2301496-003 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:52:43 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/12/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	158040	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	9.27	114	693782	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	156598	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.97	65	335493	12.539	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.32%				
57) Toluene-d8 (SS2)	12.39	98	800970	13.461	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.68%				
73) Bromofluorobenzene (SS3)	16.79	174	279780	11.531	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.24%				
Target Compounds							Qvalue
2) Propene	3.25	42	283417m	13.482	ng		
3) Dichlorodifluoromethan...	3.34	85	56903	1.559	ng		99
4) Chloromethane	3.48	50	12492	0.545	ng		97
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	1205	N.D.			
6) Vinyl Chloride	3.67	62	11517	0.627	ng		95
7) 1,3-Butadiene	3.76	54	301	N.D.			
8) Bromomethane	4.02	94	371	N.D.			
9) Chloroethane	4.14	64	134	N.D.			
10) Ethanol	4.28	45	301470	20.102	ng		100
11) Acetonitrile	4.43	41	16611	N.D.			
12) Acrolein	4.52	56	2904	N.D.			
13) Acetone	4.60	58	258109	22.711	ng		99
14) Trichlorofluoromethane	4.73	101	30880	0.849	ng		98
15) 2-Propanol (Isopropanol)	4.83	45	1228860	27.696	ng		93
16) Acrylonitrile	5.01	53	2747	N.D.			
17) 1,1-Dichloroethene	5.23	96	2200	N.D.			
18) 2-Methyl-2-Propanol (t...	5.32	59	5419	N.D.			
19) Methylene Chloride	5.33	84	4700	N.D.			
20) 3-Chloro-1-propene (Al...	5.41	41	202	N.D.			
21) Trichlorotrifluoroethane	5.55	151	160613	9.758	ng		83
22) Carbon Disulfide	5.58	76	5592	N.D.			
23) trans-1,2-Dichloroethene	6.12	61	820	N.D.			
24) 1,1-Dichloroethane	6.28	63	645	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	6.64	72	28149	3.107	ng	#	92
28) cis-1,2-Dichloroethene	7.05	61	148279	5.963	ng		99
29) Diisopropyl Ether	7.27	87	1312	N.D.			
30) Ethyl Acetate	7.26	61	23492	3.373	ng		99
31) n-Hexane	7.27	57	132596	4.585	ng		96
32) Chloroform	7.33	83	2383	N.D.			
34) Tetrahydrofuran (THF)	7.72	72	57327	6.319	ng		93
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	8.08	62	4694	N.D.			
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
39) Isopropyl Acetate	9.26	61	24174	No Calib		#	
40) 1-Butanol	8.79	56	19299	No Calib		#	
41) Benzene	8.86	78	45254	0.764	ng		100
42) Carbon Tetrachloride	9.03	117	7045	N.D.			
43) Cyclohexane	9.18	84	12109	0.550	ng		95
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	9.81	63	114	N.D.			
46) Bromodichloromethane	10.10	83	2768	N.D.			
47) Trichloroethene	10.11	130	159057	9.162	ng		100
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D. d			
50) Methyl Methacrylate	10.38	100	106	N.D.			

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112316.D Vial: 10
Acq On : 11 Apr 2023 17:38 Operator: SC
Sample : P2301496-003 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:52:43 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

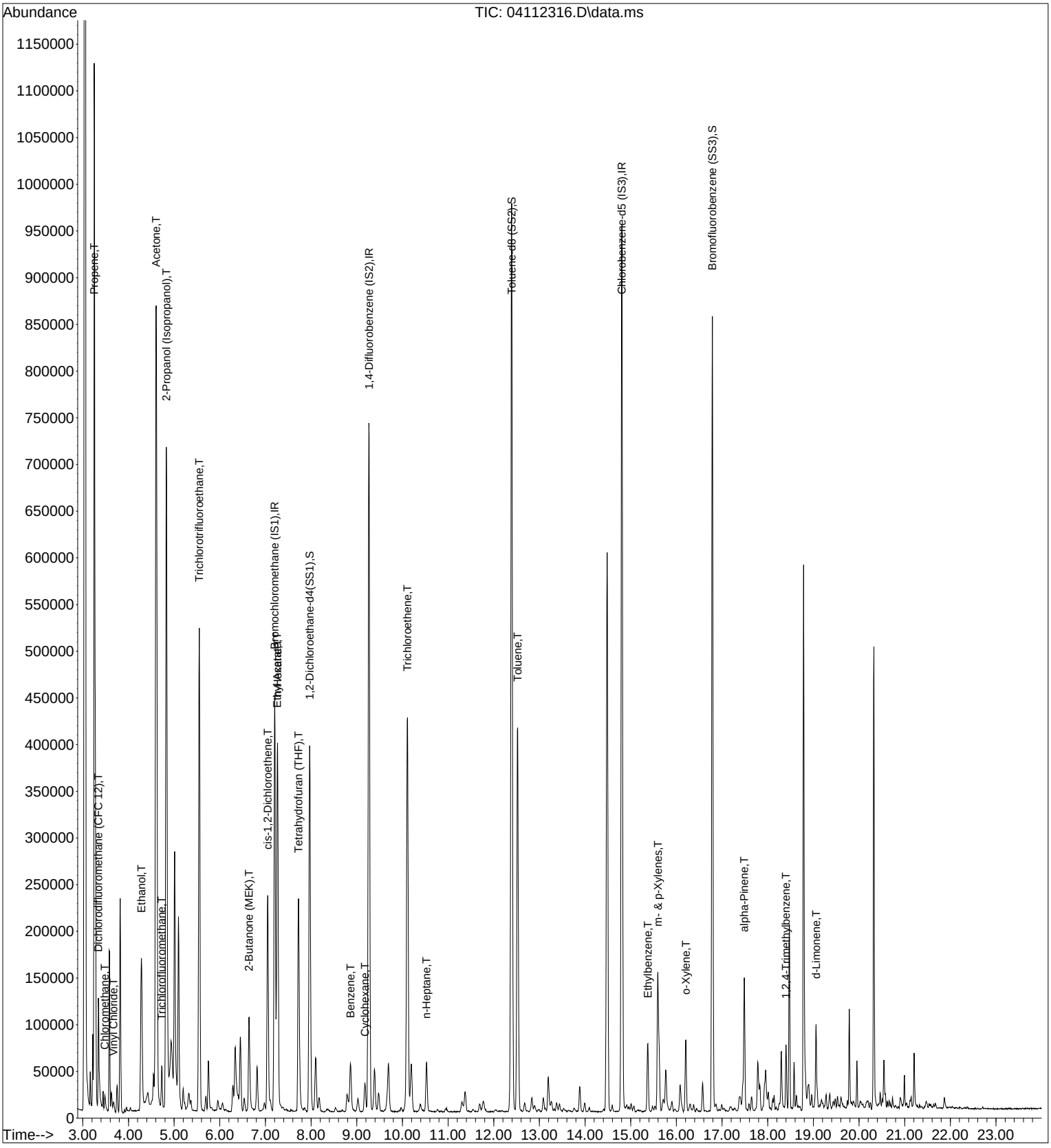
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.52	71	12999	0.881 ng	97
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	11.30	58	3326	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.52	91	353282	5.576 ng	100
59) 2-Hexanone	12.89	43	4314	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.76	43	5307	N.D.	
63) n-Octane	13.89	57	4887	N.D.	
64) Tetrachloroethene	14.00	166	3216	N.D.	
65) Chlorobenzene	14.86	112	851	N.D.	
66) Ethylbenzene	15.37	91	61454	0.846 ng	99
67) m- & p-Xylenes	15.60	91	137390	2.304 ng	97
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.07	104	3715	N.D.	
70) o-Xylene	16.21	91	52039	0.886 ng	99
71) n-Nonane	16.58	43	14195	N.D.	
72) 1,1,2,2-Tetrachloroethane	16.09	83	175	N.D.	
74) Cumene	16.99	105	5835	N.D.	
75) alpha-Pinene	17.49	93	57358	1.879 ng	92
76) n-Propylbenzene	17.64	91	12081	N.D.	
77) 3-Ethyltoluene	16.99	105	5835	No Calib	
78) 4-Ethyltoluene	17.83	105	11976	N.D.	
79) 1,3,5-Trimethylbenzene	17.93	105	11440	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	16.99	105	5835	No Calib	
82) 1,2,4-Trimethylbenzene	18.40	105	35014	0.560 ng	88
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.40	91	4292	N.D.	
85) 1,3-Dichlorobenzene	18.63	146	5313	N.D.	
86) 1,4-Dichlorobenzene	18.63	146	5313	N.D.	
87) sec-Butylbenzene	18.72	105	1615	N.D.	
88) 4-Isopropyltoluene (p-...	18.90	119	10020	N.D.	
89) 1,2,3-Trimethylbenzene	16.99	105	5835	No Calib	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.06	68	16874	0.806 ng	80
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	18.09	58	959	No Calib	
94) 1,2,4-Trichlorobenzene	20.82	180	171	N.D.	
95) Naphthalene	20.93	128	1011	N.D.	
96) n-Dodecane	19.05	58	415	No Calib #	
97) Hexachlorobutadiene	21.27	225	265	N.D.	
98) Cyclohexanone	15.21	55	578	No Calib #	
99) tert-Butylbenzene	18.40	119	4414	N.D.	
100) n-Butylbenzene	19.37	91	3374	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112316.D Vial: 10
Acq On : 11 Apr 2023 17:38 Operator: SC
Sample : P2301496-003 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:52:43 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112316.D Vial: 10
Acq On : 11 Apr 2023 17:38 Operator: SC
Sample : P2301496-003 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:52:43 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/12/23

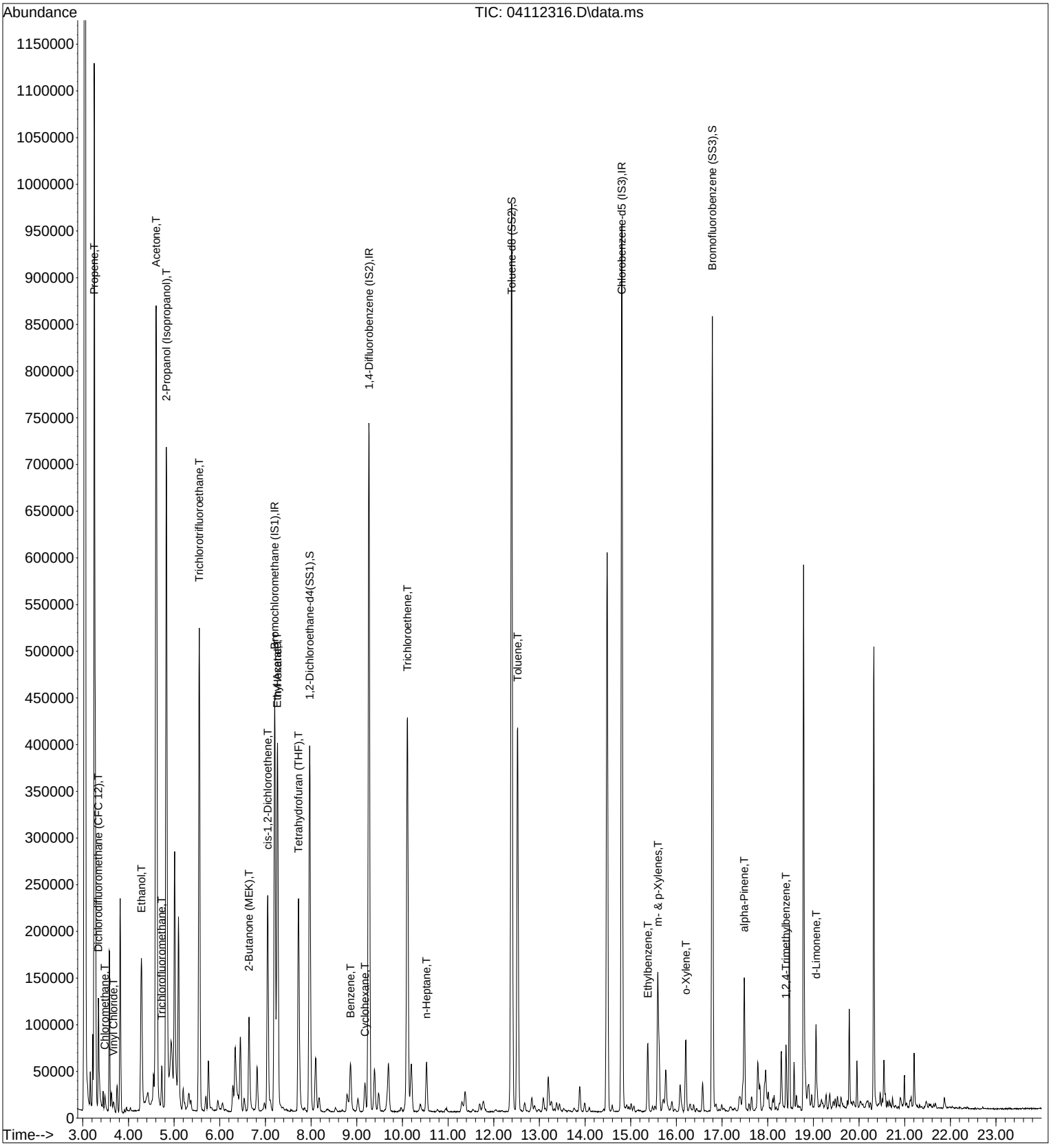
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	158040	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	9.27	114	693782	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	156598	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.97	65	335493	12.539	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.32%				
57) Toluene-d8 (SS2)	12.39	98	800970	13.461	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.68%				
73) Bromofluorobenzene (SS3)	16.79	174	279780	11.531	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.24%				
Target Compounds							Qvalue
2) Propene	3.25	42	283417m	13.482	ng		
3) Dichlorodifluoromethan...	3.34	85	56903	1.559	ng		99
4) Chloromethane	3.48	50	12492	0.545	ng		97
6) Vinyl Chloride	3.67	62	11517	0.627	ng		95
10) Ethanol	4.28	45	301470	20.102	ng		100
13) Acetone	4.60	58	258109	22.711	ng		99
14) Trichlorofluoromethane	4.73	101	30880	0.849	ng		98
15) 2-Propanol (Isopropanol)	4.83	45	1228860	27.696	ng		93
21) Trichlorotrifluoroethane	5.55	151	160613	9.758	ng		83
27) 2-Butanone (MEK)	6.64	72	28149	3.107	ng	#	92
28) cis-1,2-Dichloroethene	7.05	61	148279	5.963	ng		99
30) Ethyl Acetate	7.26	61	23492	3.373	ng		99
31) n-Hexane	7.27	57	132596	4.585	ng		96
34) Tetrahydrofuran (THF)	7.72	72	57327	6.319	ng		93
41) Benzene	8.86	78	45254	0.764	ng		100
43) Cyclohexane	9.18	84	12109	0.550	ng		95
47) Trichloroethene	10.11	130	159057	9.162	ng		100
51) n-Heptane	10.52	71	12999	0.881	ng		97
58) Toluene	12.52	91	353282	5.576	ng		100
66) Ethylbenzene	15.37	91	61454	0.846	ng		99
67) m- & p-Xylenes	15.60	91	137390	2.304	ng		97
70) o-Xylene	16.21	91	52039	0.886	ng		99
75) alpha-Pinene	17.49	93	57358	1.879	ng		92
82) 1,2,4-Trimethylbenzene	18.40	105	35014	0.560	ng		88
91) d-Limonene	19.06	68	16874	0.806	ng		80

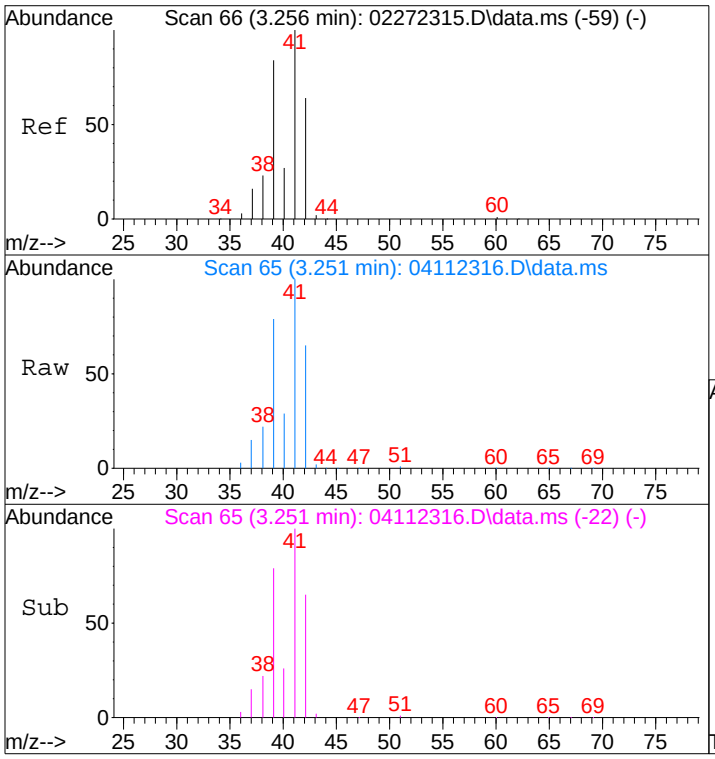
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112316.D Vial: 10
Acq On : 11 Apr 2023 17:38 Operator: SC
Sample : P2301496-003 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:52:43 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

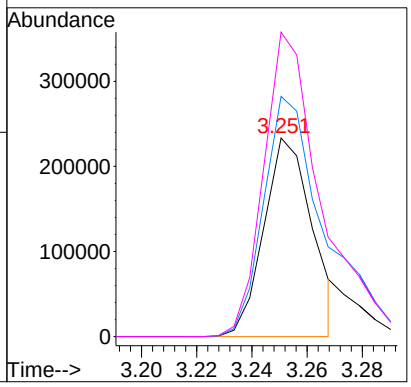


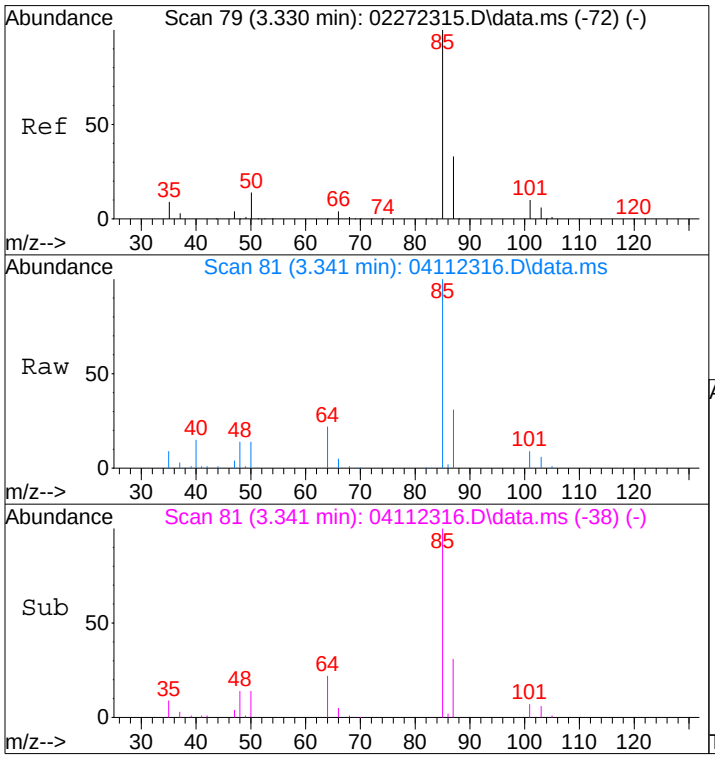


#2
Propene
Concen: 13.48 ng m
RT: 3.25 min Scan# 65
Delta R.T. -0.006 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 42 Resp: 283417

Ion	Ratio	Lower	Upper
42	100		
39	156.0	110.0	150.0#
41	185.6	135.8	175.8#

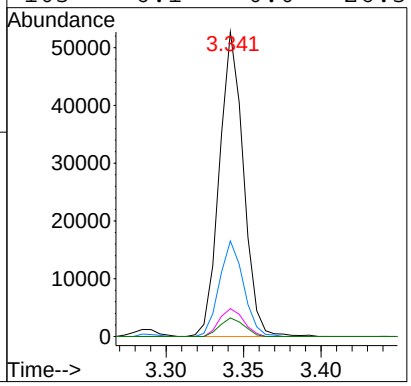


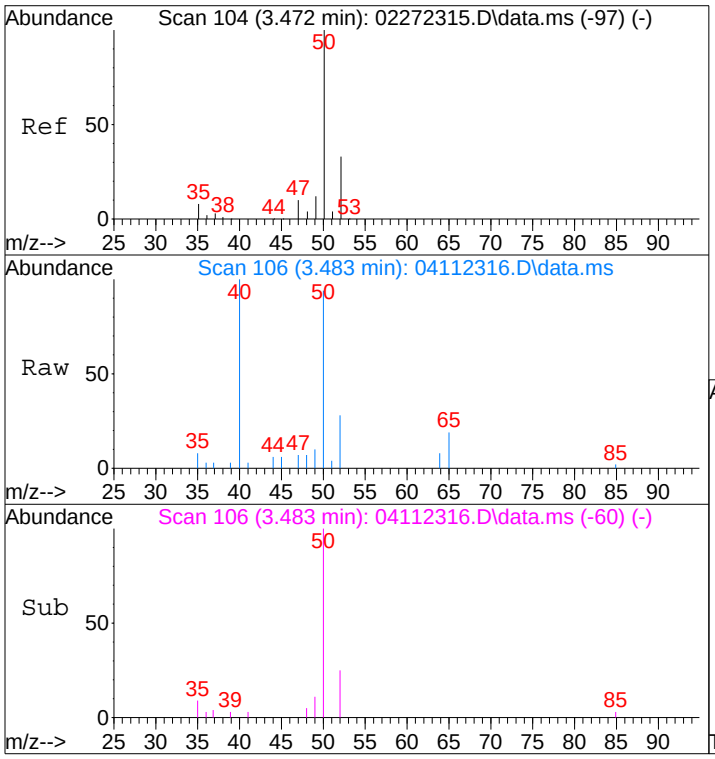


#3
Dichlorodifluoromethane (CFC 12)
Concen: 1.56 ng
RT: 3.34 min Scan# 81
Delta R.T. -0.009 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 85 Resp: 56903

Ion	Ratio	Lower	Upper
85	100		
87	31.5	12.3	52.3
101	9.3	0.0	29.7
103	6.1	0.0	26.3

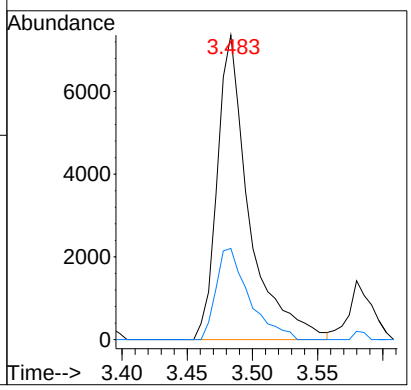


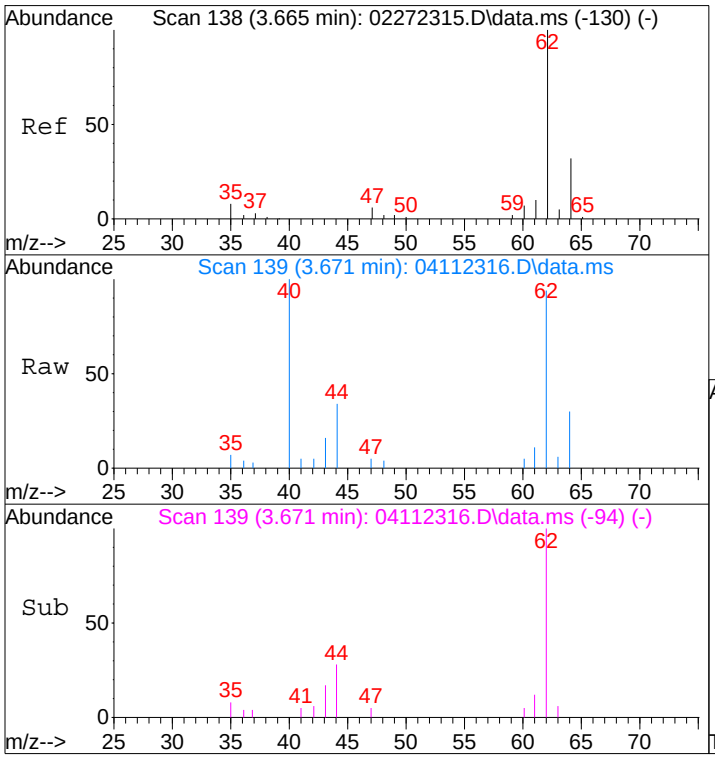


#4
Chloromethane
Concen: 0.55 ng
RT: 3.48 min Scan# 106
Delta R.T. 0.011 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 50 Resp: 12492

Ion	Ratio	Lower	Upper
50	100		
52	31.0	12.8	52.8

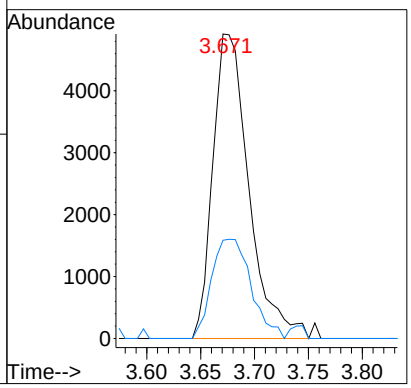


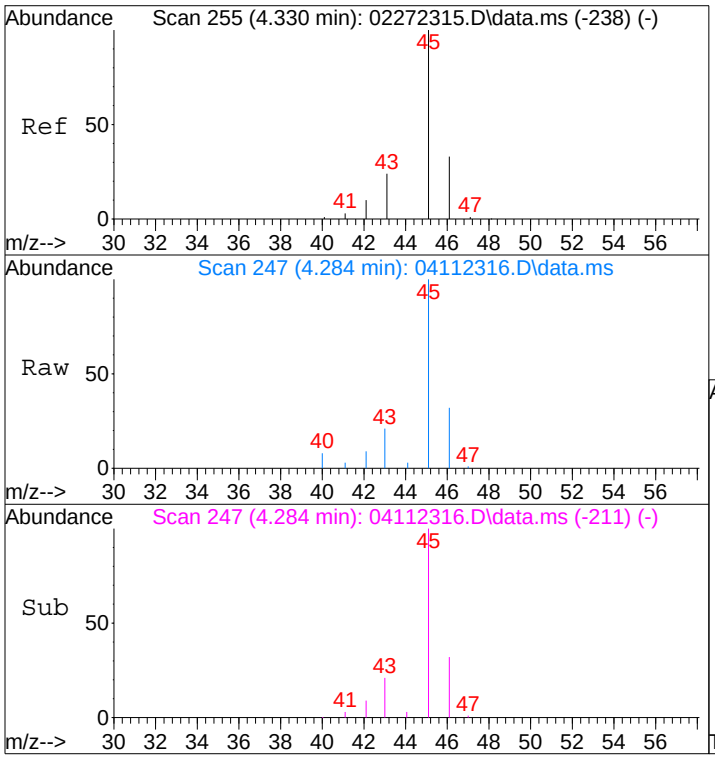


#6
Vinyl Chloride
Concen: 0.63 ng
RT: 3.67 min Scan# 139
Delta R.T. 0.005 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 62 Resp: 11517

Ion	Ratio	Lower	Upper
62	100		
64	35.2	12.1	52.1

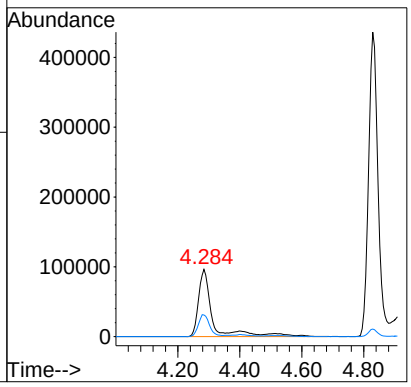


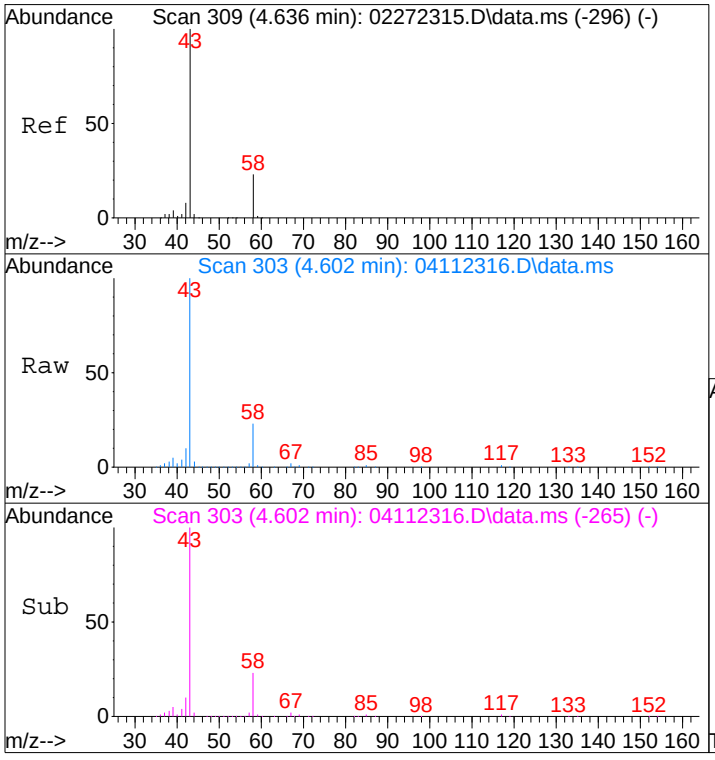


#10
Ethanol
Concen: 20.10 ng
RT: 4.28 min Scan# 247
Delta R.T. -0.046 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 45 Resp: 301470

Ion	Ratio	Lower	Upper
45	100		
46	33.2	13.4	53.4

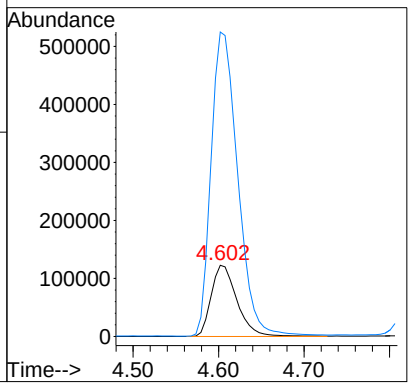


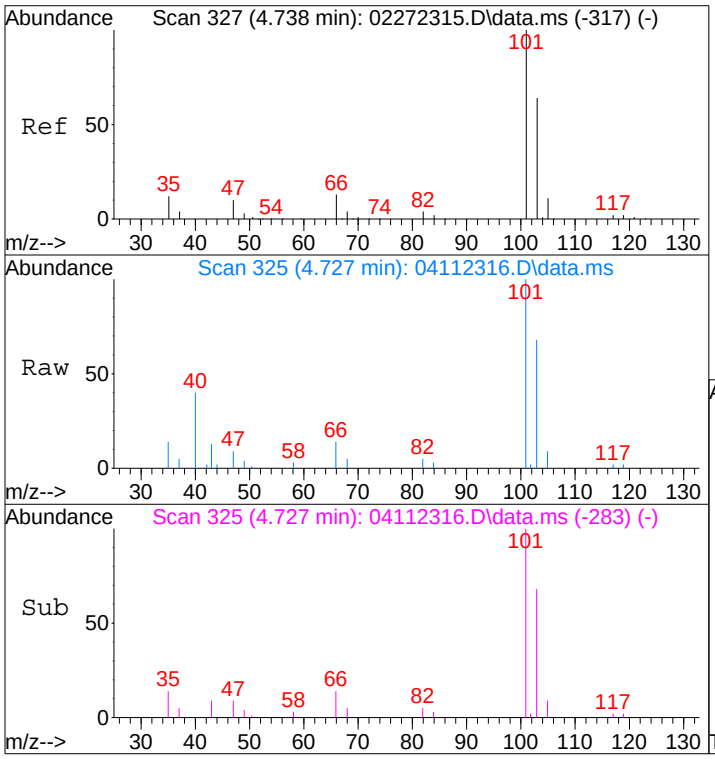


#13
Acetone
Concen: 22.71 ng
RT: 4.60 min Scan# 303
Delta R.T. -0.034 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 58 Resp: 258109

Ion	Ratio	Lower	Upper
58	100		
43	441.2	414.4	474.4

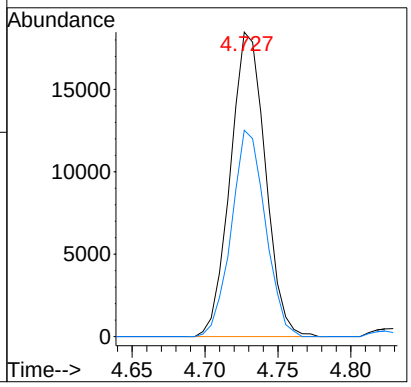


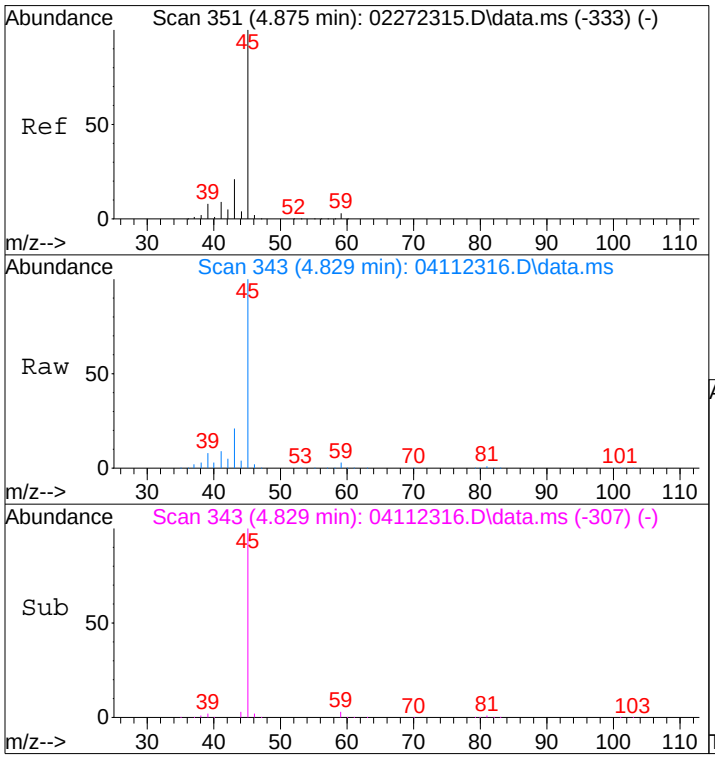


#14
Trichlorofluoromethane
Concen: 0.85 ng
RT: 4.73 min Scan# 325
Delta R.T. -0.012 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion:101 Resp: 30880

Ion	Ratio	Lower	Upper
101	100		
103	65.7	44.0	84.0

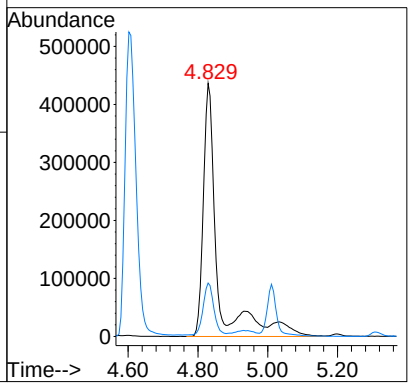


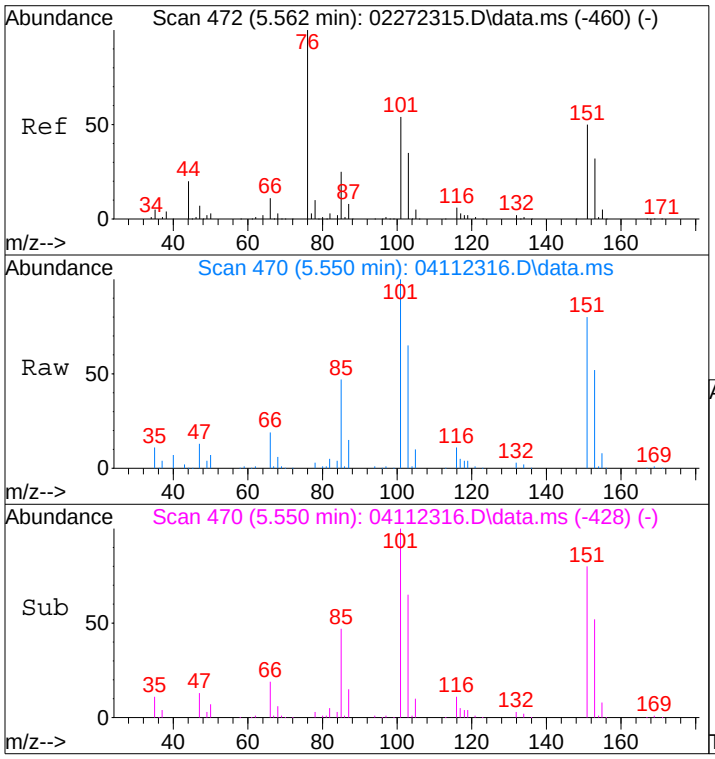


#15
2-Propanol (Isopropanol)
Concen: 27.70 ng
RT: 4.83 min Scan# 343
Delta R.T. -0.046 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 45 Resp: 1228860

Ion	Ratio	Lower	Upper
45	100		
43	18.3	1.6	41.6

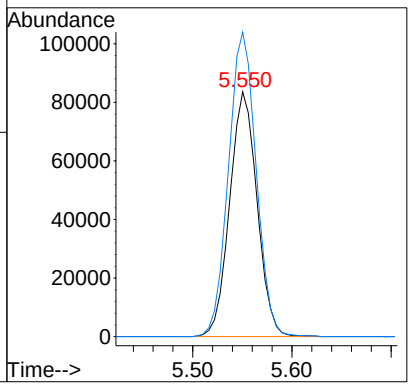


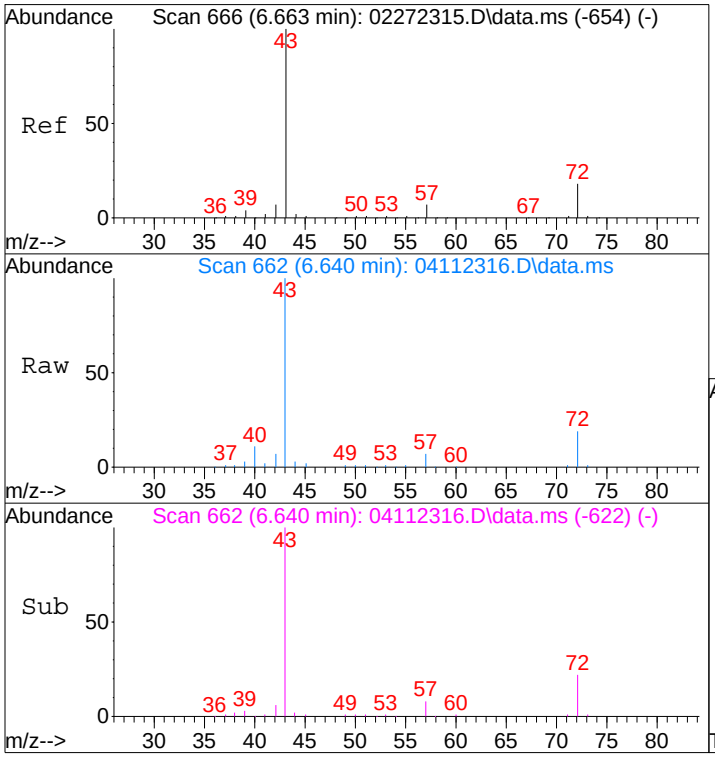


#21
Trichlorotrifluoroethane
Concen: 9.76 ng
RT: 5.55 min Scan# 470
Delta R.T. -0.012 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion:151 Resp: 160613

Ion	Ratio	Lower	Upper
151	100		
101	125.8	88.2	128.2

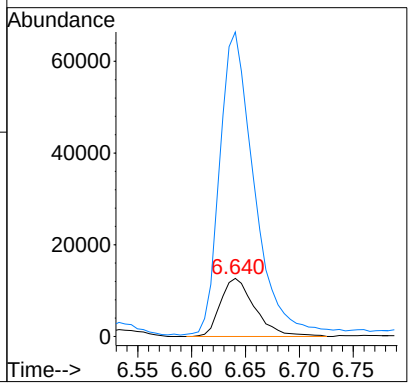


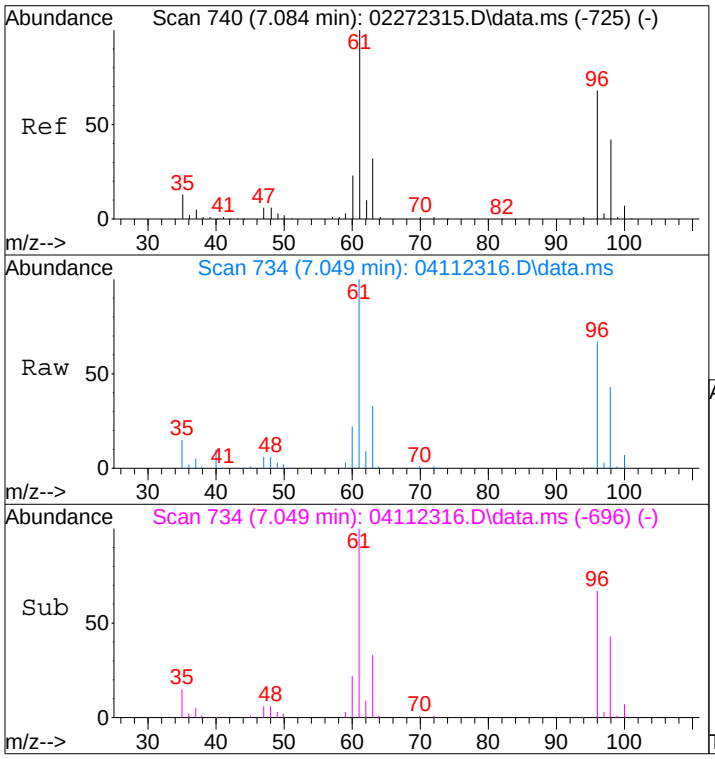


#27
2-Butanone (MEK)
Concen: 3.11 ng
RT: 6.64 min Scan# 662
Delta R.T. -0.023 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 72 Resp: 28149

Ion	Ratio	Lower	Upper
72	100		
43	533.0	536.0	576.0#

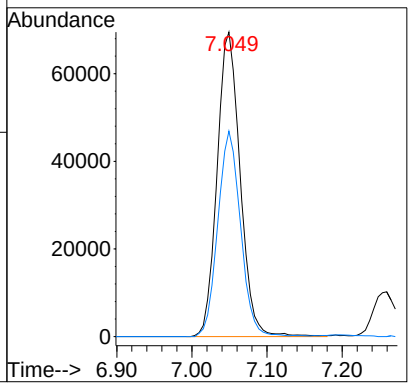


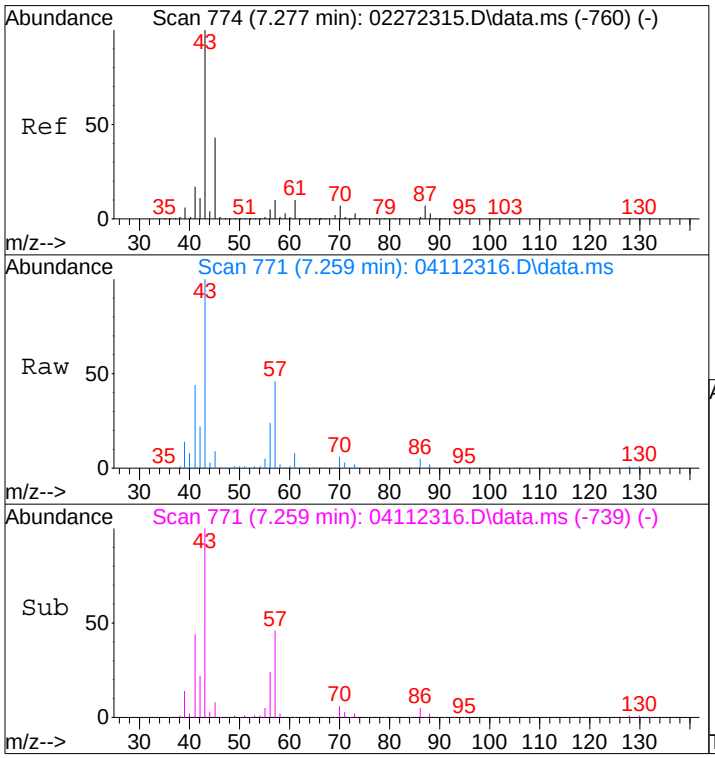


#28
cis-1,2-Dichloroethene
Concen: 5.96 ng
RT: 7.05 min Scan# 734
Delta R.T. -0.034 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 61 Resp: 148279

Ion	Ratio	Lower	Upper
61	100		
96	66.6	47.8	87.8

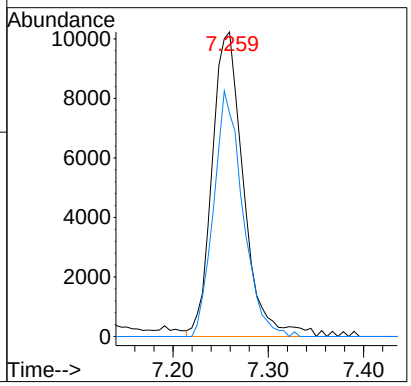


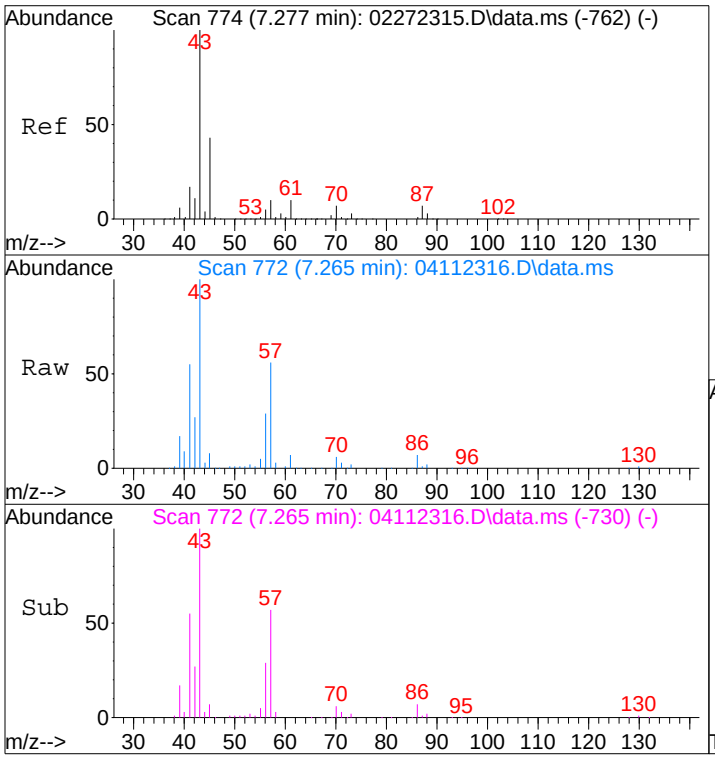


#30
Ethyl Acetate
Concen: 3.37 ng
RT: 7.26 min Scan# 771
Delta R.T. -0.017 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 61 Resp: 23492

Ion	Ratio	Lower	Upper
61	100		
70	74.9	55.8	95.8

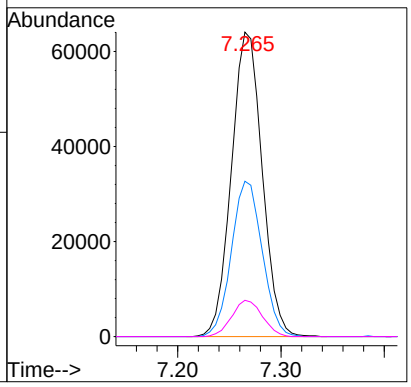


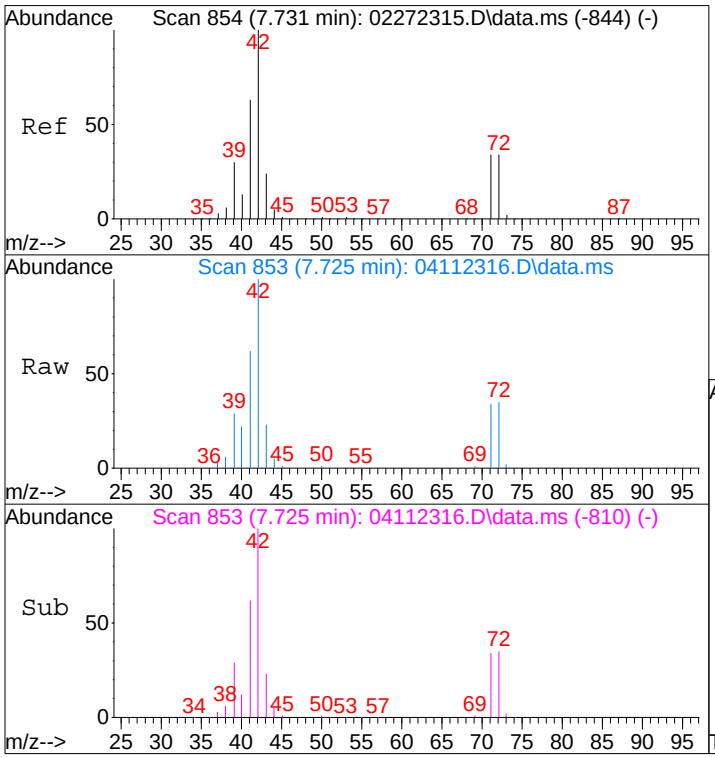


#31
n-Hexane
Concen: 4.59 ng
RT: 7.27 min Scan# 772
Delta R.T. -0.012 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 57 Resp: 132596

Ion	Ratio	Lower	Upper
57	100		
56	51.0	43.3	64.9
86	11.9	10.2	15.2

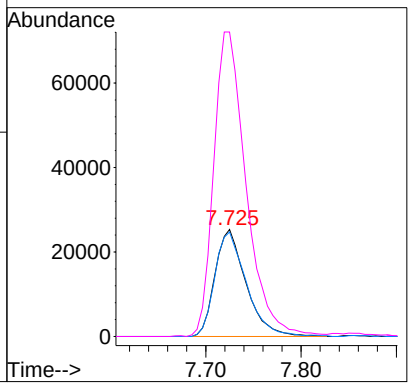


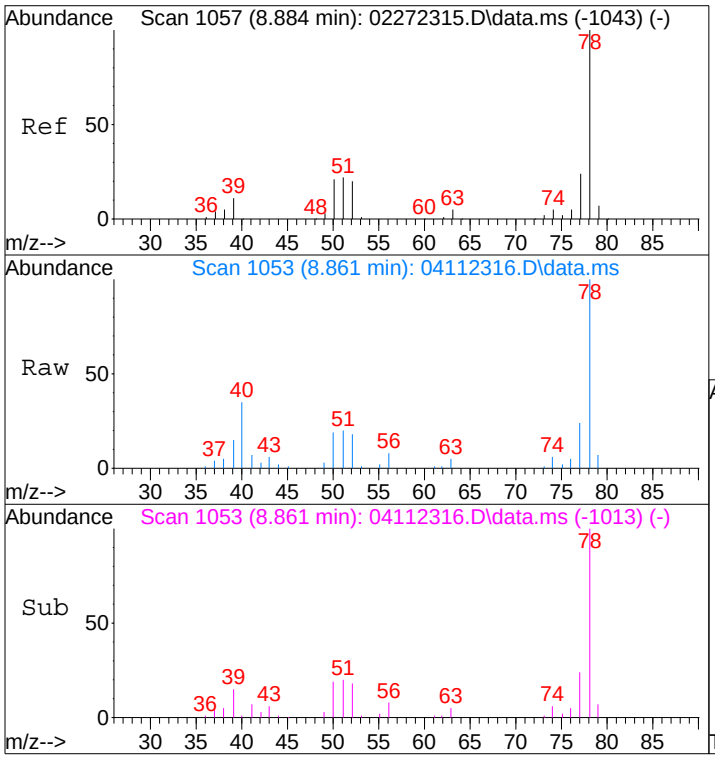


#34
Tetrahydrofuran (THF)
Concen: 6.32 ng
RT: 7.72 min Scan# 853
Delta R.T. -0.006 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 72 Resp: 57327

Ion	Ratio	Lower	Upper
72	100		
71	99.8	81.3	121.3
42	296.9	293.7	333.7

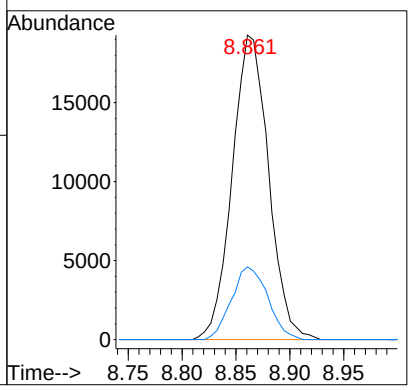


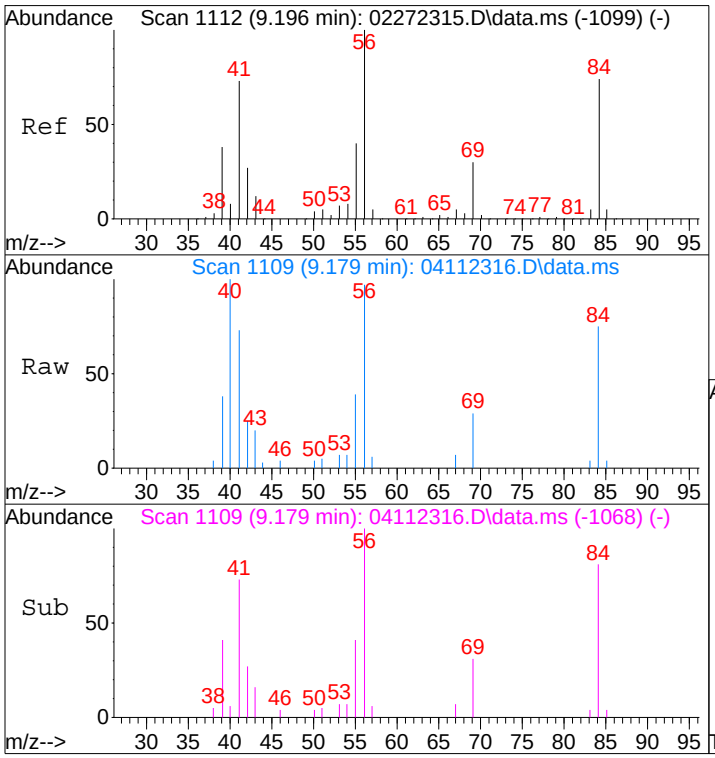


#41
Benzene
Concen: 0.76 ng
RT: 8.86 min Scan# 1053
Delta R.T. -0.023 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 78 Resp: 45254

Ion	Ratio	Lower	Upper
78	100		
77	23.8	4.0	44.0

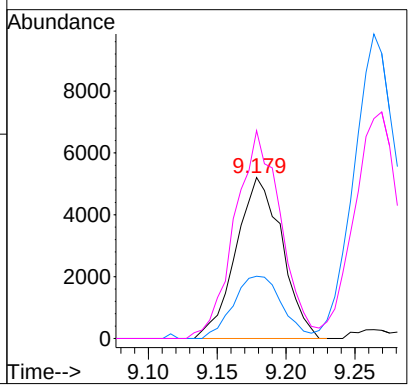


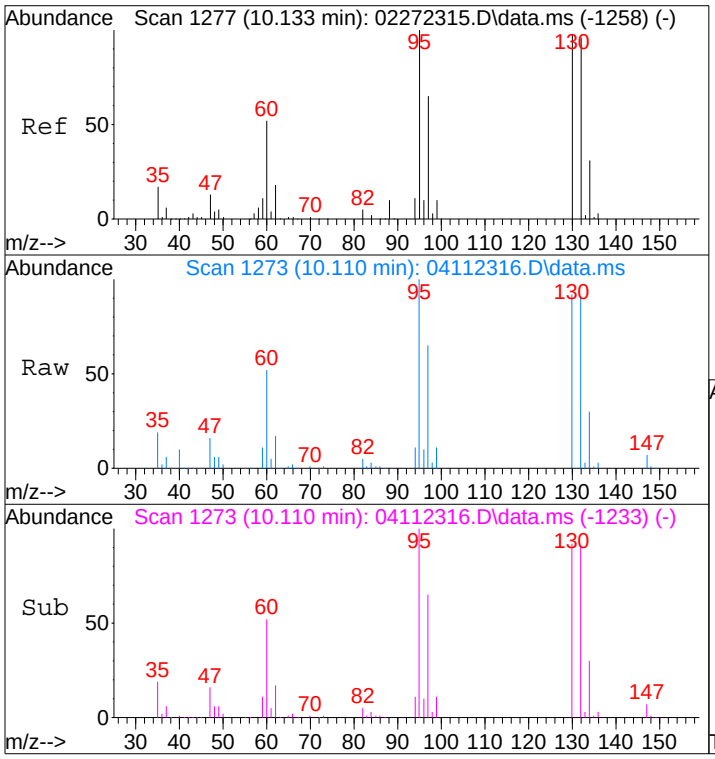


#43
Cyclohexane
Concen: 0.55 ng
RT: 9.18 min Scan# 1109
Delta R.T. -0.017 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 84 Resp: 12109

Ion	Ratio	Lower	Upper
84	100		
69	40.8	20.6	60.6
56	128.9	116.1	156.1

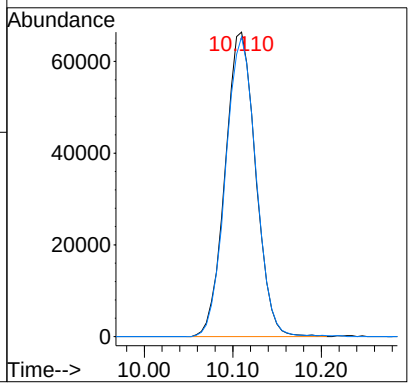


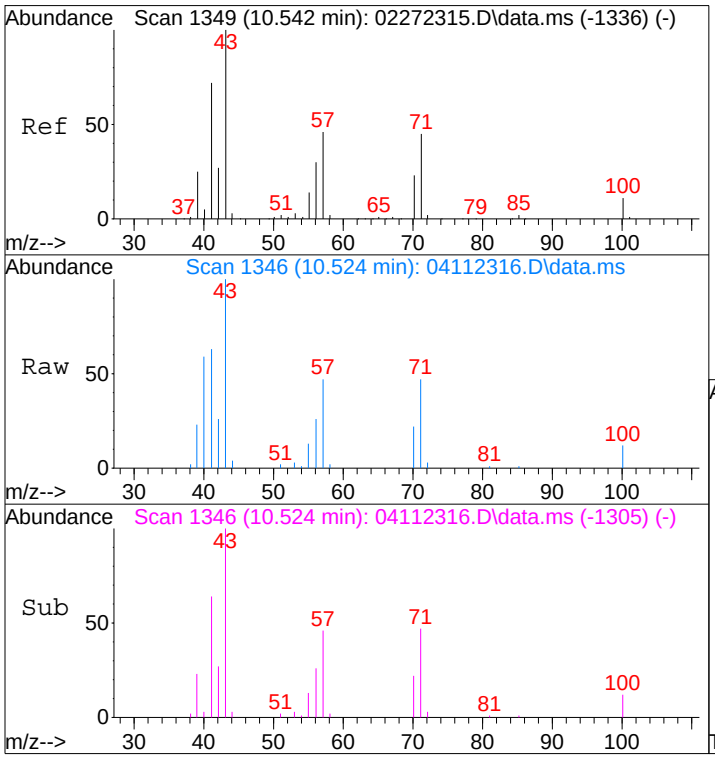


#47
Trichloroethene
Concen: 9.16 ng
RT: 10.11 min Scan# 1273
Delta R.T. -0.023 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion:130 Resp: 159057

Ion	Ratio	Lower	Upper
130	100		
132	98.1	77.9	117.9

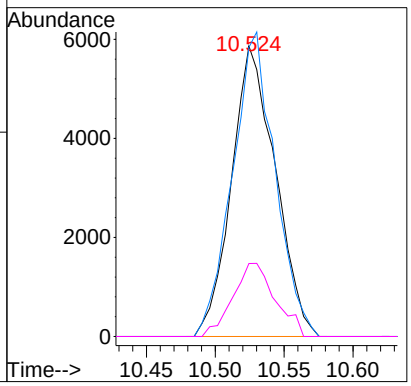


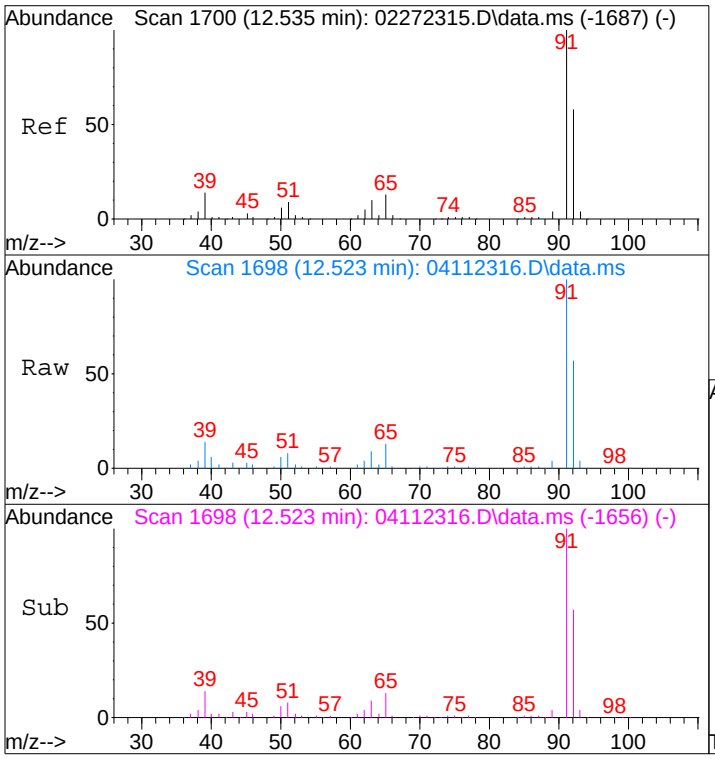


#51
n-Heptane
Concen: 0.88 ng
RT: 10.52 min Scan# 1346
Delta R.T. -0.017 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 71 Resp: 12999

Ion	Ratio	Lower	Upper
71	100		
57	101.7	84.6	124.6
100	24.3	5.8	45.8

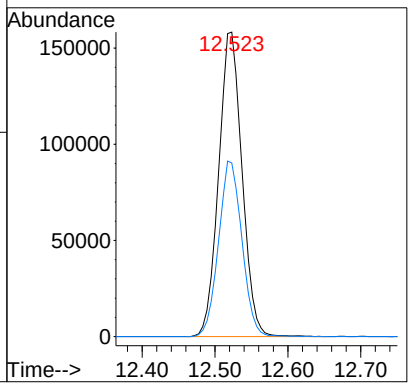


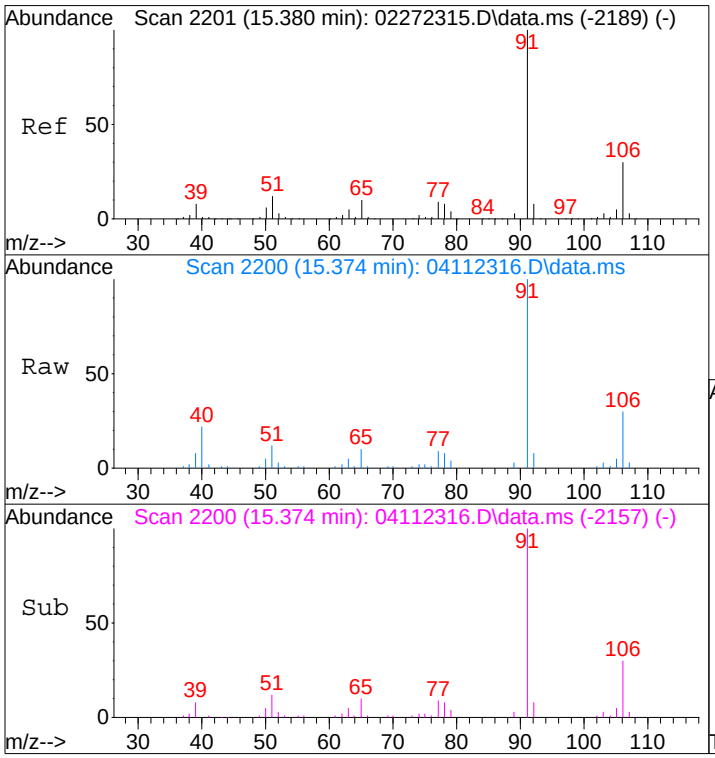


#58
Toluene
Concen: 5.58 ng
RT: 12.52 min Scan# 1698
Delta R.T. -0.012 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 91 Resp: 353282

Ion	Ratio	Lower	Upper
91	100		
92	57.5	37.6	77.6

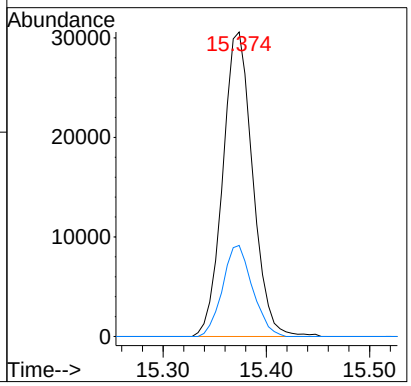


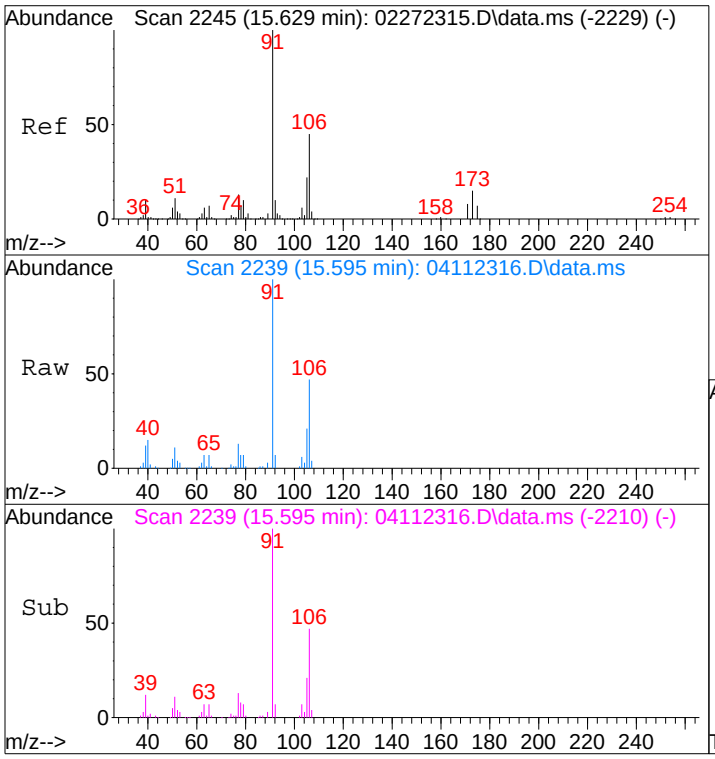


#66
Ethylbenzene
Concen: 0.85 ng
RT: 15.37 min Scan# 2200
Delta R.T. -0.006 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 91 Resp: 61454

Ion	Ratio	Lower	Upper
91	100		
106	29.9	10.3	50.3

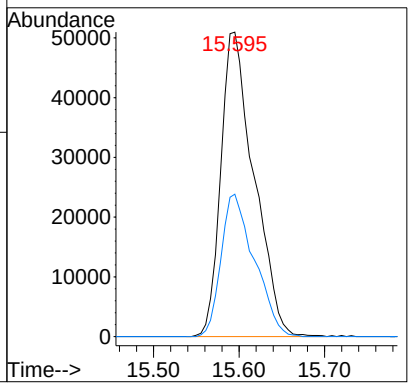


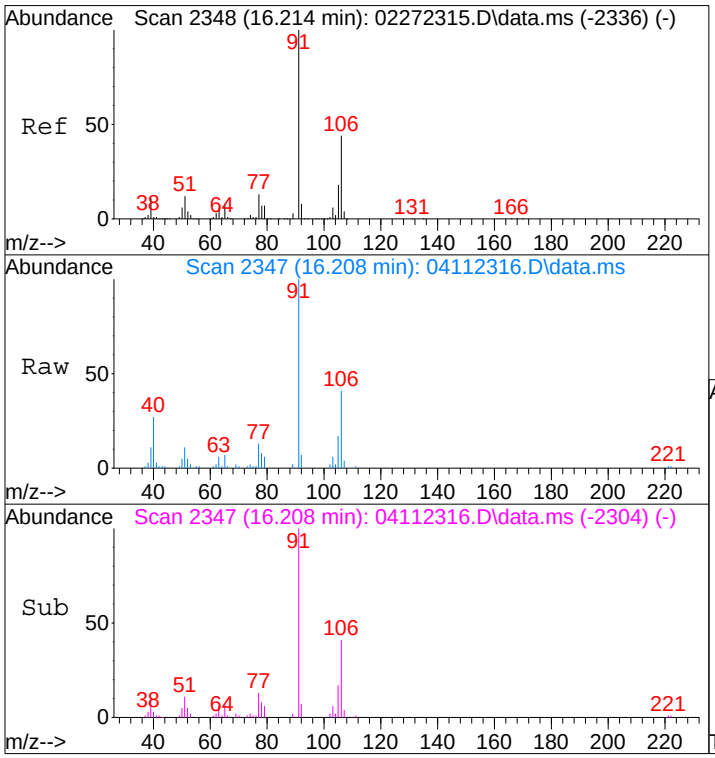


#67
m- & p-Xylenes
Concen: 2.30 ng
RT: 15.60 min Scan# 2239
Delta R.T. -0.034 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 91 Resp: 137390

Ion	Ratio	Lower	Upper
91	100		
106	47.0	25.0	65.0

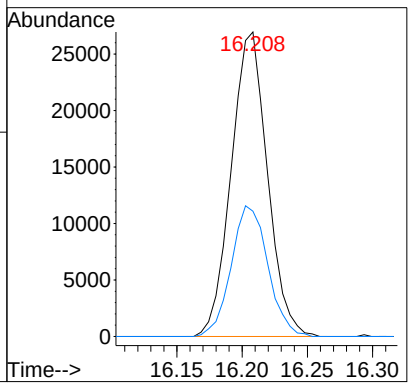


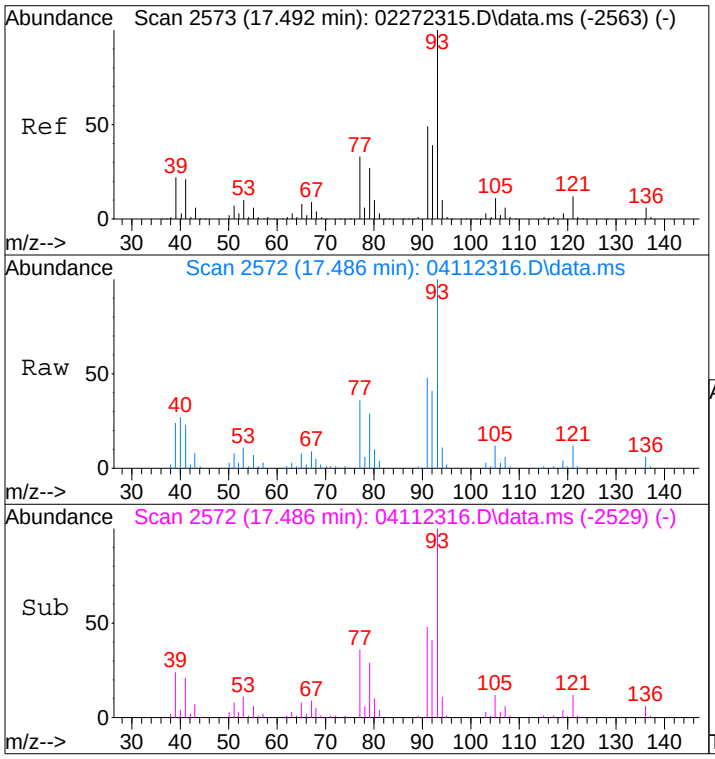


#70
o-Xylene
Concen: 0.89 ng
RT: 16.21 min Scan# 2347
Delta R.T. -0.006 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 91 Resp: 52039

Ion	Ratio	Lower	Upper
91	100		
106	43.5	24.0	64.0

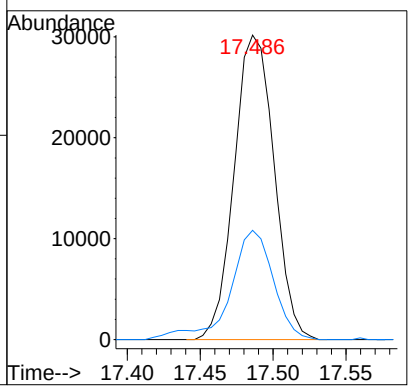


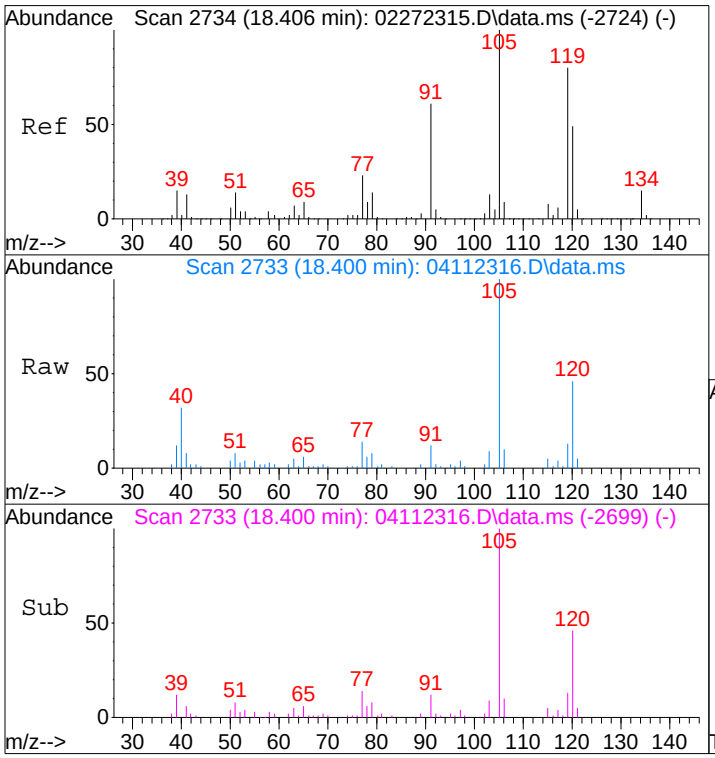


#75
alpha-Pinene
Concen: 1.88 ng
RT: 17.49 min Scan# 2572
Delta R.T. -0.006 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion: 93 Resp: 57358

Ion	Ratio	Lower	Upper
93	100		
77	38.7	14.2	54.2

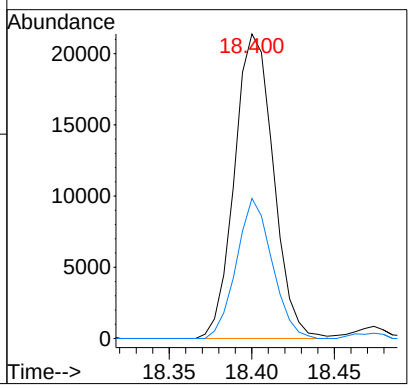


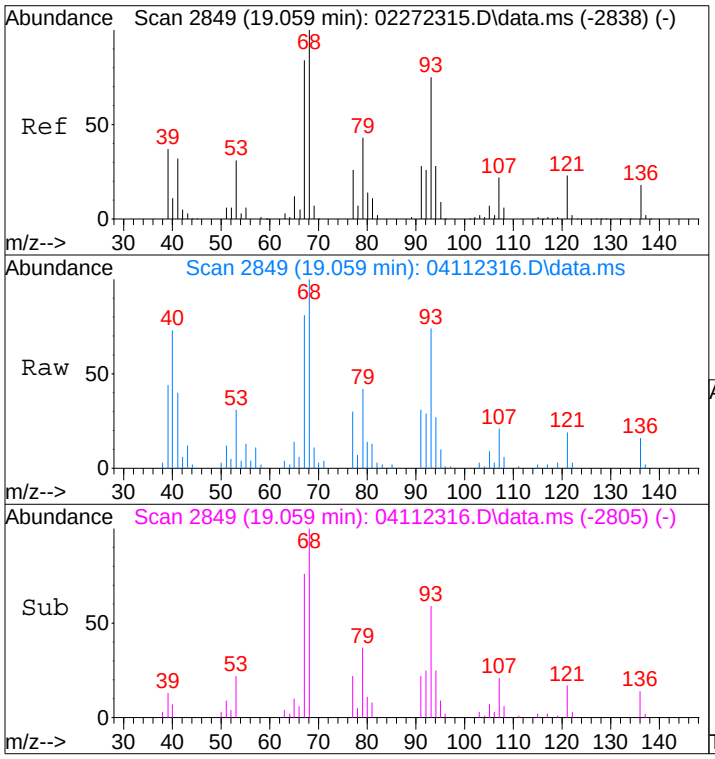


#82
1,2,4-Trimethylbenzene
Concen: 0.56 ng
RT: 18.40 min Scan# 2733
Delta R.T. -0.006 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

Tgt Ion:105 Resp: 35014

Ion	Ratio	Lower	Upper
105	100		
120	42.1	30.5	70.5

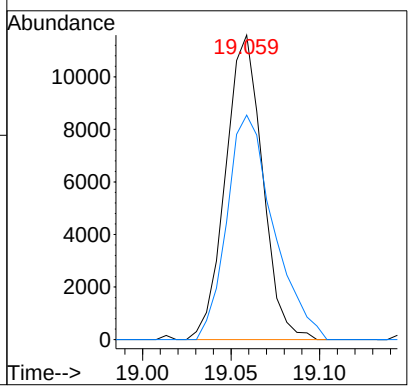




#91
d-Limonene
Concen: 0.81 ng
RT: 19.06 min Scan# 2849
Delta R.T. -0.000 min
Lab File: 04112316.D
Acq: 11 Apr 2023 17:38

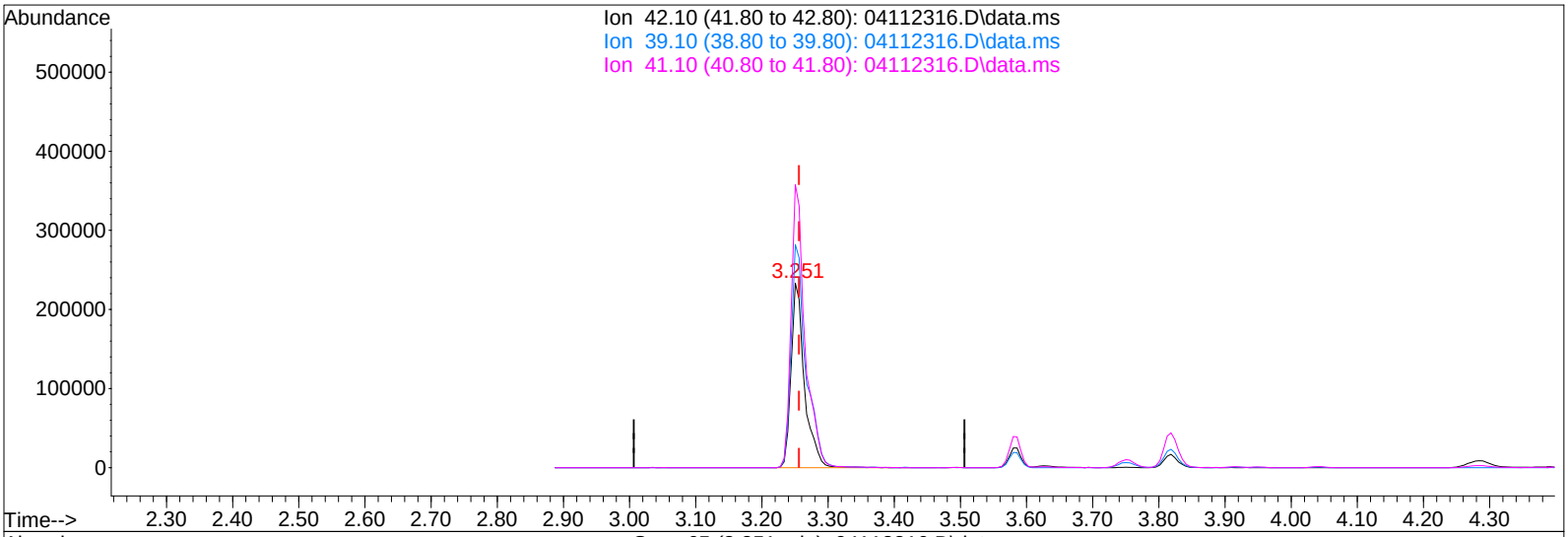
Tgt Ion: 68 Resp: 16874

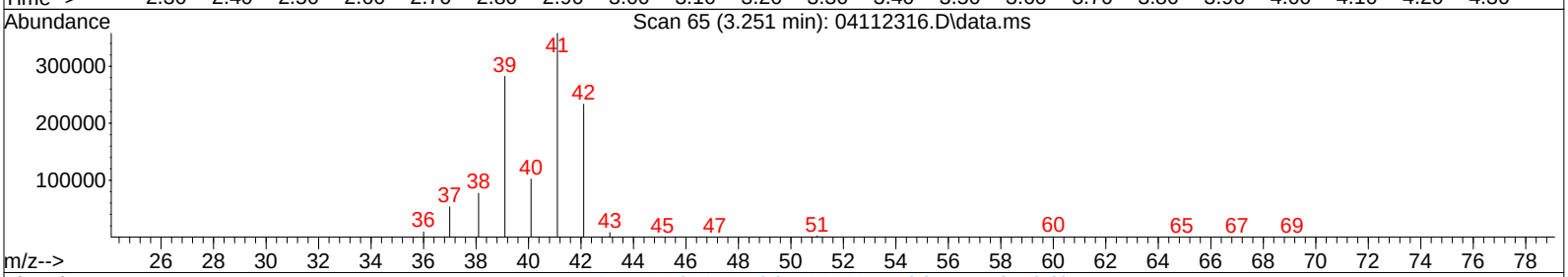
Ion	Ratio	Lower	Upper
68	100		
93	92.6	55.7	95.7

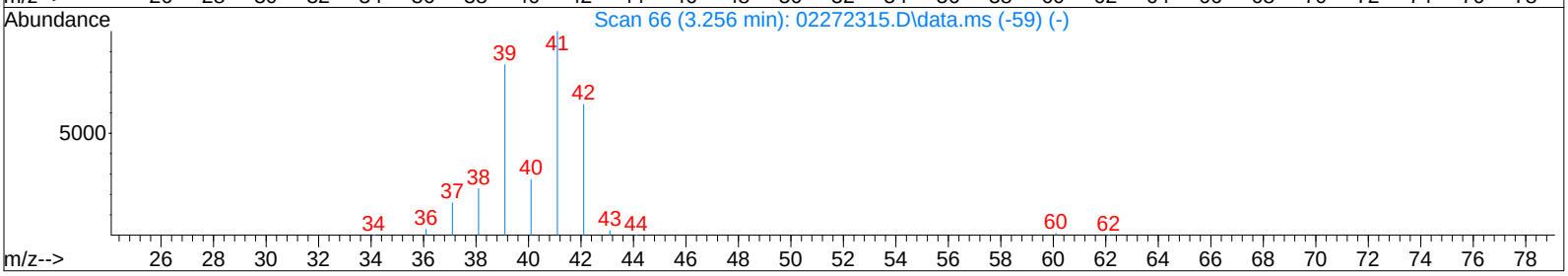


Data File : I:\MS09\DATA\2023 04\11\04112316.D Vial: 10
Acq On : 11 Apr 2023 17:38 Operator: SC
Sample : P2301496-003 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:35:29 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04112316.D\data.ms

(2) Propene (T)

3.251min (-0.006) 15.55ng

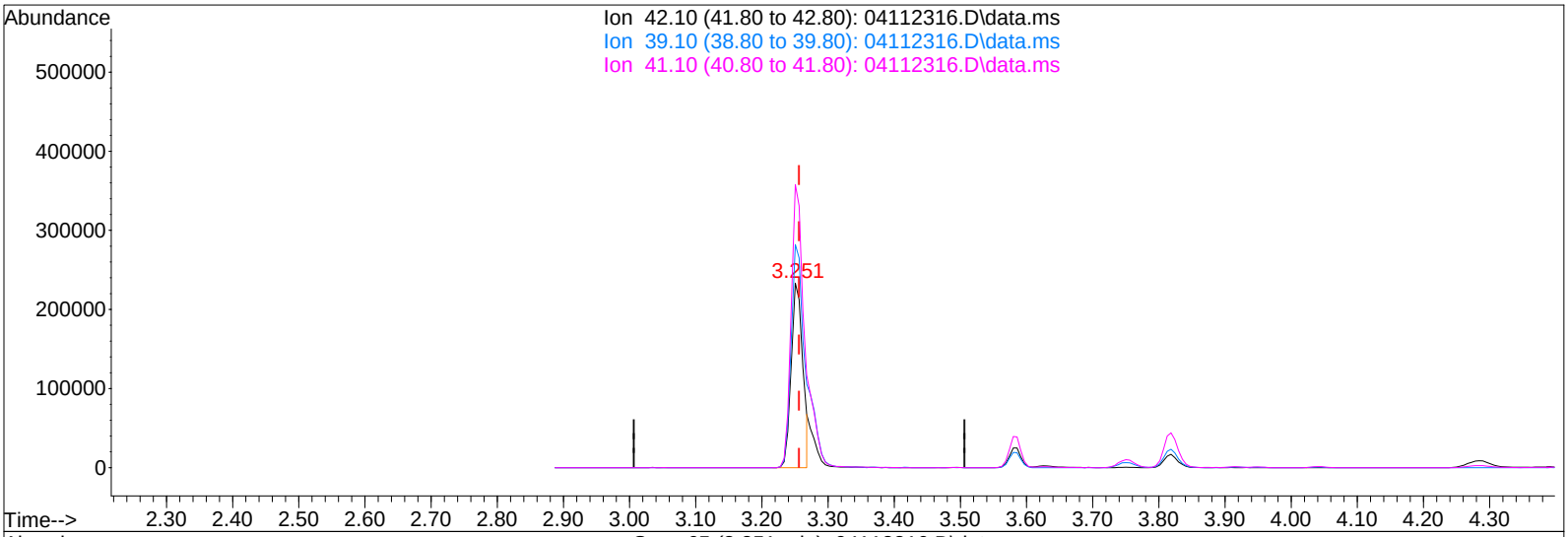
response 326894

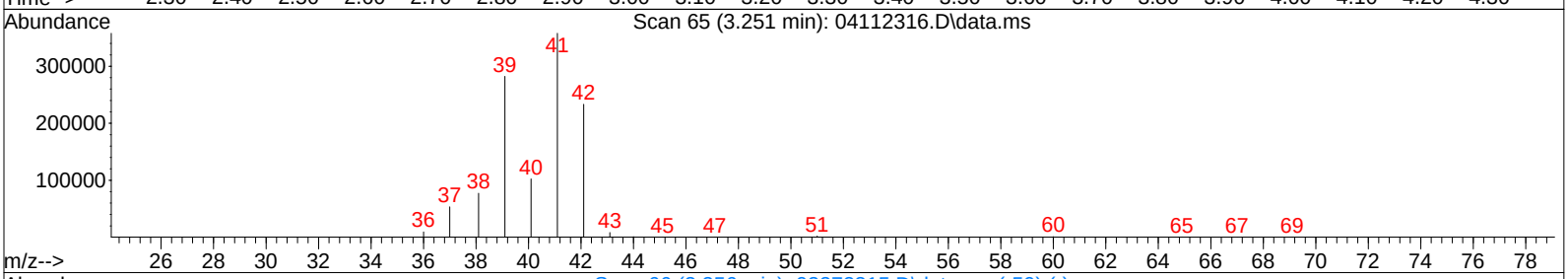
Ion	Exp%	Act%
42.10	100	100
39.10	130.00	135.24
41.10	155.80	160.91
0.00	0.00	0.00

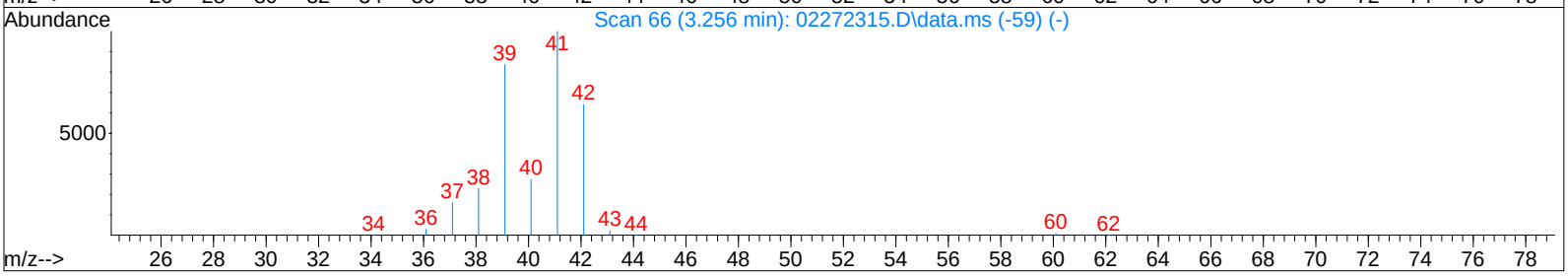
01177843

Data File : I:\MS09\DATA\2023 04\11\04112316.D Vial: 10
Acq On : 11 Apr 2023 17:38 Operator: SC
Sample : P2301496-003 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:35:29 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04112316.D\data.ms

(2) Propene (T)

3.251min (-0.006) 13.48ng m

response 283417

Ion	Exp%	Act%
42.10	100	100
39.10	130.00	155.99#
41.10	155.80	185.59#
0.00	0.00	0.00

IPC

4/12/23

LH 4/12/23

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112317.D Vial: 11
Acq On : 11 Apr 2023 18:10 Operator: SC
Sample : P2301496-004 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:54:41 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/12/23

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	156576	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	689905	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.81	54	155485	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.96	65	338301	12.762	ng	-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.08%			
57) Toluene-d8 (SS2)	12.39	98	794200	13.443	ng	-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.52%			
73) Bromofluorobenzene (SS3)	16.79	174	275635	11.441	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.52%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D. d		
3) Dichlorodifluoromethan...	3.34	85	64789	1.792	ng	100
4) Chloromethane	3.48	50	8995	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	3.59	135	1330	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	3.75	54	268	N.D.		
8) Bromomethane	4.00	94	192	N.D.		
9) Chloroethane	4.14	64	285	N.D.		
10) Ethanol	4.26	45	61796	4.159	ng	99
11) Acetonitrile	4.43	41	5345	N.D.		
12) Acrolein	4.52	56	2291	N.D.		
13) Acetone	4.61	58	75621	6.716	ng	96
14) Trichlorofluoromethane	4.73	101	31594	0.876	ng	100
15) 2-Propanol (Isopropanol)	4.82	45	34358	0.782	ng	94
16) Acrylonitrile	5.01	53	955	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	5.32	59	1289	N.D.		
19) Methylene Chloride	5.33	84	4562	N.D.		
20) 3-Chloro-1-propene (Al...	5.37	41	931	N.D.		
21) Trichlorotrifluoroethane	5.56	151	11061	0.678	ng	83
22) Carbon Disulfide	5.58	76	3021	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	6.26	73	111	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D. d		
27) 2-Butanone (MEK)	6.64	72	12721	1.417	ng	96
28) cis-1,2-Dichloroethene	7.05	61	1367	N.D.		
29) Diisopropyl Ether	7.25	87	305	N.D.		
30) Ethyl Acetate	7.26	61	9896	1.434	ng	95
31) n-Hexane	7.27	57	43716	1.526	ng	96
32) Chloroform	7.33	83	1829	N.D.		
34) Tetrahydrofuran (THF)	7.73	72	11238	1.250	ng	96
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	8.08	62	1740	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	9.26	61	23309	No Calib	#	
40) 1-Butanol	8.79	56	12575	No Calib	#	
41) Benzene	8.86	78	32491	0.552	ng	100
42) Carbon Tetrachloride	9.03	117	7560	N.D.		
43) Cyclohexane	9.18	84	4578	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	9.81	63	131	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	10.11	130	1498	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	10.20	57	13865	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112317.D Vial: 11
Acq On : 11 Apr 2023 18:10 Operator: SC
Sample : P2301496-004 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:54:41 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

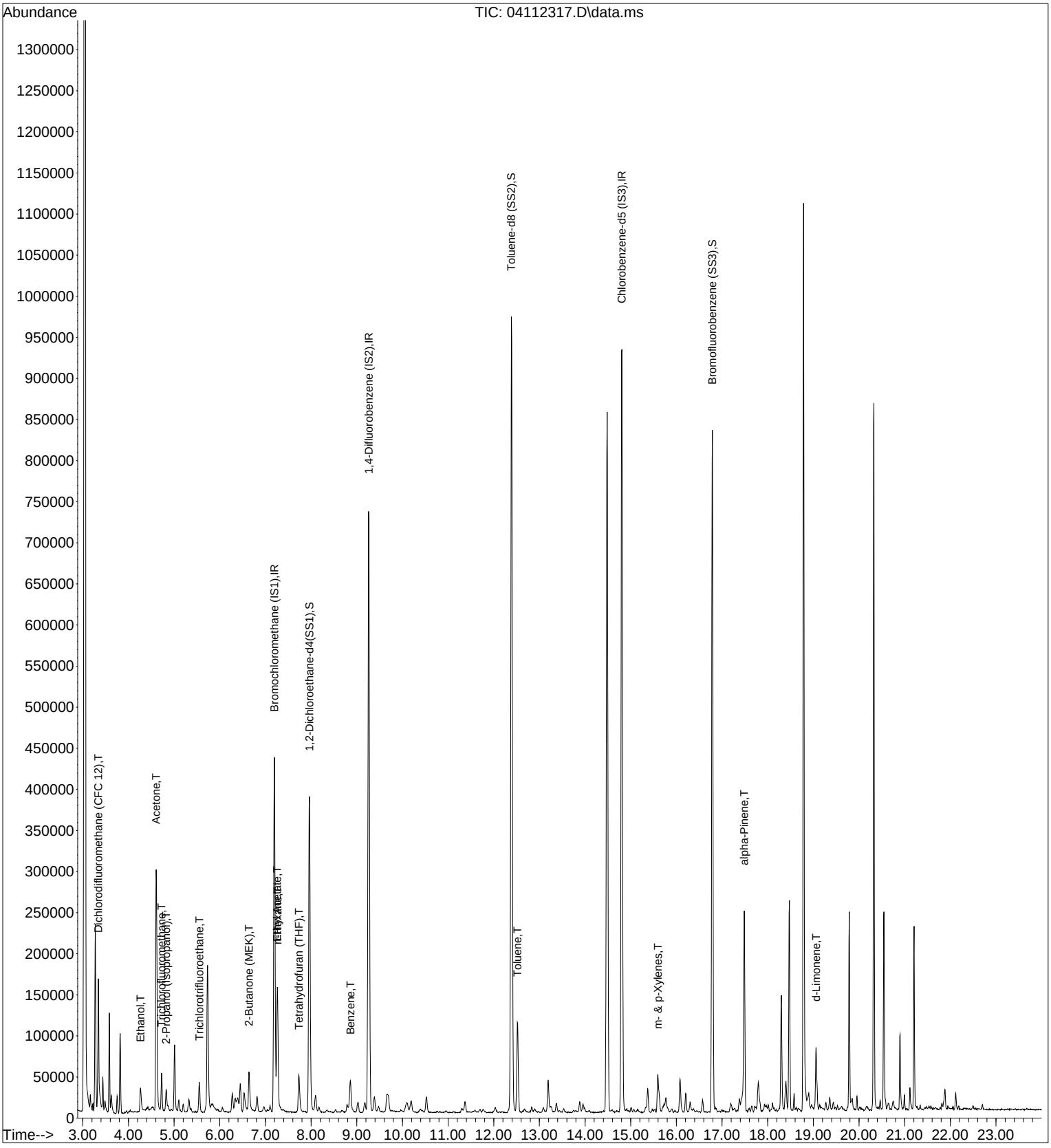
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.52	71	4736	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	11.31	58	1563	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.52	91	92553	1.471 ng	100
59) 2-Hexanone	12.90	43	3435	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.74	43	4194	N.D.	
63) n-Octane	13.88	57	2058	N.D.	
64) Tetrachloroethene	13.99	166	525	N.D.	
65) Chlorobenzene	14.86	112	800	N.D.	
66) Ethylbenzene	15.37	91	23150	N.D.	
67) m- & p-Xylenes	15.60	91	42112	0.711 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	16.06	104	2865	N.D.	
70) o-Xylene	16.21	91	15853	N.D.	
71) n-Nonane	16.57	43	7551	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	17.00	105	2713	N.D.	
75) alpha-Pinene	17.49	93	98368	3.246 ng	99
76) n-Propylbenzene	17.64	91	4778	N.D.	
77) 3-Ethyltoluene	17.00	105	2713	No Calib	
78) 4-Ethyltoluene	17.83	105	3853	N.D.	
79) 1,3,5-Trimethylbenzene	17.92	105	3419	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	17.00	105	2713	No Calib	
82) 1,2,4-Trimethylbenzene	18.40	105	11089	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.39	91	1672	N.D.	
85) 1,3-Dichlorobenzene	18.47	146	213	N.D.	
86) 1,4-Dichlorobenzene	18.63	146	1215	N.D.	
87) sec-Butylbenzene	18.71	105	636	N.D.	
88) 4-Isopropyltoluene (p-...	18.90	119	7256	N.D.	
89) 1,2,3-Trimethylbenzene	17.00	105	2713	No Calib	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	19.06	68	14240	0.685 ng #	33
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	18.08	58	1561	No Calib #	
94) 1,2,4-Trichlorobenzene	20.82	180	223	N.D.	
95) Naphthalene	20.92	128	4064	N.D.	
96) n-Dodecane	19.05	58	334	No Calib #	
97) Hexachlorobutadiene	21.27	225	135	N.D.	
98) Cyclohexanone	15.22	55	109	No Calib #	
99) tert-Butylbenzene	18.40	119	1603	N.D.	
100) n-Butylbenzene	19.36	91	2381	N.D.	
101) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112317.D Vial: 11
Acq On : 11 Apr 2023 18:10 Operator: SC
Sample : P2301496-004 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:54:41 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112317.D Vial: 11
Acq On : 11 Apr 2023 18:10 Operator: SC
Sample : P2301496-004 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:54:41 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/12/23

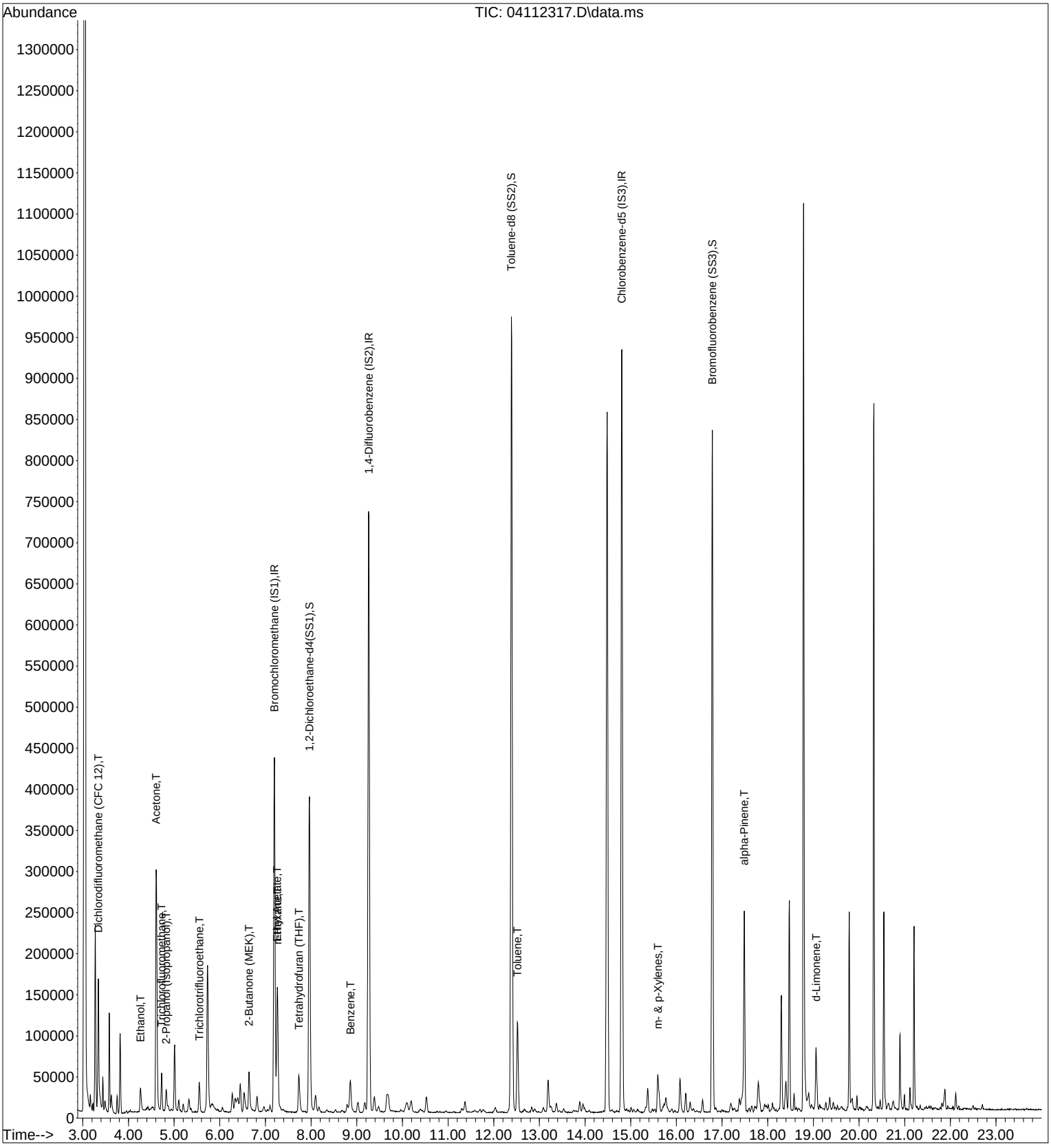
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	156576	12.500	ng		-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	689905	12.500	ng		-0.03
56) Chlorobenzene-d5 (IS3)	14.81	54	155485	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	338301	12.762	ng		-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.08%				
57) Toluene-d8 (SS2)	12.39	98	794200	13.443	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 107.52%				
73) Bromofluorobenzene (SS3)	16.79	174	275635	11.441	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 91.52%				
Target Compounds							Qvalue
3) Dichlorodifluoromethan...	3.34	85	64789	1.792	ng		100
10) Ethanol	4.26	45	61796	4.159	ng		99
13) Acetone	4.61	58	75621	6.716	ng		96
14) Trichlorofluoromethane	4.73	101	31594	0.876	ng		100
15) 2-Propanol (Isopropanol)	4.82	45	34358	0.782	ng		94
21) Trichlorotrifluoroethane	5.56	151	11061	0.678	ng		83
27) 2-Butanone (MEK)	6.64	72	12721	1.417	ng		96
30) Ethyl Acetate	7.26	61	9896	1.434	ng		95
31) n-Hexane	7.27	57	43716	1.526	ng		96
34) Tetrahydrofuran (THF)	7.73	72	11238	1.250	ng		96
41) Benzene	8.86	78	32491	0.552	ng		100
58) Toluene	12.52	91	92553	1.471	ng		100
67) m- & p-Xylenes	15.60	91	42112	0.711	ng		99
75) alpha-Pinene	17.49	93	98368	3.246	ng		99
91) d-Limonene	19.06	68	14240	0.685	ng	#	33

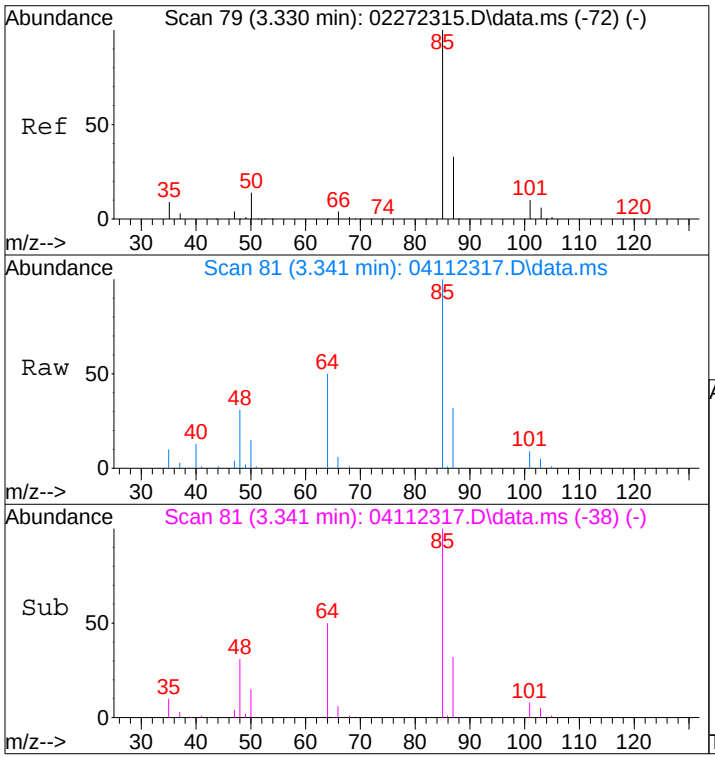
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112317.D Vial: 11
Acq On : 11 Apr 2023 18:10 Operator: SC
Sample : P2301496-004 (1000mL) Inst : MS09
Misc : S37-04052305

Quant Time: Apr 12 08:54:41 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

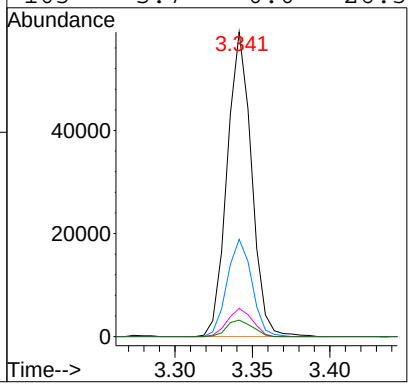


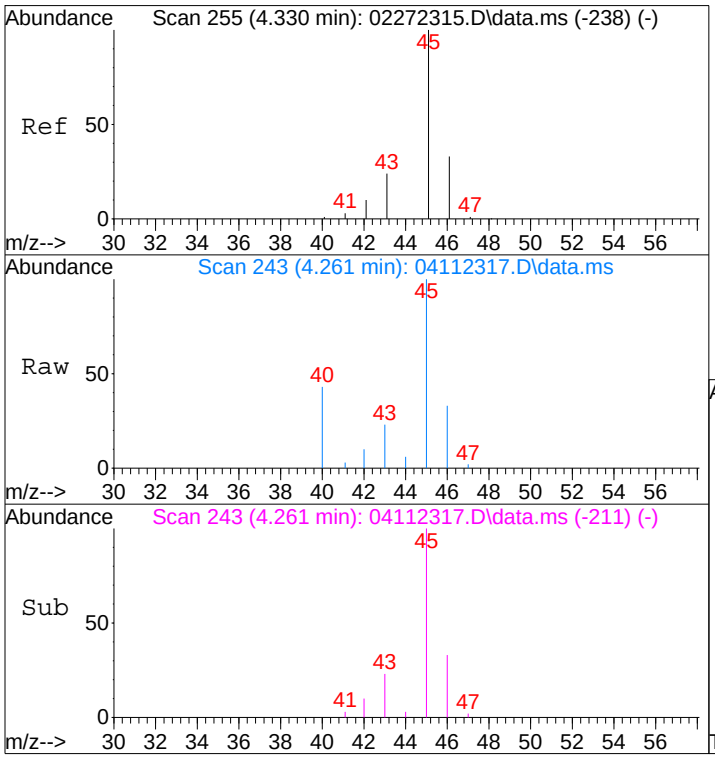


#3
Dichlorodifluoromethane (CFC 12)
Concen: 1.79 ng
RT: 3.34 min Scan# 81
Delta R.T. -0.009 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 85 Resp: 64789

Ion	Ratio	Lower	Upper
85	100		
87	32.3	12.3	52.3
101	9.5	0.0	29.7
103	5.7	0.0	26.3

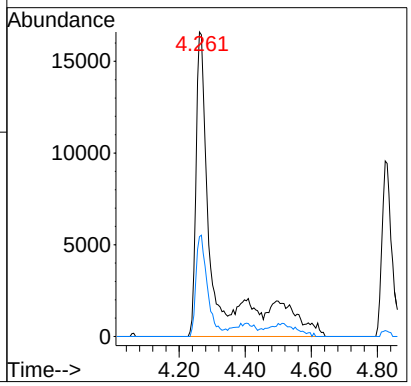


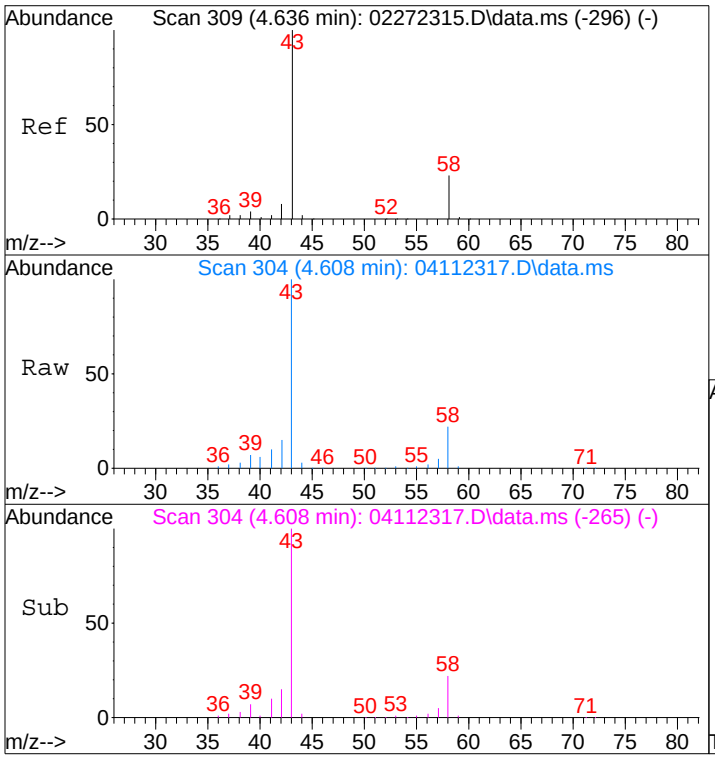


#10
Ethanol
Concen: 4.16 ng
RT: 4.26 min Scan# 243
Delta R.T. -0.068 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 45 Resp: 61796

Ion	Ratio	Lower	Upper
45	100		
46	34.0	13.4	53.4

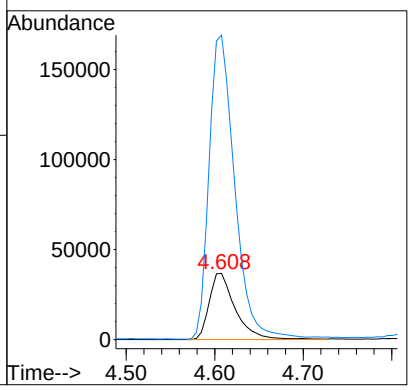


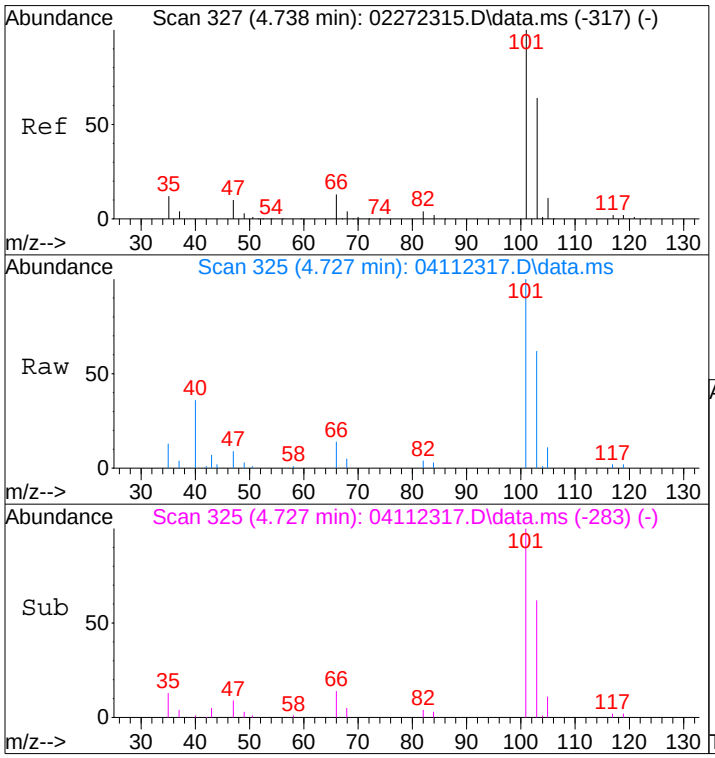


#13
Acetone
Concen: 6.72 ng
RT: 4.61 min Scan# 304
Delta R.T. -0.029 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 58 Resp: 75621

Ion	Ratio	Lower	Upper
58	100		
43	454.0	414.4	474.4

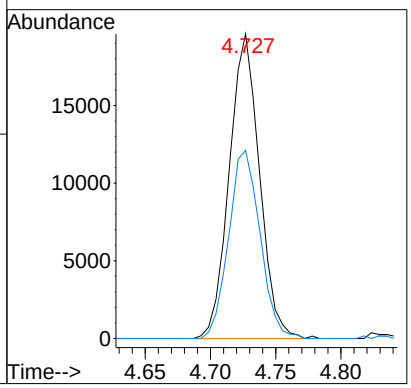


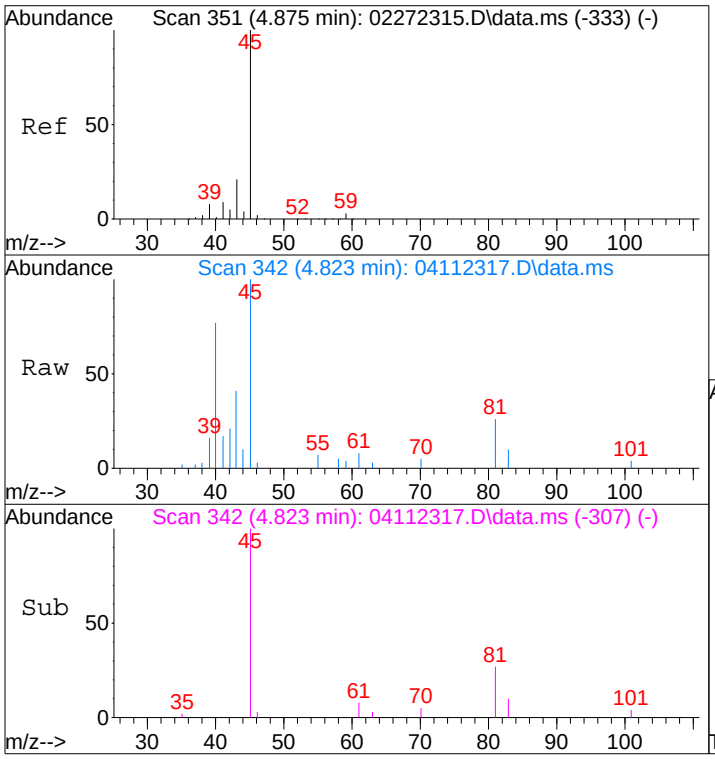


#14
Trichlorofluoromethane
Concen: 0.88 ng
RT: 4.73 min Scan# 325
Delta R.T. -0.012 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion:101 Resp: 31594

Ion	Ratio	Lower	Upper
101	100		
103	64.0	44.0	84.0

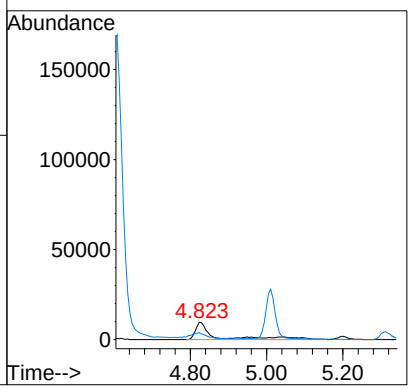


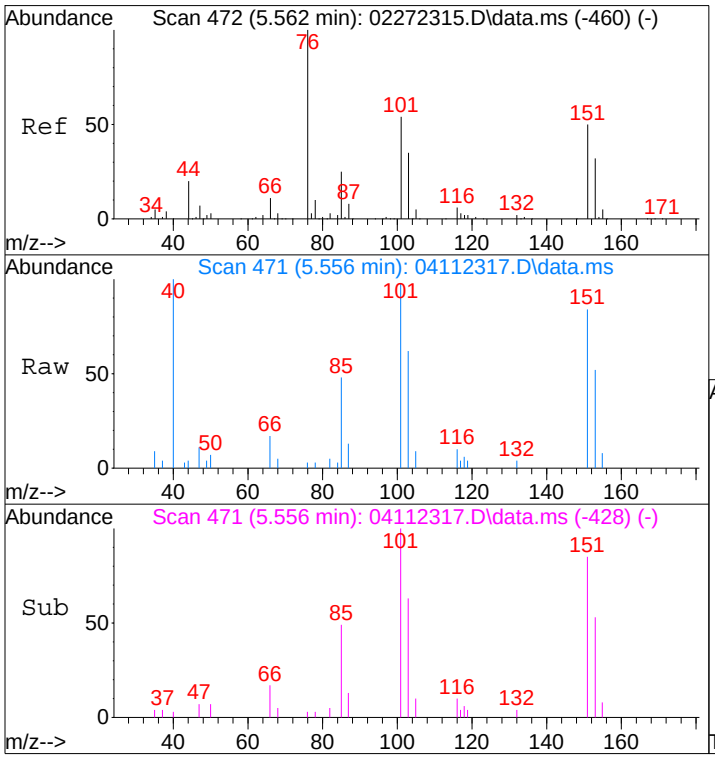


#15
2-Propanol (Isopropanol)
Concen: 0.78 ng
RT: 4.82 min Scan# 342
Delta R.T. -0.052 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 45 Resp: 34358

Ion	Ratio	Lower	Upper
45	100		
43	24.3	1.6	41.6

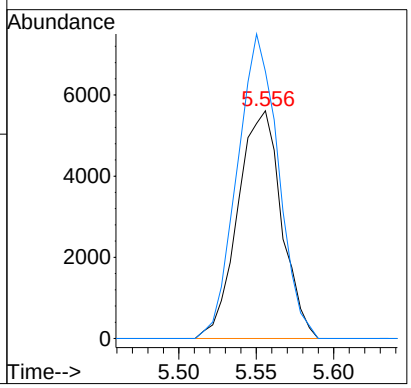


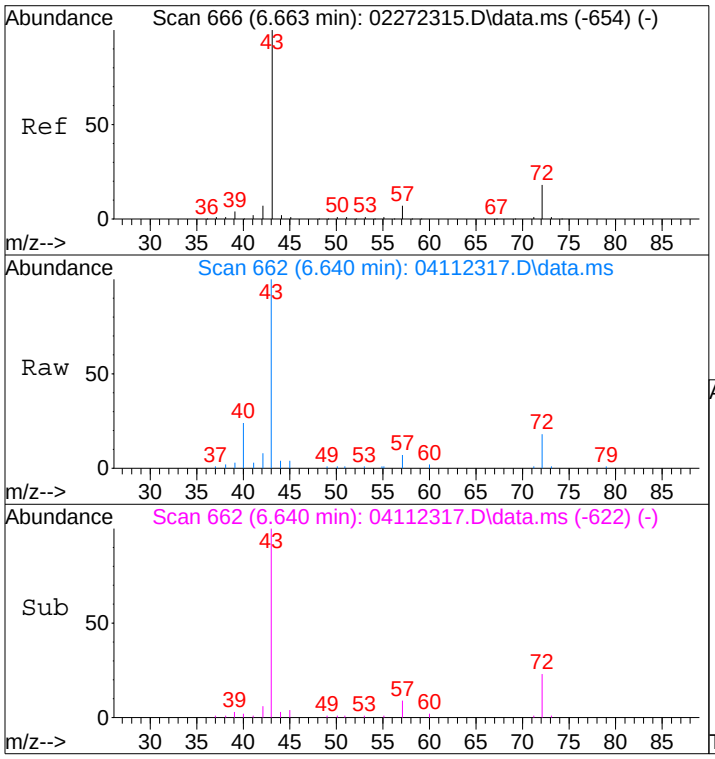


#21
Trichlorotrifluoroethane
Concen: 0.68 ng
RT: 5.56 min Scan# 471
Delta R.T. -0.006 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion:151 Resp: 11061

Ion	Ratio	Lower	Upper
151	100		
101	125.6	88.2	128.2

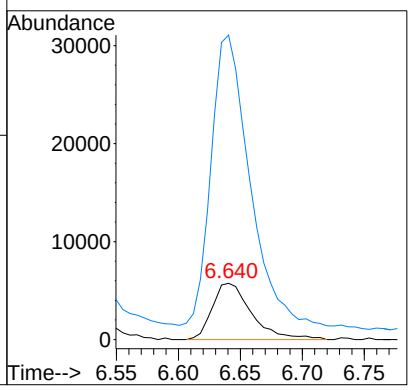


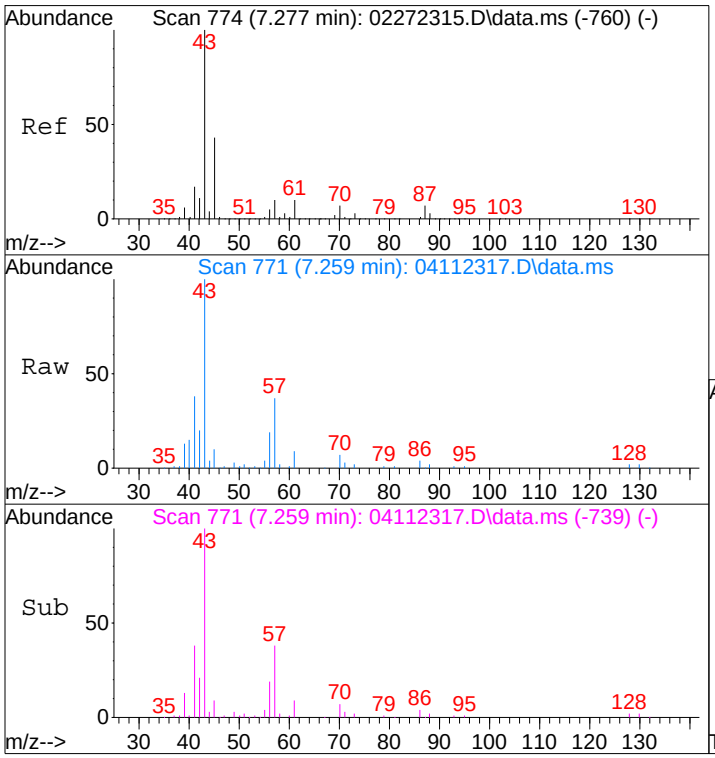


#27
2-Butanone (MEK)
Concen: 1.42 ng
RT: 6.64 min Scan# 662
Delta R.T. -0.023 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 72 Resp: 12721

Ion	Ratio	Lower	Upper
72	100		
43	543.2	536.0	576.0

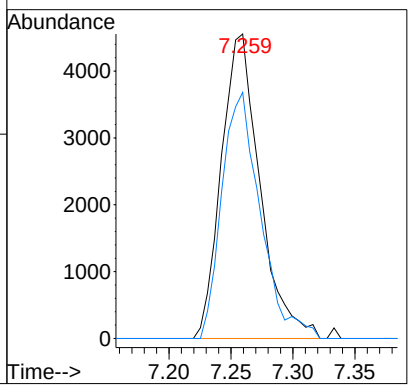


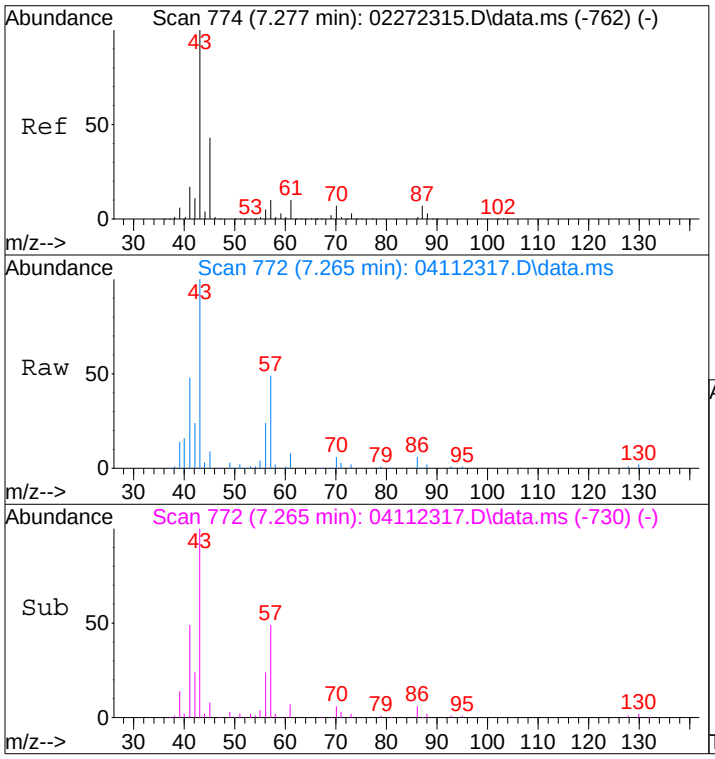


#30
Ethyl Acetate
Concen: 1.43 ng
RT: 7.26 min Scan# 771
Delta R.T. -0.017 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 61 Resp: 9896

Ion	Ratio	Lower	Upper
61	100		
70	80.5	55.8	95.8

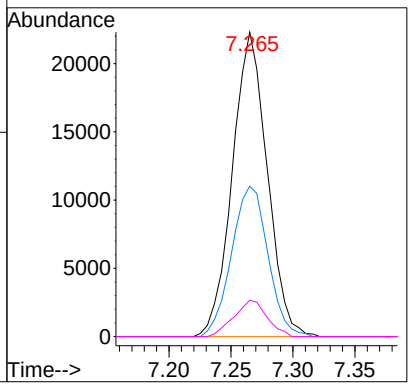


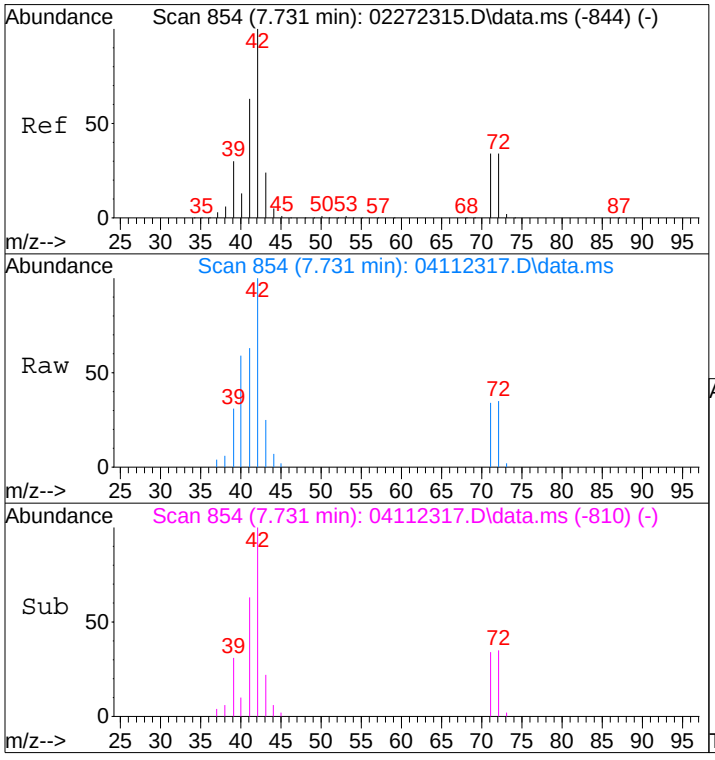


#31
n-Hexane
Concen: 1.53 ng
RT: 7.27 min Scan# 772
Delta R.T. -0.012 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 57 Resp: 43716

Ion	Ratio	Lower	Upper
57	100		
56	51.5	43.3	64.9
86	11.4	10.2	15.2

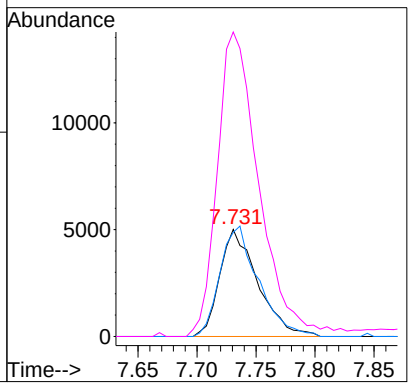


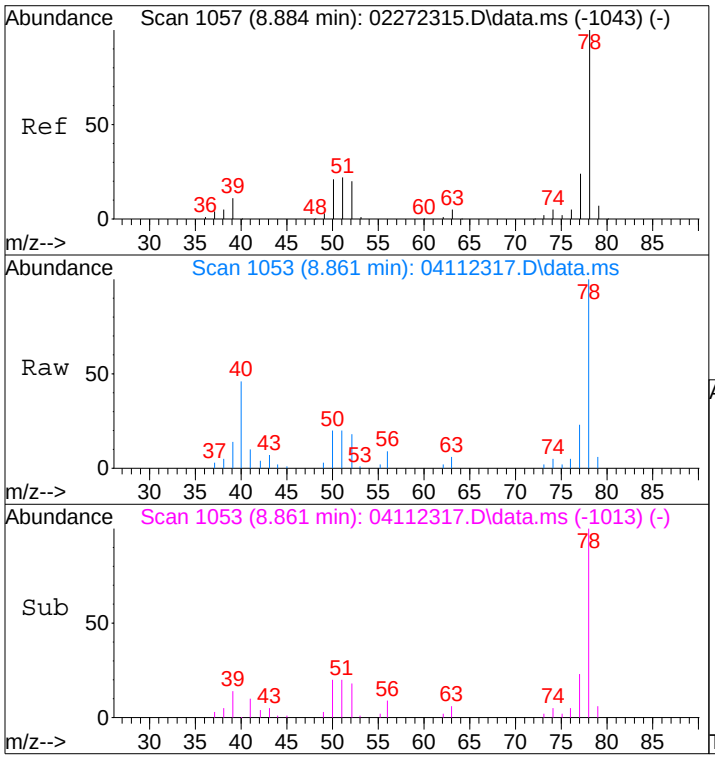


#34
Tetrahydrofuran (THF)
Concen: 1.25 ng
RT: 7.73 min Scan# 854
Delta R.T. -0.000 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 72 Resp: 11238

Ion	Ratio	Lower	Upper
72	100		
71	103.9	81.3	121.3
42	322.8	293.7	333.7

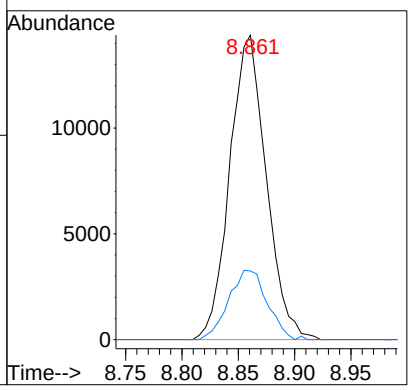


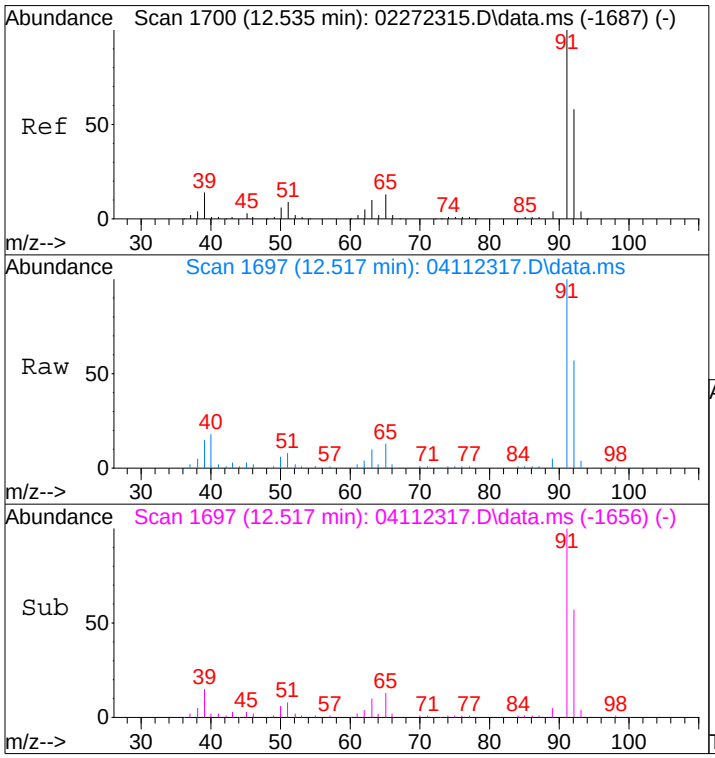


#41
Benzene
Concen: 0.55 ng
RT: 8.86 min Scan# 1053
Delta R.T. -0.023 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 78 Resp: 32491

Ion	Ratio	Lower	Upper
78	100		
77	24.0	4.0	44.0

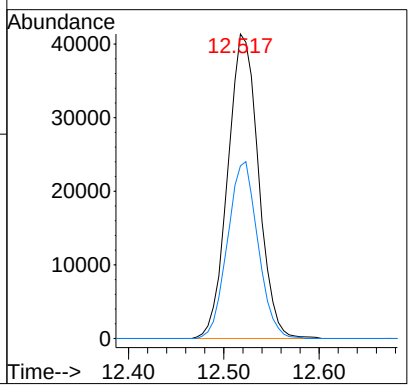


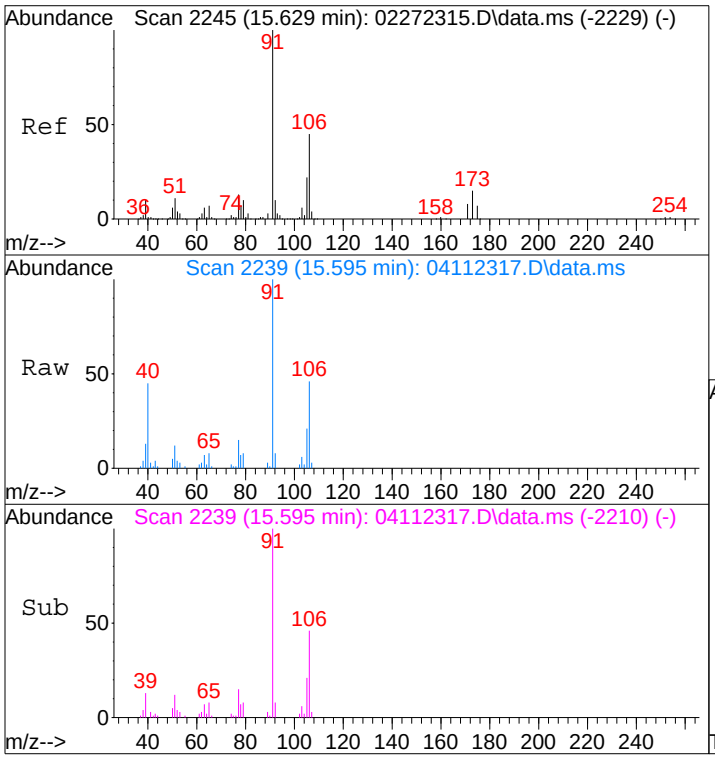


#58
Toluene
Concen: 1.47 ng
RT: 12.52 min Scan# 1697
Delta R.T. -0.017 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 91 Resp: 92553

Ion	Ratio	Lower	Upper
91	100		
92	57.6	37.6	77.6

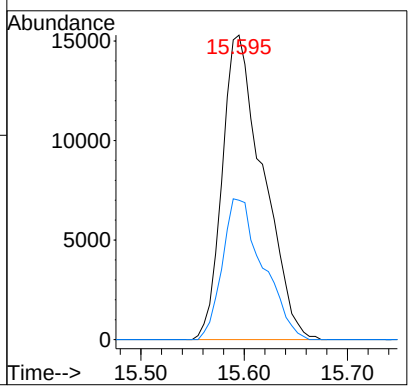


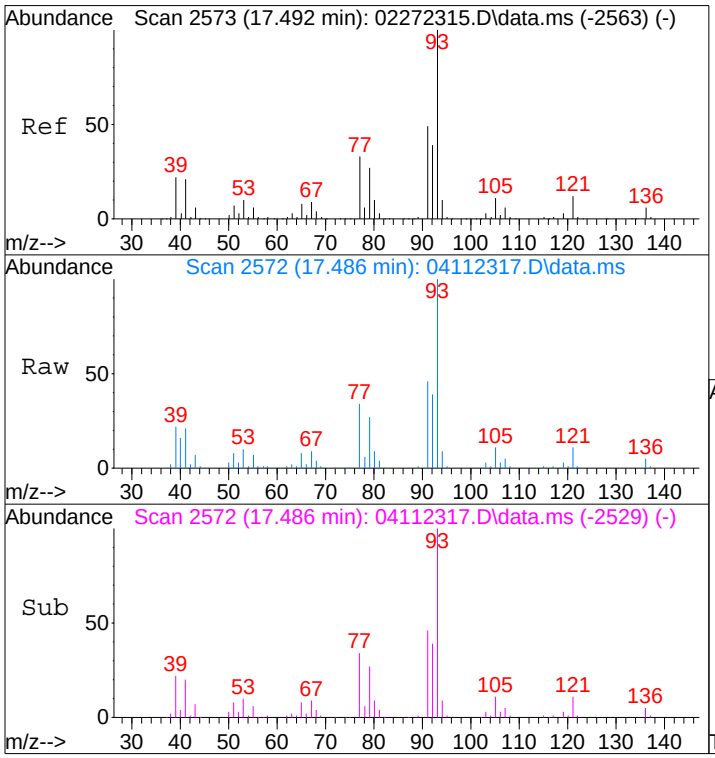


#67
m- & p-Xylenes
Concen: 0.71 ng
RT: 15.60 min Scan# 2239
Delta R.T. -0.034 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 91 Resp: 42112

Ion	Ratio	Lower	Upper
91	100		
106	45.9	25.0	65.0

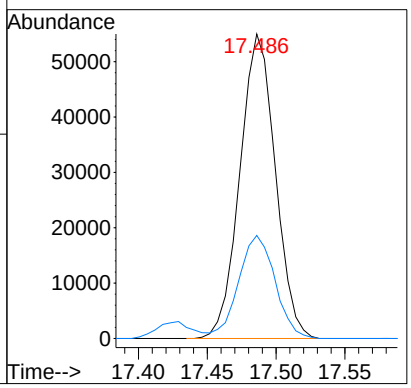


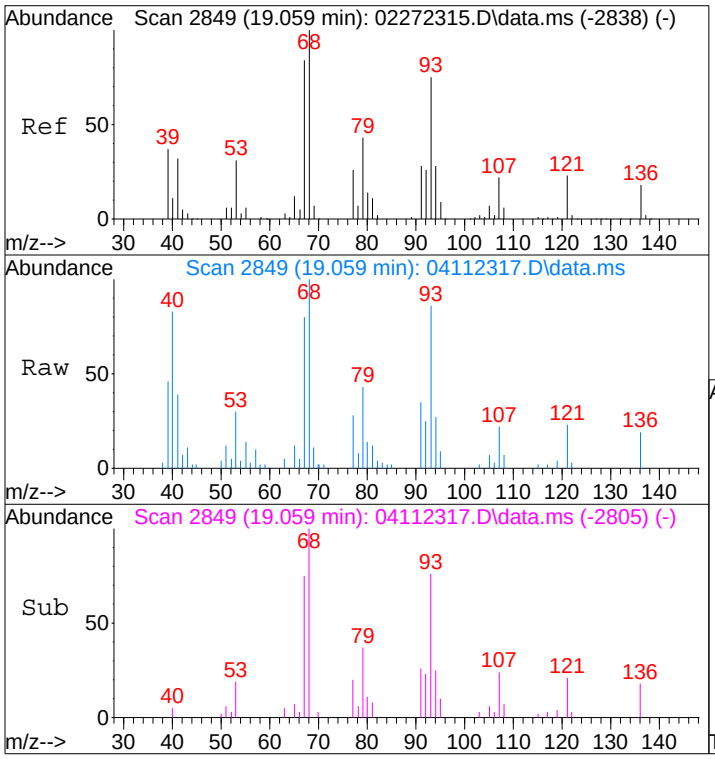


#75
alpha-Pinene
Concen: 3.25 ng
RT: 17.49 min Scan# 2572
Delta R.T. -0.006 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 93 Resp: 98368

Ion	Ratio	Lower	Upper
93	100		
77	34.8	14.2	54.2

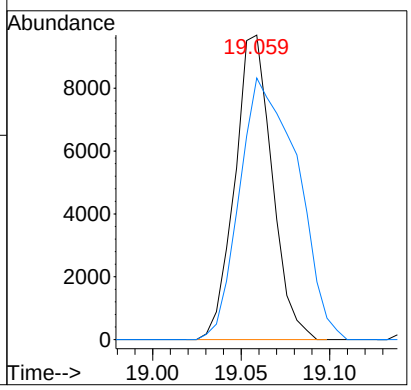




#91
d-Limonene
Concen: 0.69 ng
RT: 19.06 min Scan# 2849
Delta R.T. -0.000 min
Lab File: 04112317.D
Acq: 11 Apr 2023 18:10

Tgt Ion: 68 Resp: 14240

Ion	Ratio	Lower	Upper
68	100		
93	133.0	55.7	95.7#



Data File : I:\MS09\DATA\2023 04\11\04112304.D Vial: 2
Acq On : 11 Apr 2023 10:32 Operator: SC
Sample : MB R9041123 1000mL Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 10:56:41 2023 4/11/23
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	148696	12.500	ng	-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	656871	12.500	ng	-0.03
56) Chlorobenzene-d5 (IS3)	14.81	54	147416	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	7.96	65	325951	12.948	ng	-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.60%			
57) Toluene-d8 (SS2)	12.39	98	748037	13.354	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.80%			
73) Bromofluorobenzene (SS3)	16.79	174	263026	11.515	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 92.16%			
Target Compounds						Qvalue
2) Propene	3.31	42	277	N.D.		
3) Dichlorodifluoromethan...	3.32	85	141	N.D.		
4) Chloromethane	3.36	50	634	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	0.00	45	0	N.D. d		
11) Acetonitrile	4.49	41	56	N.D.		
12) Acrolein	4.55	56	65	N.D.		
13) Acetone	4.64	58	4400	0.411	ng	96
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	4.91	45	253	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	5.34	84	196	N.D.		
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	5.61	76	371	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	9.26	61	22505	No Calib	#	
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	8.87	78	518	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	9.26	84	721	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		
50) Methyl Methacrylate	0.00	100	0	N.D.		

Data File : I:\MS09\DATA\2023 04\11\04112304.D Vial: 2
Acq On : 11 Apr 2023 10:32 Operator: SC
Sample : MB R9041123 1000mL Inst : MS09
Misc : S37-04052305

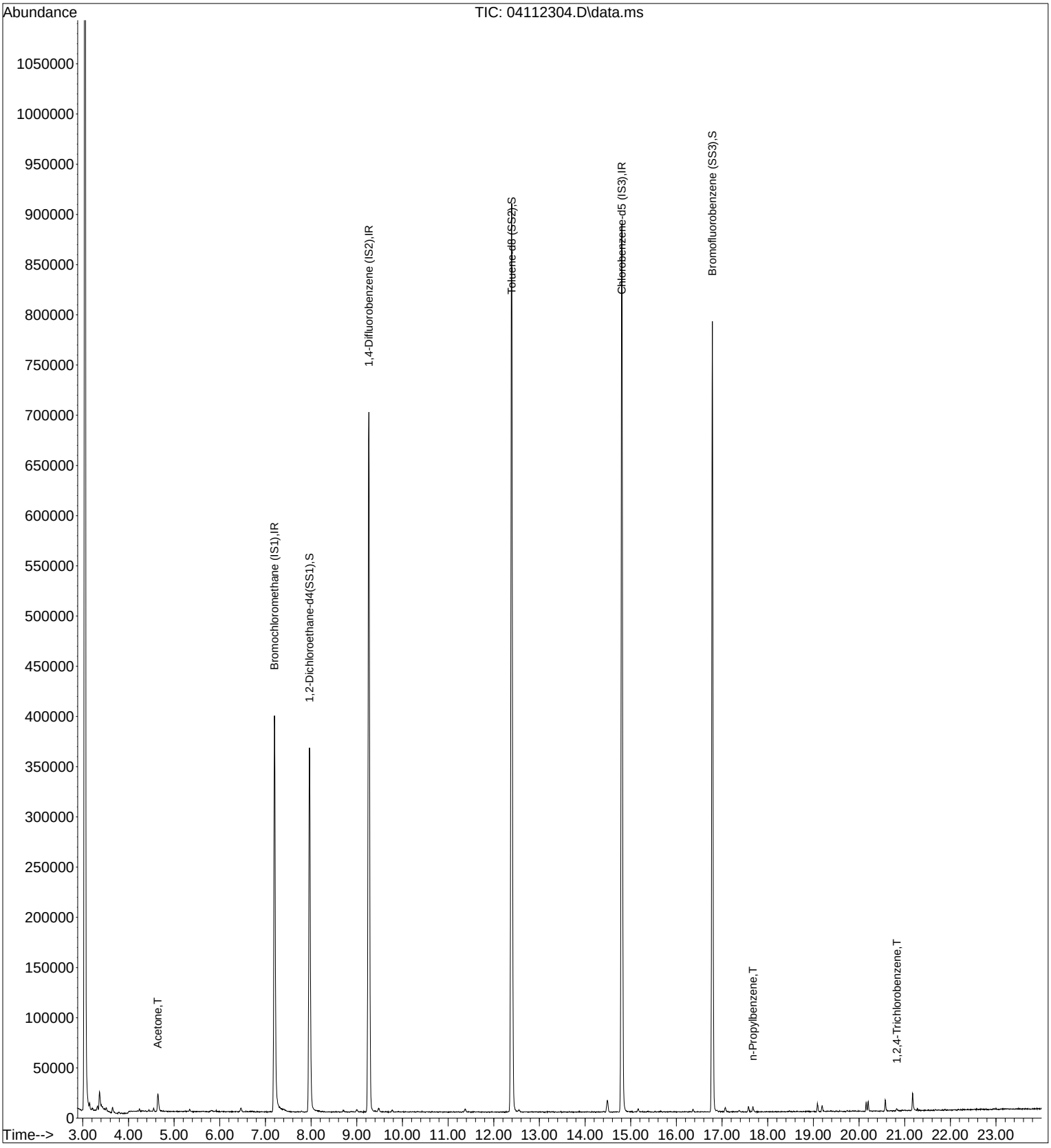
Quant Time: Apr 11 10:56:41 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	0.00	71	0	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	0.00	91	0	N.D.	
59) 2-Hexanone	0.00	43	0	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	0.00	43	0	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	0.00	166	0	N.D.	
65) Chlorobenzene	14.86	112	114	N.D.	
66) Ethylbenzene	15.38	91	933	N.D.	
67) m- & p-Xylenes	15.62	91	293	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	0.00	104	0	N.D.	
70) o-Xylene	16.21	91	112	N.D.	
71) n-Nonane	0.00	43	0	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	16.99	105	213	N.D.	
75) alpha-Pinene	0.00	93	0	N.D.	
76) n-Propylbenzene	17.67	91	4804	0.059 ng #	66
77) 3-Ethyltoluene	16.99	105	213	No Calib #	
78) 4-Ethyltoluene	0.00	105	0	N.D.	
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
80) alpha-Methylstyrene	0.00	118	0	N.D.	
81) 2-Ethyltoluene	16.99	105	213	No Calib #	
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
83) n-Decane	0.00	58	0	N.D.	
84) Benzyl Chloride	18.56	91	116	N.D.	
85) 1,3-Dichlorobenzene	18.56	146	346	N.D.	
86) 1,4-Dichlorobenzene	18.65	146	265	N.D.	
87) sec-Butylbenzene	18.71	105	174	N.D.	
88) 4-Isopropyltoluene (p-...	18.90	119	362	N.D.	
89) 1,2,3-Trimethylbenzene	16.99	105	213	No Calib #	
90) 1,2-Dichlorobenzene	19.02	146	236	N.D.	
91) d-Limonene	0.00	68	0	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.83	180	1530	0.059 ng #	83
95) Naphthalene	0.00	128	0	N.D. d	
96) n-Dodecane	19.09	58	407	No Calib #	
97) Hexachlorobutadiene	21.28	225	662	N.D.	
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	0.00	119	0	N.D.	
100) n-Butylbenzene	19.38	91	323	N.D.	
101) 1,1,1,2-Tetrachloroethane	14.85	131	618	N.D.	

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

Data File : I:\MS09\DATA\2023 04\11\04112304.D Vial: 2
Acq On : 11 Apr 2023 10:32 Operator: SC
Sample : MB R9041123 1000mL Inst : MS09
Misc : S37-04052305

Quant Time: Apr 11 10:56:41 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112305.D Vial: 2
Acq On : 11 Apr 2023 11:04 Operator: SC
Sample : LCS R9041123 25ng Inst : MS09
Misc : S37-04052305/S37-03162302 (4/15)

Quant Time: Apr 11 11:25:46 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/11/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	151425	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.29	114	665297	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.81	54	151138	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	333637	13.014	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.08%				
57) Toluene-d8 (SS2)	12.40	98	754882	13.145	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.12%				
73) Bromofluorobenzene (SS3)	16.79	174	281511	12.021	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.16%				
Target Compounds							Qvalue
2) Propene	3.25	42	543381	26.977	ng		98
3) Dichlorodifluoromethan...	3.33	85	807326	23.092	ng		100
4) Chloromethane	3.47	50	567750	25.857	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	345238	21.084	ng		100
6) Vinyl Chloride	3.66	62	388151	22.053	ng		99
7) 1,3-Butadiene	3.78	54	283114	23.180	ng		95
8) Bromomethane	3.99	94	250259	22.376	ng		99
9) Chloroethane	4.14	64	225827	24.597	ng		100
10) Ethanol	4.32	45	1545260	107.537	ng		100
11) Acetonitrile	4.45	41	747190	20.493	ng		100
12) Acrolein	4.53	56	444491	46.408	ng		99
13) Acetone	4.63	58	1157492	106.299	ng		96
14) Trichlorofluoromethane	4.73	101	757016	21.715	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	1823671	42.897	ng		98
16) Acrylonitrile	5.01	53	899728	43.631	ng		99
17) 1,1-Dichloroethene	5.24	96	318085	22.570	ng		99
18) 2-Methyl-2-Propanol (t...	5.33	59	1800030	48.492	ng		100
19) Methylene Chloride	5.36	84	318480	22.160	ng		97
20) 3-Chloro-1-propene (Al...	5.45	41	608594	22.450	ng		99
21) Trichlorotrifluoroethane	5.56	151	320987	20.352	ng		88
22) Carbon Disulfide	5.58	76	2346642	44.859	ng		100
23) trans-1,2-Dichloroethene	6.14	61	533999	22.749	ng		99
24) 1,1-Dichloroethane	6.32	63	644541	22.367	ng		100
25) Methyl tert-Butyl Ether	6.35	73	1087485	24.462	ng		99
26) Vinyl Acetate	6.44	86	325487	154.245	ng	#	83
27) 2-Butanone (MEK)	6.66	72	405472	46.716	ng	#	86
28) cis-1,2-Dichloroethene	7.08	61	500976	21.028	ng		100
29) Diisopropyl Ether	7.27	87	498995	41.471	ng	#	23
30) Ethyl Acetate	7.27	61	229118	34.335	ng		96
31) n-Hexane	7.28	57	541396	19.540	ng		97
32) Chloroform	7.36	83	648791	21.333	ng		99
34) Tetrahydrofuran (THF)	7.73	72	369811	42.544	ng		96
35) Ethyl tert-Butyl Ether	7.80	87	772370	47.130	ng		95
36) 1,2-Dichloroethane	8.11	62	581409	21.996	ng		97
38) 1,1,1-Trichloroethane	8.38	97	643779	21.937	ng		99
39) Isopropyl Acetate	9.20	61	2017	No Calib		#	
40) 1-Butanol	8.82	56	1901	No Calib		#	
41) Benzene	8.88	78	1227233	21.614	ng		100
42) Carbon Tetrachloride	9.05	117	608372	24.311	ng		100
43) Cyclohexane	9.20	84	912812	43.215	ng		94
44) tert-Amyl Methyl Ether	9.56	73	1860422	48.203	ng		97
45) 1,2-Dichloropropane	9.84	63	335930	20.995	ng		97
46) Bromodichloromethane	10.06	83	540380	22.942	ng		100
47) Trichloroethene	10.13	130	352888	21.196	ng		100
48) 1,4-Dioxane	10.09	88	263131	23.664	ng		97
49) 2,2,4-Trimethylpentane...	10.21	57	1385797	19.958	ng		99
50) Methyl Methacrylate	10.38	100	251089	46.855	ng		92

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112305.D Vial: 2
Acq On : 11 Apr 2023 11:04 Operator: SC
Sample : LCS R9041123 25ng Inst : MS09
Misc : S37-04052305/S37-03162302 (4/15)

Quant Time: Apr 11 11:25:46 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

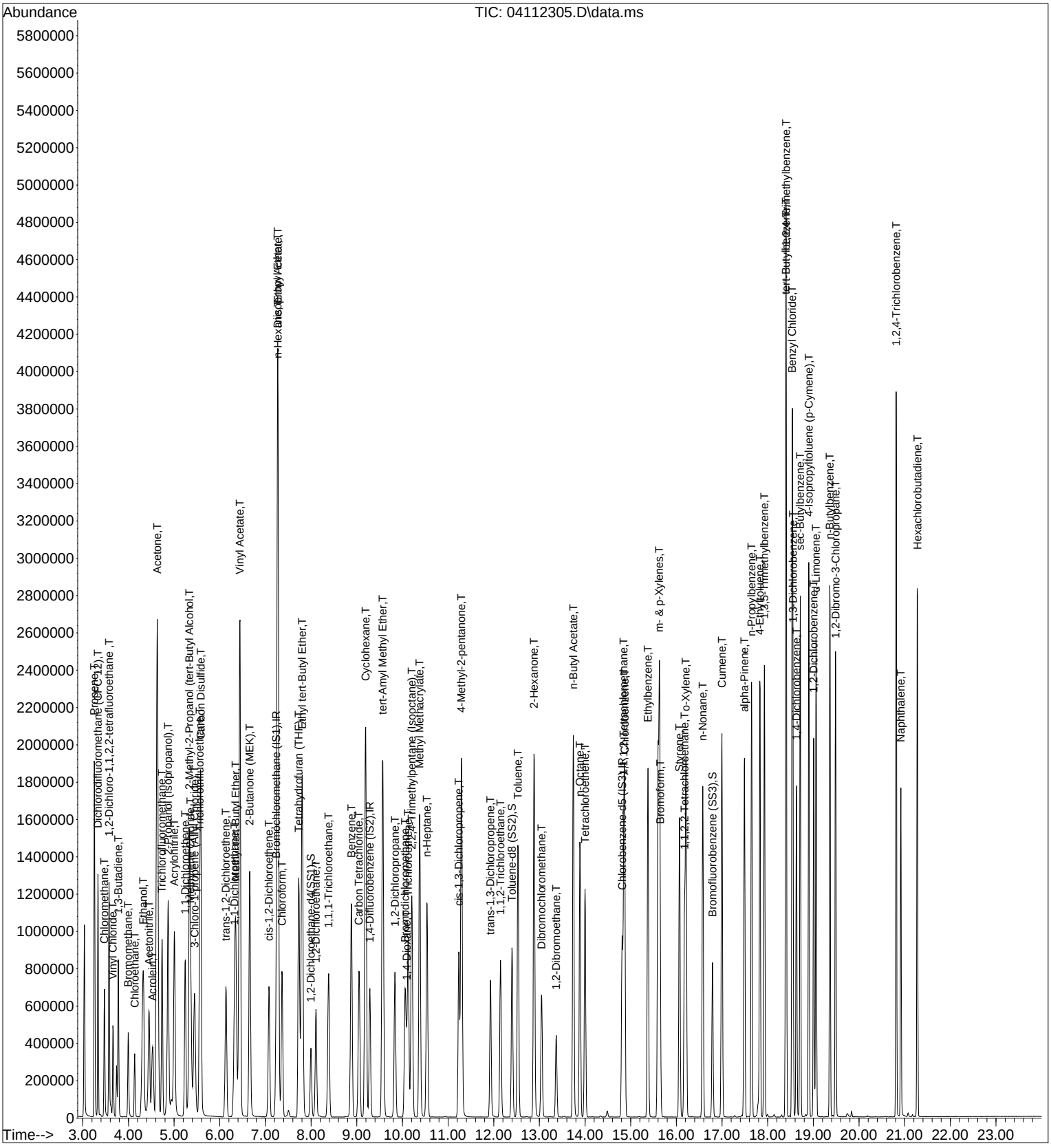
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.54	71	314502	22.235 ng	94
52) cis-1,3-Dichloropropene	11.23	75	607645	27.202 ng	100
53) 4-Methyl-2-pentanone	11.29	58	623508	44.835 ng	99
54) trans-1,3-Dichloropropene	11.93	75	491539	24.141 ng	100
55) 1,1,2-Trichloroethane	12.15	97	325156	21.989 ng	99
58) Toluene	12.53	91	1314779	21.503 ng	100
59) 2-Hexanone	12.88	43	1768313	45.933 ng	99
60) Dibromochloromethane	13.05	129	444938	23.754 ng	100
61) 1,2-Dibromoethane	13.37	107	368762	21.881 ng	100
62) n-Butyl Acetate	13.74	43	1961155	45.876 ng	100
63) n-Octane	13.89	57	291530	21.849 ng	97
64) Tetrachloroethene	14.00	166	429178	20.359 ng	100
65) Chlorobenzene	14.87	112	873880	21.625 ng	100
66) Ethylbenzene	15.38	91	1590856	22.685 ng	100
67) m- & p-Xylenes	15.62	91	2599955	45.176 ng	99
68) Bromoform	15.65	173	422151	23.596 ng	99
69) Styrene	16.07	104	857778	23.634 ng	100
70) o-Xylene	16.21	91	1293348	22.806 ng	100
71) n-Nonane	16.58	43	790214	22.071 ng	99
72) 1,1,2,2-Tetrachloroethane	16.18	83	568904	24.204 ng	100
74) Cumene	17.00	105	1572863	22.509 ng	100
75) alpha-Pinene	17.49	93	788848	26.776 ng	99
76) n-Propylbenzene	17.65	91	1891539	22.620 ng	100
77) 3-Ethyltoluene	17.00	105	1572863	No Calib	
78) 4-Ethyltoluene	17.83	105	1524617	23.068 ng	100
79) 1,3,5-Trimethylbenzene	17.93	105	1359191	22.889 ng	100
80) alpha-Methylstyrene	17.00	118	3038	No Calib #	
81) 2-Ethyltoluene	17.00	105	1572863	No Calib	
82) 1,2,4-Trimethylbenzene	18.41	105	1368487	22.692 ng	100
83) n-Decane	16.98	58	11690	No Calib	
84) Benzyl Chloride	18.54	91	1973848	58.994 ng	98
85) 1,3-Dichlorobenzene	18.55	146	718738	20.571 ng	97
86) 1,4-Dichlorobenzene	18.63	146	672362	19.283 ng	97
87) sec-Butylbenzene	18.71	105	1744662	22.167 ng	99
88) 4-Isopropyltoluene (p-...	18.90	119	1517379	22.121 ng	99
89) 1,2,3-Trimethylbenzene	17.00	105	1572863	No Calib	
90) 1,2-Dichlorobenzene	19.01	146	736624	21.080 ng	96
91) d-Limonene	19.06	68	489564	24.234 ng	100
92) 1,2-Dibromo-3-Chloropr...	19.49	157	603261	45.928 ng	87
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.81	180	1013237	37.805 ng	99
95) Naphthalene	20.92	128	1090694	20.486 ng	100
96) n-Dodecane	19.06	58	4466	No Calib #	
97) Hexachlorobutadiene	21.28	225	490352	22.063 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.40	119	1292067	22.517 ng	99
100) n-Butylbenzene	19.36	91	1415497	22.525 ng	99
101) 1,1,1,2-Tetrachloroethane	14.85	131	363217	22.954 ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112305.D Vial: 2
Acq On : 11 Apr 2023 11:04 Operator: SC
Sample : LCS R9041123 25ng Inst : MS09
Misc : S37-04052305/S37-03162302 (4/15)

Quant Time: Apr 11 11:25:46 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112306.D Vial: 2
Acq On : 11 Apr 2023 11:36 Operator: SC
Sample : LCSD R9041123 25ng Inst : MS09
Misc : S37-04052305/S37-03162302 (4/15)

Quant Time: Apr 11 11:58:05 2023 4/11/23
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	154171	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.29	114	676039	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.81	54	152936	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	336493	12.892	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.12%				
57) Toluene-d8 (SS2)	12.40	98	772169	13.288	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.32%				
73) Bromofluorobenzene (SS3)	16.79	174	284959	12.025	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.24%				
Target Compounds							Qvalue
2) Propene	3.26	42	533742	26.027	ng		97
3) Dichlorodifluoromethan...	3.34	85	803691	22.578	ng		100
4) Chloromethane	3.47	50	563098	25.188	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	359038	21.536	ng		100
6) Vinyl Chloride	3.66	62	414521	23.132	ng		98
7) 1,3-Butadiene	3.78	54	298507	24.005	ng		94
8) Bromomethane	3.99	94	258730	22.722	ng		100
9) Chloroethane	4.14	64	229387	24.540	ng		100
10) Ethanol	4.32	45	1573211	107.532	ng		100
11) Acetonitrile	4.45	41	761399	20.511	ng		99
12) Acrolein	4.53	56	450654	46.213	ng		99
13) Acetone	4.63	58	1165190	105.100	ng		96
14) Trichlorofluoromethane	4.74	101	754488	21.257	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	1867345	43.142	ng		98
16) Acrylonitrile	5.01	53	912624	43.468	ng		99
17) 1,1-Dichloroethene	5.24	96	319619	22.275	ng		100
18) 2-Methyl-2-Propanol (t...	5.33	59	1843157	48.769	ng		99
19) Methylene Chloride	5.36	84	321763	21.990	ng		96
20) 3-Chloro-1-propene (Al...	5.45	41	616486	22.336	ng		99
21) Trichlorotrifluoroethane	5.56	151	324951	20.237	ng		88
22) Carbon Disulfide	5.58	76	2376713	44.624	ng		100
23) trans-1,2-Dichloroethene	6.14	61	542613	22.704	ng		100
24) 1,1-Dichloroethane	6.32	63	652488	22.239	ng		100
25) Methyl tert-Butyl Ether	6.35	73	1101283	24.331	ng		99
26) Vinyl Acetate	6.44	86	333680	155.311	ng	#	83
27) 2-Butanone (MEK)	6.66	72	413026	46.739	ng	#	88
28) cis-1,2-Dichloroethene	7.08	61	509411	21.002	ng		100
29) Diisopropyl Ether	7.27	87	507699	41.443	ng	#	23
30) Ethyl Acetate	7.27	61	233668	34.393	ng		95
31) n-Hexane	7.28	57	553588	19.624	ng		97
32) Chloroform	7.37	83	653993	21.121	ng		100
34) Tetrahydrofuran (THF)	7.73	72	381073	43.059	ng		95
35) Ethyl tert-Butyl Ether	7.80	87	792098	47.473	ng		94
36) 1,2-Dichloroethane	8.11	62	586871	21.807	ng		98
38) 1,1,1-Trichloroethane	8.38	97	651516	21.848	ng		99
39) Isopropyl Acetate	9.19	61	1935	No Calib		#	
40) 1-Butanol	8.83	56	1955	No Calib		#	
41) Benzene	8.88	78	1250137	21.667	ng		100
42) Carbon Tetrachloride	9.05	117	616172	24.231	ng		99
43) Cyclohexane	9.20	84	930215	43.339	ng		94
44) tert-Amyl Methyl Ether	9.57	73	1899251	48.427	ng		97
45) 1,2-Dichloropropane	9.84	63	345640	21.259	ng		97
46) Bromodichloromethane	10.06	83	545980	22.812	ng		100
47) Trichloroethene	10.13	130	360364	21.302	ng		99
48) 1,4-Dioxane	10.09	88	269299	23.834	ng		97
49) 2,2,4-Trimethylpentane...	10.21	57	1424073	20.184	ng		99
50) Methyl Methacrylate	10.38	100	255338	46.890	ng		91

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112306.D Vial: 2
Acq On : 11 Apr 2023 11:36 Operator: SC
Sample : LCSD R9041123 25ng Inst : MS09
Misc : S37-04052305/S37-03162302 (4/15)

Quant Time: Apr 11 11:58:05 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

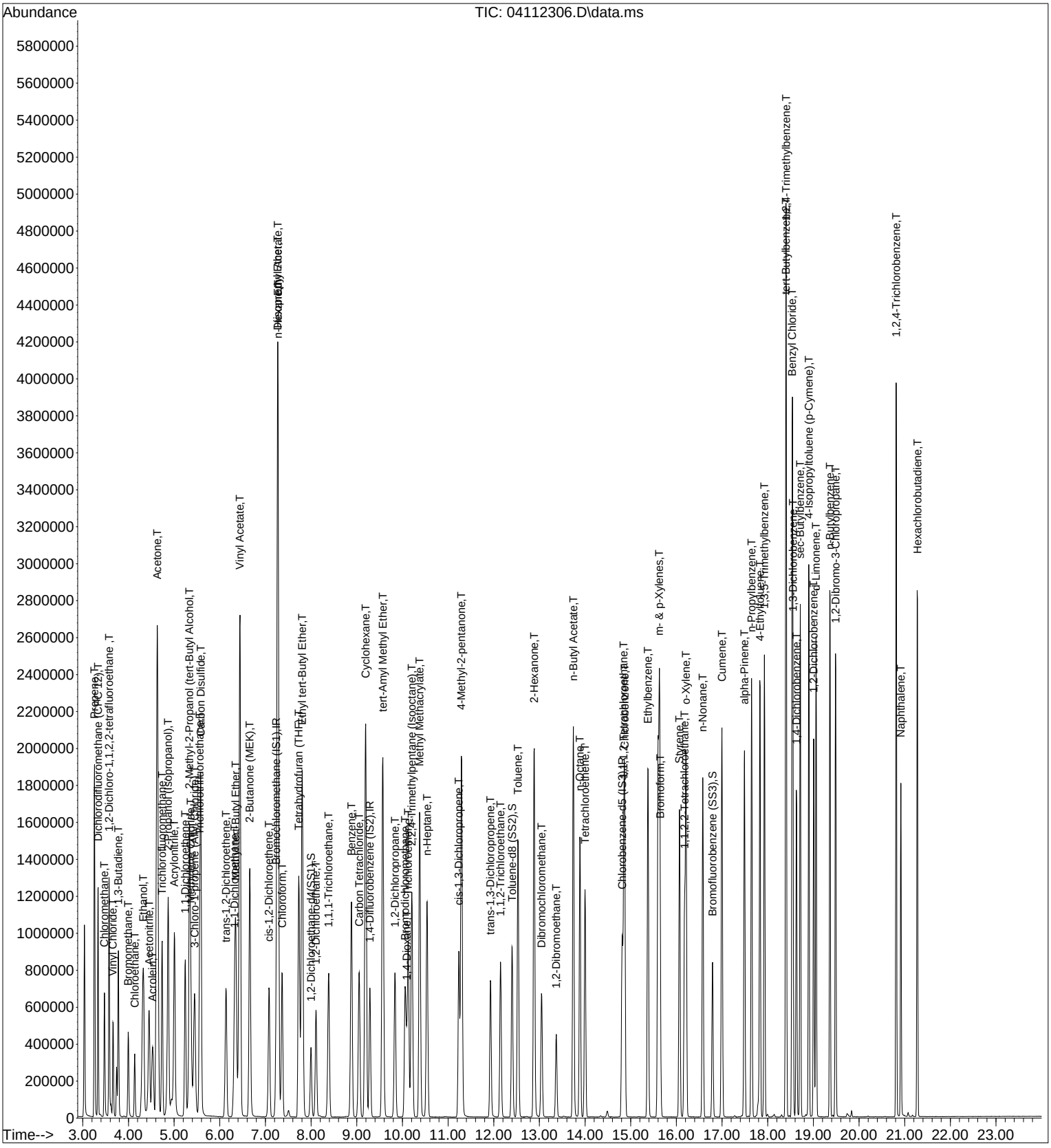
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.54	71	321839	22.392 ng	94
52) cis-1,3-Dichloropropene	11.23	75	622077	27.405 ng	100
53) 4-Methyl-2-pentanone	11.29	58	639902	45.282 ng	99
54) trans-1,3-Dichloropropene	11.93	75	503702	24.345 ng	99
55) 1,1,2-Trichloroethane	12.15	97	329195	21.908 ng	98
58) Toluene	12.53	91	1343426	21.713 ng	100
59) 2-Hexanone	12.89	43	1819301	46.702 ng	99
60) Dibromochloromethane	13.05	129	448239	23.649 ng	99
61) 1,2-Dibromoethane	13.37	107	376135	22.056 ng	100
62) n-Butyl Acetate	13.74	43	2014688	46.574 ng	99
63) n-Octane	13.89	57	298890	22.138 ng	97
64) Tetrachloroethene	14.00	166	436882	20.481 ng	100
65) Chlorobenzene	14.87	112	888526	21.729 ng	100
66) Ethylbenzene	15.38	91	1620781	22.840 ng	100
67) m- & p-Xylenes	15.62	91	2649082	45.489 ng	100
68) Bromoform	15.65	173	423230	23.379 ng	100
69) Styrene	16.07	104	871739	23.737 ng	99
70) o-Xylene	16.21	91	1312060	22.864 ng	100
71) n-Nonane	16.58	43	810977	22.385 ng	99
72) 1,1,2,2-Tetrachloroethane	16.18	83	582804	24.504 ng	99
74) Cumene	17.00	105	1595318	22.562 ng	100
75) alpha-Pinene	17.49	93	807091	27.073 ng	100
76) n-Propylbenzene	17.64	91	1922822	22.724 ng	100
77) 3-Ethyltoluene	17.00	105	1595318	No Calib	
78) 4-Ethyltoluene	17.83	105	1552555	23.214 ng	100
79) 1,3,5-Trimethylbenzene	17.93	105	1376937	22.916 ng	99
80) alpha-Methylstyrene	17.00	118	3172	No Calib #	
81) 2-Ethyltoluene	17.00	105	1595318	No Calib	
82) 1,2,4-Trimethylbenzene	18.41	105	1382053	22.647 ng	100
83) n-Decane	17.00	58	12179	No Calib	
84) Benzyl Chloride	18.54	91	2011581	59.415 ng	99
85) 1,3-Dichlorobenzene	18.55	146	726981	20.562 ng	97
86) 1,4-Dichlorobenzene	18.63	146	681114	19.304 ng	97
87) sec-Butylbenzene	18.71	105	1777045	22.313 ng	99
88) 4-Isopropyltoluene (p-...	18.90	119	1538388	22.164 ng	99
89) 1,2,3-Trimethylbenzene	17.00	105	1595318	No Calib	
90) 1,2-Dichlorobenzene	19.01	146	743062	21.014 ng	97
91) d-Limonene	19.06	68	501565	24.536 ng	99
92) 1,2-Dibromo-3-Chloropr...	19.49	157	610701	45.948 ng	87
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.81	180	1026284	37.841 ng	99
95) Naphthalene	20.92	128	1126119	20.903 ng	100
96) n-Dodecane	19.05	58	4588	No Calib #	
97) Hexachlorobutadiene	21.28	225	491924	21.873 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.40	119	1310063	22.562 ng	99
100) n-Butylbenzene	19.37	91	1442537	22.685 ng	99
101) 1,1,1,2-Tetrachloroethane	14.85	131	369409	23.071 ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112306.D Vial: 2
Acq On : 11 Apr 2023 11:36 Operator: SC
Sample : LCSD R9041123 25ng Inst : MS09
Misc : S37-04052305/S37-03162302 (4/15)

Quant Time: Apr 11 11:58:05 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



01177866

Method Path : I:\MS09\METHODS\
Method File : R9022723.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Feb 28 08:30:18 2023
Response Via : Initial Calibration

3/1/23

Calibration Files
0.1 =02272310.D 0.2 =02272311.D 0.5 =02272312.D 1.0 =02272313.D 5.0 =02272314.D 25 =02272
100 =02272317.D

		Compound	0.1	0.2	0.5	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------ISTD----------									
2)	T	Propene	1.907	1.632	1.608	1.548	1.627	1.658	1.660	1.661	1.663	6.34
3)	T	Dichlorodifluo...	3.592	2.983	3.394	2.750	2.370	2.893	2.645	2.461	2.886	14.87
4)	T	Chloromethane	2.286	1.987	2.256	1.858	1.418	1.864	1.603	1.228	1.813	20.83
5)	T	1,2-Dichloro-1...	1.597	1.376	1.601	1.253	1.066	1.359	1.310	1.252	1.352	13.29
6)	T	Vinyl Chloride	1.538	1.432	1.728	1.345	1.121	1.440	1.507	1.513	1.453	11.98
7)	T	1,3-Butadiene	0.889	0.786	1.162	0.939	0.810	1.110	1.121	1.249	1.008	17.26
8)	T	Bromomethane	1.082	0.964	1.161	0.914	0.703	0.929	0.838	0.797	0.923	16.11
9)	T	Chloroethane	0.787	0.777	0.898	0.822	0.641	0.767	0.679	0.691	0.758	11.08
10)	T	Ethanol	1.303	1.225	1.398	1.335	1.068	1.141	0.996	1.023	1.186	12.78
11)	T	Acetonitrile	3.263	3.185	3.409	3.427	2.688	2.933	2.524	2.649	3.010	11.94
12)	T	Acrolein	0.766	0.743	0.933	0.911	0.728	0.808	0.712	0.724	0.791	10.95
13)	T	Acetone	1.104	0.973	1.047	0.999	0.760	0.839	0.737	0.731	0.899	16.66
14)	T	Trichlorofluor...	3.454	2.977	3.457	2.895	2.357	2.847	2.581	2.454	2.878	14.49
15)	T	2-Propanol (Is...			4.787	4.684	2.719	3.565	2.760	2.542	3.509	28.89
16)	T	Acrylonitrile	1.488	1.740	2.081	2.126	1.545	1.685	1.466	1.486	1.702	15.67
17)	T	1,1-Dichloroet...	1.290	1.200	1.366	1.235	0.988	1.145	1.049	1.032	1.163	11.48
18)	T	2-Methyl-2-Pro...	3.614	3.499	3.874	3.568	2.474	3.504	2.587	1.392	3.064	27.49
19)	T	Methylene Chlo...	1.401	1.256	1.366	1.296	0.999	1.139	1.027	1.008	1.186	13.88
20)	T	3-Chloro-1-pro...	2.356	2.307	2.633	2.620	1.959	2.252	1.858	1.917	2.238	13.58
21)	T	Trichlorotrifl...	1.539	1.314	1.555	1.231	1.060	1.316	1.234	1.167	1.302	13.21
22)	T	Carbon Disulfide	4.983	4.561	4.971	4.814	3.765	4.191	3.711	3.550	4.318	13.71
23)	T	trans-1,2-Dich...	1.952	2.037	2.162	2.141	1.797	1.943	1.747	1.723	1.938	8.81
24)	T	1,1-Dichloroet...	2.542	2.571	2.744	2.670	2.200	2.271	2.042	1.990	2.379	12.20
25)	T	Methyl tert-Bu...	3.965	3.724	4.180	3.895	3.325	3.811	3.432	3.026	3.670	10.36
26)	T	Vinyl Acetate	0.117	0.147	0.173	0.189	0.185	0.204	0.191	0.188	0.174	16.47
27)	T	2-Butanone (MEK)	0.557	0.736	0.794	0.851	0.746	0.740	0.666	0.641	0.716	12.86
28)	T	cis-1,2-Dichlo...	2.094	2.146	2.241	2.121	1.857	1.880	1.722	1.673	1.967	10.76
29)	T	Diisopropyl Ether	1.117	1.059	1.121	1.059	0.919	0.948	0.877	0.846	0.993	10.98
30)	T	Ethyl Acetate	0.488	0.559	0.618	0.652	0.595	0.536	0.487	0.472	0.551	12.15
31)	T	n-Hexane	2.461	2.501	2.610	2.696	2.345	2.065	1.853	1.767	2.287	15.31
32)	T	Chloroform	2.803	2.663	2.918	2.640	2.284	2.432	2.229	2.116	2.511	11.50
33)	S	1,2-Dichloroet...	2.102	2.171	2.250	2.038	2.093	2.119	2.091	2.066	2.116	3.14
34)	T	Tetrahydrofura...	0.708	0.723	0.885	0.741	0.719	0.704	0.652	0.608	0.718	11.19
35)	T	Ethyl tert-But...	1.360	1.375	1.608	1.289	1.207	1.407	1.315	1.261	1.353	8.99
36)	T	1,2-Dichloroet...	2.450	2.264	2.656	2.102	1.916	2.168	2.020	1.882	2.182	12.21
37)	IR	1,4-Difluorobenzen...	----------ISTD----------									
38)	T	1,1,1-Trichlor...	0.618	0.562	0.612	0.536	0.481	0.571	0.533	0.498	0.551	8.96
39)	T	Isopropyl Acetate									0.000	-1.00
40)	T	1-Butanol									0.000	-1.00
41)	T	Benzene	1.238	1.152	1.258	1.094	0.924	1.019	0.950	0.899	1.067	13.18
42)	T	Carbon Tetrach...	0.496	0.462	0.521	0.453	0.398	0.507	0.478	0.447	0.470	8.37
43)	T	Cyclohexane	0.463	0.409	0.470	0.408	0.357	0.380	0.354	0.334	0.397	12.65
44)	T	tert-Amyl Meth...	0.750	0.690	0.800	0.731	0.633	0.771	0.726	0.701	0.725	7.15
45)	T	1,2-Dichloropr...	0.307	0.301	0.366	0.338	0.305	0.281	0.259	0.248	0.301	12.94
46)	T	Bromodichlorom...	0.473	0.423	0.494	0.454	0.390	0.461	0.435	0.410	0.443	7.77
47)	T	Trichloroethene	0.376	0.318	0.344	0.309	0.258	0.316	0.298	0.282	0.313	11.51
48)	T	1,4-Dioxane	0.204	0.176	0.238	0.230	0.190	0.224	0.210	0.200	0.209	10.08
49)	T	2,2,4-Trimethy...	1.427	1.370	1.592	1.547	1.179	1.188	1.100	1.034	1.305	16.00
50)	T	Methyl Methacr...	0.075	0.088	0.110	0.112	0.101	0.112	0.107	0.101	0.101	13.18
51)	T	n-Heptane	0.266	0.259	0.322	0.319	0.248	0.251	0.236	0.224	0.266	13.58
52)	T	cis-1,3-Dichlo...	0.384	0.372	0.475	0.466	0.340	0.465	0.438	0.417	0.420	11.89
53)	T	4-Methyl-2-pen...	0.230	0.256	0.317	0.321	0.201	0.273	0.255	0.238	0.261	15.85
54)	T	trans-1,3-Dich...	0.258	0.300	0.406	0.403	0.329	0.475	0.456	0.435	0.383	20.48

55)	T	1,1,2-Trichlor...	0.316	0.279	0.327	0.292	0.215	0.279	0.264	0.250	0.278	12.92
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------									
57)	S	Toluene-d8 (SS2)	4.857	4.699	4.732	4.589	4.797	4.807	4.794	4.723	4.750	1.75
58)	T	Toluene	6.104	5.282	5.812	5.013	4.412	4.948	4.618	4.268	5.057	12.86
59)	T	2-Hexanone	2.986	3.073	3.768	3.306	2.867	3.464	3.155	2.851	3.184	9.92
60)	T	Dibromochlorom...	1.691	1.406	1.640	1.315	1.462	1.715	1.639	1.526	1.549	9.36
61)	T	1,2-Dibromoethane	1.492	1.277	1.560	1.254	1.302	1.502	1.430	1.334	1.394	8.38
62)	T	n-Butyl Acetate	3.115	3.261	4.113	3.975	3.208	3.895	3.527	3.191	3.536	11.38
63)	T	n-Octane	1.145	1.200	1.357	1.105	0.968	1.090	1.010	0.953	1.104	12.13
64)	T	Tetrachloroethene	2.199	1.652	1.871	1.453	1.641	1.819	1.722	1.590	1.743	12.94
65)	T	Chlorobenzene	4.185	3.432	3.646	3.135	2.943	3.337	3.140	2.919	3.342	12.56
66)	T	Ethylbenzene	6.994	5.868	6.881	4.780	5.305	5.963	5.538	5.071	5.800	13.84
67)	T	m- & p-Xylenes	5.776	4.810	5.554	3.841	4.372	4.945	4.590	4.190	4.760	13.86
68)	T	Bromoform	1.683	1.186	1.439	1.162	1.433	1.749	1.666	1.519	1.480	14.92
69)	T	Styrene	2.987	2.735	3.383	2.434	2.921	3.414	3.202	2.938	3.002	10.98
70)	T	o-Xylene	5.590	4.728	5.580	3.819	4.334	4.854	4.518	4.100	4.690	13.71
71)	T	n-Nonane	3.422	3.277	3.915	2.298	2.658	2.967	2.684	2.468	2.961	18.39
72)	T	1,1,2,2-Tetrac...	2.098	1.995	2.360	1.561	1.808	2.054	1.907	1.769	1.944	12.43
73)	S	Bromofluoroben...	2.066	1.799	1.810	1.627	2.079	2.059	2.046	2.008	1.937	8.72
74)	T	Cumene	7.027	5.893	6.754	4.739	5.339	5.981	5.504	4.997	5.779	13.91
75)	T	alpha-Pinene	2.536	2.267	2.580	1.845	2.087	2.892	2.731	2.555	2.437	14.21
76)	T	n-Propylbenzene	8.448	6.777	8.154	5.919	6.454	7.145	6.541	5.892	6.916	13.77
77)	T	3-Ethyltoluene									0.000	-1.00
78)	T	4-Ethyltoluene	6.549	5.435	5.978	4.713	5.196	5.719	5.285	4.856	5.466	11.03
79)	T	1,3,5-Trimethy...	5.890	4.913	5.628	4.253	4.559	5.116	4.720	4.211	4.911	12.41
80)	T	alpha-Methylst...									0.000	-1.00
81)	T	2-Ethyltoluene									0.000	-1.00
82)	T	1,2,4-Trimethy...	5.951	4.886	5.645	4.292	4.679	5.289	4.878	4.282	4.988	12.10
83)	T	n-Decane									0.000	-1.00
84)	T	Benzyl Chloride			1.571	1.473	2.487	3.894	3.797	3.381	2.767	39.23
85)	T	1,3-Dichlorobe...	3.382	2.650	3.157	2.436	2.728	3.165	2.956	2.643	2.890	11.28
86)	T	1,4-Dichlorobe...	3.500	2.676	3.105	2.446	2.682	3.122	2.915	2.625	2.884	11.93
87)	T	sec-Butylbenzene	7.956	6.643	7.599	5.826	6.017	6.647	6.073	5.313	6.509	13.80
88)	T	4-Isopropyltol...	7.050	5.496	6.414	5.055	5.359	5.893	5.383	4.735	5.673	13.27
89)	T	1,2,3-Trimethy...									0.000	-1.00
90)	T	1,2-Dichlorobe...	3.468	2.755	3.161	2.501	2.711	3.063	2.876	2.586	2.890	11.19
91)	T	d-Limonene	1.646	1.559	1.913	1.582	1.563	1.841	1.727	1.535	1.671	8.53
92)	T	1,2-Dibromo-3-...	1.111	0.874	1.092	0.938	1.090	1.291	1.211	1.083	1.086	12.31
93)	T	n-Undecane									0.000	-1.00
94)	T	1,2,4-Trichlor...	2.425	1.786	2.263	1.771	2.199	2.727	2.490	2.071	2.217	15.13
95)	T	Naphthalene	4.091	3.006	4.240	3.590	4.239	5.803	5.415	4.842	4.403	20.92
96)	T	n-Dodecane									0.000	-1.00
97)	T	Hexachlorobuta...	2.611	1.874	1.918	1.478	1.727	1.903	1.732	1.462	1.838	19.55
98)	T	Cyclohexanone									0.000	-1.00
99)	T	tert-Butylbenzene	5.826	4.645	5.352	4.112	4.462	4.957	4.565	4.048	4.746	12.82
100)	T	n-Butylbenzene	5.961	5.104	5.935	5.005	4.807	5.447	4.986	4.334	5.197	10.74
101)	T	1,1,1,2-Tetrac...	1.407	1.165	1.455	1.189	1.228	1.429	1.350	1.247	1.309	8.79

(#) = Out of Range

R9022723.M Wed Mar 01 09:13:08 2023

Primary Source Standards Concentrations (Working & Initial Calibration)

3/1/23

1ng/L Std. ID: | 40ng/L Std. ID:
4ng/L Std. ID: S35-02222302 | 200ng/L Std. ID: S35-02162303
20ng/L Std. ID: S35-02222301 | 1000ng/L Std. ID:

Dilution Factors:		1	5	25	50	250	1000	Working STD Conc.(ng/L):	4	4	20	20	20	200	200	200
	Source Std.		Primary Working Standards					Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
Propene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Dichlorodifluoromethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Chloromethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Freon-114	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Vinyl Chloride	1.01	1010	202	40.4	20.2	4.04	1.01		0.101	0.202	0.505	1.01	5.05	25.25	50.5	101
1,3-Butadiene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Bromomethane	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
Chloroethane	1.03	1030	206	41.2	20.6	4.12	1.03		0.103	0.206	0.515	1.03	5.15	25.75	51.5	103
Ethanol	3.45	3450	690	138.0	69.0	13.80	3.45		0.345	0.690	1.725	3.45	17.25	86.25	172.5	345
Acetonitrile	0.91	910	182	36.4	18.2	3.64	0.91		0.091	0.182	0.455	0.91	4.55	22.75	45.5	91
Acrolein	1.93	1930	386	77.2	38.6	7.72	1.93		0.193	0.386	0.965	1.93	9.65	48.25	96.5	193
Acetone	5.27	5270	1054	210.8	105.4	21.08	5.27		0.527	1.054	2.635	5.27	26.35	131.75	263.5	527
Trichlorofluoromethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Isopropanol	2.05	2050	410	82.0	41.0	8.20	2.05		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
Acrylonitrile	2.05	2050	410	82.0	41.0	8.20	2.05		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
1,1-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
tert-Butanol	2.11	2110	422	84.4	42.2	8.44	2.11		0.211	0.422	1.055	2.11	10.55	52.75	105.5	211
Methylene Chloride	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Allyl Chloride	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Trichlorotrifluoroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Carbon Disulfide	2.13	2130	426	85.2	42.6	8.52	2.13		0.213	0.426	1.065	2.13	10.65	53.25	106.5	213
trans-1,2-Dichloroethene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,1-Dichloroethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Methyl tert-Butyl Ether	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Vinyl Acetate	2.80	2800	560	112.0	56.0	11.20	2.80		0.280	0.560	1.400	2.80	14.00	70.00	140.0	280
2-Butanone	2.09	2090	418	83.6	41.8	8.36	2.09		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
cis-1,2-Dichloroethene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Diisopropyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
Ethyl Acetate	4.22	4220	844	168.8	84.4	16.88	4.22		0.422	0.844	2.110	4.22	21.10	105.50	211.0	422
n-Hexane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Chloroform	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Tetrahydrofuran	2.04	2040	408	81.6	40.8	8.16	2.04		0.204	0.408	1.020	2.04	10.20	51.00	102.0	204
Ethyl tert-Butyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
1,2-Dichloroethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,1,1-Trichloroethane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Benzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Carbon Tetrachloride	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
Cyclohexane	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
tert-Amyl Methyl Ether	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
1,2-Dichloropropane	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Bromodichloromethane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Trichloroethene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
1,4-Dioxane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Isooctane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
Methyl Methacrylate	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
n-Heptane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID: | **40ng/L Std. ID:**
4ng/L Std. ID: S35-02222302 | **200ng/L Std. ID:** S35-02162303
20ng/L Std. ID: S35-02222301 | **1000ng/L Std. ID:**

Dilution Factors:		1	5	25	50	250	1000	Working STD Conc.(ng/L):	4	4	20	20	20	200	200	200
	Source Std.		Primary Working Standards					Injection (L):	0.025	0.050	0.0250	0.050	0.25	0.125	0.25	0.50
Compounds	mg/m³	1000ng/L	200ng/L	40ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.1ng	0.2ng	0.5ng	1ng	5ng	25ng	50ng	100ng
cis-1,3-Dichloropropene	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
4-Methyl-2-pentanone	2.15	2150	430	86.0	43.0	8.60	2.15		0.215	0.430	1.075	2.15	10.75	53.75	107.5	215
trans-1,3-Dichloropropene	1.02	1020	204	40.8	20.4	4.08	1.02		0.102	0.204	0.510	1.02	5.10	25.50	51.0	102
1,1,2-Trichloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Toluene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
2-Hexanone	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
Dibromochloromethane	1.08	1080	216	43.2	21.6	4.32	1.08		0.108	0.216	0.540	1.08	5.40	27.00	54.0	108
1,2-Dibromoethane	1.04	1040	208	41.6	20.8	4.16	1.04		0.104	0.208	0.520	1.04	5.20	26.00	52.0	104
n-Butyl Acetate	2.05	2050	410	82.0	41.0	8.20	2.05		0.205	0.410	1.025	2.05	10.25	51.25	102.5	205
n-Octane	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Tetrachloroethene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Chlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Ethylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
m-&p-Xylene	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
Bromoform	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
Styrene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
o-Xylene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
n-Nonane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,1,2,2-Tetrachloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
Cumene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
alpha-Pinene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
n-Propylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
4-Ethyltoluene	1.09	1090	218	43.6	21.8	4.36	1.09		0.109	0.218	0.545	1.09	5.45	27.25	54.5	109
1,3,5-Trimethylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,2,4-Trimethylbenzene	1.05	1050	210	42.0	21.0	4.20	1.05		0.105	0.210	0.525	1.05	5.25	26.25	52.5	105
Benzyl Chloride	2.12	2120	424	84.8	42.4	8.48	2.12		0.212	0.424	1.060	2.12	10.60	53.00	106.0	212
1,3-Dichlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,4-Dichlorobenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
sec-Butylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
p-Isopropyltoluene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
1,2-Dichlorobenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
d-Limonene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
1,2-Dibromo-3-chloropropane	2.10	2100	420	84.0	42.0	8.40	2.10		0.210	0.420	1.050	2.10	10.50	52.50	105.0	210
1,2,4-Trichlorobenzene	2.09	2090	418	83.6	41.8	8.36	2.09		0.209	0.418	1.045	2.09	10.45	52.25	104.5	209
Naphthalene	1.10	1100	220	44.0	22.0	4.40	1.10		0.110	0.220	0.550	1.10	5.50	27.50	55.0	110
Hexachloro-1,3-butadiene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
tert-Butylbenzene	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106
n-Butylbenzene	1.07	1070	214	42.8	21.4	4.28	1.07		0.107	0.214	0.535	1.07	5.35	26.75	53.5	107
1,1,1,2-Tetrachloroethane	1.06	1060	212	42.4	21.2	4.24	1.06		0.106	0.212	0.530	1.06	5.30	26.50	53.0	106

Calibration Status Report MS09

01177870

Method : I:\MS09\METHODS\R9022723.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration

3/1/23

#	ID	Conc	ISTD Conc	Path\File
1	0.1	0	13	I:\MS09\DATA\2023_02\27\02272310.D
2	0.2	0	13	I:\MS09\DATA\2023_02\27\02272311.D
3	0.5	1	13	I:\MS09\DATA\2023_02\27\02272312.D
4	1.0	1	13	I:\MS09\DATA\2023_02\27\02272313.D
5	5.0	5	13	I:\MS09\DATA\2023_02\27\02272314.D
6	25	26	13	I:\MS09\DATA\2023_02\27\02272315.D
7	50	53	13	I:\MS09\DATA\2023_02\27\02272316.D
8	100	105	13	I:\MS09\DATA\2023_02\27\02272317.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Feb 28 08:28 2023	Feb 27 17:15 2023	27 Feb 2023 14:00
2	0.2	Feb 28 08:29 2023	Feb 27 17:14 2023	27 Feb 2023 14:32
3	0.5	Feb 28 08:29 2023	Feb 27 17:12 2023	27 Feb 2023 15:04
4	1.0	Feb 28 08:29 2023	Feb 27 17:11 2023	27 Feb 2023 15:36
5	5.0	Feb 28 08:29 2023	Feb 27 17:09 2023	27 Feb 2023 16:07
6	25	Feb 28 08:29 2023	Feb 27 17:08 2023	27 Feb 2023 16:39
7	50	Feb 28 08:30 2023	Feb 28 08:25 2023	27 Feb 2023 17:11
8	100	Feb 28 08:30 2023	Feb 28 08:27 2023	27 Feb 2023 17:43

R9022723.M Wed Mar 01 09:14:41 2023

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272310.D Vial: 5
Acq On : 27 Feb 2023 14:00 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222302 (3/18)

Quant Time: Feb 27 17:15:29 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

2/27/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	145483	12.500	ng		-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	629040	12.500	ng		-0.03
56) Chlorobenzene-d5 (IS3)	14.80	54	143296	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	305780	12.401	ng		-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.20%				
57) Toluene-d8 (SS2)	12.39	98	696036	12.631	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 101.04%				
73) Bromofluorobenzene (SS3)	16.79	174	296117	12.543	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.32%				
Target Compounds							Qvalue
2) Propene	3.30	42	2330	0.121	ng		97
3) Dichlorodifluoromethan...	3.36	85	4432	0.132	ng		97
4) Chloromethane	3.50	50	2741	0.126	ng		94
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	1933	0.122	ng		99
6) Vinyl Chloride	3.69	62	1808	0.108	ng		95
7) 1,3-Butadiene	3.81	54	1097	0.085	ng	#	80
8) Bromomethane	4.01	94	1284	0.119	ng		98
9) Chloroethane	4.15	64	943	0.106	ng	#	43
10) Ethanol	4.28	45	5232	0.394	ng		95
11) Acetonitrile	4.45	41	3456	0.101	ng		80
12) Acrolein	4.53	56	1721	0.183	ng		91
13) Acetone	4.62	58	6773	0.694	ng		92
14) Trichlorofluoromethane	4.74	101	4181	0.126	ng		95
15) 2-Propanol (Isopropanol)	4.83	45	12731	0.307	ng		90
16) Acrylonitrile	4.99	53	3551	0.181	ng		96
17) 1,1-Dichloroethene	5.25	96	1622	0.122	ng		96
18) 2-Methyl-2-Propanol (t...	5.38	59	8876	0.218	ng		93
19) Methylene Chloride	5.34	84	1729	0.130	ng		100
20) 3-Chloro-1-propene (Al...	5.44	41	2907	0.111	ng		84
21) Trichlorotrifluoroethane	5.57	151	1934	0.126	ng		92
22) Carbon Disulfide	5.60	76	12353	0.253	ng		94
23) trans-1,2-Dichloroethene	6.12	61	2454	0.109	ng		99
24) 1,1-Dichloroethane	6.29	63	3166	0.120	ng		96
25) Methyl tert-Butyl Ether	6.37	73	4938	0.111	ng		99
26) Vinyl Acetate	6.43	86	381	0.160	ng	#	1
27) 2-Butanone (MEK)	6.66	72	1356	0.158	ng	#	6
28) cis-1,2-Dichloroethene	7.05	61	2583	0.118	ng		99
29) Diisopropyl Ether	7.28	87	2757	0.250	ng	#	92
30) Ethyl Acetate	7.27	61	2395	0.384	ng		94
31) n-Hexane	7.27	57	3007	0.125	ng	#	91
32) Chloroform	7.32	83	3458	0.122	ng		95
34) Tetrahydrofuran (THF)	7.76	72	1680	0.205	ng	#	90
35) Ethyl tert-Butyl Ether	7.80	87	3355	0.205	ng		95
36) 1,2-Dichloroethane	8.07	62	3079	0.122	ng		94
38) 1,1,1-Trichloroethane	8.36	97	3267	0.114	ng		99
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.87	78	6666	0.130	ng		96
42) Carbon Tetrachloride	9.03	117	2598	0.102	ng		100
43) Cyclohexane	9.18	84	4898	0.256	ng		94
44) tert-Amyl Methyl Ether	9.57	73	8006	0.206	ng		97
45) 1,2-Dichloropropane	9.82	63	1621	0.115	ng		96
46) Bromodichloromethane	10.04	83	2545	0.110	ng		97
47) Trichloroethene	10.11	130	1985	0.125	ng		99
48) 1,4-Dioxane	10.12	88	1088	0.097	ng	#	72
49) 2,2,4-Trimethylpentane...	10.20	57	7758	0.130	ng		98
50) Methyl Methacrylate	10.38	100	795	0.140	ng	#	57

Data File : I:\MS09\DATA\2023 02\27\02272310.D Vial: 5
Acq On : 27 Feb 2023 14:00 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222302 (3/18)

Quant Time: Feb 27 17:15:29 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

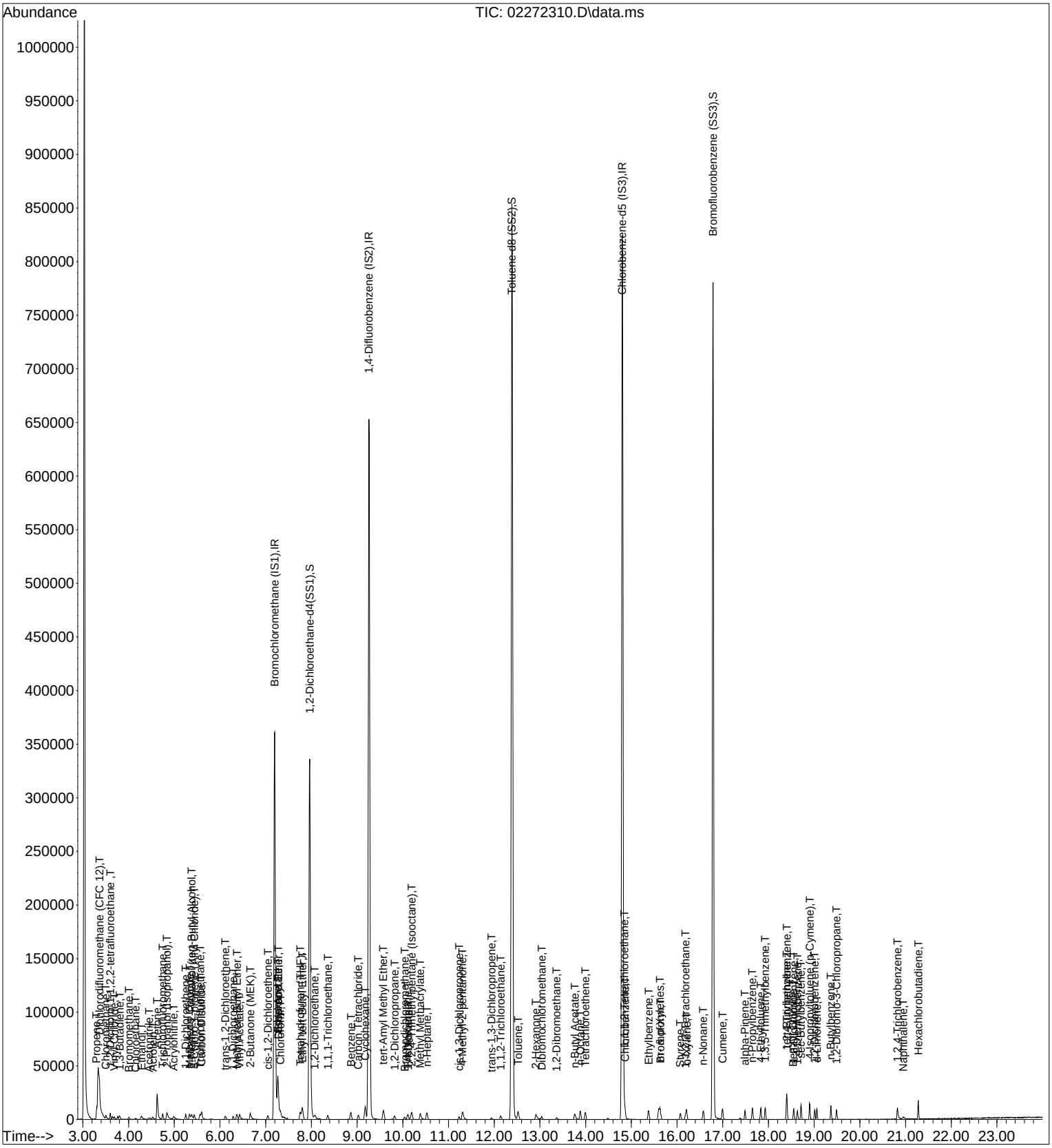
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	10.53	71	1420	0.112 ng		94
52) cis-1,3-Dichloropropene	11.23	75	2086	0.089 ng		96
53) 4-Methyl-2-pentanone	11.30	58	2493	0.181 ng		85
54) trans-1,3-Dichloropropene	11.94	75	1322	0.055 ng		74
55) 1,1,2-Trichloroethane	12.14	97	1687	0.120 ng		91
58) Toluene	12.52	91	7347	0.130 ng		99
59) 2-Hexanone	12.91	43	7257	0.183 ng		90
60) Dibromochloromethane	13.04	129	2093	0.106 ng		96
61) 1,2-Dibromoethane	13.36	107	1779	0.103 ng		96
62) n-Butyl Acetate	13.77	43	7321	0.164 ng		93
63) n-Octane	13.89	57	1404	0.112 ng		98
64) Tetrachloroethene	13.99	166	2672	0.128 ng		100
65) Chlorobenzene	14.86	112	5086	0.133 ng		99
66) Ethylbenzene	15.38	91	8418	0.123 ng		100
67) m- & p-Xylenes	15.62	91	13904	0.245 ng		99
68) Bromoform	15.63	173	2065	0.103 ng		87
69) Styrene	16.07	104	3630	0.093 ng		98
70) o-Xylene	16.21	91	6793	0.122 ng		100
71) n-Nonane	16.57	43	4158	0.122 ng		98
72) 1,1,2,2-Tetrachloroethane	16.19	83	2549	0.108 ng		98
74) Cumene	17.00	105	8619	0.126 ng		99
75) alpha-Pinene	17.49	93	3169	0.096 ng		88
76) n-Propylbenzene	17.64	91	10362	0.127 ng		96
77) 3-Ethyltoluene	17.00	105	8619	No Calib		
78) 4-Ethyltoluene	17.83	105	8183	0.125 ng		96
79) 1,3,5-Trimethylbenzene	17.93	105	7157	0.122 ng		96
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.00	105	8619	No Calib		
82) 1,2,4-Trimethylbenzene	18.41	105	7163	0.118 ng		100
83) n-Decane	0.00	58	0	N.D.		
84) Benzyl Chloride	18.54	91	1964	0.044 ng		90
85) 1,3-Dichlorobenzene	18.55	146	4110	0.113 ng		96
86) 1,4-Dichlorobenzene	18.63	146	4253	0.119 ng		96
87) sec-Butylbenzene	18.71	105	9668	0.127 ng		97
88) 4-Isopropyltoluene (p-...	18.91	119	8567	0.127 ng		98
89) 1,2,3-Trimethylbenzene	17.00	105	8619	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	4254	0.121 ng		96
91) d-Limonene	19.06	68	2019	0.096 ng		96
92) 1,2-Dibromo-3-Chloropr...	19.49	157	2674	0.181 ng	#	85
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.82	180	5811	0.186 ng		97
95) Naphthalene	20.95	128	5159	0.078 ng		77
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.28	225	3173	0.145 ng		97
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.40	119	7079	0.125 ng		100
100) n-Butylbenzene	19.37	91	7312	0.117 ng		91
101) 1,1,1,2-Tetrachloroethane	14.85	131	1710	0.104 ng		94

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272310.D Vial: 5
Acq On : 27 Feb 2023 14:00 Operator: SC
Sample : 0.1ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222302 (3/18)

Quant Time: Feb 27 17:15:29 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272311.D Vial: 5
Acq On : 27 Feb 2023 14:32 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222302 (3/18)

Quant Time: Feb 27 17:14:13 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

2/27/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	153699	12.500	ng		-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	691223	12.500	ng		-0.03
56) Chlorobenzene-d5 (IS3)	14.80	54	165380	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	333657	12.808	ng		-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.48%				
57) Toluene-d8 (SS2)	12.39	98	777193	12.221	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.76%				
73) Bromofluorobenzene (SS3)	16.79	174	297532	10.920	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 87.36%				
Target Compounds							Qvalue
2) Propene	3.30	42	4215	0.207	ng		94
3) Dichlorodifluoromethan...	3.36	85	7775	0.219	ng		97
4) Chloromethane	3.51	50	5034m	0.220	ng		
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	3518	0.211	ng		97
6) Vinyl Chloride	3.68	62	3556	0.201	ng		97
7) 1,3-Butadiene	3.80	54	2050	0.150	ng	#	85
8) Bromomethane	4.01	94	2417	0.212	ng		91
9) Chloroethane	4.15	64	1968	0.209	ng		93
10) Ethanol	4.27	45	10397	0.741	ng		94
11) Acetonitrile	4.44	41	7128	0.197	ng	#	60
12) Acrolein	4.52	56	3525	0.355	ng		98
13) Acetone	4.62	58	12612	1.223	ng		92
14) Trichlorofluoromethane	4.74	101	7613	0.218	ng		98
15) 2-Propanol (Isopropanol)	4.83	45	22098	0.504	ng		82
16) Acrylonitrile	4.98	53	8774	0.423	ng		86
17) 1,1-Dichloroethene	5.25	96	3188	0.226	ng		95
18) 2-Methyl-2-Propanol (t...	5.38	59	18156m	0.422	ng		
19) Methylene Chloride	5.33	84	3273	0.234	ng		85
20) 3-Chloro-1-propene (Al...	5.44	41	6015	0.217	ng		95
21) Trichlorotrifluoroethane	5.56	151	3489	0.216	ng		90
22) Carbon Disulfide	5.60	76	23891	0.464	ng		96
23) trans-1,2-Dichloroethene	6.12	61	5411	0.227	ng		96
24) 1,1-Dichloroethane	6.29	63	6766	0.242	ng		98
25) Methyl tert-Butyl Ether	6.37	73	9800	0.209	ng		99
26) Vinyl Acetate	6.42	86	1009	0.401	ng	#	72
27) 2-Butanone (MEK)	6.66	72	3782	0.416	ng	#	78
28) cis-1,2-Dichloroethene	7.04	61	5595	0.242	ng		92
29) Diisopropyl Ether	7.26	87	5521	0.474	ng	#	82
30) Ethyl Acetate	7.27	61	5805	0.881	ng		94
31) n-Hexane	7.27	57	6457	0.254	ng		98
32) Chloroform	7.33	83	6942	0.232	ng		98
34) Tetrahydrofuran (THF)	7.75	72	3628	0.419	ng	#	79
35) Ethyl tert-Butyl Ether	7.80	87	7168	0.414	ng		94
36) 1,2-Dichloroethane	8.08	62	6012	0.226	ng		99
38) 1,1,1-Trichloroethane	8.36	97	6521	0.206	ng		96
39) Isopropyl Acetate	9.26	61	23974	No Calib		#	
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.87	78	13628	0.242	ng		98
42) Carbon Tetrachloride	9.03	117	5311	0.189	ng		97
43) Cyclohexane	9.18	84	9490	0.452	ng		95
44) tert-Amyl Methyl Ether	9.57	73	16169	0.379	ng		95
45) 1,2-Dichloropropane	9.83	63	3500	0.226	ng		100
46) Bromodichloromethane	10.04	83	5007	0.196	ng		100
47) Trichloroethene	10.11	130	3693	0.211	ng		100
48) 1,4-Dioxane	10.13	88	2062	0.167	ng		91
49) 2,2,4-Trimethylpentane...	10.20	57	16358	0.249	ng		99
50) Methyl Methacrylate	10.38	100	2058	0.331	ng	#	83

Data File : I:\MS09\DATA\2023 02\27\02272311.D Vial: 5
Acq On : 27 Feb 2023 14:32 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222302 (3/18)

Quant Time: Feb 27 17:14:13 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

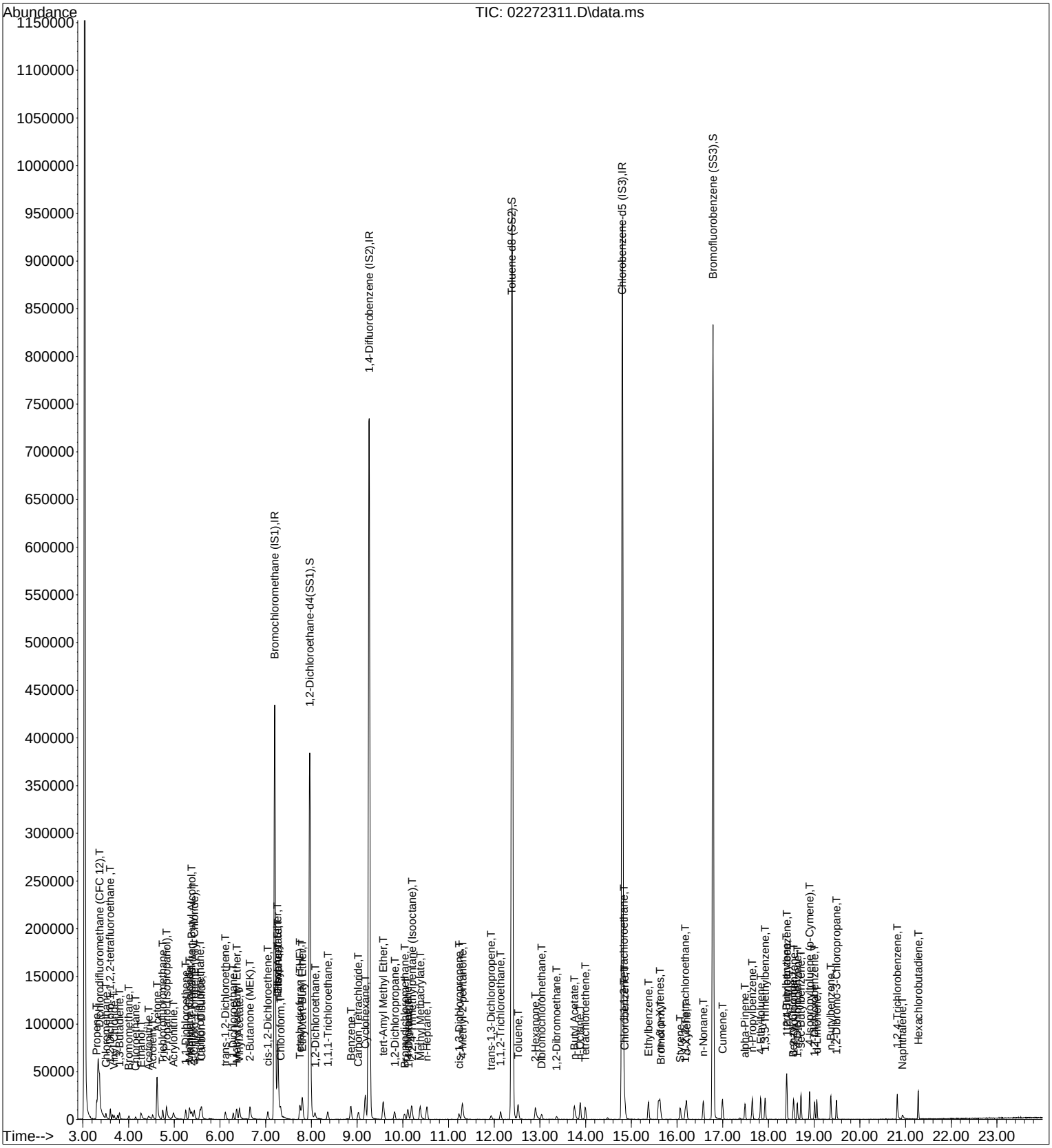
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.52	71	3033	0.218	ng		93
52) cis-1,3-Dichloropropene	11.23	75	4446	0.173	ng		91
53) 4-Methyl-2-pentanone	11.31	58	6078	0.402	ng		90
54) trans-1,3-Dichloropropene	11.93	75	3382	0.129	ng		95
55) 1,1,2-Trichloroethane	12.14	97	3267	0.211	ng		94
58) Toluene	12.52	91	14676	0.224	ng		95
59) 2-Hexanone	12.90	43	17237	0.376	ng		88
60) Dibromochloromethane	13.03	129	4019	0.177	ng		98
61) 1,2-Dibromoethane	13.36	107	3514	0.177	ng		98
62) n-Butyl Acetate	13.76	43	17690	0.343	ng		99
63) n-Octane	13.87	57	3398	0.236	ng		89
64) Tetrachloroethene	13.99	166	4634	0.193	ng		97
65) Chlorobenzene	14.86	112	9626	0.218	ng		99
66) Ethylbenzene	15.37	91	16303	0.207	ng		98
67) m- & p-Xylenes	15.62	91	26726	0.408	ng		100
68) Bromoform	15.65	173	3358	0.145	ng		100
69) Styrene	16.07	104	7671	0.170	ng		97
70) o-Xylene	16.21	91	13260	0.206	ng		98
71) n-Nonane	16.58	43	9192	0.234	ng		97
72) 1,1,2,2-Tetrachloroethane	16.18	83	5595	0.206	ng		100
74) Cumene	17.00	105	16686	0.211	ng		97
75) alpha-Pinene	17.49	93	6539	0.171	ng		93
76) n-Propylbenzene	17.64	91	19187	0.203	ng		99
77) 3-Ethyltoluene	17.00	105	16686	No Calib			
78) 4-Ethyltoluene	17.83	105	15675	0.207	ng		96
79) 1,3,5-Trimethylbenzene	17.93	105	13781	0.204	ng		96
80) alpha-Methylstyrene	0.00	118	0	N.D.			
81) 2-Ethyltoluene	17.00	105	16686	No Calib			
82) 1,2,4-Trimethylbenzene	18.41	105	13576	0.194	ng		99
83) n-Decane	0.00	58	0	N.D.			
84) Benzyl Chloride	18.54	91	4499	0.087	ng		93
85) 1,3-Dichlorobenzene	18.55	146	7434	0.178	ng		98
86) 1,4-Dichlorobenzene	18.63	146	7505	0.182	ng		97
87) sec-Butylbenzene	18.71	105	18632	0.212	ng		97
88) 4-Isopropyltoluene (p-...	18.90	119	15415	0.198	ng		99
89) 1,2,3-Trimethylbenzene	17.00	105	16686	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	7801	0.193	ng		96
91) d-Limonene	19.06	68	4413	0.181	ng		95
92) 1,2-Dibromo-3-Chloropr...	19.49	157	4857	0.284	ng	#	80
93) n-Undecane	0.00	58	0	N.D.			
94) 1,2,4-Trichlorobenzene	20.82	180	9879	0.274	ng		98
95) Naphthalene	20.93	128	8749	0.114	ng		88
96) n-Dodecane	0.00	58	0	N.D.			
97) Hexachlorobutadiene	21.28	225	5255	0.209	ng		97
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.39	119	13028	0.199	ng		98
100) n-Butylbenzene	19.37	91	14451	0.201	ng		96
101) 1,1,1,2-Tetrachloroethane	14.84	131	3269	0.173	ng		97

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

Quantitation Report (QT Reviewed)

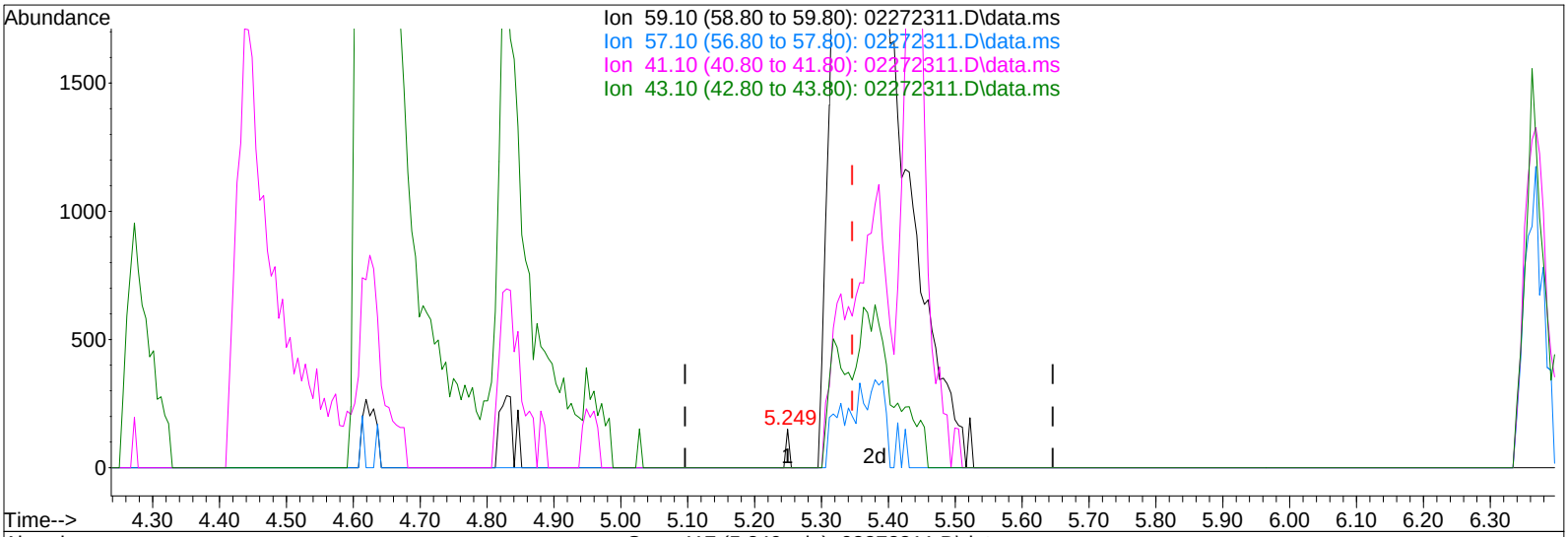
Data File : I:\MS09\DATA\2023 02\27\02272311.D Vial: 5
Acq On : 27 Feb 2023 14:32 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222302 (3/18)

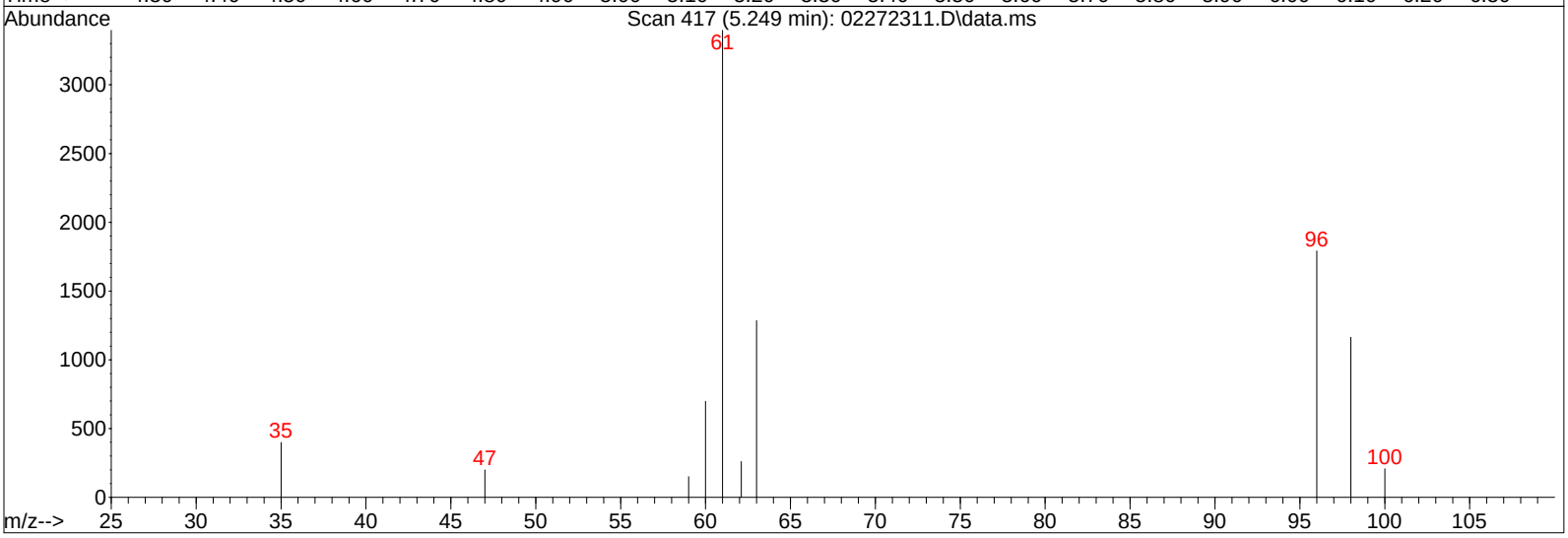
Quant Time: Feb 27 17:14:13 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data File : I:\MS09\DATA\2023 02\27\02272311.D Vial: 5
Acq On : 27 Feb 2023 14:32 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222302 (3/18)

Quant Time: Feb 27 17:13:23 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02272311.D\data.ms

(18) 2-Methyl-2-Propanol (tert-Butyl Alcohol (T)

5.249min (-0.097) 0.00ng

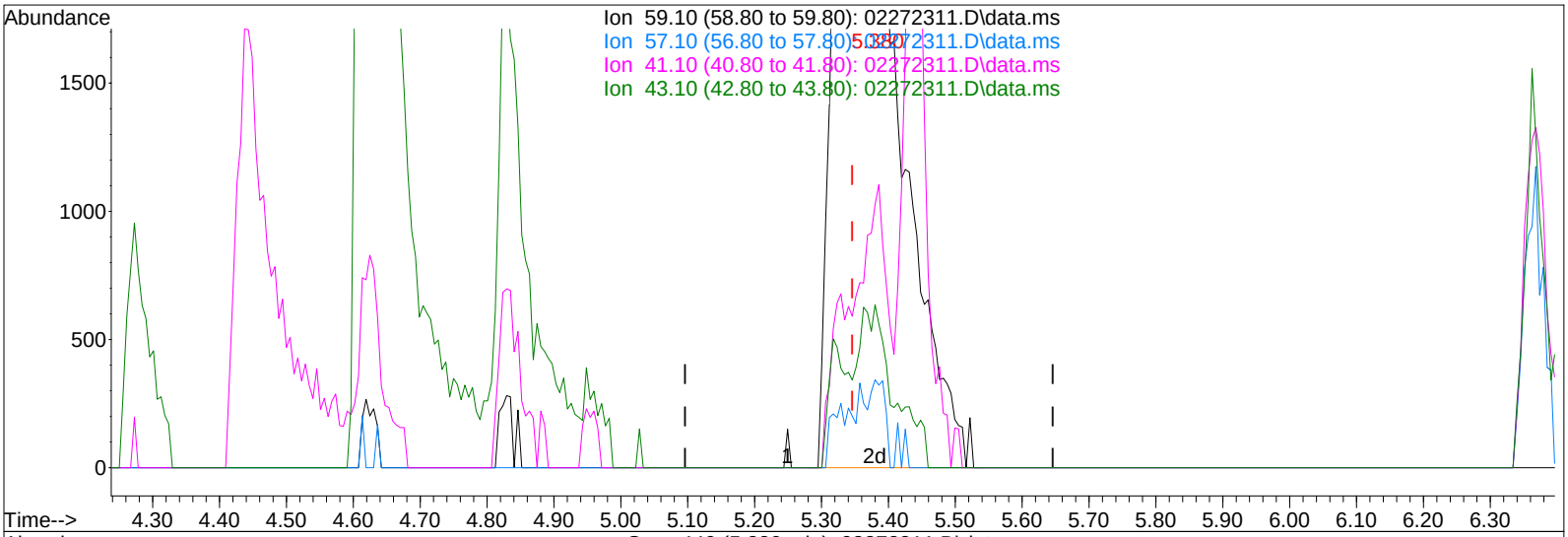
response 51

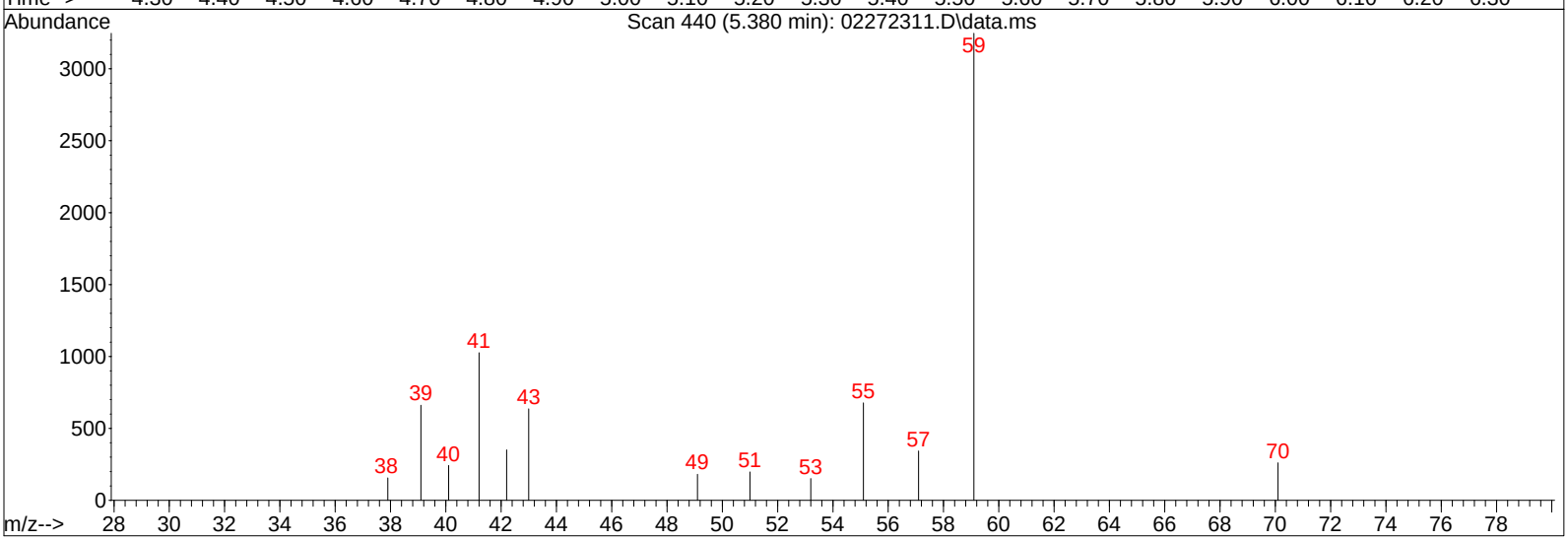
Ion	Exp%	Act%
59.10	100	100
57.10	10.50	0.00
41.10	24.60	0.00#
43.10	18.20	0.00

01177878

Data File : I:\MS09\DATA\2023 02\27\02272311.D Vial: 5
Acq On : 27 Feb 2023 14:32 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222302 (3/18)

Quant Time: Feb 27 17:13:23 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02272311.D\data.ms

(18) 2-Methyl-2-Propanol (tert-Butyl Alcohol (T)

5.380min (+0.034) 0.42ng m

response 18156

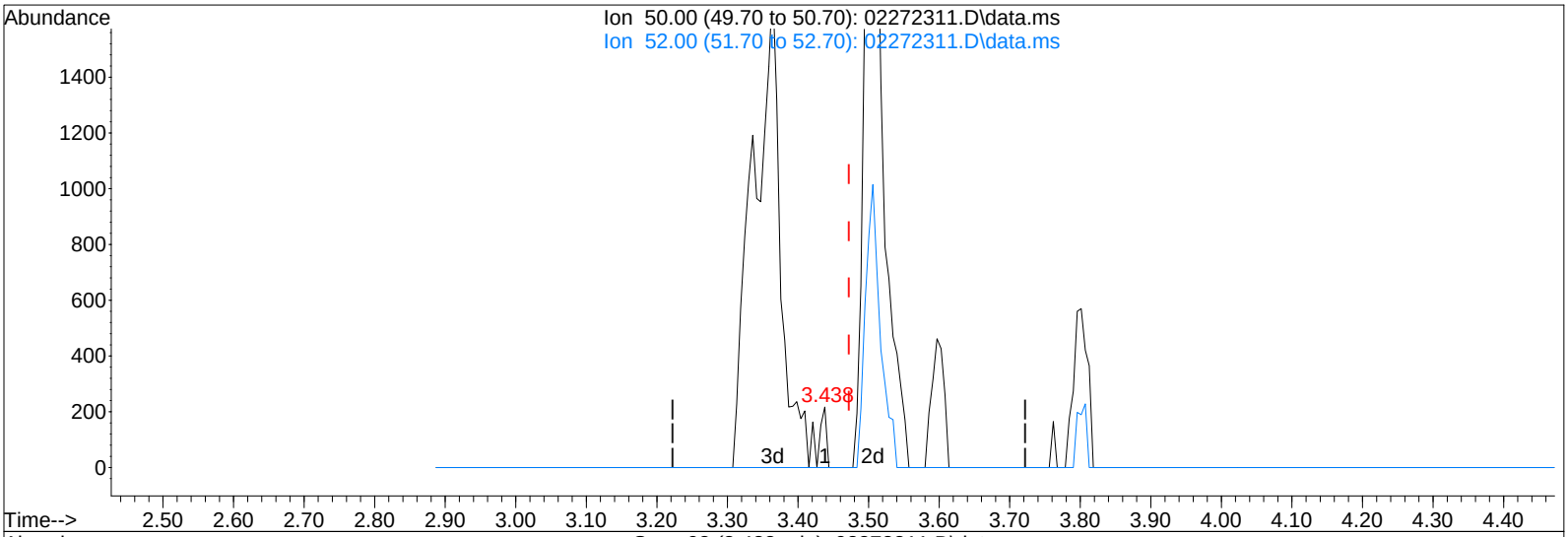
Ion	Exp%	Act%
59.10	100	100
57.10	10.50	0.00
41.10	24.60	0.00#
43.10	18.20	0.00

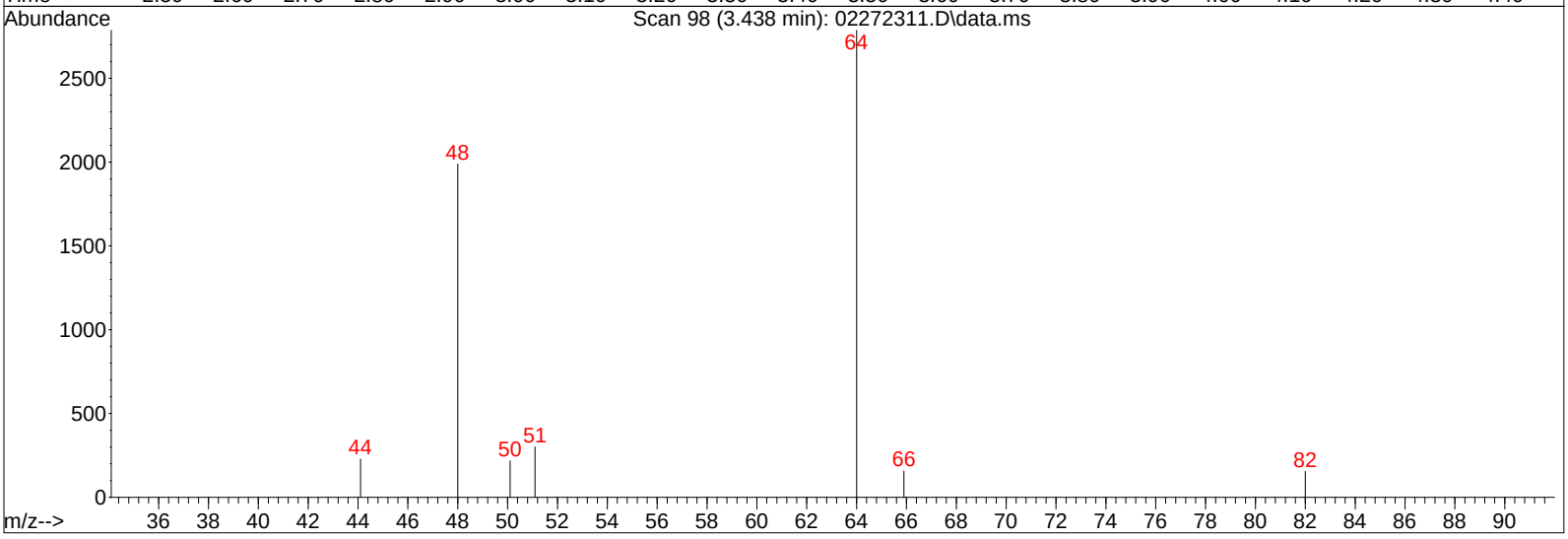
MP

2/27/23

Data File : I:\MS09\DATA\2023 02\27\02272311.D Vial: 5
Acq On : 27 Feb 2023 14:32 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222302 (3/18)

Quant Time: Feb 27 17:13:23 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02272311.D\data.ms

(4) Chloromethane (T)

3.438min (-0.034) 0.01ng

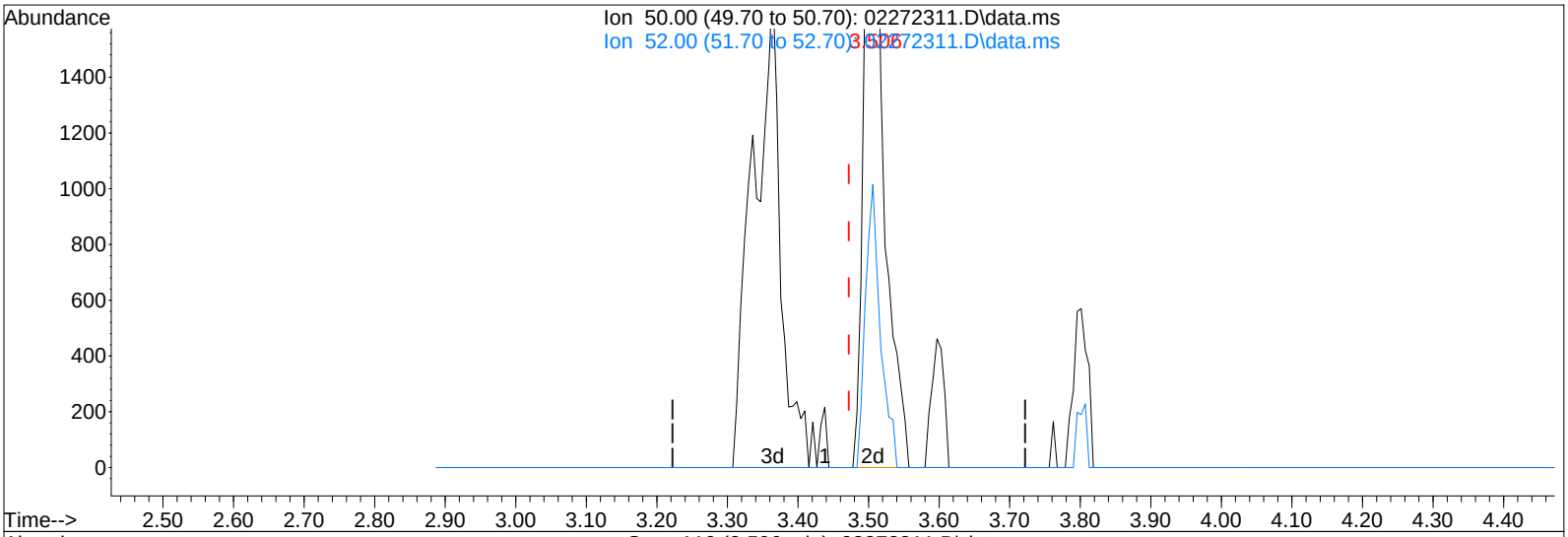
response 126

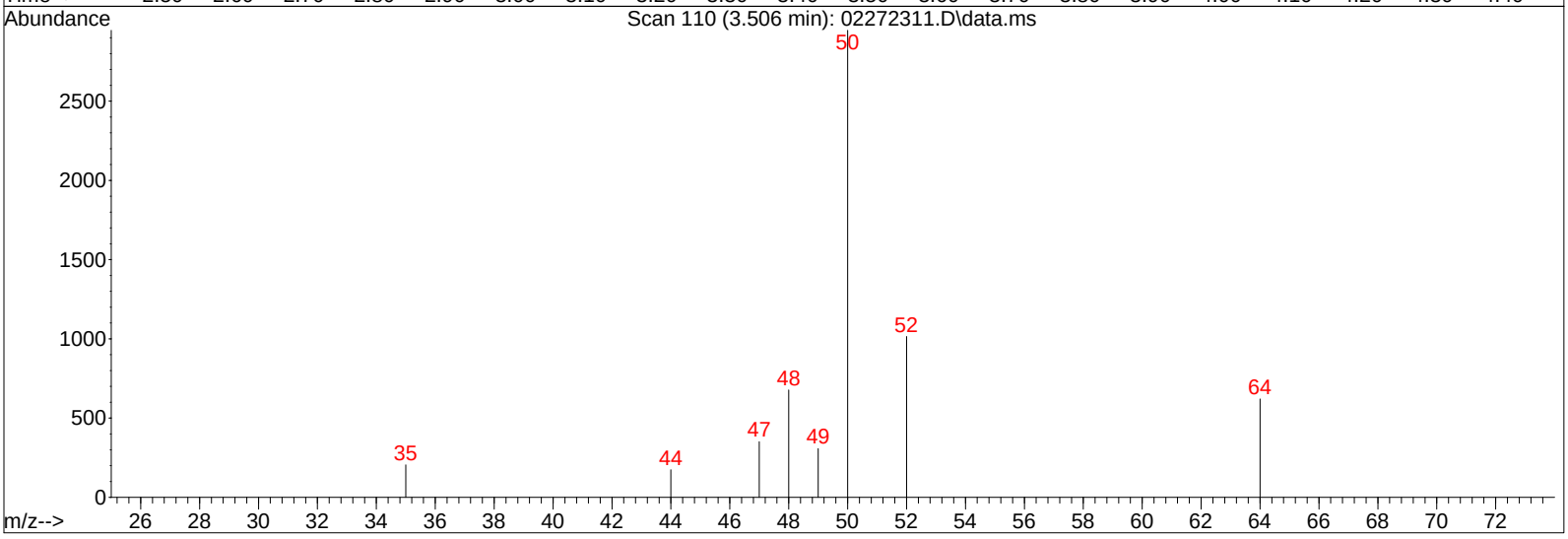
Ion	Exp%	Act%
50.00	100	100
52.00	32.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

01177880

Data File : I:\MS09\DATA\2023 02\27\02272311.D Vial: 5
Acq On : 27 Feb 2023 14:32 Operator: SC
Sample : 0.2ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222302 (3/18)

Quant Time: Feb 27 17:13:23 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M





TIC: 02272311.D\data.ms

(4) Chloromethane (T)

3.506min (+0.034) 0.22ng m

response 5034

Ion	Exp%	Act%
50.00	100	100
52.00	32.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

MP

2/27/23

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272312.D Vial: 6
Acq On : 27 Feb 2023 15:04 Operator: SC
Sample : 0.5ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222301 (3/18)

2/27/23

Quant Time: Feb 27 17:12:10 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	146340	12.500	ng		-0.05
37) 1,4-Difluorobenzene (IS2)	9.26	114	686493	12.500	ng		-0.03
56) Chlorobenzene-d5 (IS3)	14.81	54	163448	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.96	65	329297	13.277	ng		-0.04
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.24%				
57) Toluene-d8 (SS2)	12.39	98	773447	12.305	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.48%				
73) Bromofluorobenzene (SS3)	16.79	174	295881	10.988	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 87.92%				
Target Compounds							Qvalue
2) Propene	3.29	42	9881	0.509	ng		94
3) Dichlorodifluoromethan...	3.36	85	21060	0.622	ng		100
4) Chloromethane	3.50	50	13601	0.623	ng		97
5) 1,2-Dichloro-1,1,2,2-t...	3.60	135	9749	0.613	ng		99
6) Vinyl Chloride	3.68	62	10217	0.606	ng		99
7) 1,3-Butadiene	3.80	54	7211	0.555	ng		96
8) Bromomethane	4.01	94	6929	0.637	ng		97
9) Chloroethane	4.14	64	5417	0.603	ng		100
10) Ethanol	4.27	45	28227	2.112	ng		98
11) Acetonitrile	4.43	41	18159	0.528	ng		93
12) Acrolein	4.52	56	10537	1.114	ng		100
13) Acetone	4.61	58	32306	3.289	ng		97
14) Trichlorofluoromethane	4.74	101	21047	0.632	ng		96
15) 2-Propanol (Isopropanol)	4.82	45	57444	1.377	ng		86
16) Acrylonitrile	4.98	53	24973	1.266	ng		96
17) 1,1-Dichloroethene	5.24	96	8637	0.644	ng		97
18) 2-Methyl-2-Propanol (t...	5.29	59	47853	1.167	ng		99
19) Methylene Chloride	5.33	84	8473	0.636	ng		93
20) 3-Chloro-1-propene (Al...	5.44	41	16338	0.620	ng		91
21) Trichlorotrifluoroethane	5.56	151	9831	0.638	ng		99
22) Carbon Disulfide	5.58	76	61982	1.263	ng		97
23) trans-1,2-Dichloroethene	6.11	61	13666	0.601	ng		99
24) 1,1-Dichloroethane	6.29	63	17185	0.646	ng		100
25) Methyl tert-Butyl Ether	6.35	73	26181	0.587	ng		99
26) Vinyl Acetate	6.42	86	2834	1.184	ng	#	58
27) 2-Butanone (MEK)	6.65	72	9715	1.122	ng	#	81
28) cis-1,2-Dichloroethene	7.04	61	13903	0.632	ng		97
29) Diisopropyl Ether	7.25	87	13917	1.254	ng	#	83
30) Ethyl Acetate	7.25	61	15261	2.432	ng		98
31) n-Hexane	7.27	57	16040	0.663	ng		97
32) Chloroform	7.33	83	18103	0.636	ng		99
34) Tetrahydrofuran (THF)	7.74	72	10570	1.282	ng	#	91
35) Ethyl tert-Butyl Ether	7.79	87	19951	1.211	ng		94
36) 1,2-Dichloroethane	8.08	62	16790	0.661	ng		99
38) 1,1,1-Trichloroethane	8.36	97	17655	0.563	ng		98
39) Isopropyl Acetate	9.26	61	24132	No Calib		#	
40) 1-Butanol	0.00	56	0	N.D.			
41) Benzene	8.86	78	36971	0.660	ng		100
42) Carbon Tetrachloride	9.03	117	14881	0.534	ng		100
43) Cyclohexane	9.18	84	27085	1.298	ng		93
44) tert-Amyl Methyl Ether	9.57	73	46585	1.101	ng		96
45) 1,2-Dichloropropane	9.81	63	10539	0.684	ng		94
46) Bromodichloromethane	10.04	83	14523	0.574	ng		99
47) Trichloroethene	10.11	130	9915	0.570	ng		99
48) 1,4-Dioxane	10.10	88	6928	0.564	ng		99
49) 2,2,4-Trimethylpentane...	10.20	57	47208	0.723	ng		97
50) Methyl Methacrylate	10.37	100	6394	1.035	ng	#	80

Data File : I:\MS09\DATA\2023 02\27\02272312.D Vial: 6
Acq On : 27 Feb 2023 15:04 Operator: SC
Sample : 0.5ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222301 (3/18)

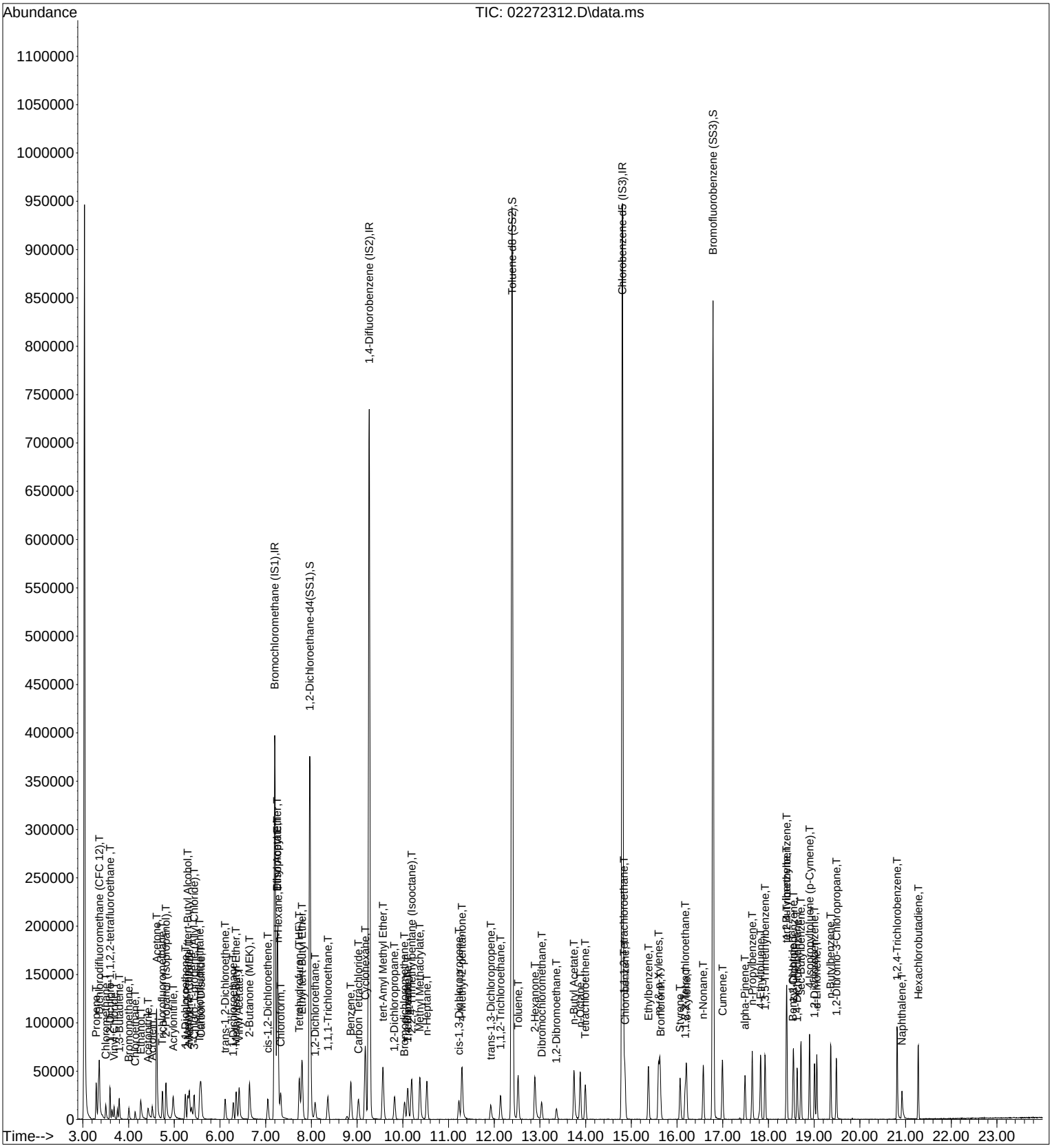
Quant Time: Feb 27 17:12:10 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	10.52	71	9365	0.679 ng		98
52) cis-1,3-Dichloropropene	11.23	75	14079	0.551 ng		100
53) 4-Methyl-2-pentanone	11.30	58	18695	1.246 ng		91
54) trans-1,3-Dichloropropene	11.93	75	11359	0.436 ng		100
55) 1,1,2-Trichloroethane	12.14	97	9522	0.620 ng		97
58) Toluene	12.52	91	39898	0.617 ng		99
59) 2-Hexanone	12.89	43	52231	1.153 ng		96
60) Dibromochloromethane	13.04	129	11578	0.516 ng		100
61) 1,2-Dibromoethane	13.36	107	10606	0.540 ng		100
62) n-Butyl Acetate	13.74	43	55122	1.082 ng		99
63) n-Octane	13.89	57	9495	0.666 ng		94
64) Tetrachloroethene	13.99	166	12965	0.545 ng		100
65) Chlorobenzene	14.86	112	25268	0.579 ng		99
66) Ethylbenzene	15.37	91	47238	0.606 ng		99
67) m- & p-Xylenes	15.60	91	76260	1.179 ng		98
68) Bromoform	15.64	173	10065	0.440 ng		97
69) Styrene	16.07	104	23444	0.525 ng		98
70) o-Xylene	16.21	91	38669	0.609 ng		98
71) n-Nonane	16.57	43	27135	0.700 ng		93
72) 1,1,2,2-Tetrachloroethane	16.18	83	16358	0.609 ng		97
74) Cumene	17.00	105	47251	0.604 ng		99
75) alpha-Pinene	17.49	93	18387	0.486 ng		95
76) n-Propylbenzene	17.65	91	57041	0.611 ng		99
77) 3-Ethyltoluene	17.00	105	47251	No Calib		
78) 4-Ethyltoluene	17.83	105	42600	0.570 ng		98
79) 1,3,5-Trimethylbenzene	17.93	105	39005	0.583 ng		98
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	17.00	105	47251	No Calib		
82) 1,2,4-Trimethylbenzene	18.40	105	38752	0.560 ng		100
83) n-Decane	16.99	58	444	No Calib	#	
84) Benzyl Chloride	18.54	91	21775	0.428 ng		94
85) 1,3-Dichlorobenzene	18.55	146	21881	0.529 ng		99
86) 1,4-Dichlorobenzene	18.63	146	21519	0.527 ng		100
87) sec-Butylbenzene	18.71	105	52666	0.606 ng		97
88) 4-Isopropyltoluene (p-...	18.90	119	44449	0.577 ng		99
89) 1,2,3-Trimethylbenzene	17.00	105	47251	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	22114	0.552 ng		100
91) d-Limonene	19.06	68	13386	0.556 ng		95
92) 1,2-Dibromo-3-Chloropr...	19.49	157	14990	0.888 ng	#	81
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.81	180	30928	0.867 ng		98
95) Naphthalene	20.92	128	30491	0.402 ng		95
96) n-Dodecane	0.00	58	0	N.D.		
97) Hexachlorobutadiene	21.28	225	13291	0.534 ng		100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.39	119	37087	0.572 ng		98
100) n-Butylbenzene	19.36	91	41521	0.583 ng		97
101) 1,1,1,2-Tetrachloroethane	14.84	131	10081	0.539 ng		95

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

Data File : I:\MS09\DATA\2023 02\27\02272312.D Vial: 6
Acq On : 27 Feb 2023 15:04 Operator: SC
Sample : 0.5ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222301 (3/18)

Quant Time: Feb 27 17:12:10 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272313.D Vial: 6
Acq On : 27 Feb 2023 15:36 Operator: SC
Sample : 1.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222301 (3/18)

Quant Time: Feb 27 17:11:01 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

2/27/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.20	130	160229	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	9.26	114	686789	12.500	ng		-0.03
56) Chlorobenzene-d5 (IS3)	14.81	54	179375	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.97	65	326481	12.022	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.16%				
57) Toluene-d8 (SS2)	12.39	98	823102	11.933	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.44%				
73) Bromofluorobenzene (SS3)	16.79	174	291867	9.876	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 79.04%				
Target Compounds							Qvalue
2) Propene	3.28	42	20835	0.980	ng		98
3) Dichlorodifluoromethan...	3.35	85	37362	1.008	ng		100
4) Chloromethane	3.49	50	24530	1.027	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	3.59	135	16709	0.959	ng		98
6) Vinyl Chloride	3.68	62	17416	0.944	ng		97
7) 1,3-Butadiene	3.79	54	12755	0.897	ng		95
8) Bromomethane	4.00	94	11948	1.004	ng		98
9) Chloroethane	4.14	64	10853	1.104	ng		97
10) Ethanol	4.27	45	59041	4.035	ng		100
11) Acetonitrile	4.42	41	39973	1.061	ng		97
12) Acrolein	4.51	56	22549	2.178	ng		100
13) Acetone	4.61	58	67506	6.277	ng		97
14) Trichlorofluoromethane	4.73	101	38589	1.058	ng		99
15) 2-Propanol (Isopropanol)	4.82	45	123084	2.694	ng		92
16) Acrylonitrile	4.97	53	55872	2.586	ng		96
17) 1,1-Dichloroethene	5.24	96	17096	1.164	ng		93
18) 2-Methyl-2-Propanol (t...	5.29	59	96515	2.150	ng		96
19) Methylene Chloride	5.32	84	17606	1.206	ng		85
20) 3-Chloro-1-propene (Al...	5.43	41	35596	1.233	ng		92
21) Trichlorotrifluoroethane	5.56	151	17042	1.010	ng		85
22) Carbon Disulfide	5.57	76	131446	2.447	ng		99
23) trans-1,2-Dichloroethene	6.11	61	29642	1.190	ng		97
24) 1,1-Dichloroethane	6.29	63	36621	1.258	ng		96
25) Methyl tert-Butyl Ether	6.35	73	53420	1.093	ng		95
26) Vinyl Acetate	6.41	86	6794	2.593	ng	#	52
27) 2-Butanone (MEK)	6.64	72	22803	2.405	ng	#	79
28) cis-1,2-Dichloroethene	7.04	61	28817	1.196	ng		98
29) Diisopropyl Ether	7.25	87	28768	2.367	ng	#	56
30) Ethyl Acetate	7.25	61	35293	5.137	ng		95
31) n-Hexane	7.27	57	36287	1.371	ng		97
32) Chloroform	7.33	83	35871	1.151	ng		100
34) Tetrahydrofuran (THF)	7.73	72	19365	2.145	ng	#	88
35) Ethyl tert-Butyl Ether	7.79	87	35039	1.943	ng		93
36) 1,2-Dichloroethane	8.08	62	29095	1.047	ng		100
38) 1,1,1-Trichloroethane	8.36	97	30925	0.986	ng		99
39) Isopropyl Acetate	9.26	61	24170	No Calib	#		
40) 1-Butanol	8.84	56	153	No Calib	#		
41) Benzene	8.86	78	64321	1.148	ng		99
42) Carbon Tetrachloride	9.03	117	25863	0.929	ng		99
43) Cyclohexane	9.18	84	47054	2.254	ng		94
44) tert-Amyl Methyl Ether	9.56	73	85143	2.011	ng		96
45) 1,2-Dichloropropane	9.82	63	19511	1.265	ng		98
46) Bromodichloromethane	10.04	83	26692	1.054	ng		100
47) Trichloroethene	10.10	130	17852	1.027	ng		98
48) 1,4-Dioxane	10.09	88	13418	1.091	ng		98
49) 2,2,4-Trimethylpentane...	10.20	57	91790	1.406	ng		97
50) Methyl Methacrylate	10.37	100	13019	2.107	ng	#	84

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272313.D Vial: 6
Acq On : 27 Feb 2023 15:36 Operator: SC
Sample : 1.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222301 (3/18)

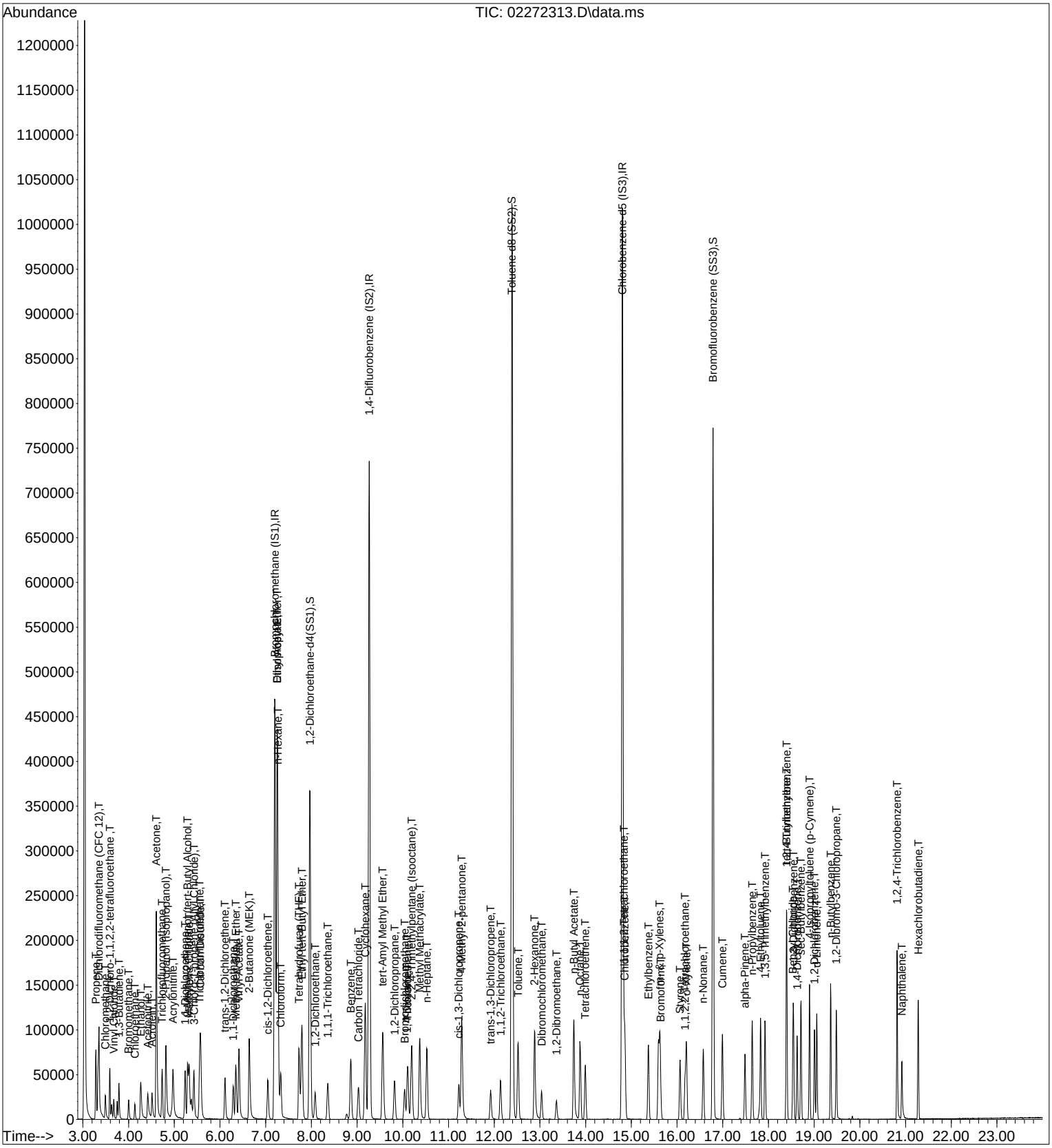
Quant Time: Feb 27 17:11:01 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	10.52	71	18587	1.347 ng		97
52) cis-1,3-Dichloropropene	11.22	75	27674	1.083 ng		100
53) 4-Methyl-2-pentanone	11.29	58	37890	2.525 ng		88
54) trans-1,3-Dichloropropene	11.92	75	22563	0.865 ng		98
55) 1,1,2-Trichloroethane	12.14	97	17019	1.108 ng		99
58) Toluene	12.52	91	75532	1.064 ng		99
59) 2-Hexanone	12.88	43	100590	2.023 ng		99
60) Dibromochloromethane	13.04	129	20374	0.828 ng		99
61) 1,2-Dibromoethane	13.36	107	18710	0.868 ng		99
62) n-Butyl Acetate	13.74	43	116928	2.092 ng		99
63) n-Octane	13.87	57	16974	1.085 ng		93
64) Tetrachloroethene	13.99	166	22106	0.847 ng		99
65) Chlorobenzene	14.86	112	47679	0.996 ng		100
66) Ethylbenzene	15.37	91	72021	0.842 ng		97
67) m- & p-Xylenes	15.62	91	115759	1.631 ng		99
68) Bromoform	15.64	173	17843	0.711 ng		98
69) Styrene	16.07	104	37017	0.756 ng		99
70) o-Xylene	16.20	91	58088	0.834 ng		99
71) n-Nonane	16.57	43	34952	0.821 ng		98
72) 1,1,2,2-Tetrachloroethane	16.17	83	23743	0.806 ng		100
74) Cumene	16.99	105	72764	0.848 ng		100
75) alpha-Pinene	17.49	93	28856	0.695 ng		96
76) n-Propylbenzene	17.64	91	90878	0.886 ng		99
77) 3-Ethyltoluene	16.99	105	72764	No Calib		
78) 4-Ethyltoluene	17.83	105	73715	0.898 ng		100
79) 1,3,5-Trimethylbenzene	17.93	105	64685	0.881 ng		96
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	16.99	105	72764	No Calib		
82) 1,2,4-Trimethylbenzene	18.40	105	64676	0.852 ng		100
83) n-Decane	17.00	58	501	No Calib	#	
84) Benzyl Chloride	18.54	91	44805	0.802 ng		98
85) 1,3-Dichlorobenzene	18.55	146	37056	0.816 ng		100
86) 1,4-Dichlorobenzene	18.63	146	37208	0.831 ng		99
87) sec-Butylbenzene	18.71	105	88626	0.929 ng		99
88) 4-Isopropyltoluene (p-...	18.90	119	76892	0.909 ng		99
89) 1,2,3-Trimethylbenzene	16.99	105	72764	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	38401	0.874 ng		99
91) d-Limonene	19.06	68	24285	0.919 ng		93
92) 1,2-Dibromo-3-Chloropr...	19.48	157	28268	1.526 ng	#	80
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.81	180	53107	1.357 ng		99
95) Naphthalene	20.92	128	56662	0.680 ng		98
96) n-Dodecane	19.06	58	109	No Calib	#	
97) Hexachlorobutadiene	21.28	225	22481	0.823 ng		99
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.39	119	62552	0.879 ng		100
100) n-Butylbenzene	19.36	91	76845	0.983 ng		98
101) 1,1,1,2-Tetrachloroethane	14.84	131	18080	0.882 ng		99

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

Data File : I:\MS09\DATA\2023 02\27\02272313.D Vial: 6
Acq On : 27 Feb 2023 15:36 Operator: SC
Sample : 1.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222301 (3/18)

Quant Time: Feb 27 17:11:01 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272314.D Vial: 6
Acq On : 27 Feb 2023 16:07 Operator: SC
Sample : 5.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222301 (3/18)

Quant Time: Feb 27 17:09:50 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

2/27/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.21	130	161448	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	9.28	114	705620	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.81	54	141118	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	7.98	65	337902	12.349	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.80%				
57) Toluene-d8 (SS2)	12.39	98	676906	12.474	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%				
73) Bromofluorobenzene (SS3)	16.79	174	293338	12.617	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.96%				
Target Compounds							Qvalue
2) Propene	3.26	42	110343	5.151	ng		99
3) Dichlorodifluoromethan...	3.34	85	162258	4.343	ng		99
4) Chloromethane	3.48	50	94321	3.917	ng		98
5) 1,2-Dichloro-1,1,2,2-t...	3.58	135	71611	4.081	ng		99
6) Vinyl Chloride	3.66	62	73110	3.932	ng		99
7) 1,3-Butadiene	3.78	54	55457	3.869	ng		96
8) Bromomethane	3.99	94	46303	3.861	ng		99
9) Chloroethane	4.13	64	42641	4.303	ng		99
10) Ethanol	4.28	45	237853	16.134	ng		99
11) Acetonitrile	4.43	41	157970	4.163	ng		100
12) Acrolein	4.51	56	90765	8.700	ng		95
13) Acetone	4.61	58	258649	23.868	ng		100
14) Trichlorofluoromethane	4.73	101	158314	4.306	ng		99
15) 2-Propanol (Isopropanol)	4.84	45	359903	7.819	ng		95
16) Acrylonitrile	4.98	53	204524	9.396	ng		99
17) 1,1-Dichloroethene	5.23	96	68931	4.660	ng		97
18) 2-Methyl-2-Propanol (t...	5.31	59	337109	7.455	ng		96
19) Methylene Chloride	5.33	84	68376	4.649	ng		92
20) 3-Chloro-1-propene (Al...	5.43	41	134098	4.610	ng		97
21) Trichlorotrifluoroethane	5.56	151	73913	4.347	ng		93
22) Carbon Disulfide	5.57	76	517926	9.569	ng		99
23) trans-1,2-Dichloroethene	6.12	61	125309	4.994	ng		97
24) 1,1-Dichloroethane	6.30	63	152039	5.184	ng		99
25) Methyl tert-Butyl Ether	6.34	73	229738	4.667	ng		96
26) Vinyl Acetate	6.42	86	33396	12.649	ng	#	65
27) 2-Butanone (MEK)	6.64	72	100748	10.548	ng	#	84
28) cis-1,2-Dichloroethene	7.06	61	127098	5.234	ng		96
29) Diisopropyl Ether	7.25	87	125783	10.273	ng	#	49
30) Ethyl Acetate	7.26	61	162076	23.414	ng		93
31) n-Hexane	7.27	57	159037	5.962	ng		98
32) Chloroform	7.34	83	156351	4.978	ng		100
34) Tetrahydrofuran (THF)	7.73	72	94722	10.411	ng	#	84
35) Ethyl tert-Butyl Ether	7.79	87	165232	9.092	ng		90
36) 1,2-Dichloroethane	8.09	62	133641	4.772	ng		99
38) 1,1,1-Trichloroethane	8.37	97	142469	4.419	ng		97
39) Isopropyl Acetate	9.18	61	267	No Calib		#	
40) 1-Butanol	8.80	56	4098	No Calib			
41) Benzene	8.87	78	279018	4.848	ng		99
42) Carbon Tetrachloride	9.04	117	116752	4.080	ng		99
43) Cyclohexane	9.18	84	211866	9.878	ng		93
44) tert-Amyl Methyl Ether	9.56	73	378523	8.701	ng		96
45) 1,2-Dichloropropane	9.83	63	90520	5.714	ng		100
46) Bromodichloromethane	10.05	83	117877	4.529	ng		99
47) Trichloroethene	10.12	130	76571	4.286	ng		100
48) 1,4-Dioxane	10.09	88	56725	4.489	ng		98
49) 2,2,4-Trimethylpentane...	10.20	57	359317	5.356	ng		98
50) Methyl Methacrylate	10.37	100	60580	9.541	ng	#	82

Data File : I:\MS09\DATA\2023 02\27\02272314.D Vial: 6
Acq On : 27 Feb 2023 16:07 Operator: SC
Sample : 5.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222301 (3/18)

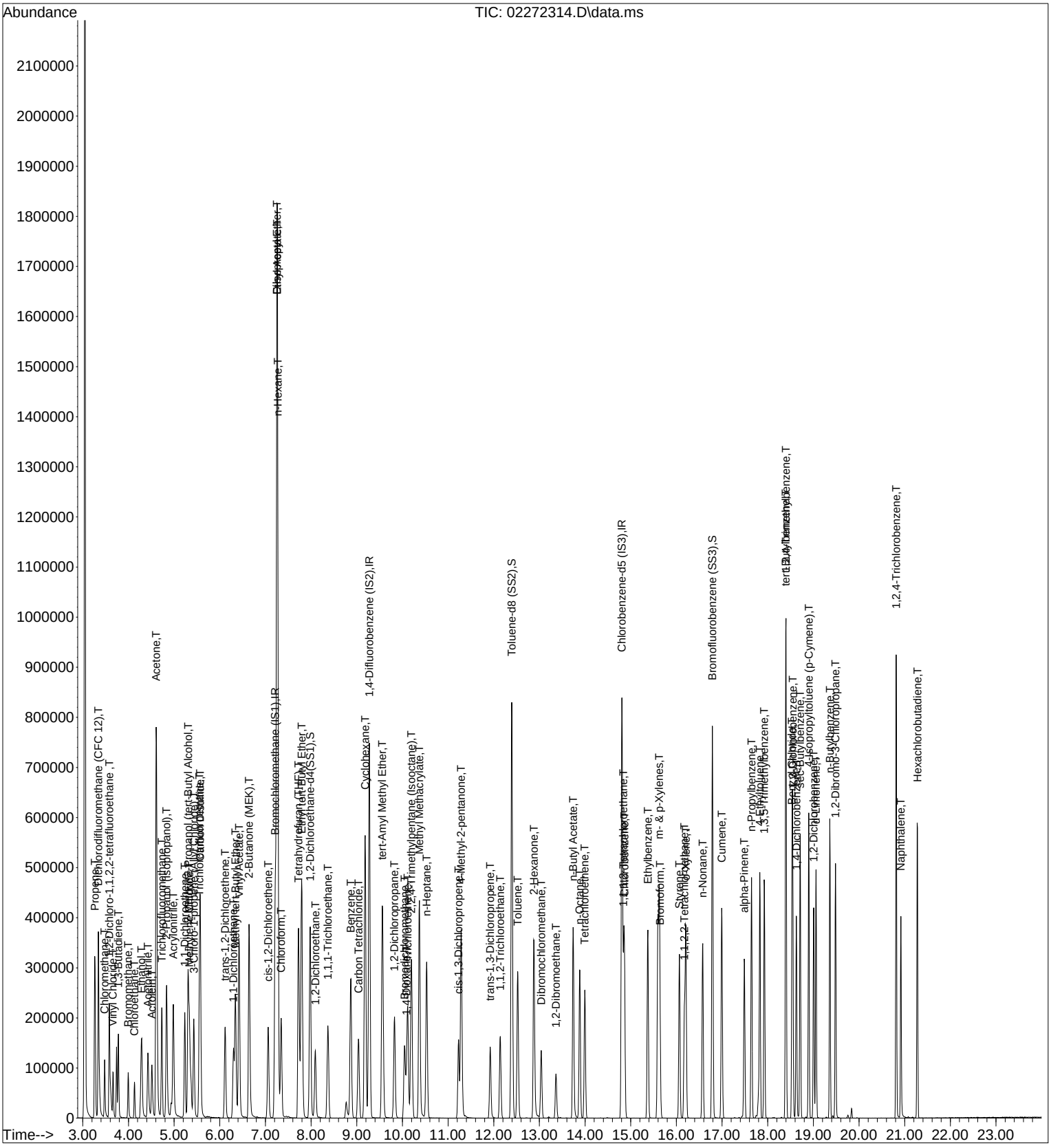
Quant Time: Feb 27 17:09:50 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	10.53	71	74282	5.239 ng		95
52) cis-1,3-Dichloropropene	11.23	75	103787	3.955 ng		100
53) 4-Methyl-2-pentanone	11.29	58	121673	7.891 ng		98
54) trans-1,3-Dichloropropene	11.92	75	94695	3.535 ng		100
55) 1,1,2-Trichloroethane	12.14	97	64417	4.083 ng		98
58) Toluene	12.52	91	261470	4.681 ng		99
59) 2-Hexanone	12.88	43	343069	8.772 ng		99
60) Dibromochloromethane	13.04	129	89115	4.602 ng		99
61) 1,2-Dibromoethane	13.36	107	76460	4.510 ng		99
62) n-Butyl Acetate	13.74	43	371191	8.442 ng		99
63) n-Octane	13.88	57	58487	4.754 ng		99
64) Tetrachloroethene	13.99	166	98198	4.781 ng		98
65) Chlorobenzene	14.86	112	176113	4.674 ng		100
66) Ethylbenzene	15.37	91	314452	4.671 ng		100
67) m- & p-Xylenes	15.62	91	518293	9.284 ng		100
68) Bromoform	15.64	173	86536	4.382 ng		99
69) Styrene	16.07	104	174778	4.535 ng		100
70) o-Xylene	16.21	91	259295	4.732 ng		99
71) n-Nonane	16.58	43	159020	4.748 ng		99
72) 1,1,2,2-Tetrachloroethane	16.17	83	108205	4.667 ng		99
74) Cumene	16.99	105	322482	4.776 ng		100
75) alpha-Pinene	17.49	93	128391	3.933 ng		95
76) n-Propylbenzene	17.65	91	389782	4.832 ng		99
77) 3-Ethyltoluene	16.99	105	322482	No Calib		
78) 4-Ethyltoluene	17.83	105	319717	4.952 ng		99
79) 1,3,5-Trimethylbenzene	17.92	105	272786	4.723 ng		100
80) alpha-Methylstyrene	17.00	118	801	No Calib	#	
81) 2-Ethyltoluene	16.99	105	322482	No Calib		
82) 1,2,4-Trimethylbenzene	18.40	105	277319	4.645 ng		100
83) n-Decane	16.99	58	2651	No Calib		
84) Benzyl Chloride	18.53	91	297613	6.770 ng		98
85) 1,3-Dichlorobenzene	18.55	146	163198	4.568 ng		99
86) 1,4-Dichlorobenzene	18.63	146	160450	4.553 ng		99
87) sec-Butylbenzene	18.71	105	360040	4.798 ng		99
88) 4-Isopropyltoluene (p-...	18.90	119	320648	4.818 ng		99
89) 1,2,3-Trimethylbenzene	16.99	105	322482	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	163727	4.735 ng		100
91) d-Limonene	19.06	68	94406	4.542 ng		99
92) 1,2-Dibromo-3-Chloropr...	19.48	157	129262	8.867 ng		97
93) n-Undecane	0.00	58	0	N.D.		
94) 1,2,4-Trichlorobenzene	20.81	180	259436	8.426 ng		100
95) Naphthalene	20.92	128	263213	4.018 ng		100
96) n-Dodecane	19.05	58	1106	No Calib	#	
97) Hexachlorobutadiene	21.28	225	103336	4.809 ng		100
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	18.39	119	266984	4.771 ng		100
100) n-Butylbenzene	19.36	91	290338	4.721 ng		100
101) 1,1,1,2-Tetrachloroethane	14.84	131	73450	4.552 ng		100

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

Data File : I:\MS09\DATA\2023 02\27\02272314.D Vial: 6
Acq On : 27 Feb 2023 16:07 Operator: SC
Sample : 5.0ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02222301 (3/18)

Quant Time: Feb 27 17:09:50 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:09:40 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272315.D Vial: 7
Acq On : 27 Feb 2023 16:39 Operator: SC
Sample : 25ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02162303 (3/18)

Quant Time: Feb 27 17:08:16 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:08:05 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

2/27/23

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	145732	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	9.29	114	624395	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.81	54	143994	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	8.00	65	308746	12.500	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.00%			
57) Toluene-d8 (SS2)	12.40	98	692163	12.500	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.00%			
73) Bromofluorobenzene (SS3)	16.79	174	296539	12.500	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.00%			
Target Compounds						Qvalue
2) Propene	3.26	42	507555	26.250	ng	100
3) Dichlorodifluoromethan...	3.33	85	893667	26.500	ng	100
4) Chloromethane	3.47	50	559628	25.750	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	411850	26.000	ng	100
6) Vinyl Chloride	3.67	62	423786	25.250	ng	100
7) 1,3-Butadiene	3.78	54	342853	26.500	ng	100
8) Bromomethane	4.00	94	276046	25.500	ng	100
9) Chloroethane	4.14	64	230311	25.750	ng	100
10) Ethanol	4.33	45	1147757	86.250	ng	100
11) Acetonitrile	4.45	41	777955	22.711	ng	100
12) Acrolein	4.53	56	454528	48.266	ng	100
13) Acetone	4.64	58	1288729	131.750	ng	100
14) Trichlorofluoromethane	4.74	101	862865	26.000	ng	100
15) 2-Propanol (Isopropanol)	4.87	45	2130126	51.266	ng	100
16) Acrylonitrile	5.01	53	1006962	51.250	ng	100
17) 1,1-Dichloroethene	5.24	96	360537	27.000	ng	100
18) 2-Methyl-2-Propanol (t...	5.35	59	2155035	52.794	ng	100
19) Methylene Chloride	5.36	84	351778	26.500	ng	100
20) 3-Chloro-1-propene (Al...	5.45	41	695768	26.496	ng	100
21) Trichlorotrifluoroethane	5.56	151	414378	27.000	ng	100
22) Carbon Disulfide	5.58	76	2601650	53.250	ng	100
23) trans-1,2-Dichloroethene	6.14	61	611574	27.000	ng	100
24) 1,1-Dichloroethane	6.33	63	708122	26.750	ng	100
25) Methyl tert-Butyl Ether	6.35	73	1188635	26.750	ng	100
26) Vinyl Acetate	6.44	86	166820	70.000	ng	100
27) 2-Butanone (MEK)	6.66	72	450499	52.250	ng	100
28) cis-1,2-Dichloroethene	7.08	61	580873	26.500	ng	100
29) Diisopropyl Ether	7.27	87	585788	53.000	ng	100
30) Ethyl Acetate	7.28	61	659215	105.500	ng	100
31) n-Hexane	7.28	57	632018	26.250	ng	100
32) Chloroform	7.37	83	751358	26.500	ng	100
34) Tetrahydrofuran (THF)	7.73	72	418852	51.000	ng	100
35) Ethyl tert-Butyl Ether	7.81	87	869438	53.000	ng	100
36) 1,2-Dichloroethane	8.11	62	682523	27.000	ng	100
38) 1,1,1-Trichloroethane	8.38	97	748849	26.250	ng	100
39) Isopropyl Acetate	9.19	61	2573	No Calib	#	
40) 1-Butanol	8.80	56	19987	No Calib		
41) Benzene	8.88	78	1362209	26.750	ng	100
42) Carbon Tetrachloride	9.05	117	658412	26.000	ng	100
43) Cyclohexane	9.20	84	996369	52.500	ng	100
44) tert-Amyl Methyl Ether	9.57	73	2040363	53.000	ng	100
45) 1,2-Dichloropropane	9.84	63	367955	26.250	ng	100
46) Bromodichloromethane	10.06	83	616098	26.750	ng	100
47) Trichloroethene	10.13	130	414981	26.250	ng	100
48) 1,4-Dioxane	10.09	88	296325	26.500	ng	100
49) 2,2,4-Trimethylpentane...	10.21	57	1602792	27.000	ng	100
50) Methyl Methacrylate	10.38	100	297768	53.000	ng	100

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272315.D Vial: 7
Acq On : 27 Feb 2023 16:39 Operator: SC
Sample : 25ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02162303 (3/18)

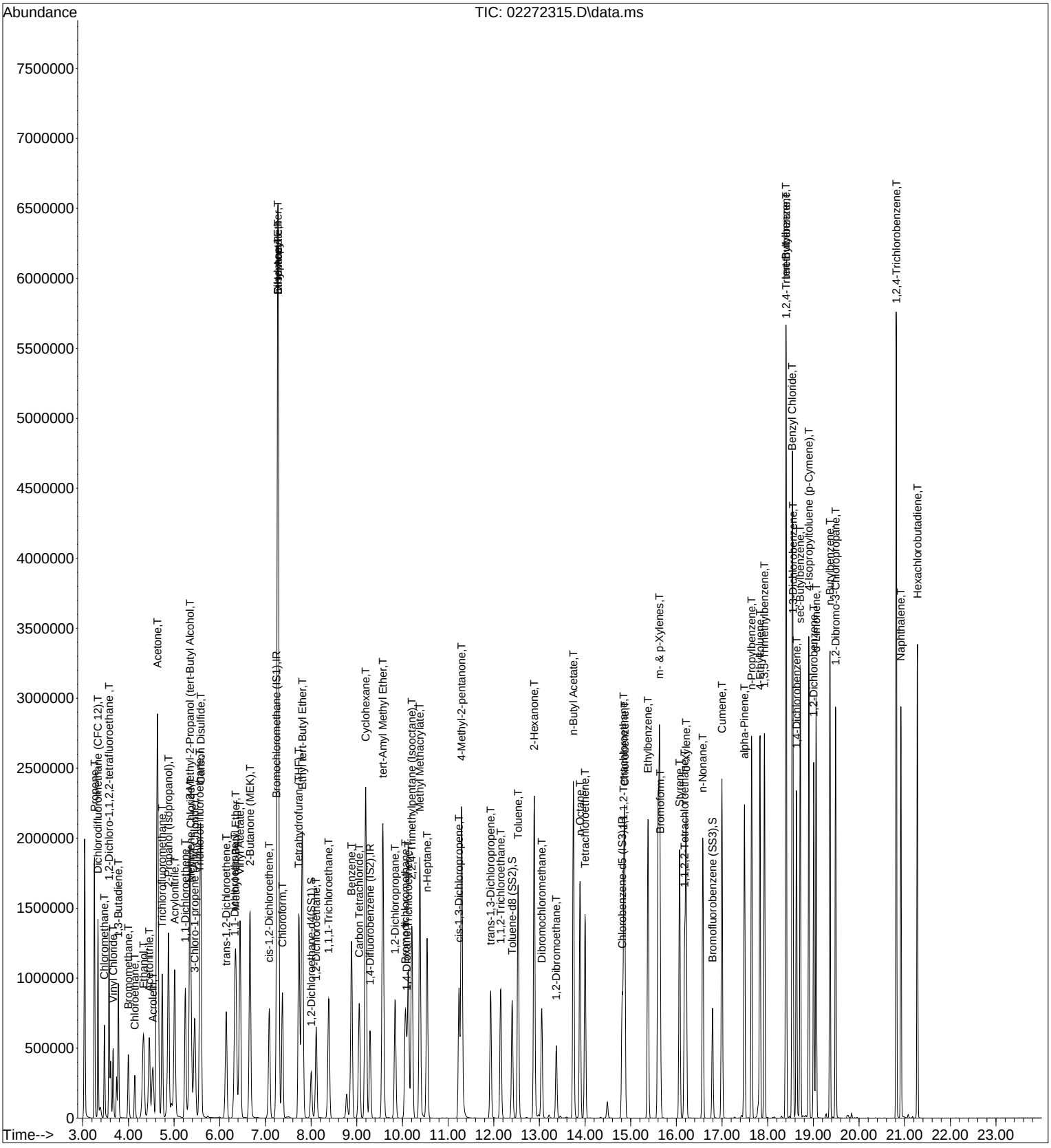
Quant Time: Feb 27 17:08:16 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:08:05 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.54	71	332472	26.500	ng		100
52) cis-1,3-Dichloropropene	11.24	75	627011	27.000	ng		100
53) 4-Methyl-2-pentanone	11.30	58	733418	53.750	ng		100
54) trans-1,3-Dichloropropene	11.93	75	604444	25.500	ng		100
55) 1,1,2-Trichloroethane	12.15	97	369972	26.499	ng		100
58) Toluene	12.53	91	1496201	26.250	ng		100
59) 2-Hexanone	12.89	43	2115059	53.000	ng		100
60) Dibromochloromethane	13.05	129	533467	27.000	ng		100
61) 1,2-Dibromoethane	13.37	107	449776	26.000	ng		100
62) n-Butyl Acetate	13.74	43	2299468	51.250	ng		100
63) n-Octane	13.89	57	335817	26.750	ng		100
64) Tetrachloroethene	14.00	166	555399	26.500	ng		100
65) Chlorobenzene	14.87	112	1018774	26.500	ng		100
66) Ethylbenzene	15.38	91	1803178	26.250	ng		100
67) m- & p-Xylenes	15.63	91	2990743	52.500	ng		100
68) Bromoform	15.65	173	539045	26.750	ng		100
69) Styrene	16.07	104	1042125	26.500	ng		100
70) o-Xylene	16.21	91	1481800	26.500	ng		100
71) n-Nonane	16.58	43	905586	26.500	ng		100
72) 1,1,2,2-Tetrachloroethane	16.18	83	626967	26.500	ng		100
74) Cumene	17.00	105	1843180	26.750	ng		100
75) alpha-Pinene	17.49	93	907708	27.250	ng		100
76) n-Propylbenzene	17.65	91	2201583	26.750	ng		100
77) 3-Ethyltoluene	17.00	105	1843180	No Calib			
78) 4-Ethyltoluene	17.83	105	1795202	27.250	ng		100
79) 1,3,5-Trimethylbenzene	17.93	105	1561636	26.500	ng		100
80) alpha-Methylstyrene	17.00	118	3075	No Calib		#	
81) 2-Ethyltoluene	17.00	105	1843180	No Calib			
82) 1,2,4-Trimethylbenzene	18.41	105	1599184	26.250	ng		100
83) n-Decane	17.01	58	13428	No Calib			
84) Benzyl Chloride	18.54	91	2377328	53.000	ng		100
85) 1,3-Dichlorobenzene	18.55	146	966121	26.500	ng		100
86) 1,4-Dichlorobenzene	18.63	146	952964	26.500	ng		100
87) sec-Butylbenzene	18.71	105	2029035	26.500	ng		100
88) 4-Isopropyltoluene (p-...	18.90	119	1798851	26.491	ng		100
89) 1,2,3-Trimethylbenzene	17.00	105	1843180	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	943849	26.750	ng		100
91) d-Limonene	19.06	68	567384	26.750	ng		100
92) 1,2-Dibromo-3-Chloropr...	19.49	157	780903	52.500	ng		100
93) n-Undecane	18.11	58	373	No Calib		#	
94) 1,2,4-Trichlorobenzene	20.82	180	1641599	52.250	ng		100
95) Naphthalene	20.92	128	1838311	27.500	ng		100
96) n-Dodecane	19.06	58	4526	No Calib		#	
97) Hexachlorobutadiene	21.28	225	581075	26.500	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.40	119	1513270	26.500	ng		100
100) n-Butylbenzene	19.37	91	1678615	26.750	ng		100
101) 1,1,1,2-Tetrachloroethane	14.85	131	436301	26.500	ng		100

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

Data File : I:\MS09\DATA\2023 02\27\02272315.D Vial: 7
Acq On : 27 Feb 2023 16:39 Operator: SC
Sample : 25ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02162303 (3/18)

Quant Time: Feb 27 17:08:16 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:08:05 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272316.D Vial: 7
Acq On : 27 Feb 2023 17:11 Operator: SC
Sample : 50ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02162303 (3/18)

Quant Time: Feb 28 08:25:18 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:08:05 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

2/28/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.26	130	147367	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	9.30	114	630348	12.500	ng		0.01
56) Chlorobenzene-d5 (IS3)	14.82	54	145741	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.01	65	308197	12.339	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.72%				
57) Toluene-d8 (SS2)	12.41	98	698666	12.466	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.76%				
73) Bromofluorobenzene (SS3)	16.79	174	298154	12.417	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 99.36%				
Target Compounds							Qvalue
2) Propene	3.26	42	1027444	52.548	ng		99
3) Dichlorodifluoromethan...	3.34	85	1652887	48.469	ng		100
4) Chloromethane	3.48	50	972987	44.273	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.58	135	803110	50.138	ng		100
6) Vinyl Chloride	3.67	62	897202	52.864	ng		100
7) 1,3-Butadiene	3.78	54	700144	53.516	ng		98
8) Bromomethane	4.01	94	503721	46.015	ng		99
9) Chloroethane	4.15	64	412434	45.601	ng		100
10) Ethanol	4.36	45	2025441	150.516	ng		100
11) Acetonitrile	4.48	41	1353940	39.088	ng		100
12) Acrolein	4.55	56	809649	85.022	ng		100
13) Acetone	4.65	58	2288221	231.335	ng		97
14) Trichlorofluoromethane	4.75	101	1582523	47.156	ng		99
15) 2-Propanol (Isopropanol)	4.90	45	3335115	79.375	ng		99
16) Acrylonitrile	5.03	53	1771265	89.150	ng		99
17) 1,1-Dichloroethene	5.26	96	667820	49.457	ng		98
18) 2-Methyl-2-Propanol (t...	5.37	59	3217806	77.954	ng		99
19) Methylene Chloride	5.38	84	641723	47.806	ng		95
20) 3-Chloro-1-propene (Al...	5.47	41	1160805	43.715	ng		95
21) Trichlorotrifluoroethane	5.57	151	785476	50.612	ng		97
22) Carbon Disulfide	5.60	76	4659537	94.312	ng		100
23) trans-1,2-Dichloroethene	6.15	61	1112052	48.551	ng		98
24) 1,1-Dichloroethane	6.34	63	1287851	48.110	ng		100
25) Methyl tert-Butyl Ether	6.36	73	2164686	48.175	ng		99
26) Vinyl Acetate	6.46	86	314605	130.548	ng	#	84
27) 2-Butanone (MEK)	6.68	72	820304	94.085	ng	#	93
28) cis-1,2-Dichloroethene	7.09	61	1075876	48.538	ng		100
29) Diisopropyl Ether	7.28	87	1095799	98.044	ng	#	84
30) Ethyl Acetate	7.29	61	1211386	191.718	ng		98
31) n-Hexane	7.29	57	1146765	47.101	ng		100
32) Chloroform	7.39	83	1392959	48.584	ng		100
34) Tetrahydrofuran (THF)	7.74	72	784289	94.437	ng		97
35) Ethyl tert-Butyl Ether	7.82	87	1643850	99.096	ng		99
36) 1,2-Dichloroethane	8.13	62	1285684	50.296	ng		100
38) 1,1,1-Trichloroethane	8.40	97	1411104	48.997	ng		100
39) Isopropyl Acetate	9.20	61	4684	No Calib		#	
40) 1-Butanol	8.80	56	39107	No Calib			
41) Benzene	8.89	78	2562754	49.850	ng		100
42) Carbon Tetrachloride	9.07	117	1252872	49.007	ng		100
43) Cyclohexane	9.21	84	1876364	97.934	ng		99
44) tert-Amyl Methyl Ether	9.58	73	3879402	99.819	ng		99
45) 1,2-Dichloropropane	9.85	63	685813	48.464	ng		100
46) Bromodichloromethane	10.08	83	1173135	50.455	ng		100
47) Trichloroethene	10.14	130	789251	49.453	ng		100
48) 1,4-Dioxane	10.10	88	561082	49.703	ng		100
49) 2,2,4-Trimethylpentane...	10.21	57	2995020	49.976	ng		99
50) Methyl Methacrylate	10.39	100	570054	100.506	ng		99

Data File : I:\MS09\DATA\2023 02\27\02272316.D Vial: 7
Acq On : 27 Feb 2023 17:11 Operator: SC
Sample : 50ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02162303 (3/18)

Quant Time: Feb 28 08:25:18 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:08:05 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

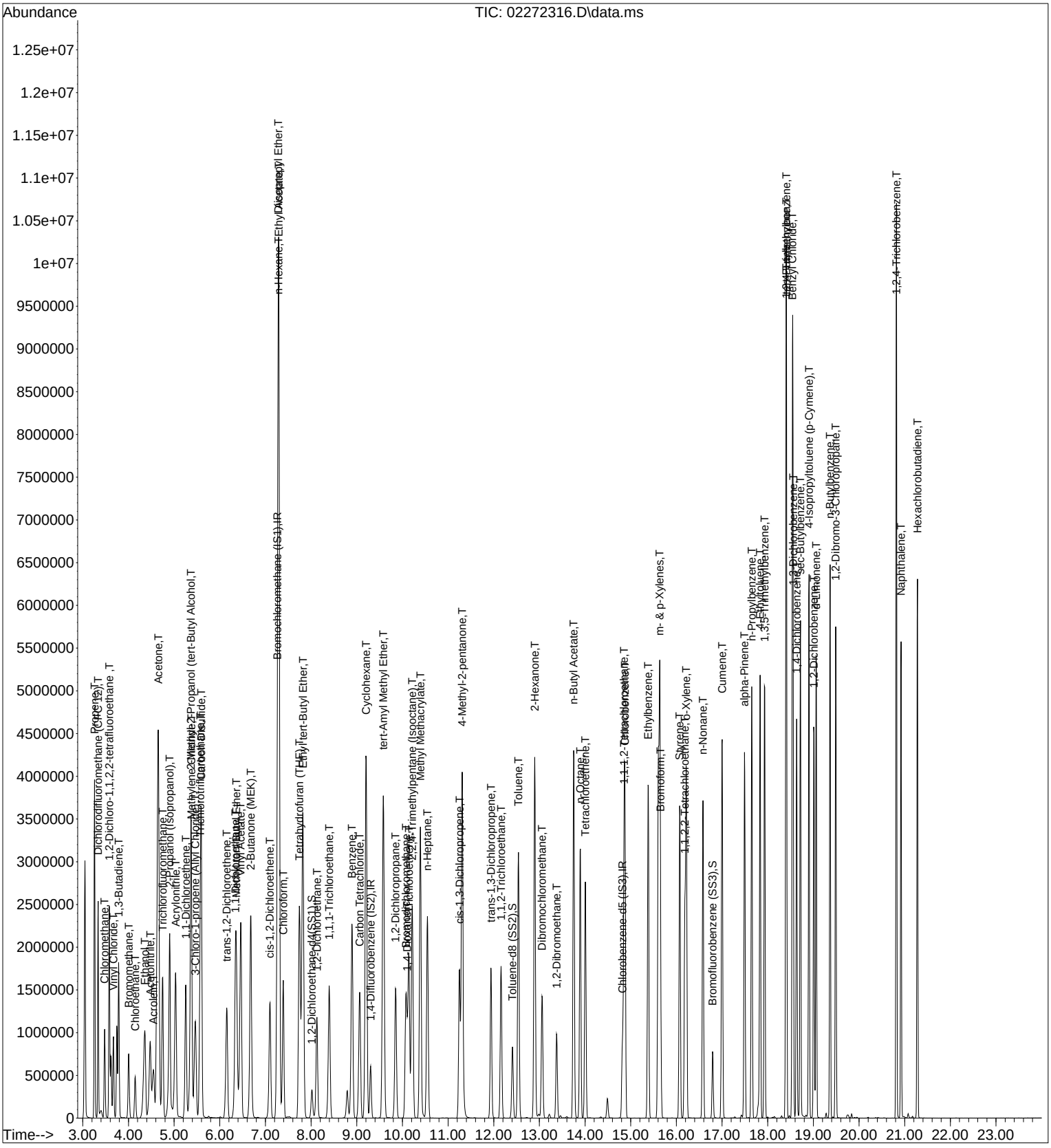
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
51) n-Heptane	10.55	71	631765	49.880 ng		99
52) cis-1,3-Dichloropropene	11.25	75	1193868	50.924 ng		99
53) 4-Methyl-2-pentanone	11.31	58	1383460	100.432 ng		97
54) trans-1,3-Dichloropropene	11.94	75	1173668	49.047 ng		100
55) 1,1,2-Trichloroethane	12.16	97	705707	50.069 ng		100
58) Toluene	12.54	91	2826724	48.999 ng		100
59) 2-Hexanone	12.90	43	3899817	96.552 ng		98
60) Dibromochloromethane	13.06	129	1031690	51.590 ng		100
61) 1,2-Dibromoethane	13.38	107	866853	49.509 ng		100
62) n-Butyl Acetate	13.75	43	4215330	92.824 ng		99
63) n-Octane	13.90	57	629949	49.578 ng		99
64) Tetrachloroethene	14.01	166	1064038	50.160 ng		100
65) Chlorobenzene	14.87	112	1940549	49.872 ng		100
66) Ethylbenzene	15.38	91	3390031	48.759 ng		100
67) m- & p-Xylenes	15.63	91	5619596	97.465 ng		99
68) Bromoform	15.65	173	1038937	50.939 ng		99
69) Styrene	16.07	104	1978903	49.718 ng		100
70) o-Xylene	16.21	91	2791624	49.326 ng		100
71) n-Nonane	16.58	43	1658727	47.957 ng		98
72) 1,1,2,2-Tetrachloroethane	16.19	83	1178220	49.203 ng		100
74) Cumene	17.00	105	3433087	49.227 ng		99
75) alpha-Pinene	17.49	93	1735284	51.470 ng		100
76) n-Propylbenzene	17.65	91	4079978	48.979 ng		99
77) 3-Ethyltoluene	17.00	105	3433087	No Calib		
78) 4-Ethyltoluene	17.83	105	3358077	50.362 ng		98
79) 1,3,5-Trimethylbenzene	17.93	105	2916406	48.896 ng		99
80) alpha-Methylstyrene	17.00	118	6051	No Calib	#	
81) 2-Ethyltoluene	17.00	105	3433087	No Calib		
82) 1,2,4-Trimethylbenzene	18.41	105	2985719	48.422 ng		99
83) n-Decane	17.00	58	23641	No Calib		
84) Benzyl Chloride	18.54	91	4693090	103.373 ng		99
85) 1,3-Dichlorobenzene	18.56	146	1826744	49.506 ng		100
86) 1,4-Dichlorobenzene	18.63	146	1801396	49.493 ng		99
87) sec-Butylbenzene	18.72	105	3752599	48.423 ng		99
88) 4-Isopropyltoluene (p-...	18.91	119	3326471	48.401 ng		99
89) 1,2,3-Trimethylbenzene	17.00	105	3433087	No Calib		
90) 1,2-Dichlorobenzene	19.01	146	1793808	50.230 ng		100
91) d-Limonene	19.06	68	1077122	50.173 ng		100
92) 1,2-Dibromo-3-Chloropr...	19.49	157	1482335	98.463 ng		99
93) n-Undecane	18.08	58	1214	No Calib	#	
94) 1,2,4-Trichlorobenzene	20.82	180	3033916	95.408 ng		100
95) Naphthalene	20.92	128	3472624	51.326 ng		99
96) n-Dodecane	19.06	58	8253	No Calib	#	
97) Hexachlorobutadiene	21.28	225	1070508	48.235 ng		99
98) Cyclohexanone	15.27	55	180	No Calib	#	
99) tert-Butylbenzene	18.41	119	2821166	48.811 ng		99
100) n-Butylbenzene	19.37	91	3110110	48.968 ng		99
101) 1,1,1,2-Tetrachloroethane	14.85	131	834070	50.052 ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272316.D Vial: 7
Acq On : 27 Feb 2023 17:11 Operator: SC
Sample : 50ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02162303 (3/18)

Quant Time: Feb 28 08:25:18 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:08:05 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272317.D Vial: 7
Acq On : 27 Feb 2023 17:43 Operator: SC
Sample : 100ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02162303 (3/18)

Quant Time: Feb 28 08:27:15 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:08:05 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

2/28/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.28	130	151786	12.500	ng		0.03
37) 1,4-Difluorobenzene (IS2)	9.32	114	646044	12.500	ng		0.02
56) Chlorobenzene-d5 (IS3)	14.82	54	151743	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.03	65	313640	12.192	ng		0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.52%				
57) Toluene-d8 (SS2)	12.42	98	716612	12.281	ng		0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.24%				
73) Bromofluorobenzene (SS3)	16.80	174	304644	12.186	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.52%				
Target Compounds							Qvalue
2) Propene	3.26	42	2118197	105.181	ng		99
3) Dichlorodifluoromethan...	3.34	85	3168245	90.201	ng		99
4) Chloromethane	3.49	50	1536016	67.857	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.59	135	1580474	95.795	ng		99
6) Vinyl Chloride	3.68	62	1855110	106.123	ng		100
7) 1,3-Butadiene	3.80	54	1607769	119.312	ng		88
8) Bromomethane	4.02	94	987336	87.568	ng		99
9) Chloroethane	4.16	64	864785	92.831	ng		100
10) Ethanol	4.38	45	4286987	309.303	ng		99
11) Acetonitrile	4.49	41	2927037	82.042	ng		91
12) Acrolein	4.56	56	1697442	173.061	ng		100
13) Acetone	4.67	58	4680884	459.452	ng		90
14) Trichlorofluoromethane	4.76	101	3098888	89.652	ng		99
15) 2-Propanol (Isopropanol)	4.93	45	6327067	146.200	ng		100
16) Acrylonitrile	5.05	53	3699820	180.794	ng		99
17) 1,1-Dichloroethene	5.27	96	1354042	97.357	ng		99
18) 2-Methyl-2-Propanol (t...	5.39	59	3567345	83.906	ng		95
19) Methylene Chloride	5.39	84	1297453	93.841	ng		98
20) 3-Chloro-1-propene (Al...	5.48	41	2467548	90.220	ng		95
21) Trichlorotrifluoroethane	5.58	151	1530439	95.743	ng		99
22) Carbon Disulfide	5.61	76	9181253	180.425	ng		99
23) trans-1,2-Dichloroethene	6.16	61	2259816	95.788	ng		100
24) 1,1-Dichloroethane	6.36	63	2586229	93.801	ng		100
25) Methyl tert-Butyl Ether	6.37	73	3931164	84.941	ng		100
26) Vinyl Acetate	6.48	86	639870	257.789	ng	#	87
27) 2-Butanone (MEK)	6.70	72	1627980	181.286	ng	#	93
28) cis-1,2-Dichloroethene	7.11	61	2153136	94.310	ng		100
29) Diisopropyl Ether	7.29	87	2177987	189.197	ng	#	70
30) Ethyl Acetate	7.31	61	2418213	371.572	ng		97
31) n-Hexane	7.29	57	2252964	89.842	ng		100
32) Chloroform	7.41	83	2723022	92.209	ng		100
34) Tetrahydrofuran (THF)	7.76	72	1506684	176.139	ng		96
35) Ethyl tert-Butyl Ether	7.83	87	3247325	190.058	ng		97
36) 1,2-Dichloroethane	8.14	62	2467476	93.718	ng		99
38) 1,1,1-Trichloroethane	8.41	97	2702228	91.549	ng		100
39) Isopropyl Acetate	9.22	61	8676	No Calib		#	
40) 1-Butanol	8.81	56	77671	No Calib			
41) Benzene	8.91	78	4973170	94.387	ng		99
42) Carbon Tetrachloride	9.08	117	2403217	91.720	ng		100
43) Cyclohexane	9.21	84	3620364	184.369	ng		98
44) tert-Amyl Methyl Ether	9.59	73	7680356	192.818	ng		99
45) 1,2-Dichloropropane	9.87	63	1345772	92.790	ng		100
46) Bromodichloromethane	10.09	83	2267740	95.162	ng		100
47) Trichloroethene	10.16	130	1532666	93.701	ng		100
48) 1,4-Dioxane	10.12	88	1094081	94.564	ng		99
49) 2,2,4-Trimethylpentane...	10.22	57	5771145	93.961	ng		100
50) Methyl Methacrylate	10.41	100	1109150	190.803	ng		98

Data File : I:\MS09\DATA\2023 02\27\02272317.D Vial: 7
Acq On : 27 Feb 2023 17:43 Operator: SC
Sample : 100ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02162303 (3/18)

Quant Time: Feb 28 08:27:15 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:08:05 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

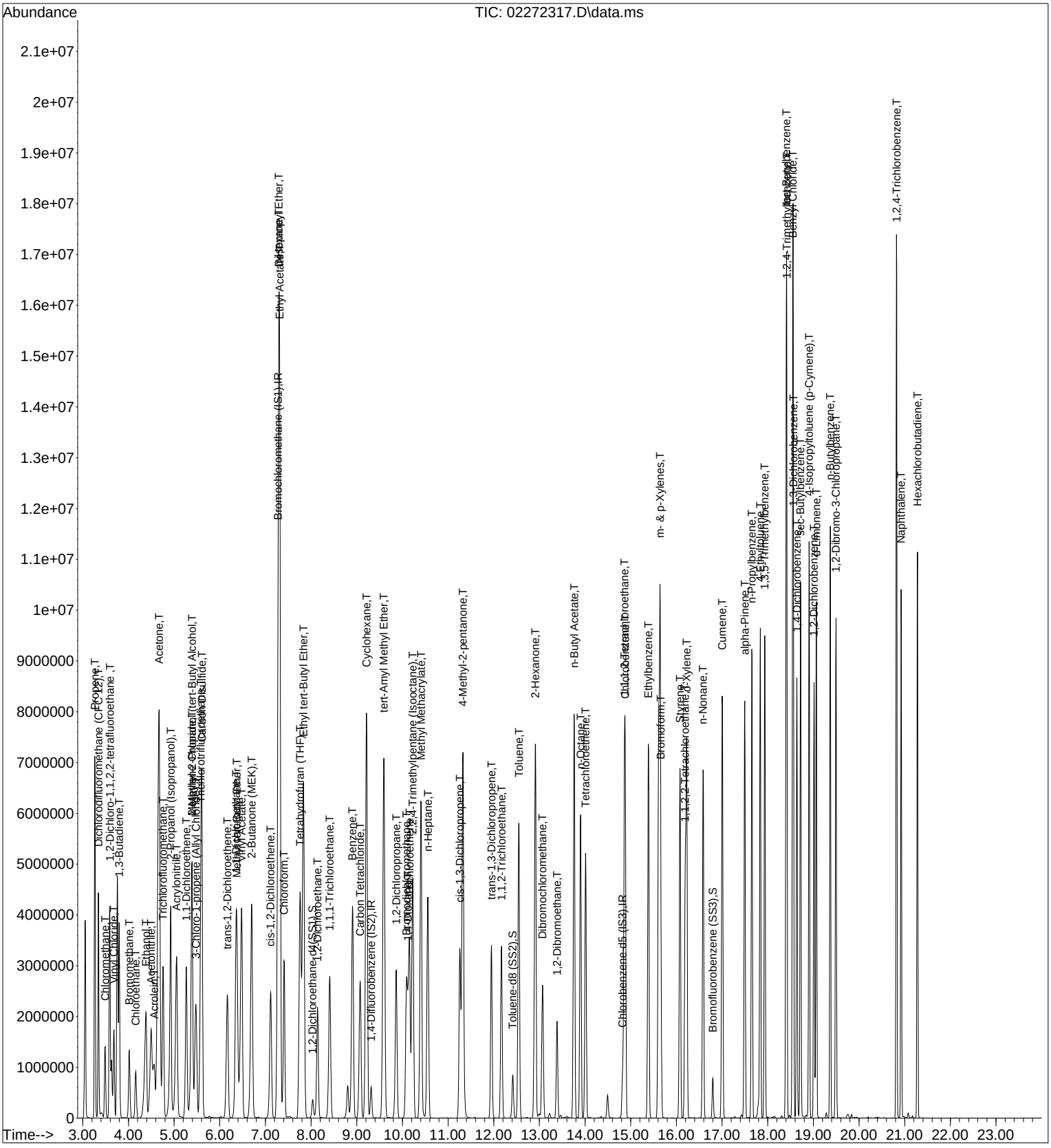
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.56	71	1229507	94.715	ng		99
52) cis-1,3-Dichloropropene	11.26	75	2325985	96.804	ng		99
53) 4-Methyl-2-pentanone	11.33	58	2644649	187.323	ng		94
54) trans-1,3-Dichloropropene	11.95	75	2294032	93.536	ng		99
55) 1,1,2-Trichloroethane	12.17	97	1367150	94.640	ng		99
58) Toluene	12.55	91	5440159	90.570	ng		99
59) 2-Hexanone	12.91	43	7338349	174.497	ng		96
60) Dibromochloromethane	13.07	129	2001160	96.111	ng		99
61) 1,2-Dibromoethane	13.39	107	1684264	92.390	ng		100
62) n-Butyl Acetate	13.76	43	7941201	167.953	ng		97
63) n-Octane	13.90	57	1237387	93.532	ng		99
64) Tetrachloroethene	14.01	166	2046230	92.647	ng		100
65) Chlorobenzene	14.88	112	3755826	92.706	ng		99
66) Ethylbenzene	15.39	91	6463538	89.289	ng		99
67) m- & p-Xylenes	15.64	91	10680993	177.921	ng		98
68) Bromoform	15.66	173	1973347	92.926	ng		100
69) Styrene	16.08	104	3780333	91.220	ng		99
70) o-Xylene	16.23	91	5276116	89.538	ng		99
71) n-Nonane	16.58	43	3175976	88.192	ng		97
72) 1,1,2,2-Tetrachloroethane	16.19	83	2276514	91.308	ng		100
74) Cumene	17.00	105	6490255	89.383	ng		98
75) alpha-Pinene	17.50	93	3381075	96.319	ng		100
76) n-Propylbenzene	17.65	91	7652615	88.233	ng		98
77) 3-Ethyltoluene	17.00	105	6490255	No Calib			
78) 4-Ethyltoluene	17.84	105	6425792	92.558	ng		99
79) 1,3,5-Trimethylbenzene	17.93	105	5418736	87.257	ng		98
80) alpha-Methylstyrene	17.00	118	10624	No Calib		#	
81) 2-Ethyltoluene	17.00	105	6490255	No Calib			
82) 1,2,4-Trimethylbenzene	18.42	105	5458439	85.023	ng		97
83) n-Decane	17.00	58	45267	No Calib			
84) Benzyl Chloride	18.55	91	8701656	184.088	ng		96
85) 1,3-Dichlorobenzene	18.56	146	3401319	88.531	ng		100
86) 1,4-Dichlorobenzene	18.64	146	3378123	89.142	ng		99
87) sec-Butylbenzene	18.72	105	6837093	84.735	ng		98
88) 4-Isopropyltoluene (p-...	18.91	119	6093404	85.154	ng		99
89) 1,2,3-Trimethylbenzene	17.00	105	6490255	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	3358852	90.333	ng		100
91) d-Limonene	19.06	68	1994240	89.220	ng		99
92) 1,2-Dibromo-3-Chloropr...	19.50	157	2761894	176.200	ng		96
93) n-Undecane	18.08	58	3105	No Calib			
94) 1,2,4-Trichlorobenzene	20.82	180	5254105	158.692	ng		100
95) Naphthalene	20.92	128	6466026	91.788	ng		98
96) n-Dodecane	19.06	58	15048	No Calib		#	
97) Hexachlorobutadiene	21.28	225	1881167	81.410	ng		99
98) Cyclohexanone	15.27	55	526	No Calib		#	
99) tert-Butylbenzene	18.41	119	5208465	86.552	ng		98
100) n-Butylbenzene	19.37	91	5629198	85.125	ng		97
101) 1,1,1,2-Tetrachloroethane	14.86	131	1604784	92.494	ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272317.D Vial: 7
Acq On : 27 Feb 2023 17:43 Operator: SC
Sample : 100ng TO-15 ICAL STD Inst : MS09
Misc : S35-02212305/S35-02162303 (3/18)

Quant Time: Feb 28 08:27:15 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Feb 27 17:08:05 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272325.D Vial: 16
Acq On : 28 Feb 2023 11:22 Operator: SC
Sample : 25ng TO-15 ICV STD Inst : MS09
Misc : S35-02212305/S35-02062302 (3/8)

Quant Time: Feb 28 11:44:02 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

2/28/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	147842	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.29	114	629577	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.81	54	143819	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	302879	12.101	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.80%				
57) Toluene-d8 (SS2)	12.40	98	698383	12.780	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.24%				
73) Bromofluorobenzene (SS3)	16.79	174	301341	13.523	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.16%				
Target Compounds							Qvalue
2) Propene	3.25	42	427320	21.729	ng		99
3) Dichlorodifluoromethan...	3.33	85	750115	21.975	ng		100
4) Chloromethane	3.47	50	479332	22.359	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	3.57	135	360974	22.579	ng		100
6) Vinyl Chloride	3.66	62	391799	22.800	ng		99
7) 1,3-Butadiene	3.77	54	320401	26.868	ng		99
8) Bromomethane	3.99	94	262067	24.000	ng		100
9) Chloroethane	4.13	64	197205	22.000	ng		99
10) Ethanol	4.33	45	1456431	103.812	ng		99
11) Acetonitrile	4.45	41	664073	18.655	ng		99
12) Acrolein	4.53	56	443782	47.457	ng		99
13) Acetone	4.63	58	1096103	103.101	ng		100
14) Trichlorofluoromethane	4.73	101	729381	21.430	ng		100
15) 2-Propanol (Isopropanol)	4.87	45	1836836	44.254	ng		100
16) Acrylonitrile	5.01	53	861711	42.800	ng		100
17) 1,1-Dichloroethene	5.24	96	307300	22.333	ng		98
18) 2-Methyl-2-Propanol (t...	5.35	59	1787632	49.325	ng		99
19) Methylene Chloride	5.36	84	303373	21.621	ng		97
20) 3-Chloro-1-propene (Al...	5.44	41	502000	18.967	ng		96
21) Trichlorotrifluoroethane	5.56	151	357654	23.227	ng		98
22) Carbon Disulfide	5.58	76	2230918	43.680	ng		100
23) trans-1,2-Dichloroethene	6.14	61	514803	22.462	ng		98
24) 1,1-Dichloroethane	6.32	63	602404	21.411	ng		100
25) Methyl tert-Butyl Ether	6.35	73	1030178	23.735	ng		99
26) Vinyl Acetate	6.44	86	327954	159.180	ng	#	85
27) 2-Butanone (MEK)	6.66	72	382317	45.116	ng		96
28) cis-1,2-Dichloroethene	7.08	61	490829	21.102	ng		99
29) Diisopropyl Ether	7.27	87	496541	42.267	ng	#	26
30) Ethyl Acetate	7.27	61	238776	36.650	ng		97
31) n-Hexane	7.28	57	543322	20.085	ng		99
32) Chloroform	7.37	83	637093	21.456	ng		100
34) Tetrahydrofuran (THF)	7.73	72	349583	41.192	ng		97
35) Ethyl tert-Butyl Ether	7.80	87	754599	47.162	ng		99
36) 1,2-Dichloroethane	8.11	62	583987	22.629	ng		100
38) 1,1,1-Trichloroethane	8.38	97	646898	23.294	ng		99
39) Isopropyl Acetate	9.19	61	1951	No Calib		#	
40) 1-Butanol	8.81	56	3029	No Calib		#	
41) Benzene	8.88	78	1180266	21.966	ng		100
42) Carbon Tetrachloride	9.05	117	600790	25.370	ng		100
43) Cyclohexane	9.20	84	870274	43.539	ng		98
44) tert-Amyl Methyl Ether	9.57	73	1783779	48.839	ng		99
45) 1,2-Dichloropropane	9.84	63	314357	20.762	ng		100
46) Bromodichloromethane	10.06	83	538521	24.160	ng		99
47) Trichloroethene	10.13	130	367802	23.346	ng		100
48) 1,4-Dioxane	10.09	88	258573	24.573	ng		99
49) 2,2,4-Trimethylpentane...	10.21	57	1338761	20.375	ng		99
50) Methyl Methacrylate	10.38	100	261447	51.556	ng		97

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272325.D Vial: 16
Acq On : 28 Feb 2023 11:22 Operator: SC
Sample : 25ng TO-15 ICV STD Inst : MS09
Misc : S35-02212305/S35-02062302 (3/8)

Quant Time: Feb 28 11:44:02 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

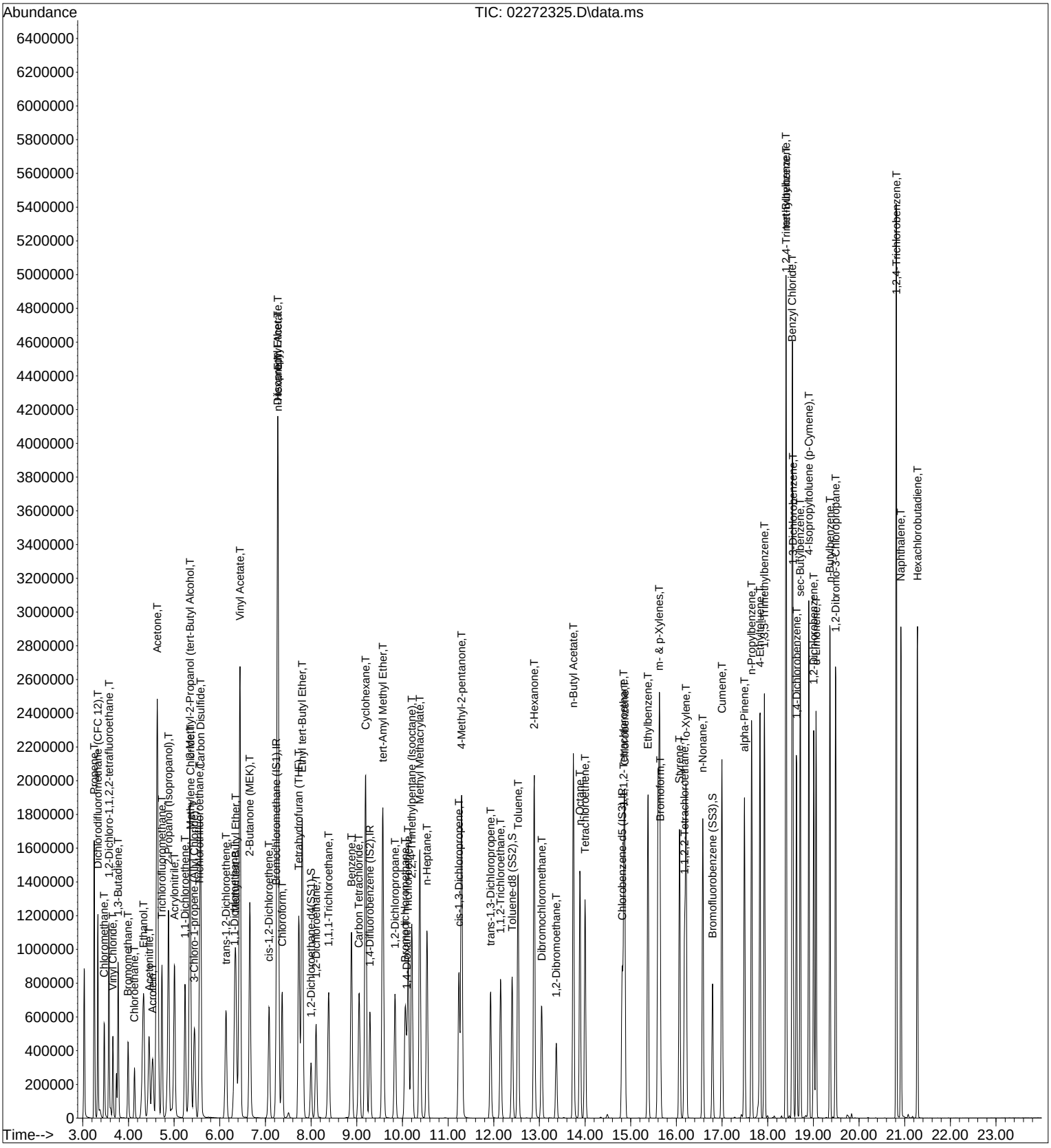
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
51) n-Heptane	10.54	71	292419	21.846	ng		98
52) cis-1,3-Dichloropropene	11.24	75	590475	27.933	ng		99
53) 4-Methyl-2-pentanone	11.30	58	631433	47.981	ng		98
54) trans-1,3-Dichloropropene	11.93	75	500314	25.966	ng		100
55) 1,1,2-Trichloroethane	12.15	97	327167	23.380	ng		100
58) Toluene	12.53	91	1321256	22.708	ng		100
59) 2-Hexanone	12.89	43	1826325	49.855	ng		99
60) Dibromochloromethane	13.05	129	464627	26.068	ng		100
61) 1,2-Dibromoethane	13.37	107	394427	24.595	ng		100
62) n-Butyl Acetate	13.74	43	2064809	50.759	ng		100
63) n-Octane	13.89	57	291370	22.949	ng		100
64) Tetrachloroethene	14.00	166	495443	24.699	ng		100
65) Chlorobenzene	14.87	112	918106	23.875	ng		100
66) Ethylbenzene	15.38	91	1624986	24.351	ng		100
67) m- & p-Xylenes	15.62	91	2687745	49.078	ng		100
68) Bromoform	15.65	173	487059	28.610	ng		100
69) Styrene	16.07	104	925702	26.804	ng		100
70) o-Xylene	16.21	91	1327431	24.599	ng		100
71) n-Nonane	16.58	43	797487	23.408	ng		100
72) 1,1,2,2-Tetrachloroethane	16.18	83	572006	25.574	ng		100
74) Cumene	17.00	105	1613100	24.259	ng		100
75) alpha-Pinene	17.49	93	776782	27.708	ng		100
76) n-Propylbenzene	17.64	91	1931636	24.276	ng		100
77) 3-Ethyltoluene	17.00	105	1613100	No Calib			
78) 4-Ethyltoluene	17.83	105	1599107	25.426	ng		100
79) 1,3,5-Trimethylbenzene	17.93	105	1412586	24.999	ng		100
80) alpha-Methylstyrene	17.00	118	2786	No Calib		#	
81) 2-Ethyltoluene	17.00	105	1613100	No Calib			
82) 1,2,4-Trimethylbenzene	18.41	105	1438351	25.064	ng		100
83) n-Decane	17.00	58	11950	No Calib			
84) Benzyl Chloride	18.54	91	2332770	73.270	ng		100
85) 1,3-Dichlorobenzene	18.55	146	885592	26.636	ng		99
86) 1,4-Dichlorobenzene	18.63	146	866713	26.122	ng		100
87) sec-Butylbenzene	18.71	105	1787588	23.868	ng		100
88) 4-Isopropyltoluene (p-...	18.90	119	1577548	24.169	ng		99
89) 1,2,3-Trimethylbenzene	17.00	105	1613100	No Calib			
90) 1,2-Dichlorobenzene	19.01	146	864343	25.994	ng		99
91) d-Limonene	19.06	68	463450	24.109	ng		99
92) 1,2-Dibromo-3-Chloropr...	19.49	157	719125	57.536	ng		99
93) n-Undecane	0.00	58	0	N.D.			
94) 1,2,4-Trichlorobenzene	20.82	180	1582418	62.046	ng		100
95) Naphthalene	20.92	128	1849508	36.507	ng		100
96) n-Dodecane	19.06	58	4064	No Calib		#	
97) Hexachlorobutadiene	21.28	225	504742	23.866	ng		100
98) Cyclohexanone	0.00	55	0	N.D.			
99) tert-Butylbenzene	18.40	119	1354771	24.811	ng		100
100) n-Butylbenzene	19.37	91	1480254	24.754	ng		100
101) 1,1,1,2-Tetrachloroethane	14.85	131	385206	25.583	ng		100

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 02\27\02272325.D Vial: 16
Acq On : 28 Feb 2023 11:22 Operator: SC
Sample : 25ng TO-15 ICV STD Inst : MS09
Misc : S35-02212305/S35-02062302 (3/8)

Quant Time: Feb 28 11:44:02 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



ALS Environmental

LCS Acceptance Criteria

2/28/23

25ng TO-15 ICV STD

	RT
Bromochloromethane (IS1)	7.24
1,4-Difluorobenzene (IS2)	9.29
Chlorobenzene-d5 (IS3)	14.81

Datafile: 02272325.D
Instrument: MS-09
Date: 2/28/2023

CAS No	Analyte	Amount Found	Spike Amount	% REC	ALS LCS Limits	ALS Pass/Fail	70-130 LCS Limits	70-130 Pass/Fail	DOD LCS Limits	DOD Pass/Fail
115-07-1	Propene	21.729	26.5	82	56-128	ok	70-130	ok	57-136	ok
75-71-8	Dichlorodifluoromethane	21.975	26.5	83	71-112	ok	70-130	ok	59-128	ok
74-87-3	Chloromethane	22.359	26.3	85	53-126	ok	70-130	ok	59-132	ok
76-14-2	Freon 114	22.579	26.8	84	62-121	ok	70-130	ok	63-121	ok
75-01-4	Vinyl Chloride	22.800	26.3	87	63-123	ok	70-130	ok	64-127	ok
106-99-0	1,3-Butadiene	26.868	26.3	102	63-135	ok	70-130	ok	66-134	ok
74-83-9	Bromomethane	24.000	26.3	91	71-112	ok	70-130	ok	63-134	ok
75-00-3	Chloroethane	22.000	26.5	83	66-117	ok	70-130	ok	63-127	ok
64-17-5	Ethanol	103.812	138	75	57-117	ok	70-130	ok	59-125	ok
75-05-8	Acetonitrile	18.655	26.8	70	59-131	ok	70-130	ok	63-132	ok
107-02-8	Acrolein	47.457	55.0	86	71-123	ok	70-130	ok	62-126	ok
67-64-1	Acetone	103.101	133	78	60-117	ok	70-130	ok	58-128	ok
75-69-4	Trichlorofluoromethane	21.430	26.3	81	71-114	ok	70-130	ok	62-126	ok
67-63-0	Isopropanol	44.254	51.8	85	61-124	ok	70-130	ok	52-125	ok
107-13-1	Acrylonitrile	42.800	52.3	82	65-130	ok	70-130	ok	71-137	ok
75-35-4	1,1-Dichloroethene	22.333	25.5	88	74-114	ok	70-130	ok	61-133	ok
75-65-0	tert-Butanol	49.325	51.0	97	56-135	ok	70-130	ok	24-150	ok
75-09-2	Methylene Chloride	21.621	25.5	85	75-112	ok	70-130	ok	62-115	ok
107-05-1	Allyl Chloride	18.967	26.5	72	57-127	ok	70-130	ok	71-131	ok
76-13-1	Trichlorotrifluoroethane	23.227	26.3	88	73-114	ok	70-130	ok	66-126	ok
75-15-0	Carbon Disulfide	43.680	53.8	81	70-113	ok	70-130	ok	57-134	ok
156-60-5	trans-1,2-Dichloroethene	22.462	27.0	83	76-119	ok	70-130	ok	67-124	ok
75-34-3	1,1-Dichloroethane	21.411	27.0	79	70-114	ok	70-130	ok	68-126	ok
1634-04-4	Methyl tert-Butyl Ether	23.735	27.0	88	72-118	ok	70-130	ok	66-126	ok
108-05-4	Vinyl Acetate	159.180	138	115	56-137	ok	70-130	ok	56-139	ok
78-93-3	2-Butanone	45.116	51.8	87	74-121	ok	70-130	ok	67-130	ok
156-59-2	cis-1,2-Dichloroethene	21.102	26.8	79	73-117	ok	70-130	ok	70-121	ok
108-20-3	Diisopropyl Ether	42.267	53.3	79	58-124	ok	70-130	ok	70-117	ok
141-78-6	Ethyl Acetate	36.650	49.8	74	59-161	ok	70-130	ok	65-128	ok
110-54-3	n-Hexane	20.085	26.5	76	55-130	ok	70-130	ok	63-120	ok
67-66-3	Chloroform	21.456	27.0	79	71-114	ok	70-130	ok	68-123	ok
109-99-9	Tetrahydrofuran	41.192	50.3	82	73-114	ok	70-130	ok	64-123	ok
637-92-3	Ethyl tert-Butyl Ether	47.162	53.3	88	76-119	ok	70-130	ok	61-130	ok
107-06-2	1,2-Dichloroethane	22.629	25.5	89	71-119	ok	70-130	ok	65-128	ok
71-55-6	1,1,1-Trichloroethane	23.294	26.3	89	73-119	ok	70-130	ok	68-125	ok
108-21-4	Isopropyl Acetate	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	65-129	#N/A
71-36-3	1-Butanol	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-133	#N/A
71-43-2	Benzene	21.966	25.5	86	72-113	ok	70-130	ok	69-119	ok
56-23-5	Carbon Tetrachloride	25.370	26.3	96	67-123	ok	70-130	ok	68-132	ok
110-82-7	Cyclohexane	43.539	53.3	82	70-119	ok	70-130	ok	70-117	ok
994-05-8	tert-Amyl Methyl Ether	48.839	53.3	92	74-120	ok	70-130	ok	62-133	ok
78-87-5	1,2-Dichloropropane	20.762	26.8	77	70-118	ok	70-130	ok	69-123	ok
75-27-4	Bromodichloromethane	24.160	27.0	89	74-119	ok	70-130	ok	72-128	ok
79-01-6	Trichloroethene	23.346	26.5	88	74-115	ok	70-130	ok	71-123	ok
123-91-1	1,4-Dioxane	24.573	26.5	93	77-124	ok	70-130	ok	71-122	ok
540-84-1	Isooctane	20.375	26.8	76	65-120	ok	70-130	ok	68-121	ok
80-62-6	Methyl Methacrylate	51.556	53.5	96	78-126	ok	70-130	ok	70-128	ok
142-82-5	n-Heptane	21.846	26.8	82	70-119	ok	70-130	ok	69-123	ok
10061-01-5	cis-1,3-Dichloropropene	27.933	26.5	105	81-126	ok	70-130	ok	70-128	ok
108-10-1	4-Methyl-2-pentanone	47.981	53.3	90	73-129	ok	70-130	ok	67-130	ok

ALS Environmental

LCS Acceptance Criteria

25ng TO-15 ICV STD

	RT
Bromochloromethane (IS1)	7.24
1,4-Difluorobenzene (IS2)	9.29
Chlorobenzene-d5 (IS3)	14.81

Datafile: 02272325.D
Instrument: MS-09
Date: 2/28/2023

CAS No	Analyte	Amount Found	Spike Amount	% REC	ALS LCS Limits	ALS Pass/Fail	70-130 LCS Limits	70-130 Pass/Fail	DOD LCS Limits	DOD Pass/Fail
10061-02-6	trans-1,3-Dichloropropene	25.966	24.5	106	80-127	ok	70-130	ok	75-133	ok
79-00-5	1,1,2-Trichloroethane	23.380	27.0	87	78-117	ok	70-130	ok	73-119	ok
108-88-3	Toluene	22.708	26.8	85	70-118	ok	70-130	ok	66-119	ok
591-78-6	2-Hexanone	49.855	53.3	94	74-132	ok	70-130	ok	62-128	ok
124-48-1	Dibromochloromethane	26.068	26.8	97	69-137	ok	70-130	ok	70-130	ok
106-93-4	1,2-Dibromoethane	24.595	25.5	96	76-128	ok	70-130	ok	74-122	ok
123-86-4	Butyl Acetate	50.759	53.0	96	75-134	ok	70-130	ok	65-134	ok
111-65-9	n-Octane	22.949	26.5	87	68-120	ok	70-130	ok	69-121	ok
127-18-4	Tetrachloroethene	24.699	26.8	92	63-130	ok	70-130	ok	66-124	ok
108-90-7	Chlorobenzene	23.875	27.0	88	70-118	ok	70-130	ok	70-119	ok
100-41-4	Ethylbenzene	24.351	27.3	89	71-123	ok	70-130	ok	70-124	ok
179601-23-1	m- & p-Xylene	49.078	53.8	91	67-127	ok	70-130	ok	61-134	ok
75-25-2	Bromoform	28.610	27.3	105	65-149	ok	70-130	ok	66-139	ok
100-42-5	Styrene	26.804	26.8	100	76-132	ok	70-130	ok	73-127	ok
95-47-6	o-Xylene	24.599	27.0	91	69-124	ok	70-130	ok	67-125	ok
111-84-2	n-Nonane	23.408	26.8	87	64-127	ok	70-130	ok	63-128	ok
79-34-5	1,1,2,2-Tetrachloroethane	25.574	27.0	95	69-128	ok	70-130	ok	65-127	ok
98-82-8	Cumene	24.259	26.5	92	69-125	ok	70-130	ok	68-124	ok
80-56-8	alpha-Pinene	27.708	27.0	103	68-129	ok	70-130	ok	62-136	ok
103-65-1	n-Propylbenzene	24.276	26.5	92	70-127	ok	70-130	ok	69-123	ok
620-14-4	3-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-123	#N/A
622-96-8	4-Ethyltoluene	25.426	27.3	93	69-127	ok	70-130	ok	67-129	ok
108-67-8	1,3,5-Trimethylbenzene	24.999	27.0	93	66-129	ok	70-130	ok	67-130	ok
98-83-9	alpha-Methylstyrene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	67-128	#N/A
611-14-3	2-Ethyltoluene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	66-121	#N/A
95-63-6	1,2,4-Trimethylbenzene	25.064	26.5	95	63-142	ok	70-130	ok	66-132	ok
124-18-5	n-Decane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	70-118	#N/A
100-44-7	Benzyl Chloride	73.270	53.5	137	73-145	ok	70-130	FAIL	50-147	ok
541-73-1	1,3-Dichlorobenzene	26.636	26.8	99	67-136	ok	70-130	ok	65-130	ok
106-46-7	1,4-Dichlorobenzene	26.122	26.8	97	63-134	ok	70-130	ok	60-131	ok
135-98-8	sec-Butylbenzene	23.868	26.3	91	68-130	ok	70-130	ok	68-125	ok
99-87-6	p-Isopropyltoluene	24.169	26.3	92	60-139	ok	70-130	ok	67-130	ok
526-73-8	1,2,3-Trimethylbenzene	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	60-134	#N/A
95-50-1	1,2-Dichlorobenzene	25.994	26.5	98	64-139	ok	70-130	ok	63-129	ok
5989-27-5	d-Limonene	24.109	26.0	93	63-137	ok	70-130	ok	65-136	ok
96-12-8	1,2-Dibromo-3-Chloropropane	57.536	52.0	111	72-145	ok	70-130	ok	73-133	ok
1120-21-4	n-Undecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	69-123	#N/A
120-82-1	1,2,4-Trichlorobenzene	62.046	55.0	113	62-154	ok	70-130	ok	55-142	ok
91-20-3	Naphthalene	36.507	27.5	133	62-156	ok	70-130	FAIL	57-138	ok
112-40-3	n-Dodecane	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	62-147	#N/A
87-68-3	Hexachloro-1,3-butadiene	23.866	27.3	87	55-142	ok	70-130	ok	56-138	ok
108-94-1	Cyclohexanone	0.000	#N/A	#N/A	0	#N/A	70-130	#N/A	61-132	#N/A
98-06-6	tert-Butylbenzene	24.811	26.5	94	61-140	ok	70-130	ok	65-124	ok
104-51-8	n-Butylbenzene	24.754	26.0	95	70-131	ok	70-130	ok	66-130	ok

Evaluate Continuing Calibration Report

Data File : I:\MS09\DATA\2023 04\11\04112302.D Vial: 2
Acq On : 11 Apr 2023 9:28 Operator: SC
Sample : CCV R9041123 25ng Inst : MS09
Misc : S37-04052305/S37-04032304 (5/2)

Quant Time: Apr 11 09:54:32 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/11/23

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	102	0.00
2	T	Propene	1.663	1.793	-7.8	110	0.00
3	T	Dichlorodifluoromethane (CF	2.886	3.091	-7.1	109	0.00
4	T	Chloromethane	1.813	2.140	-18.0	117	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.352	1.328	1.8	100	0.01
6	T	Vinyl Chloride	1.453	1.466	-0.9	104	0.00
7	T	1,3-Butadiene	1.008	1.082	-7.3	100	0.00
8	T	Bromomethane	0.923	0.916	0.8	101	0.00
9	T	Chloroethane	0.758	0.831	-9.6	111	0.01
10	T	Ethanol	1.186	1.167	1.6	104	0.00
11	T	Acetonitrile	3.010	3.070	-2.0	107	0.00
12	T	Acrolein	0.791	0.827	-4.6	105	0.00
13	T	Acetone	0.899	0.842	6.3	102	0.00
14	T	Trichlorofluoromethane	2.878	2.940	-2.2	106	0.00
15	T	2-Propanol (Isopropanol)	3.509	3.651	-4.0	105	0.00
16	T	Acrylonitrile	1.702	1.693	0.5	103	0.00
17	T	1,1-Dichloroethene	1.163	1.168	-0.4	104	0.00
18	T	2-Methyl-2-Propanol (tert-B	3.064	3.559	-16.2	104	0.00
19	T	Methylene Chloride	1.186	1.168	1.5	105	0.00
20	T	3-Chloro-1-propene (Allyl C	2.238	2.464	-10.1	112	0.00
21	T	Trichlorotrifluoroethane	1.302	1.211	7.0	94	0.00
22	T	Carbon Disulfide	4.318	4.289	0.7	105	0.00
23	T	trans-1,2-Dichloroethene	1.938	1.968	-1.5	104	0.00
24	T	1,1-Dichloroethane	2.379	2.365	0.6	106	0.00
25	T	Methyl tert-Butyl Ether	3.670	4.030	-9.8	108	0.00
26	T	Vinyl Acetate	0.174	0.210	-20.7	105	0.01
27	T	2-Butanone (MEK)	0.716	0.774	-8.1	107	0.00
28	T	cis-1,2-Dichloroethene	1.967	1.895	3.7	103	0.00
29	T	Diisopropyl Ether	0.993	0.930	6.3	100	0.00
30	T	Ethyl Acetate	0.551	0.492	10.7	94	0.00
31	T	n-Hexane	2.287	1.971	13.8	97	0.00
32	T	Chloroform	2.511	2.435	3.0	102	0.00
33	S	1,2-Dichloroethane-d4(SS1)	2.116	2.232	-5.5	108	0.00
34	T	Tetrahydrofuran (THF)	0.718	0.728	-1.4	106	0.00
35	T	Ethyl tert-Butyl Ether	1.353	1.465	-8.3	106	0.00
36	T	1,2-Dichloroethane	2.182	2.168	0.6	102	0.00
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	105	0.00
38	T	1,1,1-Trichloroethane	0.551	0.559	-1.5	103	0.00
39	T	Isopropyl Acetate	0.000	0.000	0.0	96	0.02
40	T	1-Butanol	0.000	0.000	0.0	99	0.00
41	T	Benzene	1.067	1.009	5.4	104	0.00
42	T	Carbon Tetrachloride	0.470	0.510	-8.5	106	0.00
43	T	Cyclohexane	0.397	0.383	3.5	106	0.00
44	T	tert-Amyl Methyl Ether	0.725	0.792	-9.2	108	0.00
45	T	1,2-Dichloropropane	0.301	0.281	6.6	105	0.00
46	T	Bromodichloromethane	0.443	0.451	-1.8	103	0.00
47	T	Trichloroethene	0.313	0.303	3.2	101	0.00
48	T	1,4-Dioxane	0.209	0.215	-2.9	101	0.00
49	T	2,2,4-Trimethylpentane (Iso	1.305	1.168	10.5	103	0.00
50	T	Methyl Methacrylate	0.101	0.108	-6.9	101	0.00
51	T	n-Heptane	0.266	0.261	1.9	109	0.00
52	T	cis-1,3-Dichloropropene	0.420	0.478	-13.8	108	0.00
53	T	4-Methyl-2-pentanone	0.261	0.252	3.4	97	0.00
54	T	trans-1,3-Dichloropropene	0.383	0.500	-30.5#	111	0.00
55	T	1,1,2-Trichloroethane	0.278	0.274	1.4	103	0.00

Data File : I:\MS09\DATA\2023 04\11\04112302.D Vial: 2
Acq On : 11 Apr 2023 9:28 Operator: SC
Sample : CCV R9041123 25ng Inst : MS09
Misc : S37-04052305/S37-04032304 (5/2)

Quant Time: Apr 11 09:54:32 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	105	0.00
57	S	Toluene-d8 (SS2)	4.750	4.955	-4.3	108	0.00
58	T	Toluene	5.057	4.897	3.2	104	0.00
59	T	2-Hexanone	3.184	3.210	-0.8	97	0.00
60	T	Dibromochloromethane	1.549	1.669	-7.7	102	0.00
61	T	1,2-Dibromoethane	1.394	1.474	-5.7	103	0.00
62	T	n-Butyl Acetate	3.536	3.574	-1.1	96	0.00
63	T	n-Octane	1.104	1.064	3.6	102	0.00
64	T	Tetrachloroethene	1.743	1.604	8.0	92	0.00
65	T	Chlorobenzene	3.342	3.343	-0.0	105	0.00
66	T	Ethylbenzene	5.800	5.915	-2.0	104	0.00
67	T	m- & p-Xylenes	4.760	4.910	-3.2	104	0.00
68	T	Bromoform	1.480	1.597	-7.9	96	0.00
69	T	Styrene	3.002	3.457	-15.2	106	0.00
70	T	o-Xylene	4.690	4.821	-2.8	104	0.00
71	T	n-Nonane	2.961	2.896	2.2	102	0.00
72	T	1,1,2,2-Tetrachloroethane	1.944	2.080	-7.0	106	0.00
73	S	Bromofluorobenzene (SS3)	1.937	1.862	3.9	95	0.00
74	T	Cumene	5.779	5.873	-1.6	103	0.00
75	T	alpha-Pinene	2.437	2.938	-20.6	107	0.00
76	T	n-Propylbenzene	6.916	7.175	-3.7	105	0.00
77	T	3-Ethyltoluene	0.000	0.000	0.0	103	0.00
78	T	4-Ethyltoluene	5.466	5.697	-4.2	105	0.00
79	T	1,3,5-Trimethylbenzene	4.911	5.066	-3.2	104	0.00
80	T	alpha-Methylstyrene	0.000	0.000	0.0	123	-0.10
81	T	2-Ethyltoluene	0.000	0.000	0.0	103	0.00
82	T	1,2,4-Trimethylbenzene	4.988	5.248	-5.2	104	0.00
83	T	n-Decane	0.000	0.000	0.0	115	-0.01
84	T	Benzyl Chloride	2.767	4.517	-63.2#	122	0.00
85	T	1,3-Dichlorobenzene	2.890	3.076	-6.4	102	0.00
86	T	1,4-Dichlorobenzene	2.884	3.106	-7.7	104	0.00
87	T	sec-Butylbenzene	6.509	6.613	-1.6	104	0.00
88	T	4-Isopropyltoluene (p-Cymen	5.673	5.828	-2.7	104	0.00
89	T	1,2,3-Trimethylbenzene	0.000	0.000	0.0	103	0.00
90	T	1,2-Dichlorobenzene	2.890	2.976	-3.0	102	0.00
91	T	d-Limonene	1.671	1.893	-13.3	108	0.00
92	T	1,2-Dibromo-3-Chloropropane	1.086	1.222	-12.5	99	0.00
93	T	n-Undecane	0.000	0.000	0.0	0#	-18.11#
94	T	1,2,4-Trichlorobenzene	2.217	2.747	-23.9	106	0.00
95	T	Naphthalene	4.403	6.665	-51.4#	120	0.00
96	T	n-Dodecane	0.000	0.000	0.0	114	0.00
97	T	Hexachlorobutadiene	1.838	1.950	-6.1	108	0.00
98	T	Cyclohexanone	0.000	0.000	0.0	0#	-15.27#
99	T	tert-Butylbenzene	4.746	4.840	-2.0	102	0.00
100	T	n-Butylbenzene	5.197	5.572	-7.2	107	0.00
101	T	1,1,1,2-Tetrachloroethane	1.309	1.356	-3.6	100	0.00

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112302.D Vial: 2
Acq On : 11 Apr 2023 9:28 Operator: SC
Sample : CCV R9041123 25ng Inst : MS09
Misc : S37-04052305/S37-04032304 (5/2)

Quant Time: Apr 11 09:54:32 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/11/23

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	7.24	130	148885	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	9.29	114	656345	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.81	54	151073	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	8.00	65	332261	13.182	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.44%				
57) Toluene-d8 (SS2)	12.40	98	748540	13.040	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.32%				
73) Bromofluorobenzene (SS3)	16.79	174	281339	12.019	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.16%				
Target Compounds							Qvalue
2) Propene	3.26	42	560613	28.308	ng		98
3) Dichlorodifluoromethan...	3.34	85	975728	28.384	ng		100
4) Chloromethane	3.48	50	656343	30.402	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	3.59	135	411185	25.539	ng		100
6) Vinyl Chloride	3.67	62	440819	25.473	ng		99
7) 1,3-Butadiene	3.78	54	341639	28.448	ng		94
8) Bromomethane	4.01	94	278194	25.298	ng		100
9) Chloroethane	4.15	64	254972	28.246	ng		100
10) Ethanol	4.34	45	1199313	84.886	ng		100
11) Acetonitrile	4.46	41	831924	23.206	ng		100
12) Acrolein	4.54	56	475231	50.464	ng		99
13) Acetone	4.64	58	1320702	123.357	ng		99
14) Trichlorofluoromethane	4.74	101	910580	26.566	ng		100
15) 2-Propanol (Isopropanol)	4.88	45	2228737	53.320	ng		97
16) Acrylonitrile	5.02	53	1033227	50.959	ng		99
17) 1,1-Dichloroethene	5.25	96	375495	27.098	ng		100
18) 2-Methyl-2-Propanol (t...	5.35	59	2235845	61.260	ng		99
19) Methylene Chloride	5.37	84	368547	26.082	ng		96
20) 3-Chloro-1-propene (Al...	5.45	41	777818	29.182	ng		98
21) Trichlorotrifluoroethane	5.57	151	389411	25.112	ng		90
22) Carbon Disulfide	5.59	76	2720287	52.888	ng		100
23) trans-1,2-Dichloroethene	6.15	61	632980	27.425	ng		100
24) 1,1-Dichloroethane	6.33	63	753645	26.599	ng		100
25) Methyl tert-Butyl Ether	6.36	73	1283917	29.374	ng		99
26) Vinyl Acetate	6.45	86	175207	84.445	ng	#	84
27) 2-Butanone (MEK)	6.66	72	481923	56.472	ng	#	85
28) cis-1,2-Dichloroethene	7.09	61	597999	25.529	ng		100
29) Diisopropyl Ether	7.27	87	587301	49.642	ng	#	89
30) Ethyl Acetate	7.28	61	617663	94.140	ng		95
31) n-Hexane	7.28	57	616187	22.619	ng		98
32) Chloroform	7.37	83	768602	25.703	ng		100
34) Tetrahydrofuran (THF)	7.74	72	442292	51.751	ng		94
35) Ethyl tert-Butyl Ether	7.81	87	924900	57.400	ng		93
36) 1,2-Dichloroethane	8.12	62	697119	26.823	ng		98
38) 1,1,1-Trichloroethane	8.39	97	770451	26.612	ng		99
39) Isopropyl Acetate	9.21	61	2460	No Calib		#	
40) 1-Butanol	8.80	56	19691	No Calib			
41) Benzene	8.89	78	1417852	25.312	ng		100
42) Carbon Tetrachloride	9.06	117	696567	28.215	ng		99
43) Cyclohexane	9.20	84	1054600	50.608	ng		93
44) tert-Amyl Methyl Ether	9.58	73	2205126	57.913	ng		97
45) 1,2-Dichloropropane	9.84	63	386665	24.496	ng		97
46) Bromodichloromethane	10.06	83	633884	27.279	ng		100
47) Trichloroethene	10.13	130	417095	25.395	ng		100
48) 1,4-Dioxane	10.10	88	298936	27.251	ng		97
49) 2,2,4-Trimethylpentane...	10.21	57	1655678	24.170	ng		100
50) Methyl Methacrylate	10.38	100	300214	56.786	ng		93

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112302.D Vial: 2
Acq On : 11 Apr 2023 9:28 Operator: SC
Sample : CCV R9041123 25ng Inst : MS09
Misc : S37-04052305/S37-04032304 (5/2)

Quant Time: Apr 11 09:54:32 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M

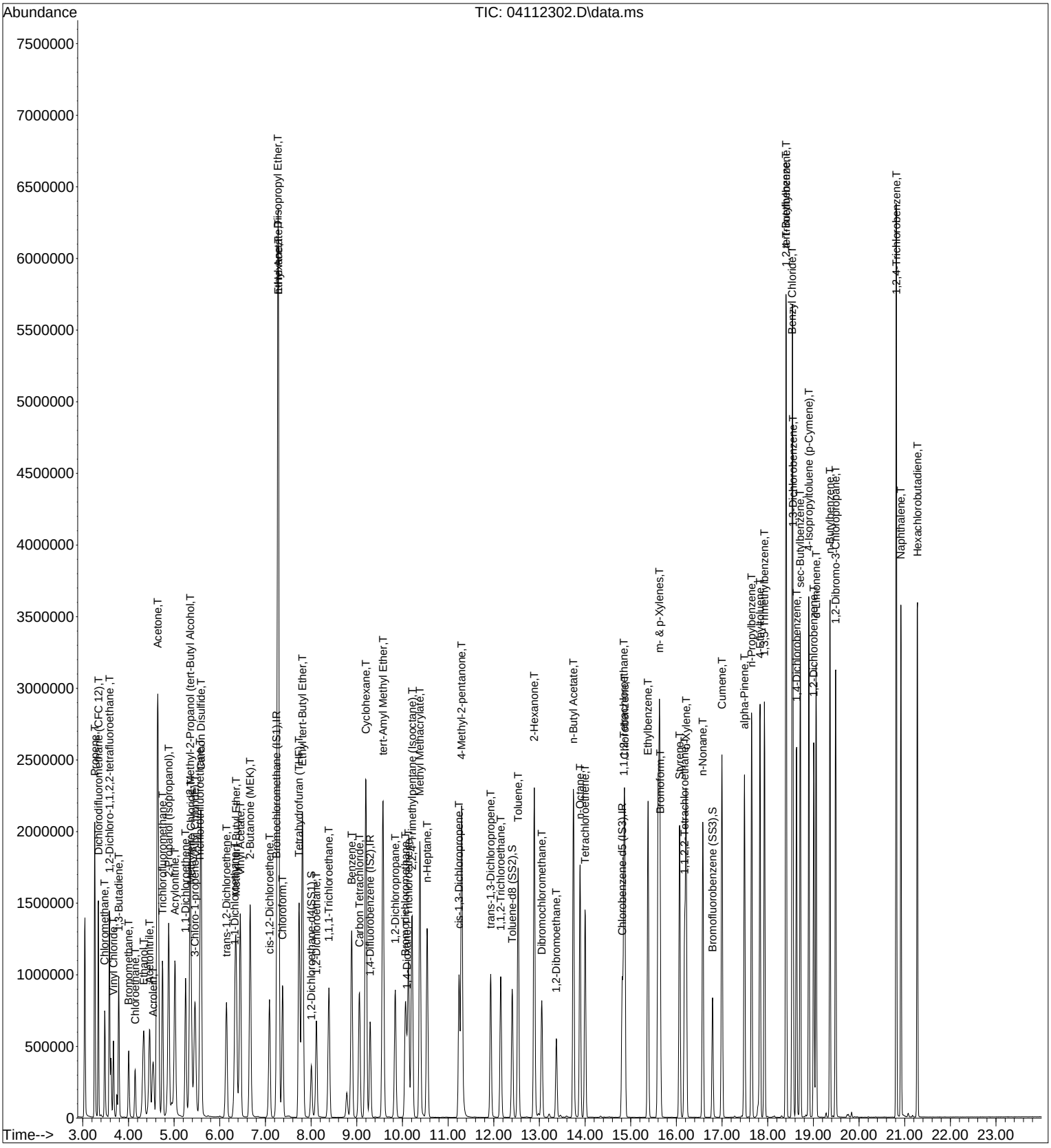
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
51) n-Heptane	10.54	71	363192	26.027 ng	94
52) cis-1,3-Dichloropropene	11.24	75	677950	30.763 ng	100
53) 4-Methyl-2-pentanone	11.30	58	711330	51.847 ng	98
54) trans-1,3-Dichloropropene	11.93	75	669632	33.336 ng	100
55) 1,1,2-Trichloroethane	12.15	97	381894	26.178 ng	98
58) Toluene	12.53	91	1553692	25.421 ng	100
59) 2-Hexanone	12.89	43	2055935	53.428 ng	99
60) Dibromochloromethane	13.05	129	544717	29.094 ng	99
61) 1,2-Dibromoethane	13.37	107	463087	27.490 ng	100
62) n-Butyl Acetate	13.74	43	2213950	51.812 ng	99
63) n-Octane	13.89	57	344083	25.799 ng	96
64) Tetrachloroethene	14.00	166	513684	24.378 ng	100
65) Chlorobenzene	14.87	112	1070721	26.507 ng	100
66) Ethylbenzene	15.38	91	1876488	26.769 ng	100
67) m- & p-Xylenes	15.63	91	3115553	54.158 ng	99
68) Bromoform	15.65	173	516430	28.879 ng	99
69) Styrene	16.07	104	1107156	30.518 ng	99
70) o-Xylene	16.21	91	1543893	27.236 ng	99
71) n-Nonane	16.58	43	927425	25.915 ng	98
72) 1,1,2,2-Tetrachloroethane	16.18	83	666132	28.353 ng	100
74) Cumene	17.00	105	1898864	27.186 ng	100
75) alpha-Pinene	17.49	93	967675	32.860 ng	99
76) n-Propylbenzene	17.64	91	2319810	27.754 ng	100
77) 3-Ethyltoluene	17.00	105	1898864	No Calib	
78) 4-Ethyltoluene	17.83	105	1876246	28.400 ng	100
79) 1,3,5-Trimethylbenzene	17.93	105	1622581	27.337 ng	100
80) alpha-Methylstyrene	17.00	118	3791	No Calib #	
81) 2-Ethyltoluene	17.00	105	1898864	No Calib	
82) 1,2,4-Trimethylbenzene	18.41	105	1665033	27.621 ng	100
83) n-Decane	17.00	58	15456	No Calib	
84) Benzyl Chloride	18.54	91	2893295	86.512 ng	99
85) 1,3-Dichlorobenzene	18.55	146	985263	28.211 ng	97
86) 1,4-Dichlorobenzene	18.63	146	994746	28.541 ng	97
87) sec-Butylbenzene	18.71	105	2117859	26.920 ng	99
88) 4-Isopropyltoluene (p-...	18.90	119	1866426	27.221 ng	99
89) 1,2,3-Trimethylbenzene	17.00	105	1898864	No Calib	
90) 1,2-Dichlorobenzene	19.01	146	962144	27.545 ng	97
91) d-Limonene	19.06	68	611990	30.308 ng	100
92) 1,2-Dibromo-3-Chloropr...	19.49	157	775276	59.050 ng	88
93) n-Undecane	0.00	58	0	N.D.	
94) 1,2,4-Trichlorobenzene	20.82	180	1734930	64.760 ng	99
95) Naphthalene	20.92	128	2215029	41.623 ng	100
96) n-Dodecane	19.06	58	5141	No Calib #	
97) Hexachlorobutadiene	21.28	225	624683	28.119 ng	100
98) Cyclohexanone	0.00	55	0	N.D.	
99) tert-Butylbenzene	18.40	119	1550063	27.025 ng	99
100) n-Butylbenzene	19.37	91	1801422	28.678 ng	99
101) 1,1,1,2-Tetrachloroethane	14.85	131	434438	27.467 ng	99

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

Quantitation Report (QT Reviewed)

Data File : I:\MS09\DATA\2023 04\11\04112302.D Vial: 2
Acq On : 11 Apr 2023 9:28 Operator: SC
Sample : CCV R9041123 25ng Inst : MS09
Misc : S37-04052305/S37-04032304 (5/2)

Quant Time: Apr 11 09:54:32 2023
Quant Method : I:\MS09\METHODS\R9022723.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Feb 28 08:30:18 2023
Response via : Initial Calibration
DataAcq Meth:TO15.M



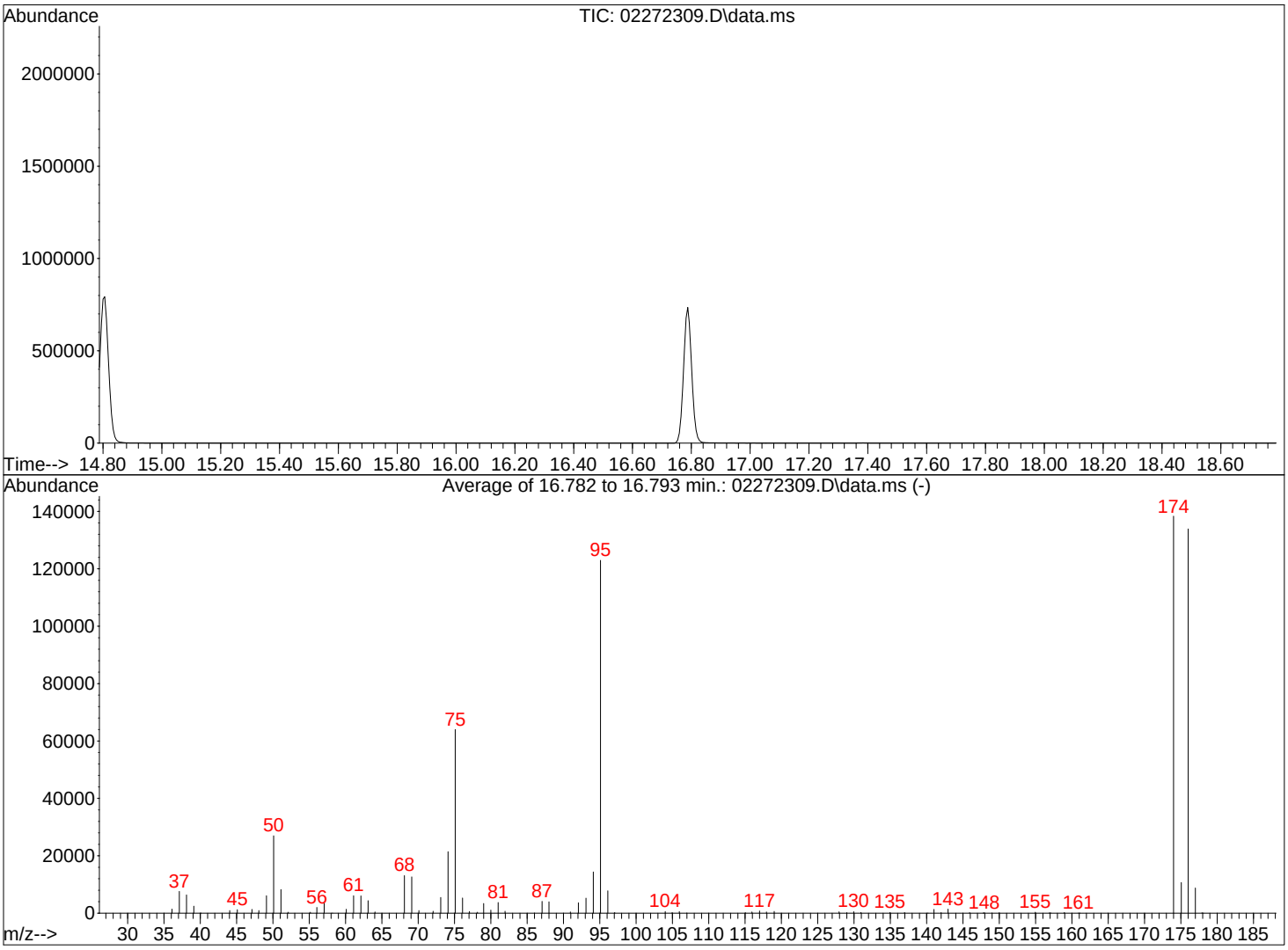
01177909

Data Path : I:\MS09\DATA\2023 02\27\
Data File : 02272309.D
Acq On : 27 Feb 2023 13:28
Operator : SC
Sample : 12.5ng TO-15 BFB STD
Misc : S35-02212305
ALS Vial : 2 Sample Multiplier: 1

2/27/23

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R9022723.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Mon Feb 27 17:09:40 2023



AutoFind: Scans 2448, 2449, 2450; Background Corrected with Scan 2440

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	21.9	26952	PASS
75	95	30	66	52.1	63995	PASS
95	95	100	100	100.0	122944	PASS
96	95	5	9	6.3	7791	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	112.5	138352	PASS
175	174	4	9	7.7	10691	PASS
176	174	93	101	96.8	133875	PASS
177	176	5	9	6.6	8780	PASS

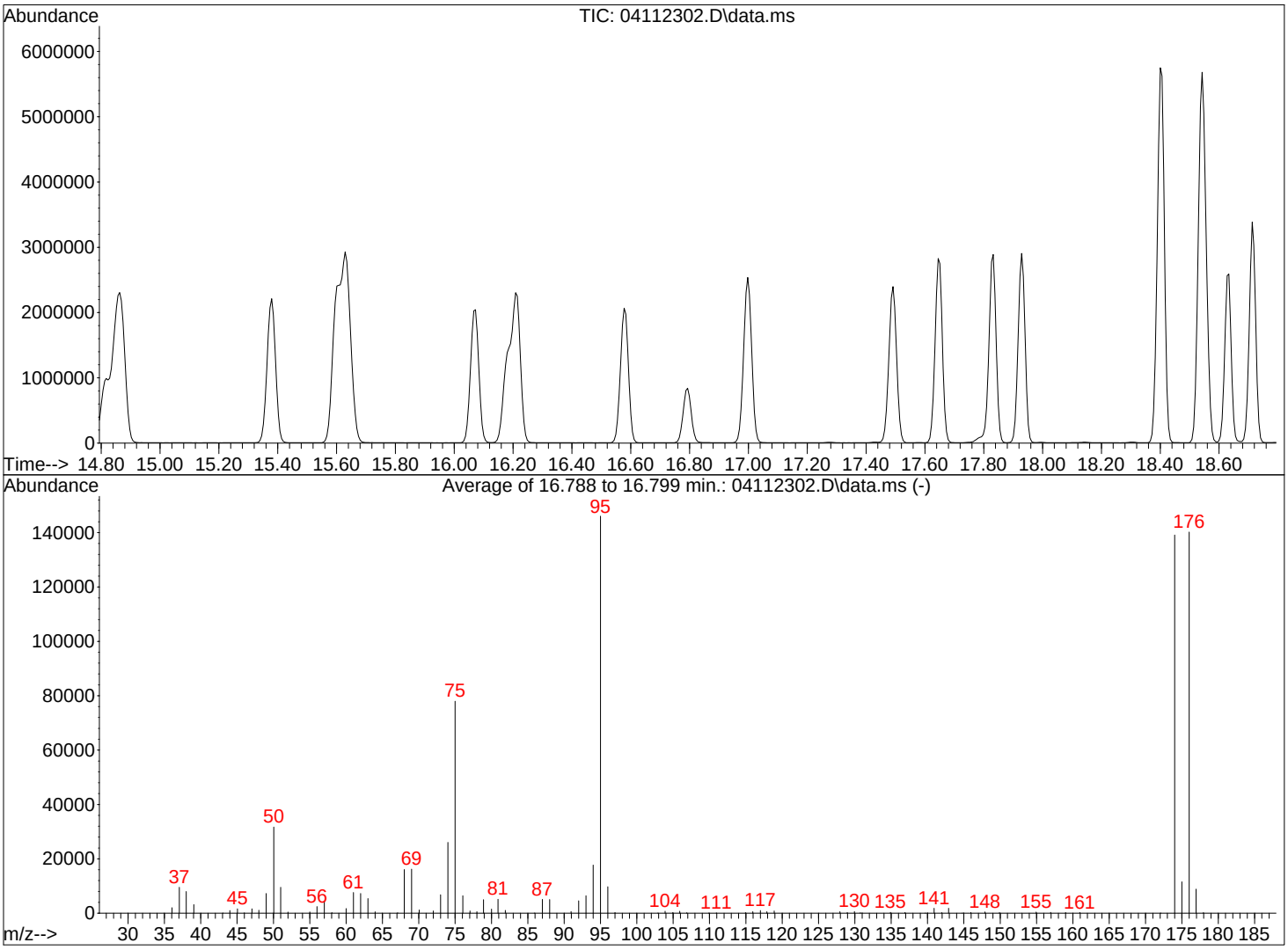
01177910

Data Path : I:\MS09\DATA\2023 04\11\
Data File : 04112302.D
Acq On : 11 Apr 2023 9:28
Operator : SC
Sample : CCV R9041123 25ng
Misc : S37-04052305/S37-04032304 (5/2)
ALS Vial : 2 Sample Multiplier: 1

4/11/23

Integration File: LSCINT.P

Method : I:\MS09\METHODS\R9022723.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Feb 28 08:30:18 2023



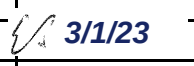
AutoFind: Scans 2449, 2450, 2451; Background Corrected with Scan 2441

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	21.7	31680	PASS
75	95	30	66	53.4	77984	PASS
95	95	100	100	100.0	146069	PASS
96	95	5	9	6.7	9717	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	95.3	139136	PASS
175	174	4	9	8.3	11572	PASS
176	174	93	101	100.8	140203	PASS
177	176	5	9	6.3	8862	PASS

Injection Log

Directory: J:\MS09\DATA\2023_02\27\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	2/27/23 8:50	02272301.D	Blank	S35-02212305	SC	1	
2	2/27/23 9:22	02272302.D	CCV R9022723_25ng	S35-02212305/S35-02162305 (3/7)	SC	2	
3	2/27/23 9:54	02272303.D	CCV C9022723_5.0ng	S35-02212305/S35-02022303 (3/4)	SC	3	
4	2/27/23 10:26	02272304.D	CCV R9022723_5.0ng	S35-02212305/S35-02162305 (3/7)	SC	2	
5	2/27/23 11:15	02272305.D	MB R9022723_1000mL	S35-02212305	SC	2	
6	2/27/23 11:47	02272306.D	LCS R9022723_25ng	S35-02212305/S35-02242303 (3/26)	SC	2	
7	2/27/23 12:18	02272307.D	LCSD R9022723_25ng	S35-02212305/S35-02242303 (3/26)	SC	2	
8	2/27/23 12:56	02272308.D	Blank	S35-02212305	SC	2	
9	2/27/23 13:28	02272309.D	12.5ng TO-15 BFB STD	S35-02212305	SC	2	pass
10	2/27/23 14:00	02272310.D	0.1ng TO-15 ICAL STD	S35-02212305/S35-02222302 (3/18)	SC	5	
11	2/27/23 14:32	02272311.D	0.2ng TO-15 ICAL STD	S35-02212305/S35-02222302 (3/18)	SC	5	
12	2/27/23 15:04	02272312.D	0.5ng TO-15 ICAL STD	S35-02212305/S35-02222301 (3/18)	SC	6	
13	2/27/23 15:36	02272313.D	1.0ng TO-15 ICAL STD	S35-02212305/S35-02222301 (3/18)	SC	6	
14	2/27/23 16:07	02272314.D	5.0ng TO-15 ICAL STD	S35-02212305/S35-02222301 (3/18)	SC	6	
15	2/27/23 16:39	02272315.D	25ng TO-15 ICAL STD	S35-02212305/S35-02162303 (3/18)	SC	7	
16	2/27/23 17:11	02272316.D	50ng TO-15 ICAL STD	S35-02212305/S35-02162303 (3/18)	SC	7	
17	2/27/23 17:43	02272317.D	100ng TO-15 ICAL STD	S35-02212305/S35-02162303 (3/18)	SC	7	
18	2/27/23 18:15	02272318.D	Blank	S35-02212305	SC	2	
19	2/27/23 18:47	02272319.D	25ng TO-15 ICV STD	S35-02212305/S35-02242303 (3/26)	SC	2	not used
20	2/27/23 19:19	02272320.D	25ng TO-15 ICV STD	S35-02212305/S35-02242303 (3/26)	SC	2	not used
21	2/28/23 9:03	02272321.D	Blank	S35-02212305	SC	2	
22	2/28/23 9:35	02272322.D	25ng TO-15 ICV STD	S35-02212305/S35-02242304 (3/26)	SC	8	not used
23	2/28/23 10:07	02272323.D	5.0ng TO-15 ICV STD	S35-02212305/S35-02242304 (3/26)	SC	8	not used
24	2/28/23 10:50	02272324.D	Blank	S35-02212305	SC	2	
25	2/28/23 11:22	02272325.D	25ng TO-15 ICV STD	S35-02212305/S35-02062302 (3/8)	SC	16	pass
26	2/28/23 11:54	02272326.D	5.0ng TO-15 ICV STD	S35-02212305/S35-02062302 (3/8)	SC	16	not used
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							



Injection Log

01177912

Directory: I:\MS09\DATA\2023_04\11\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	4/11/23 8:56	04112301.D	Blank	S37-04052305	SC	2	
2	4/11/23 9:28	04112302.D	CCV R9041123_25ng	S37-04052305/S37-04032304 (5/2)	SC	2	pass
3	4/11/23 10:00	04112303.D	CCV C9041123_25ng	S37-04052305/S37-03242302 (4/23)	SC	16	pass
4	4/11/23 10:32	04112304.D	MB R9041123_1000mL	S37-04052305	SC	2	pass
5	4/11/23 11:04	04112305.D	LCS R9041123_25ng	S37-04052305/S37-03162302 (4/15)	SC	2	pass
6	4/11/23 11:36	04112306.D	LCSD R9041123_25ng	S37-04052305/S37-03162302 (4/15)	SC	2	pass
7	4/11/23 12:39	04112307.D	P2301512-002 (1000mL)	S37-04052305	SC	3	
8	4/11/23 13:11	04112308.D	P2301512-003 (1000mL)	S37-04052305	SC	4	
9	4/11/23 13:43	04112309.D	P2301570-001 (1000mL)	S37-04052305	SC	5	
10	4/11/23 14:15	04112310.D	P2301570-002 (1000mL)	S37-04052305	SC	6	
11	4/11/23 14:47	04112311.D	P2301570-003 (1000mL)	S37-04052305	SC	7	
12	4/11/23 15:26	04112312.D	P2301496-001 (25mL)	S37-04052305	SC	8	
13	4/11/23 15:58	04112313.D	P2301496-002 (25mL)	S37-04052305	SC	9	
14	4/11/23 16:30	04112314.D	P2301496-001Dil (5.0mL)	S37-04052305	SC	1	
15	4/11/23 17:06	04112315.D	P2301496-002Dil (5.0mL)	S37-04052305	SC	1	
16	4/11/23 17:38	04112316.D	P2301496-003 (1000mL)	S37-04052305	SC	10	
17	4/11/23 18:10	04112317.D	P2301496-004 (1000mL)	S37-04052305	SC	11	
18	4/11/23 18:42	04112318.D	P2301561-001 (1000mL)	S37-04052305	SC	12	
19	4/11/23 19:14	04112319.D	P2301561-002 (1000mL)	S37-04052305	SC	13	
20	4/11/23 19:46	04112320.D	P2301561-003 (1000mL)	S37-04052305	SC	14	
21	4/11/23 20:19	04112321.D	P2301561-004 (1000mL)	S37-04052305	SC	15	
22	4/11/23 20:51	04112322.D	P2301561-005 (1000mL)	S37-04052305	SC	16	
23	4/11/23 21:23	04112323.D	P2301559-001 (1000mL)	S37-04052305	SC	3	
24	4/11/23 21:55	04112324.D	P2301559-002 (1000mL)	S37-04052305	SC	4	
25	4/11/23 22:27	04112325.D	P2301559-003 (1000mL)	S37-04052305	SC	5	
26	4/11/23 22:59	04112326.D	P2301559-004 (1000mL)	S37-04052305	SC	6	
27	4/11/23 23:31	04112327.D	P2301559-005 (1000mL)	S37-04052305	SC	7	
28	4/12/23 0:03	04112328.D	P2301559-005dup (1000mL)	S37-04052305	SC	7	pass
29	4/12/23 0:35	04112329.D	P2301487-001 (15mL)	S37-04052305	SC	8	
30	4/12/23 8:52	04112330.D	P2301487-001Dil (1.5mL)	S37-04052305	SC	1	
							V 4/12/23

APPENDIX I
PROTOCOL FOR DISCHARGING GWTP EFFLUENT

This page intentionally left blank.

MEMORANDUM

DATE: August 28, 2017

PROJECT NAME: Remediation of Multiple Sites, Longhorn Army Ammunition Plant, Karnack, TX

TO:	Richard Mayer	Senior Project Engineer US Environmental Protection Agency Federal Facilities Section (6PD-F)
	April Palmie	Project and Grant Manager Superfund Section, Remediation Division Texas Commission on Environmental Quality
FROM:	Rose M. Zeiler, Ph.D.	Longhorn AAP Site Manager

SUBJECT: **Protocol for Discharging GWTP Effluent**
Longhorn Army Ammunition Plant, Karnack, TX
(Contract: W912DY-09-D-0059, Task Order DS01)

INTRODUCTION

The purpose of this memo is to document the protocol for discharging Longhorn Army Ammunition Plant groundwater treatment plant (GWTP) effluent to Harrison Bayou, the INF-Pond, or LHAAP-18/24.

The GWTP is designed to:

- Extract groundwater from LHAAP-18/24 and LHAAP-16 for hydraulic control;
- Remove metals by pH adjustment, polymer addition, and gravity separation;
- Remove volatile organic compounds (VOCs) by air stripping;
- Remove perchlorate in a fluidized bed reactor (FBR) and an ion exchange scavenger system; and
- Discharge the effluent continuously.

DISCHARGE CRITERIA

The discharge criteria established for discharge to Harrison Bayou are:

Parameter	Discharge Criteria (µg/L)	
	Daily Average	Daily Maximum
Volatiles		
1,1,1-Trichloroethane	3,417	7,230
1,1,2-Trichloroethane	102.5	216.9
1,1-Dichloroethane	6,633	14,032
1,1-Dichloroethene	119	253
1,2-Dichloroethane	85	181
Acetone	1,132	2,395
Benzene	85	181
Carbon Tetrachloride	85	181
Chlorobenzene	22,300	47,180
Chloroform	1,708	3,615
Ethylbenzene	26,954	57,025
Xylenes	39.5	83.6
Methylene Chloride	803	1,699
Styrene	2,829	5,987
Tetrachloroethene	85.4	180.7
Toluene	1,980	4,189
Trichloroethene	85	181
Vinyl Chloride	34	72
Anions		
Chloride	*	*
Sulfate	*	*
Perchlorate**	278	589
Metals		
Aluminum	777	1,644
Arsenic	365	772
Barium	1,000	2,000
Cadmium	1.6	3.4
Chromium, Total	355	752
Chromium, Hexavalent	58	124
Cobalt	5,433	11,495
Iron	1,132	2,395
Lead	2.2	4.6
Nickel	87	184
Manganese	7,323	15,494
Silver	1.4	3
Selenium	5.7	12
Vanadium	1,698	3,592
Zinc	146	310
Other		
Hexachlorobenzene	0.22	0.47
1,4-Dioxane		134.2
Oil and Grease		15
Chemical Oxygen Demand		200

* - Based upon flow in Harrison Bayou

** - Discharge criteria, when diverted to the INF Pond, is 17 µg/L

PROTOCOL FOR DISCHARGING GWTP EFFLUENT

In accordance with the *Sampling and Analysis Plan, Groundwater Treatment Plant and Well Fields* (SAP) Table 2-2, indicator parameters for the FBR, such as temperature, pH and oxidation reduction potential (ORP), are monitored in real time to predict FBR performance and perchlorate removal. Based upon these indicator parameters, the operator of the GWTP can make adjustments such as:

- Bring the ion exchange system online;
- Increase or decrease the addition rate of electron donor (acetic acid);
- Increase or decrease the nutrient addition rate (urea or phosphoric acid); or
- Increase or decrease the FBR recirculation rate

Samples of the GWTP effluent are collected weekly, analyzed for perchlorate, nutrients (ammonia-nitrogen and ortho-phosphate), total organic carbon (TOC), chloride, and sulfate, with the results received from the laboratory 14 days later. Other parameters (e.g. Record of Decision metals and volatiles) are collected and analyzed in GWTP effluent samples according to the frequencies listed in Table 2-1 of the SAP.

As shown in Figure 1, groundwater is continuously extracted, treated, and discharged. If Harrison Bayou is flowing and indicator parameters are within their historical optimal ranges, then the ion exchange vessels can be bypassed and the GWTP effluent sample will be collected after the FBR. If Harrison Bayou is not flowing or the indicator parameters are not within historical optimal ranges, then the ion exchange vessels will be put on line, and the GWTP effluent sample will be collected between the lead and lag ion exchange vessel. Professional judgement may also be used as to when to bring the ion exchange vessels online, such as after a power outage or during anticipated cold temperatures when the FBR has historically not performed optimally.

If a parameter is measured in the effluent at a concentration above the discharge criteria, then a confirmation sample and an effluent sample after the lag ion exchange vessel will be collected and analyzed for the parameter with a 24-hour turnaround time. Corrective measures (e.g. increased nutrient or electron donor addition rates, bring ion exchange vessels on line) will be implemented as appropriate to bring the parameter back within the discharge criteria. ***If an upset condition in the FBR leads to high concentrations of perchlorate going into the lead ion exchange vessel and breaking through at the sample location between the vessels, the lag vessel will still remove perchlorate before it is discharged to Harrison Bayou, the INF Pond, or LHAAP-18/24.*** It is estimated that the lag ion exchange vessel can remove all of the perchlorate from two weeks of typical groundwater extraction at a concentration of 920 µg/L. If the residual perchlorate concentration after the FBR and lead ion exchange vessel is only 600 µg/L, the lag ion exchange vessel could last almost 2.5 years before perchlorate would be detected in the discharged effluent.

If a parameter exceeds the discharge criteria by more than 40% (see Appendix A-2, SAP, Section 7c of Monitoring and Reporting Requirements) or reaches 920 µg/L of perchlorate, then the GWTP will be put into full recycle mode (no discharge) until the parameter is below the discharge criteria again. Appendix A-2 of the SAP requires GWTP data to be provided to TCEQ monthly including a list of noncompliance(s), if applicable.

Discharge to Harrison Bayou

As shown in Figure 1, the GWTP effluent will be discharged to Harrison Bayou as long as it has a measurable flow. The flowrate in Harrison Bayou is estimated by measuring the height of water with a staff gauge and velocity in feet/sec at intervals along the width as described in the Installation-Wide Work Plan, Standard Operating Procedures, Attachment 18 – Water Depth and Velocity Measurements (AECOM, July 2014).

The allowable flow rate of GWTP effluent that can be discharged to Harrison Bayou is given by:

$$QE \leq \frac{QS\ (CC - CA)}{(CE - CC)}$$

where Q_E = GWTP effluent flow Q_S = Harrison Bayou flow

C_C = Criteria concentration (100 mg/L for chloride, 50 mg/L for sulfate)

C_A = Ambient concentration = 10 mg/L

C_E = Chloride or sulfate concentration in GWTP effluent

The allowable GWTP effluent flow will be the lower of the calculated values given the measured concentrations of chloride and sulfate in the discharge stream. For each day that GWTP effluent is discharged to Harrison Bayou, the measured Harrison Bayou flow, the allowable effluent flow, and the actual effluent flow are recorded.

Discharge to INF Pond

If Harrison Bayou is not flowing, then GWTP effluent will be discharged to the Intermediate-Range Nuclear Forces (INF) Pond for temporary storage until Harrison Bayou flow resumes. Perchlorate concentration detected in the effluent must be 17 µg/L or less, when this occurs.

The INF Pond has a flexible membrane liner protected by a soil cover with a gravity discharge pipe (and valve) to Harrison Bayou. The INF Pond has a nominal capacity of 3 million gallons with a staff gage to measure the height of water stored in the pond. The GWTP operator maintains the INF Pond by visually inspecting for erosion, vegetative growth including tree growth along the anchor trench, and liner integrity and making necessary repairs. Periodically, accumulated debris must be removed from the influent and effluent piping to the INF Pond.

Prior to discharging to the INF Pond, a lead and lag ion exchange vessel will be brought online. The GWTP Operator will also confirm that the discharge valve is closed, will record the reading on the effluent totalizer, and will record the height of water using the staff gage. The GWTP Operator will then configure valves and pumps to direct GWTP effluent to the INF Pond. The height of water in the INF Pond and totalizer reading will be recorded at the beginning and end of each shift for the duration of active discharge. When the height of water in the pond reaches 3 feet below the height of the berm (freeboard), the GWTP Operator will stop discharging to the INF Pond and TCEQ will be notified. After the TCEQ acknowledges the INF Pond level, GWTP effluent may be discharged to the INF Pond again until 2 feet of freeboard is reached. The GWTP Operator will stop discharging to the INF Pond and TCEQ will be notified again. After the TCEQ acknowledges 2 feet of freeboard in the INF Pond,GWTP effluent may be discharged again until 1 foot of freeboard remains. No additional GWTP effluent can be accepted at the INF Pond until greater than 1 foot of freeboard is measured.

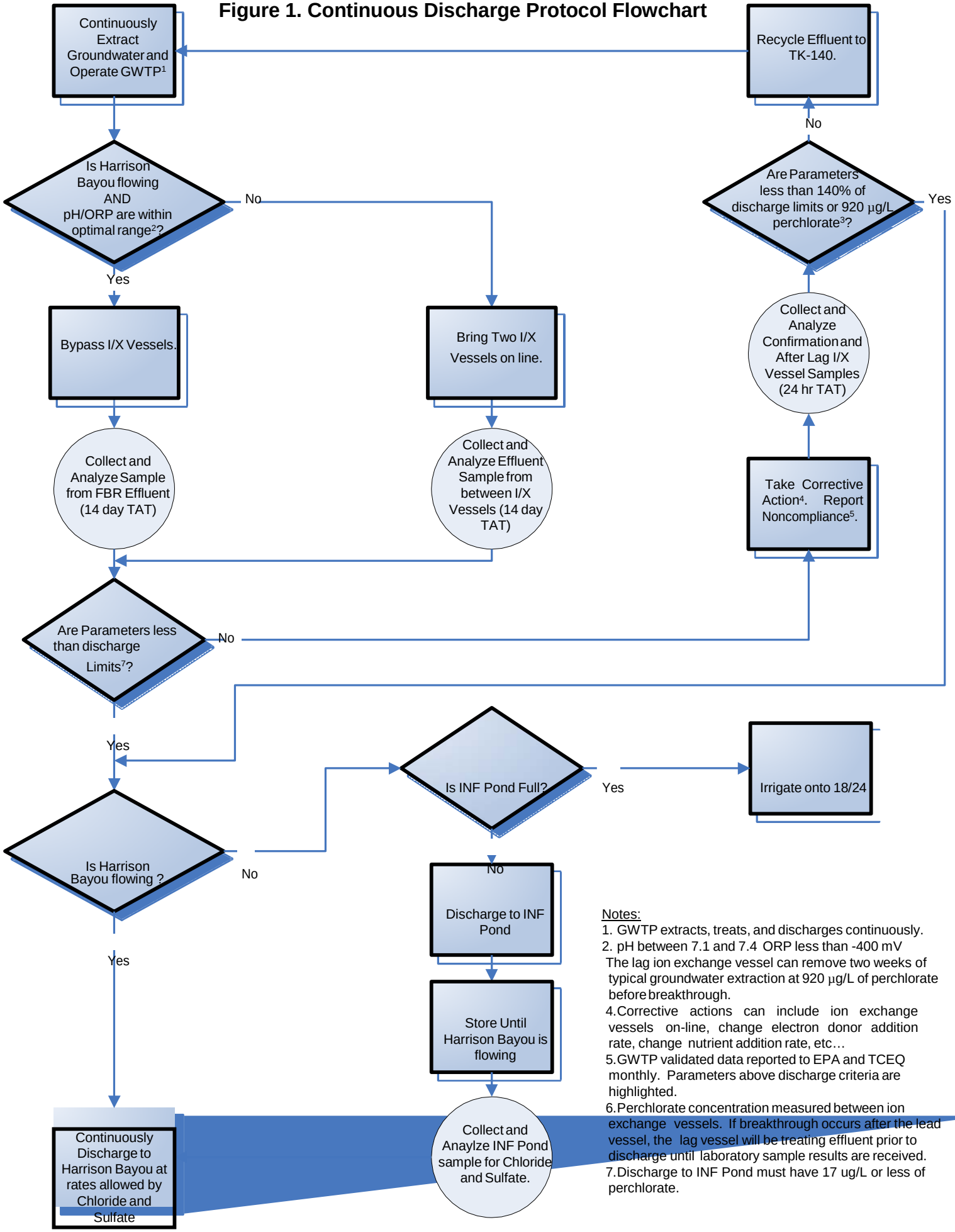
As soon as flow in Harrison Bayou returns, stored GWTP effluent from the INF Pond will be discharged. As with direct discharges from the GWTP to Harrison Bayou, the allowable flowrate of effluent from the INF Pond is calculated based upon the chloride and sulfate concentrations in the pond and the flow in Harrison Bayou. If effluent from the INF Pond and the GWTP are discharged simultaneously, total flow of both streams together should not exceed the calculated discharge level for either discharge location. For each day that INF Pond contents are discharged to Harrison Bayou, the measured Harrison Bayou flow, the allowable effluent flow, and the actual effluent flow are recorded.

Irrigation onto LHAAP-18/24

If Harrison Bayou is not flowing and the INF Pond has less than 1 foot of freeboard, then GWTP effluent will be irrigated onto LHAAP-18/24 using one of the three main sprinkler lines. To avoid pooling and runoff of irrigation water, only one line will be used for half a day at a time, with a separate line being used the second half of the day. If needed, the irrigation will occur 5 days a week for 8 hours each day (using 3 sprinklers in each line). If conditions are wet due to rain events, irrigation will not be conducted to avoid ponding and potential runoff, the GWTP will be put into recycle mode, and groundwater extraction will be interrupted if storage space is not available.

While irrigating, site inspections will be performed to ensure pooling and runoff are not occurring. During the irrigation activities, inspections will be performed twice a day, once approximately three hours and again approximately six hours into the 8-hour irrigation shift. The system will be inspected to ensure that the sprinkler heads are operating properly and not leaking large amounts of water. If ponding or runoff is observed, irrigation at that sprinkler line will cease, and irrigation at another sprinkler line will be started if possible. Volumes of GWTP effluent and twice daily inspections will be recorded daily and reported monthly until flow resumes in Harrison Bayou or greater than 1 foot of freeboard is available in the INF Pond.

Figure 1. Continuous Discharge Protocol Flowchart



Notes:

1. GWTP extracts, treats, and discharges continuously.
2. pH between 7.1 and 7.4 ORP less than -400 mV
   The lag ion exchange vessel can remove two weeks of typical groundwater extraction at 920 µg/L of perchlorate before breakthrough.
4. Corrective actions can include ion exchange vessels on-line, change electron donor addition rate, change nutrient addition rate, etc…
5. GWTP validated data reported to EPA and TCEQ monthly. Parameters above discharge criteria are highlighted.
6. Perchlorate concentration measured between ion exchange vessels. If breakthrough occurs after the lead vessel, the lag vessel will be treating effluent prior to discharge until laboratory sample results are received.
7. Discharge to INF Pond must have 17 ug/L or less of perchlorate.

APPENDIX J
AIR DATA TABLES, PID READINGS, AND CALIBRATION LOGS

This page intentionally left blank.

Appendix J Table 1. Ambient Air Data - March 2023
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

Pollutant	CAS #	Short Term ESL March 2012	AMCVs (Short Term Health)	GWTP Ambient Air Concentrations (1)		Status (3)	Downwind Ambient Air Concentrations (2)		Status (3)
		µg/m^3	µg/m^3	µg/m^3			µg/m^3		
1,1-Dichloroethane	75-34-3	4,000	4,047	0.81	U	PASS	0.70	U	PASS
1,1-Dichloroethene	75-35-4	210	714	0.81	U	PASS	0.70	U	PASS
1,2-Dichloroethane	107-06-2	160	162	0.81	U	PASS	0.70	U	PASS
Acetone	67-64-1	5,900	NA	**34**		PASS	**8.7**		PASS
Benzene	71-43-2	170	575	**1.1**		PASS	**0.71**		PASS
Carbon disulfide	75-15-0	30	NA	1.6	U	PASS	1.4	U	PASS
Chloroform	67-66-3	100	98	0.80	U	PASS	0.68	U	PASS
cis-1,2-Dichloroethene	156-59-2	7,900	NA	**8.9**		PASS	0.68	U	PASS
Methylene chloride	75-09-2	3,600	12,158	0.80	U	PASS	0.68	U	PASS
Tetrachloroethene	127-18-4	2,000	6,782	0.80	U	PASS	0.68	U	PASS
trans-1,2-Dichloroethene	156-60-5	7,900	NA	0.81	U	PASS	0.70	U	PASS
Trichloroethene	79-01-6	540	537	**14**		PASS	0.68	U	PASS
Vinyl chloride	75-01-4	20,000	66,460	**0.94**		PASS	0.66	U	PASS
n-Hexane	110-54-3	5,300	6,336	**6.9**		PASS	**2.0**		PASS
Styrene	100-42-5	110	21,725	0.80	U	PASS	0.68	U	PASS
Toluene	108-88-3	640	15,074	**8.4**		PASS	**1.9**		PASS
Ethylbenzene	100-41-4	740	86,844	**1.3**		PASS	0.68	U	PASS
m,p-Xylenes	179601-23-1	180	7,382	**3.5**		PASS	1.4	U	PASS
o-Xylene	95-47-6	1,600	7,382	**1.3**		PASS	0.68	U	PASS
1,3-Dichlorobenzene	541-73-1	720	NA	0.80	U	PASS	0.68	U	PASS
Propene (C3H6)	115-07-1	Asphyxiant	Asphyxiant	**20**		NA	0.68	U	NA
Dichlorodifluoromethane (CFC 12)	75-71-8	50,000	49,452	**2.3**		PASS	**2.3**		PASS
Ethanol	64-17-5	18,800	NA	**30**		PASS	6.5	U	PASS
Trichlorofluoromethane (CFC 11)	75-69-4	28,000	56,184	**1.3**		PASS	**1.1**		PASS
Trichlorotrifluoroethane (CFC 113)	76-13-1	38,000	NA	**15**		PASS	**0.87**		PASS
alpha-Pinene	80-56-8	60	3,499	**2.8**		PASS	**4.2**		PASS
d-Limonene	5989-27-5	1,100	NA	1.7	U	PASS	1.4	U	PASS

Notes:

(1) Sample collected over an 8-hour period on March 27, 2023, between 07:00 AM and 03:00 PM

(2) Sample collected over a 24-hour period beginning on March 27, 2023 at 07:00 AM and ending on March 28, 2023 at 07:00 AM

(3) Status based on comparison of air sample result to Air Monitoring Comparison Values (AMCVs). When there is no AMCV value for a chemical, the air sample concentration is compared to the short-term Effects Screening Level (ESL).

CAS # = Chemical Abstracts Service Number

GWTP = Groundwater Treatment Plant

U = non-detect

µg/m^3 = micrograms per cubic meter

g/mole = gram/mole

mol/m3 = mole per cubic meter

NA - Not applicable

Bold text denotes detections

Appendix J Table 2. Emission Stack Air Data - March 2023
Longhorn Army Ammunition Plant
Groundwater Treatment Plant

Pollutant	CAS #	Measured Air Stripper Stack Concentrations (1)		Air Stripper Emission Rates (2)		Air Stripper Emission Rates (2a)		Allowable Annual Emission (3)	Status (4)	TLV (5)	TLV Reference	Compliance section	Distance Downwind to nearest off-site Receptor (D)	(K) conversion value	Allowable Maximum Hourly Emission Limit at Nearest off-site Receptor (6)(7) (E) = L/K	Status (8)
		µg/m^3		lb/hr		tpy		tpy		mg/m^3			feet		lb/hr	
1,1-Dichloroethane	75-34-3	**34**		5.57E-04		3.62E-04		5	PASS	405	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
1,1-Dichloroethene	75-35-4	**230**		3.77E-03		2.45E-03		5	PASS	20	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.4	PASS
1,2-Dichloroethane	107-06-2	**130**		2.13E-03		1.39E-03		5	PASS	40	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	2.9	PASS
Acetone	67-64-1	270	U	2.21E-03	U	1.44E-03	U	5	PASS	590	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Benzene	71-43-2	27	U	2.21E-04	U	1.44E-04	U	5	PASS	3	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	0.21	PASS
Carbon disulfide	75-15-0	54	U	4.43E-04	U	2.88E-04	U	5	PASS	31	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	2.2	PASS
Chloroform	67-66-3	**34**		5.57E-04		3.62E-04		5	PASS	10	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	0.71	PASS
cis-1,2-Dichloroethene	156-59-2	**7,000**		1.15E-01		7.46E-02		5	PASS	793	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Methylene chloride	75-09-2	27	U	2.21E-04	U	1.44E-04	U	5	PASS	26	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.9	PASS
Tetrachloroethene	127-18-4	**180**		2.95E-03		1.92E-03		5	PASS	33.5	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	2.4	PASS
trans-1,2-Dichloroethene	156-60-5	**46**		7.54E-04		4.90E-04		5	PASS	793	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Trichloroethene	79-01-6	**8,900**		1.46E-01		9.48E-02		5	PASS	135	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	6.0	PASS
Vinyl chloride	75-01-4	**1100**		1.80E-02		1.17E-02		5	PASS	2	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	0.14	PASS
n-Hexane	110-54-3	27	U	2.21E-04	U	1.44E-04	U	5	PASS	1,800	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Styrene	100-42-5	27	U	2.21E-04	U	1.44E-04	U	5	PASS	21	106.262 List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.5	PASS
Toluene	108-88-3	27	U	2.21E-04	U	1.44E-04	U	5	PASS	188	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	6.0	PASS
Ethylbenzene	100-41-4	27	U	2.21E-04	U	1.44E-04	U	5	PASS	434	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
m,p-Xylenes	179601-23-1	55	U	4.51E-04	U	2.93E-04	U	5	PASS	434	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
o-Xylene	95-47-6	27	U	2.21E-04	U	1.44E-04	U	5	PASS	434	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
1,3-Dichlorobenzene	541-73-1	27	U	2.21E-04	U	1.44E-04	U	5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	1.0	PASS
Propene (C3H6)	115-07-1	27	U	2.21E-04	U	1.44E-04	U	5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	6.0	PASS
Dichlorodifluoromethane (CFC 12)	75-71-8	27	U	2.21E-04	U	1.44E-04	U	5	PASS	4,950	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Ethanol	64-17-5	250	U	2.05E-03	U	1.33E-03	U	5	PASS	1,880	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Trichlorofluoromethane (CFC 11)	75-69-4	26	U	2.13E-04	U	1.39E-04	U	5	PASS	5,620	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
Trichlorotrifluoroethane (CFC 113)	76-13-1	**8,400**		1.38E-01		8.95E-02		5	PASS	7,670	ACGIH List	30 TAC 106.533(f)(1)(A)(ii)	2,000	14	1.0	PASS
alpha-Pinene	80-56-8	55	U	4.51E-04	U	2.93E-04	U	5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	1.0	PASS
d-Limonene	5989-27-5	55	U	4.51E-04	U	2.93E-04	U	5	PASS	(5)	--	30 TAC 106.533(f)(1)(A)(i)	2,000	14	1.0	PASS
		TOTAL		0.436												

Notes:

(1) Sample collected on March 27,2023. The higher value of the sample or duplicate is reported.

(2) Based on a blower flow rate of 4,390 cubic feet per minute (cfm). Note that plant operates less than or equal to 25 hours per week. 1/2 of detection limit was used for estimating mass rate

(2a) Based on operation of 25 hours per week, 52 weeks per year.

(3) Per 30TAC 106.533(f)(1)(B)

(4) Based on comparing the calculated air stripper stack sample emission rate in tons per year (tpy) to the allowable annual emission limit per chemical of 5 tpy.

(5) No Threshold Limit Values (TLVs) for these chemicals

(6) The maximum hourly limit allowed by 30 Texas Administrative Code (TAC) 106.262, per pollutant, is 6 pounds per hour (lb/hr) per "Figure 1: 30 TAC 106.262(a)". The E value was overridden with 6 lb/hr when the calculated E was higher.

(7) The maximum hourly emission rate allowed by 30 TAC 106.261(a)(3) for chemicals with a limit value (L) greater than 200 mg/m^3 is 1 lb/hr.

(8) Based on comparing the calculated air stripper stack sample emission rate in pounds per hour (lb/hr) to the allowable maximum emission limit per chemical based on distance downwind to nearest off-site receptor.

CAS # = Chemical Abstracts Service Number

mg/m^3 = milligrams per cubic meter

µg/m^3 = micrograms per cubic meter

ACGIH = American Conference of Governmental Industrial Hygienists

U = non-detect

Date	Time	Location	Air Flow Rate at Blower	Instrument ID
1/6/2023	13:00	Outside GWTP Office	2120 ACFM	MiniRAE 3000
1/6/2023	13:00	Downwind	2120 ACFM	MiniRAE 3000
1/6/2023	13:00	Stripper	2120 ACFM	MiniRAE 3000
1/11/2023	8:00	Outside GWTP Office	2256 ACFM	MiniRAE 3000
1/11/2023	8:00	Downwind	2256 ACFM	MiniRAE 3000
1/11/2023	8:00	Stripper	2256 ACFM	MiniRAE 3000
1/11/2023	12:00	Outside GWTP Office	2214 ACFM	MiniRAE 3000
1/11/2023	12:00	Downwind	2214 ACFM	MiniRAE 3000
1/11/2023	12:00	Stripper	2214 ACFM	MiniRAE 3000
1/13/2023	8:00	Outside GWTP Office	2259 ACFM	MiniRAE 3000
1/13/2023	8:00	Downwind	2259 ACFM	MiniRAE 3000
1/13/2023	8:00	Stripper	2259 ACFM	MiniRAE 3000
1/18/2023	8:00	Outside GWTP Office	2255 ACFM	MiniRAE 3000
1/18/2023	8:00	Downwind	2255 ACFM	MiniRAE 3000
1/18/2023	8:00	Stripper	2255 ACFM	MiniRAE 3000
1/18/2023	12:30	Outside GWTP Office	2319 ACFM	MiniRAE 3000
1/18/2023	12:30	Downwind	2319 ACFM	MiniRAE 3000
1/18/2023	12:30	Stripper	2319 ACFM	MiniRAE 3000
1/20/2023	8:00	Outside GWTP Office	2487 ACFM	MiniRAE 3000
1/20/2023	8:00	Downwind	2487 ACFM	MiniRAE 3000
1/20/2023	8:00	Stripper	2487 ACFM	MiniRAE 3000
1/20/2023	10:30	Outside GWTP Office	2279 ACFM	MiniRAE 3000
1/20/2023	10:30	Downwind	2279 ACFM	MiniRAE 3000
1/20/2023	10:30	Stripper	2279 ACFM	MiniRAE 3000
1/24/2023	8:00	Outside GWTP Office	2390 ACFM	MiniRAE 3000
1/24/2023	8:00	Downwind	2390 ACFM	MiniRAE 3000
1/24/2023	8:00	Stripper	2390 ACFM	MiniRAE 3000
1/24/2023	14:00	Outside GWTP Office	2177 ACFM	MiniRAE 3000
1/24/2023	14:00	Downwind	2177 ACFM	MiniRAE 3000
1/24/2023	14:00	Stripper	2177 ACFM	MiniRAE 3000
2/2/2023	8:00	Outside GWTP Office	2414 ACFM	MiniRAE 3000
2/2/2023	8:00	Downwind	2414 ACFM	MiniRAE 3000
2/2/2023	8:00	Stripper	2414 ACFM	MiniRAE 3000
2/2/2023	10:30	Outside GWTP Office	2410 ACFM	MiniRAE 3000
2/2/2023	10:30	Downwind	2410 ACFM	MiniRAE 3000
2/2/2023	10:30	Stripper	2410 ACFM	MiniRAE 3000
2/6/2023	8:00	Outside GWTP Office	2256 ACFM	MiniRAE 3000
2/6/2023	8:00	Downwind	2256 ACFM	MiniRAE 3000
2/6/2023	8:00	Stripper	2256 ACFM	MiniRAE 3000

2/6/2023	10:30	Outside GWTP Office	2021 ACFM	MiniRAE 3000
2/6/2023	10:30	Downwind	2021 ACFM	MiniRAE 3000
2/6/2023	10:30	Stripper	2021 ACFM	MiniRAE 3000
2/23/2023	8:00	Outside GWTP Office	2370 ACFM	MiniRAE 3000
2/23/2023	8:00	Downwind	2370 ACFM	MiniRAE 3000
2/23/2023	8:00	Stripper	2370 ACFM	MiniRAE 3000
2/23/2023	12:00	Outside GWTP Office	2318 ACFM	MiniRAE 3000
2/23/2023	12:00	Downwind	2318 ACFM	MiniRAE 3000
2/23/2023	12:00	Stripper	2318 ACFM	MiniRAE 3000
3/6/2023	8:00	Outside GWTP Office	2308 ACFM	MiniRAE 3000
3/6/2023	8:00	Downwind	2308 ACFM	MiniRAE 3000
3/6/2023	8:00	Stripper	2308 ACFM	MiniRAE 3000
3/6/2023	14:00	Outside GWTP Office	2139 ACFM	MiniRAE 3000
3/6/2023	14:00	Downwind	2139 ACFM	MiniRAE 3000
3/6/2023	14:00	Stripper	2139 ACFM	MiniRAE 3000
3/9/2023	8:00	Outside GWTP Office	2337 ACFM	MiniRAE 3000
3/9/2023	8:00	Downwind	2337 ACFM	MiniRAE 3000
3/9/2023	8:00	Stripper	2337 ACFM	MiniRAE 3000
3/9/2023	11:00	Outside GWTP Office	2249 ACFM	MiniRAE 3000
3/9/2023	11:00	Downwind	2249 ACFM	MiniRAE 3000
3/9/2023	11:00	Stripper	2249 ACFM	MiniRAE 3000
3/13/2023	8:00	Outside GWTP Office	2331 ACFM	MiniRAE 3000
3/13/2023	8:00	Downwind	2331 ACFM	MiniRAE 3000
3/13/2023	8:00	Stripper	2331 ACFM	MiniRAE 3000
3/13/2023	14:00	Outside GWTP Office	2130 ACFM	MiniRAE 3000
3/13/2023	14:00	Downwind	2130 ACFM	MiniRAE 3000
3/13/2023	14:00	Stripper	2130 ACFM	MiniRAE 3000
3/16/2023	8:00	Outside GWTP Office	2351 ACFM	MiniRAE 3000
3/16/2023	8:00	Downwind	2351 ACFM	MiniRAE 3000
3/16/2023	8:00	Stripper	2351 ACFM	MiniRAE 3000
3/16/2023	11:00	Outside GWTP Office	2125 ACFM	MiniRAE 3000
3/16/2023	11:00	Downwind	2125 ACFM	MiniRAE 3000
3/16/2023	11:00	Stripper	2125 ACFM	MiniRAE 3000
3/20/2023	8:00	Outside GWTP Office	2322 ACFM	MiniRAE 3000
3/20/2023	8:00	Downwind	2322 ACFM	MiniRAE 3000
3/20/2023	8:00	Stripper	2322 ACFM	MiniRAE 3000
3/20/2023	14:00	Outside GWTP Office	2134 ACFM	MiniRAE 3000
3/20/2023	14:00	Downwind	2134 ACFM	MiniRAE 3000
3/20/2023	14:00	Stripper	2134 ACFM	MiniRAE 3000
3/23/2023	8:00	Outside GWTP Office	2351 ACFM	MiniRAE 3000

3/23/2023	8:00	Downwind	2351 ACFM	MiniRAE 3000
3/23/2023	8:00	Stripper	2351 ACFM	MiniRAE 3000
3/23/2023	11:00	Outside GWTP Office	2159 ACFM	MiniRAE 3000
3/23/2023	11:00	Downwind	2159 ACFM	MiniRAE 3000
3/23/2023	11:00	Stripper	2159 ACFM	MiniRAE 3000
3/27/2023	8:00	Outside GWTP Office	2358 ACFM	MiniRAE 3000
3/27/2023	8:00	Downwind	2358 ACFM	MiniRAE 3000
3/27/2023	8:00	Stripper	2358 ACFM	MiniRAE 3000
3/27/2023	14:00	Outside GWTP Office	2210 ACFM	MiniRAE 3000
3/27/2023	14:00	Downwind	2210 ACFM	MiniRAE 3000
3/27/2023	14:00	Stripper	2210 ACFM	MiniRAE 3000

Person Collecting	PID Reading	Weather Conditions
Kennie Moore	0.0 ppm	Clear 66°F
Kennie Moore	0.0 ppm	Clear 66°F
Kennie Moore	Max. 22.1 ppm Steady State 5.5 ppm	Clear 66°F
Kennie Moore	0.0 ppm	Clear 65°F
Kennie Moore	0.0 ppm	Clear 65°F
Kennie Moore	Max. 22.3 ppm Steady State 5.9 ppm	Clear 65°F
Kennie Moore	0.0 ppm	Clear 77°F
Kennie Moore	0.0 ppm	Clear 77°F
Kennie Moore	Max. 23.7 ppm Steady State 6.5 ppm	Clear 77°F
Kennie Moore	0.0 ppm	Clear 34°F
Kennie Moore	0.0 ppm	Clear 34°F
Kennie Moore	Max. 22.1 ppm Steady State 5.8 ppm	Clear 34°F
Kennie Moore	0.0 ppm	Rain 69°F
Kennie Moore	0.0 ppm	Rain 69°F
Kennie Moore	Max. 23.7 ppm Steady State 6.9 ppm	Rain 69°F
Kennie Moore	0.0 ppm	Rain 62°F
Kennie Moore	0.0 ppm	Rain 62°F
Kennie Moore	Max. 21.1 ppm Steady State 5.7 ppm	Rain 62°F
Scott Beesinger	0.0 ppm	Clear 31°F
Scott Beesinger	0.0 ppm	Clear 31°F
Scott Beesinger	Max. 20.8 ppm Steady State 5.0 ppm	Clear 31°F
Scott Beesinger	0.0 ppm	Clear 50°F
Scott Beesinger	0.0 ppm	Clear 50°F
Scott Beesinger	Max. 22.9 ppm Steady State 5.7 ppm	Clear 50°F
Scott Beesinger	0.0 ppm	Rain 42°F
Scott Beesinger	0.0 ppm	Rain 42°F
Scott Beesinger	Max. 22.9 ppm Steady State 6.8 ppm	Rain 42°F
Scott Beesinger	0.0 ppm	Rain 44°F
Scott Beesinger	0.0 ppm	Rain 44°F
Scott Beesinger	Max. 24.2 ppm Steady State 7.4 ppm	Rain 44°F
Kennie Moore	0.0 ppm	Rain 35°F
Kennie Moore	0.0 ppm	Rain 35°F
Kennie Moore	Max. 23.2 ppm Steady State 6.2 ppm	Rain 35°F
Scott Beesinger	0.0 ppm	Rain 36°F
Scott Beesinger	0.0 ppm	Rain 36°F
Scott Beesinger	Max. 22.2 ppm Steady State 6.0 ppm	Rain 36°F
Kennie Moore	0.0 ppm	Clear 54°F
Kennie Moore	0.0 ppm	Clear 54°F
Kennie Moore	Max. 22.1 ppm Steady State 6.3 ppm	Clear 54°F

Kennie Moore	0.0 ppm	Clear 60°F
Kennie Moore	0.0 ppm	Clear 60°F
Kennie Moore	Max. 21.2 ppm Steady State 5.3 ppm	Clear 60°F
Kennie Moore	0.0 ppm	Clear 68°F
Kennie Moore	0.0 ppm	Clear 68°F
Kennie Moore	Max. 24.7 ppm Steady State 7.2 ppm	Clear 68°F
Scott Beesinger	0.0 ppm	Clear 77°F
Scott Beesinger	0.0 ppm	Clear 77°F
Scott Beesinger	Max. 22.9 ppm Steady State 6.3 ppm	Clear 77°F
Kennie Moore	0.0 ppm	Clear 57°F
Kennie Moore	0.0 ppm	Clear 57°F
Kennie Moore	Max. 23.7 ppm Steady State 5.9 ppm	Clear 57°F
Scott Beesinger	0.0 ppm	Clear 79°F
Scott Beesinger	0.0 ppm	Clear 79°F
Scott Beesinger	Max. 22.3 ppm Steady State 5.5 ppm	Clear 79°F
Kennie Moore	0.0 ppm	Clear 60°F
Kennie Moore	0.0 ppm	Clear 60°F
Kennie Moore	Max. 22.7 ppm Steady State 6.1 ppm	Clear 60°F
Scott Beesinger	0.0 ppm	Clear 65°F
Scott Beesinger	0.0 ppm	Clear 65°F
Scott Beesinger	Max. 24.9 ppm Steady State 7.3 ppm	Clear 65°F
Scott Beesinger	0.0 ppm	Clear 46°F
Scott Beesinger	0.0 ppm	Clear 46°F
Scott Beesinger	Max. 21.7 ppm Steady State 5.9 ppm	Clear 46°F
Scott Beesinger	0.0 ppm	Clear 60°F
Scott Beesinger	0.0 ppm	Clear 60°F
Scott Beesinger	Max. 23.5 ppm Steady State 6.4 ppm	Clear 60°F
Scott Beesinger	0.0 ppm	Cloudy 56°F
Scott Beesinger	0.0 ppm	Cloudy 56°F
Scott Beesinger	Max. 21.1 ppm Steady State 5.5 ppm	Cloudy 606°F
Scott Beesinger	0.0 ppm	Cloudy 64°F
Scott Beesinger	0.0 ppm	Cloudy 64°F
Scott Beesinger	Max. 24.8 ppm Steady State 6.8 ppm	Cloudy 64°F
Kennie Moore	0.0 ppm	Clear 30°F
Kennie Moore	0.0 ppm	Clear 30°F
Kennie Moore	Max. 23.2 ppm Steady State 6.5 ppm	Clear 30°F
Scott Beesinger	0.0 ppm	Clear 55°F
Scott Beesinger	0.0 ppm	Clear 55°F
Scott Beesinger	Max. 21.4 ppm Steady State 6.0 ppm	Clear 55°F
Kennie Moore	0.0 ppm	Clear 69°F

Kennie Moore	0.0 ppm		Clear 69°F
Kennie Moore	Max. 21.4 ppm	Steady State 5.7 ppm	Clear 69°F
Scott Beesinger	0.0 ppm		Clear 78°F
Scott Beesinger	0.0 ppm		Clear 78°F
Scott Beesinger	Max. 22.9 ppm	Steady State 6.3 ppm	Clear 78°F

Kennie Moore	0.0 ppm		Clear 57°F
Kennie Moore	0.0 ppm		Clear 57°F
Kennie Moore	Max. 22.0 ppm	Steady State 6.2 ppm	Clear 57°F
Scott Beesinger	0.0 ppm		Clear 73°F
Scott Beesinger	0.0 ppm		Clear 73°F
Scott Beesinger	Max. 24.7 ppm	Steady State 7.1 ppm	Clear 73°F

01177931

EQUIPMENT CALIBRATION DAILY LOG

Date: 1/6/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: SCOTT BEGSINGER

PID

Model: MINI RAE 3000 Bulb: 11.8 ~~10.6~~ eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0630 Initials: SB Value:	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	12/28/23	UGB-250-100-20	TO 2420 SB Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	O2 (%)				Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
First Point Calibration (Again)	pH	4.00			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

01177932

EQUIPMENT CALIBRATION DAILY LOG

Date: 11/1/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Beegsinger

PID

Model: Mini RAE 3000

Equipment ID #: Bulb: 11.8 eV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
Field Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0615 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100ppm (isobutylene)	SGB-250-100-20		Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
Field Point Calibration	O2 (%)				Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
Field Point Calibration (Probe)	pH	4.01			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:		
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Field Blank Calibration	pH	4.16			Value:	Value:	Value:
	Conductivity (mS/cm)	62.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Comments:

01177933

EQUIPMENT CALIBRATION DAILY LOG

Date: 1/13/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Beasinger

PID

Model: Mini RAE 3000

Equipment ID #: Bulk: 11.8 mev

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
Field Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0630 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100ppm (isobutylene)	SGB-250-100-20		Value: SB	Value:	Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
Field Point Calibration	O2 (%)				Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check (if necessary)
Field Point Calibration (Probe)	pH	4.00			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.9-8.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

01177934

EQUIPMENT CALIBRATION DAILY LOG

Date: 11/8/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Baysinger

PID

Model: MiniRAE 3000

Equipment ID #: Bulk: 10.8 eV

Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0635 Initials: SB	Time: Initials:	Time: Initials:
Second Point Calibration	Vapor conc. (ppm)	100ppm (isobutylene)	SGB-250-100-20		Value: TO ZERO SB Value: SB	Value: Value:	Value: Value:

COMB. GAS/O_2 METER

Model:

Equipment ID #:

Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	O_2 (%)			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	% LEL Pentane			Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check (if necessary)
First Point Calibration (Pentair)	pH	4.00		Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	Conductivity (mS/cm)	1.49		Value:	Value:	Value:
	Turbidity (NTU)	0		Value:	Value:	Value:
	DO (mg/L)	8.3-8.1 (ambient air)	NA	NA	Value:	Value:
Second Point Calibration (Pentair)	pH	6.86		Value:	Value:	Value:
	Conductivity (mS/cm)	83.7		Value:	Value:	Value:
	Turbidity (NTU)	100		Value:	Value:	Value:
Third Point Calibration	pH	9.18		Value:	Value:	Value:
	Conductivity (mS/cm)	82.7		Value:	Value:	Value:
	Turbidity (NTU)	100		Value:	Value:	Value:

Comments:

01177935

EQUIPMENT CALIBRATION DAILY LOG

Date: 1/20/23

Project Number: NW013[2.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Baggsinger

PID

Model: Mini RAE 3000 Batt: 11.8 [illegible] mV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0620 Initials: SB	Time: Initials:	Time: Initials:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (Isobutylene)	SGB-250-100-20		Value: TO ZERO SB Value: SB	Value: Value:	Value: Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib./Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration/Check	Evening Check (one point only)	Additional Calib./Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Buffer)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Notes:

01177936

EQUIPMENT CALIBRATION DAILY LOG

Date: 11/24/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Baesinger

PID

Model: MiniRAE 3000 Bulb: 10.6 eV

Equipment ID #:

Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0640 Initials: SB	Time: Initials:	Time: Initials:
Second Point Calibration	Vapor conc. (ppm)	100ppm (isobutylene)	SGB-250-100-20		Value: TO ZERO SB Value: SB	Value: Value:	Value: Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	O2 (%)			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	% LEL Pentane			Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check (if necessary)
First Point Calibration (Check)				Time: Initials:	Time: Initials:	Time: Initials:
	pH	4.00		Value:	Value:	Value:
	Conductivity (mS/cm)	4.49		Value:	Value:	Value:
	Turbidity (NTU)	0		Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Comments:

01177937

EQUIPMENT CALIBRATION DAILY LOG

Date: 2/2/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Beggs: NB9R

PID

Model: Mini RAE 3000 Built: 11-8

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0625 Initials: SB	Time: Initials:	Time: Initials:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	SGB-250-100-20		Value: TO ZERO SB	Value:	Value:
					Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration					Time:	Time:	Time:
					Initials:	Initials:	Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check (if necessary)
					Time:	Time:	Time:
					Initials:	Initials:	Initials:
First Point Calibration (Acidic)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	6.8-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration (Basic)	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	89.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	62.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Comments:

01177938

EQUIPMENT CALIBRATION DAILY LOG

Date: 2/6/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Baggenstoss

PID

Model: MiniRAE 3000

Equipment ID #: Bulk: 10.6 eV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check if necessary
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0615 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100ppm (isobutylene)	SGB-250-100-20		Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check if necessary
First Point Calibration	O2 (%)				Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check if necessary
First Point Calibration (Buffer)	pH	4.00			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	
	DO (mg/L)	8.9-9.1 (ambient air)	NA	NA			
Second Point Calibration	pH	9.00			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Remarks:

EQUIPMENT CALIBRATION DAILY LOG

Date: 2/23/23

Project Number: NW013[illegible].0150

Project Name: LHAAP-GWTP

Recorded By: Scott Beasinger

PID

Model: Mini RAE 3000 Bulb: 10.6 ev

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0635 Initials: SB	Time: Initials:	Time: Initials:
Second Point Calibration	Vapor conc. (ppm)	100ppm (isobutylene)	SGB-250-100-20		Value: TO ZERO SB	Value:	Value:
					Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	O2 (%)				Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check (if necessary)
First Point Calibration (Buffer)	pH	4.00			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:		
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	62.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Comments:

01177940

EQUIPMENT CALIBRATION DAILY LOG

Date: 3/6/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Baesinger

PID

Model: Mini RAE 3000

Equipment ID #: [illegible]

Batt: 11.8 [illegible] mV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0620 Initials: SB	Time: Initials:	Time: Initials:
Second Point Calibration	Vapor conc. (ppm)	100ppm (isobutylene)	SGB-250-100-20		Value: TO ZERO SB Value: SB	Value: Value:	Value: Value:

COMB. GASIO. METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	O2 (%)				Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check (if necessary)
First Point Calibration (4 point)	pH	4.00			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA			
Second Point Calibration	pH	8.00			Value:	Value:	Value:
	Conductivity (mS/cm)	53.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	52.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Comments:

EQUIPMENT CALIBRATION DAILY LOG

Date: 3/9/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Baesinger

PID

Model: Mini RAE 3000 Bulb: 10.6 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
Primary Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0645 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100ppm (isobutylene)	SGB-250-100-20		Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
Fixed Point (Calibration)	O2 (%)				Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check (if necessary)
Primary Point Calibration (Probe)	pH	4.00			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	6.0-8.1 (ambient air)	NA	NA	Value:	Value:	
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Comments:

01177942

EQUIPMENT CALIBRATION DAILY LOG

Date: 3/13/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Baginski

PID

Model: Mini RAE 3000 Bulb: 11.8 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0620 Initials: SB Value: TO ZERO SB	Time: Initials: Value:	Time: Initials: Value:
Second Point Calibration	Vapor conc. (ppm)	100ppm (isobutylene)	SGB-250-100-20		Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	%LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot#	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Buffer)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.5-8.1 (ambient air)	NA	NA			
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	83.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	83.7			Value:	Value:	Value:
	Turbidity (NTU)	400			Value:	Value:	Value:

Additional Comments:

EQUIPMENT CALIBRATION DAILY LOG

Date: 3/16/23

Project Number: NW013I2.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Beasinger

PID

Model: Mini RAE 3000

Equipment ID #: Bulk: 11.8 eV

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check if necessary
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0630 Initials: SB	Time: Initials:	Time: Initials:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	SGB-250-100-20		Value: TO ZERO SB	Value:	Value:
					Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check if necessary
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check if necessary
First Point Calibration (Packet)					Time: Initials:	Time: Initials:	Time: Initials:
	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-8.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Comments:

01177944

EQUIPMENT CALIBRATION DAILY LOG

Date: 3/20/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Beasinger

PID

Model: MiniRAE 3000 Bulb: 10.6 eV

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0635 Initials: SB	Time: Initials:	Time: Initials:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	SGB-250-100-20		Value: TO ZERO SB	Value:	Value:
					Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration					Time: Initials:	Time: Initials:	Time: Initials:
	O2 (%)				Value:	Value:	Value:
	% LEL Pentane				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check (if necessary)
					Time: Initials:	Time: Initials:	Time: Initials:
First Point Calibration (Yellow)	pH	4.00			Value:	Value:	Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-8.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.18			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Comments:

01177945

EQUIPMENT CALIBRATION DAILY LOG

Date: 3/23/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Boggs/NGRC

PID

Model: MiniRAE 3000

Equipment ID #: Batt: 10.8 10.5 nav

Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0615 Initials: SB	Time: Initials:	Time: Initials:
Second Point Calibration	Vapor conc. (ppm)	100 ppm (isobutylene)	SGB-250-100-20		Value: TO ZERO SB Value: SB	Value: Value:	Value: Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check (if necessary)
First Point Calibration	O2 (%)			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	% LEL Pentane			Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

	Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check (if necessary)
First Point Calibration (Buffer)	pH	4.00			Time: Initials: Value:	Time: Initials: Value:	Time: Initials: Value:
	Conductivity (mS/cm)	4.49			Value:	Value:	Value:
	Turbidity (NTU)	0			Value:	Value:	Value:
	DO (mg/L)	8.8-9.1 (ambient air)	NA	NA	Value:	Value:	Value:
Second Point Calibration	pH	9.00			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:
Third Point Calibration	pH	9.00			Value:	Value:	Value:
	Conductivity (mS/cm)	58.7			Value:	Value:	Value:
	Turbidity (NTU)	100			Value:	Value:	Value:

Additional Notes:

01177946

EQUIPMENT CALIBRATION DAILY LOG

Date: 3/27/23

Project Number: NW01312.0150

Project Name: LHAAP-GWTP

Recorded By: Scott Boggs/NGSR

PID

Model: MiniRAE 3000

Equipment ID #: Batt: 11.8 [illegible]

Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check if necessary
First Point Calibration	Vapor conc. (ppm)	0.0 (ambient air)	NA	NA	Time: 0625	Time:	Time:
					Initials: SB	Initials:	Initials:
Second Point Calibration	Vapor conc. (ppm)	100ppm (isobutylene)	SGB-250-100-20		Value: TO ZERO SB	Value:	Value:
					Value: SB	Value:	Value:

COMB. GAS/O2 METER

Model:

Equipment ID #:

Parameter	Standard	Exp. Date	Lot #	Morning Calibration	Evening Check	Additional Calib. Check if necessary
First Point Calibration	O2 (%)			Time:	Time:	Time:
				Initials:	Initials:	Initials:
	% LEL Pentane			Value:	Value:	Value:
				Value:	Value:	Value:

WATER QUALITY METER

Model:

Equipment ID #:

Parameter	Standard	Exp. Date	Lot #	Morning Calibration Check	Evening Check (one point only)	Additional Calib. Check if necessary
First Point Calibration (Buffer)	pH	4.00		Time:	Time:	Time:
				Initials:	Initials:	Initials:
	Conductivity (mS/cm)	4.49		Value:	Value:	Value:
	Turbidity (NTU)	0		Value:	Value:	Value:
	DO (mg/L)	6.3-9.1 (ambient air)	NA	Value:	Value:	Value:
Second Point Calibration	pH	6.86		Value:	Value:	Value:
	Conductivity (mS/cm)	58.7		Value:	Value:	Value:
	Turbidity (NTU)	100		Value:	Value:	Value:
Third Point Calibration	pH	9.18		Value:	Value:	Value:
	Conductivity (mS/cm)	58.7		Value:	Value:	Value:
	Turbidity (NTU)	100		Value:	Value:	Value:

Additional Remarks:

December 22, 2022 Service Request No:E2201205

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22120986

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory December 16, 2022
For your reference, these analyses have been assigned our service request number **E2201205.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at James.Guin@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

James Guin

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Environmental - US	**Service Request No.:**	E2201205
Project:	HS22120986	**Date Received:**	12/16/22
Sample Matrix:	Ground Water		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Eight samples were received for analysis at ALS Environmental in Houston on 12/16/22.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200580: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2201205
Project: HS22120986

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2201205-001	MW5_121522	12/15/2022	0725
E2201205-002	18CPTMW08DW_121522	12/15/2022	0815
E2201205-003	18CPTMW08SW_121522	12/15/2022	0900
E2201205-004	AWD3_121522	12/15/2022	0945
E2201205-005	AWD3_121522_a	12/15/2022	0945
E2201205-006	18CPTMW22R_121522	12/15/2022	1035
E2201205-007	18CPTMW22SW_121522	12/15/2022	1120
E2201205-008	MW20_121522	12/15/2022	1205

Service Request Summary

Folder #: **E2201205**
Client Name: ALS Environmental - US
Project Name: HS22120986
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 12/16/22
Internal Due Date: 1/3/2023
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22120986
EDD: BASIC_WQC_CASNo

8 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 4B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2201205-001	MW5_121522	Ground Water	12/15/22 0725	**IV**
E2201205-002	18CPTMW08DW_121522	Ground Water	12/15/22 0815	**IV**
E2201205-003	18CPTMW08SW_121522	Ground Water	12/15/22 0900	**IV**
E2201205-004	AWD3_121522	Ground Water	12/15/22 0945	**IV**
E2201205-005	AWD3_121522_a	Ground Water	12/15/22 0945	**IV**
E2201205-006	18CPTMW22R_121522	Ground Water	12/15/22 1035	**IV**
E2201205-007	18CPTMW22SW_121522	Ground Water	12/15/22 1120	**IV**
E2201205-008	MW20_121522	Ground Water	12/15/22 1205	**IV**

Service Request Summary

Folder #: **E2201205**
Client Name: ALS Environmental - US
Project Name: HS22120986
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 12/16/22
Internal Due Date: 1/3/2023
QAP: LAB QAP
Qualifier Set: HRMS Qualifier Set
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22120986
EDD: BASIC_WQC_CASNo

8 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 4B
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	8	Level IV due 1/10

Data Qualifiers

HRMS Qualifier Set

B Indicates the associated analyte was found in the method blank at >1/10th the reported value.

E Estimated value. The reported concentration is above the calibration range of the instrument.

H Sample extracted and/or analyzed out of suggested holding time.

J Estimated value. The reported concentration is below the MRL.

K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits.The concentration of this analyte should be considered as an estimate.

P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.

Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.

S Signal saturated detector. Result reported from dilution.

U Compound was analyzed for, but was not detected (ND).

X See Case Narrative.

Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.

i The MDL/MRL have been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2368363	12/31/2023
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Ecology	C819-22	11/14/2023

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 20552

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS22120986
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22120986-01**	**MW5_121522**	**Groundwater**	**15 Dec 2022 07:25**
	Provide Level II and Level IV reports in separate pdf			04 Jan 2023
2.	**HS22120986-02**	**18CPTMW08DW_121522**	**Groundwater**	**15 Dec 2022 08:15**
	Provide Level II and Level IV reports in separate pdf			04 Jan 2023
3.	**HS22120986-03**	**18CPTMW08SW_121522**	**Groundwater**	**15 Dec 2022 09:00**
	Provide Level II and Level IV reports in separate pdf			04 Jan 2023
4.	**HS22120986-04**	**AWD3_121522**	**Groundwater**	**15 Dec 2022 09:45**
	Provide Level II and Level IV reports in separate pdf			04 Jan 2023
5.	**HS22120986-05**	**AWD3_121522_a**	**Groundwater**	**15 Dec 2022 09:45**
	Provide Level II and Level IV reports in separate pdf			04 Jan 2023
6.	**HS22120986-06**	**18CPTMW22R_121522**	**Groundwater**	**15 Dec 2022 10:35**
	Provide Level II and Level IV reports in separate pdf			04 Jan 2023
7.	**HS22120986-07**	**18CPTMW22SW_121522**	**Groundwater**	**15 Dec 2022 11:20**
	Provide Level II and Level IV reports in separate pdf			04 Jan 2023
8.	**HS22120986-08**	**MW20_121522**	**Groundwater**	**15 Dec 2022 12:05**
	Provide Level II and Level IV reports in separate pdf			04 Jan 2023

Subcontract Chain of Custody

SAMPLING STATE: Texas

COC ID: 20552

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: NR

Date/Time:

Received By: [illegible]

Date/Time: 12-16-22 1212

Cooler ID(s):

Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist JG

Client/Project ALG-H1

Thermometer ID IR21

Date/Time Received: 12-16-22 Initials: CG

Date/Time Logged in: 12-16-22 Initials CG

1. Method of delivery: ○ US Mail ~~Fed-Ex~~ ○ UPS ○ DHL ALS Courier ○ Client

2. Samples received in: Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes No

Were they intact? ○ Yes ○ No N/A

Were they signed and dated? ○ Yes ○ No N/A

If yes, how many and where?

4. Packing Material: ○ Inserts Baggies ○ Bubble Wrap ○ Gel Packs Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
~		12-16-22	1212	CG	0.8	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? Yes ○ No

10. Did sample labels and tags agree with custody documents? Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 411932 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 12/21/22 08:20

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2201200-001	HBW7_121622	.01	6850/ClO4 DOD			Water	10mL	
2	E2201200-002	HBW7_121622_a	.01	6850/ClO4 DOD			Water	10mL	
3	E2201200-003	HBW10_121622	.01	6850/ClO4 DOD			Water	10mL	
4	E2201200-004	HBW1_121622	.01	6850/ClO4 DOD			Water	10mL	
5	E2201200-005	GPW1_121622	.01	6850/ClO4 DOD			Water	10mL	
6	E2201200-006	GPW3_121622	.01	6850/ClO4 DOD			Water	10mL	
7	E2201205-001	MW5_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2201205-002	18CPTMW08DW_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2201205-003	18CPTMW08SW_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2201205-004	AWD3_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2201205-005	AWD3_121522_a	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2201205-006	18CPTMW22R_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2201205-007	18CPTMW22SW_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2201205-008	MW20_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2201206-001	18CPTMW04_121622	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2201206-002	18CPTMW04SW_121622	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2201206-003	MW20_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
18	EQ2200580-01	MB		6850/ClO4			Liquid	10mL	
19	EQ2200580-02	LCS		6850/ClO4			Liquid	10mL	
20	EQ2200580-03	DLCS		6850/ClO4			Liquid	10mL	
21	R2211772-004	2212071447Y 200-G-175	.01	6850/ClO4			Water	10mL	
22	R2211773-013	2212070823 600L-HA-01	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 225386 Logbook Ref: Perchlorate (1st Source) Expires On: 01/31/2023

EQ2200580-02	1.00µL	EQ2200580-02	1.00µL	EQ2200580-03	1.00µL	EQ2200580-03	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 225719 Logbook Ref: Perchlorate Internal Standard Expires On: 01/31/2023

E2201200-001	100.00µL	E2201200-002	100.00µL	E2201200-003	100.00µL	E2201200-004	100.00µL	E2201200-005	100.00µL	E2201200-006	100.00µL
E2201205-001	100.00µL	E2201205-002	100.00µL	E2201205-003	100.00µL	E2201205-004	100.00µL	E2201205-005	100.00µL	E2201205-006	100.00µL
E2201205-007	100.00µL	E2201205-008	100.00µL	E2201206-001	100.00µL	E2201206-002	100.00µL	E2201206-003	100.00µL	EQ2200580-01	100.00µL
EQ2200580-01	100.00µL	EQ2200580-02	100.00µL	EQ2200580-02	100.00µL	EQ2200580-03	100.00µL	EQ2200580-03	100.00µL	R2211772-004	100.00µL
R2211773-013	100.00µL										

Preparation Information Benchsheet

Prep Run#: 411932 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 12/21/22 08:20

Preparation Materials

Water HPLC Grade	10/24/2022 Water (225656)	6850 Amber Glass screw vial	2mL Screw Top Vial (221308)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221307)		

Preparation Steps

Step: Preparation
Started: 12/21/22 08:20
Finished: 12/21/22 09:20
By: XMI
Comments

Comments: _____

Reviewed By: XMI Date: 12/21/22

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Collected:**	12/15/22 0725
Sample Matrix:	Ground Water	**Date Received:**	12/16/22
Sample Name:	MW5_121522	**Units:**	µg/L
Lab Code:	E2201205-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**22100**		100	50.0	25.0	1000	12/21/22	12/21/22 16:32	411932	789386	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Collected:**	12/15/22 0815
Sample Matrix:	Ground Water	**Date Received:**	12/16/22
Sample Name:	18CPTMW08DW_121522	**Units:**	µg/L
Lab Code:	E2201205-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**5740**		20.0	10.0	5.00	200	12/21/22	12/21/22 17:42	411932	789386	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Collected:**	12/15/22 0900
Sample Matrix:	Ground Water	**Date Received:**	12/16/22
Sample Name:	18CPTMW08SW_121522	**Units:**	µg/L
Lab Code:	E2201205-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**15500**		100	50.0	25.0	1000	12/21/22	12/21/22 16:43	411932	789386	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Collected:**	12/15/22 0945
Sample Matrix:	Ground Water	**Date Received:**	12/16/22
Sample Name:	AWD3_121522	**Units:**	µg/L
Lab Code:	E2201205-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**41.5**		0.100	0.0500	0.0250	1	12/21/22	12/22/22 08:51	411932	789389	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Collected:**	12/15/22 0945
Sample Matrix:	Ground Water	**Date Received:**	12/16/22
Sample Name:	AWD3_121522_a	**Units:**	µg/L
Lab Code:	E2201205-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**37.9**		0.100	0.0500	0.0250	1	12/21/22	12/22/22 08:45	411932	789389	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Collected:**	12/15/22 1035
Sample Matrix:	Ground Water	**Date Received:**	12/16/22
Sample Name:	18CPTMW22R_121522	**Units:**	µg/L
Lab Code:	E2201205-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**1.22**		0.100	0.0500	0.0250	1	12/21/22	12/21/22 18:57	411932	789386	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Collected:**	12/15/22 1120
Sample Matrix:	Ground Water	**Date Received:**	12/16/22
Sample Name:	18CPTMW22SW_121522	**Units:**	µg/L
Lab Code:	E2201205-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**18300**		100	50.0	25.0	1000	12/21/22	12/21/22 16:49	411932	789386	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Collected:**	12/15/22 1205
Sample Matrix:	Ground Water	**Date Received:**	12/16/22
Sample Name:	MW20_121522	**Units:**	µg/L
Lab Code:	E2201205-008	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.514**		0.100	0.0500	0.0250	1	12/21/22	12/21/22 19:02	411932	789386	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200580-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND		0.100	0.0500	0.0250	1	12/21/22	12/21/22 16:15	411932	789386	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Analyzed:**	12/21/22
Sample Matrix:	Ground Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	411932

	Lab Control Sample EQ2200580-02			Duplicate Lab Control Sample EQ2200580-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.103	0.100	103	0.101	0.100	101	84 - 119	1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200580-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.103**		0.100	0.0500	0.0250	1	12/21/22	12/21/22 16:21	411932	789386	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200580-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.101**		0.100	0.0500	0.0250	1	12/21/22	12/21/22 16:26	411932	789386	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20221214

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : **A:**0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	IB		20221214_001	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:12
2	ICS		20221214_002	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:29
3	LODV		20221214_003	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:35
4	PERCHLORATE1		20221214_004	Perchlorate6850c.lcm	1x	☒	226061	12/14/2022 15:40
5	PERCHLORATE2		20221214_005	Perchlorate6850c.lcm	1x	☒	226062	12/14/2022 15:46
6	PERCHLORATE3		20221214_006	Perchlorate6850c.lcm	1x	☒	226063	12/14/2022 15:51
7	PERCHLORATE4		20221214_007	Perchlorate6850c.lcm	1x	☒	226064	12/14/2022 15:57
8	PERCHLORATE5		20221214_008	Perchlorate6850c.lcm	1x	☒	226065	12/14/2022 16:02
9	PERCHLORATE6		20221214_009	Perchlorate6850c.lcm	1x	☒	226066	12/14/2022 16:09
10	PERCHLORATE7		20221214_010	Perchlorate6850c.lcm	1x	☒	225881	12/14/2022 16:15
11	PERCHLORATE8		20221214_011	Perchlorate6850c.lcm	1x	☒	226068	12/14/2022 16:20
12	PERCHLORATE9		20221214_012	Perchlorate6850c.lcm	1x	☒	226069	12/14/2022 16:25
13	PERCHLORATE10		20221214_013	Perchlorate6850c.lcm	1x	☒	226070	12/14/2022 16:31
14	PERCHLORATEICV		20221214_014	Perchlorate6850c.lcm	1x	☒	226067	12/14/2022 16:37

Initial Calibration - Detailed Report

Calibration ID: EC2200016 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2200016-01	PERCHLORATE1	20221214_004	12/14/2022 15:40
02	EC2200016-02	PERCHLORATE2	20221214_005	12/14/2022 15:46
03	EC2200016-03	PERCHLORATE3	20221214_006	12/14/2022 15:51
04	EC2200016-04	PERCHLORATE4	20221214_007	12/14/2022 15:57
05	EC2200016-05	PERCHLORATE5	20221214_008	12/14/2022 16:02
06	EC2200016-06	PERCHLORATE6	20221214_009	12/14/2022 16:09
07	EC2200016-07	PERCHLORATE7	20221214_010	12/14/2022 16:15
08	EC2200016-08	PERCHLORATE8	20221214_011	12/14/2022 16:20
09	EC2200016-09	PERCHLORATE9	20221214_012	12/14/2022 16:25
10	EC2200016-10	PERCHLORATE10	20221214_013	12/14/2022 16:31

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 2.927** **Average RF = 0.1567**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1615	02	0.5000	0.1479	03	0.7000	0.1579	04	1.0000	0.1573
05	2.0000	0.1505	06	5.0000	0.1573	07	10.0000	0.1541	08	20.0000	0.162
09	30.0000	0.1598	10	50.0000	0.1587						

Analyte

Perchlorate RSE = 2.93

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.103	3.1	02	0.5000	0.472	-5.6	03	0.7000	0.705	0.8
04	1.0000	1.00	0.4	05	2.0000	1.92	-3.9	06	5.0000	5.02	0.4
07	10.0000	9.83	-1.7	08	20.0000	20.7	3.4	09	30.0000	30.6	2.0
10	50.0000	50.6	1.3								

Initial Calibration Verification Summary Report

Calibration ID:	EC2200016	**Instrument ID:**	E-LCMS-01
Datafile ID:	20221214_014	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2200016-11	T	Average RF	10	9.359	ng/mL	-6.4	<= 15

Insight Report

Printed at 12/15/2022 10:55:51 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221214\12142022 ICAL.damlp

PERCHLORATE1

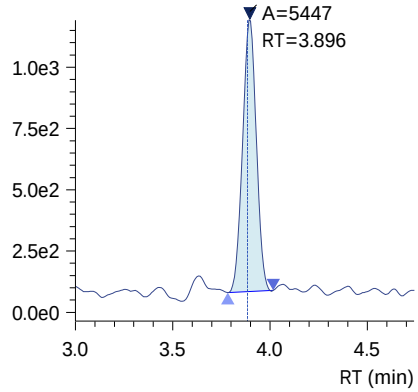
Sample ID: PERCHLORATE1
Date Acquired: 12/14/2022 3:40:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_004.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.896	5447	337240	0.1031	ng/mL	101.00 >85.00	35.31	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.889	337240	337240	1.0000	ng/mL	----	----	

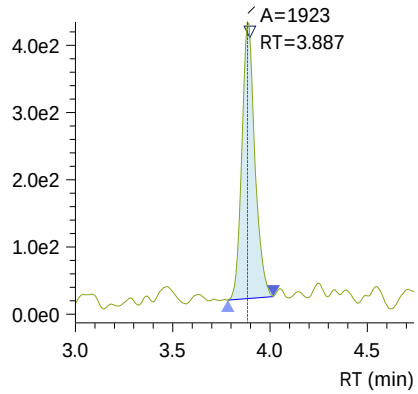
Perchlorate

Conc 0.1031
R#1 35.31 (34.02)

Q 99.00>83.00 (-) 1.19e3



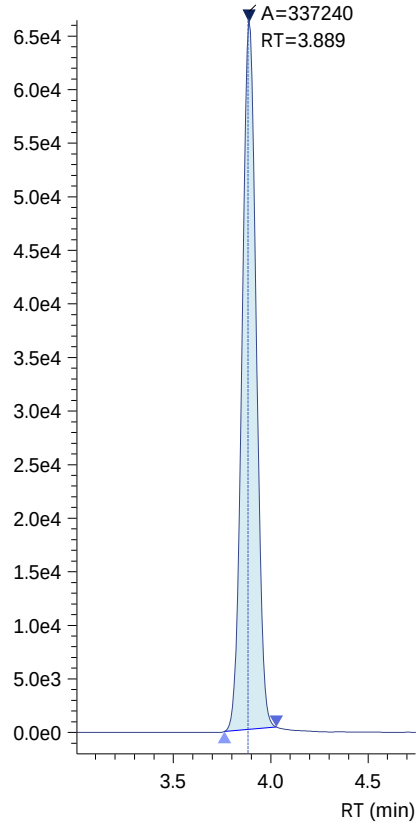
R1 101.00>85.00 (-) 4.35e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.65e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE2

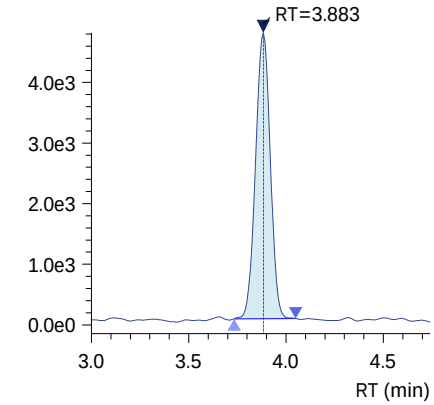
Sample ID: PERCHLORATE2
Date Acquired: 12/14/2022 3:46:03 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_005.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.883	24897	336620	0.4720	ng/mL	101.00 >85.00	33.26	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.878	336620	336620	1.0000	ng/mL	----	----	

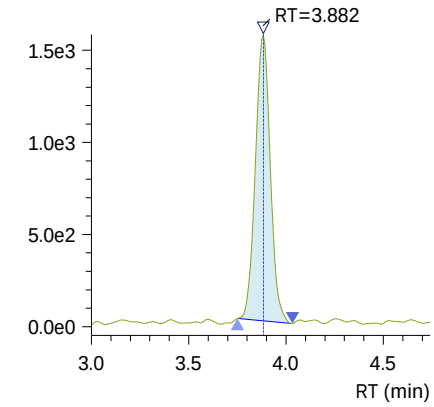
Perchlorate

Conc 0.4720
R#1 33.26 (34.02)

Q 99.00>83.00 (-) A=24897 4.82e3 RT=3.883



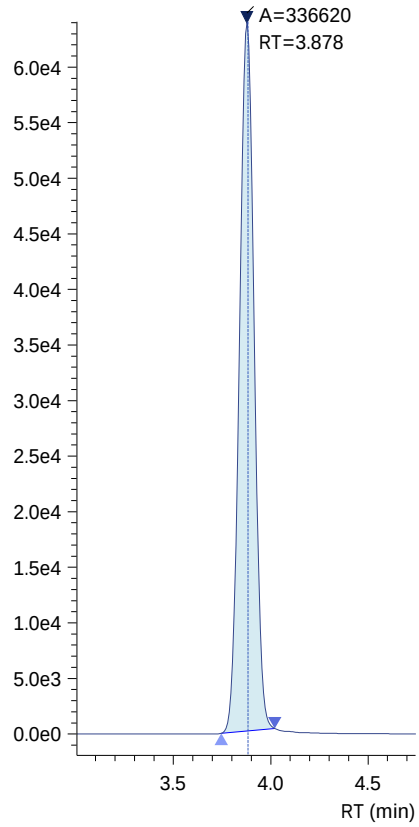
R1 101.00>85.00 (-) A=8281 1.59e3 RT=3.882



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.41e4 A=336620 RT=3.878



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE3

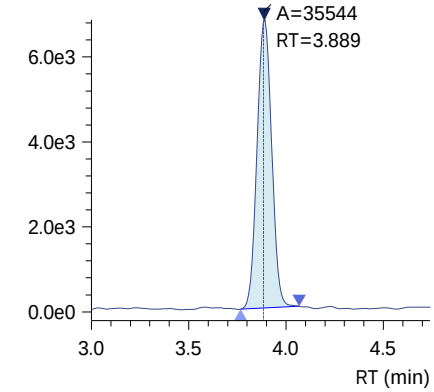
Sample ID: PERCHLORATE3
Date Acquired: 12/14/2022 3:51:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_006.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.889	35544	321596	0.7053	ng/mL	101.00 >85.00	35.09	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.885	321596	321596	1.0000	ng/mL	----	----	

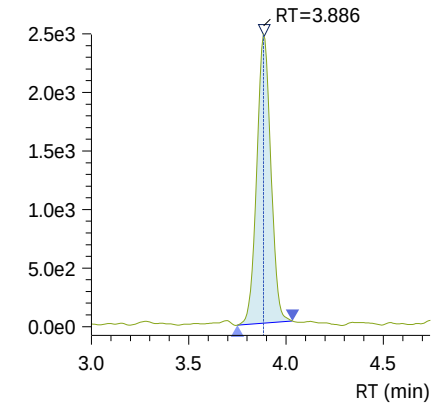
Perchlorate

Conc 0.7053
R#1 35.09 (34.02)

Q 99.00>83.00 (-) 6.88e3



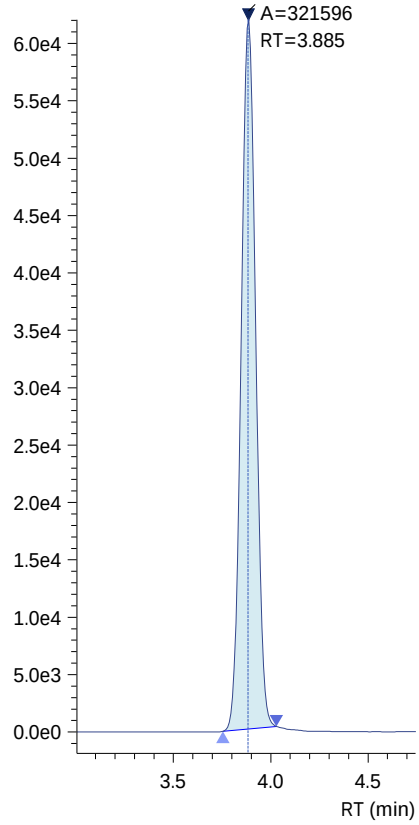
R1 101.00>85.00 (-) A=12471 2.50e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.21e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE4

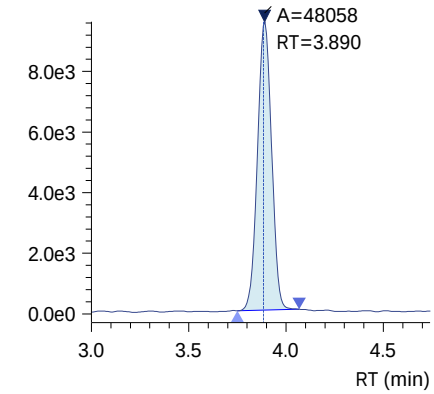
Sample ID: PERCHLORATE4
Date Acquired: 12/14/2022 3:57:06 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_007.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.890	48058	305584	1.0036	ng/mL	101.00 >85.00	33.87	23.94 -44.46
Sodium Perchlorate-18O4 _IS	Auto	3.886	305584	305584	1.0000	ng/mL	----	----	

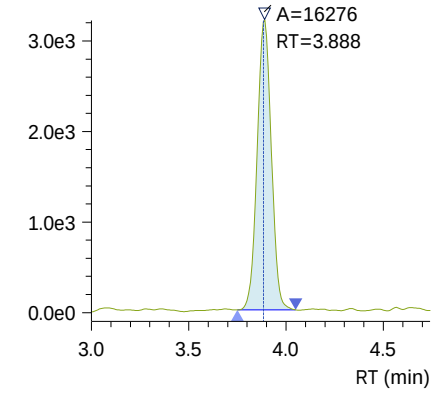
Perchlorate

Conc 1.0036
R#1 33.87 (34.02)

Q 99.00>83.00 (-) 9.64e3



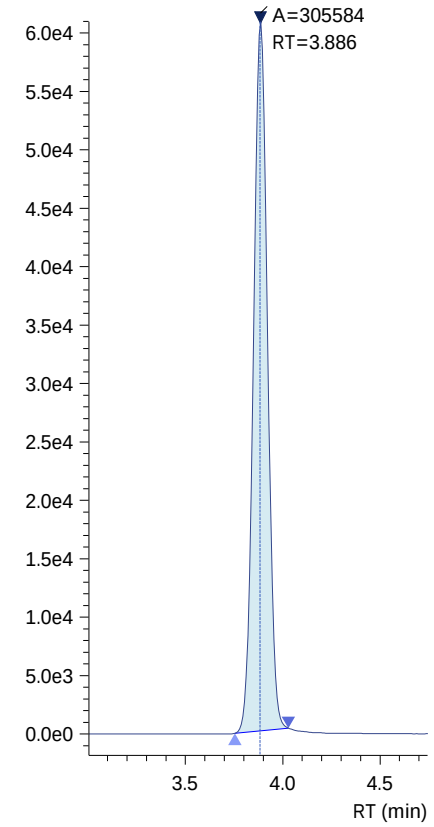
R1 101.00>85.00 (-) 3.23e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.10e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

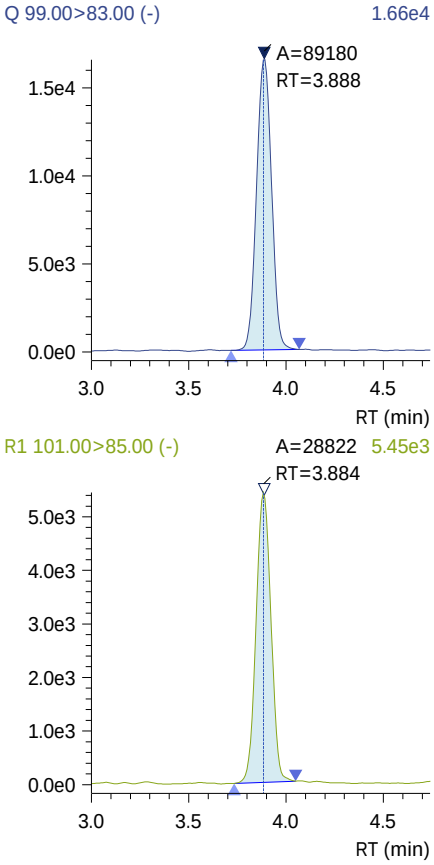
PERCHLORATE5

Sample ID: PERCHLORATE5
Date Acquired: 12/14/2022 4:02:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_008.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.888	89180	296200	1.9213	ng/mL	101.00 >85.00	32.32	23.94 -44.46
Sodium Perchlorate-18O4 _IS	Auto	3.885	296200	296200	1.0000	ng/mL	----	----	

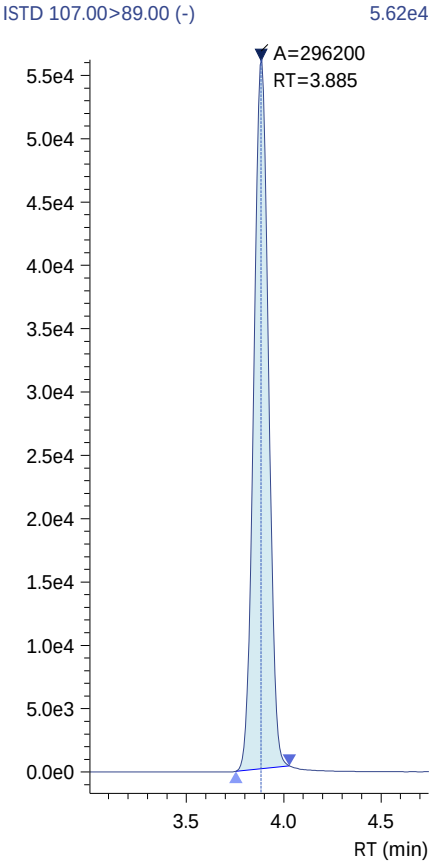
Perchlorate

Conc 1.9213
R#1 32.32 (34.02)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE6

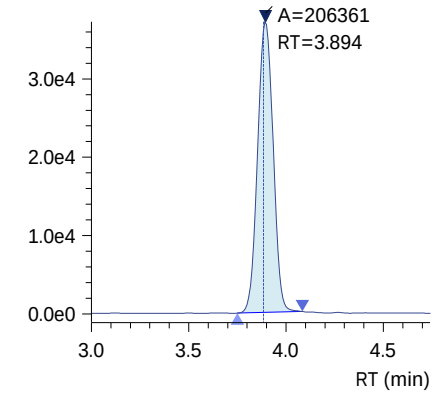
Sample ID: PERCHLORATE6
Date Acquired: 12/14/2022 4:09:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_009.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.894	206361	262312	5.0202	ng/mL	101.00 >85.00	33.93	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.889	262312	262312	1.0000	ng/mL	----	----	

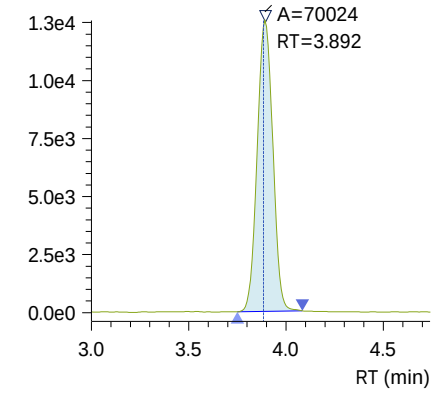
Perchlorate

Conc 5.0202
R#1 33.93 (34.02)

Q 99.00>83.00 (-) 3.73e4



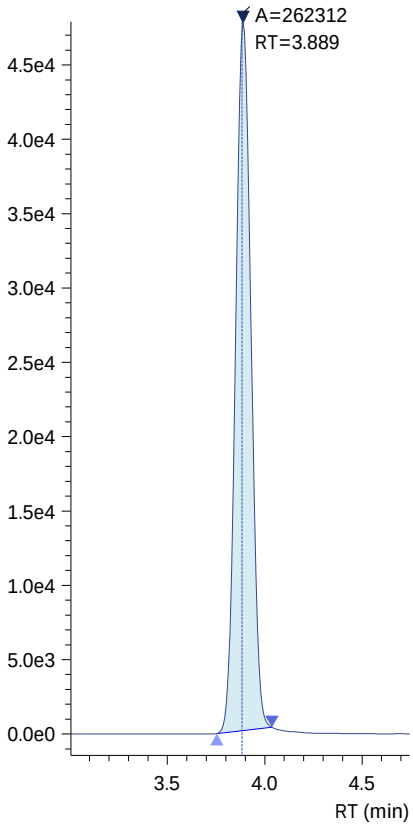
R1 101.00>85.00 (-) 1.26e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.79e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE7

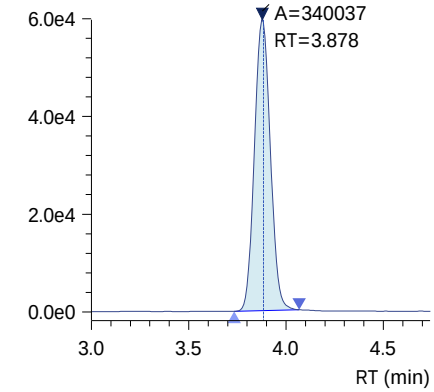
Sample ID: PERCHLORATE7
Date Acquired: 12/14/2022 4:15:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_010.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.878	340037	220702	9.8317	ng/mL	101.00 >85.00	34.05	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.875	220702	220702	1.0000	ng/mL	----	----	

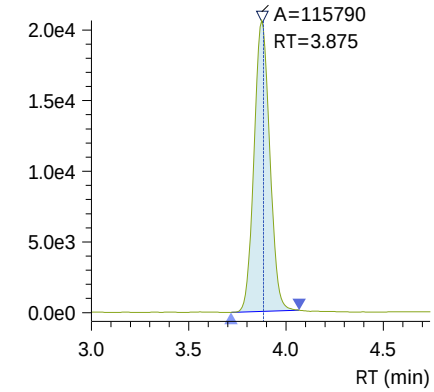
Perchlorate

Conc 9.8317
R#1 34.05 (34.02)

Q 99.00>83.00 (-) 5.98e4



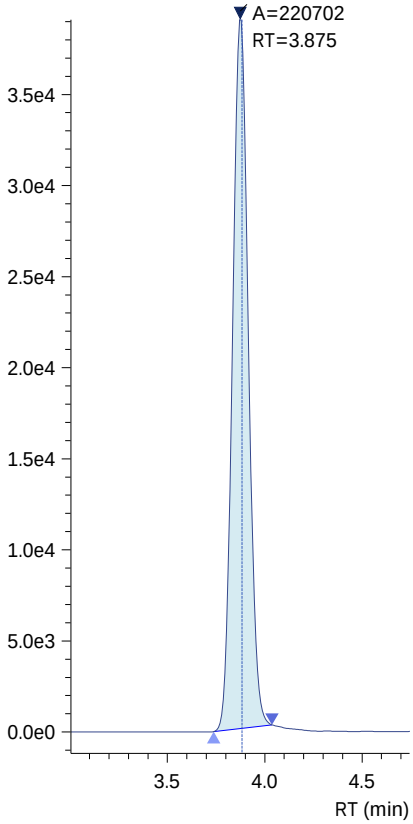
R1 101.00>85.00 (-) 2.07e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.91e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE8

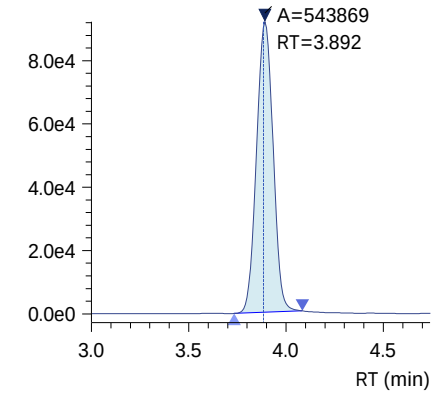
Sample ID: PERCHLORATE8
Date Acquired: 12/14/2022 4:20:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_011.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.892	5438 69	167819	20.6 806	ng/mL	101.00 >85.00	33.45	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.888	1678 19	167819	1.0000	ng/mL	----	----	

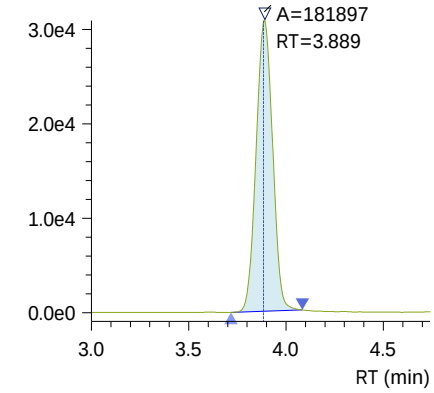
Perchlorate

Conc 20.6806
R#1 33.45 (34.02)

Q 99.00>83.00 (-) 9.23e4



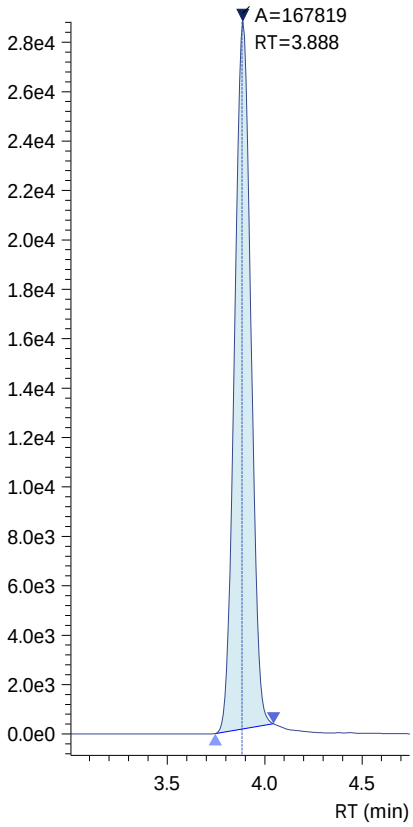
R1 101.00>85.00 (-) 3.09e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.88e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE9

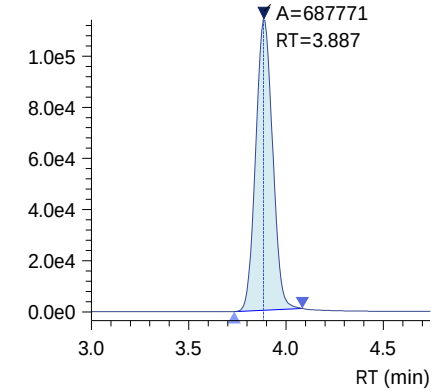
Sample ID: PERCHLORATE9
Date Acquired: 12/14/2022 4:25:58 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_012.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.887	687771	143493	30.5860	ng/mL	101.00 >85.00	33.79	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.883	143493	143493	1.0000	ng/mL	----	----	

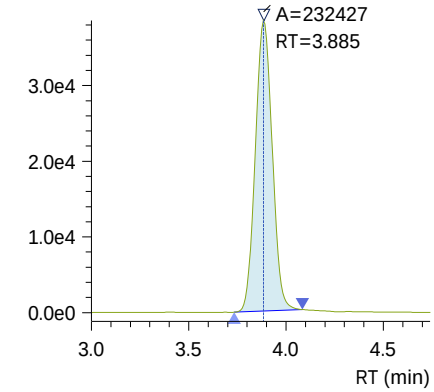
Perchlorate

Conc 30.5860
R#1 33.79 (34.02)

Q 99.00>83.00 (-) 1.14e5



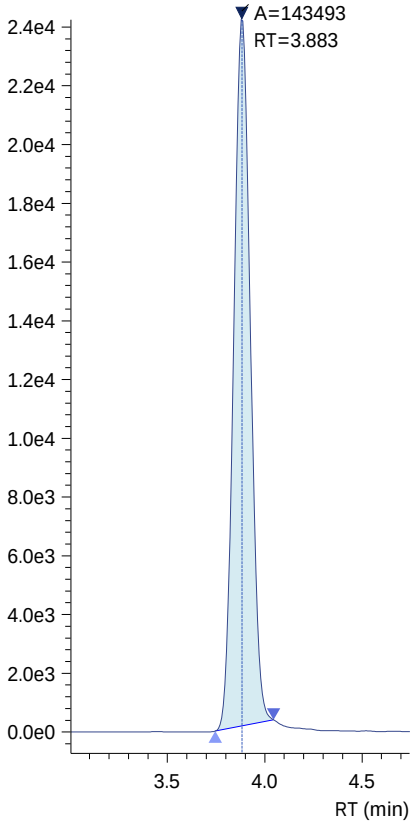
R1 101.00>85.00 (-) 3.86e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.43e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE10

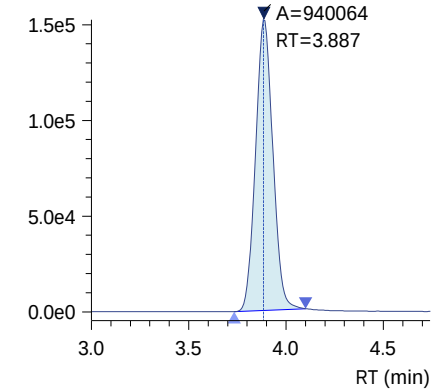
Sample ID: PERCHLORATE10
Date Acquired: 12/14/2022 4:31:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_013.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.887	9400 64	118445	50.6 464	ng/mL	101.00 >85.00	33.39	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.883	1184 45	118445	1.0000	ng/mL	----	----	

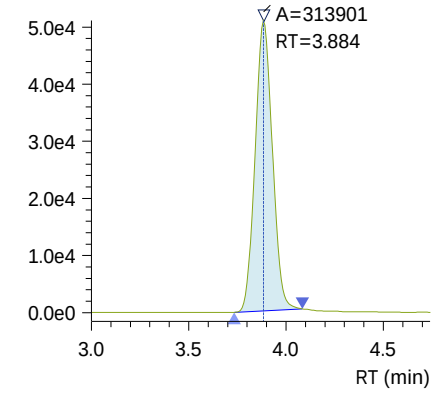
Perchlorate

Conc 50.6464
R#1 33.39 (34.02)

Q 99.00>83.00 (-) 1.53e5



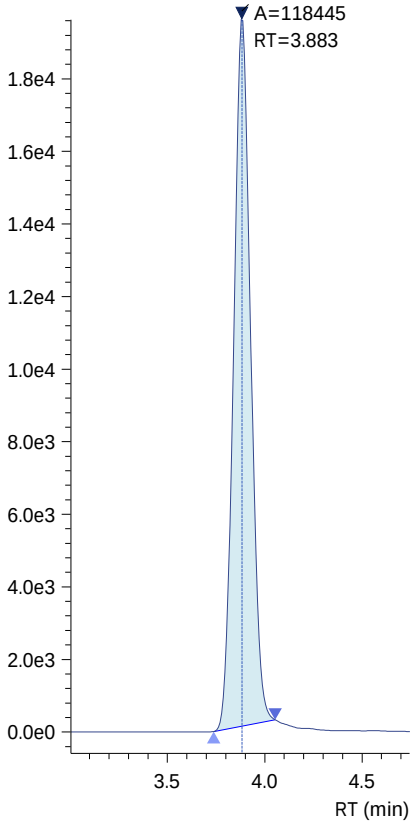
R1 101.00>85.00 (-) 5.12e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 1.96e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

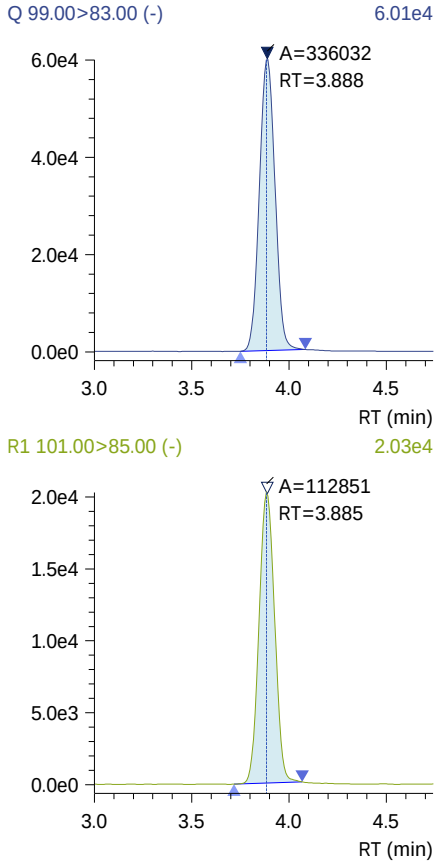
PERCHLORATEICV

Sample ID: PERCHLORATEICV
Date Acquired: 12/14/2022 4:37:01 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_014.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.888	3360 32	229124	9.3588	ng/mL	101.00 >85.00	33.58	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.884	2291 24	229124	1.0000	ng/mL	----	----	

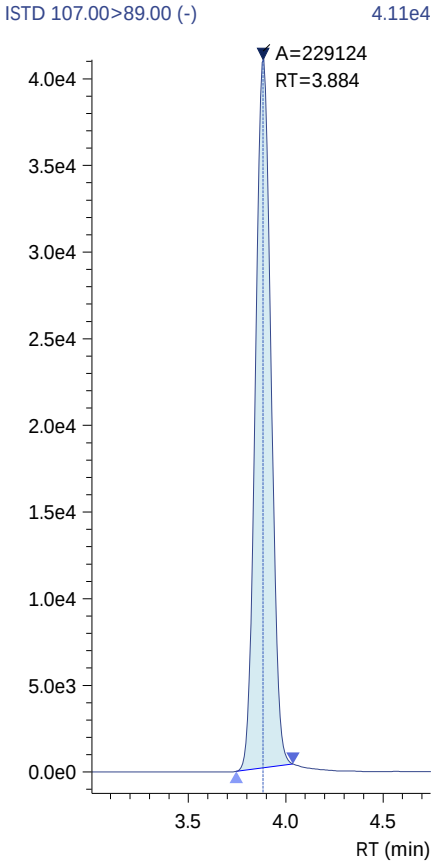
Perchlorate

Conc 9.3588
R#1 33.58 (34.02)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20221221WATER

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : A:0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	IB		20221221W-001	Perchlorate6850c.lcm	1x	☒		12/21/2022 15:53
2	ICS		20221221W-002	Perchlorate6850c.lcm	1x	☒		12/21/2022 15:58
3	LODV		20221221W-003	Perchlorate6850c.lcm	1x	☒	225199	12/21/2022 16:04
4	PERCHLORATE7		20221221W-004	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 16:09
5	EQ2200580-01		20221221W-005	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:15
6	EQ2200580-02		20221221W-006	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:21
7	EQ2200580-03		20221221W-007	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:26
8	E2201205-001X1K		20221221W-008	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:32
9	E2201205-003X1K		20221221W-009	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:43
10	E2201205-007X1K		20221221W-010	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:49
11	E2201206-001X5		20221221W-011	Perchlorate6850c.lcm	1x	☒		12/21/2022 17:36
12	E2201205-002X200		20221221W-012	Perchlorate6850c.lcm	1x	☒		12/21/2022 17:42
13	PERCHLORATE7		20221221W-013	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 17:47
14	IB		20221221W-014	Perchlorate6850c.lcm	1x	☒		12/21/2022 17:59
15	E2201200-001		20221221W-015	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:05
16	E2201200-002		20221221W-016	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:11
17	E2201200-003		20221221W-017	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:17
18	E2201200-004		20221221W-018	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:22
19	E2201200-005		20221221W-019	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:28
20	E2201200-006		20221221W-020	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:34
21	PERCHLORATE7		20221221W-021	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 18:39
22	E2201205-004		20221221W-022	Perchlorate6850c.lcm	1x	☒	DNU-IS	12/21/2022 18:45
23	E2201205-005		20221221W-023	Perchlorate6850c.lcm	1x	☒	DNU-IS	12/21/2022 18:51
24	E2201205-006		20221221W-024	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:57
25	E2201205-008		20221221W-025	Perchlorate6850c.lcm	1x	☒		12/21/2022 19:02
26	E2201206-002		20221221W-026	Perchlorate6850c.lcm	1x	☒	DNU-CONFIRM PEAK	12/21/2022 19:08
27	E2201206-003		20221221W-027	Perchlorate6850c.lcm	1x	☒	DNU-CONFIRM PEAK	12/21/2022 19:14
28	R2211772-004		20221221W-028	Perchlorate6850c.lcm	1x	☒		12/21/2022 19:19
29	R2211773-013		20221221W-029	Perchlorate6850c.lcm	1x	☒		12/21/2022 19:25
30	PERCHLORATE7		20221221W-030	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 19:31

20221222WATER

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : **A:**0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	IB		20221221W-001	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:18
2	ICS		20221222W-002	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:23
3	LODV		20221222W-003	Perchlorate6850c.lcm	1x	☒	225199	12/22/2022 8:28
4	PERCHLORATE7		20221222W-004	Perchlorate6850c.lcm	1x	☒	226067	12/22/2022 8:34
5	E2201205-005		20221222W-005	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:45
6	E2201205-004		20221222W-006	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:51
7	E2201206-002		20221222W-007	Perchlorate6850c.lcm	1x	☒		12/22/2022 9:08
8	E2201206-003		20221222W-008	Perchlorate6850c.lcm	1x	☒		12/22/2022 9:16
9	PERCHLORATE7		20221222W-009	Perchlorate6850c.lcm	1x	☒	226067	12/22/2022 9:27

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22120986

Service Request: E2201205
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-004

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1579	0.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22120986

Service Request: E2201205
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-013

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1575	0.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22120986

Service Request: E2201205
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-021

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1575	0.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22120986

Service Request: E2201205
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-030

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.2	0.1567	0.1590	1.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22120986

Service Request: E2201205
Date Analyzed: 12/22/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\New folder\20221222W-004

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789389
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1584	1.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22120986

Service Request: E2201205
Date Analyzed: 12/22/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\New folder\20221222W-009

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789389
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.96	0.1567	0.1558	-0.6	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Analyzed:**	12/21/22 16:09

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-004	**Lab Code:**	EQ2200588-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-01	226,860	3.72
Method Blank	EQ2200580-01	338,792	3.73
Lab Control Sample	EQ2200580-02	322,701	3.73
Duplicate Lab Control Sample	EQ2200580-03	328,166	3.73
MW5_121522	E2201205-001	149,243	3.73
18CPTMW08SW_121522	E2201205-003	173,805	3.73
18CPTMW22SW_121522	E2201205-007	163,427	3.73
18CPTMW08DW_121522	E2201205-002	136,759	3.73

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Analyzed:**	12/21/22 17:47

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-013	**Lab Code:**	EQ2200588-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-02	237,291	3.72

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Analyzed:**	12/21/22 18:39

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-021	**Lab Code:**	EQ2200588-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-03	240,095	3.72
18CPTMW22R_121522	E2201205-006	312,903	3.72
MW20_121522	E2201205-008	330,781	3.71

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Analyzed:**	12/21/22 19:31

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-030	**Lab Code:**	EQ2200588-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-04	239,454	3.71

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Analyzed:**	12/22/22 08:34

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\New folder\20221222W-004	**Lab Code:**	EQ2200589-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789389
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200589-01	256,146	3.71
AWD3_121522_a	E2201205-005	127,331	3.71
AWD3_121522	E2201205-004	127,483	3.71

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201205
Project:	HS22120986	**Date Analyzed:**	12/22/22 09:27

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\New folder\20221222W-009	**Lab Code:**	EQ2200589-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789389
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200589-02	234,742	3.71

Results flagged with an asterisk (*) indicate values outside control criteria.

Insight Report

Printed at 12/22/2022 9:51:13 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221221\12212022 WATER.damlp

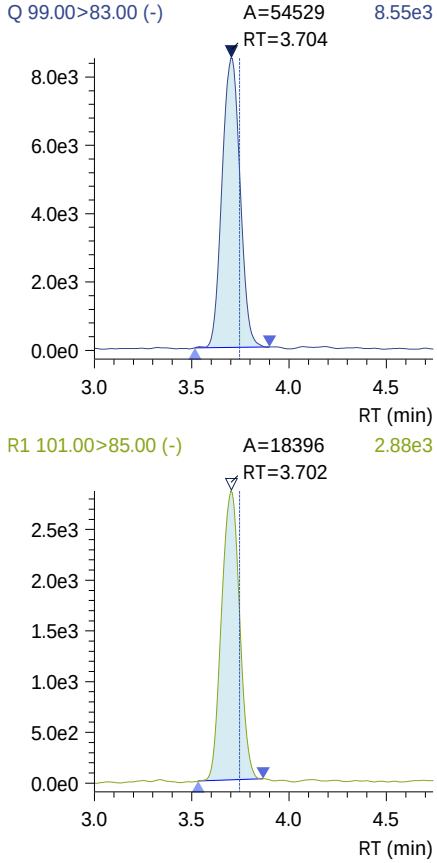
ICS

Sample ID: ICS
Date Acquired: 12/21/2022 3:58:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-002.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.704	54529	342386	1.0187	ng/mL	101.00 >85.00	33.74	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.698	342386	342386	1.0000	ng/mL	----	----	

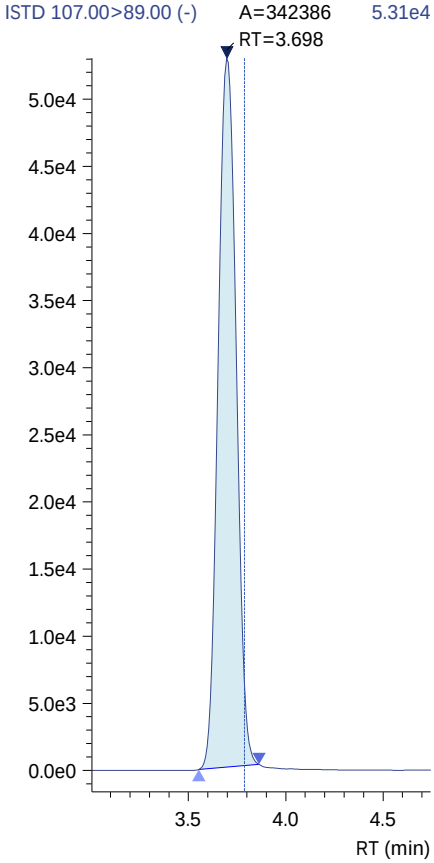
Perchlorate

Conc 1.0187
R#1 33.74 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

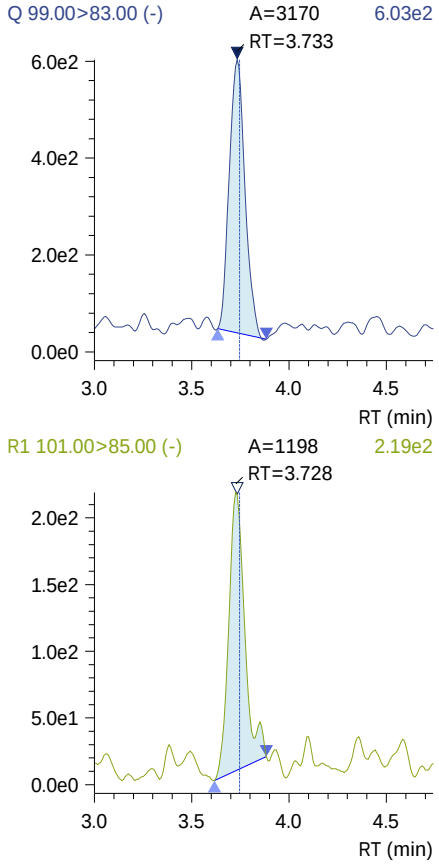
LODV

Sample ID: LODV
Date Acquired: 12/21/2022 4:04:18 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-003.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.733	3170	359225	0.0564	ng/mL	101.00 >85.00	37.79	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.727	3592 25	359225	1.0000	ng/mL	----	----	

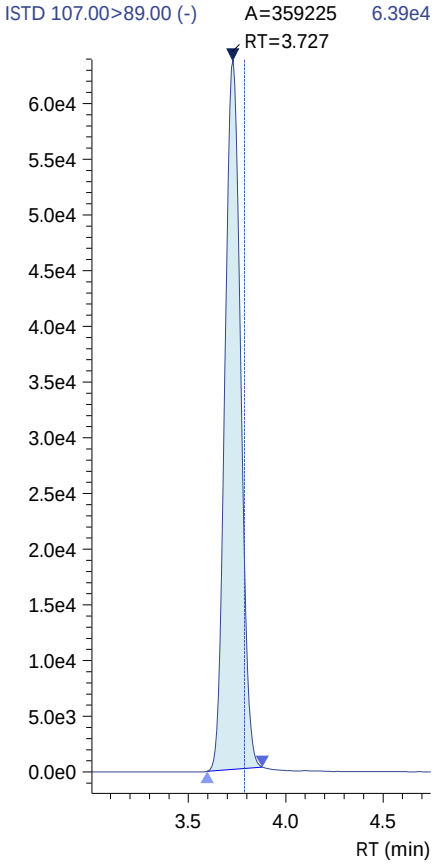
Perchlorate

Conc 0.0564
R#1 37.79 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

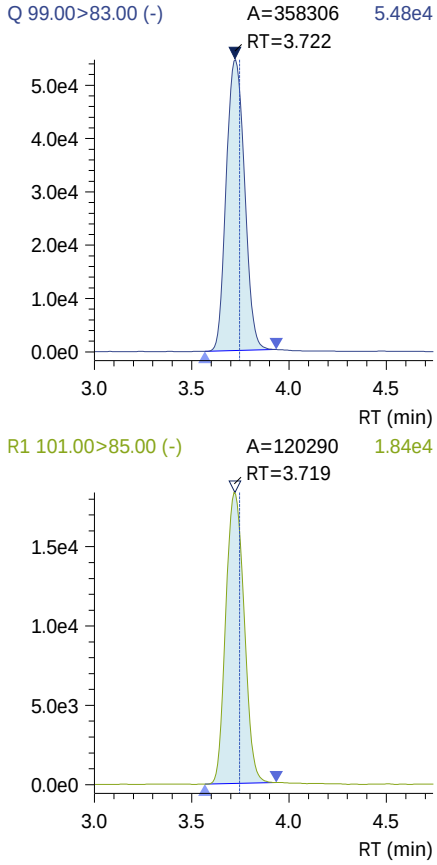
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/21/2022 4:09:58 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-004.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.722	358306	226860	10.1026	ng/mL	101.00 >85.00	33.57	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.717	226860	226860	1.0000	ng/mL	----	----	

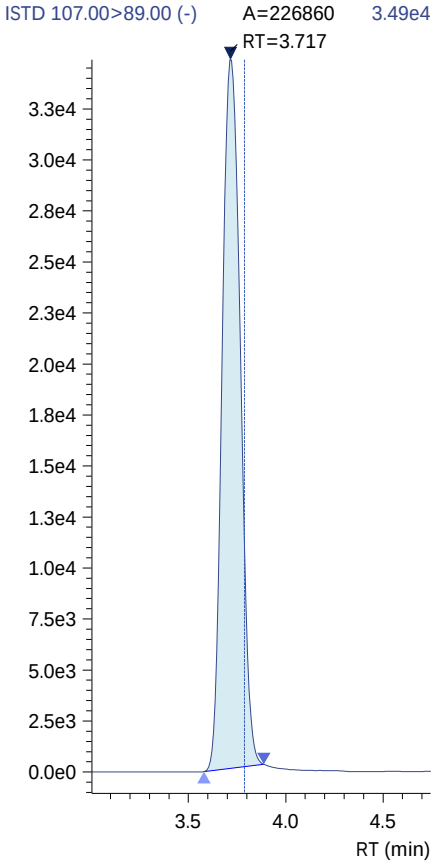
Perchlorate

Conc 10.1026
R#1 33.57 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

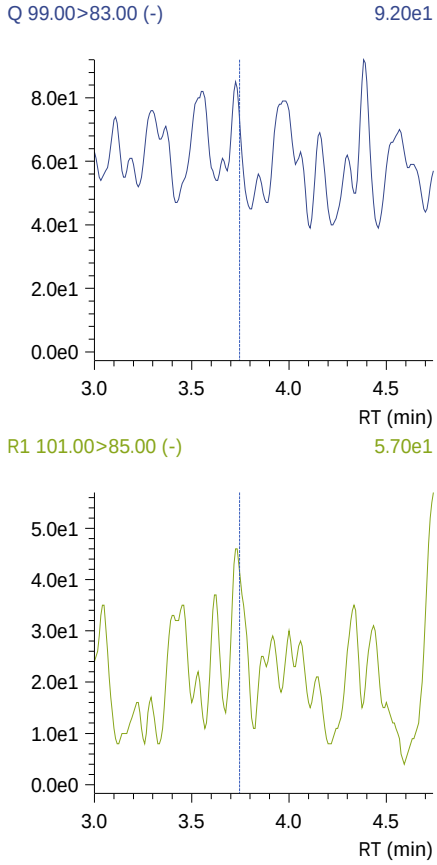
EQ2200580-01

Sample ID: EQ2200580-01
Date Acquired: 12/21/2022 4:15:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-005.lcd
Vial: 25 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	338792	----	ng/mL	101.00 >85.00	0.00	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.734	338792	338792	1.0000	ng/mL	----	----	

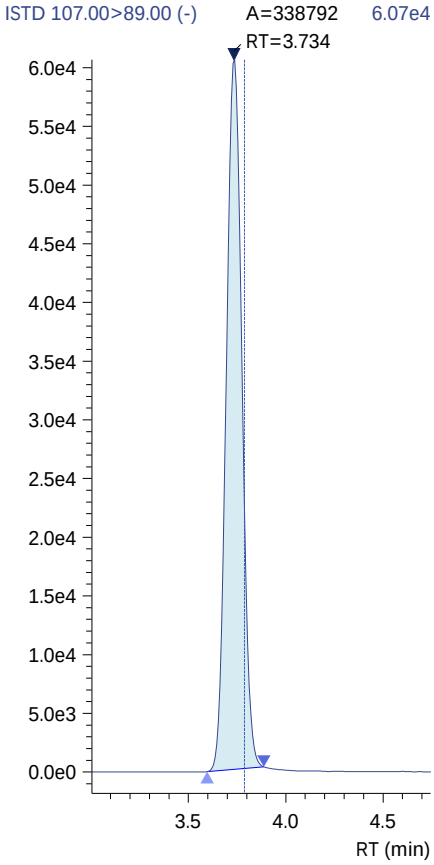
Perchlorate

Conc ----
R#1 0.00 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

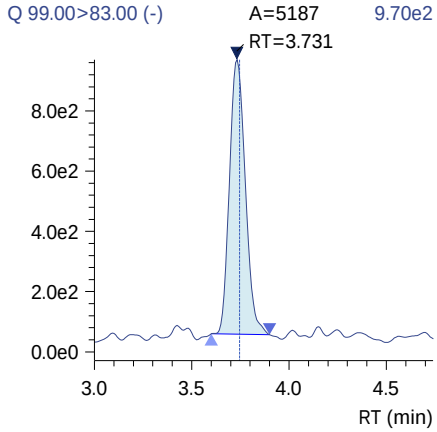
EQ2200580-02

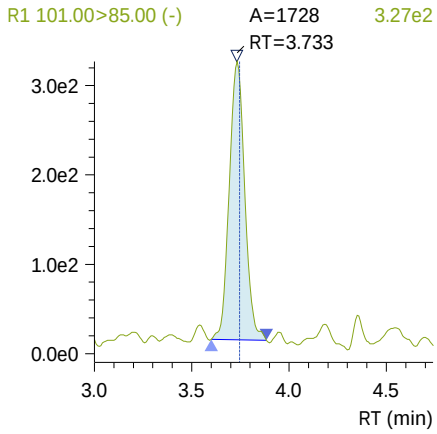
Sample ID: EQ2200580-02
Date Acquired: 12/21/2022 4:21:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-006.lcd
Vial: 26 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.731	5187	322701	0.1028	ng/mL	101.00 >85.00	33.31	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.732	322701	322701	1.0000	ng/mL	----	----	

Perchlorate

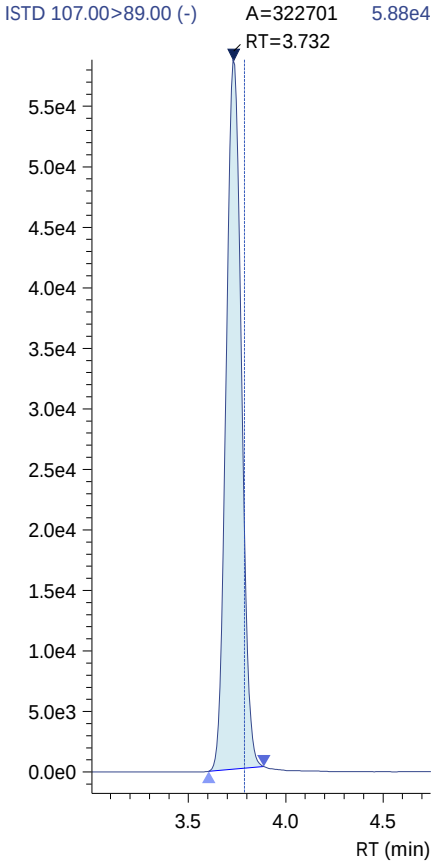
Conc 0.1028
R#1 33.31 (33.82)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

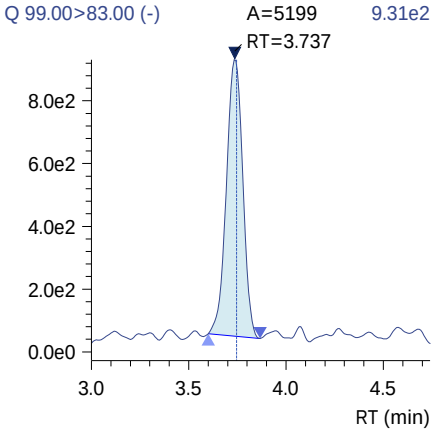
EQ2200580-03

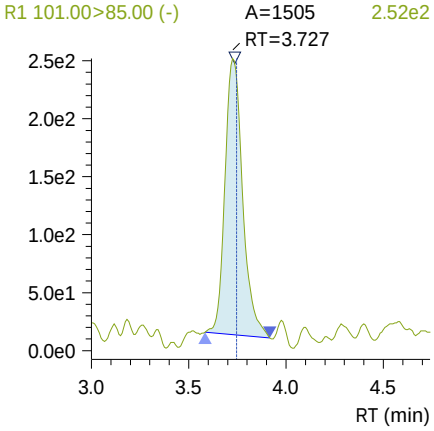
Sample ID: EQ2200580-03
Date Acquired: 12/21/2022 4:26:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-007.lcd
Vial: 27 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.737	5199	328166	0.1013	ng/mL	101.00 >85.00	28.96	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.732	3281 66	328166	1.0000	ng/mL	----	----	

Perchlorate

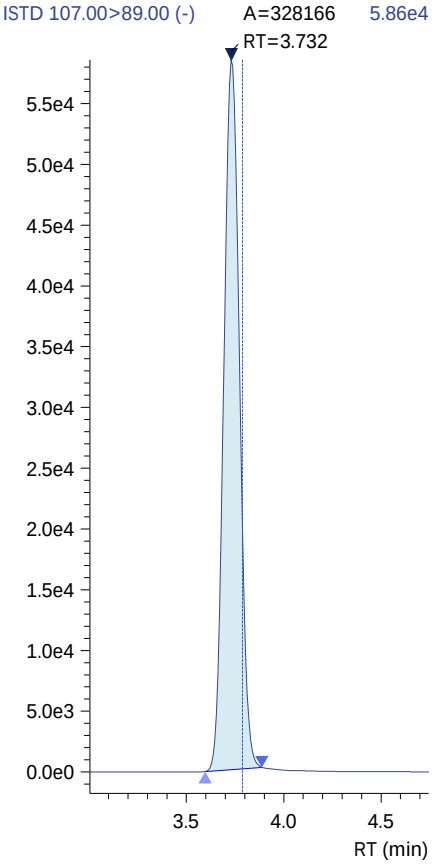
Conc 0.1013
R#1 28.96 (33.82)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

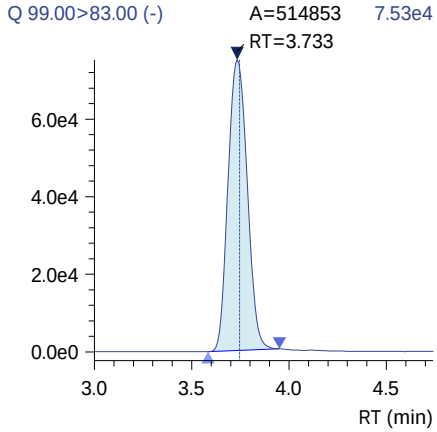
E2201205-001X1K

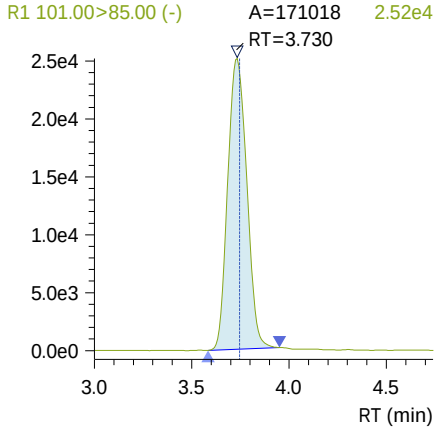
Sample ID: E2201205-001
Date Acquired: 12/21/2022 4:32:36 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-008.lcd
Vial: 34 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.733	5148 53	149243	22.0 662	ng/mL	101.00 >85.00	33.22	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.728	1492 43	149243	1.0000	ng/mL	----	----	

Perchlorate

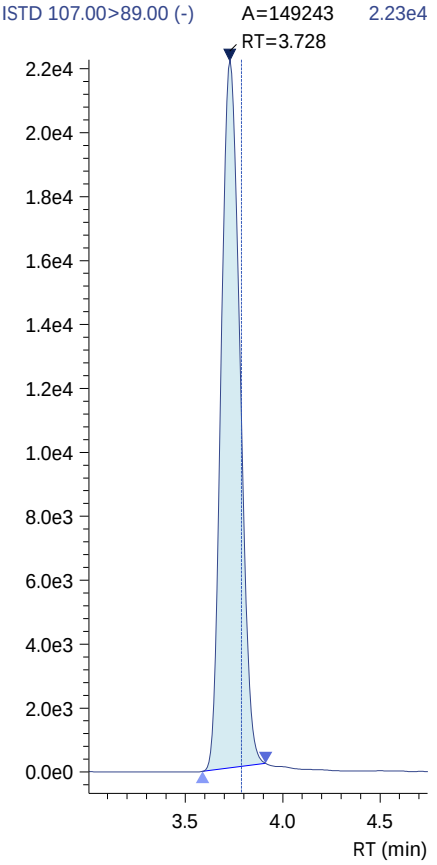
Conc 22.0662
R#1 33.22 (33.82)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

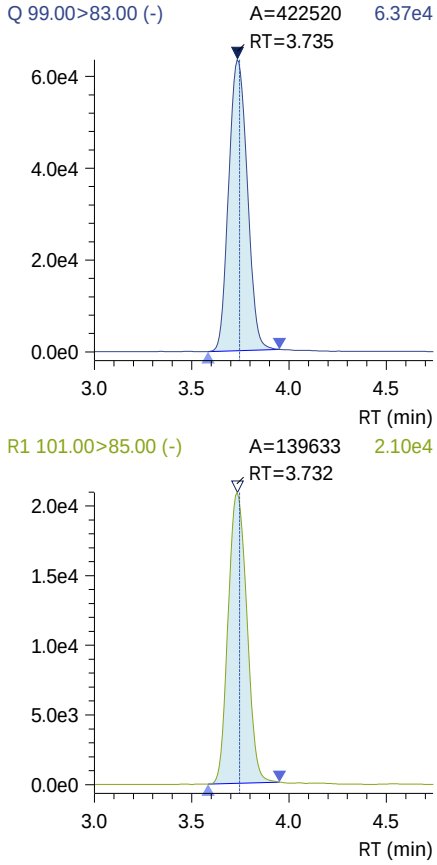
E2201205-003X1K

Sample ID: E2201205-003
Date Acquired: 12/21/2022 4:43:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-009.lcd
Vial: 36 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.735	4225 20	173805	15.5 497	ng/mL	101.00 >85.00	33.05	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.732	1738 05	173805	1.0000	ng/mL	----	----	

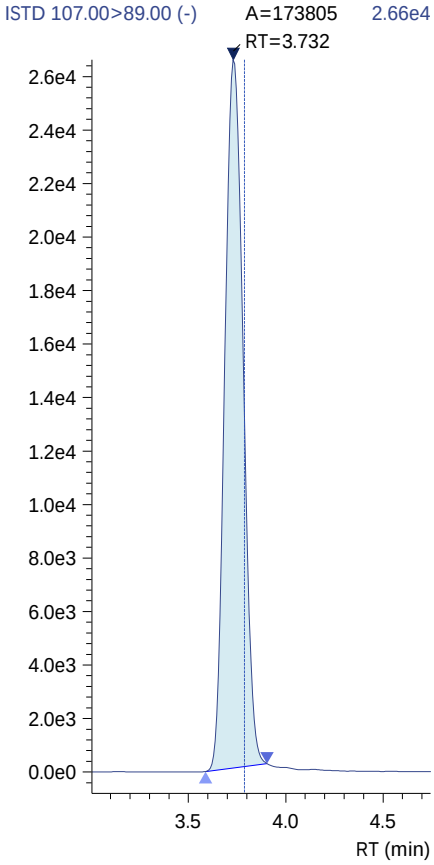
Perchlorate

Conc 15.5497
R#1 33.05 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

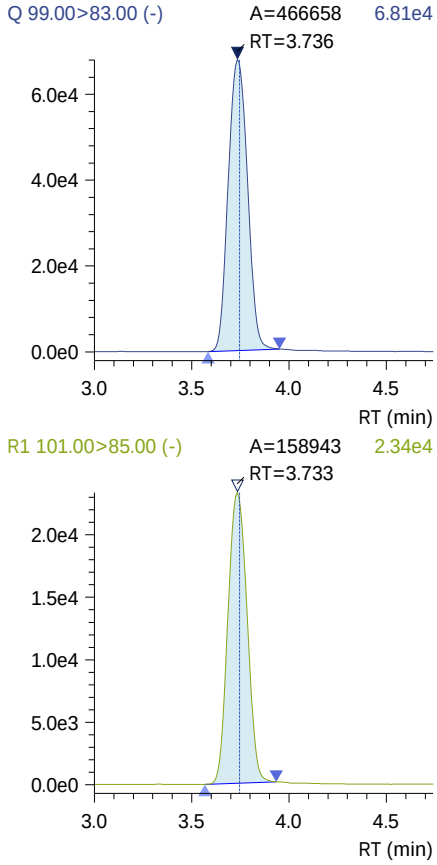
E2201205-007X1K

Sample ID: E2201205-007
Date Acquired: 12/21/2022 4:49:32 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-010.lcd
Vial: 40 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.736	466658	163427	18.2647	ng/mL	101.00 >85.00	34.06	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.729	163427	163427	1.0000	ng/mL	----	----	

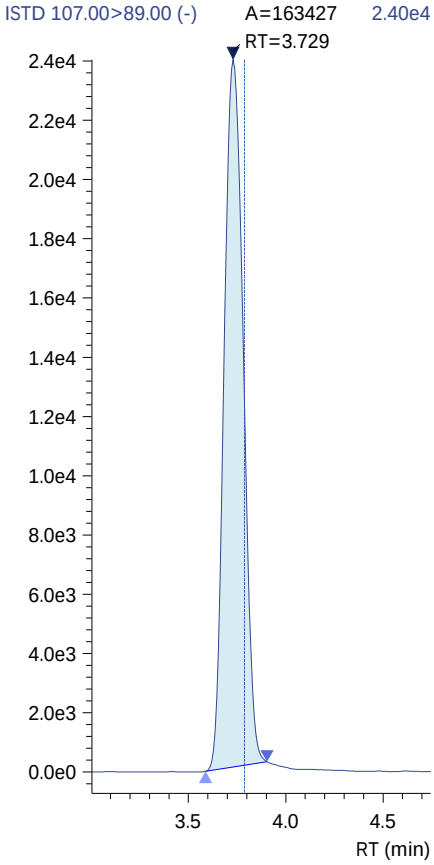
Perchlorate

Conc 18.2647
R#1 34.06 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

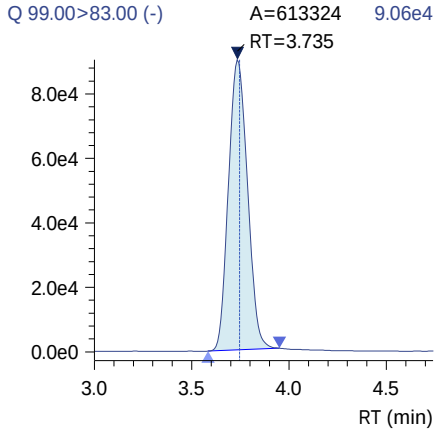
E2201205-002X200

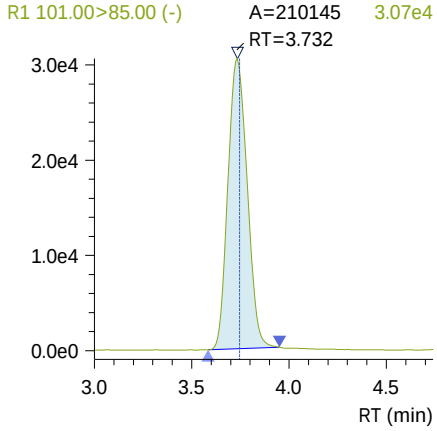
Sample ID: E2201205-002
Date Acquired: 12/21/2022 5:42:08 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-012.lcd
Vial: 35 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.735	6133 24	136759	28.6 860	ng/mL	101.00 >85.00	34.26	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.730	1367 59	136759	1.0000	ng/mL	----	----	

Perchlorate

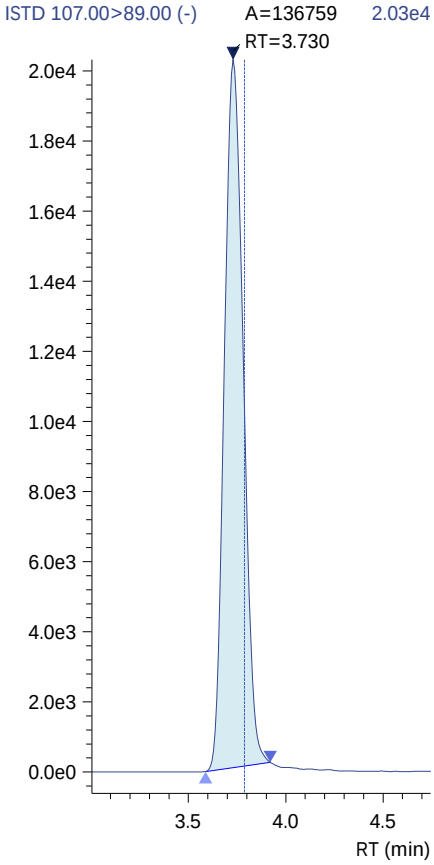
Conc 28.6860
R#1 34.26 (33.82)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

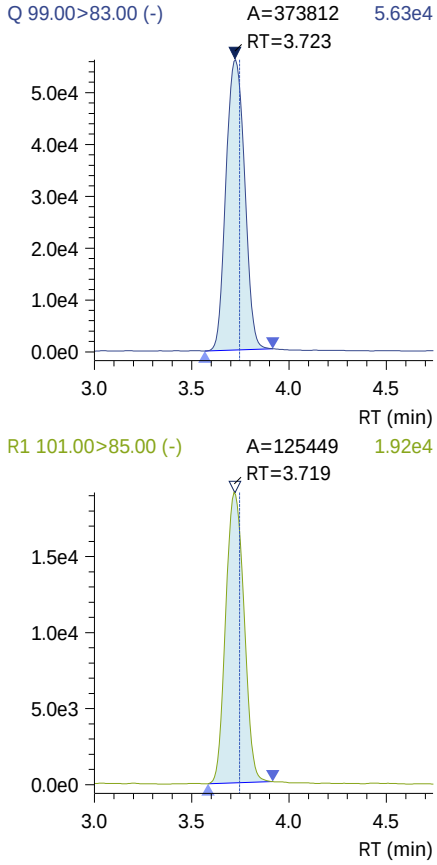
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/21/2022 5:47:50 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-013.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.723	3738 12	237291	10.0 765	ng/mL	101.00 >85.00	33.56	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.717	2372 91	237291	1.0000	ng/mL	----	----	

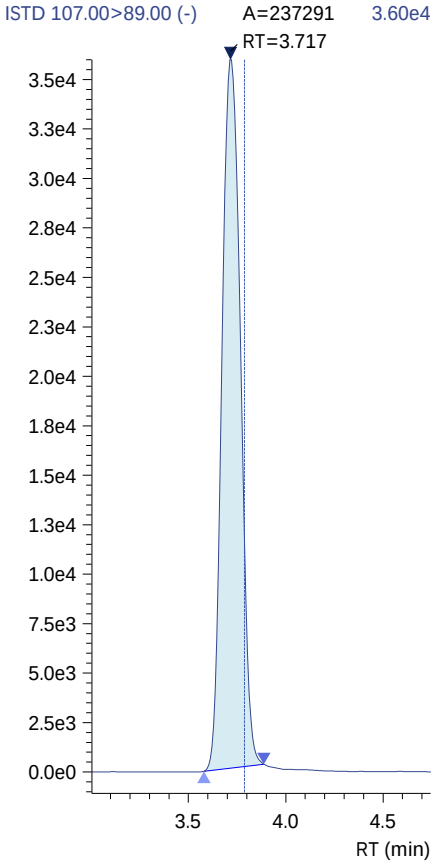
Perchlorate

Conc 10.0765
R#1 33.56 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

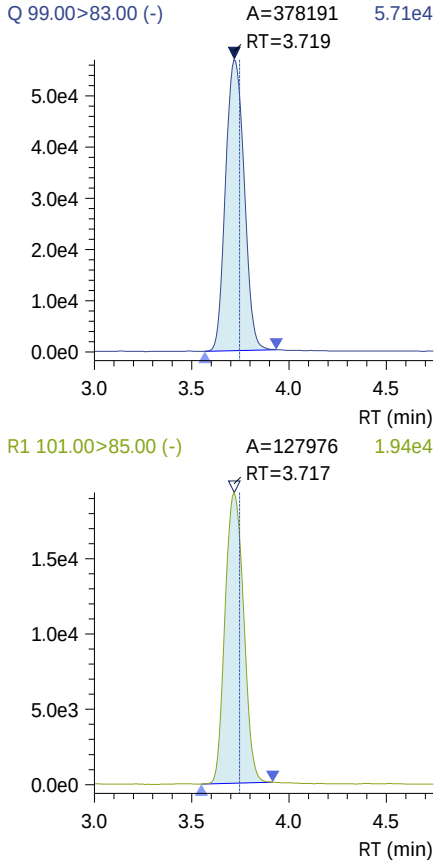
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/21/2022 6:39:59 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-021.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.719	3781 91	240095	10.0 754	ng/mL	101.00 >85.00	33.84	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.715	2400 95	240095	1.0000	ng/mL	----	----	

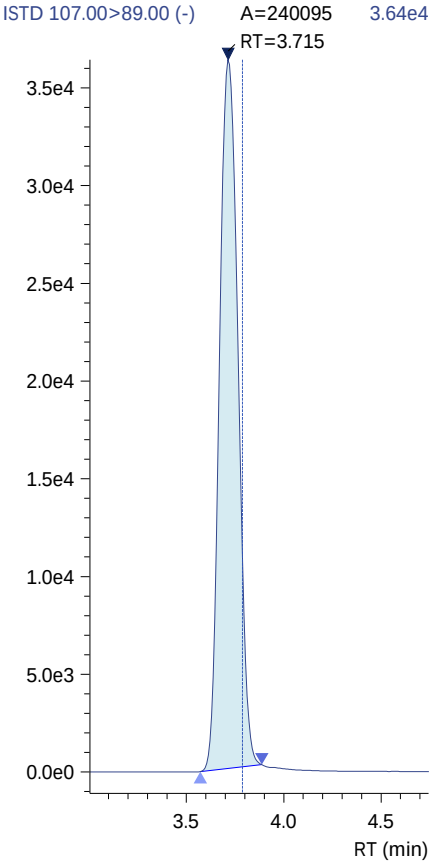
Perchlorate

Conc 10.0754
R#1 33.84 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

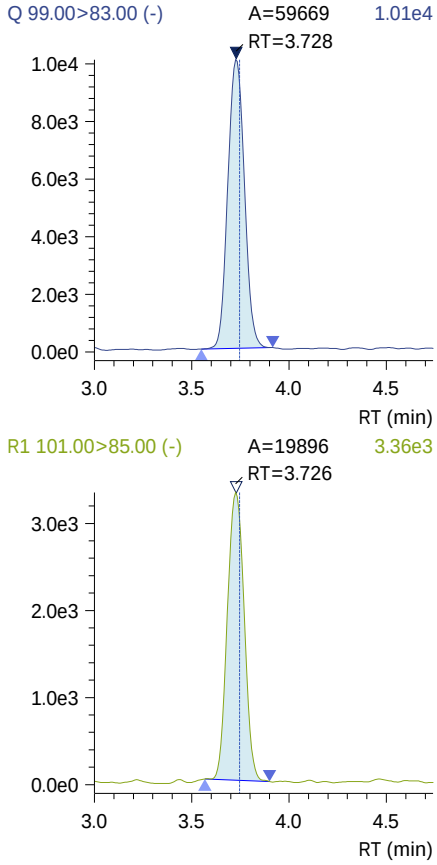
E2201205-006

Sample ID: E2201205-006
Date Acquired: 12/21/2022 6:57:02 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-024.lcd
Vial: 39 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.728	59669	312903	1.2198	ng/mL	101.00 >85.00	33.34	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.723	312903	312903	1.0000	ng/mL	----	----	

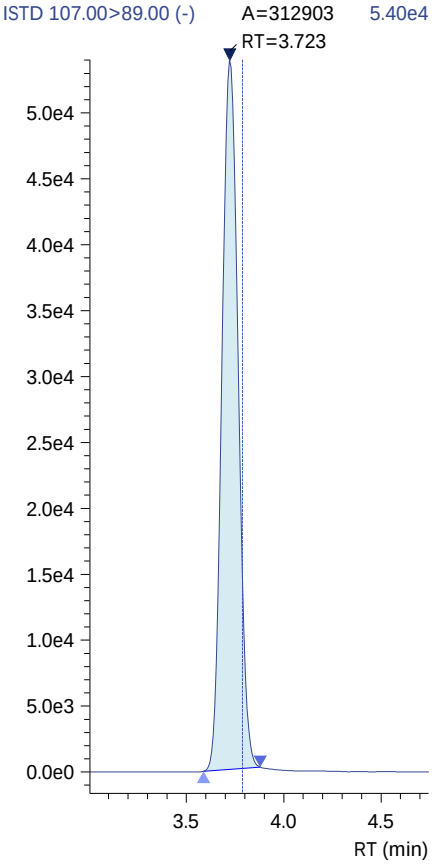
Perchlorate

Conc 1.2198
R#1 33.34 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

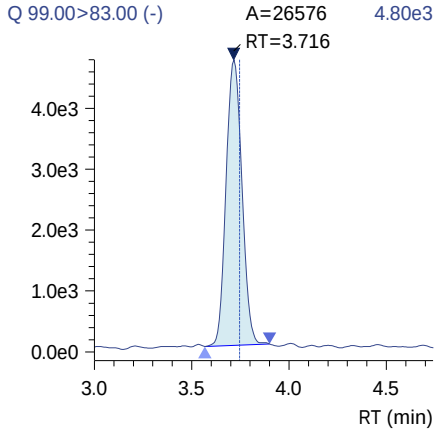
E2201205-008

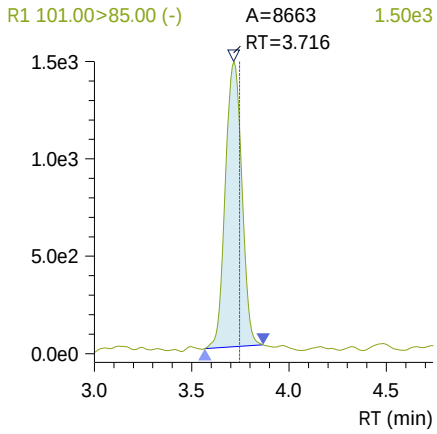
Sample ID: E2201205-008
Date Acquired: 12/21/2022 7:02:43 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-025.lcd
Vial: 41 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.716	26576	330781	0.5139	ng/mL	101.00 >85.00	32.60	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.713	33081	330781	1.0000	ng/mL	----	----	

Perchlorate

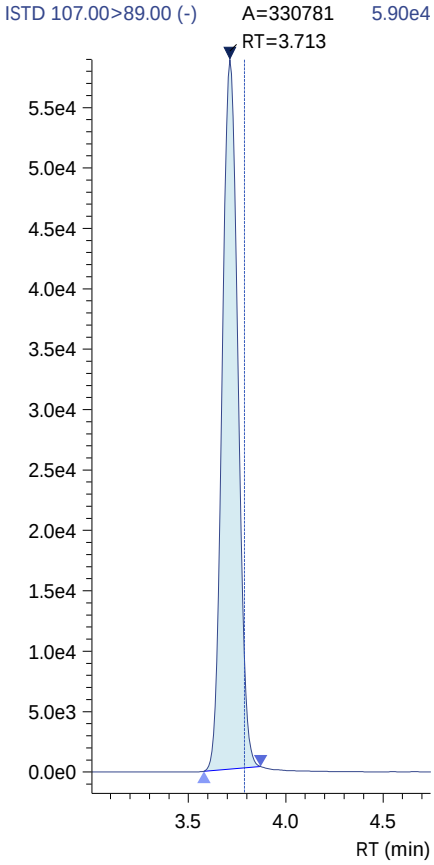
Conc 0.5139
R#1 32.60 (33.82)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

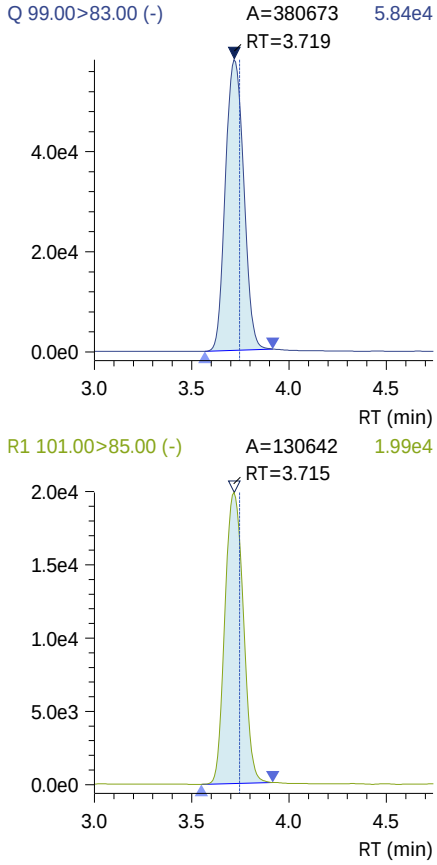
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/21/2022 7:31:14 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-030.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.719	3806 73	239454	10.1 687	ng/mL	101.00 >85.00	34.32	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.713	2394 54	239454	1.0000	ng/mL	----	----	

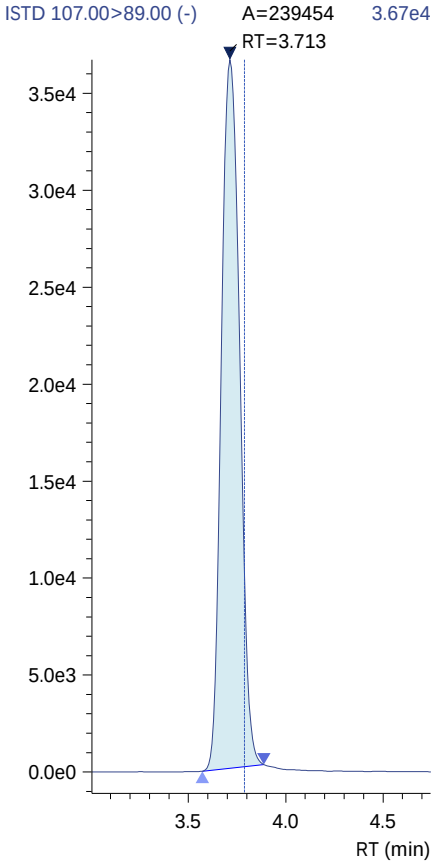
Perchlorate

Conc 10.1687
R#1 34.32 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221222\12222022WATER.damlp

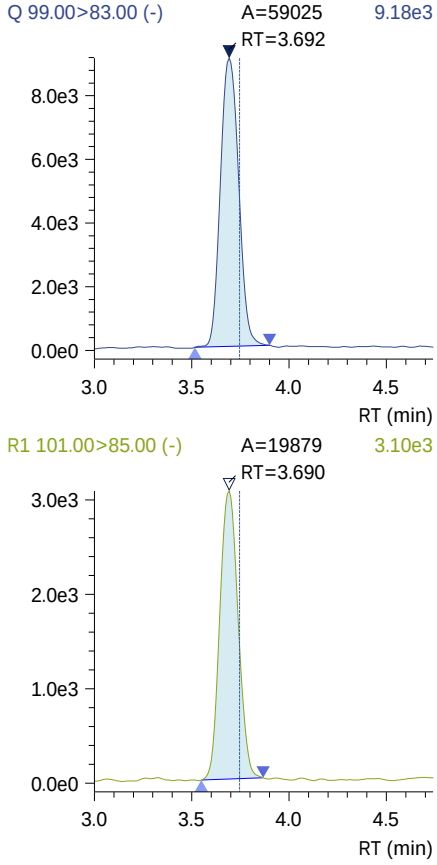
ICS

Sample ID: ICS
Date Acquired: 12/22/2022 8:23:15 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-002.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.692	59025	372945	1.0123	ng/mL	101.00 >85.00	33.68	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.690	372945	372945	1.0000	ng/mL	----	----	

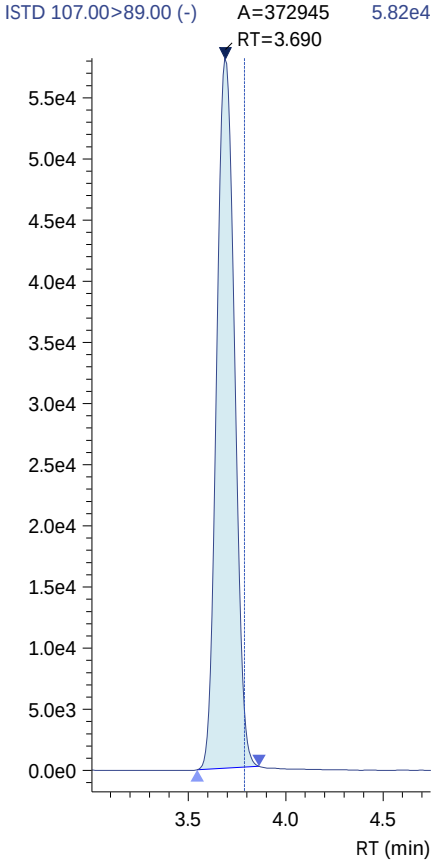
Perchlorate

Conc 1.0123
R#1 33.68 (33.58)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

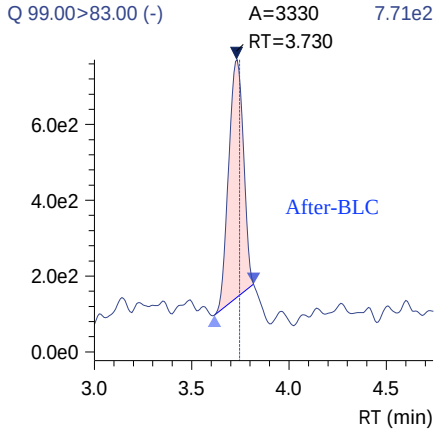
LODV

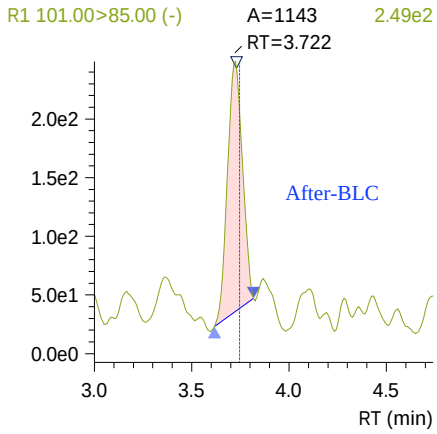
Sample ID: LODV
Date Acquired: 12/22/2022 8:28:56 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-003.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.730	3330	370994	0.0574	ng/mL	101.00 >85.00	34.32	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.721	370994	370994	1.0000	ng/mL	----	----	

Perchlorate

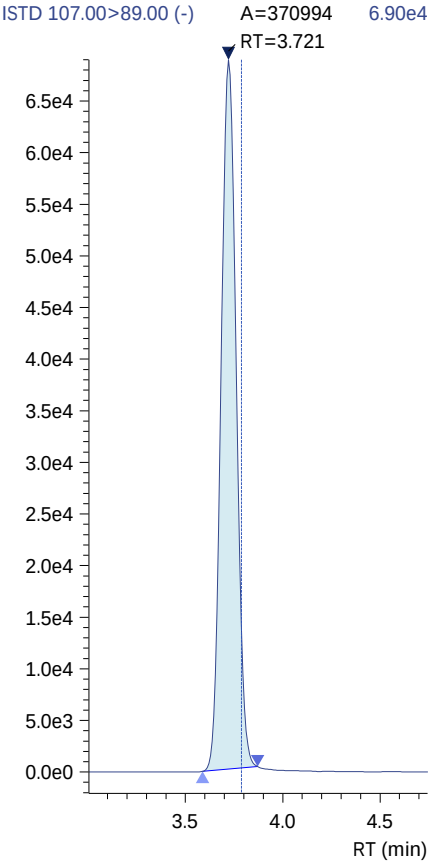
Conc 0.0574
R#1 34.32 (33.58)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:58:38 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221222\12222022WATER.damlp

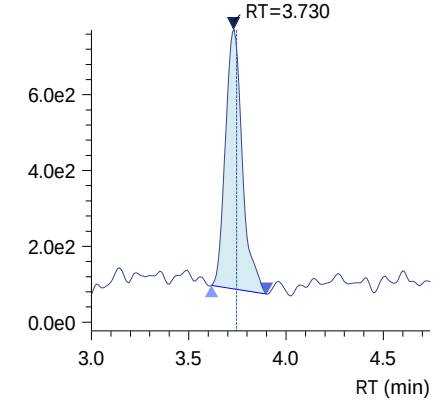
LODV

Sample ID: LODV
Date Acquired: 12/22/2022 8:28:56 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-003.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

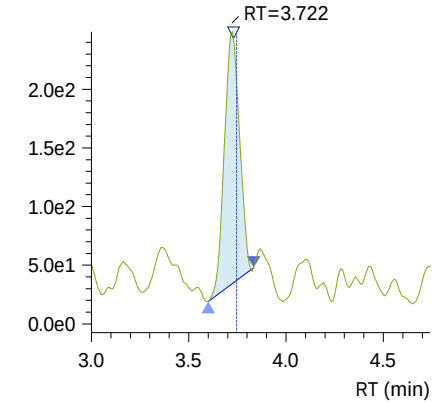
Perchlorate

Conc 0.0715
R#1 28.01 (33.58)

Q 99.00>83.00 (-) A=4145 7.71e2



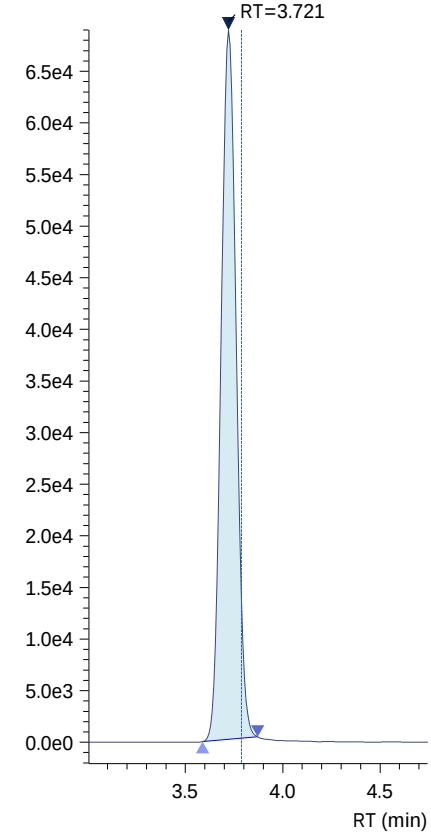
R1 101.00>85.00 (-) A=1161 2.49e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=370994 6.90e4



Insight Report

Printed at 12/22/2022 9:57:36 AM

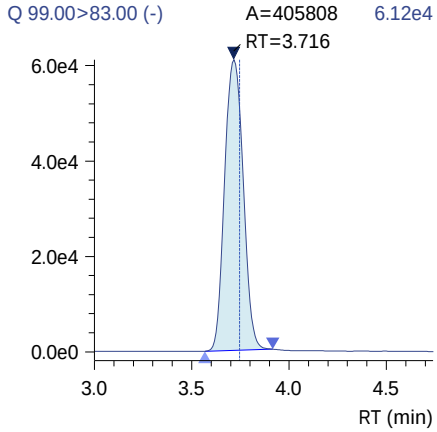
PERCHLORATE7

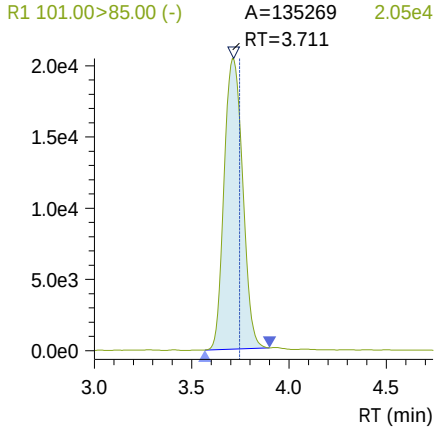
Sample ID: PERCHLORATE7
Date Acquired: 12/22/2022 8:34:34 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-004.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.716	405808	256146	10.1338	ng/mL	101.00 >85.00	33.33	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.708	256146	256146	1.0000	ng/mL	----	----	

Perchlorate

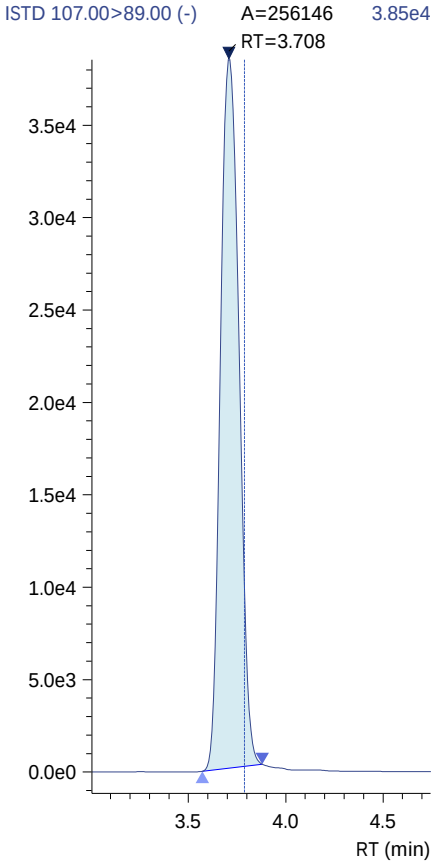
Conc 10.1338
R#1 33.33 (33.58)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

E2201205-005

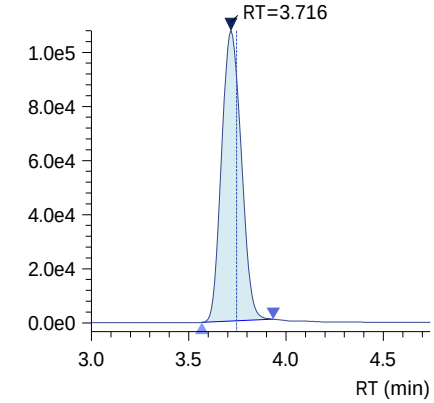
Sample ID: E2201205-005
Date Acquired: 12/22/2022 8:45:55 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-005.lcd
Vial: 38 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.716	7552 46	127331	37.9 393	ng/mL	101.00 >85.00	33.24	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.711	1273 31	127331	1.0000	ng/mL	----	----	

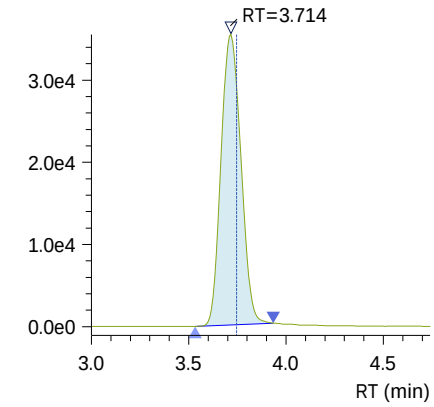
Perchlorate

Conc 37.9393
R#1 33.24 (33.58)

Q 99.00>83.00 (-) A=755246 1.08e5



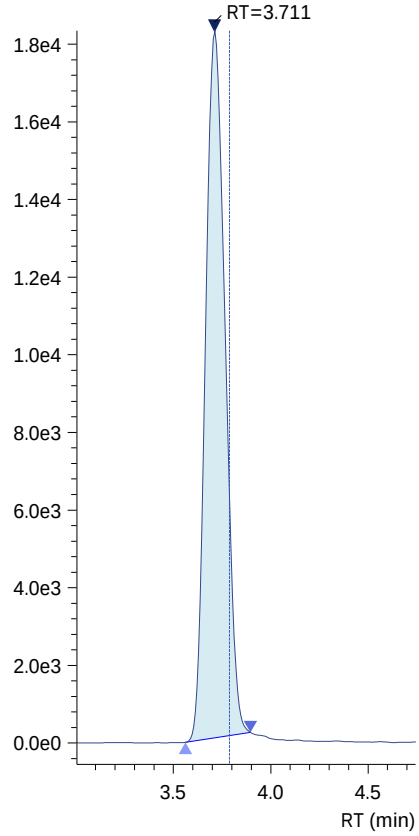
R1 101.00>85.00 (-) A=251028 3.56e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=127331 1.83e4



Insight Report

Printed at 12/22/2022 9:57:36 AM

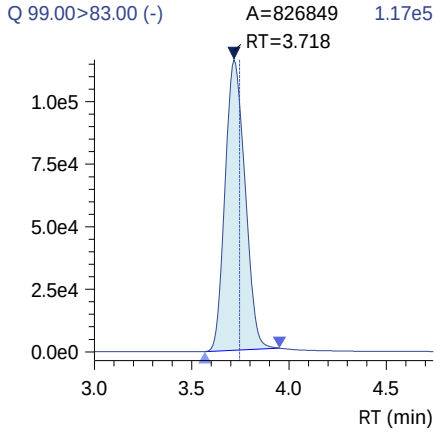
E2201205-004

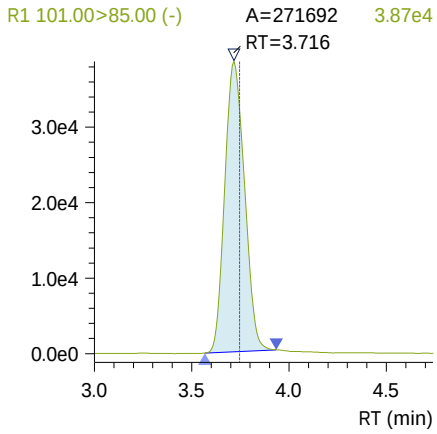
Sample ID: E2201205-004
Date Acquired: 12/22/2022 8:51:38 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-006.lcd
Vial: 37 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.718	8268 49	127483	41.4 868	ng/mL	101.00 >85.00	32.86	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.714	1274 83	127483	1.0000	ng/mL	----	----	

Perchlorate

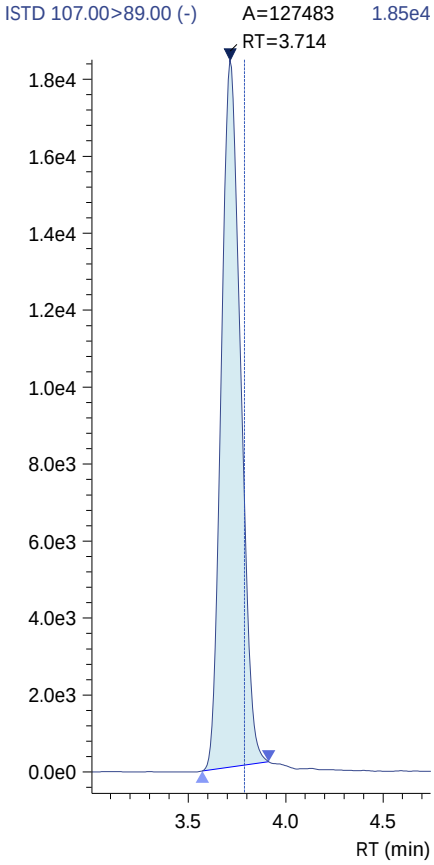
Conc 41.4868
R#1 32.86 (33.58)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

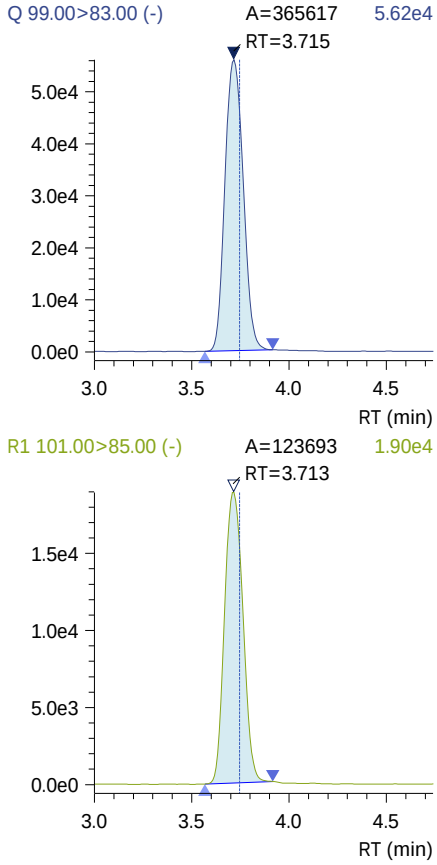
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/22/2022 9:27:33 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-009.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.715	3656 17	234742	9.9626	ng/mL	101.00 >85.00	33.83	23.51 -43.65
Sodium Perchlorate-18O4 _IS	Auto	3.710	2347 42	234742	1.0000	ng/mL	----	----	

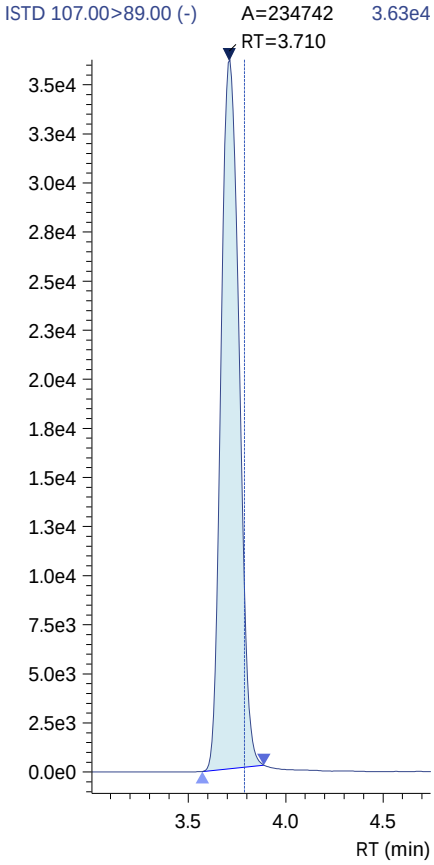
Perchlorate

Conc 9.9626
R#1 33.83 (33.58)



Sodium Perchlorate-18O4_IS

Conc 1.0000



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
alsglobal.com

right solutions.
right partner.

WorkOrder: HS22121096

LHAAP 18 24

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

23-Jan-2023

ALS Environmental
ALS Group USA, Corp
10450 Stancliff Road, Suite 210
Houston, TX 77099
T : +1 281 530 5656
F : +1 281 530 5887
www.alsglobal.com

Table of Contents

HS22121096 LHAAP 18 24 Cover Page
- CoverPage
- HS22121096 LHAAP 18 24 Final
  - CoverLetter
  - Sample Summary
  - CaseNarrative
  - 18CPTMW04_121622
  - 18CPTMW04SW_121622
  - MW2_121522
  - Trip Blank
  - Weight/Volume Log
  - Dates Report
  - QC
  - Acronyms
  - Certifications
  - SampleReceiptCheckList
  - COC
  - HS22121096-E2201206 Level II Perchlorate Report
- HS22121096-MSVOA-SW8260
  - Form 1 - Sample Results
  - Form 2 - Surrogates
  - Form 3A - MS/MSD

Table of Contents (continued)

Form 3B - LCS/LCSD
Form 4 - MB Assoc
Form 5 - Tune
Form 6 - ICAL
Form 6I - ICV
Form 7 - CCV
Form 8 - ISTD
Run Log
Raw Data VOA6 424237
Raw Data VOA6 424675
HS22121096-MSSEMI-SW8270SIM
Form 1 - Sample Results
Form 2 - Surrogates
Form 3B - LCS/LCSD
Form 4 - MB Assoc
Form 5 - Tune
Form 6 - ICAL
Form 6I - ICV
Form 7 - CCV
Form 8 - ISTD
Prep Log
Run Log
Raw Data SV-6 425684
Raw Data SV-6 425803
HS22121096 - ME - HG_W_DODICP_W_DOD
Form 13 - HG04_425209 Run Log
Form 13 - ICPMS07_425185 Run Log
Form 13 - ICPMS07_425281 Run Log
Form 2 - HG04_425209 CCV
Form 2 - ICPMS07_425185 CCV
Form 2 - ICPMS07_425281 CCV
Form 3 - HG04_425209 CCB
Form 3 - ICPMS07_425185 CCB
Form 3 - ICPMS07_425281 CCB
Form 4 - ICPMS07_425185 ICSA

HS22121096 LHAAP 18 24 Final

ALS WO# HS22121096

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

January 23, 2023

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22121096**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

ALS Environmental received 4 sample(s) on Dec 19, 2022 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,

Generated By: DANE.WACASEY
Dane J. Wacasey

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS22121096

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22121096-01	18CPTMW04_121622	Groundwater		16-Dec-2022 07:25	19-Dec-2022 09:05	☐
HS22121096-02	18CPTMW04SW_12162	Groundwater		16-Dec-2022 08:15	19-Dec-2022 09:05	☐
HS22121096-03	MW2_121622	Groundwater		16-Dec-2022 09:05	19-Dec-2022 09:05	☐
HS22121096-04	Trip Blank	Water		16-Dec-2022 00:00	19-Dec-2022 09:05	☐

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS22121096

Work Order Comments

• Receiving notes:
Collection times missing from COC, logged in per container labels.

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS High Res Lab Houston, TX. Final report attached.

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 187710

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW8260

Batch ID: R424675

Sample ID: 18CPTMW04_121622 (HS22121096-01)

• Lowest practical dilution due to high concentration of non-target compound.

Sample ID: 18CPTMW04SW_121622 (HS22121096-02MS)

• MS/MSD failed QC limit for some few compounds

Metals by Method SW7470A

Batch ID: 188025

Sample ID: HS22120986-01MS

• MS and MSD are for an unrelated sample

Metals by Method SW6020A

Batch ID: 188020

Sample ID: HS22121316-01MS

• MS and MSD are for an unrelated sample

Sample ID: HS22121316-01PDS

• PDS is for an unrelated sample

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04_121622
Collection Date: 16-Dec-2022 07:25

ANALYTICAL REPORT
WorkOrder:HS22121096
Lab ID:HS22121096-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
1,1,1-Trichloroethane	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
1,1,2,2-Tetrachloroethane	10	U	5.0	10	10	ug/L	10	22-Dec-2022 13:09
1,1,2-Trichloroethane	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
1,1-Dichloroethane	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
1,1-Dichloroethene	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
1,1-Dichloropropene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
1,2,3-Trichlorobenzene	10	U	4.0	10	10	ug/L	10	22-Dec-2022 13:09
1,2,3-Trichloropropane	10	U	5.0	10	10	ug/L	10	22-Dec-2022 13:09
1,2,4-Trichlorobenzene	10	U	5.0	10	10	ug/L	10	22-Dec-2022 13:09
1,2,4-Trimethylbenzene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
1,2-Dibromo-3-chloropropane	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
1,2-Dibromoethane	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
1,2-Dichlorobenzene	10	U	5.0	10	10	ug/L	10	22-Dec-2022 13:09
1,2-Dichloroethane	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
1,2-Dichloropropane	10	U	5.0	10	10	ug/L	10	22-Dec-2022 13:09
1,3,5-Trimethylbenzene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
1,3-Dichlorobenzene	10	U	4.0	10	10	ug/L	10	22-Dec-2022 13:09
1,3-Dichloropropane	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
1,4-Dichlorobenzene	10	U	4.0	10	10	ug/L	10	22-Dec-2022 13:09
2,2-Dichloropropane	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
2-Butanone	10	U	5.0	10	20	ug/L	10	22-Dec-2022 13:09
2-Chlorotoluene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
2-Hexanone	10	U	10	10	20	ug/L	10	22-Dec-2022 13:09
4-Chlorotoluene	10	U	4.0	10	10	ug/L	10	22-Dec-2022 13:09
4-Isopropyltoluene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
4-Methyl-2-pentanone	10	U	7.0	10	20	ug/L	10	22-Dec-2022 13:09
Acetone	10	U	4.0	10	20	ug/L	10	22-Dec-2022 13:09
Benzene	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
Bromobenzene	10	U	4.0	10	10	ug/L	10	22-Dec-2022 13:09
Bromochloromethane	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
Bromodichloromethane	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
Bromoform	10	U	4.0	10	10	ug/L	10	22-Dec-2022 13:09
Bromomethane	10	U	4.0	10	10	ug/L	10	22-Dec-2022 13:09
Carbon disulfide	10	U	6.0	10	20	ug/L	10	22-Dec-2022 13:09
Carbon tetrachloride	10	U	5.0	10	10	ug/L	10	22-Dec-2022 13:09
Chlorobenzene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
Chloroethane	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
Chloroform	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04_121622
Collection Date: 16-Dec-2022 07:25

ANALYTICAL REPORT
WorkOrder:HS22121096
Lab ID:HS22121096-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
cis-1,2-Dichloroethene	**12**		**2.0**	**10**	**10**	**ug/L**	10	22-Dec-2022 13:09
cis-1,3-Dichloropropene	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
Dibromochloromethane	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
Dibromomethane	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
Dichlorodifluoromethane	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
Ethylbenzene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
Hexachlorobutadiene	10	U	10	10	10	ug/L	10	22-Dec-2022 13:09
Isopropylbenzene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
m,p-Xylene	10	U	5.0	10	20	ug/L	10	22-Dec-2022 13:09
Methylene chloride	10	U	4.0	10	20	ug/L	10	22-Dec-2022 13:09
n-Butylbenzene	10	U	4.0	10	10	ug/L	10	22-Dec-2022 13:09
n-Propylbenzene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
Naphthalene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
o-Xylene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
sec-Butylbenzene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
Styrene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
tert-Butylbenzene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
Tetrachloroethene	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
Toluene	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
trans-1,2-Dichloroethene	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
trans-1,3-Dichloropropene	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
Trichloroethene	**290**		**2.0**	**10**	**10**	**ug/L**	10	22-Dec-2022 13:09
Trichlorofluoromethane	10	U	3.0	10	10	ug/L	10	22-Dec-2022 13:09
Vinyl chloride	10	U	2.0	10	10	ug/L	10	22-Dec-2022 13:09
Surr: 1,2-Dichloroethane-d4	*95.7*			**0**	*81-118*	*%REC*	*10*	*22-Dec-2022 13:09*
Surr: 4-Bromofluorobenzene	*94.4*			**0**	*85-114*	*%REC*	*10*	*22-Dec-2022 13:09*
Surr: Dibromofluoromethane	*96.2*			**0**	*80-119*	*%REC*	*10*	*22-Dec-2022 13:09*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*10*	*22-Dec-2022 13:09*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 22-Dec-2022		Analyst: MBG
1,4-Dioxane	**0.18**		**0.010**	**0.0050**	**0.010**	**ug/L**	1	11-Jan-2023 18:41
Surr: 2-Fluorobiphenyl	*122*			**0**	*40-140*	*%REC*	*1*	*11-Jan-2023 18:41*
Surr: 4-Terphenyl-d14	*119*			**0**	*40-140*	*%REC*	*1*	*11-Jan-2023 18:41*
Surr: Nitrobenzene-d5	*109*			**0**	*40-140*	*%REC*	*1*	*11-Jan-2023 18:41*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	27-Dec-2022 18:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04SW_121622
Collection Date: 16-Dec-2022 08:15

ANALYTICAL REPORT
WorkOrder:HS22121096
Lab ID:HS22121096-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:47
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	22-Dec-2022 12:47
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	22-Dec-2022 12:47
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:47
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	22-Dec-2022 12:47
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	22-Dec-2022 12:47
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	22-Dec-2022 12:47
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04SW_121622
Collection Date: 16-Dec-2022 08:15

ANALYTICAL REPORT
WorkOrder:HS22121096
Lab ID:HS22121096-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	22-Dec-2022 12:47
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	22-Dec-2022 12:47
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:47
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:47
Surr: 1,2-Dichloroethane-d4	*92.9*			**0**	*81-118*	*%REC*	*1*	*22-Dec-2022 12:47*
Surr: 4-Bromofluorobenzene	*95.1*			**0**	*85-114*	*%REC*	*1*	*22-Dec-2022 12:47*
Surr: Dibromofluoromethane	*96.9*			**0**	*80-119*	*%REC*	*1*	*22-Dec-2022 12:47*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*22-Dec-2022 12:47*
SEMIVOLATILES SIM	**Method:SW8270SIM**					Prep:SW3510 / 22-Dec-2022		Analyst: MBG
1,4-Dioxane	**0.014**		**0.010**	**0.0050**	**0.010**	**ug/L**	1	11-Jan-2023 18:59
Surr: 2-Fluorobiphenyl	*115*			**0**	*40-140*	*%REC*	*1*	*11-Jan-2023 18:59*
Surr: 4-Terphenyl-d14	*113*			**0**	*40-140*	*%REC*	*1*	*11-Jan-2023 18:59*
Surr: Nitrobenzene-d5	*112*			**0**	*40-140*	*%REC*	*1*	*11-Jan-2023 18:59*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW04SW_121622
Collection Date: 16-Dec-2022 08:15

ANALYTICAL REPORT
WorkOrder:HS22121096
Lab ID:HS22121096-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 03-Jan-2023		Analyst: JHD
Aluminum	**0.0288**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	03-Jan-2023 16:48
Antimony	0.00125	U	0.000400	0.00125	0.00500	mg/L	1	03-Jan-2023 16:48
Arsenic	**0.00624**		**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	03-Jan-2023 16:48
Barium	**0.793**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	03-Jan-2023 16:48
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	03-Jan-2023 16:48
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	03-Jan-2023 16:48
Calcium	**23.8**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	03-Jan-2023 16:48
Chromium	**0.0134**		**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	03-Jan-2023 16:48
Cobalt	**0.00566**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	03-Jan-2023 16:48
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	03-Jan-2023 16:48
Iron	**20.3**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	03-Jan-2023 16:48
Lead	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	03-Jan-2023 16:48
Magnesium	**14.6**		**0.0100**	**0.100**	**0.200**	**mg/L**	1	03-Jan-2023 16:48
Manganese	**0.429**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	03-Jan-2023 16:48
Nickel	**0.00592**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	03-Jan-2023 16:48
Potassium	**52.7**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	03-Jan-2023 16:48
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	03-Jan-2023 16:48
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	03-Jan-2023 16:48
Sodium	**100**		**0.0140**	**0.0500**	**0.200**	**mg/L**	1	03-Jan-2023 16:48
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	03-Jan-2023 16:48
Vanadium	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	03-Jan-2023 16:48
Zinc	**0.0281**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	03-Jan-2023 16:48
MERCURY BY SW7470A		**Method:SW7470A**				Prep:SW7470A / 03-Jan-2023		Analyst: JS
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	03-Jan-2023 14:52
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	27-Dec-2022 18:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW2_121622
Collection Date: 16-Dec-2022 09:05

ANALYTICAL REPORT
WorkOrder:HS22121096
Lab ID:HS22121096-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
1,1,1-Trichloroethane	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
1,1,2,2-Tetrachloroethane	25	U	12	25	25	ug/L	25	22-Dec-2022 13:30
1,1,2-Trichloroethane	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
1,1-Dichloroethane	**20**	J	**5.0**	**25**	**25**	**ug/L**	25	22-Dec-2022 13:30
1,1-Dichloroethene	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
1,1-Dichloropropene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
1,2,3-Trichlorobenzene	25	U	10	25	25	ug/L	25	22-Dec-2022 13:30
1,2,3-Trichloropropane	25	U	12	25	25	ug/L	25	22-Dec-2022 13:30
1,2,4-Trichlorobenzene	25	U	12	25	25	ug/L	25	22-Dec-2022 13:30
1,2,4-Trimethylbenzene	**13**	J	**7.5**	**25**	**25**	**ug/L**	25	22-Dec-2022 13:30
1,2-Dibromo-3-chloropropane	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
1,2-Dibromoethane	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
1,2-Dichlorobenzene	25	U	12	25	25	ug/L	25	22-Dec-2022 13:30
1,2-Dichloroethane	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
1,2-Dichloropropane	25	U	12	25	25	ug/L	25	22-Dec-2022 13:30
1,3,5-Trimethylbenzene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
1,3-Dichlorobenzene	25	U	10	25	25	ug/L	25	22-Dec-2022 13:30
1,3-Dichloropropane	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
1,4-Dichlorobenzene	25	U	10	25	25	ug/L	25	22-Dec-2022 13:30
2,2-Dichloropropane	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
2-Butanone	25	U	12	25	50	ug/L	25	22-Dec-2022 13:30
2-Chlorotoluene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
2-Hexanone	25	U	25	25	50	ug/L	25	22-Dec-2022 13:30
4-Chlorotoluene	25	U	10	25	25	ug/L	25	22-Dec-2022 13:30
4-Isopropyltoluene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
4-Methyl-2-pentanone	25	U	18	25	50	ug/L	25	22-Dec-2022 13:30
Acetone	25	U	10	25	50	ug/L	25	22-Dec-2022 13:30
Benzene	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
Bromobenzene	25	U	10	25	25	ug/L	25	22-Dec-2022 13:30
Bromochloromethane	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
Bromodichloromethane	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
Bromoform	25	U	10	25	25	ug/L	25	22-Dec-2022 13:30
Bromomethane	25	U	10	25	25	ug/L	25	22-Dec-2022 13:30
Carbon disulfide	25	U	15	25	50	ug/L	25	22-Dec-2022 13:30
Carbon tetrachloride	25	U	12	25	25	ug/L	25	22-Dec-2022 13:30
Chlorobenzene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
Chloroethane	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
Chloroform	**43**		**5.0**	**25**	**25**	**ug/L**	25	22-Dec-2022 13:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW2_121622
Collection Date: 16-Dec-2022 09:05

ANALYTICAL REPORT
WorkOrder:HS22121096
Lab ID:HS22121096-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
cis-1,2-Dichloroethene	**30,000**		**50**	**250**	**250**	**ug/L**	250	22-Dec-2022 14:33
cis-1,3-Dichloropropene	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
Dibromochloromethane	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
Dibromomethane	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
Dichlorodifluoromethane	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
Ethylbenzene	**15**	J	**7.5**	**25**	**25**	**ug/L**	25	22-Dec-2022 13:30
Hexachlorobutadiene	25	U	25	25	25	ug/L	25	22-Dec-2022 13:30
Isopropylbenzene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
m,p-Xylene	**17**	J	**12**	**25**	**50**	**ug/L**	25	22-Dec-2022 13:30
Methylene chloride	**130**		**10**	**25**	**50**	**ug/L**	25	22-Dec-2022 13:30
n-Butylbenzene	25	U	10	25	25	ug/L	25	22-Dec-2022 13:30
n-Propylbenzene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
Naphthalene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
o-Xylene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
sec-Butylbenzene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
Styrene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
tert-Butylbenzene	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
Tetrachloroethene	**30**		**7.5**	**25**	**25**	**ug/L**	25	22-Dec-2022 13:30
Toluene	**21**	J	**5.0**	**25**	**25**	**ug/L**	25	22-Dec-2022 13:30
trans-1,2-Dichloroethene	**65**		**5.0**	**25**	**25**	**ug/L**	25	22-Dec-2022 13:30
trans-1,3-Dichloropropene	25	U	5.0	25	25	ug/L	25	22-Dec-2022 13:30
Trichloroethene	**3,500**		**5.0**	**25**	**25**	**ug/L**	25	22-Dec-2022 13:30
Trichlorofluoromethane	25	U	7.5	25	25	ug/L	25	22-Dec-2022 13:30
Vinyl chloride	**20**	J	**5.0**	**25**	**25**	**ug/L**	25	22-Dec-2022 13:30
Surr: 1,2-Dichloroethane-d4	*92.0*			**0**	*81-118*	*%REC*	*25*	*22-Dec-2022 13:30*
Surr: 1,2-Dichloroethane-d4	*90.2*			**0**	*81-118*	*%REC*	*250*	*22-Dec-2022 14:33*
Surr: 4-Bromofluorobenzene	*93.4*			**0**	*85-114*	*%REC*	*25*	*22-Dec-2022 13:30*
Surr: 4-Bromofluorobenzene	*95.9*			**0**	*85-114*	*%REC*	*250*	*22-Dec-2022 14:33*
Surr: Dibromofluoromethane	*95.6*			**0**	*80-119*	*%REC*	*25*	*22-Dec-2022 13:30*
Surr: Dibromofluoromethane	*92.4*			**0**	*80-119*	*%REC*	*250*	*22-Dec-2022 14:33*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*25*	*22-Dec-2022 13:30*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*250*	*22-Dec-2022 14:33*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 22-Dec-2022		Analyst: MBG
1,4-Dioxane	**1.8**		**0.10**	**0.050**	**0.10**	**ug/L**	10	12-Jan-2023 13:51
Surr: 2-Fluorobiphenyl	*126*			**0**	*40-140*	*%REC*	*10*	*12-Jan-2023 13:51*
Surr: 4-Terphenyl-d14	*96.8*			**0**	*40-140*	*%REC*	*10*	*12-Jan-2023 13:51*
Surr: Nitrobenzene-d5	*114*			**0**	*40-140*	*%REC*	*10*	*12-Jan-2023 13:51*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: MW2_121622
Collection Date: 16-Dec-2022 09:05

ANALYTICAL REPORT
WorkOrder:HS22121096
Lab ID:HS22121096-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 03-Jan-2023		Analyst: JHD
Aluminum	**0.0134**		**0.00180**	**0.00500**	**0.0100**	**mg/L**	1	03-Jan-2023 16:50
Antimony	0.00125	U	0.000400	0.00125	0.00500	mg/L	1	03-Jan-2023 16:50
Arsenic	**0.0181**		**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	03-Jan-2023 16:50
Barium	**4.32**		**0.190**	**0.250**	**0.500**	**mg/L**	100	04-Jan-2023 11:40
Beryllium	**0.000324**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	03-Jan-2023 16:50
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	03-Jan-2023 16:50
Calcium	**94.6**		**0.0340**	**0.0500**	**0.500**	**mg/L**	1	03-Jan-2023 16:50
Chromium	**0.0201**		**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	03-Jan-2023 16:50
Cobalt	**0.214**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	03-Jan-2023 16:50
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	03-Jan-2023 16:50
Iron	**36.2**		**0.0120**	**0.0500**	**0.200**	**mg/L**	1	03-Jan-2023 16:50
Lead	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	03-Jan-2023 16:50
Magnesium	**69.8**		**0.0100**	**0.100**	**0.200**	**mg/L**	1	03-Jan-2023 16:50
Manganese	**13.3**		**0.0700**	**0.250**	**0.500**	**mg/L**	100	04-Jan-2023 11:40
Nickel	**0.155**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	03-Jan-2023 16:50
Potassium	**3.21**		**0.0180**	**0.0500**	**0.200**	**mg/L**	1	03-Jan-2023 16:50
Selenium	**0.00119**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	03-Jan-2023 16:50
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	03-Jan-2023 16:50
Sodium	**265**		**1.40**	**5.00**	**20.0**	**mg/L**	100	04-Jan-2023 11:40
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	03-Jan-2023 16:50
Vanadium	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	03-Jan-2023 16:50
Zinc	**0.0431**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	03-Jan-2023 16:50
MERCURY BY SW7470A		**Method:SW7470A**				Prep:SW7470A / 03-Jan-2023		Analyst: JS
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	03-Jan-2023 14:54
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	27-Dec-2022 18:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 16-Dec-2022 00:00

ANALYTICAL REPORT
WorkOrder:HS22121096
Lab ID:HS22121096-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:26
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	22-Dec-2022 12:26
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	22-Dec-2022 12:26
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:26
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	22-Dec-2022 12:26
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	22-Dec-2022 12:26
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	22-Dec-2022 12:26
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 16-Dec-2022 00:00

ANALYTICAL REPORT
WorkOrder:HS22121096
Lab ID:HS22121096-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	22-Dec-2022 12:26
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	22-Dec-2022 12:26
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	22-Dec-2022 12:26
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	22-Dec-2022 12:26
Surr: 1,2-Dichloroethane-d4	*92.5*			**0**	*81-118*	*%REC*	*1*	*22-Dec-2022 12:26*
Surr: 4-Bromofluorobenzene	*94.3*			**0**	*85-114*	*%REC*	*1*	*22-Dec-2022 12:26*
Surr: Dibromofluoromethane	*95.8*			**0**	*80-119*	*%REC*	*1*	*22-Dec-2022 12:26*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*22-Dec-2022 12:26*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Batch ID: 187710 **Start Date:** 22 Dec 2022 10:57 **End Date:** 22 Dec 2022 15:30
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22121096-01	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22121096-02	1	1000 (mL)	1 (mL)	0.001	120 plastic HNO3
HS22121096-03	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

Batch ID: 187924 **Start Date:** 29 Dec 2022 09:00 **End Date:** 29 Dec 2022 12:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22121096-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121096-03		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 188020 **Start Date:** 03 Jan 2023 08:30 **End Date:** 03 Jan 2023 12:30
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22121096-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121096-03		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 188025 **Start Date:** 03 Jan 2023 09:00 **End Date:** 03 Jan 2023 12:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22121096-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121096-03		10 (mL)	10 (mL)	1	120 plastic HNO3

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 187710 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS22121096-01	18CPTMW04_121622	16 Dec 2022 07:25		22 Dec 2022 10:57	11 Jan 2023 18:41	1
HS22121096-02	18CPTMW04SW_121622	16 Dec 2022 08:15		22 Dec 2022 10:57	11 Jan 2023 18:59	1
HS22121096-03	MW2_121622	16 Dec 2022 09:05		22 Dec 2022 10:57	12 Jan 2023 13:51	10
Batch ID: 188020 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS22121096-02	18CPTMW04SW_121622	16 Dec 2022 08:15		03 Jan 2023 08:30	03 Jan 2023 16:48	1
HS22121096-03	MW2_121622	16 Dec 2022 09:05		03 Jan 2023 08:30	04 Jan 2023 11:40	100
HS22121096-03	MW2_121622	16 Dec 2022 09:05		03 Jan 2023 08:30	03 Jan 2023 16:50	1
Batch ID: 188025 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS22121096-02	18CPTMW04SW_121622	16 Dec 2022 08:15		03 Jan 2023 09:00	03 Jan 2023 14:52	1
HS22121096-03	MW2_121622	16 Dec 2022 09:05		03 Jan 2023 09:00	03 Jan 2023 14:54	1
Batch ID: R424675 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22121096-04	Trip Blank	16 Dec 2022 00:00			22 Dec 2022 12:26	1
Batch ID: R424675 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS22121096-01	18CPTMW04_121622	16 Dec 2022 07:25			22 Dec 2022 13:09	10
HS22121096-02	18CPTMW04SW_121622	16 Dec 2022 08:15			22 Dec 2022 12:47	1
HS22121096-03	MW2_121622	16 Dec 2022 09:05			22 Dec 2022 14:33	250
HS22121096-03	MW2_121622	16 Dec 2022 09:05			22 Dec 2022 13:30	25
Batch ID: R424825 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS22121096-01	18CPTMW04_121622	16 Dec 2022 07:25			27 Dec 2022 18:54	1
HS22121096-02	18CPTMW04SW_121622	16 Dec 2022 08:15			27 Dec 2022 18:54	1
HS22121096-03	MW2_121622	16 Dec 2022 09:05			27 Dec 2022 18:54	1

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: 188020 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-188020** Units: **mg/L** Analysis Date: **03-Jan-2023 15:05**
Client ID: Run ID: **ICPMS07_425185** SeqNo: **7059873** PrepDate: **03-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.002613	0.0100								J
Antimony	0.00125	0.00500								U
Arsenic	0.00125	0.00500								U
Barium	0.00250	0.00500								U
Beryllium	0.000500	0.00200								U
Cadmium	0.000500	0.00200								U
Calcium	0.0500	0.500								U
Chromium	0.000425	0.00500								J
Cobalt	0.000500	0.00500								U
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00125	0.00500								U
Magnesium	0.100	0.200								U
Manganese	0.00250	0.00500								U
Nickel	0.00125	0.00500								U
Potassium	0.0500	0.200								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U
Sodium	0.1105	0.200								J
Thallium	0.000500	0.00200								U
Vanadium	0.00125	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: 188020 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-188020** Units: **mg/L** Analysis Date: **03-Jan-2023 15:07**
Client ID: Run ID: **ICPMS07_425185** SeqNo: **7059874** PrepDate: **03-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1111	0.0100	0.1	0	111	84 - 117				
Antimony	0.05031	0.00500	0.05	0	101	85 - 117				
Arsenic	0.04979	0.00500	0.05	0	99.6	84 - 116				
Barium	0.0517	0.00500	0.05	0	103	86 - 114				
Beryllium	0.04874	0.00200	0.05	0	97.5	83 - 121				
Cadmium	0.0517	0.00200	0.05	0	103	87 - 115				
Calcium	5.018	0.500	5	0	100	87 - 118				
Chromium	0.04932	0.00500	0.05	0	98.6	85 - 116				
Cobalt	0.05037	0.00500	0.05	0	101	86 - 115				
Copper	0.05022	0.00500	0.05	0	100	85 - 118				
Iron	4.908	0.200	5	0	98.2	87 - 118				
Lead	0.04784	0.00500	0.05	0	95.7	88 - 115				
Magnesium	5.133	0.200	5	0	103	83 - 118				
Manganese	0.05028	0.00500	0.05	0	101	87 - 115				
Nickel	0.04992	0.00500	0.05	0	99.8	85 - 117				
Potassium	4.988	0.200	5	0	99.8	87 - 115				
Selenium	0.05117	0.00500	0.05	0	102	80 - 120				
Silver	0.05001	0.00500	0.05	0	100	85 - 116				
Sodium	5.098	0.200	5	0	102	85 - 117				
Thallium	0.04775	0.00200	0.05	0	95.5	82 - 116				
Vanadium	0.04947	0.00500	0.05	0	98.9	86 - 115				
Zinc	0.05139	0.00500	0.05	0	103	83 - 119				

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: 188020 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS22121316-01MS** Units: **mg/L** Analysis Date: **03-Jan-2023 15:15**
Client ID: Run ID: **ICPMS07_425185** SeqNo: **7059878** PrepDate: **03-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.116	0.0100	0.1	0.01805	97.9	84 - 117				
Antimony	0.05144	0.00500	0.05	0.00069	101	85 - 117				
Arsenic	0.05855	0.00500	0.05	0.007692	102	84 - 116				
Barium	1.216	0.00500	0.05	1.147	137	86 - 114				SO
Beryllium	0.05135	0.00200	0.05	0.000061	103	83 - 121				
Cadmium	0.04972	0.00200	0.05	0.000024	99.4	87 - 115				
Calcium	43.3	0.500	5	33.68	192	87 - 118				SO
Chromium	0.05218	0.00500	0.05	0.002331	99.7	85 - 116				
Cobalt	0.05163	0.00500	0.05	0.000871	102	86 - 115				
Copper	0.05073	0.00500	0.05	0.00007	101	85 - 118				
Iron	54.51	0.200	5	47.96	131	87 - 118				SO
Lead	0.04838	0.00500	0.05	0.000029	96.7	88 - 115				
Magnesium	27.82	0.200	5	21.87	119	83 - 118				SO
Manganese	0.6518	0.00500	0.05	0.5747	154	87 - 115				SO
Nickel	0.0561	0.00500	0.05	0.005921	100	85 - 117				
Potassium	15.41	0.200	5	10.08	107	87 - 115				
Selenium	0.04945	0.00500	0.05	-0.000031	99.0	80 - 120				
Silver	0.04771	0.00500	0.05	-0.000071	95.6	85 - 116				
Sodium	107.2	0.200	5	100.2	142	85 - 117				SO
Thallium	0.04171	0.00200	0.05	-0.000005	83.4	82 - 116				
Vanadium	0.05055	0.00500	0.05	0.000217	101	86 - 115				
Zinc	0.05384	0.00500	0.05	0.003646	100	83 - 119				

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: 188020 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS22121316-01MSD** Units: **mg/L** Analysis Date: **03-Jan-2023 15:17**
Client ID: Run ID: **ICPMS07_425185** SeqNo: **7059879** PrepDate: **03-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1227	0.0100	0.1	0.01805	105	84 - 117	0.116	5.65	20	
Antimony	0.05361	0.00500	0.05	0.00069	106	85 - 117	0.05144	4.13	20	
Arsenic	0.06094	0.00500	0.05	0.007692	106	84 - 116	0.05855	4	20	
Barium	1.281	0.00500	0.05	1.147	267	86 - 114	1.216	5.17	20	SO
Beryllium	0.05108	0.00200	0.05	0.000061	102	83 - 121	0.05135	0.529	20	
Cadmium	0.05271	0.00200	0.05	0.000024	105	87 - 115	0.04972	5.83	20	
Calcium	45.8	0.500	5	33.68	242	87 - 118	43.3	5.61	20	SO
Chromium	0.05439	0.00500	0.05	0.002331	104	85 - 116	0.05218	4.15	20	
Cobalt	0.05385	0.00500	0.05	0.000871	106	86 - 115	0.05163	4.2	20	
Copper	0.05236	0.00500	0.05	0.00007	105	85 - 118	0.05073	3.15	20	
Iron	56.57	0.200	5	47.96	172	87 - 118	54.51	3.71	20	SO
Lead	0.05104	0.00500	0.05	0.000029	102	88 - 115	0.04838	5.34	20	
Magnesium	28.61	0.200	5	21.87	135	83 - 118	27.82	2.8	20	SO
Manganese	0.6812	0.00500	0.05	0.5747	213	87 - 115	0.6518	4.41	20	SO
Nickel	0.05903	0.00500	0.05	0.005921	106	85 - 117	0.0561	5.08	20	
Selenium	0.05146	0.00500	0.05	-0.000031	103	80 - 120	0.04945	3.99	20	
Silver	0.05083	0.00500	0.05	-0.000071	102	85 - 116	0.04771	6.33	20	
Sodium	112.3	0.200	5	100.2	243	85 - 117	107.2	4.6	20	SO
Thallium	0.04397	0.00200	0.05	-0.000005	88.0	82 - 116	0.04171	5.28	20	
Vanadium	0.0525	0.00500	0.05	0.000217	105	86 - 115	0.05055	3.77	20	
Zinc	0.0563	0.00500	0.05	0.003646	105	83 - 119	0.05384	4.47	20	

MSD Sample ID: **HS22121316-01MSD** Units: **mg/L** Analysis Date: **03-Jan-2023 15:49**
Client ID: Run ID: **ICPMS07_425185** SeqNo: **7059971** PrepDate: **03-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Potassium	15.57	0.200	5	10.08	110	87 - 115	15.41	1	20	

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: 188020 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS22121316-01PDS** Units: **mg/L** Analysis Date: **03-Jan-2023 15:19**
Client ID: Run ID: **ICPMS07_425185** SeqNo: **7059880** PrepDate: **03-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1288	0.0100	0.1	0.01805	111	80 - 120				
Antimony	0.1145	0.00500	0.1	0.00069	114	80 - 120				
Arsenic	0.1223	0.00500	0.1	0.007692	115	80 - 120				
Barium	1.333	0.00500	0.1	1.147	186	80 - 120				SO
Beryllium	0.1126	0.00200	0.1	0.000061	113	80 - 120				
Cadmium	0.1175	0.00200	0.1	0.000024	117	80 - 120				
Chromium	0.1154	0.00500	0.1	0.002331	113	80 - 120				
Cobalt	0.1151	0.00500	0.1	0.000871	114	80 - 120				
Copper	0.1138	0.00500	0.1	0.00007	114	80 - 120				
Iron	61.31	0.200	10	47.96	133	80 - 120				SO
Lead	0.1136	0.00500	0.1	0.000029	114	80 - 120				
Manganese	0.7052	0.00500	0.1	0.5747	131	80 - 120				SO
Nickel	0.1186	0.00500	0.1	0.005921	113	80 - 120				
Potassium	21.42	0.200	10	10.08	113	80 - 120				
Selenium	0.1139	0.00500	0.1	-0.000031	114	80 - 120				
Silver	0.1143	0.00500	0.1	-0.000071	114	80 - 120				
Sodium	114.9	0.200	10	100.2	148	80 - 120				SO
Vanadium	0.1145	0.00500	0.1	0.000217	114	80 - 120				
Zinc	0.1168	0.00500	0.1	0.003646	113	80 - 120				

PDS Sample ID: **HS22121316-01PDS** Units: **mg/L** Analysis Date: **03-Jan-2023 16:46**
Client ID: Run ID: **ICPMS07_425185** SeqNo: **7060150** PrepDate: **03-Jan-2023** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	118.7	5.00	100	33.26	85.4	80 - 120				

PDS Sample ID: **HS22121316-01PDS** Units: **mg/L** Analysis Date: **03-Jan-2023 15:51**
Client ID: Run ID: **ICPMS07_425185** SeqNo: **7059972** PrepDate: **03-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Magnesium	30.95	0.200	10	21.87	90.8	80 - 120				

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: 188020 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS22121316-01SD** Units: **mg/L** Analysis Date: **03-Jan-2023 15:13**
Client ID: Run ID: **ICPMS07_425185** SeqNo: **7059877** PrepDate: **03-Jan-2023** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.0183	0.0500					0.01805	0	10	J
Antimony	0.00625	0.0250					0.00069	0	10	U
Arsenic	0.00786	0.0250					0.007692	0	10	J
Barium	1.059	0.0250					1.147	7.73	10	
Beryllium	0.00250	0.0100					0.000061	0	10	U
Cadmium	0.00250	0.0100					0.000024	0	10	U
Chromium	0.00625	0.0250					0.002331	0	10	U
Cobalt	0.000783	0.0250					0.000871	0	10	J
Copper	0.0125	0.0250					0.00007	0	10	U
Iron	48.36	1.00					47.96	0.835	10	
Lead	0.00625	0.0250					0.000029	0	10	U
Magnesium	22.66	1.00					21.87	3.61	10	
Manganese	0.5594	0.0250					0.5747	2.66	10	
Nickel	0.005276	0.0250					0.005921	0	10	J
Potassium	10.35	1.00					10.08	2.66	10	
Selenium	0.0125	0.0250					-0.000031	0	10	U
Silver	0.00250	0.0250					-0.000071	0	10	U
Sodium	100	1.00					100.2	0.142	10	
Thallium	0.00250	0.0100					-0.000005	0	10	U
Vanadium	0.00625	0.0250					0.000217	0	10	U
Zinc	0.0125	0.0250					0.003646	0	10	U

SD Sample ID: **HS22121316-01SD** Units: **mg/L** Analysis Date: **03-Jan-2023 16:44**
Client ID: Run ID: **ICPMS07_425185** SeqNo: **7060149** PrepDate: **03-Jan-2023** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Calcium	32.66	25.0					33.26	1.8	10	

The following samples were analyzed in this batch: HS22121096-02 HS22121096-03

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: 188025 (0) **Instrument: HG04** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-188025** Units: **mg/L** Analysis Date: **03-Jan-2023 14:26**
Client ID: Run ID: **HG04_425209** SeqNo: **7059891** PrepDate: **03-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.000100	0.000200								U

LCS Sample ID: **LCS-188025** Units: **mg/L** Analysis Date: **03-Jan-2023 14:27**
Client ID: Run ID: **HG04_425209** SeqNo: **7059892** PrepDate: **03-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00484	0.000200	0.005	0	96.8	82 - 119				

MS Sample ID: **HS22120986-01MS** Units: **mg/L** Analysis Date: **03-Jan-2023 14:33**
Client ID: Run ID: **HG04_425209** SeqNo: **7059895** PrepDate: **03-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00275	0.000200	0.005	-0.00001100	55.2	82 - 119				S

MSD Sample ID: **HS22120986-01MSD** Units: **mg/L** Analysis Date: **03-Jan-2023 14:34**
Client ID: Run ID: **HG04_425209** SeqNo: **7059896** PrepDate: **03-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00325	0.000200	0.005	-0.00001100	65.2	82 - 119	0.002750	16.7	20	S

The following samples were analyzed in this batch: HS22121096-02 HS22121096-03

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: 187710 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-187710** Units: **ug/L** Analysis Date: **11-Jan-2023 16:18**
Client ID: Run ID: **SV-6_425684** SeqNo: **7071002** PrepDate: **22-Dec-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.0050	0.010								U
Surr: 2-Fluorobiphenyl	*0.0825*	*0*	*0.08*	*0*	*103*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08324*	*0*	*0.08*	*0*	*104*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07626*	*0*	*0.08*	*0*	*95.3*	*40 - 140*				

LCS Sample ID: **LCS-187710** Units: **ug/L** Analysis Date: **11-Jan-2023 16:36**
Client ID: Run ID: **SV-6_425684** SeqNo: **7071003** PrepDate: **22-Dec-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.04076	0.010	0.08	0	51.0	40 - 140				
Surr: 2-Fluorobiphenyl	*0.05792*	*0*	*0.08*	*0*	*72.4*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.07985*	*0*	*0.08*	*0*	*99.8*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.04762*	*0*	*0.08*	*0*	*59.5*	*40 - 140*				

LCSD Sample ID: **LCSD-187710** Units: **ug/L** Analysis Date: **11-Jan-2023 16:54**
Client ID: Run ID: **SV-6_425684** SeqNo: **7071004** PrepDate: **22-Dec-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.04444	0.010	0.08	0	55.6	40 - 140	0.04076	8.65	20	
Surr: 2-Fluorobiphenyl	*0.05284*	*0*	*0.08*	*0*	*66.1*	*40 - 140*	*0.05792*	*9.17*	*20*	
Surr: 4-Terphenyl-d14	*0.08463*	*0*	*0.08*	*0*	*106*	*40 - 140*	*0.07985*	*5.81*	*20*	
Surr: Nitrobenzene-d5	*0.04877*	*0*	*0.08*	*0*	*61.0*	*40 - 140*	*0.04762*	*2.39*	*20*	

The following samples were analyzed in this batch: HS22121096-01 HS22121096-02 HS22121096-03

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: R424675 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-221222** Units: **ug/L** Analysis Date: **22-Dec-2022 12:05**
Client ID: Run ID: **VOA6_424675** SeqNo: **7047627** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	1.0	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	1.0	1.0								U
1,1-Dichloroethene	1.0	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	1.0	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	1.0	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	1.0	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	1.0	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	1.0	1.0								U
Bromodichloromethane	1.0	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: R424675 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-221222** Units: **ug/L** Analysis Date: **22-Dec-2022 12:05**
Client ID: Run ID: **VOA6_424675** SeqNo: **7047627** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	1.0	1.0								U
Chloromethane	1.0	1.0								U
cis-1,2-Dichloroethene	1.0	1.0								U
cis-1,3-Dichloropropene	1.0	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	1.0	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	1.0	1.0								U
trans-1,2-Dichloroethene	1.0	1.0								U
trans-1,3-Dichloropropene	1.0	1.0								U
Trichloroethene	1.0	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	1.0	1.0								U
Surr: 1,2-Dichloroethane-d4	*45.77*	*1.0*	*50*	*0*	*91.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*46.59*	*1.0*	*50*	*0*	*93.2*	*85 - 114*				
Surr: Dibromofluoromethane	*47.54*	*1.0*	*50*	*0*	*95.1*	*80 - 119*				
Surr: Toluene-d8	*52.51*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: R424675 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-221222** Units: **ug/L** Analysis Date: **22-Dec-2022 11:23**
Client ID: Run ID: **VOA6_424675** SeqNo: **7047626** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	18.44	1.0	20	0	92.2	78 - 124				
1,1,1-Trichloroethane	17.84	1.0	20	0	89.2	74 - 131				
1,1,2,2-Tetrachloroethane	17.79	1.0	20	0	89.0	71 - 121				
1,1,2-Trichloroethane	18.77	1.0	20	0	93.9	80 - 119				
1,1-Dichloroethane	17.23	1.0	20	0	86.2	77 - 125				
1,1-Dichloroethene	17.71	1.0	20	0	88.6	71 - 131				
1,1-Dichloropropene	19.8	1.0	20	0	99.0	78 - 125				
1,2,3-Trichlorobenzene	20.4	1.0	20	0	102	69 - 129				
1,2,3-Trichloropropane	19.04	1.0	20	0	95.2	73 - 122				
1,2,4-Trichlorobenzene	20.76	1.0	20	0	104	69 - 130				
1,2,4-Trimethylbenzene	18.25	1.0	20	0	91.3	76 - 124				
1,2-Dibromo-3-chloropropane	19.26	1.0	20	0	96.3	62 - 128				
1,2-Dibromoethane	19.12	1.0	20	0	95.6	77 - 121				
1,2-Dichlorobenzene	18.59	1.0	20	0	92.9	80 - 119				
1,2-Dichloroethane	18.5	1.0	20	0	92.5	73 - 128				
1,2-Dichloropropane	17.85	1.0	20	0	89.2	78 - 122				
1,3,5-Trimethylbenzene	18.97	1.0	20	0	94.9	75 - 124				
1,3-Dichlorobenzene	19.21	1.0	20	0	96.1	80 - 119				
1,3-Dichloropropane	18.72	1.0	20	0	93.6	80 - 119				
1,4-Dichlorobenzene	18.79	1.0	20	0	94.0	79 - 118				
2,2-Dichloropropane	18.24	1.0	20	0	91.2	60 - 139				
2-Butanone	35.82	2.0	40	0	89.6	56 - 143				
2-Chlorotoluene	18.28	1.0	20	0	91.4	79 - 122				
2-Hexanone	38.1	2.0	40	0	95.3	57 - 139				
4-Chlorotoluene	18.43	1.0	20	0	92.2	78 - 122				
4-Isopropyltoluene	19.72	1.0	20	0	98.6	77 - 127				
4-Methyl-2-pentanone	35.85	2.0	40	0	89.6	67 - 130				
Acetone	40.27	2.0	40	0	101	39 - 160				
Benzene	18.42	1.0	20	0	92.1	79 - 120				
Bromobenzene	19.01	1.0	20	0	95.1	80 - 120				
Bromochloromethane	17.49	1.0	20	0	87.5	78 - 123				
Bromodichloromethane	17.96	1.0	20	0	89.8	79 - 125				
Bromoform	19.57	1.0	20	0	97.9	66 - 130				
Bromomethane	18.93	1.0	20	0	94.6	53 - 141				

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: R424675 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

LCS Sample ID: **VLCSW-221222** Units: **ug/L** Analysis Date: **22-Dec-2022 11:23**
Client ID: Run ID: **VOA6_424675** SeqNo: **7047626** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	36.11	2.0	40	0	90.3	64 - 133				
Carbon tetrachloride	18.28	1.0	20	0	91.4	72 - 136				
Chlorobenzene	18.2	1.0	20	0	91.0	82 - 118				
Chloroethane	16.52	1.0	20	0	82.6	60 - 138				
Chloroform	17.37	1.0	20	0	86.9	79 - 124				
Chloromethane	19.09	1.0	20	0	95.4	50 - 139				
cis-1,2-Dichloroethene	17.39	1.0	20	0	86.9	78 - 123				
cis-1,3-Dichloropropene	18.45	1.0	20	0	92.3	75 - 124				
Dibromochloromethane	19.25	1.0	20	0	96.2	74 - 126				
Dibromomethane	18.56	1.0	20	0	92.8	79 - 123				
Dichlorodifluoromethane	20.53	1.0	20	0	103	32 - 152				
Ethylbenzene	19.22	1.0	20	0	96.1	79 - 121				
Hexachlorobutadiene	20.65	1.0	20	0	103	66 - 134				
Isopropylbenzene	19.17	1.0	20	0	95.8	72 - 131				
m,p-Xylene	37.77	2.0	40	0	94.4	80 - 121				
Methylene chloride	17.96	2.0	20	0	89.8	74 - 124				
Naphthalene	19.54	1.0	20	0	97.7	61 - 128				
n-Butylbenzene	18.5	1.0	20	0	92.5	75 - 128				
n-Propylbenzene	18.82	1.0	20	0	94.1	76 - 126				
o-Xylene	18.72	1.0	20	0	93.6	78 - 122				
sec-Butylbenzene	19.32	1.0	20	0	96.6	77 - 126				
Styrene	19.16	1.0	20	0	95.8	78 - 123				
tert-Butylbenzene	19.18	1.0	20	0	95.9	78 - 124				
Tetrachloroethene	20.06	1.0	20	0	100	74 - 129				
Toluene	18.48	1.0	20	0	92.4	80 - 121				
trans-1,2-Dichloroethene	18.18	1.0	20	0	90.9	75 - 124				
trans-1,3-Dichloropropene	18.61	1.0	20	0	93.1	73 - 127				
Trichloroethene	19.11	1.0	20	0	95.5	79 - 123				
Trichlorofluoromethane	17.96	1.0	20	0	89.8	65 - 141				
Vinyl chloride	18.11	1.0	20	0	90.6	58 - 137				
Surr: 1,2-Dichloroethane-d4	*48.02*	*1.0*	*50*	*0*	*96.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.62*	*1.0*	*50*	*0*	*97.2*	*85 - 114*				
Surr: Dibromofluoromethane	*47.94*	*1.0*	*50*	*0*	*95.9*	*80 - 119*				
Surr: Toluene-d8	*49.09*	*1.0*	*50*	*0*	*98.2*	*89 - 112*				

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: R424675 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22121096-02MS** Units: **ug/L** Analysis Date: **22-Dec-2022 13:51**
Client ID: **18CPTMW04SW_121622** Run ID: **VOA6_424675** SeqNo: **7047632** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.99	1.0	20	0	99.9	78 - 124				
1,1,1-Trichloroethane	19.97	1.0	20	0	99.9	74 - 131				
1,1,2,2-Tetrachloroethane	17.79	1.0	20	0	88.9	71 - 121				
1,1,2-Trichloroethane	18.52	1.0	20	0	92.6	80 - 119				
1,1-Dichloroethane	16.99	1.0	20	0	85.0	77 - 125				
1,1-Dichloroethene	18.38	1.0	20	0	91.9	71 - 131				
1,1-Dichloropropene	22.88	1.0	20	0	114	78 - 125				
1,2,3-Trichlorobenzene	21.97	1.0	20	0	110	69 - 129				
1,2,3-Trichloropropane	18.33	1.0	20	0	91.6	73 - 122				
1,2,4-Trichlorobenzene	23.13	1.0	20	0	116	69 - 130				
1,2,4-Trimethylbenzene	21.89	1.0	20	0	109	76 - 124				
1,2-Dibromo-3-chloropropane	18.84	1.0	20	0	94.2	62 - 128				
1,2-Dibromoethane	19.36	1.0	20	0	96.8	77 - 121				
1,2-Dichlorobenzene	20.59	1.0	20	0	103	80 - 119				
1,2-Dichloroethane	18.31	1.0	20	0	91.5	73 - 128				
1,2-Dichloropropane	18.16	1.0	20	0	90.8	78 - 122				
1,3,5-Trimethylbenzene	23.26	1.0	20	0	116	75 - 124				
1,3-Dichlorobenzene	22	1.0	20	0	110	80 - 119				
1,3-Dichloropropane	18.94	1.0	20	0	94.7	80 - 119				
1,4-Dichlorobenzene	20.97	1.0	20	0	105	79 - 118				
2,2-Dichloropropane	19.5	1.0	20	0	97.5	60 - 139				
2-Butanone	28.25	2.0	40	0	70.6	56 - 143				
2-Chlorotoluene	21.42	1.0	20	0	107	79 - 122				
2-Hexanone	32.56	2.0	40	0	81.4	57 - 139				
4-Chlorotoluene	21.35	1.0	20	0	107	78 - 122				
4-Isopropyltoluene	25.84	1.0	20	0	129	77 - 127				S
4-Methyl-2-pentanone	34.6	2.0	40	0	86.5	67 - 130				
Acetone	22.8	2.0	40	0	57.0	39 - 160				
Benzene	19.59	1.0	20	0	98.0	79 - 120				
Bromobenzene	20.84	1.0	20	0	104	80 - 120				
Bromochloromethane	16.19	1.0	20	0	80.9	78 - 123				
Bromodichloromethane	18.02	1.0	20	0	90.1	79 - 125				
Bromoform	18.97	1.0	20	0	94.8	66 - 130				
Bromomethane	18.36	1.0	20	0	91.8	53 - 141				

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: R424675 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS22121096-02MS** Units: **ug/L** Analysis Date: **22-Dec-2022 13:51**
Client ID: **18CPTMW04SW_121622** Run ID: **VOA6_424675** SeqNo: **7047632** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	37.14	2.0	40	0	92.9	64 - 133				
Carbon tetrachloride	21.63	1.0	20	0	108	72 - 136				
Chlorobenzene	20.06	1.0	20	0	100	82 - 118				
Chloroethane	15.99	1.0	20	0	79.9	60 - 138				
Chloroform	17.3	1.0	20	0	86.5	79 - 124				
Chloromethane	16.36	1.0	20	0	81.8	50 - 139				
cis-1,2-Dichloroethene	18.13	1.0	20	0	90.6	78 - 123				
cis-1,3-Dichloropropene	18.24	1.0	20	0	91.2	75 - 124				
Dibromochloromethane	19.39	1.0	20	0	96.9	74 - 126				
Dibromomethane	17.79	1.0	20	0	89.0	79 - 123				
Dichlorodifluoromethane	13.03	1.0	20	0	65.2	32 - 152				
Ethylbenzene	22.73	1.0	20	0	114	79 - 121				
Hexachlorobutadiene	27.79	1.0	20	0	139	66 - 134				S
Isopropylbenzene	23.98	1.0	20	0	120	72 - 131				
m,p-Xylene	44.28	2.0	40	0	111	80 - 121				
Methylene chloride	15.62	2.0	20	0	78.1	74 - 124				
Naphthalene	20.36	1.0	20	0	102	61 - 128				
n-Butylbenzene	23.96	1.0	20	0	120	75 - 128				
n-Propylbenzene	24.2	1.0	20	0	121	76 - 126				
o-Xylene	21.27	1.0	20	0	106	78 - 122				
sec-Butylbenzene	26.48	1.0	20	0	132	77 - 126				S
Styrene	20.88	1.0	20	0	104	78 - 123				
tert-Butylbenzene	25.1	1.0	20	0	125	78 - 124				S
Tetrachloroethene	25.41	1.0	20	0	127	74 - 129				
Toluene	20.76	1.0	20	0	104	80 - 121				
trans-1,2-Dichloroethene	18.36	1.0	20	0	91.8	75 - 124				
trans-1,3-Dichloropropene	18.09	1.0	20	0	90.5	73 - 127				
Trichloroethene	21.12	1.0	20	0	106	79 - 123				
Trichlorofluoromethane	19.84	1.0	20	0	99.2	65 - 141				
Vinyl chloride	16.77	1.0	20	0	83.9	58 - 137				
Surr: 1,2-Dichloroethane-d4	*42.79*	*1.0*	*50*	*0*	*85.6*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.93*	*1.0*	*50*	*0*	*95.9*	*85 - 114*				
Surr: Dibromofluoromethane	*45.26*	*1.0*	*50*	*0*	*90.5*	*80 - 119*				
Surr: Toluene-d8	*51.74*	*1.0*	*50*	*0*	*103*	*89 - 112*				

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: R424675 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22121096-02MSD** Units: **ug/L** Analysis Date: **22-Dec-2022 14:12**
Client ID: **18CPTMW04SW_121622** Run ID: **VOA6_424675** SeqNo: **7047633** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.1	1.0	20	0	100	78 - 124	19.99	0.555	20	
1,1,1-Trichloroethane	19.09	1.0	20	0	95.5	74 - 131	19.97	4.49	20	
1,1,2,2-Tetrachloroethane	19.63	1.0	20	0	98.2	71 - 121	17.79	9.87	20	
1,1,2-Trichloroethane	19.17	1.0	20	0	95.9	80 - 119	18.52	3.48	20	
1,1-Dichloroethane	17.23	1.0	20	0	86.1	77 - 125	16.99	1.37	20	
1,1-Dichloroethene	18.51	1.0	20	0	92.6	71 - 131	18.38	0.709	20	
1,1-Dichloropropene	22.59	1.0	20	0	113	78 - 125	22.88	1.32	20	
1,2,3-Trichlorobenzene	24.13	1.0	20	0	121	69 - 129	21.97	9.37	20	
1,2,3-Trichloropropane	19.98	1.0	20	0	99.9	73 - 122	18.33	8.62	20	
1,2,4-Trichlorobenzene	24.44	1.0	20	0	122	69 - 130	23.13	5.48	20	
1,2,4-Trimethylbenzene	22.95	1.0	20	0	115	76 - 124	21.89	4.72	20	
1,2-Dibromo-3-chloropropane	20.33	1.0	20	0	102	62 - 128	18.84	7.62	20	
1,2-Dibromoethane	20.11	1.0	20	0	101	77 - 121	19.36	3.79	20	
1,2-Dichlorobenzene	21.88	1.0	20	0	109	80 - 119	20.59	6.06	20	
1,2-Dichloroethane	18.73	1.0	20	0	93.7	73 - 128	18.31	2.27	20	
1,2-Dichloropropane	18.09	1.0	20	0	90.4	78 - 122	18.16	0.396	20	
1,3,5-Trimethylbenzene	24.1	1.0	20	0	121	75 - 124	23.26	3.53	20	
1,3-Dichlorobenzene	23.2	1.0	20	0	116	80 - 119	22	5.32	20	
1,3-Dichloropropane	19.06	1.0	20	0	95.3	80 - 119	18.94	0.593	20	
1,4-Dichlorobenzene	22.13	1.0	20	0	111	79 - 118	20.97	5.38	20	
2,2-Dichloropropane	19.03	1.0	20	0	95.1	60 - 139	19.5	2.47	20	
2-Butanone	29.73	2.0	40	0	74.3	56 - 143	28.25	5.09	20	
2-Chlorotoluene	22.3	1.0	20	0	112	79 - 122	21.42	4.05	20	
2-Hexanone	35.63	2.0	40	0	89.1	57 - 139	32.56	9.02	20	
4-Chlorotoluene	22.21	1.0	20	0	111	78 - 122	21.35	3.92	20	
4-Isopropyltoluene	27.04	1.0	20	0	135	77 - 127	25.84	4.52	20	S
4-Methyl-2-pentanone	36.22	2.0	40	0	90.6	67 - 130	34.6	4.58	20	
Acetone	23.58	2.0	40	0	59.0	39 - 160	22.8	3.36	20	
Benzene	19.28	1.0	20	0	96.4	79 - 120	19.59	1.58	20	
Bromobenzene	22.19	1.0	20	0	111	80 - 120	20.84	6.29	20	
Bromochloromethane	16.4	1.0	20	0	82.0	78 - 123	16.19	1.3	20	
Bromodichloromethane	18	1.0	20	0	90.0	79 - 125	18.02	0.0826	20	
Bromoform	19.93	1.0	20	0	99.7	66 - 130	18.97	4.96	20	
Bromomethane	17.94	1.0	20	0	89.7	53 - 141	18.36	2.3	20	

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

QC BATCH REPORT

Batch ID: R424675 (0) **Instrument: VOA6** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS22121096-02MSD** Units: **ug/L** Analysis Date: **22-Dec-2022 14:12**
Client ID: **18CPTMW04SW_121622** Run ID: **VOA6_424675** SeqNo: **7047633** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	36.87	2.0	40	0	92.2	64 - 133	37.14	0.743	20	
Carbon tetrachloride	21.93	1.0	20	0	110	72 - 136	21.63	1.37	20	
Chlorobenzene	19.96	1.0	20	0	99.8	82 - 118	20.06	0.489	20	
Chloroethane	16.27	1.0	20	0	81.4	60 - 138	15.99	1.79	20	
Chloroform	17.15	1.0	20	0	85.7	79 - 124	17.3	0.874	20	
Chloromethane	15.82	1.0	20	0	79.1	50 - 139	16.36	3.4	20	
cis-1,2-Dichloroethene	17.59	1.0	20	0	87.9	78 - 123	18.13	3.01	20	
cis-1,3-Dichloropropene	18.43	1.0	20	0	92.1	75 - 124	18.24	1.04	20	
Dibromochloromethane	19.79	1.0	20	0	98.9	74 - 126	19.39	2.05	20	
Dibromomethane	18.18	1.0	20	0	90.9	79 - 123	17.79	2.15	20	
Dichlorodifluoromethane	13.76	1.0	20	0	68.8	32 - 152	13.03	5.43	20	
Ethylbenzene	22.65	1.0	20	0	113	79 - 121	22.73	0.334	20	
Hexachlorobutadiene	29.63	1.0	20	0	148	66 - 134	27.79	6.41	20	S
Isopropylbenzene	23.83	1.0	20	0	119	72 - 131	23.98	0.645	20	
m,p-Xylene	43.97	2.0	40	0	110	80 - 121	44.28	0.713	20	
Methylene chloride	15.89	2.0	20	0	79.5	74 - 124	15.62	1.73	20	
Naphthalene	21.86	1.0	20	0	109	61 - 128	20.36	7.08	20	
n-Butylbenzene	24.84	1.0	20	0	124	75 - 128	23.96	3.59	20	
n-Propylbenzene	25.07	1.0	20	0	125	76 - 126	24.2	3.55	20	
o-Xylene	21.27	1.0	20	0	106	78 - 122	21.27	0.0119	20	
sec-Butylbenzene	27.46	1.0	20	0	137	77 - 126	26.48	3.62	20	S
Styrene	20.71	1.0	20	0	104	78 - 123	20.88	0.854	20	
tert-Butylbenzene	25.91	1.0	20	0	130	78 - 124	25.1	3.19	20	S
Tetrachloroethene	25.51	1.0	20	0	128	74 - 129	25.41	0.391	20	
Toluene	20.68	1.0	20	0	103	80 - 121	20.76	0.385	20	
trans-1,2-Dichloroethene	18.58	1.0	20	0	92.9	75 - 124	18.36	1.22	20	
trans-1,3-Dichloropropene	18.18	1.0	20	0	90.9	73 - 127	18.09	0.468	20	
Trichloroethene	20.79	1.0	20	0	104	79 - 123	21.12	1.56	20	
Trichlorofluoromethane	19.88	1.0	20	0	99.4	65 - 141	19.84	0.234	20	
Vinyl chloride	16.79	1.0	20	0	83.9	58 - 137	16.77	0.0753	20	
Surr: 1,2-Dichloroethane-d4	*43.02*	*1.0*	*50*	*0*	*86.0*	*81 - 118*	*42.79*	*0.555*	*20*	
Surr: 4-Bromofluorobenzene	*47.13*	*1.0*	*50*	*0*	*94.3*	*85 - 114*	*47.93*	*1.68*	*20*	
Surr: Dibromofluoromethane	*43.79*	*1.0*	*50*	*0*	*87.6*	*80 - 119*	*45.26*	*3.31*	*20*	
Surr: Toluene-d8	*51.87*	*1.0*	*50*	*0*	*104*	*89 - 112*	*51.74*	*0.249*	*20*	

ALS Houston, US Date: 12-Jan-23

Client:	Bhate Environmental Associates, Inc.
Project:	LHAAP 18 24
WorkOrder:	HS22121096

QC BATCH REPORT

Batch ID:	**R424675 (0)**	**Instrument:**	**VOA6**	**Method:**	**VOLATILES ORGANICS BY METHOD 8260C**

The following samples were analyzed in this batch:	HS22121096-01	HS22121096-02	HS22121096-03	HS22121096-04

ALS Houston, US Date: 12-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS22121096**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 12-Jan-23

Sample Receipt Checklist

Work Order ID: HS22121096 **Date/Time Received:** **19-Dec-2022 09:05**

Client Name: Bhate Environmental **Received by:** **Paresh M. Giga**

Completed By: */S/ Corey Grandits* 19-Dec-2022 15:05 **Reviewed by:** */S/ Dane J. Wacasey* 04-Jan-2023 17:16

eSignature Date/Time eSignature Date/Time

Matrices: **W** Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	1.3UC/0.8C	IR31
Cooler(s)/Kit(s):	49560	
Date/Time sample(s) sent to storage:	12/19/2022	

Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes: Collection times missing from COC, logged in per container labels.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

bhate ENVIRONMENTAL CONSULTANTS

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: _____ of _____

Project/Phase No: NWO1312.0150

HS22121096

Bhate Environmental Associates, Inc.

LHAAP 18 24

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC	PERCHLORATE	TOTAL METALS	1,4 - DIOXANE						Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
18CPTmw04_121622	16 Dec 2022		-	N		WG	5	X	X		X									
18CPTmw04SW_121622	16 Dec 2022		-	N		WG	6	X	X	X	X									
MW2_121622	16 Dec 2022		-	N		WG	6	X	X	X	X									
Trip Blank	16 Dec 2022			TB		W	2	X												
			-																	
			-																	
			-																	
			-															4956		
			-																	
			-																	
			-																	

COMMENTS: STANDARD TAT

Custody Transfer(s) Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	12/16/22	1300	1.	12/17/22	0900
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped _____ No.:

Method of Shipment: _____

_____ Fed Ex _____ Airbill Number: _____

Analytical Lab: ALS 10450 Stanchiff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: Dane Wagaoy Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

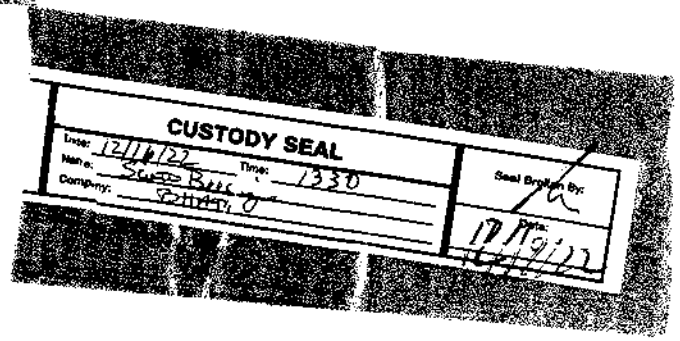
3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5667


CUSTODY SEAL
Time: 1330
Seal Broken By:
Date:

REF: LHAAP – 18/24 – BO 81919 – RG
FedEx
FedEx.
TRK# 0221 5300 5225 1618
SATURDAY 12:0(0P
PRIORITY OVERNIGHT
XO SGRA
77099
TX-US
IAH

December 22, 2022 Service Request No:E2201206

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22121096

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory December 19, 2022
For your reference, these analyses have been assigned our service request number **E2201206.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at James.Guin@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

James Guin

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Environmental - US	**Service Request No.:**	E2201206
Project:	HS221206	**Date Received:**	12/19/22
Sample Matrix:	Ground Water		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Three samples were received for analysis at ALS Environmental in Houston on 12/19/22.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200580: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2201206
Project: HS22121096

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2201206-001	18CPTMW04_121622	12/16/2022	0725
E2201206-002	18CPTMW04SW_121622	12/16/2022	0815
E2201206-003	MW2_121622	12/16/2022	0905

Service Request Summary

Folder #: **E2201206**
Client Name: ALS Environmental - US
Project Name: HS22121096
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 12/19/22
Internal Due Date: 1/4/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22121096
EDD: BASIC_WQC_CASNo

3 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 4B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2201206-001	18CPTMW04_121622	Ground Water	12/16/22 0725	**IV**
E2201206-002	18CPTMW04SW_121622	Ground Water	12/16/22 0815	**IV**
E2201206-003	MW2_121622	Ground Water	12/16/22 0905	**IV**

Service Request Summary

Folder #: **E2201206**
Client Name: ALS Environmental - US
Project Name: HS22121096
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 12/19/22
Internal Due Date: 1/4/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22121096
EDD: BASIC_WQC_CASNo

3 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 4B
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	3	Level IV due 1/11

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.

Data Qualifiers

Lab Standard

M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2368363	12/31/2023
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Ecology	C819-22	11/14/2023

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 20565

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS22121096
TSR:	Holly Tignac

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22121096-01**	**18CPTMW04_121622**	**Groundwater**	**16 Dec 2022 07:25**
	Provide Level II and Level IV reports in separate pdf			05 Jan 2023
2.	**HS22121096-02**	**18CPTMW04SW_121622**	**Groundwater**	**16 Dec 2022 08:15**
	Provide Level II and Level IV reports in separate pdf			05 Jan 2023
3.	**HS22121096-03**	**MW20_121522**	**Groundwater**	**16 Dec 2022 09:05**
	Provide Level II and Level IV reports in separate pdf			05 Jan 2023

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: NR Date/Time:

Received By: Date/Time: 12.19.22 1603

Cooler ID(s): Temperature(s):

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Sample Receipt Checklist

Work Order ID: HS22121096 **Date/Time received:** 19 Dec 2022 09:05

Client name: Bhate Environmental Associates, Inc. **Received by:** Paresh M. Giga

Completed/By: 19 Dec 2022 15:05 (Date/Time) Corey Grandits (eSignature) **Reviewed/By:** _____ (Date/Time) _____ (eSignature)

Matrices: W **Carrier name:** FedEx

Shipping container/cooler in good condition?	☑ Yes	☐ No	☐ Not Present
Custody seals intact on shipping container/cooler?	☑ Yes	☐ No	☐ Not Present
Custody seals intact on Sample bottles?	☐ Yes	☐ No	☑ Not Present
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐ Yes	☐ No	☑ Not Present
Chain of custody present?	☑ Yes	☐ No	1 Page(s)
Chain of custody signed when relinquished and received?	☑ Yes	☐ No	COC ID(s):
Samplers name present on COC?	☑ Yes	☐ No	
Chain of custody agrees with sample labels?	☐ Yes	☑ No	
Samples in proper container/bottle?	☑ Yes	☐ No	
Sample containers intact?	☑ Yes	☐ No	
Sufficient sample volume for indicated test?	☑ Yes	☐ No	
All samples received within holding time?	☑ Yes	☐ No	
Container/Temp Blank temperature in compliance?	☑ Yes	☐ No	

Temperature(s)/Thermometer(s): 1.3UC/0.8C IR31

Cooler Information: 1 Cooler(s), 49560

Date/Time sample(s) sent to storage: 12/19/2022

Water - VOA vials have zero headspace?	☑ Yes	☐ No	☐ No VOA vials submitted
Water - pH acceptable upon receipt?	☑ Yes	☐ No	☐ Not Applicable
pH adjusted?	☐ Yes	☑ No	☐ Not Applicable

pH adjusted by: _____

Login notes: Collection times missing from COC, logged in per container labels.

Client contacted: _____ **Date contacted:** _____ **Person contacted:** _____

Contacted by: _____ **Regarding:** _____

Comments: _____

Corrective action: _____

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 411932 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 12/21/22 08:20

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2201200-001	HBW7_121622	.01	6850/ClO4 DOD			Water	10mL	
2	E2201200-002	HBW7_121622_a	.01	6850/ClO4 DOD			Water	10mL	
3	E2201200-003	HBW10_121622	.01	6850/ClO4 DOD			Water	10mL	
4	E2201200-004	HBW1_121622	.01	6850/ClO4 DOD			Water	10mL	
5	E2201200-005	GPW1_121622	.01	6850/ClO4 DOD			Water	10mL	
6	E2201200-006	GPW3_121622	.01	6850/ClO4 DOD			Water	10mL	
7	E2201205-001	MW5_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2201205-002	18CPTMW08DW_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2201205-003	18CPTMW08SW_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2201205-004	AWD3_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2201205-005	AWD3_121522_a	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2201205-006	18CPTMW22R_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2201205-007	18CPTMW22SW_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2201205-008	MW2_121622	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2201206-001	18CPTMW04_121622	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2201206-002	18CPTMW04SW_121622	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2201206-003	MW2_121622	.01	6850/ClO4 DOD			Ground Water	10mL	
18	EQ2200580-01	MB		6850/ClO4			Liquid	10mL	
19	EQ2200580-02	LCS		6850/ClO4			Liquid	10mL	
20	EQ2200580-03	DLCS		6850/ClO4			Liquid	10mL	
21	R2211772-004	2212071447Y 200-G-175	.01	6850/ClO4			Water	10mL	
22	R2211773-013	2212070823 600L-HA-01	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 225386 Logbook Ref: Perchlorate (1st Source) Expires On: 01/31/2023

EQ2200580-02	1.00µL	EQ2200580-02	1.00µL	EQ2200580-03	1.00µL	EQ2200580-03	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 225719 Logbook Ref: Perchlorate Internal Standard Expires On: 01/31/2023

E2201200-001	100.00µL	E2201200-002	100.00µL	E2201200-003	100.00µL	E2201200-004	100.00µL	E2201200-005	100.00µL	E2201200-006	100.00µL
E2201205-001	100.00µL	E2201205-002	100.00µL	E2201205-003	100.00µL	E2201205-004	100.00µL	E2201205-005	100.00µL	E2201205-006	100.00µL
E2201205-007	100.00µL	E2201205-008	100.00µL	E2201206-001	100.00µL	E2201206-002	100.00µL	E2201206-003	100.00µL	EQ2200580-01	100.00µL
EQ2200580-01	100.00µL	EQ2200580-02	100.00µL	EQ2200580-02	100.00µL	EQ2200580-03	100.00µL	EQ2200580-03	100.00µL	R2211772-004	100.00µL
R2211773-013	100.00µL										

Preparation Information Benchsheet

Prep Run#: 411932 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 12/21/22 08:20

Preparation Materials

Water HPLC Grade	10/24/2022 Water (225656)	6850 Amber Glass screw vial	2mL Screw Top Vial (221308)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221307)		

Preparation Steps

Step: Preparation
Started: 12/21/22 08:20
Finished: 12/21/22 09:20
By: XMI
Comments

Comments: _____

Reviewed By: XMI Date: 12/21/22

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	12/16/22 0725
Sample Matrix:	Ground Water	**Date Received:**	12/19/22
Sample Name:	18CPTMW04_121622	**Units:**	µg/L
Lab Code:	E2201206-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**75.7**		0.500	0.250	0.125	5	12/21/22	12/21/22 17:36	411932	789386	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	12/16/22 0815
Sample Matrix:	Ground Water	**Date Received:**	12/19/22
Sample Name:	18CPTMW04SW_121622	**Units:**	µg/L
Lab Code:	E2201206-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/21/22	12/22/22 09:08	411932	789389	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	12/16/22 0905
Sample Matrix:	Ground Water	**Date Received:**	12/19/22
Sample Name:	MW2_121622	**Units:**	µg/L
Lab Code:	E2201206-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/21/22	12/22/22 09:16	411932	789389	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200580-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/21/22	12/21/22 16:15	411932	789386	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096
Sample Matrix: Ground Water

Service Request: E2201206
Date Analyzed: 12/21/22

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 411932

	Lab Control Sample EQ2200580-02			Duplicate Lab Control Sample EQ2200580-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.103	0.100	103	0.101	0.100	101	84 - 119	1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200580-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.103**		0.100	0.0500	0.0250	1	12/21/22	12/21/22 16:21	411932	789386	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200580-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.101**		0.100	0.0500	0.0250	1	12/21/22	12/21/22 16:26	411932	789386	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20221214

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : **A:**0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	IB		20221214_001	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:12
2	ICS		20221214_002	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:29
3	LODV		20221214_003	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:35
4	PERCHLORATE1		20221214_004	Perchlorate6850c.lcm	1x	☒	226061	12/14/2022 15:40
5	PERCHLORATE2		20221214_005	Perchlorate6850c.lcm	1x	☒	226062	12/14/2022 15:46
6	PERCHLORATE3		20221214_006	Perchlorate6850c.lcm	1x	☒	226063	12/14/2022 15:51
7	PERCHLORATE4		20221214_007	Perchlorate6850c.lcm	1x	☒	226064	12/14/2022 15:57
8	PERCHLORATE5		20221214_008	Perchlorate6850c.lcm	1x	☒	226065	12/14/2022 16:02
9	PERCHLORATE6		20221214_009	Perchlorate6850c.lcm	1x	☒	226066	12/14/2022 16:09
10	PERCHLORATE7		20221214_010	Perchlorate6850c.lcm	1x	☒	225881	12/14/2022 16:15
11	PERCHLORATE8		20221214_011	Perchlorate6850c.lcm	1x	☒	226068	12/14/2022 16:20
12	PERCHLORATE9		20221214_012	Perchlorate6850c.lcm	1x	☒	226069	12/14/2022 16:25
13	PERCHLORATE10		20221214_013	Perchlorate6850c.lcm	1x	☒	226070	12/14/2022 16:31
14	PERCHLORATEICV		20221214_014	Perchlorate6850c.lcm	1x	☒	226067	12/14/2022 16:37

Initial Calibration - Detailed Report

Calibration ID: EC2200016 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2200016-01	PERCHLORATE1	20221214_004	12/14/2022 15:40
02	EC2200016-02	PERCHLORATE2	20221214_005	12/14/2022 15:46
03	EC2200016-03	PERCHLORATE3	20221214_006	12/14/2022 15:51
04	EC2200016-04	PERCHLORATE4	20221214_007	12/14/2022 15:57
05	EC2200016-05	PERCHLORATE5	20221214_008	12/14/2022 16:02
06	EC2200016-06	PERCHLORATE6	20221214_009	12/14/2022 16:09
07	EC2200016-07	PERCHLORATE7	20221214_010	12/14/2022 16:15
08	EC2200016-08	PERCHLORATE8	20221214_011	12/14/2022 16:20
09	EC2200016-09	PERCHLORATE9	20221214_012	12/14/2022 16:25
10	EC2200016-10	PERCHLORATE10	20221214_013	12/14/2022 16:31

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 2.927** **Average RF = 0.1567**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1615	02	0.5000	0.1479	03	0.7000	0.1579	04	1.0000	0.1573
05	2.0000	0.1505	06	5.0000	0.1573	07	10.0000	0.1541	08	20.0000	0.162
09	30.0000	0.1598	10	50.0000	0.1587						

Analyte

Perchlorate RSE = 2.93

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.103	3.1	02	0.5000	0.472	-5.6	03	0.7000	0.705	0.8
04	1.0000	1.00	0.4	05	2.0000	1.92	-3.9	06	5.0000	5.02	0.4
07	10.0000	9.83	-1.7	08	20.0000	20.7	3.4	09	30.0000	30.6	2.0
10	50.0000	50.6	1.3								

Initial Calibration Verification Summary Report

Calibration ID:	EC2200016	**Instrument ID:**	E-LCMS-01
Datafile ID:	20221214_014	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2200016-11	T	Average RF	10	9.359	ng/mL	-6.4	<= 15

Insight Report

Printed at 12/15/2022 10:55:51 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221214\12142022 ICAL.damlp

PERCHLORATE1

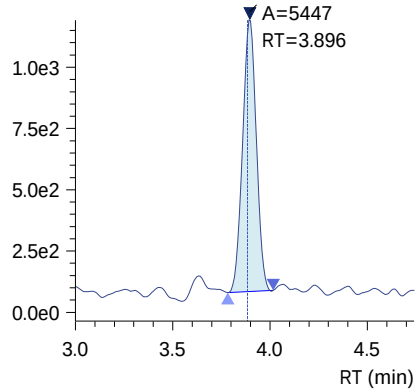
Sample ID: PERCHLORATE1
Date Acquired: 12/14/2022 3:40:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_004.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.896	5447	337240	0.1031	ng/mL	101.00 >85.00	35.31	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.889	337240	337240	1.0000	ng/mL	----	----	

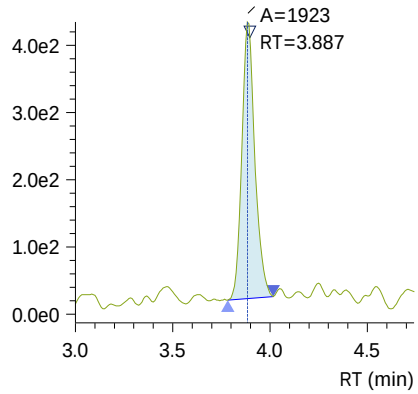
Perchlorate

Conc 0.1031
R#1 35.31 (34.02)

Q 99.00>83.00 (-) 1.19e3



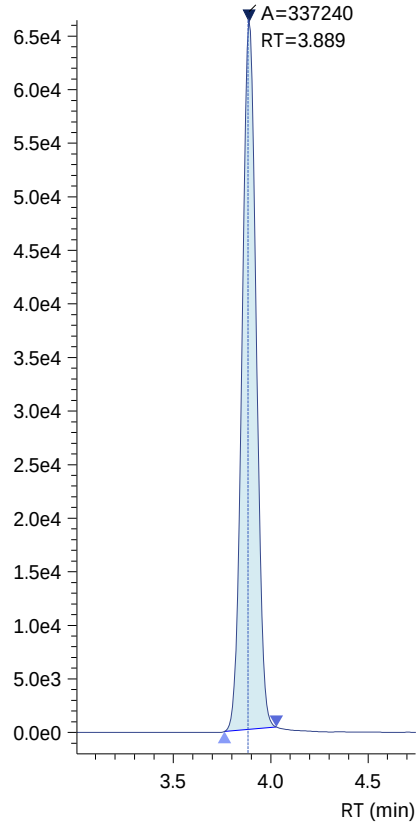
R1 101.00>85.00 (-) 4.35e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.65e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

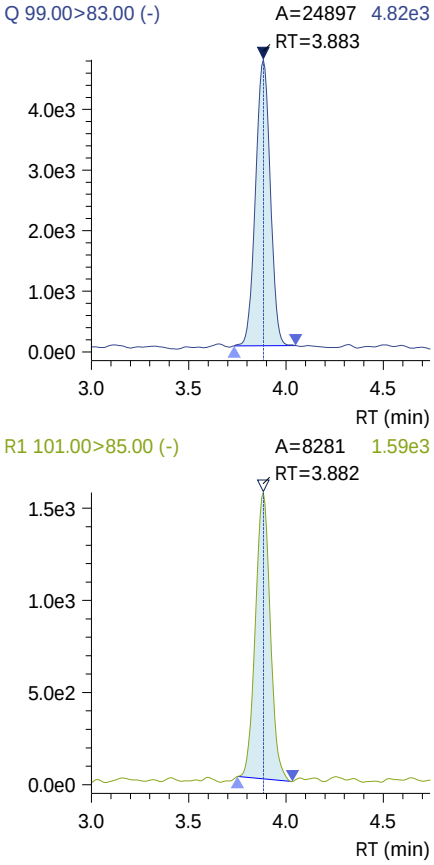
PERCHLORATE2

Sample ID: PERCHLORATE2
Date Acquired: 12/14/2022 3:46:03 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_005.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.883	24897	336620	0.4720	ng/mL	101.00 >85.00	33.26	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.878	336620	336620	1.0000	ng/mL	----	----	

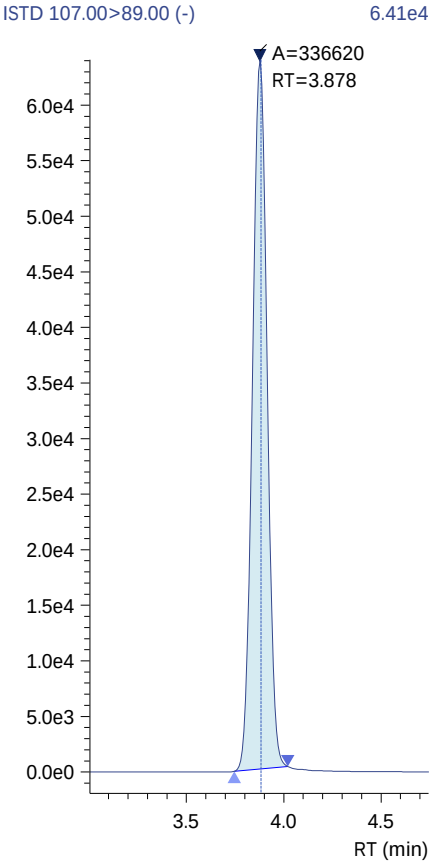
Perchlorate

Conc 0.4720
R#1 33.26 (34.02)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE3

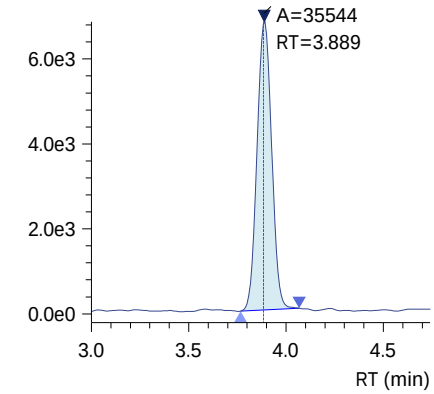
Sample ID: PERCHLORATE3
Date Acquired: 12/14/2022 3:51:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_006.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.889	35544	321596	0.7053	ng/mL	101.00 >85.00	35.09	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.885	321596	321596	1.0000	ng/mL	----	----	

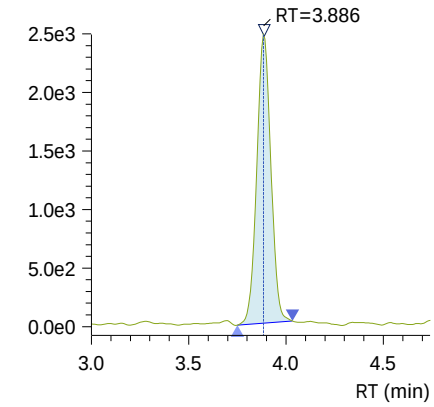
Perchlorate

Conc 0.7053
R#1 35.09 (34.02)

Q 99.00>83.00 (-) 6.88e3



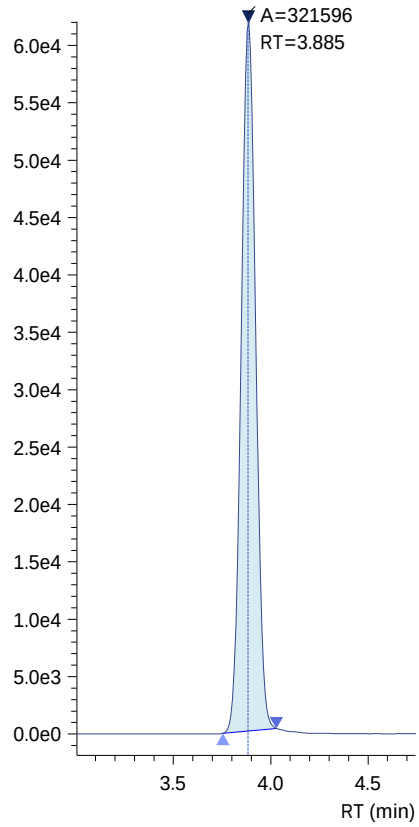
R1 101.00>85.00 (-) A=12471 2.50e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.21e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE4

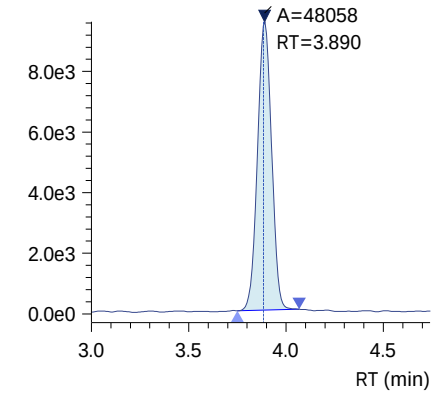
Sample ID: PERCHLORATE4
Date Acquired: 12/14/2022 3:57:06 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_007.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.890	48058	305584	1.0036	ng/mL	101.00 >85.00	33.87	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.886	305584	305584	1.0000	ng/mL	----	----	

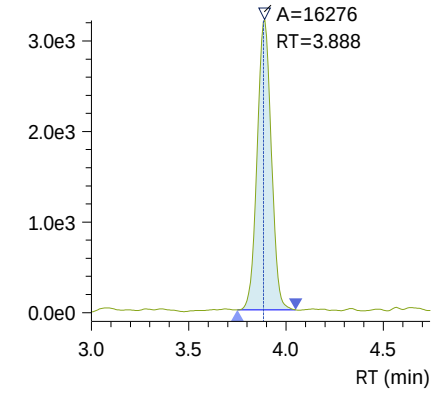
Perchlorate

Conc 1.0036
R#1 33.87 (34.02)

Q 99.00>83.00 (-) 9.64e3



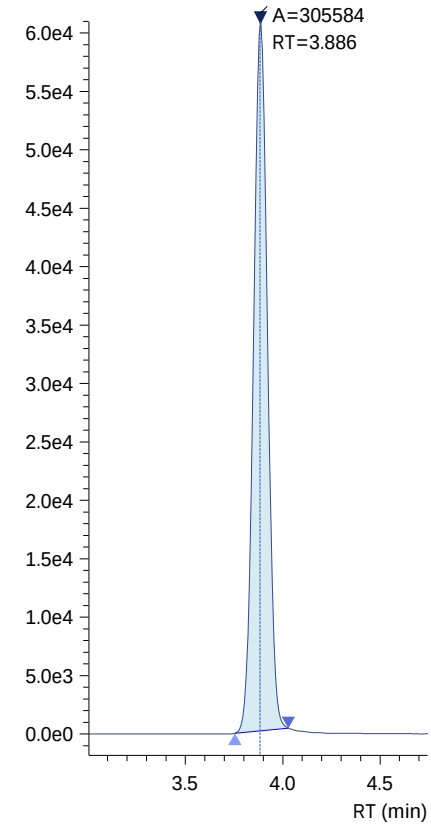
R1 101.00>85.00 (-) 3.23e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.10e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

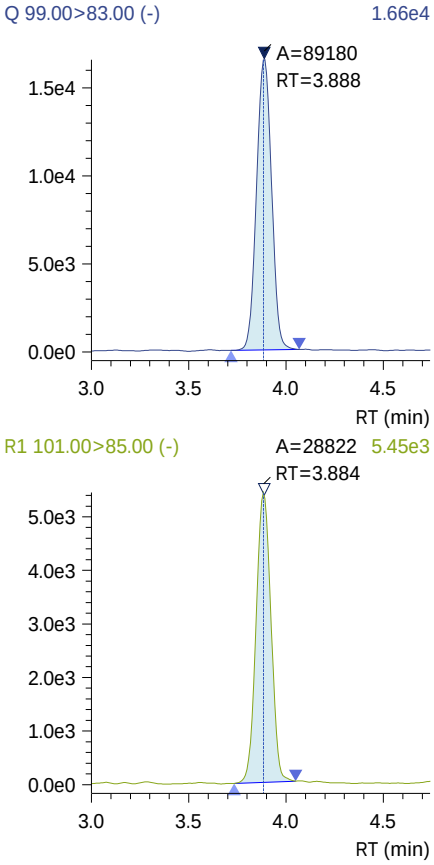
PERCHLORATE5

Sample ID: PERCHLORATE5
Date Acquired: 12/14/2022 4:02:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_008.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.888	89180	296200	1.9213	ng/mL	101.00 >85.00	32.32	23.94 -44.46
Sodium Perchlorate-18O4 _IS	Auto	3.885	296200	296200	1.0000	ng/mL	----	----	

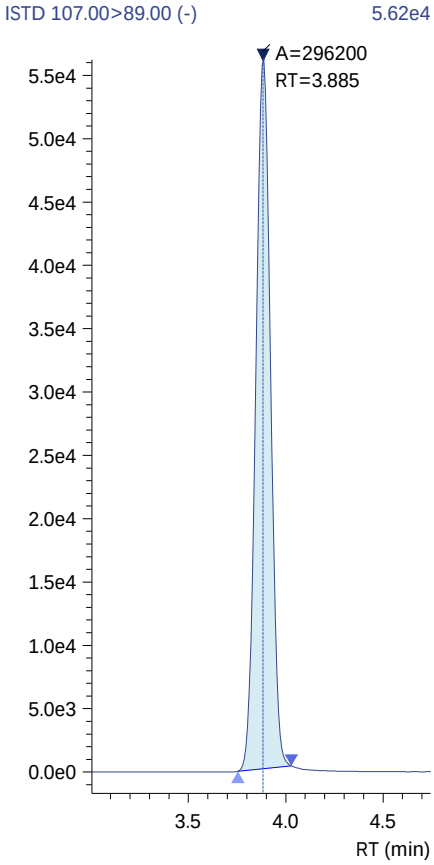
Perchlorate

Conc 1.9213
R#1 32.32 (34.02)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE6

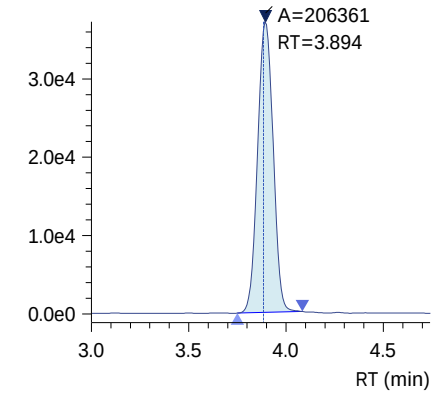
Sample ID: PERCHLORATE6
Date Acquired: 12/14/2022 4:09:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_009.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.894	206361	262312	5.0202	ng/mL	101.00 >85.00	33.93	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.889	262312	262312	1.0000	ng/mL	----	----	

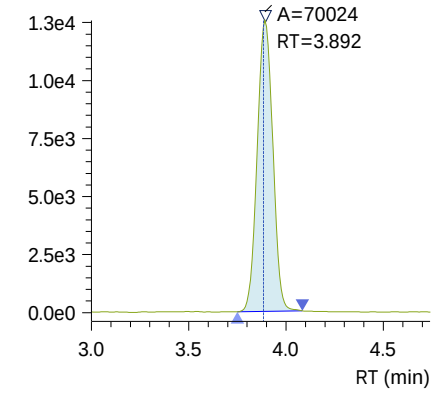
Perchlorate

Conc 5.0202
R#1 33.93 (34.02)

Q 99.00>83.00 (-) 3.73e4



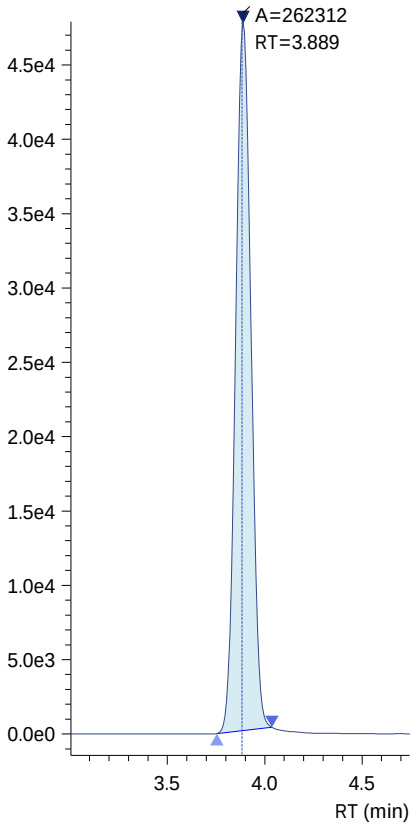
R1 101.00>85.00 (-) 1.26e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.79e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE7

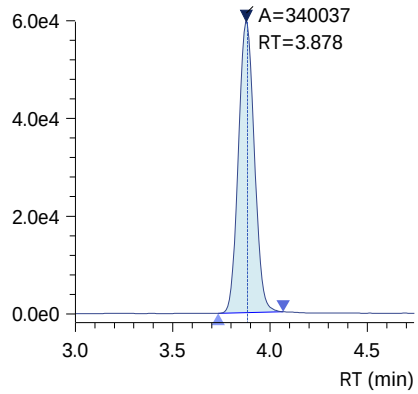
Sample ID: PERCHLORATE7
Date Acquired: 12/14/2022 4:15:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_010.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.878	340037	220702	9.8317	ng/mL	101.00 >85.00	34.05	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.875	220702	220702	1.0000	ng/mL	----	----	

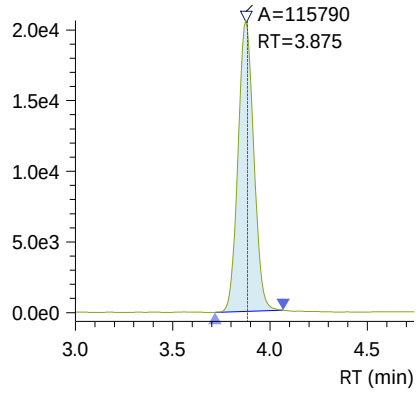
Perchlorate

Conc 9.8317
R#1 34.05 (34.02)

Q 99.00>83.00 (-) 5.98e4



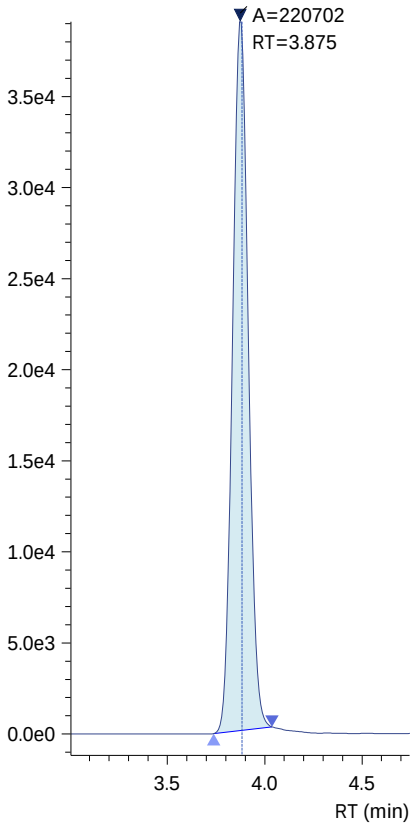
R1 101.00>85.00 (-) 2.07e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.91e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

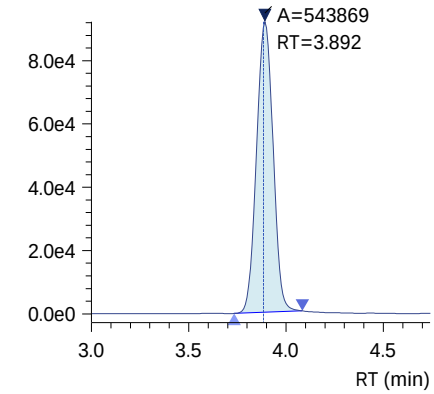
PERCHLORATE8

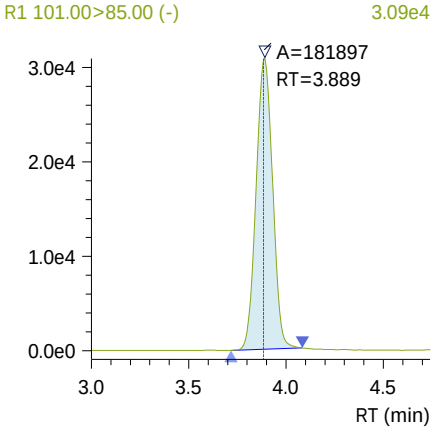
Sample ID: PERCHLORATE8
Date Acquired: 12/14/2022 4:20:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_011.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.892	543869	167819	20.6806	ng/mL	101.00 >85.00	33.45	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.888	167819	167819	1.0000	ng/mL	----	----	

Perchlorate

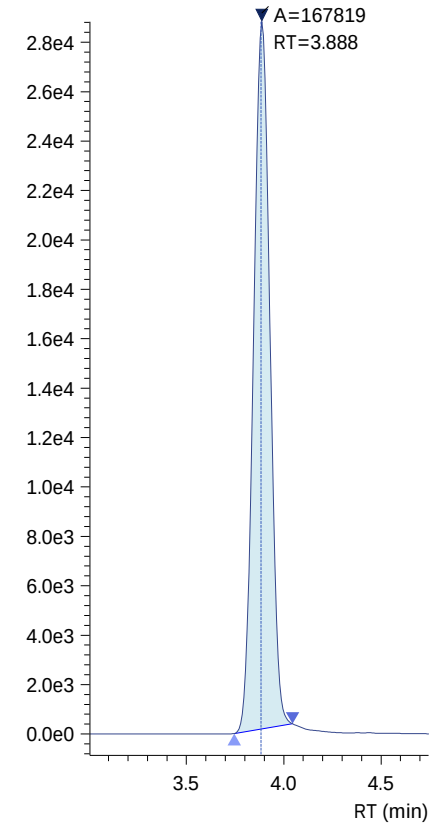
Conc 20.6806
R#1 33.45 (34.02)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE9

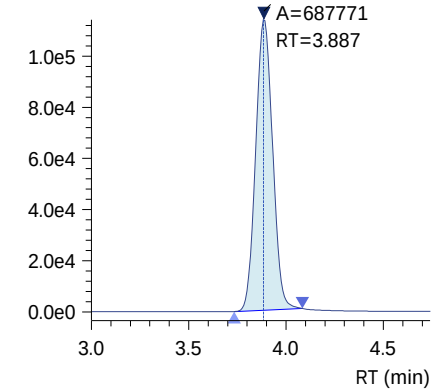
Sample ID: PERCHLORATE9
Date Acquired: 12/14/2022 4:25:58 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_012.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.887	687771	143493	30.5860	ng/mL	101.00 >85.00	33.79	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.883	143493	143493	1.0000	ng/mL	----	----	

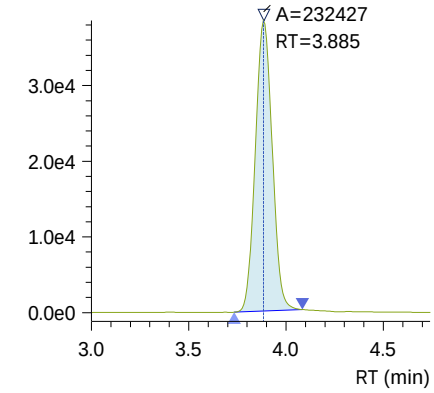
Perchlorate

Conc 30.5860
R#1 33.79 (34.02)

Q 99.00>83.00 (-) 1.14e5



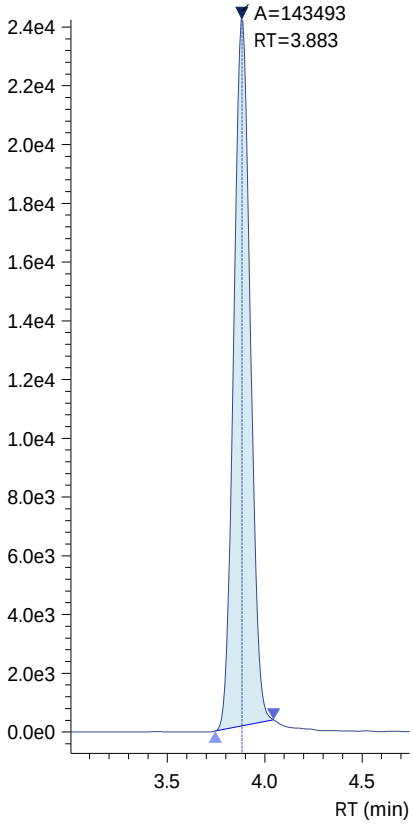
R1 101.00>85.00 (-) 3.86e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.43e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE10

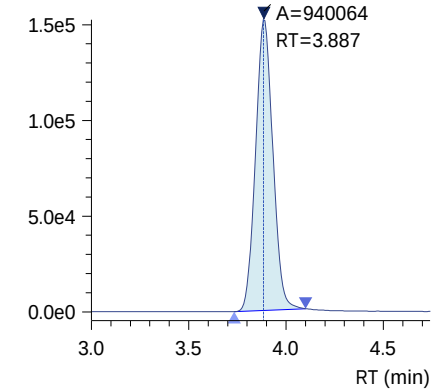
Sample ID: PERCHLORATE10
Date Acquired: 12/14/2022 4:31:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_013.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.887	9400 64	118445	50.6 464	ng/mL	101.00 >85.00	33.39	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.883	1184 45	118445	1.0000	ng/mL	----	----	

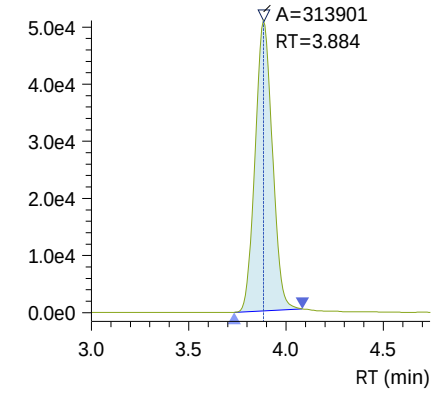
Perchlorate

Conc 50.6464
R#1 33.39 (34.02)

Q 99.00>83.00 (-) 1.53e5



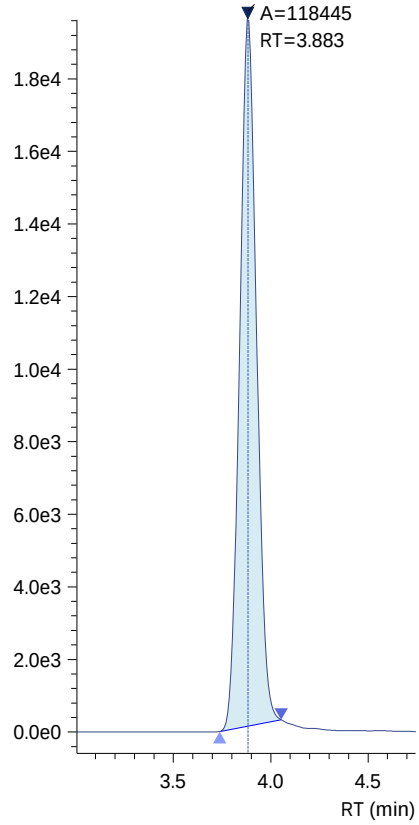
R1 101.00>85.00 (-) 5.12e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 1.96e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

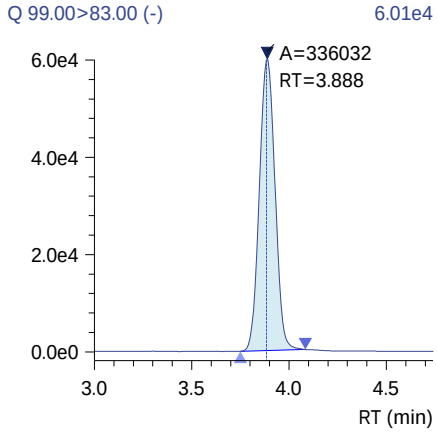
PERCHLORATEICV

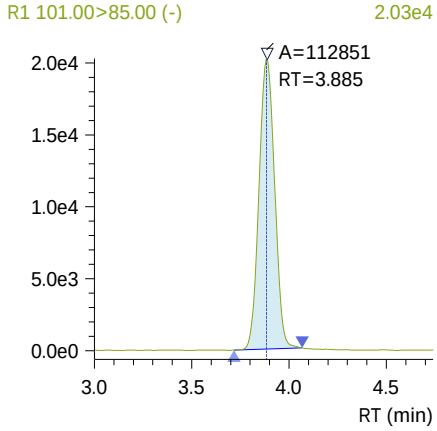
Sample ID: PERCHLORATEICV
Date Acquired: 12/14/2022 4:37:01 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_014.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.888	3360 32	229124	9.3588	ng/mL	101.00 >85.00	33.58	23.94 -44.46
Sodium Perchlorate-18O4 _IS	Auto	3.884	2291 24	229124	1.0000	ng/mL	----	----	

Perchlorate

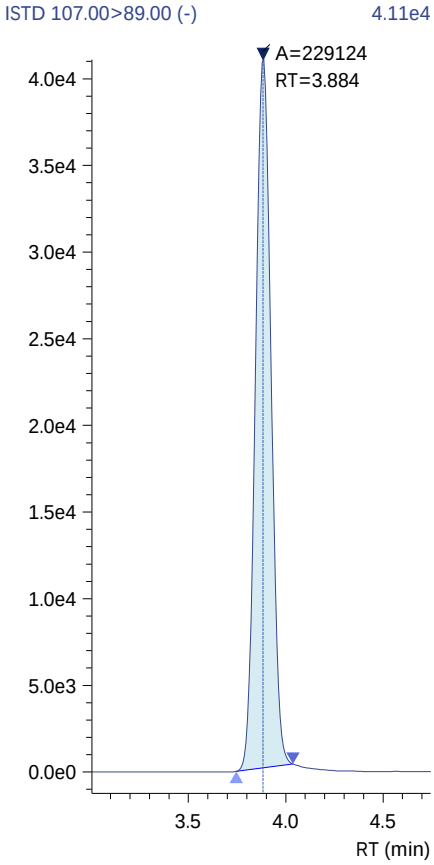
Conc 9.3588
R#1 33.58 (34.02)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20221221WATER

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : A:0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	IB		20221221W-001	Perchlorate6850c.lcm	1x	☒		12/21/2022 15:53
2	ICS		20221221W-002	Perchlorate6850c.lcm	1x	☒		12/21/2022 15:58
3	LODV		20221221W-003	Perchlorate6850c.lcm	1x	☒	225199	12/21/2022 16:04
4	PERCHLORATE7		20221221W-004	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 16:09
5	EQ2200580-01		20221221W-005	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:15
6	EQ2200580-02		20221221W-006	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:21
7	EQ2200580-03		20221221W-007	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:26
8	E2201205-001X1K		20221221W-008	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:32
9	E2201205-003X1K		20221221W-009	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:43
10	E2201205-007X1K		20221221W-010	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:49
11	E2201206-001X5		20221221W-011	Perchlorate6850c.lcm	1x	☒		12/21/2022 17:36
12	E2201205-002X200		20221221W-012	Perchlorate6850c.lcm	1x	☒		12/21/2022 17:42
13	PERCHLORATE7		20221221W-013	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 17:47
14	IB		20221221W-014	Perchlorate6850c.lcm	1x	☒		12/21/2022 17:59
15	E2201200-001		20221221W-015	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:05
16	E2201200-002		20221221W-016	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:11
17	E2201200-003		20221221W-017	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:17
18	E2201200-004		20221221W-018	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:22
19	E2201200-005		20221221W-019	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:28
20	E2201200-006		20221221W-020	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:34
21	PERCHLORATE7		20221221W-021	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 18:39
22	E2201205-004		20221221W-022	Perchlorate6850c.lcm	1x	☒	DNU-IS	12/21/2022 18:45
23	E2201205-005		20221221W-023	Perchlorate6850c.lcm	1x	☒	DNU-IS	12/21/2022 18:51
24	E2201205-006		20221221W-024	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:57
25	E2201205-008		20221221W-025	Perchlorate6850c.lcm	1x	☒		12/21/2022 19:02
26	E2201206-002		20221221W-026	Perchlorate6850c.lcm	1x	☒	DNU-CONFIRM PEAK	12/21/2022 19:08
27	E2201206-003		20221221W-027	Perchlorate6850c.lcm	1x	☒	DNU-CONFIRM PEAK	12/21/2022 19:14
28	R2211772-004		20221221W-028	Perchlorate6850c.lcm	1x	☒		12/21/2022 19:19
29	R2211773-013		20221221W-029	Perchlorate6850c.lcm	1x	☒		12/21/2022 19:25
30	PERCHLORATE7		20221221W-030	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 19:31

20221222WATER

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : **A:**0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	IB		20221221W-001	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:18
2	ICS		20221222W-002	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:23
3	LODV		20221222W-003	Perchlorate6850c.lcm	1x	☒	225199	12/22/2022 8:28
4	PERCHLORATE7		20221222W-004	Perchlorate6850c.lcm	1x	☒	226067	12/22/2022 8:34
5	E2201205-005		20221222W-005	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:45
6	E2201205-004		20221222W-006	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:51
7	E2201206-002		20221222W-007	Perchlorate6850c.lcm	1x	☒		12/22/2022 9:08
8	E2201206-003		20221222W-008	Perchlorate6850c.lcm	1x	☒		12/22/2022 9:16
9	PERCHLORATE7		20221222W-009	Perchlorate6850c.lcm	1x	☒	226067	12/22/2022 9:27

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-004

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1579	0.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-013

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1575	0.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-021

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1575	0.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-030

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.2	0.1567	0.1590	1.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/22/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\New folder\20221222W-004

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789389
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1584	1.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/22/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\New folder\20221222W-009

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789389
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.96	0.1567	0.1558	-0.6	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/21/22 16:09

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-004	**Lab Code:**	EQ2200588-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-01	226,860	3.72
Method Blank	EQ2200580-01	338,792	3.73
Lab Control Sample	EQ2200580-02	322,701	3.73
Duplicate Lab Control Sample	EQ2200580-03	328,166	3.73
18CPTMW04_121622	E2201206-001	183,810	3.74

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/21/22 17:47

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-013	**Lab Code:**	EQ2200588-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-02	237,291	3.72

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/21/22 18:39

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-021	**Lab Code:**	EQ2200588-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-03	240,095	3.72

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/21/22 19:31

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-030	**Lab Code:**	EQ2200588-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-04	239,454	3.71

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/22/22 08:34

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\New folder\20221222W-004	**Lab Code:**	EQ2200589-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789389
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200589-01	256,146	3.71
18CPTMW04SW_121622	E2201206-002	355,678	3.70
MW2_121622	E2201206-003	320,329	3.70

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/22/22 09:27

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\New folder\20221222W-009	**Lab Code:**	EQ2200589-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789389
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200589-02	234,742	3.71

Results flagged with an asterisk (*) indicate values outside control criteria.

Insight Report

Printed at 12/22/2022 9:51:13 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221221\12212022 WATER.damlp

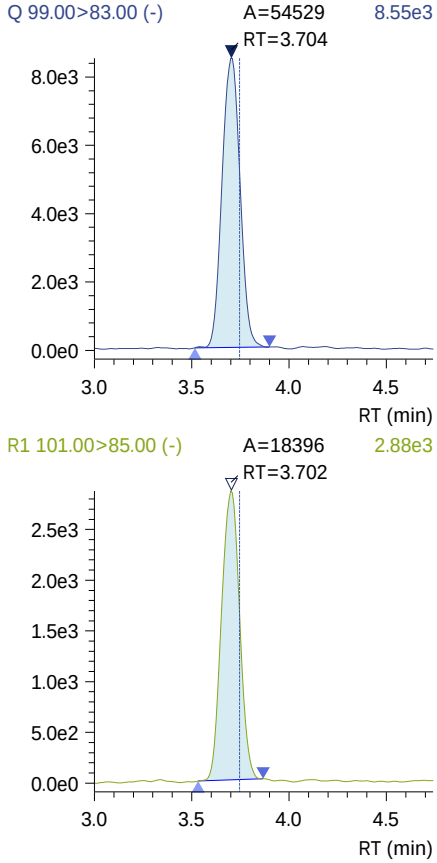
ICS

Sample ID: ICS
Date Acquired: 12/21/2022 3:58:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-002.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.704	54529	342386	1.0187	ng/mL	101.00 >85.00	33.74	23.68 -43.97
Sodium Perchlorate-18O4 _IS	Auto	3.698	342386	342386	1.0000	ng/mL	----	----	

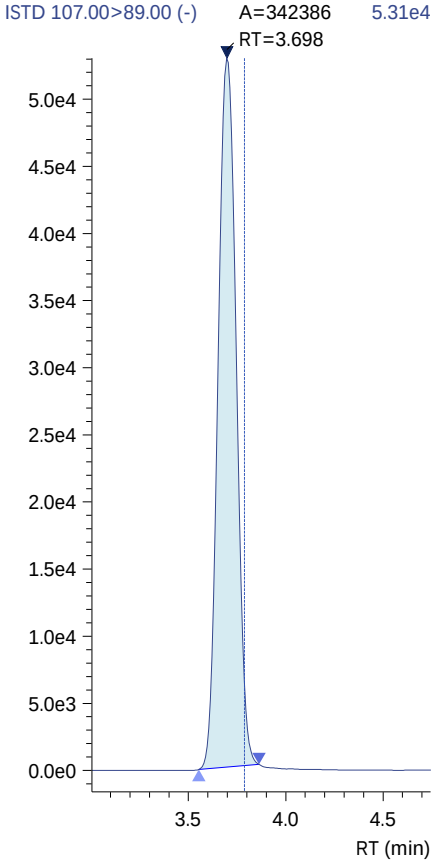
Perchlorate

Conc 1.0187
R#1 33.74 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

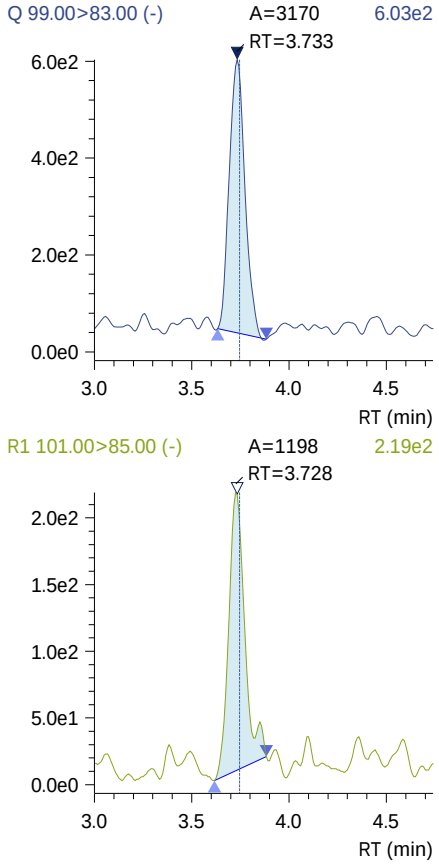
LODV

Sample ID: LODV
Date Acquired: 12/21/2022 4:04:18 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-003.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.733	3170	359225	0.0564	ng/mL	101.00 >85.00	37.79	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.727	3592 25	359225	1.0000	ng/mL	----	----	

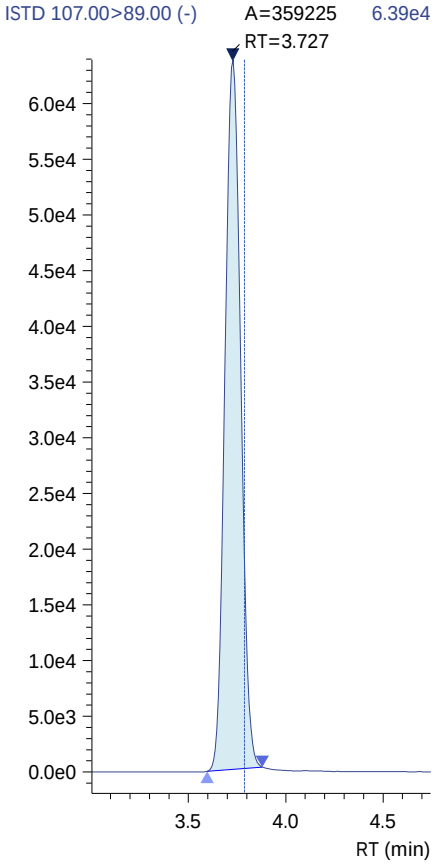
Perchlorate

Conc 0.0564
R#1 37.79 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

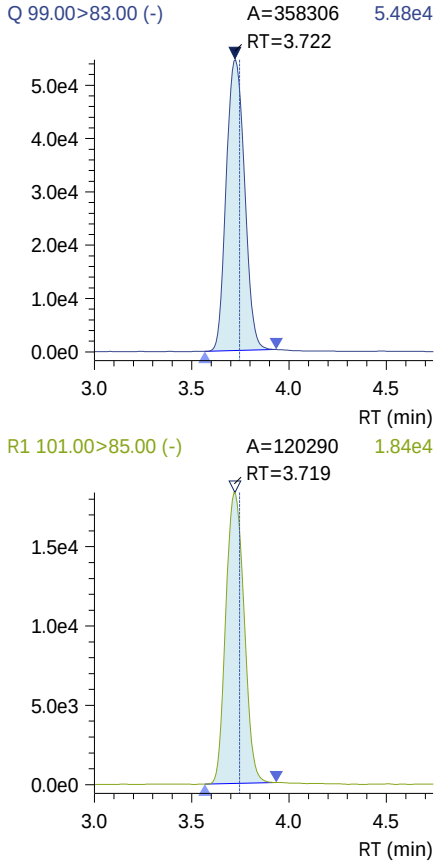
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/21/2022 4:09:58 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-004.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.722	358306	226860	10.1026	ng/mL	101.00 >85.00	33.57	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.717	226860	226860	1.0000	ng/mL	----	----	

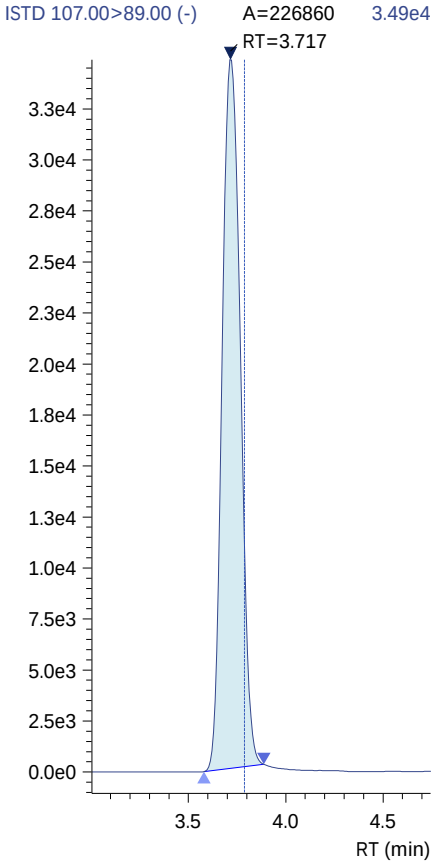
Perchlorate

Conc 10.1026
R#1 33.57 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

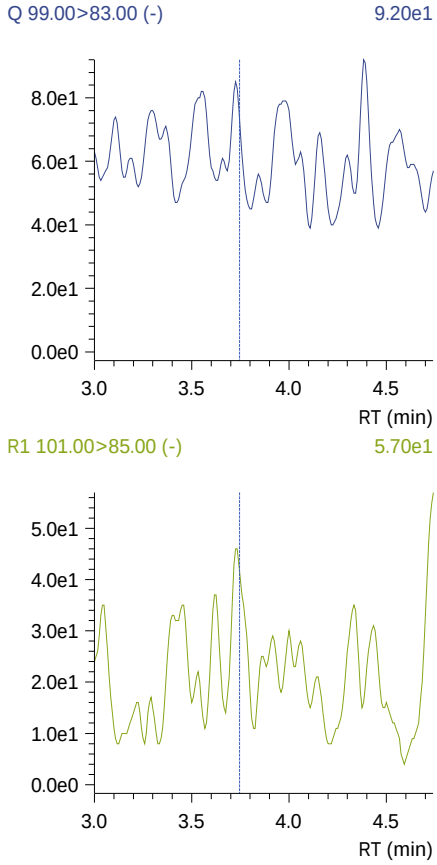
EQ2200580-01

Sample ID: EQ2200580-01
Date Acquired: 12/21/2022 4:15:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-005.lcd
Vial: 25 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	338792	----	ng/mL	101.00 >85.00	0.00	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.734	338792	338792	1.0000	ng/mL	----	----	

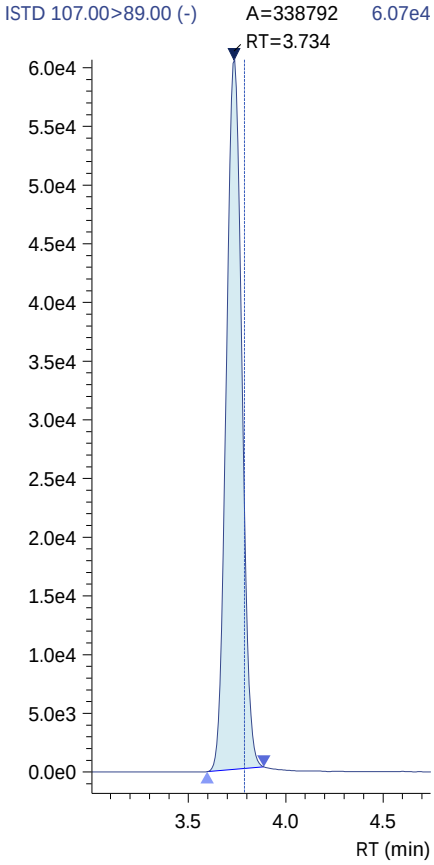
Perchlorate

Conc ----
R#1 0.00 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

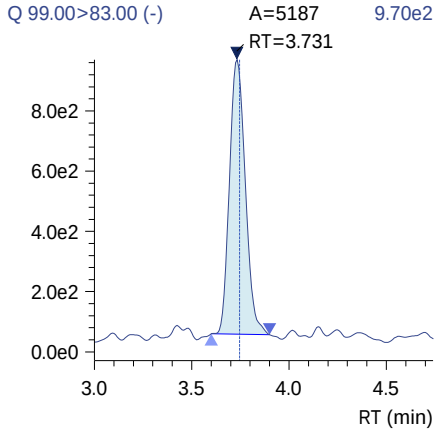
EQ2200580-02

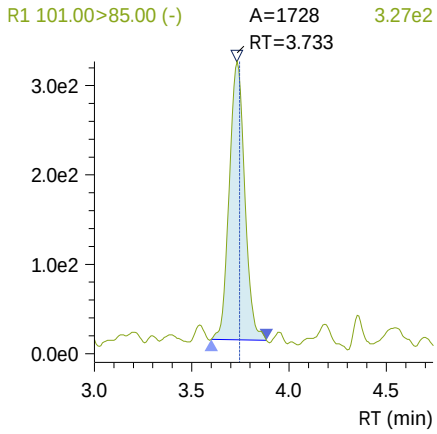
Sample ID: EQ2200580-02
Date Acquired: 12/21/2022 4:21:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-006.lcd
Vial: 26 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.731	5187	322701	0.1028	ng/mL	101.00 >85.00	33.31	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.732	322701	322701	1.0000	ng/mL	----	----	

Perchlorate

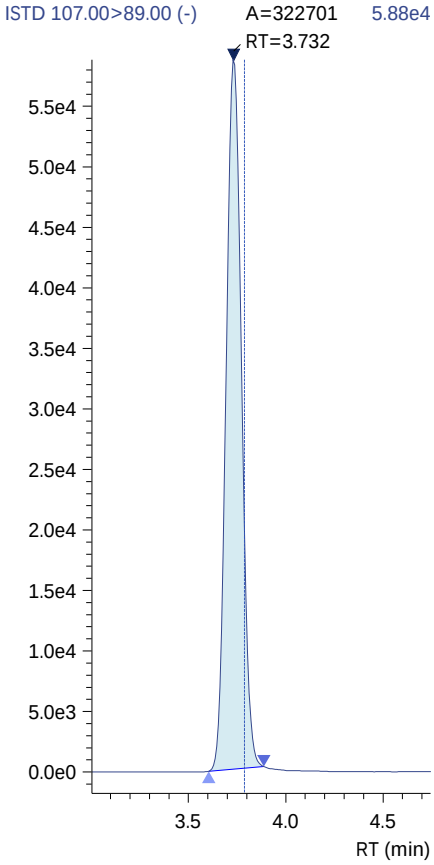
Conc 0.1028
R#1 33.31 (33.82)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

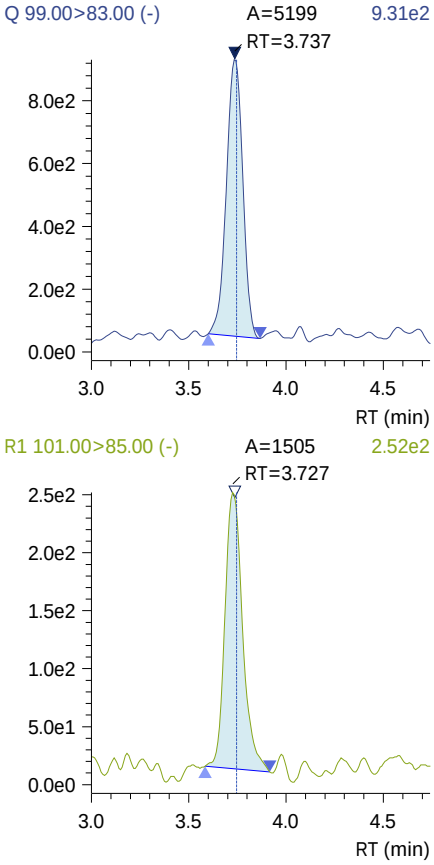
EQ2200580-03

Sample ID: EQ2200580-03
Date Acquired: 12/21/2022 4:26:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-007.lcd
Vial: 27 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.737	5199	328166	0.1013	ng/mL	101.00 >85.00	28.96	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.732	3281 66	328166	1.0000	ng/mL	----	----	

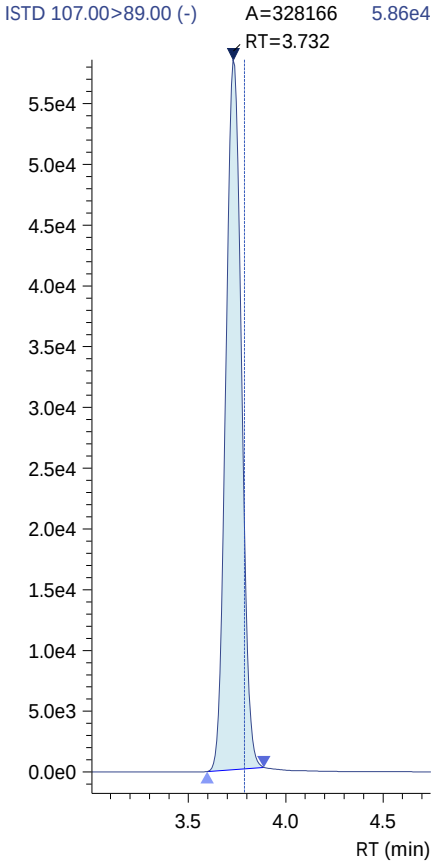
Perchlorate

Conc 0.1013
R#1 28.96 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

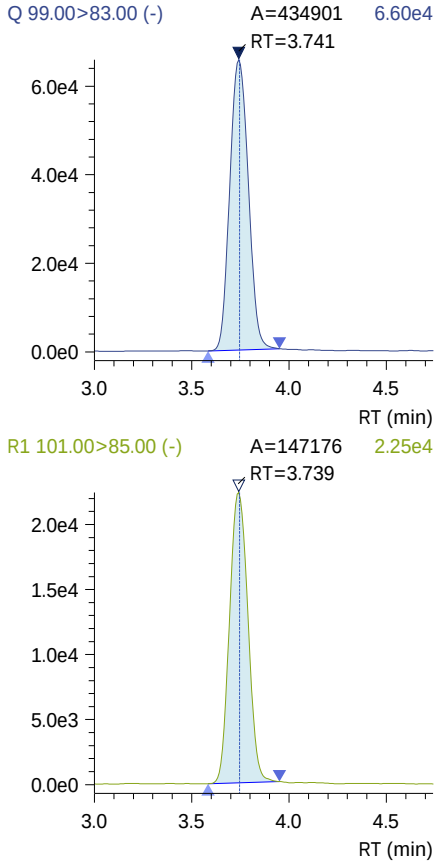
E2201206-001X5

Sample ID: E2201206-001
Date Acquired: 12/21/2022 5:36:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-011.lcd
Vial: 42 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.741	434901	183810	15.1342	ng/mL	101.00 >85.00	33.84	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.736	183810	183810	1.0000	ng/mL	----	----	

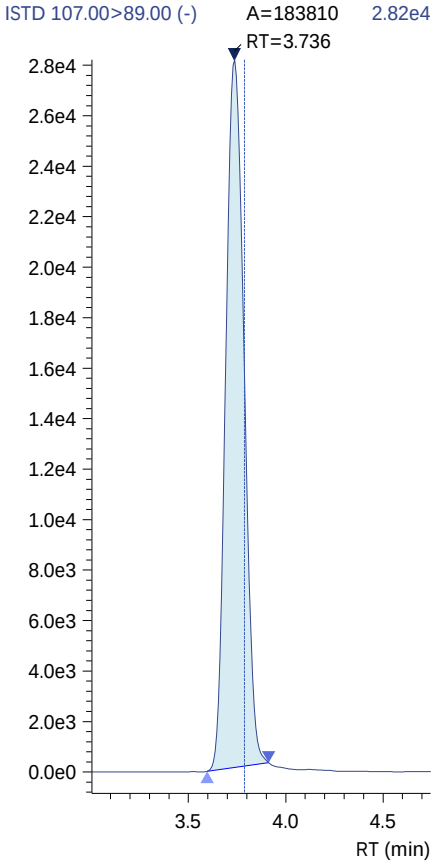
Perchlorate

Conc 15.1342
R#1 33.84 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

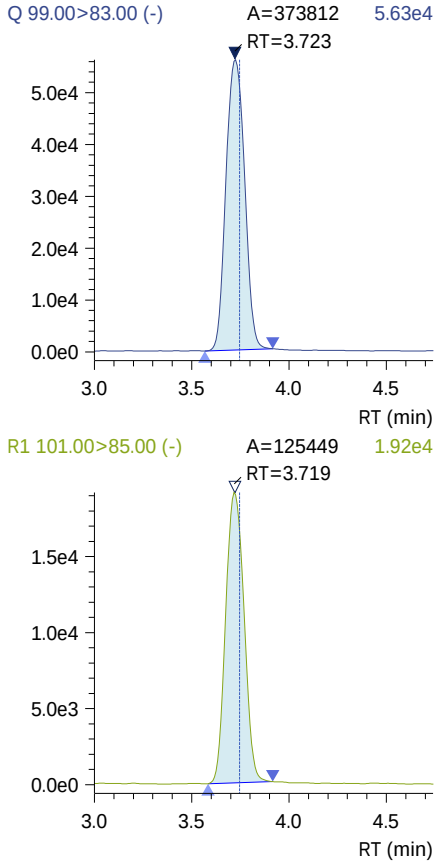
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/21/2022 5:47:50 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-013.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.723	3738 12	237291	10.0 765	ng/mL	101.00 >85.00	33.56	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.717	2372 91	237291	1.0000	ng/mL	----	----	

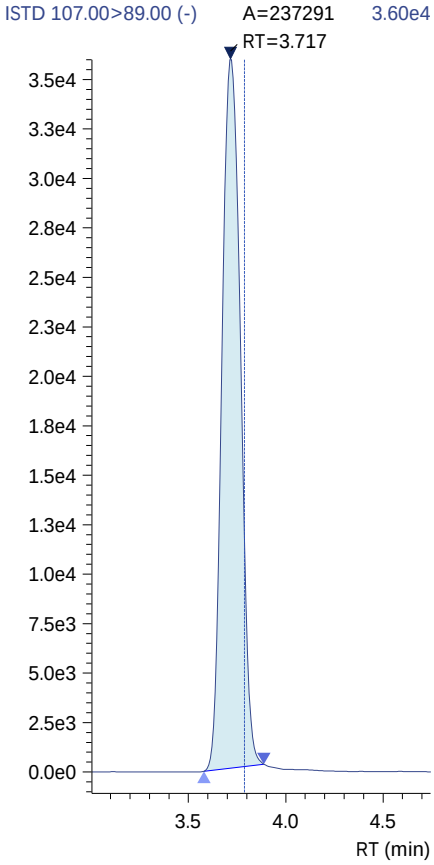
Perchlorate

Conc 10.0765
R#1 33.56 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221222\12222022WATER.damlp

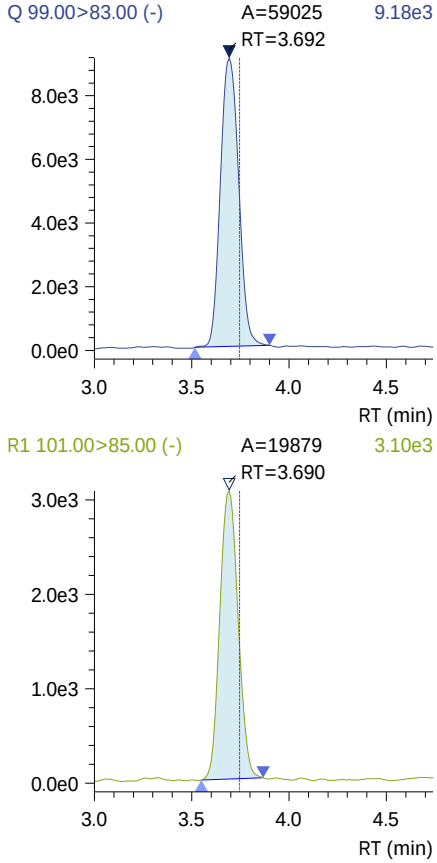
ICS

Sample ID: ICS
Date Acquired: 12/22/2022 8:23:15 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-002.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.692	59025	372945	1.0123	ng/mL	101.00 >85.00	33.68	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.690	372945	372945	1.0000	ng/mL	----	----	

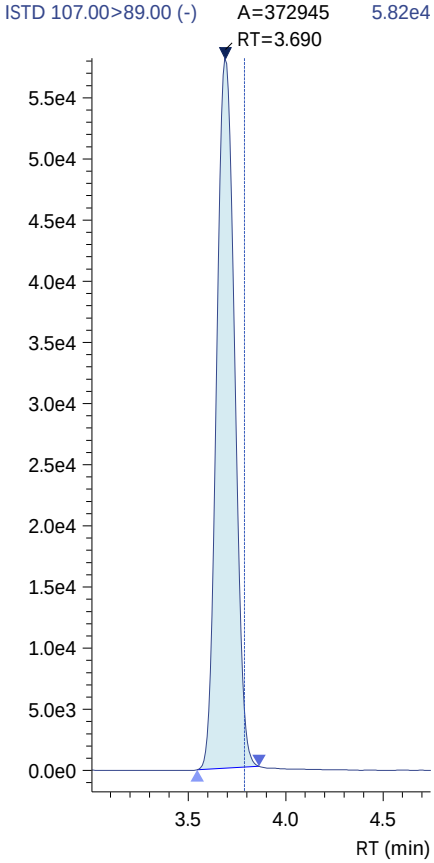
Perchlorate

Conc 1.0123
R#1 33.68 (33.58)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

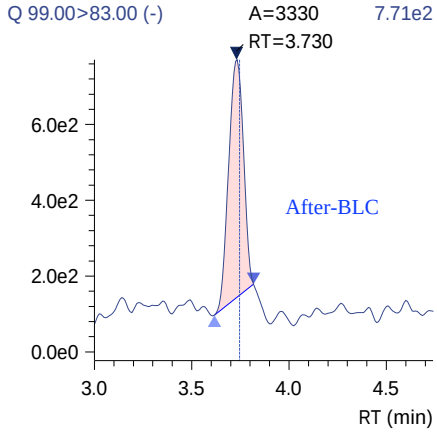
LODV

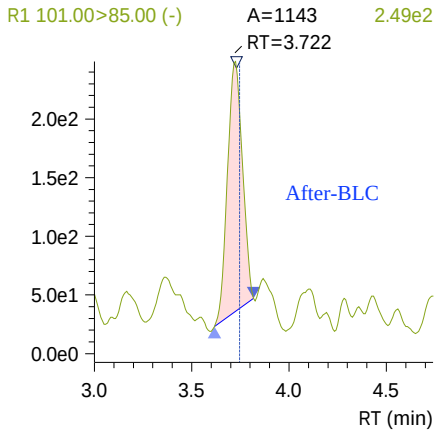
Sample ID: LODV
Date Acquired: 12/22/2022 8:28:56 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-003.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.730	3330	370994	0.0574	ng/mL	101.00 >85.00	34.32	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.721	370994	370994	1.0000	ng/mL	----	----	

Perchlorate

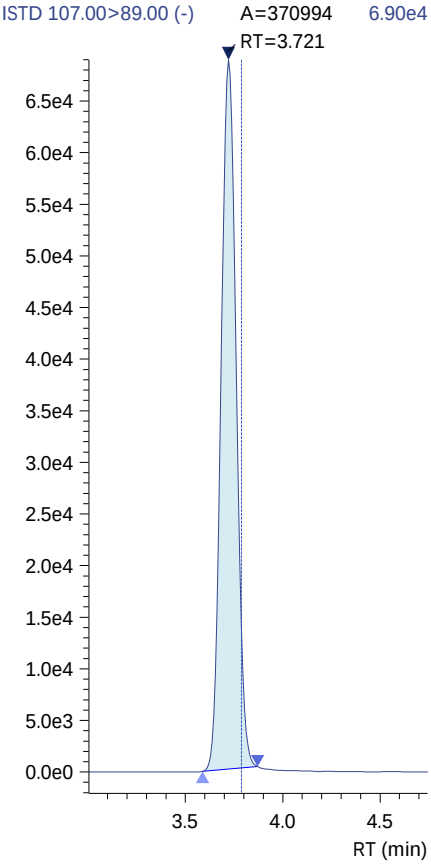
Conc 0.0574
R#1 34.32 (33.58)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

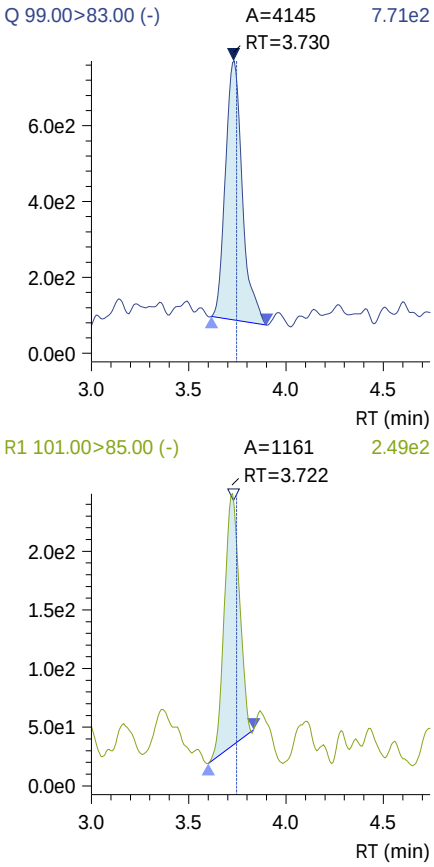
Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221222\12222022WATER.damlp

LODV

Sample ID: LODV
Date Acquired: 12/22/2022 8:28:56 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-003.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

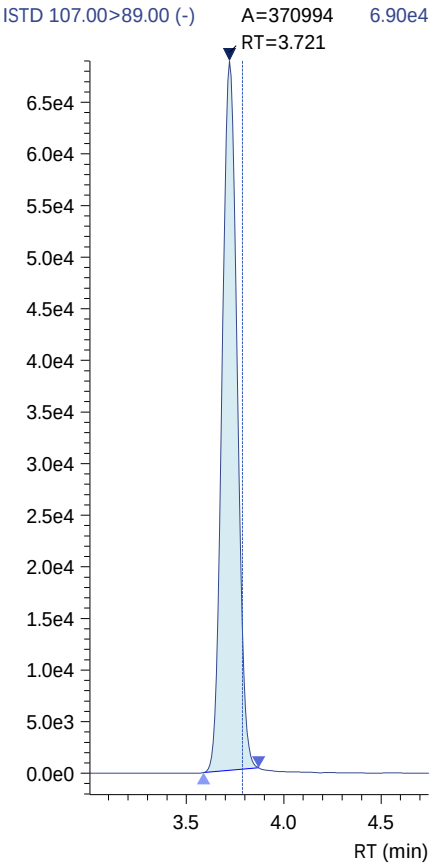
Perchlorate

Conc 0.0715
R#1 28.01 (33.58)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

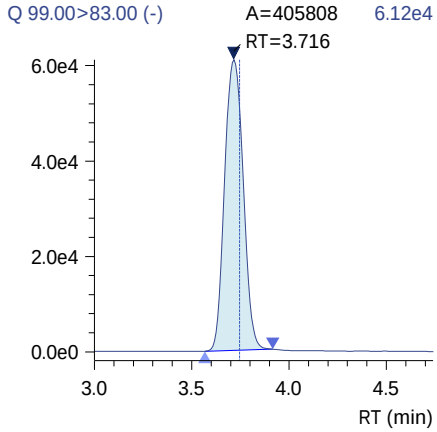
PERCHLORATE7

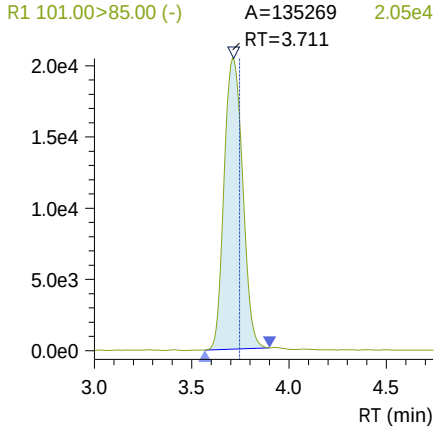
Sample ID: PERCHLORATE7
Date Acquired: 12/22/2022 8:34:34 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-004.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.716	405808	256146	10.1338	ng/mL	101.00 >85.00	33.33	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.708	256146	256146	1.0000	ng/mL	----	----	

Perchlorate

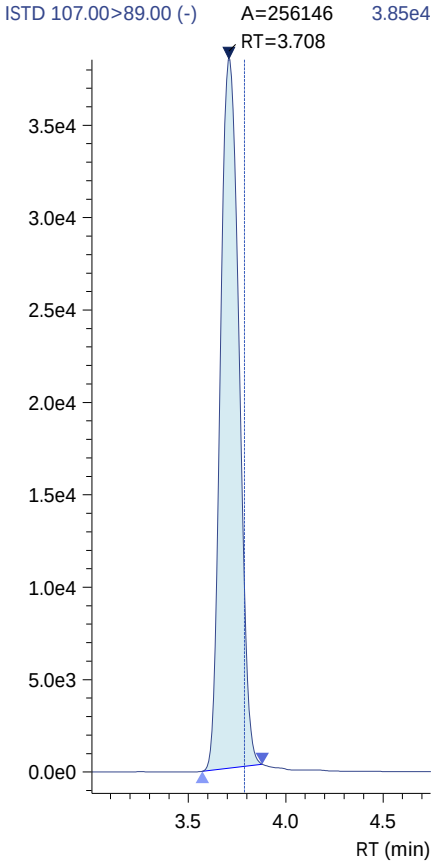
Conc 10.1338
R#1 33.33 (33.58)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

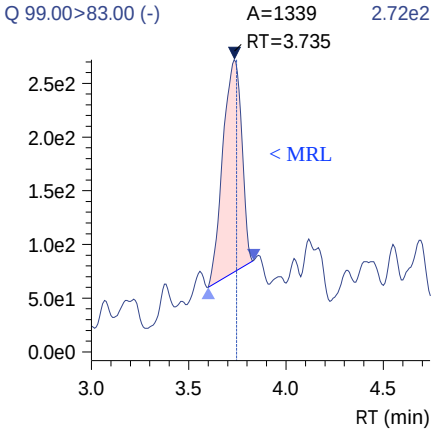
E2201206-002

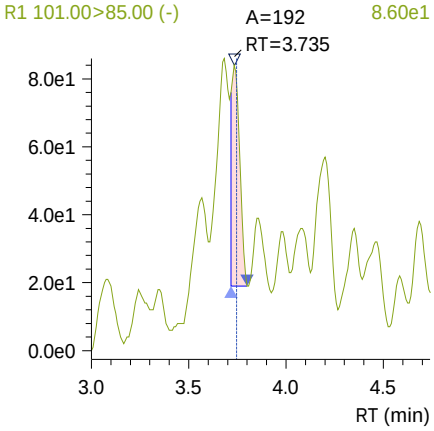
Sample ID: E2201206-002
Date Acquired: 12/22/2022 9:08:46 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-007.lcd
Vial: 43 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.735	1339	355678	0.0241	ng/mL	101.00 >85.00	14.32	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.702	355678	355678	1.0000	ng/mL	----	----	

Perchlorate

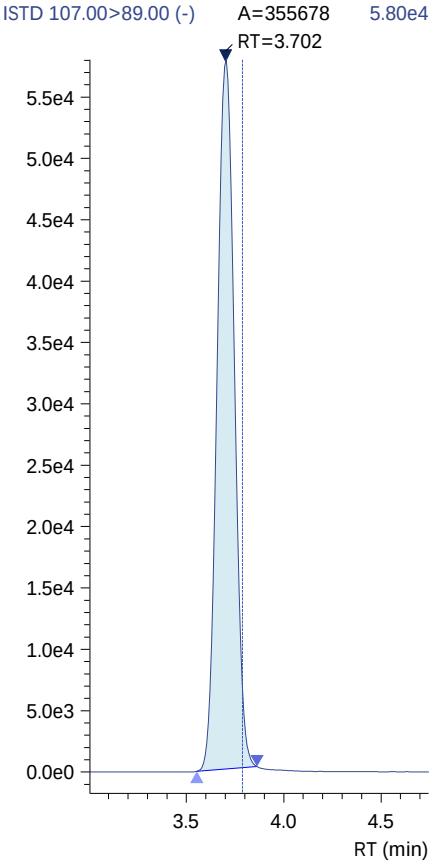
Conc 0.0241
R#1 14.32 (33.58)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:58:38 AM

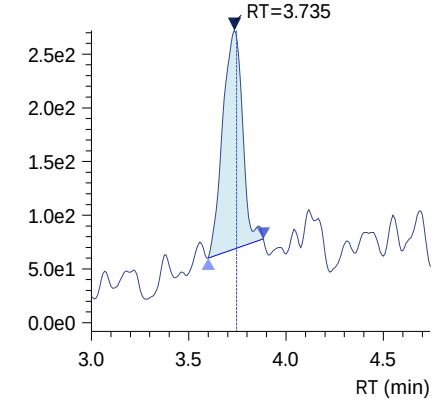
E2201206-002

Sample ID: E2201206-002
Date Acquired: 12/22/2022 9:08:46 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-007.lcd
Vial: 43 | Inj. Volume: 25.0000uL | Tray: 5

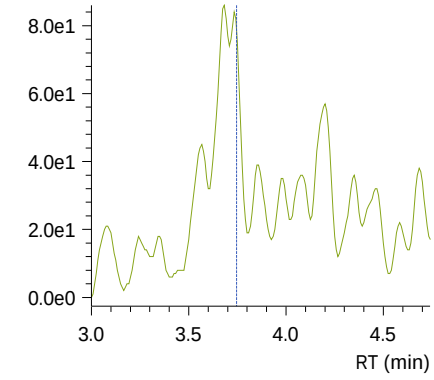
Perchlorate

Conc 0.0259
R#1 0.00 (33.58)

Q 99.00>83.00 (-) A=1442 2.72e2



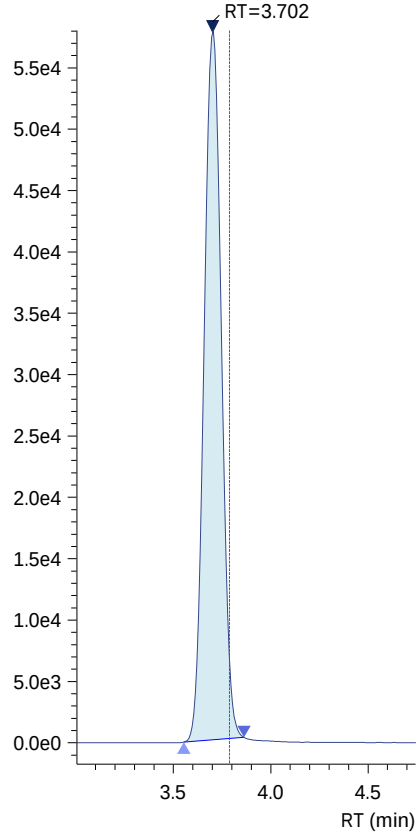
R1 101.00>85.00 (-) 8.60e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=355678 5.80e4



Insight Report

Printed at 12/22/2022 9:57:36 AM

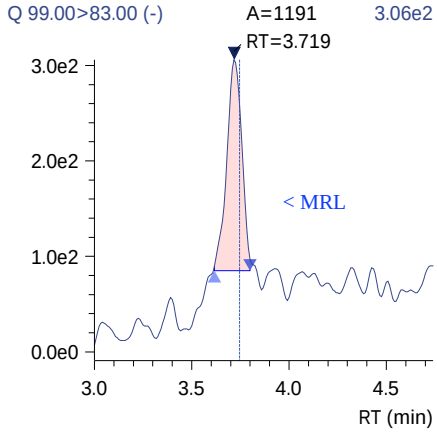
E2201206-003

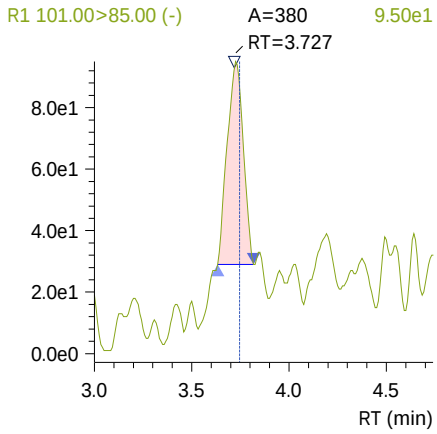
Sample ID: E2201206-003
Date Acquired: 12/22/2022 9:16:10 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-008.lcd
Vial: 44 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.719	1191	320329	0.0238	ng/mL	101.00 >85.00	31.90	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.697	320329	320329	1.0000	ng/mL	----	----	

Perchlorate

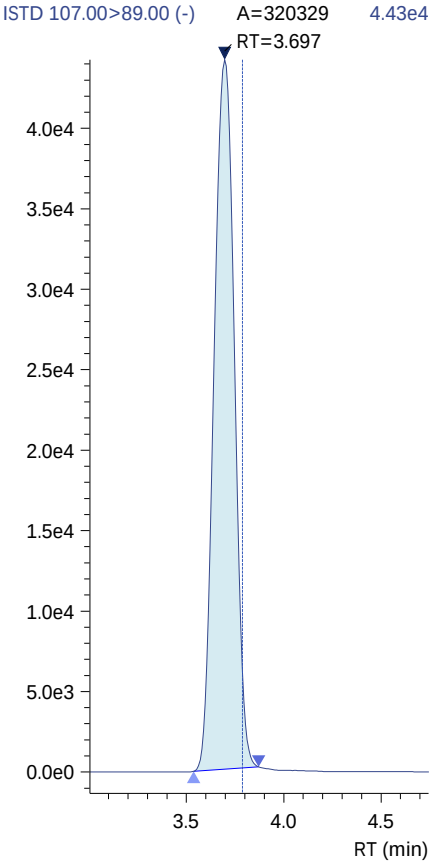
Conc 0.0238
R#1 31.90 (33.58)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

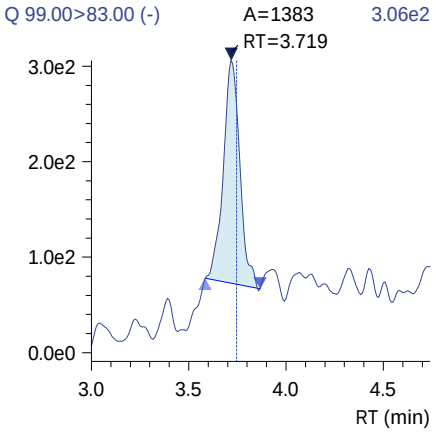
Printed at 12/22/2022 9:58:38 AM

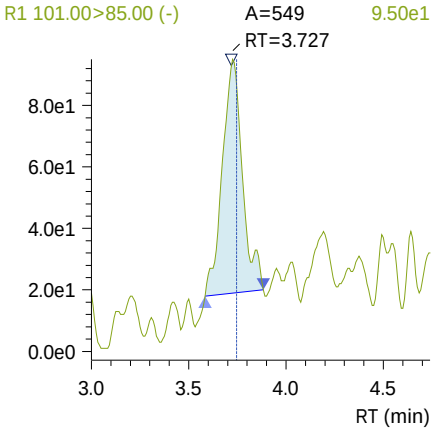
E2201206-003

Sample ID: E2201206-003
Date Acquired: 12/22/2022 9:16:10 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-008.lcd
Vial: 44 | Inj. Volume: 25.0000uL | Tray: 5

Perchlorate

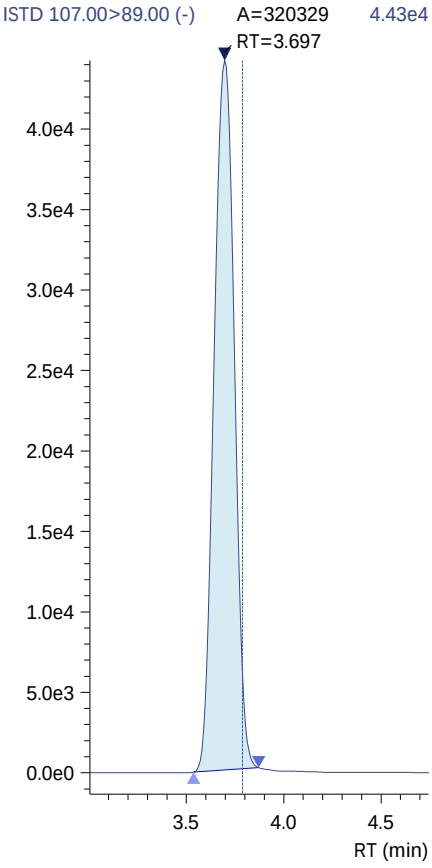
Conc 0.0276
R#1 39.65 (33.58)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Manual Integration - Before

Insight Report

Printed at 12/22/2022 9:57:36 AM

PERCHLORATE7

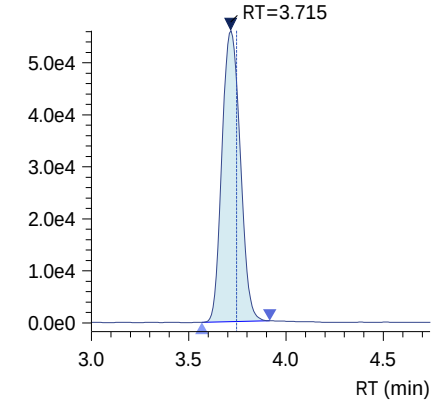
Sample ID: PERCHLORATE7
Date Acquired: 12/22/2022 9:27:33 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-009.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.715	3656 17	234742	9.9626	ng/mL	101.00 >85.00	33.83	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.710	2347 42	234742	1.0000	ng/mL	----	----	

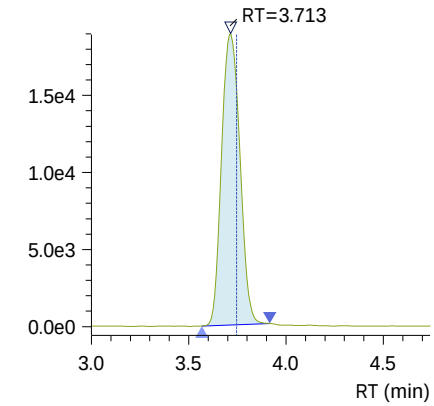
Perchlorate

Conc 9.9626
R#1 33.83 (33.58)

Q 99.00>83.00 (-) A=365617 5.62e4



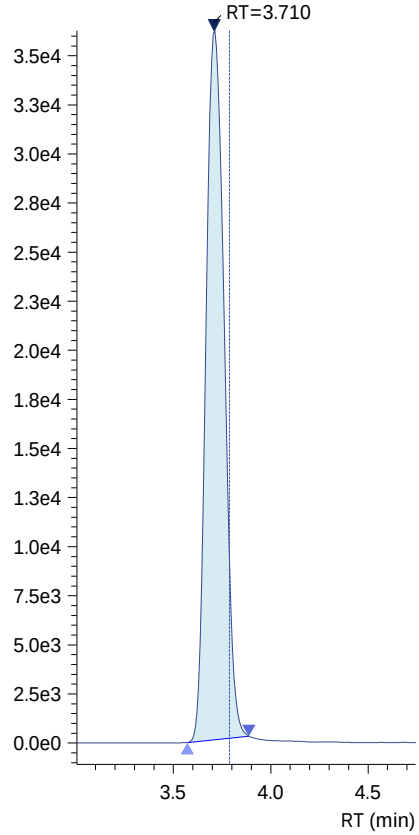
R1 101.00>85.00 (-) A=123693 1.90e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=234742 3.63e4



HS22121096-MSVOA-SW8260

ALS WO# HS22121096

right solutions.
right partner.

Form 1

Organic Analysis Data Sheet

Volatiles by by EPA 8260

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

HS22121096-01	Collected	Received	Matrix	Basis
18CPTMW04_121622	12/16/22 07:25	12/19/22 09:05	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,1,1-Trichloroethane	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,1,2,2-Tetrachloroethane	ug/L	10	U	5.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,1,2-Trichloroethane	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,1-Dichloroethane	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,1-Dichloroethene	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,1-Dichloropropene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,2,3-Trichlorobenzene	ug/L	10	U	4.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,2,3-Trichloropropane	ug/L	10	U	5.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,2,4-Trichlorobenzene	ug/L	10	U	5.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,2,4-Trimethylbenzene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,2-Dibromo-3-	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,2-Dibromoethane	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,2-Dichlorobenzene	ug/L	10	U	5.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,2-Dichloroethane	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,2-Dichloropropane	ug/L	10	U	5.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,3,5-Trimethylbenzene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,3-Dichlorobenzene	ug/L	10	U	4.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,3-Dichloropropane	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
1,4-Dichlorobenzene	ug/L	10	U	4.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
2,2-Dichloropropane	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
2-Butanone	ug/L	20	U	5.0	20	20	10	12/22/22 13:09	VOA6_424675	X122210
2-Chlorotoluene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
2-Hexanone	ug/L	20	U	10	20	20	10	12/22/22 13:09	VOA6_424675	X122210
4-Chlorotoluene	ug/L	10	U	4.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
4-Isopropyltoluene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
4-Methyl-2-pentanone	ug/L	20	U	7.0	20	20	10	12/22/22 13:09	VOA6_424675	X122210
Acetone	ug/L	20	U	4.0	20	20	10	12/22/22 13:09	VOA6_424675	X122210
Benzene	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Bromobenzene	ug/L	10	U	4.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Bromochloromethane	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Bromodichloromethane	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Bromoform	ug/L	10	U	4.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

HS22121096-01	Collected	Received	Matrix	Basis
18CPTMW04_121622	12/16/22 07:25	12/19/22 09:05	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	10	U	4.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Carbon disulfide	ug/L	20	U	6.0	20	20	10	12/22/22 13:09	VOA6_424675	X122210
Carbon tetrachloride	ug/L	10	U	5.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Chlorobenzene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Chloroethane	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Chloroform	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Chloromethane	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
cis-1,2-Dichloroethene	ug/L	12		2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
cis-1,3-Dichloropropene	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Dibromochloromethane	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Dibromomethane	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Dichlorodifluoromethane	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Ethylbenzene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Hexachlorobutadiene	ug/L	10	U	10	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Isopropylbenzene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
m,p-Xylene	ug/L	20	U	5.0	20	20	10	12/22/22 13:09	VOA6_424675	X122210
Methylene chloride	ug/L	20	U	4.0	20	20	10	12/22/22 13:09	VOA6_424675	X122210
Naphthalene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
n-Butylbenzene	ug/L	10	U	4.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
n-Propylbenzene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
o-Xylene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
sec-Butylbenzene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Styrene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
tert-Butylbenzene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Tetrachloroethene	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Toluene	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
trans-1,2-Dichloroethene	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
trans-1,3-Dichloropropene	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Trichloroethene	ug/L	290		2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Trichlorofluoromethane	ug/L	10	U	3.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210
Vinyl chloride	ug/L	10	U	2.0	10	10	10	12/22/22 13:09	VOA6_424675	X122210

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

HS22121096-02	Collected	Received	Matrix	Basis
18CPTMW04SW_121622	12/16/22 08:15	12/19/22 09:05	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	12/22/22 12:47	VOA6_424675	X122209
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	12/22/22 12:47	VOA6_424675	X122209
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	12/22/22 12:47	VOA6_424675	X122209
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	12/22/22 12:47	VOA6_424675	X122209
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

HS22121096-02	Collected	Received	Matrix	Basis
18CPTMW04SW_121622	12/16/22 08:15	12/19/22 09:05	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	12/22/22 12:47	VOA6_424675	X122209
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	12/22/22 12:47	VOA6_424675	X122209
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	12/22/22 12:47	VOA6_424675	X122209
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:47	VOA6_424675	X122209

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

HS22121096-03	Collected	Received	Matrix	Basis
MW2_121522	12/16/22 09:05	12/19/22 09:05	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,1,1-Trichloroethane	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,1,2,2-Tetrachloroethane	ug/L	25	U	12	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,1,2-Trichloroethane	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,1-Dichloroethane	ug/L	20	J	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,1-Dichloroethene	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,1-Dichloropropene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,2,3-Trichlorobenzene	ug/L	25	U	10	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,2,3-Trichloropropane	ug/L	25	U	12	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,2,4-Trichlorobenzene	ug/L	25	U	12	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,2,4-Trimethylbenzene	ug/L	13	J	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,2-Dibromo-3-	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,2-Dibromoethane	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,2-Dichlorobenzene	ug/L	25	U	12	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,2-Dichloroethane	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,2-Dichloropropane	ug/L	25	U	12	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,3,5-Trimethylbenzene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,3-Dichlorobenzene	ug/L	25	U	10	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,3-Dichloropropane	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
1,4-Dichlorobenzene	ug/L	25	U	10	25	25	25	12/22/22 13:30	VOA6_424675	X122211
2,2-Dichloropropane	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
2-Butanone	ug/L	50	U	12	50	50	25	12/22/22 13:30	VOA6_424675	X122211
2-Chlorotoluene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
2-Hexanone	ug/L	50	U	25	50	50	25	12/22/22 13:30	VOA6_424675	X122211
4-Chlorotoluene	ug/L	25	U	10	25	25	25	12/22/22 13:30	VOA6_424675	X122211
4-Isopropyltoluene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
4-Methyl-2-pentanone	ug/L	50	U	18	50	50	25	12/22/22 13:30	VOA6_424675	X122211
Acetone	ug/L	50	U	10	50	50	25	12/22/22 13:30	VOA6_424675	X122211
Benzene	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Bromobenzene	ug/L	25	U	10	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Bromochloromethane	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Bromodichloromethane	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Bromoform	ug/L	25	U	10	25	25	25	12/22/22 13:30	VOA6_424675	X122211

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

HS22121096-03	Collected	Received	Matrix	Basis
MW2_121522	12/16/22 09:05	12/19/22 09:05	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	25	U	10	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Carbon disulfide	ug/L	50	U	15	50	50	25	12/22/22 13:30	VOA6_424675	X122211
Carbon tetrachloride	ug/L	25	U	12	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Chlorobenzene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Chloroethane	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Chloroform	ug/L	43		5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Chloromethane	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
cis-1,2-Dichloroethene	ug/L	30,000		50	250	250	250	12/22/22 14:33	VOA6_424675	X122214
cis-1,3-Dichloropropene	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Dibromochloromethane	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Dibromomethane	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Dichlorodifluoromethane	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Ethylbenzene	ug/L	15	J	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Hexachlorobutadiene	ug/L	25	U	25	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Isopropylbenzene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
m,p-Xylene	ug/L	17	J	12	50	50	25	12/22/22 13:30	VOA6_424675	X122211
Methylene chloride	ug/L	130		10	50	50	25	12/22/22 13:30	VOA6_424675	X122211
Naphthalene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
n-Butylbenzene	ug/L	25	U	10	25	25	25	12/22/22 13:30	VOA6_424675	X122211
n-Propylbenzene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
o-Xylene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
sec-Butylbenzene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Styrene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
tert-Butylbenzene	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Tetrachloroethene	ug/L	30		7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Toluene	ug/L	21	J	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
trans-1,2-Dichloroethene	ug/L	65		5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
trans-1,3-Dichloropropene	ug/L	25	U	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Trichloroethene	ug/L	3,500		5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Trichlorofluoromethane	ug/L	25	U	7.5	25	25	25	12/22/22 13:30	VOA6_424675	X122211
Vinyl chloride	ug/L	20	J	5.0	25	25	25	12/22/22 13:30	VOA6_424675	X122211

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

HS22121096-04	Collected	Received	Matrix	Basis
Trip Blank	12/16/22 00:00	12/19/22 09:05	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	12/22/22 12:26	VOA6_424675	X122208
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	12/22/22 12:26	VOA6_424675	X122208
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	12/22/22 12:26	VOA6_424675	X122208
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	12/22/22 12:26	VOA6_424675	X122208
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

HS22121096-04	Collected	Received	Matrix	Basis
Trip Blank	12/16/22 00:00	12/19/22 09:05	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	12/22/22 12:26	VOA6_424675	X122208
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	12/22/22 12:26	VOA6_424675	X122208
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	12/22/22 12:26	VOA6_424675	X122208
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:26	VOA6_424675	X122208

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

VBLKW-221222	Collected	Received	Matrix	Basis
VBLKW-221222	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	12/22/22 12:05	VOA6_424675	X122207
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	12/22/22 12:05	VOA6_424675	X122207
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	12/22/22 12:05	VOA6_424675	X122207
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	12/22/22 12:05	VOA6_424675	X122207
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

VBLKW-221222	Collected	Received	Matrix	Basis
VBLKW-221222	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	12/22/22 12:05	VOA6_424675	X122207
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	12/22/22 12:05	VOA6_424675	X122207
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	12/22/22 12:05	VOA6_424675	X122207
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	12/22/22 12:05	VOA6_424675	X122207

right solutions.
right partner.

Form 2

System Monitoring Compound Recovery

Volatiles by by EPA 8260

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RunID
VOA6_424675

Volatiles by by EPA 8260

CCV	Analyzed 12/22/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	44.04	50	88.1	80-120	
4-Bromofluorobenzene	48.33	50	96.7	80-120	
Dibromofluoromethane	45.84	50	91.7	80-120	
Toluene-d8	49.32	50	98.6	80-120	

CCB	Analyzed 12/22/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	42.84	50	85.7	80-120	
4-Bromofluorobenzene	47.06	50	94.1	80-120	
Dibromofluoromethane	44.58	50	89.2	80-120	
Toluene-d8	52.57	50	105	80-120	

VLCSW-221222	Analyzed 12/22/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	48.02	50	96.0	81-118	
4-Bromofluorobenzene	48.62	50	97.2	85-114	
Dibromofluoromethane	47.94	50	95.9	80-119	
Toluene-d8	49.09	50	98.2	89-112	

VBLKW-221222	Analyzed 12/22/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	45.77	50	91.5	81-118	
4-Bromofluorobenzene	46.59	50	93.2	85-114	
Dibromofluoromethane	47.54	50	95.1	80-119	
Toluene-d8	52.51	50	105	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RunID
VOA6_424675

Volatiles by by EPA 8260

HS22121096-04	Analyzed 12/22/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	46	50	92.5	81-118	
4-Bromofluorobenzene	47	50	94.3	85-114	
Dibromofluoromethane	48	50	95.8	80-119	
Toluene-d8	53	50	105	89-112	

HS22121096-02	Analyzed 12/22/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	46	50	92.9	81-118	
4-Bromofluorobenzene	48	50	95.1	85-114	
Dibromofluoromethane	48	50	96.9	80-119	
Toluene-d8	53	50	106	89-112	

HS22121096-01	Analyzed 12/22/22		Conc Units µg/L		DF 10
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	480	500	95.7	81-118	
4-Bromofluorobenzene	470	500	94.4	85-114	
Dibromofluoromethane	480	500	96.2	80-119	
Toluene-d8	530	500	107	89-112	

HS22121096-03	Analyzed 12/22/22		Conc Units µg/L		DF 25
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	1,100	1250	92.0	81-118	
4-Bromofluorobenzene	1,200	1250	93.4	85-114	
Dibromofluoromethane	1,200	1250	95.6	80-119	
Toluene-d8	1,300	1250	106	89-112	
1,2-Dichloroethane-d4	11,000	12500	90.2	81-118	
4-Bromofluorobenzene	12,000	12500	95.9	85-114	
Dibromofluoromethane	12,000	12500	92.4	80-119	
Toluene-d8	13,000	12500	105	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RunID
VOA6_424675

Volatiles by by EPA 8260

HS22121096-02MS	Analyzed 12/22/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	42.79	50	85.6	81-118	
4-Bromofluorobenzene	47.93	50	95.9	85-114	
Dibromofluoromethane	45.26	50	90.5	80-119	
Toluene-d8	51.74	50	103	89-112	

HS22121096-02MSD	Analyzed 12/22/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	43.02	50	86.0	81-118	
4-Bromofluorobenzene	47.13	50	94.3	85-114	
Dibromofluoromethane	43.79	50	87.6	80-119	
Toluene-d8	51.87	50	104	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

right solutions.
right partner.

Form 3A

Matrix Spike/Spike Duplicate Recovery

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

18CPTMW04SW_121622		HS22121096-02		HS22121096-02MS				HS22121096-02MSD						
Sample Matrix	Aqueous	Run Date	12/22/22	12/22/22				12/22/22						
Units	µg/L	Run Time	12:47	13:51				14:12						
		Data File	X122209.D	X122212.D				X122213.D						
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
1,1,1,2-Tetrachloroethane	78-124	1	0	19.99	20.00	100		20.1	20.00	100		20	0.600	
1,1,1-Trichloroethane	74-131	1	0	19.97	20.00	100		19.09	20.00	96		20	4.50	
1,1,2,2-Tetrachloroethane	71-121	1	0	17.79	20.00	89		19.63	20.00	98		20	9.90	
1,1,2-Trichloroethane	80-119	1	0	18.52	20.00	93		19.17	20.00	96		20	3.50	
1,1-Dichloroethane	77-125	1	0	16.99	20.00	85		17.23	20.00	86		20	1.40	
1,1-Dichloroethene	71-131	1	0	18.38	20.00	92		18.51	20.00	93		20	0.700	
1,1-Dichloropropene	78-125	1	0	22.88	20.00	114		22.59	20.00	113		20	1.30	
1,2,3-Trichlorobenzene	69-129	1	0	21.97	20.00	110		24.13	20.00	121		20	9.40	
1,2,3-Trichloropropane	73-122	1	0	18.33	20.00	92		19.98	20.00	100		20	8.60	
1,2,4-Trichlorobenzene	69-130	1	0	23.13	20.00	116		24.44	20.00	122		20	5.50	
1,2,4-Trimethylbenzene	76-124	1	0	21.89	20.00	109		22.95	20.00	115		20	4.70	
1,2-Dibromo-3-	62-128	1	0	18.84	20.00	94		20.33	20.00	102		20	7.60	
1,2-Dibromoethane	77-121	1	0	19.36	20.00	97		20.11	20.00	101		20	3.80	
1,2-Dichlorobenzene	80-119	1	0	20.59	20.00	103		21.88	20.00	109		20	6.10	
1,2-Dichloroethane	73-128	1	0	18.31	20.00	92		18.73	20.00	94		20	2.30	
1,2-Dichloropropane	78-122	1	0	18.16	20.00	91		18.09	20.00	90		20	0.400	
1,3,5-Trimethylbenzene	75-124	1	0	23.26	20.00	116		24.1	20.00	121		20	3.50	
1,3-Dichlorobenzene	80-119	1	0	22.00	20.00	110		23.2	20.00	116		20	5.30	
1,3-Dichloropropane	80-119	1	0	18.94	20.00	95		19.06	20.00	95		20	0.600	
1,4-Dichlorobenzene	79-118	1	0	20.97	20.00	105		22.13	20.00	111		20	5.40	
2,2-Dichloropropane	60-139	1	0	19.50	20.00	98		19.03	20.00	95		20	2.50	
2-Butanone	56-143	1	0	28.25	40.00	71		29.73	40.00	74		20	5.10	
2-Chlorotoluene	79-122	1	0	21.42	20.00	107		22.3	20.00	112		20	4.00	
2-Hexanone	57-139	1	0	32.56	40.00	81		35.63	40.00	89		20	9.00	
4-Chlorotoluene	78-122	1	0	21.35	20.00	107		22.21	20.00	111		20	3.90	
4-Isopropyltoluene	77-127	1	0	25.84	20.00	129	*	27.04	20.00	135	*	20	4.50	
4-Methyl-2-pentanone	67-130	1	0	34.60	40.00	87		36.22	40.00	91		20	4.60	
Acetone	39-160	1	0	22.80	40.00	57		23.58	40.00	59		20	3.40	
Benzene	79-120	1	0	19.59	20.00	98		19.28	20.00	96		20	1.60	
Bromobenzene	80-120	1	0	20.84	20.00	104		22.19	20.00	111		20	6.30	
Bromochloromethane	78-123	1	0	16.19	20.00	81		16.4	20.00	82		20	1.30	
Bromodichloromethane	79-125	1	0	18.02	20.00	90		18	20.00	90		20	0.100	
Bromoform	66-130	1	0	18.97	20.00	95		19.93	20.00	100		20	5.00	
Bromomethane	53-141	1	0	18.36	20.00	92		17.94	20.00	90		20	2.30	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

18CPTMW04SW_121622		HS22121096-02		HS22121096-02MS				HS22121096-02MSD						
Sample Matrix	Aqueous	**Run Date**	12/22/22	12/22/22				12/22/22						
Units	µg/L	**Run Time**	12:47	13:51				14:12						
		Data File	X122209.D	X122212.D				X122213.D						
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
Carbon disulfide	64-133	1	0	37.14	40.00	93		36.87	40.00	92		20	0.700	
Carbon tetrachloride	72-136	1	0	21.63	20.00	108		21.93	20.00	110		20	1.40	
Chlorobenzene	82-118	1	0	20.06	20.00	100		19.96	20.00	100		20	0.500	
Chloroethane	60-138	1	0	15.99	20.00	80		16.27	20.00	81		20	1.80	
Chloroform	79-124	1	0	17.30	20.00	87		17.15	20.00	86		20	0.900	
Chloromethane	50-139	1	0	16.36	20.00	82		15.82	20.00	79		20	3.40	
cis-1,2-Dichloroethene	78-123	1	0	18.13	20.00	91		17.59	20.00	88		20	3.00	
cis-1,3-Dichloropropene	75-124	1	0	18.24	20.00	91		18.43	20.00	92		20	1.00	
Dibromochloromethane	74-126	1	0	19.39	20.00	97		19.79	20.00	99		20	2.00	
Dibromomethane	79-123	1	0	17.79	20.00	89		18.18	20.00	91		20	2.20	
Dichlorodifluoromethane	32-152	1	0	13.03	20.00	65		13.76	20.00	69		20	5.40	
Ethylbenzene	79-121	1	0	22.73	20.00	114		22.65	20.00	113		20	0.300	
Hexachlorobutadiene	66-134	1	0	27.79	20.00	139	*	29.63	20.00	148	*	20	6.40	
Isopropylbenzene	72-131	1	0	23.98	20.00	120		23.83	20.00	119		20	0.600	
m,p-Xylene	80-121	1	0	44.28	40.00	111		43.97	40.00	110		20	0.700	
Methylene chloride	74-124	1	0	15.62	20.00	78		15.89	20.00	80		20	1.70	
n-Butylbenzene	75-128	1	0	23.96	20.00	120		24.84	20.00	124		20	3.60	
n-Propylbenzene	76-126	1	0	24.20	20.00	121		25.07	20.00	125		20	3.60	
Naphthalene	61-128	1	0	20.36	20.00	102		21.86	20.00	109		20	7.10	
o-Xylene	78-122	1	0	21.27	20.00	106		21.27	20.00	106		20	0	
sec-Butylbenzene	77-126	1	0	26.48	20.00	132	*	27.46	20.00	137	*	20	3.60	
Styrene	78-123	1	0	20.88	20.00	104		20.71	20.00	104		20	0.900	
tert-Butylbenzene	78-124	1	0	25.10	20.00	125	*	25.91	20.00	130	*	20	3.20	
Tetrachloroethene	74-129	1	0	25.41	20.00	127		25.51	20.00	128		20	0.400	
Toluene	80-121	1	0	20.76	20.00	104		20.68	20.00	103		20	0.400	
trans-1,2-Dichloroethene	75-124	1	0	18.36	20.00	92		18.58	20.00	93		20	1.20	
trans-1,3-Dichloropropene	73-127	1	0	18.09	20.00	91		18.18	20.00	91		20	0.500	
Trichloroethene	79-123	1	0	21.12	20.00	106		20.79	20.00	104		20	1.60	
Trichlorofluoromethane	65-141	1	0	19.84	20.00	99		19.88	20.00	99		20	0.200	
Vinyl chloride	58-137	1	0	16.77	20.00	84		16.79	20.00	84		20	0.100	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

right solutions.
right partner.

Form 3B

Laboratory Control Sample Recovery

Volatiles by by EPA 8260

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

VOA6_424675		QC ID	VLCSW-221222			
QC Matrix Aqueous	Units	Run Date	12/22/22			
	ug/L	Run Time	11:23			
Analyte	%R Limits	Spike Added	LCS Result	%R	Q	
1,1,1,2-Tetrachloroethane	78-124	20	18.44	92		
1,1,1-Trichloroethane	74-131	20	17.84	89		
1,1,2,2-Tetrachloroethane	71-121	20	17.79	89		
1,1,2-Trichloroethane	80-119	20	18.77	94		
1,1-Dichloroethane	77-125	20	17.23	86		
1,1-Dichloroethene	71-131	20	17.71	89		
1,1-Dichloropropene	78-125	20	19.8	99		
1,2,3-Trichlorobenzene	69-129	20	20.4	102		
1,2,3-Trichloropropane	73-122	20	19.04	95		
1,2,4-Trichlorobenzene	69-130	20	20.76	104		
1,2,4-Trimethylbenzene	76-124	20	18.25	91		
1,2-Dibromo-3-chloropropane	62-128	20	19.26	96		
1,2-Dibromoethane	77-121	20	19.12	96		
1,2-Dichlorobenzene	80-119	20	18.59	93		
1,2-Dichloroethane	73-128	20	18.5	92		
1,2-Dichloroethane-d4	81-118	50	48.02	96		
1,2-Dichloropropane	78-122	20	17.85	89		
1,3,5-Trimethylbenzene	75-124	20	18.97	95		
1,3-Dichlorobenzene	80-119	20	19.21	96		
1,3-Dichloropropane	80-119	20	18.72	94		
1,4-Dichlorobenzene	79-118	20	18.79	94		
2,2-Dichloropropane	60-139	20	18.24	91		
2-Butanone	56-143	40	35.82	90		
2-Chlorotoluene	79-122	20	18.28	91		
2-Hexanone	57-139	40	38.1	95		
4-Bromofluorobenzene	85-114	50	48.62	97		
4-Chlorotoluene	78-122	20	18.43	92		
4-Isopropyltoluene	77-127	20	19.72	99		
4-Methyl-2-pentanone	67-130	40	35.85	90		
Acetone	39-160	40	40.27	101		
Benzene	79-120	20	18.42	92		
Bromobenzene	80-120	20	19.01	95		
Bromochloromethane	78-123	20	17.49	88		
Bromodichloromethane	79-125	20	17.96	90		
Bromoform	66-130	20	19.57	98		
Bromomethane	53-141	20	18.93	95		

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

VOA6_424675		QC ID	VLCSW-221222			
QC Matrix Aqueous	Units ug/L	Run Date Run Time	12/22/22 11:23			
Analyte	%R Limits	Spike Added	LCS Result	%R	Q	
Carbon disulfide	64-133	40	36.11	90		
Carbon tetrachloride	72-136	20	18.28	91		
Chlorobenzene	82-118	20	18.2	91		
Chloroethane	60-138	20	16.52	83		
Chloroform	79-124	20	17.37	87		
Chloromethane	50-139	20	19.09	95		
cis-1,2-Dichloroethene	78-123	20	17.39	87		
cis-1,3-Dichloropropene	75-124	20	18.45	92		
Dibromochloromethane	74-126	20	19.25	96		
Dibromofluoromethane	80-119	50	47.94	96		
Dibromomethane	79-123	20	18.56	93		
Dichlorodifluoromethane	32-152	20	20.53	103		
Ethylbenzene	79-121	20	19.22	96		
Hexachlorobutadiene	66-134	20	20.65	103		
Isopropylbenzene	72-131	20	19.17	96		
m,p-Xylene	80-121	40	37.77	94		
Methylene chloride	74-124	20	17.96	90		
Naphthalene	61-128	20	19.54	98		
n-Butylbenzene	75-128	20	18.5	92		
n-Propylbenzene	76-126	20	18.82	94		
o-Xylene	78-122	20	18.72	94		
sec-Butylbenzene	77-126	20	19.32	97		
Styrene	78-123	20	19.16	96		
tert-Butylbenzene	78-124	20	19.18	96		
Tetrachloroethene	74-129	20	20.06	100		
Toluene	80-121	20	18.48	92		
Toluene-d8	89-112	50	49.09	98		
trans-1,2-Dichloroethene	75-124	20	18.18	91		
trans-1,3-Dichloropropene	73-127	20	18.61	93		
Trichloroethene	79-123	20	19.11	96		
Trichlorofluoromethane	65-141	20	17.96	90		
Vinyl chloride	58-137	20	18.11	91		

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

right solutions.
right partner.

Form 4

Method Blank Summary

Volatiles by by EPA 8260

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 4 - Method Blank Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

Client Sample ID	Type	Lab Sample ID	File ID	Date Analyzed	Run ID
METHOD BLANK	MBLK	VBLKW-221222	X122207.D	12/22/22 12:05	VOA6_424675
VLCSW-221222	LCS	VLCSW-221222	X122205.D	12/22/22 11:23	VOA6_424675
Trip Blank	SAMP	HS22121096-04	X122208.D	12/22/22 12:26	VOA6_424675
18CPTMW04SW_121622	SAMP	HS22121096-02	X122209.D	12/22/22 12:47	VOA6_424675
18CPTMW04_121622	SAMP	HS22121096-01	X122210.D	12/22/22 13:09	VOA6_424675
MW2_121522	SAMP	HS22121096-03	X122211.D	12/22/22 13:30	VOA6_424675
18CPTMW04SW_121622	MS	HS22121096-02MS	X122212.D	12/22/22 13:51	VOA6_424675
18CPTMW04SW_121622	MSD	HS22121096-02MSD	X122213.D	12/22/22 14:12	VOA6_424675
MW2_121522	SAMP	HS22121096-03	X122214.D	12/22/22 14:33	VOA6_424675

right solutions.
right partner.

Form 5

Instrument Performance Check

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RunID
VOA6_424237

Tune File X121601.D 12/16/22 11:17

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	18.3 (18.4)
75	30.0 - 60.0% of mass 95	46.1 (46.1)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	7.2 (7.16)
173	Less than 2.0% of mass 174	0.8 (0.897) 1
174	50.0 - 120.0% of mass 95	89 (89)
175	4.0 - 9.0% of mass 174	7 (7.82) 1
176	93.0 - 101.0% of mass 174	87.4 (98.2) 1
177	5.0 - 9.0% of mass 176	5.8 (6.59) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	ICAL1	12/16/22 11:38	X121602	VSTD000.25
2	ICAL2	12/16/22 12:20	X121603	VSTD000.5
3	ICAL3	12/16/22 12:41	X121604	VSTD001
4	ICAL4	12/16/22 13:02	X121605	VSTD002
5	ICAL5	12/16/22 13:23	X121606	VSTD005
6	ICAL6	12/16/22 13:43	X121607	VSTD020
7	ICAL7	12/16/22 14:04	X121608	VSTD050
8	ICAL8	12/16/22 14:25	X121609	VSTD100
9	ICAL9	12/16/22 14:46	X121610	VSTD150
10	ICAL	12/16/22 15:07	X121611	VSTD200
11	ICV	12/16/22 15:49	X121613	CCV

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RunID
VOA6_424675

Tune File X122201.D 12/22/22 09:59

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	17.6 (17.6)
75	30.0 - 60.0% of mass 95	49.8 (49.8)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	6.3 (6.27)
173	Less than 2.0% of mass 174	1.1 (1.18) 1
174	50.0 - 120.0% of mass 95	93.9 (93.9)
175	4.0 - 9.0% of mass 174	7.3 (7.81) 1
176	93.0 - 101.0% of mass 174	91.7 (97.7) 1
177	5.0 - 9.0% of mass 176	6.5 (7.06) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	CCV	12/22/22 10:41	X122203	CCV
2	CCB	12/22/22 11:02	X122204	CCB
3	LCS	12/22/22 11:23	X122205	VLCSW-221222
4	MBLK	12/22/22 12:05	X122207	VBLKW-221222
5	SAMP	12/22/22 12:26	X122208	Trip Blank
6	SAMP	12/22/22 12:47	X122209	18CPTMW04SW_121622
7	SAMP	12/22/22 13:09	X122210	18CPTMW04_121622
8	SAMP	12/22/22 13:30	X122211	MW2_121522
9	MS	12/22/22 13:51	X122212	HS22121096-02MS
10	MSD	12/22/22 14:12	X122213	HS22121096-02MSD
11	SAMP	12/22/22 14:33	X122214	MW2_121522
12	CCV_EN	12/22/22 14:54	X122215	CCV-END

right solutions.
right partner.

Form 6

Initial Calibration Data

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138
ICAL End Date 16-DEC-2022 1507

Calibration Files

Level 1 ..voa6.i\X221216.b\X121602.D
Level 2 ..voa6.i\X221216.b\X121603.D
Level 3 ..voa6.i\X221216.b\X121604.D
Level 4 ..voa6.i\X221216.b\X121605.D
Level 5 ..voa6.i\X221216.b\X121606.D
Level 6 ..voa6.i\X221216.b\X121607.D
Level 7 ..voa6.i\X221216.b\X121608.D
Level 8 ..voa6.i\X221216.b\X121609.D
Level 9 ..voa6.i\X221216.b\X121610.D
Level 10 ..voa6.i\X221216.b\X121611.D

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Dichlorodifluoromethane	NE 160392	1990 309019	2911 476130	6239 635808	15008	63382	LINR	0.00786	0.35247		0.99971	
Chloromethane	NE 192710	2466 388163	3670 621048	8057 865151	19623	72324	LINR	0.04423	0.47332		0.99747	
Propionitrile	NE 0.04851	0.06018 0.04917	0.05265 0.05178	0.04739 0.05178	0.05114	0.04656	AVRG		0.05102		7.91502	
Vinyl Chloride	NE 0.44103	0.52268 0.42953	0.40472 0.44923	0.39786 0.45909	0.42164	0.40520	AVRG		0.43678		8.81916	
Bromomethane	NE 139689	1893 284165	3293 470318	5996 NE	15112	52034	LINR	0.03529	0.34244		0.99519	
Chloroethane	NE 0.29447	0.35820 0.28714	0.27936 0.30494	0.31044 0.30410	0.31436	0.28309	AVRG		0.30401		7.80750	
Trichlorofluoromethane	NE 0.60756	0.71207 0.59817	0.54474 0.64605	0.57316 0.65074	0.59068	0.57785	AVRG		0.61122		8.28859	
Acrolein	NE 27445	440 60756	761 96139	1317 125874	2699	12279	LINR	0.05644	0.03519		0.99833	
Acetone	NE 124798	2669 243517	4787 373504	7041 514105	17632	50987	LINR	-0.00069	0.14025		0.99910	
1,1-Dichloroethene	NE 0.36912	0.44142 0.36226	0.35953 0.38517	0.37590 0.39076	0.37389	0.35725	AVRG		0.37948		6.80558	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Isobutyl Alcohol	NE 0.05462	0.05610 0.05559	0.05239 0.05946	0.05650 0.05952	0.05728	0.05469	AVRG		0.05624		4.10209	
Acetonitrile	NE 0.04430	0.04776 0.04552	0.04645 0.04791	0.04253 0.04736	0.04357	0.04417	AVRG		0.04551		4.32823	
Allyl Chloride	NE 0.81324	0.99118 0.83169	0.95202 0.86799	0.81682 0.86396	0.84304	0.82034	AVRG		0.86670		7.30464	
Iodomethane	NE 455792	2397 958603	3865 1554547	8702 2193685	26708	143457	QUAD	0.06641	2.01333	-0.08031	0.99956	
Acrylonitrile	NE 0.12970	0.12113 0.12956	0.12536 0.13857	0.12482 0.13997	0.12256	0.12666	AVRG		0.12870		5.15060	
Methylene Chloride	NE 0.49311	0.63666 0.46611	0.59459 0.48892	0.50364 0.47907	0.50885	0.51372	AVRG		0.52052		10.92514	
Methyl tert-butyl ether	NE 1.16844	1.26574 1.18584	1.39027 1.23813	1.27259 1.24075	1.24993	1.16729	AVRG		1.24211		5.52745	
Carbon Disulfide	NE 0.97542	1.07494 0.97088	1.00609 1.02392	0.95722 1.06178	0.94769	0.91773	AVRG		0.99285		5.32584	
trans-1,2-Dichloroethene	NE 0.41851	0.48064 0.41454	0.42427 0.43221	0.38965 0.43554	0.42173	0.40526	AVRG		0.42470		5.92187	
Vinyl Acetate	NE 1.07506	1.09845 1.07519	0.99054 1.16529	1.06368 1.16741	1.12321	1.05445	AVRG		1.09037		5.13969	
1,1-Dichloroethane	NE 0.72125	0.83949 0.70504	0.80145 0.74074	0.69997 0.74459	0.75023	0.70550	AVRG		0.74536		6.34771	
Chloroprene	NE 0.16145	0.19503 0.16116	0.18721 0.16823	0.17124 0.17481	0.15874	0.15219	AVRG		0.17001		8.17551	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
2-Butanone	NE 130179	1292 264221	2498 407629	5418 555896	11771	47830	LINR	0.06050	0.15346		0.99924	
Methacrylonitrile	NE 0.32328	0.44770 0.32565	0.36475 0.34081	0.34993 0.34351	0.34840	0.34235	AVRG		0.35404		10.52608	
2,2-Dichloropropane	NE 0.62063	0.70167 0.61027	0.65466 0.64008	0.60521 0.65162	0.61866	0.59289	AVRG		0.63286		5.25207	
cis-1,2-Dichloroethene	NE 0.49985	0.61803 0.48778	0.49622 0.51710	0.52999 0.51455	0.50446	0.48374	AVRG		0.51686		7.86616	
Chloroform	NE 0.81023	0.87547 0.78725	0.86252 0.84612	0.85352 0.84457	0.84666	0.79238	AVRG		0.83541		3.73708	
Bromochloromethane	NE 0.26364	0.32093 0.26287	0.29857 0.28290	0.28124 0.28282	0.29319	0.26077	AVRG		0.28299		6.91423	
1,1,1-Trichloroethane	NE 0.65703	0.76105 0.64156	0.65666 0.67604	0.60049 0.69720	0.64387	0.63152	AVRG		0.66283		6.90392	
1,1-Dichloropropene	NE 0.37084	0.35889 0.35979	0.34245 0.36734	0.33027 0.37324	0.34789	0.34406	AVRG		0.35497		4.12237	
1,2-Dichloroethane	NE 0.39909	0.45501 0.40154	0.40587 0.41082	0.39492 0.41030	0.41104	0.39842	AVRG		0.40967		4.39762	
Carbon Tetrachloride	NE 0.36348	0.40179 0.35355	0.45347 0.36349	0.40515 0.37429	0.35265	0.34370	AVRG		0.37906		9.25223	
Benzene	NE 1.17241	1.34410 1.15323	1.19304 1.17461	1.18322 1.18197	1.19608	1.14722	AVRG		1.19399		4.90945	
Trichloroethene	NE 0.33750	0.37562 0.33140	0.31723 0.33891	0.33885 0.34649	0.33109	0.33079	AVRG		0.33865		4.73809	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Bromodichloromethane	NE	0.53078	0.45893	0.43689	0.42833	0.42563						
	0.42913	0.42602	0.44706	0.45009			AVRG		0.44810		7.41292	
Methyl Methacrylate	NE	0.38746	0.34921	0.33881	0.33548	0.30606						
	0.32238	0.32465	0.34726	0.35704			AVRG		0.34093		6.87301	
2-Chloroethylvinyl ether	NE	0.13531	0.11670	0.12141	0.12912	0.13108						
	0.13057	0.12541	0.12799	0.12973			AVRG		0.12748		4.37734	
1,2-Dichloropropane	NE	0.35613	0.33560	0.29692	0.31629	0.30391						
	0.31044	0.30521	0.31542	0.31856			AVRG		0.31761		5.71516	
2-Nitropropane	NE	1.05598	0.76159	0.80915	0.77468	0.75211						
	0.73644	0.73807	0.78445	0.80253			AVRG		0.80167		12.32619	
Dibromomethane	NE	0.25085	0.21183	0.22317	0.21081	0.20954						
	0.20672	0.20317	0.21324	0.21357			AVRG		0.21588		6.58330	
4-Methyl-2-Pentanone	NE	0.28987	0.26418	0.28502	0.26684	0.26684						
	0.25814	0.25156	0.26114	0.26166			AVRG		0.26725		4.64865	
cis-1,3-Dichloropropene	NE	0.53732	0.47650	0.50179	0.51804	0.52075						
	0.52860	0.53368	0.55605	0.56353			AVRG		0.52625		5.04185	
Ethyl Methacrylate	NE	0.28138	0.24077	0.23910	0.20135	0.21276						
	0.20804	0.22619	0.24786	0.26163			AVRG		0.23545		11.14205	
Toluene	NE	1.60765	1.37997	1.37463	1.36957	1.31273						
	1.36202	1.32088	1.35198	1.35870			AVRG		1.38201		6.34459	
trans-1,3-Dichloropropene	NE	0.44236	0.39493	0.40065	0.41433	0.42619						
	0.44682	0.44877	0.47075	0.48573			AVRG		0.43673		7.01005	
2-Hexanone	NE	0.19991	0.17409	0.17972	0.18386	0.17978						
	0.17839	0.17192	0.18312	0.18566			AVRG		0.18183		4.45920	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
1,1,2-Trichloroethane	NE 0.26479	0.32419 0.25654	0.26954 0.26825	0.29087 0.26649	0.28491	0.26973	AVRG		0.27726		7.37510	
1,3-Dichloropropane	NE 0.53007	0.62065 0.51166	0.55587 0.53587	0.54217 0.53590	0.54663	0.53274	AVRG		0.54573		5.60982	
Dibromochloromethane	NE 0.39906	0.43810 0.39075	0.38701 0.40792	0.39402 0.40793	0.38762	0.38903	AVRG		0.40016		4.08851	
Tetrachloroethene	NE 0.29836	0.33024 0.28012	0.25660 0.28506	0.28292 0.28889	0.26322	0.28810	AVRG		0.28594		7.36821	
1,2-Dibromoethane	NE 0.35151	0.36263 0.33998	0.33509 0.35512	0.32714 0.35096	0.35422	0.34322	AVRG		0.34665		3.22017	
1-Chlorohexane	NE 0.24556	0.26597 0.23682	0.22998 0.25047	0.21386 0.26558	0.22191	0.24457	AVRG		0.24163		7.44215	
Chlorobenzene	NE 0.95622	1.20054 0.92158	0.96715 0.96470	0.94773 0.97511	0.95913	0.93014	AVRG		0.98026		8.61127	
1,1,1,2-Tetrachloroethane	NE 0.36060	0.42477 0.35457	0.34549 0.36940	0.36191 0.37188	0.34596	0.34861	AVRG		0.36480		6.70616	
Ethylbenzene	NE 0.47797	0.47482 0.45902	0.43893 0.46986	0.45503 0.47447	0.45171	0.45394	AVRG		0.46175		2.86128	
m,p-Xylenes	NE 0.60205	0.69860 0.58346	0.55710 0.60071	0.56286 0.61493	0.56012	0.57743	AVRG		0.59525		7.35638	
o-Xylene	NE 0.59049	0.68372 0.57562	0.51381 0.60058	0.56977 0.61516	0.56849	0.56994	AVRG		0.58751		7.79066	
Styrene	NE 1.03116	1.02806 1.01266	0.79991 1.07651	0.88633 1.09594	0.95404	0.97800	AVRG		0.98473		9.52837	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Bromoform	NE	0.31195	0.25221	0.26817	0.25683	0.26696						
	0.27805	0.27584	0.29222	0.29278			AVRG		0.27722		6.87336	
Isopropylbenzene	NE	1.35706	1.16805	1.25967	1.30607	1.32939						
	1.41077	1.36357	1.42773	1.45784			AVRG		1.34224		6.69875	
1,1,2,2-Tetrachloroethane	NE	0.91828	0.84470	0.83187	0.83648	0.79018						
	0.74007	0.71754	0.75363	0.73962			AVRG		0.79693		8.24435	
1,2,3-Trichloropropane	NE	0.58047	0.56626	0.53238	0.58048	0.54015						
	0.53505	0.52761	0.60583	0.53897			AVRG		0.55636		4.97536	
trans-1,4-Dichloro-2-butene	NE	0.12274	0.09213	0.10381	0.10162	0.10094						
	0.10800	0.10845	0.11623	0.11751			AVRG		0.10794		8.88299	
n-Propylbenzene	NE	3.20938	2.13608	2.47845	2.73904	2.83806						
	2.90611	2.78733	2.90643	2.92515			AVRG		2.76956		11.03336	
Bromobenzene	NE	0.90477	0.79060	0.83045	0.81066	0.82521						
	0.80056	0.78064	0.82147	0.81857			AVRG		0.82033		4.35370	
1,3,5-Trimethylbenzene	NE	2.06484	1.68256	1.97796	2.03460	2.07048						
	2.12398	2.07652	2.18148	2.20122			AVRG		2.04596		7.47801	
2-Chlorotoluene	NE	1.93144	1.77508	1.90257	1.85141	1.80074						
	1.79455	1.71779	1.79669	1.78644			AVRG		1.81741		3.65582	
4-Chlorotoluene	NE	2.19766	1.72811	1.99610	2.10678	2.06499						
	2.09570	2.05624	2.19099	2.20989			AVRG		2.07183		7.13984	
tert-Butylbenzene	NE	1.83685	1.33195	1.56610	1.66625	1.69957						
	1.74647	1.66742	1.77236	1.78580			AVRG		1.67475		9.03914	
1,2,4-Trimethylbenzene	NE	2.44261	1.84882	2.01055	2.12502	2.14371						
	2.18278	2.12445	2.25368	2.24326			AVRG		2.15277		7.66012	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
sec-Butylbenzene	NE 2.38144	2.28219 2.30322	1.76441 2.43114	1.95855 2.46321	2.17705	2.29365	AVRG		2.22832		10.32115	
p-Isopropyltoluene	NE 2.16946	2.11113 2.07989	1.42476 2.19272	1.76888 2.20460	1.95504	2.06459	AVRG		1.99679		12.72950	
1,3-Dichlorobenzene	NE 1.39279	1.34465 1.34586	1.21323 1.42324	1.32549 1.42237	1.40186	1.38449	AVRG		1.36155		4.82043	
1,4-Dichlorobenzene	NE 1.45712	1.63128 1.44362	1.40441 1.52301	1.45614 1.52190	1.47766	1.45673	AVRG		1.48576		4.44368	
Benzyl Chloride	NE 472387	3642 1009234	4632 1650494	12783 2286488	35254	163895	LINR	0.05387	0.82700		0.99832	
n-Butylbenzene	NE 696355	5149 1425779	8459 2293126	19853 3216534	54831	248190	LINR	0.03551	1.99525		0.99890	
1,2-Dichlorobenzene	NE 1.39065	1.58241 1.36532	1.22790 1.44207	1.34058 1.43128	1.42827	1.41177	AVRG		1.40225		6.73504	
1,2-Dibromo-3-Chloropropane	NE 48660	441 94321	778 149691	1619 205063	4911	18635	LINR	0.00184	0.12764		0.99948	
1,2,4-Trichlorobenzene	NE 0.95146	0.91627 0.90293	0.65608 0.94400	0.83350 0.95022	0.89445	0.91558	AVRG		0.88494		10.53488	
Hexachlorobutadiene	NE 155390	1477 299042	1928 466452	3970 654615	13454	55912	QUAD	-0.00107	2.58308	-0.07816	0.99966	
Naphthalene	NE 2.14094	2.01970 2.06230	1.60683 2.15450	1.85985 2.12714	2.04153	2.10842	AVRG		2.01347		8.78393	
1,2,3-Trichlorobenzene	NE 0.85880	1.02696 0.83163	0.68341 0.85478	0.79977 0.84995	0.84958	0.87304	AVRG		0.84755		10.42886	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Ethyl Acetate	NE 0.37280	0.44748 0.34980	0.34909 0.38488	0.40657 0.39192	0.39985	0.40902	AVRG		0.39016		7.92750	
Methyl Acrylate	NE 0.33014	0.38247 0.33914	0.34243 0.35741	0.29817 0.35867	0.33173	0.31494	AVRG		0.33946		7.36740	
n-Butanol	NE 54418	622 124057	1171 210842	2004 297334	4891	15012	QUAD	0.80435	158	-58.97368	0.99813	*
Ethyl Acrylate	NE 420886	NE 862071	NE 1358300	9825 1836030	26414	172044	LINR	0.05859	1.02468		0.99901	*
Cyclohexanone	NE 0.01934	0.07093 0.01945	0.03374 0.01993	0.02556 0.01966	0.01884	0.01912	AVRG		0.02740		62.21369	*
1,4-Dioxane	0.00463 0.00443	0.00501 0.00442	0.00455 0.00480	0.00386 0.00497	0.00466	0.00438	AVRG		0.00457		7.29408	
n-Hexane	NE 0.39852	0.41368 0.36338	0.26016 0.39788	0.32309 0.40267	0.32437	0.35631	AVRG		0.36001		13.97418	
Freon TF	NE 0.37622	0.40111 0.36030	0.37263 0.38547	0.33005 0.39624	0.32940	0.35185	AVRG		0.36703		7.16337	
Methyl Acetate	NE 0.21071	0.27499 0.21615	0.23617 0.22455	0.22728 0.22667	0.19900	0.20937	AVRG		0.22499		9.73149	
Methylcyclohexane	NE 0.60749	0.69525 0.62521	0.49917 0.65111	0.58500 0.65095	0.56389	0.63030	AVRG		0.61204		9.36456	
Isopropyl alcohol	NE 0.01716	0.02240 0.01767	0.01652 0.01919	0.01536 0.01934	0.01833	0.01677	AVRG		0.01808		11.41496	
Amyl alcohol	NE 0.00433	NE 0.00498	NE 0.00582	NE 0.00605	0.00196	0.00315	AVRG		0.00438		36.19033	*

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Allyl alcohol	NE 0.01993	0.03347 0.01817	0.01301 0.01989	0.01615 0.02013	0.01622	0.01782	AVRG		0.01942		29.60962	*
4-Methyl-2-pentanol	NE 0.04191	0.13977 0.04448	0.06768 0.05120	0.05740 0.05444	0.04467	0.04137	AVRG		0.06032		51.38639	*
Tert-butyl alcohol	NE 0.03307	0.04145 0.03257	0.03359 0.03586	0.03291 0.03628	0.03387	0.03199	AVRG		0.03462		8.48705	
Diethyl ether	NE 0.30968	0.40393 0.31674	0.33122 0.33062	0.34807 0.33029	0.33548	0.30080	AVRG		0.33409		8.92652	
1,3-Butadiene	NE 0.33288	0.38854 0.32994	0.38107 0.34951	0.31405 0.35836	0.31693	0.31715	AVRG		0.34316		8.15203	
Cyclohexane	NE 237699	2803 432198	4003 682728	7375 943314	19859	84355	LINR	0.02522	0.51703		0.99847	
Tetrahydrofuran	NE 58181	900 109518	1361 162133	2867 219995	7598	28221	LINR	-0.06333	0.06025		0.99942	
alpha-Methylstyrene	NE 1.13399	1.35155 1.10993	0.85865 1.16502	1.02359 1.17184	1.06165	1.09458	AVRG		1.10787		11.89593	
Diisopropyl ether	NE 1.21127	1.41201 1.25239	1.35074 1.32366	1.30436 1.33324	1.25459	1.23114	AVRG		1.29704		5.00179	
Dichlorofluoromethane	NE 0.05734	NE 0.05842	NE 0.06234	NE 0.06214	0.06484	0.06089	AVRG		0.06099		4.51209	*
Propylene oxide	NE 0.03071	NE 0.03174	0.05613 0.03407	0.03062 0.03228	0.03687	0.02961	AVRG		0.03525		24.79698	*
3-Methyl-1-butanol	NE 0.00489	NE 0.00483	NE 0.00601	NE 0.00612	0.00211	0.00438	AVRG		0.00472		30.80128	*

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Butyl acrylate	NE 0.63698	0.73114 0.67566	0.58907 0.72950	0.57945 0.74630	0.58578	0.60437	AVRG		0.65314		10.52624	
1,2,3-Trimethylbenzene	NE 2.21302	2.76749 2.29498	2.61167 2.36627	2.52848 2.30685	2.25428	2.32678	AVRG		2.40776		7.74526	
Ethanol	NE 29714	458 56794	787 87890	1703 117751	3072	12594	LINR	-0.06594	0.00325		0.99956	
1-Propanol	NE 0.00727	0.00862 0.00784	0.00964 0.00802	0.00852 0.00816	0.00825	0.00721	AVRG		0.00817		9.04495	
tert-Butyl formate	NE 0.24908	NE 0.25521	NE 0.29218	0.25634 0.29283	0.33766	0.24706	AVRG		0.27577		12.14219	*
3,3-Dimethyl-1-butanol	NE 0.02235	NE 0.02388	NE 0.02628	NE 0.02679	0.01912	0.02169	AVRG		0.02335		12.46791	*
tert-Amyl methyl ether	NE 1.32775	2.53777 1.35994	1.82297 1.44272	1.67155 1.43312	1.55575	1.35887	AVRG		1.61227		23.79383	*
tert-Butyl ethyl ether	NE 1.27589	1.81984 1.30743	1.44501 1.37993	1.35004 1.39745	1.35223	1.28319	AVRG		1.40122		11.86386	
tert-Amyl alcohol	NE 0.02491	0.03129 0.02552	0.02457 0.02922	0.02972 0.02928	0.03377	0.02471	AVRG		0.02811		11.82574	
Epichlorohydrin	NE 58515	926 126478	1242 183469	2483 257397	5941	23842	LINR	0.04999	0.02268		0.99921	
Isoprene	NE 0.13550	0.20890 0.13652	0.10782 0.14294	0.12769 0.14612	0.14811	0.13210	AVRG		0.14286		19.27805	*
n-Amyl acetate	NE 0.52035	NE 0.54240	NE 0.59479	NE 0.61078	NE	0.53118	AVRG		0.55990		7.20069	*

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Isopropyl acetate	NE 0.72227	1.34716 0.73275	0.78367 0.76494	0.79130 0.76466	0.77391	0.74796	AVRG		0.82540		23.86221	*
n-Butyl acetate	NE 0.19856	0.47947 0.20815	0.28533 0.21762	0.15799 0.22438	0.22627	0.22783	AVRG		0.24729		37.68114	*
Acetaldehyde	NE 67188	NE 107798	3384 161053	5661 205547	6161	32393	LINR	-0.46573	0.02837		0.99553	
Methyl Amyl Ketone	NE 0.62641	1.24254 0.65992	0.68451 0.69377	0.63815 0.71197	0.57607	0.60726	AVRG		0.71562		28.26825	*
Dimethyl Disulfide	NE 0.67210	0.79855 0.68414	0.63899 0.70500	0.61608 0.69777	0.61366	0.66406	AVRG		0.67671		8.32695	
1,2-Dichloroethylene (total)	NE 0.45918	0.54933 0.45116	0.46024 0.47466	0.45982 0.47504	0.46309	0.44450	AVRG		0.47078		6.59168	
Xylenes (total)	NE 0.56357	0.65089 0.56191	0.51351 0.58028	0.53491 0.60523	0.53725	0.54549	AVRG		0.56589		7.37687	
Dibromofluoromethane	NE 211939	2321 438954	4769 652724	9050 856027	24255	90108	LINR	-0.00333	0.47851		0.99972	
1,2-Dichloroethane-d4	NE 222293	2849 455890	5559 686218	9783 919752	24938	92990	LINR	0.00543	0.50950		0.99982	
Toluene-d8	NE 1.18347	1.47608 1.20166	1.31472 1.16429	1.20749 1.10711	1.24798	1.21701	AVRG		1.23554		8.62469	
4-Bromofluorobenzene	NE 292753	3870 615584	7790 936681	13631 1277239	32501	116878	LINR	0.00128	0.46242		0.99992	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

right solutions.
right partner.

Form 6I

Initial Calibration Verification (ICV)

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 1404
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
1,1,1,2-Tetrachlor	50.00	48.61	97.24	80-120	
1,1,1-Trichloroeth	50.00	50.16	100.33	80-120	
1,1,2,2-Tetrachlor	50.00	46.75	93.50	80-120	
Freon TF	50.00	52.90	105.81	80-120	
Methyl Acetate	50.00	48.17	96.35	80-120	
Cyclohexane	50.00	51.73	103.47	80-120	
Methylcyclohexane	50.00	50.89	101.79	80-120	
Carbon Disulfide	100.00	98.50	98.50	80-120	
2-Hexanone	100.00	96.73	96.74	80-120	
1,1,2-Trichloroeth	50.00	47.91	95.83	80-120	
1,1-Dichloroethane	50.00	48.19	96.39	80-120	
1,1-Dichloroethene	50.00	49.34	98.68	80-120	
1,1-Dichloropropen	50.00	52.11	104.24	80-120	
1,2,3-Trichloroben	50.00	52.79	105.58	80-120	
1,2,3-Trichloropro	50.00	48.07	96.16	80-120	
1,2,4-Trichloroben	50.00	54.66	109.32	80-120	
1,2,4-Trimethylben	50.00	51.32	102.65	80-120	
1,2-Dibromo-3-Chlo	50.00	50.53	101.07	80-120	
1,2-Dibromoethane	50.00	50.24	100.49	80-120	
Acrolein	100.00	95.06	95.07	80-120	
Acrylonitrile	100.00	101.42	101.43	80-120	
1,2-Dichlorobenzen	50.00	49.52	99.05	80-120	
1,2-Dichloroethane	50.00	49.52	99.05	80-120	
1,2-Dichloropropan	50.00	49.60	99.22	80-120	
1,3,5-Trimethylben	50.00	52.30	104.61	80-120	
1,3-Dichlorobenzen	50.00	51.21	102.43	80-120	
1,3-Dichloropropan	50.00	47.82	95.66	80-120	
1,4-Dichlorobenzen	50.00	49.71	99.44	80-120	
1-Chlorohexane	50.00	51.98	103.97	80-120	
2,2-Dichloropropan	50.00	50.98	101.98	80-120	
2-Butanone	100.00	97.74	97.74	80-120	
2-Chlorotoluene	50.00	49.94	99.89	80-120	
4-Chlorotoluene	50.00	51.25	102.51	80-120	
p-Isopropyltoluene	50.00	54.75	109.51	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 1404
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
4-Methyl-2-Pentano	100.00	94.03	94.03	80-120	
Acetone	100.00	101.89	101.90	80-120	
Benzene	50.00	50.29	100.58	80-120	
Bromobenzene	50.00	49.62	99.25	80-120	
Bromochloromethane	50.00	47.25	94.51	80-120	
Bromodichlorometha	50.00	49.22	98.45	80-120	
Bromoform	50.00	49.33	98.66	80-120	
Bromomethane	50.00	50.78	101.58	80-120	
Carbon Tetrachlori	50.00	49.06	98.12	80-120	
Chlorobenzene	50.00	48.34	96.68	80-120	
Chloroethane	50.00	48.32	96.64	80-120	
Chloroform	50.00	48.45	96.91	80-120	
Chloromethane	50.00	50.17	100.35	80-120	
cis-1,2-Dichloroet	50.00	48.25	96.51	80-120	
cis-1,3-Dichloropr	50.00	52.11	104.22	80-120	
Dibromochlorometha	50.00	49.50	99.02	80-120	
Dibromomethane	50.00	49.19	98.38	80-120	
Dichlorodifluorome	50.00	52.19	104.38	80-120	
Ethylbenzene	50.00	51.31	102.63	80-120	
Hexachlorobutadien	50.00	57.73	115.48	80-120	
Isopropylbenzene	50.00	52.09	104.19	80-120	
m,p-Xylenes	100.00	100.17	100.17	80-120	
Methyl tert-butyl	50.00	48.12	96.25	80-120	
Methylene Chloride	50.00	47.56	95.14	80-120	
n-Butylbenzene	50.00	50.66	101.33	80-120	
n-Propylbenzene	50.00	52.67	105.35	80-120	
Naphthalene	50.00	52.67	105.35	80-120	
o-Xylene	50.00	49.75	99.51	80-120	
sec-Butylbenzene	50.00	54.16	108.34	80-120	
Styrene	50.00	52.09	104.20	80-120	
tert-Butylbenzene	50.00	52.83	105.67	80-120	
Tetrachloroethene	50.00	50.99	101.99	80-120	
Toluene	50.00	49.20	98.42	80-120	
trans-1,2-Dichloro	50.00	49.99	99.98	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424237

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 1404
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
trans-1,3-Dichloro	50.00	52.50	105.01	80-120	
Trichloroethene	50.00	51.28	102.56	80-120	
Trichlorofluoromet	50.00	51.00	102.02	80-120	
Vinyl Chloride	50.00	50.57	101.15	80-120	
1,2-Dichloroethyle	100.00	98.24	98.25	80-120	
Xylenes (total)	150.00	149.92	99.95	80-120	
1,4-Dioxane	1000.00	1021.76	102.18	80-120	
Dibromofluorometha	50.00	50.91	101.84	71-125	
1,2-Dichloroethane	50.00	50.36	100.73	70-125	
Toluene-d8	50.00	49.50	99.00	75-125	
4-Bromofluorobenze	50.00	49.98	99.97	72-125	

right solutions.
right partner.

Form 7

Continuing Calibration Verification (CCV)

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424675

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 22-DEC-2022 1041
Lab File ID X122203.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,4-Dioxane	0.00457	0.00416	0.00416	0.001	8.98644	20.0	Averaged	
1,3-Butadiene	0.34316	0.32304	0.32304	0.100	5.86270	20.0	Averaged	
Methacrylonitrile	0.35404	0.28077	0.28077	0.100	20.69452	20.0	Averaged	<-
Dichlorodifluoromethane	50.0	52.61087	0.36811	0.100	-5.22173	20.0	Linear	
Chloromethane	50.0	43.49717	0.39082	0.100	13.00566	20.0	Linear	
Vinyl Chloride	0.43678	0.40389	0.40389	0.100	7.52980	20.0	Averaged	
Bromomethane	50.0	42.37996	0.27817	0.100	15.24009	20.0	Linear	
Chloroethane	0.30401	0.25560	0.25560	0.100	15.92254	20.0	Averaged	
Trichlorofluoromethane	0.61122	0.59195	0.59195	0.100	3.15366	20.0	Averaged	
Acrolein	100	87.33265	0.02974	0.010	12.66735	20.0	Linear	
Acetone	100	97.22977	0.13641	0.100	2.77023	20.0	Linear	
1,1-Dichloroethene	0.37948	0.34589	0.34589	0.100	8.85122	20.0	Averaged	
Iodomethane	100	97.36731	0.48596	0.100	2.63269	20.0	Quadratic	
Acrylonitrile	0.12870	0.11697	0.11697	0.050	9.11795	20.0	Averaged	
Methylene Chloride	0.52052	0.43139	0.43139	0.100	17.12333	20.0	Averaged	
Methyl tert-butyl ether	1.24211	1.02944	1.02944	0.100	17.12177	20.0	Averaged	
Carbon Disulfide	0.99285	0.91923	0.91923	0.100	7.41465	20.0	Averaged	
trans-1,2-Dichloroethene	0.42470	0.37802	0.37802	0.100	10.99230	20.0	Averaged	
Vinyl Acetate	1.09037	0.95115	0.95115	0.010	12.76804	20.0	Averaged	
1,1-Dichloroethane	0.74536	0.63359	0.63359	0.200	14.99638	20.0	Averaged	
2-Butanone	100	92.10591	0.13670	0.100	7.89409	20.0	Linear	
2,2-Dichloropropane	0.63286	0.57307	0.57307	0.100	9.44713	20.0	Averaged	
cis-1,2-Dichloroethene	0.51686	0.44126	0.44126	0.100	14.62668	20.0	Averaged	
Chloroform	0.83541	0.70743	0.70743	0.200	15.32008	20.0	Averaged	
Bromochloromethane	0.28299	0.24040	0.24040	0.100	15.05159	20.0	Averaged	
Dibromofluoromethane	50.0	45.83970	0.44028	0.100	8.32060	20.0	Linear	
1,1,1-Trichloroethane	0.66283	0.60127	0.60127	0.100	9.28699	20.0	Averaged	
1,1-Dichloropropene	0.35497	0.36157	0.36157	0.100	-1.85676	20.0	Averaged	
1,2-Dichloroethane	0.40967	0.38558	0.38558	0.100	5.88069	20.0	Averaged	
Carbon Tetrachloride	0.37906	0.36728	0.36728	0.100	3.10794	20.0	Averaged	
1,2-Dichloroethane-d4	50.0	44.03886	0.44599	0.100	11.92227	20.0	Linear	
Benzene	1.19399	1.12355	1.12355	0.500	5.89950	20.0	Averaged	
Trichloroethene	0.33865	0.33072	0.33072	0.200	2.34143	20.0	Averaged	
Bromodichloromethane	0.44810	0.41132	0.41132	0.200	8.20760	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424675

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 22-DEC-2022 1041
Lab File ID X122203.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
2-Chloroethylvinyl ether	0.12748	0.11275	0.11275	0.001	11.55520	20.0	Averaged	
1,2-Dichloropropane	0.31761	0.29007	0.29007	0.100	8.66915	20.0	Averaged	
Dibromomethane	0.21588	0.19730	0.19730	0.100	8.60456	20.0	Averaged	
4-Methyl-2-Pentanone	0.26725	0.25215	0.25215	0.100	5.65175	20.0	Averaged	
cis-1,3-Dichloropropene	0.52625	0.50610	0.50610	0.200	3.82885	20.0	Averaged	
Toluene-d8	1.23554	1.21881	1.21881	0.100	1.35383	20.0	Averaged	
Toluene	1.38201	1.28339	1.28339	0.400	7.13601	20.0	Averaged	
trans-1,3-Dichloropropene	0.43673	0.41896	0.41896	0.100	4.06770	20.0	Averaged	
2-Hexanone	0.18183	0.17716	0.17716	0.100	2.56505	20.0	Averaged	
1,1,2-Trichloroethane	0.27726	0.25433	0.25433	0.100	8.27021	20.0	Averaged	
1,3-Dichloropropane	0.54573	0.50633	0.50633	0.100	7.21988	20.0	Averaged	
Dibromochloromethane	0.40016	0.39059	0.39059	0.100	2.39183	20.0	Averaged	
Tetrachloroethene	0.28594	0.29611	0.29611	0.200	-3.55486	20.0	Averaged	
1,2-Dibromoethane	0.34665	0.34105	0.34105	0.100	1.61585	20.0	Averaged	
1-Chlorohexane	0.24163	0.22747	0.22747	0.100	5.86260	20.0	Averaged	
Chlorobenzene	0.98026	0.88551	0.88551	0.500	9.66492	20.0	Averaged	
1,1,1,2-Tetrachloroethane	0.36480	0.34429	0.34429	0.100	5.62337	20.0	Averaged	
Ethylbenzene	0.46175	0.44152	0.44152	0.100	4.38138	20.0	Averaged	
m,p-Xylenes	0.59525	0.54851	0.54851	0.100	7.85199	20.0	Averaged	
o-Xylene	0.58751	0.53202	0.53202	0.300	9.44473	20.0	Averaged	
Styrene	0.98473	0.93272	0.93272	0.300	5.28234	20.0	Averaged	
Bromoform	0.27722	0.27817	0.27817	0.100	-0.34048	20.0	Averaged	
Isopropylbenzene	1.34224	1.27832	1.27832	0.100	4.76169	20.0	Averaged	
1,1,2,2-Tetrachloroethane	0.79693	0.72101	0.72101	0.300	9.52605	20.0	Averaged	
4-Bromofluorobenzene	50.0	48.33358	0.44641	0.100	3.33284	20.0	Linear	
1,2,3-Trichloropropane	0.55636	0.52203	0.52203	0.100	6.16994	20.0	Averaged	
n-Propylbenzene	2.76956	2.64854	2.64854	0.100	4.36969	20.0	Averaged	
Bromobenzene	0.82033	0.78175	0.78175	0.100	4.70212	20.0	Averaged	
1,3,5-Trimethylbenzene	2.04596	1.92051	1.92051	0.100	6.13139	20.0	Averaged	
2-Chlorotoluene	1.81741	1.62677	1.62677	0.100	10.48976	20.0	Averaged	
4-Chlorotoluene	2.07183	1.89771	1.89771	0.100	8.40398	20.0	Averaged	
tert-Butylbenzene	1.67475	1.62029	1.62029	0.100	3.25199	20.0	Averaged	
1,2,4-Trimethylbenzene	2.15277	1.96441	1.96441	0.100	8.74935	20.0	Averaged	
sec-Butylbenzene	2.22832	2.23501	2.23501	0.100	-0.30022	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424675

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 22-DEC-2022 1041
Lab File ID X122203.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
p-Isopropyltoluene	1.99679	2.01589	2.01589	0.100	-0.95665	20.0	Averaged	
1,3-Dichlorobenzene	1.36155	1.27124	1.27124	0.600	6.63333	20.0	Averaged	
1,4-Dichlorobenzene	1.48576	1.33509	1.33509	0.400	10.14131	20.0	Averaged	
n-Butylbenzene	50.0	45.94073	1.76241	0.500	8.11855	20.0	Linear	
1,2-Dichlorobenzene	1.40225	1.27521	1.27521	0.400	9.05975	20.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	49.82181	0.12695	0.040	0.35638	20.0	Linear	
1,2,4-Trichlorobenzene	0.88494	0.92287	0.92287	0.100	-4.28508	20.0	Averaged	
Hexachlorobutadiene	50.0	58.50263	0.45978	0.100	-17.00525	20.0	Quadratic	
Naphthalene	2.01347	2.01642	2.01642	0.200	-0.14643	20.0	Averaged	
1,2,3-Trichlorobenzene	0.84755	0.85066	0.85066	0.010	-0.36682	20.0	Averaged	
1,2-Dichloroethylene (total	0.47078	0.40964	0.40964	0.200	12.98735	20.0	Averaged	
Xylenes (total)	0.56589	0.50807	0.50807	0.100	10.21789	20.0	Averaged	
Cyclohexane	50.0	46.11433	0.46381	0.100	7.77134	20.0	Linear	
Freon TF	0.36703	0.35361	0.35361	0.100	3.65745	20.0	Averaged	
Methylcyclohexane	0.61204	0.60367	0.60367	0.100	1.36715	20.0	Averaged	
Methyl Acetate	0.22499	0.18797	0.18797	0.100	16.45199	20.0	Averaged	
Tert-butyl alcohol	0.03462	0.03040	0.03040	0.005	12.20494	20.0	Averaged	
Isopropyl alcohol	0.01808	0.01626	0.01626	0.005	10.08276	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424675

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 22-DEC-2022 1454
Lab File ID X122215.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,4-Dioxane	0.00457	0.00404	0.00404	0.001	11.51291	50.0	Averaged	
1,3-Butadiene	0.34316	0.35557	0.35557	0.100	-3.61735	50.0	Averaged	
Methacrylonitrile	0.35404	0.27709	0.27709	0.100	21.73459	50.0	Averaged	
Dichlorodifluoromethane	50.0	57.43587	0.40212	0.100	-14.87173	50.0	Linear	
Chloromethane	50.0	47.38526	0.42763	0.100	5.22948	50.0	Linear	
Vinyl Chloride	0.43678	0.44158	0.44158	0.100	-1.09866	50.0	Averaged	
Bromomethane	50.0	44.58001	0.29324	0.100	10.83999	50.0	Linear	
Chloroethane	0.30401	0.27826	0.27826	0.100	8.47012	50.0	Averaged	
Trichlorofluoromethane	0.61122	0.64804	0.64804	0.100	-6.02262	50.0	Averaged	
Acrolein	100	86.76091	0.02954	0.010	13.23909	50.0	Linear	
Acetone	100	92.92115	0.13037	0.100	7.07885	50.0	Linear	
1,1-Dichloroethene	0.37948	0.37843	0.37843	0.100	0.27727	50.0	Averaged	
Iodomethane	100	104	0.52054	0.100	-3.77084	50.0	Quadratic	
Acrylonitrile	0.12870	0.11578	0.11578	0.050	10.03982	50.0	Averaged	
Methylene Chloride	0.52052	0.46159	0.46159	0.100	11.32173	50.0	Averaged	
Methyl tert-butyl ether	1.24211	1.05475	1.05475	0.100	15.08413	50.0	Averaged	
Carbon Disulfide	0.99285	0.99710	0.99710	0.100	-0.42807	50.0	Averaged	
trans-1,2-Dichloroethene	0.42470	0.41038	0.41038	0.100	3.37323	50.0	Averaged	
Vinyl Acetate	1.09037	0.86162	0.86162	0.010	20.97912	50.0	Averaged	
1,1-Dichloroethane	0.74536	0.68333	0.68333	0.200	8.32262	50.0	Averaged	
2-Butanone	100	90.22290	0.13381	0.100	9.77710	50.0	Linear	
2,2-Dichloropropane	0.63286	0.59890	0.59890	0.100	5.36480	50.0	Averaged	
cis-1,2-Dichloroethene	0.51686	0.46963	0.46963	0.100	9.13821	50.0	Averaged	
Chloroform	0.83541	0.76062	0.76062	0.200	8.95225	50.0	Averaged	
Bromochloromethane	0.28299	0.24948	0.24948	0.100	11.84100	50.0	Averaged	
Dibromofluoromethane	50.0	47.32854	0.45453	0.100	5.34292	50.0	Linear	
1,1,1-Trichloroethane	0.66283	0.66415	0.66415	0.100	-0.20025	50.0	Averaged	
1,1-Dichloropropene	0.35497	0.39807	0.39807	0.100	-12.14033	50.0	Averaged	
1,2-Dichloroethane	0.40967	0.38695	0.38695	0.100	5.54563	50.0	Averaged	
Carbon Tetrachloride	0.37906	0.41139	0.41139	0.100	-8.52820	50.0	Averaged	
1,2-Dichloroethane-d4	50.0	45.94610	0.46543	0.100	8.10780	50.0	Linear	
Benzene	1.19399	1.16818	1.16818	0.500	2.16161	50.0	Averaged	
Trichloroethene	0.33865	0.36393	0.36393	0.200	-7.46501	50.0	Averaged	
Bromodichloromethane	0.44810	0.41908	0.41908	0.200	6.47587	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID VOA6_424675

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 22-DEC-2022 1454
Lab File ID X122215.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
2-Chloroethylvinyl ether	0.12748	0.11267	0.11267	0.001	11.61754	50.0	Averaged	
1,2-Dichloropropane	0.31761	0.29705	0.29705	0.100	6.47311	50.0	Averaged	
Dibromomethane	0.21588	0.20153	0.20153	0.100	6.64840	50.0	Averaged	
4-Methyl-2-Pentanone	0.26725	0.24053	0.24053	0.100	9.99880	50.0	Averaged	
cis-1,3-Dichloropropene	0.52625	0.50619	0.50619	0.200	3.81239	50.0	Averaged	
Toluene-d8	1.23554	1.23086	1.23086	0.100	0.37836	50.0	Averaged	
Toluene	1.38201	1.37000	1.37000	0.400	0.86933	50.0	Averaged	
trans-1,3-Dichloropropene	0.43673	0.41773	0.41773	0.100	4.35031	50.0	Averaged	
2-Hexanone	0.18183	0.17012	0.17012	0.100	6.44164	50.0	Averaged	
1,1,2-Trichloroethane	0.27726	0.25709	0.25709	0.100	7.27321	50.0	Averaged	
1,3-Dichloropropane	0.54573	0.51528	0.51528	0.100	5.57921	50.0	Averaged	
Dibromochloromethane	0.40016	0.39293	0.39293	0.100	1.80706	50.0	Averaged	
Tetrachloroethene	0.28594	0.33904	0.33904	0.200	-18.56871	50.0	Averaged	
1,2-Dibromoethane	0.34665	0.34158	0.34158	0.100	1.46372	50.0	Averaged	
1-Chlorohexane	0.24163	0.26097	0.26097	0.100	-8.00069	50.0	Averaged	
Chlorobenzene	0.98026	0.93878	0.93878	0.500	4.23161	50.0	Averaged	
1,1,1,2-Tetrachloroethane	0.36480	0.36302	0.36302	0.100	0.48789	50.0	Averaged	
Ethylbenzene	0.46175	0.48962	0.48962	0.100	-6.03511	50.0	Averaged	
m,p-Xylenes	0.59525	0.61211	0.61211	0.100	-2.83195	50.0	Averaged	
o-Xylene	0.58751	0.59189	0.59189	0.300	-0.74592	50.0	Averaged	
Styrene	0.98473	1.00347	1.00347	0.300	-1.90313	50.0	Averaged	
Bromoform	0.27722	0.27969	0.27969	0.100	-0.89144	50.0	Averaged	
Isopropylbenzene	1.34224	1.48354	1.48354	0.100	-10.52774	50.0	Averaged	
1,1,2,2-Tetrachloroethane	0.79693	0.69961	0.69961	0.300	12.21220	50.0	Averaged	
4-Bromofluorobenzene	50.0	48.45518	0.44754	0.100	3.08964	50.0	Linear	
1,2,3-Trichloropropane	0.55636	0.51457	0.51457	0.100	7.51039	50.0	Averaged	
n-Propylbenzene	2.76956	3.08690	3.08690	0.100	-11.45825	50.0	Averaged	
Bromobenzene	0.82033	0.83867	0.83867	0.100	-2.23672	50.0	Averaged	
1,3,5-Trimethylbenzene	2.04596	2.23720	2.23720	0.100	-9.34738	50.0	Averaged	
2-Chlorotoluene	1.81741	1.81791	1.81791	0.100	-0.02726	50.0	Averaged	
4-Chlorotoluene	2.07183	2.11560	2.11560	0.100	-2.11279	50.0	Averaged	
tert-Butylbenzene	1.67475	1.92837	1.92837	0.100	-15.14379	50.0	Averaged	
1,2,4-Trimethylbenzene	2.15277	2.22949	2.22949	0.100	-3.56403	50.0	Averaged	
sec-Butylbenzene	2.22832	2.69103	2.69103	0.100	-20.76525	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder
HS22121096

RunID
VOA6_424675

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 22-DEC-2022 1454
Lab File ID X122215.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
p-Isopropyltoluene	1.99679	2.37293	2.37293	0.100	-18.83749	50.0	Averaged	
1,3-Dichlorobenzene	1.36155	1.43028	1.43028	0.600	-5.04800	50.0	Averaged	
1,4-Dichlorobenzene	1.48576	1.47777	1.47777	0.400	0.53801	50.0	Averaged	
n-Butylbenzene	50.0	53.42658	2.06114	0.500	-6.85317	50.0	Linear	
1,2-Dichlorobenzene	1.40225	1.42047	1.42047	0.400	-1.29948	50.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	51.17568	0.13041	0.040	-2.35135	50.0	Linear	
1,2,4-Trichlorobenzene	0.88494	1.04984	1.04984	0.100	-18.63320	50.0	Averaged	
Hexachlorobutadiene	50.0	66.31421	0.52211	0.100	-32.62841	50.0	Quadratic	
Naphthalene	2.01347	2.16511	2.16511	0.200	-7.53161	50.0	Averaged	
1,2,3-Trichlorobenzene	0.84755	0.97220	0.97220	0.010	-14.70772	50.0	Averaged	
1,2-Dichloroethylene (total	0.47078	0.44000	0.44000	0.200	6.53784	50.0	Averaged	
Xylenes (total)	0.56589	0.56300	0.56300	0.100	0.51221	50.0	Averaged	
Cyclohexane	50.0	55.96754	0.56570	0.100	-11.93508	50.0	Linear	
Freon TF	0.36703	0.40817	0.40817	0.100	-11.20964	50.0	Averaged	
Methylcyclohexane	0.61204	0.60454	0.60454	0.100	1.22523	50.0	Averaged	
Methyl Acetate	0.22499	0.19888	0.19888	0.100	11.60286	50.0	Averaged	
Tert-butyl alcohol	0.03462	0.03005	0.03005	0.005	13.20692	50.0	Averaged	
Isopropyl alcohol	0.01808	0.01587	0.01587	0.005	12.24198	50.0	Averaged	

right solutions.
right partner.

Form 8

Internal Standard Area and RT Summary

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 8 - Internal Standard Area and RT Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RunID
VOA6_424675

		IS1				IS2				IS3				IS4			
Sample ID	File ID	Area		RT		Area		RT		Area		RT		Area		RT	
12-HOUR STD (CCV)	X122203	465672	#	4.18	#	644522	#	4.97	#	603048	#	7.67	#	339445	#	9.66	#
CCB	X122204	516866		4.18		689936		4.97		597142		7.67		309365		9.66	
VLCSW-221222	X122205	450651		4.18		636700		4.97		592792		7.67		338853		9.66	
VBLKW-221222	X122207	493389		4.18		694541		4.97		609091		7.67		297826		9.66	
HS22121096-04	X122208	495907		4.18		714522		4.97		628025		7.67		314221		9.66	
HS22121096-02	X122209	467423		4.18		680917		4.97		599135		7.67		305628		9.67	
HS22121096-01	X122210	455757		4.18		658776		4.97		572740		7.67		279598		9.66	
HS22121096-03	X122211	467887		4.18		672236		4.97		592435		7.67		294527		9.67	
HS22121096-02MS	X122212	505821		4.18		693543		4.97		615142		7.67		345928		9.66	
HS22121096-02MSD	X122213	500496		4.18		677054		4.97		598410		7.67		322020		9.66	
HS22121096-03	X122214	499857		4.18		693402		4.97		608118		7.67		313550		9.66	
CCV-END	X122215	443350		4.18		631304		4.97		587116		7.67		330349		9.66	

IS1 - Pentafluorobenzene IS2 - 1,4-Difluorobenzene IS3 - Chlorobenzene-d5 IS4 - 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of 12H STD IS Area
AREA LOWER LIMIT = - 50% of 12H STD IS Area
RT - Retention Time IS - Internal Standard

RT UPPER LIMIT = + 0.50 of 12H STD IS RT
RT LOWER LIMIT = - 0.50 of 12H STD IS RT
CCV - Continuing Calibration Verification

- Area or RT Limit Flag
* - Value Outside Area or RT limits
H - Hour STD - Standard

right solutions.
right partner.

Analysis Run Log

Volatiles by by EPA 8260

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

MSVOA06 -Logbook

Batch: 52417 **Analyst:** Presenta Cabascango

Date: 12-16-2022 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	12-16-2022 11:17 am	1.00	50 mL	50 mL	X121601.D	Liquid	Y	NA
2	VSTD000.25	ICAL1	12-16-2022 11:38 am	1.00	50 mL	50 mL	X121602.D	Liquid	Y	NA
3	VSTD000.5	ICAL2	12-16-2022 12:20 pm	1.00	50 mL	50 mL	X121603.D	Liquid	Y	NA
4	VSTD001	ICAL3	12-16-2022 12:41 pm	1.00	50 mL	50 mL	X121604.D	Liquid	Y	NA
5	VSTD002	ICAL4	12-16-2022 01:02 pm	1.00	50 mL	50 mL	X121605.D	Liquid	Y	NA
6	VSTD005	ICAL5	12-16-2022 01:23 pm	1.00	50 mL	50 mL	X121606.D	Liquid	Y	NA
7	VSTD020	ICAL6	12-16-2022 01:43 pm	1.00	50 mL	50 mL	X121607.D	Liquid	Y	NA
8	VSTD050	ICAL7	12-16-2022 02:04 pm	1.00	50 mL	50 mL	X121608.D	Liquid	Y	NA
9	VSTD100	ICAL8	12-16-2022 02:25 pm	1.00	50 mL	50 mL	X121609.D	Liquid	Y	NA
10	VSTD150	ICAL9	12-16-2022 02:46 pm	1.00	50 mL	50 mL	X121610.D	Liquid	Y	NA
11	VSTD200	ICAL	12-16-2022 03:07 pm	1.00	50 mL	50 mL	X121611.D	Liquid	Y	NA
12	BLANK	SAMP	12-16-2022 03:28 pm	1.00	50 mL	50 mL	X121612.D	Liquid	Y	NA
13	CCV	CCV	12-16-2022 03:49 pm	1.00	50 mL	50 mL	X121613.D	Liquid	Y	NA
14	BLANK	SAMP	12-16-2022 04:10 pm	1.00	50 mL	50 mL	X121614.D	Liquid	Y	NA
15	CCB	SAMP	12-16-2022 04:31 pm	1.00	50 mL	50 mL	X121615.D	Liquid	Y	NA
16	VLCSW-221216	LCS	12-16-2022 04:52 pm	1.00	50 mL	50 mL	X121616.D	Liquid	Y	NA
17	BLANK	SAMP	12-16-2022 05:13 pm	1.00	50 mL	50 mL	X121617.D	Liquid	Y	NA
18	VBLKW-221216	MBLK	12-16-2022 05:34 pm	1.00	50 mL	50 mL	X121618.D	Liquid	Y	NA
19	HS22120648-05	SAMP	12-16-2022 05:55 pm	1.00	50 mL	50 mL	X121619.D	Liquid	Y	NA
20	HS22120648-09	SAMP	12-16-2022 06:16 pm	1.00	50 mL	50 mL	X121620.D	Liquid	Y	NA
21	HS22120648-01	SAMP	12-16-2022 06:37 pm	1.00	50 mL	50 mL	X121621.D	Liquid	Y	NA
22	HS22120648-02	SAMP	12-16-2022 06:58 pm	1.00	50 mL	50 mL	X121622.D	Liquid	Y	NA
23	HS22120648-03	SAMP	12-16-2022 07:19 pm	1.00	50 mL	50 mL	X121623.D	Liquid	Y	NA
24	HS22120648-04	SAMP	12-16-2022 07:40 pm	1.00	50 mL	50 mL	X121624.D	Liquid	Y	NA
25	HS22120648-06	SAMP	12-16-2022 08:01 pm	1.00	50 mL	50 mL	X121625.D	Liquid	Y	NA
26	HS22120648-07	SAMP	12-16-2022 08:22 pm	1.00	50 mL	50 mL	X121626.D	Liquid	Y	NA
27	HS22120648-08	SAMP	12-16-2022 08:43 pm	1.00	50 mL	50 mL	X121627.D	Liquid	Y	NA
28	HS22120648-06MS	MS	12-16-2022 09:04 pm	1.00	50 mL	50 mL	X121628.D	Liquid	Y	NA
29	HS22120648-06MSD	MSD	12-16-2022 09:25 pm	1.00	50 mL	50 mL	X121629.D	Liquid	Y	NA
30	CCV-END	CCV	12-16-2022 09:46 pm	1.00	50 mL	50 mL	X121630.D	Liquid	Y	NA
31	BFB	TUNE	12-16-2022 10:07 pm	1.00	50 mL	50 mL	Y121601.D	Liquid	Y	NA
32	CCV	CCV	12-16-2022 10:28 pm	1.00	50 mL	50 mL	Y121602a.D	Liquid	Y	NA
33	CCV	CCV	12-16-2022 10:49 pm	1.00	50 mL	50 mL	Y121603.D	Liquid	Y	NA
34	CCB	SAMP	12-16-2022 11:10 pm	1.00	50 mL	50 mL	Y121604.D	Liquid	Y	NA
35	VLCSW-221215	LCS	12-16-2022 11:31 pm	1.00	50 mL	50 mL	Y121605.D	Liquid	Y	NA
36	BLANK	SAMP	12-16-2022 11:52 pm	1.00	50 mL	50 mL	Y121606.D	Liquid	Y	NA
37	VBLKW-221215	MBLK	12-17-2022 12:13 am	1.00	50 mL	50 mL	Y121607.D	Liquid	Y	NA
38	HS22120974-13	SAMP	12-17-2022 12:34 am	1.00	50 mL	50 mL	Y121608.D	Liquid	Y	NA
39	HS22120974-01	SAMP	12-17-2022 12:55 am	1.00	50 mL	50 mL	Y121609.D	Liquid	Y	NA
40	HS22120974-01MS	MS	12-17-2022 01:16 am	1.00	50 mL	50 mL	Y121610.D	Liquid	Y	NA
41	HS22120974-01MSD	MSD	12-17-2022 01:38 am	1.00	50 mL	50 mL	Y121611.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
42	BLANK	SAMP	12-17-2022 01:59 am	1.00	50 mL	50 mL	Y121612.D	Liquid	Y	NA
43	HS22120974-02	SAMP	12-17-2022 02:20 am	1.00	50 mL	50 mL	Y121613.D	Liquid	Y	NA
44	HS22120974-03	SAMP	12-17-2022 02:41 am	1.00	50 mL	50 mL	Y121614.D	Liquid	Y	NA
45	HS22120974-04	SAMP	12-17-2022 03:02 am	1.00	50 mL	50 mL	Y121615.D	Liquid	Y	NA
46	HS22120974-05	SAMP	12-17-2022 03:23 am	1.00	50 mL	50 mL	Y121616.D	Liquid	Y	NA
47	HS22120974-06	SAMP	12-17-2022 03:44 am	1.00	50 mL	50 mL	Y121617.D	Liquid	Y	NA
48	HS22120974-07	SAMP	12-17-2022 04:05 am	1.00	50 mL	50 mL	Y121618.D	Liquid	Y	NA
49	HS22120974-08	SAMP	12-17-2022 04:26 am	1.00	50 mL	50 mL	Y121619.D	Liquid	Y	NA
50	HS22120974-09	SAMP	12-17-2022 04:47 am	1.00	50 mL	50 mL	Y121620.D	Liquid	Y	NA
51	HS22120974-10	SAMP	12-17-2022 05:08 am	1.00	50 mL	50 mL	Y121621.D	Liquid	Y	NA
52	HS22120974-11	SAMP	12-17-2022 05:29 am	1.00	50 mL	50 mL	Y121622.D	Liquid	Y	NA
53	HS22120974-12	SAMP	12-17-2022 05:50 am	1.00	50 mL	50 mL	Y121623.D	Liquid	Y	NA
54	HS22120974-14	SAMP	12-17-2022 06:11 am	1.00	50 mL	50 mL	Y121624.D	Liquid	Y	NA
55	HS22120974-15	SAMP	12-17-2022 06:32 am	1.00	50 mL	50 mL	Y121625.D	Liquid	Y	NA
56	HS22120574-15	SAMP	12-17-2022 06:53 am	5.00	10 mL	50 mL	Y121626.D	Liquid	Y	NA
57	HS22120574-17	SAMP	12-17-2022 07:14 am	5.00	10 mL	50 mL	Y121627.D	Liquid	Y	NA
58	HS22120770-07	SAMP	12-17-2022 07:36 am	10.00	5 mL	50 mL	Y121628.D	Liquid	Y	NA
59	HS22120770-07	SAMP	12-17-2022 07:57 am	100.0(	500 µL	50 mL	Y121629.D	Liquid	Y	NA
60	HS22120770-10	SAMP	12-17-2022 08:18 am	5.00	10 mL	50 mL	Y121630.D	Liquid	Y	NA
61	BLANK	SAMP	12-17-2022 08:39 am	1.00	50 mL	50 mL	Y121631.D	Liquid	Y	NA

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Volatiles by by EPA 8260

RUNID
VOA6_424675

Run ID VOA6_424675 **Start Date** 12/22/22 **EndDate** 12/22/22 **Matrix** Aqueous

Client Sample ID	Type	Lab Sample ID	File ID	Analysis Date	DF
CCV	CCV	CCV	X122203.D	12/22/22 10:41	1
CCB	CCB	CCB	X122204.D	12/22/22 11:02	1
VLCSW-221222	LCS	VLCSW-221222	X122205.D	12/22/22 11:23	1
VBLKW-221222	MBLK	VBLKW-221222	X122207.D	12/22/22 12:05	1
Trip Blank	SAMP	HS22121096-04	X122208.D	12/22/22 12:26	1
18CPTMW04SW_121622	SAMP	HS22121096-02	X122209.D	12/22/22 12:47	1
18CPTMW04_121622	SAMP	HS22121096-01	X122210.D	12/22/22 13:09	10
MW2_121522	SAMP	HS22121096-03	X122211.D	12/22/22 13:30	25
18CPTMW04SW_121622	MS	HS22121096-02MS	X122212.D	12/22/22 13:51	1
18CPTMW04SW_121622	MSD	HS22121096-02MSD	X122213.D	12/22/22 14:12	1
MW2_121522	SAMP	HS22121096-03	X122214.D	12/22/22 14:33	250

right solutions.
right partner.

Raw Data VOA6 424237

Volatiles by by EPA 8260

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D Page 1
Report Date: 16-Dec-2022 12:08

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 16-DEC-2022 11:17
Operator : PC Inst ID: voa6.i
Smp Info : BFB;BFB;3;;BFB
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\bfb.m
Meth Date : 01-Dec-2022 12:59 Linh.Pham Quant Type: ISTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vf	1.000	Volumetric correction factor
Vi	2.000	Injection Volume
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/l)		
RT	EXP RT	REL RT	MASS	RESPONSE			TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
8.691	8.889	(0.000)	95	72328			0.00- 100.00	100.00
8.691	8.889	(0.000)	50	13272			15.00- 40.00	18.35
8.691	8.889	(0.000)	75	33368			30.00- 60.00	46.13
8.691	8.889	(0.000)	96	5178			5.00- 9.00	7.16
8.691	8.889	(0.000)	173	577			0.00- 2.00	0.90
8.691	8.889	(0.000)	174	64360			50.00- 0.00	88.98
8.691	8.889	(0.000)	175	5033			5.00- 9.00	7.82
8.691	8.889	(0.000)	176	63184			95.00- 101.00	98.17
8.691	8.889	(0.000)	177	4164			5.00- 9.00	6.59

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.35
75	30.00 - 60.00% of mass 95	46.13
96	5.00 - 9.00% of mass 95	7.16
173	Less than 2.00% of mass 174	0.80 (0.90)
174	Greater than 50.00% of mass 95	88.98
175	5.00 - 9.00% of mass 174	6.96 (7.82)
176	95.00 - 101.00% of mass 174	87.36 (98.17)
177	5.00 - 9.00% of mass 176	5.76 (6.59)

Data File: X121601.D
Spectrum: Scan 2160 (8.68)
Location of Maximum: 95.00
Number of points: 84

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.90	686	63.00	2521	93.00	2705	136.90	215
37.00	3051	64.10	316	94.00	9587	140.90	735
38.00	2957	66.90	155	95.00	72328	141.70	91
39.00	1321	67.90	6274	96.00	5178	142.80	683
39.90	1146	69.00	6990	96.90	213	145.60	119
42.00	114	69.90	604	103.00	58	148.00	107
42.90	301	71.80	385	104.00	313	149.80	105
44.00	1509	72.90	2986	104.70	125	153.80	54
45.00	716	74.00	11163	105.10	132	154.80	169
46.80	723	75.00	33368	105.90	451	156.80	155
48.00	503	76.00	3228	110.60	54	160.80	71
49.00	3278	76.90	395	113.00	74	171.60	83
50.00	13272	77.80	187	114.80	159	172.80	577
51.00	3648	78.90	2224	115.80	342	173.90	64360
52.10	365	79.80	718	116.90	386	174.90	5033
54.00	52	80.90	2158	117.90	425	175.90	63184
54.90	278	81.80	420	118.80	260	176.90	4164
56.00	1513	83.00	51	127.90	191	178.00	133
57.00	1763	86.90	2878	128.90	172		
59.90	665	87.80	2342	129.80	237		
61.00	3173	91.00	516	130.80	156		
62.00	3572	92.00	2006	134.70	222		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D Page 1

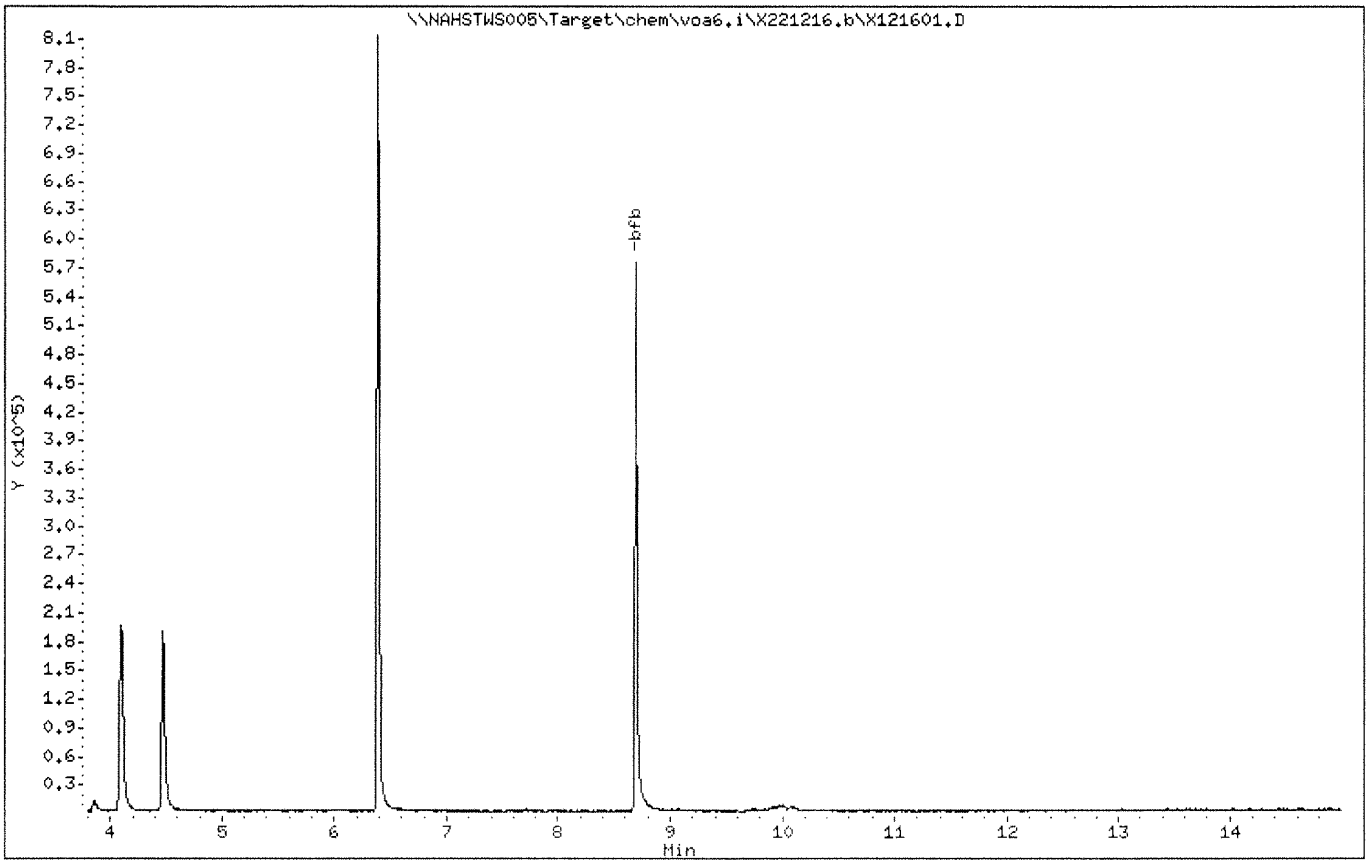
Date : 16-DEC-2022 11:17

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D Page 2

Date : 16-DEC-2022 11:17

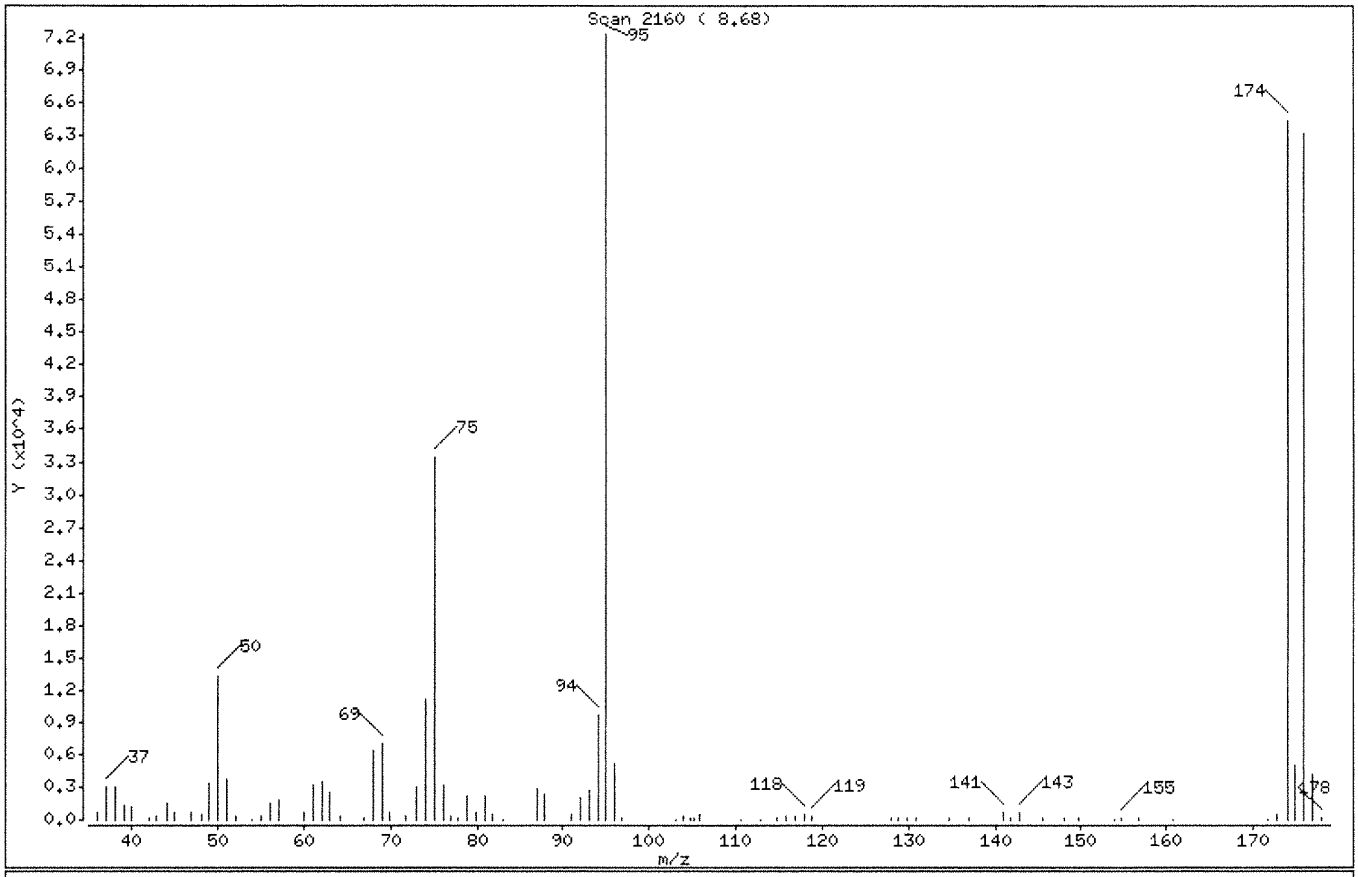
Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.35
75	30.00 - 60.00% of mass 95	46.13
96	5.00 - 9.00% of mass 95	7.16
173	Less than 2.00% of mass 174	0.80 (0.90)
174	Greater than 50.00% of mass 95	88.98
175	5.00 - 9.00% of mass 174	6.96 (7.82)
176	95.00 - 101.00% of mass 174	87.36 (98.17)
177	5.00 - 9.00% of mass 176	5.76 (6.59)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D

Date : 16-DEC-2022 11:17

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

Data File: X121601.D
Spectrum: Scan 2160 (8.68)
Location of Maximum: 95.00
Number of points: 84

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.90	686	63.00	2521	93.00	2705	136.90	215
37.00	3051	64.10	316	94.00	9587	140.90	735
38.00	2957	66.90	155	95.00	72328	141.70	91
39.00	1321	67.90	6274	96.00	5178	142.80	683
39.90	1146	69.00	6990	96.90	213	145.60	119
42.00	114	69.90	604	103.00	58	148.00	107
42.90	301	71.80	385	104.00	313	149.80	105
44.00	1509	72.90	2986	104.70	125	153.80	54
45.00	716	74.00	11163	105.10	132	154.80	169
46.80	723	75.00	33368	105.90	451	156.80	155
48.00	503	76.00	3228	110.60	54	160.80	71
49.00	3278	76.90	395	113.00	74	171.60	83
50.00	13272	77.80	187	114.80	159	172.80	577
51.00	3648	78.90	2224	115.80	342	173.90	64360
52.10	365	79.80	718	116.90	386	174.90	5033
54.00	52	80.90	2158	117.90	425	175.90	63184
54.90	278	81.80	420	118.80	260	176.90	4164
56.00	1513	83.00	51	127.90	191	178.00	133
57.00	1763	86.90	2878	128.90	172		
59.90	665	87.80	2342	129.80	237		
61.00	3173	91.00	516	130.80	156		
62.00	3572	92.00	2006	134.70	222		

Data File : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D
Inj Date : 16-DEC-2022 11:17
InstruID : voa6.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 16-DEC-2022 11:38
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1	Pentafluorobenzene	168	4.178	4.178	(1.000)	461807	50.0000	
135	1,4-Dioxane	88	5.625	5.625	(1.346)	214	5.00000	5.06(M)
140	1,3-Butadiene	54	1.164	1.164	(0.279)	1172	0.25000	0.36
25	Methacrylonitrile	41	3.855	3.855	(0.923)	5876	0.25000	1.79
12	Isobutyl Alcohol	43	4.687	4.687	(1.122)	2537	5.00000	4.88(TM)
13	Acetonitrile	39	2.202	2.202	(0.527)	730	2.50000	1.73
14	Allyl Chloride	41	2.206	2.206	(0.528)	1591	0.25000	0.19
4	Propionitrile	54	3.702	3.702	(0.886)	1165	2.50000	2.47(M)
72	trans-1,4-Dichloro-2-butene	53	8.931	8.931	(1.164)	280	0.25000	0.19(M)
145	alpha-Methylstyrene	118	9.268	9.268	(0.959)	2322	0.25000	0.30
200	Dimethyl Disulfide	94	6.213	6.213	(0.810)	1870	0.25000	0.21
139	Diethyl ether	59	1.760	1.760	(0.421)	687	0.25000	0.22
49	Ethyl Methacrylate	69	6.738	6.738	(1.357)	625	0.25000	0.19
142	Tetrahydrofuran	42	3.836	3.836	(0.918)	358	0.50000	(M)
166	1,2,3-Trimethylbenzene	105	9.737	9.737	(1.008)	4360	0.25000	0.25
2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	801	0.25000	0.63(M)
3	Chloromethane	50	1.077	1.077	(0.258)	1420	0.25000	2.53
5	Vinyl Chloride	62	1.141	1.141	(0.273)	1134	0.25000	0.28(M)
6	Bromomethane	94	1.340	1.340	(0.321)	1009	0.25000	2.08(M)
8	Trichlorofluoromethane	101	1.561	1.561	(0.374)	1468	0.25000	0.26

10 Acetone	43	1.977	1.977 (0.473)	2727	0.50000	2.07
11 1,1-Dichloroethene	96	1.910	1.910 (0.457)	1010	0.25000	0.28(M)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D Page 2
Report Date: 27-Dec-2022 16:07

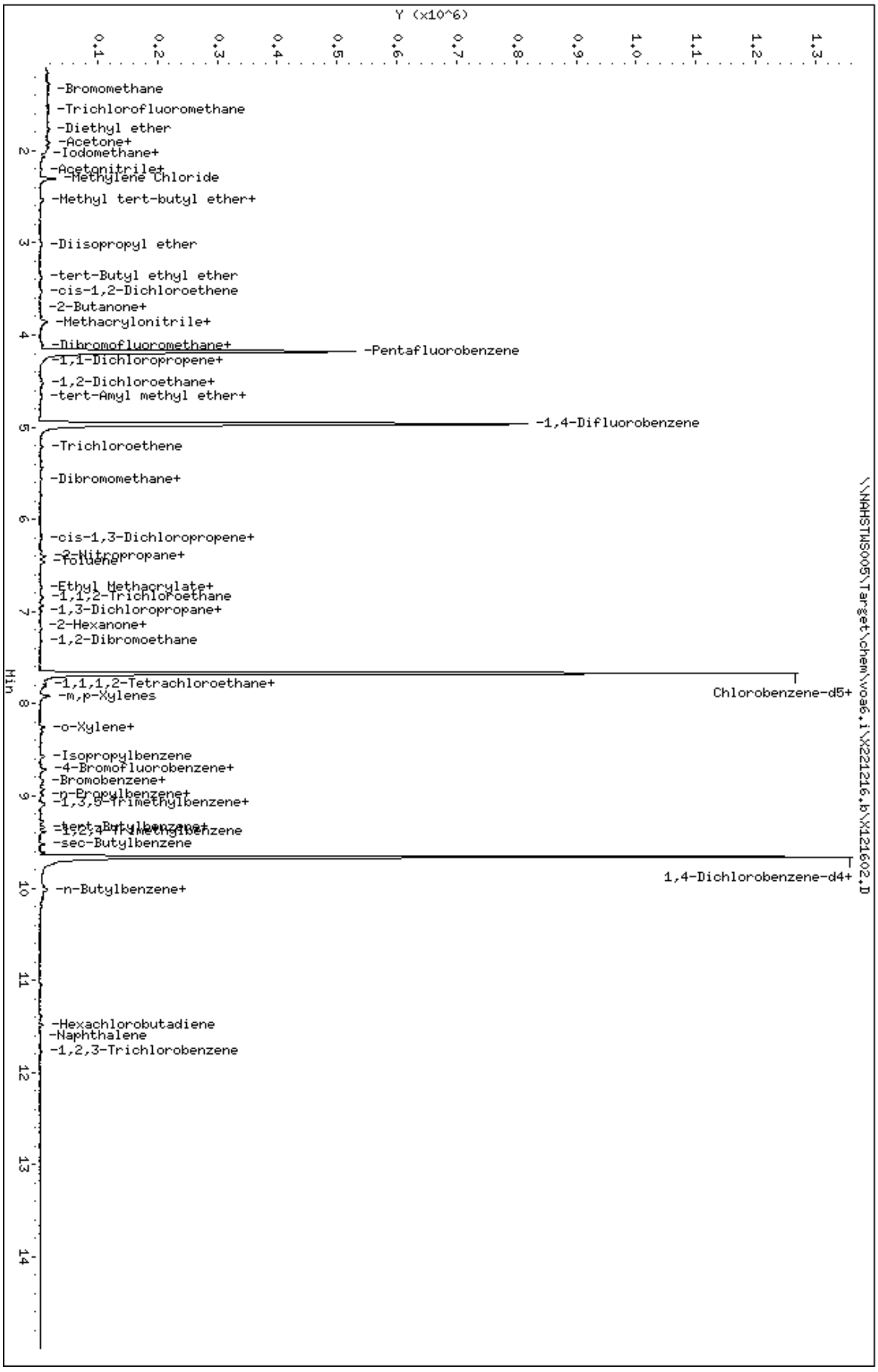
			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	15	Iodomethane	142	2.026	2.026	(0.485)	1106	0.50000	3.56(T)
	17	Methylene Chloride	84	2.292	2.292	(0.549)	1436	0.25000	0.29(M)
	18	Methyl tert-butyl ether	73	2.536	2.536	(0.607)	2787	0.25000	0.24
	19	Carbon Disulfide	76	2.071	2.071	(0.496)	5999	0.50000	0.65
	20	trans-1,2-Dichloroethene	96	2.539	2.539	(0.608)	1302	0.25000	0.33
	24	2-Butanone	43	3.698	3.698	(0.885)	1014	0.50000	3.74
	27	cis-1,2-Dichloroethene	96	3.533	3.533	(0.846)	1402	0.25000	0.29
	28	Chloroform	83	3.908	3.908	(0.935)	2553	0.25000	0.33
	29	Bromochloromethane	128	3.799	3.799	(0.909)	802	0.25000	0.30(M)
$	30	Dibromofluoromethane	113	4.103	4.103	(0.982)	1706	0.25000	0.21
	31	1,1,1-Trichloroethane	97	4.076	4.076	(0.976)	1648	0.25000	0.26
	32	1,1-Dichloropropene	75	4.286	4.286	(0.863)	2114	0.25000	0.43
	33	1,2-Dichloroethane	62	4.571	4.571	(0.921)	2167	0.25000	0.38
	34	Carbon Tetrachloride	117	4.256	4.256	(0.857)	1685	0.25000	0.32(M)
$	35	1,2-Dichloroethane-d4	65	4.481	4.481	(1.073)	2260	0.25000	0.75(T)
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	690224	50.0000	
	37	Benzene	78	4.522	4.522	(0.911)	5768	0.25000	0.34
	38	Trichloroethene	130	5.212	5.212	(1.050)	1544	0.25000	0.33
	44	Dibromomethane	93	5.565	5.565	(1.121)	1046	0.25000	0.35
	45	4-Methyl-2-Pentanone	43	6.352	6.352	(0.828)	2297	0.50000	0.65
	46	cis-1,3-Dichloropropene	75	6.168	6.168	(1.242)	1839	0.25000	0.25
*	47	Chlorobenzene-d5	117	7.671	7.671	(1.000)	653787	50.0000	
$	48	Toluene-d8	98	6.401	6.401	(0.834)	6828	0.25000	0.42(T)
	50	Toluene	91	6.457	6.457	(0.842)	6778	0.25000	0.37
	52	2-Hexanone	43	7.150	7.150	(0.932)	974	0.50000	0.40(T)
	53	1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	1098	0.25000	0.30
	54	1,3-Dichloropropane	76	6.993	6.993	(0.912)	2278	0.25000	0.31
	55	Dibromochloromethane	129	7.184	7.184	(0.936)	1732	0.25000	0.33
	56	Tetrachloroethene	164	6.933	6.933	(0.904)	1051	0.25000	0.28
	57	1,2-Dibromoethane	107	7.278	7.278	(0.949)	1100	0.25000	0.24
	58	1-Chlorohexane	55	7.668	7.668	(1.544)	6570	0.25000	1.96
	59	Chlorobenzene	112	7.694	7.694	(1.003)	3981	0.25000	0.31
	60	1,1,1,2-Tetrachloroethane	131	7.780	7.780	(1.014)	1245	0.25000	0.26
	61	Ethylbenzene	106	7.810	7.810	(1.018)	1854	0.25000	0.30
	62	m,p-Xylenes	106	7.915	7.915	(1.032)	5083	0.50000	0.65
	63	o-Xylene	106	8.252	8.252	(1.076)	2471	0.25000	0.32
	64	Styrene	104	8.297	8.297	(1.082)	3214	0.25000	0.24
	67	Isopropylbenzene	105	8.575	8.575	(1.118)	5495	0.25000	0.31
$	69	4-Bromofluorobenzene	95	8.706	8.706	(1.135)	4271	0.25000	0.77
*	70	1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	348702	50.0000	
	71	1,2,3-Trichloropropane	75	8.875	8.875	(0.919)	766	0.25000	0.19(M)
	73	n-Propylbenzene	91	8.931	8.931	(0.924)	5570	0.25000	0.28
	74	Bromobenzene	156	8.826	8.826	(0.913)	1517	0.25000	0.26
	75	1,3,5-Trimethylbenzene	105	9.081	9.081	(0.940)	4893	0.25000	0.34
	76	2-Chlorotoluene	91	8.991	8.991	(0.931)	4890	0.25000	0.38
	77	4-Chlorotoluene	91	9.107	9.107	(0.943)	3881	0.25000	0.26
	78	tert-Butylbenzene	119	9.343	9.343	(0.967)	4059	0.25000	0.34
	79	1,2,4-Trimethylbenzene	105	9.392	9.392	(0.972)	5202	0.25000	0.34
	81	sec-Butylbenzene	105	9.523	9.523	(0.986)	4818	0.25000	0.31
	82	p-Isopropyltoluene	119	9.662	9.662	(1.000)	4406	0.25000	0.31
	83	1,3-Dichlorobenzene	146	9.621	9.621	(0.996)	3005	0.25000	0.31
	84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	3674	0.25000	0.35

87 n-Butylbenzene	91	10.033	10.033 (1.038)	1595	0.25000	1.89
88 1,2-Dichlorobenzene	146	10.010	10.010 (1.036)	2937	0.25000	0.30

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	91 Hexachlorobutadiene	225	11.484	11.484	(1.189)	726	0.25000	0.21(M)
	92 Naphthalene	128	11.607	11.607	(1.201)	1969	0.25000	0.14
	93 1,2,3-Trichlorobenzene	180	11.769	11.769	(1.218)	1816	0.25000	0.30(M)
M	94 1,2-Dichloroethylene (total)	96				2704	0.50000	
M	95 Xylenes (total)	106				7554	0.75000	
	141 Cyclohexane	56	4.125	4.125	(0.987)	1235	0.25000	1.51(M)
	138 Freon TF	101	1.917	1.917	(0.459)	765	0.25000	0.22(M)

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6,i\X221216,b\X121602.D
Date : 16-DEC-2022 11:38
Client ID: VSTD000.25
Sample Info: VSTD000.25;VSTD000.25;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

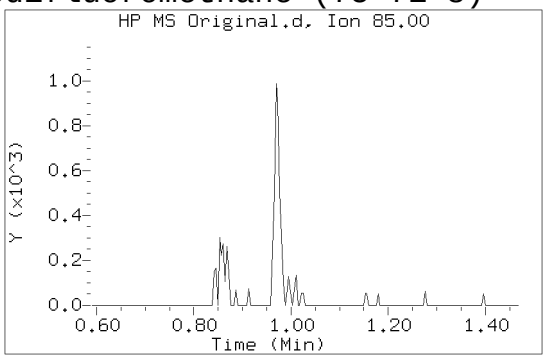
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Dichlorodifluoromethane (75-71-8)

Reason Code:

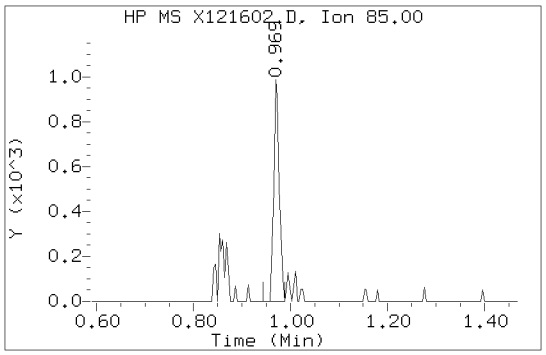
BEFORE

MASS
50
AREA
1420
HEIGHT
1809
16-Dec-2022
11:54
ALSHS
Server



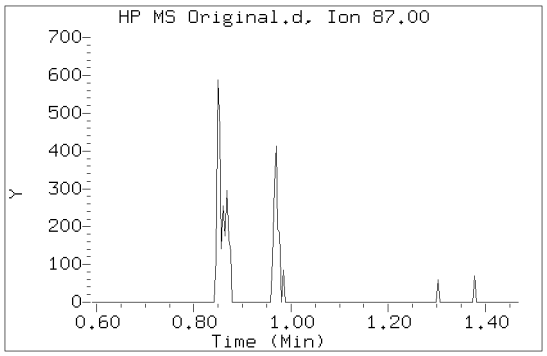
AFTER

MASS
85
AREA
801
HEIGHT
987
27-Dec-2022
16:07
ALSHS
Ser



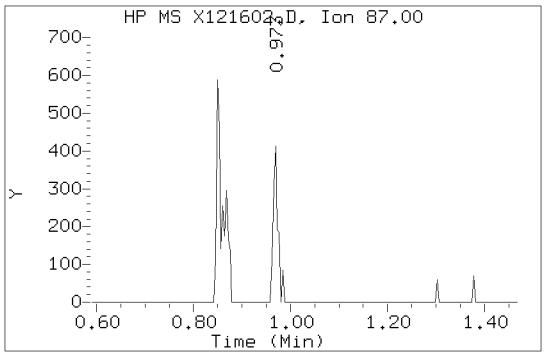
BEFORE

MASS
52
AREA
731
HEIGHT
740
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
87
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

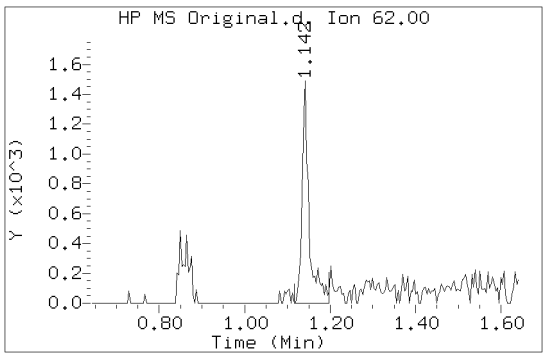


Vinyl Chloride (75-01-4)

Reason Code:

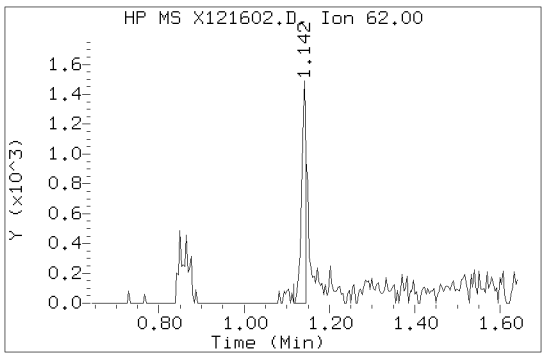
BEFORE

MASS
94
AREA
1572
HEIGHT
983
16-Dec-2022
11:54
ALSHS
Server



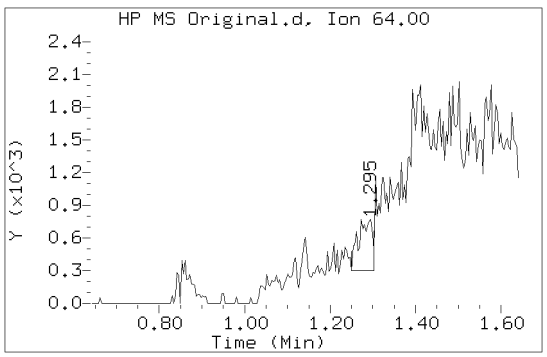
AFTER

MASS
62
AREA
1134
HEIGHT
1490
27-Dec-2022
16:07
ALSHS
Ser



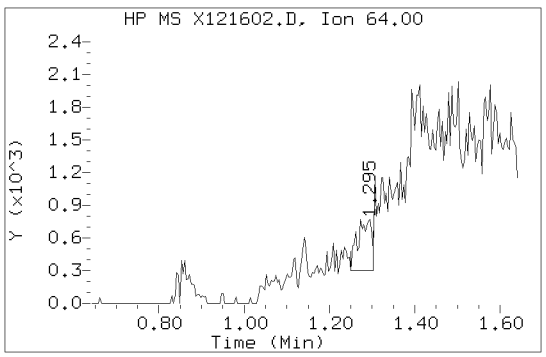
BEFORE

MASS
96
AREA
1330
HEIGHT
961
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
64
AREA
1053
HEIGHT
470
27-Dec-2022
16:07
ALSHS
Ser

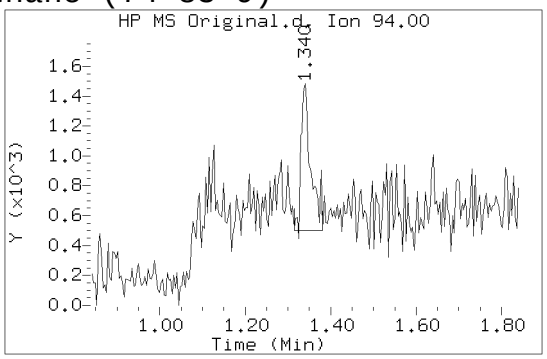


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Bromomethane (74-83-9)

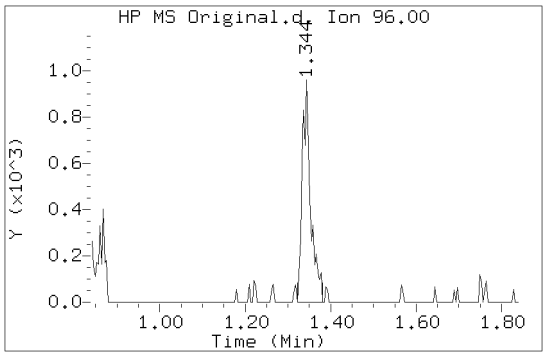
BEFORE

MASS
64
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



BEFORE

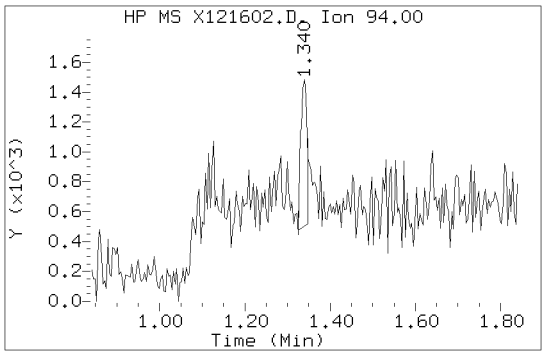
MASS
66
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

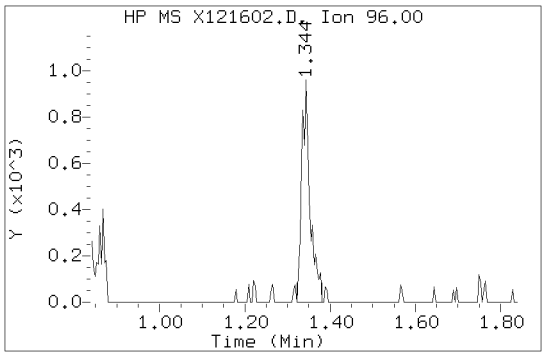
AFTER

MASS
94
AREA
1009
HEIGHT
977
27-Dec-2022
16:07
ALSHS
Ser



AFTER

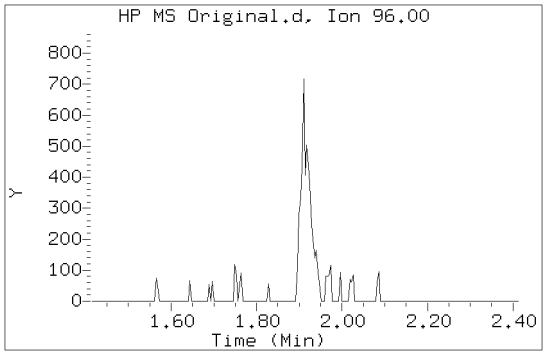
MASS
96
AREA
1330
HEIGHT
961
27-Dec-2022
16:07
ALSHS
Ser



1,1-Dichloroethene (75-35-4)

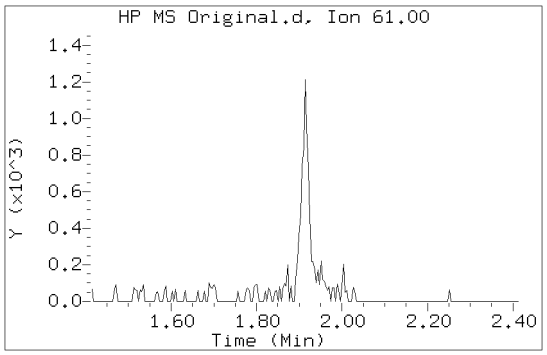
BEFORE

MASS
142
AREA
1106
HEIGHT
699
16-Dec-2022
11:54
ALSHS
Server



BEFORE

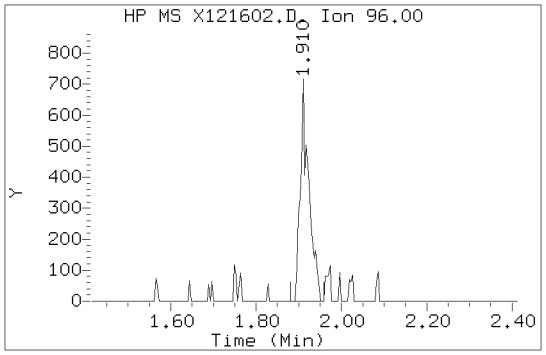
MASS
127
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

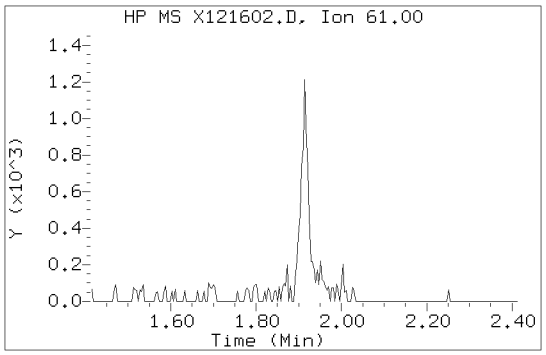
AFTER

MASS
96
AREA
1010
HEIGHT
717
27-Dec-2022
16:07
ALSHS
Ser



AFTER

MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



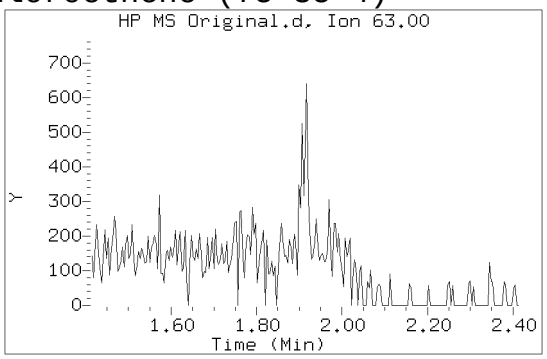
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

1,1-Dichloroethene (75-35-4)

Reason Code:

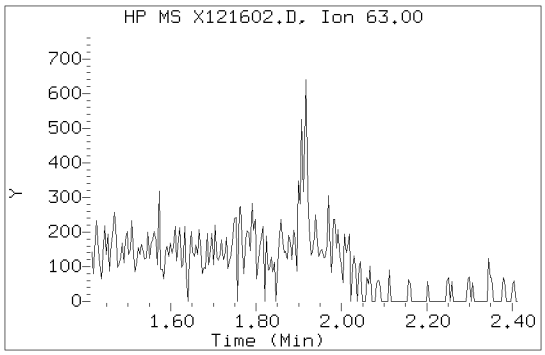
BEFORE

MASS
141
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

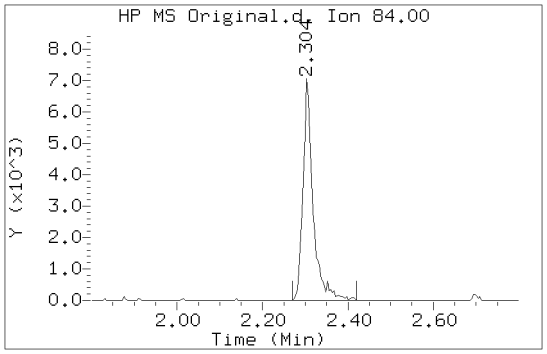


Methylene Chloride (75-09-2)

Reason Code:

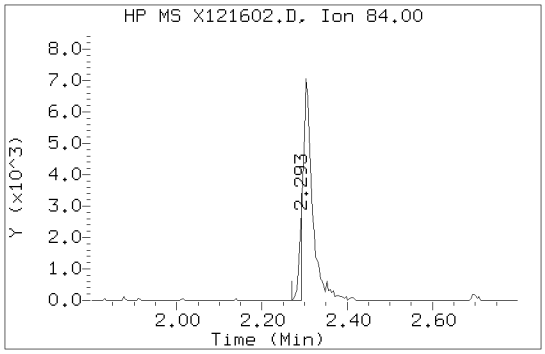
BEFORE

MASS
84
AREA
11777
HEIGHT
7057
16-Dec-2022
11:54
ALSHS
Server



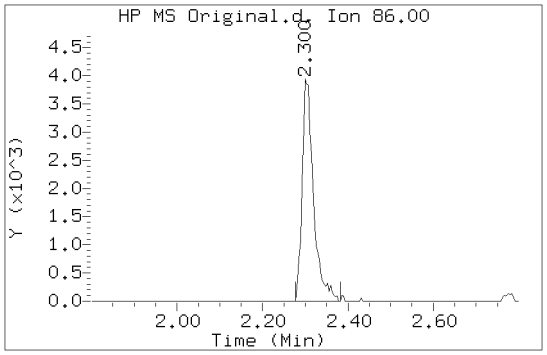
AFTER

MASS
84
AREA
1436
HEIGHT
2786
27-Dec-2022
16:07
ALSHS
Ser



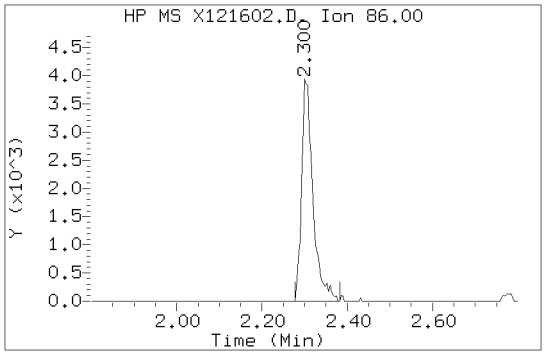
BEFORE

MASS
86
AREA
7453
HEIGHT
3944
16-Dec-2022
11:54
ALSHS
Server



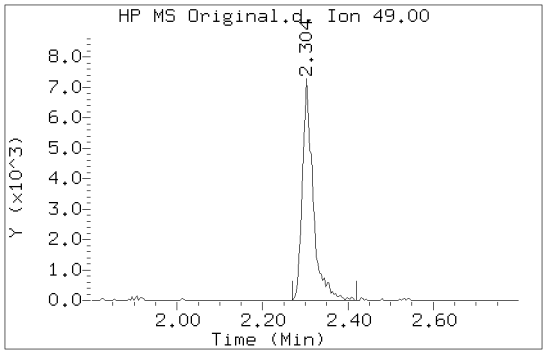
AFTER

MASS
86
AREA
7453
HEIGHT
3944
27-Dec-2022
16:07
ALSHS
Ser



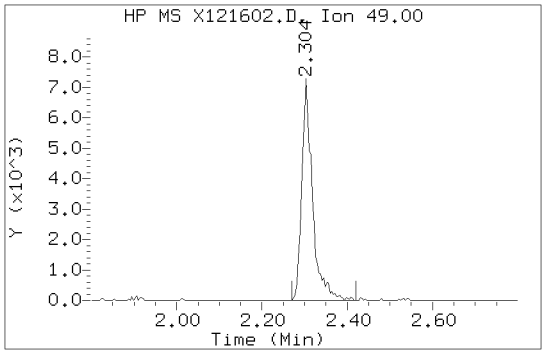
BEFORE

MASS
49
AREA
12974
HEIGHT
7289
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
49
AREA
12974
HEIGHT
7289
27-Dec-2022
16:07
ALSHS
Ser

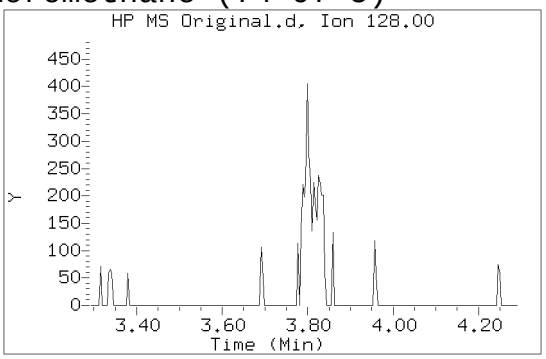


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Bromochloromethane (74-97-5)

BEFORE

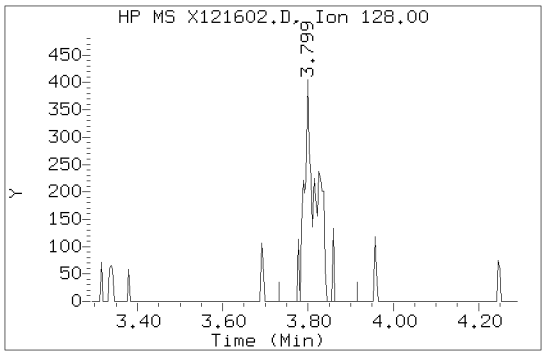
MASS
96
AREA
1402
HEIGHT
854
16-Dec-2022
11:54
ALSHS
Server



AFTER

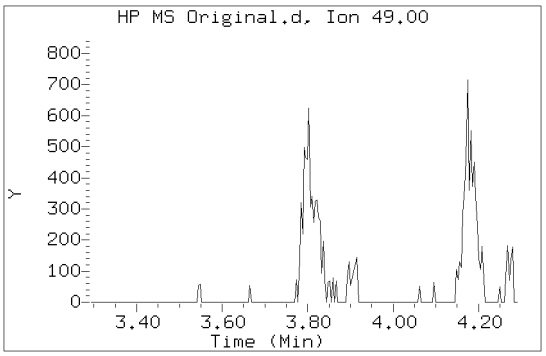
MASS
128
AREA
802
HEIGHT
405
27-Dec-2022
16:07
ALSHS
Ser

Reason Code:



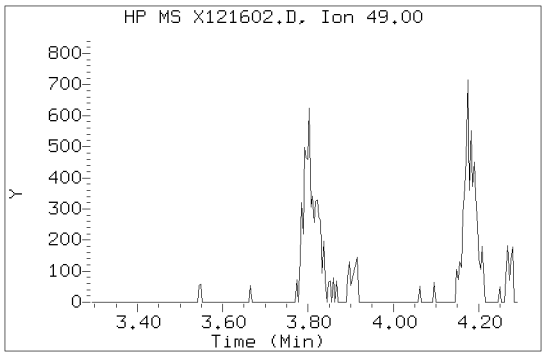
BEFORE

MASS
61
AREA
1975
HEIGHT
828
16-Dec-2022
11:54
ALSHS
Server



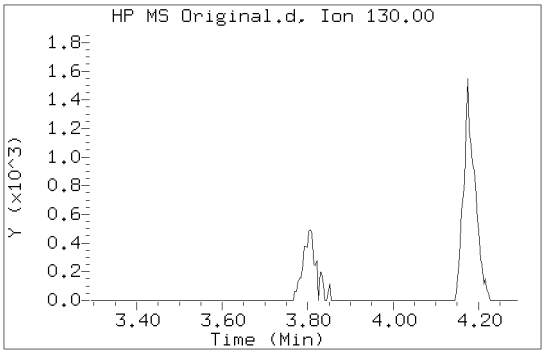
AFTER

MASS
49
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



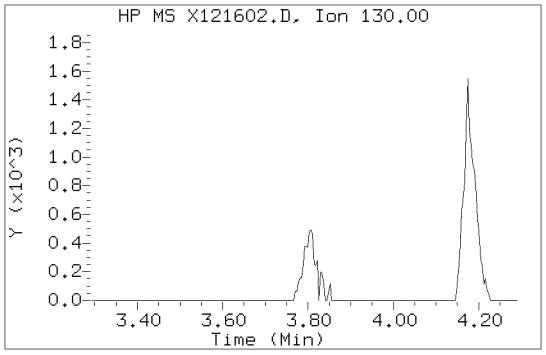
BEFORE

MASS
98
AREA
1027
HEIGHT
608
16-Dec-2022
11:54
ALSHS
Server



AFTER

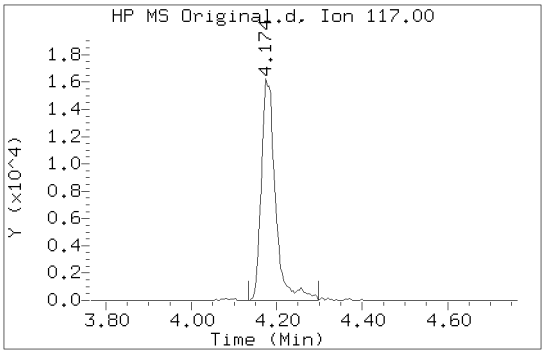
MASS
130
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



Carbon Tetrachloride (56-23-5)

BEFORE

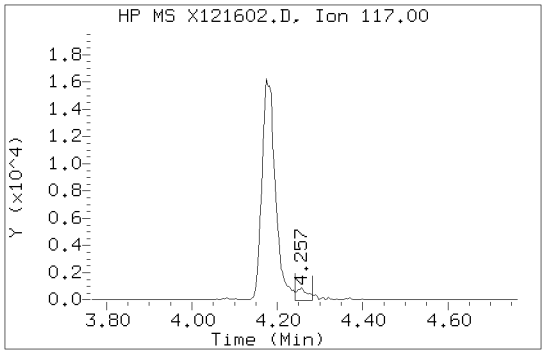
MASS
97
AREA
1700
HEIGHT
1016
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
117
AREA
1685
HEIGHT
944
27-Dec-2022
16:07
ALSHS
Ser

Reason Code:



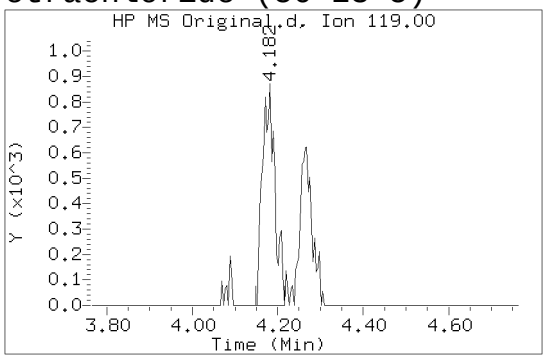
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Carbon Tetrachloride (56-23-5)

Reason Code:

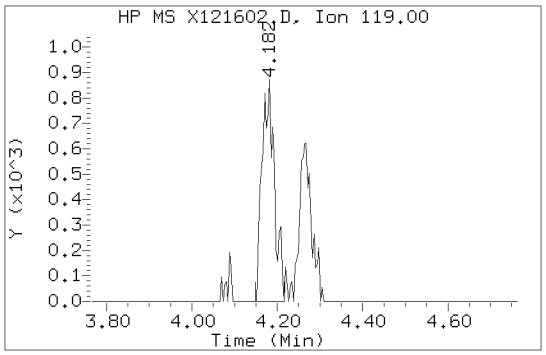
BEFORE

MASS
99
AREA
207130
HEIGHT
91368
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
119
AREA
1748
HEIGHT
872
27-Dec-2022
16:07
ALSHS
Ser

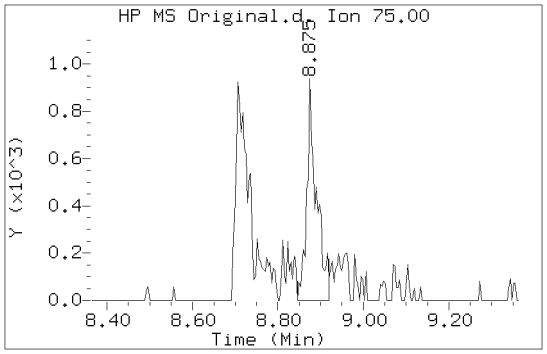


1,2,3-Trichloropropane (96-18-4)

Reason Code:

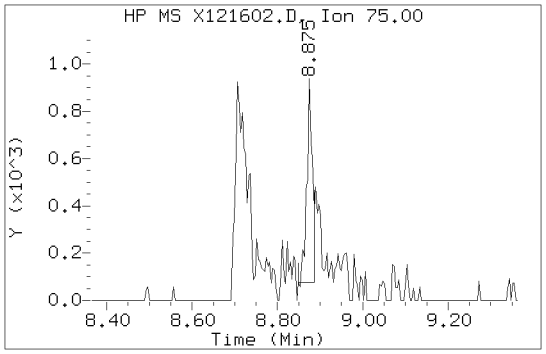
BEFORE

MASS
152
AREA
348702
HEIGHT
242350
16-Dec-2022
11:54
ALSHS
Server



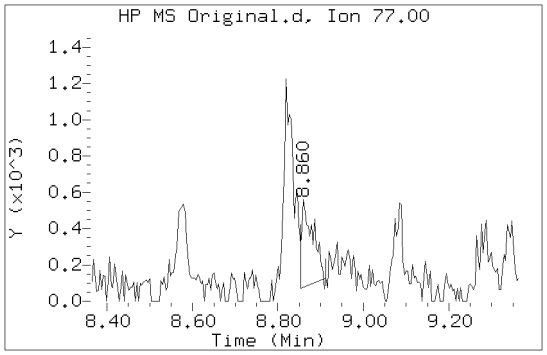
AFTER

MASS
75
AREA
766
HEIGHT
862
27-Dec-2022
16:07
ALSHS
Ser



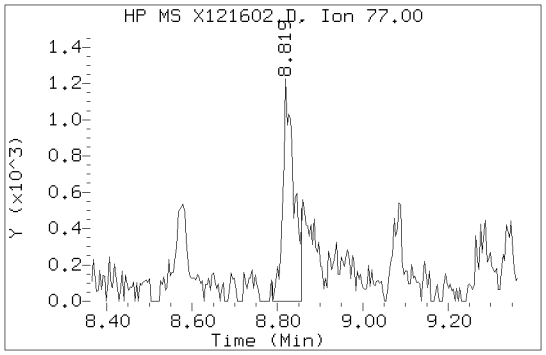
BEFORE

MASS
115
AREA
184413
HEIGHT
133835
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
77
AREA
2223
HEIGHT
1225
27-Dec-2022
16:07
ALSHS
Ser

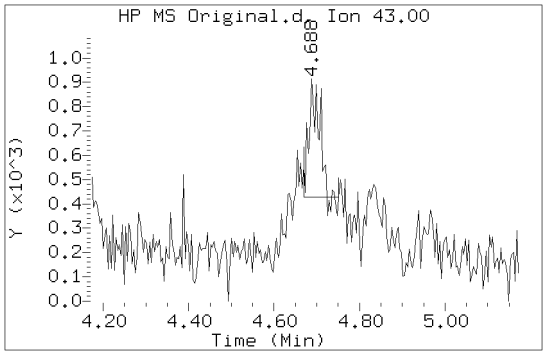


Isobutyl Alcohol (78-83-1)

Reason Code:

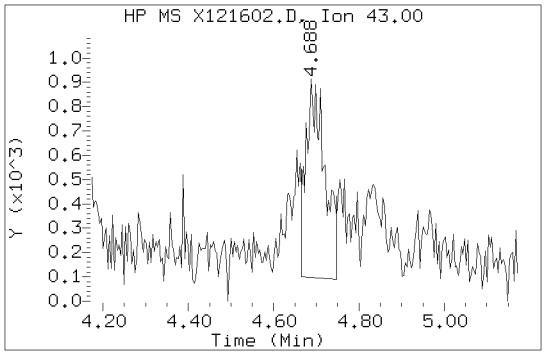
BEFORE

MASS
75
AREA
1475
HEIGHT
938
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
43
AREA
2537
HEIGHT
816
27-Dec-2022
16:07
ALSHS
Ser



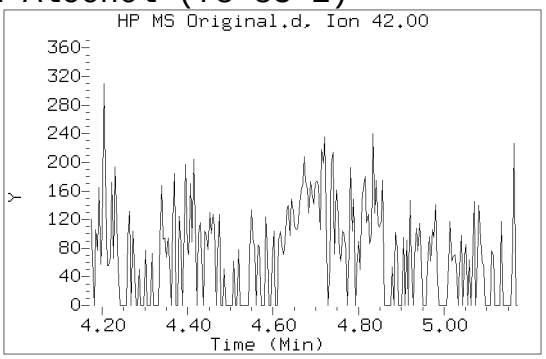
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Isobutyl Alcohol (78-83-1)

Reason Code:

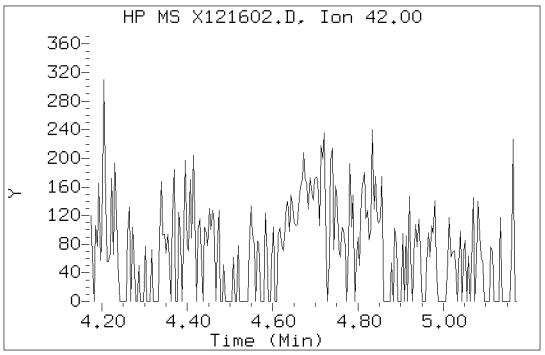
BEFORE

MASS
77
AREA
888
HEIGHT
483
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

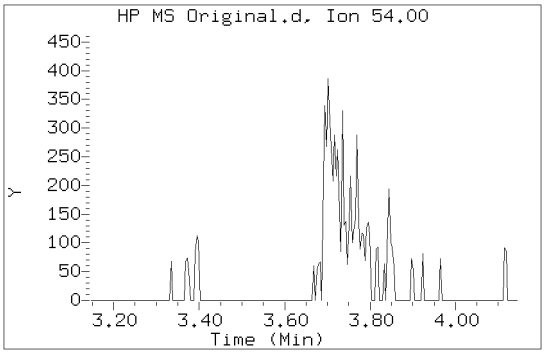


Propionitrile (107-12-0)

Reason Code:

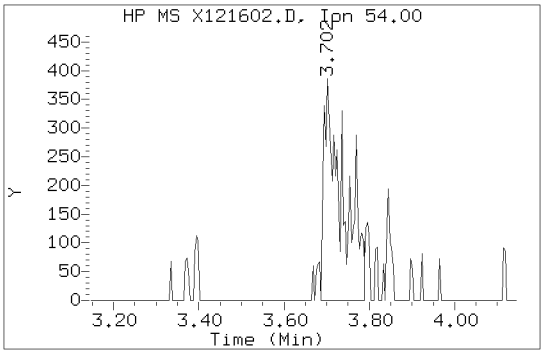
BEFORE

MASS
91
AREA
3881
HEIGHT
1822
16-Dec-2022
11:54
ALSHS
Server



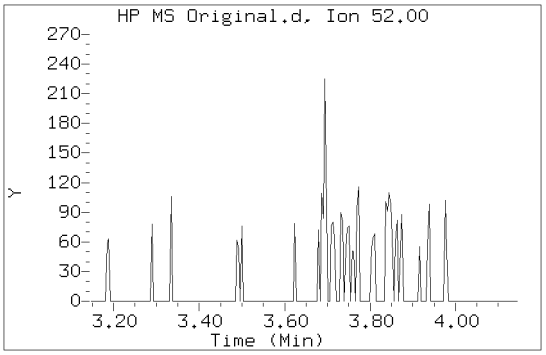
AFTER

MASS
54
AREA
1165
HEIGHT
386
27-Dec-2022
16:07
ALSHS
Ser



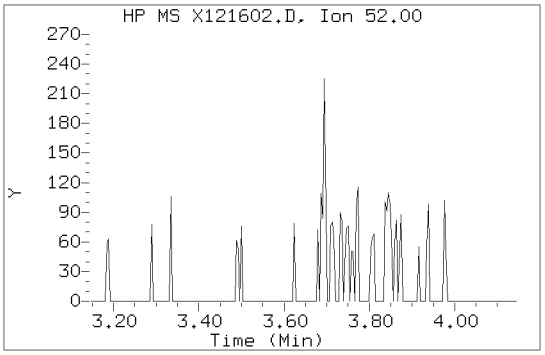
BEFORE

MASS
126
AREA
1511
HEIGHT
914
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

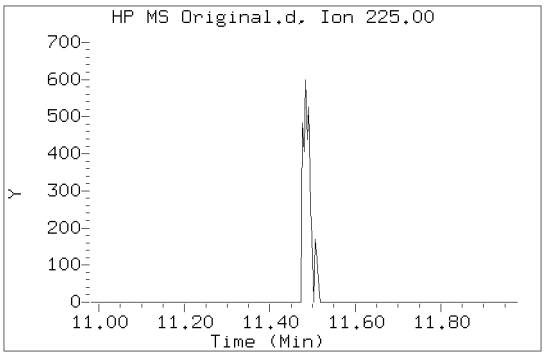


Hexachlorobutadiene (87-68-3)

Reason Code:

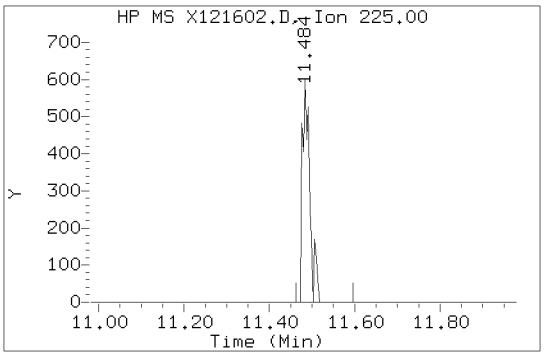
BEFORE

MASS
155
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
225
AREA
726
HEIGHT
599
27-Dec-2022
16:07
ALSHS
Ser

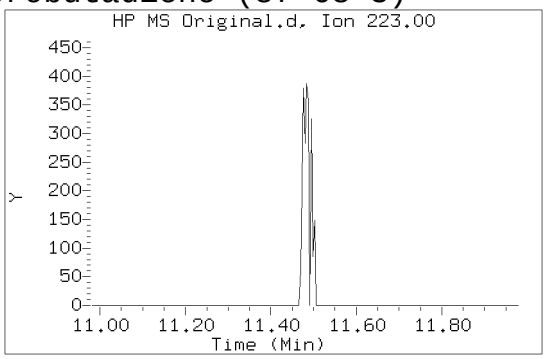


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

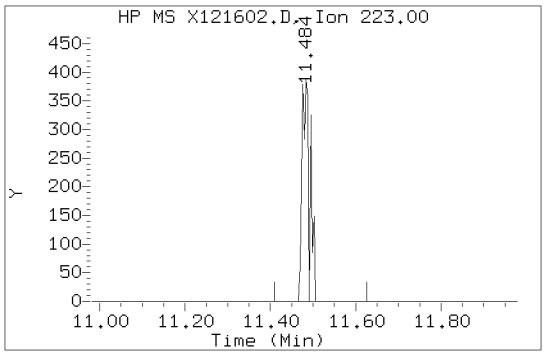
Hexachlorobutadiene (87-68-3)

Reason Code:

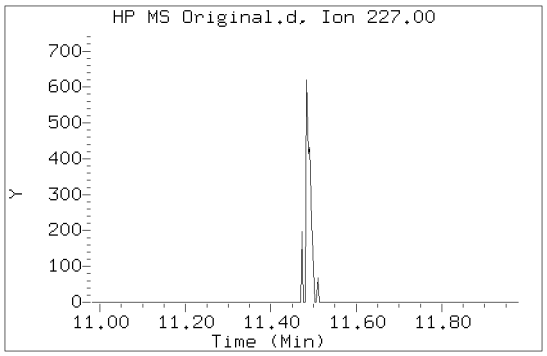
BEFORE
MASS
157
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



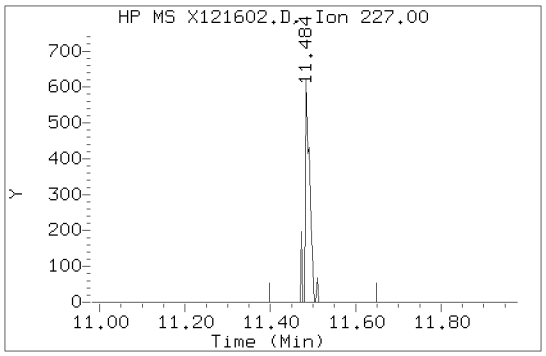
AFTER
MASS
223
AREA
502
HEIGHT
387
27-Dec-2022
16:07
ALSHS
Ser



BEFORE
MASS
75
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



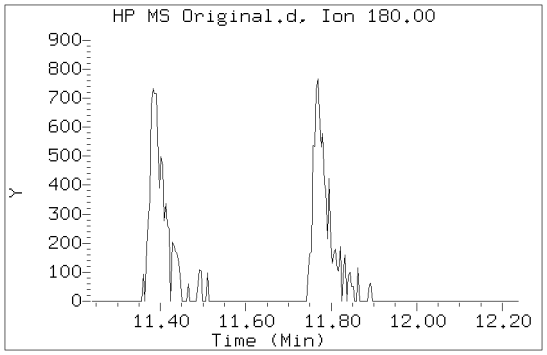
AFTER
MASS
227
AREA
469
HEIGHT
620
27-Dec-2022
16:07
ALSHS
Ser



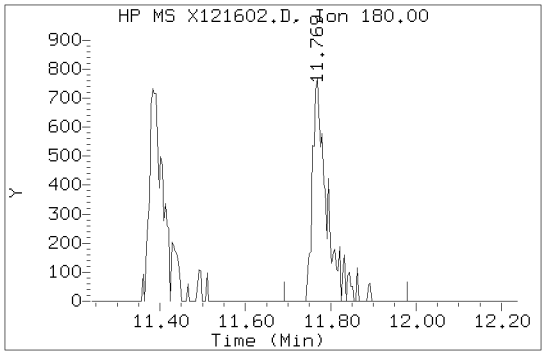
1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

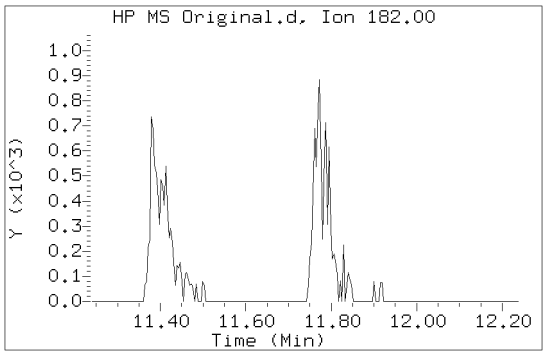
BEFORE
MASS
225
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



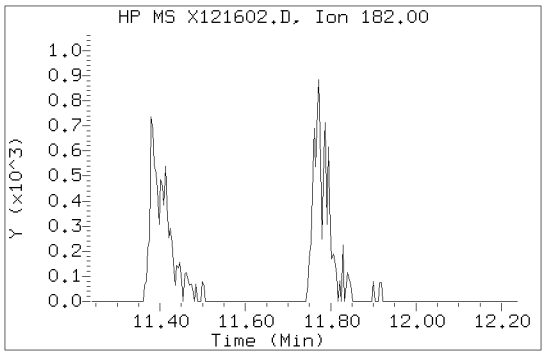
AFTER
MASS
180
AREA
1816
HEIGHT
766
27-Dec-2022
16:07
ALSHS
Ser



BEFORE
MASS
223
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER
MASS
182
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



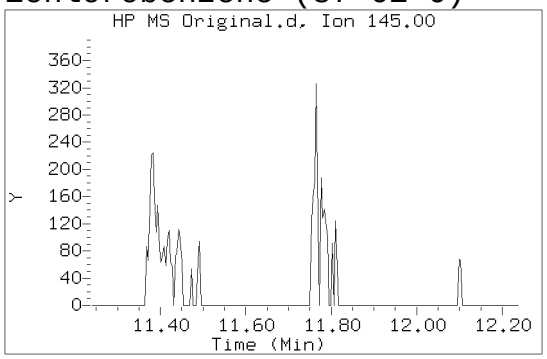
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

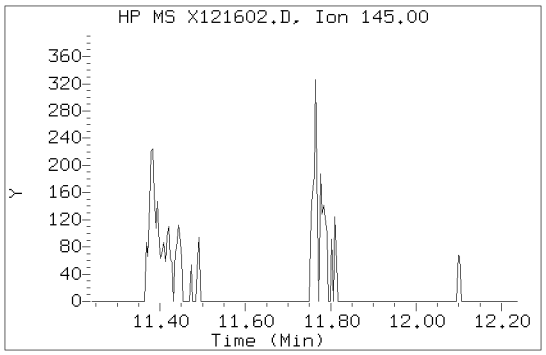
BEFORE

MASS
227
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
145
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

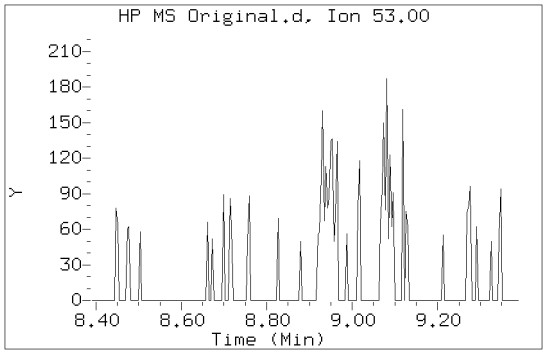


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

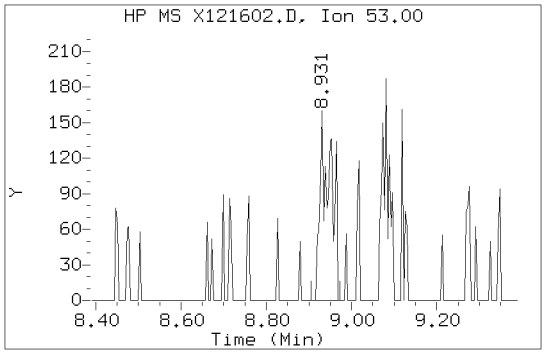
BEFORE

MASS
53
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



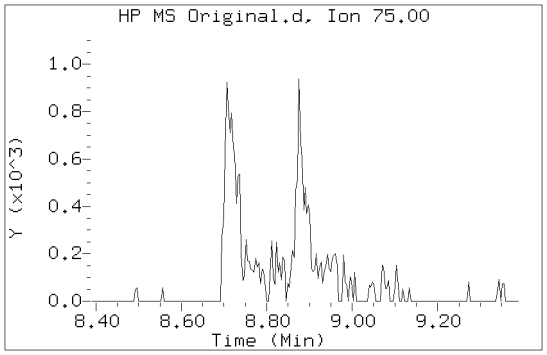
AFTER

MASS
53
AREA
280
HEIGHT
160
27-Dec-2022
16:07
ALSHS
Ser



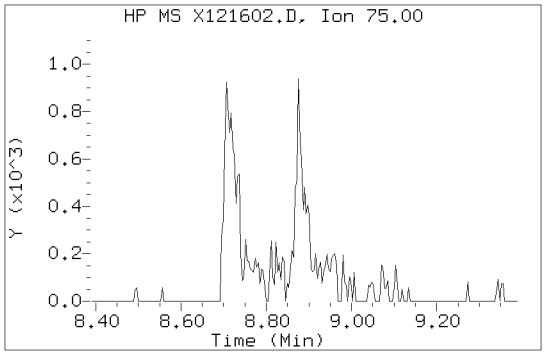
BEFORE

MASS
88
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

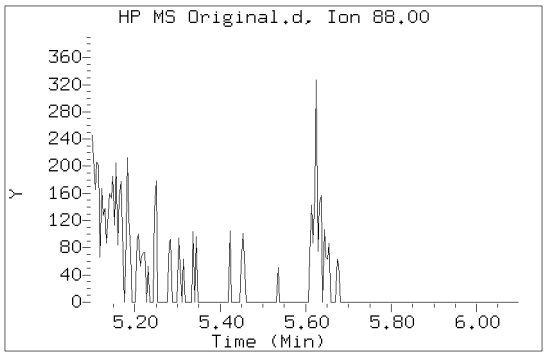


1,4-Dioxane ()

Reason Code:

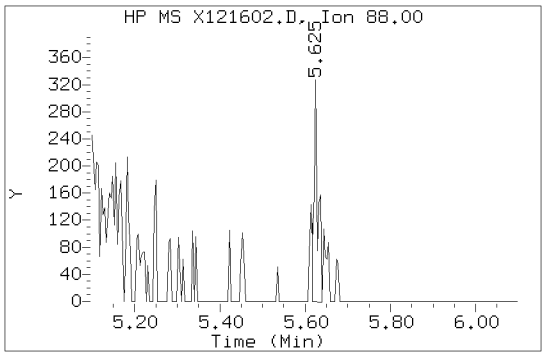
BEFORE

MASS
57
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
88
AREA
214
HEIGHT
327
27-Dec-2022
16:07
ALSHS
Ser



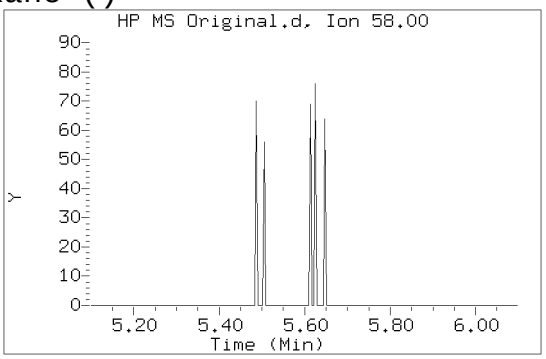
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

1,4-Dioxane ()

Reason Code:

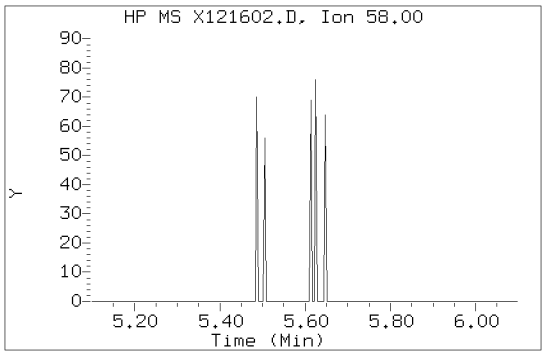
BEFORE

MASS
41
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

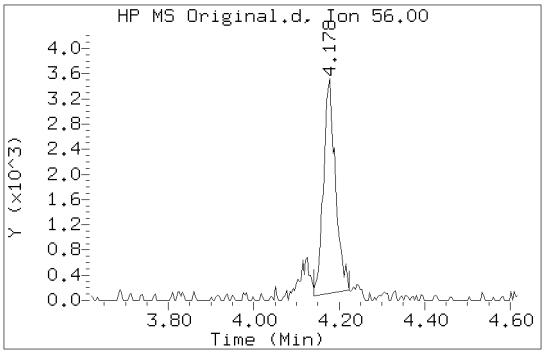


Cyclohexane (110-82-7)

Reason Code:

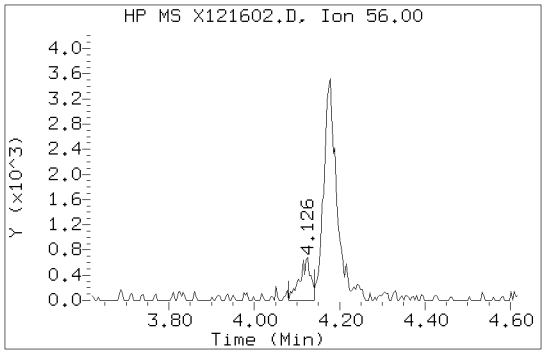
BEFORE

MASS
42
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



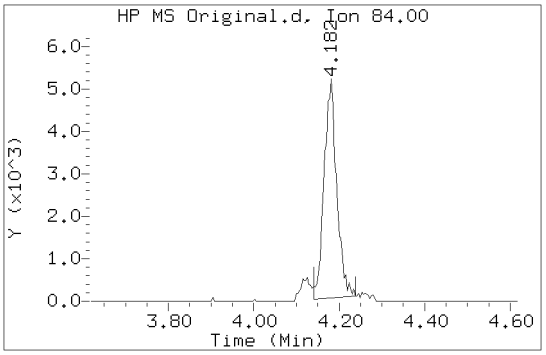
AFTER

MASS
56
AREA
1235
HEIGHT
682
27-Dec-2022
16:07
ALSHS
Ser



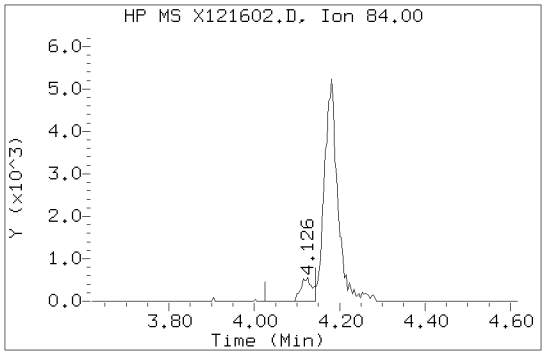
BEFORE

MASS
71
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
84
AREA
1062
HEIGHT
557
27-Dec-2022
16:07
ALSHS
Ser

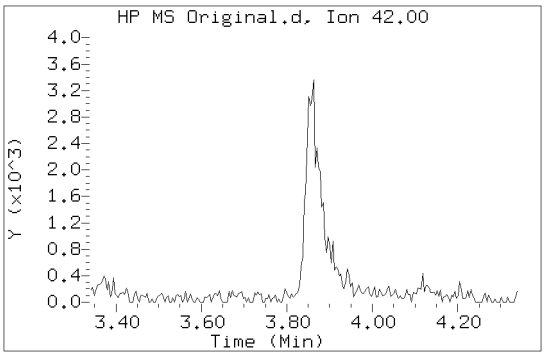


Tetrahydrofuran (109-99-9)

Reason Code:

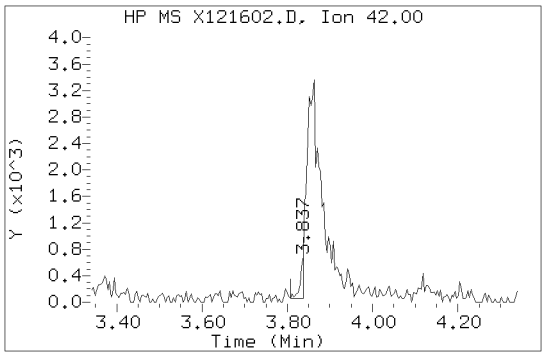
BEFORE

MASS
101
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
42
AREA
358
HEIGHT
628
27-Dec-2022
16:07
ALSHS
Ser



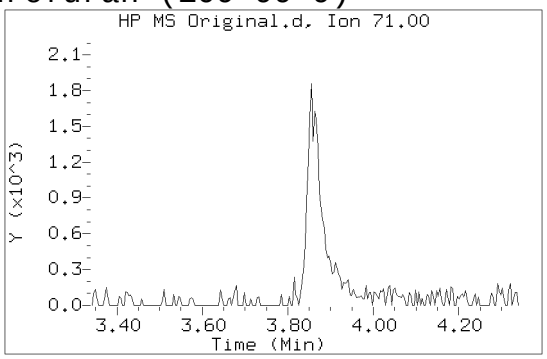
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Tetrahydrofuran (109-99-9)

Reason Code:

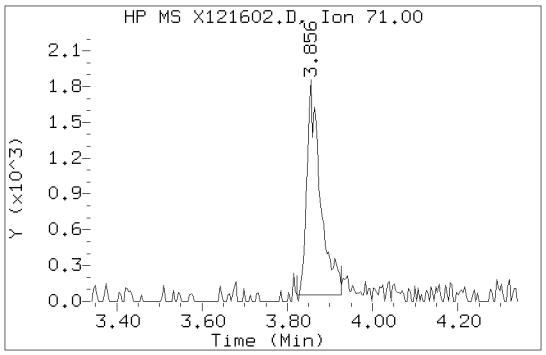
BEFORE

MASS
151
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
71
AREA
3962
HEIGHT
1803
27-Dec-2022
16:07
ALSHS
Ser

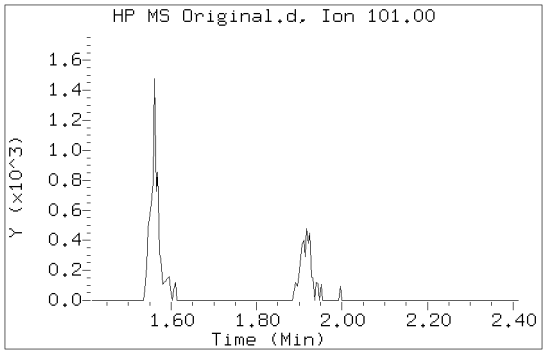


Freon TF (76-13-1)

Reason Code:

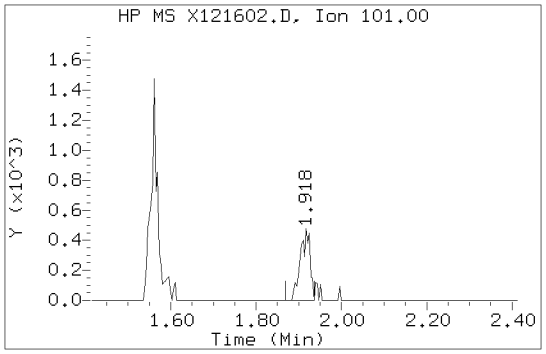
BEFORE

MASS
118
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



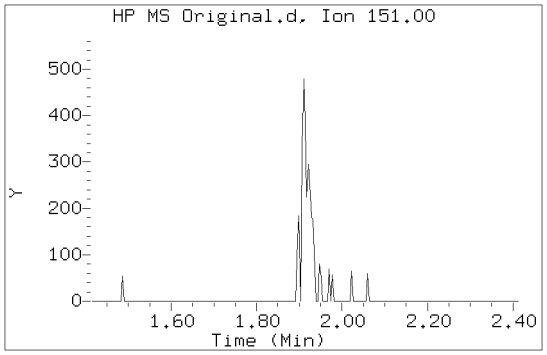
AFTER

MASS
101
AREA
765
HEIGHT
479
27-Dec-2022
16:07
ALSHS
Ser



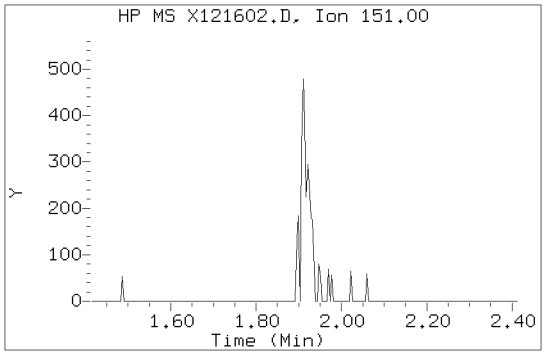
BEFORE

MASS
103
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
151
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 16-DEC-2022 12:20
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 11:38 Cal File: X121602.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	461469	50.0000	
135 1,4-Dioxane	88	5.625	5.625	(1.346)	462	10.0000	10.95(M)
140 1,3-Butadiene	54	1.164	1.164	(0.279)	1793	0.50000	0.56(M)
25 Methacrylonitrile	41	3.848	3.848	(0.921)	2066	0.50000	0.63(M)
12 Isobutyl Alcohol	43	4.695	4.695	(1.124)	5178	10.0000	9.97(M)
13 Acetonitrile	39	2.210	2.210	(0.529)	2204	5.00000	5.24(M)
14 Allyl Chloride	41	2.206	2.206	(0.528)	4574	0.50000	0.57(M)
4 Propionitrile	54	3.686	3.686	(0.882)	2777	5.00000	5.89(M)
136 n-Hexane	57	2.772	2.772	(0.664)	1909	0.50000	0.57(M)
72 trans-1,4-Dichloro-2-butene	53	8.931	8.931	(1.165)	792	0.50000	0.56(M)
23 Chloroprene	53	1.771	1.771	(0.424)	900	0.50000	0.57(M)
145 alpha-Methylstyrene	118	9.272	9.272	(0.960)	4701	0.50000	0.60
200 Dimethyl Disulfide	94	6.202	6.202	(0.809)	5153	0.50000	0.59(M)
139 Diethyl ether	59	1.760	1.760	(0.421)	1864	0.50000	0.60
130 Ethyl Acetate	43	3.679	3.679	(0.881)	2065	0.50000	0.57(M)
40 Methyl Methacrylate	41	5.628	5.628	(1.347)	1788	0.50000	0.56(M)
49 Ethyl Methacrylate	69	6.727	6.727	(1.355)	1935	0.50000	0.59(M)
132 n-Butanol	56	5.291	5.291	(1.266)	622	10.0000	50.83(M)
142 Tetrahydrofuran	42	3.840	3.840	(0.919)	900	1.00000	(M)
150 Allyl alcohol	57	2.772	2.772	(0.664)	3089	10.0000	17.23

166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	9626	0.50000	0.57(M)
131	Methyl Acrylate	55	3.743	3.743 (0.896)	1765	0.50000	0.56(M)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D Page 2
Report Date: 27-Dec-2022 16:07

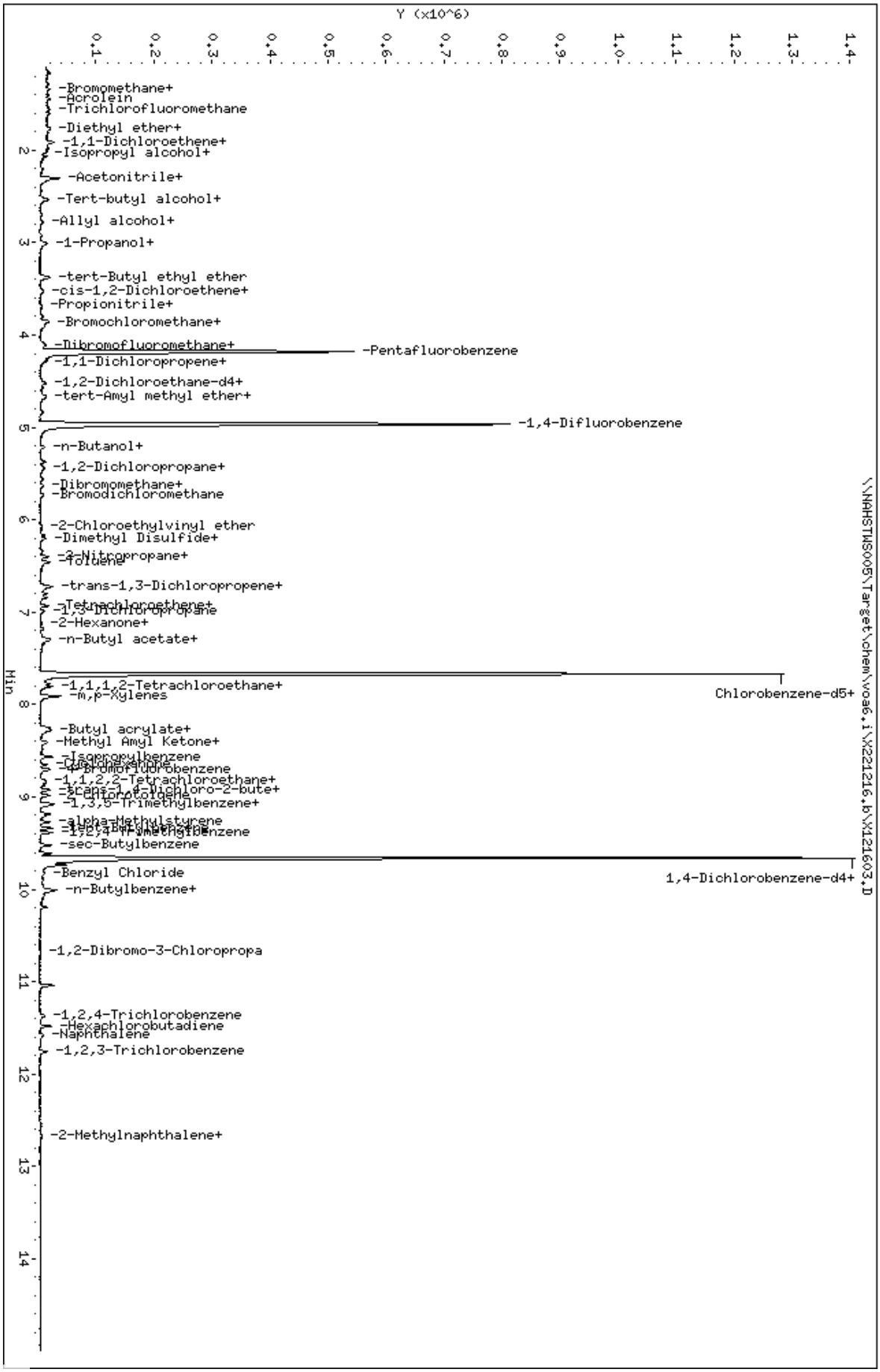
			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
	Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	162	Butyl acrylate	55	8.271	8.271	(1.079)	4718	0.50000	0.55(M)
	2	Dichlorodifluoromethane	85	0.972	0.972	(0.233)	1990	0.50000	1.00(M)
	3	Chloromethane	50	1.077	1.077	(0.258)	2466	0.50000	2.77(M)
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	2412	0.50000	0.59(M)
	6	Bromomethane	94	1.336	1.336	(0.320)	1893	0.50000	2.36(M)
	7	Chloroethane	64	1.407	1.407	(0.337)	1653	0.50000	0.58(M)
	8	Trichlorofluoromethane	101	1.561	1.561	(0.374)	3286	0.50000	0.58(M)
	9	Acrolein	56	1.441	1.441	(0.345)	440	1.00000	4.17(M)
	10	Acetone	43	1.977	1.977	(0.473)	2669	1.00000	2.02(M)
	11	1,1-Dichloroethene	96	1.913	1.913	(0.458)	2037	0.50000	0.58(M)
	15	Iodomethane	142	2.026	2.026	(0.485)	2397	1.00000	3.84(TM)
	16	Acrylonitrile	53	2.566	2.566	(0.614)	1118	1.00000	0.94(M)
	17	Methylene Chloride	84	2.296	2.296	(0.550)	2938	0.50000	0.61(M)
	18	Methyl tert-butyl ether	73	2.536	2.536	(0.607)	5841	0.50000	0.50(M)
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	9921	1.00000	1.08(M)
	20	trans-1,2-Dichloroethene	96	2.543	2.543	(0.609)	2218	0.50000	0.56(M)
	21	Vinyl Acetate	43	3.023	3.023	(0.724)	10138	1.00000	1.00(M)
	22	1,1-Dichloroethane	63	2.926	2.926	(0.700)	3874	0.50000	0.56(M)
	24	2-Butanone	43	3.649	3.649	(0.873)	1292	1.00000	3.93(M)
	26	2,2-Dichloropropane	77	3.514	3.514	(0.841)	3238	0.50000	0.55(M)
	27	cis-1,2-Dichloroethene	96	3.544	3.544	(0.848)	2852	0.50000	0.59
	28	Chloroform	83	3.908	3.908	(0.935)	4040	0.50000	0.52(M)
	29	Bromochloromethane	128	3.799	3.799	(0.909)	1481	0.50000	0.56
$	30	Dibromofluoromethane	113	4.110	4.110	(0.984)	2321	0.50000	0.35
	31	1,1,1-Trichloroethane	97	4.084	4.084	(0.978)	3512	0.50000	0.57(M)
	32	1,1-Dichloropropene	75	4.290	4.290	(0.864)	2468	0.50000	0.50(M)
	33	1,2-Dichloroethane	62	4.567	4.567	(0.920)	3129	0.50000	0.55(M)
	34	Carbon Tetrachloride	117	4.264	4.264	(0.859)	2763	0.50000	0.52(MH)
$	35	1,2-Dichloroethane-d4	65	4.481	4.481	(1.073)	2849	0.50000	0.87(T)
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	687671	50.0000	
	37	Benzene	78	4.519	4.519	(0.910)	9243	0.50000	0.56
	38	Trichloroethene	130	5.216	5.216	(1.051)	2583	0.50000	0.55(M)
	39	Bromodichloromethane	83	5.730	5.730	(1.154)	3650	0.50000	0.59(M)
	41	2-Chloroethylvinyl ether	63	6.071	6.071	(1.223)	1861	1.00000	1.06(M)
	42	1,2-Dichloropropane	63	5.441	5.441	(1.096)	2449	0.50000	0.56(M)
	44	Dibromomethane	93	5.557	5.557	(1.119)	1725	0.50000	0.58
	45	4-Methyl-2-Pentanone	43	6.337	6.337	(0.826)	3741	1.00000	1.08(M)
	46	cis-1,3-Dichloropropene	75	6.168	6.168	(1.242)	3695	0.50000	0.51(M)
*	47	Chlorobenzene-d5	117	7.668	7.668	(1.000)	645291	50.0000	
$	48	Toluene-d8	98	6.401	6.401	(0.835)	9525	0.50000	0.59
	50	Toluene	91	6.460	6.460	(0.843)	10374	0.50000	0.58(M)
	51	trans-1,3-Dichloropropene	75	6.697	6.697	(1.349)	3042	0.50000	0.50
	52	2-Hexanone	43	7.117	7.117	(0.928)	2580	1.00000	1.09
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	2092	0.50000	0.58(M)
	54	1,3-Dichloropropane	76	6.993	6.993	(0.912)	4005	0.50000	0.56(M)
	55	Dibromochloromethane	129	7.180	7.180	(0.936)	2827	0.50000	0.54
	56	Tetrachloroethene	164	6.933	6.933	(0.904)	2131	0.50000	0.57(M)
	57	1,2-Dibromoethane	107	7.270	7.270	(0.948)	2340	0.50000	0.52(M)
	58	1-Chlorohexane	55	7.705	7.705	(1.552)	1829	0.50000	0.55(MH)
	59	Chlorobenzene	112	7.694	7.694	(1.003)	7747	0.50000	0.61
	60	1,1,1,2-Tetrachloroethane	131	7.784	7.784	(1.015)	2741	0.50000	0.58(M)
	61	Ethylbenzene	106	7.806	7.806	(1.018)	3064	0.50000	0.51(M)

62 m,p-Xylenes	106	7.911	7.911 (1.032)	9016	1.00000	1.17(M)
63 o-Xylene	106	8.252	8.252 (1.076)	4412	0.50000	0.58(M)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	64 Styrene	104	8.286	8.286	(1.081)	6634	0.50000	0.52(M)
	66 Bromoform	173	8.421	8.421	(1.098)	2013	0.50000	0.56(TM)
	67 Isopropylbenzene	105	8.567	8.567	(1.117)	8757	0.50000	0.50(M)
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	3194	0.50000	0.57(M)
$	69 4-Bromofluorobenzene	95	8.706	8.706	(1.135)	3870	0.50000	0.71(M)
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	347824	50.0000	
	71 1,2,3-Trichloropropane	75	8.871	8.871	(0.918)	2019	0.50000	0.52(M)
	73 n-Propylbenzene	91	8.923	8.923	(0.924)	11163	0.50000	0.57(M)
	74 Bromobenzene	156	8.818	8.818	(0.913)	3147	0.50000	0.55(M)
	75 1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	7182	0.50000	0.50(M)
	76 2-Chlorotoluene	91	8.983	8.983	(0.930)	6718	0.50000	0.53(M)
	77 4-Chlorotoluene	91	9.088	9.088	(0.941)	7644	0.50000	0.53(M)
	78 tert-Butylbenzene	119	9.339	9.339	(0.967)	6389	0.50000	0.54(M)
	79 1,2,4-Trimethylbenzene	105	9.384	9.384	(0.971)	8496	0.50000	0.56(M)
	81 sec-Butylbenzene	105	9.523	9.523	(0.986)	7938	0.50000	0.51(M)
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	7343	0.50000	0.52(M)
	83 1,3-Dichlorobenzene	146	9.613	9.613	(0.995)	4677	0.50000	0.49(M)
	84 1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	5674	0.50000	0.54(M)
	86 Benzyl Chloride	91	9.831	9.831	(1.282)	3642	0.50000	3.03
	87 n-Butylbenzene	91	10.014	10.014	(1.036)	5149	0.50000	2.14(M)
	88 1,2-Dichlorobenzene	146	10.010	10.010	(1.036)	5504	0.50000	0.56(M)
	89 1,2-Dibromo-3-Chloropropane	155	10.678	10.678	(1.105)	441	0.50000	0.58(M)
	90 1,2,4-Trichlorobenzene	180	11.364	11.364	(1.176)	3187	0.50000	0.51(M)
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	1477	0.50000	0.49(M)
	92 Naphthalene	128	11.581	11.581	(1.199)	7025	0.50000	0.50
	93 1,2,3-Trichlorobenzene	180	11.765	11.765	(1.218)	3572	0.50000	0.60(M)
M	94 1,2-Dichloroethylene (total)	96				5070	1.00000	
M	95 Xylenes (total)	106				13428	1.50000	
	141 Cyclohexane	56	4.114	4.114	(0.985)	2803	0.50000	1.84(M)
	138 Freon TF	101	1.917	1.917	(0.459)	1851	0.50000	0.54(M)
	147 Methylcyclohexane	55	5.415	5.415	(1.091)	4781	0.50000	0.56(M)
	146 Methyl Acetate	43	2.240	2.240	(0.536)	1269	0.50000	0.61(M)

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6,i\X221216,b\X121603.D
Date : 16-DEC-2022 12:20
Client ID: VSTD000.5
Sample Info: VSTD000.5;VSTD000.5;1;2;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

\\NAHSTWS005\Target\chem\voa6,i\X221216,b\X121603.D

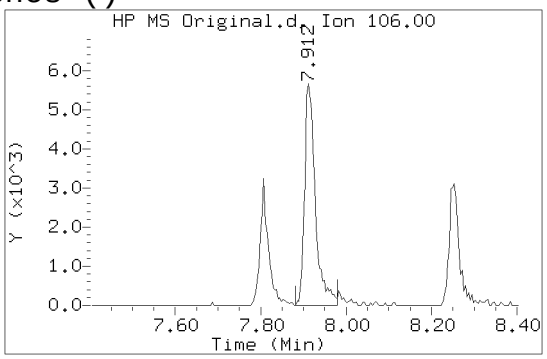
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

m,p-Xylenes ()

Reason Code:

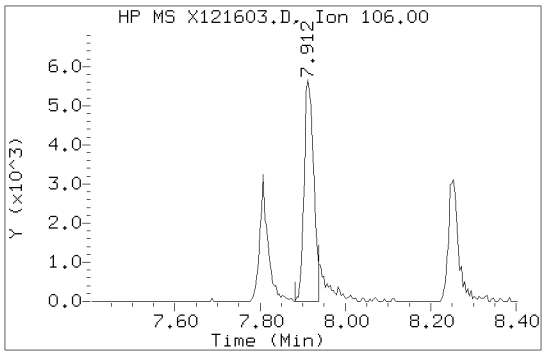
BEFORE

MASS
106
AREA
10070
HEIGHT
5666
27-Dec-2022
16:03
linh
pham



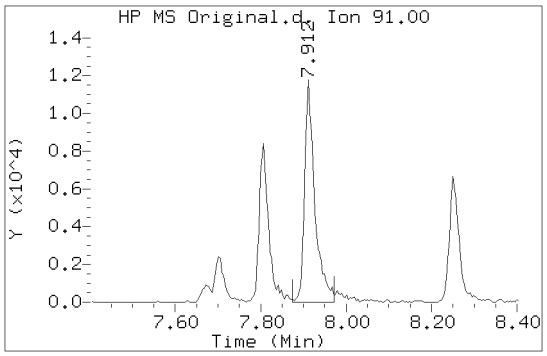
AFTER

MASS
106
AREA
9016
HEIGHT
5666
27-Dec-2022
16:07
linh
pham



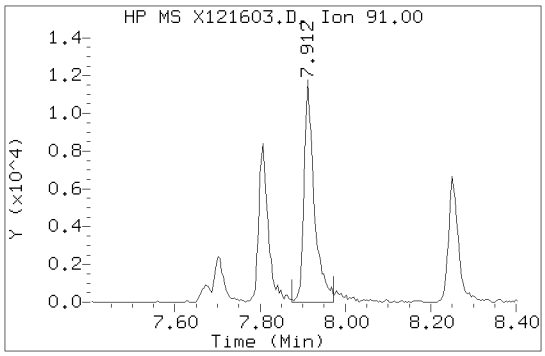
BEFORE

MASS
91
AREA
19887
HEIGHT
11768
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
19887
HEIGHT
11768
27-Dec-2022
16:07
linh
pham

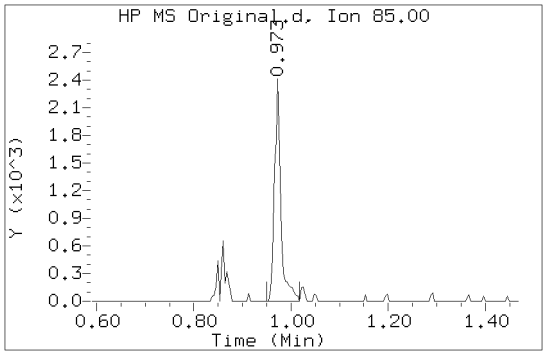


Dichlorodifluoromethane (75-71-8)

Reason Code:

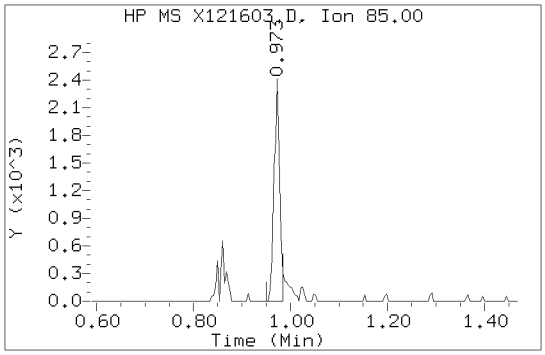
BEFORE

MASS
85
AREA
2242
HEIGHT
2413
27-Dec-2022
16:03
linh
pham



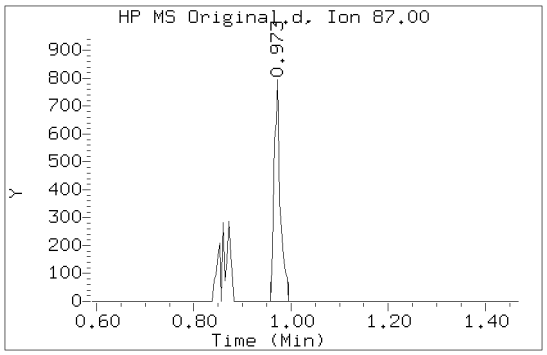
AFTER

MASS
85
AREA
1990
HEIGHT
2413
27-Dec-2022
16:07
linh
pham



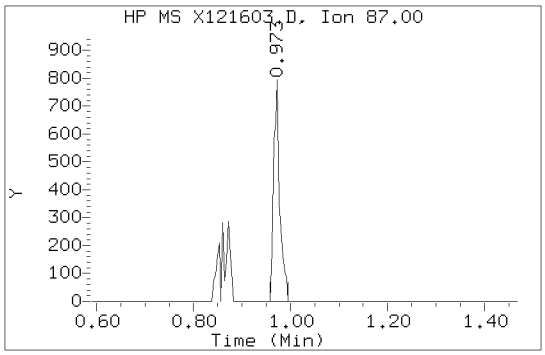
BEFORE

MASS
87
AREA
713
HEIGHT
795
27-Dec-2022
16:03
linh
pham



AFTER

MASS
87
AREA
713
HEIGHT
795
27-Dec-2022
16:07
linh
pham

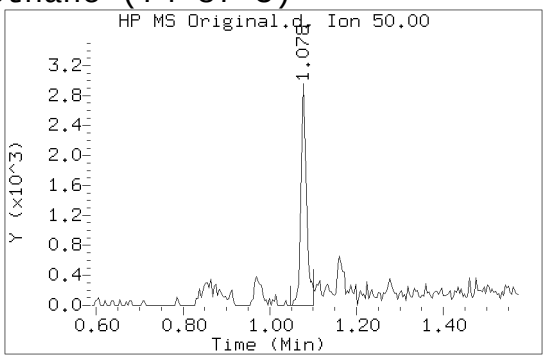


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Chloromethane (74-87-3)

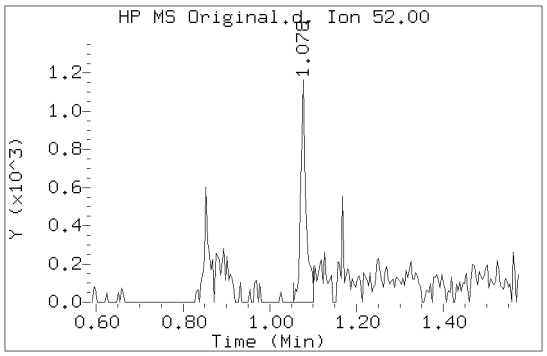
BEFORE

MASS
50
AREA
2589
HEIGHT
2959
27-Dec-2022
16:03
linh
pham



BEFORE

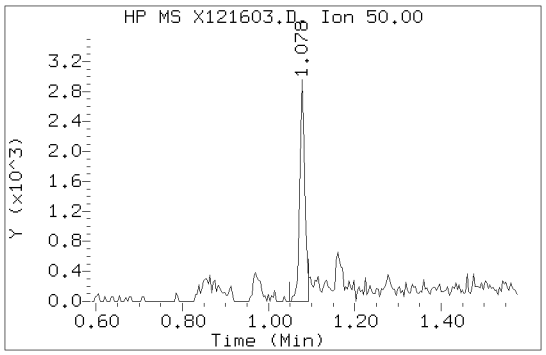
MASS
52
AREA
985
HEIGHT
1164
27-Dec-2022
16:03
linh
pham



Reason Code:

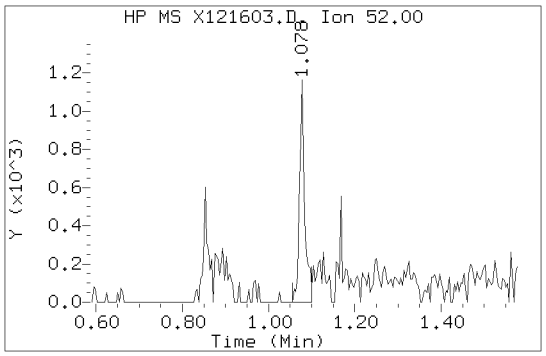
AFTER

MASS
50
AREA
2466
HEIGHT
2959
27-Dec-2022
16:07
linh
pham



AFTER

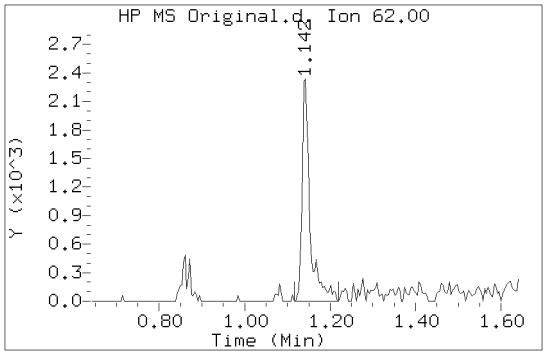
MASS
52
AREA
985
HEIGHT
1164
27-Dec-2022
16:07
linh
pham



Vinyl Chloride (75-01-4)

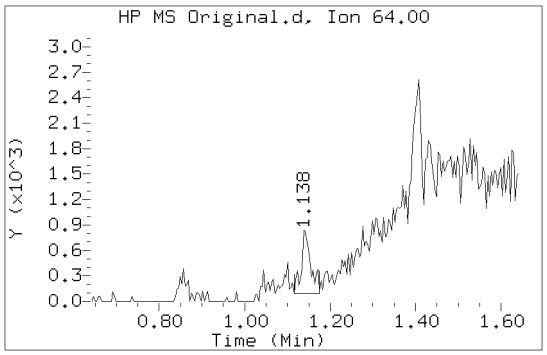
BEFORE

MASS
62
AREA
3132
HEIGHT
2337
27-Dec-2022
16:03
linh
pham



BEFORE

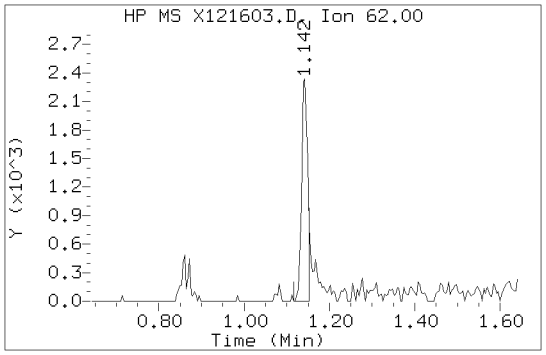
MASS
64
AREA
1174
HEIGHT
750
27-Dec-2022
16:03
linh
pham



Reason Code:

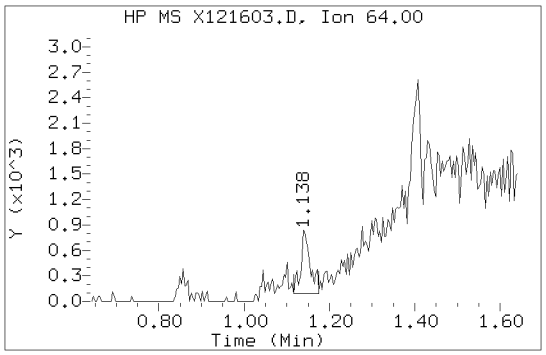
AFTER

MASS
62
AREA
2412
HEIGHT
2337
27-Dec-2022
16:07
linh
pham



AFTER

MASS
64
AREA
1174
HEIGHT
750
27-Dec-2022
16:07
linh
pham

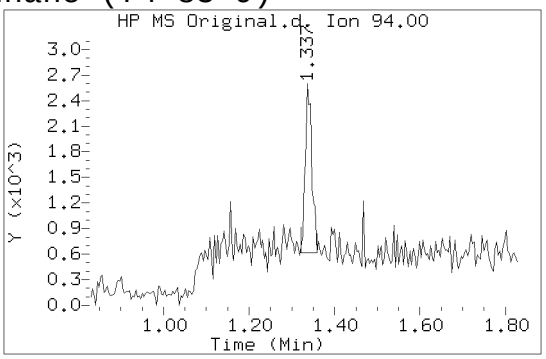


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Bromomethane (74-83-9)

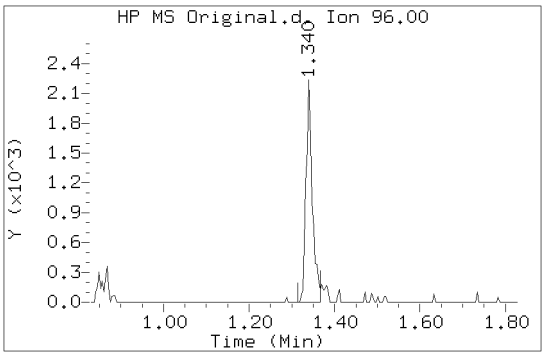
BEFORE

MASS
94
AREA
2146
HEIGHT
1983
27-Dec-2022
16:03
linh
pham



BEFORE

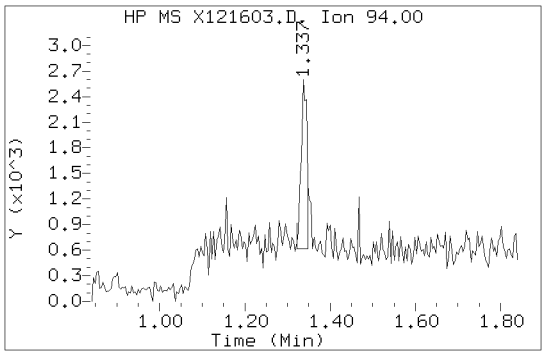
MASS
96
AREA
2304
HEIGHT
2236
27-Dec-2022
16:03
linh
pham



Reason Code:

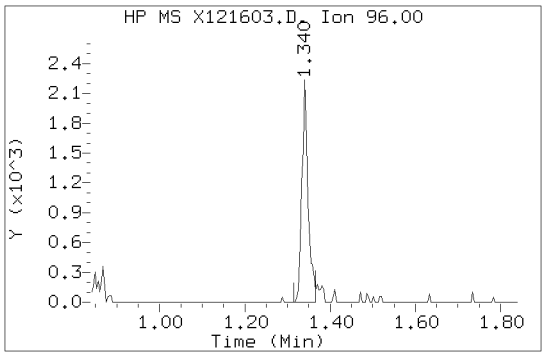
AFTER

MASS
94
AREA
1893
HEIGHT
1983
27-Dec-2022
16:07
linh
pham



AFTER

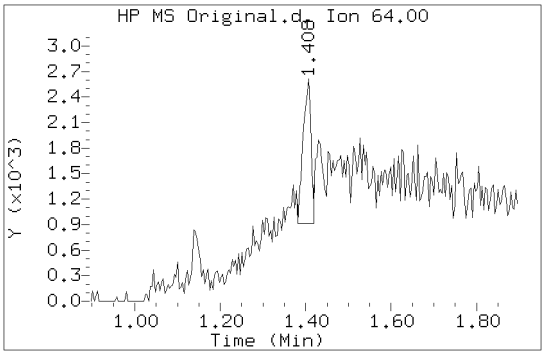
MASS
96
AREA
2304
HEIGHT
2236
27-Dec-2022
16:07
linh
pham



Chloroethane (75-00-3)

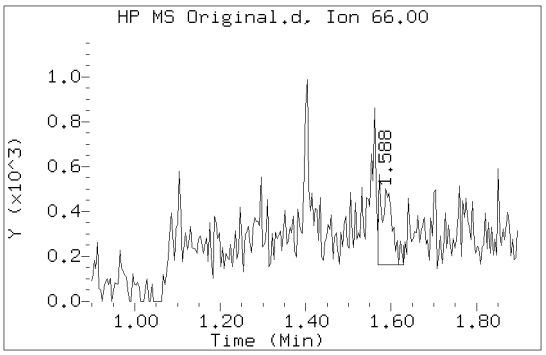
BEFORE

MASS
64
AREA
2196
HEIGHT
1702
27-Dec-2022
16:03
linh
pham



BEFORE

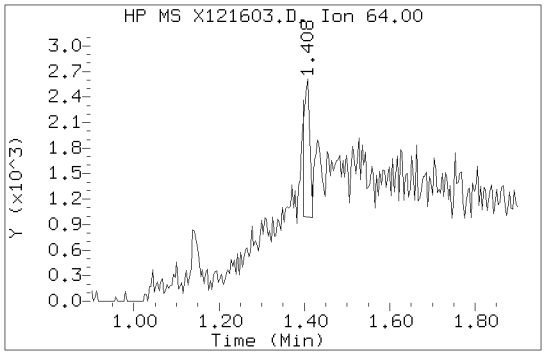
MASS
66
AREA
677
HEIGHT
340
27-Dec-2022
16:03
linh
pham



Reason Code:

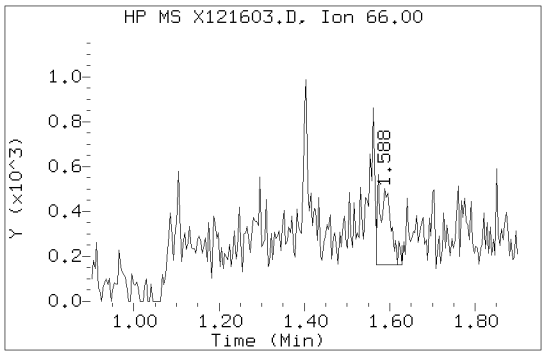
AFTER

MASS
64
AREA
1653
HEIGHT
1624
27-Dec-2022
16:07
linh
pham



AFTER

MASS
66
AREA
677
HEIGHT
340
27-Dec-2022
16:07
linh
pham

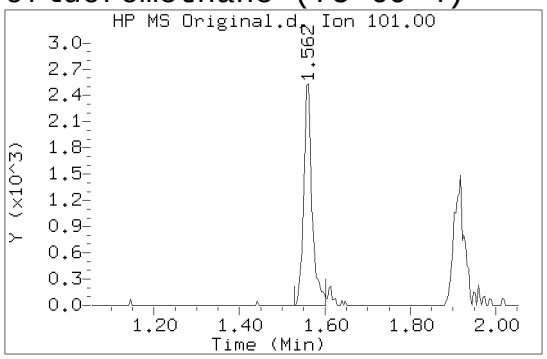


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

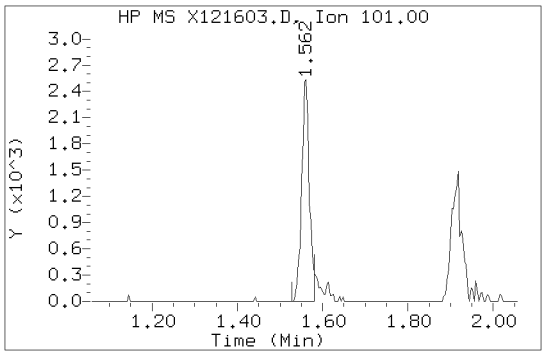
Trichlorofluoromethane (75-69-4)

Reason Code:

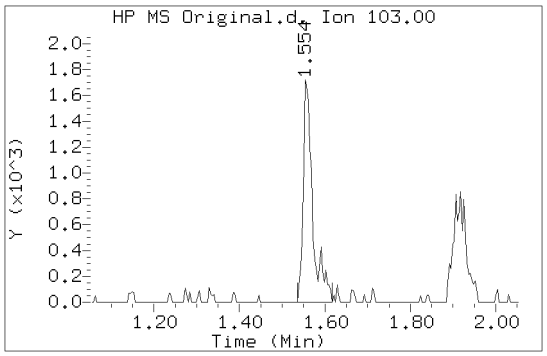
BEFORE
MASS
101
AREA
3530
HEIGHT
2534
27-Dec-2022
16:03
linh
pham



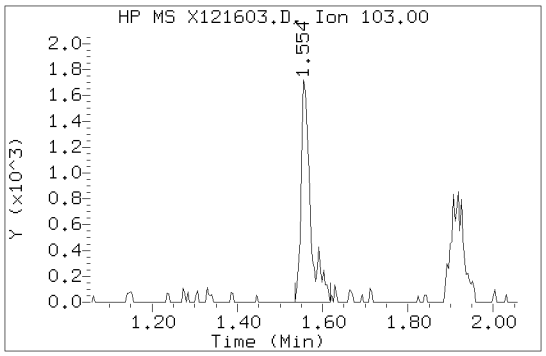
AFTER
MASS
101
AREA
3286
HEIGHT
2534
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
103
AREA
2708
HEIGHT
1720
27-Dec-2022
16:03
linh
pham



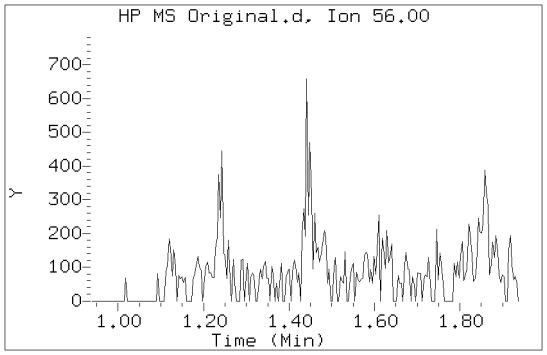
AFTER
MASS
103
AREA
2708
HEIGHT
1720
27-Dec-2022
16:07
linh
pham



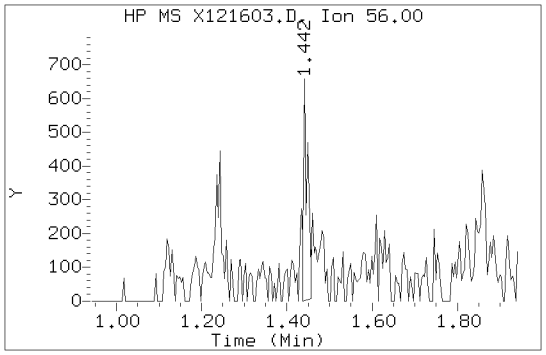
Acrolein (107-02-8)

Reason Code:

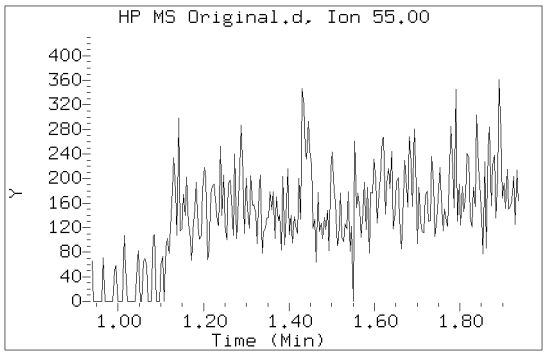
BEFORE
MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



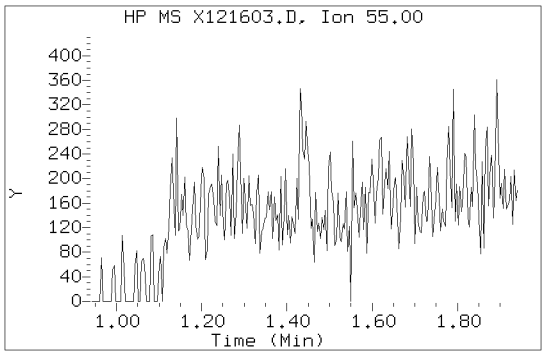
AFTER
MASS
56
AREA
440
HEIGHT
656
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



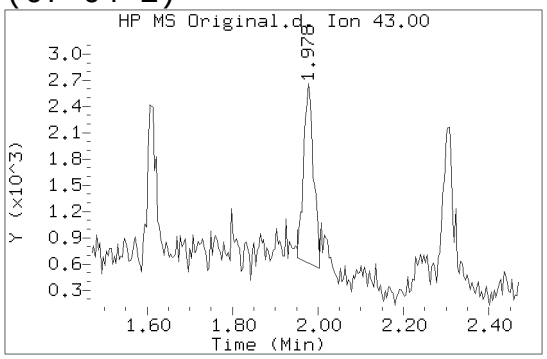
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Acetone (67-64-1)

Reason Code:

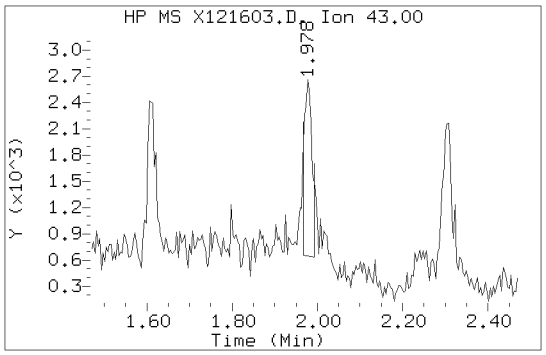
BEFORE

MASS
43
AREA
3388
HEIGHT
2046
27-Dec-2022
16:03
linh
pham



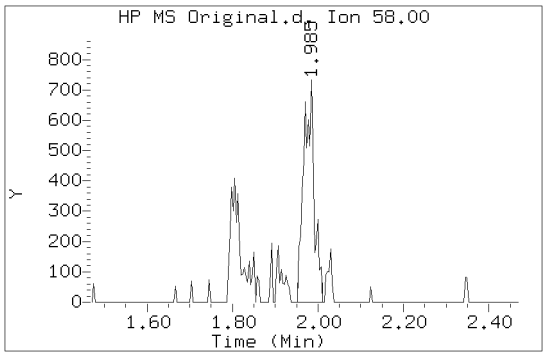
AFTER

MASS
43
AREA
2669
HEIGHT
2015
27-Dec-2022
16:07
linh
pham



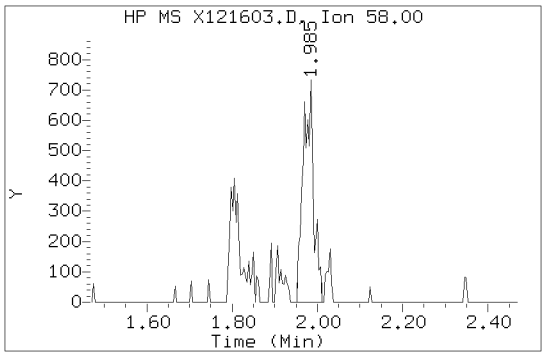
BEFORE

MASS
58
AREA
1264
HEIGHT
733
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
1264
HEIGHT
733
27-Dec-2022
16:07
linh
pham

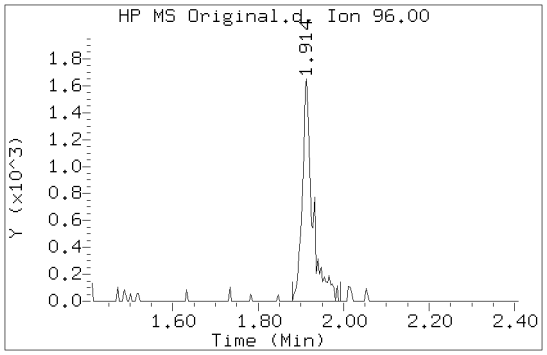


1,1-Dichloroethene (75-35-4)

Reason Code:

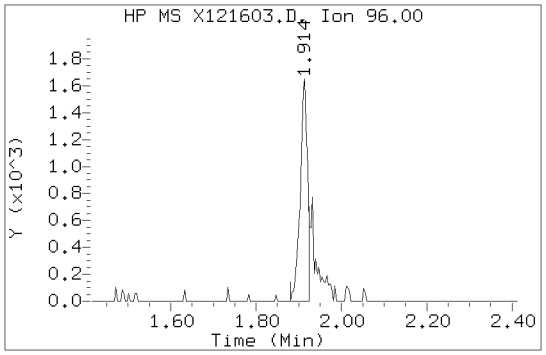
BEFORE

MASS
96
AREA
2836
HEIGHT
1651
27-Dec-2022
16:03
linh
pham



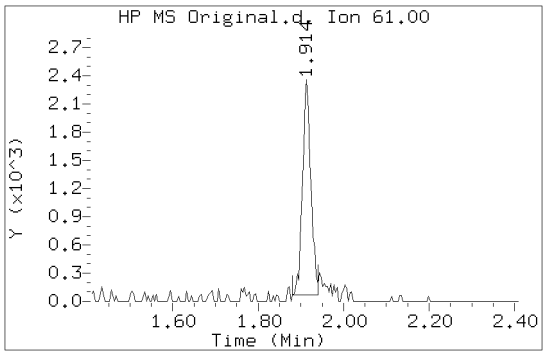
AFTER

MASS
96
AREA
2037
HEIGHT
1651
27-Dec-2022
16:07
linh
pham



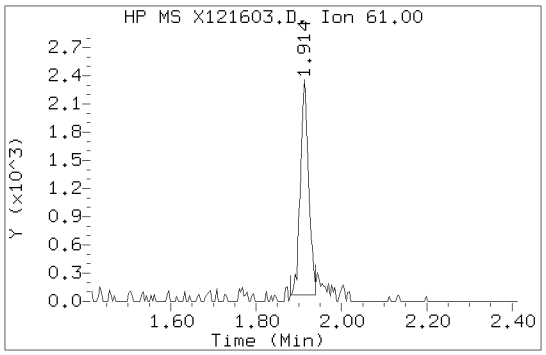
BEFORE

MASS
61
AREA
3197
HEIGHT
2293
27-Dec-2022
16:03
linh
pham



AFTER

MASS
61
AREA
3197
HEIGHT
2293
27-Dec-2022
16:07
linh
pham



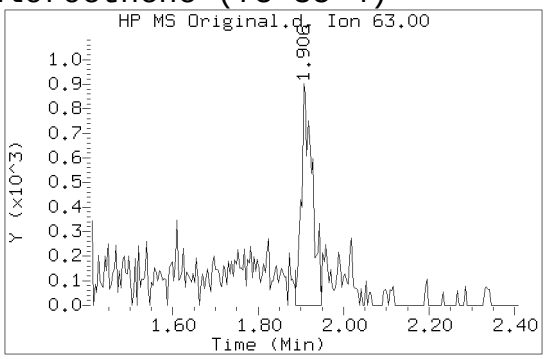
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1-Dichloroethene (75-35-4)

Reason Code:

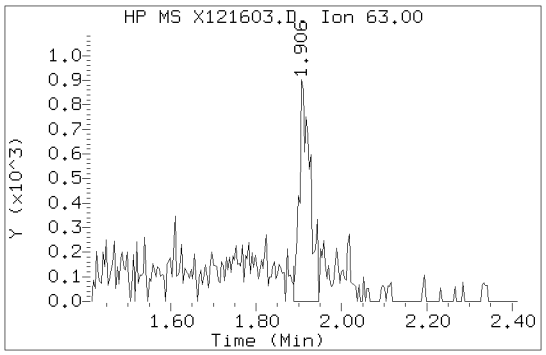
BEFORE

MASS
63
AREA
1607
HEIGHT
902
27-Dec-2022
16:03
linh
pham



AFTER

MASS
63
AREA
1607
HEIGHT
902
27-Dec-2022
16:07
linh
pham

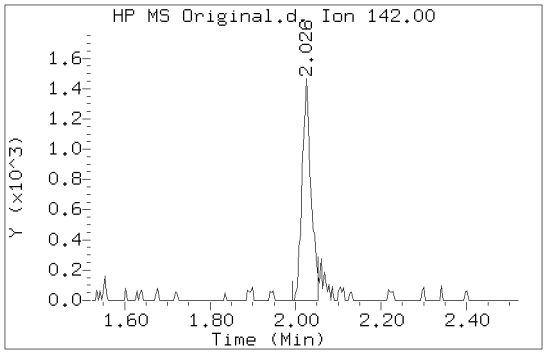


Iodomethane (74-88-4)

Reason Code:

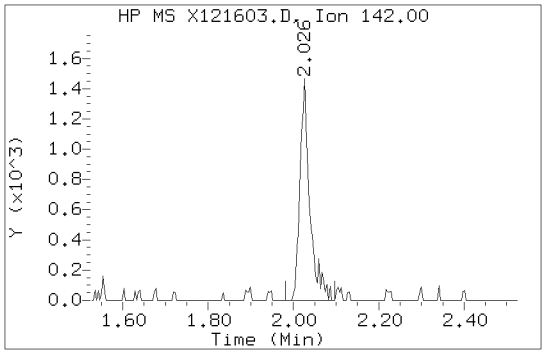
BEFORE

MASS
142
AREA
2166
HEIGHT
1466
27-Dec-2022
16:03
linh
pham



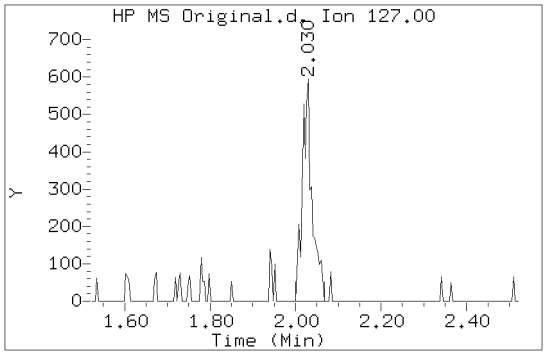
AFTER

MASS
142
AREA
2397
HEIGHT
1466
27-Dec-2022
16:07
linh
pham



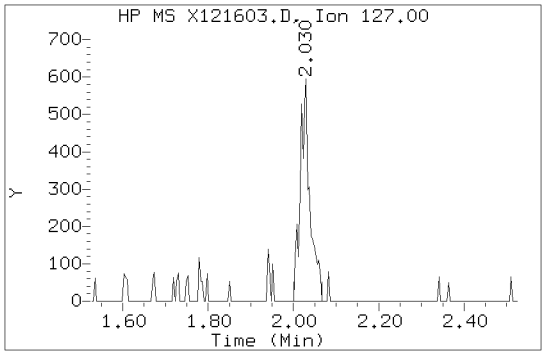
BEFORE

MASS
127
AREA
958
HEIGHT
595
27-Dec-2022
16:03
linh
pham



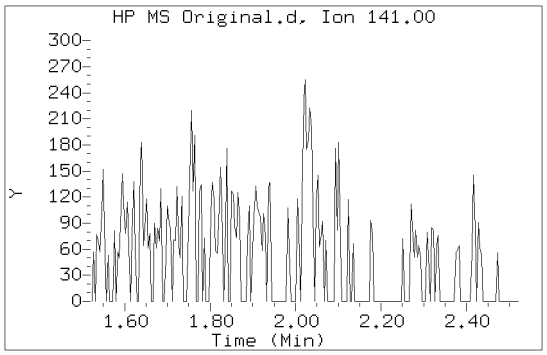
AFTER

MASS
127
AREA
958
HEIGHT
595
27-Dec-2022
16:07
linh
pham



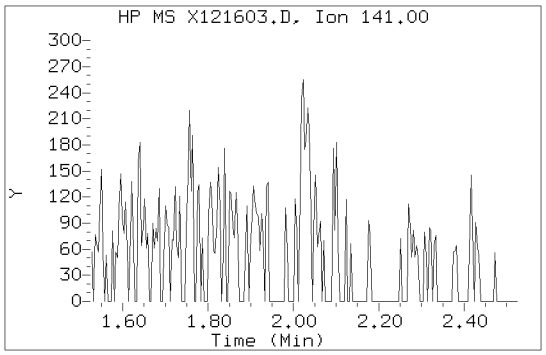
BEFORE

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

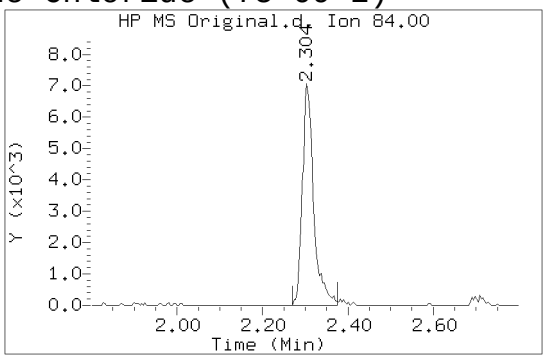


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

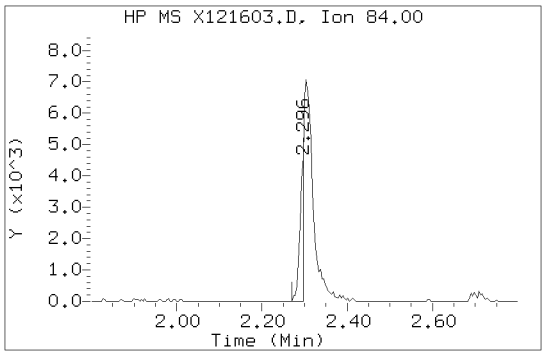
Methylene Chloride (75-09-2)

Reason Code:

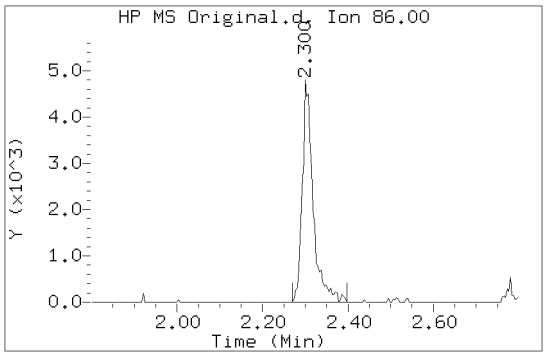
BEFORE
MASS
84
AREA
13307
HEIGHT
7067
27-Dec-2022
16:03
linh
pham



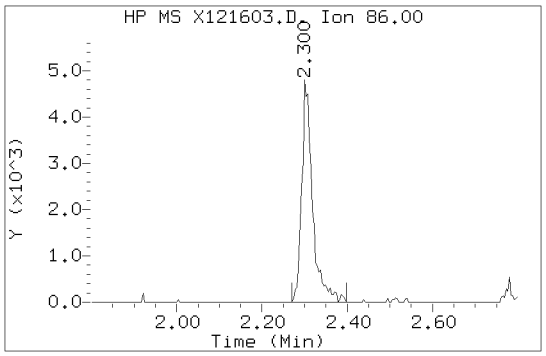
AFTER
MASS
84
AREA
2938
HEIGHT
4595
27-Dec-2022
16:07
linh
pham



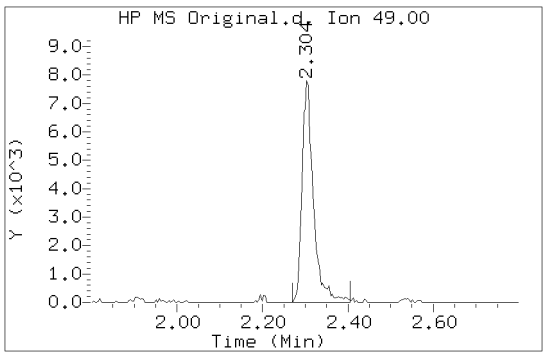
BEFORE
MASS
86
AREA
8692
HEIGHT
4802
27-Dec-2022
16:03
linh
pham



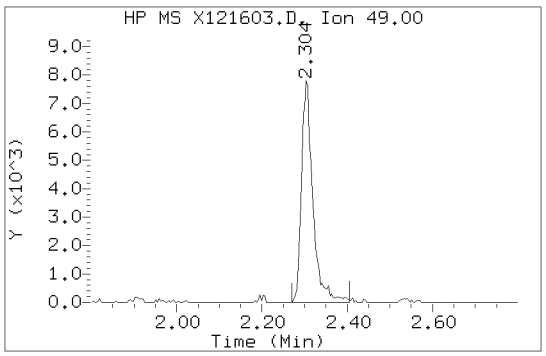
AFTER
MASS
86
AREA
8692
HEIGHT
4802
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
49
AREA
14733
HEIGHT
7803
27-Dec-2022
16:03
linh
pham



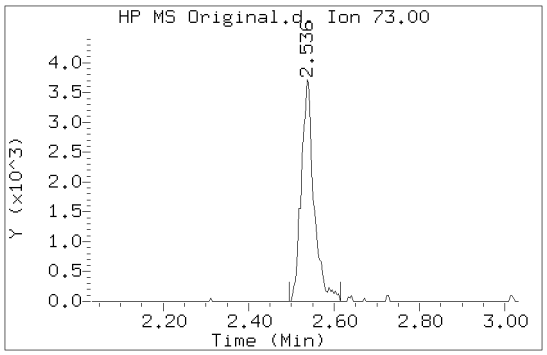
AFTER
MASS
49
AREA
14733
HEIGHT
7803
27-Dec-2022
16:07
linh
pham



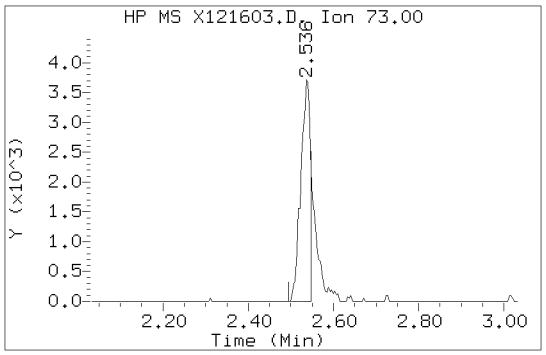
Methyl tert-butyl ether (1634-04-4)

Reason Code:

BEFORE
MASS
73
AREA
7826
HEIGHT
3716
27-Dec-2022
16:03
linh
pham



AFTER
MASS
73
AREA
5841
HEIGHT
3716
27-Dec-2022
16:07
linh
pham

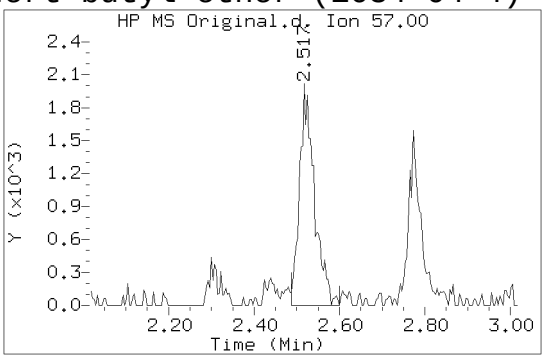


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Methyl tert-butyl ether (1634-04-4)

BEFORE

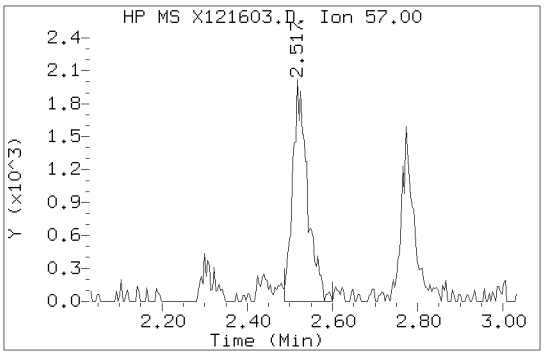
MASS
57
AREA
4915
HEIGHT
2019
27-Dec-2022
16:03
linh
pham



AFTER

MASS
57
AREA
4915
HEIGHT
2019
27-Dec-2022
16:07
linh
pham

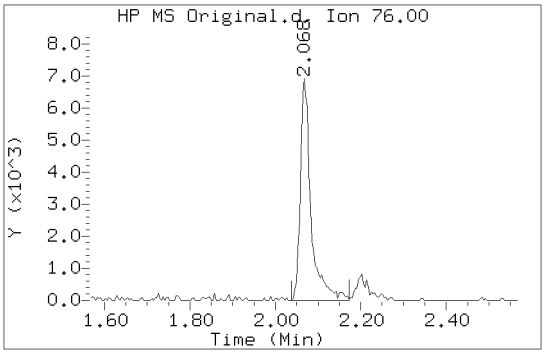
Reason Code:



Carbon Disulfide (75-15-0)

BEFORE

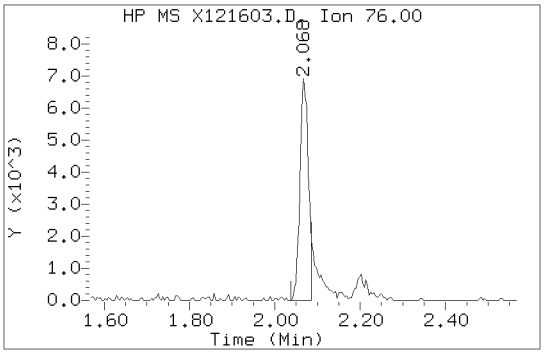
MASS
76
AREA
12313
HEIGHT
6923
27-Dec-2022
16:03
linh
pham



AFTER

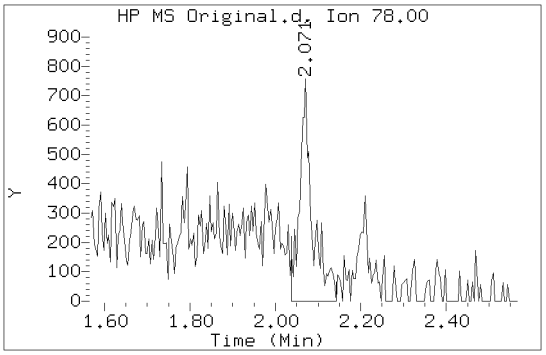
MASS
76
AREA
9921
HEIGHT
6923
27-Dec-2022
16:07
linh
pham

Reason Code:



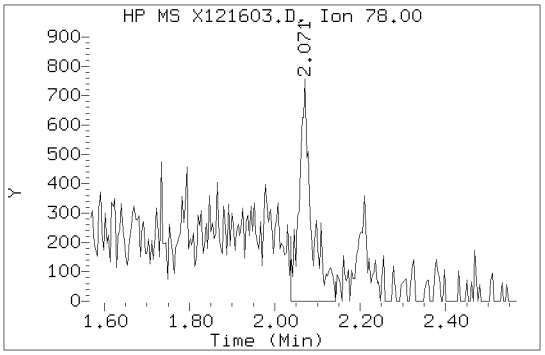
BEFORE

MASS
78
AREA
1586
HEIGHT
757
27-Dec-2022
16:03
linh
pham



AFTER

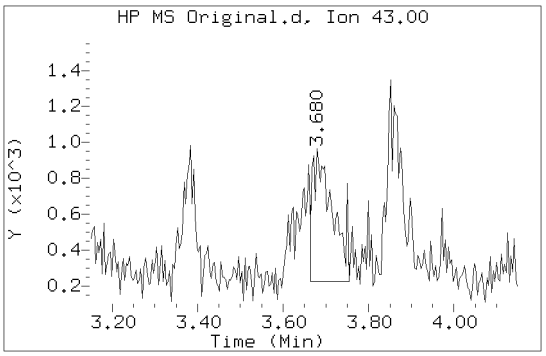
MASS
78
AREA
1586
HEIGHT
757
27-Dec-2022
16:07
linh
pham



2-Butanone (78-93-3)

BEFORE

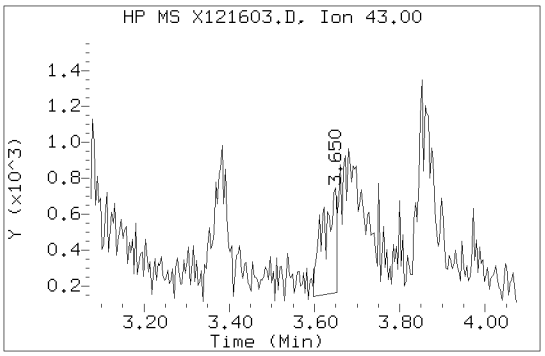
MASS
43
AREA
2415
HEIGHT
742
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
1292
HEIGHT
587
27-Dec-2022
16:07
linh
pham

Reason Code:



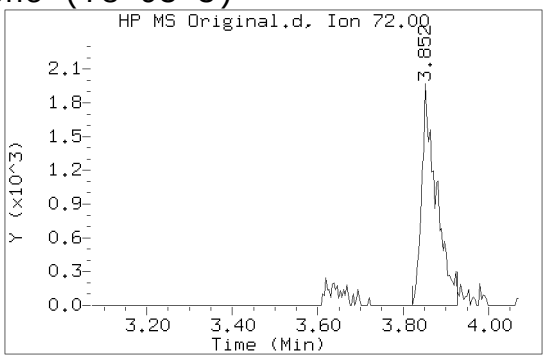
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

2-Butanone (78-93-3)

Reason Code:

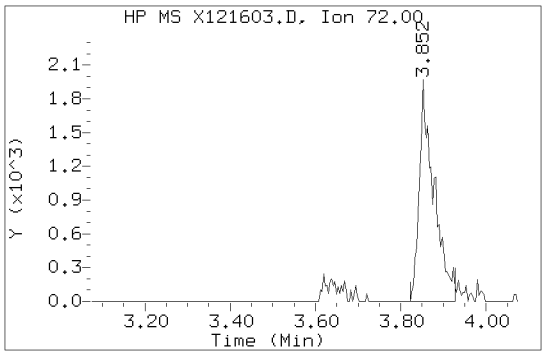
BEFORE

MASS
72
AREA
4698
HEIGHT
1970
27-Dec-2022
16:03
linh
pham



AFTER

MASS
72
AREA
4698
HEIGHT
1970
27-Dec-2022
16:07
linh
pham

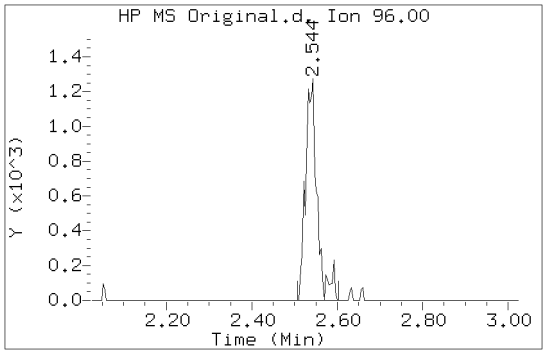


trans-1,2-Dichloroethene (156-60-5)

Reason Code:

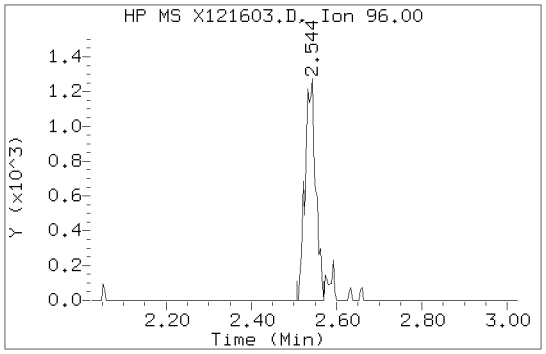
BEFORE

MASS
96
AREA
2404
HEIGHT
1274
27-Dec-2022
16:03
linh
pham



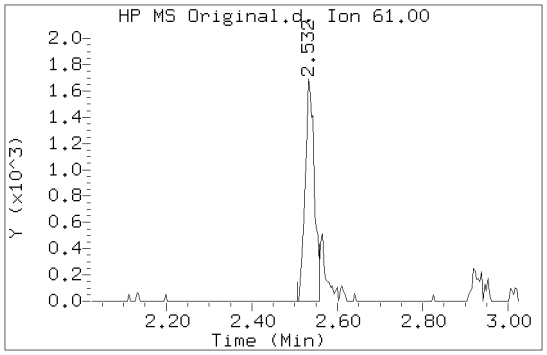
AFTER

MASS
96
AREA
2218
HEIGHT
1274
27-Dec-2022
16:07
linh
pham



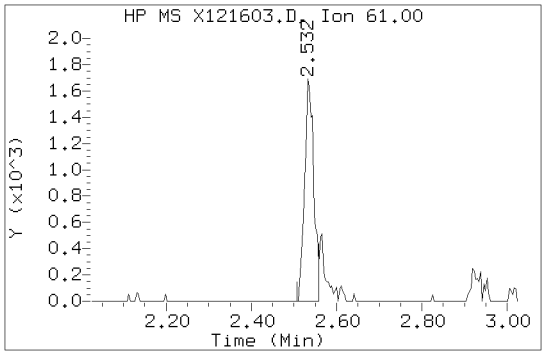
BEFORE

MASS
61
AREA
2571
HEIGHT
1692
27-Dec-2022
16:03
linh
pham



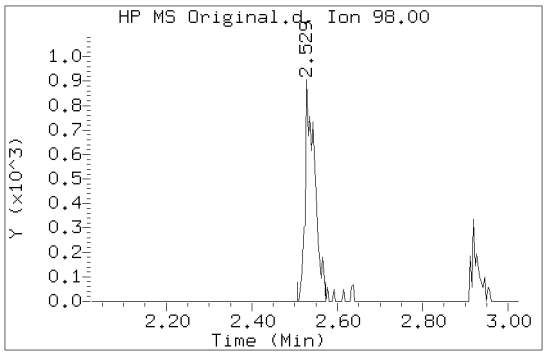
AFTER

MASS
61
AREA
2571
HEIGHT
1692
27-Dec-2022
16:07
linh
pham



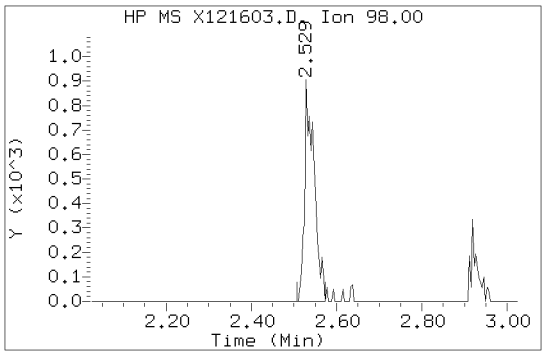
BEFORE

MASS
98
AREA
1412
HEIGHT
906
27-Dec-2022
16:03
linh
pham



AFTER

MASS
98
AREA
1412
HEIGHT
906
27-Dec-2022
16:07
linh
pham



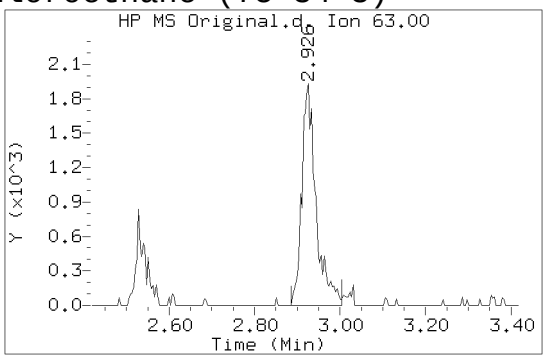
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1-Dichloroethane (75-34-3)

Reason Code:

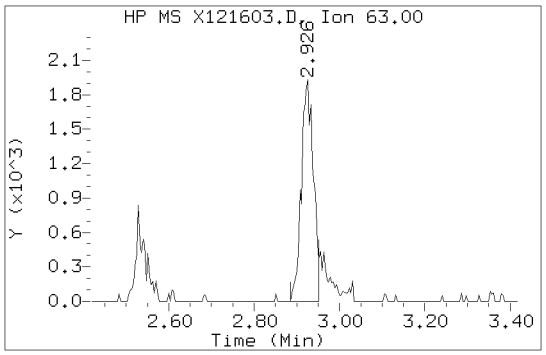
BEFORE

MASS
63
AREA
4504
HEIGHT
1931
27-Dec-2022
16:03
linh
pham



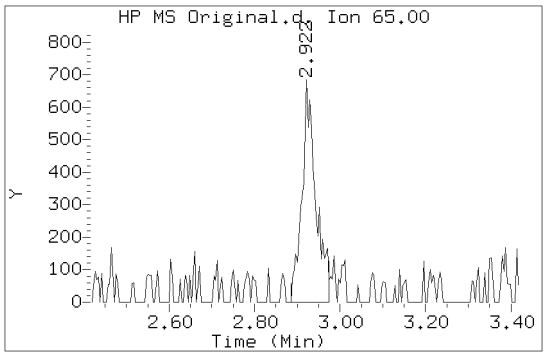
AFTER

MASS
63
AREA
3874
HEIGHT
1931
27-Dec-2022
16:07
linh
pham



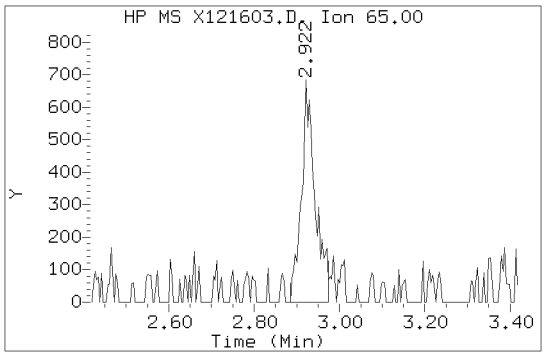
BEFORE

MASS
65
AREA
1548
HEIGHT
684
27-Dec-2022
16:03
linh
pham



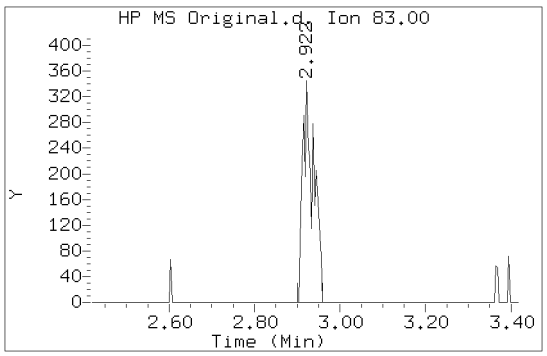
AFTER

MASS
65
AREA
1548
HEIGHT
684
27-Dec-2022
16:07
linh
pham



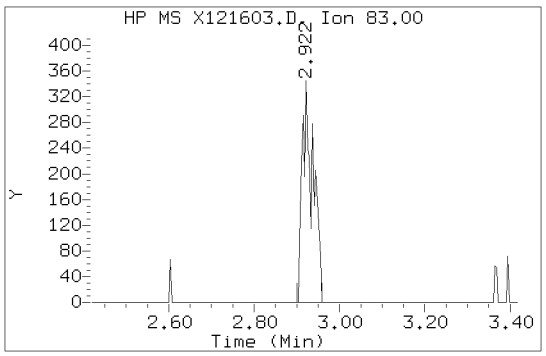
BEFORE

MASS
83
AREA
618
HEIGHT
345
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
618
HEIGHT
345
27-Dec-2022
16:07
linh
pham

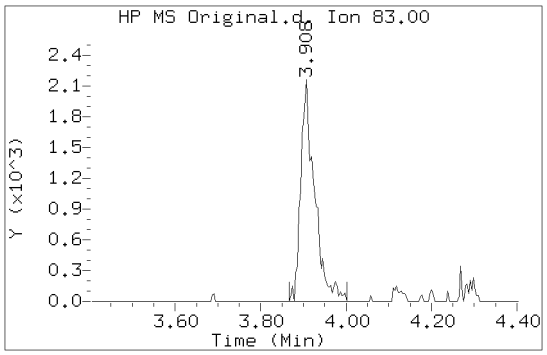


Chloroform (67-66-3)

Reason Code:

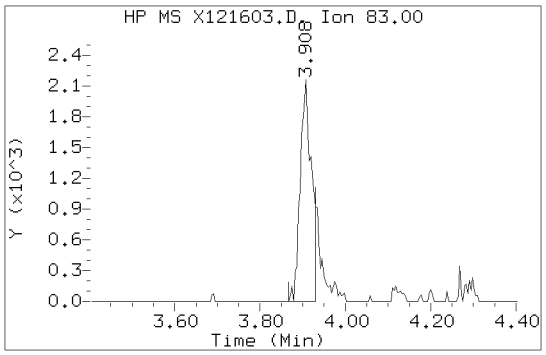
BEFORE

MASS
83
AREA
4949
HEIGHT
2160
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
4040
HEIGHT
2160
27-Dec-2022
16:07
linh
pham



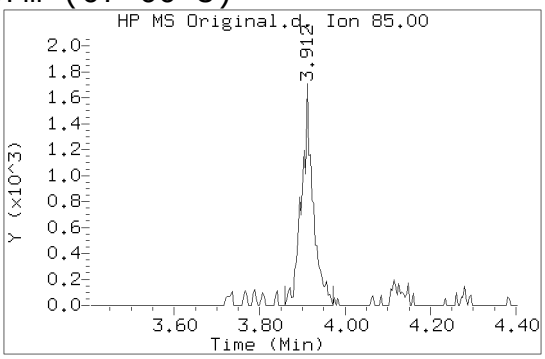
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Chloroform (67-66-3)

Reason Code:

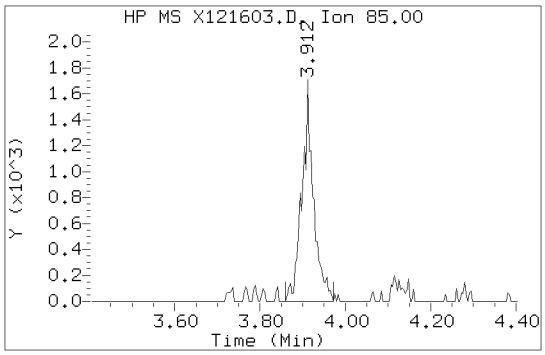
BEFORE

MASS
85
AREA
3222
HEIGHT
1709
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
3222
HEIGHT
1709
27-Dec-2022
16:07
linh
pham

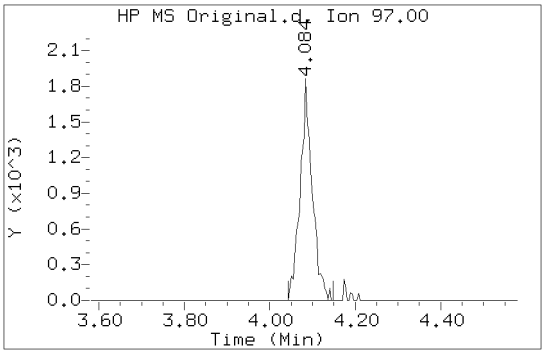


1,1,1-Trichloroethane (71-55-6)

Reason Code:

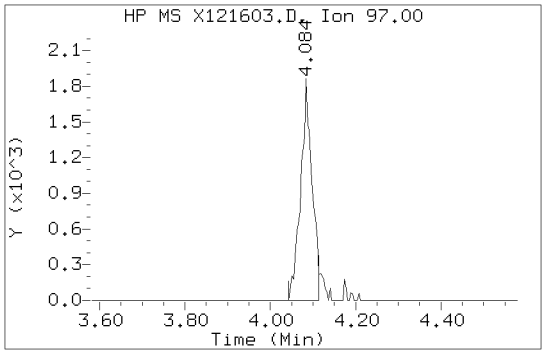
BEFORE

MASS
97
AREA
3710
HEIGHT
1863
27-Dec-2022
16:03
linh
pham



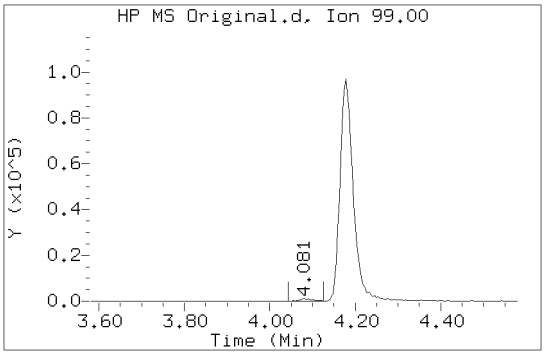
AFTER

MASS
97
AREA
3512
HEIGHT
1863
27-Dec-2022
16:07
linh
pham



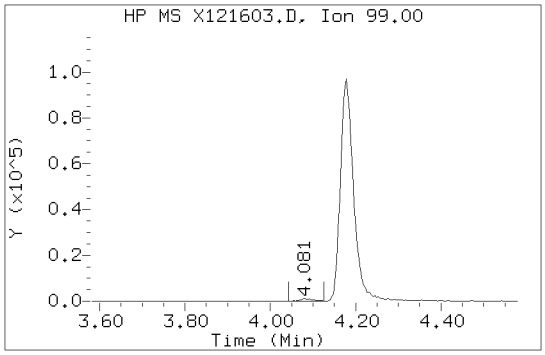
BEFORE

MASS
99
AREA
2299
HEIGHT
1029
27-Dec-2022
16:03
linh
pham



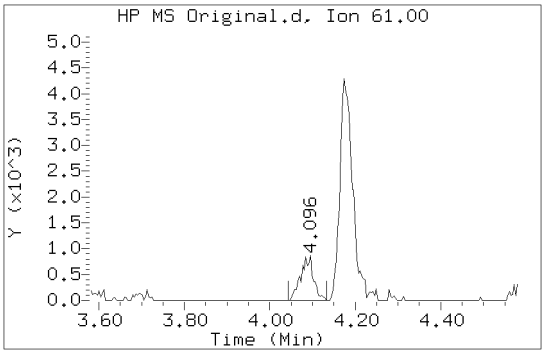
AFTER

MASS
99
AREA
2299
HEIGHT
1029
27-Dec-2022
16:07
linh
pham



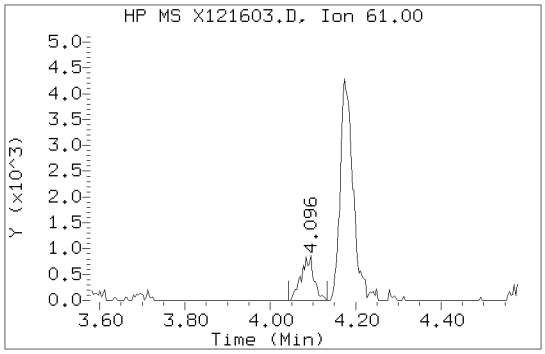
BEFORE

MASS
61
AREA
1801
HEIGHT
872
27-Dec-2022
16:03
linh
pham



AFTER

MASS
61
AREA
1801
HEIGHT
872
27-Dec-2022
16:07
linh
pham



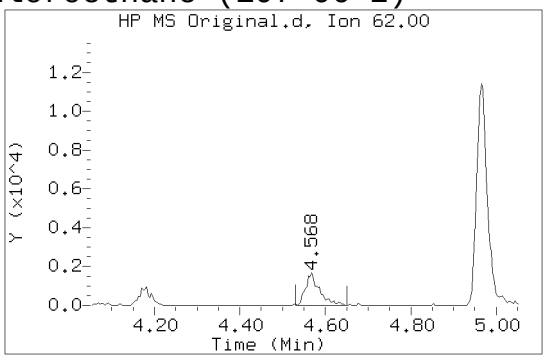
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,2-Dichloroethane (107-06-2)

Reason Code:

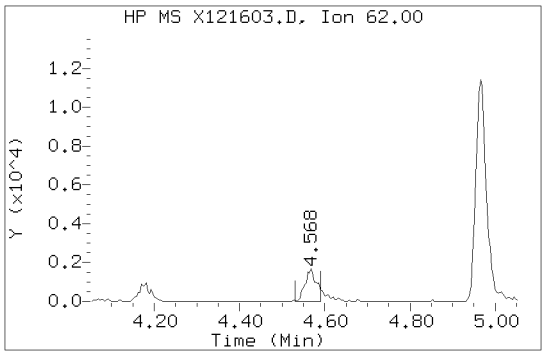
BEFORE

MASS
62
AREA
3822
HEIGHT
1678
27-Dec-2022
16:03
linh
pham



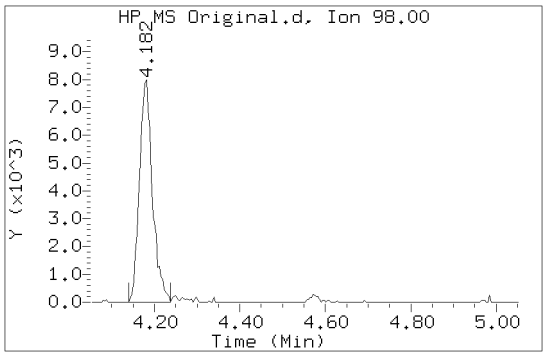
AFTER

MASS
62
AREA
3129
HEIGHT
1678
27-Dec-2022
16:07
linh
pham



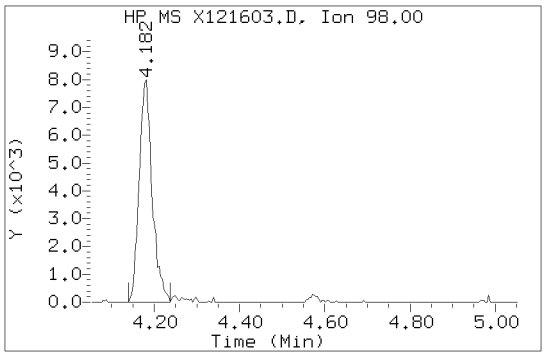
BEFORE

MASS
98
AREA
16918
HEIGHT
7987
27-Dec-2022
16:03
linh
pham



AFTER

MASS
98
AREA
16918
HEIGHT
7987
27-Dec-2022
16:07
linh
pham

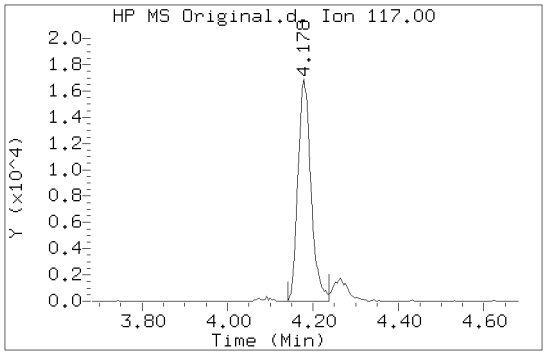


Carbon Tetrachloride (56-23-5)

Reason Code:

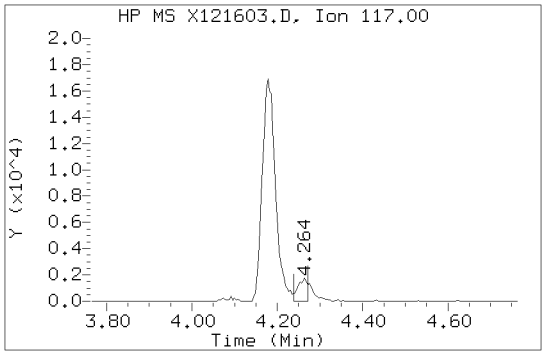
BEFORE

MASS
117
AREA
36559
HEIGHT
16920
27-Dec-2022
16:03
linh
pham



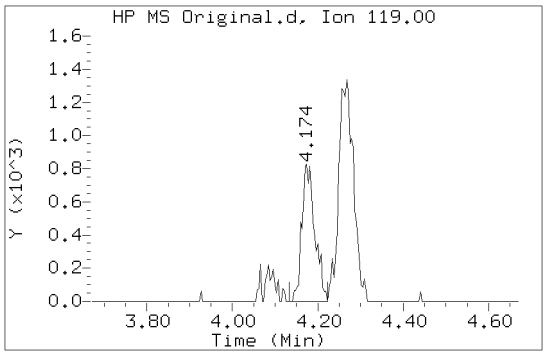
AFTER

MASS
117
AREA
2763
HEIGHT
1744
27-Dec-2022
16:07
linh
pham



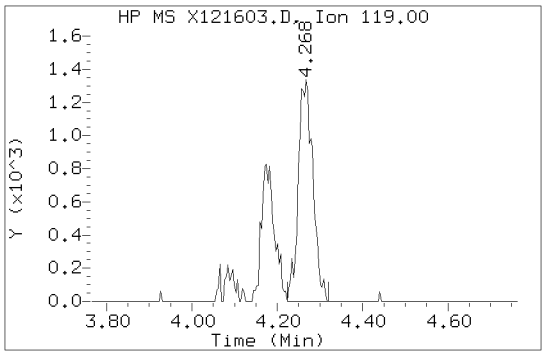
BEFORE

MASS
119
AREA
1780
HEIGHT
826
27-Dec-2022
16:03
linh
pham



AFTER

MASS
119
AREA
3227
HEIGHT
1337
27-Dec-2022
16:07
linh
pham



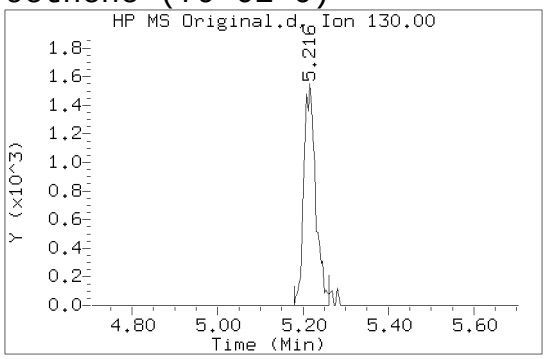
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Trichloroethene (79-01-6)

Reason Code:

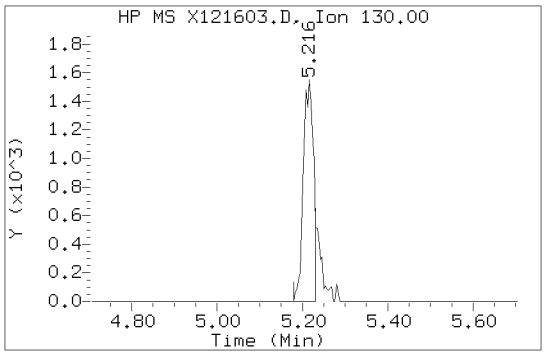
BEFORE

MASS
130
AREA
3011
HEIGHT
1551
27-Dec-2022
16:03
linh
pham



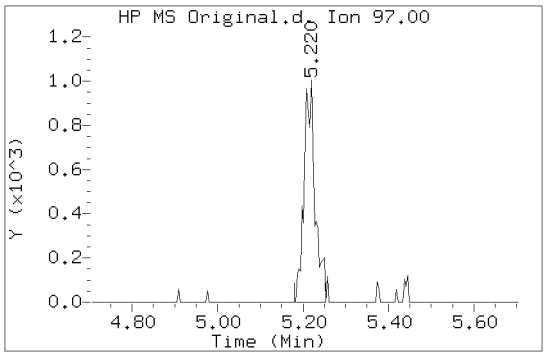
AFTER

MASS
130
AREA
2583
HEIGHT
1551
27-Dec-2022
16:07
linh
pham



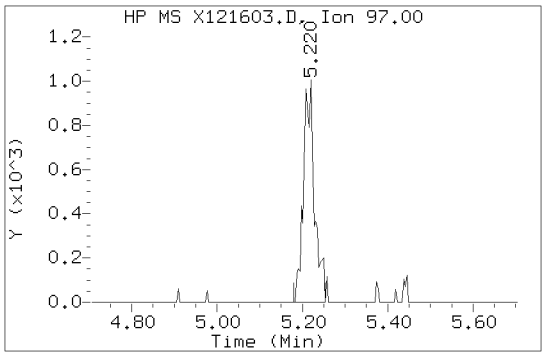
BEFORE

MASS
97
AREA
1808
HEIGHT
1006
27-Dec-2022
16:03
linh
pham



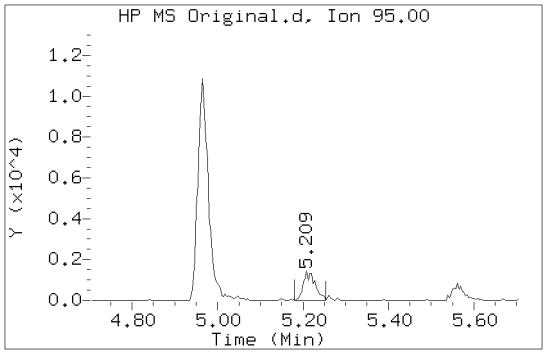
AFTER

MASS
97
AREA
1808
HEIGHT
1006
27-Dec-2022
16:07
linh
pham



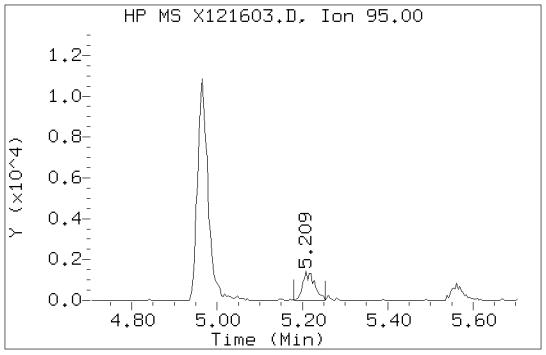
BEFORE

MASS
95
AREA
2693
HEIGHT
1431
27-Dec-2022
16:03
linh
pham



AFTER

MASS
95
AREA
2693
HEIGHT
1431
27-Dec-2022
16:07
linh
pham

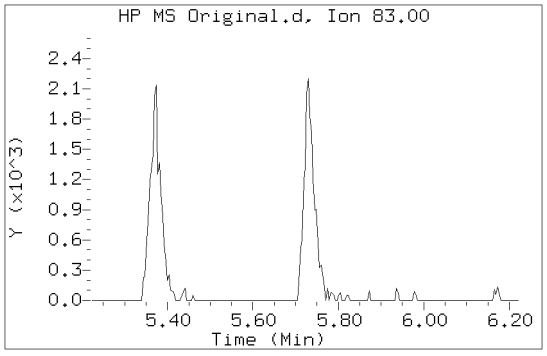


Bromodichloromethane (75-27-4)

Reason Code:

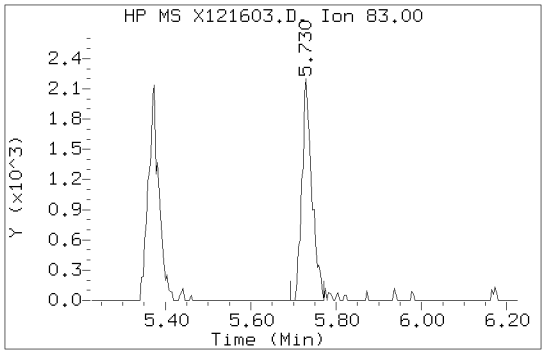
BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
3650
HEIGHT
2201
27-Dec-2022
16:07
linh
pham



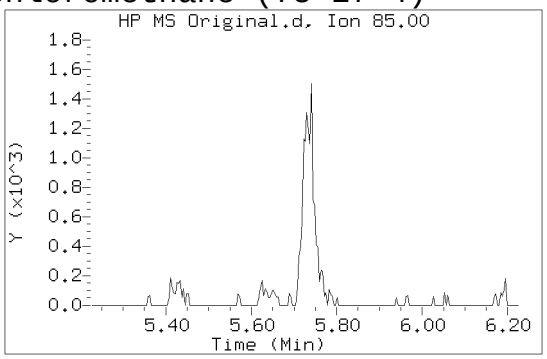
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Bromodichloromethane (75-27-4)

Reason Code:

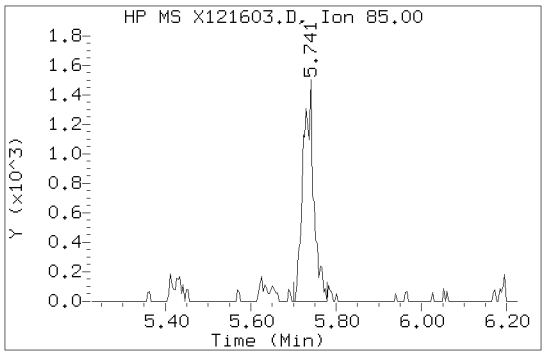
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



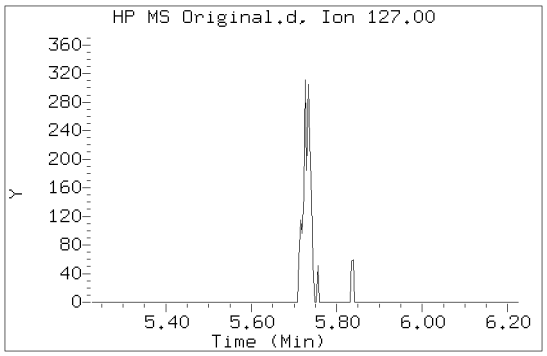
AFTER

MASS
85
AREA
2639
HEIGHT
1503
27-Dec-2022
16:07
linh
pham



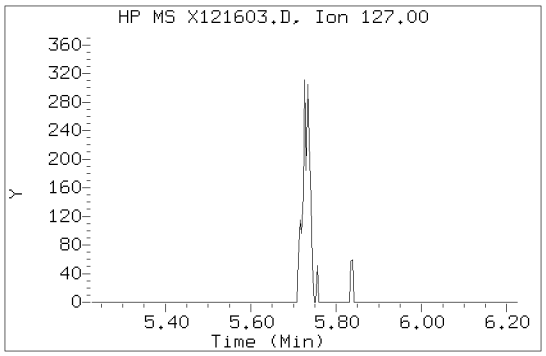
BEFORE

MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

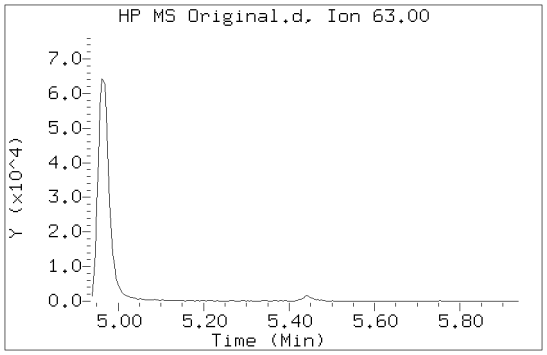


1,2-Dichloropropane (78-87-5)

Reason Code:

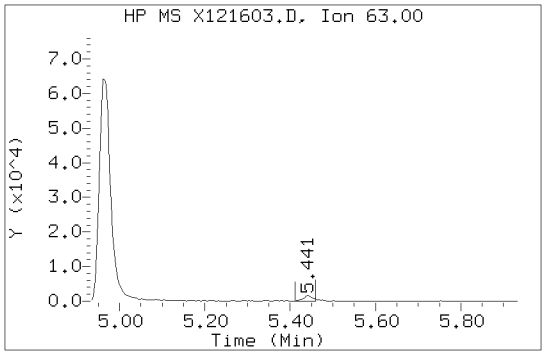
BEFORE

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



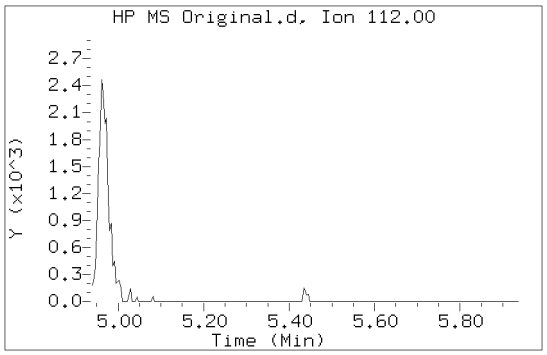
AFTER

MASS
63
AREA
2449
HEIGHT
1587
27-Dec-2022
16:07
linh
pham



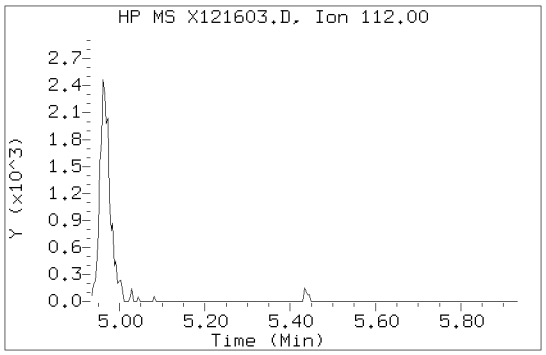
BEFORE

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



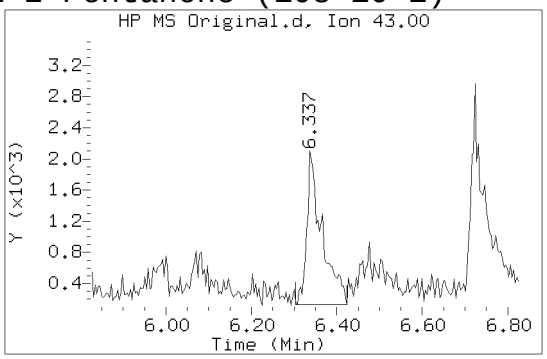
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

4-Methyl-2-Pentanone (108-10-1)

Reason Code:

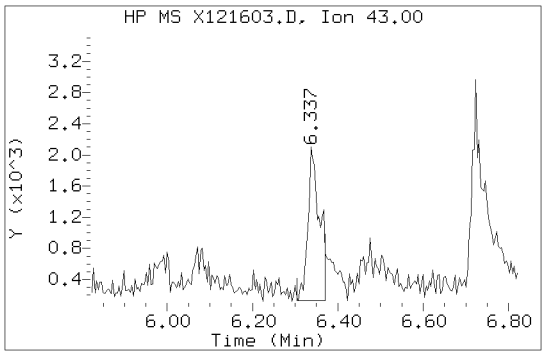
BEFORE

MASS
43
AREA
4873
HEIGHT
1970
27-Dec-2022
16:03
linh
pham



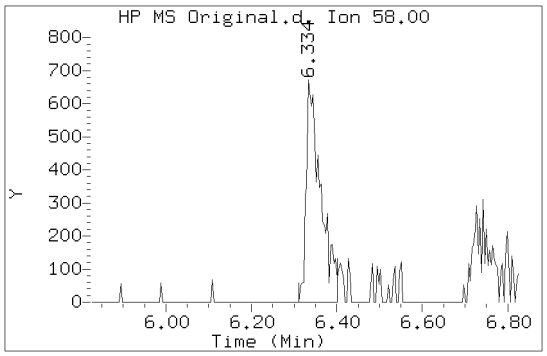
AFTER

MASS
43
AREA
3741
HEIGHT
1970
27-Dec-2022
16:07
linh
pham



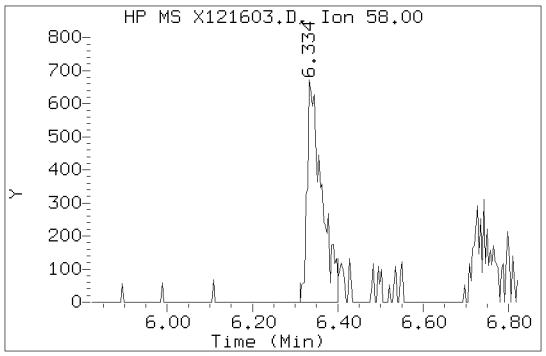
BEFORE

MASS
58
AREA
1585
HEIGHT
672
27-Dec-2022
16:03
linh
pham



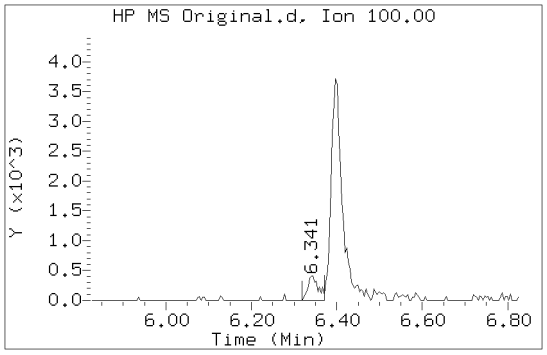
AFTER

MASS
58
AREA
1585
HEIGHT
672
27-Dec-2022
16:07
linh
pham



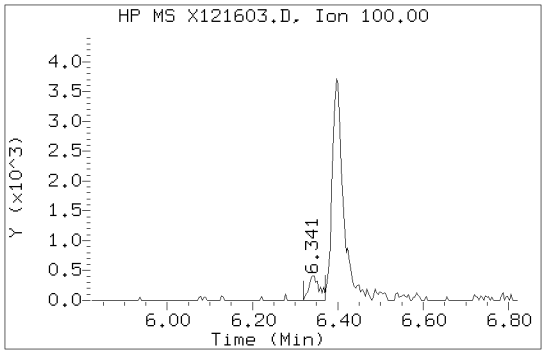
BEFORE

MASS
100
AREA
714
HEIGHT
412
27-Dec-2022
16:03
linh
pham



AFTER

MASS
100
AREA
714
HEIGHT
412
27-Dec-2022
16:07
linh
pham

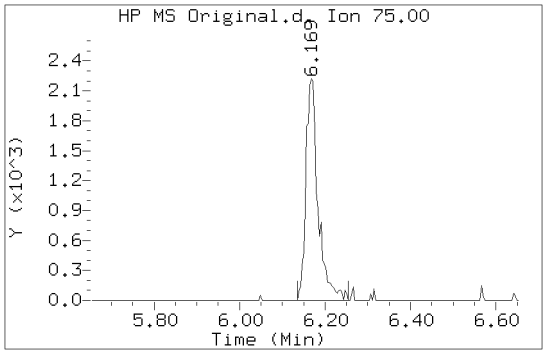


cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

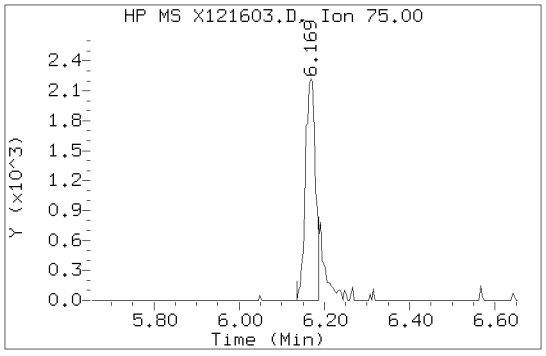
BEFORE

MASS
75
AREA
4432
HEIGHT
2222
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
3695
HEIGHT
2222
27-Dec-2022
16:07
linh
pham



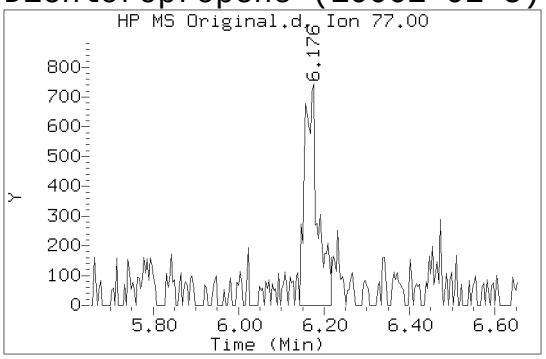
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

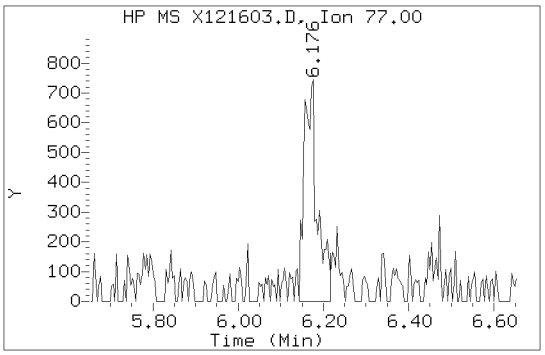
BEFORE

MASS
77
AREA
1607
HEIGHT
745
27-Dec-2022
16:03
linh
pham



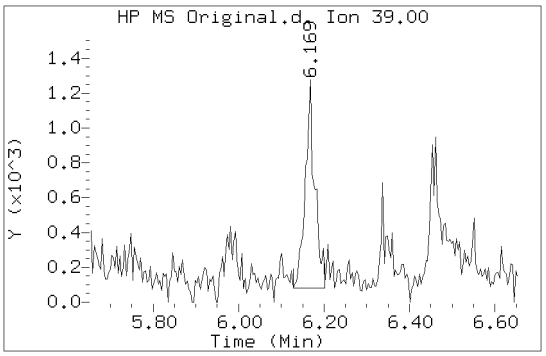
AFTER

MASS
77
AREA
1607
HEIGHT
745
27-Dec-2022
16:07
linh
pham



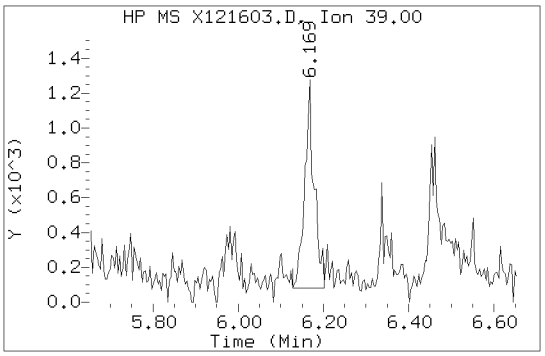
BEFORE

MASS
39
AREA
1836
HEIGHT
1193
27-Dec-2022
16:03
linh
pham



AFTER

MASS
39
AREA
1836
HEIGHT
1193
27-Dec-2022
16:07
linh
pham

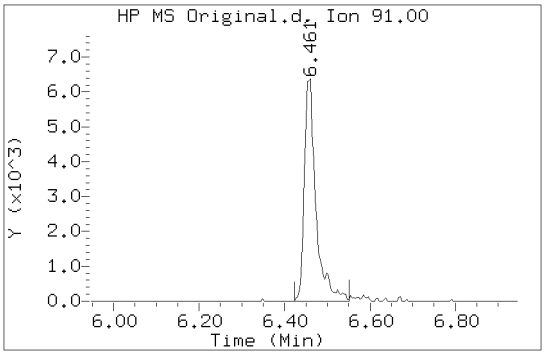


Toluene (108-88-3)

Reason Code:

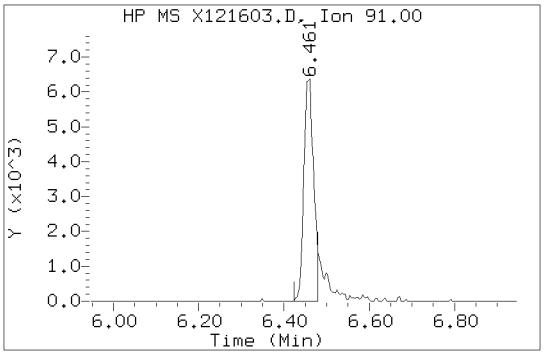
BEFORE

MASS
91
AREA
12225
HEIGHT
6374
27-Dec-2022
16:03
linh
pham



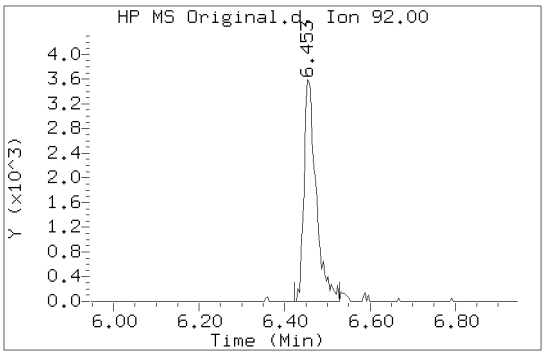
AFTER

MASS
91
AREA
10374
HEIGHT
6374
27-Dec-2022
16:07
linh
pham



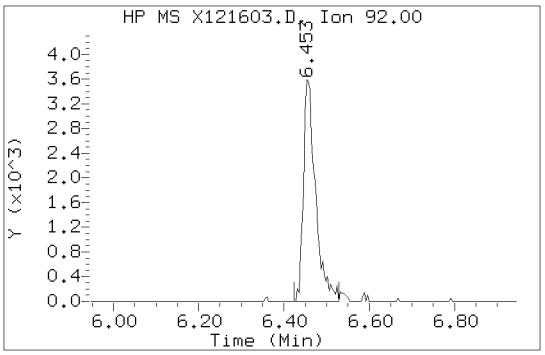
BEFORE

MASS
92
AREA
7180
HEIGHT
3591
27-Dec-2022
16:03
linh
pham



AFTER

MASS
92
AREA
7180
HEIGHT
3591
27-Dec-2022
16:07
linh
pham



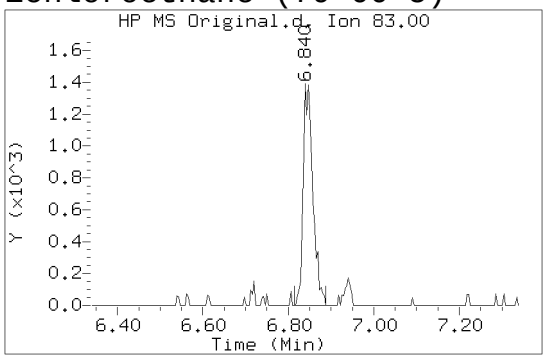
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1,2-Trichloroethane (79-00-5)

Reason Code:

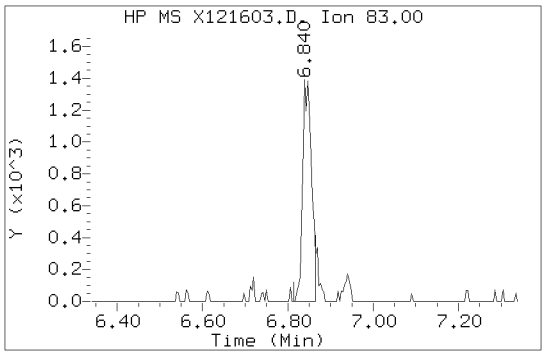
BEFORE

MASS
83
AREA
2247
HEIGHT
1391
27-Dec-2022
16:03
linh
pham



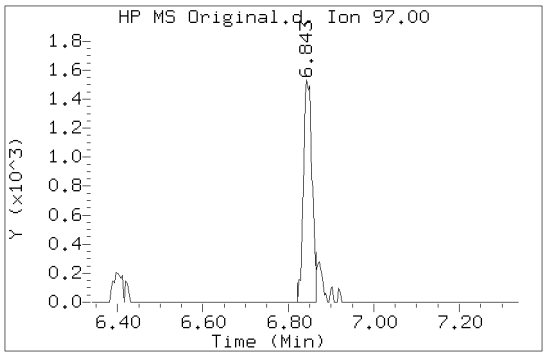
AFTER

MASS
83
AREA
2092
HEIGHT
1391
27-Dec-2022
16:07
linh
pham



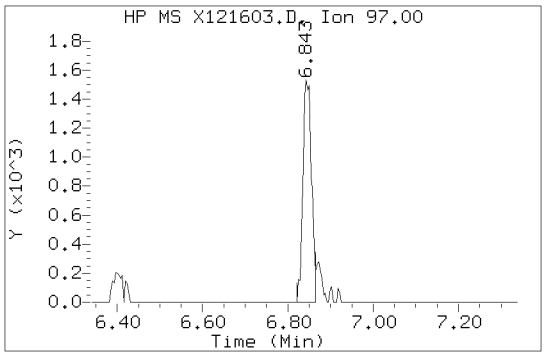
BEFORE

MASS
97
AREA
2224
HEIGHT
1532
27-Dec-2022
16:03
linh
pham



AFTER

MASS
97
AREA
2224
HEIGHT
1532
27-Dec-2022
16:07
linh
pham

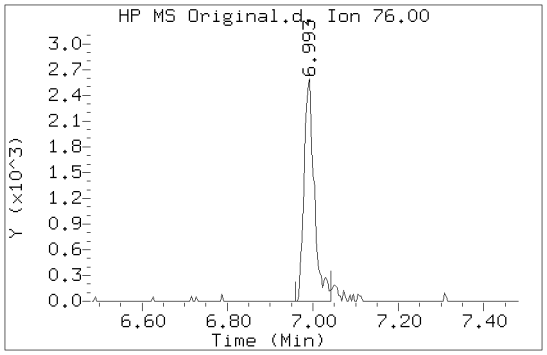


1,3-Dichloropropane (142-28-9)

Reason Code:

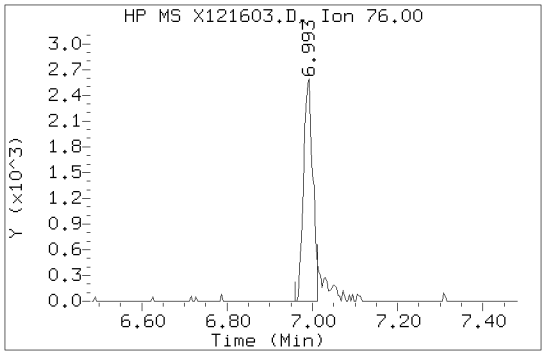
BEFORE

MASS
76
AREA
4415
HEIGHT
2592
27-Dec-2022
16:03
linh
pham



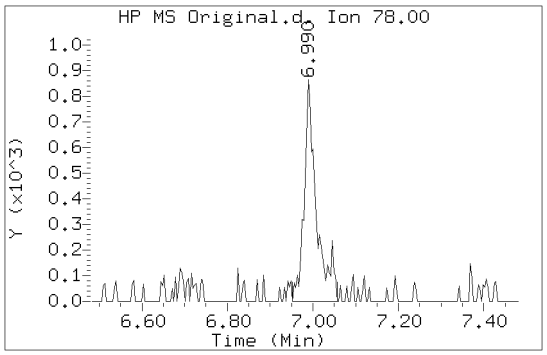
AFTER

MASS
76
AREA
4005
HEIGHT
2592
27-Dec-2022
16:07
linh
pham



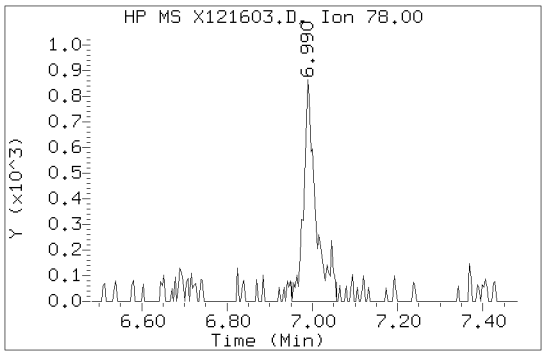
BEFORE

MASS
78
AREA
1727
HEIGHT
864
27-Dec-2022
16:03
linh
pham



AFTER

MASS
78
AREA
1727
HEIGHT
864
27-Dec-2022
16:07
linh
pham



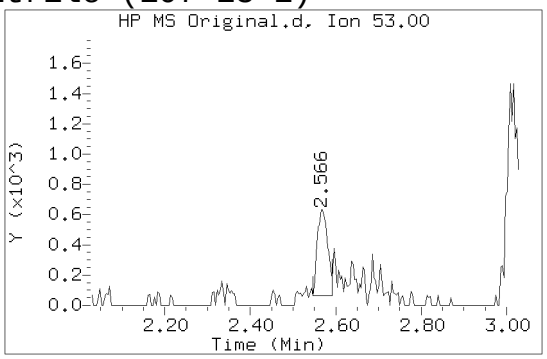
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Acrylonitrile (107-13-1)

Reason Code:

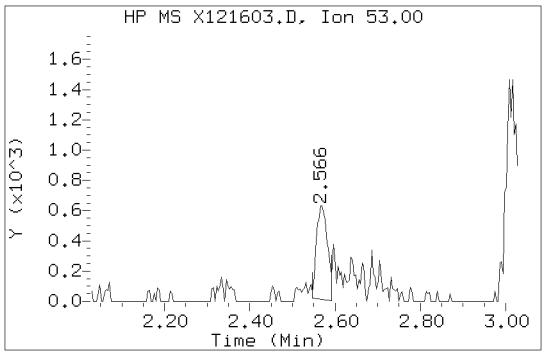
BEFORE

MASS
53
AREA
975
HEIGHT
571
27-Dec-2022
16:03
linh
pham



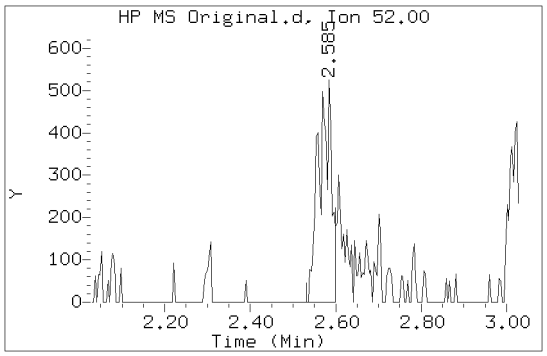
AFTER

MASS
53
AREA
1118
HEIGHT
618
27-Dec-2022
16:07
linh
pham



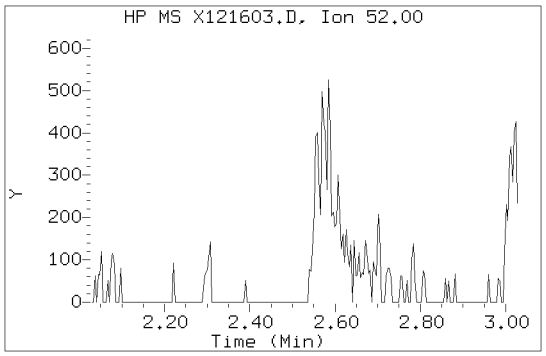
BEFORE

MASS
52
AREA
1100
HEIGHT
525
27-Dec-2022
16:03
linh
pham



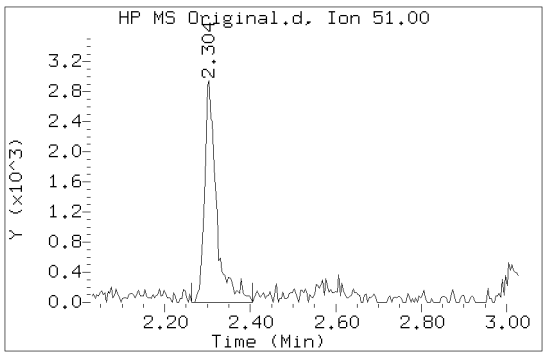
AFTER

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



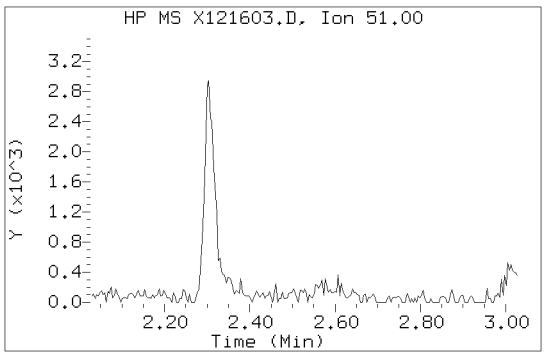
BEFORE

MASS
51
AREA
5708
HEIGHT
2946
27-Dec-2022
16:03
linh
pham



AFTER

MASS
51
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

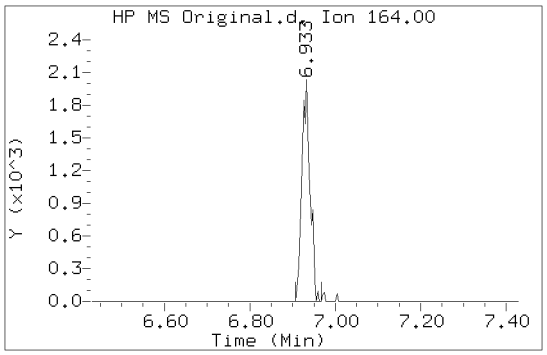


Tetrachloroethene (127-18-4)

Reason Code:

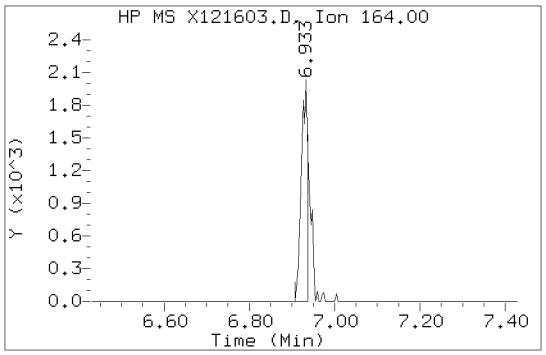
BEFORE

MASS
164
AREA
2777
HEIGHT
2036
27-Dec-2022
16:03
linh
pham



AFTER

MASS
164
AREA
2131
HEIGHT
2036
27-Dec-2022
16:07
linh
pham

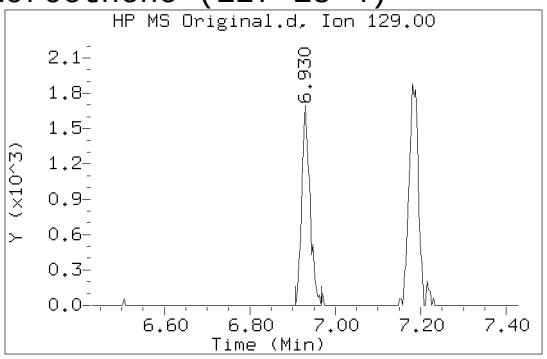


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

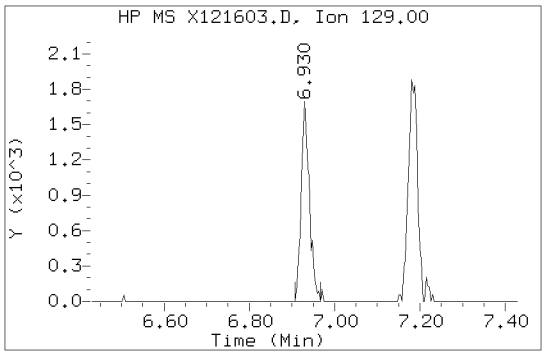
Tetrachloroethene (127-18-4)

Reason Code:

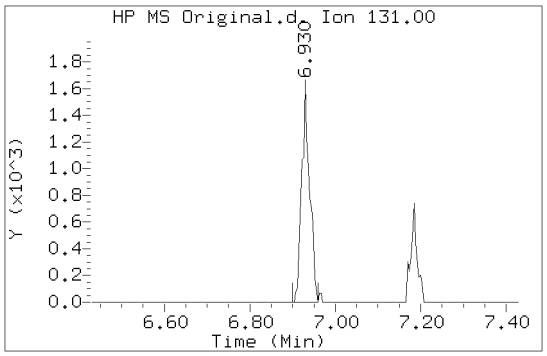
BEFORE
MASS
129
AREA
2342
HEIGHT
1697
27-Dec-2022
16:03
linh
pham



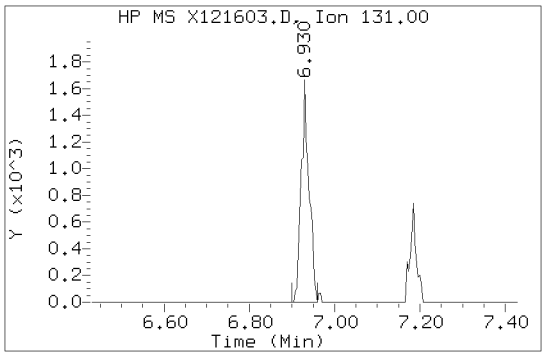
AFTER
MASS
129
AREA
2342
HEIGHT
1697
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
131
AREA
2193
HEIGHT
1665
27-Dec-2022
16:03
linh
pham



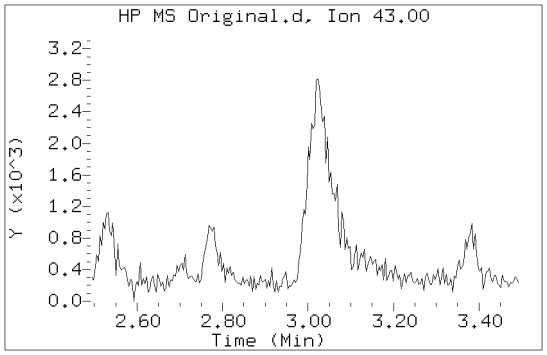
AFTER
MASS
131
AREA
2193
HEIGHT
1665
27-Dec-2022
16:07
linh
pham



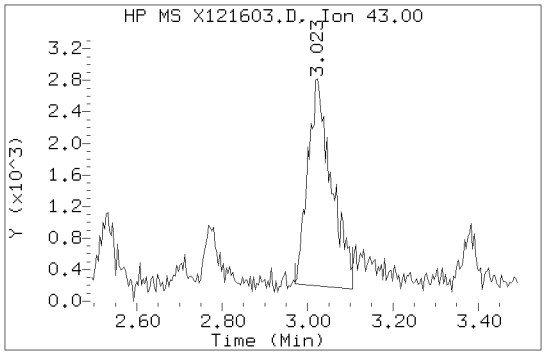
Vinyl Acetate (108-05-4)

Reason Code:

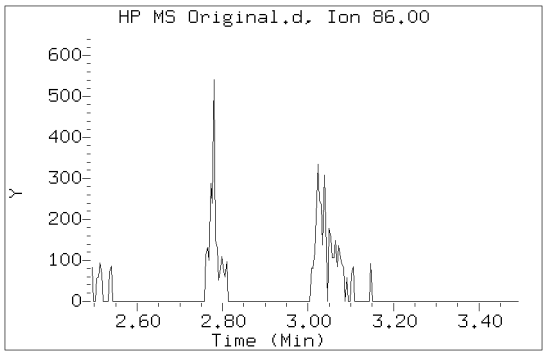
BEFORE
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



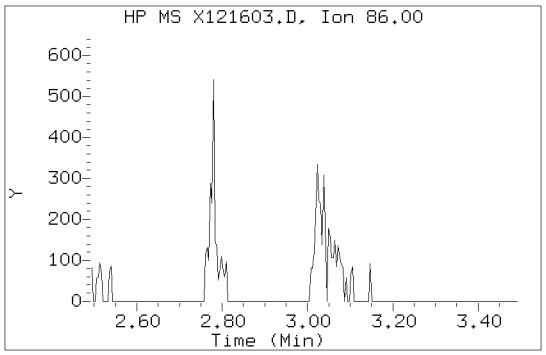
AFTER
MASS
43
AREA
10138
HEIGHT
2622
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
86
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
86
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

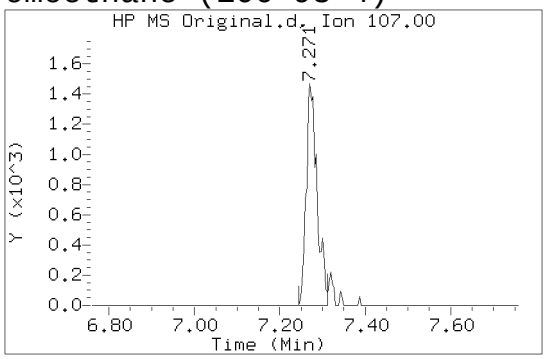


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

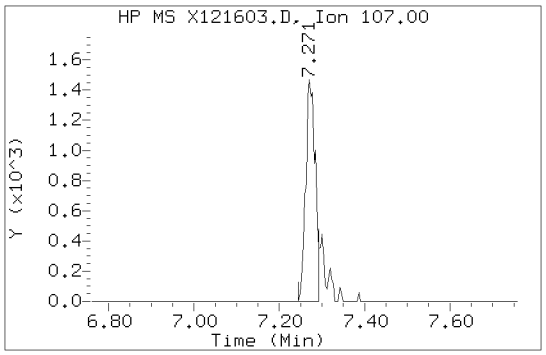
1,2-Dibromoethane (106-93-4)

Reason Code:

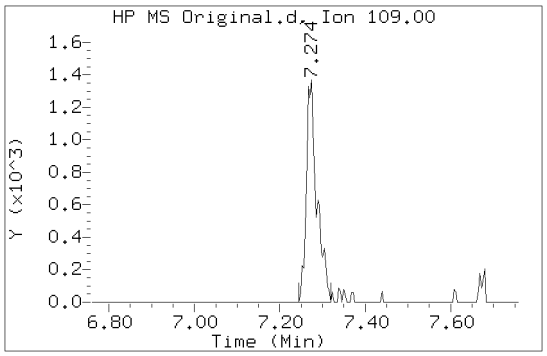
BEFORE
MASS
107
AREA
2627
HEIGHT
1469
27-Dec-2022
16:03
linh
pham



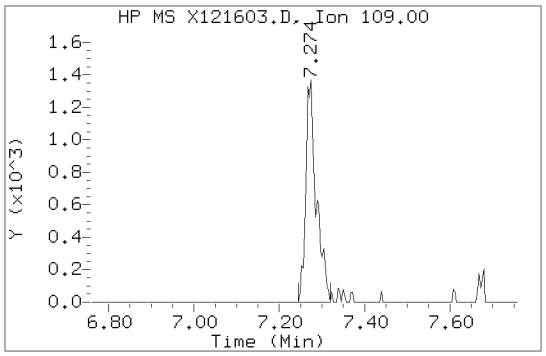
AFTER
MASS
107
AREA
2340
HEIGHT
1469
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
109
AREA
2396
HEIGHT
1369
27-Dec-2022
16:03
linh
pham



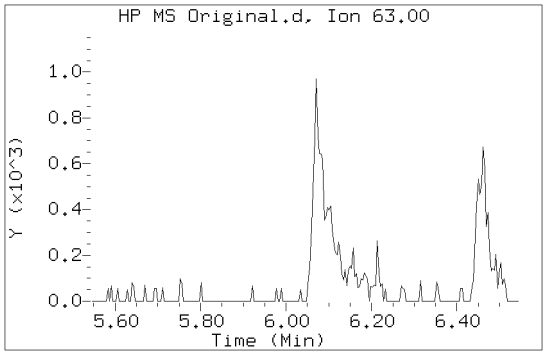
AFTER
MASS
109
AREA
2396
HEIGHT
1369
27-Dec-2022
16:07
linh
pham



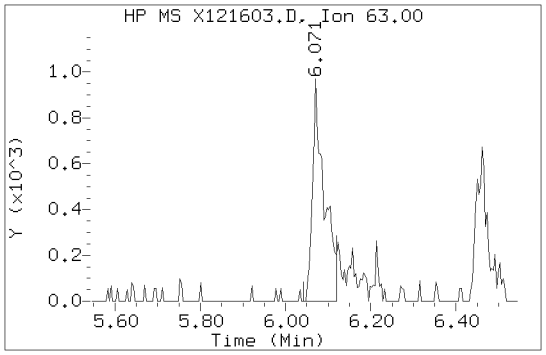
2-Chloroethylvinyl ether (110-75-8)

Reason Code:

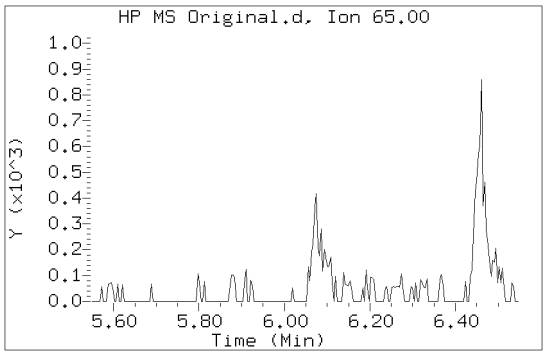
BEFORE
MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



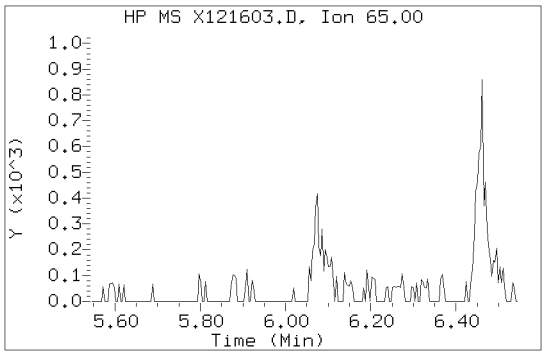
AFTER
MASS
63
AREA
1861
HEIGHT
970
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
65
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
65
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



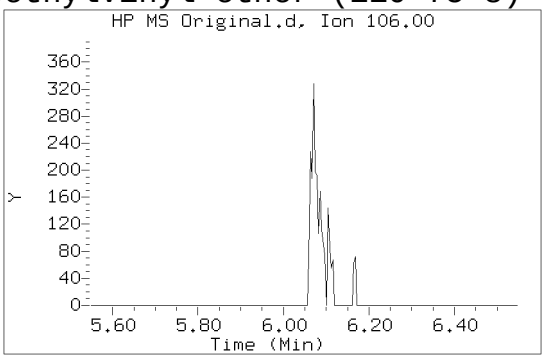
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

2-Chloroethylvinyl ether (110-75-8)

Reason Code:

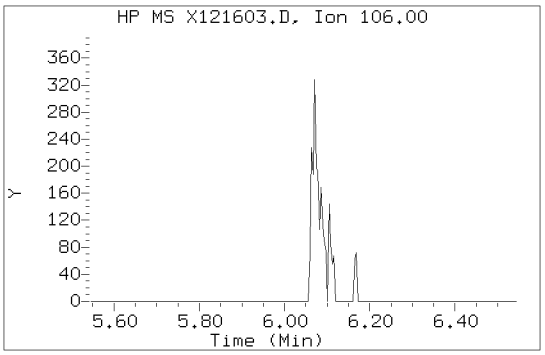
BEFORE

MASS
106
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
106
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

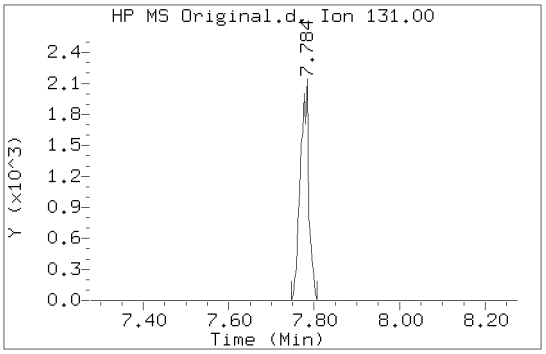


1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

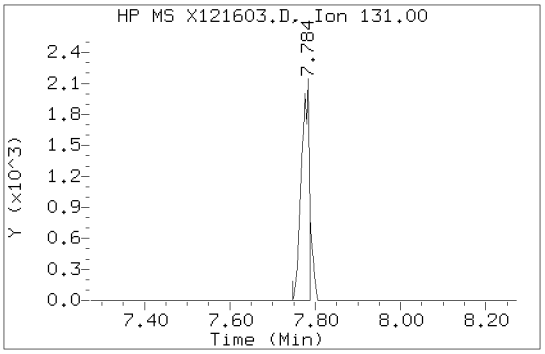
BEFORE

MASS
131
AREA
3036
HEIGHT
2146
27-Dec-2022
16:03
linh
pham



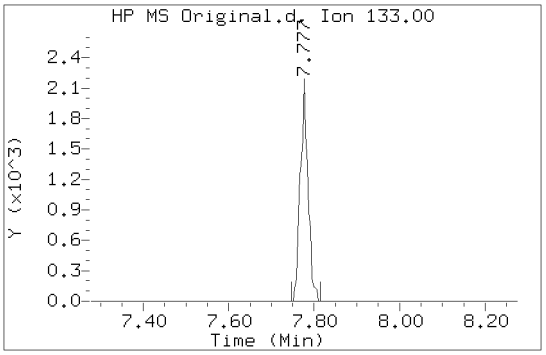
AFTER

MASS
131
AREA
2741
HEIGHT
2146
27-Dec-2022
16:07
linh
pham



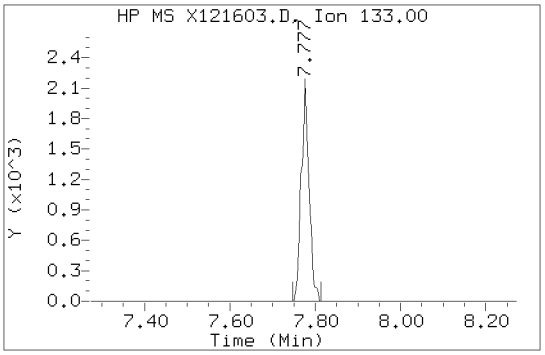
BEFORE

MASS
133
AREA
2829
HEIGHT
2191
27-Dec-2022
16:03
linh
pham



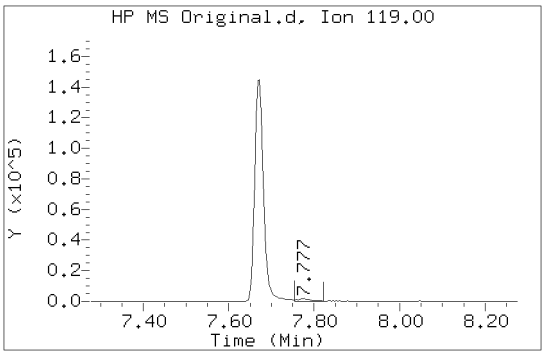
AFTER

MASS
133
AREA
2829
HEIGHT
2191
27-Dec-2022
16:07
linh
pham



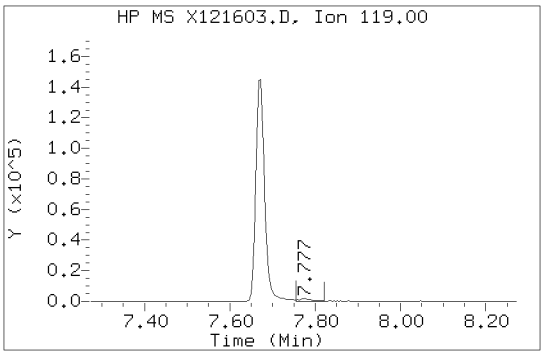
BEFORE

MASS
119
AREA
2971
HEIGHT
1971
27-Dec-2022
16:03
linh
pham



AFTER

MASS
119
AREA
2971
HEIGHT
1971
27-Dec-2022
16:07
linh
pham



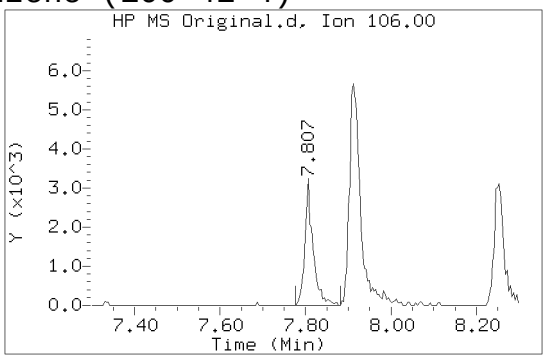
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Ethylbenzene (100-41-4)

Reason Code:

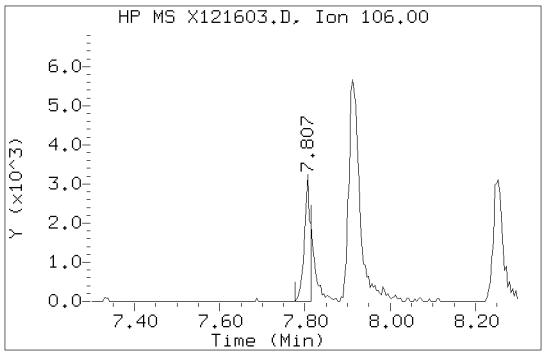
BEFORE

MASS
106
AREA
4331
HEIGHT
3242
27-Dec-2022
16:03
linh
pham



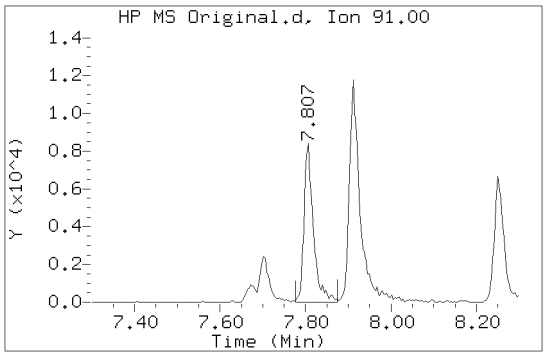
AFTER

MASS
106
AREA
3064
HEIGHT
3242
27-Dec-2022
16:07
linh
pham



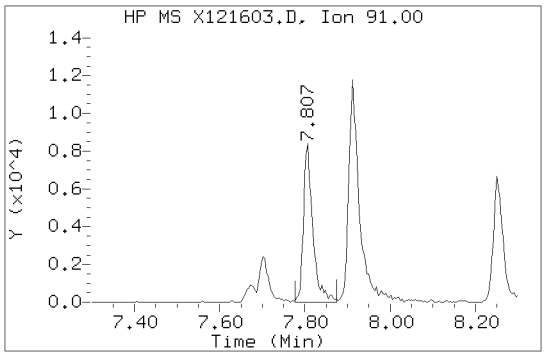
BEFORE

MASS
91
AREA
13136
HEIGHT
8410
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
13136
HEIGHT
8410
27-Dec-2022
16:07
linh
pham

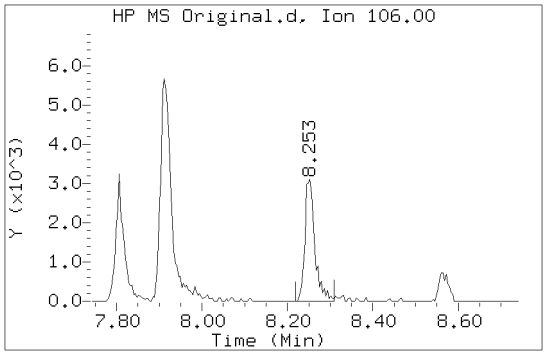


o-Xylene (95-47-6)

Reason Code:

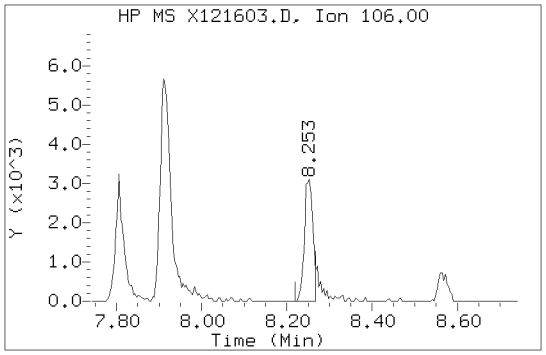
BEFORE

MASS
106
AREA
5100
HEIGHT
3111
27-Dec-2022
16:03
linh
pham



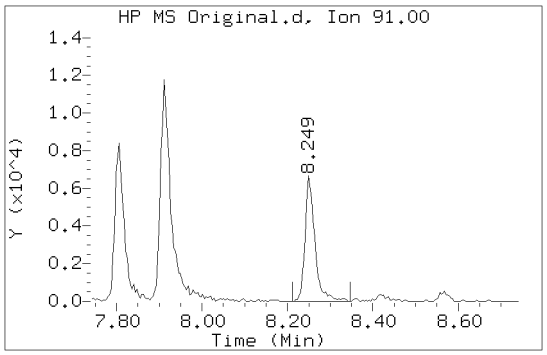
AFTER

MASS
106
AREA
4412
HEIGHT
3111
27-Dec-2022
16:07
linh
pham



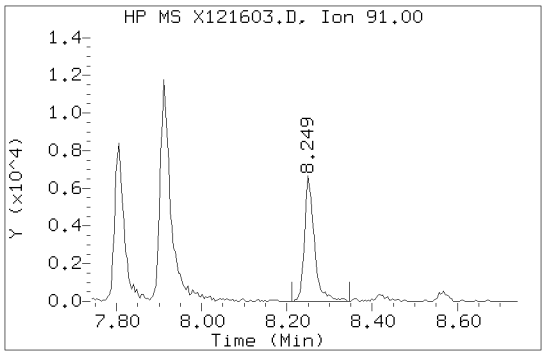
BEFORE

MASS
91
AREA
10808
HEIGHT
6665
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
10808
HEIGHT
6665
27-Dec-2022
16:07
linh
pham



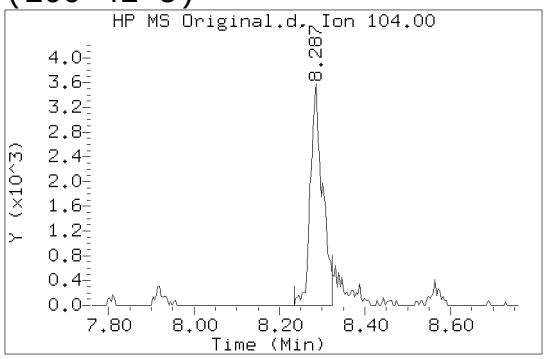
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Styrene (100-42-5)

Reason Code:

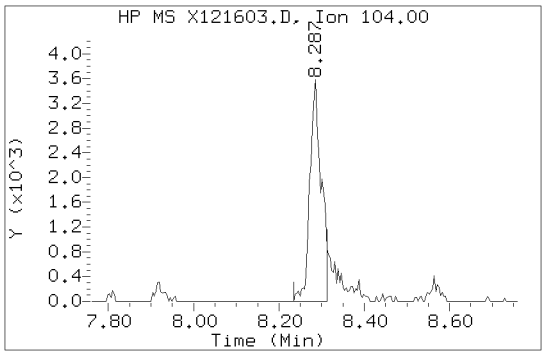
BEFORE

MASS
104
AREA
7074
HEIGHT
3581
27-Dec-2022
16:03
linh
pham



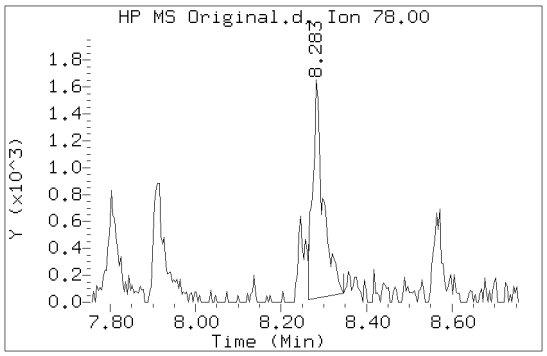
AFTER

MASS
104
AREA
6634
HEIGHT
3581
27-Dec-2022
16:07
linh
pham



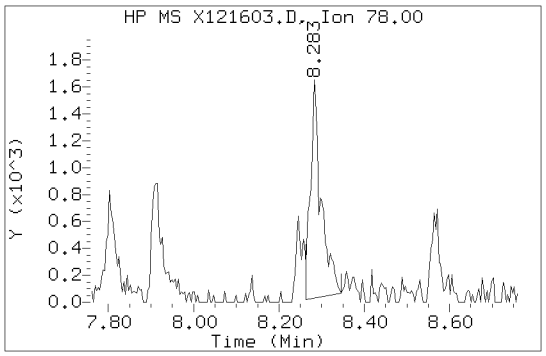
BEFORE

MASS
78
AREA
2827
HEIGHT
1622
27-Dec-2022
16:03
linh
pham



AFTER

MASS
78
AREA
2827
HEIGHT
1622
27-Dec-2022
16:07
linh
pham

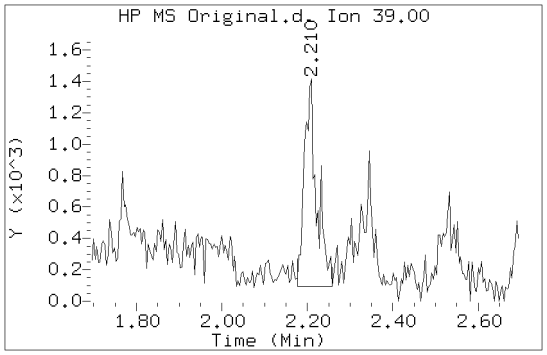


Acetonitrile (75-05-8)

Reason Code:

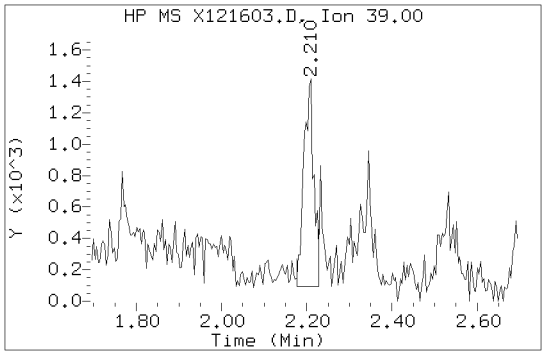
BEFORE

MASS
39
AREA
2674
HEIGHT
1321
27-Dec-2022
16:03
linh
pham



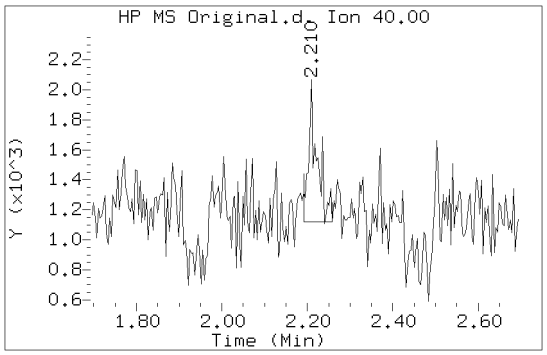
AFTER

MASS
39
AREA
2204
HEIGHT
1321
27-Dec-2022
16:07
linh
pham



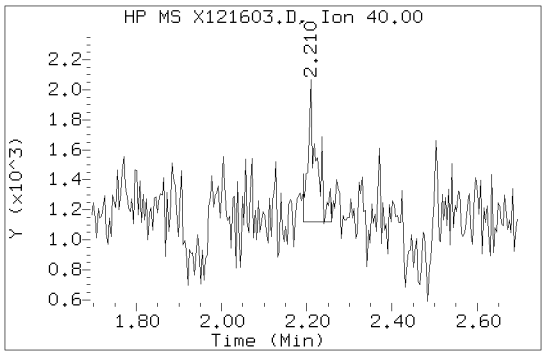
BEFORE

MASS
40
AREA
1296
HEIGHT
946
27-Dec-2022
16:03
linh
pham



AFTER

MASS
40
AREA
1296
HEIGHT
946
27-Dec-2022
16:07
linh
pham



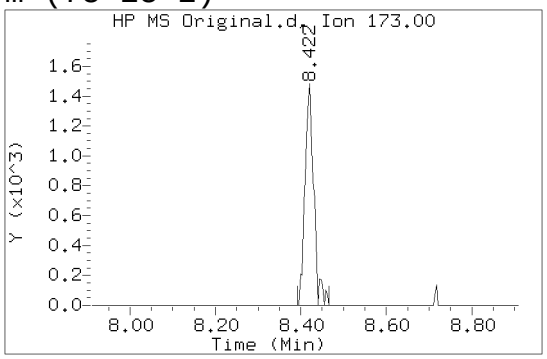
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Bromoform (75-25-2)

Reason Code:

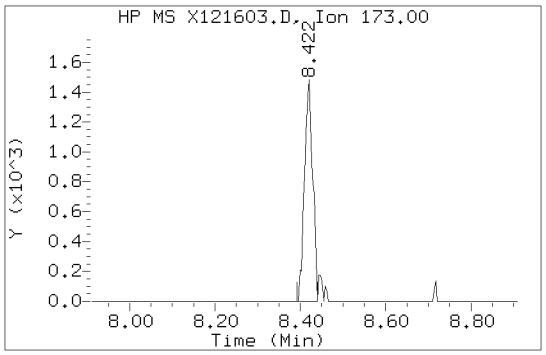
BEFORE

MASS
173
AREA
2158
HEIGHT
1483
27-Dec-2022
16:03
linh
pham



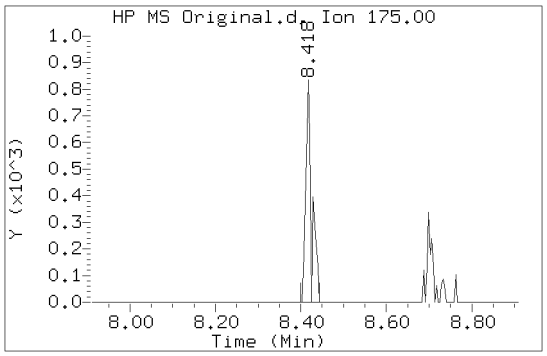
AFTER

MASS
173
AREA
2013
HEIGHT
1483
27-Dec-2022
16:07
linh
pham



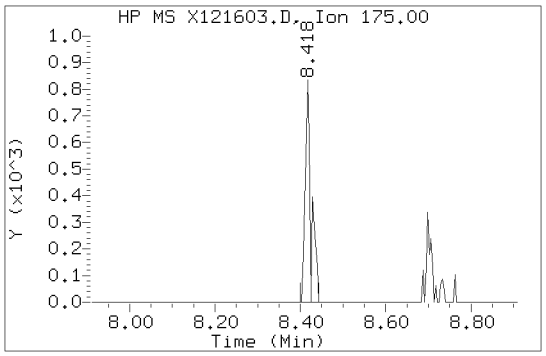
BEFORE

MASS
175
AREA
807
HEIGHT
835
27-Dec-2022
16:03
linh
pham



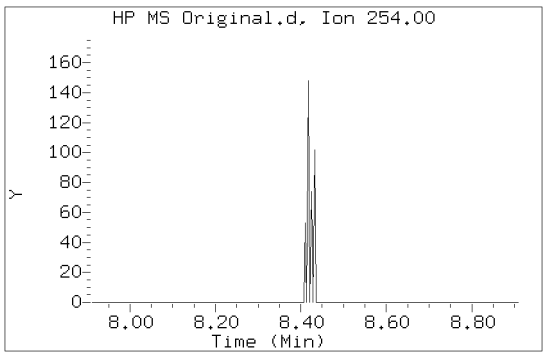
AFTER

MASS
175
AREA
807
HEIGHT
835
27-Dec-2022
16:07
linh
pham



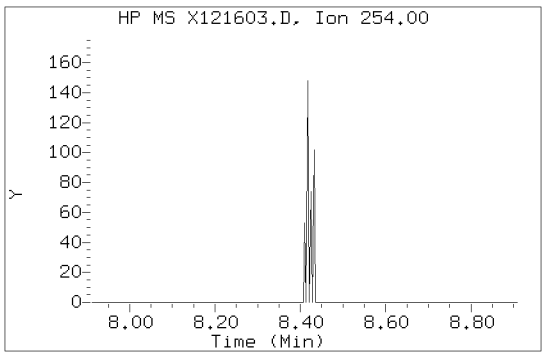
BEFORE

MASS
254
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
254
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

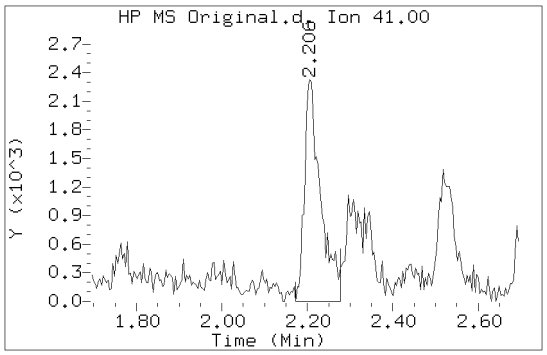


Allyl Chloride (107-05-1)

Reason Code:

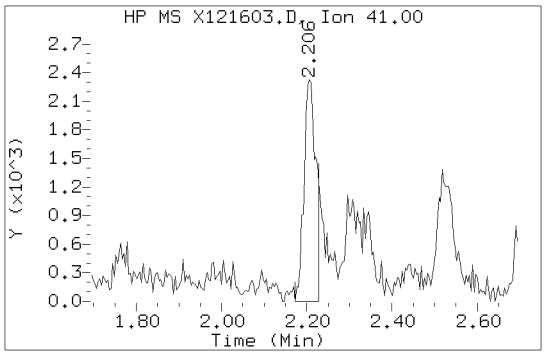
BEFORE

MASS
41
AREA
6169
HEIGHT
2326
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
4574
HEIGHT
2326
27-Dec-2022
16:07
linh
pham



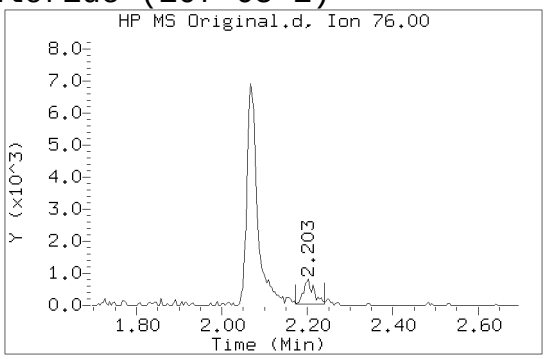
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Allyl Chloride (107-05-1)

Reason Code:

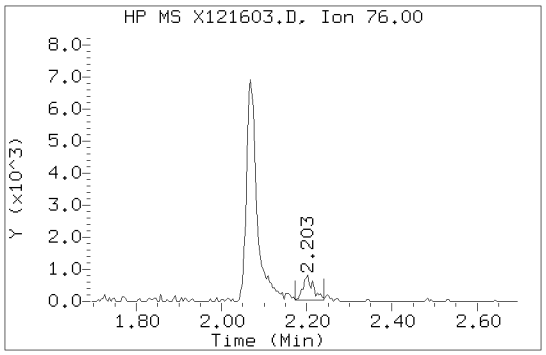
BEFORE

MASS
76
AREA
1254
HEIGHT
763
27-Dec-2022
16:03
linh
pham



AFTER

MASS
76
AREA
1254
HEIGHT
763
27-Dec-2022
16:07
linh
pham

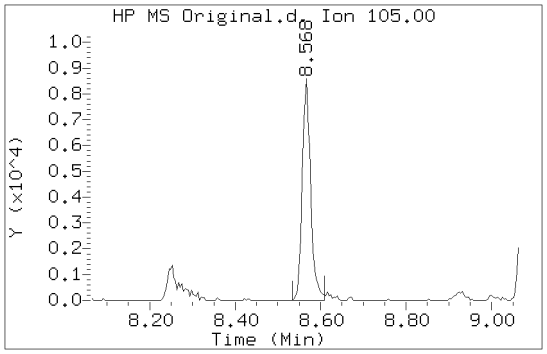


Isopropylbenzene (98-82-8)

Reason Code:

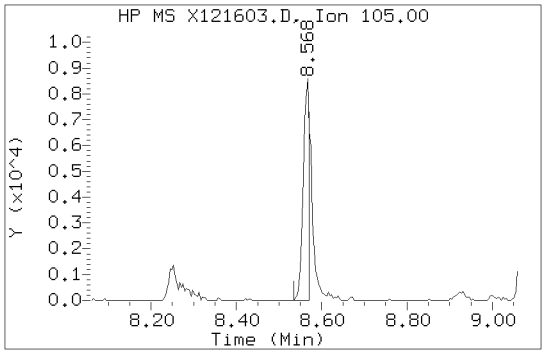
BEFORE

MASS
105
AREA
12091
HEIGHT
8588
27-Dec-2022
16:03
linh
pham



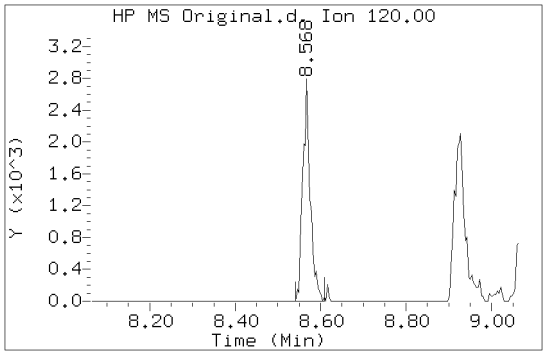
AFTER

MASS
105
AREA
8757
HEIGHT
8588
27-Dec-2022
16:07
linh
pham



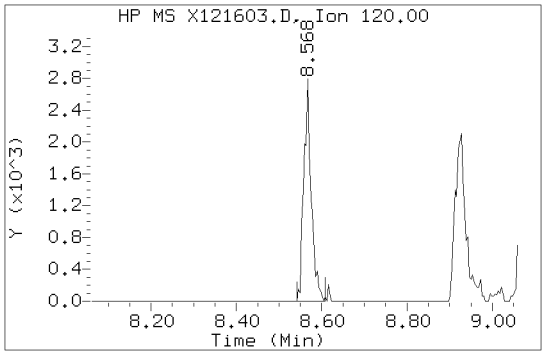
BEFORE

MASS
120
AREA
3462
HEIGHT
2793
27-Dec-2022
16:03
linh
pham



AFTER

MASS
120
AREA
3462
HEIGHT
2793
27-Dec-2022
16:07
linh
pham

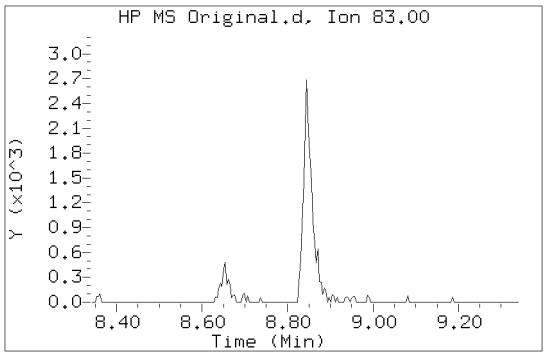


1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

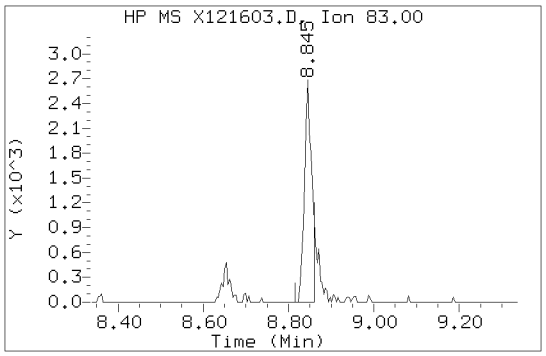
BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
3194
HEIGHT
2685
27-Dec-2022
16:07
linh
pham

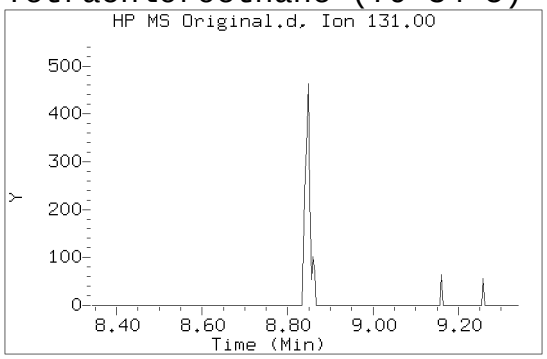


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

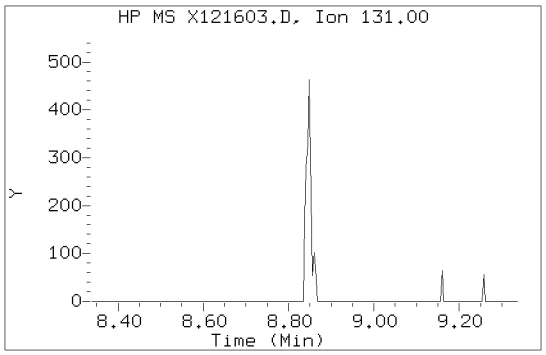
1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

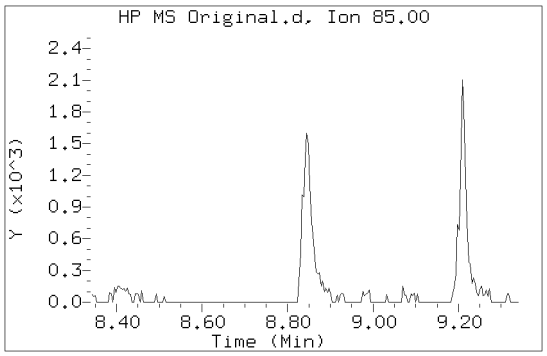
BEFORE
MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



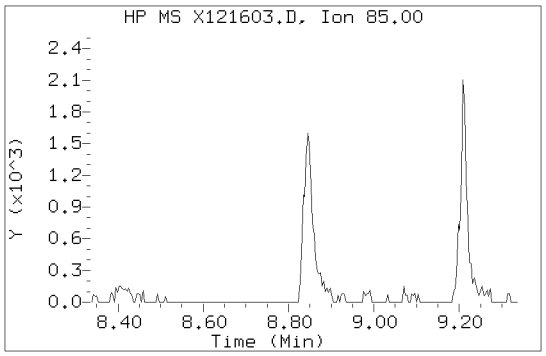
AFTER
MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



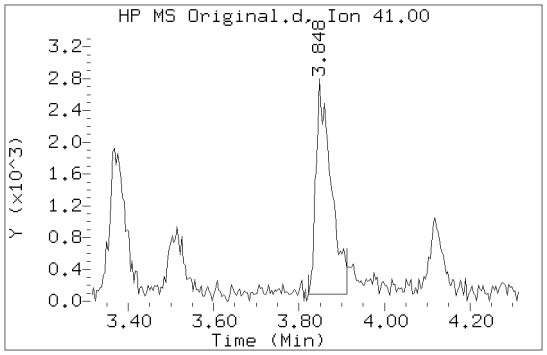
AFTER
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



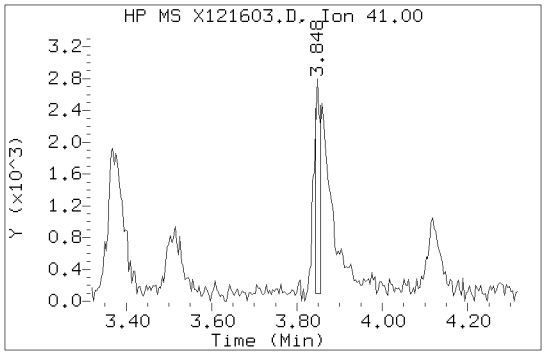
Methacrylonitrile (126-98-7)

Reason Code:

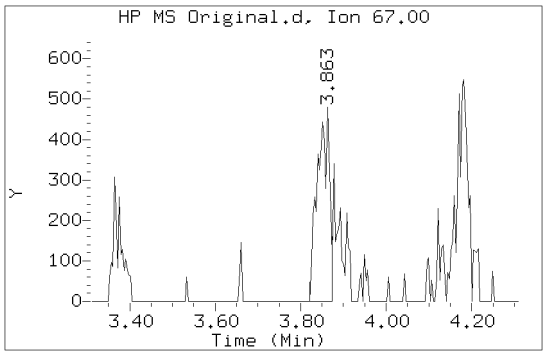
BEFORE
MASS
41
AREA
6587
HEIGHT
2708
27-Dec-2022
16:03
linh
pham



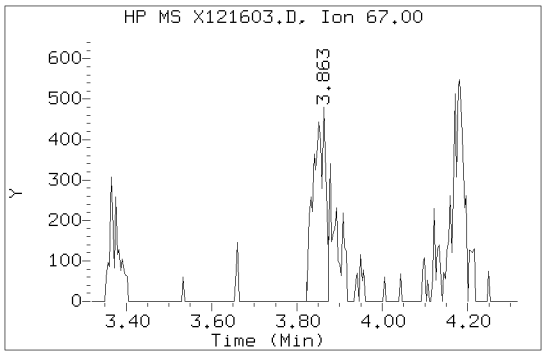
AFTER
MASS
41
AREA
2066
HEIGHT
2701
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
67
AREA
937
HEIGHT
480
27-Dec-2022
16:03
linh
pham



AFTER
MASS
67
AREA
937
HEIGHT
480
27-Dec-2022
16:07
linh
pham



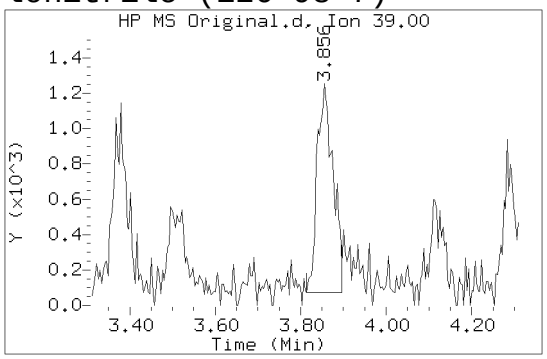
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Methacrylonitrile (126-98-7)

Reason Code:

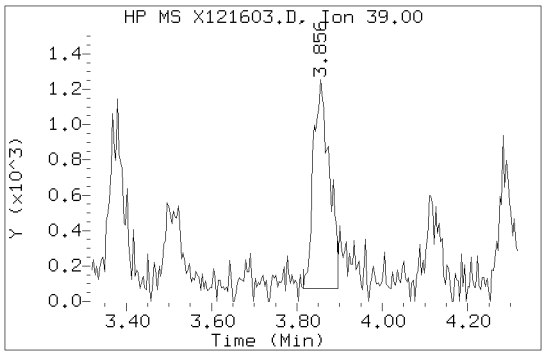
BEFORE

MASS
39
AREA
3048
HEIGHT
1181
27-Dec-2022
16:03
linh
pham



AFTER

MASS
39
AREA
3048
HEIGHT
1181
27-Dec-2022
16:07
linh
pham

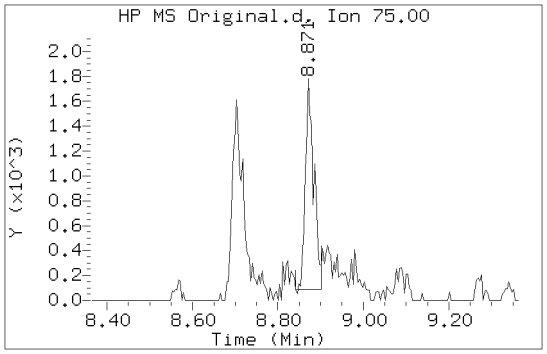


1,2,3-Trichloropropane (96-18-4)

Reason Code:

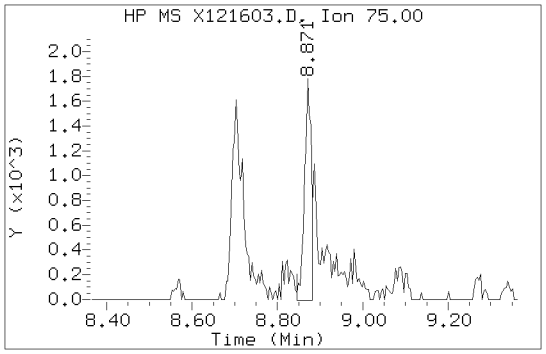
BEFORE

MASS
75
AREA
2351
HEIGHT
1693
27-Dec-2022
16:03
linh
pham



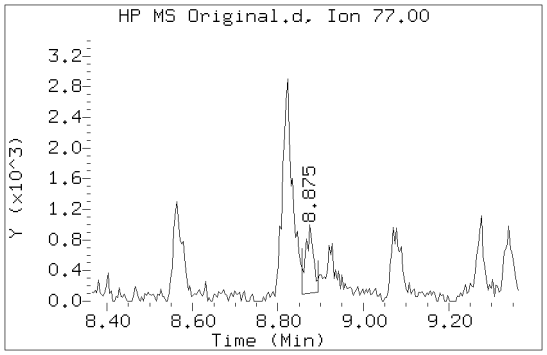
AFTER

MASS
75
AREA
2019
HEIGHT
1788
27-Dec-2022
16:07
linh
pham



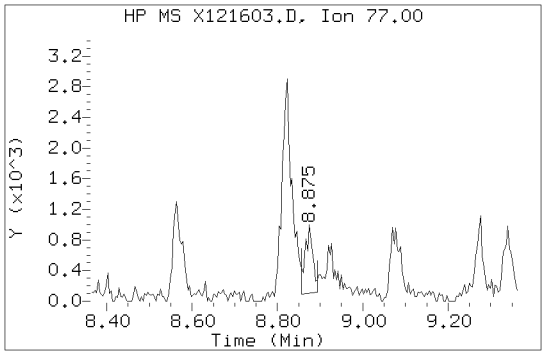
BEFORE

MASS
77
AREA
1161
HEIGHT
895
27-Dec-2022
16:03
linh
pham



AFTER

MASS
77
AREA
1161
HEIGHT
895
27-Dec-2022
16:07
linh
pham

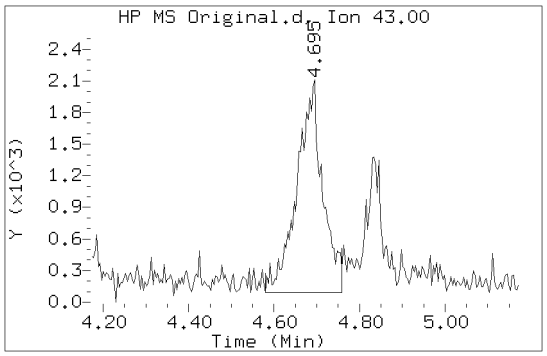


Isobutyl Alcohol (78-83-1)

Reason Code:

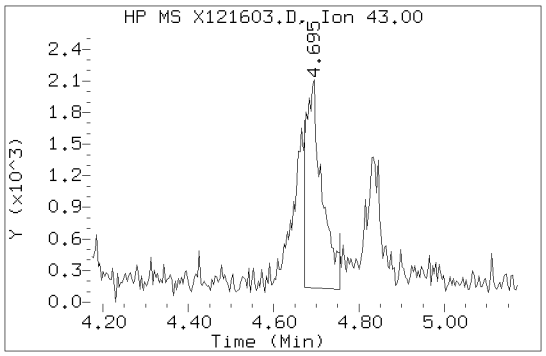
BEFORE

MASS
43
AREA
8478
HEIGHT
2018
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
5178
HEIGHT
1973
27-Dec-2022
16:07
linh
pham

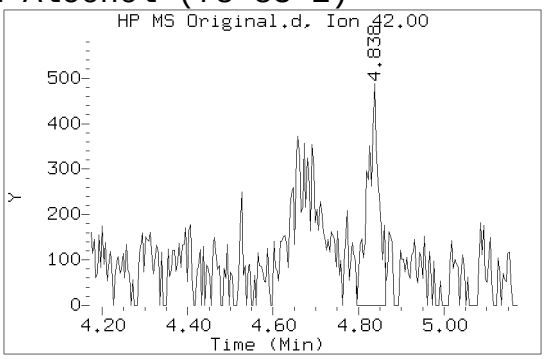


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Isobutyl Alcohol (78-83-1)

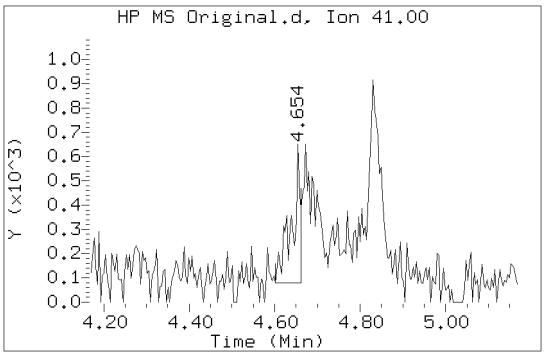
BEFORE

MASS
42
AREA
904
HEIGHT
488
27-Dec-2022
16:03
linh
pham



BEFORE

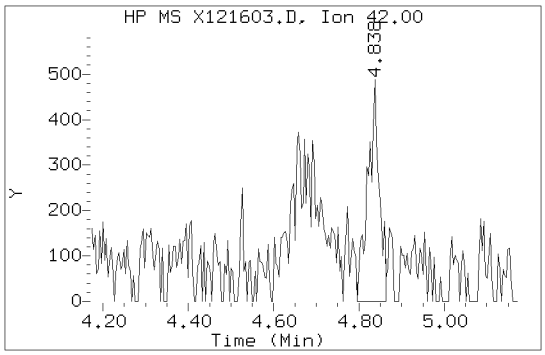
MASS
41
AREA
776
HEIGHT
572
27-Dec-2022
16:03
linh
pham



Reason Code:

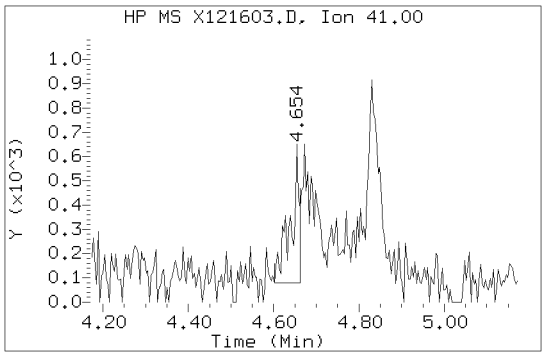
AFTER

MASS
42
AREA
904
HEIGHT
488
27-Dec-2022
16:07
linh
pham



AFTER

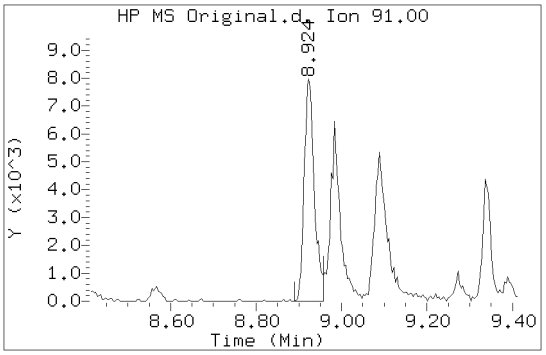
MASS
41
AREA
776
HEIGHT
572
27-Dec-2022
16:07
linh
pham



n-Propylbenzene (106-65-1)

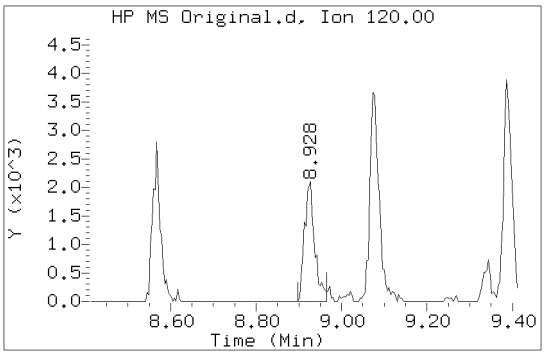
BEFORE

MASS
91
AREA
13496
HEIGHT
7972
27-Dec-2022
16:03
linh
pham



BEFORE

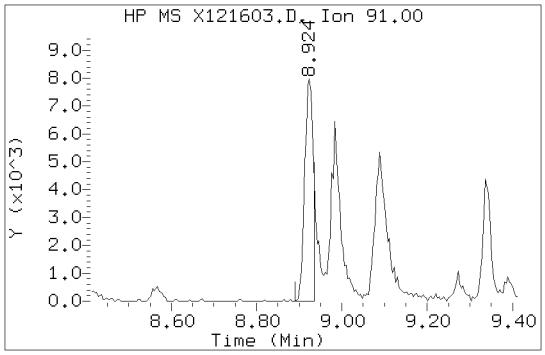
MASS
120
AREA
3559
HEIGHT
2104
27-Dec-2022
16:03
linh
pham



Reason Code:

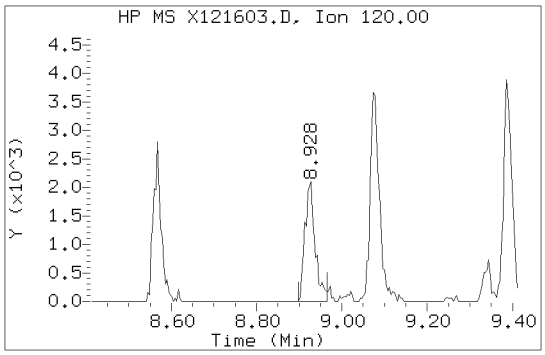
AFTER

MASS
91
AREA
11163
HEIGHT
7972
27-Dec-2022
16:07
linh
pham



AFTER

MASS
120
AREA
3559
HEIGHT
2104
27-Dec-2022
16:07
linh
pham

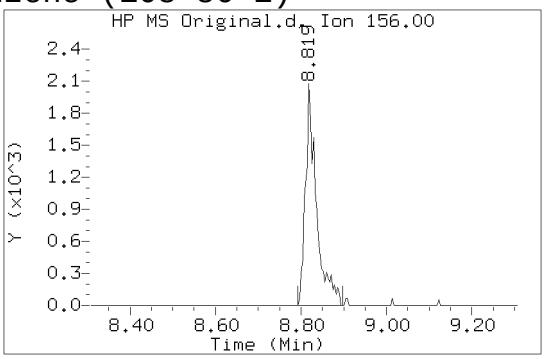


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

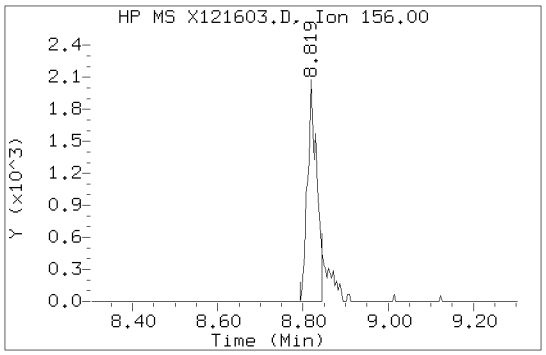
Bromobenzene (108-86-1)

Reason Code:

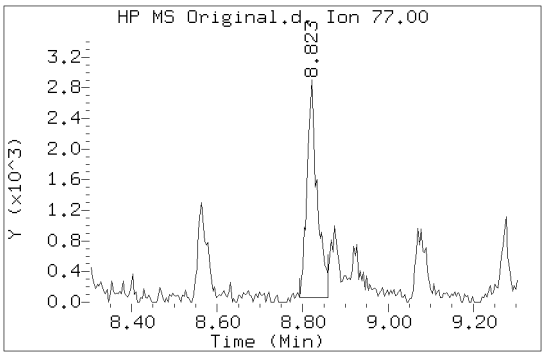
BEFORE
MASS
156
AREA
3747
HEIGHT
2077
27-Dec-2022
16:03
linh
pham



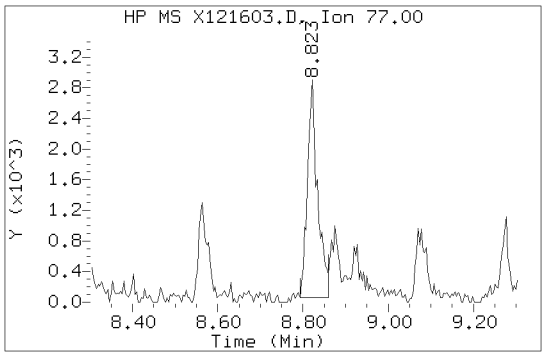
AFTER
MASS
156
AREA
3147
HEIGHT
2077
27-Dec-2022
16:07
linh
pham



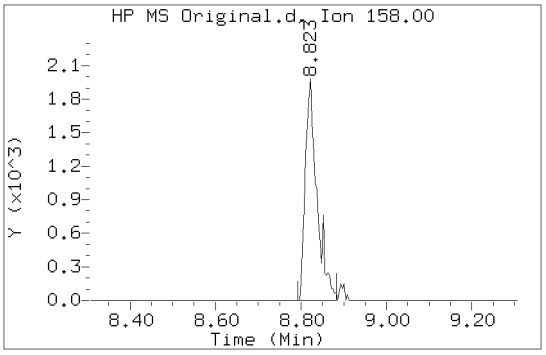
BEFORE
MASS
77
AREA
4719
HEIGHT
2841
27-Dec-2022
16:03
linh
pham



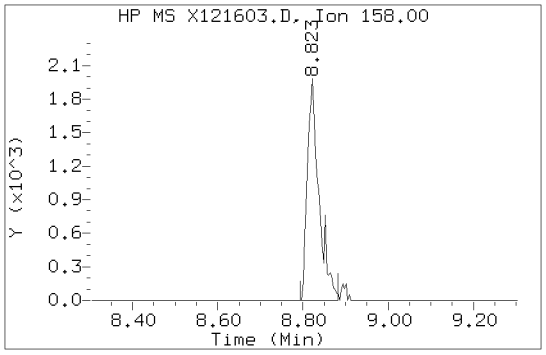
AFTER
MASS
77
AREA
4719
HEIGHT
2841
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
158
AREA
3772
HEIGHT
1983
27-Dec-2022
16:03
linh
pham



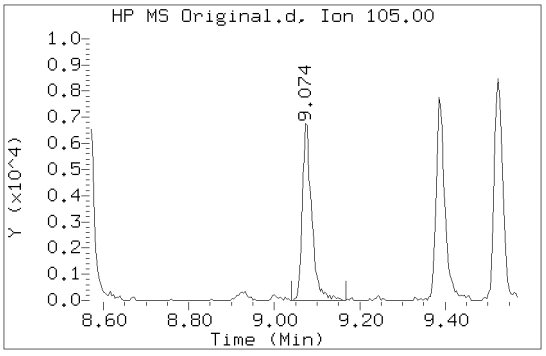
AFTER
MASS
158
AREA
3772
HEIGHT
1983
27-Dec-2022
16:07
linh
pham



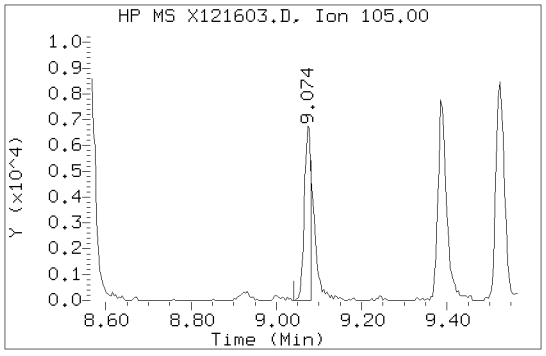
1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

BEFORE
MASS
105
AREA
10555
HEIGHT
6758
27-Dec-2022
16:03
linh
pham



AFTER
MASS
105
AREA
7182
HEIGHT
6758
27-Dec-2022
16:07
linh
pham



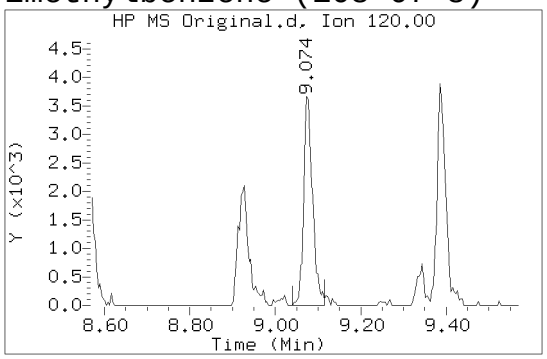
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

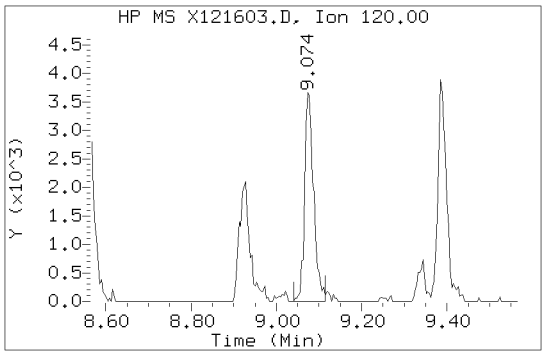
BEFORE

MASS
120
AREA
5450
HEIGHT
3663
27-Dec-2022
16:03
linh
pham



AFTER

MASS
120
AREA
5450
HEIGHT
3663
27-Dec-2022
16:07
linh
pham

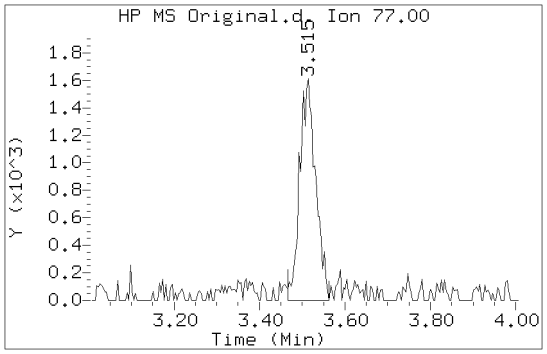


2,2-Dichloropropane (594-20-7)

Reason Code:

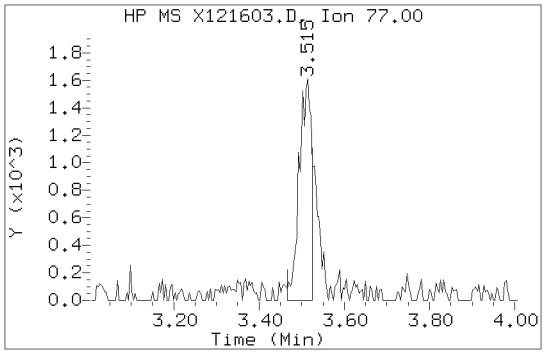
BEFORE

MASS
77
AREA
4217
HEIGHT
1612
27-Dec-2022
16:03
linh
pham



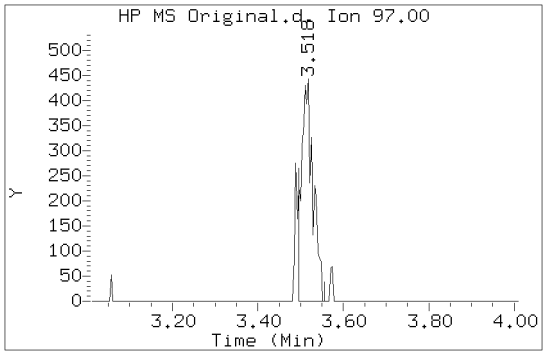
AFTER

MASS
77
AREA
3238
HEIGHT
1612
27-Dec-2022
16:07
linh
pham



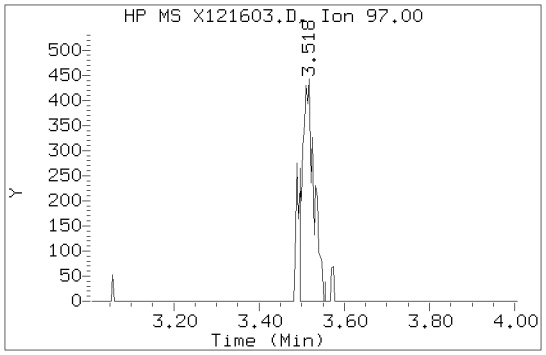
BEFORE

MASS
97
AREA
843
HEIGHT
443
27-Dec-2022
16:03
linh
pham



AFTER

MASS
97
AREA
843
HEIGHT
443
27-Dec-2022
16:07
linh
pham

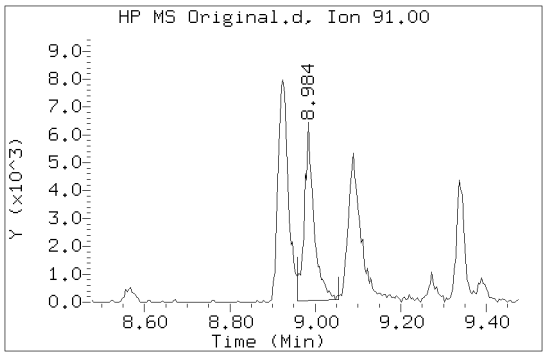


2-Chlorotoluene (95-49-8)

Reason Code:

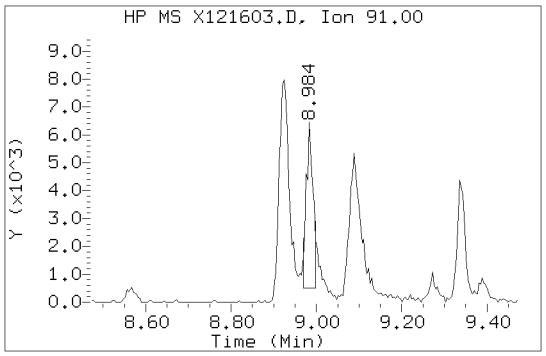
BEFORE

MASS
91
AREA
10128
HEIGHT
6401
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
6718
HEIGHT
5942
27-Dec-2022
16:07
linh
pham



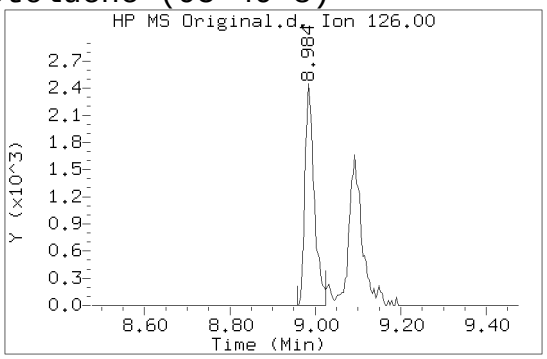
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

2-Chlorotoluene (95-49-8)

Reason Code:

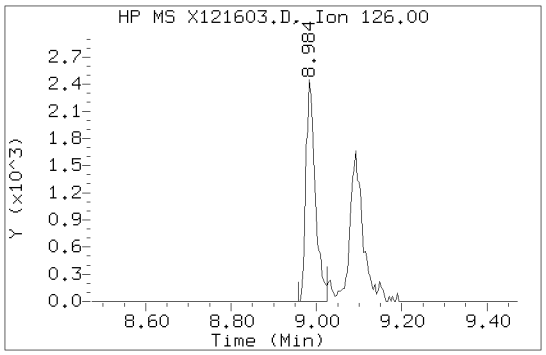
BEFORE

MASS
126
AREA
3761
HEIGHT
2450
27-Dec-2022
16:03
linh
pham



AFTER

MASS
126
AREA
3761
HEIGHT
2450
27-Dec-2022
16:07
linh
pham

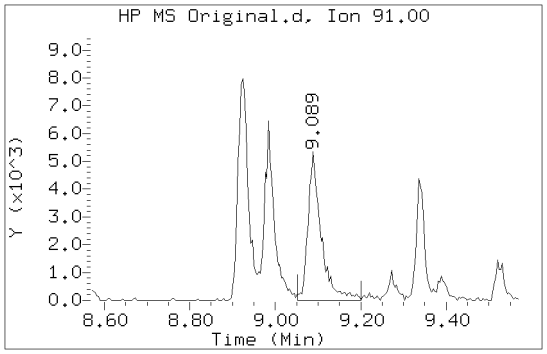


4-Chlorotoluene (106-43-4)

Reason Code:

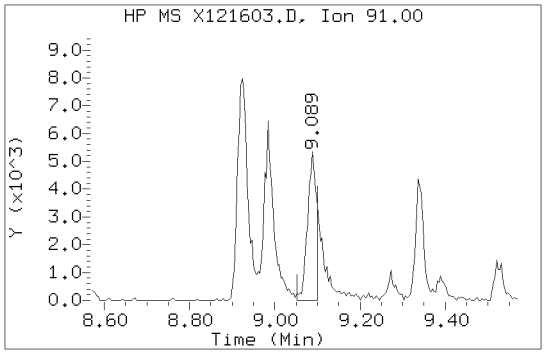
BEFORE

MASS
91
AREA
11481
HEIGHT
5337
27-Dec-2022
16:03
linh
pham



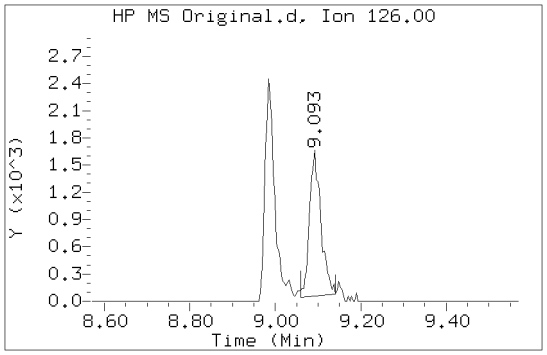
AFTER

MASS
91
AREA
7644
HEIGHT
5337
27-Dec-2022
16:07
linh
pham



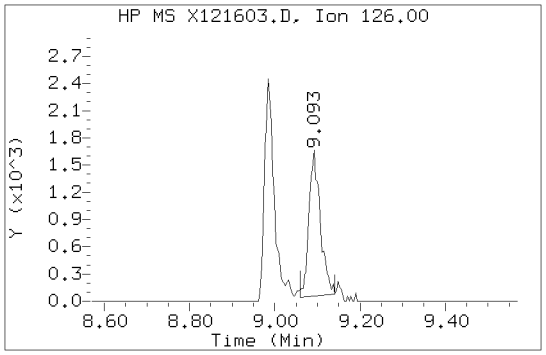
BEFORE

MASS
126
AREA
3008
HEIGHT
1612
27-Dec-2022
16:03
linh
pham



AFTER

MASS
126
AREA
3008
HEIGHT
1612
27-Dec-2022
16:07
linh
pham

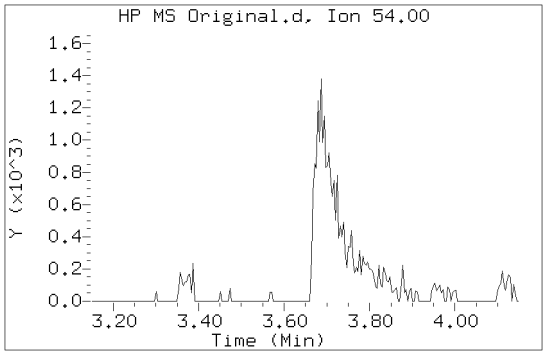


Propionitrile (107-12-0)

Reason Code:

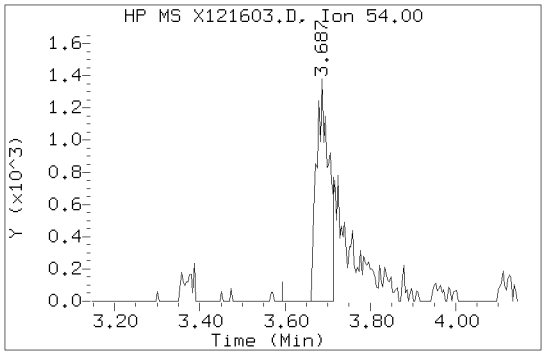
BEFORE

MASS
54
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
54
AREA
2777
HEIGHT
1380
27-Dec-2022
16:07
linh
pham



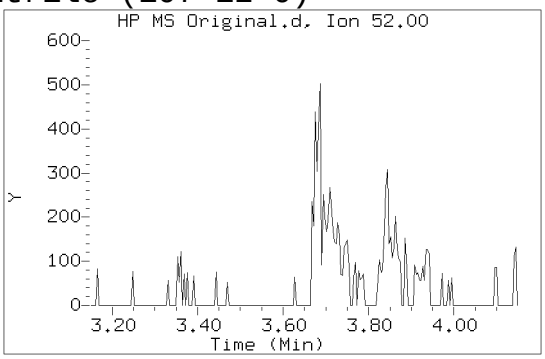
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Propionitrile (107-12-0)

Reason Code:

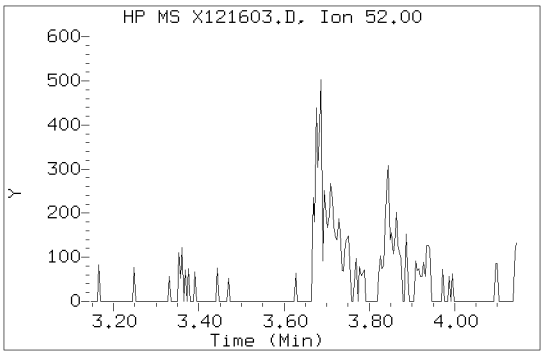
BEFORE

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



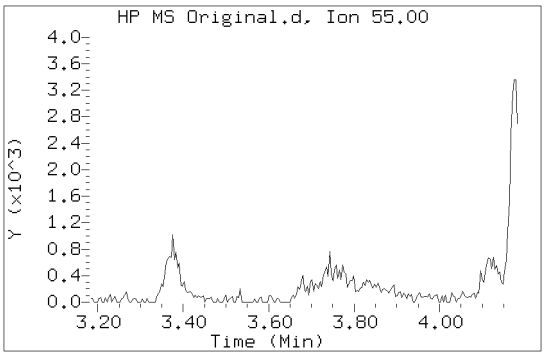
AFTER

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



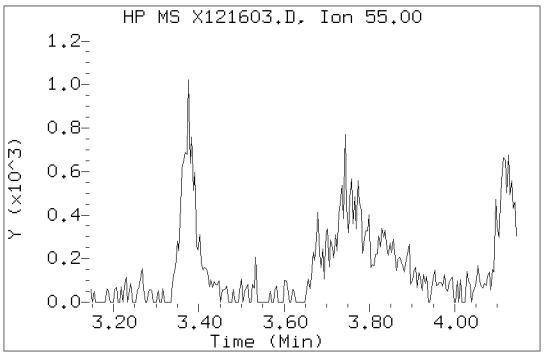
BEFORE

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

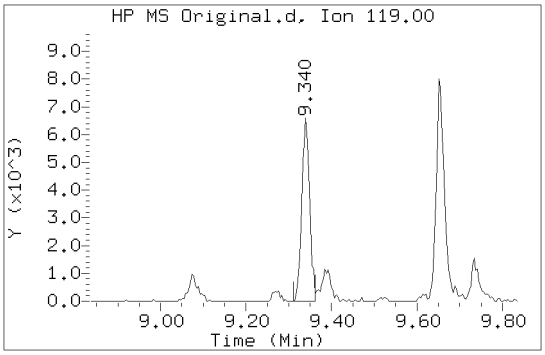


tert-Butylbenzene (98-06-6)

Reason Code:

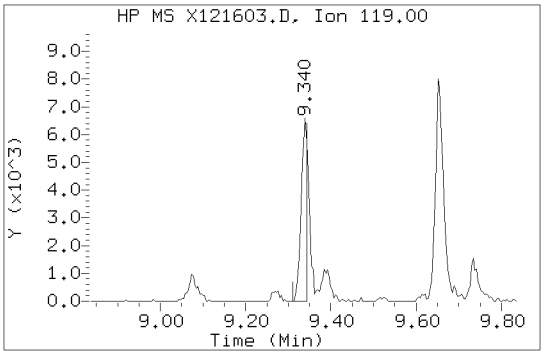
BEFORE

MASS
119
AREA
8660
HEIGHT
6598
27-Dec-2022
16:03
linh
pham



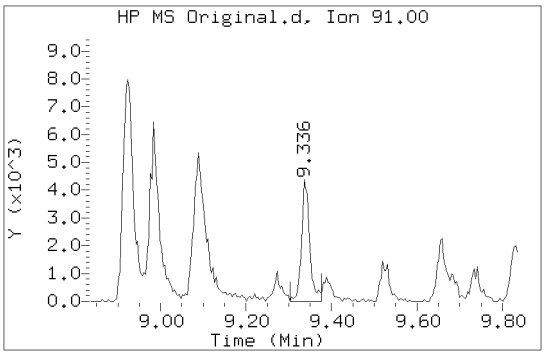
AFTER

MASS
119
AREA
6389
HEIGHT
6598
27-Dec-2022
16:07
linh
pham



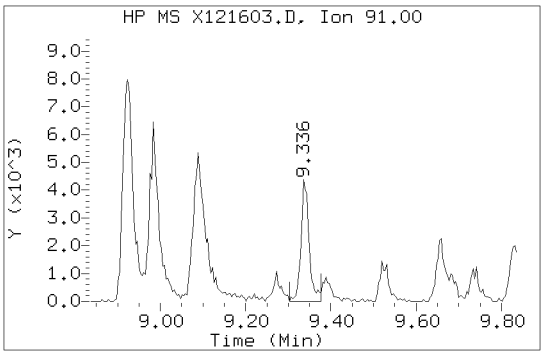
BEFORE

MASS
91
AREA
6013
HEIGHT
4378
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
6013
HEIGHT
4378
27-Dec-2022
16:07
linh
pham



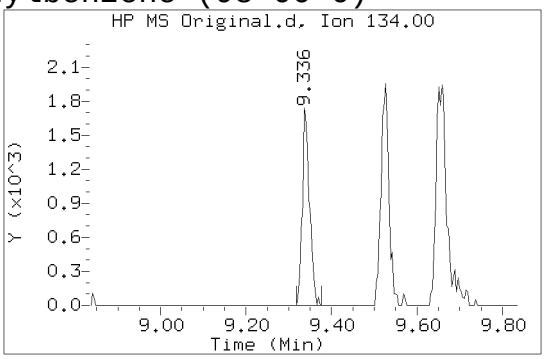
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

tert-Butylbenzene (98-06-6)

Reason Code:

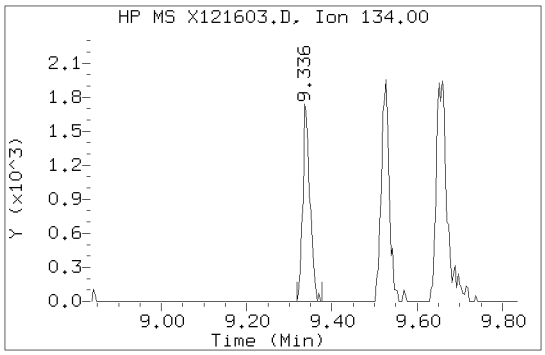
BEFORE

MASS
134
AREA
2112
HEIGHT
1740
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
2112
HEIGHT
1740
27-Dec-2022
16:07
linh
pham

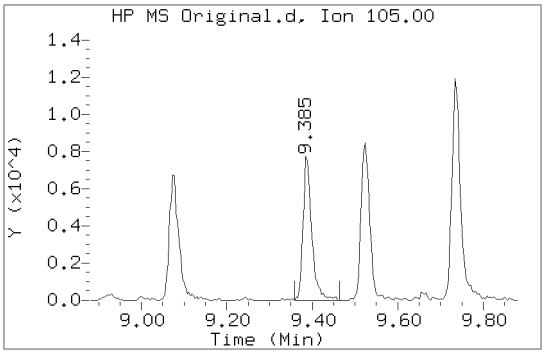


1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

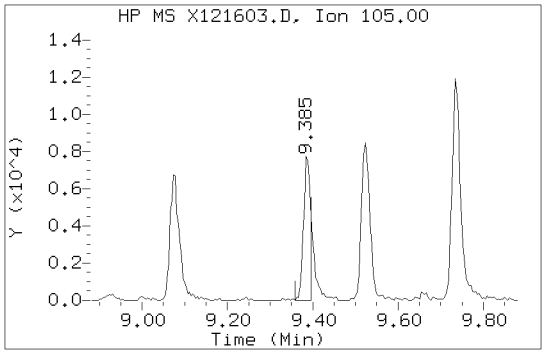
BEFORE

MASS
105
AREA
11065
HEIGHT
7775
27-Dec-2022
16:03
linh
pham



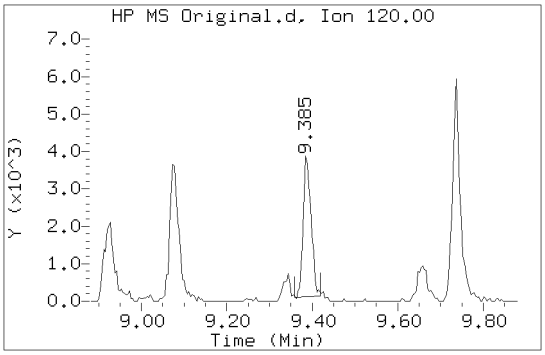
AFTER

MASS
105
AREA
8496
HEIGHT
7775
27-Dec-2022
16:07
linh
pham



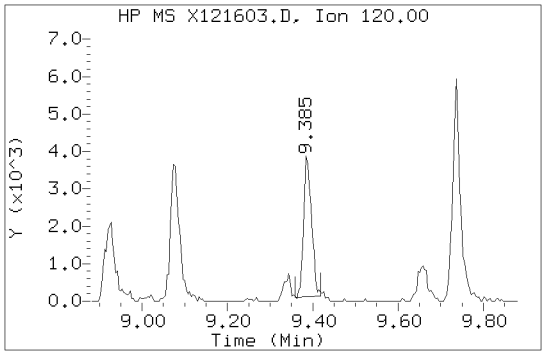
BEFORE

MASS
120
AREA
4898
HEIGHT
3773
27-Dec-2022
16:03
linh
pham



AFTER

MASS
120
AREA
4898
HEIGHT
3773
27-Dec-2022
16:07
linh
pham

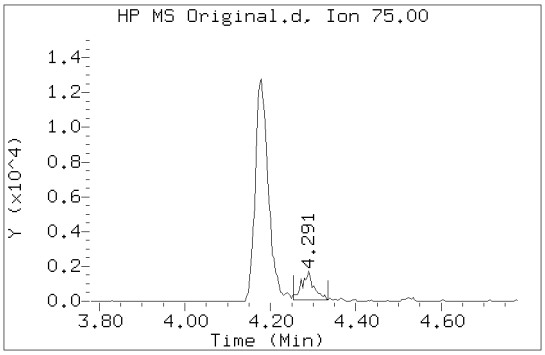


1,1-Dichloropropene (563-58-6)

Reason Code:

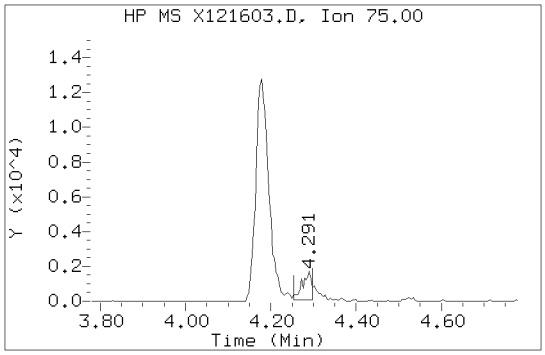
BEFORE

MASS
75
AREA
3235
HEIGHT
1674
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
2468
HEIGHT
1674
27-Dec-2022
16:07
linh
pham

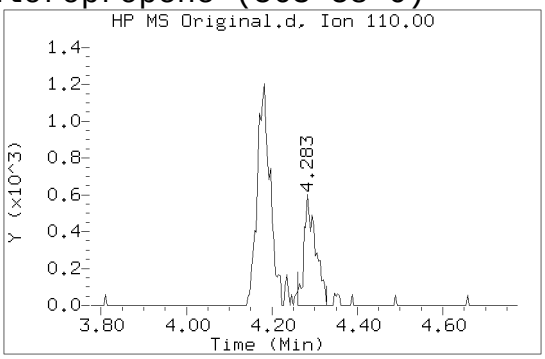


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1-Dichloropropene (563-58-6)

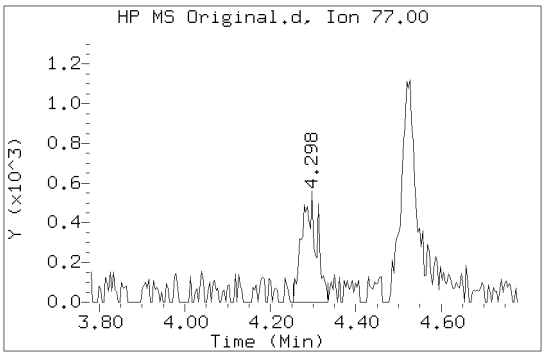
BEFORE

MASS
110
AREA
1143
HEIGHT
603
27-Dec-2022
16:03
linh
pham



BEFORE

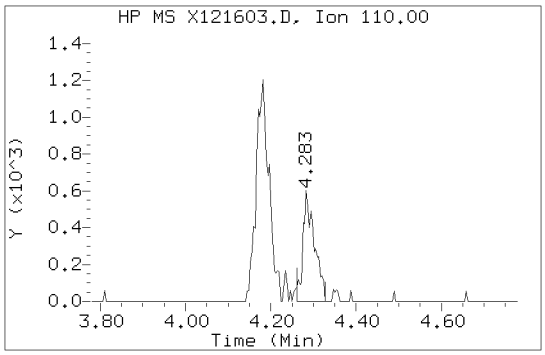
MASS
77
AREA
1342
HEIGHT
559
27-Dec-2022
16:03
linh
pham



Reason Code:

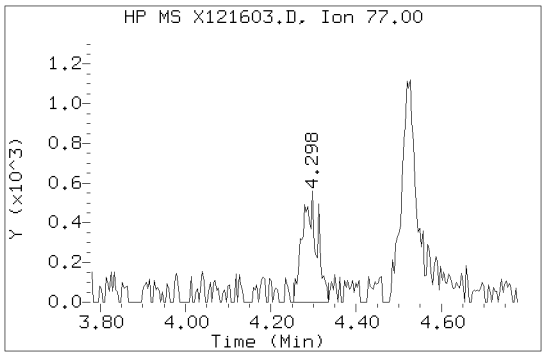
AFTER

MASS
110
AREA
1143
HEIGHT
603
27-Dec-2022
16:07
linh
pham



AFTER

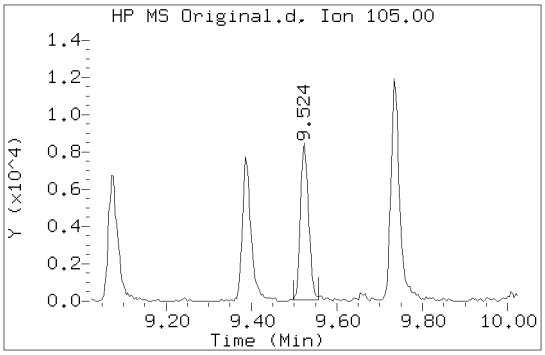
MASS
77
AREA
1342
HEIGHT
559
27-Dec-2022
16:07
linh
pham



sec-Butylbenzene (135-98-8)

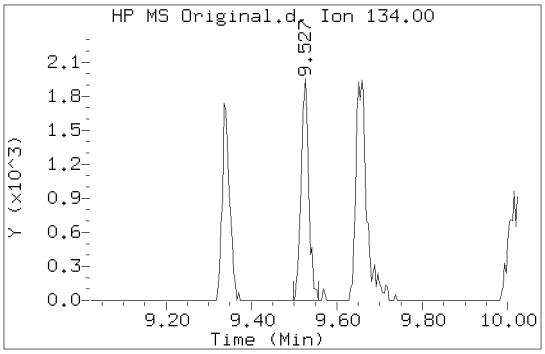
BEFORE

MASS
105
AREA
11512
HEIGHT
8394
27-Dec-2022
16:03
linh
pham



BEFORE

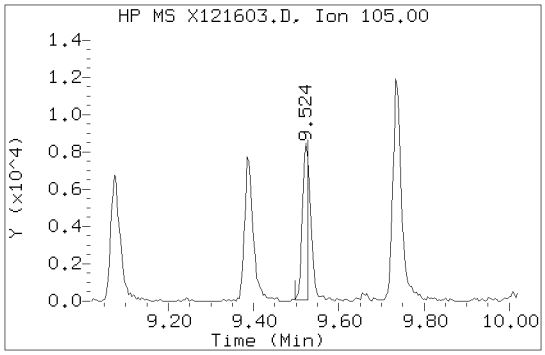
MASS
134
AREA
2519
HEIGHT
1955
27-Dec-2022
16:03
linh
pham



Reason Code:

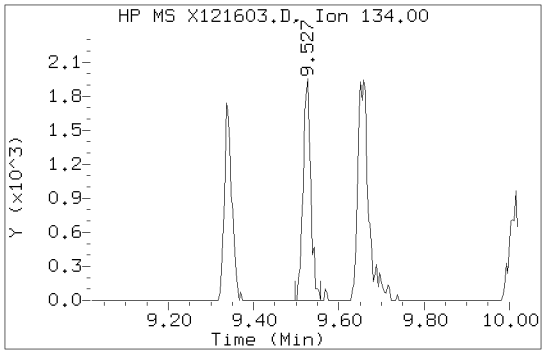
AFTER

MASS
105
AREA
7938
HEIGHT
8394
27-Dec-2022
16:07
linh
pham



AFTER

MASS
134
AREA
2519
HEIGHT
1955
27-Dec-2022
16:07
linh
pham



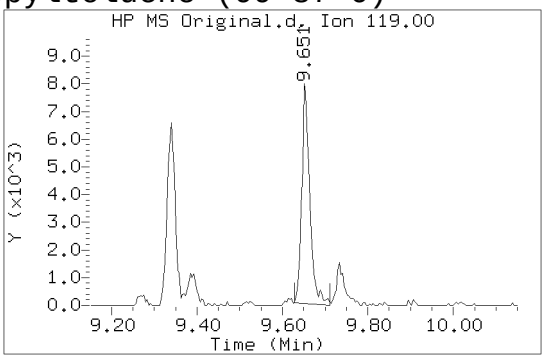
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

p-Isopropyltoluene (99-87-6)

Reason Code:

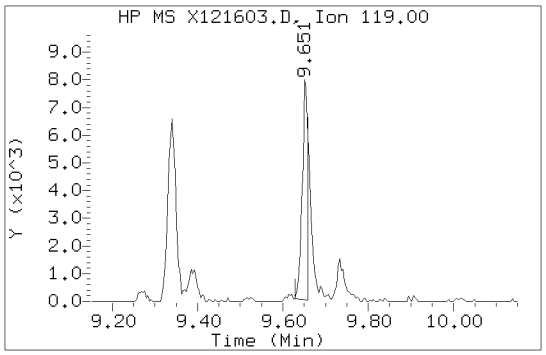
BEFORE

MASS
119
AREA
10660
HEIGHT
7944
27-Dec-2022
16:03
linh
pham



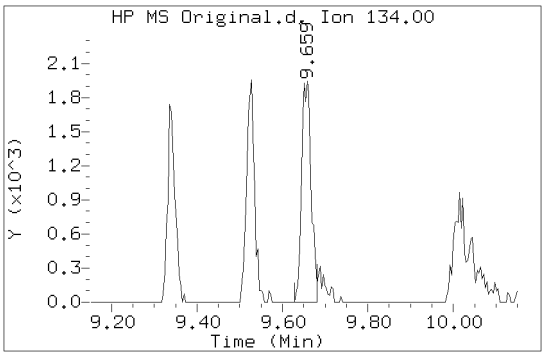
AFTER

MASS
119
AREA
7343
HEIGHT
7944
27-Dec-2022
16:07
linh
pham



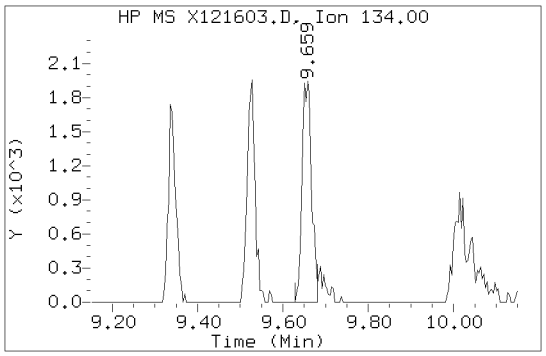
BEFORE

MASS
134
AREA
3102
HEIGHT
1946
27-Dec-2022
16:03
linh
pham



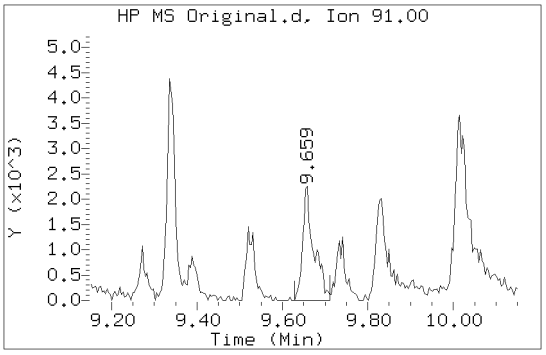
AFTER

MASS
134
AREA
3102
HEIGHT
1946
27-Dec-2022
16:07
linh
pham



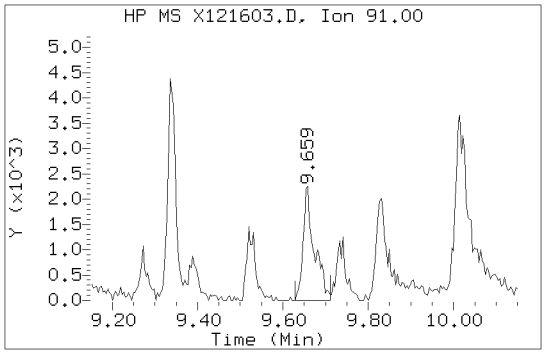
BEFORE

MASS
91
AREA
4191
HEIGHT
2256
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
4191
HEIGHT
2256
27-Dec-2022
16:07
linh
pham

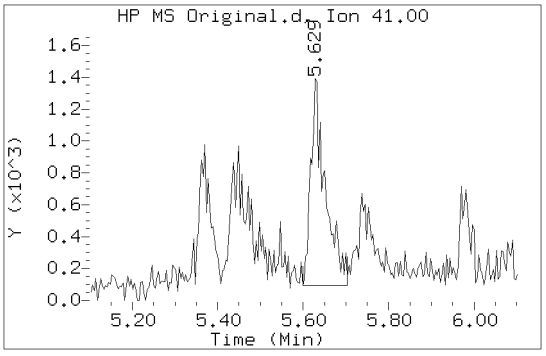


Methyl Methacrylate (80-62-6)

Reason Code:

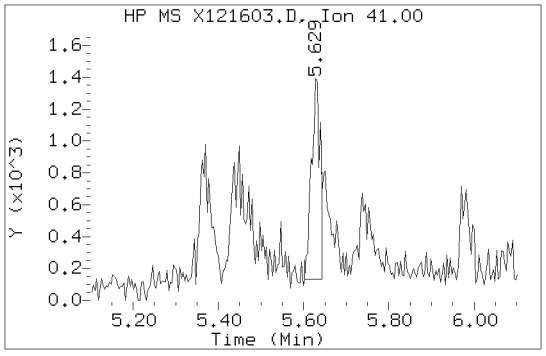
BEFORE

MASS
41
AREA
3067
HEIGHT
1299
27-Dec-2022
16:03
linh
pham



AFTER

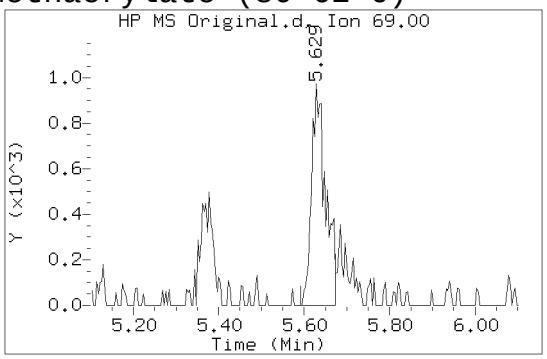
MASS
41
AREA
1788
HEIGHT
1257
27-Dec-2022
16:07
linh
pham



Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

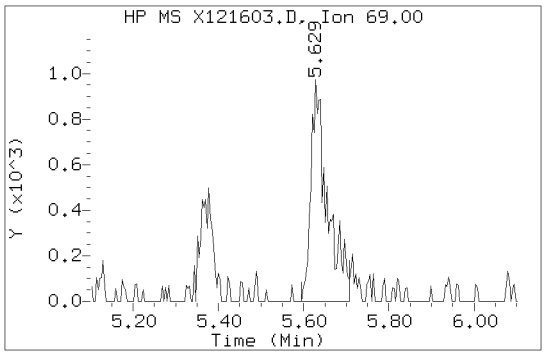
Methyl Methacrylate (80-62-6)

BEFORE
MASS
69
AREA
2216
HEIGHT
973
27-Dec-2022
16:03
linh
pham

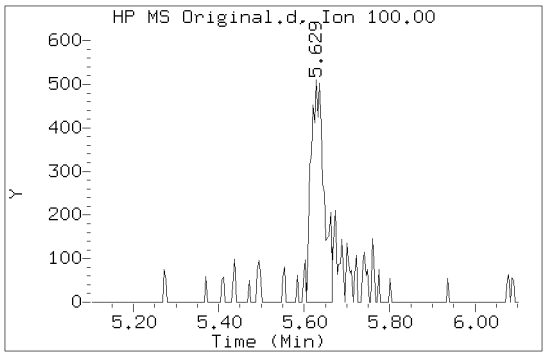


Reason Code:

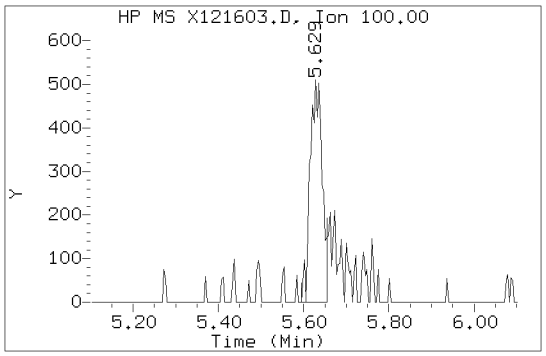
AFTER
MASS
69
AREA
2595
HEIGHT
973
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
100
AREA
1074
HEIGHT
510
27-Dec-2022
16:03
linh
pham

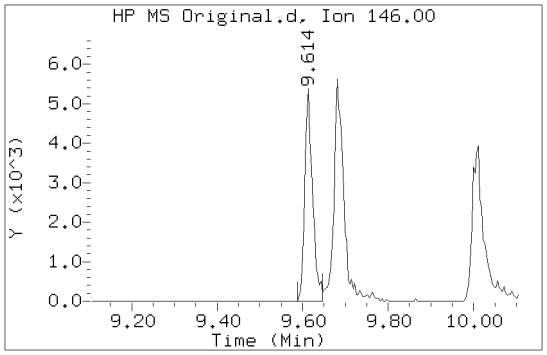


AFTER
MASS
100
AREA
1011
HEIGHT
510
27-Dec-2022
16:07
linh
pham



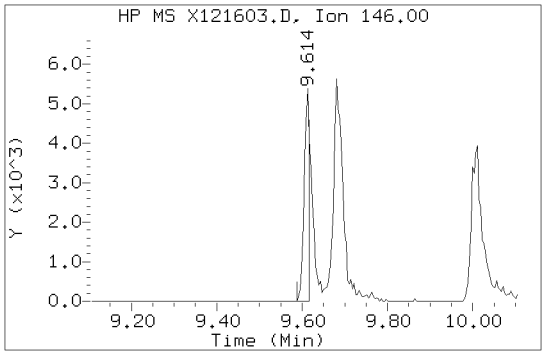
1,3-Dichlorobenzene (541-73-1)

BEFORE
MASS
146
AREA
6964
HEIGHT
5387
27-Dec-2022
16:03
linh
pham

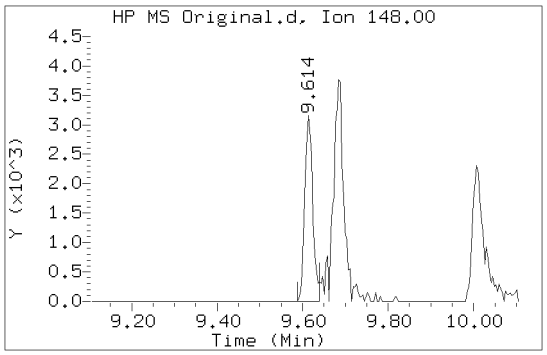


Reason Code:

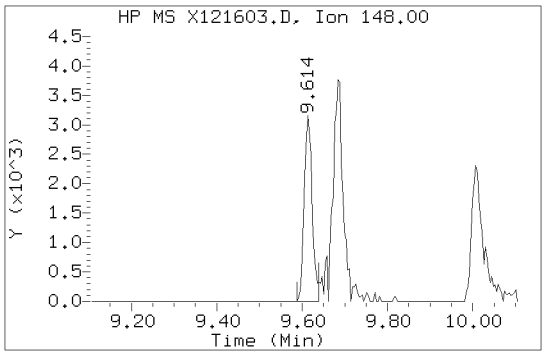
AFTER
MASS
146
AREA
4677
HEIGHT
5387
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
148
AREA
4216
HEIGHT
3157
27-Dec-2022
16:03
linh
pham



AFTER
MASS
148
AREA
4216
HEIGHT
3157
27-Dec-2022
16:07
linh
pham



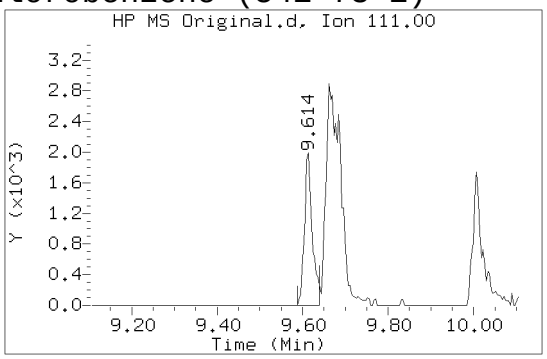
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,3-Dichlorobenzene (541-73-1)

Reason Code:

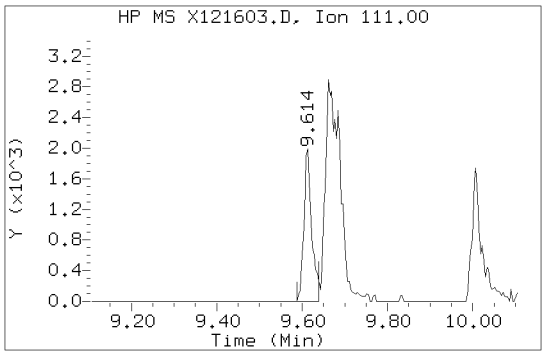
BEFORE

MASS
111
AREA
2596
HEIGHT
1995
27-Dec-2022
16:03
linh
pham



AFTER

MASS
111
AREA
2596
HEIGHT
1995
27-Dec-2022
16:07
linh
pham

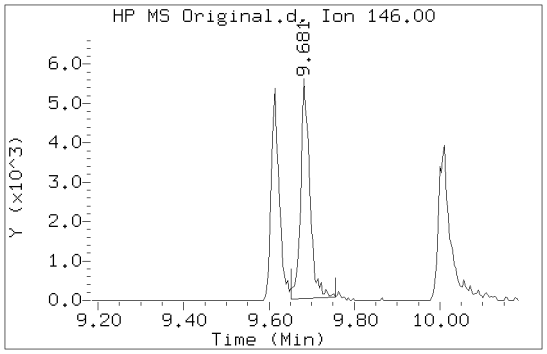


1,4-Dichlorobenzene (106-46-7)

Reason Code:

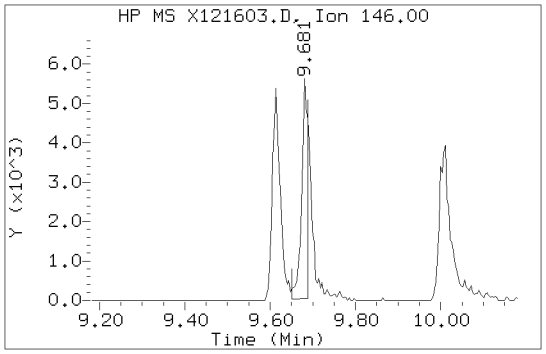
BEFORE

MASS
146
AREA
8510
HEIGHT
5586
27-Dec-2022
16:03
linh
pham



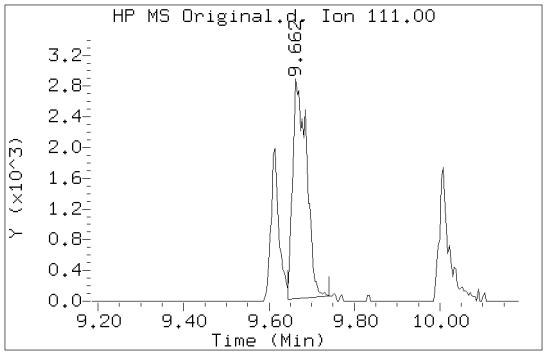
AFTER

MASS
146
AREA
5674
HEIGHT
5587
27-Dec-2022
16:07
linh
pham



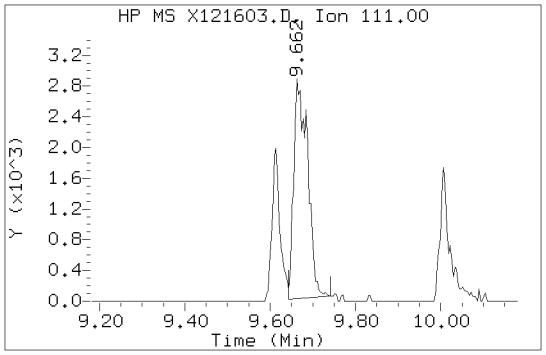
BEFORE

MASS
111
AREA
6571
HEIGHT
2862
27-Dec-2022
16:03
linh
pham



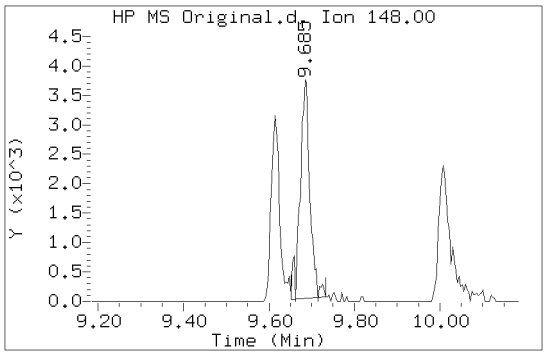
AFTER

MASS
111
AREA
6571
HEIGHT
2862
27-Dec-2022
16:07
linh
pham



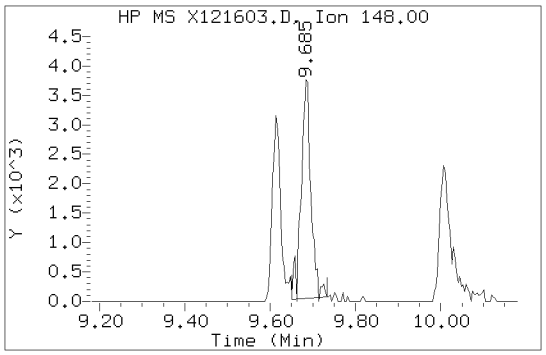
BEFORE

MASS
148
AREA
6083
HEIGHT
3714
27-Dec-2022
16:03
linh
pham



AFTER

MASS
148
AREA
6083
HEIGHT
3714
27-Dec-2022
16:07
linh
pham



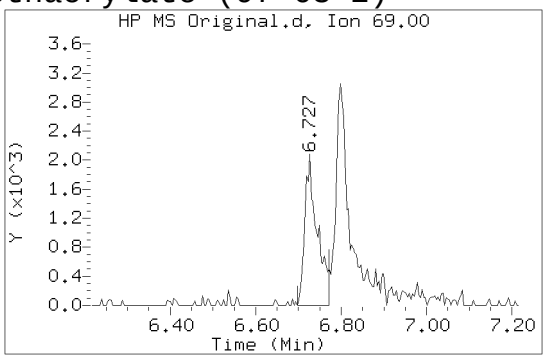
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Ethyl Methacrylate (97-63-2)

Reason Code:

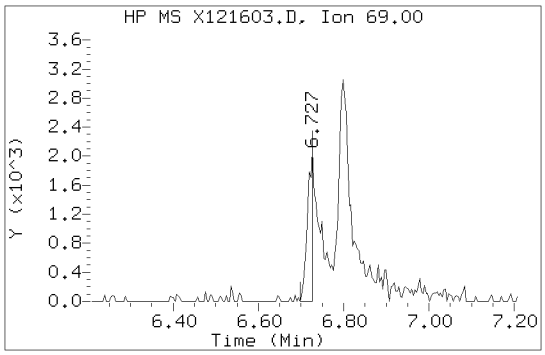
BEFORE

MASS
69
AREA
4283
HEIGHT
2083
27-Dec-2022
16:03
linh
pham



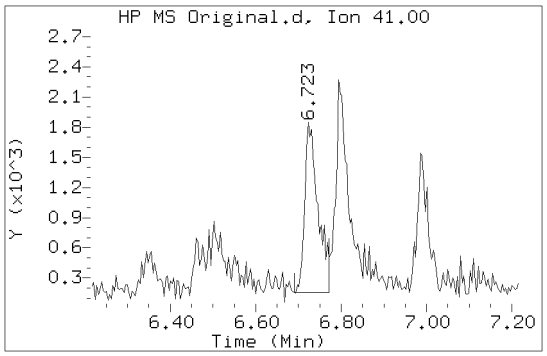
AFTER

MASS
69
AREA
1935
HEIGHT
2083
27-Dec-2022
16:07
linh
pham



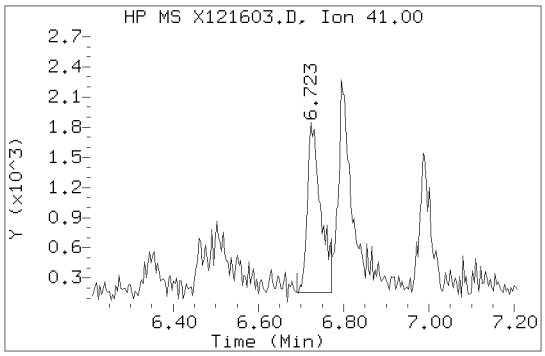
BEFORE

MASS
41
AREA
3701
HEIGHT
1688
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
3701
HEIGHT
1688
27-Dec-2022
16:07
linh
pham

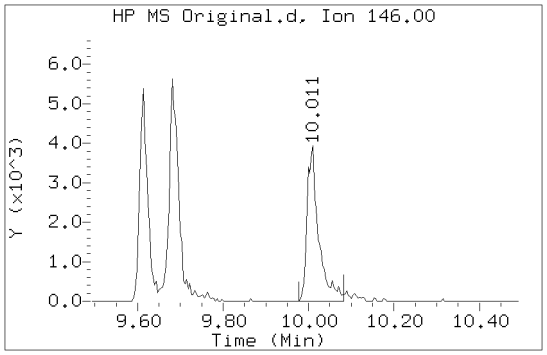


1,2-Dichlorobenzene (95-50-1)

Reason Code:

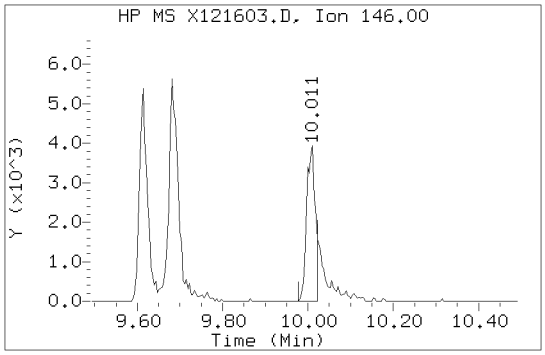
BEFORE

MASS
146
AREA
7400
HEIGHT
3934
27-Dec-2022
16:03
linh
pham



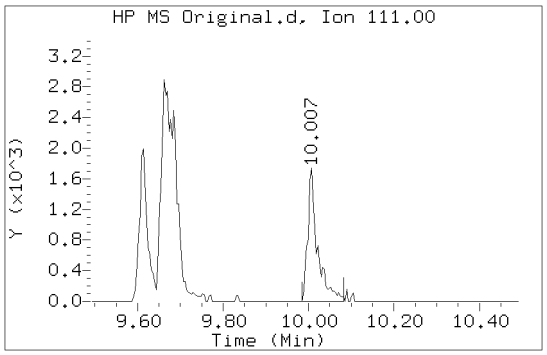
AFTER

MASS
146
AREA
5504
HEIGHT
3934
27-Dec-2022
16:07
linh
pham



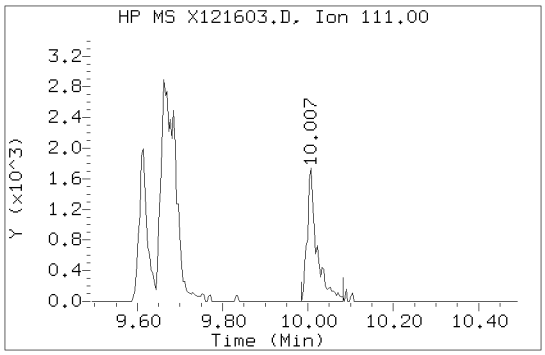
BEFORE

MASS
111
AREA
2768
HEIGHT
1741
27-Dec-2022
16:03
linh
pham



AFTER

MASS
111
AREA
2768
HEIGHT
1741
27-Dec-2022
16:07
linh
pham



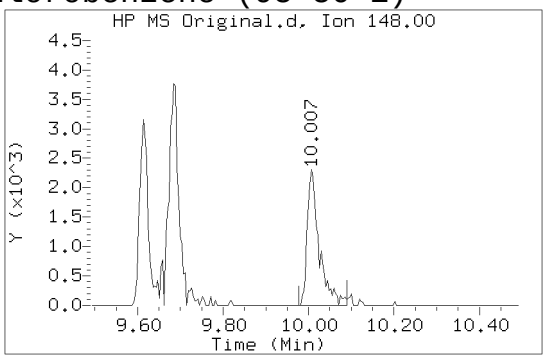
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,2-Dichlorobenzene (95-50-1)

Reason Code:

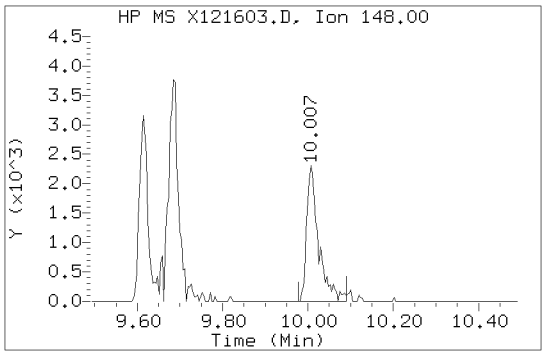
BEFORE

MASS
148
AREA
4515
HEIGHT
2306
27-Dec-2022
16:03
linh
pham



AFTER

MASS
148
AREA
4515
HEIGHT
2306
27-Dec-2022
16:07
linh
pham

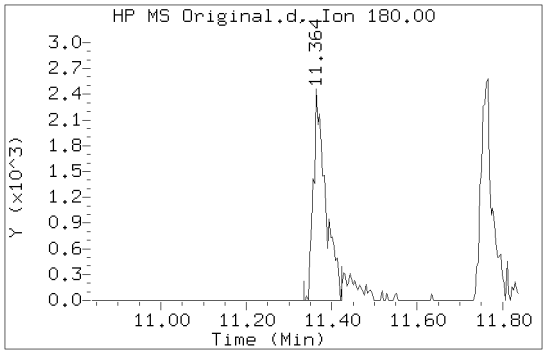


1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

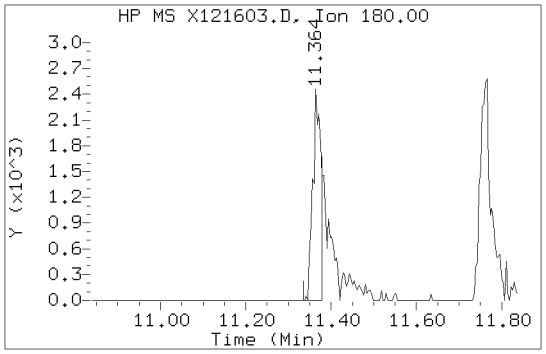
BEFORE

MASS
180
AREA
4912
HEIGHT
2459
27-Dec-2022
16:03
linh
pham



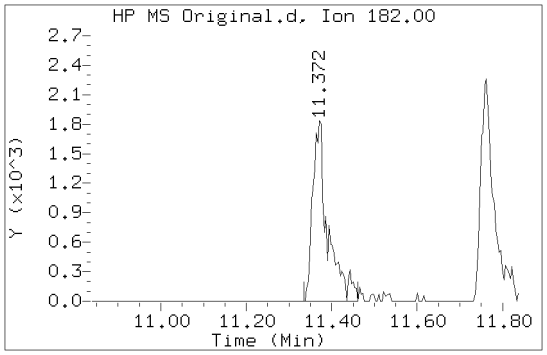
AFTER

MASS
180
AREA
3187
HEIGHT
2459
27-Dec-2022
16:07
linh
pham



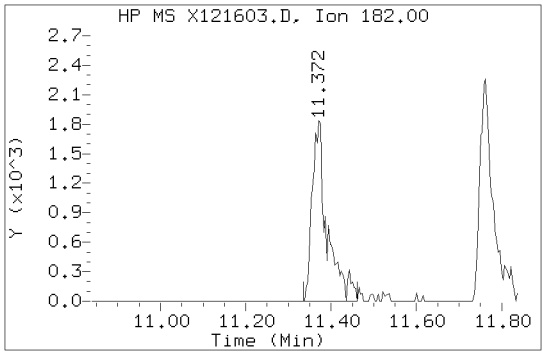
BEFORE

MASS
182
AREA
4514
HEIGHT
1835
27-Dec-2022
16:03
linh
pham



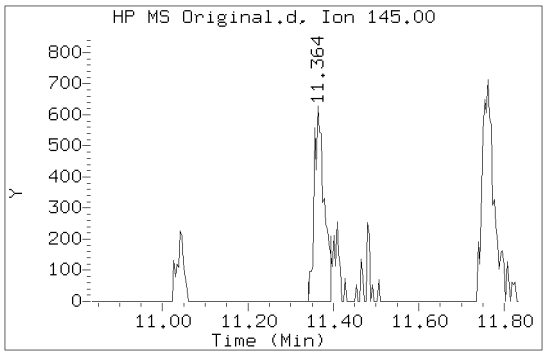
AFTER

MASS
182
AREA
4514
HEIGHT
1835
27-Dec-2022
16:07
linh
pham



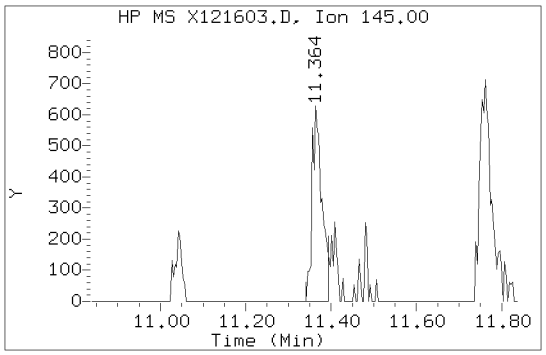
BEFORE

MASS
145
AREA
1003
HEIGHT
629
27-Dec-2022
16:03
linh
pham



AFTER

MASS
145
AREA
1003
HEIGHT
629
27-Dec-2022
16:07
linh
pham

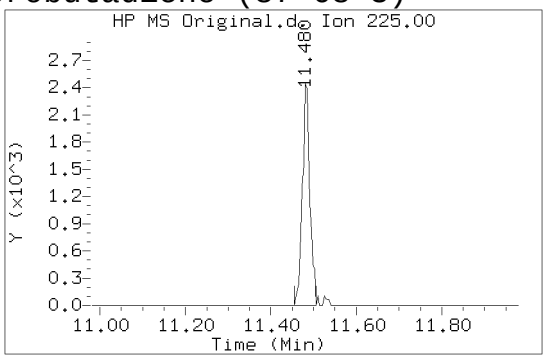


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

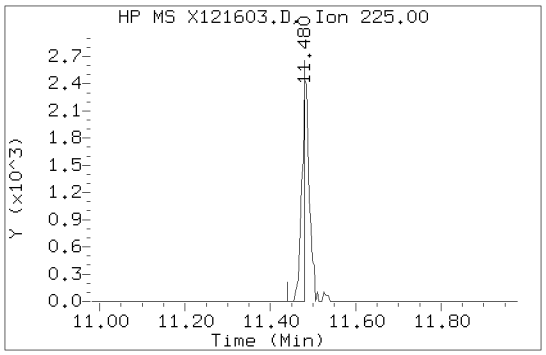
Hexachlorobutadiene (87-68-3)

Reason Code:

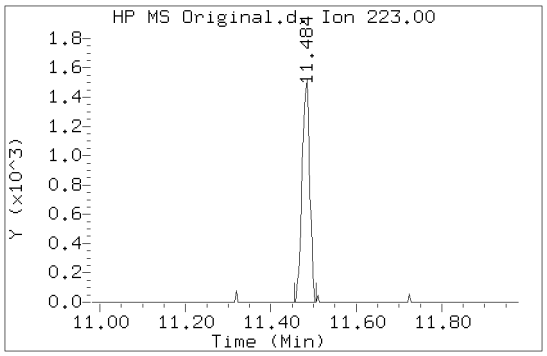
BEFORE
MASS
225
AREA
3038
HEIGHT
2444
27-Dec-2022
16:03
linh
pham



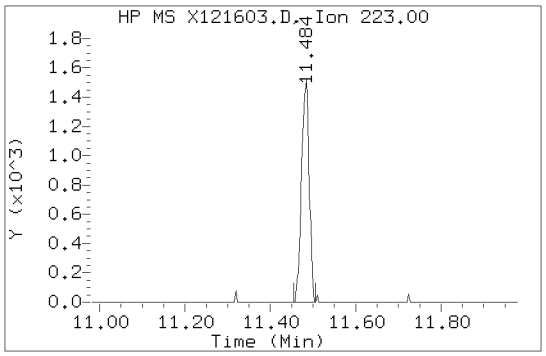
AFTER
MASS
225
AREA
1477
HEIGHT
2444
27-Dec-2022
16:07
linh
pham



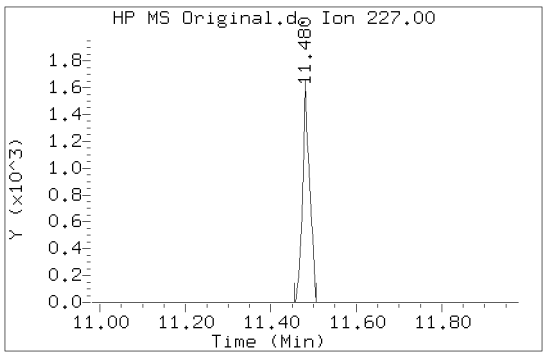
BEFORE
MASS
223
AREA
1952
HEIGHT
1518
27-Dec-2022
16:03
linh
pham



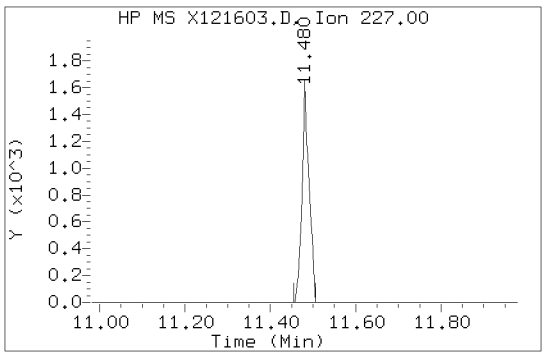
AFTER
MASS
223
AREA
1952
HEIGHT
1518
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
227
AREA
1938
HEIGHT
1652
27-Dec-2022
16:03
linh
pham



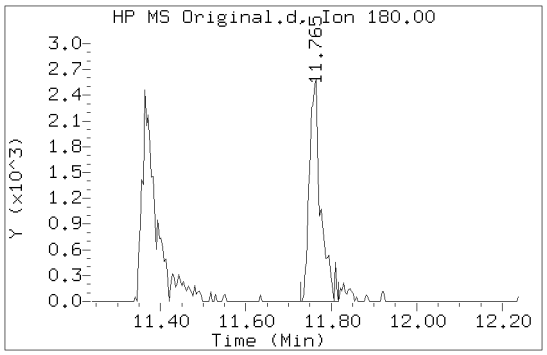
AFTER
MASS
227
AREA
1938
HEIGHT
1652
27-Dec-2022
16:07
linh
pham



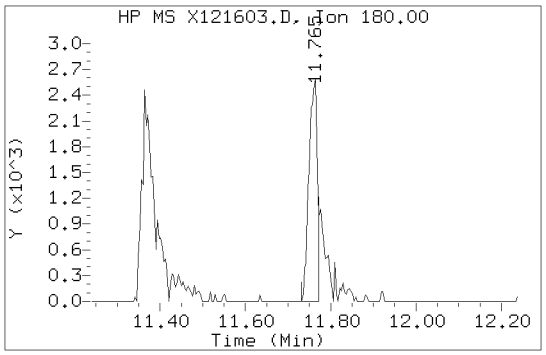
1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

BEFORE
MASS
180
AREA
4741
HEIGHT
2580
27-Dec-2022
16:03
linh
pham



AFTER
MASS
180
AREA
3572
HEIGHT
2580
27-Dec-2022
16:07
linh
pham



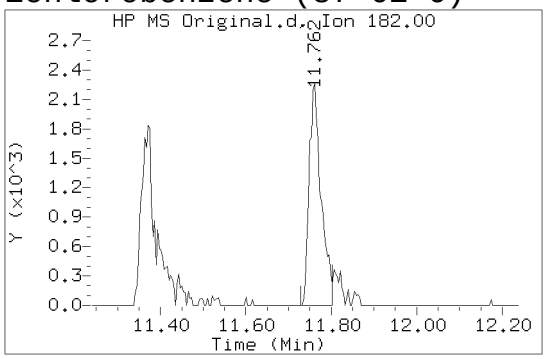
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

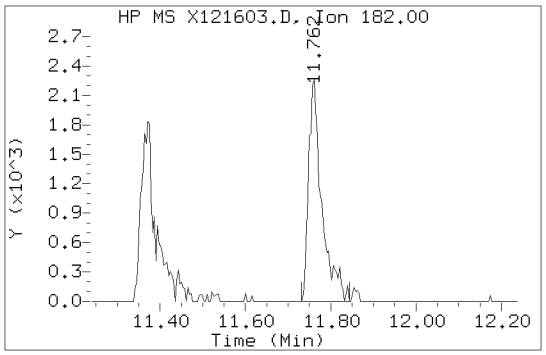
BEFORE

MASS
182
AREA
4404
HEIGHT
2261
27-Dec-2022
16:03
linh
pham



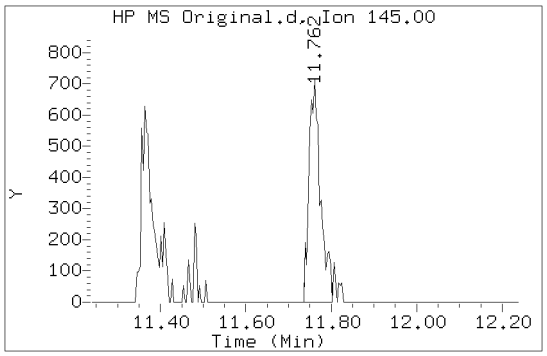
AFTER

MASS
182
AREA
4881
HEIGHT
2261
27-Dec-2022
16:07
linh
pham



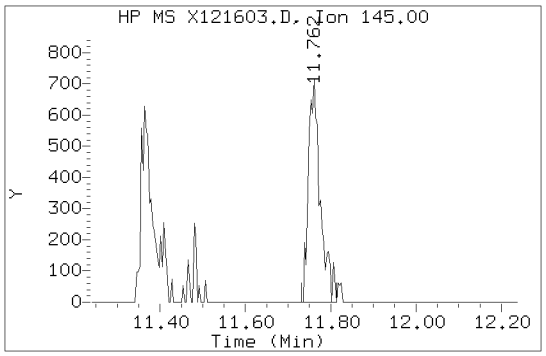
BEFORE

MASS
145
AREA
1338
HEIGHT
713
27-Dec-2022
16:03
linh
pham



AFTER

MASS
145
AREA
1384
HEIGHT
713
27-Dec-2022
16:07
linh
pham

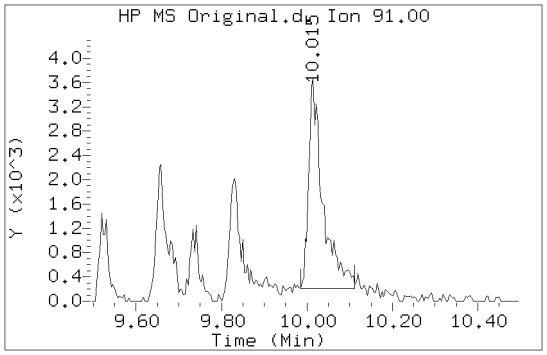


n-Butylbenzene (104-51-8)

Reason Code:

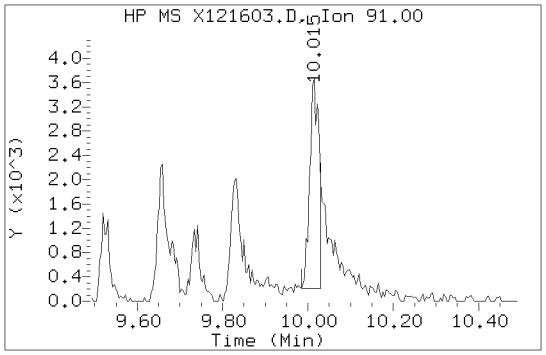
BEFORE

MASS
91
AREA
8005
HEIGHT
3451
27-Dec-2022
16:03
linh
pham



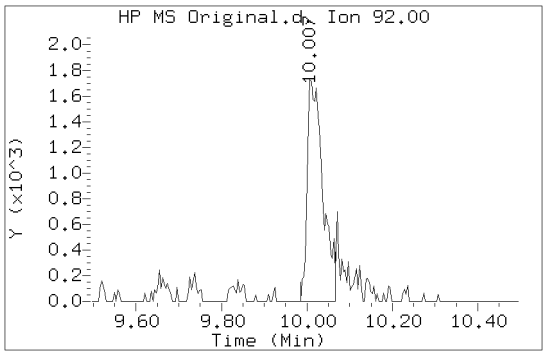
AFTER

MASS
91
AREA
5149
HEIGHT
3451
27-Dec-2022
16:07
linh
pham



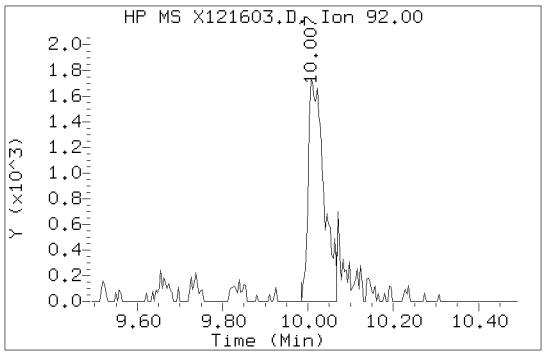
BEFORE

MASS
92
AREA
4404
HEIGHT
1727
27-Dec-2022
16:03
linh
pham



AFTER

MASS
92
AREA
4404
HEIGHT
1727
27-Dec-2022
16:07
linh
pham



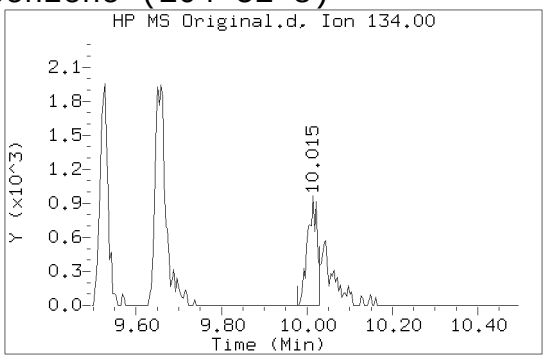
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

n-Butylbenzene (104-51-8)

Reason Code:

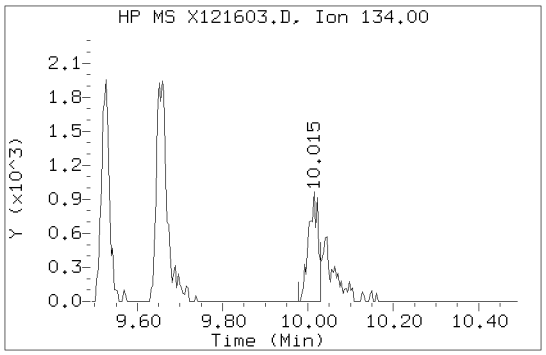
BEFORE

MASS
134
AREA
1502
HEIGHT
969
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
1502
HEIGHT
969
27-Dec-2022
16:07
linh
pham

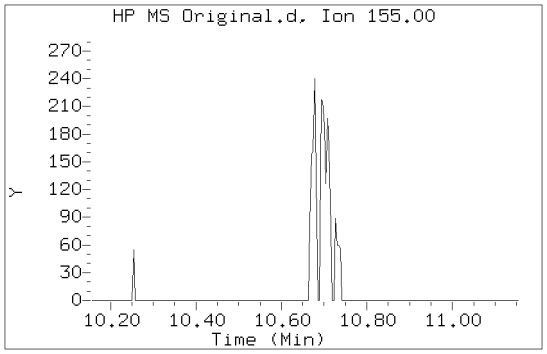


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

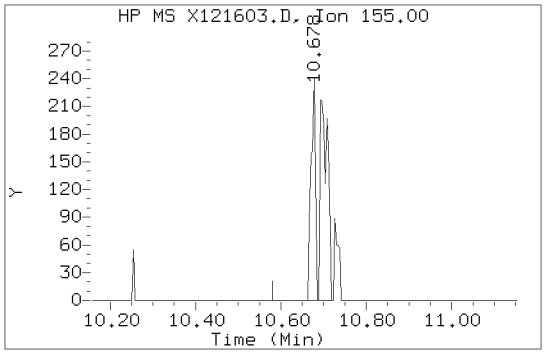
BEFORE

MASS
155
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



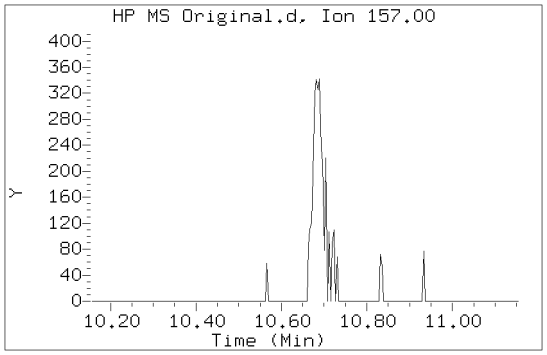
AFTER

MASS
155
AREA
441
HEIGHT
240
27-Dec-2022
16:07
linh
pham



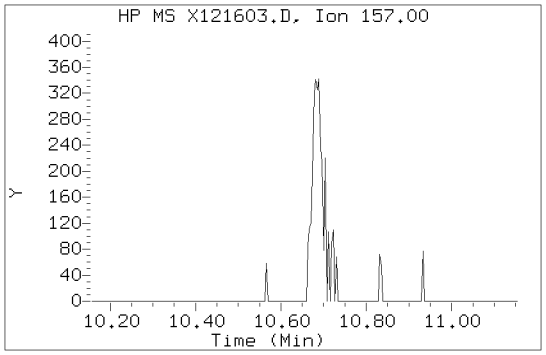
BEFORE

MASS
157
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



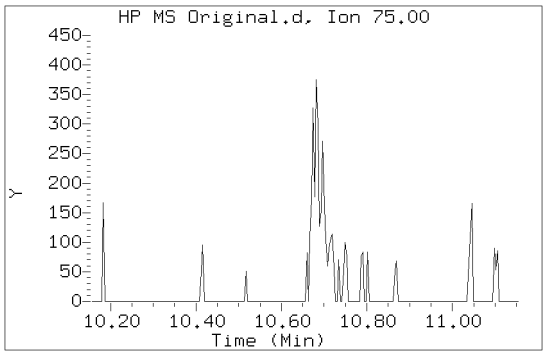
AFTER

MASS
157
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



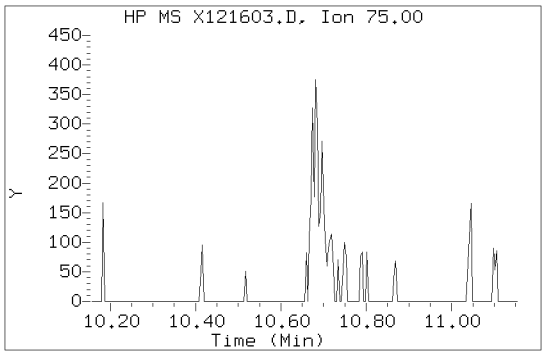
BEFORE

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



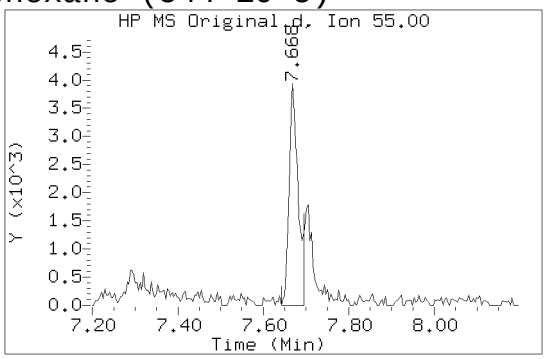
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1-Chlorohexane (544-10-5)

Reason Code:

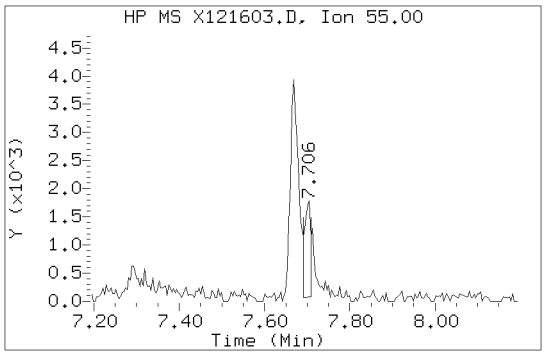
BEFORE

MASS
55
AREA
5785
HEIGHT
3936
27-Dec-2022
16:03
linh
pham



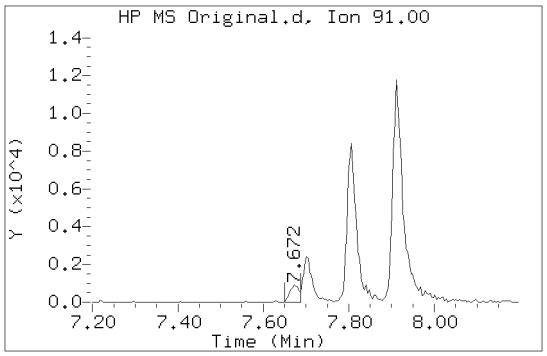
AFTER

MASS
55
AREA
1829
HEIGHT
1707
27-Dec-2022
16:07
linh
pham



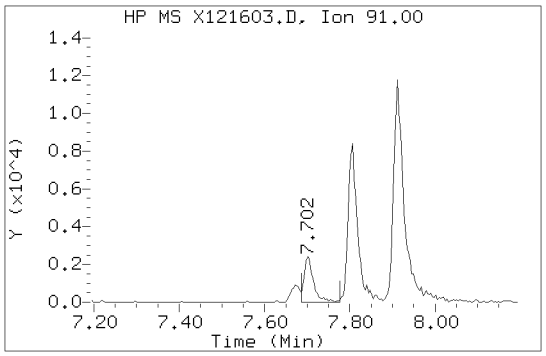
BEFORE

MASS
91
AREA
1355
HEIGHT
933
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
3802
HEIGHT
2430
27-Dec-2022
16:07
linh
pham

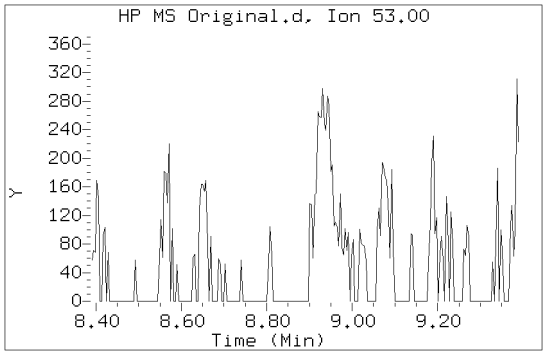


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

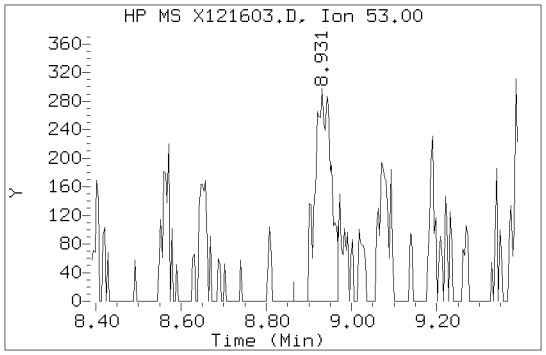
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



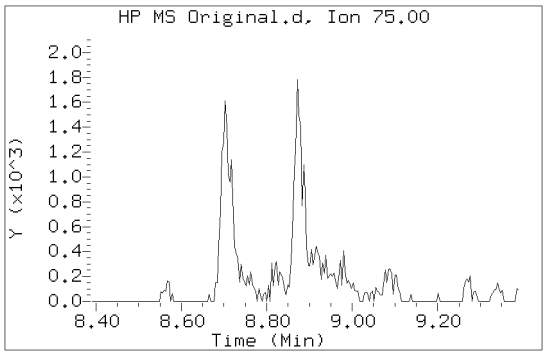
AFTER

MASS
53
AREA
792
HEIGHT
298
27-Dec-2022
16:07
linh
pham



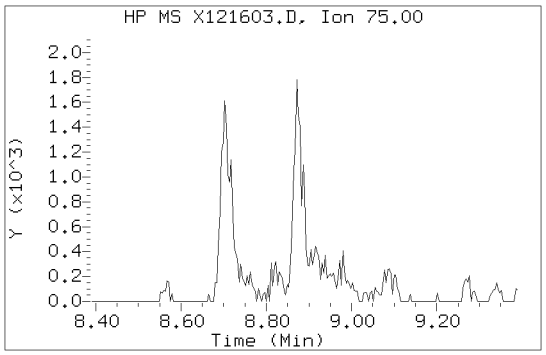
BEFORE

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



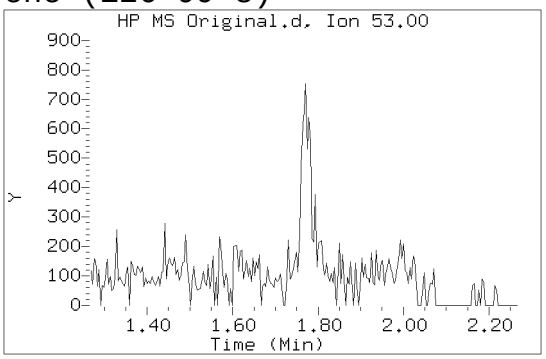
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Chloroprene (126-99-8)

Reason Code:

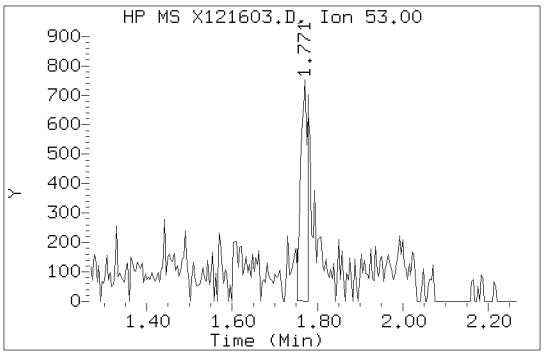
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



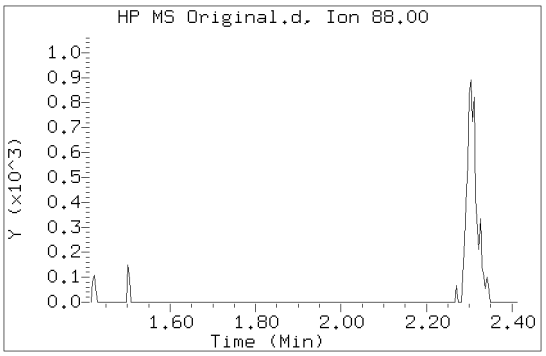
AFTER

MASS
53
AREA
900
HEIGHT
751
27-Dec-2022
16:07
linh
pham



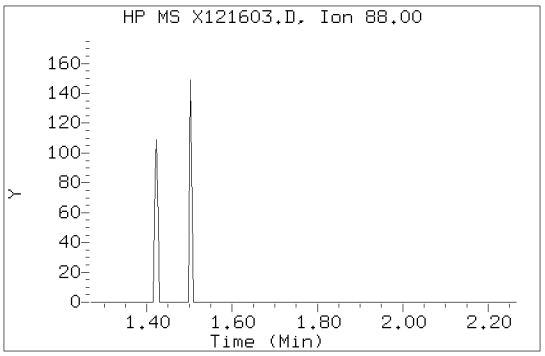
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

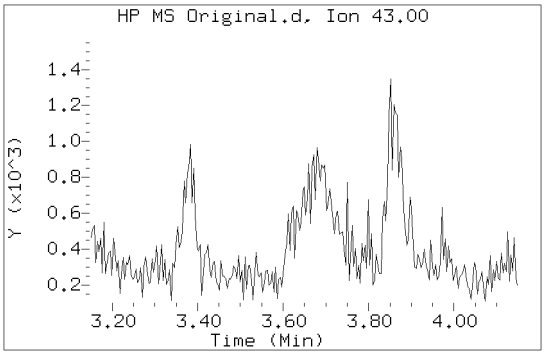


Ethyl Acetate (141-78-6)

Reason Code:

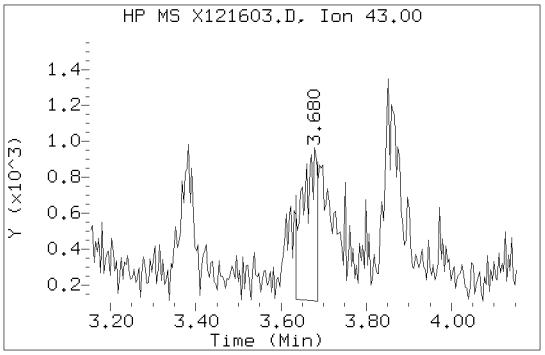
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



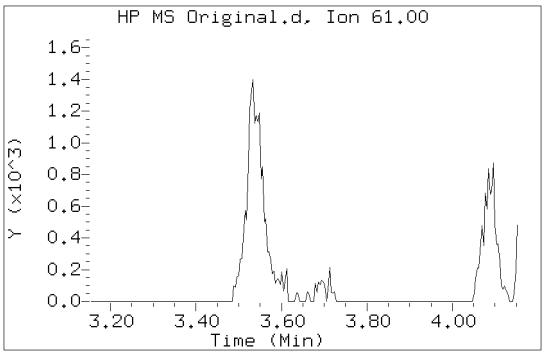
AFTER

MASS
43
AREA
2065
HEIGHT
853
27-Dec-2022
16:07
linh
pham



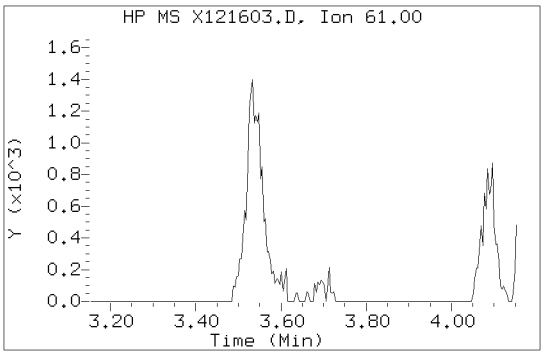
BEFORE

MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

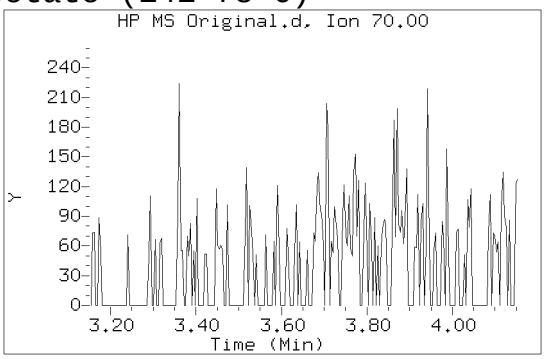


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Ethyl Acetate (141-78-6)

BEFORE

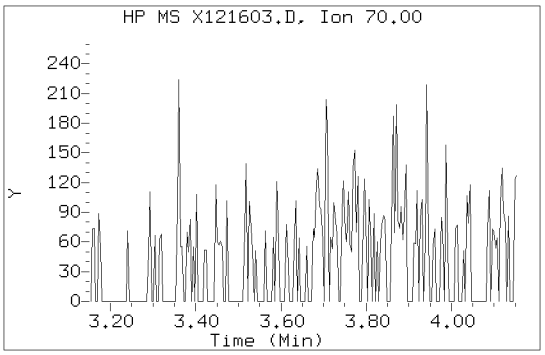
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

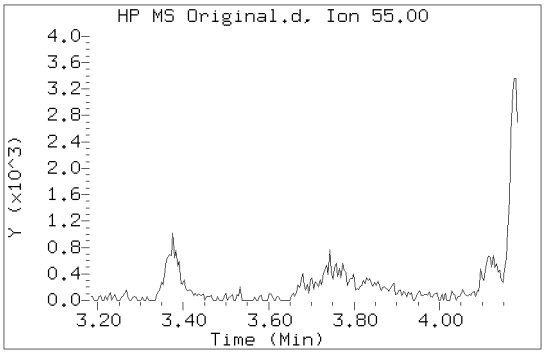
Reason Code:



Methyl Acrylate (96-33-3)

BEFORE

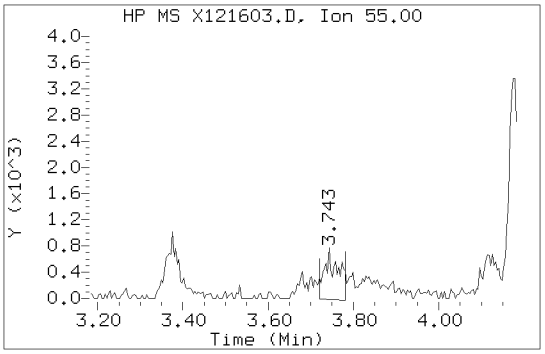
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

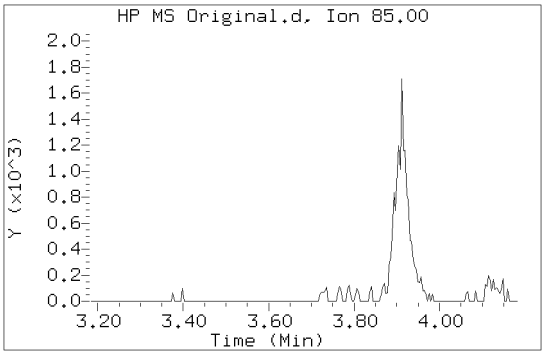
MASS
55
AREA
1765
HEIGHT
787
27-Dec-2022
16:07
linh
pham

Reason Code:



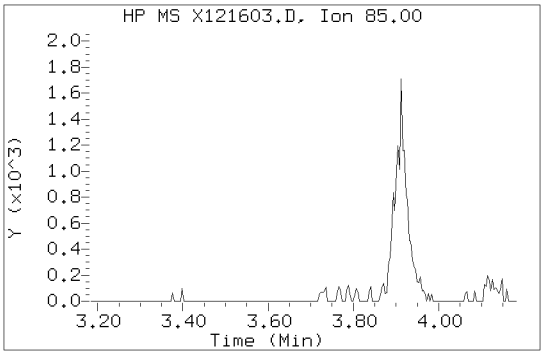
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

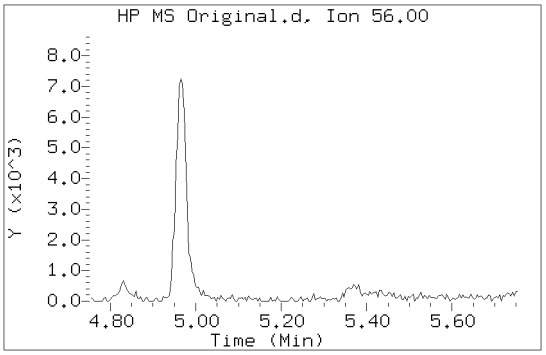
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



n-Butanol (71-36-3)

BEFORE

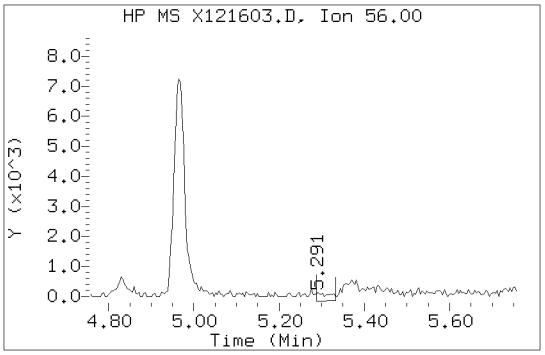
MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
56
AREA
622
HEIGHT
300
27-Dec-2022
16:07
linh
pham

Reason Code:



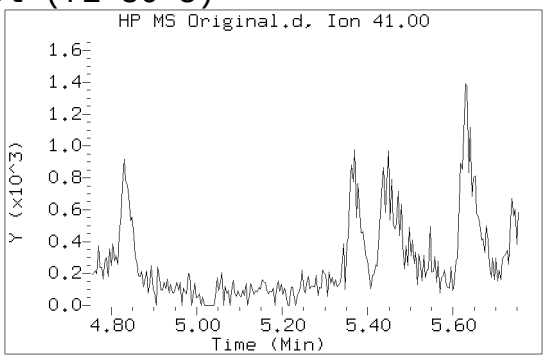
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

n-Butanol (71-36-3)

Reason Code:

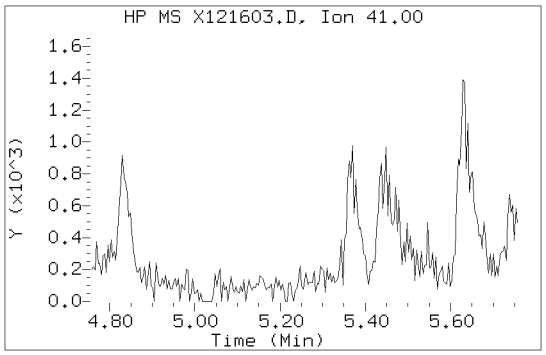
BEFORE

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

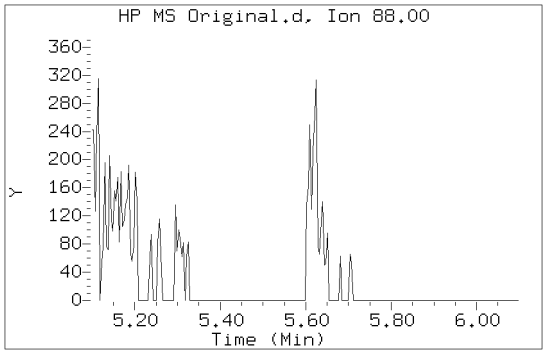


1,4-Dioxane ()

Reason Code:

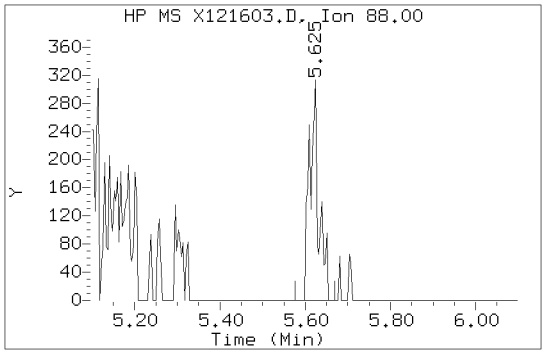
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



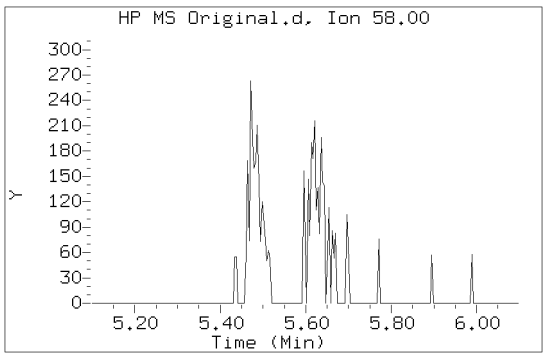
AFTER

MASS
88
AREA
462
HEIGHT
313
27-Dec-2022
16:07
linh
pham



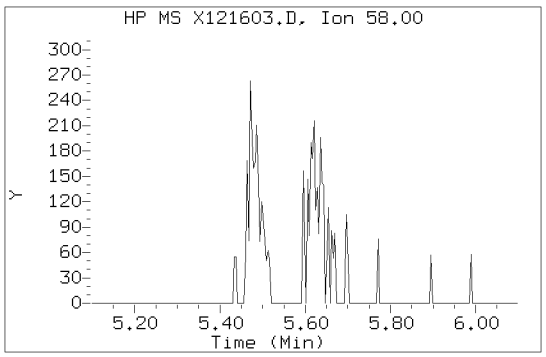
BEFORE

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

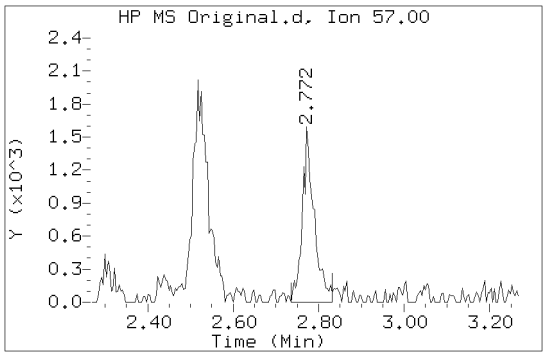


n-Hexane (110-54-3)

Reason Code:

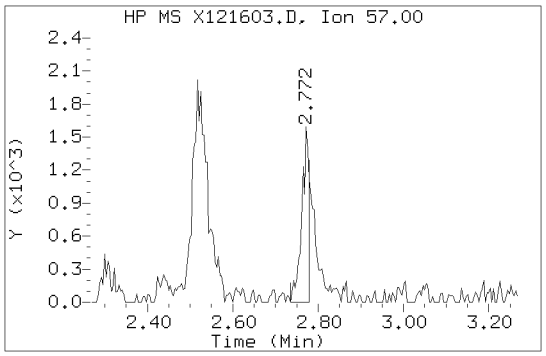
BEFORE

MASS
57
AREA
3089
HEIGHT
1591
27-Dec-2022
16:03
linh
pham



AFTER

MASS
57
AREA
1909
HEIGHT
1591
27-Dec-2022
16:07
linh
pham

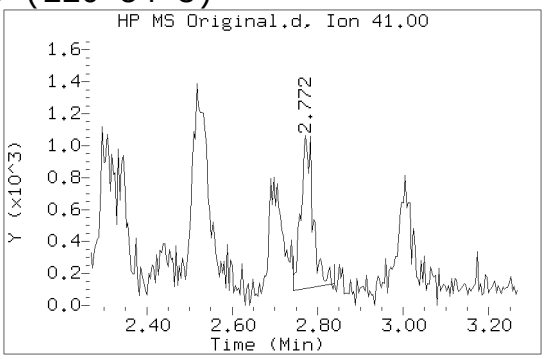


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

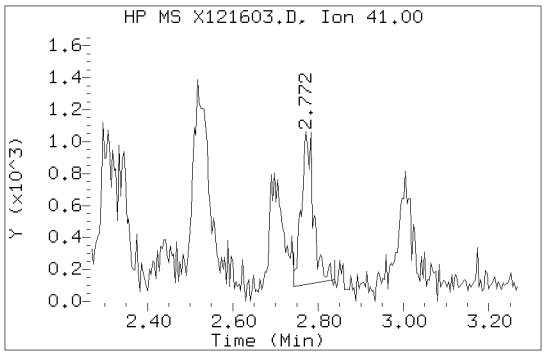
n-Hexane (110-54-3)

Reason Code:

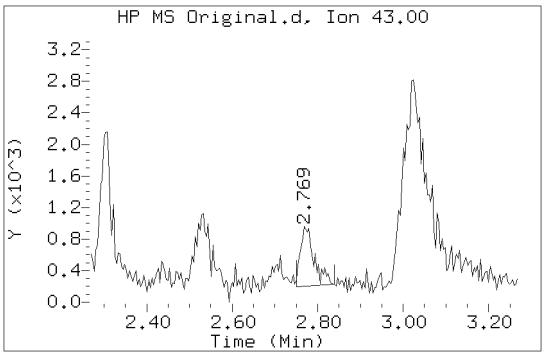
BEFORE
MASS
41
AREA
1918
HEIGHT
958
27-Dec-2022
16:03
linh
pham



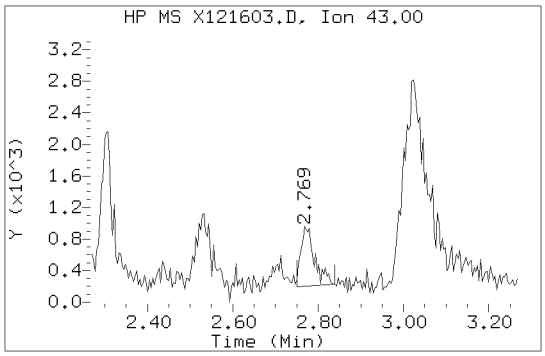
AFTER
MASS
41
AREA
1918
HEIGHT
958
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
43
AREA
1726
HEIGHT
759
27-Dec-2022
16:03
linh
pham



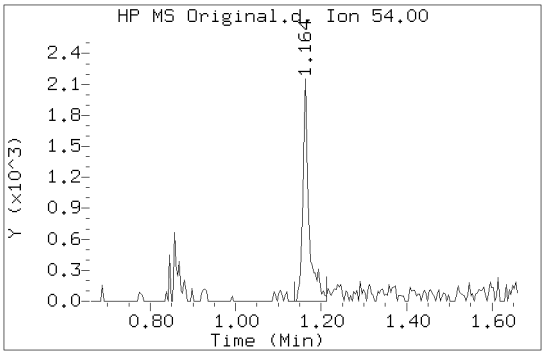
AFTER
MASS
43
AREA
1726
HEIGHT
759
27-Dec-2022
16:07
linh
pham



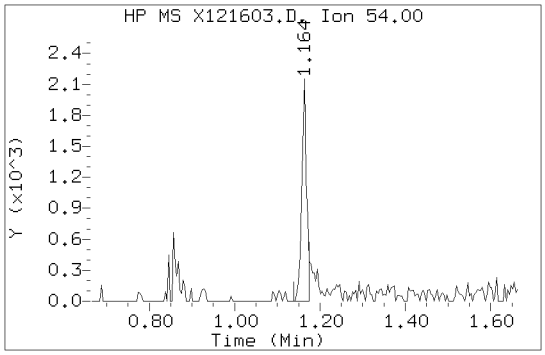
1,3-Butadiene (106-99-0)

Reason Code:

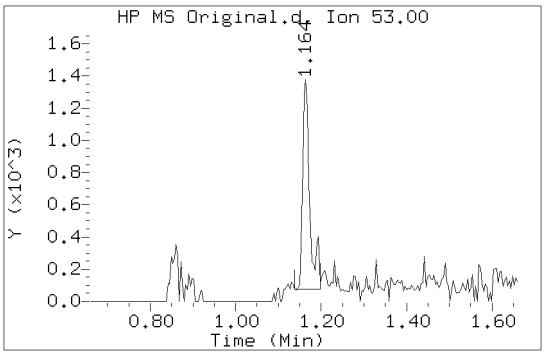
BEFORE
MASS
54
AREA
2206
HEIGHT
2153
27-Dec-2022
16:03
linh
pham



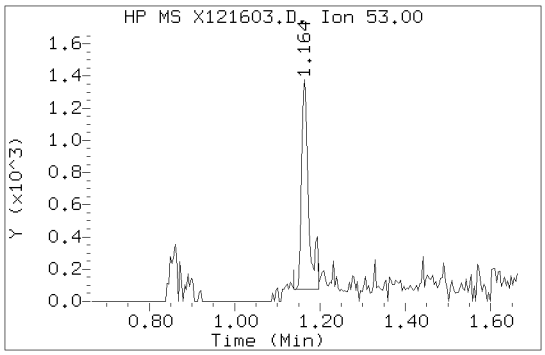
AFTER
MASS
54
AREA
1793
HEIGHT
2153
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
53
AREA
1535
HEIGHT
1301
27-Dec-2022
16:03
linh
pham



AFTER
MASS
53
AREA
1535
HEIGHT
1301
27-Dec-2022
16:07
linh
pham



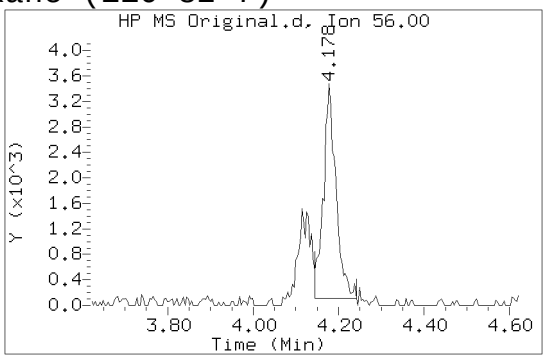
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Cyclohexane (110-82-7)

Reason Code:

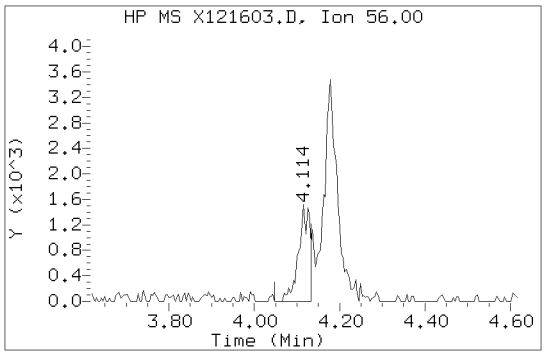
BEFORE

MASS
56
AREA
6884
HEIGHT
3363
27-Dec-2022
16:03
linh
pham



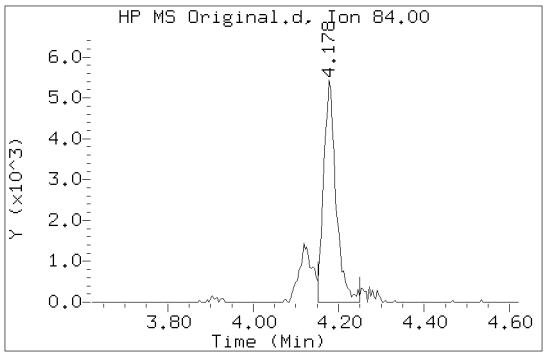
AFTER

MASS
56
AREA
2803
HEIGHT
1514
27-Dec-2022
16:07
linh
pham



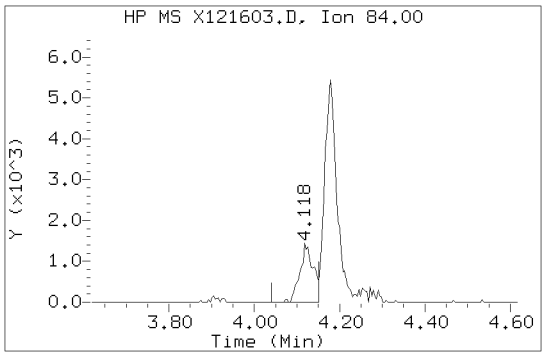
BEFORE

MASS
84
AREA
10951
HEIGHT
5440
27-Dec-2022
16:03
linh
pham



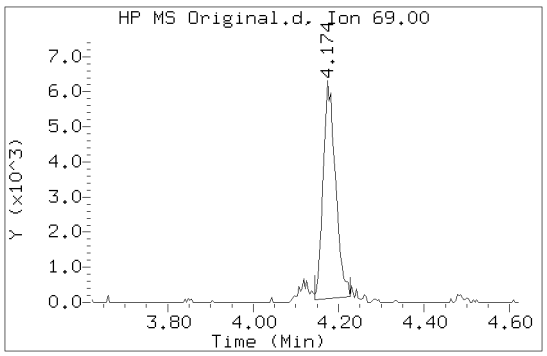
AFTER

MASS
84
AREA
3197
HEIGHT
1443
27-Dec-2022
16:07
linh
pham



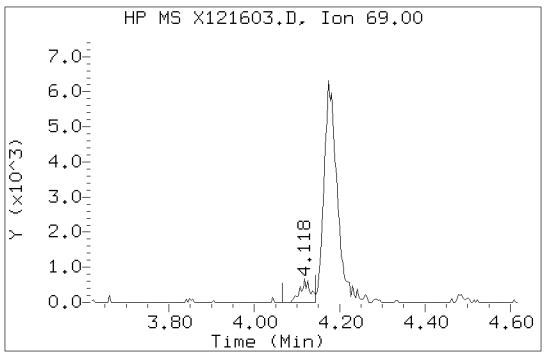
BEFORE

MASS
69
AREA
12449
HEIGHT
6206
27-Dec-2022
16:03
linh
pham



AFTER

MASS
69
AREA
1108
HEIGHT
681
27-Dec-2022
16:07
linh
pham

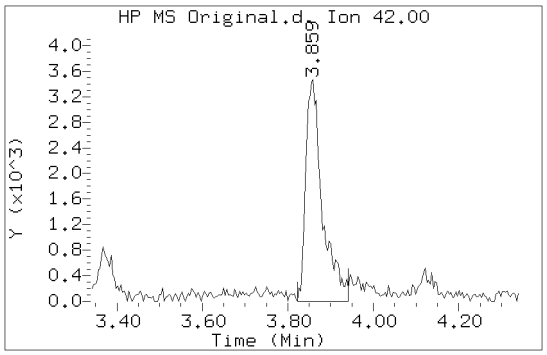


Tetrahydrofuran (109-99-9)

Reason Code:

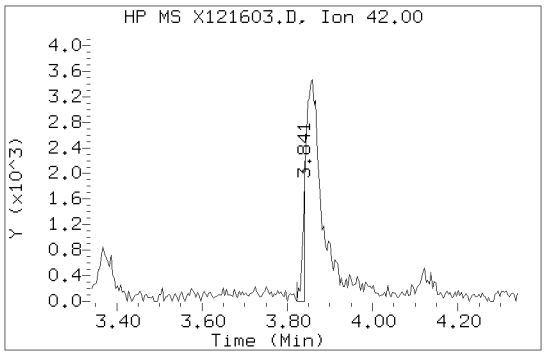
BEFORE

MASS
42
AREA
9468
HEIGHT
3467
27-Dec-2022
16:03
linh
pham



AFTER

MASS
42
AREA
900
HEIGHT
1891
27-Dec-2022
16:07
linh
pham



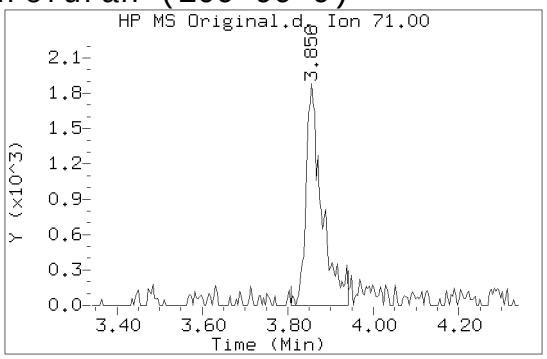
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Tetrahydrofuran (109-99-9)

Reason Code:

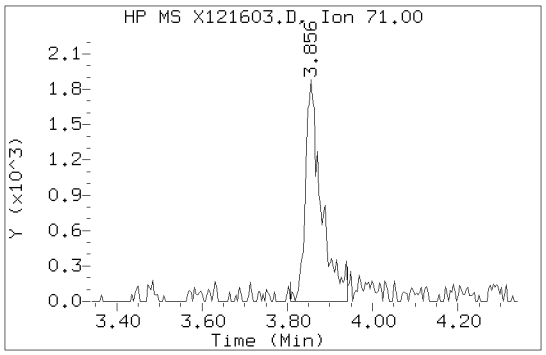
BEFORE

MASS
71
AREA
4885
HEIGHT
1881
27-Dec-2022
16:03
linh
pham



AFTER

MASS
71
AREA
4885
HEIGHT
1881
27-Dec-2022
16:07
linh
pham

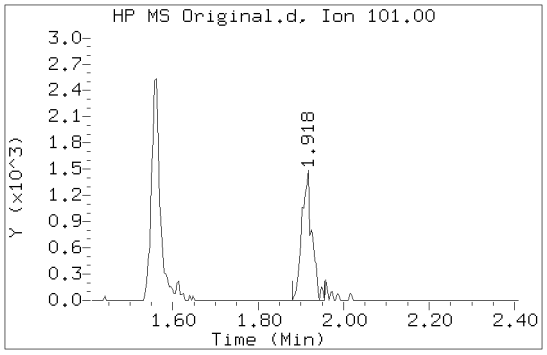


Freon TF (76-13-1)

Reason Code:

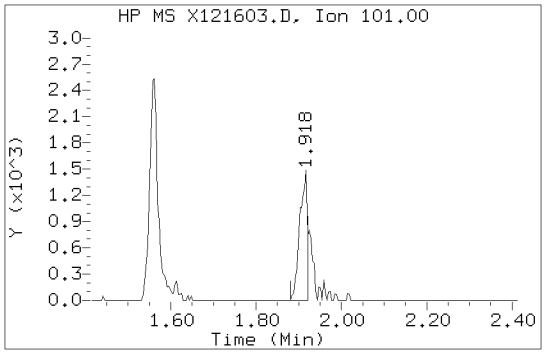
BEFORE

MASS
101
AREA
2478
HEIGHT
1484
27-Dec-2022
16:03
linh
pham



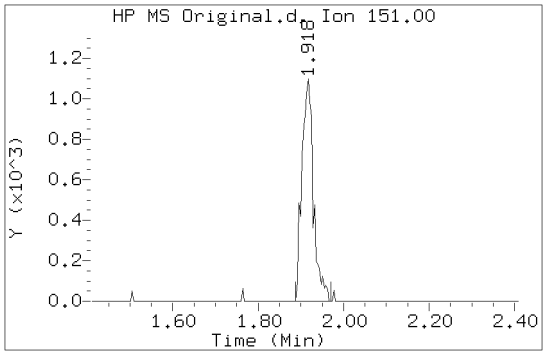
AFTER

MASS
101
AREA
1851
HEIGHT
1484
27-Dec-2022
16:07
linh
pham



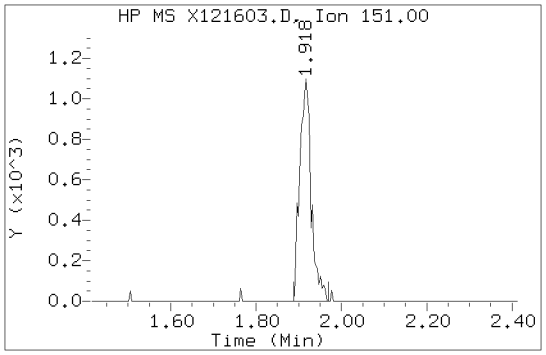
BEFORE

MASS
151
AREA
2095
HEIGHT
1098
27-Dec-2022
16:03
linh
pham



AFTER

MASS
151
AREA
2095
HEIGHT
1098
27-Dec-2022
16:07
linh
pham

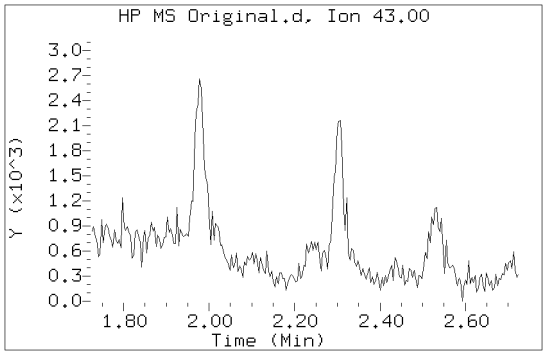


Methyl Acetate (79-20-9)

Reason Code:

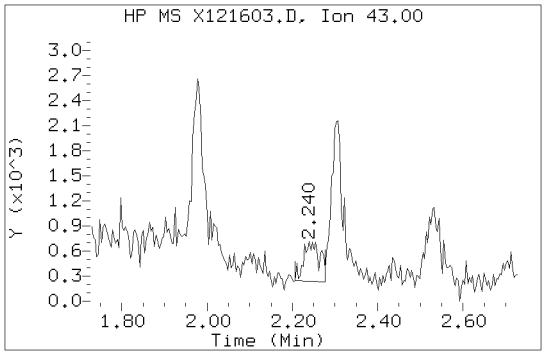
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
1269
HEIGHT
477
27-Dec-2022
16:07
linh
pham



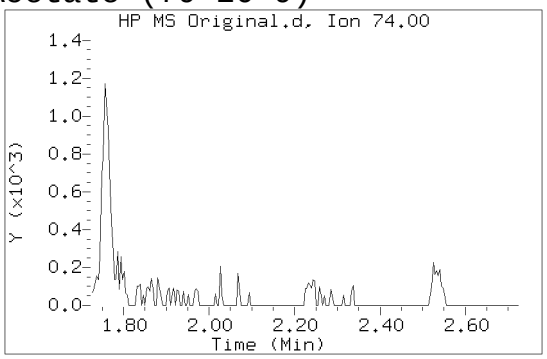
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Methyl Acetate (79-20-9)

Reason Code:

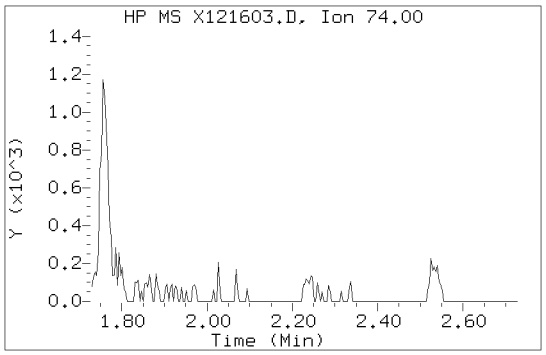
BEFORE

MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

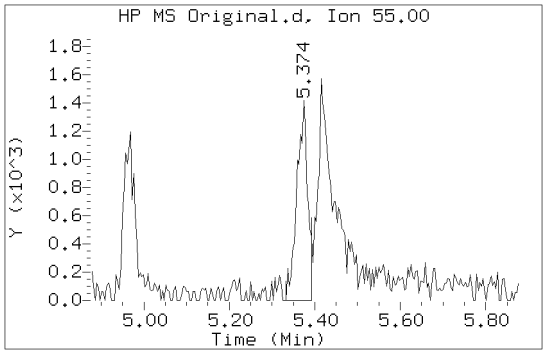


Methylcyclohexane (108-87-2)

Reason Code:

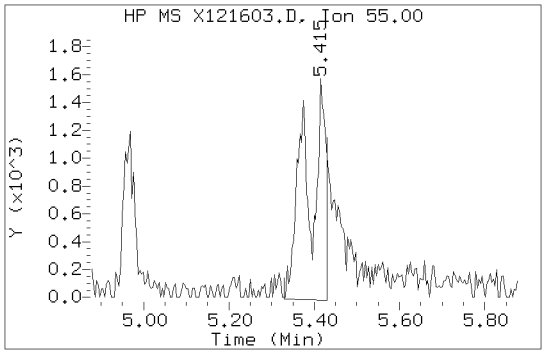
BEFORE

MASS
55
AREA
2505
HEIGHT
1416
27-Dec-2022
16:03
linh
pham



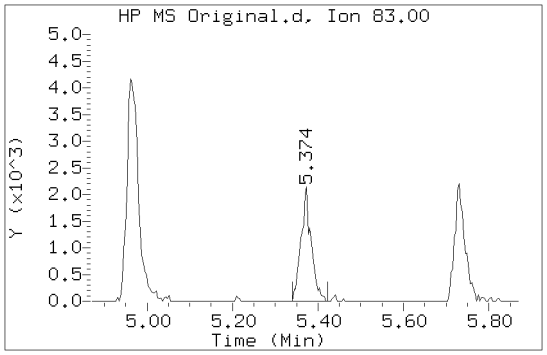
AFTER

MASS
55
AREA
4781
HEIGHT
1590
27-Dec-2022
16:07
linh
pham



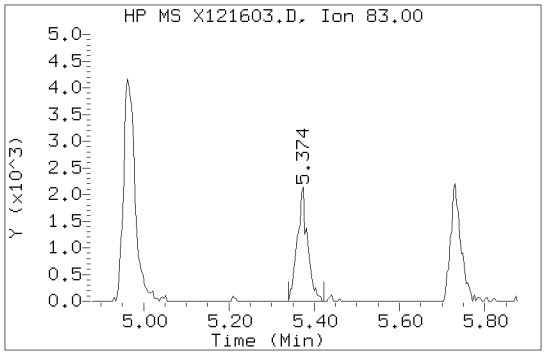
BEFORE

MASS
83
AREA
3627
HEIGHT
2141
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
3627
HEIGHT
2141
27-Dec-2022
16:07
linh
pham

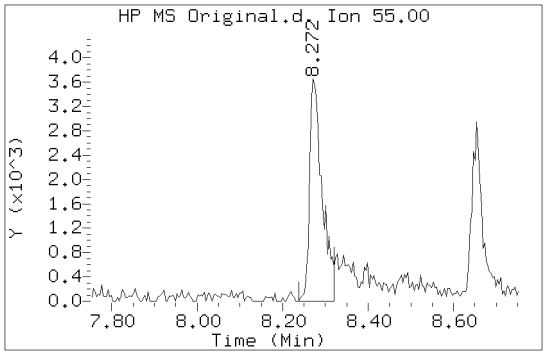


Butyl acrylate (141-32-2)

Reason Code:

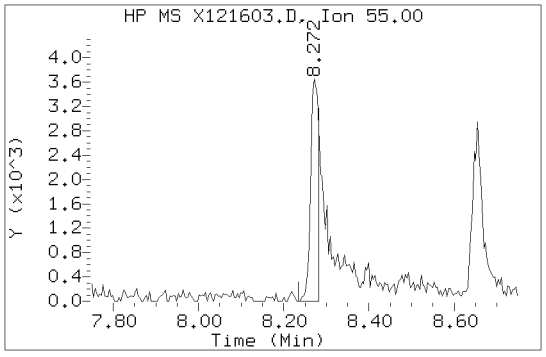
BEFORE

MASS
55
AREA
7480
HEIGHT
3653
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
4718
HEIGHT
3653
27-Dec-2022
16:07
linh
pham



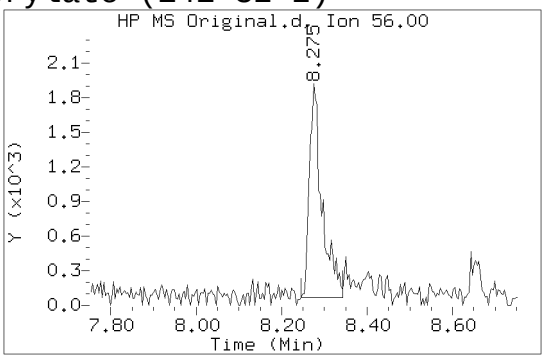
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Butyl acrylate (141-32-2)

Reason Code:

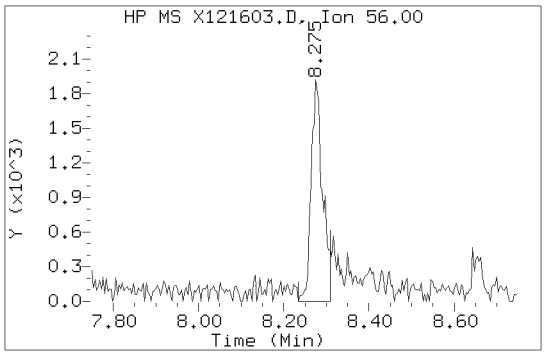
BEFORE

MASS
56
AREA
3795
HEIGHT
1858
27-Dec-2022
16:03
linh
pham



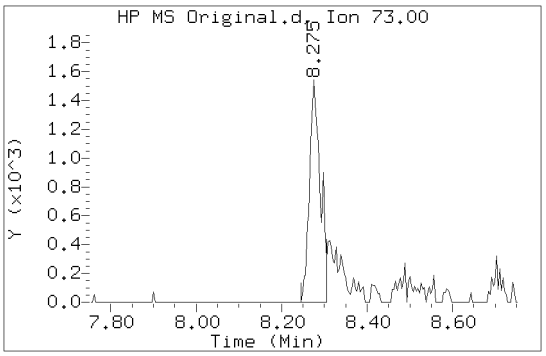
AFTER

MASS
56
AREA
3566
HEIGHT
1923
27-Dec-2022
16:07
linh
pham



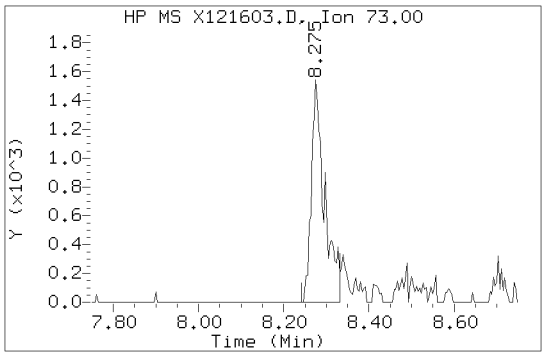
BEFORE

MASS
73
AREA
2742
HEIGHT
1542
27-Dec-2022
16:03
linh
pham



AFTER

MASS
73
AREA
3276
HEIGHT
1542
27-Dec-2022
16:07
linh
pham

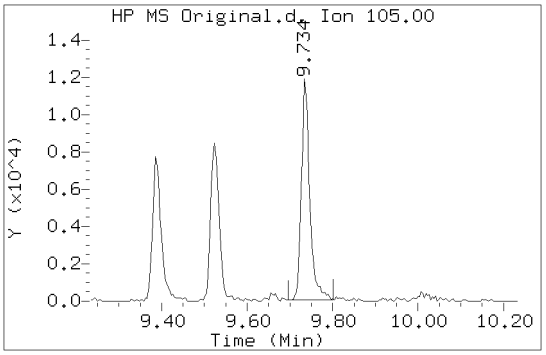


1,2,3-Trimethylbenzene (526-73-8)

Reason Code:

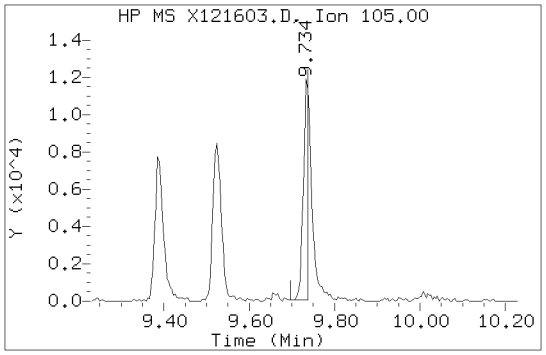
BEFORE

MASS
105
AREA
16642
HEIGHT
11860
27-Dec-2022
16:03
linh
pham



AFTER

MASS
105
AREA
9626
HEIGHT
11860
27-Dec-2022
16:07
linh
pham

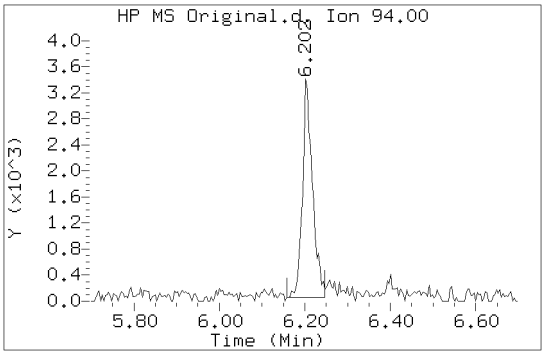


Dimethyl Disulfide (624-92-0)

Reason Code:

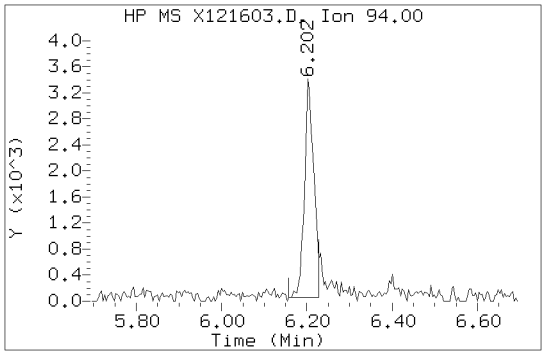
BEFORE

MASS
94
AREA
5523
HEIGHT
3352
27-Dec-2022
16:03
linh
pham



AFTER

MASS
94
AREA
5153
HEIGHT
3352
27-Dec-2022
16:07
linh
pham

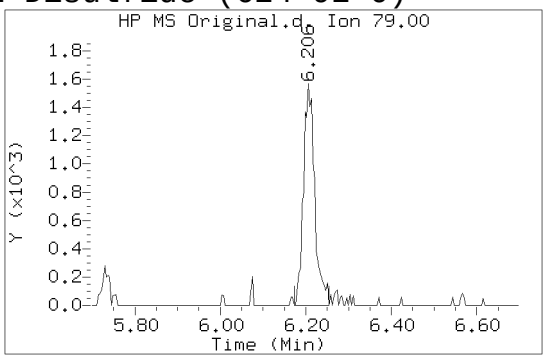


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

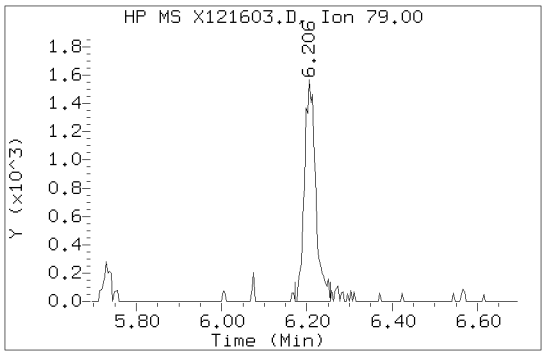
Dimethyl Disulfide (624-92-0)

Reason Code:

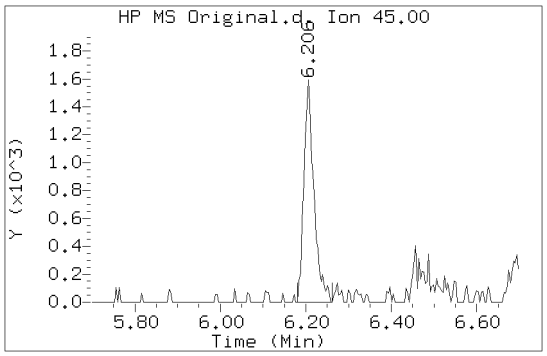
BEFORE
MASS
79
AREA
2905
HEIGHT
1568
27-Dec-2022
16:03
linh
pham



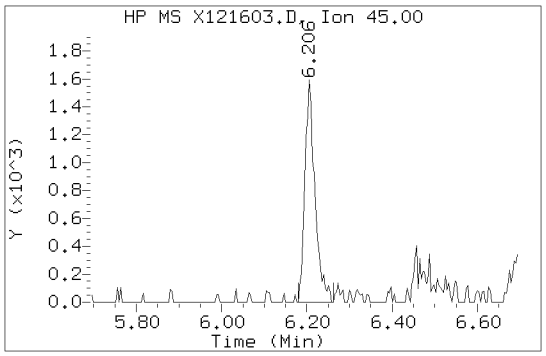
AFTER
MASS
79
AREA
2905
HEIGHT
1568
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
45
AREA
2647
HEIGHT
1593
27-Dec-2022
16:03
linh
pham



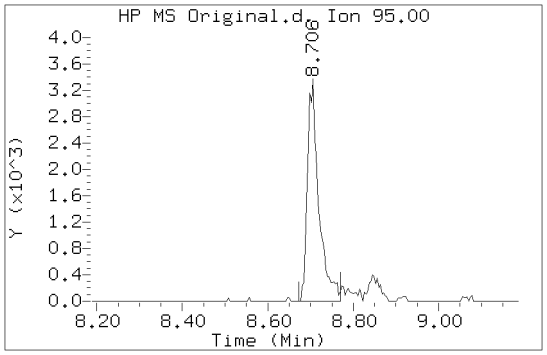
AFTER
MASS
45
AREA
2647
HEIGHT
1593
27-Dec-2022
16:07
linh
pham



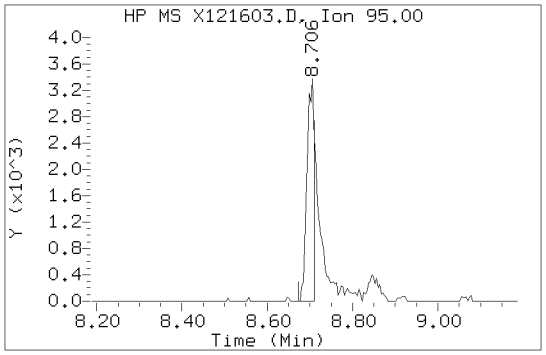
4-Bromofluorobenzene (460-00-4)

Reason Code:

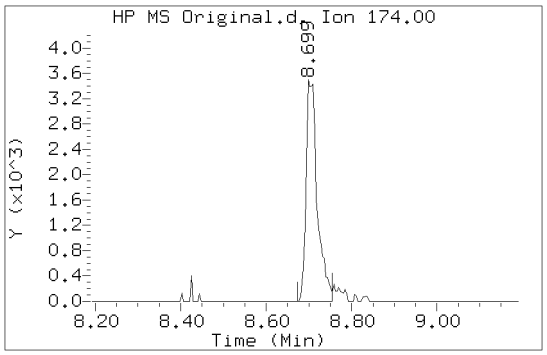
BEFORE
MASS
95
AREA
6240
HEIGHT
3372
27-Dec-2022
16:03
linh
pham



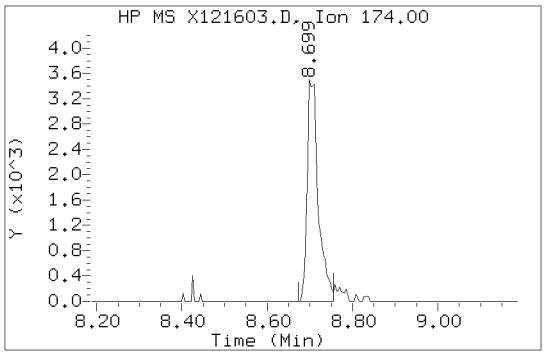
AFTER
MASS
95
AREA
3870
HEIGHT
3372
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
174
AREA
6370
HEIGHT
3502
27-Dec-2022
16:03
linh
pham



AFTER
MASS
174
AREA
6370
HEIGHT
3502
27-Dec-2022
16:07
linh
pham



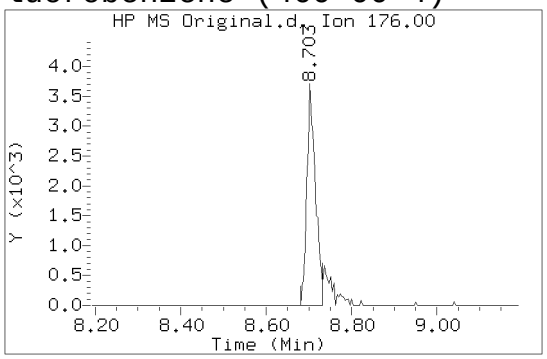
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

4-Bromofluorobenzene (460-00-4)

Reason Code:

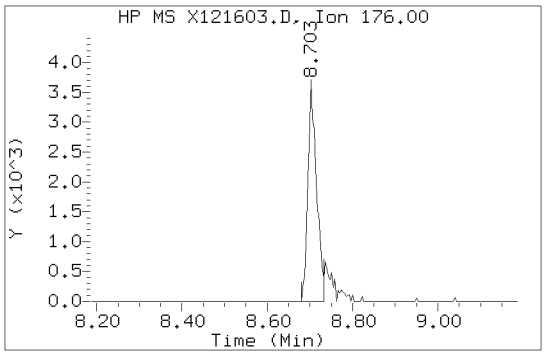
BEFORE

MASS
176
AREA
5204
HEIGHT
3711
27-Dec-2022
16:03
linh
pham



AFTER

MASS
176
AREA
5204
HEIGHT
3711
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 16-DEC-2022 12:41
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 12:20 Cal File: X121603.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	450308	50.0000	
135 1,4-Dioxane	88	5.610	5.610	(1.343)	820	20.0000	19.92(M)
140 1,3-Butadiene	54	1.160	1.160	(0.278)	3432	1.00000	1.11
25 Methacrylonitrile	41	3.852	3.852	(0.922)	3285	1.00000	1.03(M)
12 Isobutyl Alcohol	43	4.695	4.695	(1.124)	9436	20.0000	18.62(M)
13 Acetonitrile	39	2.198	2.198	(0.526)	4183	10.0000	10.20
14 Allyl Chloride	41	2.202	2.202	(0.527)	8574	1.00000	1.09
4 Propionitrile	54	3.687	3.687	(0.882)	4742	10.0000	10.32(M)
136 n-Hexane	57	2.776	2.776	(0.664)	2343	1.00000	0.72
72 trans-1,4-Dichloro-2-butene	53	8.920	8.920	(1.163)	1196	1.00000	0.85(M)
194 Acetaldehyde	44	1.212	1.212	(0.290)	3384	4.00000	(M)
23 Chloroprene	53	1.767	1.767	(0.423)	1686	1.00000	1.10(M)
145 alpha-Methylstyrene	118	9.272	9.272	(0.960)	6032	1.00000	0.77
200 Dimethyl Disulfide	94	6.206	6.206	(0.809)	8295	1.00000	0.94
139 Diethyl ether	59	1.760	1.760	(0.421)	2983	1.00000	0.99
130 Ethyl Acetate	43	3.675	3.675	(0.880)	3144	1.00000	0.89(M)
40 Methyl Methacrylate	41	5.628	5.628	(1.347)	3145	1.00000	1.02
49 Ethyl Methacrylate	69	6.727	6.727	(1.355)	3303	1.00000	1.02(M)
132 n-Butanol	56	5.239	5.239	(1.254)	1171	20.0000	60.69(M)
142 Tetrahydrofuran	42	3.844	3.844	(0.920)	1361	2.00000	(M)

150	Allyl alcohol	57	2.776	2.776 (0.664)	2343	20.0000	13.39
166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	18347	1.00000	1.08

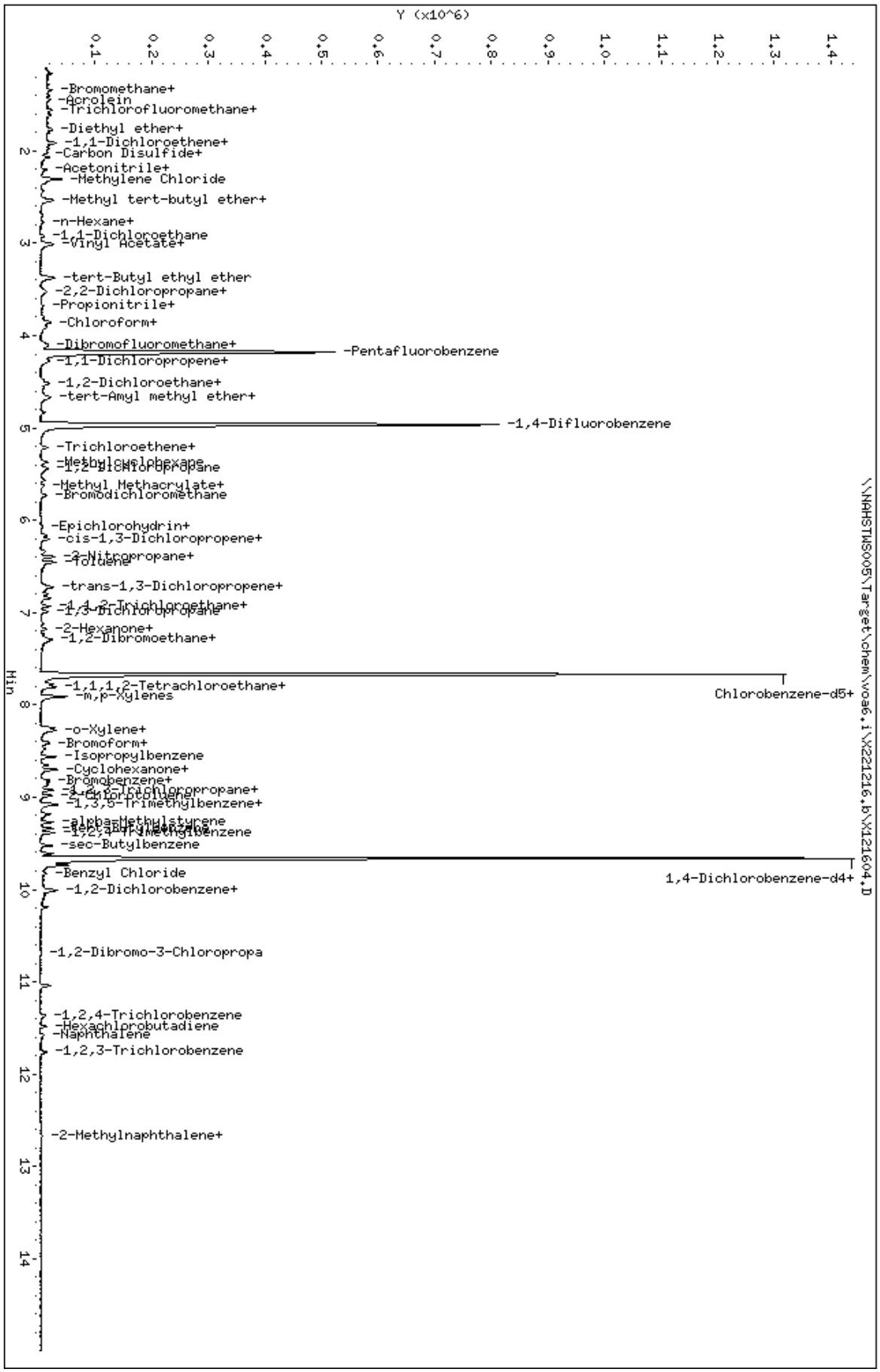
			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131	Methyl Acrylate	55	3.743	3.743	(0.896)	3084	1.00000	1.00(M)
	162	Butyl acrylate	55	8.271	8.271	(1.078)	7647	1.00000	0.90
	2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	2911	1.00000	1.30
	3	Chloromethane	50	1.078	1.078	(0.258)	3670	1.00000	3.07
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	3645	1.00000	0.92
	6	Bromomethane	94	1.340	1.340	(0.321)	3293	1.00000	2.83
	7	Chloroethane	64	1.400	1.400	(0.335)	2516	1.00000	0.91(M)
	8	Trichlorofluoromethane	101	1.554	1.554	(0.372)	4906	1.00000	0.89
	9	Acrolein	56	1.452	1.452	(0.348)	761	2.00000	5.22(M)
	10	Acetone	43	1.977	1.977	(0.473)	4787	2.00000	3.75(M)
	11	1,1-Dichloroethene	96	1.913	1.913	(0.458)	3238	1.00000	0.94
	15	Iodomethane	142	2.026	2.026	(0.485)	3865	2.00000	4.18(TM)
	16	Acrylonitrile	53	2.554	2.554	(0.612)	2258	2.00000	1.94(M)
	17	Methylene Chloride	84	2.300	2.300	(0.550)	5355	1.00000	1.14(M)
	18	Methyl tert-butyl ether	73	2.536	2.536	(0.607)	12521	1.00000	1.11
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	18122	2.00000	2.02
	20	trans-1,2-Dichloroethene	96	2.532	2.532	(0.606)	3821	1.00000	0.99
	21	Vinyl Acetate	43	3.012	3.012	(0.721)	17842	2.00000	1.81
	22	1,1-Dichloroethane	63	2.922	2.922	(0.699)	7218	1.00000	1.07
	24	2-Butanone	43	3.619	3.619	(0.866)	2498	2.00000	4.83(M)
	26	2,2-Dichloropropane	77	3.514	3.514	(0.841)	5896	1.00000	1.03
	27	cis-1,2-Dichloroethene	96	3.540	3.540	(0.847)	4469	1.00000	0.96
	28	Chloroform	83	3.908	3.908	(0.935)	7768	1.00000	1.03
	29	Bromochloromethane	128	3.803	3.803	(0.910)	2689	1.00000	1.05
$	30	Dibromofluoromethane	113	4.103	4.103	(0.982)	4769	1.00000	0.94
	31	1,1,1-Trichloroethane	97	4.088	4.088	(0.978)	5914	1.00000	0.99
	32	1,1-Dichloropropene	75	4.286	4.286	(0.863)	4698	1.00000	0.96
	33	1,2-Dichloroethane	62	4.564	4.564	(0.919)	5568	1.00000	0.99
	34	Carbon Tetrachloride	117	4.271	4.271	(0.860)	6221	1.00000	1.19
$	35	1,2-Dichloroethane-d4	65	4.485	4.485	(1.074)	5559	1.00000	1.48
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	685937	50.0000	
	37	Benzene	78	4.515	4.515	(0.909)	16367	1.00000	0.99
	38	Trichloroethene	130	5.216	5.216	(1.051)	4352	1.00000	0.93
	39	Bromodichloromethane	83	5.730	5.730	(1.154)	6296	1.00000	1.02(M)
	41	2-Chloroethylvinyl ether	63	6.071	6.071	(1.223)	3202	2.00000	1.83(M)
	42	1,2-Dichloropropane	63	5.445	5.445	(1.097)	4604	1.00000	1.05(M)
	44	Dibromomethane	93	5.557	5.557	(1.119)	2906	1.00000	0.98
	45	4-Methyl-2-Pentanone	43	6.341	6.341	(0.827)	6859	2.00000	1.97
	46	cis-1,3-Dichloropropene	75	6.168	6.168	(1.242)	6537	1.00000	0.90
*	47	Chlorobenzene-d5	117	7.671	7.671	(1.000)	649074	50.0000	
$	48	Toluene-d8	98	6.401	6.401	(0.834)	17067	1.00000	1.06
	50	Toluene	91	6.457	6.457	(0.842)	17914	1.00000	0.99
	51	trans-1,3-Dichloropropene	75	6.693	6.693	(1.348)	5418	1.00000	0.90
	52	2-Hexanone	43	7.109	7.109	(0.927)	4520	2.00000	1.91
	53	1,1,2-Trichloroethane	83	6.843	6.843	(0.892)	3499	1.00000	0.97
	54	1,3-Dichloropropane	76	6.989	6.989	(0.911)	7216	1.00000	1.01
	55	Dibromochloromethane	129	7.177	7.177	(0.936)	5024	1.00000	0.96
	56	Tetrachloroethene	164	6.933	6.933	(0.904)	3331	1.00000	0.89
	57	1,2-Dibromoethane	107	7.270	7.270	(0.948)	4350	1.00000	0.96
	58	1-Chlorohexane	55	7.705	7.705	(1.552)	3155	1.00000	0.95(MH)
	59	Chlorobenzene	112	7.698	7.698	(1.003)	12555	1.00000	0.98
	60	1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	4485	1.00000	0.94

61 Ethylbenzene	106	7.806	7.806 (1.018)	5698	1.00000	0.95
62 m,p-Xylenes	106	7.911	7.911 (1.031)	14464	2.00000	1.87

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.249	8.249	(1.075)	6670	1.00000	0.87
	64 Styrene	104	8.282	8.282	(1.080)	10384	1.00000	0.81
	66 Bromoform	173	8.417	8.417	(1.097)	3274	1.00000	0.90(T)
	67 Isopropylbenzene	105	8.564	8.564	(1.116)	15163	1.00000	0.87
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	5934	1.00000	1.05(M)
$	69 4-Bromofluorobenzene	95	8.702	8.702	(1.134)	7790	1.00000	1.36(M)
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	351251	50.0000	
	71 1,2,3-Trichloropropane	75	8.871	8.871	(0.918)	3978	1.00000	1.01
	73 n-Propylbenzene	91	8.923	8.923	(0.924)	15006	1.00000	0.77
	74 Bromobenzene	156	8.818	8.818	(0.913)	5554	1.00000	0.96
	75 1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	11820	1.00000	0.82
	76 2-Chlorotoluene	91	8.980	8.980	(0.929)	12470	1.00000	0.97
	77 4-Chlorotoluene	91	9.085	9.085	(0.940)	12140	1.00000	0.83
	78 tert-Butylbenzene	119	9.340	9.340	(0.967)	9357	1.00000	0.79
	79 1,2,4-Trimethylbenzene	105	9.385	9.385	(0.971)	12988	1.00000	0.85
	81 sec-Butylbenzene	105	9.523	9.523	(0.986)	12395	1.00000	0.79
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	10009	1.00000	0.71
	83 1,3-Dichlorobenzene	146	9.609	9.609	(0.995)	8523	1.00000	0.89
	84 1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	9866	1.00000	0.94
	86 Benzyl Chloride	91	9.823	9.823	(1.280)	4632	1.00000	3.12
	87 n-Butylbenzene	91	10.014	10.014	(1.036)	8459	1.00000	2.37(M)
	88 1,2-Dichlorobenzene	146	10.007	10.007	(1.036)	8626	1.00000	0.87
	89 1,2-Dibromo-3-Chloropropane	155	10.689	10.689	(1.106)	778	1.00000	0.95(M)
	90 1,2,4-Trichlorobenzene	180	11.371	11.371	(1.177)	4609	1.00000	0.74
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	1928	1.00000	0.65
	92 Naphthalene	128	11.574	11.574	(1.198)	11288	1.00000	0.79(M)
	93 1,2,3-Trichlorobenzene	180	11.754	11.754	(1.216)	4801	1.00000	0.80
M	94 1,2-Dichloroethylene (total)	96				8290	2.00000	
M	95 Xylenes (total)	106				21134	3.00000	
	141 Cyclohexane	56	4.125	4.125	(0.987)	4003	1.00000	2.12(H)
	138 Freon TF	101	1.906	1.906	(0.456)	3356	1.00000	1.01
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	6848	1.00000	0.81(M)
	146 Methyl Acetate	43	2.236	2.236	(0.535)	2127	1.00000	1.04(M)
	148 Tert-Butyl alcohol	59	2.438	2.438	(0.584)	6051	20.0000	19.40(a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Date : 16-DEC-2022 12:41
Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

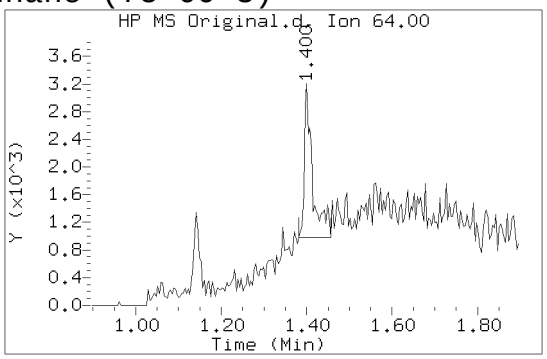
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Chloroethane (75-00-3)

Reason Code:

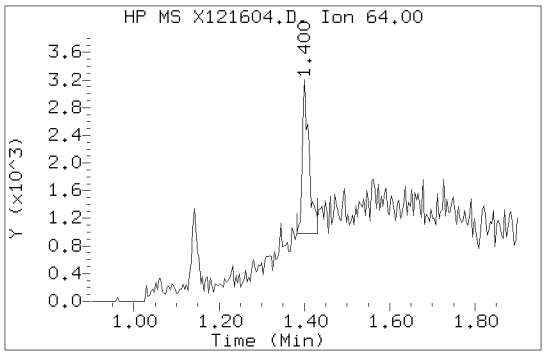
BEFORE

MASS
64
AREA
2984
HEIGHT
2221
27-Dec-2022
16:03
linh
pham



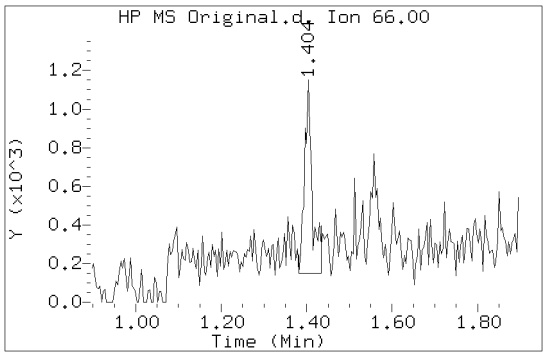
AFTER

MASS
64
AREA
2516
HEIGHT
2221
27-Dec-2022
16:07
linh
pham



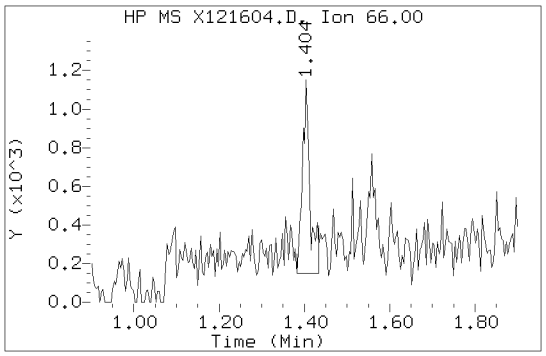
BEFORE

MASS
66
AREA
1262
HEIGHT
1002
27-Dec-2022
16:03
linh
pham



AFTER

MASS
66
AREA
1262
HEIGHT
1002
27-Dec-2022
16:07
linh
pham

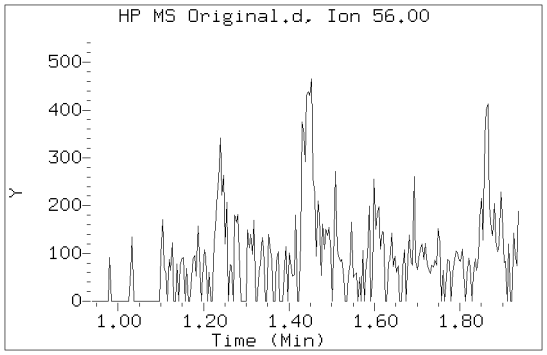


Acrolein (107-02-8)

Reason Code:

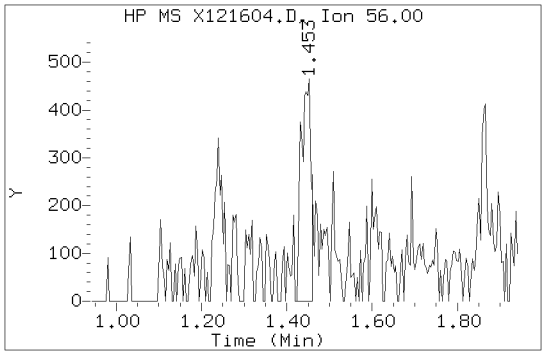
BEFORE

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



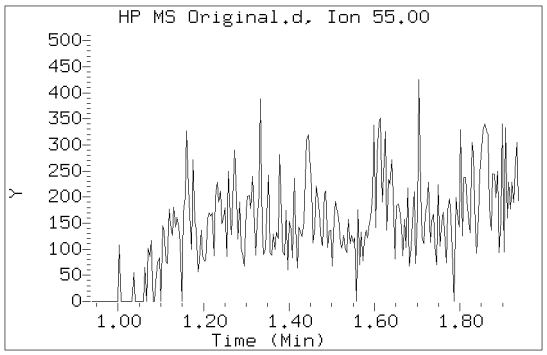
AFTER

MASS
56
AREA
761
HEIGHT
465
27-Dec-2022
16:07
linh
pham



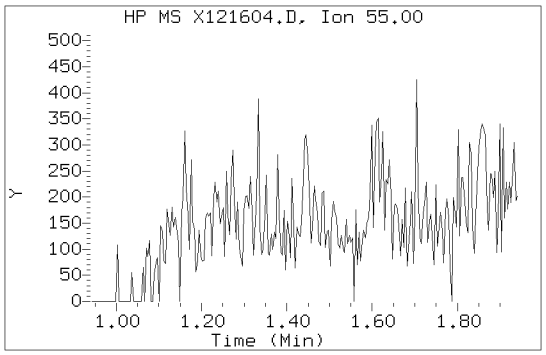
BEFORE

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

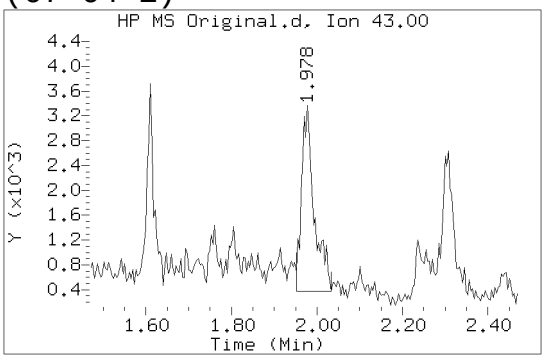


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

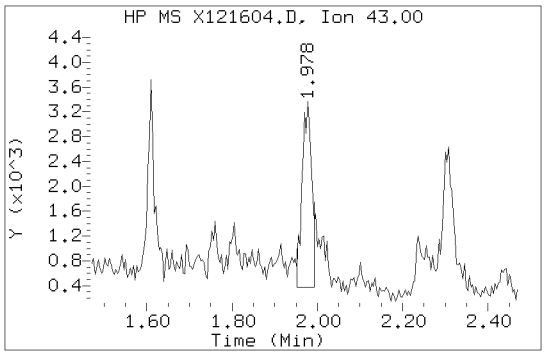
Acetone (67-64-1)

Reason Code:

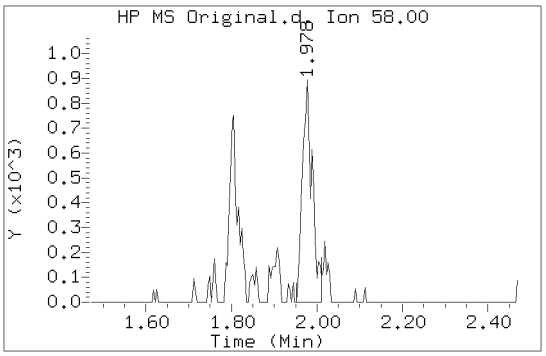
BEFORE
MASS
43
AREA
6265
HEIGHT
2993
27-Dec-2022
16:03
linh
pham



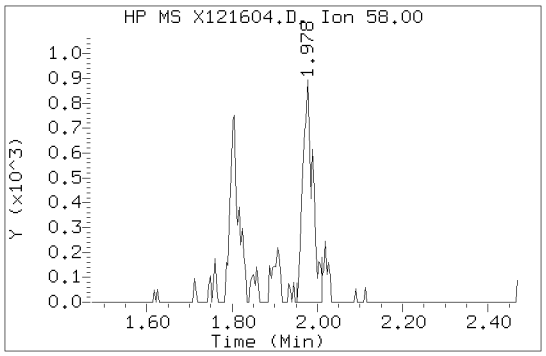
AFTER
MASS
43
AREA
4787
HEIGHT
2993
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
58
AREA
1474
HEIGHT
894
27-Dec-2022
16:03
linh
pham



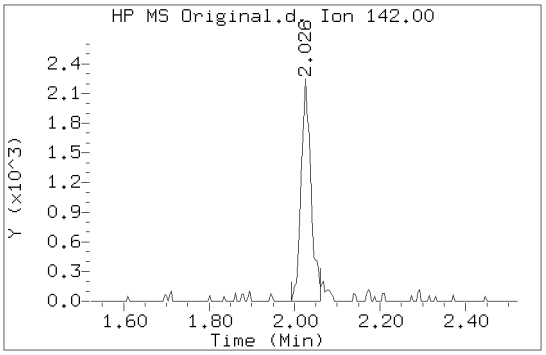
AFTER
MASS
58
AREA
1474
HEIGHT
894
27-Dec-2022
16:07
linh
pham



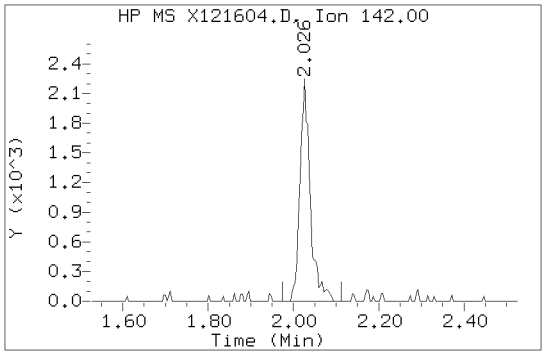
Iodomethane (74-88-4)

Reason Code:

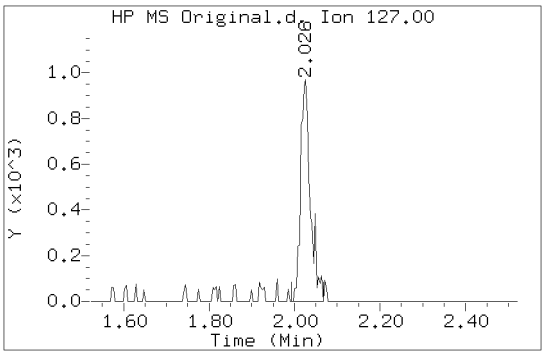
BEFORE
MASS
142
AREA
3661
HEIGHT
2248
27-Dec-2022
16:03
linh
pham



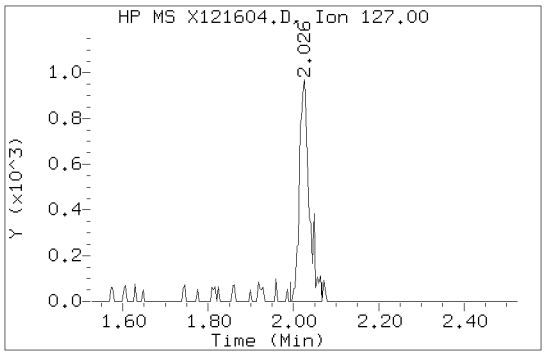
AFTER
MASS
142
AREA
3865
HEIGHT
2248
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
127
AREA
1585
HEIGHT
970
27-Dec-2022
16:03
linh
pham



AFTER
MASS
127
AREA
1585
HEIGHT
970
27-Dec-2022
16:07
linh
pham



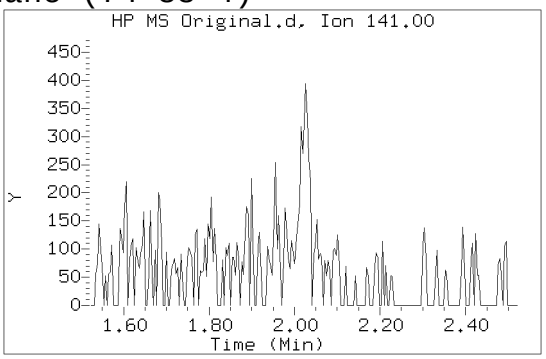
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Iodomethane (74-88-4)

Reason Code:

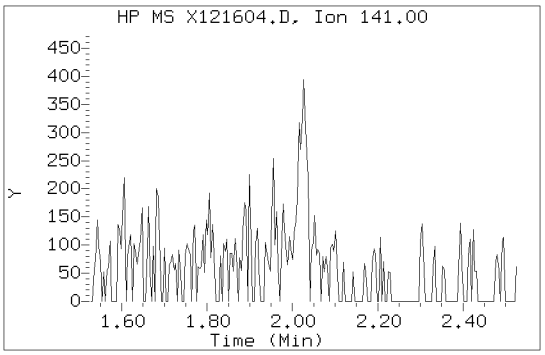
BEFORE

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

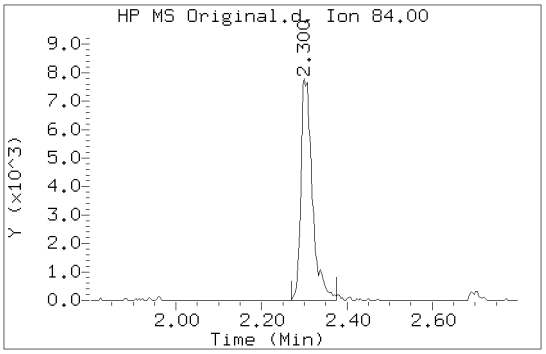


Methylene Chloride (75-09-2)

Reason Code:

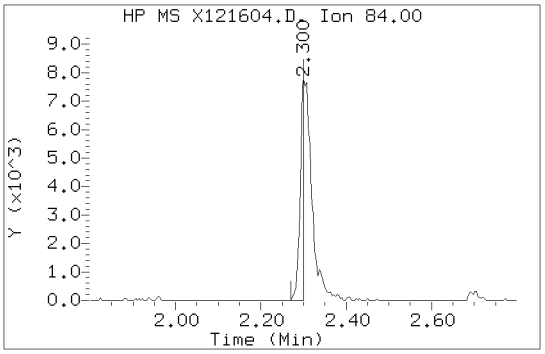
BEFORE

MASS
84
AREA
14864
HEIGHT
7788
27-Dec-2022
16:03
linh
pham



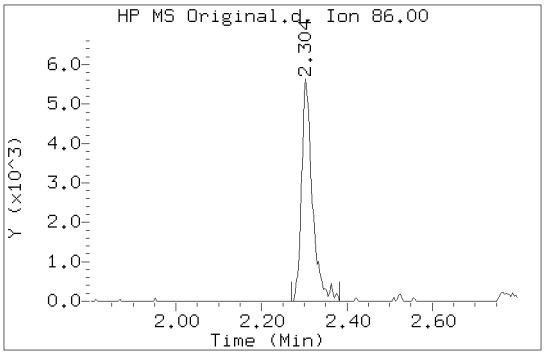
AFTER

MASS
84
AREA
5355
HEIGHT
7788
27-Dec-2022
16:07
linh
pham



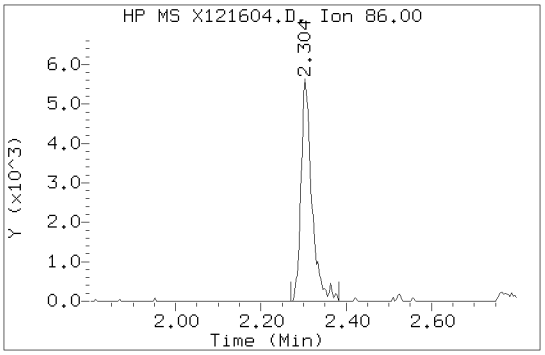
BEFORE

MASS
86
AREA
10161
HEIGHT
5637
27-Dec-2022
16:03
linh
pham



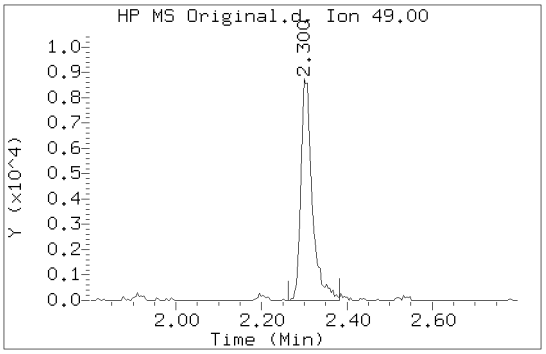
AFTER

MASS
86
AREA
10161
HEIGHT
5637
27-Dec-2022
16:07
linh
pham



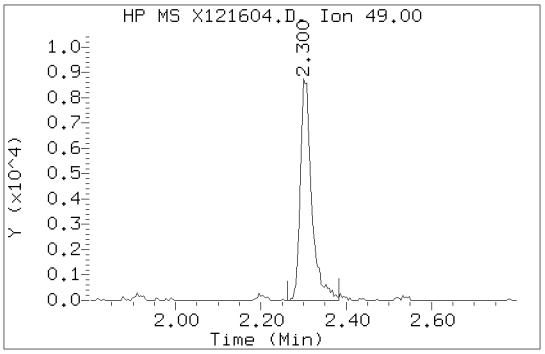
BEFORE

MASS
49
AREA
16641
HEIGHT
8752
27-Dec-2022
16:03
linh
pham



AFTER

MASS
49
AREA
16641
HEIGHT
8752
27-Dec-2022
16:07
linh
pham

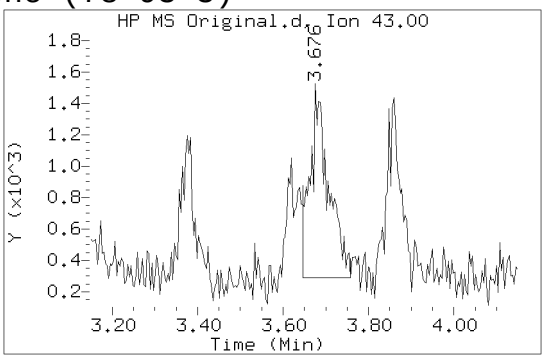


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

2-Butanone (78-93-3)

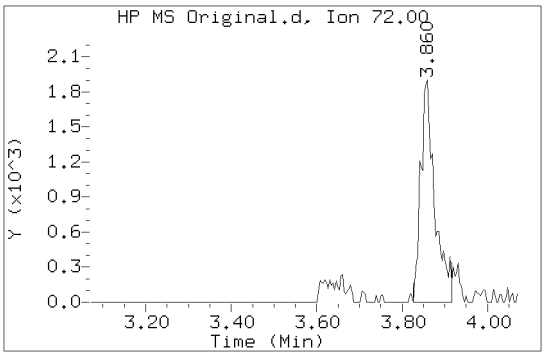
BEFORE

MASS
43
AREA
3758
HEIGHT
1236
27-Dec-2022
16:03
linh
pham



BEFORE

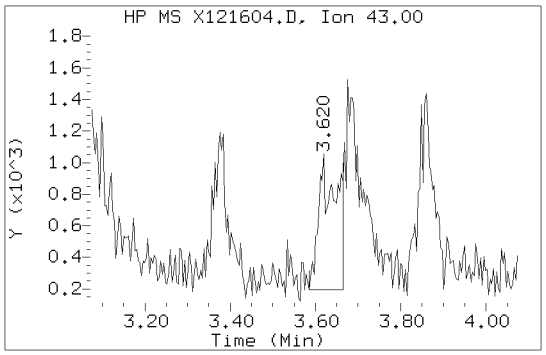
MASS
72
AREA
4320
HEIGHT
1902
27-Dec-2022
16:03
linh
pham



Reason Code:

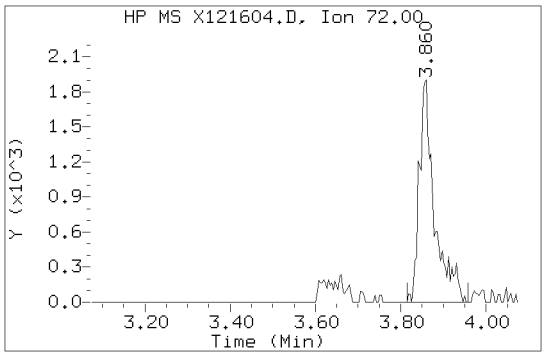
AFTER

MASS
43
AREA
2498
HEIGHT
859
27-Dec-2022
16:07
linh
pham



AFTER

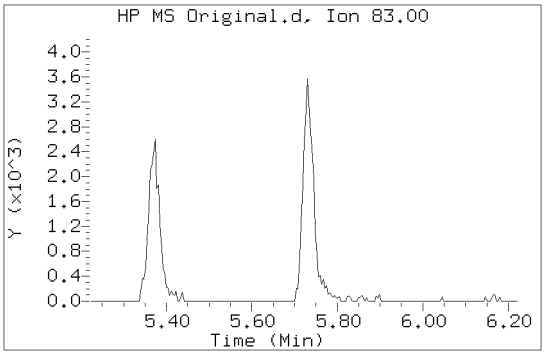
MASS
72
AREA
4690
HEIGHT
1902
27-Dec-2022
16:07
linh
pham



Bromodichloromethane (75-27-4)

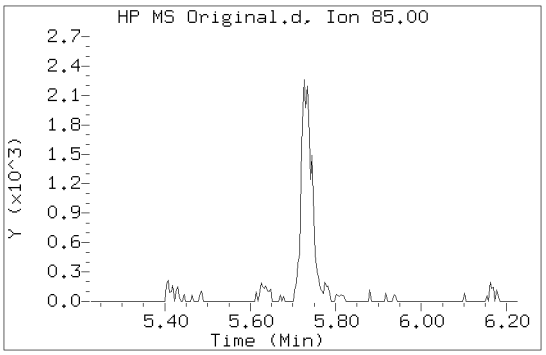
BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

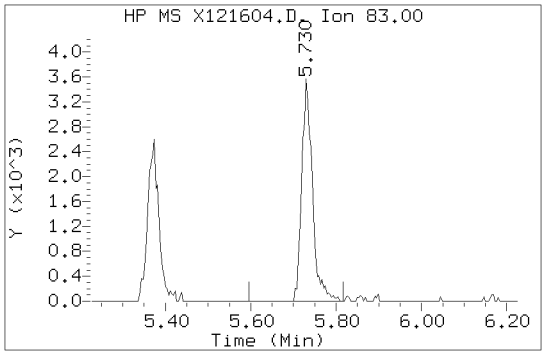
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

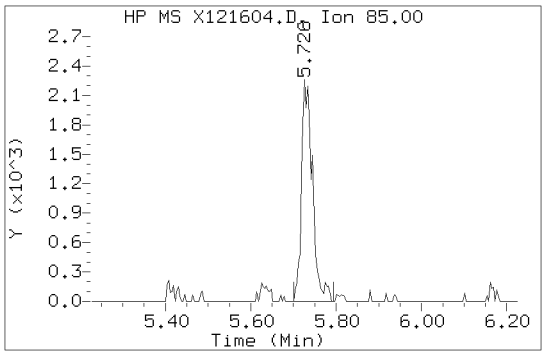
AFTER

MASS
83
AREA
6296
HEIGHT
3568
27-Dec-2022
16:07
linh
pham



AFTER

MASS
85
AREA
4084
HEIGHT
2261
27-Dec-2022
16:07
linh
pham



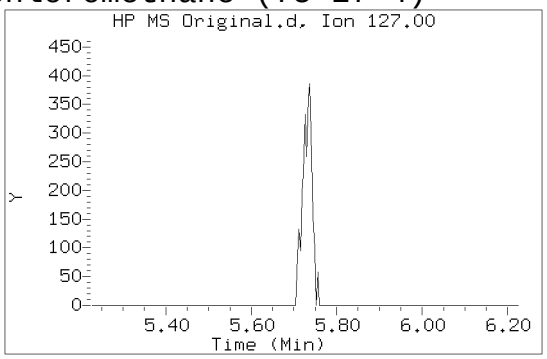
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Bromodichloromethane (75-27-4)

Reason Code:

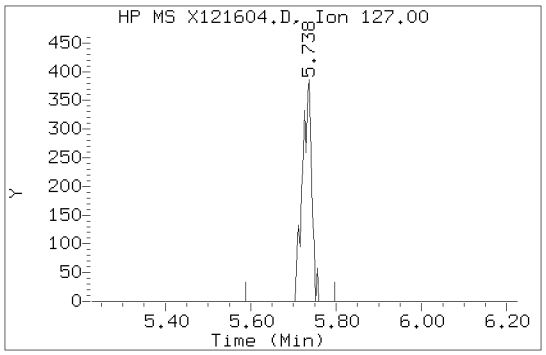
BEFORE

MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
127
AREA
595
HEIGHT
386
27-Dec-2022
16:07
linh
pham

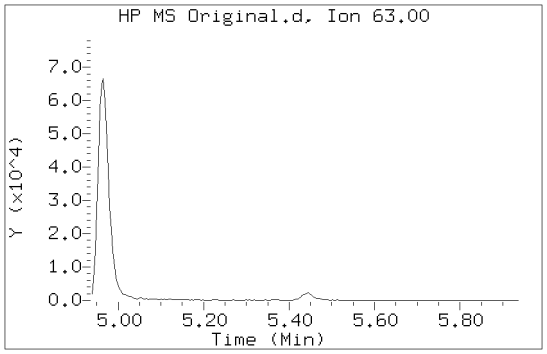


1,2-Dichloropropane (78-87-5)

Reason Code:

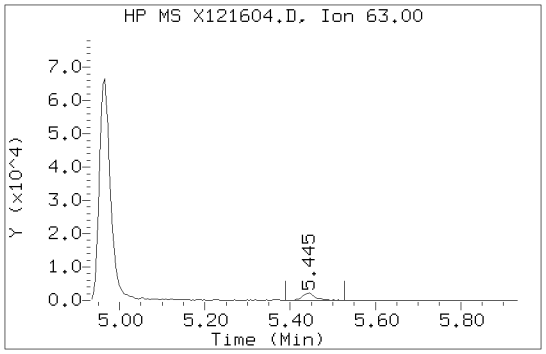
BEFORE

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



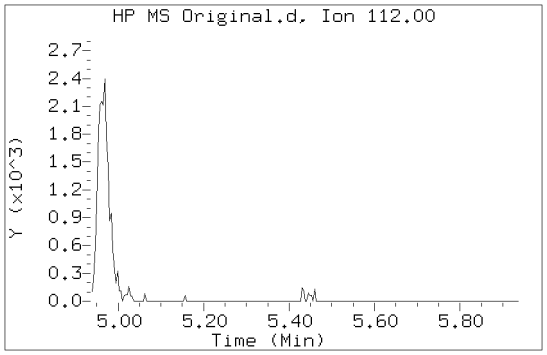
AFTER

MASS
63
AREA
4604
HEIGHT
2381
27-Dec-2022
16:07
linh
pham



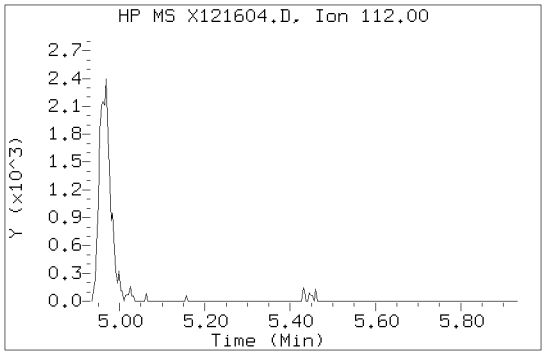
BEFORE

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

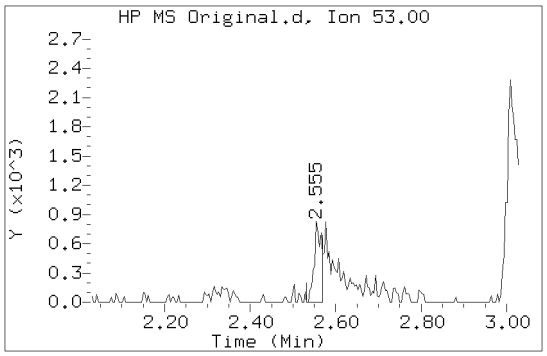


Acrylonitrile (107-13-1)

Reason Code:

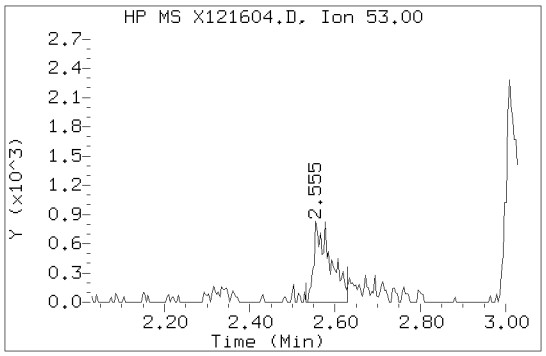
BEFORE

MASS
53
AREA
967
HEIGHT
834
27-Dec-2022
16:03
linh
pham



AFTER

MASS
53
AREA
2258
HEIGHT
834
27-Dec-2022
16:07
linh
pham



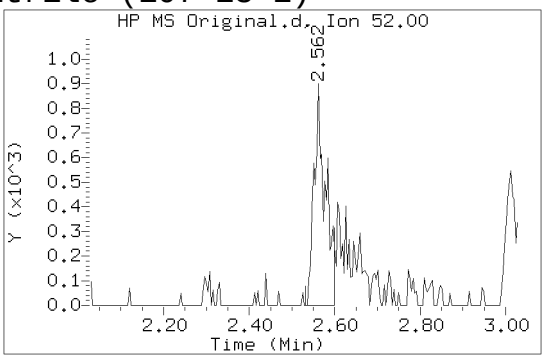
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Acrylonitrile (107-13-1)

Reason Code:

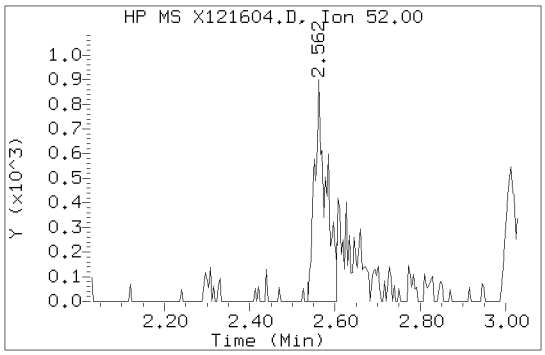
BEFORE

MASS
52
AREA
1657
HEIGHT
900
27-Dec-2022
16:03
linh
pham



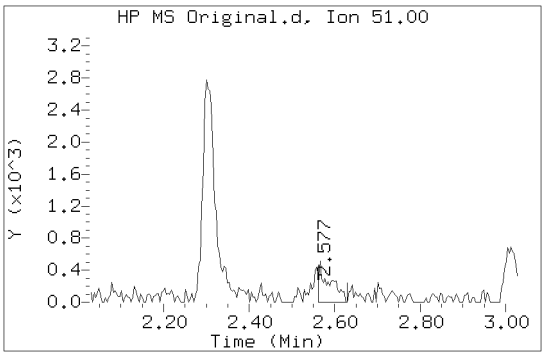
AFTER

MASS
52
AREA
1692
HEIGHT
900
27-Dec-2022
16:07
linh
pham



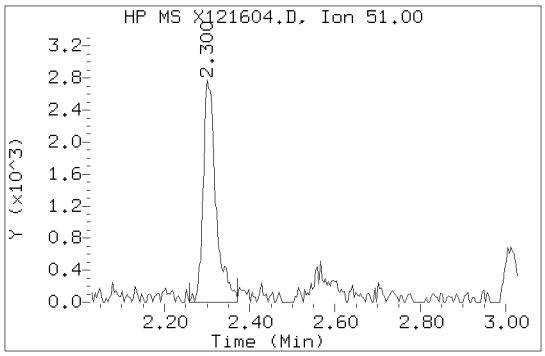
BEFORE

MASS
51
AREA
901
HEIGHT
301
27-Dec-2022
16:03
linh
pham



AFTER

MASS
51
AREA
5757
HEIGHT
2777
27-Dec-2022
16:07
linh
pham

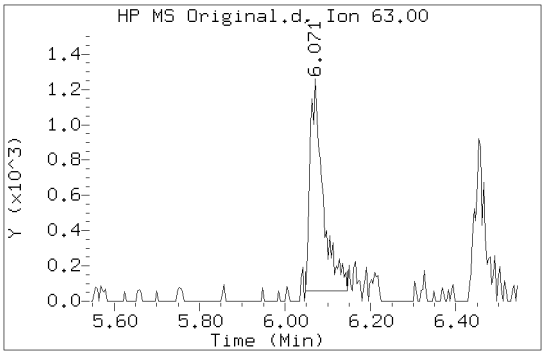


2-Chloroethylvinyl ether (110-75-8)

Reason Code:

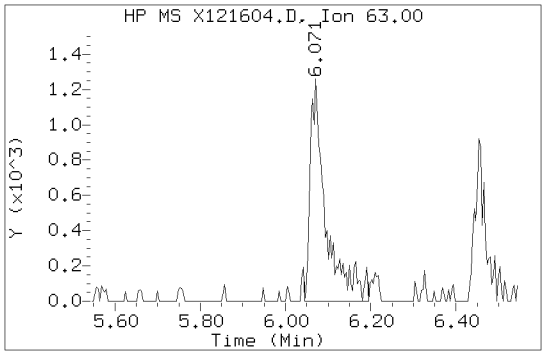
BEFORE

MASS
63
AREA
2513
HEIGHT
1202
27-Dec-2022
16:03
linh
pham



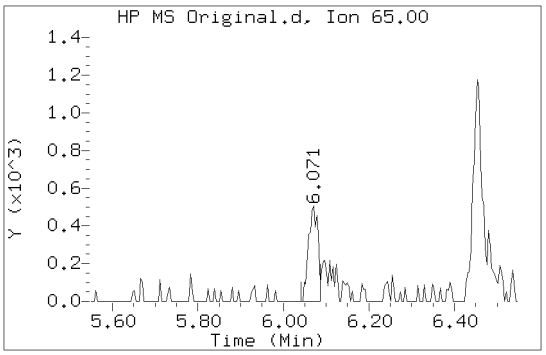
AFTER

MASS
63
AREA
3202
HEIGHT
1260
27-Dec-2022
16:07
linh
pham



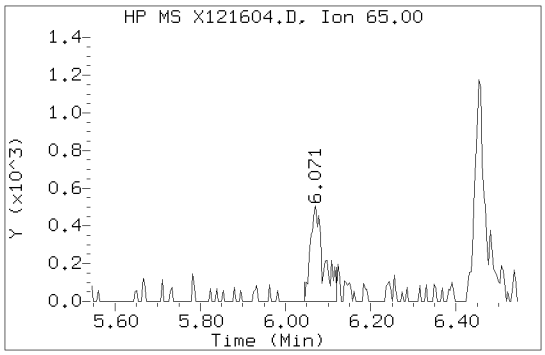
BEFORE

MASS
65
AREA
775
HEIGHT
507
27-Dec-2022
16:03
linh
pham



AFTER

MASS
65
AREA
1093
HEIGHT
507
27-Dec-2022
16:07
linh
pham



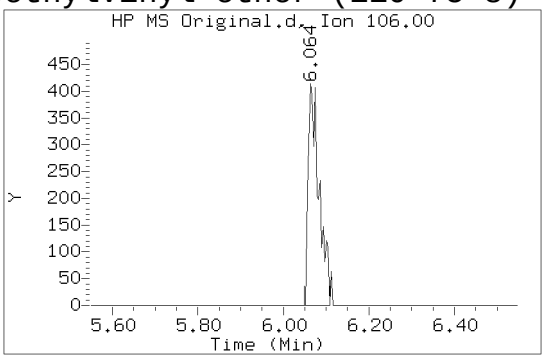
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

2-Chloroethylvinyl ether (110-75-8)

Reason Code:

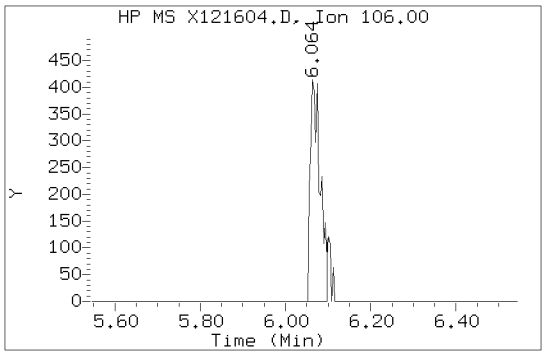
BEFORE

MASS
106
AREA
725
HEIGHT
414
27-Dec-2022
16:03
linh
pham



AFTER

MASS
106
AREA
673
HEIGHT
414
27-Dec-2022
16:07
linh
pham

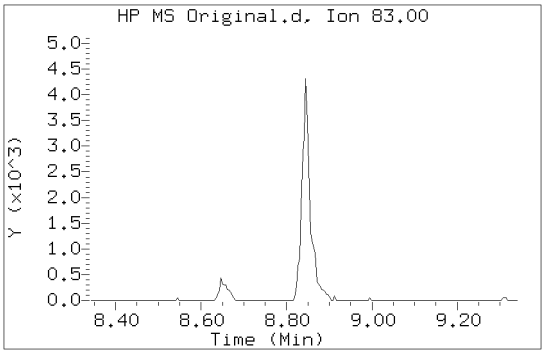


1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

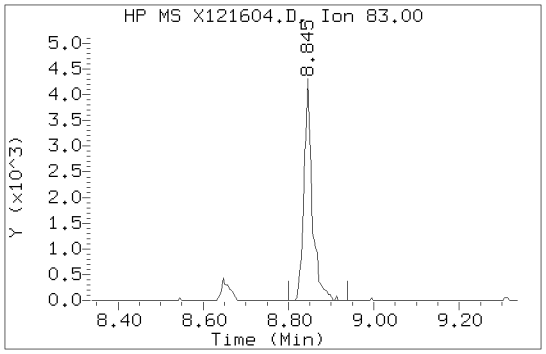
BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



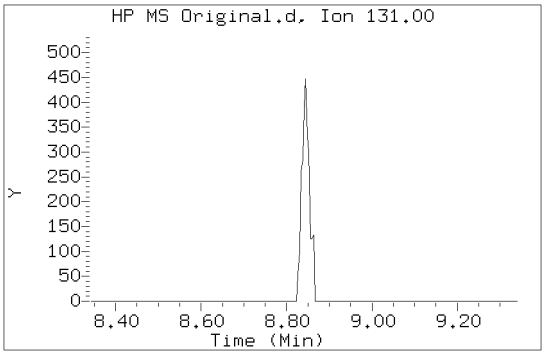
AFTER

MASS
83
AREA
5934
HEIGHT
4312
27-Dec-2022
16:07
linh
pham



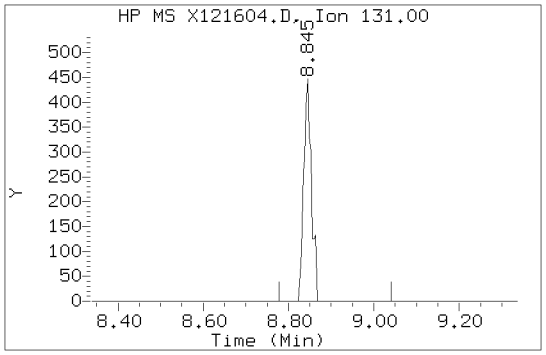
BEFORE

MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



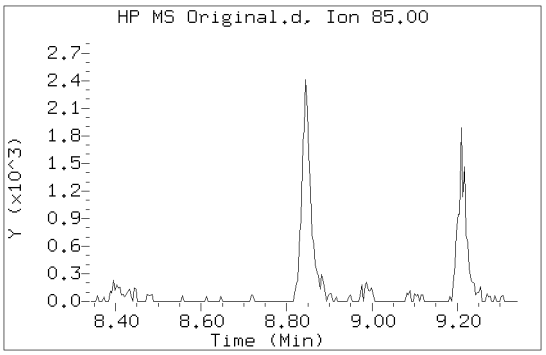
AFTER

MASS
131
AREA
574
HEIGHT
447
27-Dec-2022
16:07
linh
pham



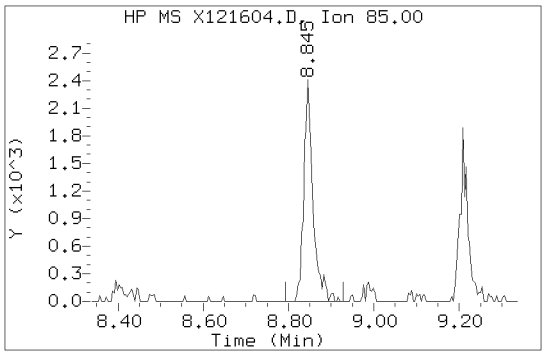
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
3682
HEIGHT
2411
27-Dec-2022
16:07
linh
pham

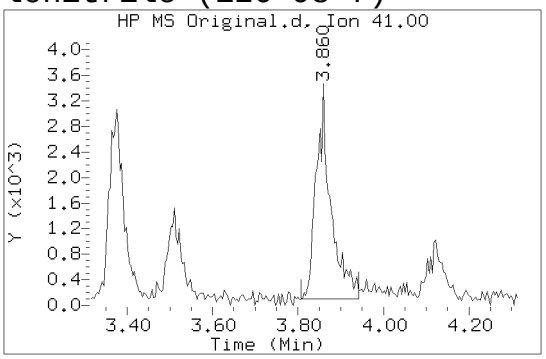


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

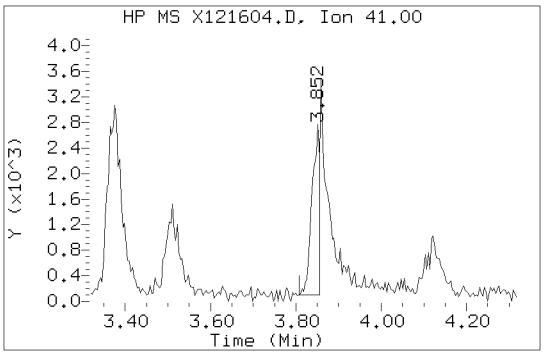
Methacrylonitrile (126-98-7)

Reason Code:

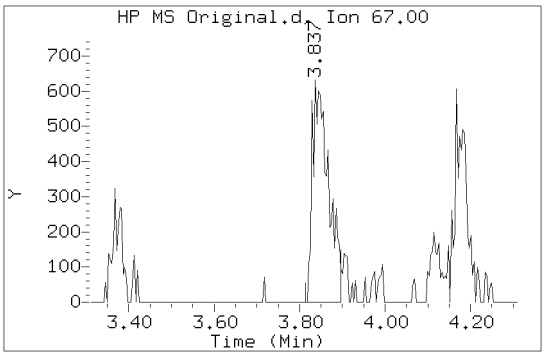
BEFORE
MASS
41
AREA
7966
HEIGHT
3370
27-Dec-2022
16:03
linh
pham



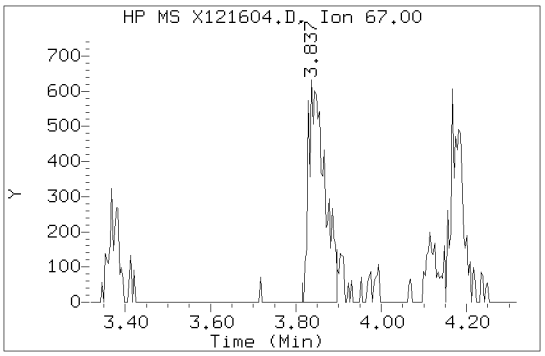
AFTER
MASS
41
AREA
3285
HEIGHT
2668
27-Dec-2022
16:07
linh
pham



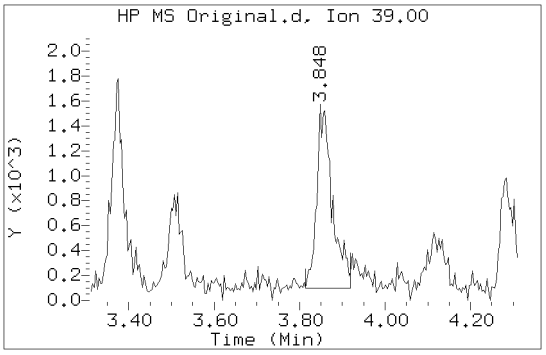
BEFORE
MASS
67
AREA
1649
HEIGHT
632
27-Dec-2022
16:03
linh
pham



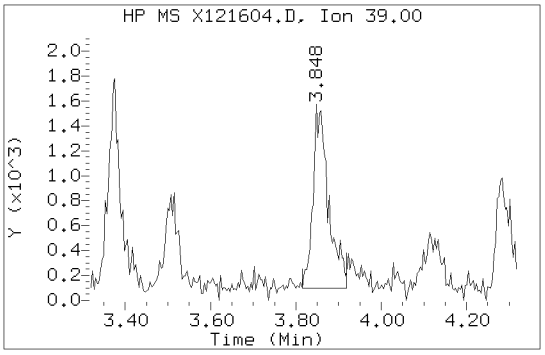
AFTER
MASS
67
AREA
1649
HEIGHT
632
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
39
AREA
3700
HEIGHT
1473
27-Dec-2022
16:03
linh
pham



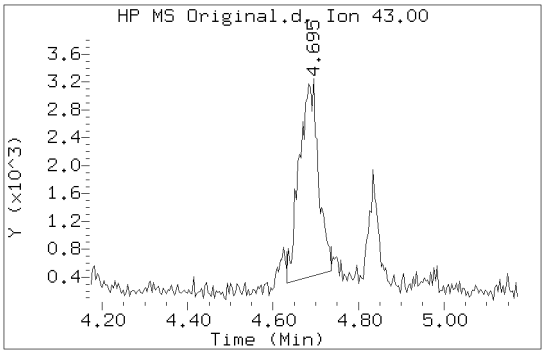
AFTER
MASS
39
AREA
3700
HEIGHT
1473
27-Dec-2022
16:07
linh
pham



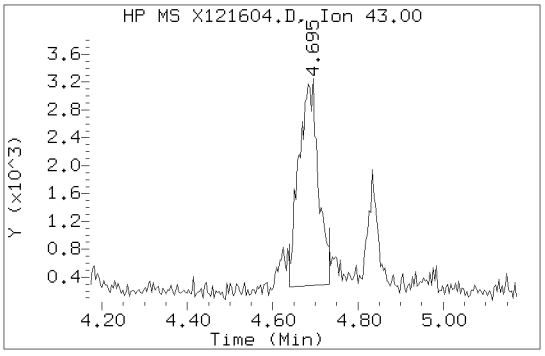
Isobutyl Alcohol (78-83-1)

Reason Code:

BEFORE
MASS
43
AREA
8847
HEIGHT
2826
27-Dec-2022
16:03
linh
pham



AFTER
MASS
43
AREA
9436
HEIGHT
2966
27-Dec-2022
16:07
linh
pham

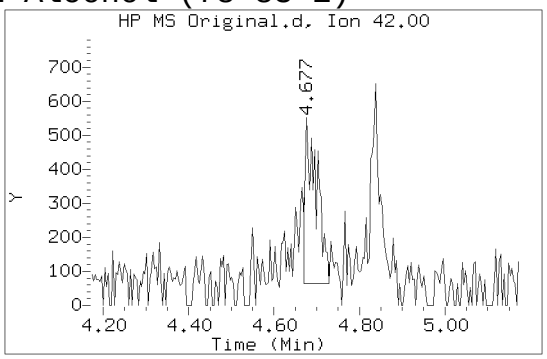


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Isobutyl Alcohol (78-83-1)

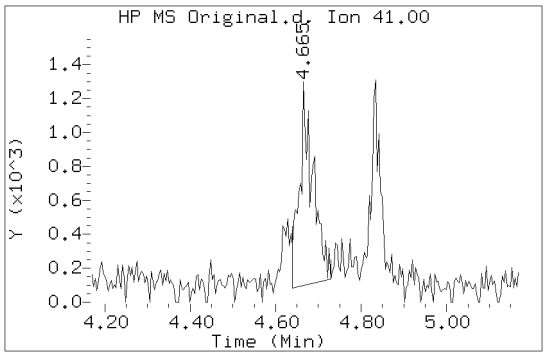
BEFORE

MASS
42
AREA
953
HEIGHT
488
27-Dec-2022
16:03
linh
pham



BEFORE

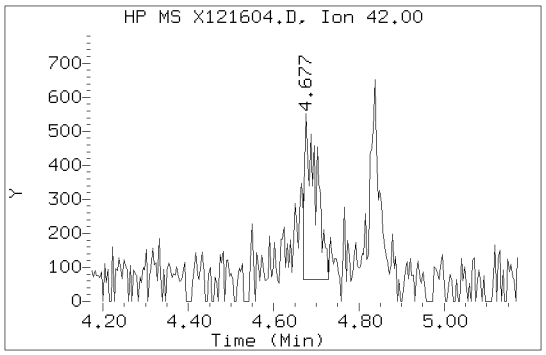
MASS
41
AREA
2650
HEIGHT
1200
27-Dec-2022
16:03
linh
pham



Reason Code:

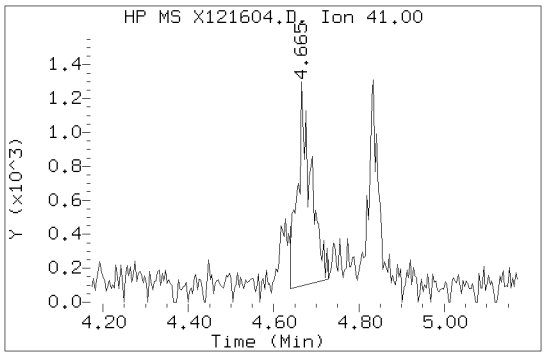
AFTER

MASS
42
AREA
953
HEIGHT
488
27-Dec-2022
16:07
linh
pham



AFTER

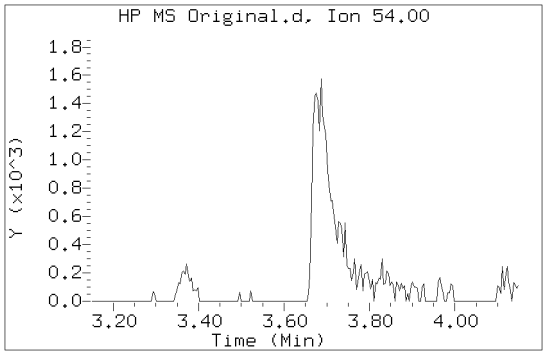
MASS
41
AREA
2656
HEIGHT
1201
27-Dec-2022
16:07
linh
pham



Propionitrile (107-12-0)

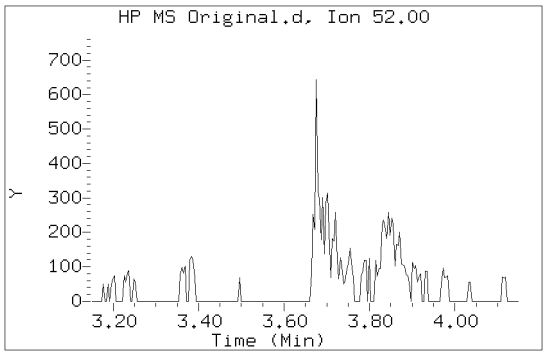
BEFORE

MASS
54
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

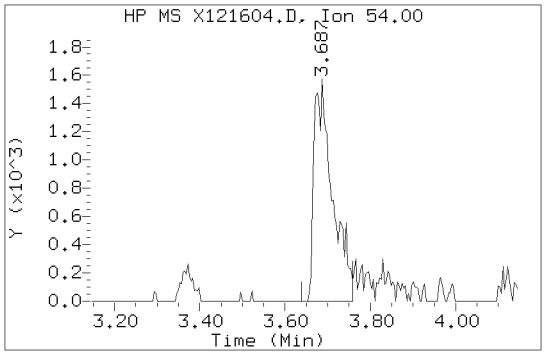
MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

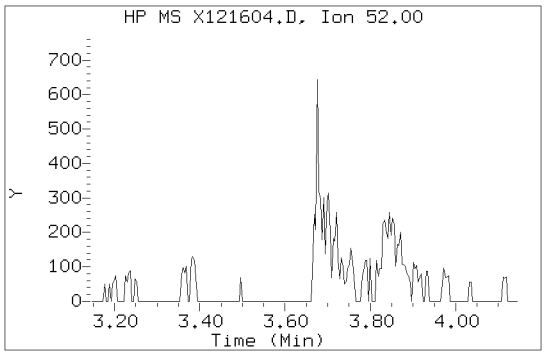
AFTER

MASS
54
AREA
4742
HEIGHT
1574
27-Dec-2022
16:07
linh
pham



AFTER

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



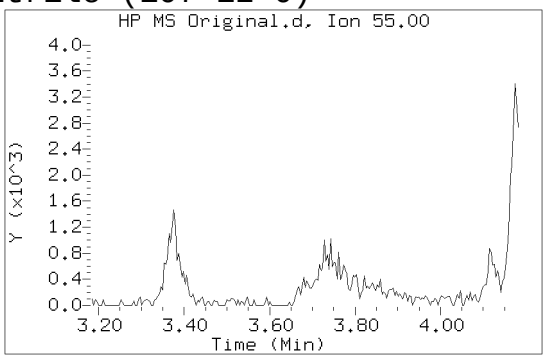
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Propionitrile (107-12-0)

Reason Code:

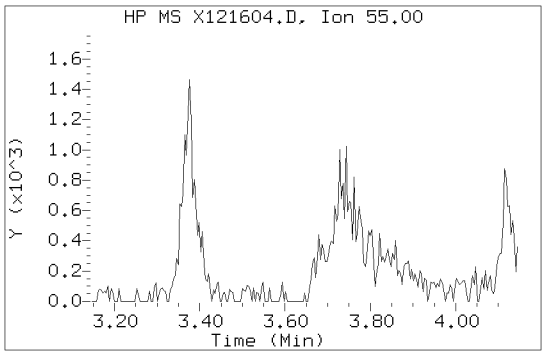
BEFORE

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

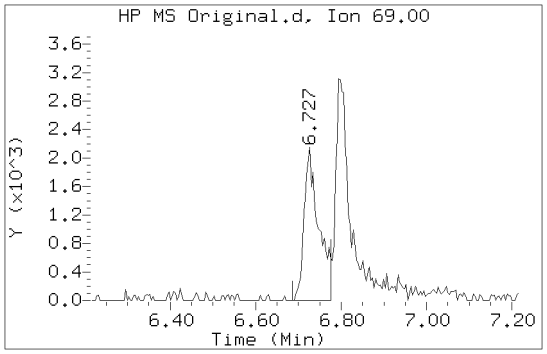


Ethyl Methacrylate (97-63-2)

Reason Code:

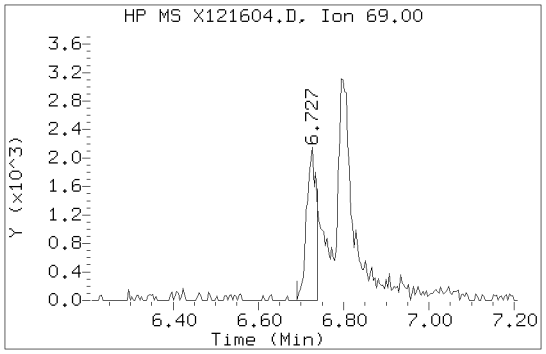
BEFORE

MASS
69
AREA
5177
HEIGHT
2156
27-Dec-2022
16:03
linh
pham



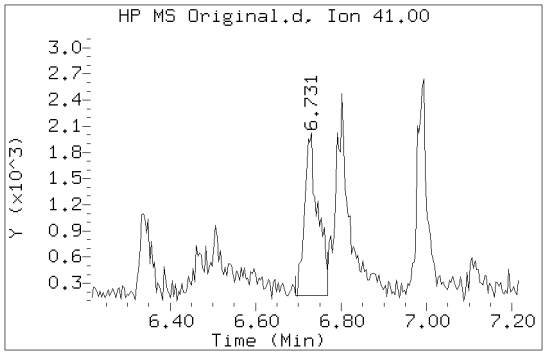
AFTER

MASS
69
AREA
3303
HEIGHT
2156
27-Dec-2022
16:07
linh
pham



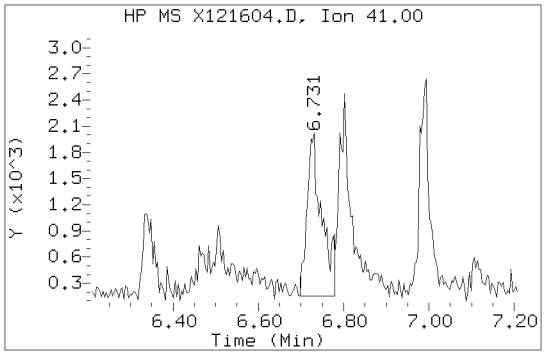
BEFORE

MASS
41
AREA
4059
HEIGHT
1867
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
4485
HEIGHT
1872
27-Dec-2022
16:07
linh
pham

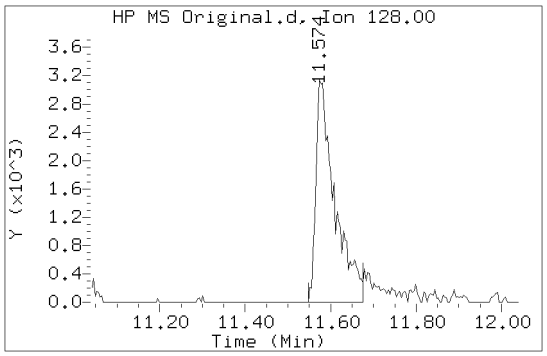


Naphthalene (91-20-3)

Reason Code:

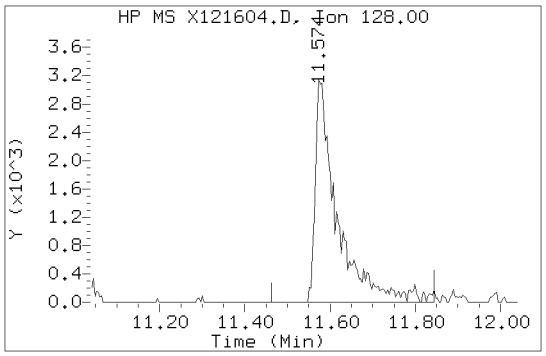
BEFORE

MASS
128
AREA
9627
HEIGHT
3139
27-Dec-2022
16:03
linh
pham



AFTER

MASS
128
AREA
11288
HEIGHT
3139
27-Dec-2022
16:07
linh
pham



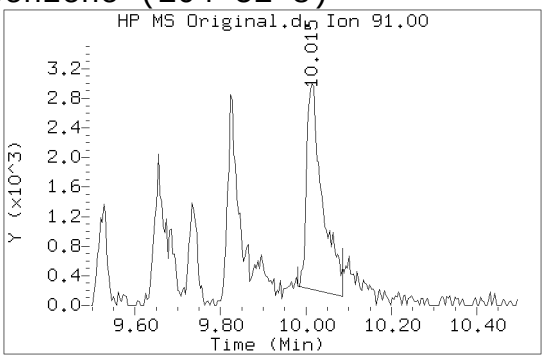
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

n-Butylbenzene (104-51-8)

Reason Code:

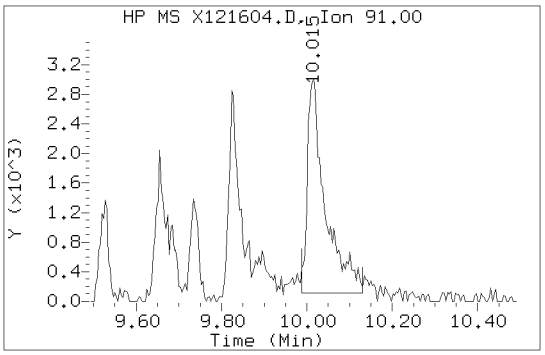
BEFORE

MASS
91
AREA
7194
HEIGHT
2783
27-Dec-2022
16:03
linh
pham



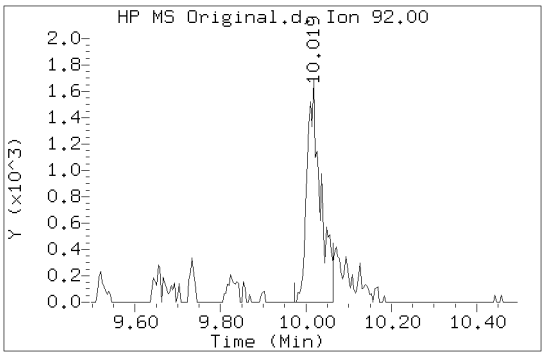
AFTER

MASS
91
AREA
8459
HEIGHT
2887
27-Dec-2022
16:07
linh
pham



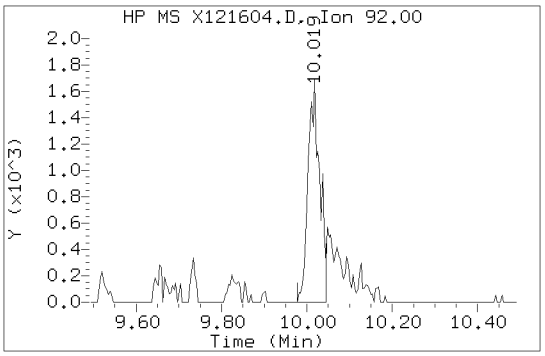
BEFORE

MASS
92
AREA
3696
HEIGHT
1686
27-Dec-2022
16:03
linh
pham



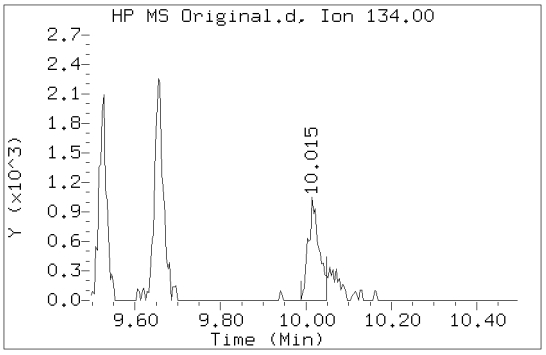
AFTER

MASS
92
AREA
3188
HEIGHT
1686
27-Dec-2022
16:07
linh
pham



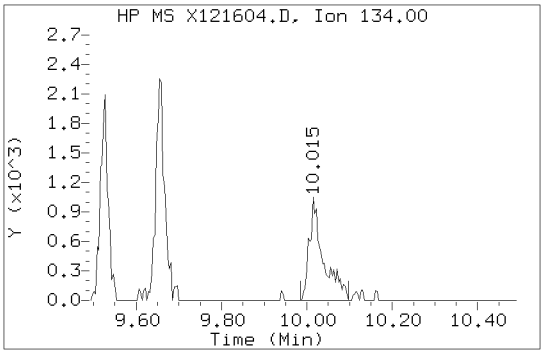
BEFORE

MASS
134
AREA
1829
HEIGHT
1051
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
2397
HEIGHT
1051
27-Dec-2022
16:07
linh
pham

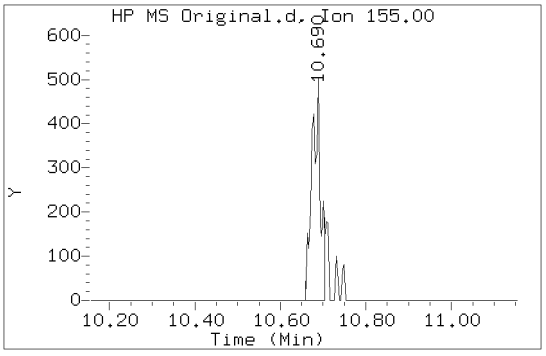


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

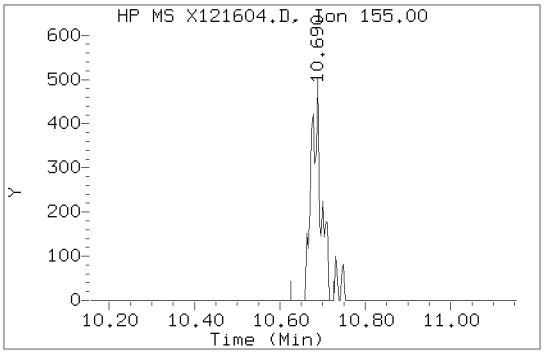
BEFORE

MASS
155
AREA
699
HEIGHT
502
27-Dec-2022
16:03
linh
pham



AFTER

MASS
155
AREA
778
HEIGHT
502
27-Dec-2022
16:07
linh
pham



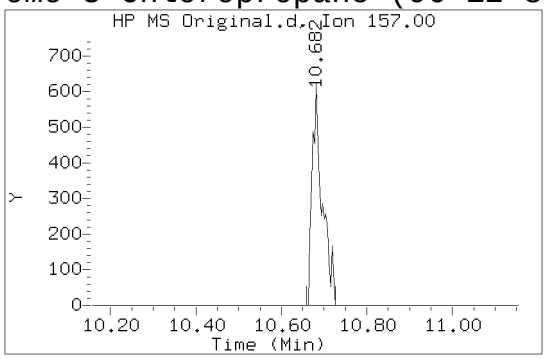
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

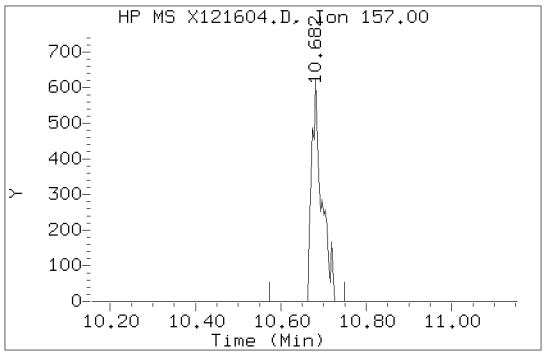
BEFORE

MASS
157
AREA
1023
HEIGHT
622
27-Dec-2022
16:03
linh
pham



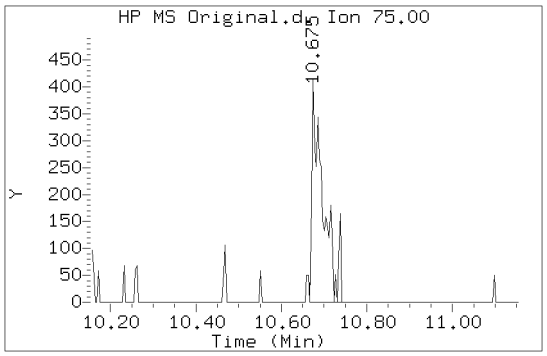
AFTER

MASS
157
AREA
1023
HEIGHT
622
27-Dec-2022
16:07
linh
pham



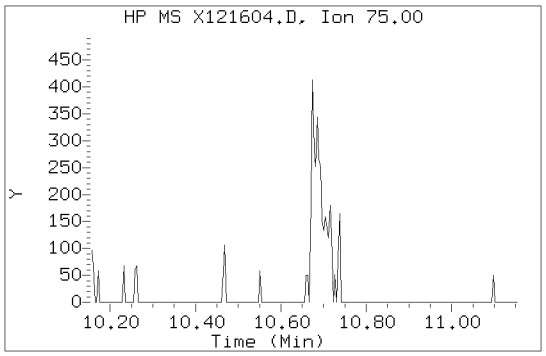
BEFORE

MASS
75
AREA
742
HEIGHT
413
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

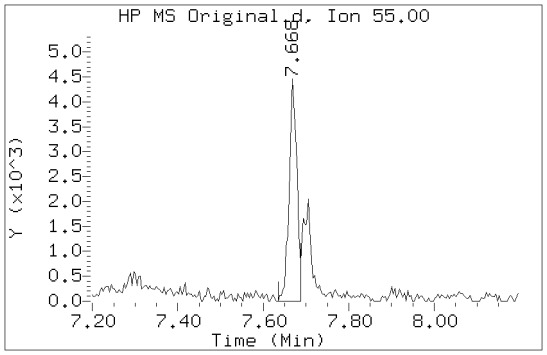


1-Chlorohexane (544-10-5)

Reason Code:

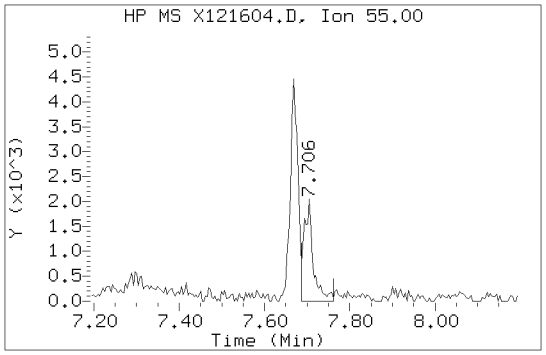
BEFORE

MASS
55
AREA
5660
HEIGHT
4460
27-Dec-2022
16:03
linh
pham



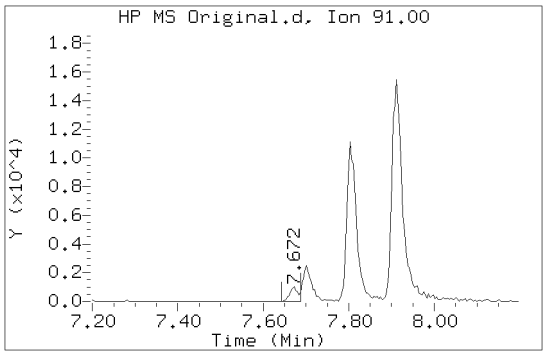
AFTER

MASS
55
AREA
3155
HEIGHT
2048
27-Dec-2022
16:07
linh
pham



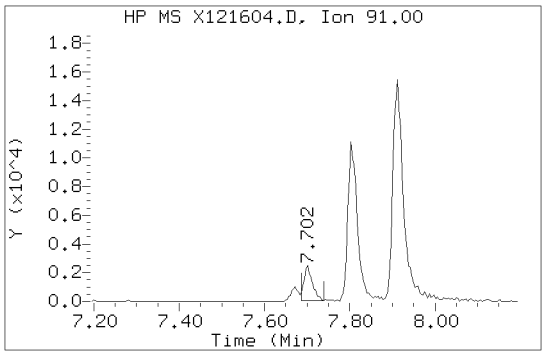
BEFORE

MASS
91
AREA
1392
HEIGHT
1029
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
3448
HEIGHT
2478
27-Dec-2022
16:07
linh
pham

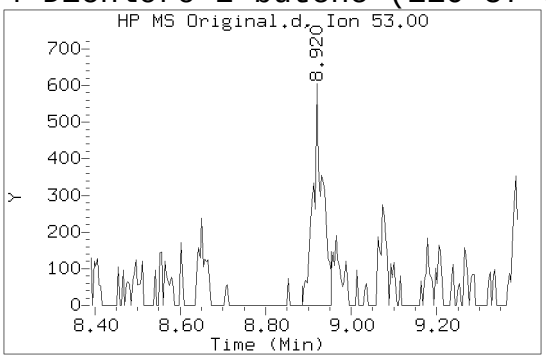


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

trans-1,4-Dichloro-2-butene (110-57-6)

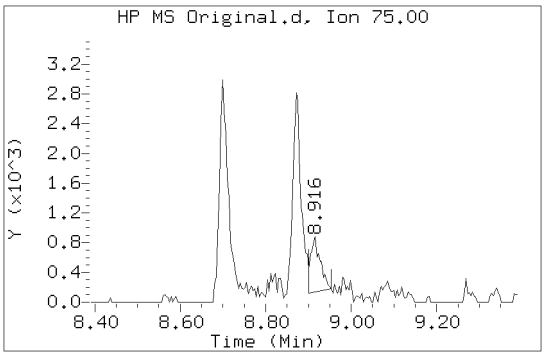
BEFORE

MASS
53
AREA
956
HEIGHT
605
27-Dec-2022
16:03
linh
pham



BEFORE

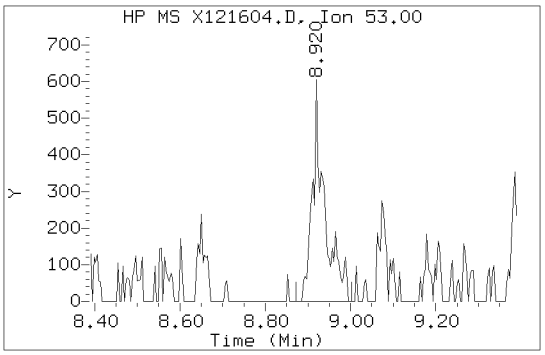
MASS
75
AREA
1166
HEIGHT
745
27-Dec-2022
16:03
linh
pham



Reason Code:

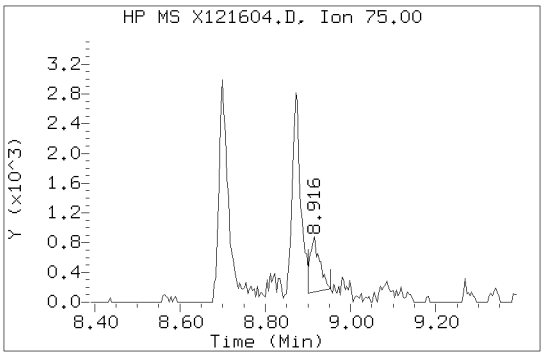
AFTER

MASS
53
AREA
1196
HEIGHT
605
27-Dec-2022
16:07
linh
pham



AFTER

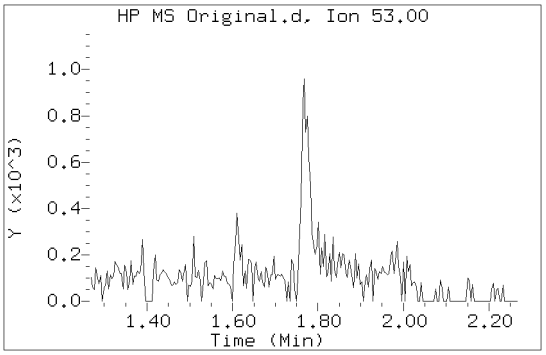
MASS
75
AREA
1166
HEIGHT
745
27-Dec-2022
16:07
linh
pham



Chloroprene (126-99-8)

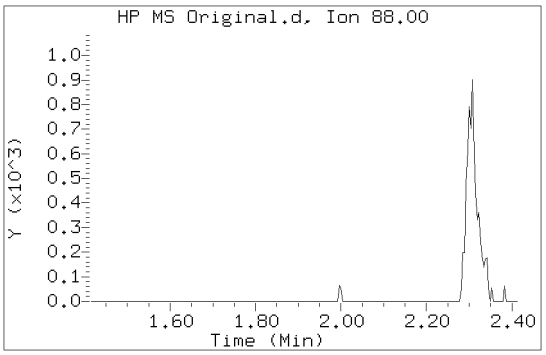
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

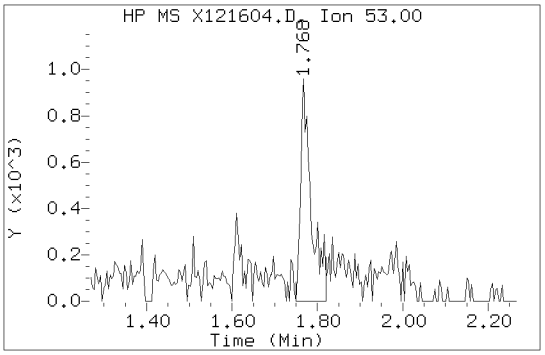
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

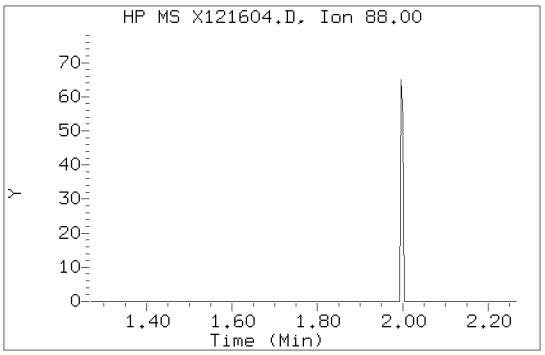
AFTER

MASS
53
AREA
1686
HEIGHT
959
27-Dec-2022
16:07
linh
pham



AFTER

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

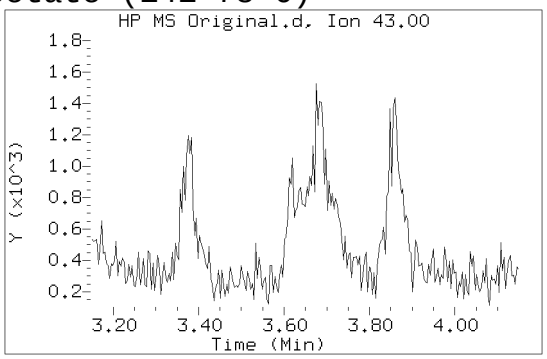


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

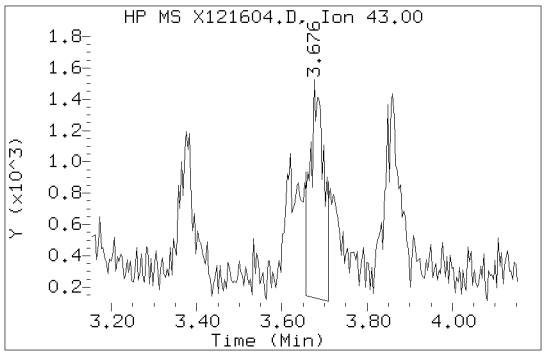
Ethyl Acetate (141-78-6)

Reason Code:

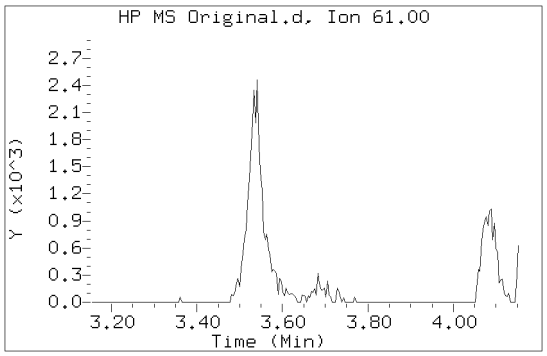
BEFORE
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



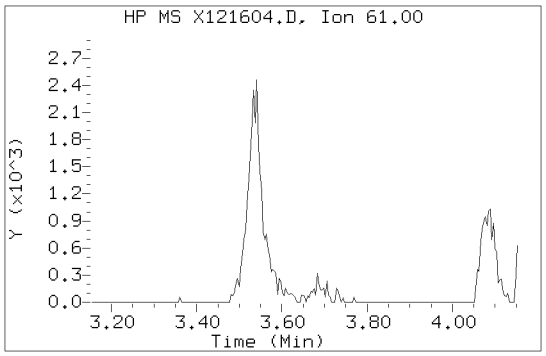
AFTER
MASS
43
AREA
3144
HEIGHT
1392
27-Dec-2022
16:07
linh
pham



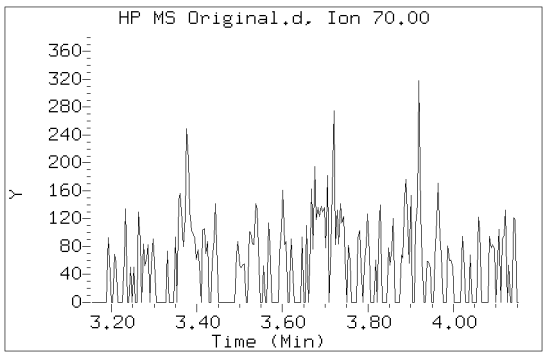
BEFORE
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



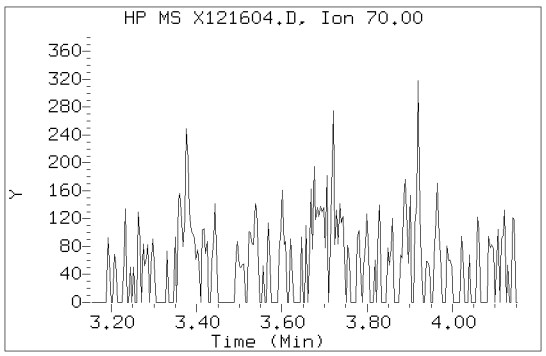
AFTER
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



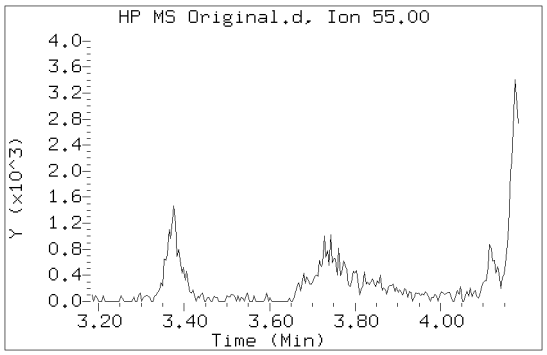
AFTER
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



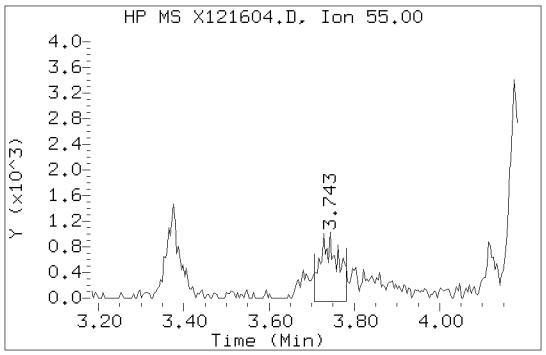
Methyl Acrylate (96-33-3)

Reason Code:

BEFORE
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
55
AREA
3084
HEIGHT
1078
27-Dec-2022
16:07
linh
pham



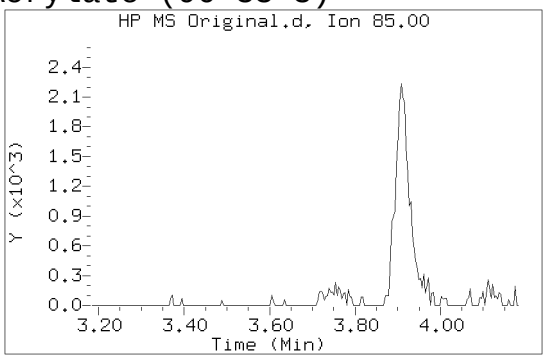
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Methyl Acrylate (96-33-3)

Reason Code:

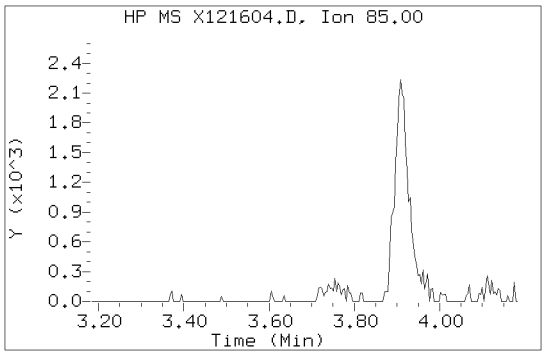
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

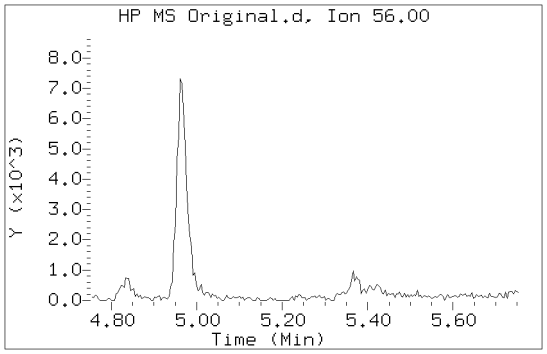


n-Butanol (71-36-3)

Reason Code:

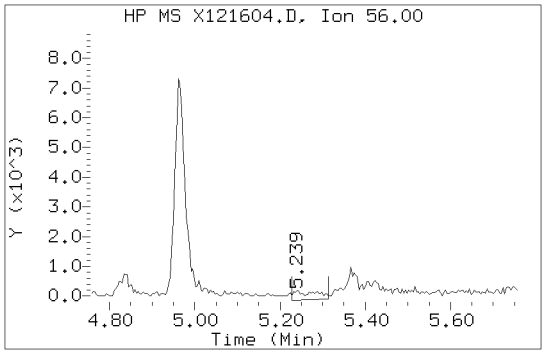
BEFORE

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



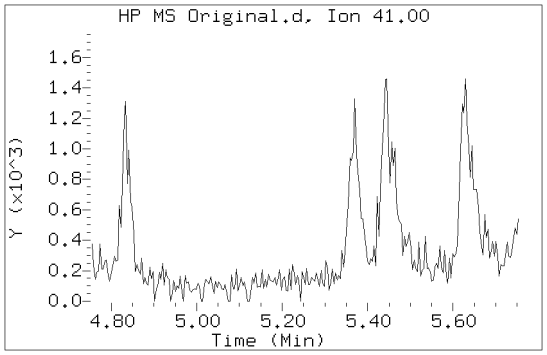
AFTER

MASS
56
AREA
1171
HEIGHT
317
27-Dec-2022
16:07
linh
pham



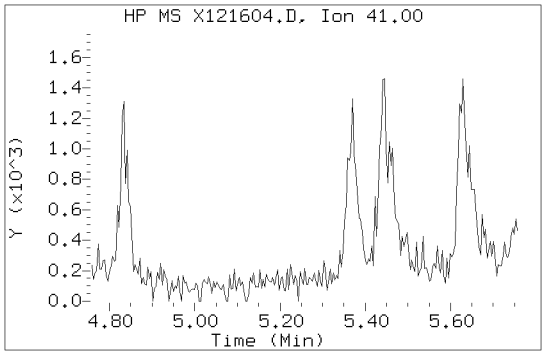
BEFORE

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

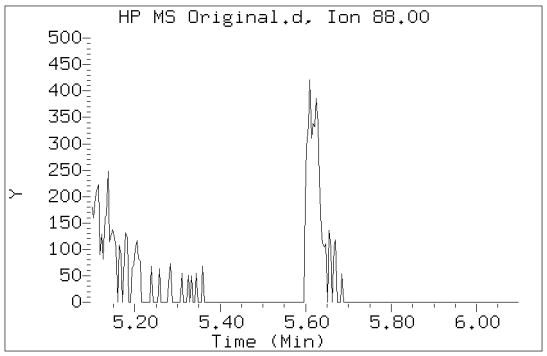


1,4-Dioxane ()

Reason Code:

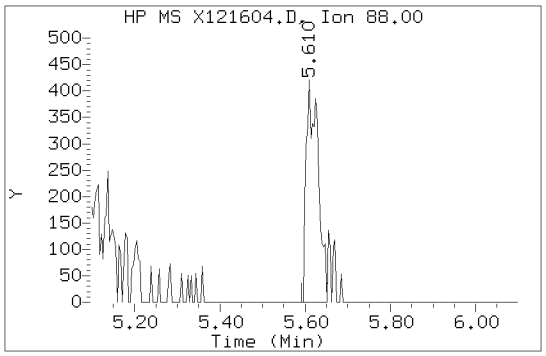
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
88
AREA
820
HEIGHT
421
27-Dec-2022
16:07
linh
pham



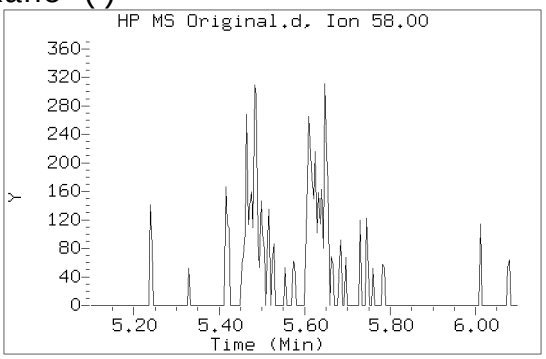
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

1,4-Dioxane ()

Reason Code:

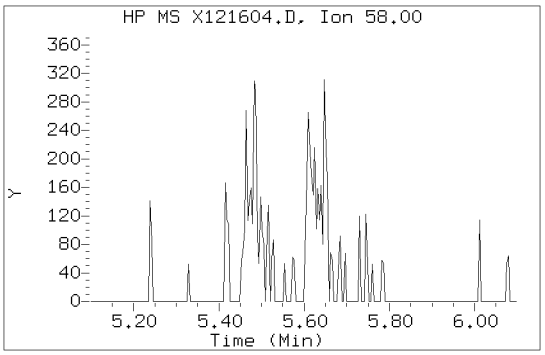
BEFORE

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

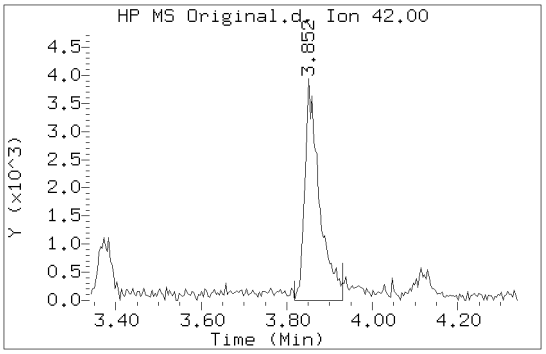


Tetrahydrofuran (109-99-9)

Reason Code:

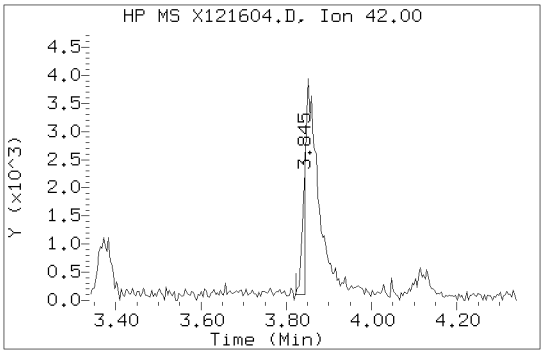
BEFORE

MASS
42
AREA
9396
HEIGHT
3939
27-Dec-2022
16:03
linh
pham



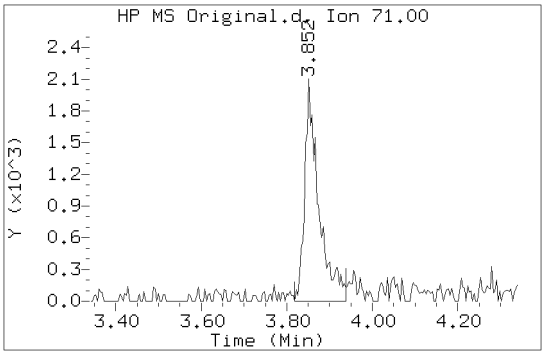
AFTER

MASS
42
AREA
1361
HEIGHT
2190
27-Dec-2022
16:07
linh
pham



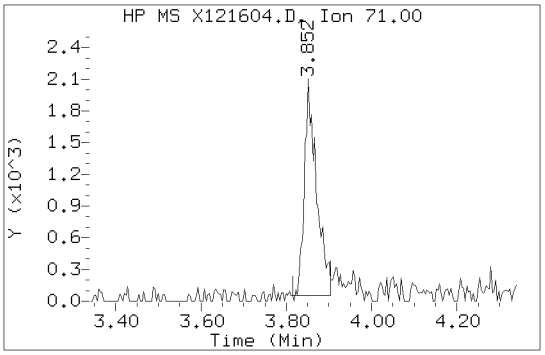
BEFORE

MASS
71
AREA
4781
HEIGHT
2103
27-Dec-2022
16:03
linh
pham



AFTER

MASS
71
AREA
4046
HEIGHT
2046
27-Dec-2022
16:07
linh
pham

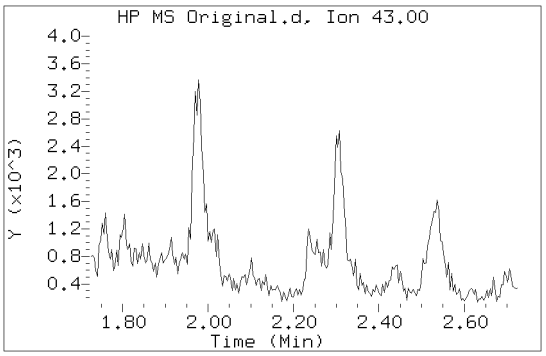


Methyl Acetate (79-20-9)

Reason Code:

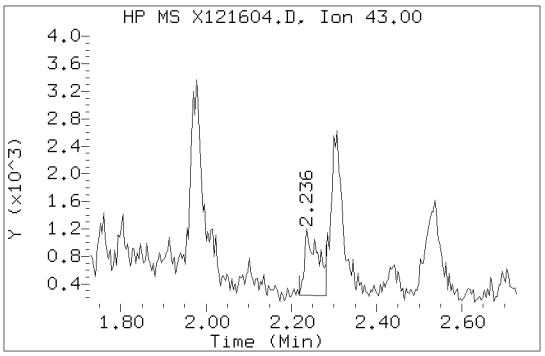
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
2127
HEIGHT
968
27-Dec-2022
16:07
linh
pham

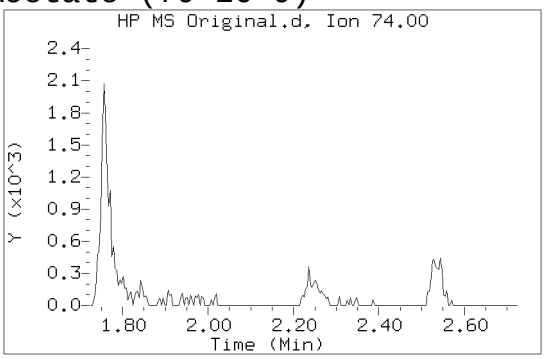


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Methyl Acetate (79-20-9)

BEFORE

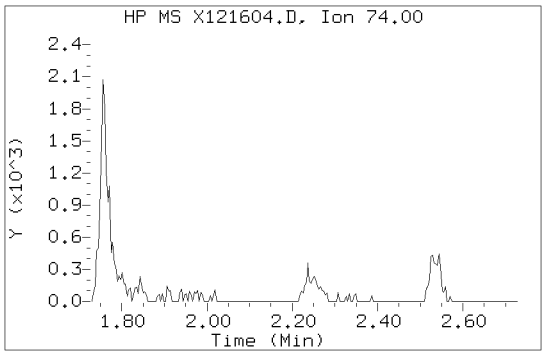
MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

AFTER

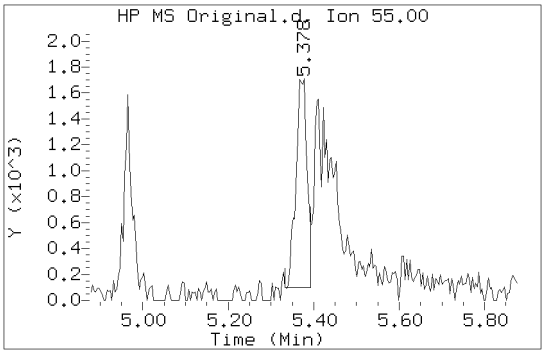
MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



Methylcyclohexane (108-87-2)

BEFORE

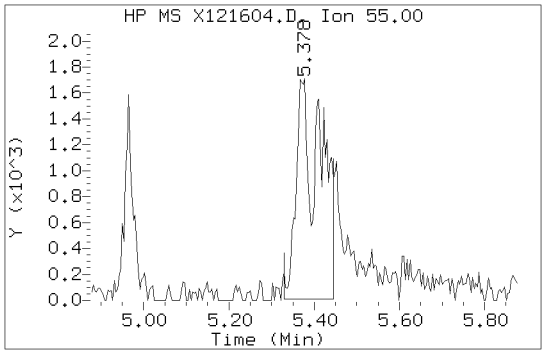
MASS
55
AREA
2998
HEIGHT
1612
27-Dec-2022
16:03
linh
pham



Reason Code:

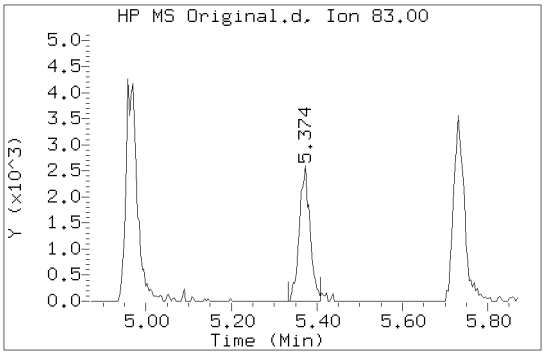
AFTER

MASS
55
AREA
6848
HEIGHT
1699
27-Dec-2022
16:07
linh
pham



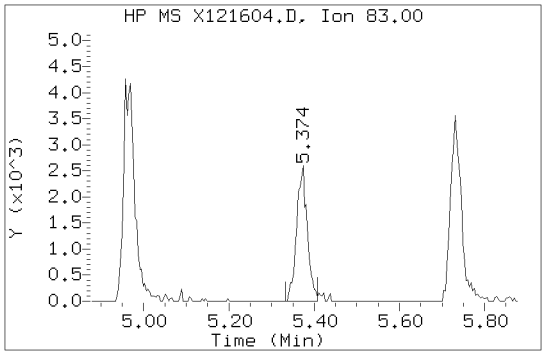
BEFORE

MASS
83
AREA
4577
HEIGHT
2601
27-Dec-2022
16:03
linh
pham



AFTER

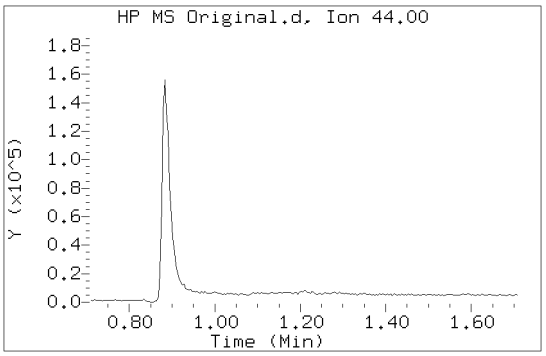
MASS
83
AREA
4577
HEIGHT
2601
27-Dec-2022
16:07
linh
pham



Acetaldehyde (75-07-0)

BEFORE

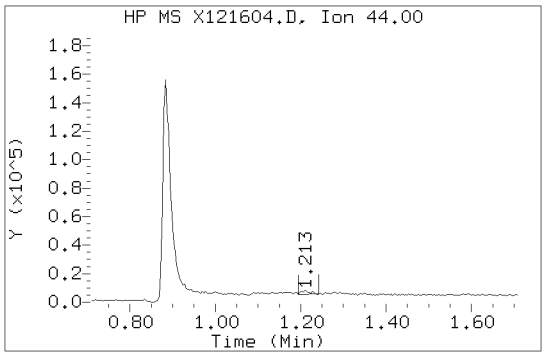
MASS
44
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

AFTER

MASS
44
AREA
3384
HEIGHT
2655
27-Dec-2022
16:07
linh
pham

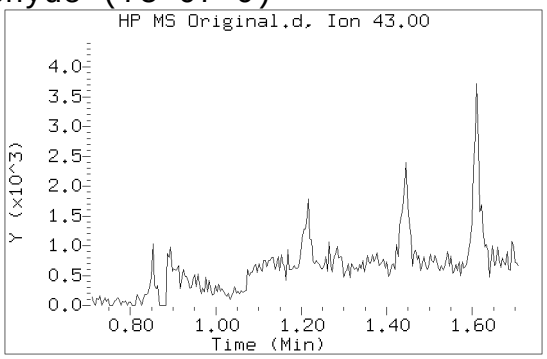


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

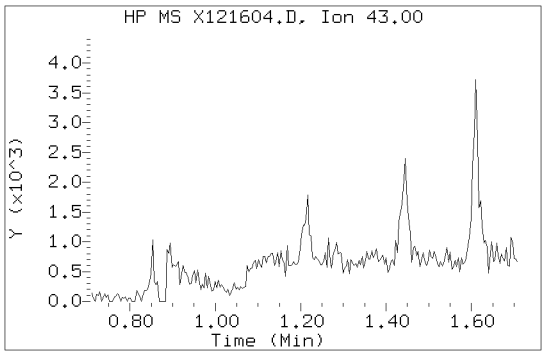
Acetaldehyde (75-07-0)

Reason Code:

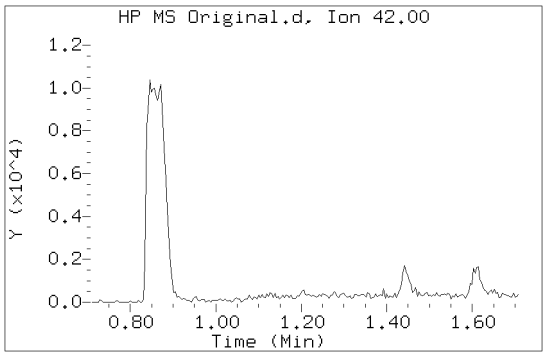
BEFORE
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



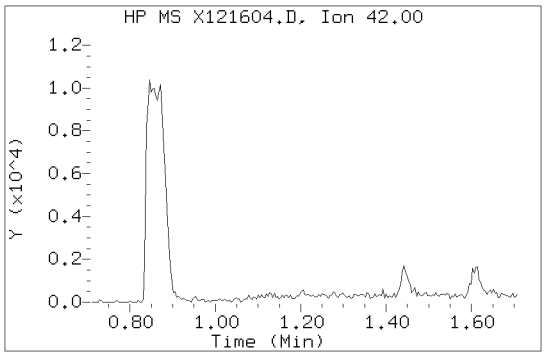
AFTER
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



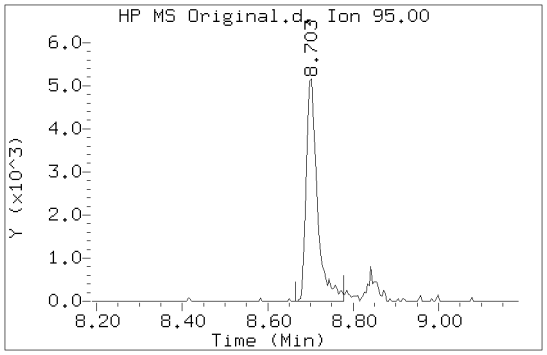
AFTER
MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



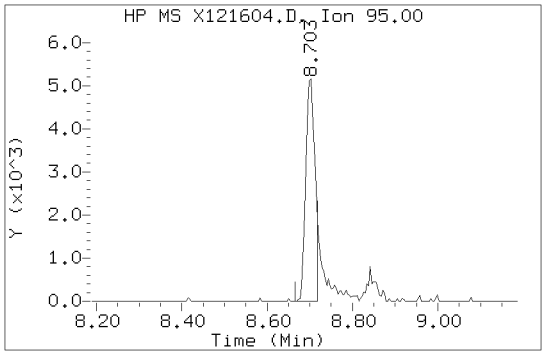
4-Bromofluorobenzene (460-00-4)

Reason Code:

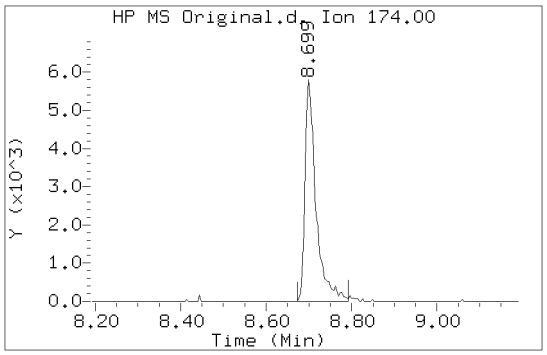
BEFORE
MASS
95
AREA
9514
HEIGHT
5159
27-Dec-2022
16:03
linh
pham



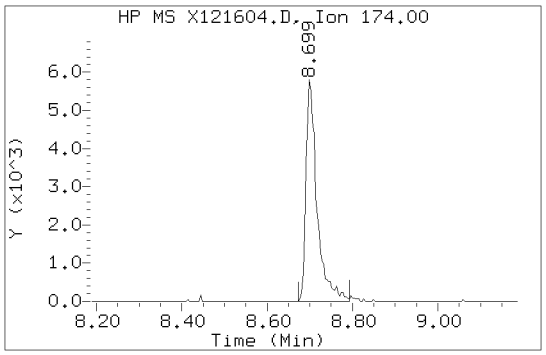
AFTER
MASS
95
AREA
7790
HEIGHT
5159
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
174
AREA
10505
HEIGHT
5802
27-Dec-2022
16:03
linh
pham



AFTER
MASS
174
AREA
10505
HEIGHT
5802
27-Dec-2022
16:07
linh
pham



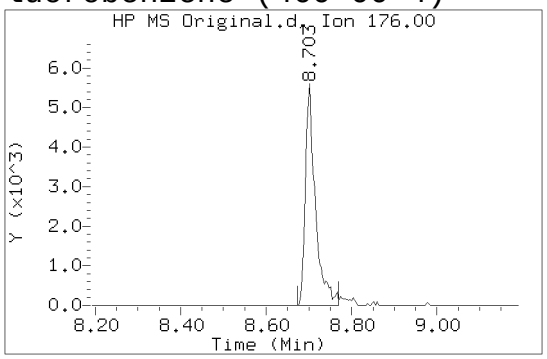
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

4-Bromofluorobenzene (460-00-4)

Reason Code:

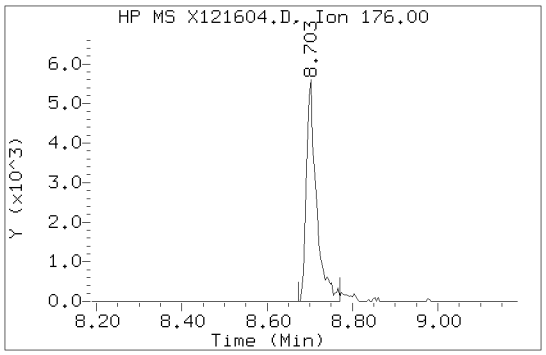
BEFORE

MASS
176
AREA
9226
HEIGHT
5603
27-Dec-2022
16:03
linh
pham



AFTER

MASS
176
AREA
9226
HEIGHT
5603
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 16-DEC-2022 13:02
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 12:41 Cal File: X121604.D
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	456374	50.0000	
135 1,4-Dioxane	88	5.610	5.610	(1.343)	1409	40.0000	33.77(M)
140 1,3-Butadiene	54	1.160	1.160	(0.278)	5733	2.00000	1.83
25 Methacrylonitrile	41	3.859	3.859	(0.924)	6388	2.00000	1.97(M)
12 Isobutyl Alcohol	43	4.684	4.684	(1.121)	20629	40.0000	40.18(M)
13 Acetonitrile	39	2.198	2.198	(0.526)	7764	20.0000	18.69
14 Allyl Chloride	41	2.206	2.206	(0.528)	14911	2.00000	1.88
4 Propionitrile	54	3.675	3.675	(0.880)	8651	20.0000	18.57
136 n-Hexane	57	2.768	2.768	(0.663)	5898	2.00000	1.79
72 trans-1,4-Dichloro-2-butene	53	8.920	8.920	(1.163)	2690	2.00000	1.92(M)
194 Acetaldehyde	44	1.212	1.212	(0.290)	5661	8.00000	(M)
23 Chloroprene	53	1.771	1.771	(0.424)	3126	2.00000	2.01(M)
145 alpha-Methylstyrene	118	9.268	9.268	(0.959)	14447	2.00000	1.84
200 Dimethyl Disulfide	94	6.202	6.202	(0.808)	15964	2.00000	1.82
139 Diethyl ether	59	1.756	1.756	(0.420)	6354	2.00000	2.08
130 Ethyl Acetate	43	3.675	3.675	(0.880)	7422	2.00000	2.08(M)
40 Methyl Methacrylate	41	5.617	5.617	(1.345)	6185	2.00000	1.98
49 Ethyl Methacrylate	69	6.715	6.715	(1.353)	6546	2.00000	2.03
132 n-Butanol	56	5.343	5.343	(1.279)	2004	40.0000	74.77(TM)
142 Tetrahydrofuran	42	3.848	3.848	(0.921)	2867	4.00000	2.04(M)

150	Allyl alcohol	57	2.768	2.768 (0.663)	5898	40.0000	33.27
166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	35687	2.00000	2.10

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D Page 2
Report Date: 27-Dec-2022 16:07

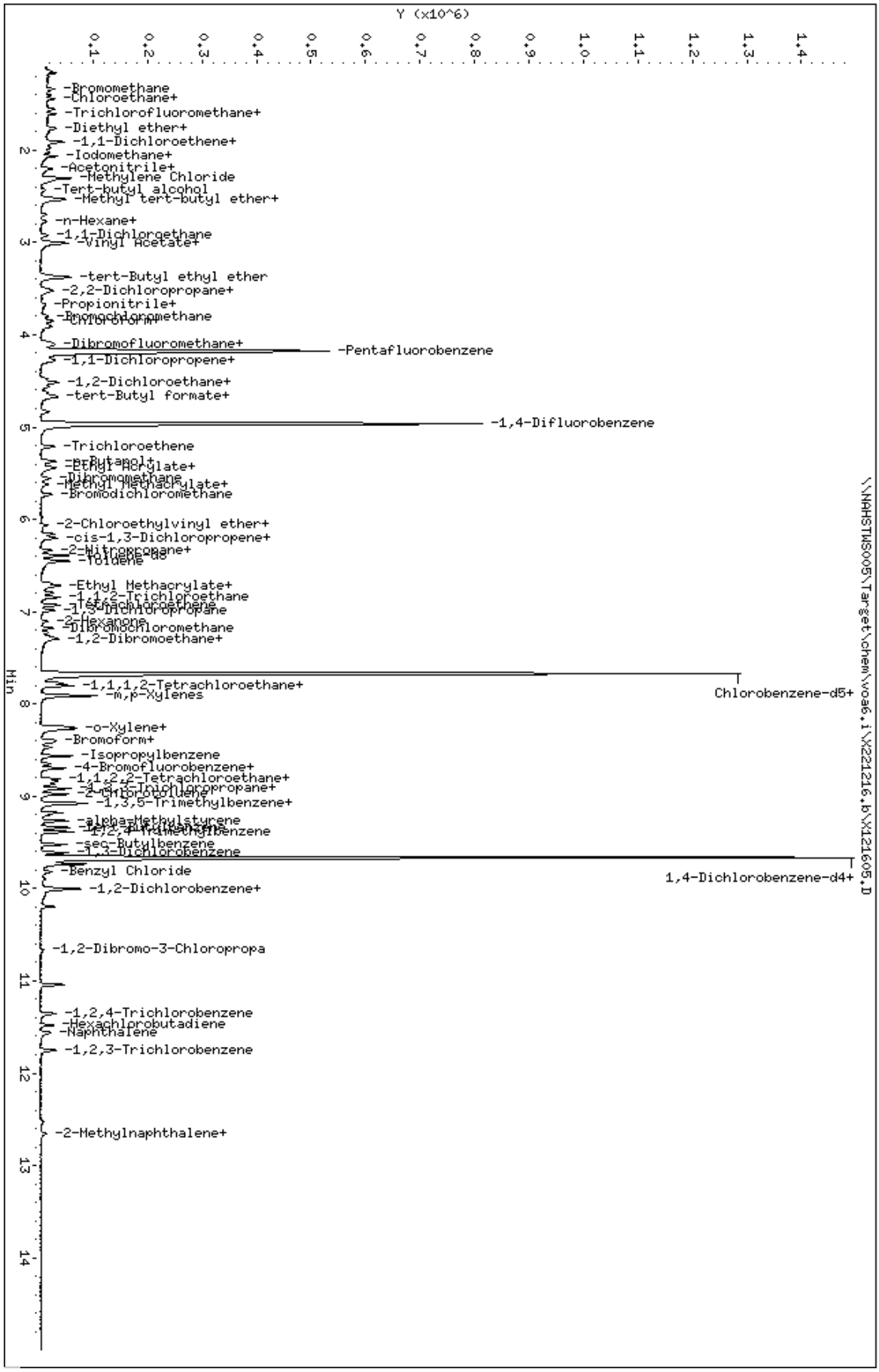
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	131 Methyl Acrylate	55	3.720	3.720	(0.891)	5443	2.00000	1.75(M)
	162 Butyl acrylate	55	8.267	8.267	(1.078)	15015	2.00000	1.77
	2 Dichlorodifluoromethane	85	0.969	0.969	(0.232)	6239	2.00000	2.33
	3 Chloromethane	50	1.077	1.077	(0.258)	8057	2.00000	4.07
	5 Vinyl Chloride	62	1.141	1.141	(0.273)	7263	2.00000	1.82
	6 Bromomethane	94	1.340	1.340	(0.321)	5996	2.00000	3.68(M)
	7 Chloroethane	64	1.400	1.400	(0.335)	5667	2.00000	2.04(M)
	8 Trichlorofluoromethane	101	1.561	1.561	(0.374)	10463	2.00000	1.87
	9 Acrolein	56	1.441	1.441	(0.345)	1317	4.00000	6.92(M)
	10 Acetone	43	1.973	1.973	(0.472)	7041	4.00000	5.46(M)
	11 1,1-Dichloroethene	96	1.910	1.910	(0.457)	6862	2.00000	1.98
	15 Iodomethane	142	2.022	2.022	(0.484)	8702	4.00000	5.23
	16 Acrylonitrile	53	2.554	2.554	(0.611)	4557	4.00000	3.87(M)
	17 Methylene Chloride	84	2.303	2.303	(0.551)	9194	2.00000	1.93(M)
	18 Methyl tert-butyl ether	73	2.536	2.536	(0.607)	23231	2.00000	2.04
	19 Carbon Disulfide	76	2.067	2.067	(0.495)	34948	4.00000	3.85
	20 trans-1,2-Dichloroethene	96	2.532	2.532	(0.606)	7113	2.00000	1.83
	21 Vinyl Acetate	43	3.008	3.008	(0.720)	38835	4.00000	3.90
	22 1,1-Dichloroethane	63	2.922	2.922	(0.699)	12778	2.00000	1.87
	24 2-Butanone	43	3.604	3.604	(0.863)	5418	4.00000	6.89(M)
	26 2,2-Dichloropropane	77	3.507	3.507	(0.839)	11048	2.00000	1.91
	27 cis-1,2-Dichloroethene	96	3.529	3.529	(0.845)	9675	2.00000	2.05
	28 Chloroform	83	3.908	3.908	(0.935)	15581	2.00000	2.04
	29 Bromochloromethane	128	3.803	3.803	(0.910)	5134	2.00000	1.98
$	30 Dibromofluoromethane	113	4.106	4.106	(0.983)	9050	2.00000	1.90
	31 1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	10962	2.00000	1.81
	32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	9042	2.00000	1.86
	33 1,2-Dichloroethane	62	4.560	4.560	(0.918)	10812	2.00000	1.92
	34 Carbon Tetrachloride	117	4.264	4.264	(0.859)	11092	2.00000	2.13(M)
$	35 1,2-Dichloroethane-d4	65	4.477	4.477	(1.072)	9783	2.00000	2.37
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	684444	50.0000	
	37 Benzene	78	4.515	4.515	(0.909)	32394	2.00000	1.98
	38 Trichloroethene	130	5.216	5.216	(1.051)	9277	2.00000	2.00
	39 Bromodichloromethane	83	5.733	5.733	(1.155)	11961	2.00000	1.94
	41 2-Chloroethylvinyl ether	63	6.059	6.059	(1.220)	6648	4.00000	3.80
	42 1,2-Dichloropropane	63	5.441	5.441	(1.096)	8129	2.00000	1.86(M)
	44 Dibromomethane	93	5.553	5.553	(1.119)	6110	2.00000	2.06
	45 4-Methyl-2-Pentanone	43	6.337	6.337	(0.826)	14771	4.00000	4.26
	46 cis-1,3-Dichloropropene	75	6.161	6.161	(1.241)	13738	2.00000	1.90
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	647809	50.0000	
$	48 Toluene-d8	98	6.393	6.393	(0.833)	31289	2.00000	1.95
	50 Toluene	91	6.453	6.453	(0.841)	35620	2.00000	1.98
	51 trans-1,3-Dichloropropene	75	6.693	6.693	(1.348)	10969	2.00000	1.83
	52 2-Hexanone	43	7.105	7.105	(0.926)	9314	4.00000	3.95
	53 1,1,2-Trichloroethane	83	6.843	6.843	(0.892)	7537	2.00000	2.09
	54 1,3-Dichloropropane	76	6.989	6.989	(0.911)	14049	2.00000	1.98
	55 Dibromochloromethane	129	7.180	7.180	(0.936)	10210	2.00000	1.96
	56 Tetrachloroethene	164	6.929	6.929	(0.903)	7331	2.00000	1.97
	57 1,2-Dibromoethane	107	7.263	7.263	(0.947)	8477	2.00000	1.88
	58 1-Chlorohexane	55	7.697	7.697	(1.550)	5855	2.00000	1.77(MH)
	59 Chlorobenzene	112	7.694	7.694	(1.003)	24558	2.00000	1.93
	60 1,1,1,2-Tetrachloroethane	131	7.772	7.772	(1.013)	9378	2.00000	1.98

61 Ethylbenzene	106	7.802	7.802 (1.017)	11791	2.00000	1.97
62 m,p-Xylenes	106	7.911	7.911 (1.031)	29170	4.00000	3.78

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.249	8.249	(1.075)	14764	2.00000	1.93
	64 Styrene	104	8.271	8.271	(1.078)	22967	2.00000	1.80
	66 Bromoform	173	8.417	8.417	(1.097)	6949	2.00000	1.93(T)
	67 Isopropylbenzene	105	8.563	8.563	(1.116)	32641	2.00000	1.87
	68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	11741	2.00000	2.08
$	69 4-Bromofluorobenzene	95	8.698	8.698	(1.134)	13631	2.00000	2.33
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	352851	50.0000	
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.918)	7514	2.00000	1.91
	73 n-Propylbenzene	91	8.916	8.916	(0.923)	34981	2.00000	1.78
	74 Bromobenzene	156	8.815	8.815	(0.912)	11721	2.00000	2.02
	75 1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	27917	2.00000	1.93
	76 2-Chlorotoluene	91	8.980	8.980	(0.929)	26853	2.00000	2.09
	77 4-Chlorotoluene	91	9.077	9.077	(0.939)	28173	2.00000	1.92
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	22104	2.00000	1.87
	79 1,2,4-Trimethylbenzene	105	9.384	9.384	(0.971)	28377	2.00000	1.86
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	27643	2.00000	1.75
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	24966	2.00000	1.77
	83 1,3-Dichlorobenzene	146	9.613	9.613	(0.995)	18708	2.00000	1.94
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	20552	2.00000	1.96
	86 Benzyl Chloride	91	9.819	9.819	(1.280)	12783	2.00000	3.88
	87 n-Butylbenzene	91	10.003	10.003	(1.035)	19853	2.00000	3.18(M)
	88 1,2-Dichlorobenzene	146	9.999	9.999	(1.035)	18921	2.00000	1.91
	89 1,2-Dibromo-3-Chloropropane	155	10.678	10.678	(1.105)	1619	2.00000	1.88(M)
	90 1,2,4-Trichlorobenzene	180	11.352	11.352	(1.175)	11764	2.00000	1.88(M)
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	3970	2.00000	1.39
	92 Naphthalene	128	11.559	11.559	(1.196)	26250	2.00000	1.84(M)
	93 1,2,3-Trichlorobenzene	180	11.750	11.750	(1.216)	11288	2.00000	1.88
M	94 1,2-Dichloroethylene (total)	96				16788	4.00000	
M	95 Xylenes (total)	106				43934	6.00000	
	141 Cyclohexane	56	4.125	4.125	(0.987)	7375	2.00000	2.82(H)
	138 Freon TF	101	1.917	1.917	(0.459)	6025	2.00000	1.79
	147 Methylcyclohexane	55	5.373	5.373	(1.082)	16016	2.00000	1.91(M)
	146 Methyl Acetate	43	2.247	2.247	(0.538)	4149	2.00000	2.02
	148 Tert-Butyl alcohol	59	2.434	2.434	(0.583)	12015	40.0000	38.02(a)
	149 Isopropyl Alcohol	45	2.101	2.101	(0.503)	5607	40.0000	33.97

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Date : 16-DEC-2022 13:02
Client ID: VSTD002
Sample Info: VSTD002;VSTD002;1;4;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

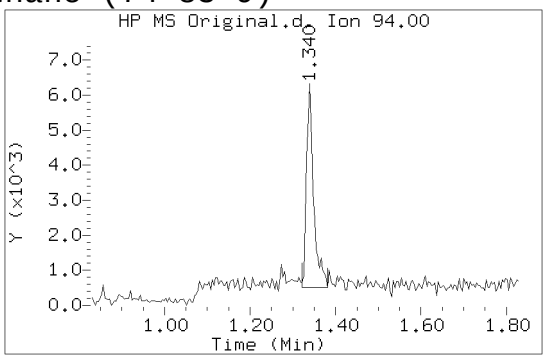
\\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D

Page 1

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

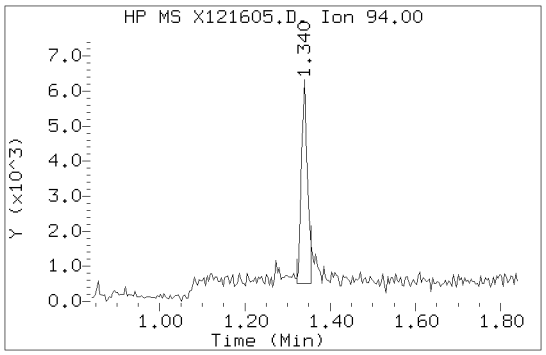
Bromomethane (74-83-9)

BEFORE
MASS
94
AREA
6762
HEIGHT
5808
27-Dec-2022
16:03
linh
pham

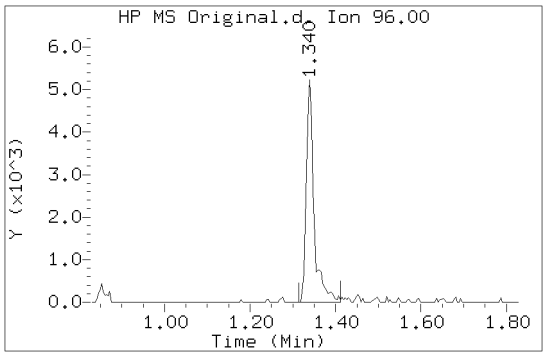


Reason Code:

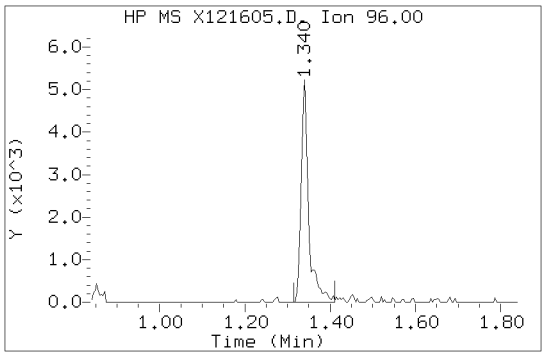
AFTER
MASS
94
AREA
5996
HEIGHT
5808
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
96
AREA
6661
HEIGHT
5227
27-Dec-2022
16:03
linh
pham

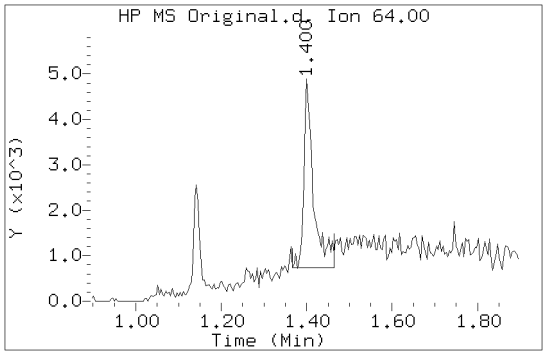


AFTER
MASS
96
AREA
6661
HEIGHT
5227
27-Dec-2022
16:07
linh
pham



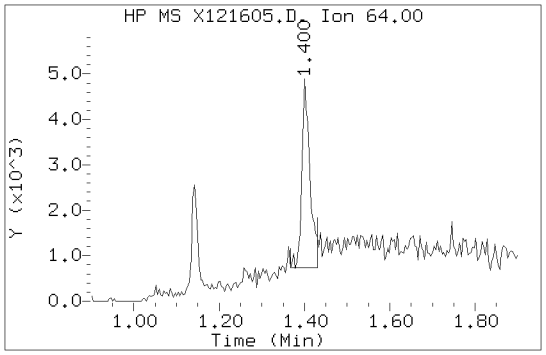
Chloroethane (75-00-3)

BEFORE
MASS
64
AREA
6641
HEIGHT
4162
27-Dec-2022
16:03
linh
pham

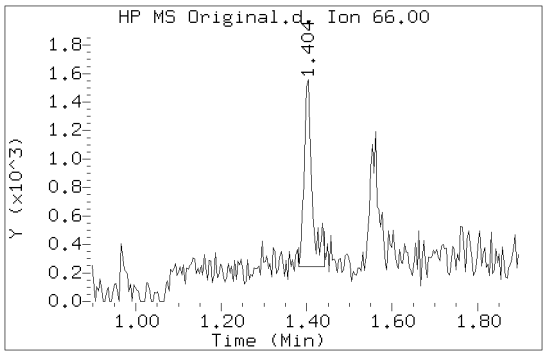


Reason Code:

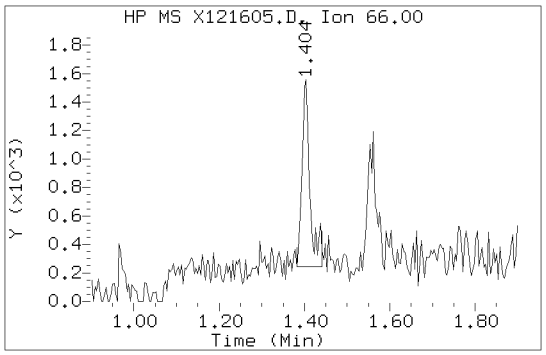
AFTER
MASS
64
AREA
5667
HEIGHT
4162
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
66
AREA
1745
HEIGHT
1315
27-Dec-2022
16:03
linh
pham



AFTER
MASS
66
AREA
1745
HEIGHT
1315
27-Dec-2022
16:07
linh
pham

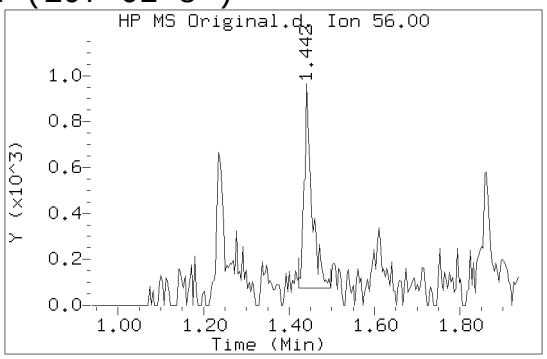


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

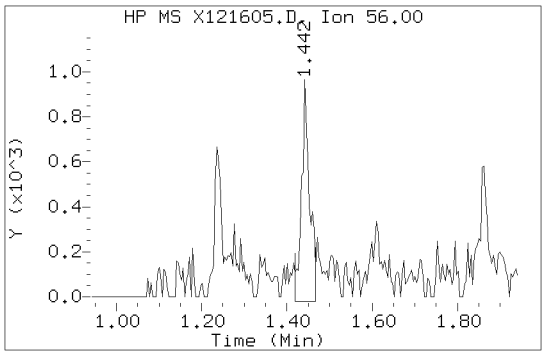
Acrolein (107-02-8)

Reason Code:

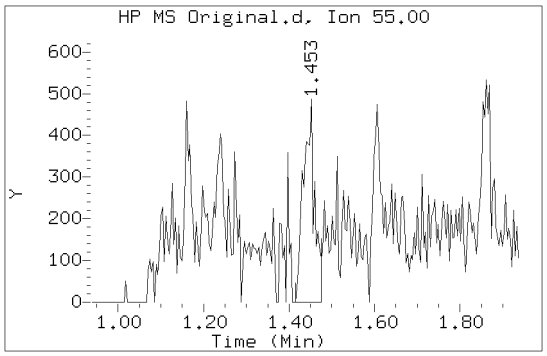
BEFORE
MASS
56
AREA
1122
HEIGHT
890
27-Dec-2022
16:03
linh
pham



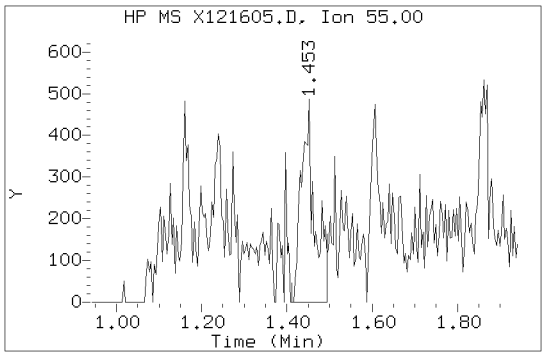
AFTER
MASS
56
AREA
1317
HEIGHT
985
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
55
AREA
885
HEIGHT
487
27-Dec-2022
16:03
linh
pham



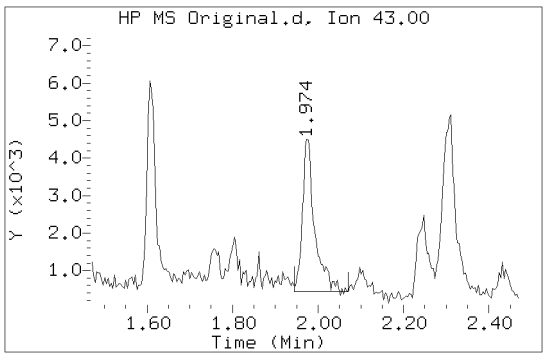
AFTER
MASS
55
AREA
1067
HEIGHT
487
27-Dec-2022
16:07
linh
pham



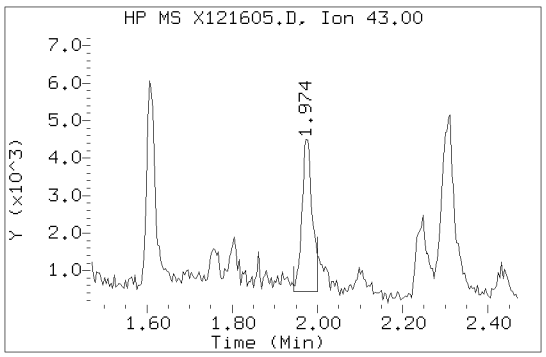
Acetone (67-64-1)

Reason Code:

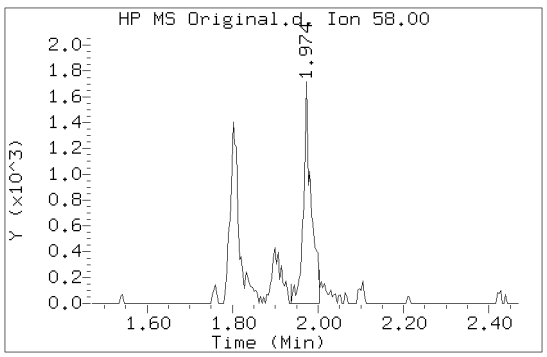
BEFORE
MASS
43
AREA
8369
HEIGHT
4066
27-Dec-2022
16:03
linh
pham



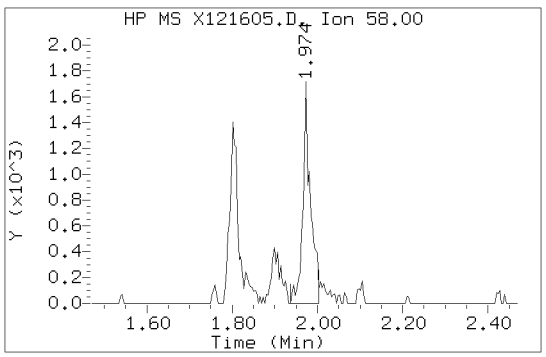
AFTER
MASS
43
AREA
7041
HEIGHT
4066
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
58
AREA
2165
HEIGHT
1717
27-Dec-2022
16:03
linh
pham



AFTER
MASS
58
AREA
2165
HEIGHT
1717
27-Dec-2022
16:07
linh
pham

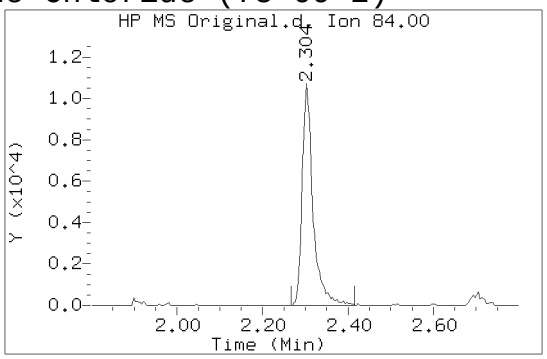


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

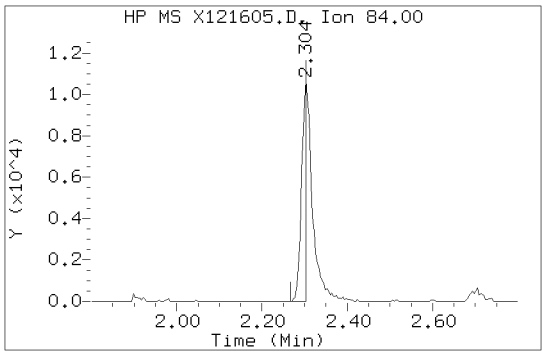
Methylene Chloride (75-09-2)

Reason Code:

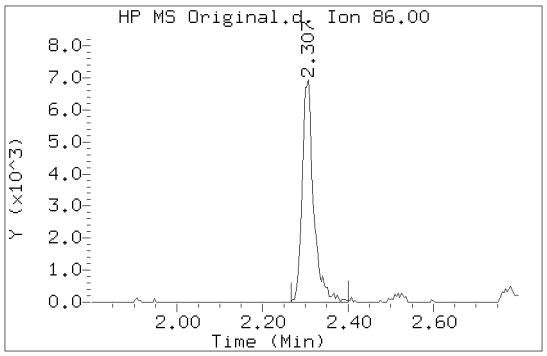
BEFORE
MASS
84
AREA
19299
HEIGHT
10710
27-Dec-2022
16:03
linh
pham



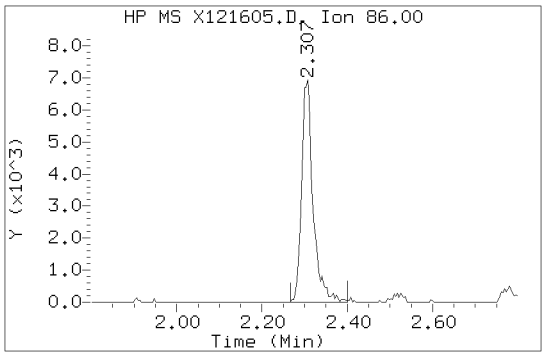
AFTER
MASS
84
AREA
9194
HEIGHT
10710
27-Dec-2022
16:07
linh
pham



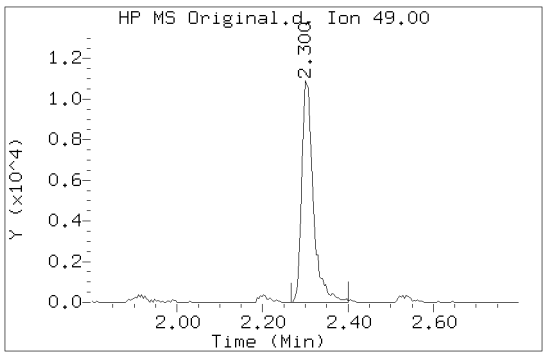
BEFORE
MASS
86
AREA
13231
HEIGHT
6936
27-Dec-2022
16:03
linh
pham



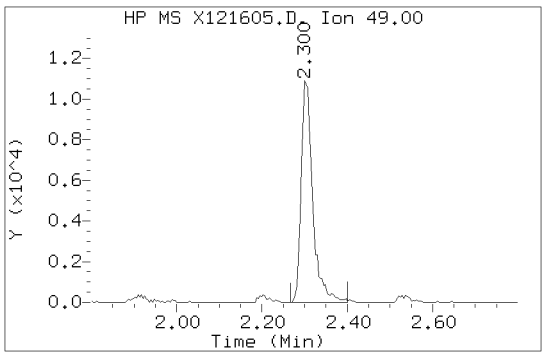
AFTER
MASS
86
AREA
13231
HEIGHT
6936
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
49
AREA
21067
HEIGHT
10905
27-Dec-2022
16:03
linh
pham



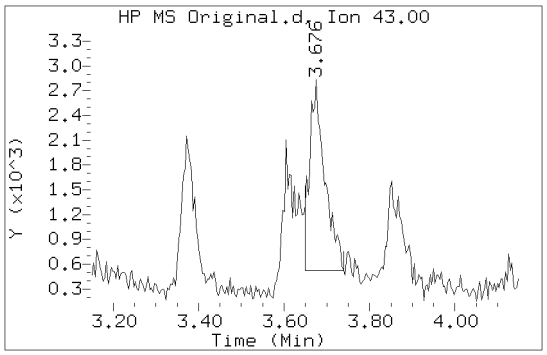
AFTER
MASS
49
AREA
21067
HEIGHT
10905
27-Dec-2022
16:07
linh
pham



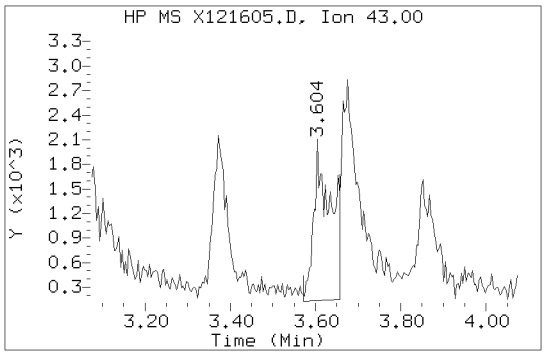
2-Butanone (78-93-3)

Reason Code:

BEFORE
MASS
43
AREA
5778
HEIGHT
2307
27-Dec-2022
16:03
linh
pham



AFTER
MASS
43
AREA
5418
HEIGHT
1969
27-Dec-2022
16:07
linh
pham



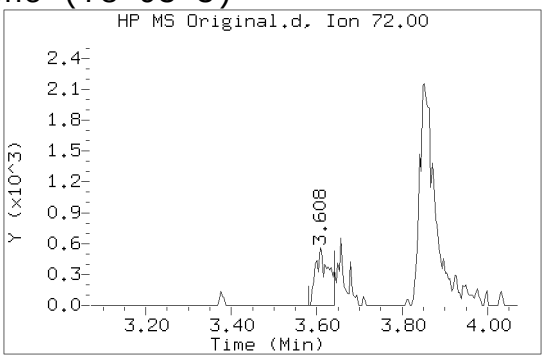
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

2-Butanone (78-93-3)

Reason Code:

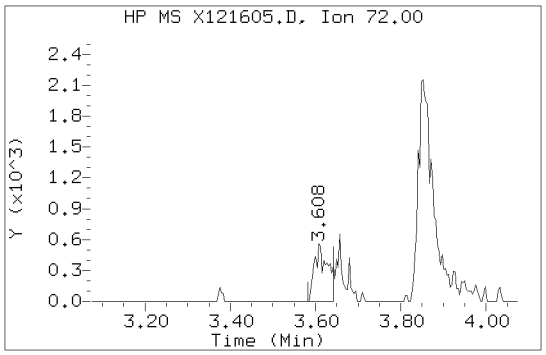
BEFORE

MASS
72
AREA
1209
HEIGHT
563
27-Dec-2022
16:03
linh
pham



AFTER

MASS
72
AREA
1209
HEIGHT
563
27-Dec-2022
16:07
linh
pham

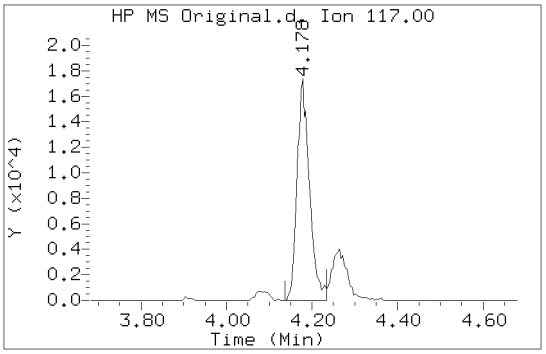


Carbon Tetrachloride (56-23-5)

Reason Code:

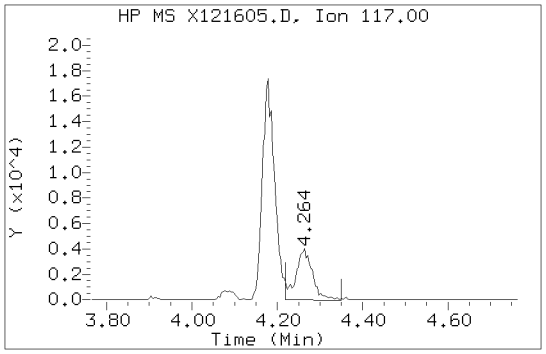
BEFORE

MASS
117
AREA
35555
HEIGHT
17376
27-Dec-2022
16:03
linh
pham



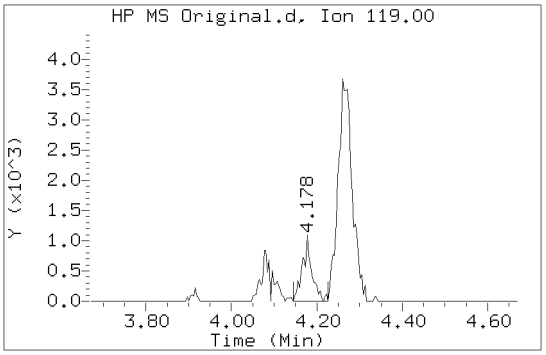
AFTER

MASS
117
AREA
11092
HEIGHT
4036
27-Dec-2022
16:07
linh
pham



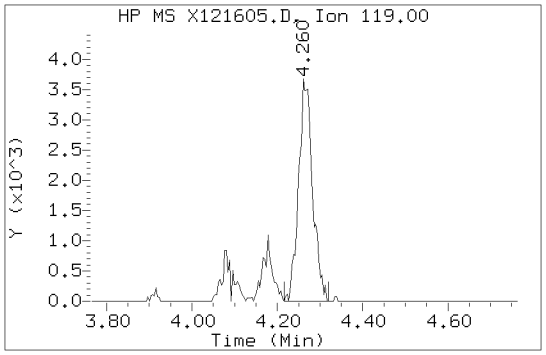
BEFORE

MASS
119
AREA
1692
HEIGHT
1100
27-Dec-2022
16:03
linh
pham



AFTER

MASS
119
AREA
8494
HEIGHT
3676
27-Dec-2022
16:07
linh
pham

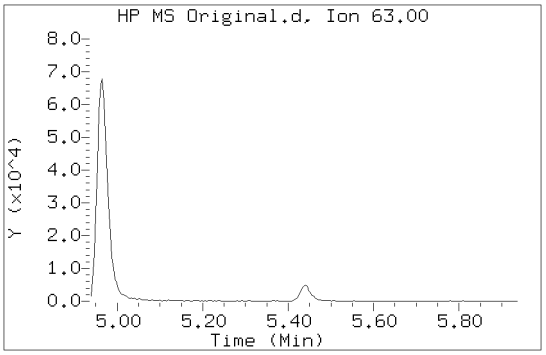


1,2-Dichloropropane (78-87-5)

Reason Code:

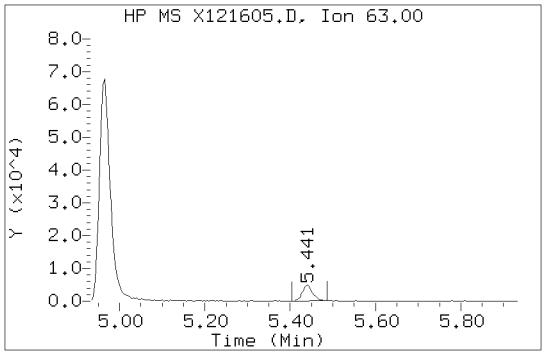
BEFORE

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
63
AREA
8129
HEIGHT
4705
27-Dec-2022
16:07
linh
pham



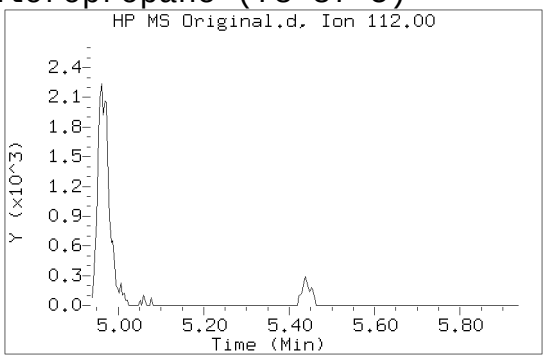
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

1,2-Dichloropropane (78-87-5)

Reason Code:

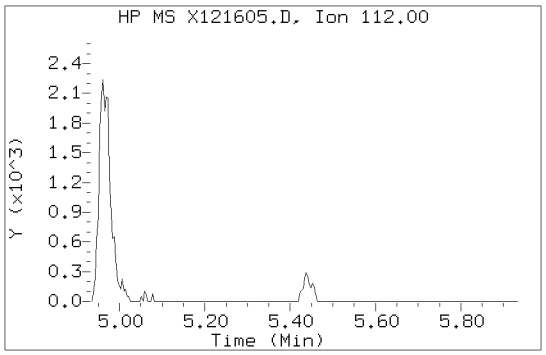
BEFORE

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

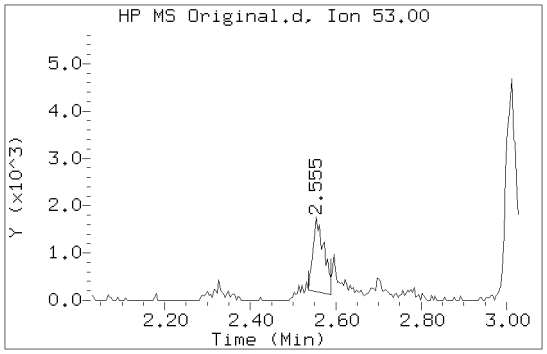


Acrylonitrile (107-13-1)

Reason Code:

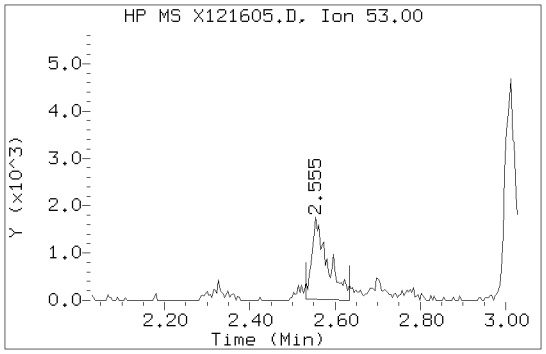
BEFORE

MASS
53
AREA
2810
HEIGHT
1577
27-Dec-2022
16:03
linh
pham



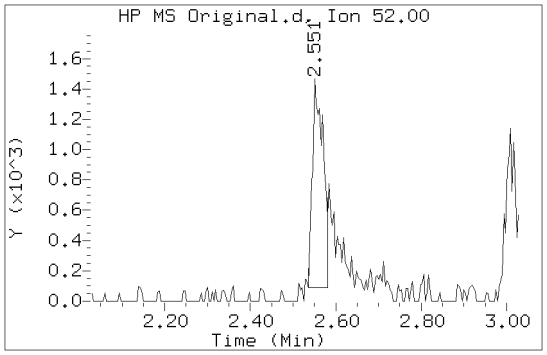
AFTER

MASS
53
AREA
4557
HEIGHT
1735
27-Dec-2022
16:07
linh
pham



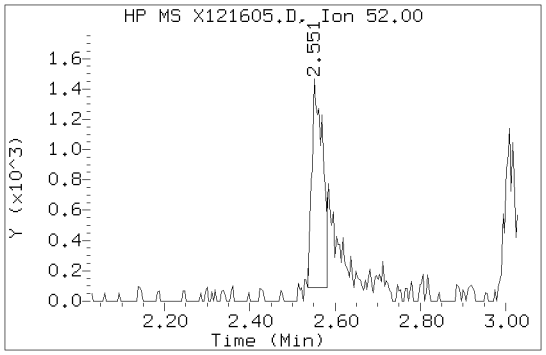
BEFORE

MASS
52
AREA
2408
HEIGHT
1379
27-Dec-2022
16:03
linh
pham



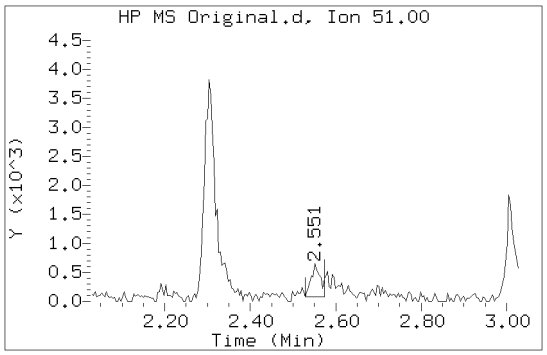
AFTER

MASS
52
AREA
2408
HEIGHT
1379
27-Dec-2022
16:07
linh
pham



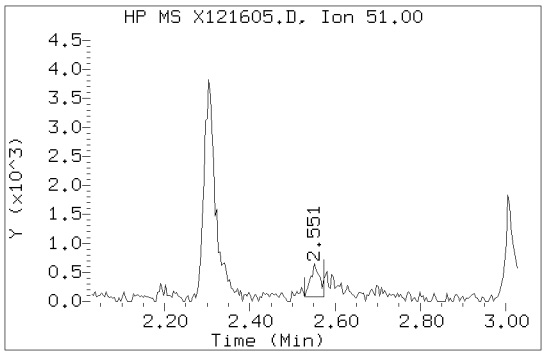
BEFORE

MASS
51
AREA
876
HEIGHT
575
27-Dec-2022
16:03
linh
pham



AFTER

MASS
51
AREA
876
HEIGHT
575
27-Dec-2022
16:07
linh
pham

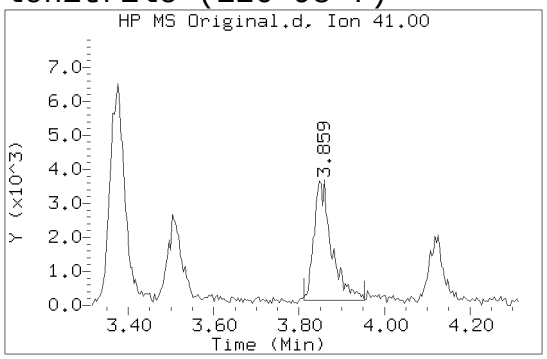


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

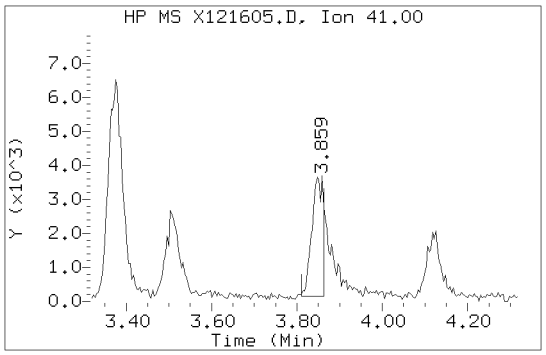
Methacrylonitrile (126-98-7)

Reason Code:

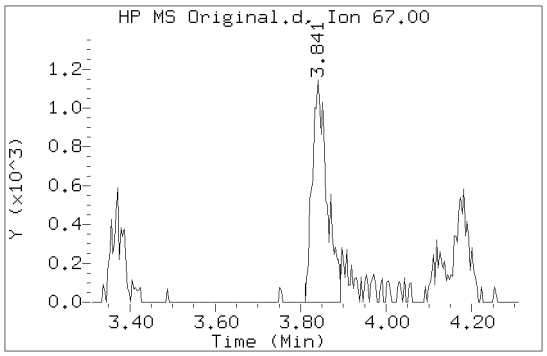
BEFORE
MASS
41
AREA
10013
HEIGHT
3544
27-Dec-2022
16:03
linh
pham



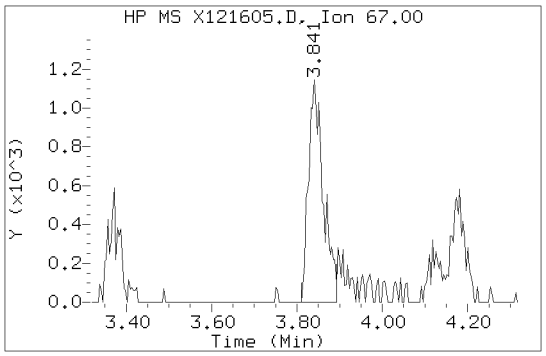
AFTER
MASS
41
AREA
6388
HEIGHT
3544
27-Dec-2022
16:07
linh
pham



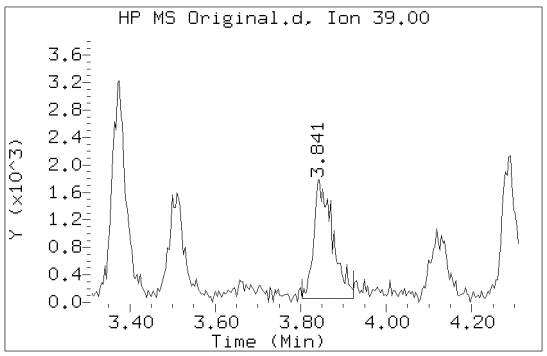
BEFORE
MASS
67
AREA
2751
HEIGHT
1145
27-Dec-2022
16:03
linh
pham



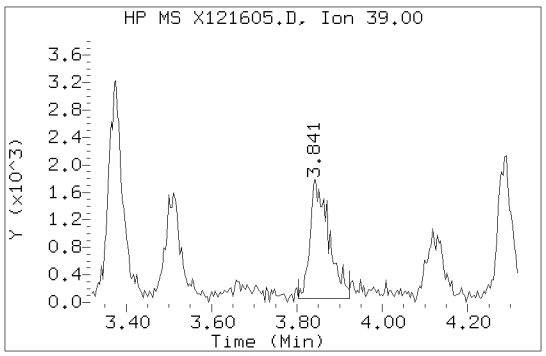
AFTER
MASS
67
AREA
2751
HEIGHT
1145
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
39
AREA
5310
HEIGHT
1724
27-Dec-2022
16:03
linh
pham



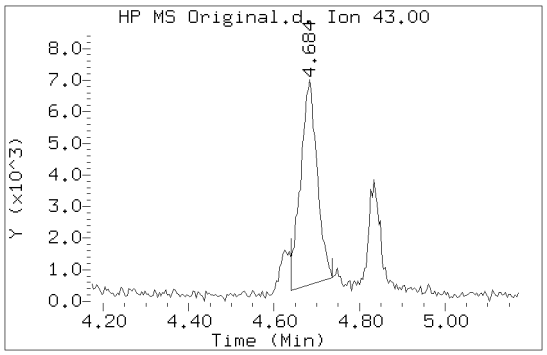
AFTER
MASS
39
AREA
5310
HEIGHT
1724
27-Dec-2022
16:07
linh
pham



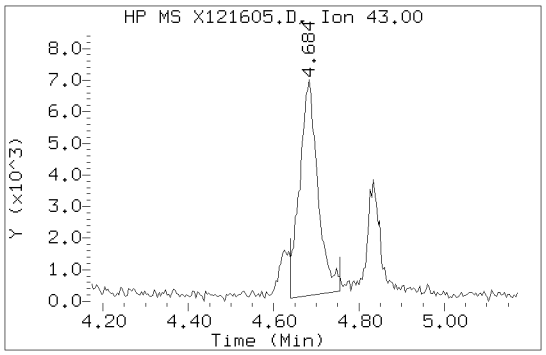
Isobutyl Alcohol (78-83-1)

Reason Code:

BEFORE
MASS
43
AREA
17811
HEIGHT
6479
27-Dec-2022
16:03
linh
pham



AFTER
MASS
43
AREA
20629
HEIGHT
6832
27-Dec-2022
16:07
linh
pham



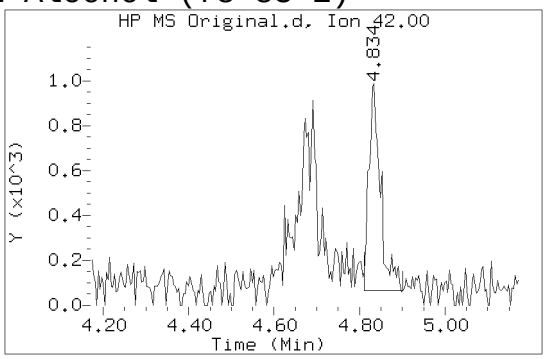
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

Isobutyl Alcohol (78-83-1)

Reason Code:

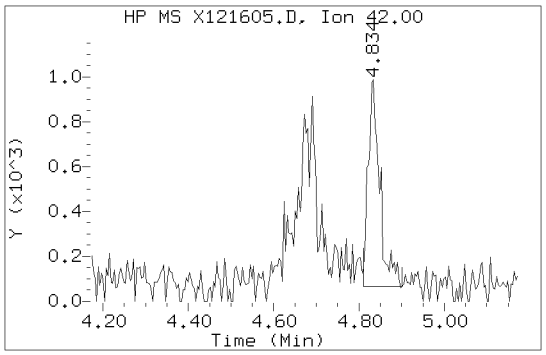
BEFORE

MASS
42
AREA
1728
HEIGHT
920
27-Dec-2022
16:03
linh
pham



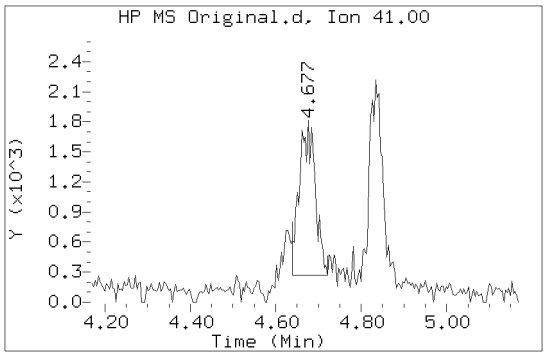
AFTER

MASS
42
AREA
1728
HEIGHT
920
27-Dec-2022
16:07
linh
pham



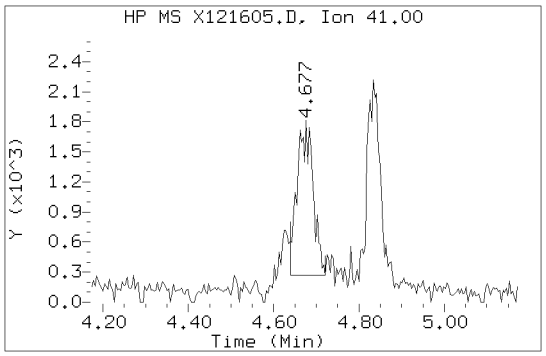
BEFORE

MASS
41
AREA
4067
HEIGHT
1547
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
4067
HEIGHT
1547
27-Dec-2022
16:07
linh
pham

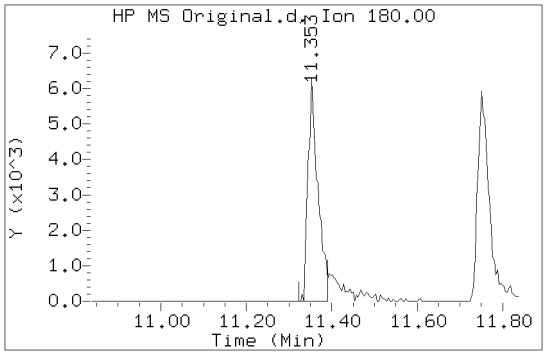


1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

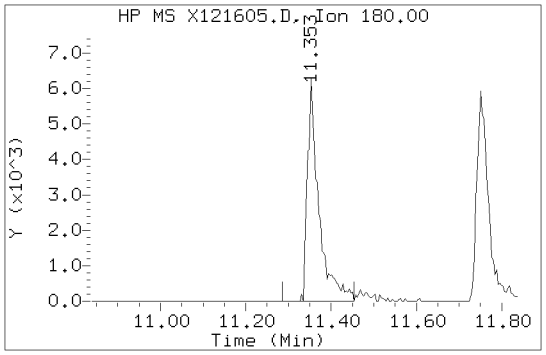
BEFORE

MASS
180
AREA
10131
HEIGHT
6269
27-Dec-2022
16:03
linh
pham



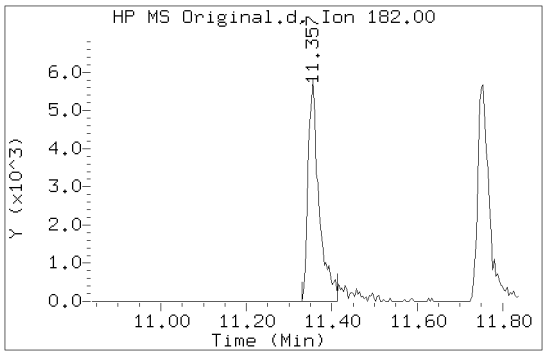
AFTER

MASS
180
AREA
11764
HEIGHT
6269
27-Dec-2022
16:07
linh
pham



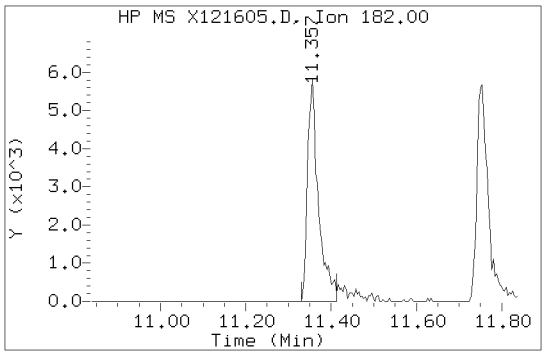
BEFORE

MASS
182
AREA
10317
HEIGHT
5807
27-Dec-2022
16:03
linh
pham



AFTER

MASS
182
AREA
10317
HEIGHT
5807
27-Dec-2022
16:07
linh
pham

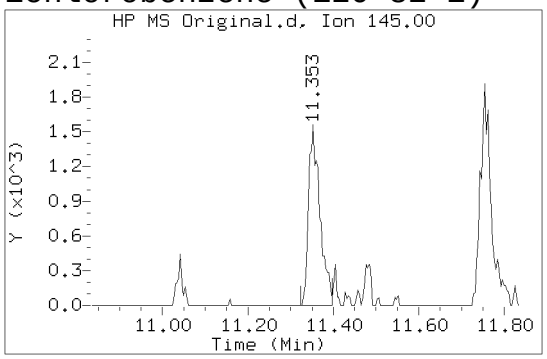


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

1,2,4-Trichlorobenzene (120-82-1)

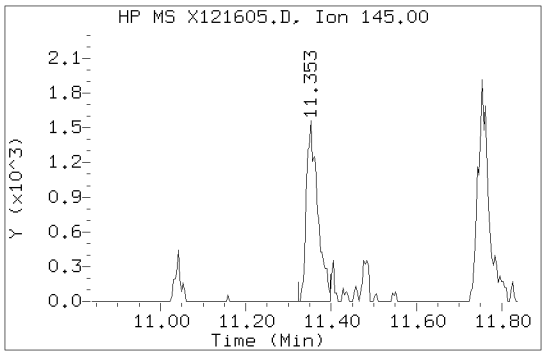
BEFORE

MASS
145
AREA
2887
HEIGHT
1565
27-Dec-2022
16:03
linh
pham



AFTER

MASS
145
AREA
2887
HEIGHT
1565
27-Dec-2022
16:07
linh
pham

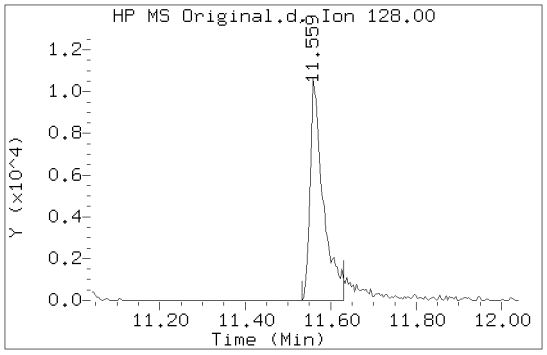


Reason Code:

Naphthalene (91-20-3)

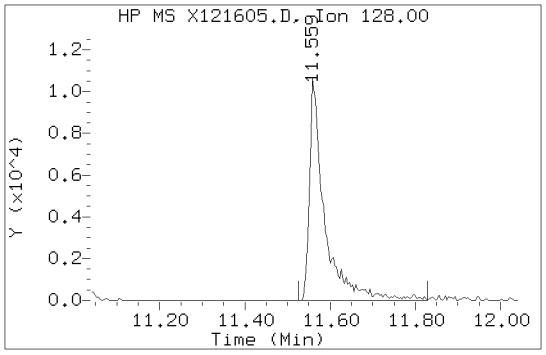
BEFORE

MASS
128
AREA
22581
HEIGHT
10616
27-Dec-2022
16:03
linh
pham



AFTER

MASS
128
AREA
26250
HEIGHT
10616
27-Dec-2022
16:07
linh
pham

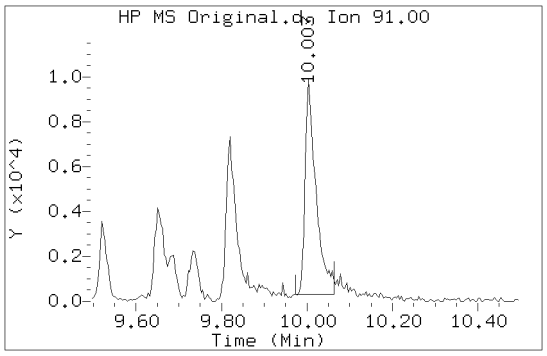


Reason Code:

n-Butylbenzene (104-51-8)

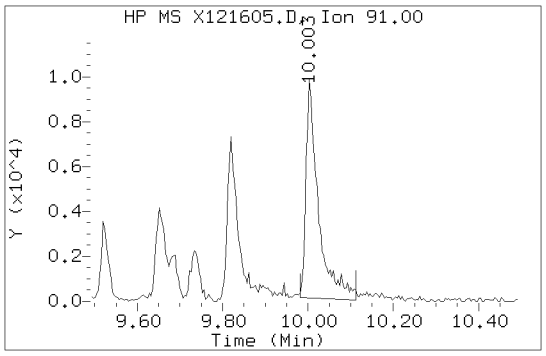
BEFORE

MASS
91
AREA
17181
HEIGHT
9558
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
19853
HEIGHT
9720
27-Dec-2022
16:07
linh
pham



Reason Code:

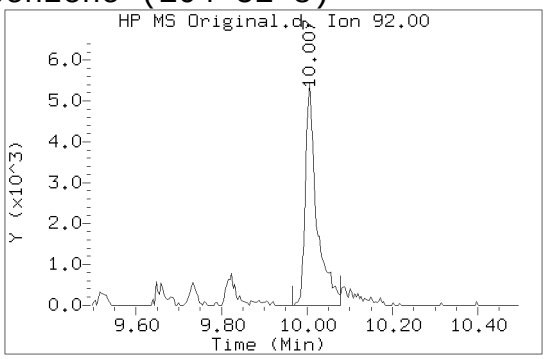
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

n-Butylbenzene (104-51-8)

Reason Code:

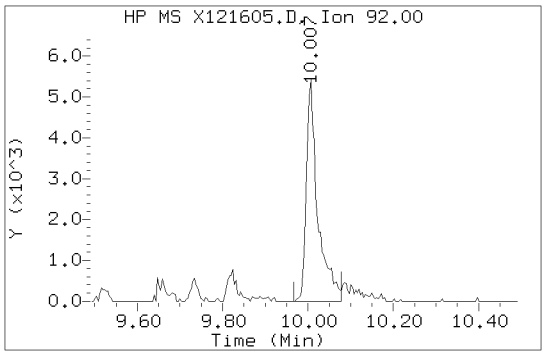
BEFORE

MASS
92
AREA
10185
HEIGHT
5422
27-Dec-2022
16:03
linh
pham



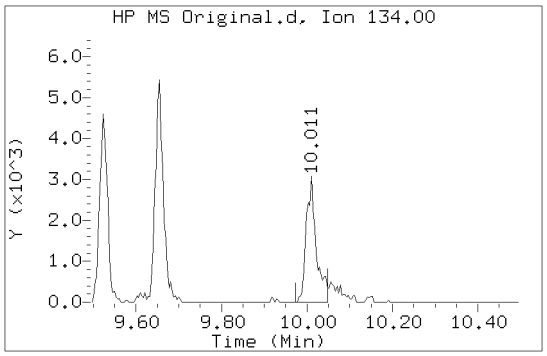
AFTER

MASS
92
AREA
10185
HEIGHT
5422
27-Dec-2022
16:07
linh
pham



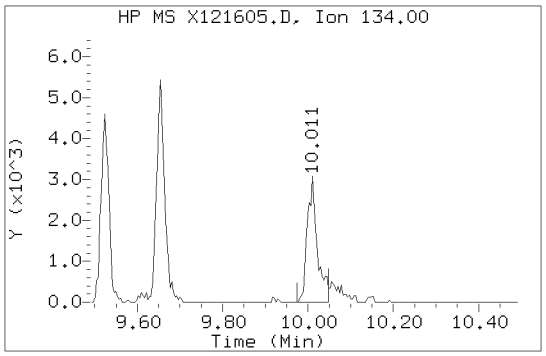
BEFORE

MASS
134
AREA
5059
HEIGHT
3076
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
5059
HEIGHT
3076
27-Dec-2022
16:07
linh
pham

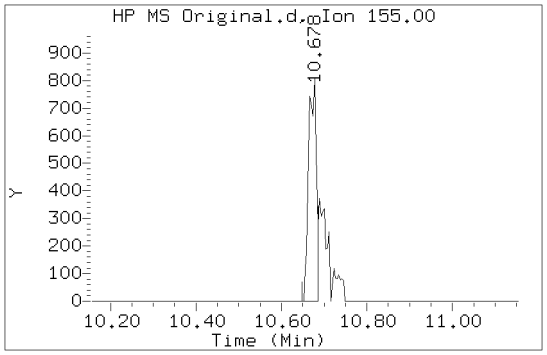


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

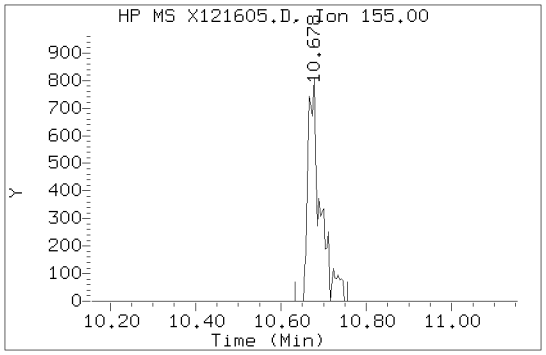
BEFORE

MASS
155
AREA
1026
HEIGHT
806
27-Dec-2022
16:03
linh
pham



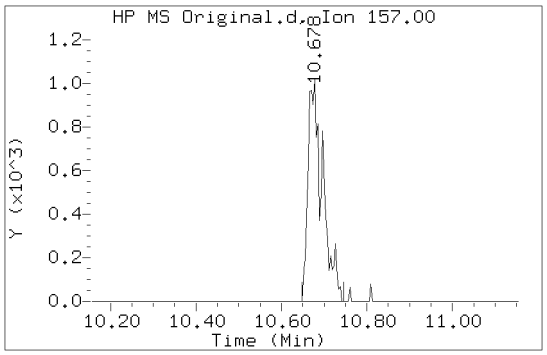
AFTER

MASS
155
AREA
1619
HEIGHT
806
27-Dec-2022
16:07
linh
pham



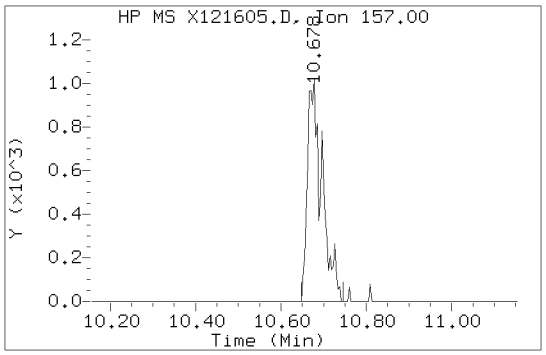
BEFORE

MASS
157
AREA
2422
HEIGHT
1016
27-Dec-2022
16:03
linh
pham



AFTER

MASS
157
AREA
2422
HEIGHT
1016
27-Dec-2022
16:07
linh
pham



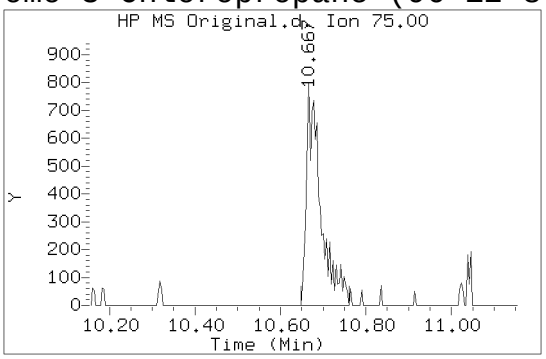
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

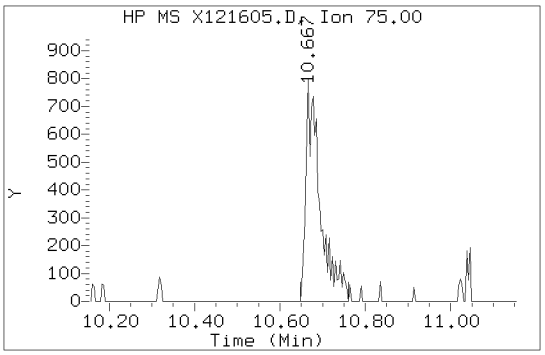
BEFORE

MASS
75
AREA
1843
HEIGHT
796
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
1843
HEIGHT
796
27-Dec-2022
16:07
linh
pham

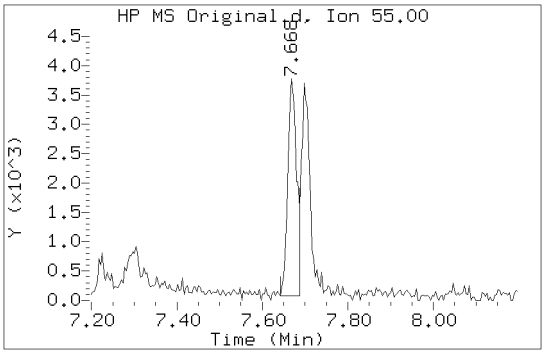


1-Chlorohexane (544-10-5)

Reason Code:

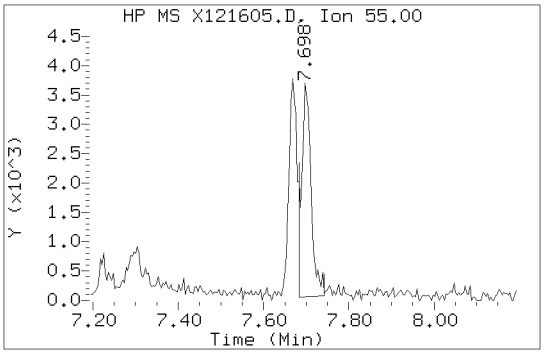
BEFORE

MASS
55
AREA
5357
HEIGHT
3703
27-Dec-2022
16:03
linh
pham



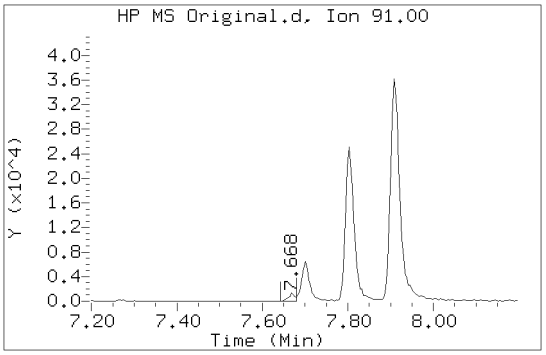
AFTER

MASS
55
AREA
5855
HEIGHT
3647
27-Dec-2022
16:07
linh
pham



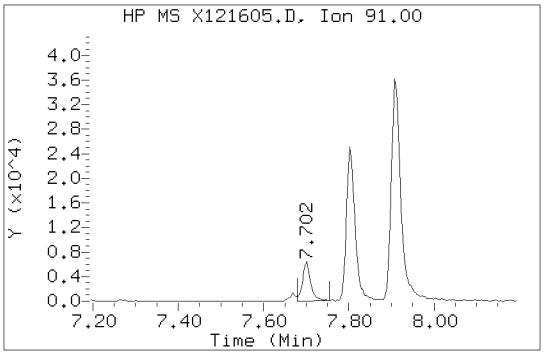
BEFORE

MASS
91
AREA
1356
HEIGHT
1324
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
8682
HEIGHT
6440
27-Dec-2022
16:07
linh
pham

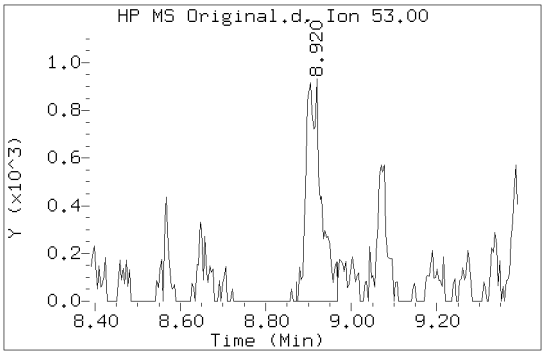


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

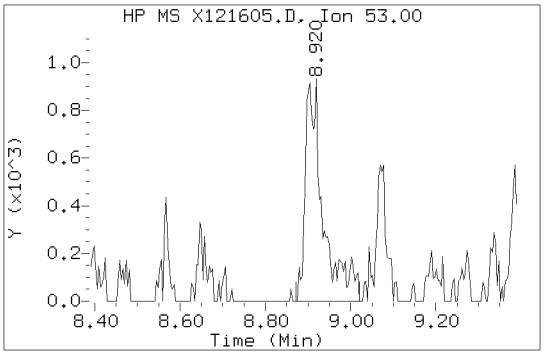
BEFORE

MASS
53
AREA
2313
HEIGHT
932
27-Dec-2022
16:03
linh
pham



AFTER

MASS
53
AREA
2690
HEIGHT
932
27-Dec-2022
16:07
linh
pham



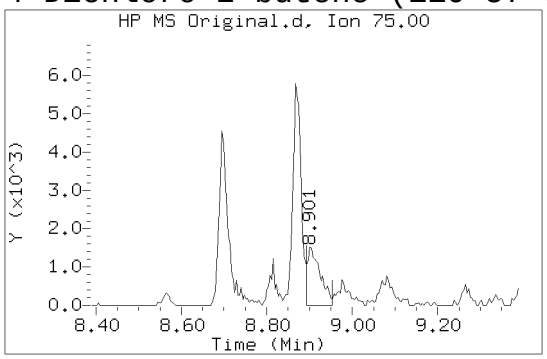
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

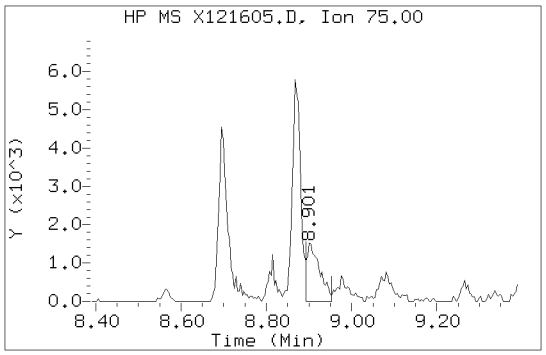
BEFORE

MASS
75
AREA
3228
HEIGHT
1526
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
3228
HEIGHT
1526
27-Dec-2022
16:07
linh
pham

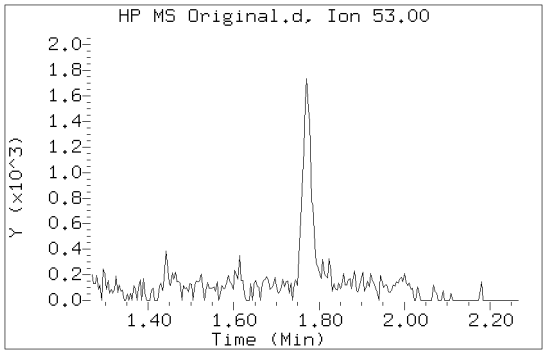


Chloroprene (126-99-8)

Reason Code:

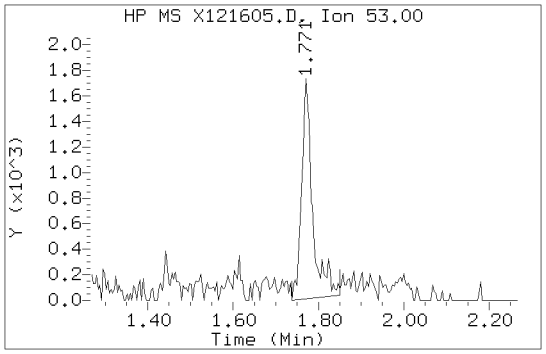
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



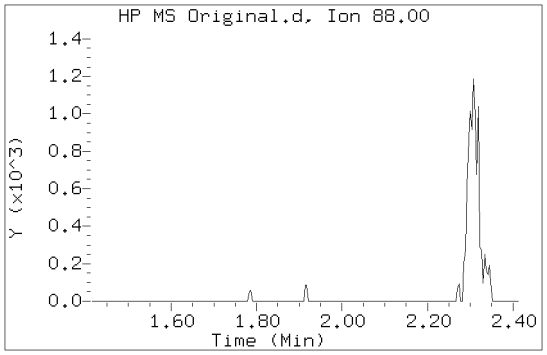
AFTER

MASS
53
AREA
3126
HEIGHT
1722
27-Dec-2022
16:07
linh
pham



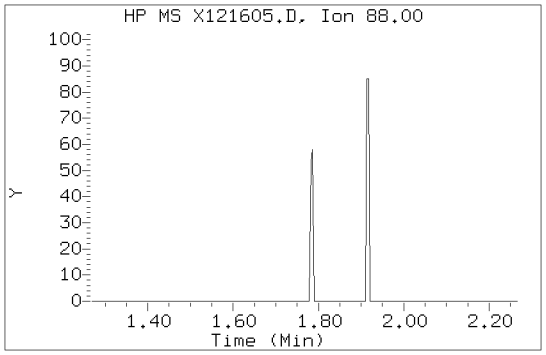
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

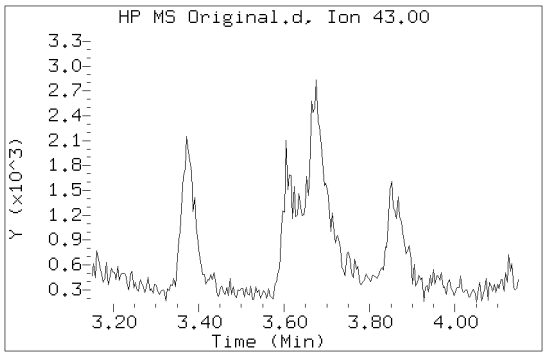


Ethyl Acetate (141-78-6)

Reason Code:

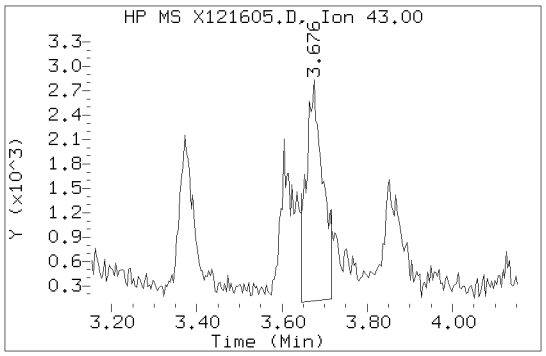
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

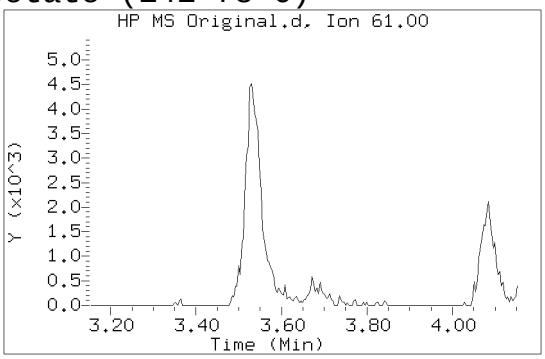
MASS
43
AREA
7422
HEIGHT
2716
27-Dec-2022
16:07
linh
pham



Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

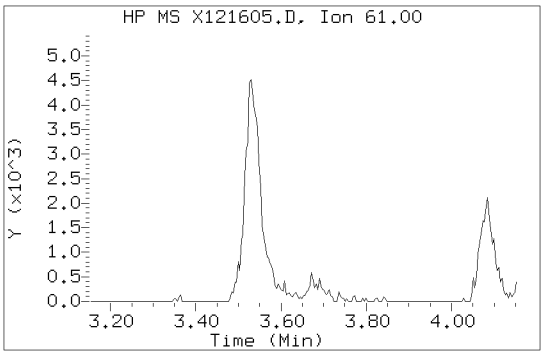
Ethyl Acetate (141-78-6)

BEFORE
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

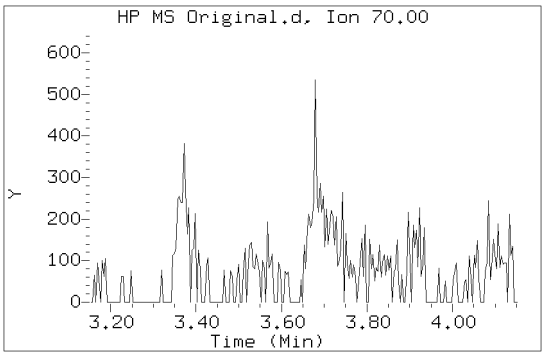


Reason Code:

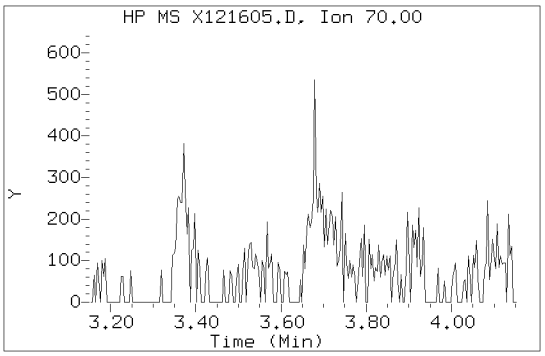
AFTER
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



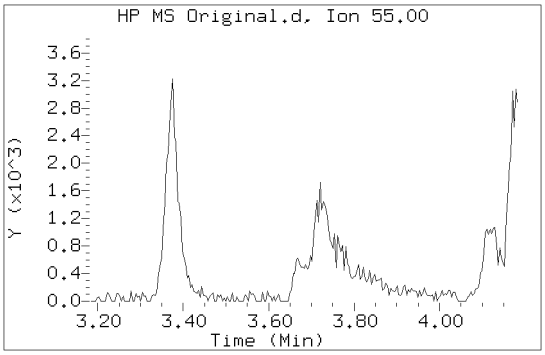
AFTER
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



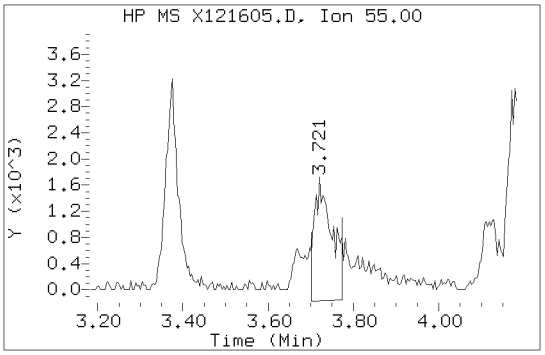
Methyl Acrylate (96-33-3)

Reason Code:

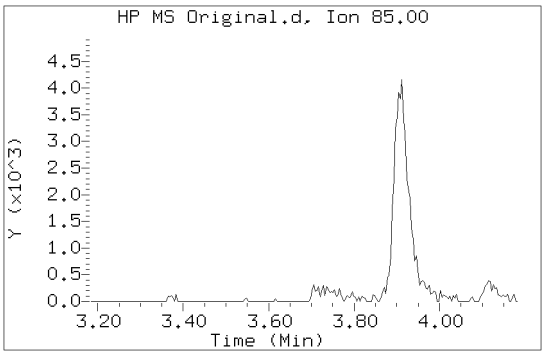
BEFORE
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



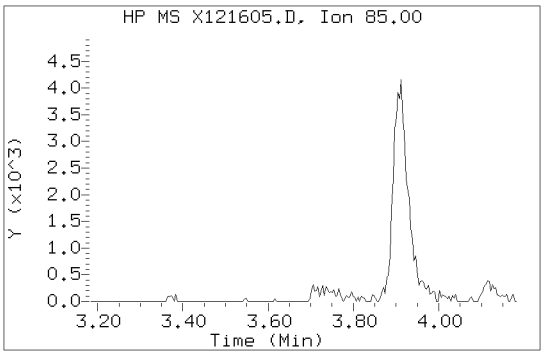
AFTER
MASS
55
AREA
5443
HEIGHT
1892
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



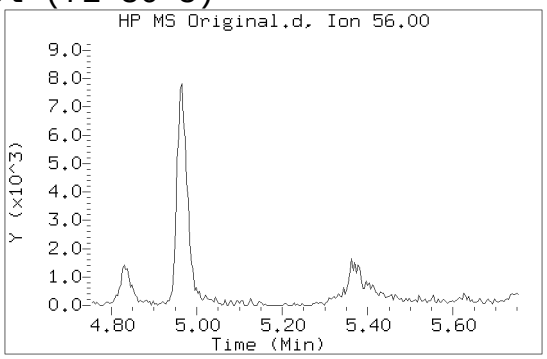
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

n-Butanol (71-36-3)

Reason Code:

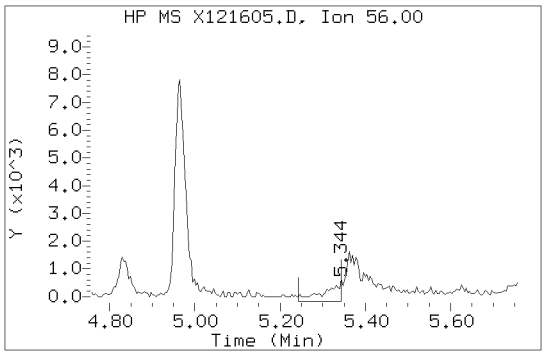
BEFORE

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



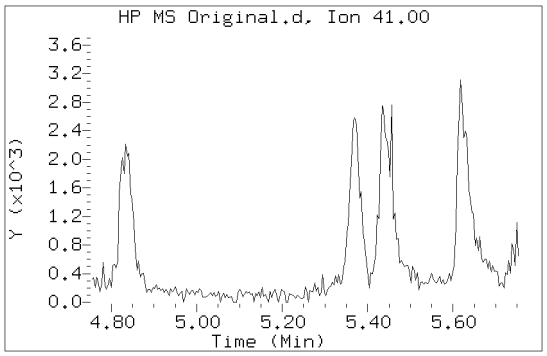
AFTER

MASS
56
AREA
2004
HEIGHT
808
27-Dec-2022
16:07
linh
pham



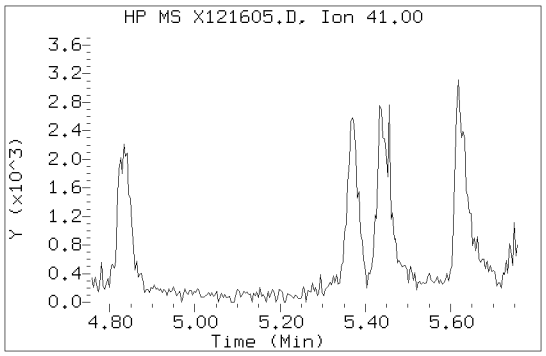
BEFORE

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

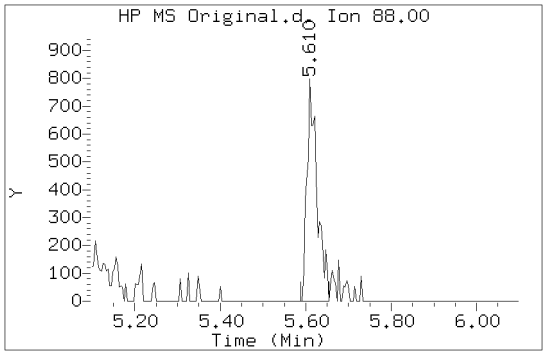


1,4-Dioxane ()

Reason Code:

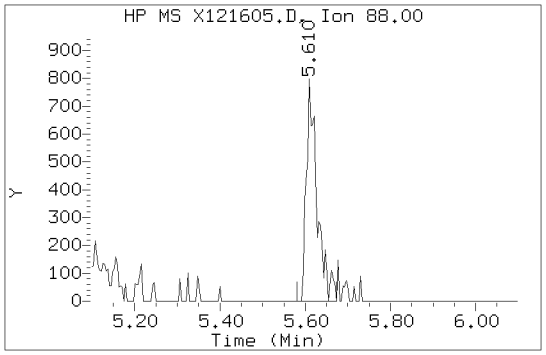
BEFORE

MASS
88
AREA
1335
HEIGHT
798
27-Dec-2022
16:03
linh
pham



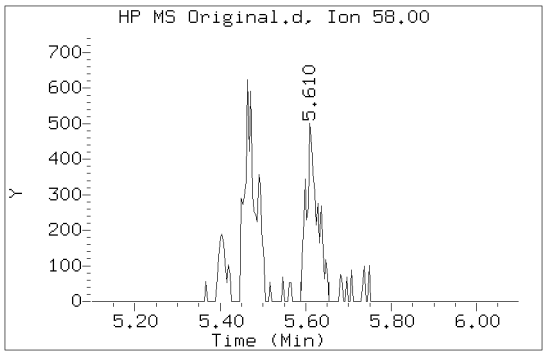
AFTER

MASS
88
AREA
1409
HEIGHT
798
27-Dec-2022
16:07
linh
pham



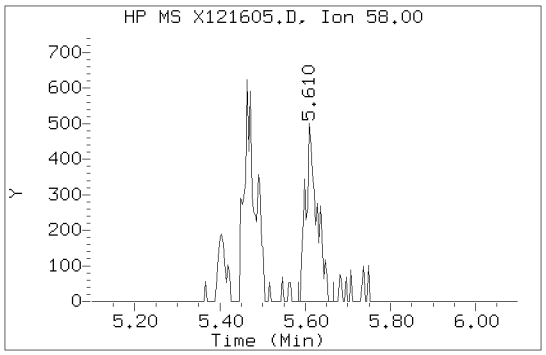
BEFORE

MASS
58
AREA
934
HEIGHT
501
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
934
HEIGHT
501
27-Dec-2022
16:07
linh
pham

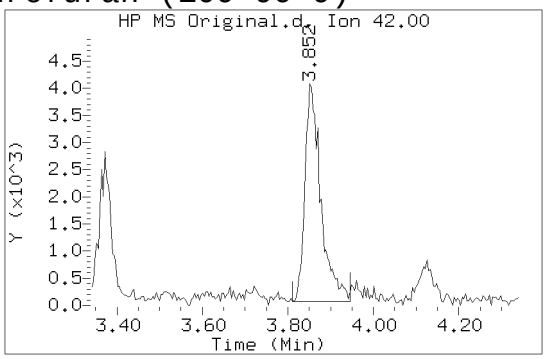


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

Tetrahydrofuran (109-99-9)

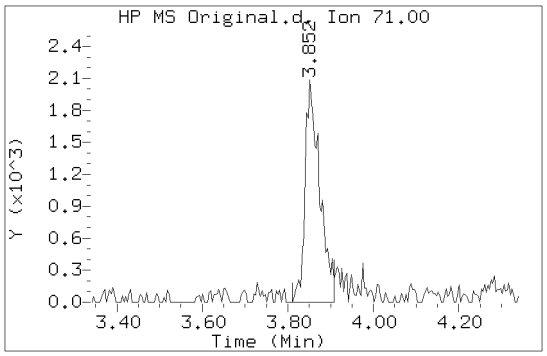
BEFORE

MASS
42
AREA
10469
HEIGHT
4012
27-Dec-2022
16:03
linh
pham



BEFORE

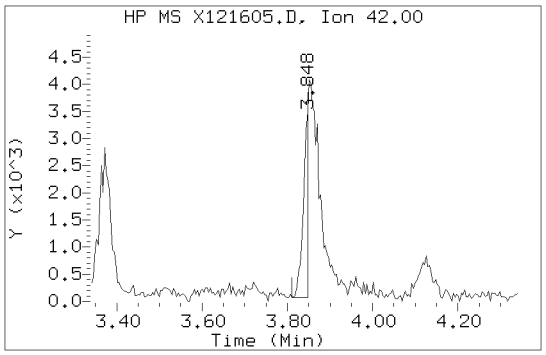
MASS
71
AREA
5020
HEIGHT
2086
27-Dec-2022
16:03
linh
pham



Reason Code:

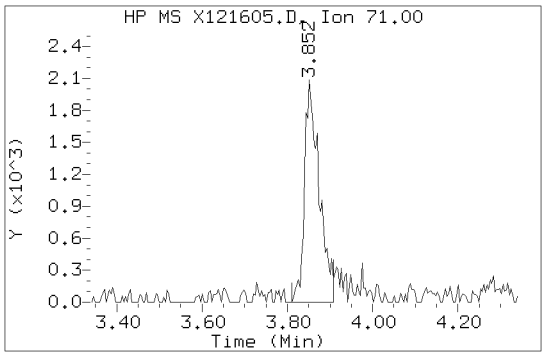
AFTER

MASS
42
AREA
2867
HEIGHT
3419
27-Dec-2022
16:07
linh
pham



AFTER

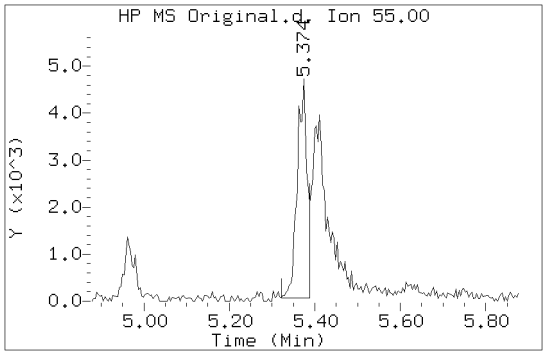
MASS
71
AREA
5020
HEIGHT
2086
27-Dec-2022
16:07
linh
pham



Methylcyclohexane (108-87-2)

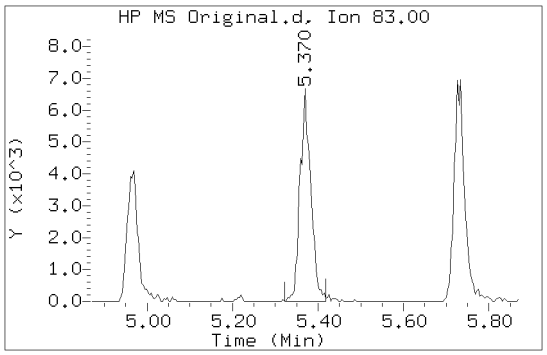
BEFORE

MASS
55
AREA
7676
HEIGHT
4656
27-Dec-2022
16:03
linh
pham



BEFORE

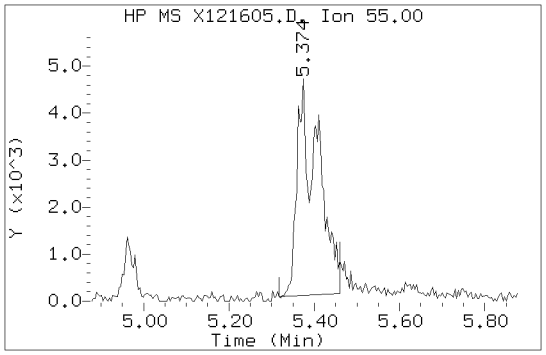
MASS
83
AREA
11881
HEIGHT
6672
27-Dec-2022
16:03
linh
pham



Reason Code:

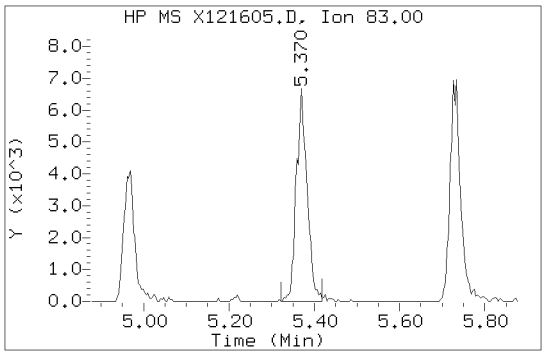
AFTER

MASS
55
AREA
16016
HEIGHT
4611
27-Dec-2022
16:07
linh
pham



AFTER

MASS
83
AREA
11881
HEIGHT
6672
27-Dec-2022
16:07
linh
pham

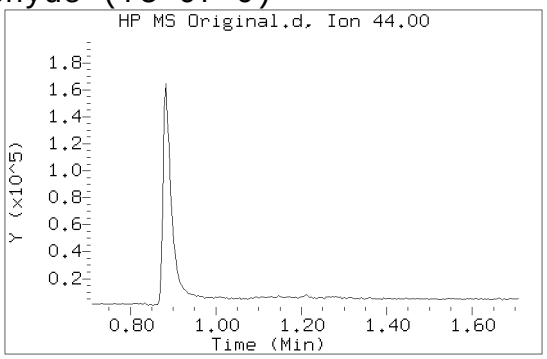


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

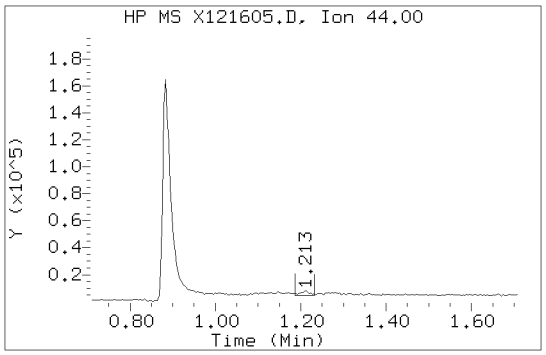
Acetaldehyde (75-07-0)

Reason Code:

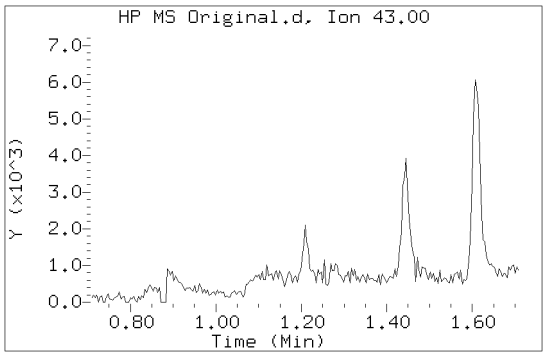
BEFORE
MASS
44
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



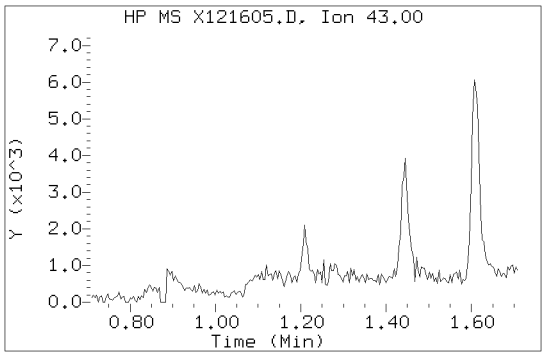
AFTER
MASS
44
AREA
5661
HEIGHT
3463
27-Dec-2022
16:07
linh
pham



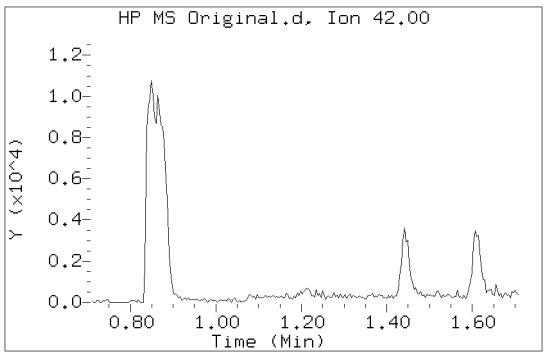
BEFORE
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



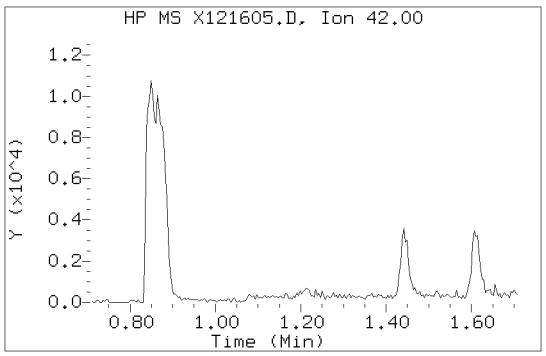
AFTER
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 16-DEC-2022 13:23
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 13:02 Cal File: X121605.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	450664	50.0000	
135 1,4-Dioxane	88	5.602	5.602	(1.341)	4197	100.000	101.88(M)
140 1,3-Butadiene	54	1.164	1.164	(0.279)	14283	5.00000	4.61
25 Methacrylonitrile	41	3.840	3.840	(0.919)	15701	5.00000	4.92(M)
12 Isobutyl Alcohol	43	4.680	4.680	(1.120)	51624	100.000	101.84
13 Acetonitrile	39	2.198	2.198	(0.526)	19635	50.0000	47.87
14 Allyl Chloride	41	2.198	2.198	(0.526)	37993	5.00000	4.86
4 Propionitrile	54	3.660	3.660	(0.876)	23049	50.0000	50.12
136 n-Hexane	57	2.772	2.772	(0.664)	14618	5.00000	4.50
72 trans-1,4-Dichloro-2-butene	53	8.901	8.901	(1.161)	6648	5.00000	4.70(M)
194 Acetaldehyde	44	1.209	1.209	(0.289)	6161	20.0000	0.80(M)
23 Chloroprene	53	1.771	1.771	(0.424)	7154	5.00000	4.66(M)
145 alpha-Methylstyrene	118	9.261	9.261	(0.958)	37831	5.00000	4.79
200 Dimethyl Disulfide	94	6.198	6.198	(0.808)	40144	5.00000	4.53
139 Diethyl ether	59	1.756	1.756	(0.420)	15119	5.00000	5.02
130 Ethyl Acetate	43	3.660	3.660	(0.876)	18020	5.00000	5.12(M)
40 Methyl Methacrylate	41	5.617	5.617	(1.345)	15119	5.00000	4.92
49 Ethyl Methacrylate	69	6.715	6.715	(1.353)	13801	5.00000	4.27
132 n-Butanol	56	5.287	5.287	(1.266)	4891	100.000	125.41(M)
142 Tetrahydrofuran	42	3.848	3.848	(0.921)	7598	10.0000	10.82(M)

150	Allyl alcohol	57	2.772	2.772 (0.664)	14618	100.000	83.50
166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	80329	5.00000	4.68

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D Page 2
Report Date: 27-Dec-2022 16:07

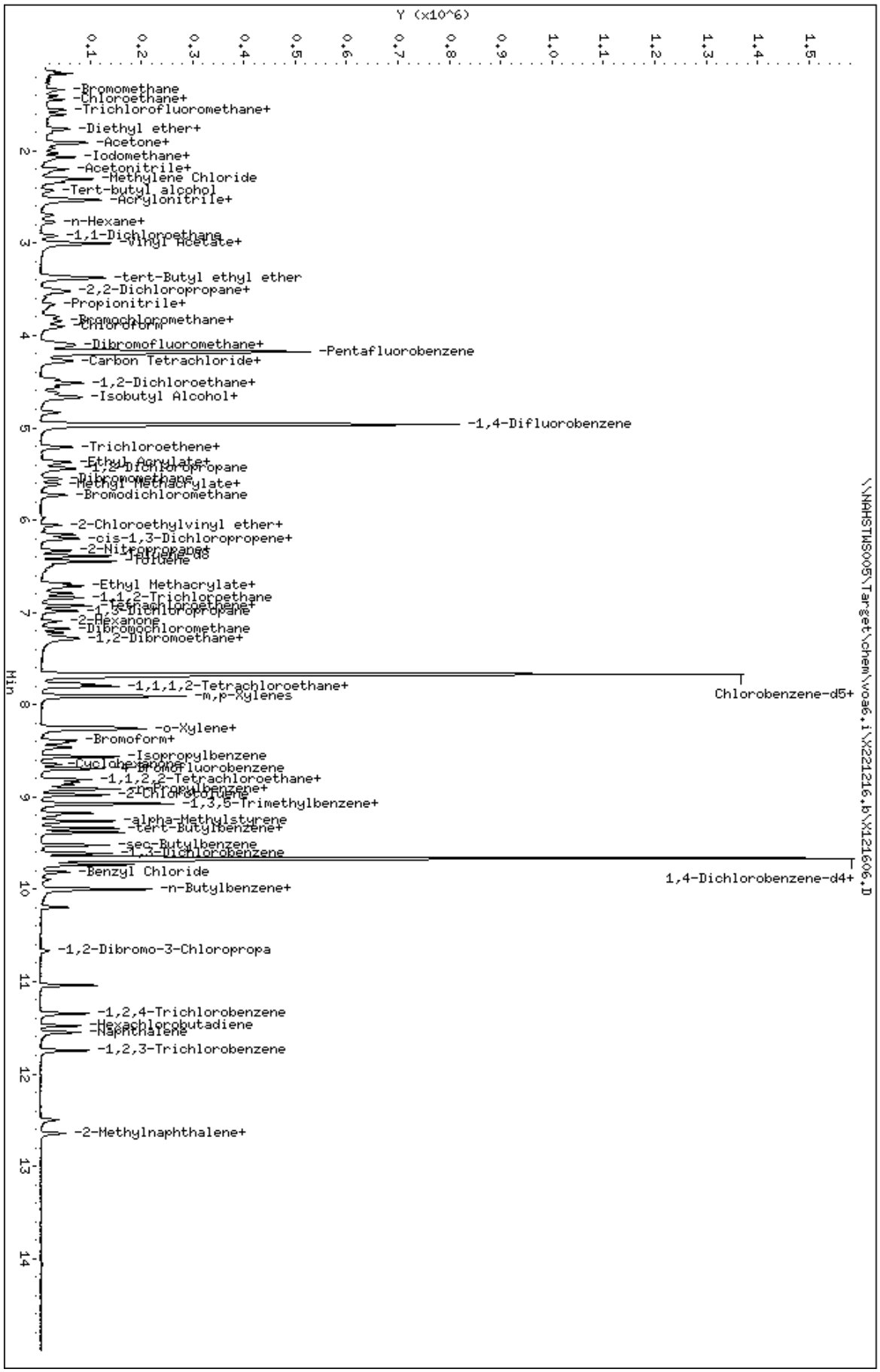
		QUANT SIG					AMOUNTS	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	131 Methyl Acrylate	55	3.705	3.705	(0.887)	14950	5.00000	4.88(M)
	162 Butyl acrylate	55	8.260	8.260	(1.077)	38320	5.00000	4.48
	2 Dichlorodifluoromethane	85	0.972	0.972	(0.233)	15008	5.00000	5.11
	3 Chloromethane	50	1.077	1.077	(0.258)	19623	5.00000	6.81
	5 Vinyl Chloride	62	1.141	1.141	(0.273)	19002	5.00000	4.82
	6 Bromomethane	94	1.336	1.336	(0.320)	15112	5.00000	6.66
	7 Chloroethane	64	1.400	1.400	(0.335)	14167	5.00000	5.17
	8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	26620	5.00000	4.83
	9 Acrolein	56	1.441	1.441	(0.345)	2699	10.0000	11.33
	10 Acetone	43	1.973	1.973	(0.472)	17632	10.0000	13.91
	11 1,1-Dichloroethene	96	1.910	1.910	(0.457)	16850	5.00000	4.92
	15 Iodomethane	142	2.026	2.026	(0.485)	26708	10.0000	9.27
	16 Acrylonitrile	53	2.551	2.551	(0.611)	11047	10.0000	9.52
	17 Methylene Chloride	84	2.303	2.303	(0.551)	22932	5.00000	4.88(M)
	18 Methyl tert-butyl ether	73	2.532	2.532	(0.606)	56330	5.00000	5.03
	19 Carbon Disulfide	76	2.067	2.067	(0.495)	85418	10.0000	9.54
	20 trans-1,2-Dichloroethene	96	2.532	2.532	(0.606)	19006	5.00000	4.96
	21 Vinyl Acetate	43	3.000	3.000	(0.718)	101238	10.0000	10.30
	22 1,1-Dichloroethane	63	2.922	2.922	(0.699)	33810	5.00000	5.03
	24 2-Butanone	43	3.600	3.600	(0.862)	11771	10.0000	11.53(H)
	26 2,2-Dichloropropane	77	3.507	3.507	(0.839)	27881	5.00000	4.88
	27 cis-1,2-Dichloroethene	96	3.533	3.533	(0.846)	22734	5.00000	4.88
	28 Chloroform	83	3.904	3.904	(0.935)	38156	5.00000	5.06
	29 Bromochloromethane	128	3.799	3.799	(0.909)	13213	5.00000	5.18
$	30 Dibromofluoromethane	113	4.103	4.103	(0.982)	24255	5.00000	5.45
	31 1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	29017	5.00000	4.85
	32 1,1-Dichloropropene	75	4.279	4.279	(0.862)	23845	5.00000	4.90(M)
	33 1,2-Dichloroethane	62	4.556	4.556	(0.918)	28173	5.00000	5.01
	34 Carbon Tetrachloride	117	4.264	4.264	(0.859)	24171	5.00000	4.65
$	35 1,2-Dichloroethane-d4	65	4.477	4.477	(1.072)	24938	5.00000	5.70(M)
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	685413	50.0000	
	37 Benzene	78	4.511	4.511	(0.909)	81981	5.00000	5.00
	38 Trichloroethene	130	5.208	5.208	(1.049)	22693	5.00000	4.88
	39 Bromodichloromethane	83	5.729	5.729	(1.154)	29358	5.00000	4.77
	41 2-Chloroethylvinyl ether	63	6.056	6.056	(1.220)	17700	10.0000	10.12
	42 1,2-Dichloropropane	63	5.437	5.437	(1.095)	21679	5.00000	4.97
	44 Dibromomethane	93	5.557	5.557	(1.119)	14449	5.00000	4.88
	45 4-Methyl-2-Pentanone	43	6.329	6.329	(0.825)	34912	10.0000	9.98
	46 cis-1,3-Dichloropropene	75	6.161	6.161	(1.241)	35507	5.00000	4.92
*	47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	654176	50.0000	
$	48 Toluene-d8	98	6.389	6.389	(0.833)	81640	5.00000	5.05
	50 Toluene	91	6.449	6.449	(0.841)	89594	5.00000	4.95
	51 trans-1,3-Dichloropropene	75	6.689	6.689	(1.347)	28399	5.00000	4.74(M)
	52 2-Hexanone	43	7.094	7.094	(0.925)	24056	10.0000	10.11
	53 1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	18638	5.00000	5.13
	54 1,3-Dichloropropane	76	6.985	6.985	(0.911)	35759	5.00000	5.00
	55 Dibromochloromethane	129	7.176	7.176	(0.936)	25357	5.00000	4.84
	56 Tetrachloroethene	164	6.929	6.929	(0.904)	17219	5.00000	4.60
	57 1,2-Dibromoethane	107	7.263	7.263	(0.947)	23172	5.00000	5.10
	58 1-Chlorohexane	55	7.698	7.698	(1.550)	15210	5.00000	4.59(MH)
	59 Chlorobenzene	112	7.694	7.694	(1.003)	62744	5.00000	4.89
	60 1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	22632	5.00000	4.74

61 Ethylbenzene	106	7.802	7.802 (1.018)	29550	5.00000	4.89
62 m,p-Xylenes	106	7.907	7.907 (1.031)	73283	10.0000	9.40

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.245	8.245	(1.075)	37189	5.00000	4.83
	64 Styrene	104	8.267	8.267	(1.078)	62411	5.00000	4.84
	66 Bromoform	173	8.414	8.414	(1.097)	16801	5.00000	4.63
	67 Isopropylbenzene	105	8.563	8.563	(1.117)	85440	5.00000	4.86
	68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	29807	5.00000	5.24
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	32501	5.00000	5.43
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	356340	50.0000	
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.918)	20685	5.00000	5.21(M)
	73 n-Propylbenzene	91	8.916	8.916	(0.923)	97603	5.00000	4.94
	74 Bromobenzene	156	8.811	8.811	(0.912)	28887	5.00000	4.94
	75 1,3,5-Trimethylbenzene	105	9.070	9.070	(0.939)	72501	5.00000	4.97
	76 2-Chlorotoluene	91	8.976	8.976	(0.929)	65973	5.00000	5.09
	77 4-Chlorotoluene	91	9.077	9.077	(0.939)	75073	5.00000	5.08
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	59375	5.00000	4.97
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	75723	5.00000	4.93
	81 sec-Butylbenzene	105	9.523	9.523	(0.986)	77577	5.00000	4.88
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	69666	5.00000	4.89
	83 1,3-Dichlorobenzene	146	9.609	9.609	(0.995)	49954	5.00000	5.14
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	52655	5.00000	4.97
	86 Benzyl Chloride	91	9.816	9.816	(1.280)	35254	5.00000	5.95
	87 n-Butylbenzene	91	9.999	9.999	(1.035)	54831	5.00000	5.63
	88 1,2-Dichlorobenzene	146	9.995	9.995	(1.035)	50895	5.00000	5.09
	89 1,2-Dibromo-3-Chloropropane	155	10.670	10.670	(1.104)	4911	5.00000	5.49
	90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.174)	31873	5.00000	5.05
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	13454	5.00000	4.81
	92 Naphthalene	128	11.551	11.551	(1.196)	72748	5.00000	5.06
	93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.216)	30274	5.00000	5.01
M	94 1,2-Dichloroethylene (total)	96				41740	10.0000	
M	95 Xylenes (total)	106				110472	15.0000	
	141 Cyclohexane	56	4.118	4.118	(0.986)	19859	5.00000	5.52(H)
	138 Freon TF	101	1.913	1.913	(0.458)	14845	5.00000	4.48
	147 Methylcyclohexane	55	5.388	5.388	(1.085)	38650	5.00000	4.60(M)
	146 Methyl Acetate	43	2.236	2.236	(0.535)	8968	5.00000	4.42
	148 Tert-Butyl alcohol	59	2.431	2.431	(0.582)	30525	100.000	97.81
	149 Isopropyl Alcohol	45	2.097	2.097	(0.502)	16518	100.000	101.35(T)

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6,i\X221216,b\X121606,D
Date : 16-DEC-2022 13:23
Client ID: VSTD005
Sample Info: VSTD005;VSTD005;1;5;
Purge Volume: 5.0
Column phase: DB624

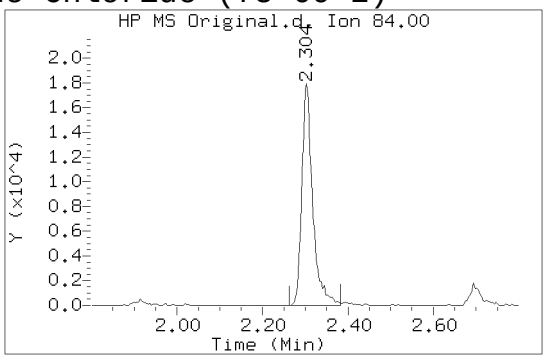
Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

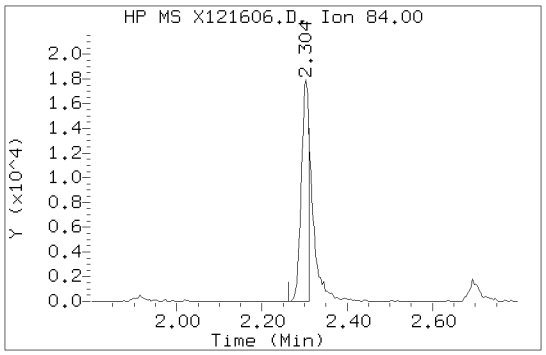
Methylene Chloride (75-09-2)

Reason Code:

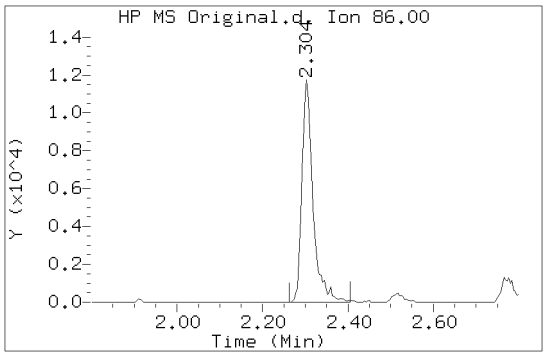
BEFORE
MASS
84
AREA
32325
HEIGHT
17936
27-Dec-2022
16:03
linh
pham



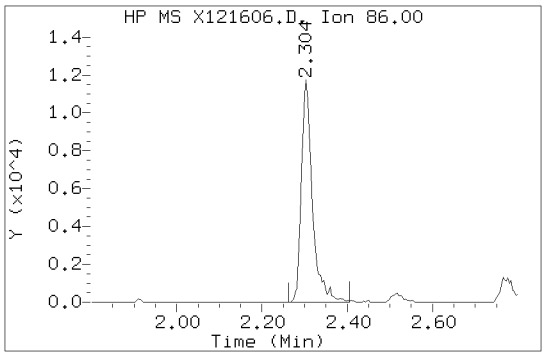
AFTER
MASS
84
AREA
22932
HEIGHT
17936
27-Dec-2022
16:07
linh
pham



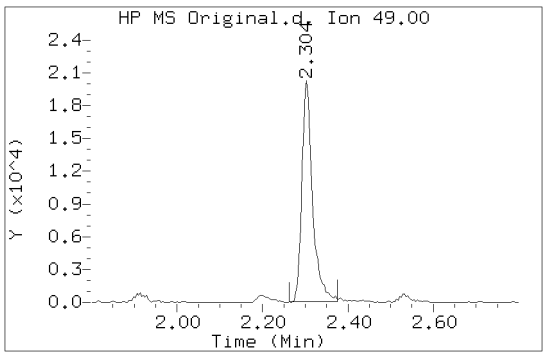
BEFORE
MASS
86
AREA
21691
HEIGHT
11740
27-Dec-2022
16:03
linh
pham



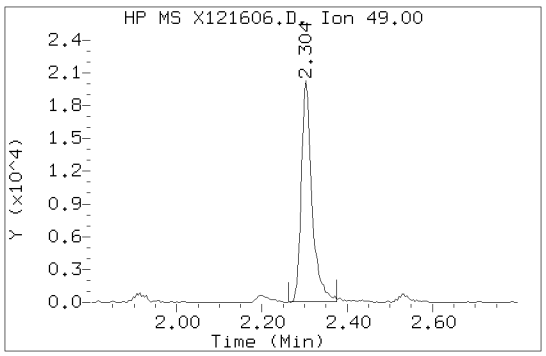
AFTER
MASS
86
AREA
21691
HEIGHT
11740
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
49
AREA
35909
HEIGHT
20222
27-Dec-2022
16:03
linh
pham



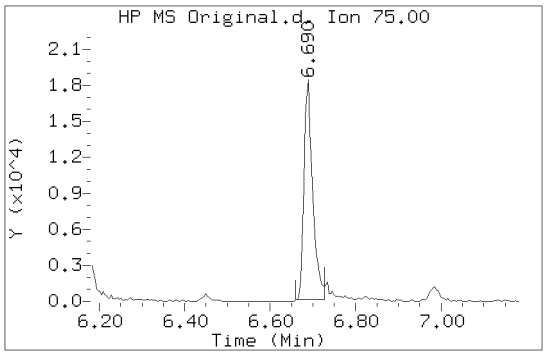
AFTER
MASS
49
AREA
35909
HEIGHT
20222
27-Dec-2022
16:07
linh
pham



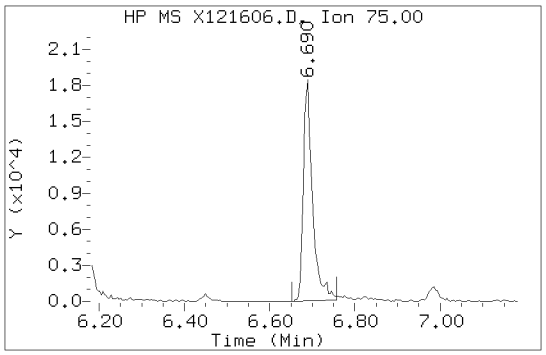
trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

BEFORE
MASS
75
AREA
26483
HEIGHT
18306
27-Dec-2022
16:03
linh
pham



AFTER
MASS
75
AREA
28399
HEIGHT
18443
27-Dec-2022
16:07
linh
pham



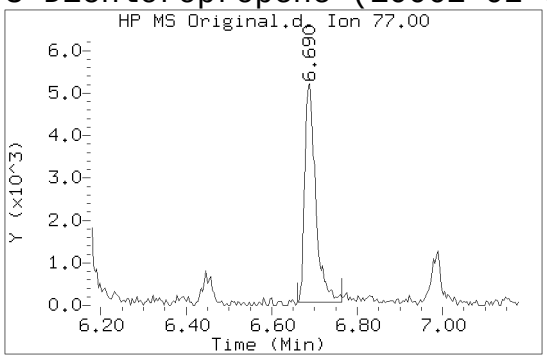
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

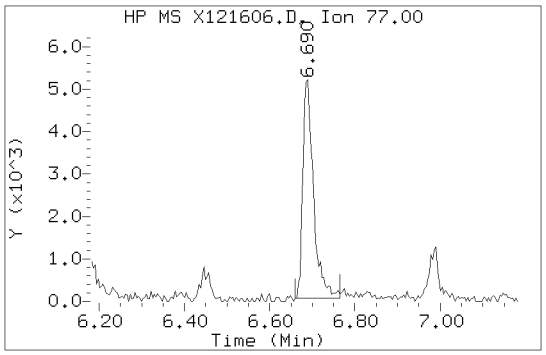
BEFORE

MASS
77
AREA
9244
HEIGHT
5154
27-Dec-2022
16:03
linh
pham



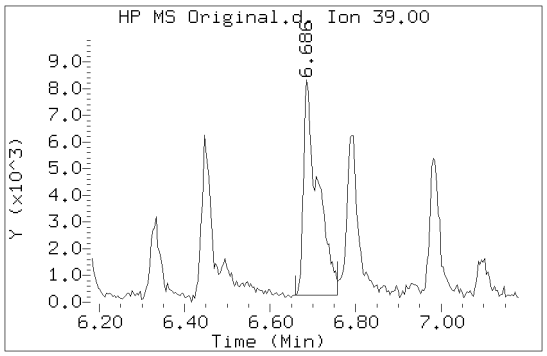
AFTER

MASS
77
AREA
9244
HEIGHT
5154
27-Dec-2022
16:07
linh
pham



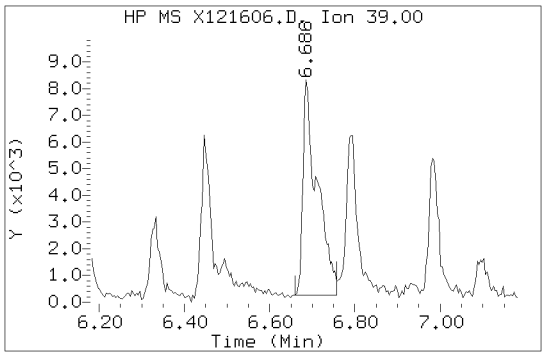
BEFORE

MASS
39
AREA
19092
HEIGHT
8065
27-Dec-2022
16:03
linh
pham



AFTER

MASS
39
AREA
19092
HEIGHT
8065
27-Dec-2022
16:07
linh
pham

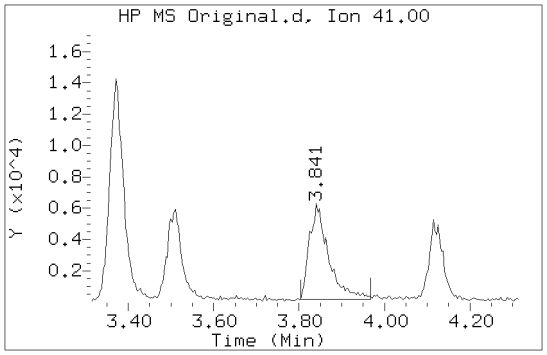


Methacrylonitrile (126-98-7)

Reason Code:

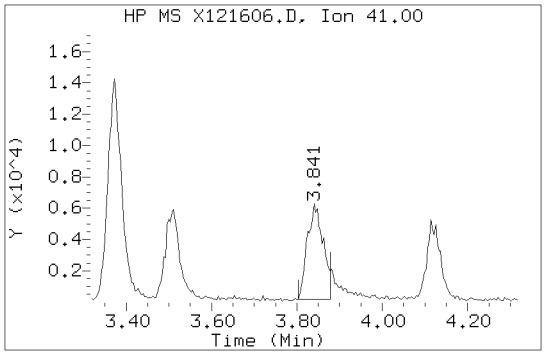
BEFORE

MASS
41
AREA
18790
HEIGHT
6109
27-Dec-2022
16:03
linh
pham



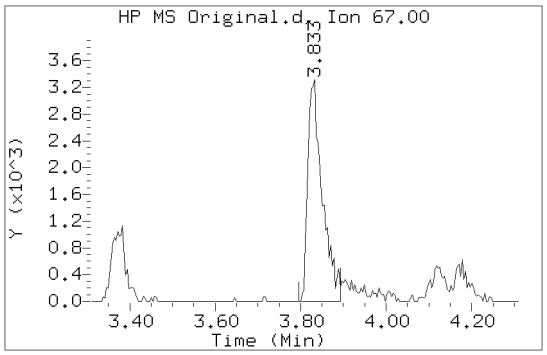
AFTER

MASS
41
AREA
15701
HEIGHT
6109
27-Dec-2022
16:07
linh
pham



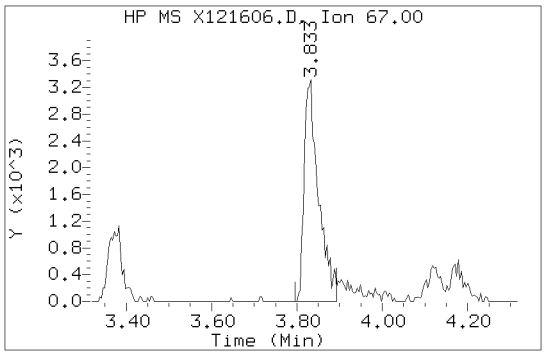
BEFORE

MASS
67
AREA
7866
HEIGHT
3315
27-Dec-2022
16:03
linh
pham



AFTER

MASS
67
AREA
7866
HEIGHT
3315
27-Dec-2022
16:07
linh
pham

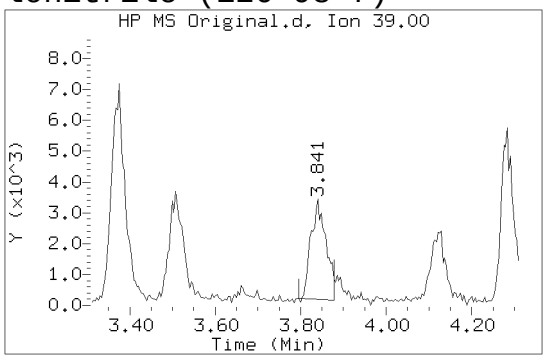


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

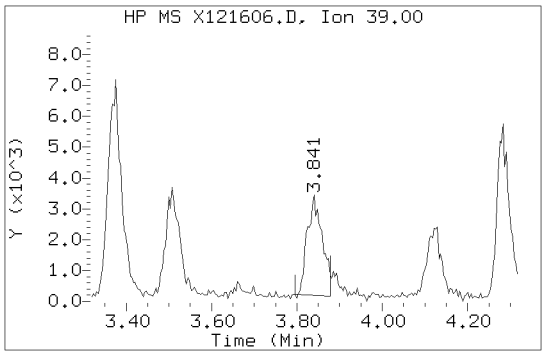
Methacrylonitrile (126-98-7)

Reason Code:

BEFORE
MASS
39
AREA
7951
HEIGHT
3252
27-Dec-2022
16:03
linh
pham



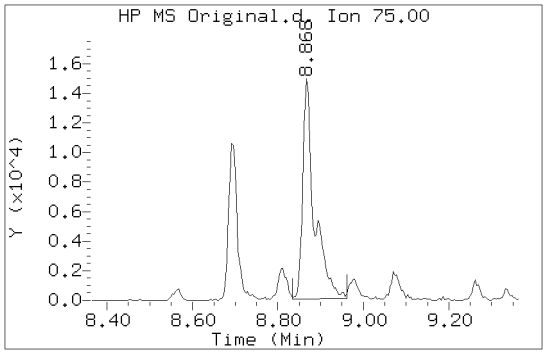
AFTER
MASS
39
AREA
7951
HEIGHT
3252
27-Dec-2022
16:07
linh
pham



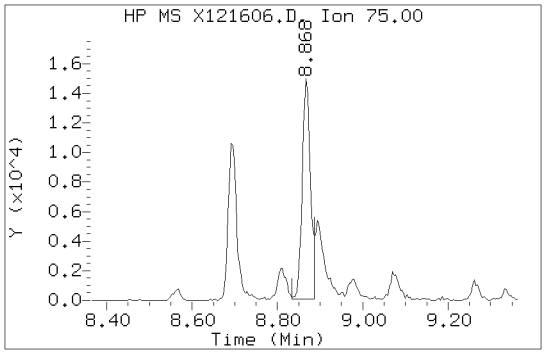
1,2,3-Trichloropropane (96-18-4)

Reason Code:

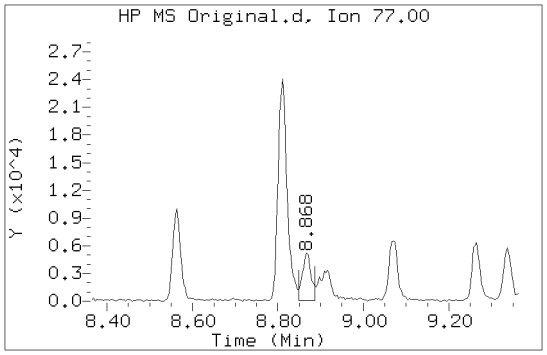
BEFORE
MASS
75
AREA
28905
HEIGHT
14911
27-Dec-2022
16:03
linh
pham



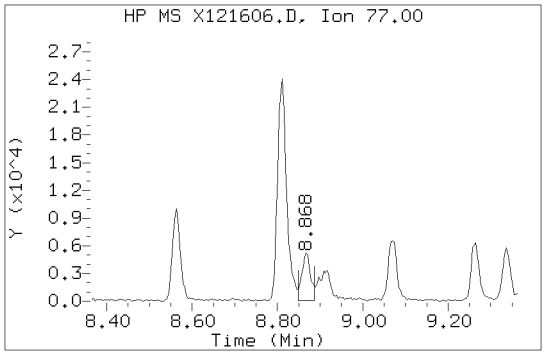
AFTER
MASS
75
AREA
20685
HEIGHT
14911
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
77
AREA
7524
HEIGHT
5143
27-Dec-2022
16:03
linh
pham



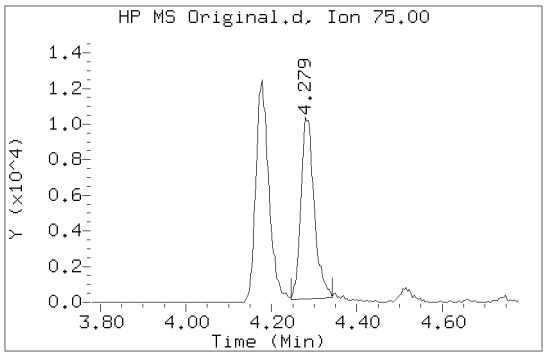
AFTER
MASS
77
AREA
7524
HEIGHT
5143
27-Dec-2022
16:07
linh
pham



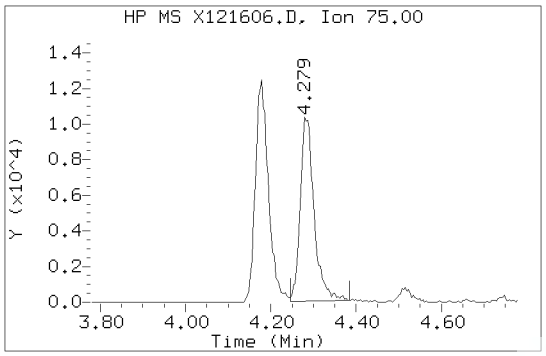
1,1-Dichloropropene (563-58-6)

Reason Code:

BEFORE
MASS
75
AREA
22411
HEIGHT
10201
27-Dec-2022
16:03
linh
pham



AFTER
MASS
75
AREA
23845
HEIGHT
10354
27-Dec-2022
16:07
linh
pham

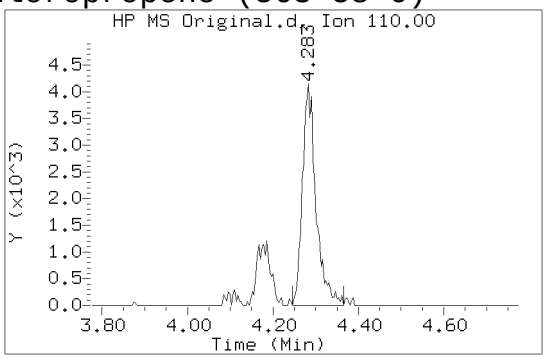


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

1,1-Dichloropropene (563-58-6)

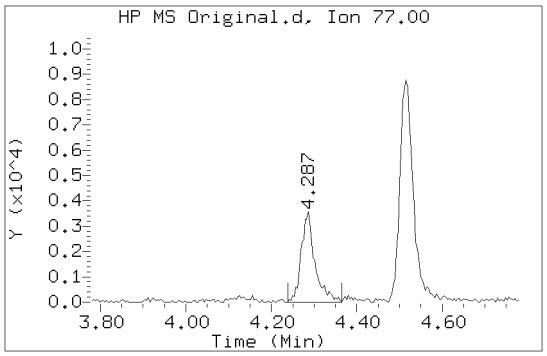
BEFORE

MASS
110
AREA
9244
HEIGHT
4151
27-Dec-2022
16:03
linh
pham



BEFORE

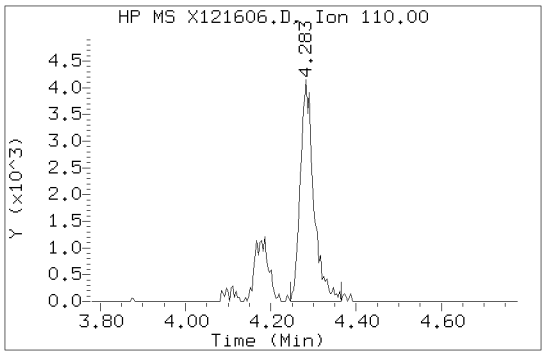
MASS
77
AREA
8083
HEIGHT
3567
27-Dec-2022
16:03
linh
pham



Reason Code:

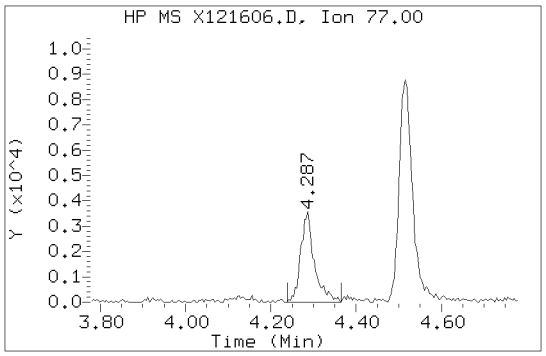
AFTER

MASS
110
AREA
9244
HEIGHT
4151
27-Dec-2022
16:07
linh
pham



AFTER

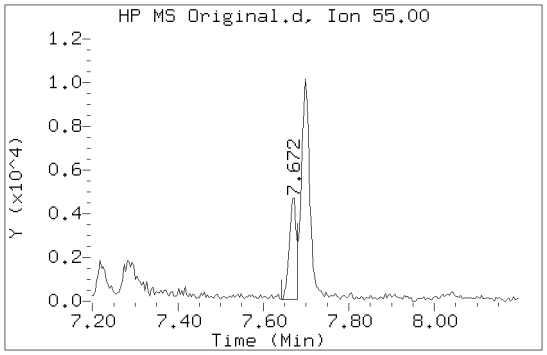
MASS
77
AREA
8083
HEIGHT
3567
27-Dec-2022
16:07
linh
pham



1-Chlorohexane (544-10-5)

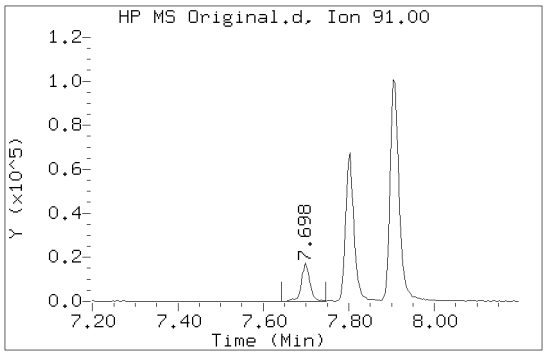
BEFORE

MASS
55
AREA
5371
HEIGHT
4660
27-Dec-2022
16:03
linh
pham



BEFORE

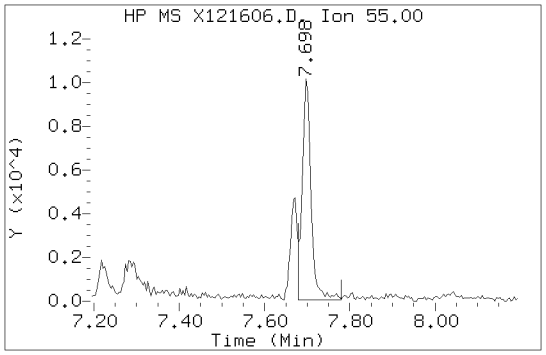
MASS
91
AREA
24578
HEIGHT
17336
27-Dec-2022
16:03
linh
pham



Reason Code:

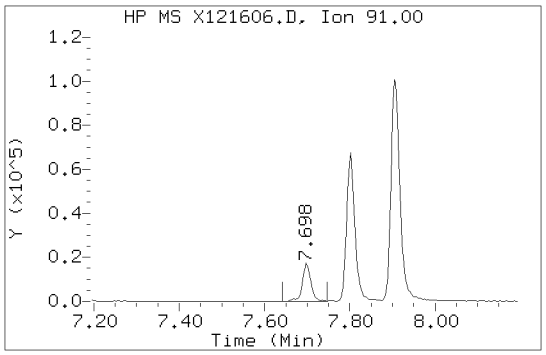
AFTER

MASS
55
AREA
15210
HEIGHT
10126
27-Dec-2022
16:07
linh
pham



AFTER

MASS
91
AREA
24578
HEIGHT
17336
27-Dec-2022
16:07
linh
pham

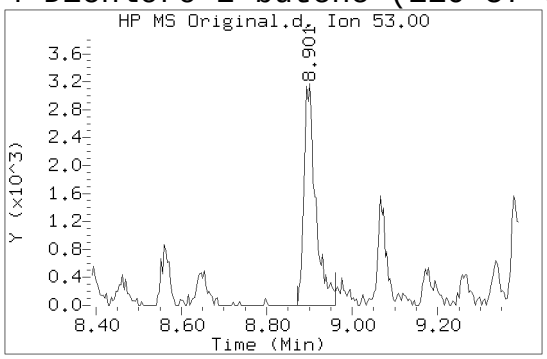


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

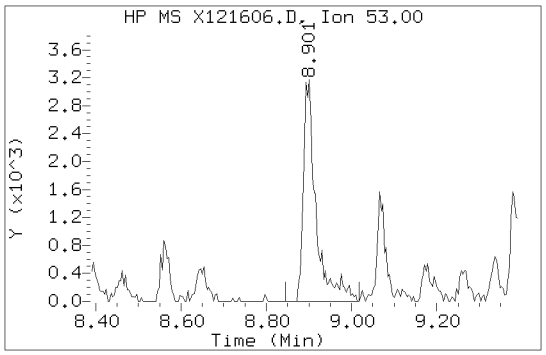
trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

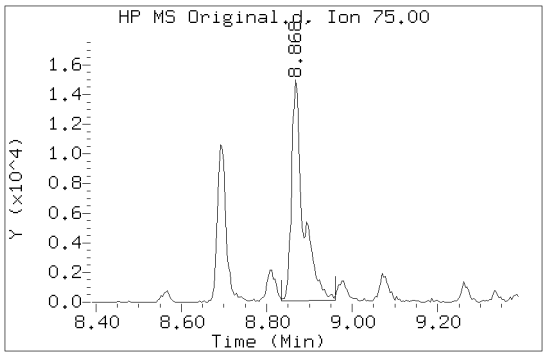
BEFORE
MASS
53
AREA
6122
HEIGHT
3172
27-Dec-2022
16:03
linh
pham



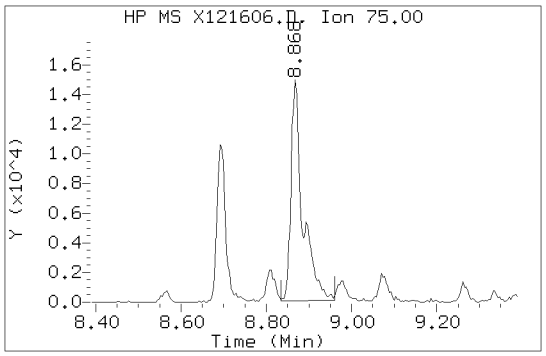
AFTER
MASS
53
AREA
6648
HEIGHT
3172
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
75
AREA
28905
HEIGHT
14911
27-Dec-2022
16:03
linh
pham



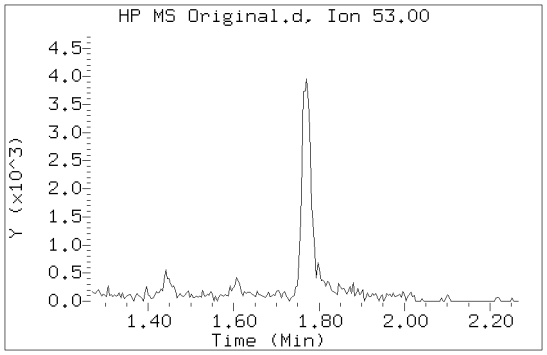
AFTER
MASS
75
AREA
28905
HEIGHT
14911
27-Dec-2022
16:07
linh
pham



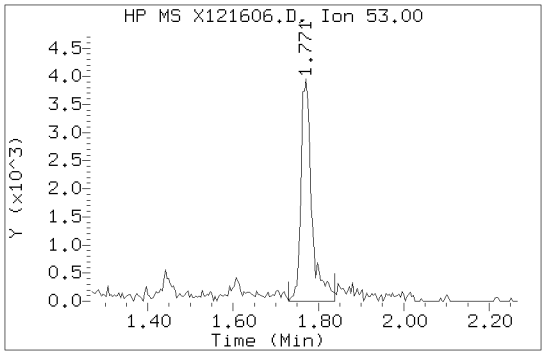
Chloroprene (126-99-8)

Reason Code:

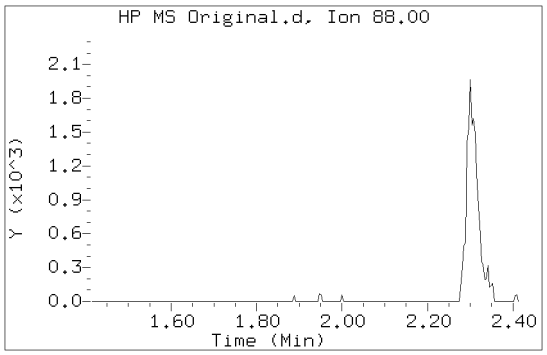
BEFORE
MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



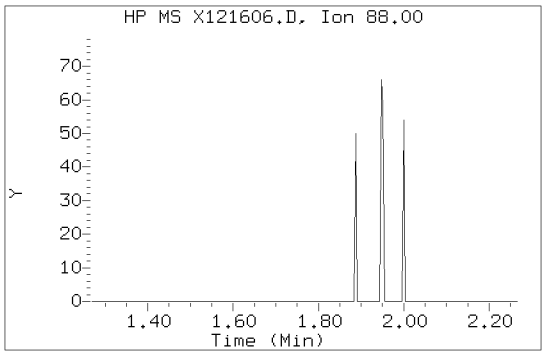
AFTER
MASS
53
AREA
7154
HEIGHT
3955
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



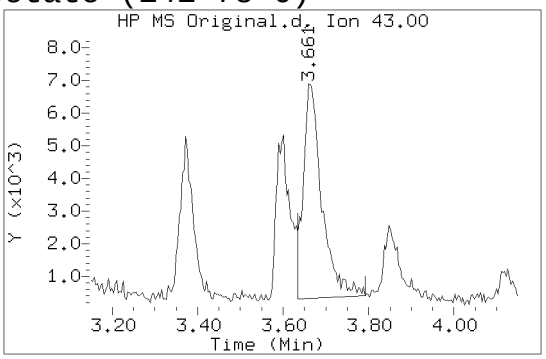
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

Ethyl Acetate (141-78-6)

Reason Code:

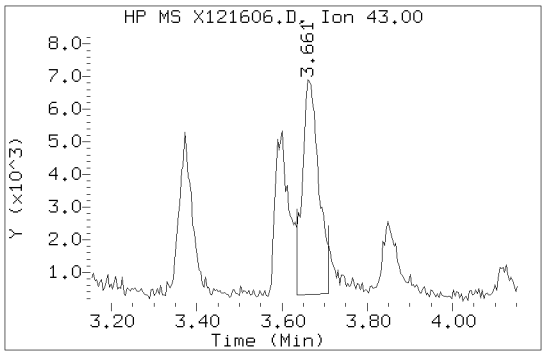
BEFORE

MASS
43
AREA
20113
HEIGHT
6576
27-Dec-2022
16:03
linh
pham



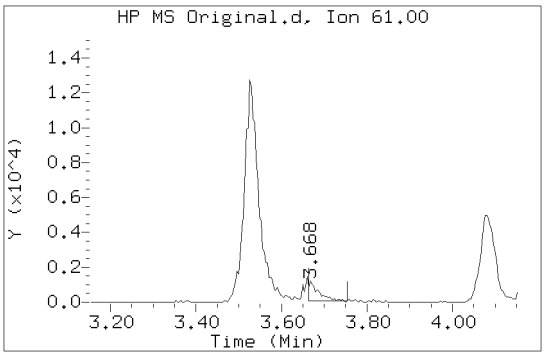
AFTER

MASS
43
AREA
18020
HEIGHT
6576
27-Dec-2022
16:07
linh
pham



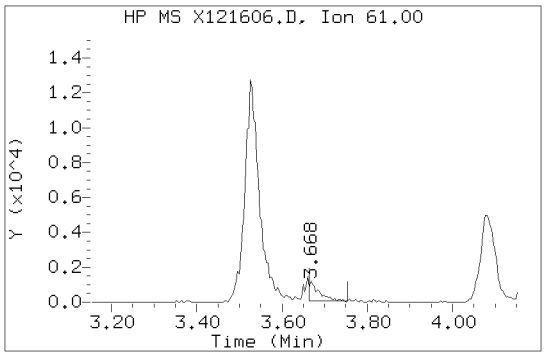
BEFORE

MASS
61
AREA
1766
HEIGHT
1155
27-Dec-2022
16:03
linh
pham



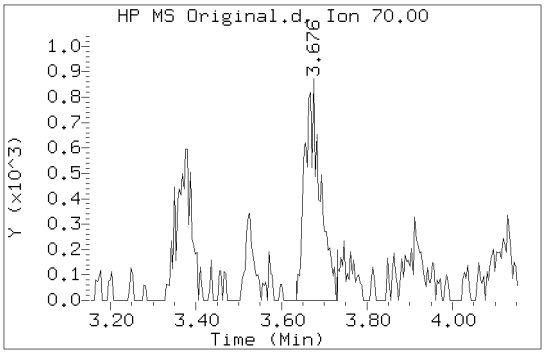
AFTER

MASS
61
AREA
1766
HEIGHT
1155
27-Dec-2022
16:07
linh
pham



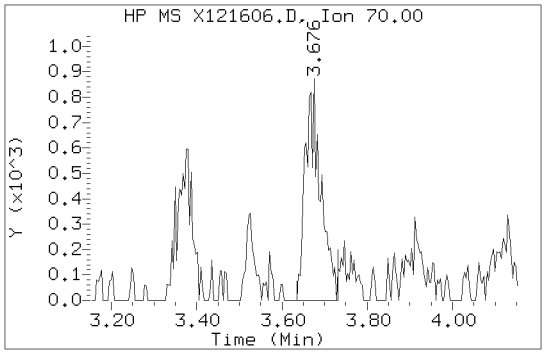
BEFORE

MASS
70
AREA
2205
HEIGHT
873
27-Dec-2022
16:03
linh
pham



AFTER

MASS
70
AREA
2205
HEIGHT
873
27-Dec-2022
16:07
linh
pham

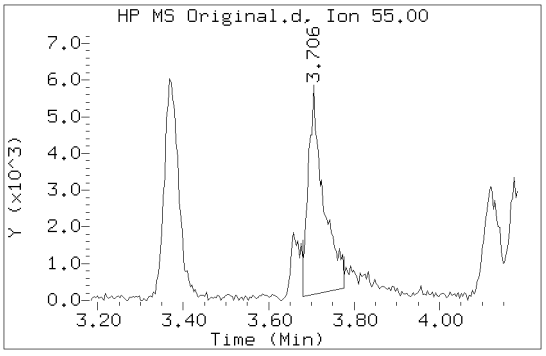


Methyl Acrylate (96-33-3)

Reason Code:

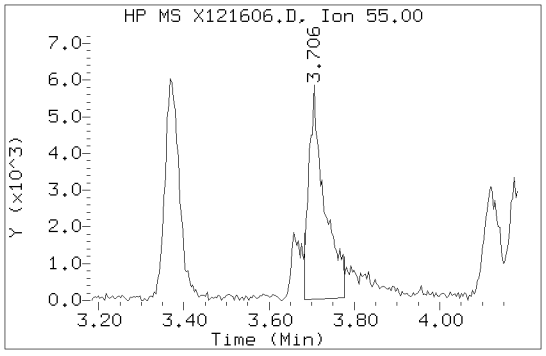
BEFORE

MASS
55
AREA
14157
HEIGHT
5696
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
14950
HEIGHT
5831
27-Dec-2022
16:07
linh
pham



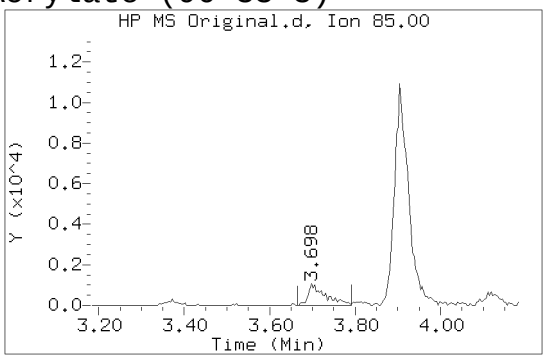
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

Methyl Acrylate (96-33-3)

Reason Code:

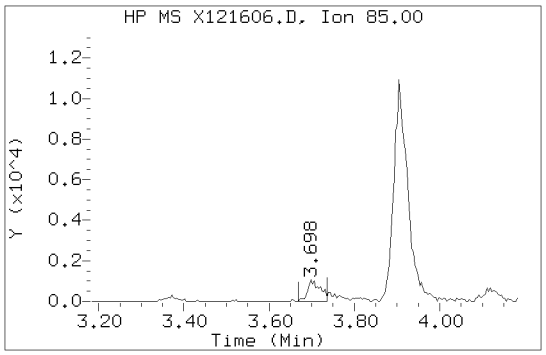
BEFORE

MASS
85
AREA
2934
HEIGHT
1073
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
2159
HEIGHT
1073
27-Dec-2022
16:07
linh
pham

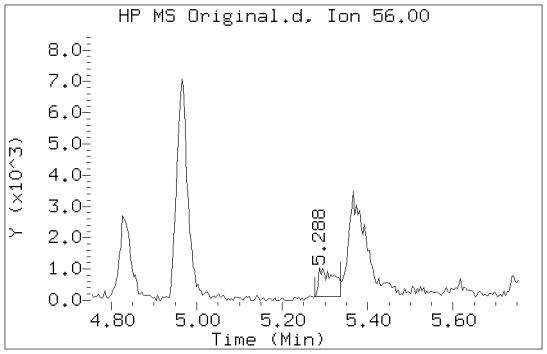


n-Butanol (71-36-3)

Reason Code:

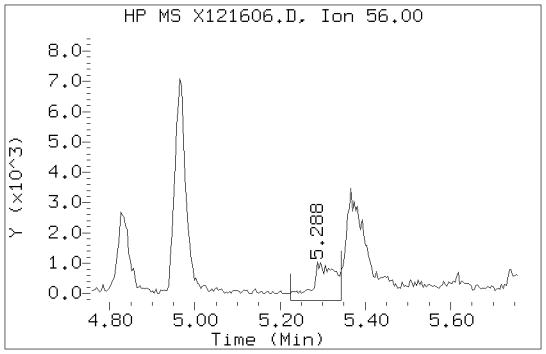
BEFORE

MASS
56
AREA
2243
HEIGHT
922
27-Dec-2022
16:03
linh
pham



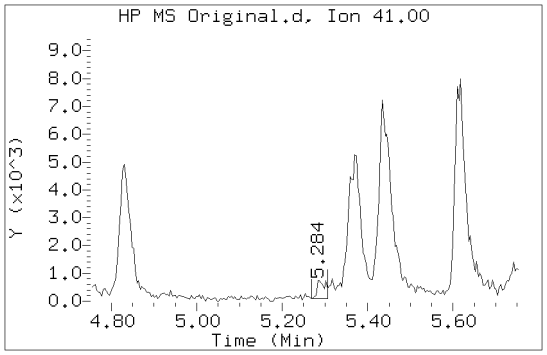
AFTER

MASS
56
AREA
4891
HEIGHT
1266
27-Dec-2022
16:07
linh
pham



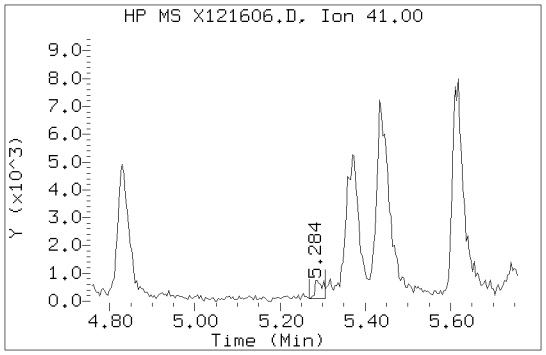
BEFORE

MASS
41
AREA
876
HEIGHT
641
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
876
HEIGHT
641
27-Dec-2022
16:07
linh
pham

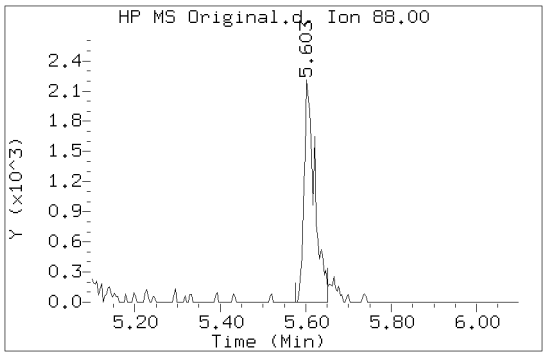


1,4-Dioxane ()

Reason Code:

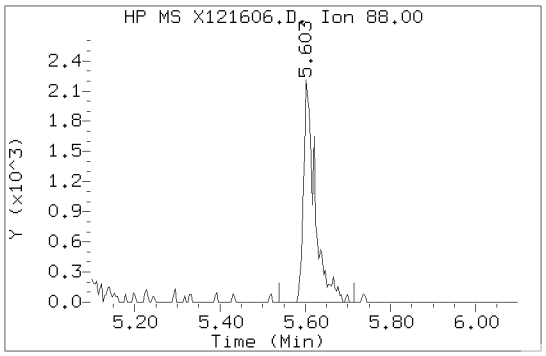
BEFORE

MASS
88
AREA
3873
HEIGHT
2211
27-Dec-2022
16:03
linh
pham



AFTER

MASS
88
AREA
4197
HEIGHT
2211
27-Dec-2022
16:07
linh
pham



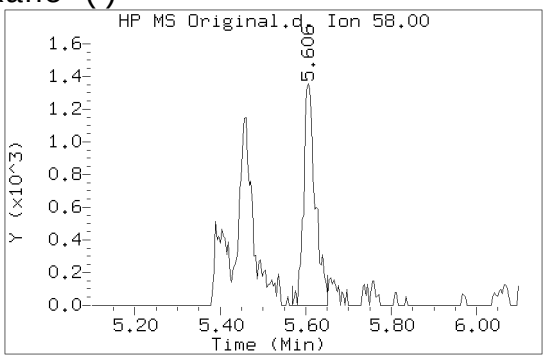
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

1,4-Dioxane ()

Reason Code:

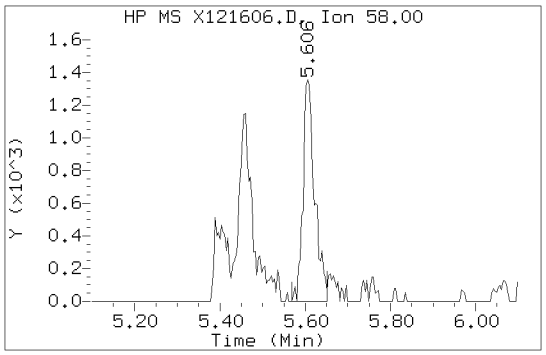
BEFORE

MASS
58
AREA
2625
HEIGHT
1356
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
2625
HEIGHT
1356
27-Dec-2022
16:07
linh
pham

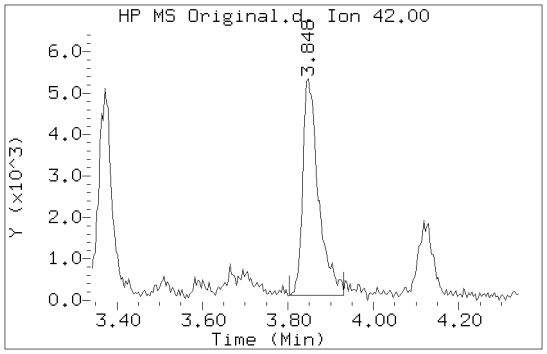


Tetrahydrofuran (109-99-9)

Reason Code:

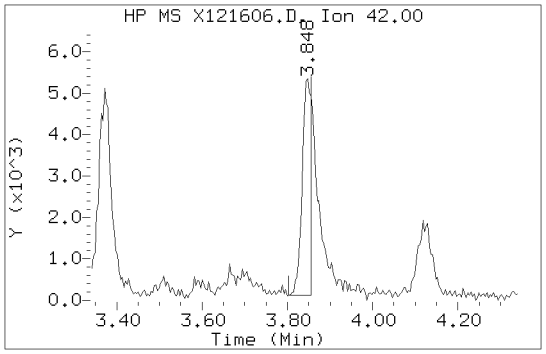
BEFORE

MASS
42
AREA
13557
HEIGHT
5225
27-Dec-2022
16:03
linh
pham



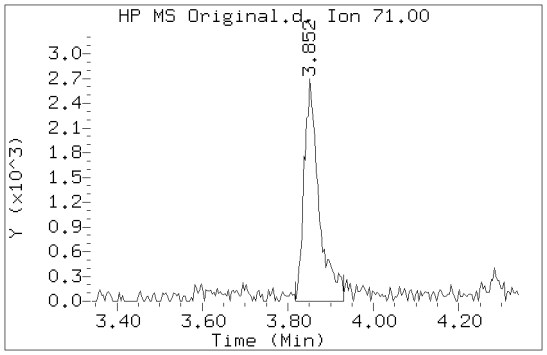
AFTER

MASS
42
AREA
7598
HEIGHT
5225
27-Dec-2022
16:07
linh
pham



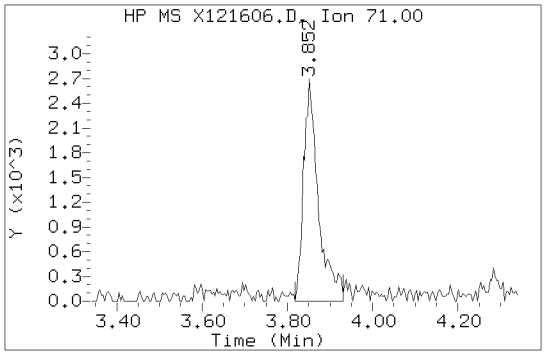
BEFORE

MASS
71
AREA
6572
HEIGHT
2695
27-Dec-2022
16:03
linh
pham



AFTER

MASS
71
AREA
6572
HEIGHT
2695
27-Dec-2022
16:07
linh
pham

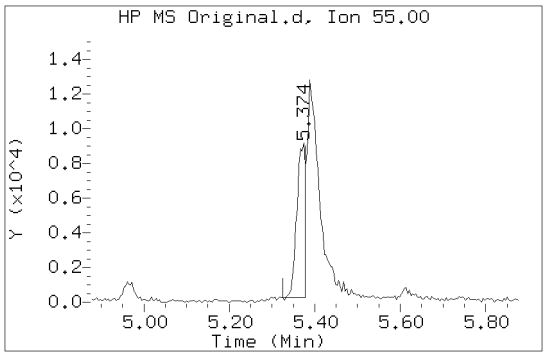


Methylcyclohexane (108-87-2)

Reason Code:

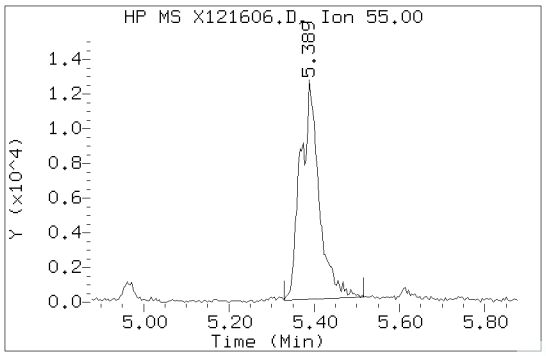
BEFORE

MASS
55
AREA
12381
HEIGHT
8941
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
38650
HEIGHT
12647
27-Dec-2022
16:07
linh
pham

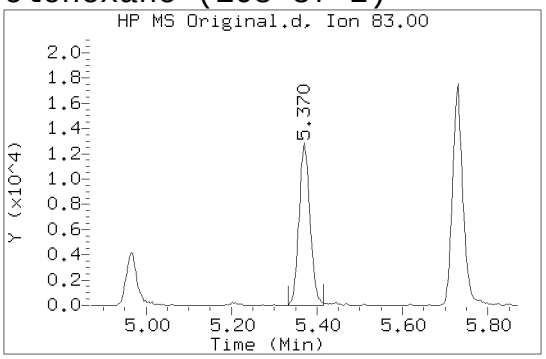


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

Methylcyclohexane (108-87-2)

BEFORE

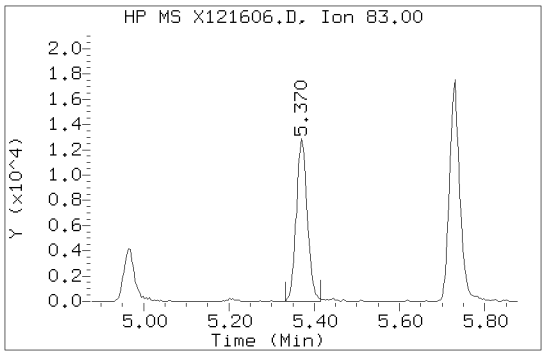
MASS
83
AREA
23564
HEIGHT
12870
27-Dec-2022
16:03
linh
pham



Reason Code:

AFTER

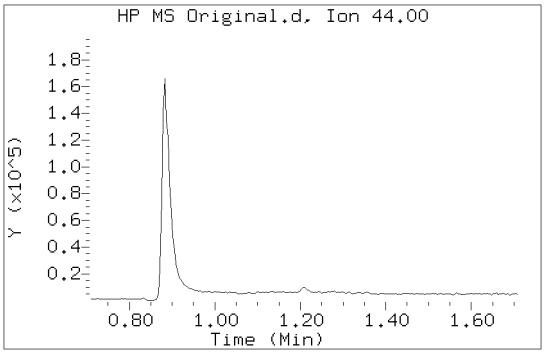
MASS
83
AREA
23564
HEIGHT
12870
27-Dec-2022
16:07
linh
pham



Acetaldehyde (75-07-0)

BEFORE

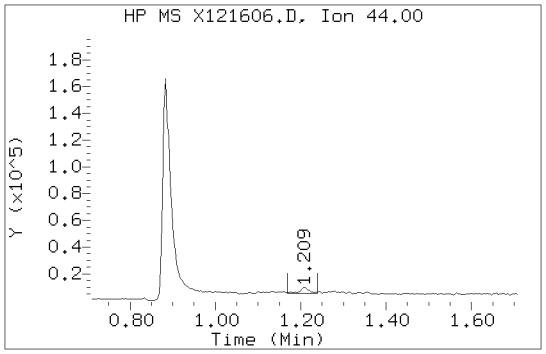
MASS
44
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

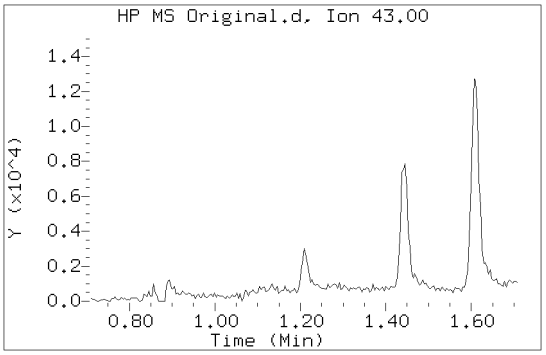
AFTER

MASS
44
AREA
6161
HEIGHT
4314
27-Dec-2022
16:07
linh
pham



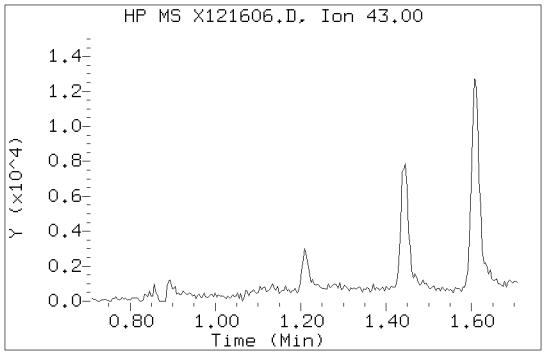
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



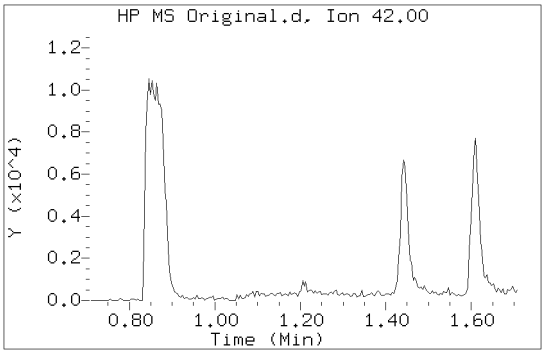
AFTER

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



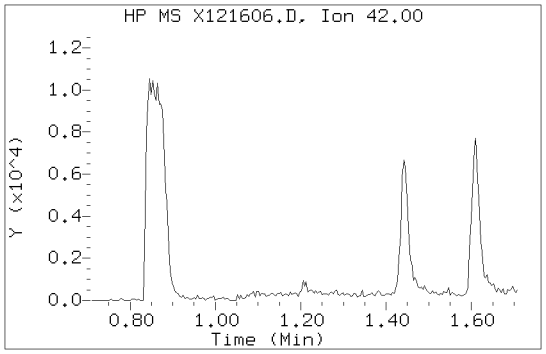
BEFORE

MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



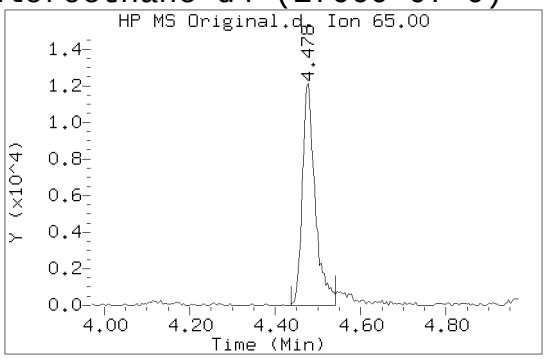
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

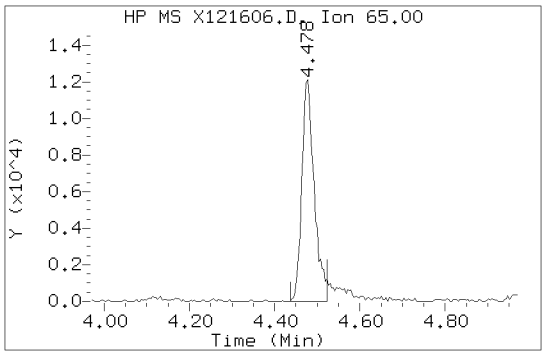
BEFORE

MASS
65
AREA
25815
HEIGHT
12121
27-Dec-2022
16:03
linh
pham



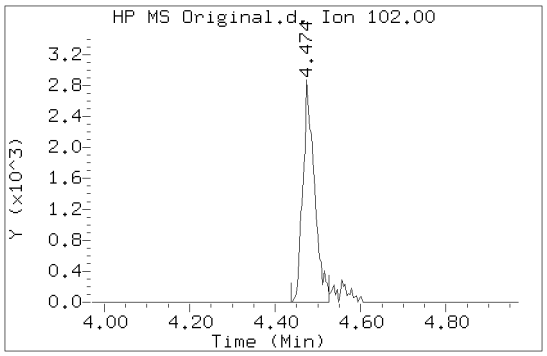
AFTER

MASS
65
AREA
24938
HEIGHT
12121
27-Dec-2022
16:07
linh
pham



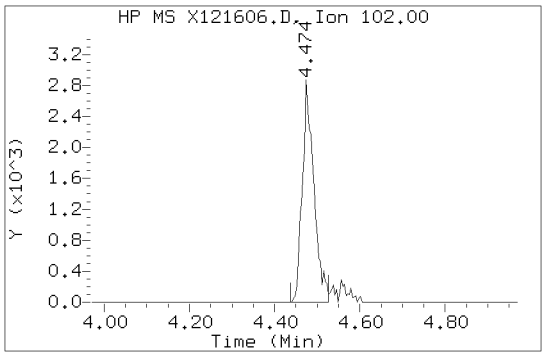
BEFORE

MASS
102
AREA
5492
HEIGHT
2873
27-Dec-2022
16:03
linh
pham



AFTER

MASS
102
AREA
5492
HEIGHT
2873
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D
Lab Smp Id: VSTD020 Client Smp ID: VSTD020
Inj Date : 16-DEC-2022 13:43
Operator : PC Inst ID: voa6.i
Smp Info : VSTD020;VSTD020;1;6;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 13:23 Cal File: X121606.D
Als bottle: 8 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	459407	50.0000	
135 1,4-Dioxane	88	5.598	5.598	(1.340)	16105	400.000	383.50(M)
140 1,3-Butadiene	54	1.164	1.164	(0.279)	58280	20.0000	18.48
25 Methacrylonitrile	41	3.821	3.821	(0.915)	62911	20.0000	19.33
12 Isobutyl Alcohol	43	4.672	4.672	(1.118)	201008	400.000	388.99
13 Acetonitrile	39	2.195	2.195	(0.525)	81163	200.000	194.11
14 Allyl Chloride	41	2.195	2.195	(0.525)	150748	20.0000	18.93
4 Propionitrile	54	3.653	3.653	(0.874)	85562	200.000	182.52
136 n-Hexane	57	2.768	2.768	(0.663)	65476	20.0000	19.79
72 trans-1,4-Dichloro-2-butene	53	8.893	8.893	(1.160)	26140	20.0000	18.70
194 Acetaldehyde	44	1.209	1.209	(0.289)	32393	80.0000	100.98(M)
23 Chloroprene	53	1.767	1.767	(0.423)	27967	20.0000	17.90(M)
145 alpha-Methylstyrene	118	9.261	9.261	(0.958)	155968	20.0000	19.76
200 Dimethyl Disulfide	94	6.198	6.198	(0.808)	171978	20.0000	19.62
139 Diethyl ether	59	1.756	1.756	(0.420)	55275	20.0000	18.00
130 Ethyl Acetate	43	3.660	3.660	(0.876)	75163	20.0000	20.96
40 Methyl Methacrylate	41	5.606	5.606	(1.342)	56242	20.0000	17.95
49 Ethyl Methacrylate	69	6.712	6.712	(1.352)	58073	20.0000	18.07
132 n-Butanol	56	5.268	5.268	(1.261)	15012	400.000	294.62
142 Tetrahydrofuran	42	3.848	3.848	(0.921)	28221	40.0000	47.81

150	Allyl alcohol	57	2.768	2.768 (0.663)	65476	400.000	366.93
166	1,2,3-Trimethylbenzene	105	9.729	9.729 (1.007)	331546	20.0000	19.32

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D Page 2
Report Date: 27-Dec-2022 16:07

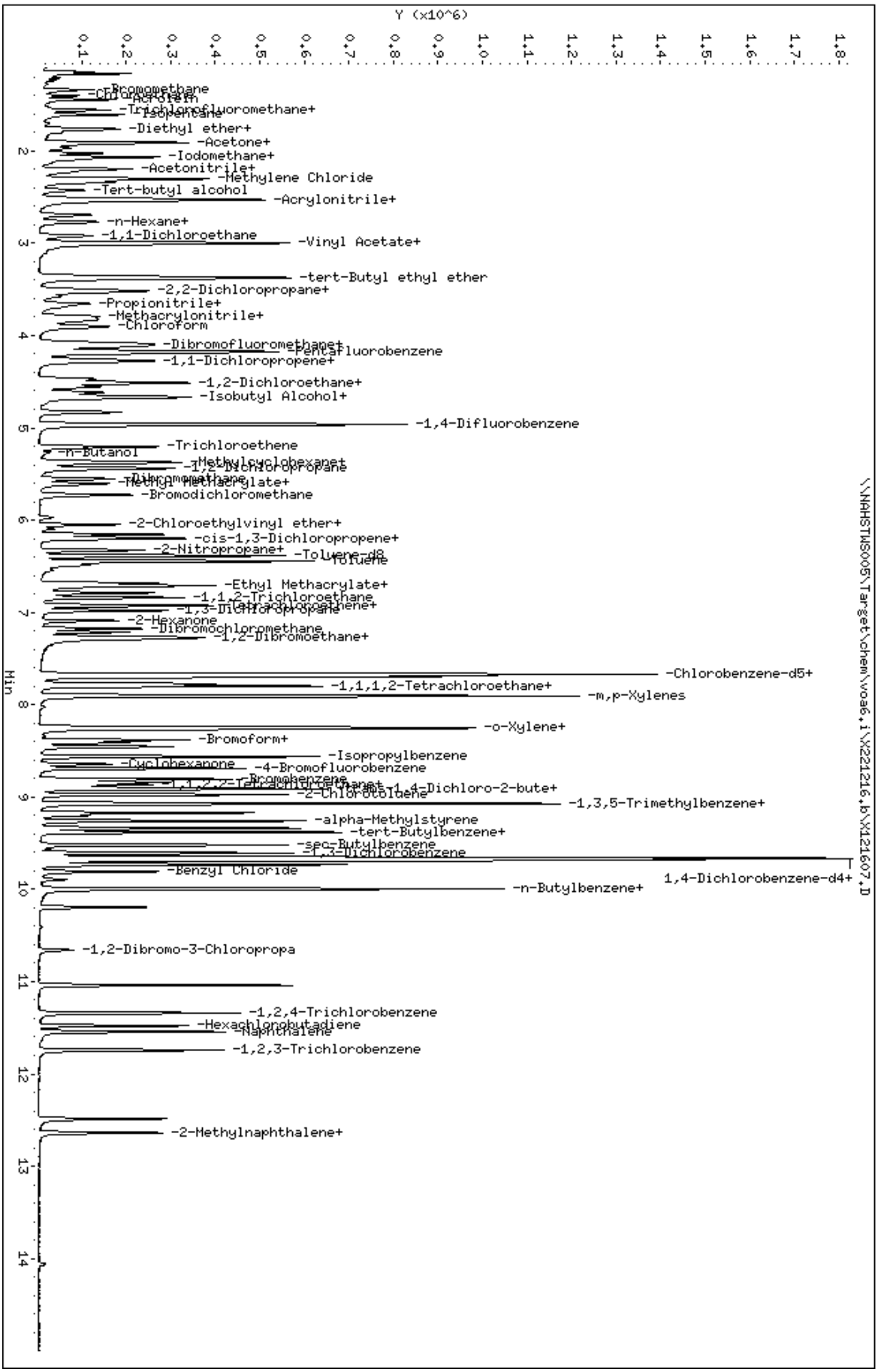
			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131	Methyl Acrylate	55	3.690	3.690	(0.883)	57874	20.0000	18.55(M)
	162	Butyl acrylate	55	8.252	8.252	(1.076)	156518	20.0000	18.50
	2	Dichlorodifluoromethane	85	0.972	0.972	(0.233)	63382	20.0000	19.96
	3	Chloromethane	50	1.077	1.077	(0.258)	72324	20.0000	18.84
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	74461	20.0000	18.55
	6	Bromomethane	94	1.340	1.340	(0.321)	52034	20.0000	18.30
	7	Chloroethane	64	1.400	1.400	(0.335)	52021	20.0000	18.62
	8	Trichlorofluoromethane	101	1.557	1.557	(0.373)	106188	20.0000	18.90
	9	Acrolein	56	1.441	1.441	(0.345)	12279	40.0000	40.80
	10	Acetone	43	1.973	1.973	(0.472)	50987	40.0000	39.53
	11	1,1-Dichloroethene	96	1.913	1.913	(0.458)	65650	20.0000	18.82
	15	Iodomethane	142	2.026	2.026	(0.485)	143457	40.0000	34.36
	16	Acrylonitrile	53	2.532	2.532	(0.606)	46552	40.0000	39.36
	17	Methylene Chloride	84	2.303	2.303	(0.551)	94402	20.0000	19.73
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	214504	20.0000	18.79
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	337289	40.0000	36.97
	20	trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	74471	20.0000	19.08
	21	Vinyl Acetate	43	2.997	2.997	(0.717)	387538	40.0000	38.68
	22	1,1-Dichloroethane	63	2.918	2.918	(0.699)	129644	20.0000	18.93
	24	2-Butanone	43	3.578	3.578	(0.856)	47830	40.0000	36.94(H)
	26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	108952	20.0000	18.73
	27	cis-1,2-Dichloroethene	96	3.525	3.525	(0.844)	88894	20.0000	18.71
	28	Chloroform	83	3.904	3.904	(0.935)	145610	20.0000	18.96
	29	Bromochloromethane	128	3.795	3.795	(0.908)	47919	20.0000	18.42
$	30	Dibromofluoromethane	113	4.099	4.099	(0.981)	90108	20.0000	20.32
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	116049	20.0000	19.05
	32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	93914	20.0000	19.38
	33	1,2-Dichloroethane	62	4.556	4.556	(0.918)	108750	20.0000	19.45
	34	Carbon Tetrachloride	117	4.260	4.260	(0.858)	93815	20.0000	18.13
$	35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	92990	20.0000	20.13
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	682389	50.0000	
	37	Benzene	78	4.511	4.511	(0.909)	313141	20.0000	19.21
	38	Trichloroethene	130	5.205	5.205	(1.048)	90292	20.0000	19.53
	39	Bromodichloromethane	83	5.726	5.726	(1.153)	116178	20.0000	18.99
	41	2-Chloroethylvinyl ether	63	6.048	6.048	(1.218)	71559	40.0000	41.12
	42	1,2-Dichloropropane	63	5.437	5.437	(1.095)	82954	20.0000	19.13
	44	Dibromomethane	93	5.553	5.553	(1.119)	57196	20.0000	19.41
	45	4-Methyl-2-Pentanone	43	6.326	6.326	(0.825)	138209	40.0000	39.93
	46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	142141	20.0000	19.79
*	47	Chlorobenzene-d5	117	7.668	7.668	(1.000)	647445	50.0000	
$	48	Toluene-d8	98	6.385	6.385	(0.833)	315179	20.0000	19.70
	50	Toluene	91	6.445	6.445	(0.841)	339968	20.0000	18.99
	51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	116330	20.0000	19.51
	52	2-Hexanone	43	7.086	7.086	(0.924)	93119	40.0000	39.54
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	69855	20.0000	19.45
	54	1,3-Dichloropropane	76	6.982	6.982	(0.911)	137967	20.0000	19.52
	55	Dibromochloromethane	129	7.176	7.176	(0.936)	100749	20.0000	19.44
	56	Tetrachloroethene	164	6.925	6.925	(0.903)	74611	20.0000	20.15
	57	1,2-Dibromoethane	107	7.263	7.263	(0.947)	88886	20.0000	19.80
	58	1-Chlorohexane	55	7.694	7.694	(1.550)	66757	20.0000	20.24
	59	Chlorobenzene	112	7.694	7.694	(1.003)	240885	20.0000	18.97
	60	1,1,1,2-Tetrachloroethane	131	7.772	7.772	(1.014)	90283	20.0000	19.11

61 Ethylbenzene	106	7.799	7.799 (1.017)	117560	20.0000	19.66
62 m,p-Xylenes	106	7.904	7.904 (1.031)	299082	40.0000	38.80

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.241	8.241	(1.075)	147602	20.0000	19.40
	64 Styrene	104	8.260	8.260	(1.077)	253280	20.0000	19.86
	66 Bromoform	173	8.410	8.410	(1.097)	69137	20.0000	19.25
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	344283	20.0000	19.80
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	112594	20.0000	19.83
$	69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	116878	20.0000	19.58
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	356229	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	76967	20.0000	19.41
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	404399	20.0000	20.49
	74 Bromobenzene	156	8.803	8.803	(0.911)	117586	20.0000	20.11
	75 1,3,5-Trimethylbenzene	105	9.070	9.070	(0.939)	295026	20.0000	20.23
	76 2-Chlorotoluene	91	8.976	8.976	(0.929)	256591	20.0000	19.81
	77 4-Chlorotoluene	91	9.070	9.070	(0.939)	294244	20.0000	19.93
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	242174	20.0000	20.29
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	305461	20.0000	19.91
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	326826	20.0000	20.58
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	294187	20.0000	20.67
	83 1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	197278	20.0000	20.33
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	207572	20.0000	19.60
	86 Benzyl Chloride	91	9.808	9.808	(1.279)	163895	20.0000	17.99
	87 n-Butylbenzene	91	9.995	9.995	(1.035)	248190	20.0000	19.23
	88 1,2-Dichlorobenzene	146	9.995	9.995	(1.035)	201166	20.0000	20.13
	89 1,2-Dibromo-3-Chloropropane	155	10.663	10.663	(1.104)	18635	20.0000	20.58
	90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	130463	20.0000	20.69
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	55912	20.0000	20.12
	92 Naphthalene	128	11.544	11.544	(1.195)	300432	20.0000	20.94
	93 1,2,3-Trichlorobenzene	180	11.742	11.742	(1.215)	124401	20.0000	20.60
M	94 1,2-Dichloroethylene (total)	96				163365	40.0000	
M	95 Xylenes (total)	106				446684	60.0000	
	141 Cyclohexane	56	4.118	4.118	(0.986)	84355	20.0000	19.01(M)
	138 Freon TF	101	1.910	1.910	(0.457)	64657	20.0000	19.17
	147 Methylcyclohexane	55	5.381	5.381	(1.084)	172044	20.0000	20.59
	146 Methyl Acetate	43	2.228	2.228	(0.533)	38475	20.0000	18.61
	148 Tert-Butyl alcohol	59	2.423	2.423	(0.580)	117583	400.000	369.63
	149 Isopropyl Alcohol	45	2.090	2.090	(0.500)	61646	400.000	371.06

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

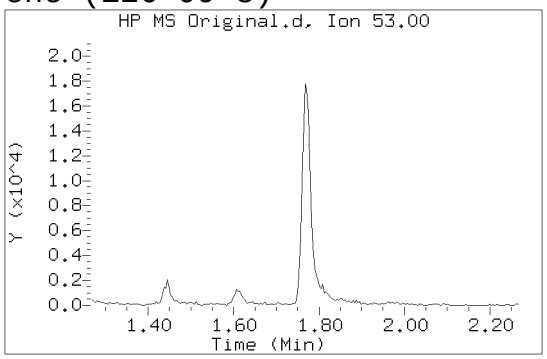

Y (x10^6)
Min
\\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D
Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D
Date : 16-DEC-2022 13:43
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;1;6;
Purge Volume: 5.0
Column phase: DB624
Instrument: voa6.i
Operator: PC
Column diameter: 0.18
Page 1
-Bromomethane
-Chloroethane
-Acrolein
-Trichlorofluoromethane+
-Isopentane
-Diethyl ether+
-Acetone+
-Iodomethane+
-Acetonitrile+
-Methylene Chloride
-Tert-butyl alcohol
-Acrylonitrile+
-n-Hexane+
-1,1-Dichloroethane
-Vinyl Acetate+
-tert-Butyl ethyl ether
-2,2-Dichloropropane+
-Propionitrile+
-Methacrylonitrile+
-Chloroform
-Dibromofluoromethane+
-Pentafluorobenzene
-1,1-Dichloropropene+
-1,2-Dichloroethane+
-Isobutyl Alcohol+
-1,4-Difluorobenzene
-Trichloroethene
-n-Butanol
-Methylcyclohexane+
-1,2-Dichloropropane
-Dibromomethane
-Methyl Methacrylate+
-Bromodichloromethane
-2-Chloroethylvinyl ether+
-cis-1,3-Dichloropropene+
-2-Nitropropane+
-Toluene-d8
-Toluene
-Ethyl Methacrylate+
-1,1,2-Trichloroethane
-Tetrachloroethene+
-1,3-Dichloropropane
-2-Hexanone
-Dibromochloromethane
-1,2-Dibromoethane+
-Chlorobenzene-d5+
-1,1,1,2-Tetrachloroethane+
-m,p-Xylenes
-o-Xylene+
-Bromoform+
-Isopropylbenzene
-Cyclohexanone
-4-Bromofluorobenzene
-Bromobenzene
-1,1,2,2-Tetrachloroethane+
-trans-1,4-Dichloro-2-bute+
-2-Chlorotoluene
-1,3,5-Trimethylbenzene+
-alpha-Methylstyrene
-tert-Butylbenzene+
-sec-Butylbenzene
-1,3-Dichlorobenzene
1,4-Dichlorobenzene-d4+
-Benzyl Chloride
-n-Butylbenzene+
-1,2-Dibromo-3-Chloropropa
-1,2,4-Trichlorobenzene
-Hexachlorobutadiene
-Naphthalene
-1,2,3-Trichlorobenzene
-2-Methylnaphthalene+

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D
Inj Date : 16-DEC-2022 13:43
InstruID : voa6.i
LabSampID : VSTD020

Chloroprene (126-99-8)

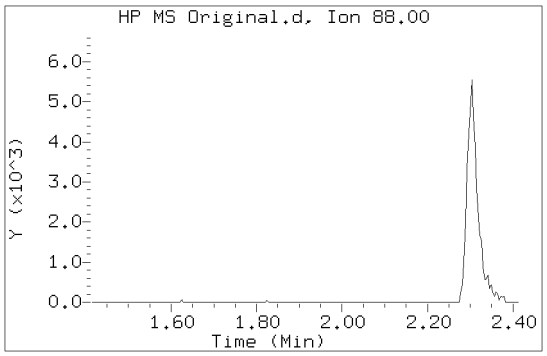
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

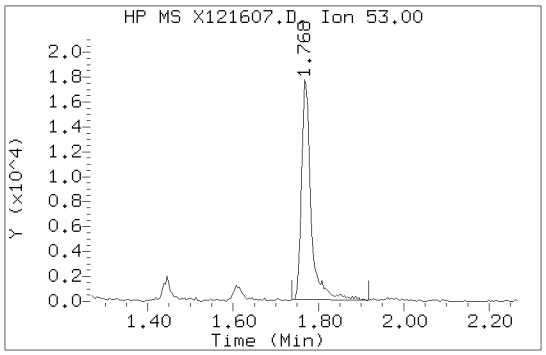
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

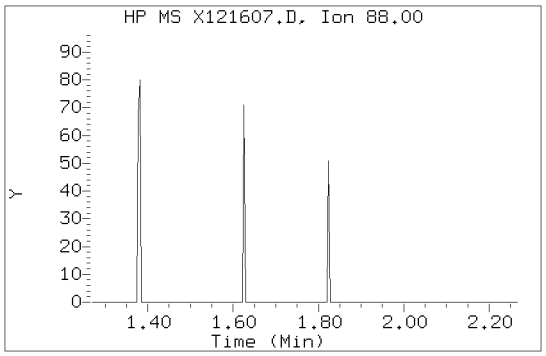
AFTER

MASS
53
AREA
27967
HEIGHT
17627
27-Dec-2022
16:06
linh
pham



AFTER

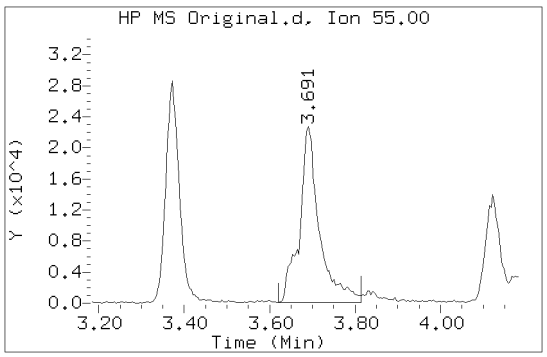
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham



Methyl Acrylate (96-33-3)

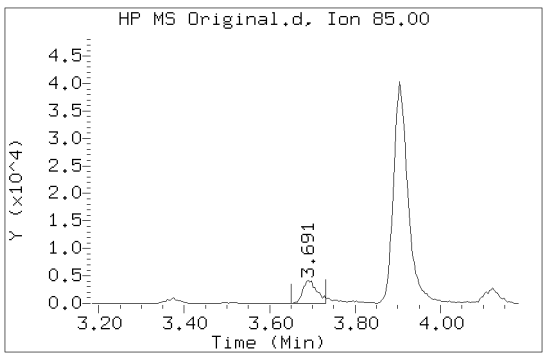
BEFORE

MASS
55
AREA
74503
HEIGHT
22672
27-Dec-2022
16:03
linh
pham



BEFORE

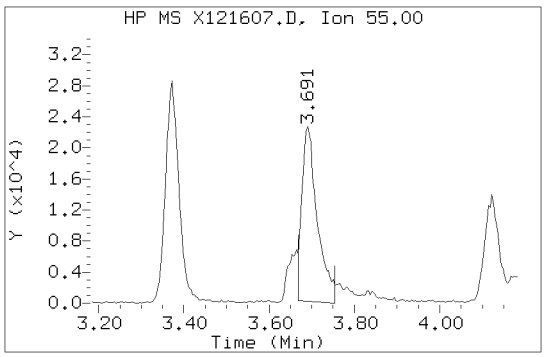
MASS
85
AREA
9792
HEIGHT
4239
27-Dec-2022
16:03
linh
pham



Reason Code:

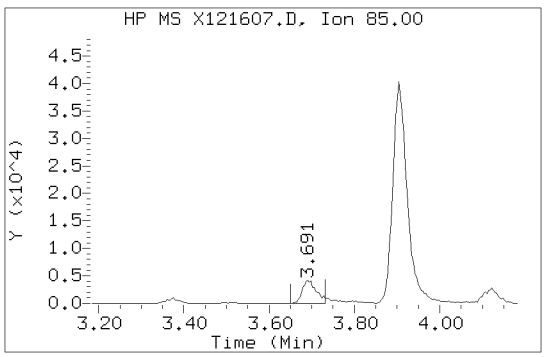
AFTER

MASS
55
AREA
57874
HEIGHT
22490
27-Dec-2022
16:06
linh
pham



AFTER

MASS
85
AREA
9792
HEIGHT
4239
27-Dec-2022
16:06
linh
pham



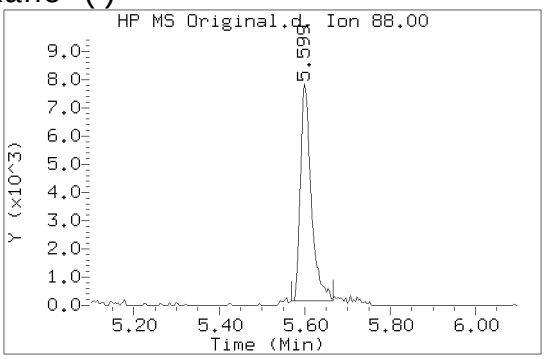
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D
Inj Date : 16-DEC-2022 13:43
InstruID : voa6.i
LabSampID : VSTD020

1,4-Dioxane ()

Reason Code:

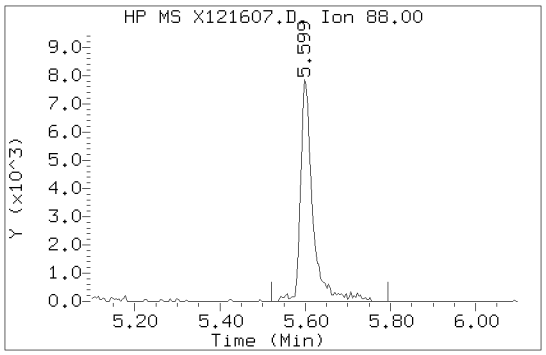
BEFORE

MASS
88
AREA
13920
HEIGHT
7701
27-Dec-2022
16:03
linh
pham



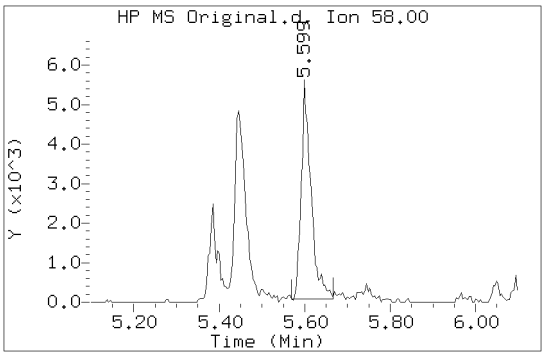
AFTER

MASS
88
AREA
16105
HEIGHT
7857
27-Dec-2022
16:06
linh
pham



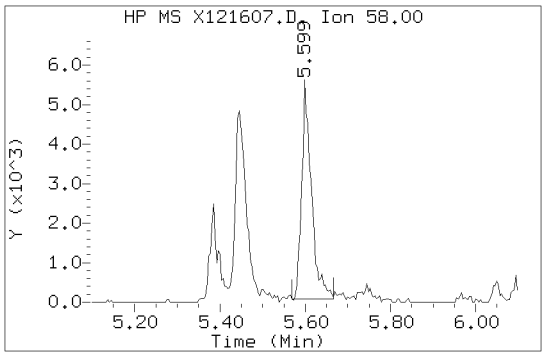
BEFORE

MASS
58
AREA
8930
HEIGHT
5535
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
8930
HEIGHT
5535
27-Dec-2022
16:06
linh
pham

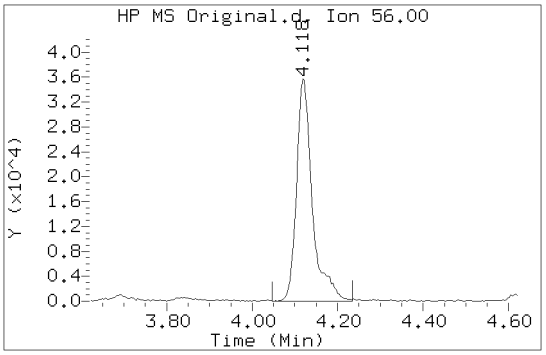


Cyclohexane (110-82-7)

Reason Code:

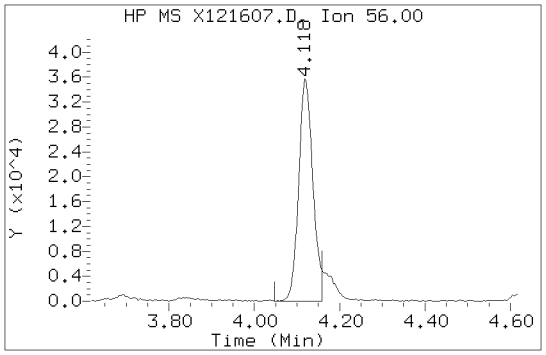
BEFORE

MASS
56
AREA
93540
HEIGHT
35720
27-Dec-2022
16:03
linh
pham



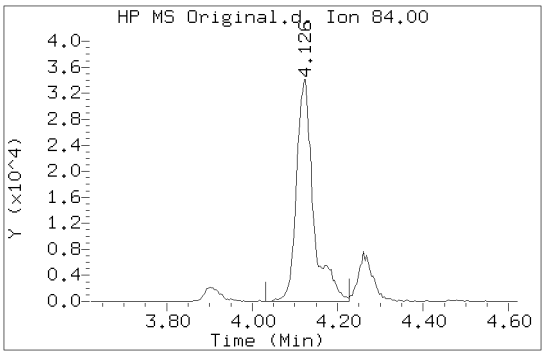
AFTER

MASS
56
AREA
84355
HEIGHT
35720
27-Dec-2022
16:06
linh
pham



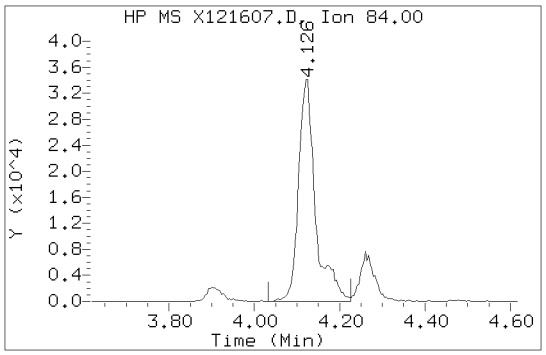
BEFORE

MASS
84
AREA
95724
HEIGHT
34088
27-Dec-2022
16:03
linh
pham



AFTER

MASS
84
AREA
95724
HEIGHT
34088
27-Dec-2022
16:06
linh
pham

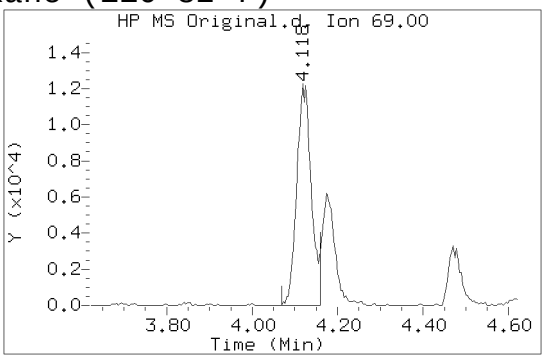


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D
Inj Date : 16-DEC-2022 13:43
InstruID : voa6.i
LabSampID : VSTD020

Cyclohexane (110-82-7)

BEFORE

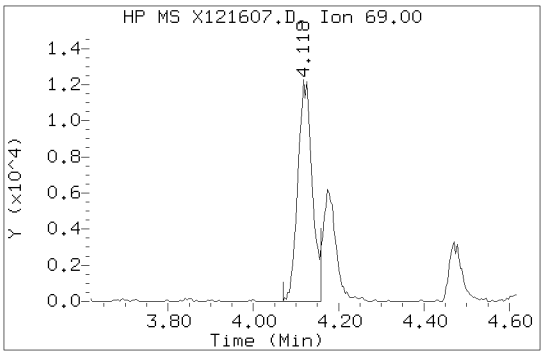
MASS
69
AREA
29515
HEIGHT
12273
27-Dec-2022
16:03
linh
pham



AFTER

MASS
69
AREA
29515
HEIGHT
12273
27-Dec-2022
16:06
linh
pham

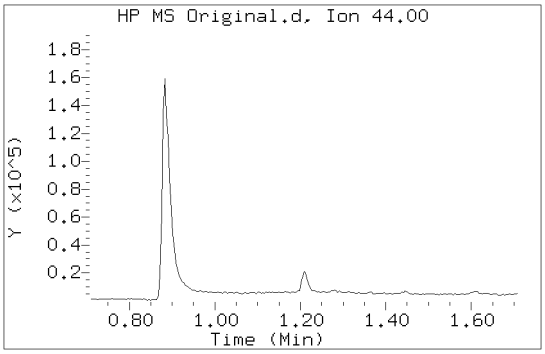
Reason Code:



Acetaldehyde (75-07-0)

BEFORE

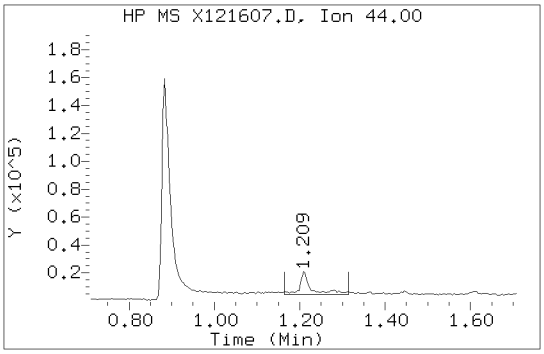
MASS
44
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

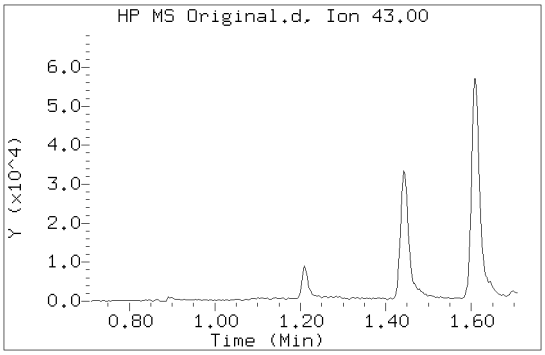
MASS
44
AREA
32393
HEIGHT
16632
27-Dec-2022
16:06
linh
pham

Reason Code:



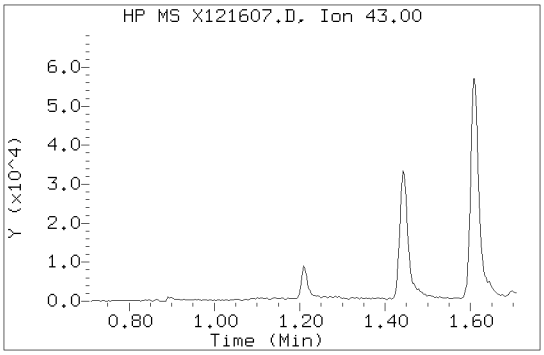
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



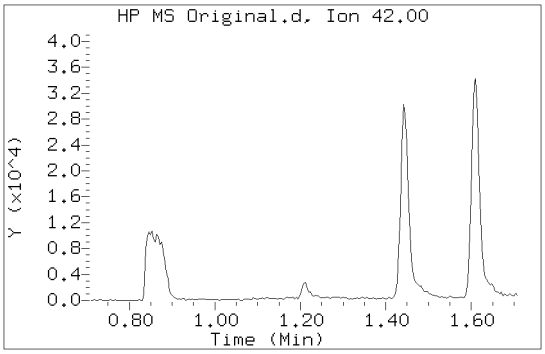
AFTER

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham



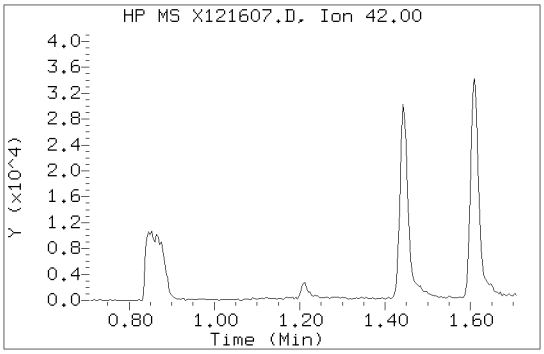
BEFORE

MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 16-DEC-2022 14:04
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;1;7;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 13:43 Cal File: X121607.D
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	457591	50.0000	
135 1,4-Dioxane	88	5.595	5.595	(1.339)	40509	1000.00	968.45
140 1,3-Butadiene	54	1.160	1.160	(0.278)	152324	50.0000	48.50
25 Methacrylonitrile	41	3.821	3.821	(0.915)	147931	50.0000	45.65
12 Isobutyl Alcohol	43	4.672	4.672	(1.118)	499872	1000.00	971.21
13 Acetonitrile	39	2.195	2.195	(0.525)	202696	500.000	486.70
14 Allyl Chloride	41	2.195	2.195	(0.525)	372130	50.0000	46.91
4 Propionitrile	54	3.645	3.645	(0.873)	221995	500.000	475.45
136 n-Hexane	57	2.768	2.768	(0.663)	182358	50.0000	55.34
72 trans-1,4-Dichloro-2-butene	53	8.890	8.890	(1.159)	70497	50.0000	50.03
194 Acetaldehyde	44	1.209	1.209	(0.289)	67188	200.000	235.49(M)
23 Chloroprene	53	1.767	1.767	(0.423)	73877	50.0000	47.48(M)
145 alpha-Methylstyrene	118	9.257	9.257	(0.958)	423646	50.0000	51.17
200 Dimethyl Disulfide	94	6.194	6.194	(0.808)	438695	50.0000	49.65
139 Diethyl ether	59	1.756	1.756	(0.420)	141705	50.0000	46.34
130 Ethyl Acetate	43	3.649	3.649	(0.873)	170590	50.0000	47.77
40 Methyl Methacrylate	41	5.606	5.606	(1.342)	147516	50.0000	47.27
49 Ethyl Methacrylate	69	6.712	6.712	(1.352)	144135	50.0000	44.17
132 n-Butanol	56	5.253	5.253	(1.257)	54418	1000.00	935.85
142 Tetrahydrofuran	42	3.844	3.844	(0.920)	58181	100.000	102.34

150	Allyl alcohol	57	2.768	2.768 (0.663)	182358	1000.00	1026.00
166	1,2,3-Trimethylbenzene	105	9.729	9.729 (1.007)	826758	50.0000	45.95

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D Page 2
Report Date: 27-Dec-2022 16:07

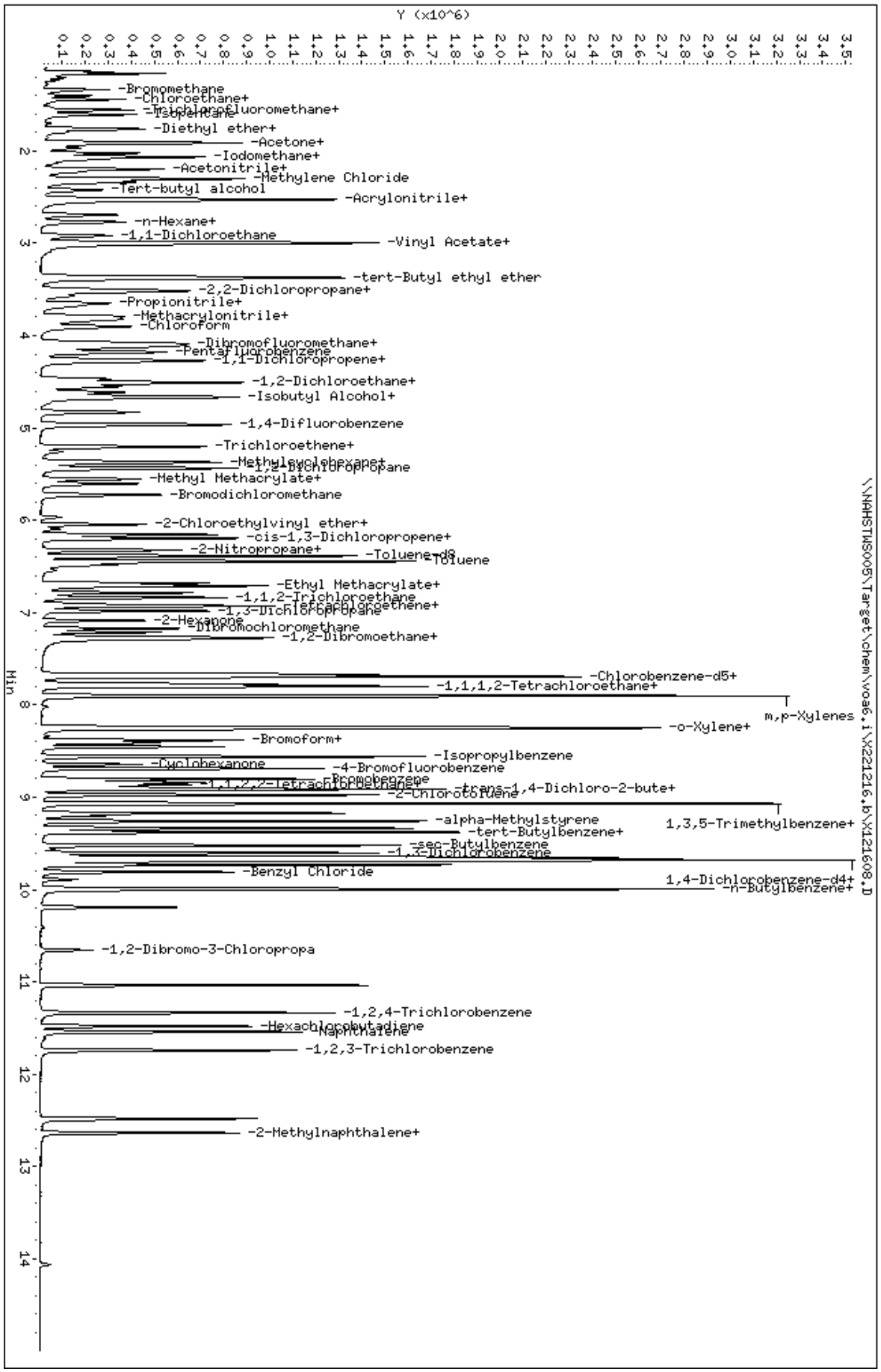
			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	131	Methyl Acrylate	55	3.683	3.683	(0.882)	151068	50.0000	48.62(M)
	162	Butyl acrylate	55	8.252	8.252	(1.076)	415774	50.0000	48.76
	2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	160392	50.0000	50.11
	3	Chloromethane	50	1.077	1.077	(0.258)	192710	50.0000	46.69
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	201812	50.0000	50.48
	6	Bromomethane	94	1.336	1.336	(0.320)	139689	50.0000	46.33
	7	Chloroethane	64	1.400	1.400	(0.335)	134745	50.0000	48.43
	8	Trichlorofluoromethane	101	1.557	1.557	(0.373)	278013	50.0000	49.70
	9	Acrolein	56	1.441	1.441	(0.345)	27445	100.000	88.04
	10	Acetone	43	1.970	1.970	(0.472)	124798	100.000	97.19
	11	1,1-Dichloroethene	96	1.910	1.910	(0.457)	168905	50.0000	48.63
	15	Iodomethane	142	2.022	2.022	(0.484)	455792	100.000	99.60
	16	Acrylonitrile	53	2.528	2.528	(0.605)	118697	100.000	100.77
	17	Methylene Chloride	84	2.300	2.300	(0.550)	225642	50.0000	47.36
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	534667	50.0000	47.03
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	892690	100.000	98.24
	20	trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	191505	50.0000	49.27
	21	Vinyl Acetate	43	2.993	2.993	(0.716)	983875	100.000	98.59
	22	1,1-Dichloroethane	63	2.918	2.918	(0.699)	330037	50.0000	48.38
	24	2-Butanone	43	3.574	3.574	(0.856)	130179	100.000	95.71(H)
	26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	283996	50.0000	49.03
	27	cis-1,2-Dichloroethene	96	3.525	3.525	(0.844)	228729	50.0000	48.35
	28	Chloroform	83	3.904	3.904	(0.935)	370755	50.0000	48.49
	29	Bromochloromethane	128	3.788	3.788	(0.907)	120638	50.0000	46.58
$	30	Dibromofluoromethane	113	4.095	4.095	(0.980)	211939	50.0000	48.23
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	300650	50.0000	49.56
	32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	256928	50.0000	52.23
	33	1,2-Dichloroethane	62	4.552	4.552	(0.917)	276500	50.0000	48.70
	34	Carbon Tetrachloride	117	4.260	4.260	(0.858)	251833	50.0000	47.94
$	35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	222293	50.0000	47.94
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	692830	50.0000	
	37	Benzene	78	4.507	4.507	(0.908)	812279	50.0000	49.09
	38	Trichloroethene	130	5.205	5.205	(1.048)	233833	50.0000	49.83
	39	Bromodichloromethane	83	5.722	5.722	(1.153)	297315	50.0000	47.88
	41	2-Chloroethylvinyl ether	63	6.048	6.048	(1.218)	180920	100.000	102.42
	42	1,2-Dichloropropane	63	5.433	5.433	(1.094)	215079	50.0000	48.87
	44	Dibromomethane	93	5.553	5.553	(1.119)	143223	50.0000	47.87
	45	4-Methyl-2-Pentanone	43	6.322	6.322	(0.824)	336990	100.000	96.59
	46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	366231	50.0000	50.22
*	47	Chlorobenzene-d5	117	7.668	7.668	(1.000)	652727	50.0000	
$	48	Toluene-d8	98	6.386	6.386	(0.833)	772486	50.0000	47.89
	50	Toluene	91	6.446	6.446	(0.841)	889029	50.0000	49.27
	51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	309568	50.0000	51.15
	52	2-Hexanone	43	7.087	7.087	(0.924)	232879	100.000	98.10
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	172833	50.0000	47.75
	54	1,3-Dichloropropane	76	6.982	6.982	(0.911)	345991	50.0000	48.56
	55	Dibromochloromethane	129	7.176	7.176	(0.936)	260477	50.0000	49.86
	56	Tetrachloroethene	164	6.925	6.925	(0.903)	194749	50.0000	52.17
	57	1,2-Dibromoethane	107	7.259	7.259	(0.947)	229442	50.0000	50.70
	58	1-Chlorohexane	55	7.694	7.694	(1.550)	170128	50.0000	50.81
	59	Chlorobenzene	112	7.694	7.694	(1.003)	624151	50.0000	48.77
	60	1,1,1,2-Tetrachloroethane	131	7.773	7.773	(1.014)	235373	50.0000	49.42

61 Ethylbenzene	106	7.799	7.799 (1.017)	311983	50.0000	51.75
62 m,p-Xylenes	106	7.904	7.904 (1.031)	785955	100.000	101.14

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.241	8.241	(1.075)	385427	50.0000	50.25
	64 Styrene	104	8.260	8.260	(1.077)	673066	50.0000	52.35
	66 Bromoform	173	8.410	8.410	(1.097)	181492	50.0000	50.14
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	920845	50.0000	52.55
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	276483	50.0000	46.43
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	292753	50.0000	48.55
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	373588	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	199888	50.0000	48.08(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	1085689	50.0000	52.46
	74 Bromobenzene	156	8.803	8.803	(0.911)	299078	50.0000	48.79
	75 1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	793494	50.0000	51.90
	76 2-Chlorotoluene	91	8.972	8.972	(0.929)	670422	50.0000	49.37
	77 4-Chlorotoluene	91	9.070	9.070	(0.939)	782927	50.0000	50.57
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	652461	50.0000	52.14
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	815460	50.0000	50.69
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	889679	50.0000	53.43
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	810483	50.0000	54.32
	83 1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	520329	50.0000	51.14
	84 1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	544362	50.0000	49.03
	86 Benzyl Chloride	91	9.808	9.808	(1.279)	472387	50.0000	46.44
	87 n-Butylbenzene	91	9.995	9.995	(1.035)	696355	50.0000	48.48
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	519532	50.0000	49.58
	89 1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.103)	48660	50.0000	51.11
	90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	355455	50.0000	53.75
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	155390	50.0000	52.99
	92 Naphthalene	128	11.540	11.540	(1.194)	799829	50.0000	53.16
	93 1,2,3-Trichlorobenzene	180	11.742	11.742	(1.215)	320836	50.0000	50.66
M	94 1,2-Dichloroethylene (total)	96				420234	100.000	
M	95 Xylenes (total)	106				1171382	150.000	
	141 Cyclohexane	56	4.121	4.121	(0.987)	237699	50.0000	51.49
	138 Freon TF	101	1.913	1.913	(0.458)	172155	50.0000	51.25
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	420886	50.0000	49.62
	146 Methyl Acetate	43	2.228	2.228	(0.533)	96420	50.0000	46.82
	148 Tert-Butyl alcohol	59	2.423	2.423	(0.580)	302677	1000.00	955.26
	149 Isopropyl Alcohol	45	2.090	2.090	(0.500)	157082	1000.00	949.28

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTMS005\Target\chem\voa6.i\X221216.b\X121608.D
Date : 16-DEC-2022 14:04
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;7;
Purge Volume: 5.0
Column phase: DB624

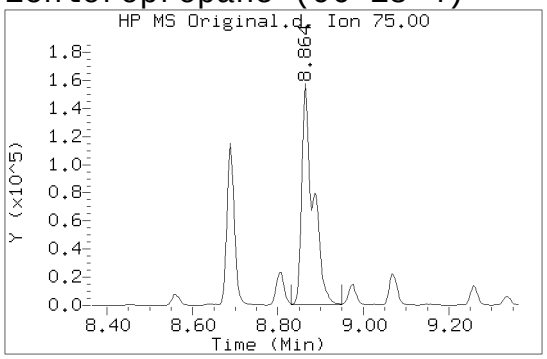
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D
Inj Date : 16-DEC-2022 14:04
InstruID : voa6.i
LabSampID : VSTD050

1,2,3-Trichloropropane (96-18-4)

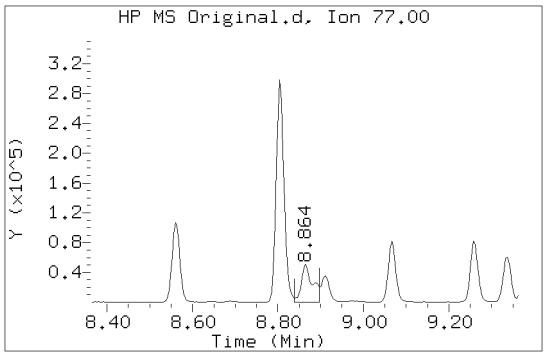
BEFORE

MASS
75
AREA
298610
HEIGHT
157256
27-Dec-2022
16:03
linh
pham



BEFORE

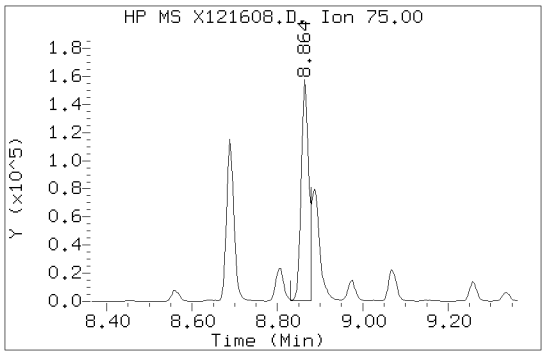
MASS
77
AREA
96560
HEIGHT
50650
27-Dec-2022
16:03
linh
pham



Reason Code:

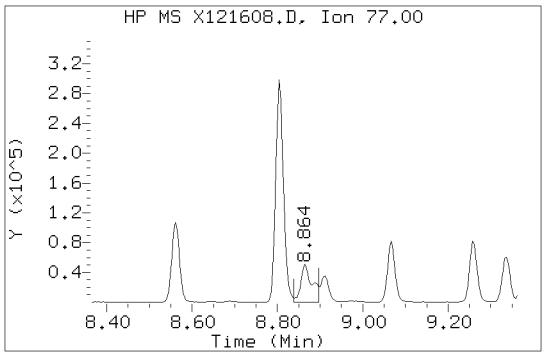
AFTER

MASS
75
AREA
199888
HEIGHT
157257
27-Dec-2022
16:06
linh
pham



AFTER

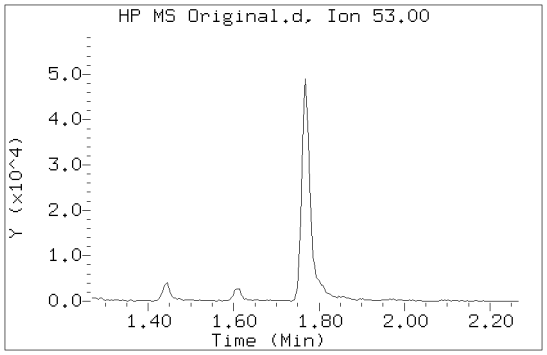
MASS
77
AREA
96560
HEIGHT
50650
27-Dec-2022
16:06
linh
pham



Chloroprene (126-99-8)

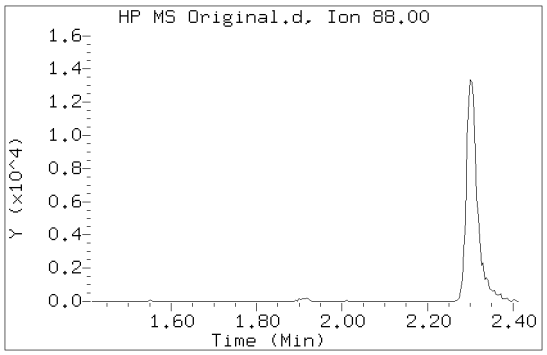
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

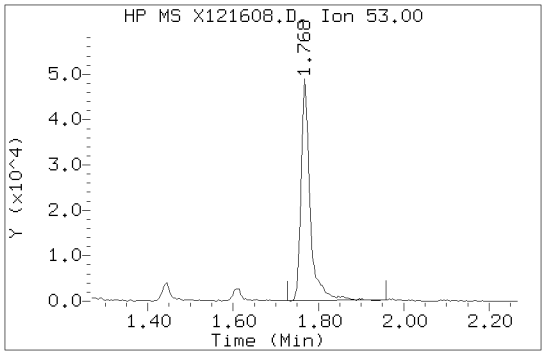
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

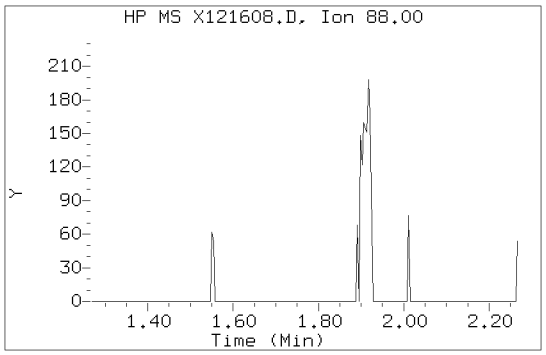
AFTER

MASS
53
AREA
73877
HEIGHT
48802
27-Dec-2022
16:06
linh
pham



AFTER

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham

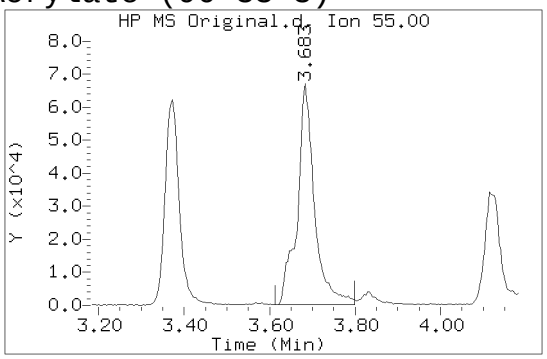


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D
Inj Date : 16-DEC-2022 14:04
InstruID : voa6.i
LabSampID : VSTD050

Methyl Acrylate (96-33-3)

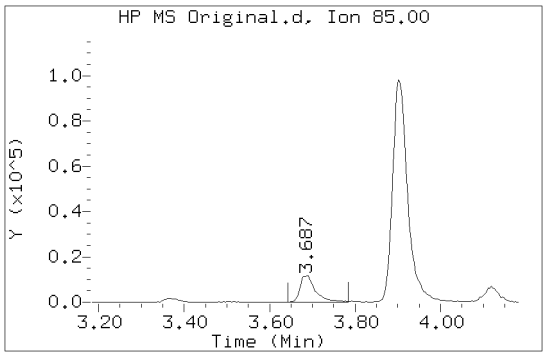
BEFORE

MASS
55
AREA
188598
HEIGHT
66813
27-Dec-2022
16:03
linh
pham



BEFORE

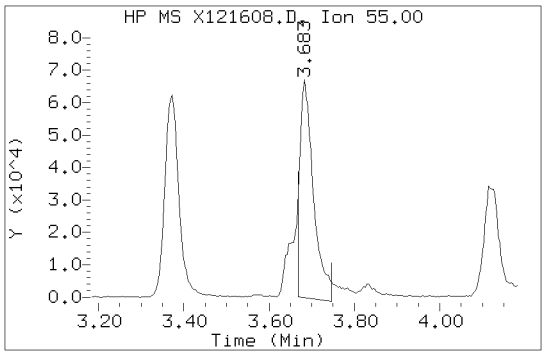
MASS
85
AREA
29996
HEIGHT
11707
27-Dec-2022
16:03
linh
pham



Reason Code:

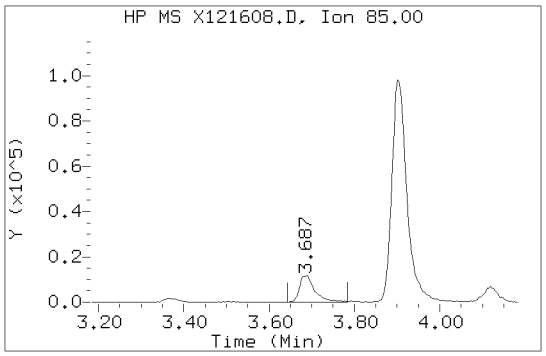
AFTER

MASS
55
AREA
151068
HEIGHT
67146
27-Dec-2022
16:06
linh
pham



AFTER

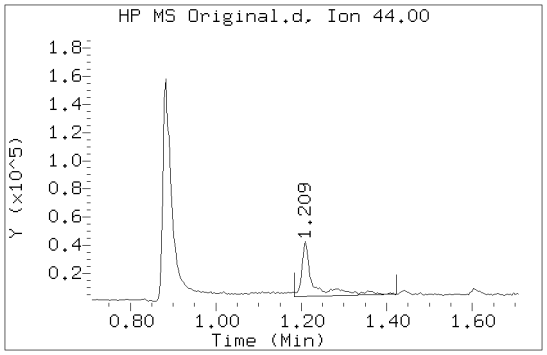
MASS
85
AREA
29996
HEIGHT
11707
27-Dec-2022
16:06
linh
pham



Acetaldehyde (75-07-0)

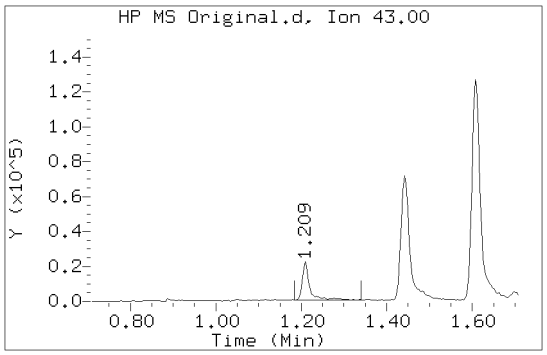
BEFORE

MASS
44
AREA
71920
HEIGHT
38656
27-Dec-2022
16:03
linh
pham



BEFORE

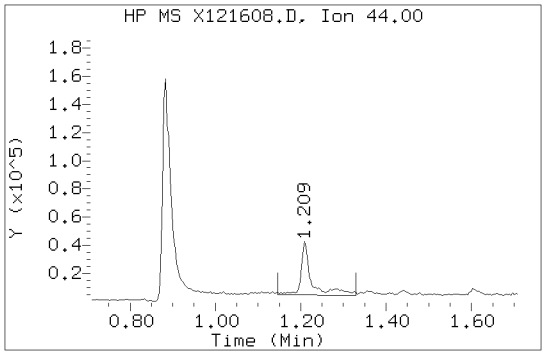
MASS
43
AREA
28032
HEIGHT
22022
27-Dec-2022
16:03
linh
pham



Reason Code:

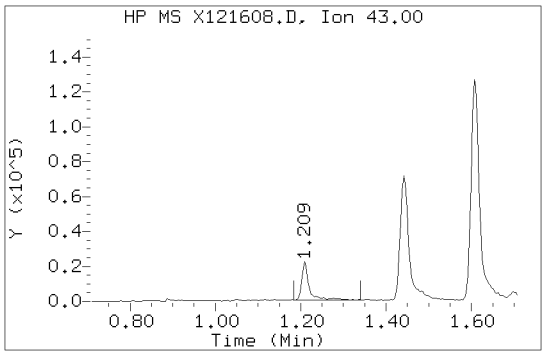
AFTER

MASS
44
AREA
67188
HEIGHT
37862
27-Dec-2022
16:06
linh
pham



AFTER

MASS
43
AREA
28032
HEIGHT
22022
27-Dec-2022
16:06
linh
pham



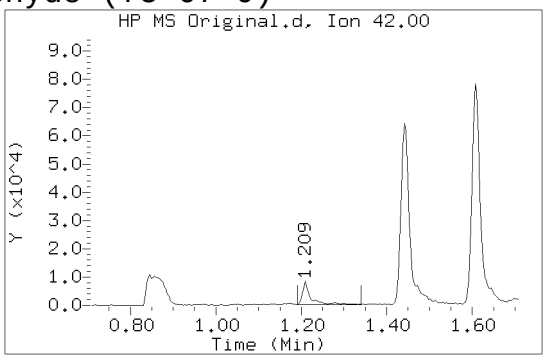
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D
Inj Date : 16-DEC-2022 14:04
InstruID : voa6.i
LabSampID : VSTD050

Acetaldehyde (75-07-0)

Reason Code:

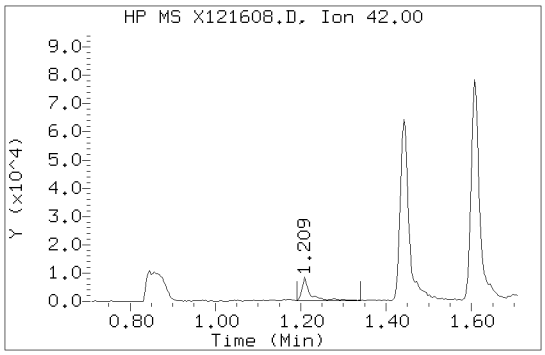
BEFORE

MASS
42
AREA
11352
HEIGHT
8504
27-Dec-2022
16:03
linh
pham



AFTER

MASS
42
AREA
11352
HEIGHT
8504
27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 16-DEC-2022 14:25
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	454640	50.0000	
135 1,4-Dioxane	88	5.598	5.598	(1.340)	80329	2000.00	1932.89
140 1,3-Butadiene	54	1.160	1.160	(0.278)	300004	100.000	96.14
25 Methacrylonitrile	41	3.822	3.822	(0.915)	296105	100.000	91.97
12 Isobutyl Alcohol	43	4.672	4.672	(1.118)	1010956	2000.00	1976.95
13 Acetonitrile	39	2.195	2.195	(0.525)	413876	1000.00	1000.23
14 Allyl Chloride	41	2.195	2.195	(0.525)	756242	100.000	95.96
4 Propionitrile	54	3.645	3.645	(0.873)	447087	1000.00	963.76
136 n-Hexane	57	2.768	2.768	(0.663)	330416	100.000	100.93
72 trans-1,4-Dichloro-2-butene	53	8.890	8.890	(1.159)	144667	100.000	100.47
194 Acetaldehyde	44	1.209	1.209	(0.289)	107798	400.000	394.60(M)
23 Chloroprene	53	1.767	1.767	(0.423)	146540	100.000	94.79(M)
145 alpha-Methylstyrene	118	9.257	9.257	(0.958)	857105	100.000	100.18
200 Dimethyl Disulfide	94	6.194	6.194	(0.808)	912573	100.000	101.09
139 Diethyl ether	59	1.752	1.752	(0.420)	288002	100.000	94.80
130 Ethyl Acetate	43	3.649	3.649	(0.873)	318062	100.000	89.65
40 Methyl Methacrylate	41	5.606	5.606	(1.342)	295199	100.000	95.22
49 Ethyl Methacrylate	69	6.712	6.712	(1.352)	311883	100.000	96.06
132 n-Butanol	56	5.253	5.253	(1.258)	124057	2000.00	1971.40
142 Tetrahydrofuran	42	3.840	3.840	(0.919)	109518	200.000	196.74

150	Allyl alcohol	57	2.768	2.768 (0.663)	330416	2000.00	1871.09
166	1,2,3-Trimethylbenzene	105	9.729	9.729 (1.007)	1772216	100.000	95.31

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D Page 2
Report Date: 27-Dec-2022 16:07

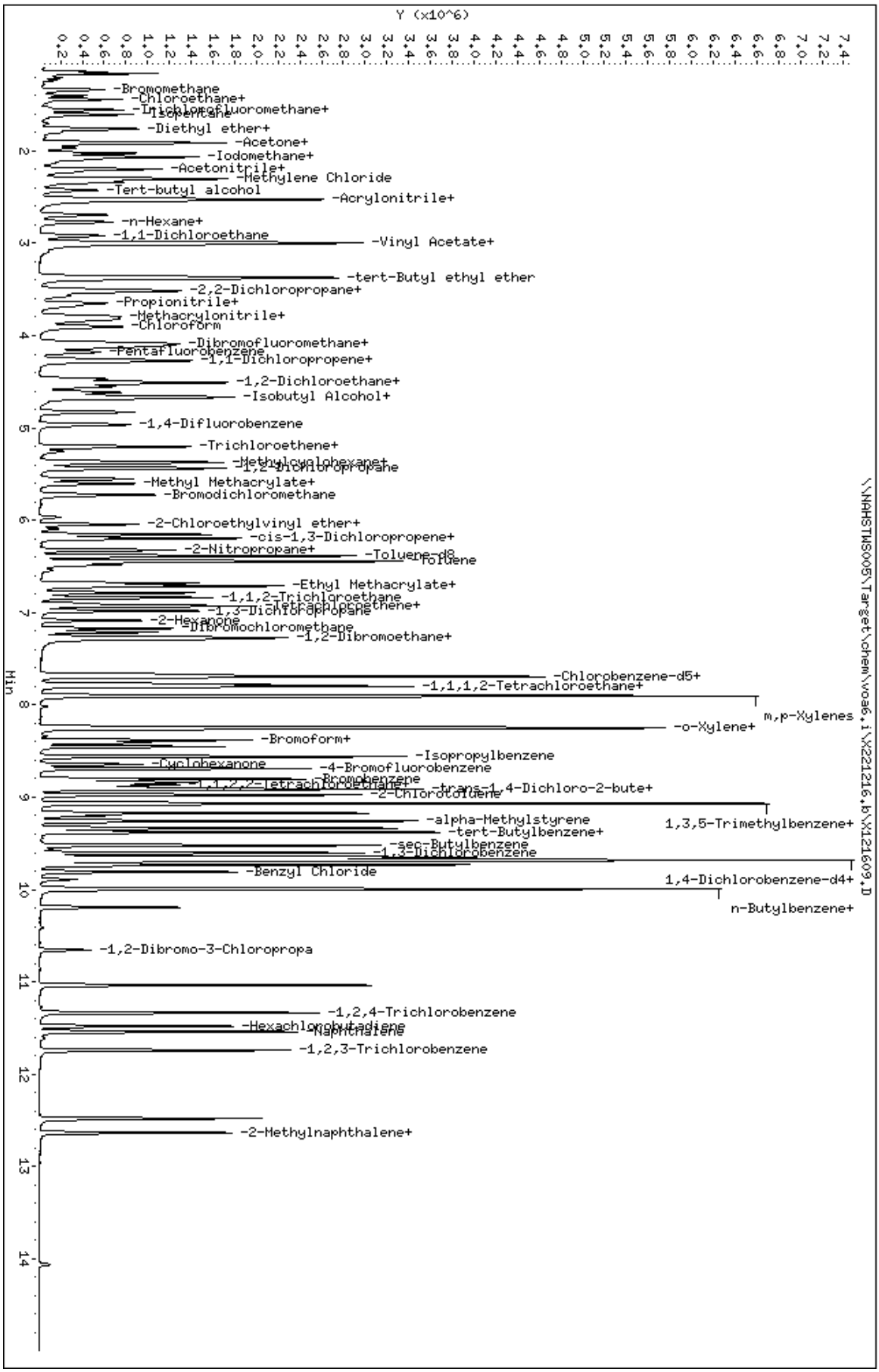
			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131	Methyl Acrylate	55	3.683	3.683	(0.882)	308372	100.000	99.90(M)
	162	Butyl acrylate	55	8.249	8.249	(1.076)	901265	100.000	103.44
	2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	309019	100.000	96.81
	3	Chloromethane	50	1.078	1.078	(0.258)	388163	100.000	92.40
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	390567	100.000	98.34
	6	Bromomethane	94	1.336	1.336	(0.320)	284165	100.000	93.02
	7	Chloroethane	64	1.400	1.400	(0.335)	261091	100.000	94.45
	8	Trichlorofluoromethane	101	1.557	1.557	(0.373)	543907	100.000	97.86
	9	Acrolein	56	1.441	1.441	(0.345)	60756	200.000	192.70
	10	Acetone	43	1.970	1.970	(0.472)	243517	200.000	190.92
	11	1,1-Dichloroethene	96	1.910	1.910	(0.457)	329394	100.000	95.46
	15	Iodomethane	142	2.026	2.026	(0.485)	958603	200.000	197.72
	16	Acrylonitrile	53	2.528	2.528	(0.605)	235604	200.000	201.32
	17	Methylene Chloride	84	2.300	2.300	(0.550)	423827	100.000	89.54
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	1078258	100.000	95.46
	19	Carbon Disulfide	76	2.063	2.063	(0.494)	1765599	200.000	195.57
	20	trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	376933	100.000	97.60
	21	Vinyl Acetate	43	2.993	2.993	(0.716)	1955305	200.000	197.21
	22	1,1-Dichloroethane	63	2.918	2.918	(0.699)	641083	100.000	94.59
	24	2-Butanone	43	3.570	3.570	(0.855)	264221	200.000	192.38(H)
	26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	554902	100.000	96.43
	27	cis-1,2-Dichloroethene	96	3.522	3.522	(0.843)	443532	100.000	94.37
	28	Chloroform	83	3.904	3.904	(0.935)	715830	100.000	94.23
	29	Bromochloromethane	128	3.792	3.792	(0.908)	239022	100.000	92.88
$	30	Dibromofluoromethane	113	4.095	4.095	(0.980)	438954	100.000	100.72
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	583361	100.000	96.79
	32	1,1-Dichloropropene	75	4.275	4.275	(0.861)	496096	100.000	101.35
	33	1,2-Dichloroethane	62	4.552	4.552	(0.917)	553661	100.000	98.01
	34	Carbon Tetrachloride	117	4.260	4.260	(0.858)	487488	100.000	93.26
$	35	1,2-Dichloroethane-d4	65	4.466	4.466	(1.069)	455890	100.000	98.67
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	689427	50.0000	
	37	Benzene	78	4.508	4.508	(0.908)	1590142	100.000	96.58
	38	Trichloroethene	130	5.205	5.205	(1.048)	456948	100.000	97.85
	39	Bromodichloromethane	83	5.722	5.722	(1.153)	587419	100.000	95.07
	41	2-Chloroethylvinyl ether	63	6.044	6.044	(1.217)	345852	200.000	196.75
	42	1,2-Dichloropropane	63	5.433	5.433	(1.094)	420835	100.000	96.09
	44	Dibromomethane	93	5.550	5.550	(1.118)	280146	100.000	94.11
	45	4-Methyl-2-Pentanone	43	6.322	6.322	(0.824)	671115	200.000	188.25
	46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	735867	100.000	101.41
*	47	Chlorobenzene-d5	117	7.668	7.668	(1.000)	666948	50.0000	
$	48	Toluene-d8	98	6.386	6.386	(0.833)	1602890	100.000	97.25
	50	Toluene	91	6.446	6.446	(0.841)	1761917	100.000	95.57
	51	trans-1,3-Dichloropropene	75	6.678	6.678	(1.345)	618784	100.000	102.75
	52	2-Hexanone	43	7.087	7.087	(0.924)	458639	200.000	189.09
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	342194	100.000	92.52
	54	1,3-Dichloropropane	76	6.982	6.982	(0.911)	682500	100.000	93.75
	55	Dibromochloromethane	129	7.173	7.173	(0.935)	521219	100.000	97.64
	56	Tetrachloroethene	164	6.925	6.925	(0.903)	373651	100.000	97.96
	57	1,2-Dibromoethane	107	7.259	7.259	(0.947)	453499	100.000	98.07
	58	1-Chlorohexane	55	7.694	7.694	(1.550)	326538	100.000	98.00
	59	Chlorobenzene	112	7.694	7.694	(1.003)	1229287	100.000	94.01
	60	1,1,1,2-Tetrachloroethane	131	7.773	7.773	(1.014)	472962	100.000	97.19

61 Ethylbenzene	106	7.799	7.799 (1.017)	612289	100.000	99.40
62 m,p-Xylenes	106	7.904	7.904 (1.031)	1556563	200.000	196.03

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.241	8.241	(1.075)	767814	100.000	97.97
	64 Styrene	104	8.260	8.260	(1.077)	1350780	100.000	102.83
	66 Bromoform	173	8.410	8.410	(1.097)	367943	100.000	99.50
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	1818857	100.000	101.58
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	554091	100.000	90.03
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	615584	100.000	99.86
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	386107	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	407425	100.000	94.83(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	2152414	100.000	100.64
	74 Bromobenzene	156	8.803	8.803	(0.911)	602819	100.000	95.16
	75 1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	1603520	100.000	101.49
	76 2-Chlorotoluene	91	8.972	8.972	(0.929)	1326500	100.000	94.51
	77 4-Chlorotoluene	91	9.070	9.070	(0.939)	1587855	100.000	99.24
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	1287608	100.000	99.56
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	1640529	100.000	98.68
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	1778581	100.000	103.36
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	1606121	100.000	104.16
	83 1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	1039293	100.000	98.84
	84 1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	1114780	100.000	97.16
	86 Benzyl Chloride	91	9.808	9.808	(1.279)	1009234	100.000	94.18
	87 n-Butylbenzene	91	9.992	9.992	(1.034)	1425779	100.000	94.31
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	1054319	100.000	97.36
	89 1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.103)	94321	100.000	95.78
	90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	697257	100.000	102.03
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	299042	100.000	97.63
	92 Naphthalene	128	11.540	11.540	(1.194)	1592534	100.000	102.42
	93 1,2,3-Trichlorobenzene	180	11.739	11.739	(1.215)	642199	100.000	98.12
M	94 1,2-Dichloroethylene (total)	96				820465	200.000	
M	95 Xylenes (total)	106				2324377	300.000	
	141 Cyclohexane	56	4.118	4.118	(0.986)	432198	100.000	93.19
	138 Freon TF	101	1.913	1.913	(0.458)	327614	100.000	98.16
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	862071	100.000	102.15(A)
	146 Methyl Acetate	43	2.228	2.228	(0.533)	196542	100.000	96.07
	148 Tert-Butyl alcohol	59	2.427	2.427	(0.581)	592215	2000.00	1881.19
	149 Isopropyl Alcohol	45	2.093	2.093	(0.501)	321288	2000.00	1954.21

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D
Date : 16-DEC-2022 14:25
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

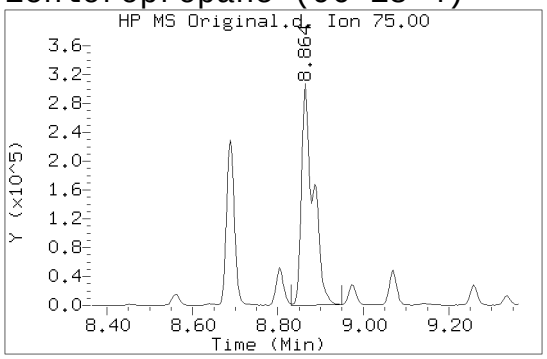
\\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D
Inj Date : 16-DEC-2022 14:25
InstruID : voa6.i
LabSampID : VSTD100

1,2,3-Trichloropropane (96-18-4)

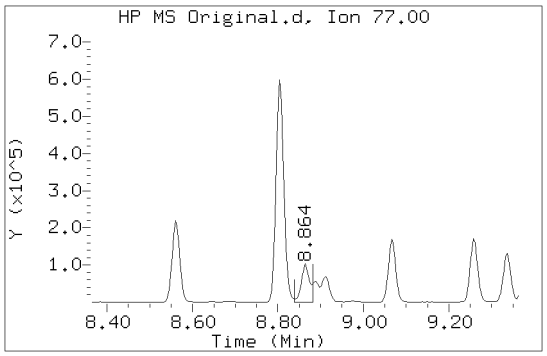
BEFORE

MASS
75
AREA
602953
HEIGHT
307037
27-Dec-2022
16:03
linh
pham



BEFORE

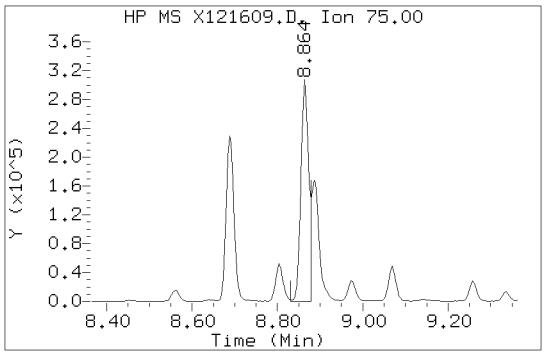
MASS
77
AREA
149362
HEIGHT
103354
27-Dec-2022
16:03
linh
pham



Reason Code:

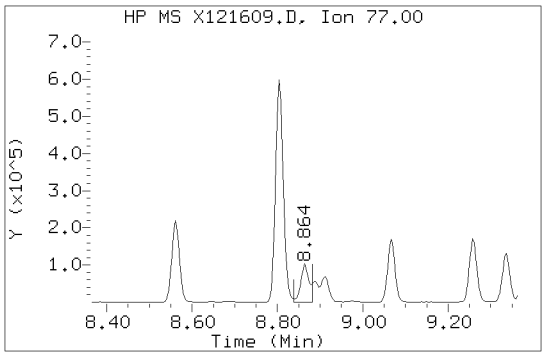
AFTER

MASS
75
AREA
407425
HEIGHT
307037
27-Dec-2022
16:06
linh
pham



AFTER

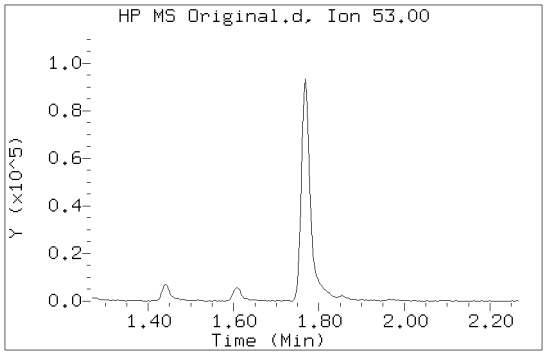
MASS
77
AREA
149362
HEIGHT
103354
27-Dec-2022
16:06
linh
pham



Chloroprene (126-99-8)

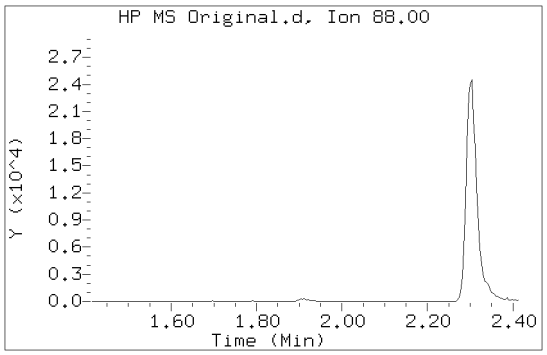
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

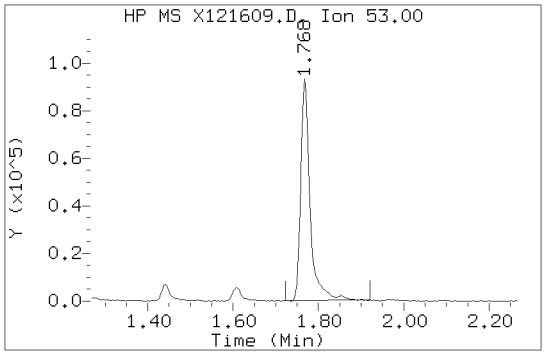
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

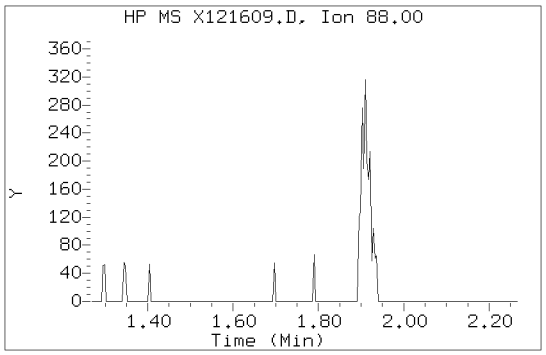
AFTER

MASS
53
AREA
146540
HEIGHT
93219
27-Dec-2022
16:06
linh
pham



AFTER

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham

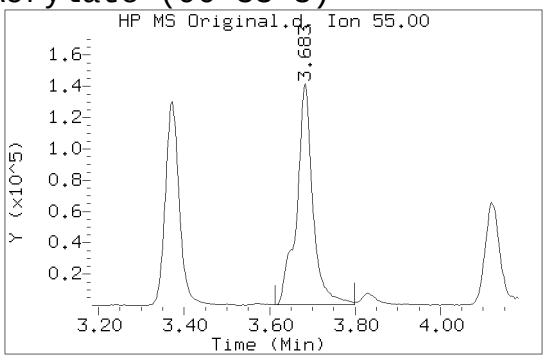


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D
Inj Date : 16-DEC-2022 14:25
InstruID : voa6.i
LabSampID : VSTD100

Methyl Acrylate (96-33-3)

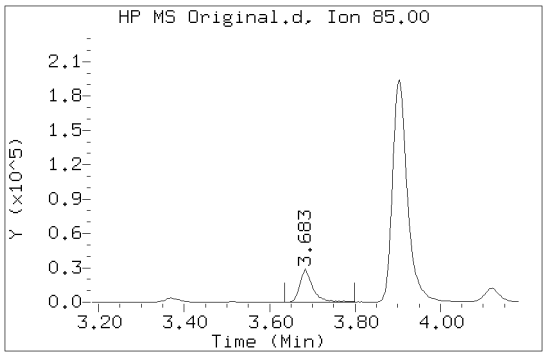
BEFORE

MASS
55
AREA
380041
HEIGHT
141345
27-Dec-2022
16:03
linh
pham



BEFORE

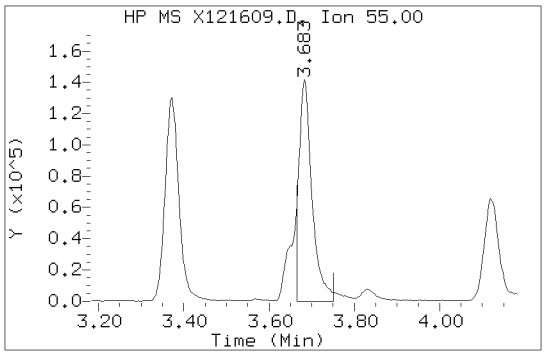
MASS
85
AREA
62241
HEIGHT
29192
27-Dec-2022
16:03
linh
pham



Reason Code:

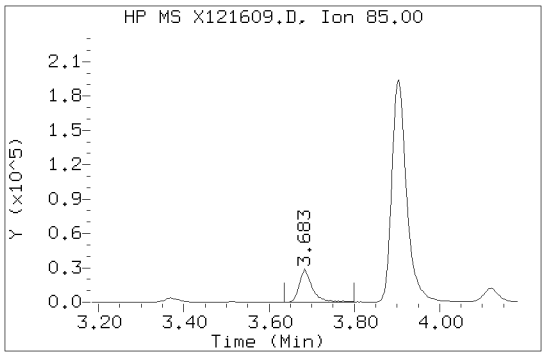
AFTER

MASS
55
AREA
308372
HEIGHT
141781
27-Dec-2022
16:06
linh
pham



AFTER

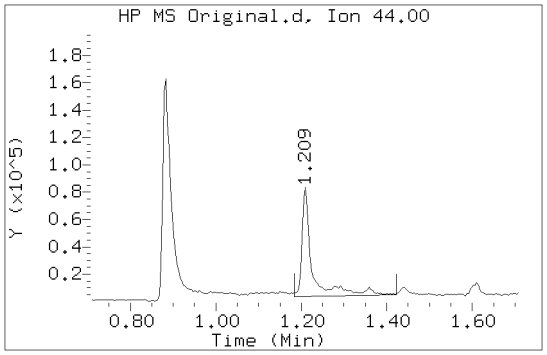
MASS
85
AREA
62241
HEIGHT
29192
27-Dec-2022
16:06
linh
pham



Acetaldehyde (75-07-0)

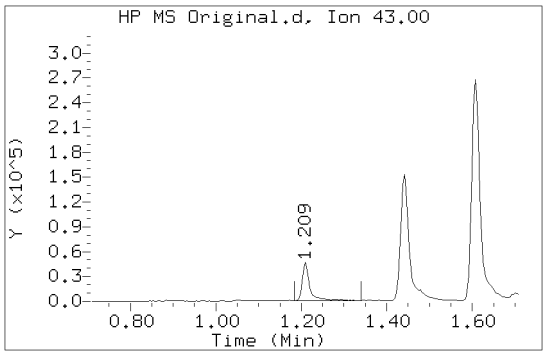
BEFORE

MASS
44
AREA
137215
HEIGHT
79995
27-Dec-2022
16:03
linh
pham



BEFORE

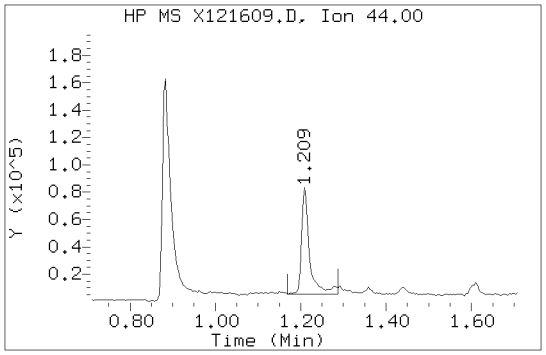
MASS
43
AREA
58307
HEIGHT
46134
27-Dec-2022
16:03
linh
pham



Reason Code:

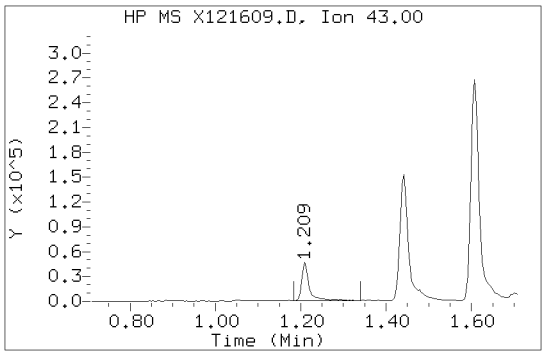
AFTER

MASS
44
AREA
107798
HEIGHT
78310
27-Dec-2022
16:06
linh
pham



AFTER

MASS
43
AREA
58307
HEIGHT
46134
27-Dec-2022
16:06
linh
pham



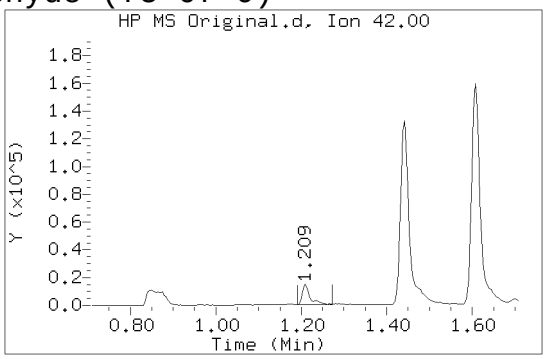
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D
Inj Date : 16-DEC-2022 14:25
InstruID : voa6.i
LabSampID : VSTD100

Acetaldehyde (75-07-0)

Reason Code:

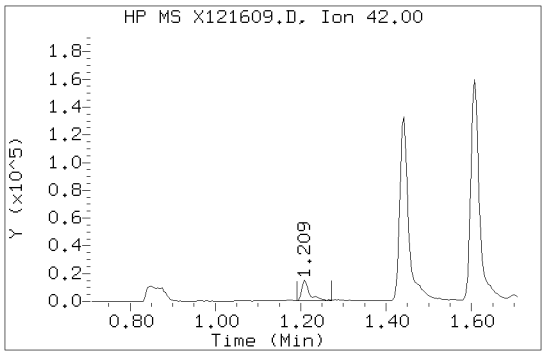
BEFORE

MASS
42
AREA
19613
HEIGHT
14674
27-Dec-2022
16:03
linh
pham



AFTER

MASS
42
AREA
19613
HEIGHT
14674
27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 16-DEC-2022 14:46
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:25 Cal File: X121609.D
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.177	4.177	(1.000)	447266	50.0000	
135 1,4-Dioxane	88	5.598	5.598	(1.340)	128845	3000.00	3151.41
140 1,3-Butadiene	54	1.160	1.160	(0.278)	468966	150.000	152.77
25 Methacrylonitrile	41	3.818	3.818	(0.914)	457301	150.000	144.39
12 Isobutyl Alcohol	43	4.672	4.672	(1.118)	1595753	3000.00	3171.99
13 Acetonitrile	39	2.194	2.194	(0.525)	642798	1500.00	1579.09
14 Allyl Chloride	41	2.194	2.194	(0.525)	1164663	150.000	150.22
4 Propionitrile	54	3.649	3.649	(0.873)	694740	1500.00	1522.31
136 n-Hexane	57	2.768	2.768	(0.663)	533876	150.000	165.78
72 trans-1,4-Dichloro-2-butene	53	8.889	8.889	(1.159)	234252	150.000	161.53
194 Acetaldehyde	44	1.209	1.209	(0.289)	161053	600.000	611.34(M)
23 Chloroprene	53	1.767	1.767	(0.423)	225733	150.000	148.43
145 alpha-Methylstyrene	118	9.257	9.257	(0.958)	1351001	150.000	157.73
200 Dimethyl Disulfide	94	6.198	6.198	(0.808)	1420820	150.000	156.27
139 Diethyl ether	59	1.752	1.752	(0.419)	443624	150.000	148.44
130 Ethyl Acetate	43	3.649	3.649	(0.873)	516433	150.000	147.97
40 Methyl Methacrylate	41	5.602	5.602	(1.341)	465959	150.000	152.78
49 Ethyl Methacrylate	69	6.712	6.712	(1.352)	517063	150.000	157.90
132 n-Butanol	56	5.253	5.253	(1.258)	210842	3000.00	3100.52
142 Tetrahydrofuran	42	3.840	3.840	(0.919)	162133	300.000	297.65

150	Allyl alcohol	57	2.768	2.768 (0.663)	533876	3000.00	3073.09
166	1,2,3-Trimethylbenzene	105	9.729	9.729 (1.007)	2744011	150.000	147.41

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D Page 2
Report Date: 27-Dec-2022 16:07

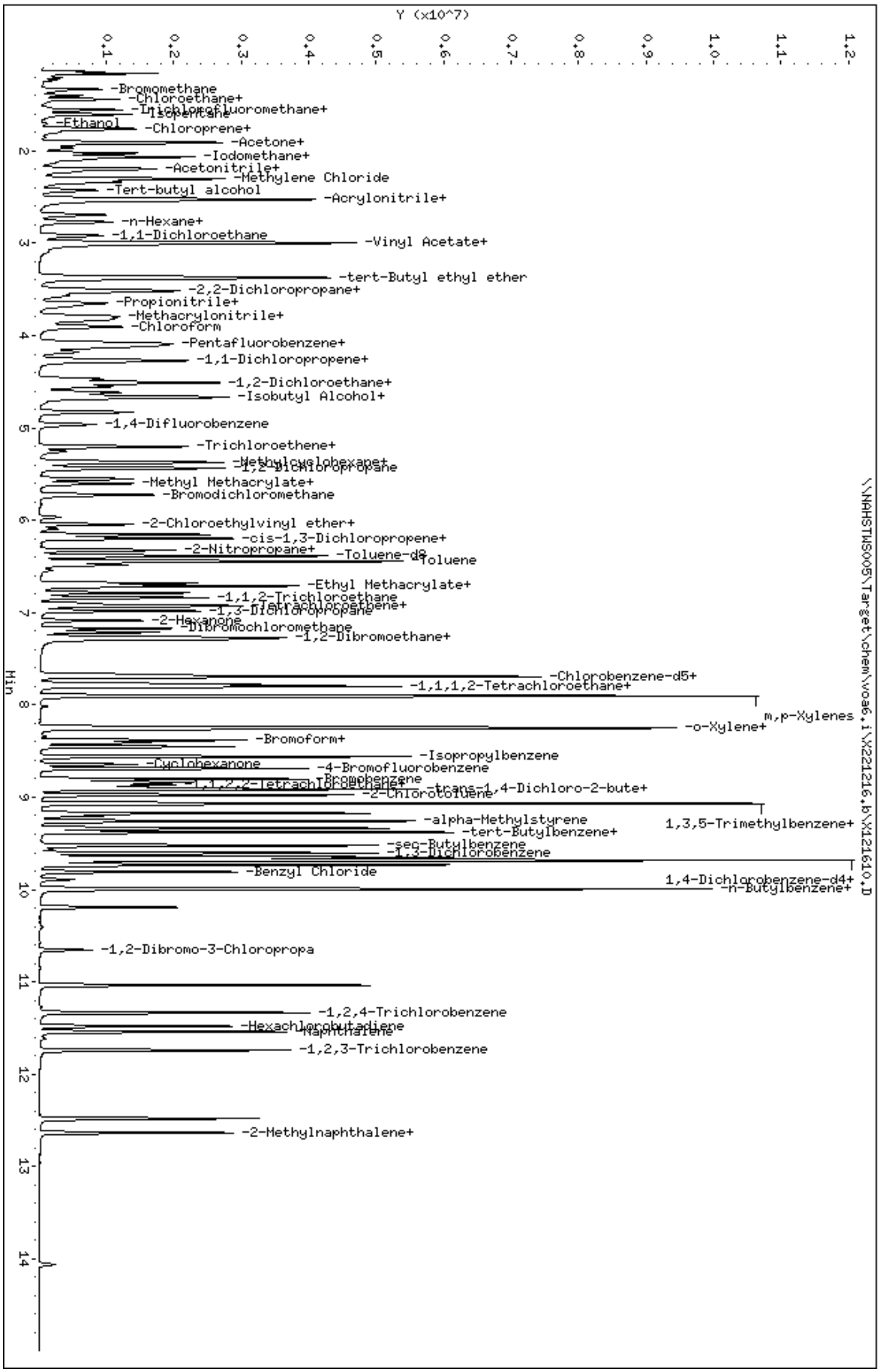
			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131	Methyl Acrylate	55	3.683	3.683	(0.882)	479571	150.000	157.93(M)
	162	Butyl acrylate	55	8.248	8.248	(1.076)	1470193	150.000	167.53
	2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	476130	150.000	151.40
	3	Chloromethane	50	1.077	1.077	(0.258)	621048	150.000	148.89
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	602774	150.000	154.27
	6	Bromomethane	94	1.332	1.332	(0.319)	470318	150.000	155.29
	7	Chloroethane	64	1.400	1.400	(0.335)	409168	150.000	150.45
	8	Trichlorofluoromethane	101	1.557	1.557	(0.373)	866865	150.000	158.54
	9	Acrolein	56	1.441	1.441	(0.345)	96139	300.000	308.25
	10	Acetone	43	1.969	1.969	(0.472)	373504	300.000	297.68
	11	1,1-Dichloroethene	96	1.910	1.910	(0.457)	516820	150.000	152.24
	15	Iodomethane	142	2.022	2.022	(0.484)	1554547	300.000	304.69
	16	Acrylonitrile	53	2.528	2.528	(0.605)	371872	300.000	323.00
	17	Methylene Chloride	84	2.299	2.299	(0.550)	656037	150.000	140.89
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	1661314	150.000	149.51
	19	Carbon Disulfide	76	2.063	2.063	(0.494)	2747788	300.000	309.38
	20	trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	579939	150.000	152.65
	21	Vinyl Acetate	43	2.993	2.993	(0.716)	3127175	300.000	320.61
	22	1,1-Dichloroethane	63	2.918	2.918	(0.699)	993924	150.000	149.06
	24	2-Butanone	43	3.570	3.570	(0.855)	407629	300.000	299.97(H)
	26	2,2-Dichloropropane	77	3.506	3.506	(0.839)	858853	150.000	151.71
	27	cis-1,2-Dichloroethene	96	3.521	3.521	(0.843)	693846	150.000	150.07
	28	Chloroform	83	3.904	3.904	(0.935)	1135322	150.000	151.92
	29	Bromochloromethane	128	3.791	3.791	(0.908)	379595	150.000	149.95
$	30	Dibromofluoromethane	113	4.095	4.095	(0.980)	652724	150.000	152.32
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	907111	150.000	152.99
	32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	766313	150.000	155.22
	33	1,2-Dichloroethane	62	4.552	4.552	(0.917)	857022	150.000	150.42
	34	Carbon Tetrachloride	117	4.264	4.264	(0.859)	758288	150.000	143.83
$	35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	686218	150.000	150.83
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	695375	50.0000	
	37	Benzene	78	4.511	4.511	(0.909)	2450385	150.000	147.56
	38	Trichloroethene	130	5.205	5.205	(1.048)	707016	150.000	150.11
	39	Bromodichloromethane	83	5.722	5.722	(1.153)	932632	150.000	149.65
	41	2-Chloroethylvinyl ether	63	6.044	6.044	(1.217)	534005	300.000	301.19
	42	1,2-Dichloropropane	63	5.433	5.433	(1.094)	658007	150.000	148.96
	44	Dibromomethane	93	5.549	5.549	(1.118)	444851	150.000	148.16
	45	4-Methyl-2-Pentanone	43	6.325	6.325	(0.825)	1052577	300.000	293.14
	46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	1159982	150.000	158.49
*	47	Chlorobenzene-d5	117	7.667	7.667	(1.000)	671780	50.0000	
$	48	Toluene-d8	98	6.385	6.385	(0.833)	2346444	150.000	141.35
	50	Toluene	91	6.445	6.445	(0.841)	2724692	150.000	146.73
	51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	982044	150.000	161.68
	52	2-Hexanone	43	7.086	7.086	(0.924)	738082	300.000	302.12
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	540625	150.000	145.13
	54	1,3-Dichloropropane	76	6.981	6.981	(0.911)	1079961	150.000	147.29
	55	Dibromochloromethane	129	7.176	7.176	(0.936)	822094	150.000	152.90
	56	Tetrachloroethene	164	6.929	6.929	(0.904)	574499	150.000	149.53
	57	1,2-Dibromoethane	107	7.259	7.259	(0.947)	715678	150.000	153.66
	58	1-Chlorohexane	55	7.697	7.697	(1.550)	522502	150.000	155.48
	59	Chlorobenzene	112	7.694	7.694	(1.003)	1944205	150.000	147.62
	60	1,1,1,2-Tetrachloroethane	131	7.772	7.772	(1.014)	744470	150.000	151.89

61 Ethylbenzene	106	7.799	7.799 (1.017)	946928	150.000	152.63
62 m,p-Xylenes	106	7.904	7.904 (1.031)	2421267	300.000	302.75

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.241	8.241	(1.075)	1210374	150.000	153.33
	64 Styrene	104	8.260	8.260	(1.077)	2169528	150.000	163.97
	66 Bromoform	173	8.410	8.410	(1.097)	588916	150.000	158.11
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	2877359	150.000	159.55
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	873933	150.000	141.84
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	936681	150.000	150.82
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	386546	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	702545	150.000	163.33
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	3370402	150.000	157.41
	74 Bromobenzene	156	8.803	8.803	(0.911)	952608	150.000	150.20
	75 1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	2529726	150.000	159.93
	76 2-Chlorotoluene	91	8.976	8.976	(0.929)	2083510	150.000	148.28
	77 4-Chlorotoluene	91	9.069	9.069	(0.939)	2540753	150.000	158.62
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	2055293	150.000	158.74
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	2613455	150.000	157.03
	81 sec-Butylbenzene	105	9.523	9.523	(0.986)	2819238	150.000	163.65
	82 p-Isopropyltoluene	119	9.650	9.650	(0.999)	2542764	150.000	164.71
	83 1,3-Dichlorobenzene	146	9.605	9.605	(0.994)	1650440	150.000	156.79
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	1766146	150.000	153.76
	86 Benzyl Chloride	91	9.808	9.808	(1.279)	1650494	150.000	151.23
	87 n-Butylbenzene	91	9.992	9.992	(1.034)	2293126	150.000	150.43
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	1672283	150.000	154.25
	89 1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.103)	149691	150.000	151.78
	90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	1094701	150.000	160.01
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	466452	150.000	150.10
	92 Naphthalene	128	11.540	11.540	(1.194)	2498440	150.000	160.50
	93 1,2,3-Trichlorobenzene	180	11.738	11.738	(1.215)	991236	150.000	151.28
M	94 1,2-Dichloroethylene (total)	96				1273785	300.000	
M	95 Xylenes (total)	106				3631641	450.000	
	141 Cyclohexane	56	4.117	4.117	(0.986)	682728	150.000	148.87
	138 Freon TF	101	1.910	1.910	(0.457)	517229	150.000	157.53
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	1358300	150.000	159.57(A)
	146 Methyl Acetate	43	2.224	2.224	(0.533)	301298	150.000	149.70
	148 Tert-Butyl alcohol	59	2.427	2.427	(0.581)	962267	3000.00	3107.07
	149 Isopropyl Alcohol	45	2.093	2.093	(0.501)	514966	3000.00	3183.89

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D
Date : 16-DEC-2022 14:46
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;
Purge Volume: 5.0
Column phase: DB624

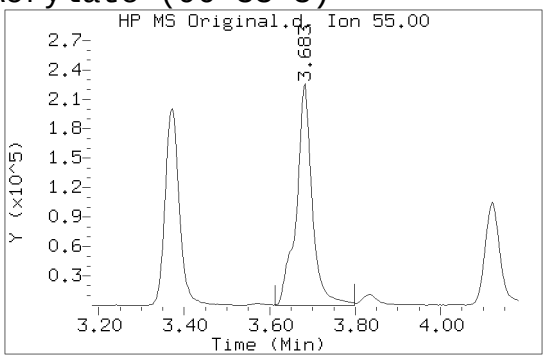
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D
Inj Date : 16-DEC-2022 14:46
InstruID : voa6.i
LabSampID : VSTD150

Methyl Acrylate (96-33-3)

BEFORE

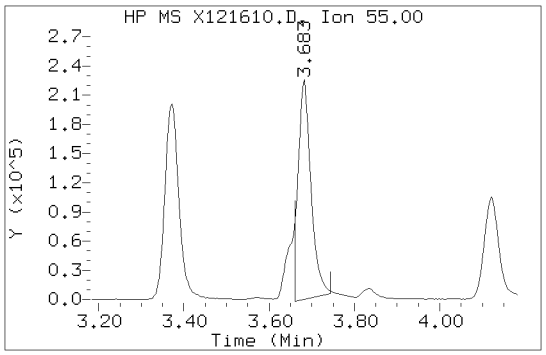
MASS
55
AREA
589884
HEIGHT
225588
27-Dec-2022
16:04
linh
pham



Reason Code:

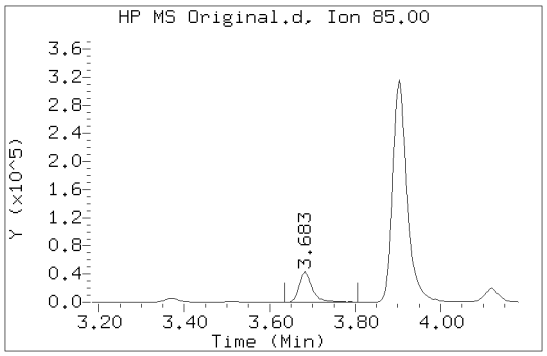
AFTER

MASS
55
AREA
479571
HEIGHT
225684
27-Dec-2022
16:06
linh
pham



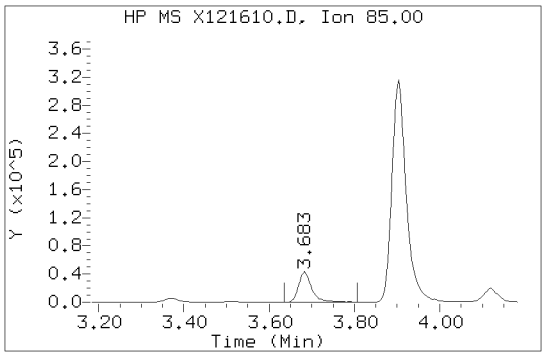
BEFORE

MASS
85
AREA
94462
HEIGHT
43984
27-Dec-2022
16:04
linh
pham



AFTER

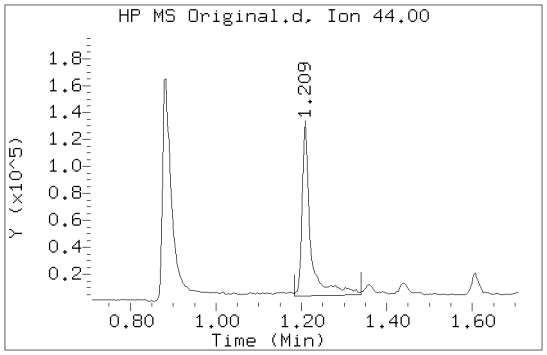
MASS
85
AREA
94462
HEIGHT
43984
27-Dec-2022
16:06
linh
pham



Acetaldehyde (75-07-0)

BEFORE

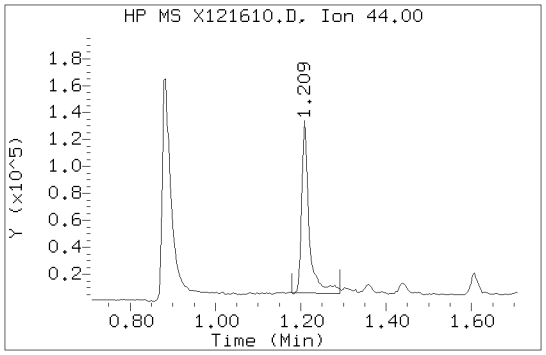
MASS
44
AREA
184291
HEIGHT
129645
27-Dec-2022
16:04
linh
pham



Reason Code:

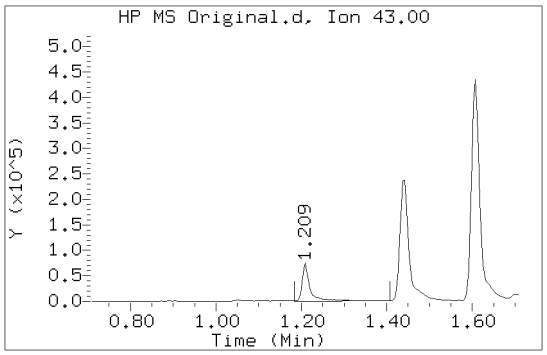
AFTER

MASS
44
AREA
161053
HEIGHT
127430
27-Dec-2022
16:06
linh
pham



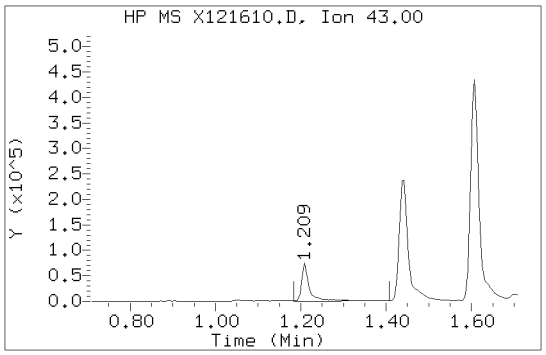
BEFORE

MASS
43
AREA
95359
HEIGHT
74827
27-Dec-2022
16:04
linh
pham



AFTER

MASS
43
AREA
95359
HEIGHT
74827
27-Dec-2022
16:06
linh
pham



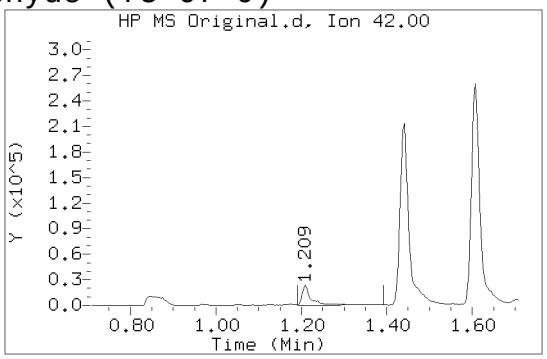
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D
Inj Date : 16-DEC-2022 14:46
InstruID : voa6.i
LabSampID : VSTD150

Acetaldehyde (75-07-0)

Reason Code:

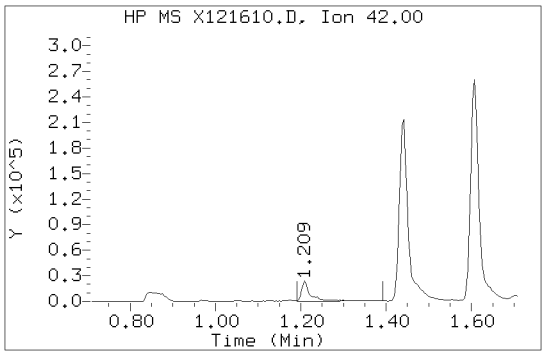
BEFORE

MASS
42
AREA
36089
HEIGHT
23932
27-Dec-2022
16:04
linh
pham



AFTER

MASS
42
AREA
36089
HEIGHT
23932
27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 16-DEC-2022 15:07
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:46 Cal File: X121610.D
Als bottle: 12 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1	Pentafluorobenzene	168	4.178	4.178	(1.000)	450847	50.0000	
135	1,4-Dioxane	88	5.598	5.598	(1.340)	179280	4000.00	4350.17(A)
140	1,3-Butadiene	54	1.160	1.160	(0.278)	646265	200.000	208.86(A)
25	Methacrylonitrile	41	3.814	3.814	(0.913)	619479	200.000	194.04
12	Isobutyl Alcohol	43	4.672	4.672	(1.118)	2146631	4000.00	4233.12(A)
13	Acetonitrile	39	2.195	2.195	(0.525)	854153	2000.00	2081.63(A)
14	Allyl Chloride	41	2.195	2.195	(0.525)	1558053	200.000	199.36
4	Propionitrile	54	3.649	3.649	(0.873)	933721	2000.00	2029.71(A)
136	n-Hexane	57	2.768	2.768	(0.663)	726173	200.000	223.70(A)
72	trans-1,4-Dichloro-2-butene	53	8.890	8.890	(1.159)	324976	200.000	217.73(A)
194	Acetaldehyde	44	1.209	1.209	(0.289)	205547	800.000	780.23(M)
23	Chloroprene	53	1.767	1.767	(0.423)	315248	200.000	205.64(A)
145	alpha-Methylstyrene	118	9.261	9.261	(0.958)	1880547	200.000	211.54(A)
200	Dimethyl Disulfide	94	6.198	6.198	(0.808)	1929723	200.000	206.22(A)
139	Diethyl ether	59	1.752	1.752	(0.419)	595638	200.000	197.72
130	Ethyl Acetate	43	3.649	3.649	(0.873)	706790	200.000	200.90(A)
40	Methyl Methacrylate	41	5.602	5.602	(1.341)	643877	200.000	209.45(A)
49	Ethyl Methacrylate	69	6.715	6.715	(1.353)	735246	200.000	222.23(A)
132	n-Butanol	56	5.253	5.253	(1.258)	297334	4000.00	3955.86
142	Tetrahydrofuran	42	3.840	3.840	(0.919)	219995	400.000	401.77(A)

150 Allyl alcohol	57	2.768	2.768 (0.663)	726173	4000.00	4146.79(A)
166 1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	3701988	200.000	191.61

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D Page 2
Report Date: 27-Dec-2022 16:07

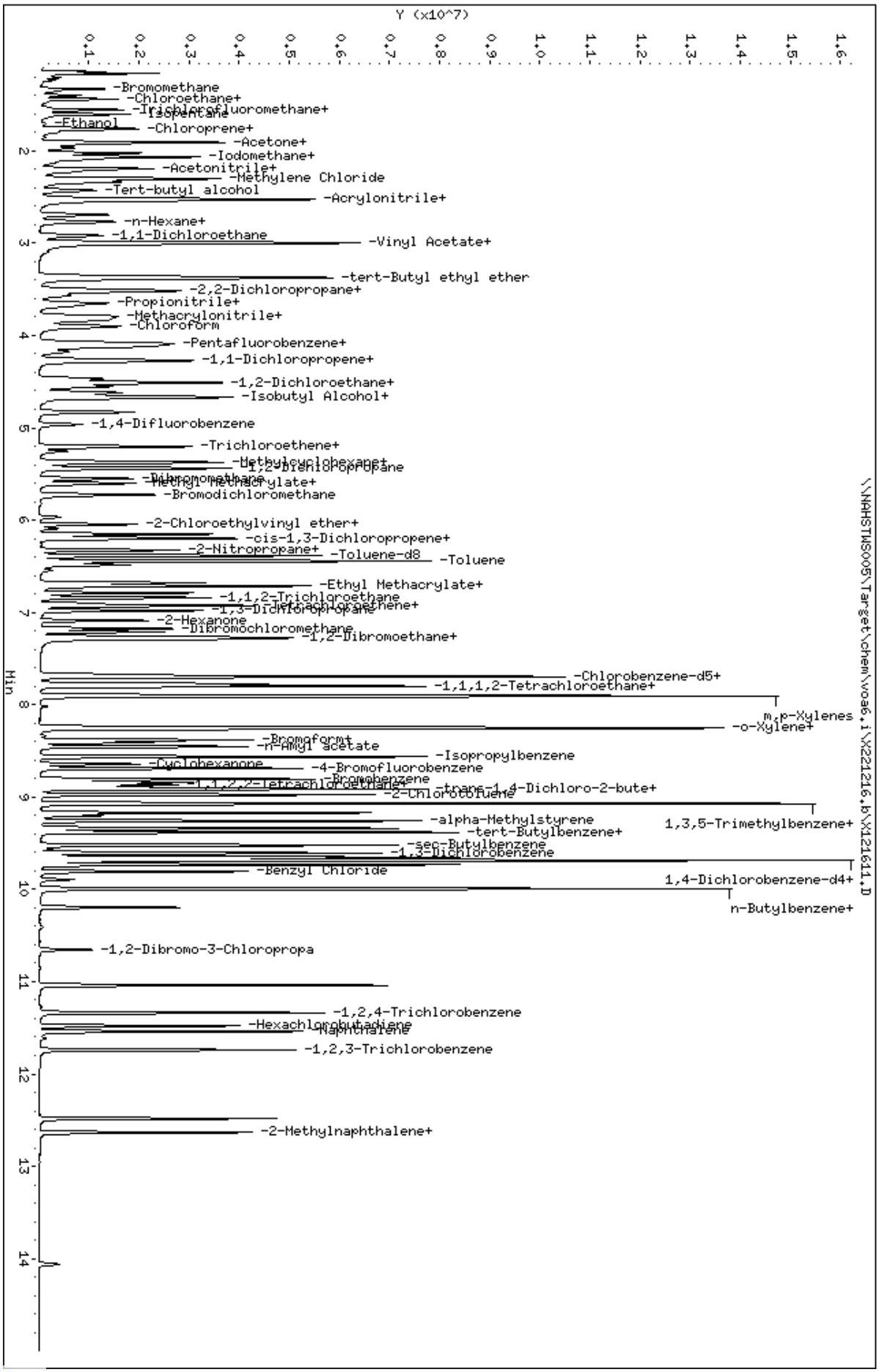
			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131	Methyl Acrylate	55	3.683	3.683	(0.882)	646827	200.000	211.32(AM)
	162	Butyl acrylate	55	8.252	8.252	(1.076)	2063916	200.000	228.52(A)
	2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	635808	200.000	200.44(A)
	3	Chloromethane	50	1.074	1.074	(0.257)	865151	200.000	204.92(A)
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	827926	200.000	210.21(A)
	6	Bromomethane	94	1.329	1.329	(0.318)	666705	200.000	217.67(A)
	7	Chloroethane	64	1.396	1.396	(0.334)	548415	200.000	200.06(A)
	8	Trichlorofluoromethane	101	1.553	1.553	(0.372)	1173529	200.000	212.92(A)
	9	Acrolein	56	1.437	1.437	(0.344)	125874	400.000	399.54
	10	Acetone	43	1.970	1.970	(0.472)	514105	400.000	406.50(A)
	11	1,1-Dichloroethene	96	1.910	1.910	(0.457)	704695	200.000	205.94(A)
	15	Iodomethane	142	2.022	2.022	(0.484)	2193685	400.000	398.07
	16	Acrylonitrile	53	2.528	2.528	(0.605)	504850	400.000	435.02(A)
	17	Methylene Chloride	84	2.299	2.299	(0.550)	863945	200.000	184.07
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	2237559	200.000	199.78
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	3829593	400.000	427.76(A)
	20	trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	785444	200.000	205.10(A)
	21	Vinyl Acetate	43	2.993	2.993	(0.716)	4210603	400.000	428.26(A)
	22	1,1-Dichloroethane	63	2.918	2.918	(0.699)	1342786	200.000	199.79
	24	2-Butanone	43	3.570	3.570	(0.855)	555896	400.000	404.77(AH)
	26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	1175128	200.000	205.93(A)
	27	cis-1,2-Dichloroethene	96	3.522	3.522	(0.843)	927934	200.000	199.10
	28	Chloroform	83	3.904	3.904	(0.935)	1523082	200.000	202.19(A)
	29	Bromochloromethane	128	3.791	3.791	(0.908)	510028	200.000	199.87
$	30	Dibromofluoromethane	113	4.095	4.095	(0.980)	856027	200.000	198.23
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	1257327	200.000	210.37(A)
	32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	1048877	200.000	210.29(A)
	33	1,2-Dichloroethane	62	4.552	4.552	(0.917)	1153034	200.000	200.31(A)
	34	Carbon Tetrachloride	117	4.260	4.260	(0.858)	1051824	200.000	197.48
$	35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	919752	200.000	200.47(A)
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	702551	50.0000	
	37	Benzene	78	4.511	4.511	(0.909)	3321582	200.000	197.98
	38	Trichloroethene	130	5.205	5.205	(1.048)	973709	200.000	204.62(A)
	39	Bromodichloromethane	83	5.722	5.722	(1.153)	1264834	200.000	200.88(A)
	41	2-Chloroethylvinyl ether	63	6.044	6.044	(1.217)	729151	400.000	407.06(A)
	42	1,2-Dichloropropane	63	5.437	5.437	(1.095)	895211	200.000	200.59(A)
	44	Dibromomethane	93	5.550	5.550	(1.118)	600170	200.000	197.85
	45	4-Methyl-2-Pentanone	43	6.326	6.326	(0.825)	1447268	400.000	391.63
	46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	1583645	200.000	214.16(A)
*	47	Chlorobenzene-d5	117	7.671	7.671	(1.000)	691386	50.0000	
$	48	Toluene-d8	98	6.385	6.385	(0.832)	3061758	200.000	179.21
	50	Toluene	91	6.445	6.445	(0.840)	3757557	200.000	196.62
	51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	1365007	200.000	222.44(A)
	52	2-Hexanone	43	7.086	7.086	(0.924)	1026898	400.000	408.42(A)
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	736981	200.000	192.23
	54	1,3-Dichloropropane	76	6.982	6.982	(0.910)	1482067	200.000	196.39
	55	Dibromochloromethane	129	7.176	7.176	(0.936)	1128140	200.000	203.88(A)
	56	Tetrachloroethene	164	6.929	6.929	(0.903)	798932	200.000	202.05(A)
	57	1,2-Dibromoethane	107	7.259	7.259	(0.946)	970608	200.000	202.48(A)
	58	1-Chlorohexane	55	7.698	7.698	(1.550)	746326	200.000	219.81(A)
	59	Chlorobenzene	112	7.694	7.694	(1.003)	2696715	200.000	198.95
	60	1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	1028448	200.000	203.88(A)

61 Ethylbenzene	106	7.799	7.799 (1.017)	1312165	200.000	205.50(A)
62 m,p-Xylenes	106	7.904	7.904 (1.030)	3401207	400.000	413.22(A)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.241	8.241	(1.074)	1701245	200.000	209.41(A)
	64 Styrene	104	8.260	8.260	(1.077)	3030858	200.000	222.58(A)
	66 Bromoform	173	8.410	8.410	(1.096)	809693	200.000	211.22(A)
	67 Isopropylbenzene	105	8.563	8.563	(1.116)	4031708	200.000	217.22(A)
	68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	1186926	200.000	185.61
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.132)	1277239	200.000	199.81
*	70 1,4-Dichlorobenzene-d4	152	9.666	9.666	(1.000)	401196	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	864931	200.000	193.75(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	4694239	200.000	211.23(A)
	74 Bromobenzene	156	8.807	8.807	(0.911)	1313631	200.000	199.57
	75 1,3,5-Trimethylbenzene	105	9.070	9.070	(0.938)	3532485	200.000	215.17(A)
	76 2-Chlorotoluene	91	8.976	8.976	(0.929)	2866849	200.000	196.59
	77 4-Chlorotoluene	91	9.070	9.070	(0.938)	3546402	200.000	213.32(A)
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	2865820	200.000	213.26(A)
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	3599947	200.000	208.40(A)
	81 sec-Butylbenzene	105	9.523	9.523	(0.985)	3952917	200.000	221.08(A)
	82 p-Isopropyltoluene	119	9.651	9.651	(0.998)	3537904	200.000	220.81(A)
	83 1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	2282597	200.000	208.93(A)
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	2442324	200.000	204.86(A)
	86 Benzyl Chloride	91	9.808	9.808	(1.279)	2286488	200.000	202.63(A)
	87 n-Butylbenzene	91	9.995	9.995	(1.034)	3216534	200.000	202.68(A)
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	2296902	200.000	204.14(A)
	89 1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.102)	205063	200.000	200.30(A)
	90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	1524896	200.000	214.75(A)
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	654615	200.000	200.27(A)
	92 Naphthalene	128	11.540	11.540	(1.194)	3413593	200.000	211.29(A)
	93 1,2,3-Trichlorobenzene	180	11.739	11.739	(1.214)	1363987	200.000	200.56(A)
M	94 1,2-Dichloroethylene (total)	96				1713378	400.000	
M	95 Xylenes (total)	106				5102452	600.000	
	141 Cyclohexane	56	4.121	4.121	(0.987)	943314	200.000	203.60(A)
	138 Freon TF	101	1.910	1.910	(0.457)	714577	200.000	215.91(A)
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	1829310	200.000	212.71(A)
	146 Methyl Acetate	43	2.224	2.224	(0.533)	408781	200.000	201.49(A)
	148 Tert-Butyl alcohol	59	2.431	2.431	(0.582)	1308623	4000.00	4191.87(A)
	149 Isopropyl Alcohol	45	2.093	2.093	(0.501)	697543	4000.00	4278.45(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D
Date : 16-DEC-2022 15:07
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;
Purge Volume: 5.0
Column phase: DB624

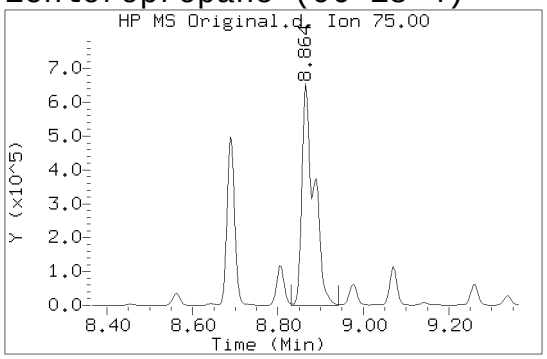
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D
Inj Date : 16-DEC-2022 15:07
InstruID : voa6.i
LabSampID : VSTD200

1,2,3-Trichloropropane (96-18-4)

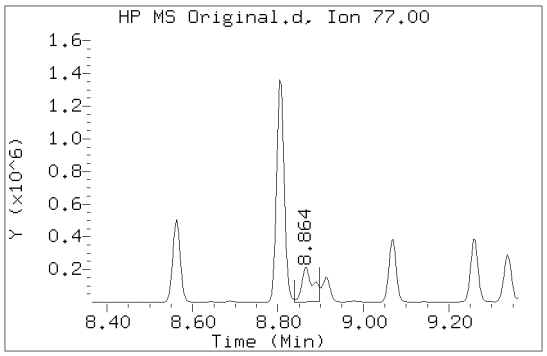
BEFORE

MASS
75
AREA
1323962
HEIGHT
654512
27-Dec-2022
16:04
linh
pham



BEFORE

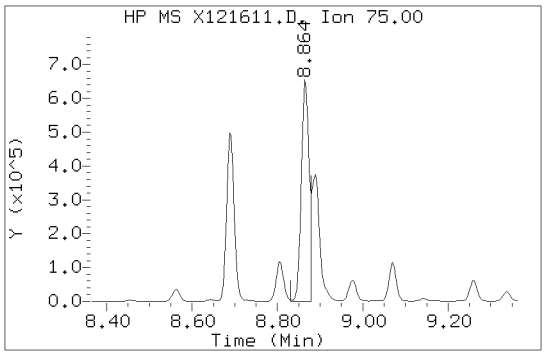
MASS
77
AREA
412197
HEIGHT
211060
27-Dec-2022
16:04
linh
pham



Reason Code:

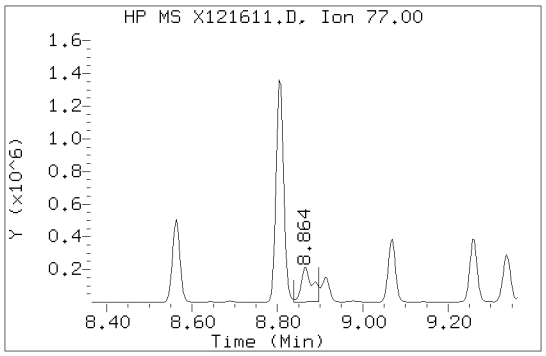
AFTER

MASS
75
AREA
864931
HEIGHT
654512
27-Dec-2022
16:06
linh
pham



AFTER

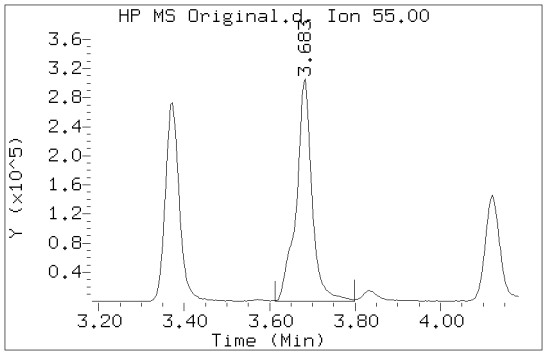
MASS
77
AREA
412197
HEIGHT
211060
27-Dec-2022
16:06
linh
pham



Methyl Acrylate (96-33-3)

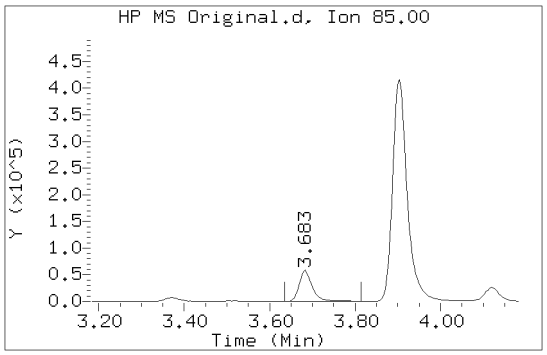
BEFORE

MASS
55
AREA
795765
HEIGHT
305336
27-Dec-2022
16:04
linh
pham



BEFORE

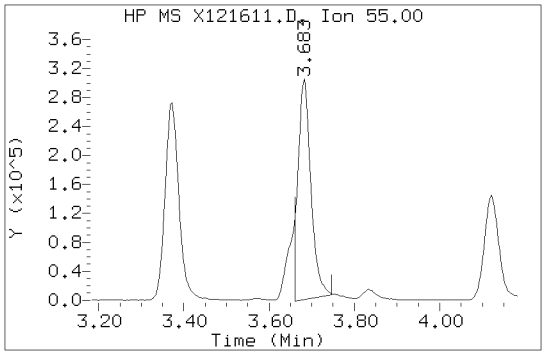
MASS
85
AREA
126210
HEIGHT
59160
27-Dec-2022
16:04
linh
pham



Reason Code:

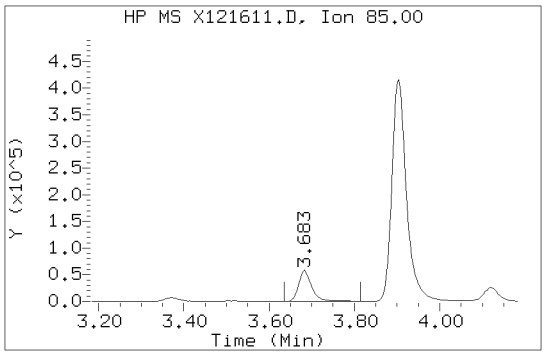
AFTER

MASS
55
AREA
646827
HEIGHT
304558
27-Dec-2022
16:06
linh
pham



AFTER

MASS
85
AREA
126210
HEIGHT
59160
27-Dec-2022
16:06
linh
pham



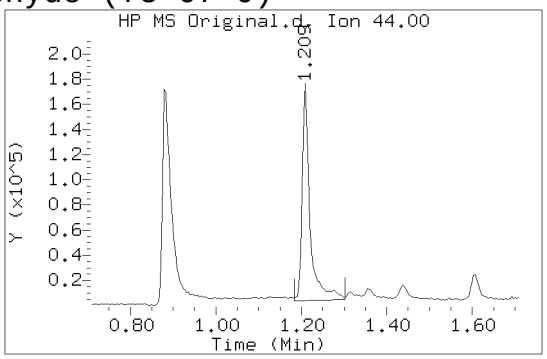
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D
Inj Date : 16-DEC-2022 15:07
InstruID : voa6.i
LabSampID : VSTD200

Acetaldehyde (75-07-0)

Reason Code:

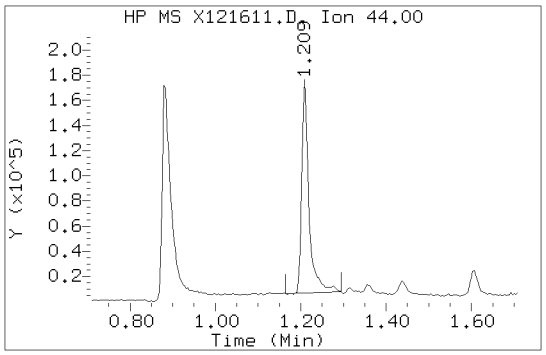
BEFORE

MASS
44
AREA
226389
HEIGHT
172187
27-Dec-2022
16:04
linh
pham



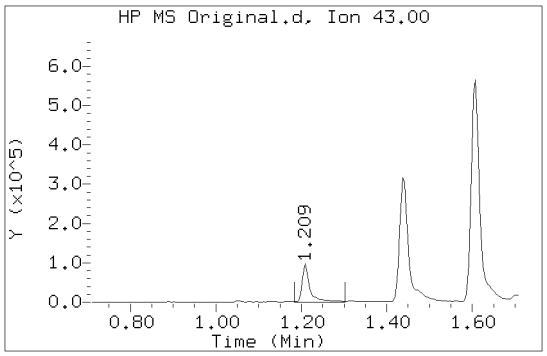
AFTER

MASS
44
AREA
205547
HEIGHT
169403
27-Dec-2022
16:06
linh
pham



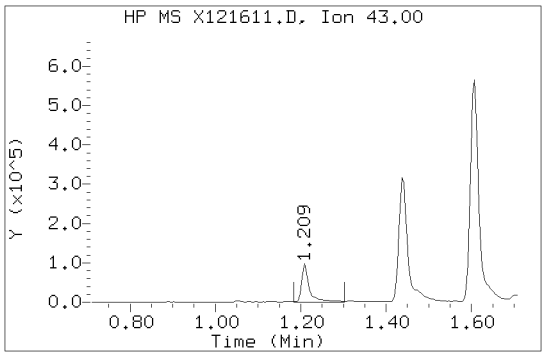
BEFORE

MASS
43
AREA
123674
HEIGHT
97657
27-Dec-2022
16:04
linh
pham



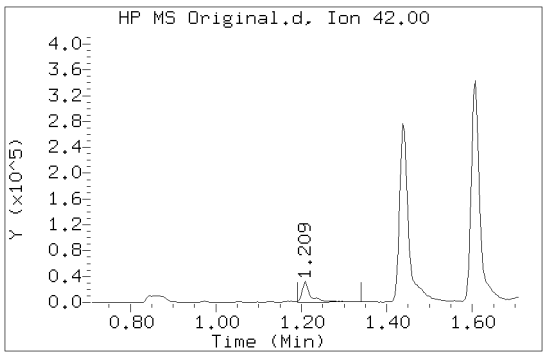
AFTER

MASS
43
AREA
123674
HEIGHT
97657
27-Dec-2022
16:06
linh
pham



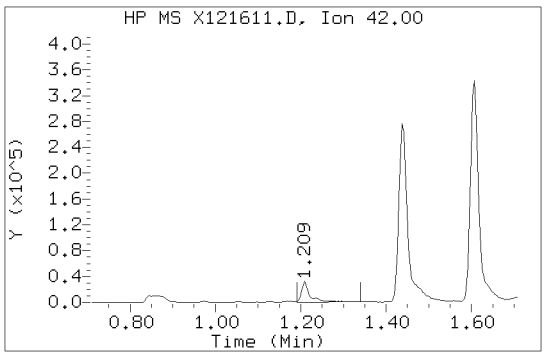
BEFORE

MASS
42
AREA
43931
HEIGHT
31915
27-Dec-2022
16:04
linh
pham



AFTER

MASS
42
AREA
43931
HEIGHT
31915
27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 16-DEC-2022 15:49
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;ICV
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 15:07 Cal File: X121611.D
Als bottle: 14 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1	Pentafluorobenzene	168	4.178	4.178	(1.000)	457291	50.0000	
135	1,4-Dioxane	88	5.598	5.598	(1.340)	42711	1021.77	1021.76
140	1,3-Butadiene	54	1.164	1.160	(0.279)	155959	49.6927	49.69
25	Methacrylonitrile	41	3.818	3.814	(0.914)	151341	46.7389	46.73
12	Isobutyl Alcohol	43	4.672	4.672	(1.118)	505171	982.151	982.15
13	Acetonitrile	39	2.194	2.195	(0.525)	197937	475.590	475.59
14	Allyl Chloride	41	2.194	2.195	(0.525)	375064	47.3168	47.31
4	Propionitrile	54	3.649	3.649	(0.873)	227186	486.896	486.89
136	n-Hexane	57	2.768	2.768	(0.663)	183599	55.7620	55.76
72	trans-1,4-Dichloro-2-butene	53	8.890	8.890	(1.159)	71513	49.7372	49.73
194	Acetaldehyde	44	1.209	1.209	(0.289)	52697	179.814	179.81(M)
23	Chloroprene	53	1.767	1.767	(0.423)	74243	47.7493	47.74(M)
145	alpha-Methylstyrene	118	9.257	9.261	(0.958)	428317	51.3094	51.30
200	Dimethyl Disulfide	94	6.198	6.198	(0.808)	437905	48.5791	48.57
139	Diethyl ether	59	1.752	1.752	(0.419)	142672	46.6930	46.69
130	Ethyl Acetate	43	3.653	3.649	(0.874)	171211	47.9808	47.98
40	Methyl Methacrylate	41	5.602	5.602	(1.341)	148777	47.7146	47.71
49	Ethyl Methacrylate	69	6.712	6.715	(1.352)	142471	44.0730	44.07
132	n-Butanol	56	5.257	5.253	(1.258)	56842	974.397	974.39
142	Tetrahydrofuran	42	3.840	3.840	(0.919)	61534	108.502	108.50

166 1,2,3-Trimethylbenzene	105	9.729	9.733 (1.007)	846843	46.6777	46.67
131 Methyl Acrylate	55	3.683	3.683 (0.882)	162555	52.3594	52.35

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D Page 2
Report Date: 27-Dec-2022 16:07

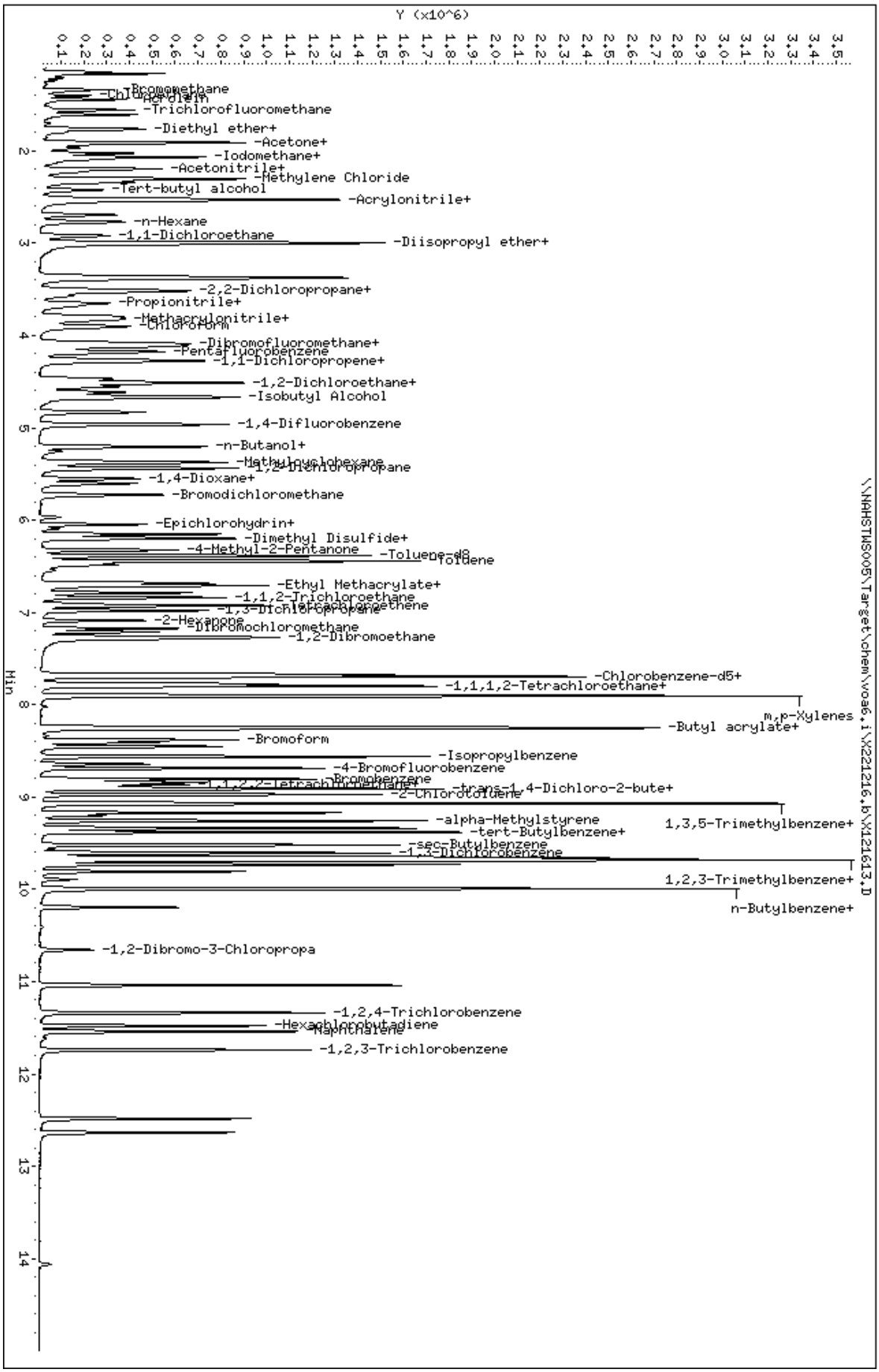
			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)
	162	Butyl acrylate	55	8.249	8.252	(1.076)	417137	47.9449	47.94
	2	Dichlorodifluoromethane	85	0.972	0.969	(0.233)	166984	52.1924	52.19
	3	Chloromethane	50	1.077	1.074	(0.258)	207623	50.1741	50.17
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	202038	50.5766	50.57
	6	Bromomethane	94	1.336	1.329	(0.320)	153541	50.7886	50.78
	7	Chloroethane	64	1.400	1.396	(0.335)	134354	48.3213	48.32
	8	Trichlorofluoromethane	101	1.557	1.553	(0.373)	285144	51.0083	51.00
	9	Acrolein	56	1.441	1.437	(0.345)	29687	95.0682	95.06
	10	Acetone	43	1.970	1.970	(0.472)	130747	101.899	101.89
	11	1,1-Dichloroethene	96	1.913	1.910	(0.458)	171246	49.3414	49.34
	15	Iodomethane	142	2.026	2.022	(0.485)	440111	96.4856	96.48
	16	Acrylonitrile	53	2.532	2.528	(0.606)	119393	101.430	101.42
	17	Methylene Chloride	84	2.299	2.299	(0.550)	226449	47.5675	47.56
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	546711	48.1256	48.12
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	894433	98.5011	98.50
	20	trans-1,2-Dichloroethene	96	2.528	2.524	(0.605)	194181	49.9917	49.99
	21	Vinyl Acetate	43	2.997	2.993	(0.717)	1044658	104.756	104.75
	22	1,1-Dichloroethane	63	2.918	2.918	(0.699)	328530	48.1931	48.19
	24	2-Butanone	43	3.574	3.570	(0.856)	132931	97.7407	97.74(H)
	26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	295126	50.9895	50.98
	27	cis-1,2-Dichloroethene	96	3.525	3.522	(0.844)	228100	48.2538	48.25
	28	Chloroform	83	3.904	3.904	(0.935)	370227	48.4556	48.45
	29	Bromochloromethane	128	3.795	3.791	(0.908)	122310	47.2570	47.25
$	30	Dibromofluoromethane	113	4.095	4.095	(0.980)	223563	50.9182	50.91
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	304118	50.1673	50.16
	32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	254008	52.1195	52.11
	33	1,2-Dichloroethane	62	4.552	4.552	(0.917)	278558	49.5262	49.52
	34	Carbon Tetrachloride	117	4.264	4.260	(0.859)	255322	49.0600	49.06
$	35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	233432	50.3661	50.36
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	686467	50.0000	
	37	Benzene	78	4.511	4.511	(0.909)	824422	50.2921	50.29
	38	Trichloroethene	130	5.205	5.205	(1.048)	238429	51.2807	51.28
	39	Bromodichloromethane	83	5.726	5.722	(1.153)	302844	49.2265	49.22
	41	2-Chloroethylvinyl ether	63	6.048	6.044	(1.218)	182363	104.194	104.19
	42	1,2-Dichloropropane	63	5.433	5.437	(1.094)	216322	49.6089	49.60
	44	Dibromomethane	93	5.550	5.550	(1.118)	145797	49.1915	49.19
	45	4-Methyl-2-Pentanone	43	6.325	6.326	(0.825)	334751	94.0316	94.03
	46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	376514	52.1120	52.11
*	47	Chlorobenzene-d5	117	7.667	7.671	(1.000)	666040	50.0000	
$	48	Toluene-d8	98	6.385	6.385	(0.833)	814721	49.5021	49.50
	50	Toluene	91	6.445	6.445	(0.841)	905906	49.2085	49.20
	51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	314805	52.5028	52.50
	52	2-Hexanone	43	7.086	7.086	(0.924)	234303	96.7356	96.73
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	176962	47.9147	47.91
	54	1,3-Dichloropropane	76	6.981	6.982	(0.911)	347689	47.8282	47.82
	55	Dibromochloromethane	129	7.176	7.176	(0.936)	263907	49.5095	49.50
	56	Tetrachloroethene	164	6.929	6.929	(0.904)	194246	50.9965	50.99
	57	1,2-Dibromoethane	107	7.259	7.259	(0.947)	232024	50.2468	50.24
	58	1-Chlorohexane	55	7.694	7.698	(1.550)	172462	51.9860	51.98
	59	Chlorobenzene	112	7.694	7.694	(1.003)	631235	48.3416	48.34
	60	1,1,1,2-Tetrachloroethane	131	7.772	7.776	(1.014)	236254	48.6176	48.61
	61	Ethylbenzene	106	7.799	7.799	(1.017)	315635	51.3153	51.31

62 m,p-Xylenes	106	7.904	7.904 (1.031)	794307	100.175	100.17
63 o-Xylene	106	8.241	8.241 (1.075)	389371	49.7531	49.75

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
	64 Styrene	104	8.260	8.260	(1.077)	683415	52.0997	52.09
	66 Bromoform	173	8.410	8.410	(1.097)	182169	49.3304	49.33
	67 Isopropylbenzene	105	8.560	8.563	(1.116)	931467	52.0964	52.09
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.841	(0.915)	280729	46.7506	46.75
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	307493	49.9836	49.98
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.666	(1.000)	376748	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	201551	48.0786	48.07(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	1099273	52.6761	52.67
	74 Bromobenzene	156	8.803	8.807	(0.911)	306751	49.6271	49.62
	75 1,3,5-Trimethylbenzene	105	9.066	9.070	(0.938)	806374	52.3068	52.30
	76 2-Chlorotoluene	91	8.972	8.976	(0.929)	683941	49.9441	49.94
	77 4-Chlorotoluene	91	9.069	9.070	(0.939)	800114	51.2527	51.25
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	666730	52.8346	52.83
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	832541	51.3249	51.32
	81 sec-Butylbenzene	105	9.519	9.523	(0.985)	909529	54.1700	54.16
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	823827	54.7550	54.75
	83 1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	525438	51.2160	51.21
	84 1,4-Dichlorobenzene	146	9.681	9.684	(1.002)	556610	49.7188	49.71
	87 n-Butylbenzene	91	9.995	9.995	(1.035)	735043	50.6672	50.66
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	523296	49.5268	49.52
	89 1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.103)	48516	50.5353	50.53
	90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	364475	54.6601	54.66
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	170927	57.7383	57.73
	92 Naphthalene	128	11.544	11.540	(1.195)	799121	52.6729	52.67
	93 1,2,3-Trichlorobenzene	180	11.739	11.739	(1.215)	337140	52.7917	52.79
M	94 1,2-Dichloroethylene (total)	96				422281	98.2454	98.24
M	95 Xylenes (total)	106				1183678	149.928	149.92
	141 Cyclohexane	56	4.121	4.121	(0.987)	238664	51.7326	51.73
	138 Freon TF	101	1.913	1.910	(0.458)	177599	52.9072	52.90
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	427649	50.8929	50.89
	146 Methyl Acetate	43	2.228	2.224	(0.533)	99131	48.1755	48.17
	148 Tert-Butyl alcohol	59	2.423	2.431	(0.580)	311463	983.641	983.64
	149 Isopropyl Alcohol	45	2.090	2.093	(0.500)	170003	1028.04	1028.03

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTMS005\Target\chem\voa6.i\X221216.b\X121613.D
Date : 16-DEC-2022 15:49
Client ID: ICV
Sample Info: CCV;CCV;2;;ICV
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

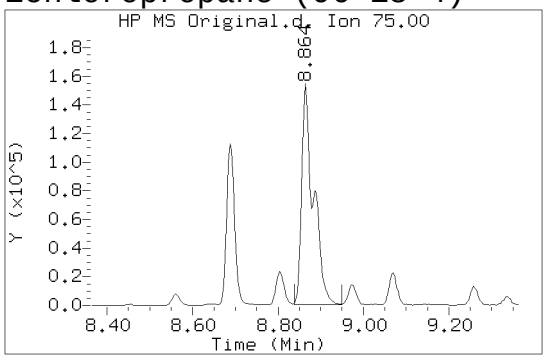
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D
Inj Date : 16-DEC-2022 15:49
InstruID : voa6.i
LabSampID : ICV

1,2,3-Trichloropropane (96-18-4)

Reason Code:

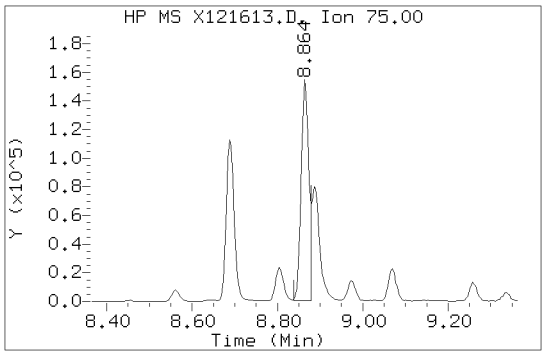
BEFORE

MASS
75
AREA
301229
HEIGHT
154590
27-Dec-2022
16:04
linh
pham



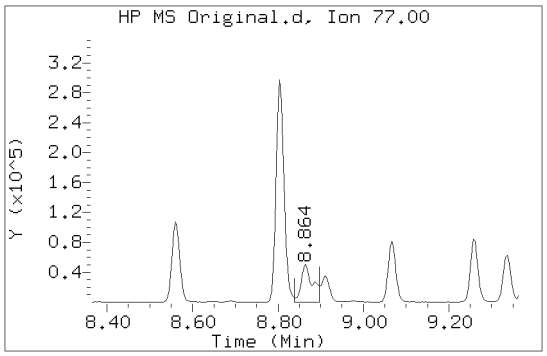
AFTER

MASS
75
AREA
201551
HEIGHT
154590
27-Dec-2022
16:06
linh
pham



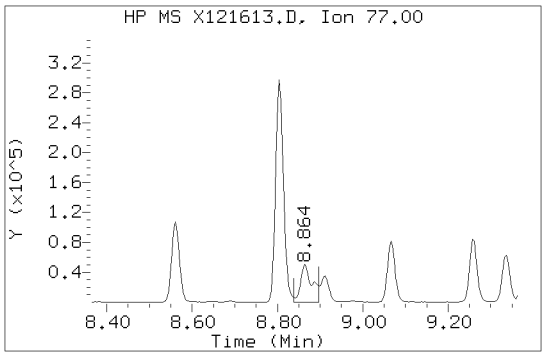
BEFORE

MASS
77
AREA
98445
HEIGHT
50627
27-Dec-2022
16:04
linh
pham



AFTER

MASS
77
AREA
98445
HEIGHT
50627
27-Dec-2022
16:06
linh
pham

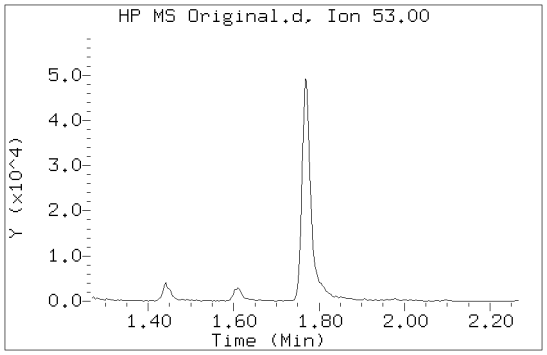


Chloroprene (126-99-8)

Reason Code:

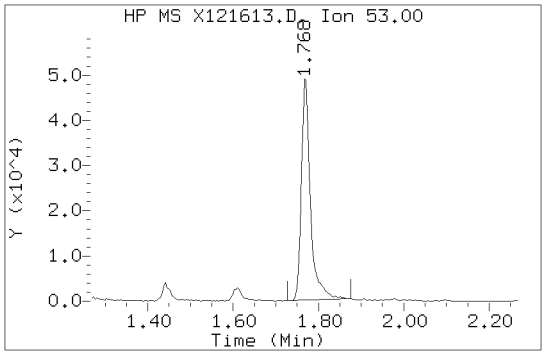
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:04
linh
pham



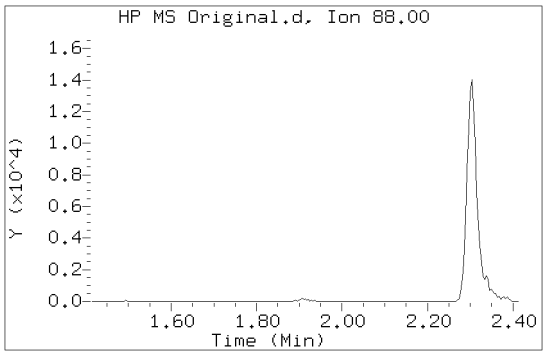
AFTER

MASS
53
AREA
74243
HEIGHT
48931
27-Dec-2022
16:06
linh
pham



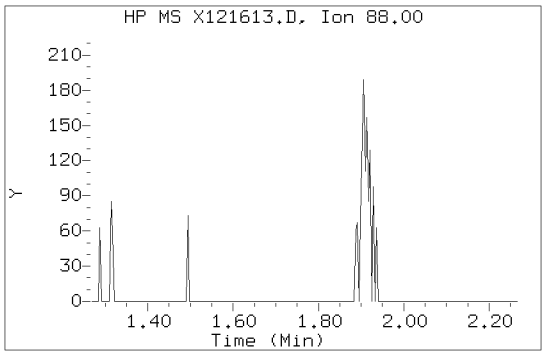
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:04
linh
pham



AFTER

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham



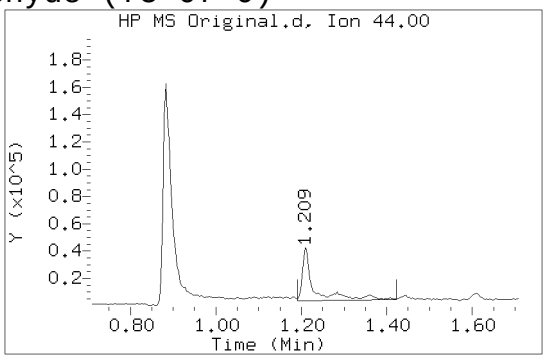
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D
Inj Date : 16-DEC-2022 15:49
InstruID : voa6.i
LabSampID : ICV

Acetaldehyde (75-07-0)

Reason Code:

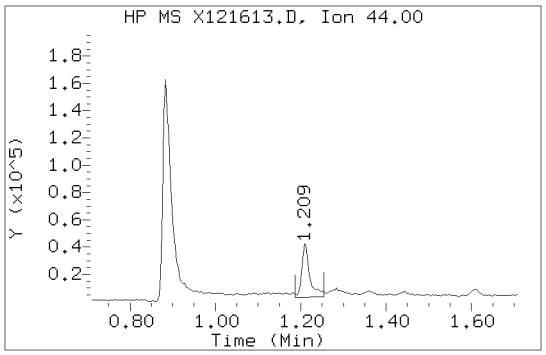
BEFORE

MASS
44
AREA
75387
HEIGHT
39303
27-Dec-2022
16:04
linh
pham



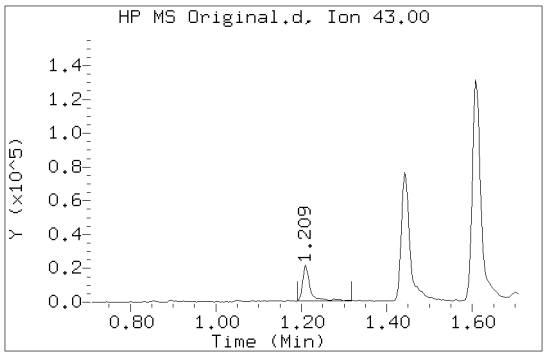
AFTER

MASS
44
AREA
52697
HEIGHT
39303
27-Dec-2022
16:06
linh
pham



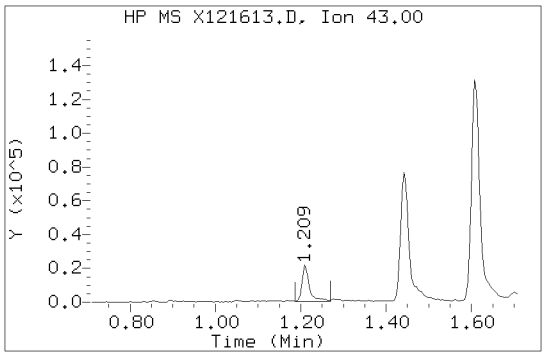
BEFORE

MASS
43
AREA
27778
HEIGHT
21502
27-Dec-2022
16:04
linh
pham



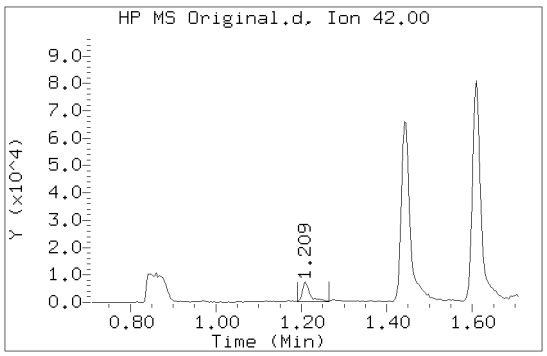
AFTER

MASS
43
AREA
26760
HEIGHT
21664
27-Dec-2022
16:06
linh
pham



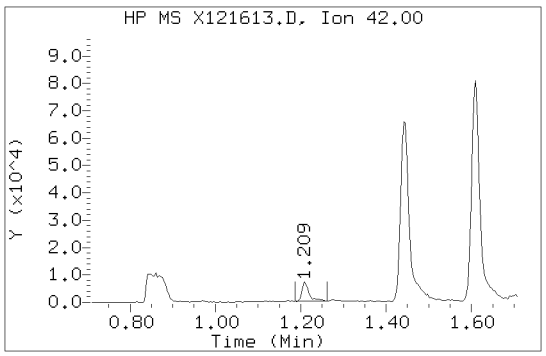
BEFORE

MASS
42
AREA
8969
HEIGHT
7131
27-Dec-2022
16:04
linh
pham



AFTER

MASS
42
AREA
8550
HEIGHT
7027
27-Dec-2022
16:06
linh
pham



right solutions.
right partner.

Raw Data VOA6 424675

Volatiles by by EPA 8260

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

12/30/2022

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122201.D Page 1
Report Date: 22-Dec-2022 10:51

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122201.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 22-DEC-2022 09:59
Operator : PC Inst ID: voa6.i
Smp Info : BFB;BFB;3;;BFB
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\bfb.m
Meth Date : 01-Dec-2022 12:59 Linh.Pham Quant Type: ISTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vf	1.000	Volumetric correction factor
Vi	2.000	Injection Volume
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/l)		
RT	EXP RT	REL RT	MASS	RESPONSE			TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
8.687	8.889	(0.000)	95	89888			0.00- 100.00	100.00
8.687	8.889	(0.000)	50	15833			15.00- 40.00	17.61
8.687	8.889	(0.000)	75	44800			30.00- 60.00	49.84
8.687	8.889	(0.000)	96	5635			5.00- 9.00	6.27
8.687	8.889	(0.000)	173	992			0.00- 2.00	1.18
8.687	8.889	(0.000)	174	84392			50.00- 0.00	93.89
8.687	8.889	(0.000)	175	6594			5.00- 9.00	7.81
8.687	8.889	(0.000)	176	82464			95.00- 101.00	97.72
8.687	8.889	(0.000)	177	5825			5.00- 9.00	7.06

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.61
75	30.00 - 60.00% of mass 95	49.84
96	5.00 - 9.00% of mass 95	6.27
173	Less than 2.00% of mass 174	1.10 (1.18)
174	Greater than 50.00% of mass 95	93.89
175	5.00 - 9.00% of mass 174	7.34 (7.81)
176	95.00 - 101.00% of mass 174	91.74 (97.72)
177	5.00 - 9.00% of mass 176	6.48 (7.06)

Data File: X122201.D
Spectrum: Scan 2159 (8.68)
Location of Maximum: 95.00
Number of points: 102

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	714	63.00	3547	92.00	2163	135.20	121
37.00	3808	64.00	379	92.90	3541	136.70	154
38.00	3690	64.90	123	94.00	10797	140.00	100
39.00	1637	66.80	318	95.00	89888	140.80	810
40.00	1397	68.00	8433	96.00	5635	141.80	200
41.10	672	69.00	9837	97.00	487	142.90	1066
42.10	905	70.10	1420	98.10	618	145.80	93
43.10	519	70.90	142	102.90	61	146.70	103
44.00	1470	71.90	581	103.90	493	147.70	229
45.00	939	73.00	3070	104.90	250	150.00	188
45.80	113	74.00	14568	106.00	492	151.90	73
47.10	720	75.00	44800	106.80	157	152.90	67
48.00	329	76.00	3832	109.70	73	153.70	82
49.10	3298	76.80	589	111.00	110	154.80	82
50.00	15833	78.00	480	112.70	52	156.70	272
51.00	5043	78.90	2971	114.90	154	158.90	128
52.00	303	79.90	807	116.00	242	160.60	88
53.10	141	80.90	2986	116.90	669	171.70	50
54.10	79	81.80	506	117.80	427	173.00	992
55.00	1910	83.10	184	118.90	303	173.90	84392
56.00	1861	84.00	123	120.00	114	174.90	6594
57.00	2956	85.10	68	127.70	424	175.90	82464
57.90	165	85.80	112	128.90	87	176.90	5825
60.00	645	86.90	3241	130.00	247	177.90	69
61.00	3220	87.90	3947	130.90	139		
62.00	4312	90.90	352	134.70	168		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122201.D Page 1

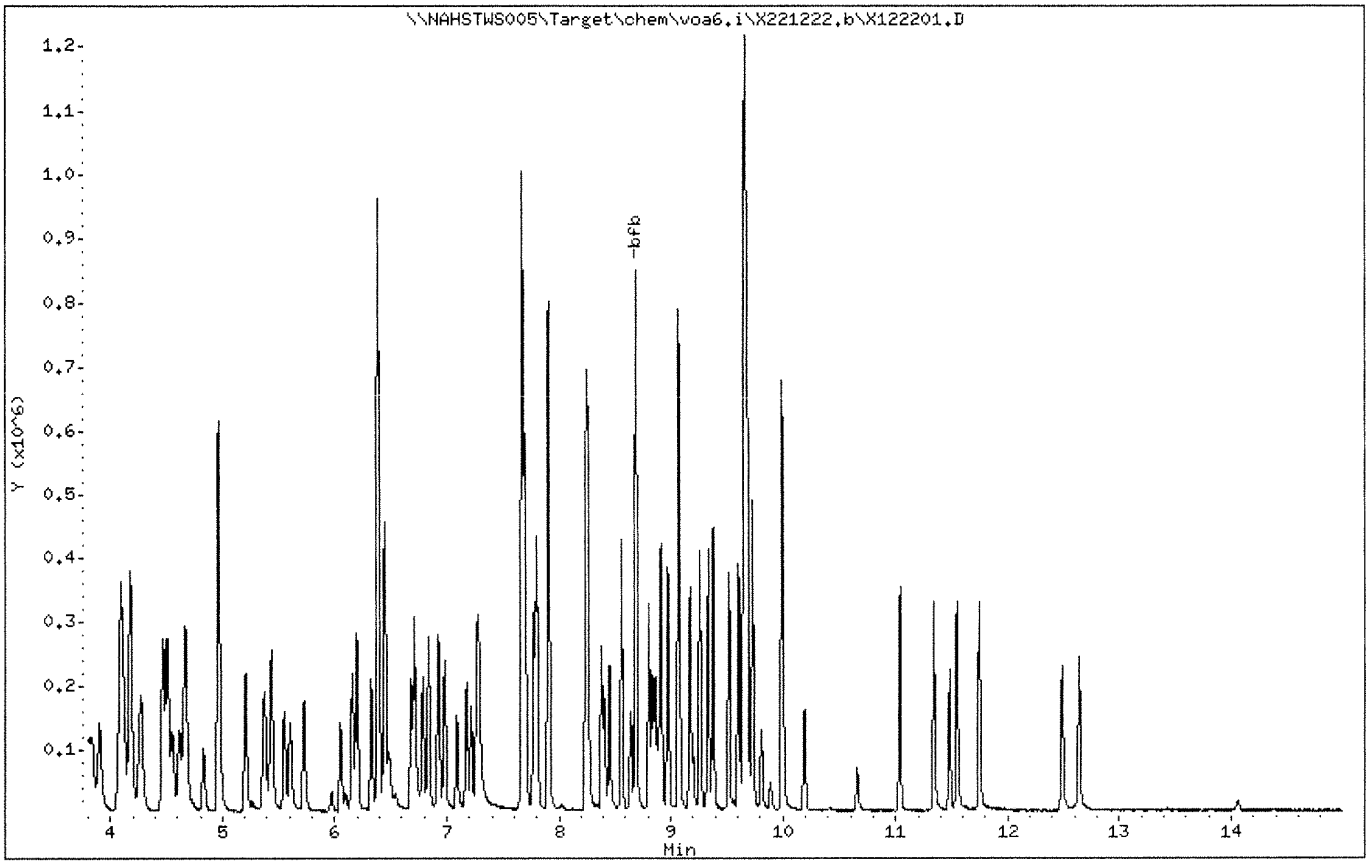
Date : 22-DEC-2022 09:59

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122201.D Page 2

Date : 22-DEC-2022 09:59

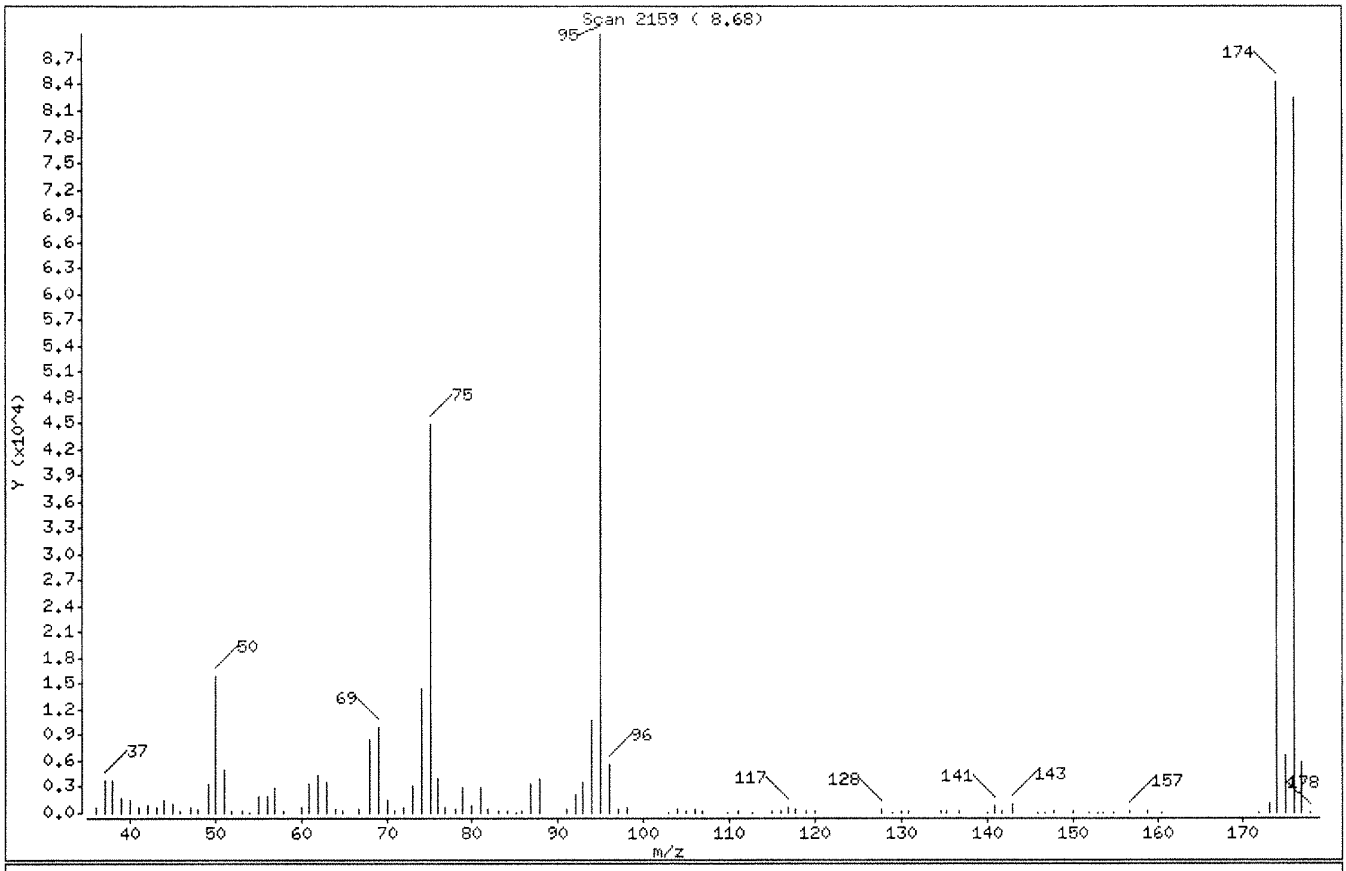
Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.61
75	30.00 - 60.00% of mass 95	49.84
96	5.00 - 9.00% of mass 95	6.27
173	Less than 2.00% of mass 174	1.10 (1.18)
174	Greater than 50.00% of mass 95	93.89
175	5.00 - 9.00% of mass 174	7.34 (7.81)
176	95.00 - 101.00% of mass 174	91.74 (97.72)
177	5.00 - 9.00% of mass 176	6.48 (7.06)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122201.D

Date : 22-DEC-2022 09:59

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

Data File: X122201.D
Spectrum: Scan 2159 (8.68)
Location of Maximum: 95.00
Number of points: 102

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	714	63.00	3547	92.00	2163	135.20	121
37.00	3808	64.00	379	92.90	3541	136.70	154
38.00	3690	64.90	123	94.00	10797	140.00	100
39.00	1637	66.80	318	95.00	89888	140.80	810
40.00	1397	68.00	8433	96.00	5635	141.80	200
41.10	672	69.00	9837	97.00	487	142.90	1066
42.10	905	70.10	1420	98.10	618	145.80	93
43.10	519	70.90	142	102.90	61	146.70	103
44.00	1470	71.90	581	103.90	493	147.70	229
45.00	939	73.00	3070	104.90	250	150.00	188
45.80	113	74.00	14568	106.00	492	151.90	73
47.10	720	75.00	44800	106.80	157	152.90	67
48.00	329	76.00	3832	109.70	73	153.70	82
49.10	3298	76.80	589	111.00	110	154.80	82
50.00	15833	78.00	480	112.70	52	156.70	272
51.00	5043	78.90	2971	114.90	154	158.90	128
52.00	303	79.90	807	116.00	242	160.60	88
53.10	141	80.90	2986	116.90	669	171.70	50
54.10	79	81.80	506	117.80	427	173.00	992
55.00	1910	83.10	184	118.90	303	173.90	84392
56.00	1861	84.00	123	120.00	114	174.90	6594
57.00	2956	85.10	68	127.70	424	175.90	82464
57.90	165	85.80	112	128.90	87	176.90	5825
60.00	645	86.90	3241	130.00	247	177.90	69
61.00	3220	87.90	3947	130.90	139		
62.00	4312	90.90	352	134.70	168		

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122201.D
Inj Date : 22-DEC-2022 09:59
InstruID : voa6.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122203.D Page 1
Report Date: 29-Dec-2022 13:40

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122203.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 22-DEC-2022 10:41
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 29-Dec-2022 13:40 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.181	4.181	(1.000)	465672	50.0000	
135 1,4-Dioxane	88	5.598	5.598	(1.339)	38742	1000.00	910.13
140 1,3-Butadiene	54	1.160	1.160	(0.277)	150431	50.0000	47.06
25 Methacrylonitrile	41	3.821	3.821	(0.914)	130749	50.0000	39.65
2 Dichlorodifluoromethane	85	0.969	0.969	(0.232)	171418	50.0000	52.61
3 Chloromethane	50	1.077	1.077	(0.258)	181995	50.0000	43.49
5 Vinyl Chloride	62	1.141	1.141	(0.273)	188080	50.0000	46.23
6 Bromomethane	94	1.336	1.336	(0.320)	129537	50.0000	42.37
7 Chloroethane	64	1.400	1.400	(0.335)	119028	50.0000	42.03
8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	275654	50.0000	48.42
9 Acrolein	56	1.441	1.441	(0.345)	27696	100.000	87.33
10 Acetone	43	1.970	1.970	(0.471)	127045	100.000	97.22
11 1,1-Dichloroethene	96	1.910	1.910	(0.457)	161071	50.0000	45.57
15 Iodomethane	142	2.022	2.022	(0.484)	452597	100.000	97.36
16 Acrylonitrile	53	2.532	2.532	(0.606)	108938	100.000	90.88
17 Methylene Chloride	84	2.300	2.300	(0.550)	200886	50.0000	41.43
18 Methyl tert-butyl ether	73	2.532	2.532	(0.606)	479380	50.0000	41.43
19 Carbon Disulfide	76	2.067	2.067	(0.494)	856124	100.000	92.58
20 trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	176033	50.0000	44.50
21 Vinyl Acetate	43	2.993	2.993	(0.716)	885846	100.000	87.23

22 1,1-Dichloroethane	63	2.918	2.918 (0.698)	295043	50.0000	42.50
24 2-Butanone	43	3.574	3.574 (0.855)	127314	100.000	92.10

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122203.D Page 2
Report Date: 29-Dec-2022 13:40

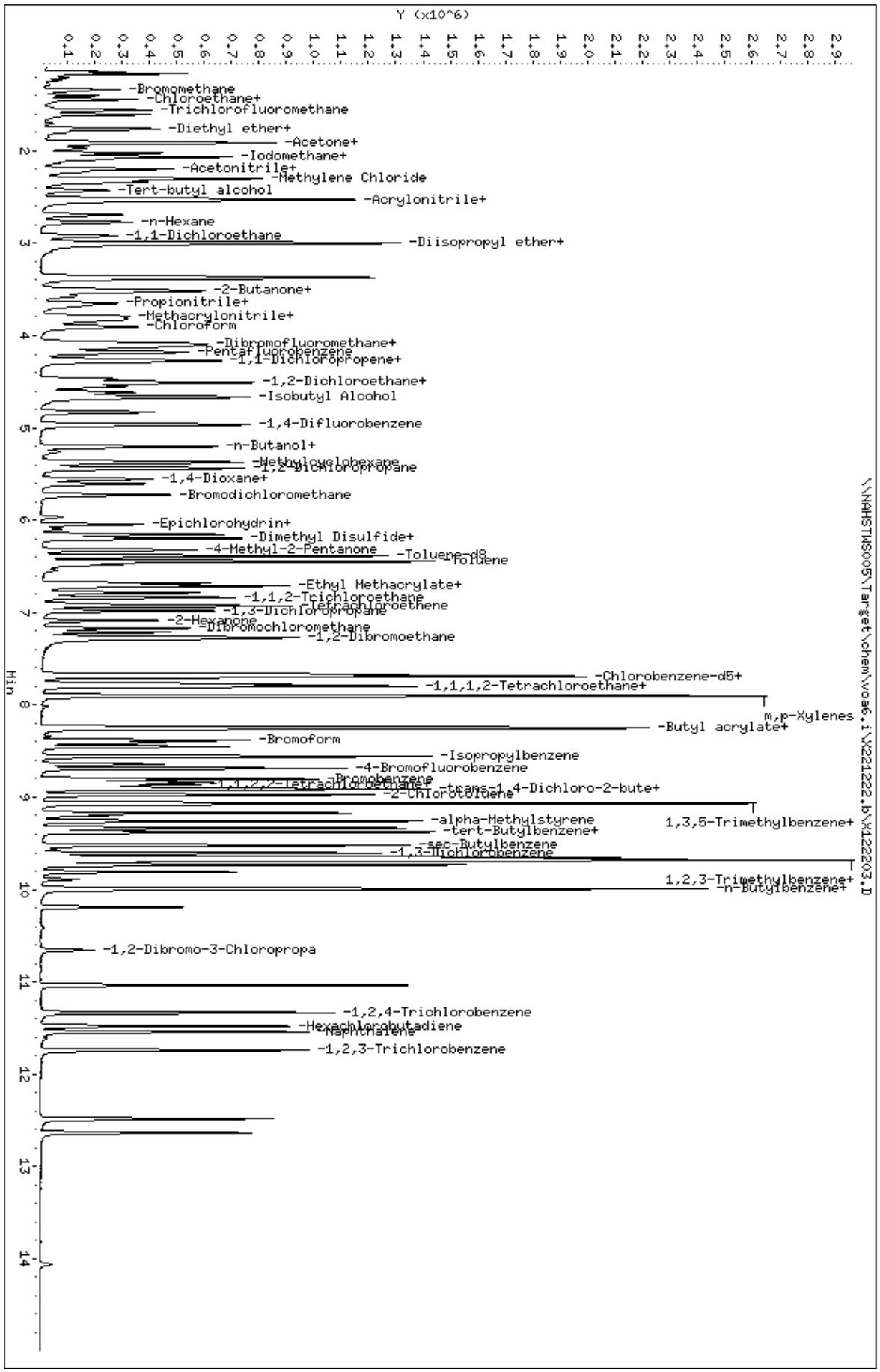
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	266862	50.0000	45.27
27	cis-1,2-Dichloroethene	96	3.522	3.522	(0.842)	205482	50.0000	42.68
28	Chloroform	83	3.900	3.900	(0.933)	329429	50.0000	42.33
29	Bromochloromethane	128	3.791	3.791	(0.907)	111946	50.0000	42.47
$ 30	Dibromofluoromethane	113	4.099	4.099	(0.980)	205028	50.0000	45.83
31	1,1,1-Trichloroethane	97	4.080	4.080	(0.976)	279994	50.0000	45.35
32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	233037	50.0000	50.92
33	1,2-Dichloroethane	62	4.552	4.552	(0.917)	248512	50.0000	47.05
34	Carbon Tetrachloride	117	4.264	4.264	(0.859)	236721	50.0000	48.44
$ 35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.069)	207686	50.0000	44.03
* 36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	644522	50.0000	
37	Benzene	78	4.511	4.511	(0.909)	724152	50.0000	47.05
38	Trichloroethene	130	5.205	5.205	(1.048)	213159	50.0000	48.82
39	Bromodichloromethane	83	5.726	5.726	(1.153)	265103	50.0000	45.89
41	2-Chloroethylvinyl ether	63	6.048	6.048	(1.218)	145340	100.000	88.44
42	1,2-Dichloropropane	63	5.433	5.433	(1.094)	186959	50.0000	45.66
44	Dibromomethane	93	5.553	5.553	(1.119)	127166	50.0000	45.69
45	4-Methyl-2-Pentanone	43	6.322	6.322	(0.824)	304112	100.000	94.34
46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	326194	50.0000	48.08
* 47	Chlorobenzene-d5	117	7.668	7.668	(1.000)	603048	50.0000	
$ 48	Toluene-d8	98	6.386	6.386	(0.833)	735000	50.0000	49.32
50	Toluene	91	6.445	6.445	(0.841)	773948	50.0000	46.43
51	trans-1,3-Dichloropropene	75	6.678	6.678	(1.345)	270030	50.0000	47.96
52	2-Hexanone	43	7.087	7.087	(0.924)	213677	100.000	97.43
53	1,1,2-Trichloroethane	83	6.835	6.835	(0.891)	153371	50.0000	45.86
54	1,3-Dichloropropane	76	6.982	6.982	(0.911)	305340	50.0000	46.39
55	Dibromochloromethane	129	7.173	7.173	(0.935)	235543	50.0000	48.80
56	Tetrachloroethene	164	6.925	6.925	(0.903)	178568	50.0000	51.77
57	1,2-Dibromoethane	107	7.259	7.259	(0.947)	205670	50.0000	49.19
58	1-Chlorohexane	55	7.694	7.694	(1.550)	146608	50.0000	47.06
59	Chlorobenzene	112	7.694	7.694	(1.003)	534008	50.0000	45.16
60	1,1,1,2-Tetrachloroethane	131	7.773	7.773	(1.014)	207621	50.0000	47.18
61	Ethylbenzene	106	7.799	7.799	(1.017)	266258	50.0000	47.80
62	m,p-Xylenes	106	7.904	7.904	(1.031)	661558	100.000	92.14
63	o-Xylene	106	8.241	8.241	(1.075)	320833	50.0000	45.27
64	Styrene	104	8.256	8.256	(1.077)	562473	50.0000	47.35
66	Bromoform	173	8.410	8.410	(1.097)	167748	50.0000	50.17
67	Isopropylbenzene	105	8.560	8.560	(1.116)	770891	50.0000	47.61
68	1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	244744	50.0000	45.23
$ 69	4-Bromofluorobenzene	95	8.687	8.687	(1.133)	269209	50.0000	48.33
* 70	1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	339445	50.0000	
71	1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	177200	50.0000	46.91(M)
73	n-Propylbenzene	91	8.912	8.912	(0.922)	899033	50.0000	47.81
74	Bromobenzene	156	8.803	8.803	(0.911)	265362	50.0000	47.64
75	1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	651909	50.0000	46.93
76	2-Chlorotoluene	91	8.972	8.972	(0.929)	552199	50.0000	44.75
77	4-Chlorotoluene	91	9.070	9.070	(0.939)	644169	50.0000	45.79
78	tert-Butylbenzene	119	9.336	9.336	(0.966)	549999	50.0000	48.37
79	1,2,4-Trimethylbenzene	105	9.377	9.377	(0.971)	666810	50.0000	45.62
81	sec-Butylbenzene	105	9.519	9.519	(0.985)	758662	50.0000	50.15
82	p-Isopropyltoluene	119	9.647	9.647	(0.998)	684283	50.0000	50.47
83	1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	431515	50.0000	46.68

84 1,4-Dichlorobenzene	146	9.681	9.681 (1.002)	453189	50.0000	44.92
87 n-Butylbenzene	91	9.992	9.992 (1.034)	598242	50.0000	45.94

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	
88	1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	432864	50.0000	45.47	
89	1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	43094	50.0000	49.82	
90	1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	313262	50.0000	52.14	
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	156069	50.0000	58.50	
92	Naphthalene	128	11.540	11.540	(1.194)	684462	50.0000	50.07	
93	1,2,3-Trichlorobenzene	180	11.739	11.739	(1.215)	288751	50.0000	50.18	
M 94	1,2-Dichloroethylene (total)	96				381515	100.000		(a)
141	Cyclohexane	56	4.118	4.118	(0.985)	215984	50.0000	46.11	
138	Freon TF	101	1.910	1.910	(0.457)	164665	50.0000	48.17	
147	Methylcyclohexane	55	5.377	5.377	(1.083)	389081	50.0000	49.31	
146	Methyl Acetate	43	2.228	2.228	(0.533)	87534	50.0000	41.77	
148	Tert-Butyl alcohol	59	2.427	2.427	(0.580)	283092	1000.00	877.95	
149	Isopropyl Alcohol	45	2.093	2.093	(0.501)	151418	1000.00	899.17	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTMS005\Target\chem\voa6.i\X221222.b\X122203.D
Date : 22-DEC-2022 10:41
Client ID: CCV
Sample Info: CCV,CCV,2,,
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

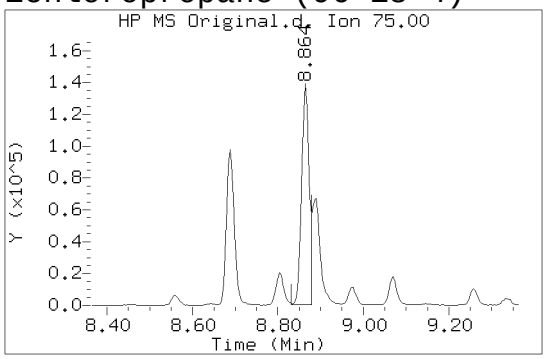
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122203.D
Inj Date : 22-DEC-2022 10:41
InstruID : voa6.i
LabSampID : CCV

1,2,3-Trichloropropane (96-18-4)

Reason Code:

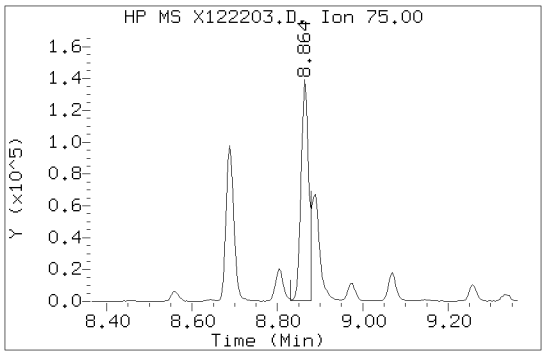
BEFORE

MASS
75
AREA
177200
HEIGHT
138988
29-Dec-2022
13:40
linh
pham



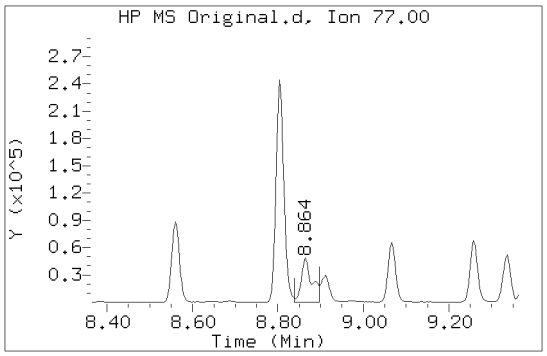
AFTER

MASS
75
AREA
177200
HEIGHT
138988
29-Dec-2022
13:40
linh
pham



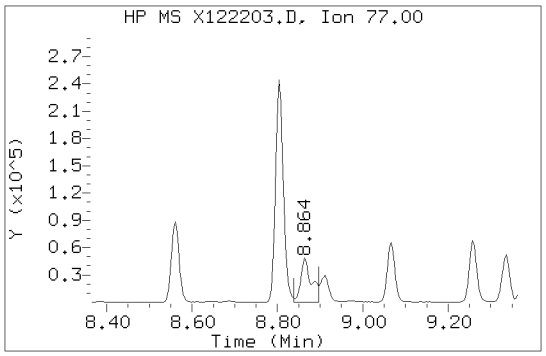
BEFORE

MASS
77
AREA
87017
HEIGHT
48622
29-Dec-2022
13:40
linh
pham



AFTER

MASS
77
AREA
87017
HEIGHT
48622
29-Dec-2022
13:40
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122204.D Page 1
Report Date: 22-Dec-2022 20:40

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122204.D
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 22-DEC-2022 11:02
Operator : PC Inst ID: voa6.i
Smp Info : CCB;CCB;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 22-Dec-2022 20:37 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.177	4.181	(1.000)	516866	50.0000	
$ 30 Dibromofluoromethane	113	4.095	4.099	(0.980)	221341	44.5808	44.58
$ 35 1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	224195	42.8383	42.83
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	689936	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.668	(1.000)	597142	50.0000	
$ 48 Toluene-d8	98	6.385	6.386	(0.832)	775735	52.5715	52.57
$ 69 4-Bromofluorobenzene	95	8.691	8.687	(1.133)	259535	47.0593	47.05
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	309365	50.0000	

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122205.D Page 1
Report Date: 29-Dec-2022 13:40

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122205.D
Lab Smp Id: VLCSW-221222 Client Smp ID: VLCSW-221222
Inj Date : 22-DEC-2022 11:23
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-221222;VLCSW-221222;3;;LCS
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 29-Dec-2022 13:40 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.177	4.181	(1.000)	450651	50.0000	
135 1,4-Dioxane	88	5.602	5.598	(1.341)	13841	335.994	335.99(a)
140 1,3-Butadiene	54	1.164	1.160	(0.279)	54974	17.7743	17.77
25 Methacrylonitrile	41	3.821	3.821	(0.915)	53846	16.8744	16.87
2 Dichlorodifluoromethane	85	0.972	0.969	(0.233)	63967	20.5282	20.52
3 Chloromethane	50	1.077	1.077	(0.258)	71997	19.0886	19.08
5 Vinyl Chloride	62	1.141	1.141	(0.273)	71303	18.1124	18.11
6 Bromomethane	94	1.340	1.336	(0.321)	52976	18.9283	18.92
7 Chloroethane	64	1.403	1.400	(0.336)	45260	16.5179	16.51
8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	98939	17.9596	17.95
9 Acrolein	56	1.445	1.441	(0.346)	11443	38.9025	38.90
10 Acetone	43	1.970	1.970	(0.472)	50941	40.2654	40.26
11 1,1-Dichloroethene	96	1.910	1.910	(0.457)	60582	17.7128	17.71
15 Iodomethane	142	2.026	2.022	(0.485)	152700	36.9695	36.96
16 Acrylonitrile	53	2.539	2.532	(0.608)	44589	38.4385	38.43
17 Methylene Chloride	84	2.303	2.300	(0.551)	84261	17.9605	17.96
18 Methyl tert-butyl ether	73	2.532	2.532	(0.606)	196122	17.5185	17.51
19 Carbon Disulfide	76	2.067	2.067	(0.495)	323096	36.1058	36.10
20 trans-1,2-Dichloroethene	96	2.528	2.524	(0.605)	69580	18.1772	18.17
21 Vinyl Acetate	43	2.997	2.993	(0.717)	352866	35.9060	35.90

22 1,1-Dichloroethane	63	2.918	2.918 (0.699)	115766	17.2323	17.23
24 2-Butanone	43	3.581	3.574 (0.857)	45361	35.8219	35.82

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122205.D Page 2
Report Date: 29-Dec-2022 13:40

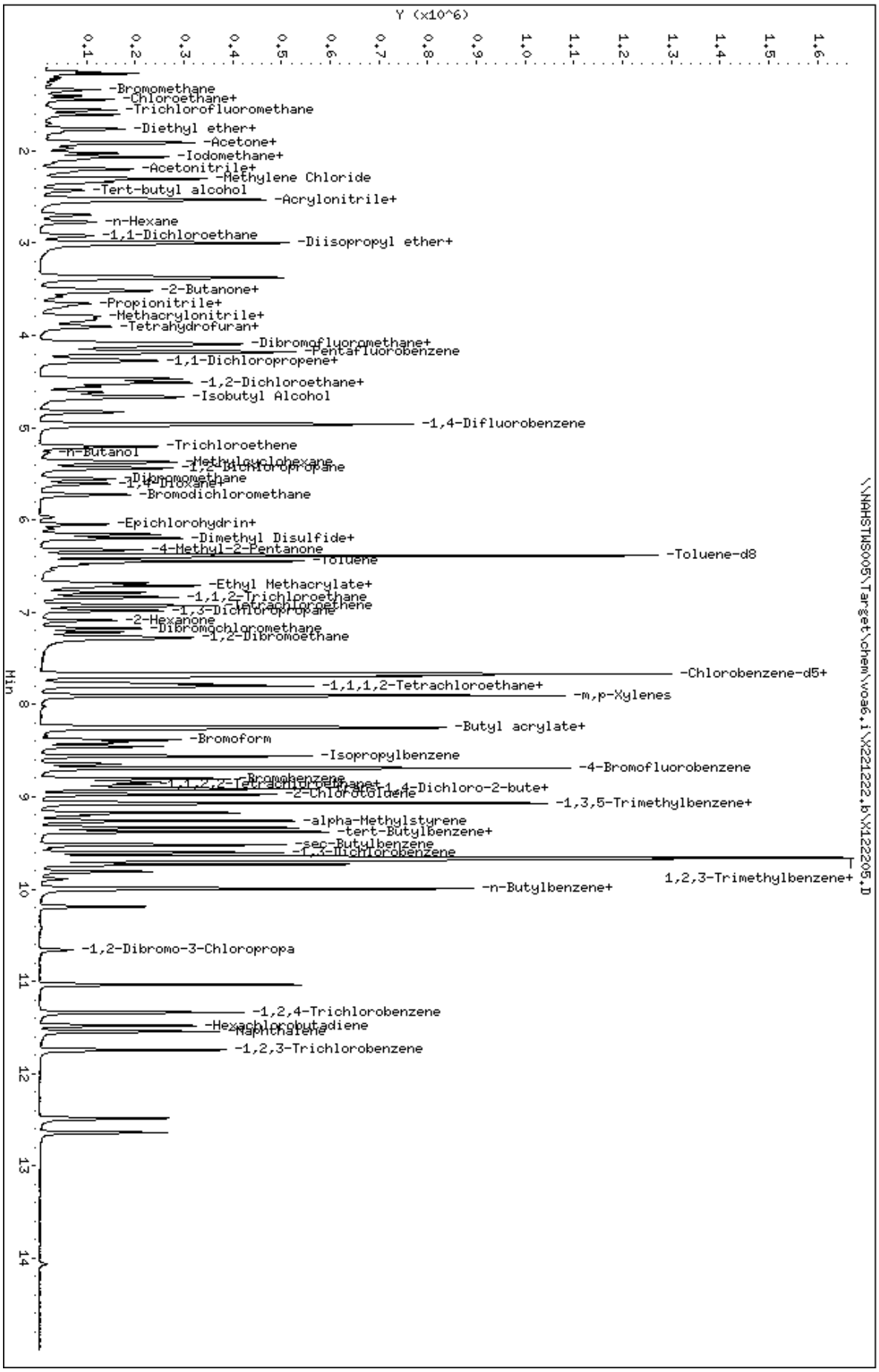
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
	26 2,2-Dichloropropane	77	3.506	3.507	(0.839)	104055	18.2427	18.24
	27 cis-1,2-Dichloroethene	96	3.525	3.522	(0.844)	81008	17.3895	17.38
	28 Chloroform	83	3.900	3.900	(0.934)	130801	17.3716	17.37
	29 Bromochloromethane	128	3.795	3.791	(0.908)	44619	17.4935	17.49
$	30 Dibromofluoromethane	113	4.095	4.099	(0.980)	207453	47.9354	47.93
	31 1,1,1-Trichloroethane	97	4.084	4.080	(0.978)	106559	17.8370	17.83
	32 1,1-Dichloropropene	75	4.279	4.279	(0.862)	89497	19.7991	19.79
	33 1,2-Dichloroethane	62	4.556	4.552	(0.918)	96500	18.4983	18.49
	34 Carbon Tetrachloride	117	4.260	4.264	(0.858)	88243	18.2812	18.28
$	35 1,2-Dichloroethane-d4	65	4.466	4.470	(1.069)	219251	48.0161	48.01
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	636700	50.0000	
	37 Benzene	78	4.511	4.511	(0.909)	280008	18.4164	18.41
	38 Trichloroethene	130	5.208	5.205	(1.049)	82405	19.1088	19.10
	39 Bromodichloromethane	83	5.726	5.726	(1.153)	102452	17.9550	17.95
	41 2-Chloroethylvinyl ether	63	6.048	6.048	(1.218)	55203	34.0058	34.00
	42 1,2-Dichloropropane	63	5.437	5.433	(1.095)	72191	17.8495	17.84
	44 Dibromomethane	93	5.553	5.553	(1.119)	51020	18.5595	18.55
	45 4-Methyl-2-Pentanone	43	6.325	6.322	(0.825)	113577	35.8460	35.84
	46 cis-1,3-Dichloropropene	75	6.157	6.153	(1.240)	123652	18.4520	18.45
*	47 Chlorobenzene-d5	117	7.667	7.668	(1.000)	592792	50.0000	
$	48 Toluene-d8	98	6.385	6.386	(0.833)	719063	49.0885	49.08
	50 Toluene	91	6.445	6.445	(0.841)	302831	18.4823	18.48
	51 trans-1,3-Dichloropropene	75	6.682	6.678	(1.346)	103519	18.6143	18.61
	52 2-Hexanone	43	7.086	7.087	(0.924)	82141	38.1036	38.10
	53 1,1,2-Trichloroethane	83	6.839	6.835	(0.892)	61714	18.7746	18.77
	54 1,3-Dichloropropane	76	6.981	6.982	(0.911)	121136	18.7225	18.72
	55 Dibromochloromethane	129	7.176	7.173	(0.936)	91315	19.2476	19.24
	56 Tetrachloroethene	164	6.925	6.925	(0.903)	68017	20.0634	20.06
	57 1,2-Dibromoethane	107	7.263	7.259	(0.947)	78585	19.1211	19.12
	58 1-Chlorohexane	55	7.694	7.694	(1.550)	56280	18.2908	18.29
	59 Chlorobenzene	112	7.694	7.694	(1.003)	211507	18.1992	18.19
	60 1,1,1,2-Tetrachloroethane	131	7.772	7.773	(1.014)	79759	18.4413	18.44
	61 Ethylbenzene	106	7.799	7.799	(1.017)	105231	19.2222	19.22
	62 m,p-Xylenes	106	7.904	7.904	(1.031)	266580	37.7742	37.77
	63 o-Xylene	106	8.241	8.241	(1.075)	130415	18.7233	18.72
	64 Styrene	104	8.260	8.256	(1.077)	223689	19.1599	19.15
	66 Bromoform	173	8.410	8.410	(1.097)	64330	19.5728	19.57
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	305027	19.1680	19.16
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	96090	17.7917	17.79
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	266204	48.6206	48.62
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	338853	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	71805	19.0441	19.04(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	353325	18.8245	18.82
	74 Bromobenzene	156	8.803	8.803	(0.911)	105703	19.0134	19.01
	75 1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	263079	18.9735	18.97
	76 2-Chlorotoluene	91	8.976	8.972	(0.929)	225206	18.2846	18.28
	77 4-Chlorotoluene	91	9.069	9.070	(0.939)	258800	18.4319	18.43
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	217654	19.1767	19.17
	79 1,2,4-Trimethylbenzene	105	9.381	9.377	(0.971)	266295	18.2526	18.25
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	291717	19.3172	19.31
	82 p-Isopropyltoluene	119	9.650	9.647	(0.999)	266889	19.7223	19.72
	83 1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	177294	19.2140	19.21

84 1,4-Dichlorobenzene	146	9.680	9.681 (1.002)	189248	18.7949	18.79
87 n-Butylbenzene	91	9.995	9.992 (1.035)	226130	18.4987	18.49

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
88	1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	176616	18.5850	18.58
89	1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	16580	19.2586	19.25
90	1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	124477	20.7554	20.75
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	54579	20.6481	20.64
92	Naphthalene	128	11.544	11.540	(1.195)	266676	19.5433	19.54
93	1,2,3-Trichlorobenzene	180	11.742	11.739	(1.215)	117200	20.4043	20.40
M 94	1,2-Dichloroethylene (total)	96				150588	35.5667	35.56
M 95	Xylenes (total)	106				396995	56.4975	56.49
141	Cyclohexane	56	4.125	4.118	(0.987)	81991	18.8556	18.85
138	Freon TF	101	1.910	1.910	(0.457)	56802	17.1708	17.17
147	Methylcyclohexane	55	5.381	5.377	(1.084)	154570	19.8326	19.83
146	Methyl Acetate	43	2.232	2.228	(0.534)	34690	17.1070	17.10
148	Tert-Butyl alcohol	59	2.427	2.427	(0.581)	106067	339.909	339.90
149	Isopropyl Alcohol	45	2.093	2.093	(0.501)	55128	338.281	338.28

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122205.D
Date : 22-DEC-2022 11:23
Client ID: VLCSW-221222
Sample Info: VLCSW-221222;VLCSW-221222;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

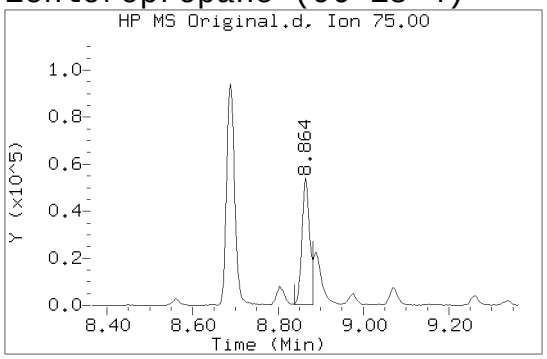
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122205.D
Inj Date : 22-DEC-2022 11:23
InstruID : voa6.i
LabSampID : VLCSW-221222

1,2,3-Trichloropropane (96-18-4)

Reason Code:

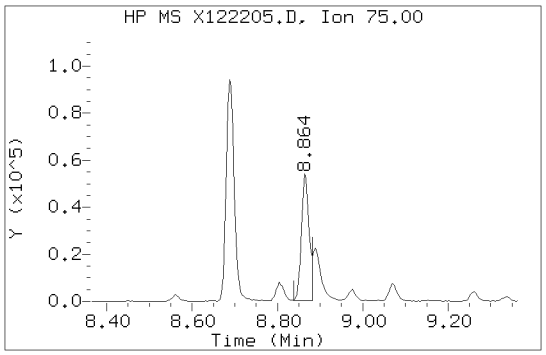
BEFORE

MASS
75
AREA
71805
HEIGHT
54087
29-Dec-2022
13:40
linh
pham



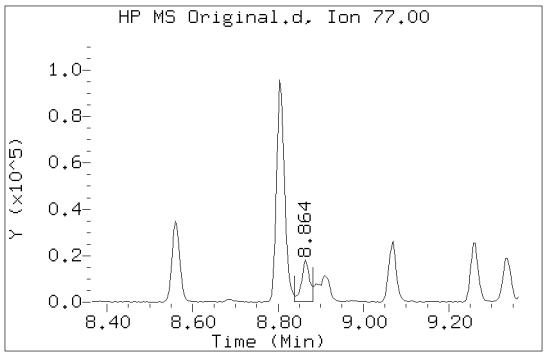
AFTER

MASS
75
AREA
71805
HEIGHT
54087
29-Dec-2022
13:40
linh
pham



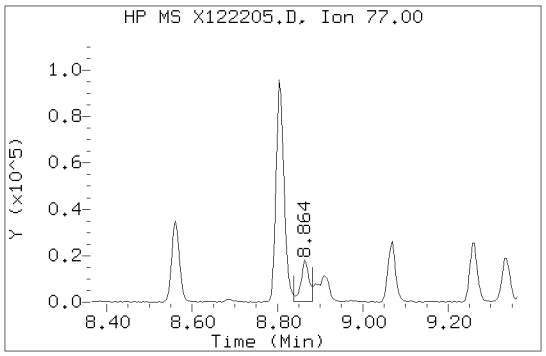
BEFORE

MASS
77
AREA
25648
HEIGHT
18074
29-Dec-2022
13:40
linh
pham



AFTER

MASS
77
AREA
25648
HEIGHT
18074
29-Dec-2022
13:40
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122207.D Page 1
Report Date: 29-Dec-2022 13:40

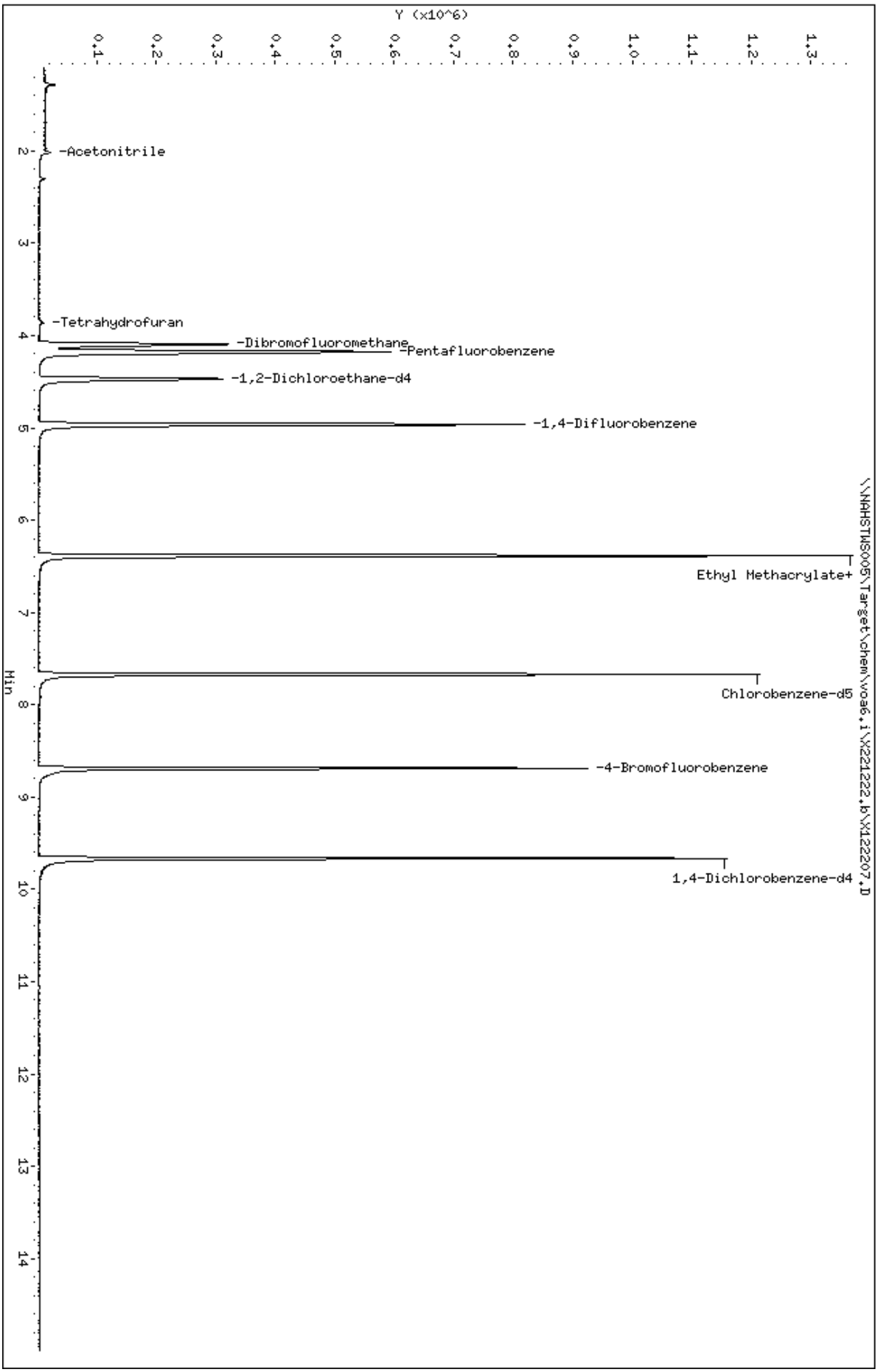
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122207.D
Lab Smp Id: VBLKW-221222 Client Smp ID: VBLKW-221222
Inj Date : 22-DEC-2022 12:05
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-221222;VBLKW-221222;3;;BLANK
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 29-Dec-2022 13:40 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.181	(1.000)	493389	50.0000	
$ 30 Dibromofluoromethane	113	4.095	4.099	(0.980)	225240	47.5358	47.53
$ 35 1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	228748	45.7694	45.76
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	694541	50.0000	
* 47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	609091	50.0000	
$ 48 Toluene-d8	98	6.385	6.386	(0.833)	790335	52.5102	52.51
$ 69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	262061	46.5858	46.58
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	297826	50.0000	



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122207.D
Date : 22-DEC-2022 12:05
Client ID: VBLKW-221222
Sample Info: VBLKW-221222;VBLKW-221222;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122207.D
Inj Date : 22-DEC-2022 12:05
InstruID : voa6.i
LabSampID : VBLKW-221222

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122208.D Page 1
Report Date: 29-Dec-2022 13:40

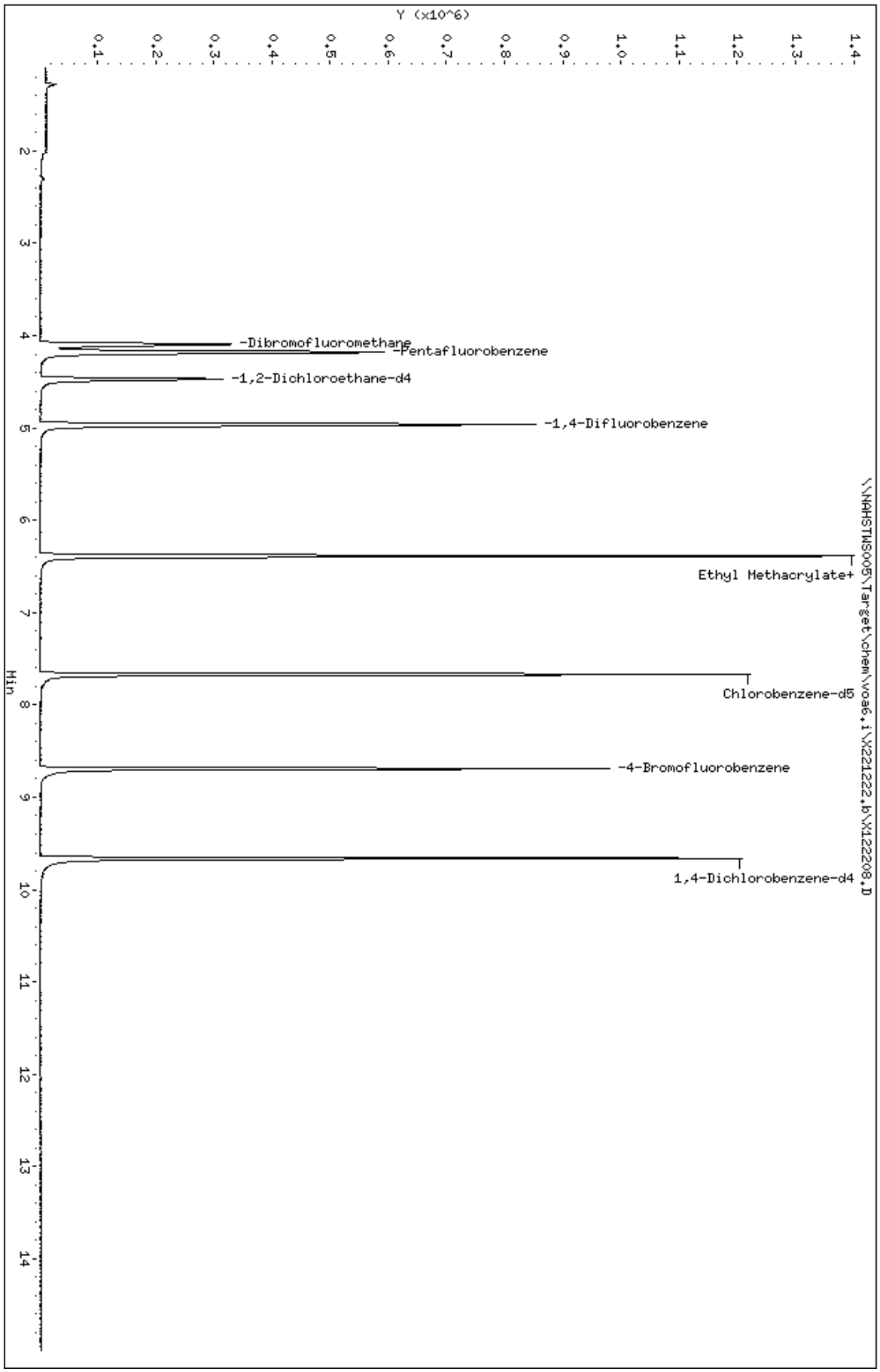
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122208.D
Lab Smp Id: HS22121096-04 Client Smp ID: HS22121096-04
Inj Date : 22-DEC-2022 12:26
Operator : PC Inst ID: voa6.i
Smp Info : HS22121096-04;HS22121096-04;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 29-Dec-2022 13:40 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.177	4.181	(1.000)	495907	50.0000	
$ 30 Dibromofluoromethane	113	4.095	4.099	(0.980)	228057	47.8872	47.88
$ 35 1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	232420	46.2650	46.26
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	714522	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.668	(1.000)	628025	50.0000	
$ 48 Toluene-d8	98	6.385	6.386	(0.832)	816461	52.6106	52.61
$ 69 4-Bromofluorobenzene	95	8.691	8.687	(1.133)	273452	47.1444	47.14
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	314221	50.0000	



Data File: \\NAHSTWS005\Target\chem\voa6,i\X221222,b\X122208,D
Date : 22-DEC-2022 12:26
Client ID: HS22121096-04
Sample Info: HS22121096-04;HS22121096-04;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122208.D
Inj Date : 22-DEC-2022 12:26
InstruID : voa6.i
LabSampID : HS22121096-04

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122209.D Page 1
Report Date: 29-Dec-2022 13:40

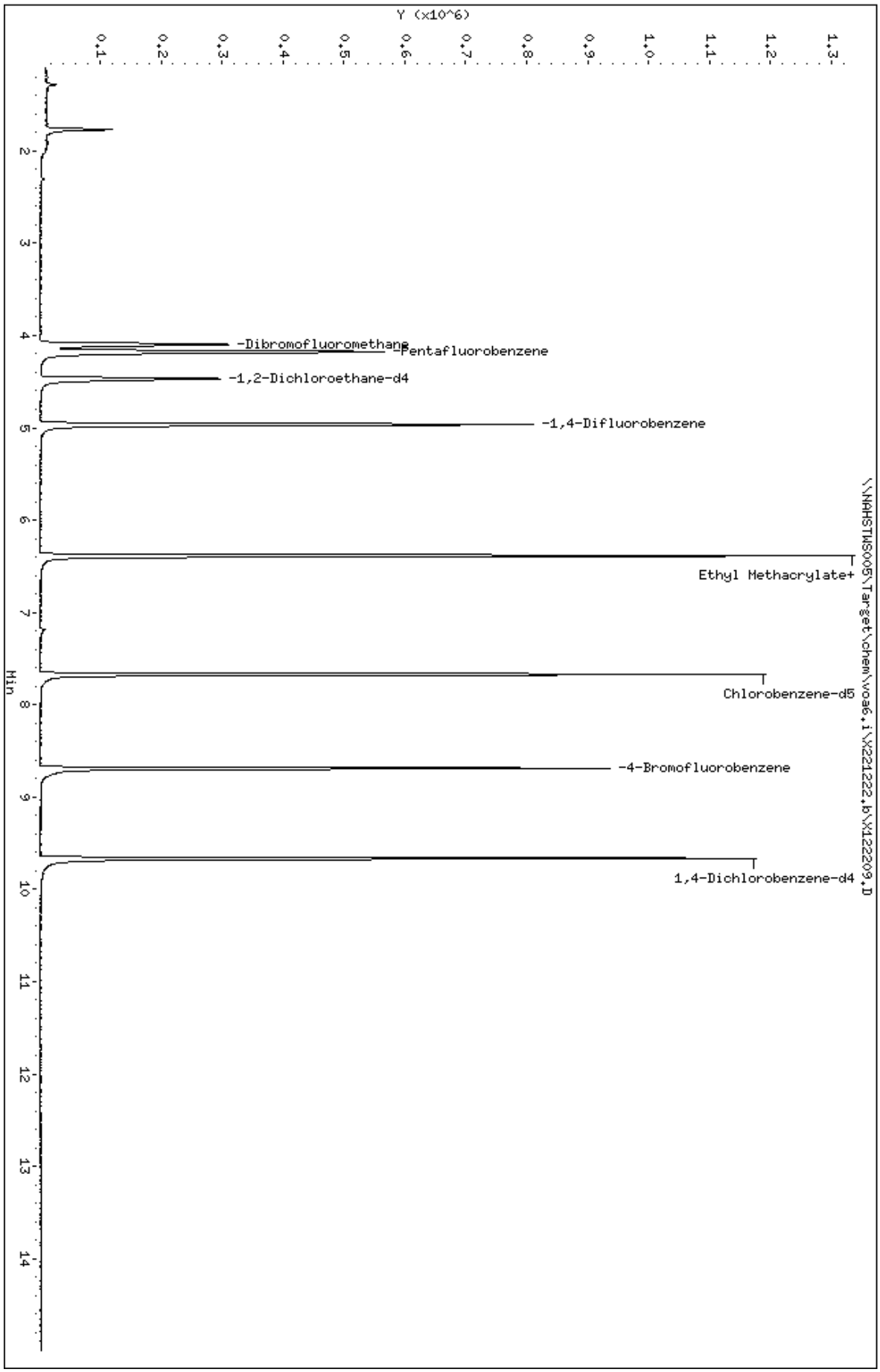
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122209.D
Lab Smp Id: HS22121096-02 Client Smp ID: HS22121096-02
Inj Date : 22-DEC-2022 12:47
Operator : PC Inst ID: voa6.i
Smp Info : HS22121096-02;HS22121096-02;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 29-Dec-2022 13:40 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.177	4.181	(1.000)	467423	50.0000	
$ 30 Dibromofluoromethane	113	4.099	4.099	(0.981)	217404	48.4340	48.43
$ 35 1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	220055	46.4718	46.47
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	680917	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.668	(1.000)	599135	50.0000	
$ 48 Toluene-d8	98	6.385	6.386	(0.832)	782069	52.8245	52.82
$ 69 4-Bromofluorobenzene	95	8.691	8.687	(1.133)	263166	47.5582	47.55
* 70 1,4-Dichlorobenzene-d4	152	9.665	9.662	(1.000)	305628	50.0000	


Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122209.D
Date : 22-DEC-2022 12:47
Client ID: HS22121096-02
Sample Info: HS22121096-02;HS22121096-02;;;
Purge Volume: 5.0
Column phase: DB624
Instrument: voa6.i
Operator: PC
Column diameter: 0.18
Page 1
Y (x10^6)
-Dibromofluoromethane
-Pentafluorobenzene
-1,2-Dichloroethane-d4
-1,4-Difluorobenzene
Ethyl Methacrylate+
Chlorobenzene-d5
-4-Bromofluorobenzene
1,4-Dichlorobenzene-d4
\\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122209.D
Min

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122209.D
Inj Date : 22-DEC-2022 12:47
InstruID : voa6.i
LabSampID : HS22121096-02

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122210.D Page 1
Report Date: 29-Dec-2022 13:40

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122210.D
Lab Smp Id: HS22121096-01 Client Smp ID: HS22121096-01
Inj Date : 22-DEC-2022 13:09
Operator : PC Inst ID: voa6.i
Smp Info : HS22121096-01;HS22121096-01;;;
Misc Info : V6;WATER;0;10;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 29-Dec-2022 13:40 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 10
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

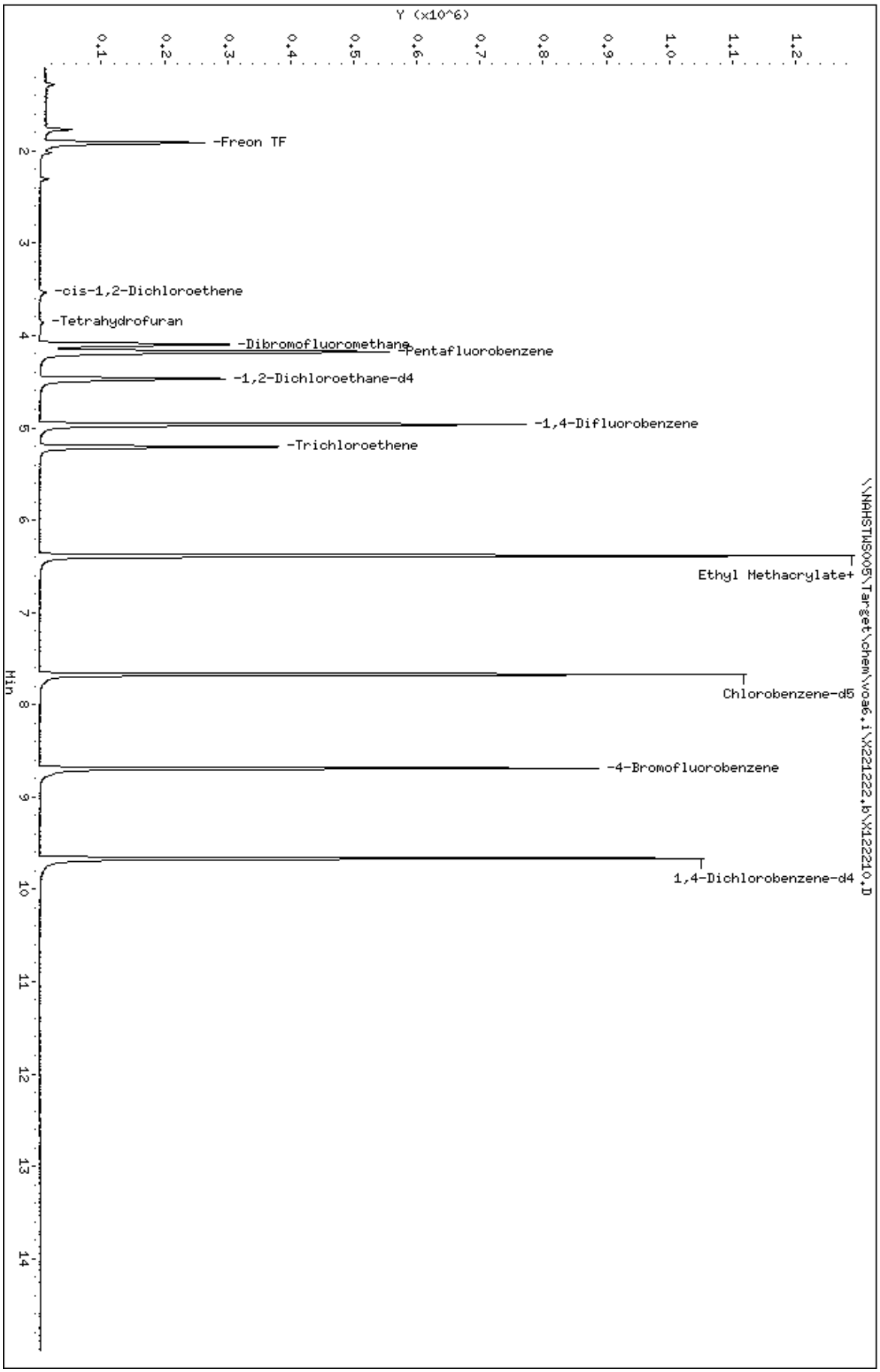
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.177	4.181	(1.000)	455757	50.0000	
	27 cis-1,2-Dichloroethene	96	3.533	3.522	(0.846)	5781	1.22707	12.27(a)
$	30 Dibromofluoromethane	113	4.099	4.099	(0.981)	210548	48.1061	48.10
$	35 1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	220939	47.8447	47.84
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	658776	50.0000	
	38 Trichloroethene	130	5.208	5.205	(1.049)	130838	29.3231	293.23
*	47 Chlorobenzene-d5	117	7.671	7.668	(1.000)	572740	50.0000	
$	48 Toluene-d8	98	6.385	6.386	(0.832)	756430	53.4473	53.44
$	69 4-Bromofluorobenzene	95	8.691	8.687	(1.133)	249697	47.2042	47.20
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	279598	50.0000	
M	94 1,2-Dichloroethylene (total)	96				5781	1.22707	12.27(a)
	138 Freon TF	101	1.909	1.910	(0.457)	99215	29.6559	296.55

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122210.D
Date : 22-DEC-2022 13:09
Client ID: HS22121096-01
Sample Info: HS22121096-01;HS22121096-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122210.D

Date : 22-DEC-2022 13:09

Client ID: HS22121096-01

Instrument: voa6.i

Sample Info: HS22121096-01;HS22121096-01;;;

Purge Volume: 5.0

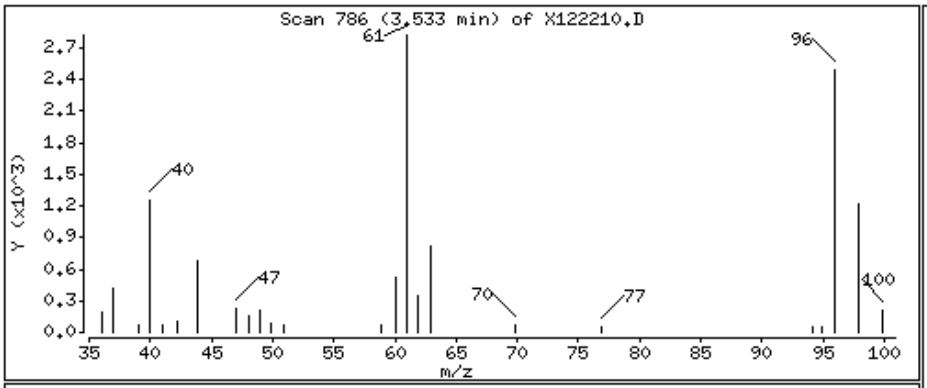
Operator: PC

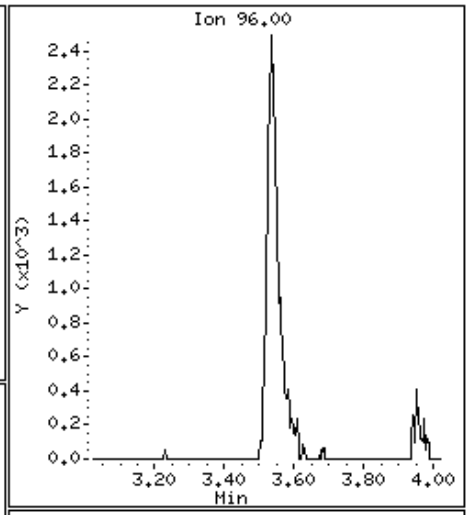
Column phase: DB624

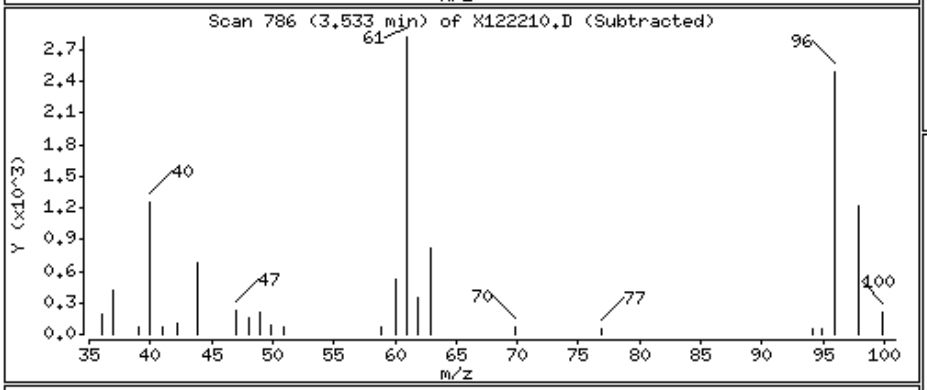
Column diameter: 0.18

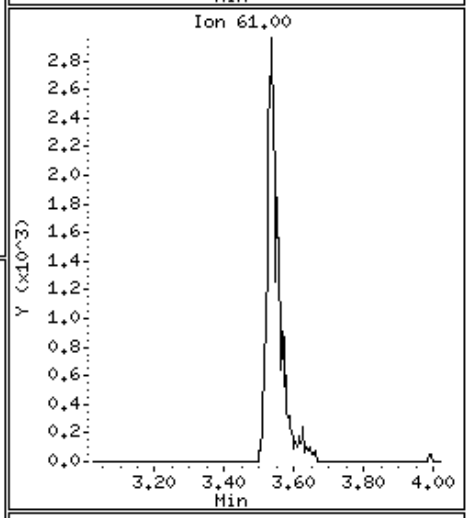
27 cis-1,2-Dichloroethene

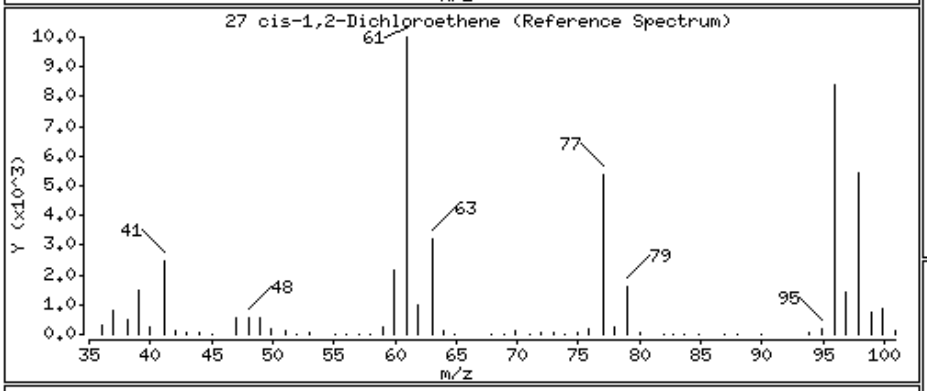
Concentration: 12.27 ug/l

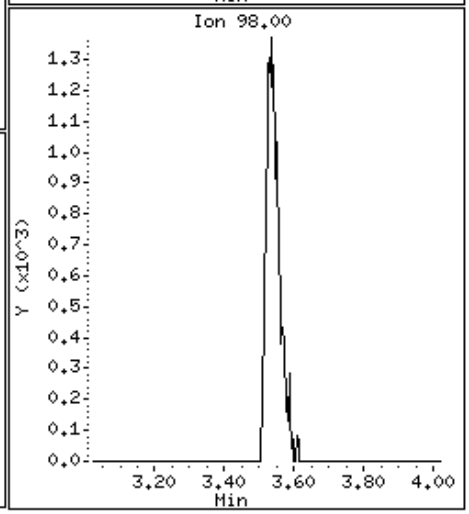


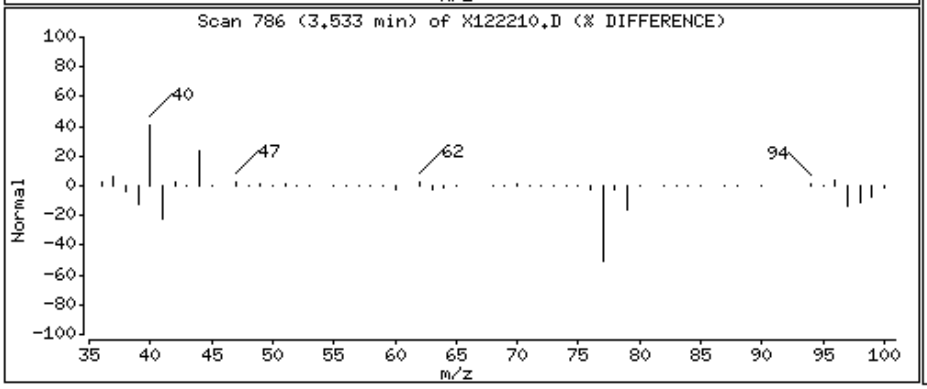












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122210.D

Date : 22-DEC-2022 13:09

Client ID: HS22121096-01

Instrument: voa6.i

Sample Info: HS22121096-01;HS22121096-01;;;

Purge Volume: 5.0

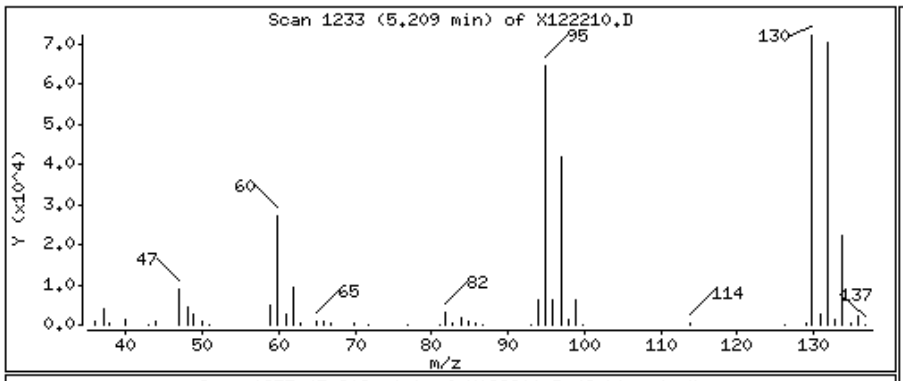
Operator: PC

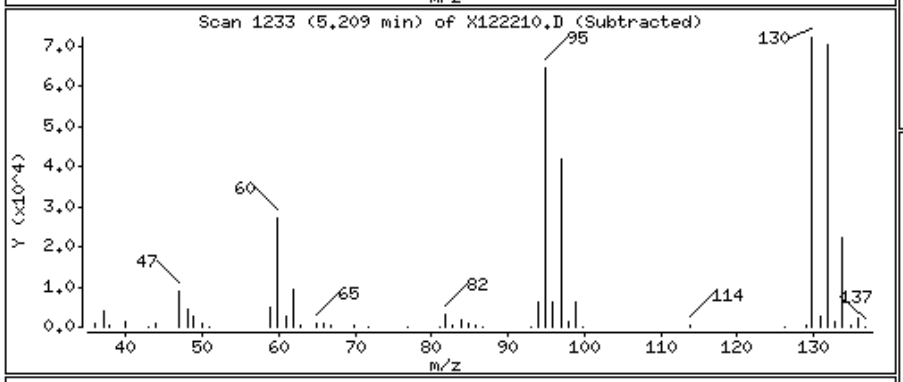
Column phase: DB624

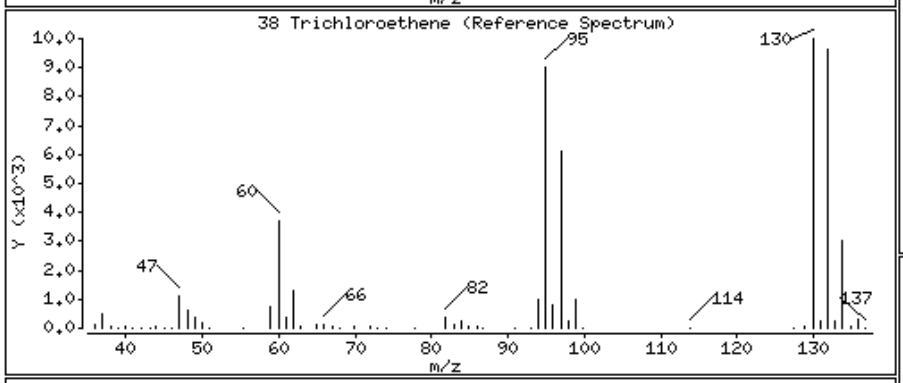
Column diameter: 0.18

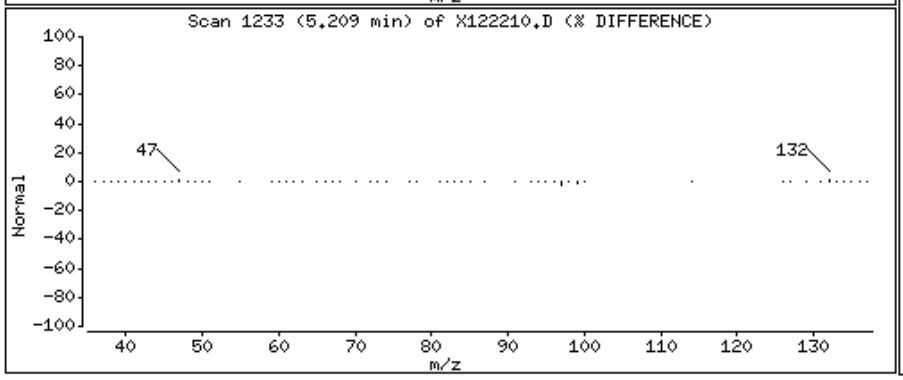
38 Trichloroethene

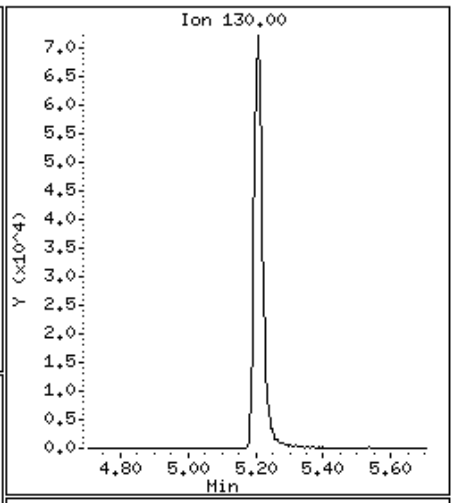
Concentration: 293.23 ug/l

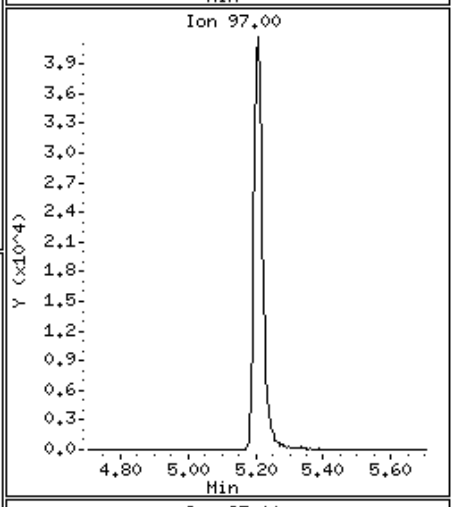


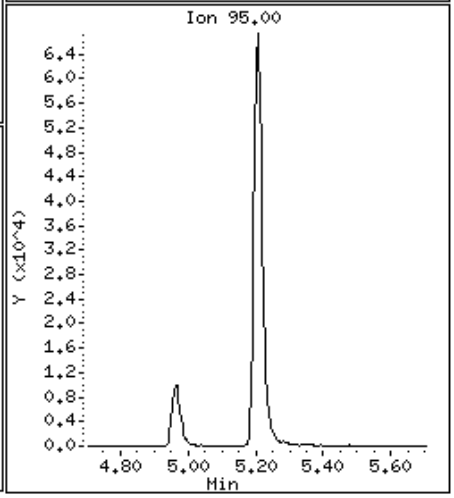












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122210.D Page 4

Date : 22-DEC-2022 13:09

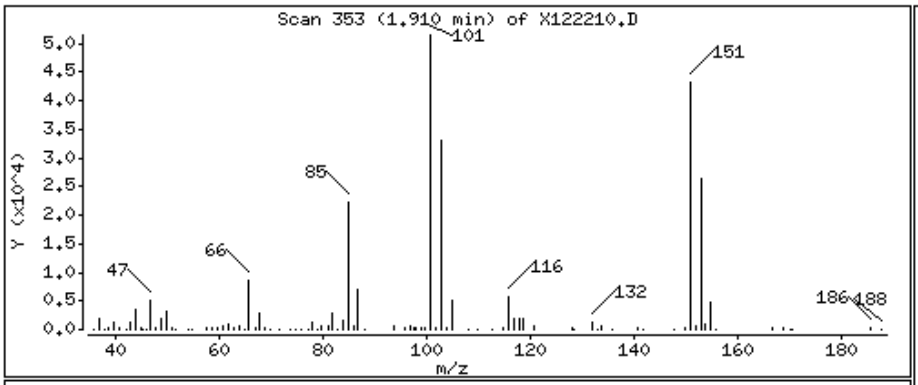
Client ID: HS22121096-01 Instrument: voa6.i

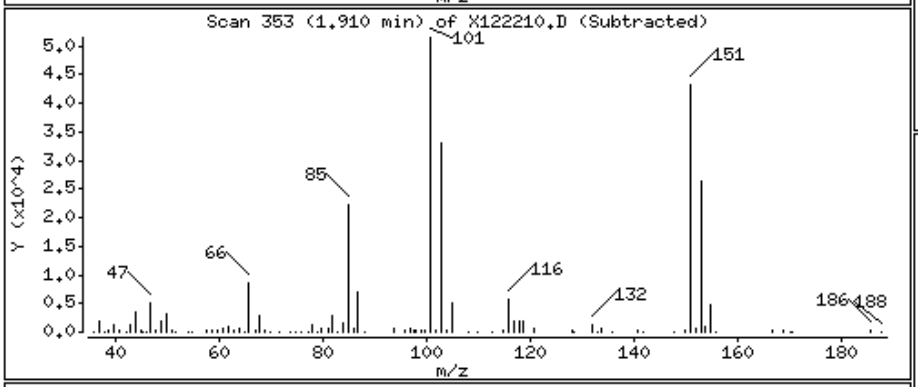
Sample Info: HS22121096-01;HS22121096-01;;;

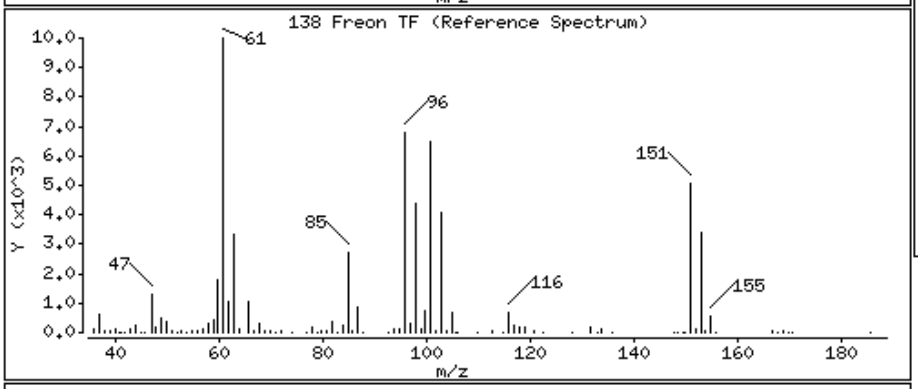
Purge Volume: 5.0 Operator: PC

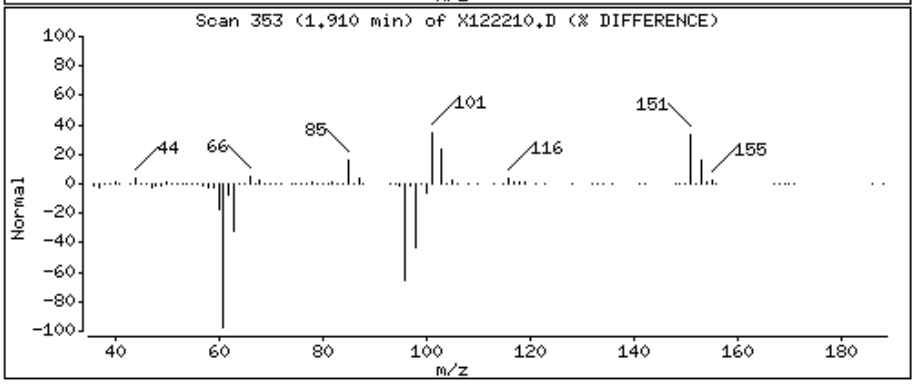
Column phase: DB624 Column diameter: 0.18

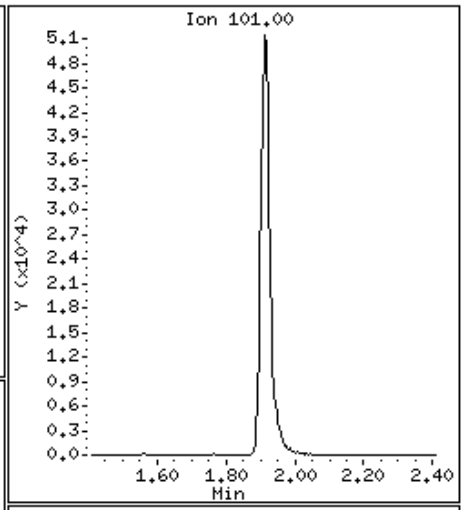
138 Freon TF Concentration: 296.55 ug/l

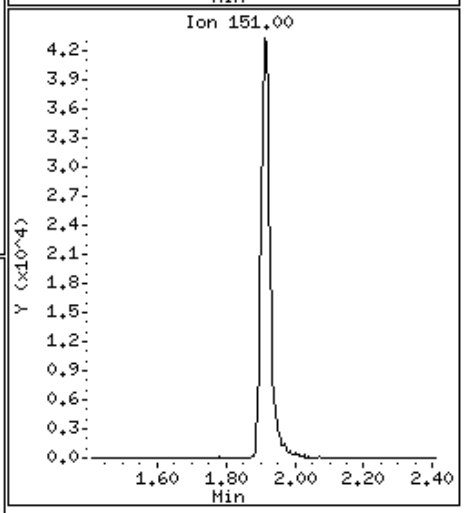












Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122210.D
Inj Date : 22-DEC-2022 13:09
InstruID : voa6.i
LabSampID : HS22121096-01

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D Page 1
Report Date: 29-Dec-2022 13:40

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D
Lab Smp Id: HS22121096-03 Client Smp ID: HS22121096-03
Inj Date : 22-DEC-2022 13:30
Operator : PC Inst ID: voa6.i
Smp Info : HS22121096-03;HS22121096-03;;;
Misc Info : V6;WATER;0;25;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 29-Dec-2022 13:40 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 11
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

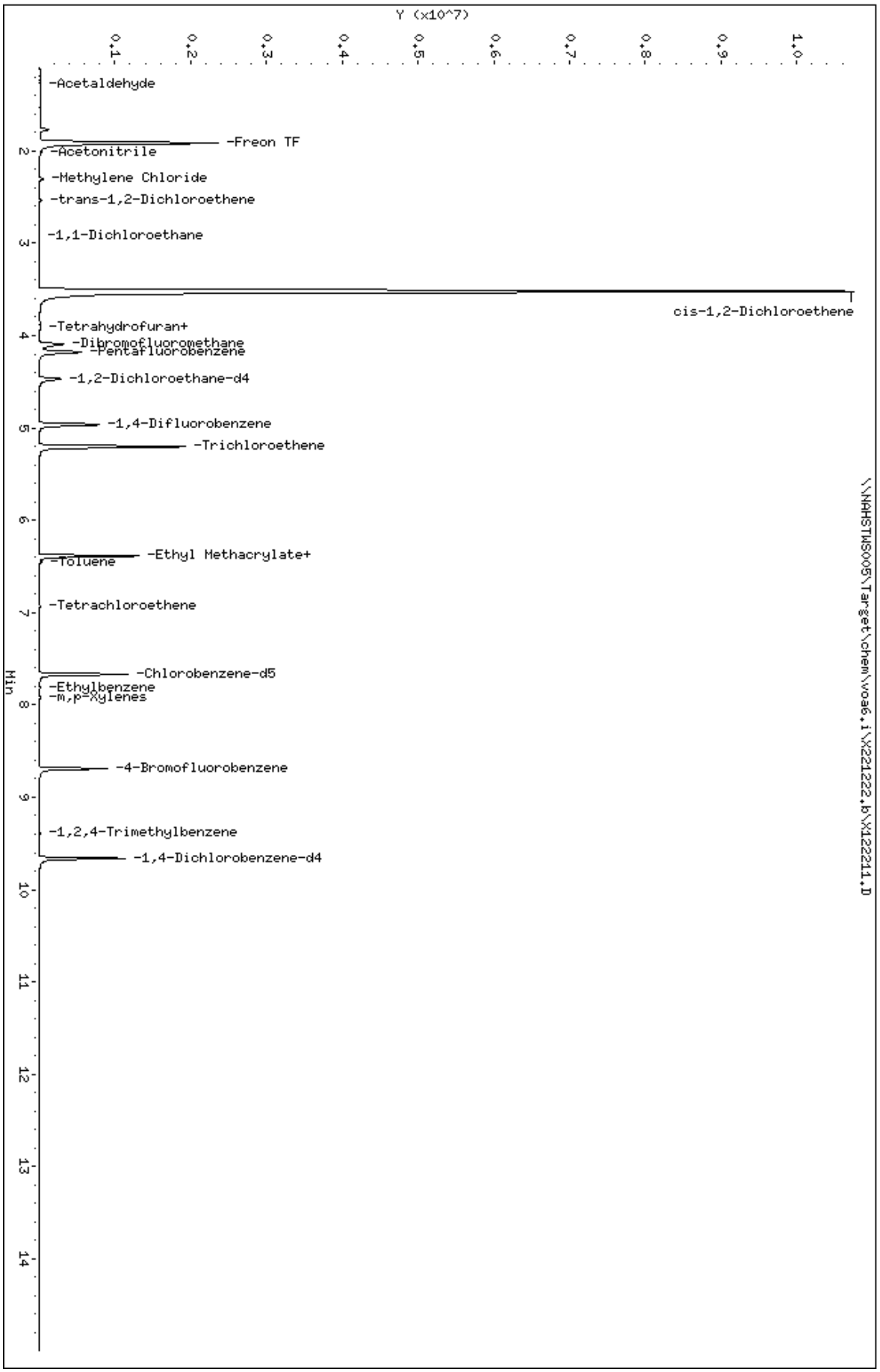
Name	Value	Description
DF	25.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.178	4.181	(1.000)	467887	50.0000	
	5 Vinyl Chloride	62	1.141	1.141	(0.273)	3201	0.78317	19.57(a)
	17 Methylene Chloride	84	2.303	2.300	(0.551)	24385	5.00627	125.15
	20 trans-1,2-Dichloroethene	96	2.532	2.524	(0.606)	10317	2.59595	64.89(a)
	22 1,1-Dichloroethane	63	2.922	2.918	(0.699)	5624	0.80632	20.15(a)
	27 cis-1,2-Dichloroethene	96	3.522	3.522	(0.843)	5609180	1159.73	28993.25(A)
	28 Chloroform	83	3.908	3.900	(0.935)	13290	1.70001	42.50(a)
$	30 Dibromofluoromethane	113	4.095	4.099	(0.980)	214693	47.7804	47.78
$	35 1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	217906	45.9752	45.97
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	672236	50.0000	
	38 Trichloroethene	130	5.205	5.205	(1.048)	639188	140.385	3509.62
*	47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	592435	50.0000	
$	48 Toluene-d8	98	6.386	6.386	(0.833)	772825	52.7904	52.79
	50 Toluene	91	6.449	6.445	(0.841)	13602	0.83065	20.76(a)
	56 Tetrachloroethene	164	6.937	6.925	(0.905)	4088	1.20659	30.16(a)
	61 Ethylbenzene	106	7.806	7.799	(1.018)	3370	0.61596	15.39(a)
	62 m,p-Xylenes	106	7.911	7.904	(1.032)	4676	0.66298	16.57(a)
$	69 4-Bromofluorobenzene	95	8.691	8.687	(1.133)	255424	46.6823	46.68
*	70 1,4-Dichlorobenzene-d4	152	9.666	9.662	(1.000)	294527	50.0000	
	79 1,2,4-Trimethylbenzene	105	9.392	9.377	(0.972)	6353	0.50099	12.52(a)

M	94	1,2-Dichloroethylene (total)	96			5619497	1162.33	29058.15
	138	Freon TF	101	1.913	1.910 (0.458)	872442	254.017	6350.42(A)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.



Data File: \\NAHSTMS005\Target\chem\voa6.i\X221222.b\X122211.D
Date : 22-DEC-2022 13:30
Client ID: HS22121096-03
Sample Info: HS22121096-03;HS22121096-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D Page 2

Date : 22-DEC-2022 13:30

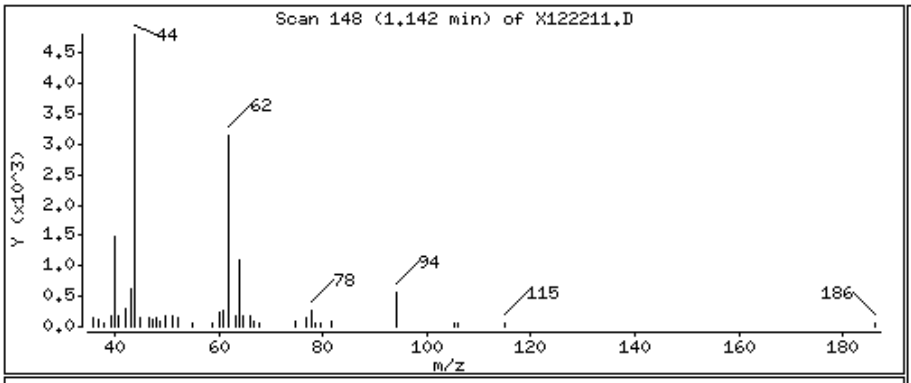
Client ID: HS22121096-03 Instrument: voa6.i

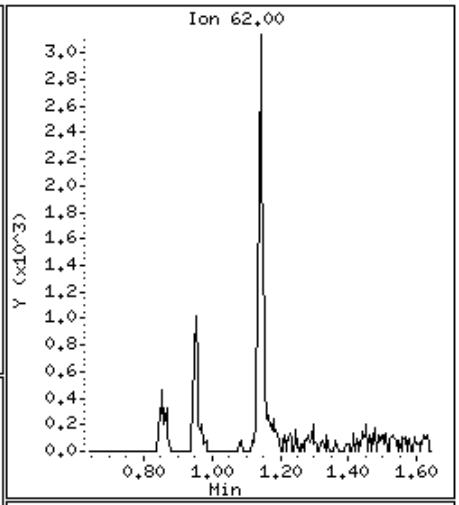
Sample Info: HS22121096-03;HS22121096-03;;;

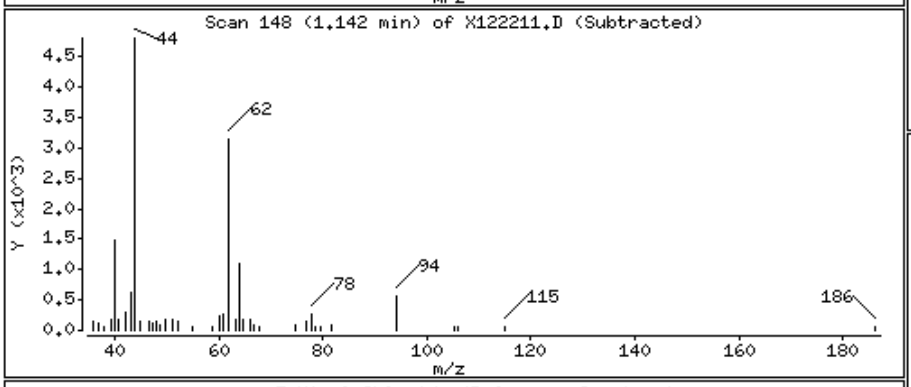
Purge Volume: 5.0 Operator: PC

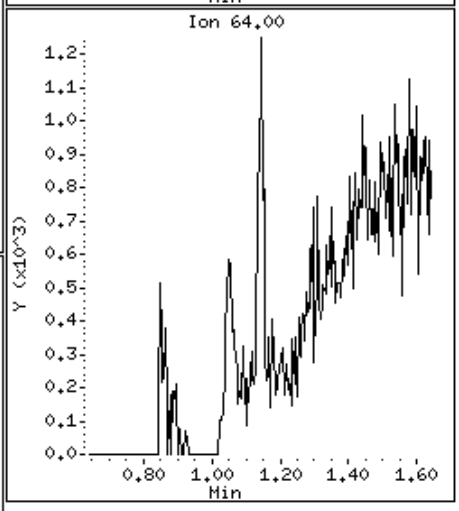
Column phase: DB624 Column diameter: 0.18

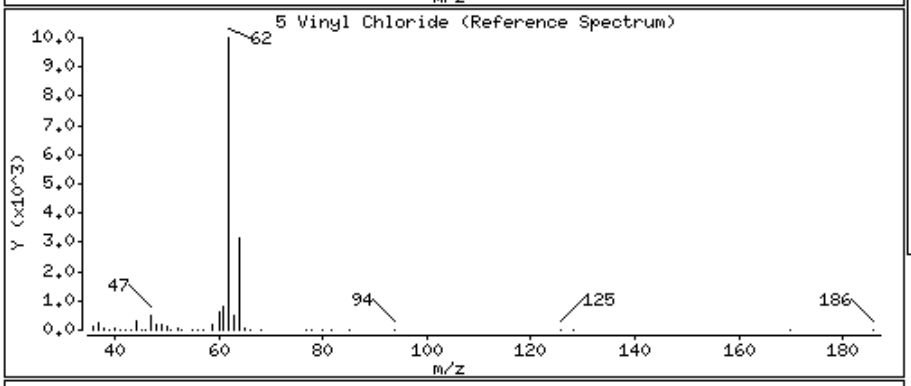
5 Vinyl Chloride Concentration: 19.57 ug/l

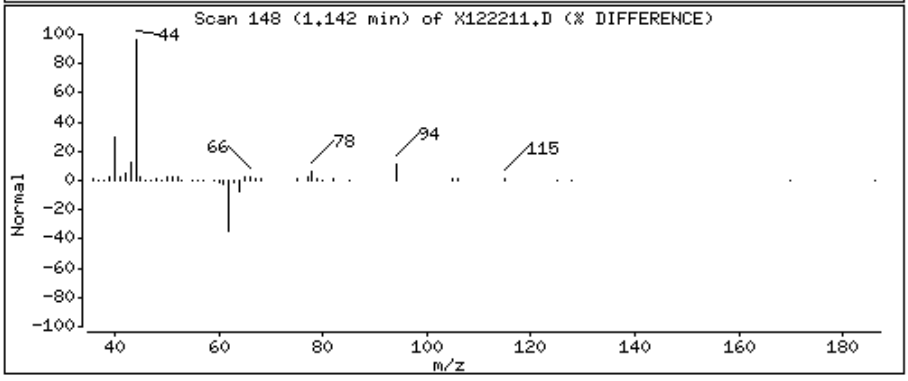












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D Page 3

Date : 22-DEC-2022 13:30

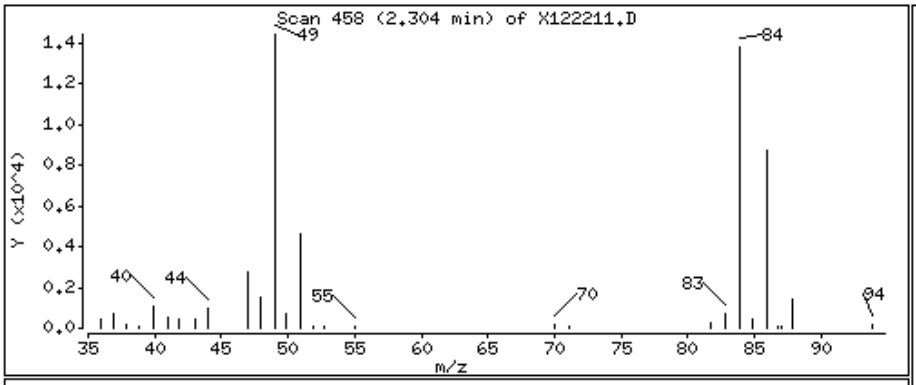
Client ID: HS22121096-03 Instrument: voa6.i

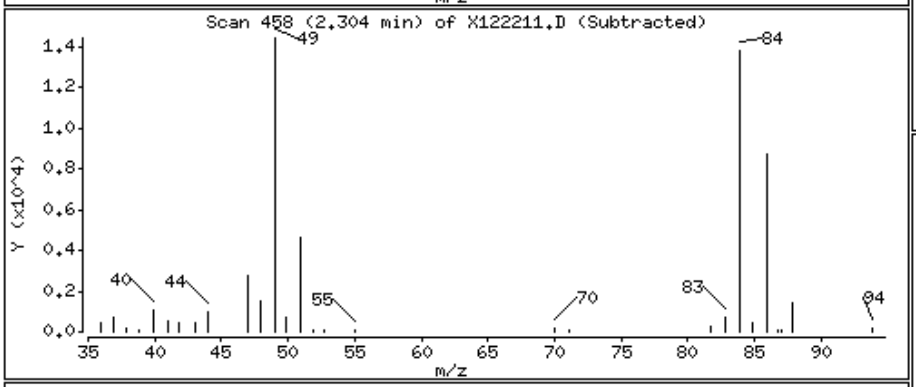
Sample Info: HS22121096-03;HS22121096-03;;;

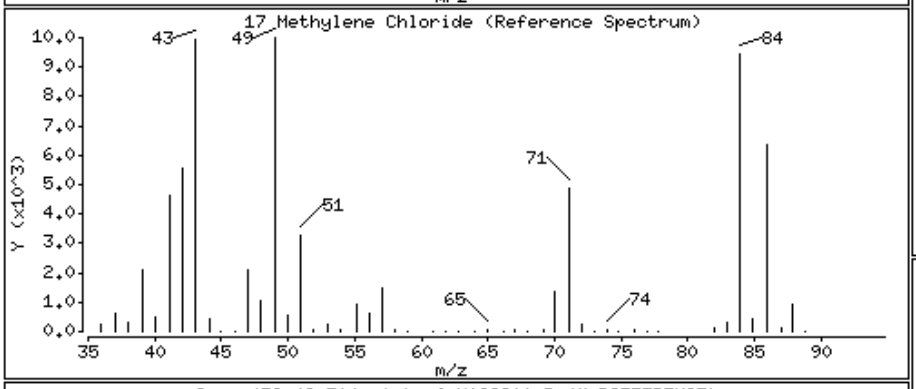
Purge Volume: 5.0 Operator: PC

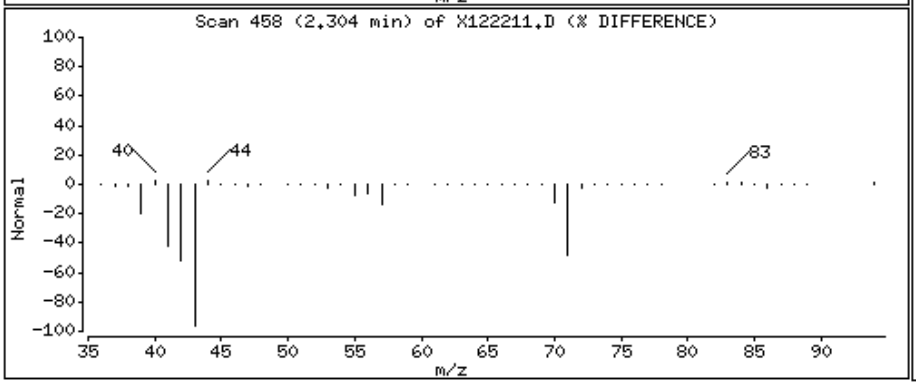
Column phase: DB624 Column diameter: 0.18

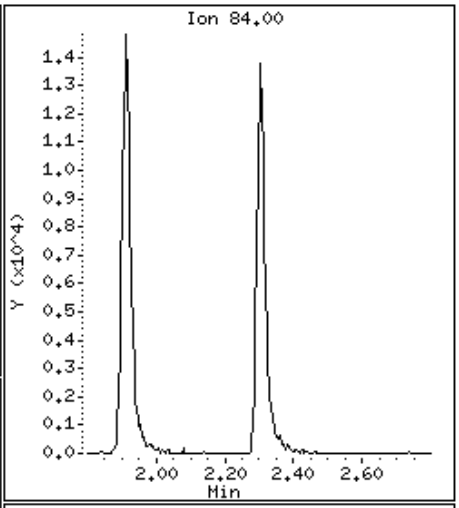
17 Methylene Chloride Concentration: 125.15 ug/l

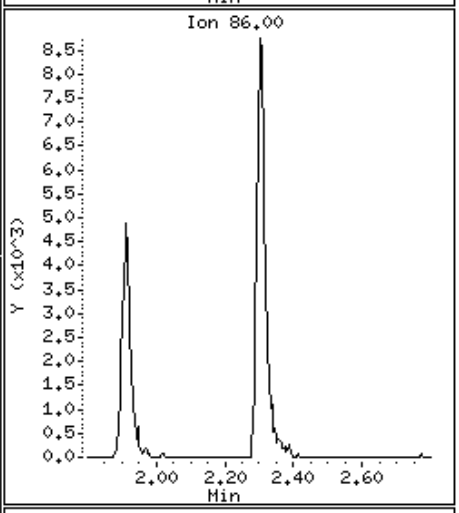


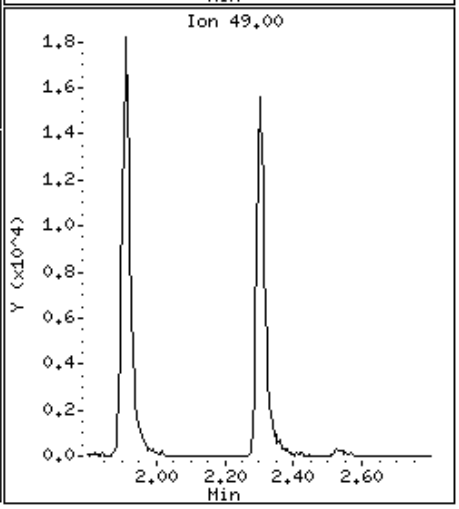












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D Page 4

Date : 22-DEC-2022 13:30

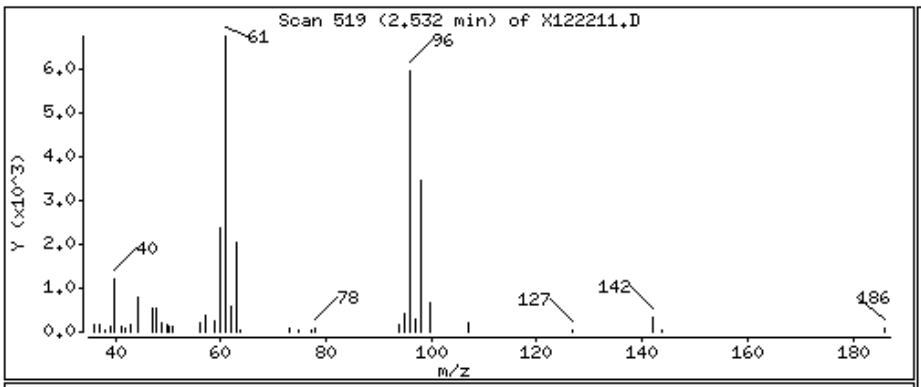
Client ID: HS22121096-03 Instrument: voa6.i

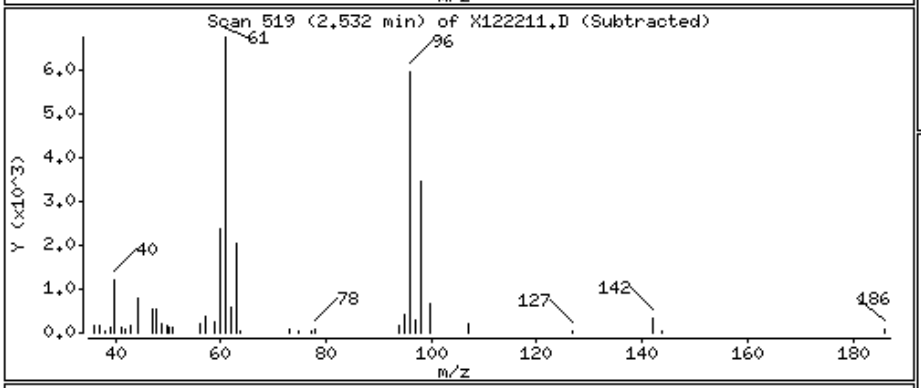
Sample Info: HS22121096-03;HS22121096-03;;;

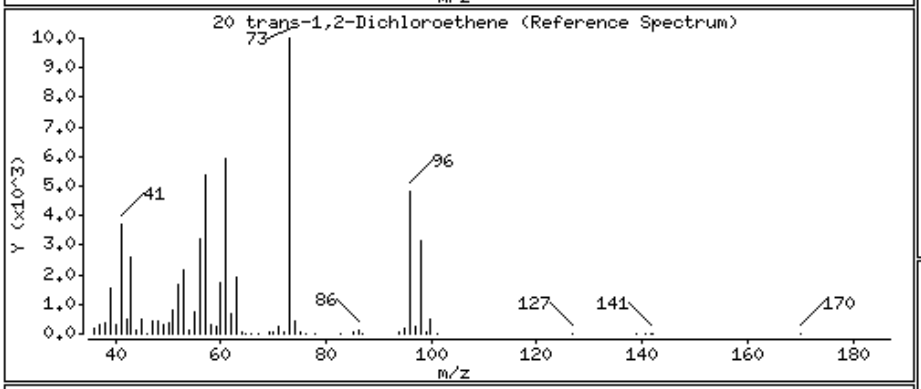
Purge Volume: 5.0 Operator: PC

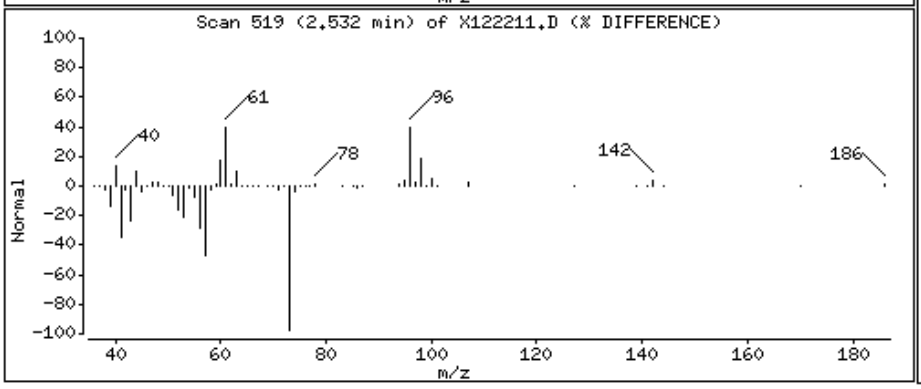
Column phase: DB624 Column diameter: 0.18

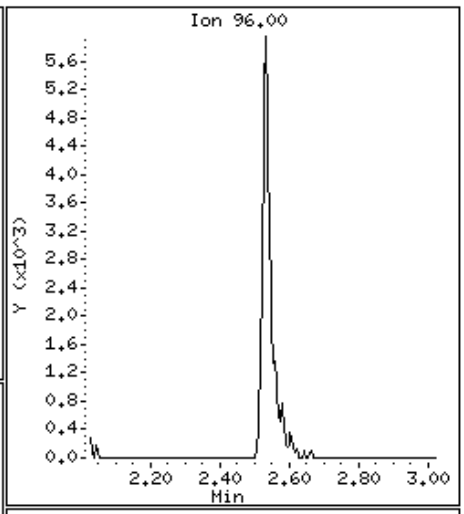
20 trans-1,2-Dichloroethene Concentration: 64.89 ug/l

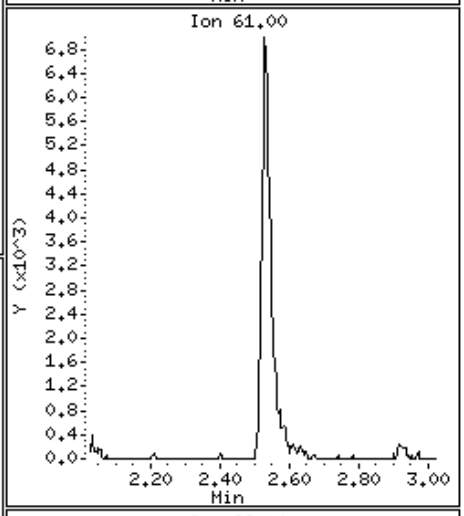


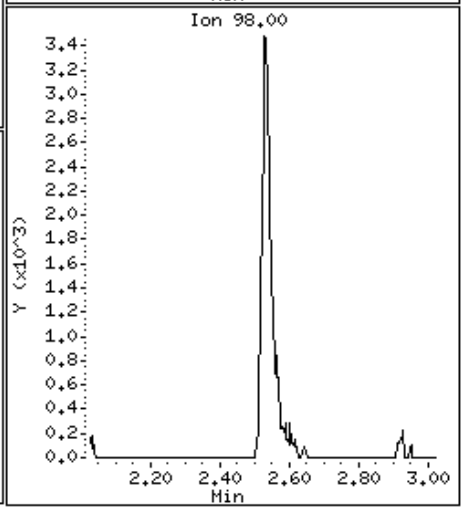












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D Page 5

Date : 22-DEC-2022 13:30

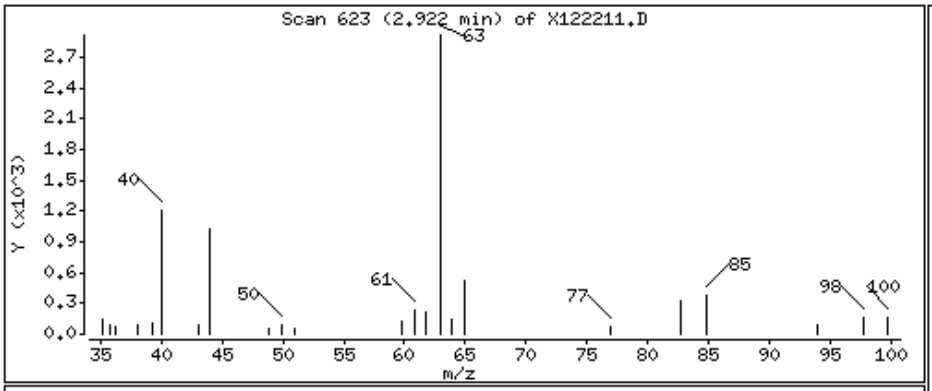
Client ID: HS22121096-03 Instrument: voa6.i

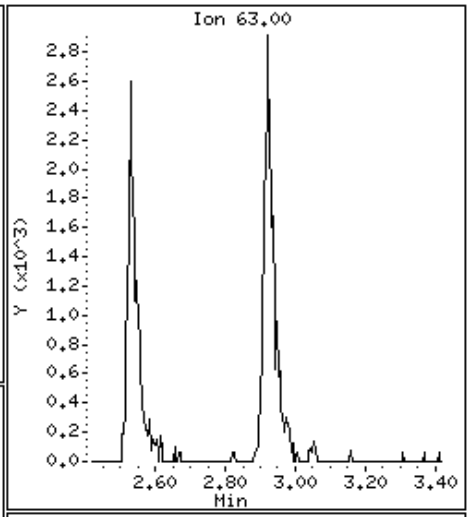
Sample Info: HS22121096-03;HS22121096-03;;;

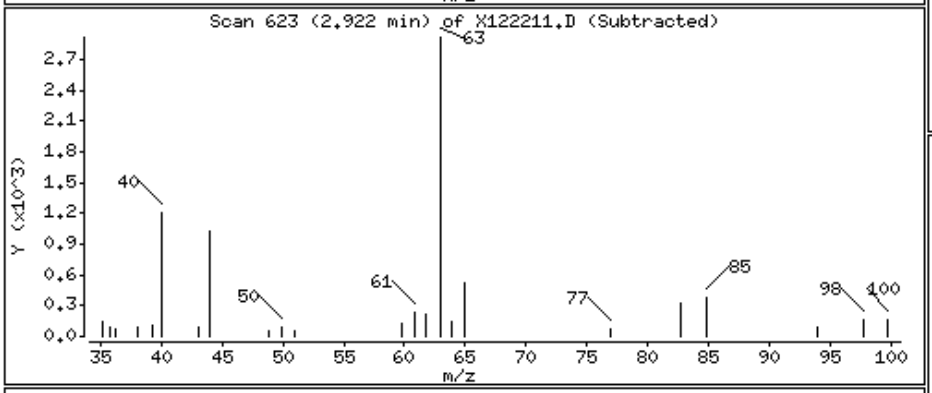
Purge Volume: 5.0 Operator: PC

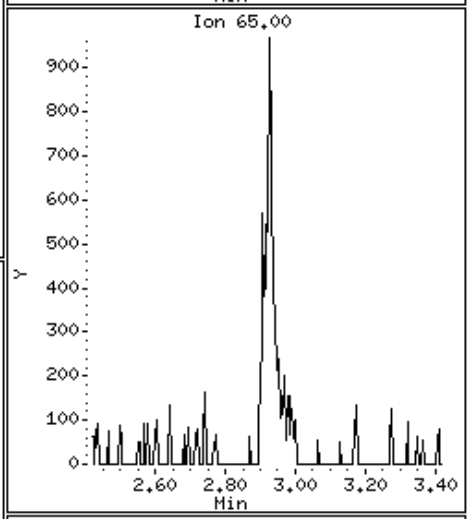
Column phase: DB624 Column diameter: 0.18

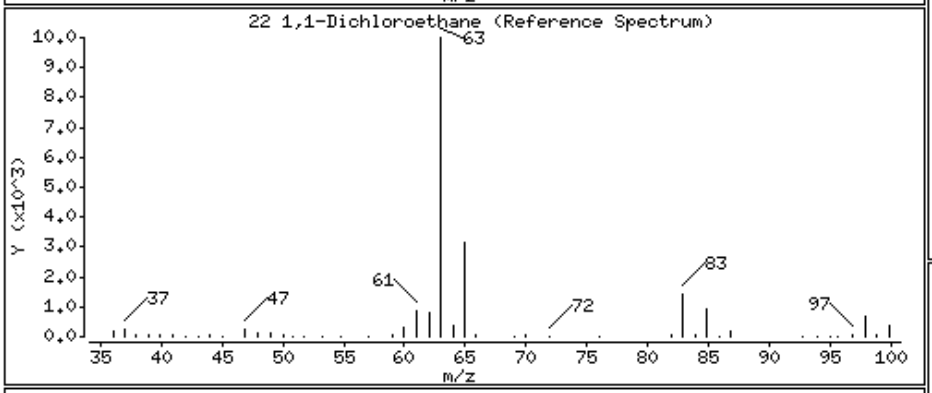
22 1,1-Dichloroethane Concentration: 20.15 ug/l

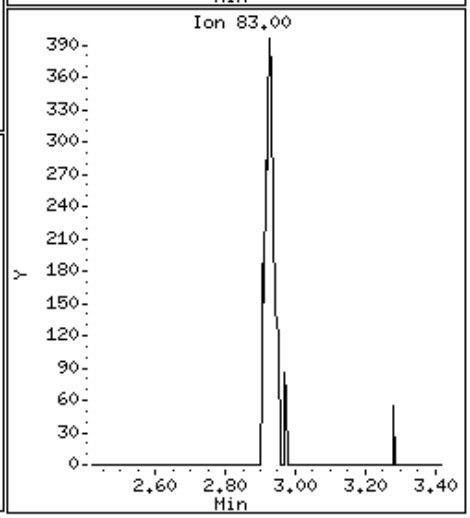


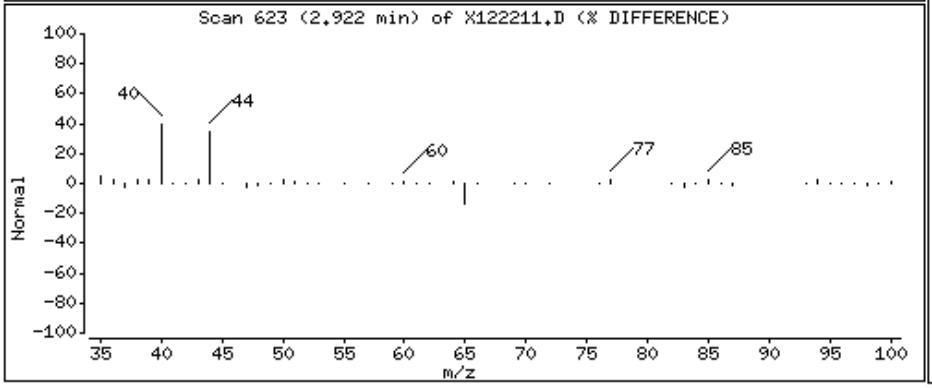












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D Page 6

Date : 22-DEC-2022 13:30

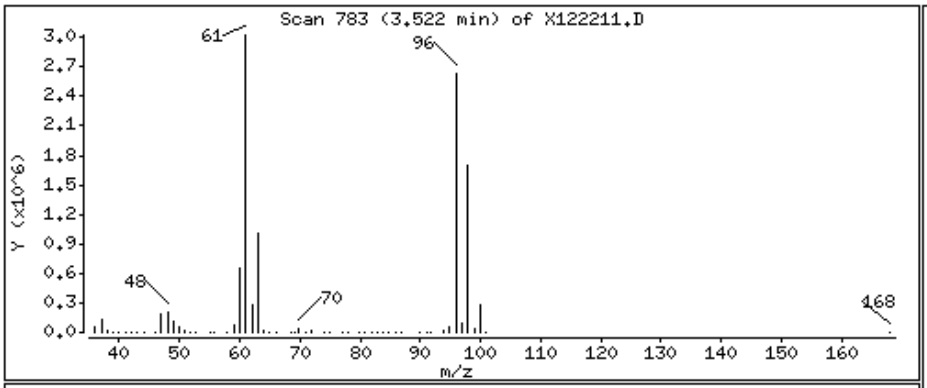
Client ID: HS22121096-03 Instrument: voa6.i

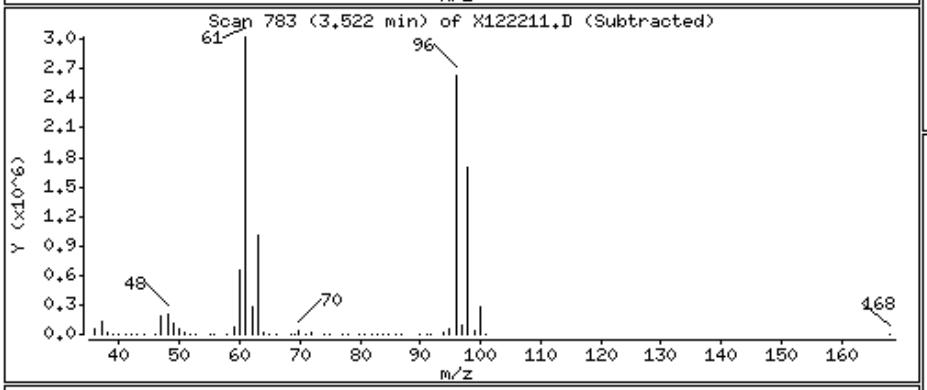
Sample Info: HS22121096-03;HS22121096-03;;;

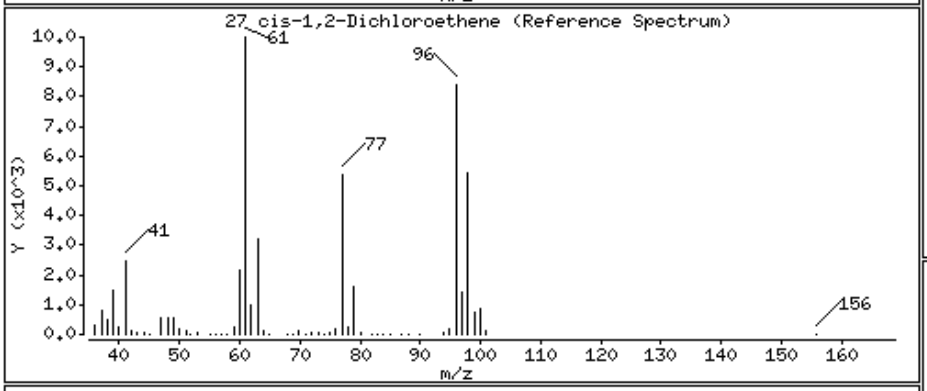
Purge Volume: 5.0 Operator: PC

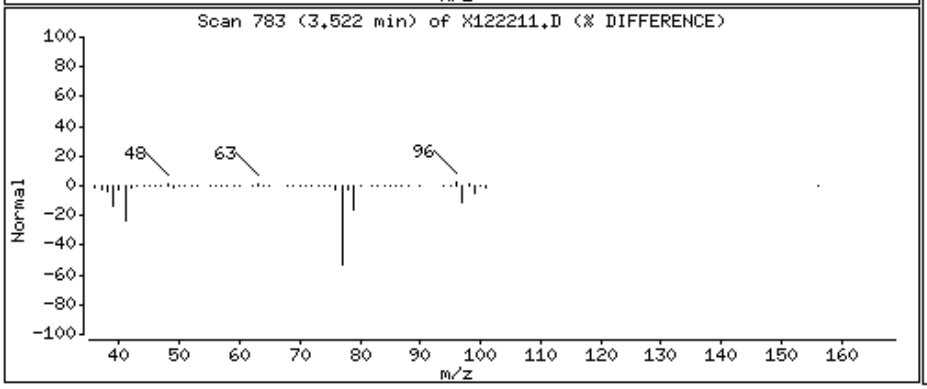
Column phase: DB624 Column diameter: 0.18

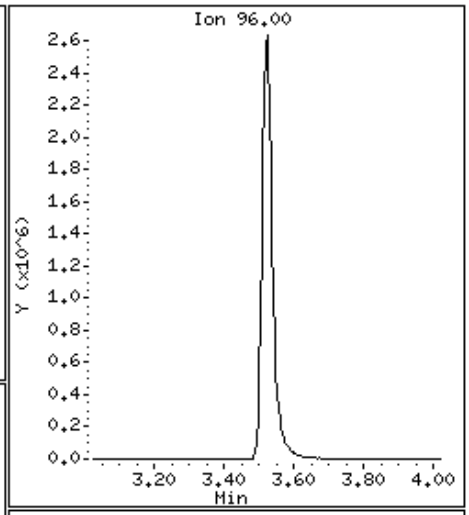
27 cis-1,2-Dichloroethene Concentration: 28993.25 ug/l

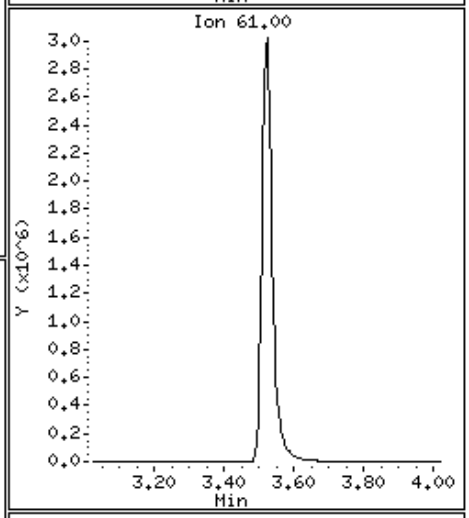


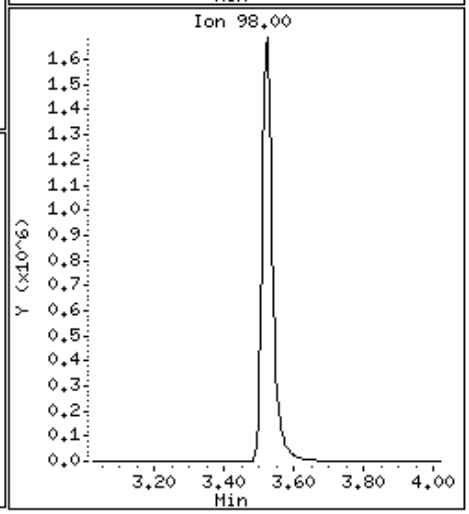












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D Page 7

Date : 22-DEC-2022 13:30

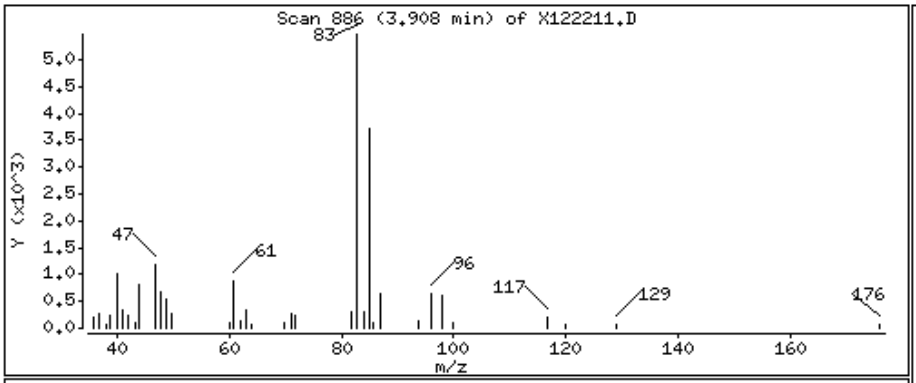
Client ID: HS22121096-03 Instrument: voa6.i

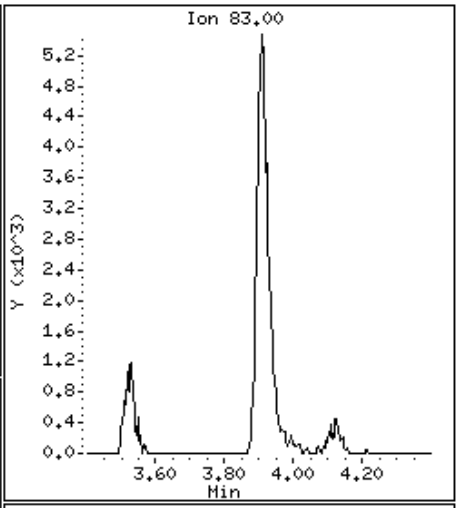
Sample Info: HS22121096-03;HS22121096-03;;;

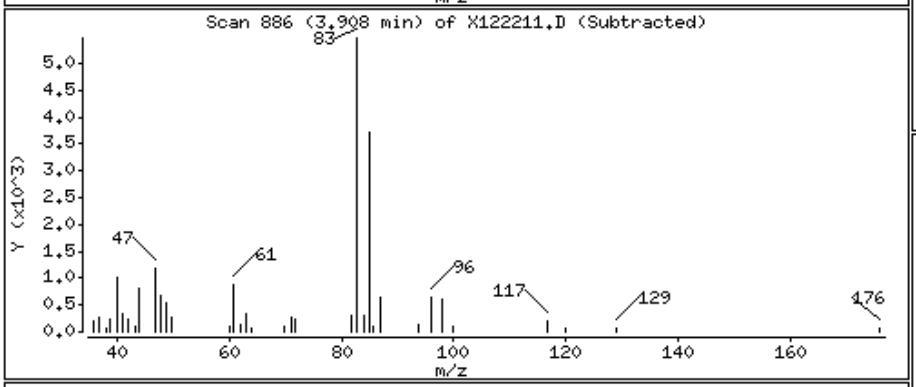
Purge Volume: 5.0 Operator: PC

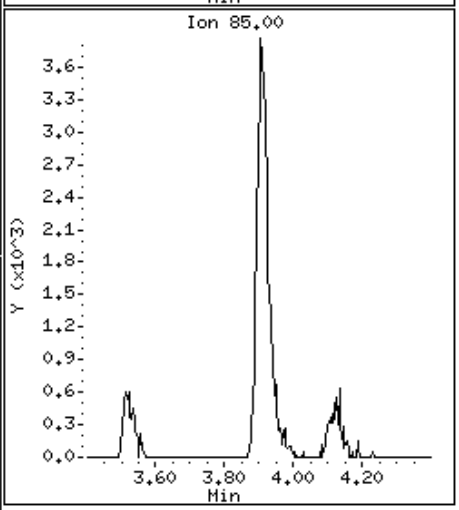
Column phase: DB624 Column diameter: 0.18

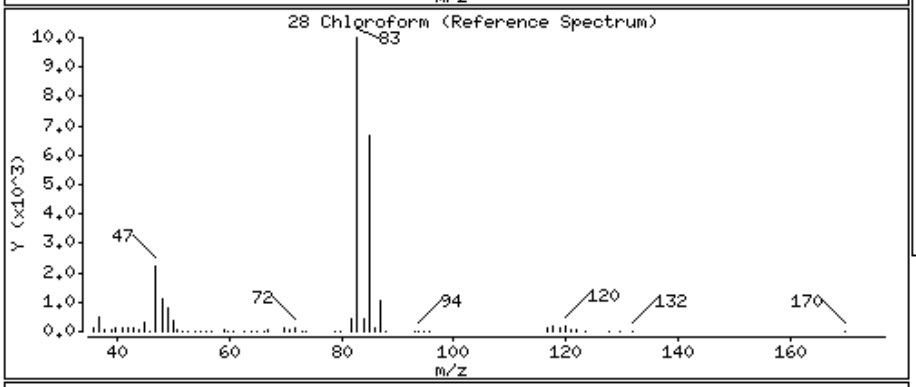
28 Chloroform Concentration: 42.50 ug/l

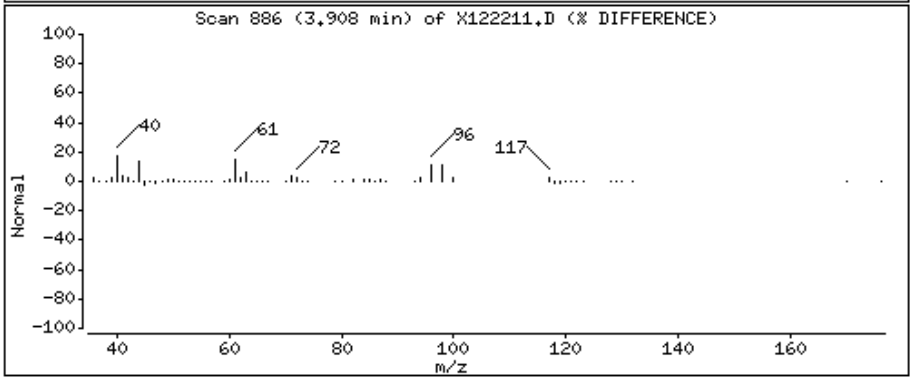












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D Page 8

Date : 22-DEC-2022 13:30

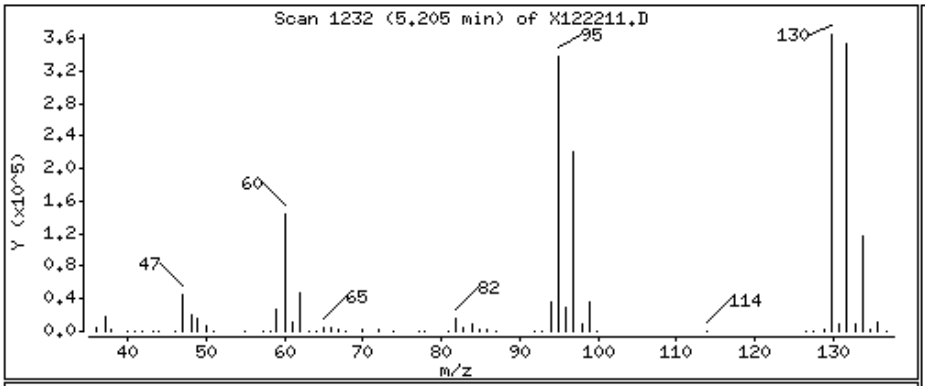
Client ID: HS22121096-03 Instrument: voa6.i

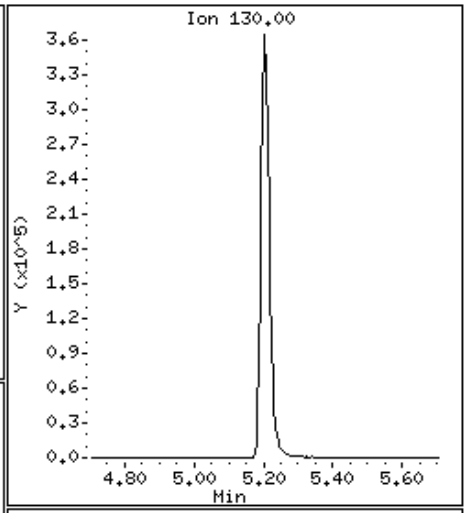
Sample Info: HS22121096-03;HS22121096-03;;;

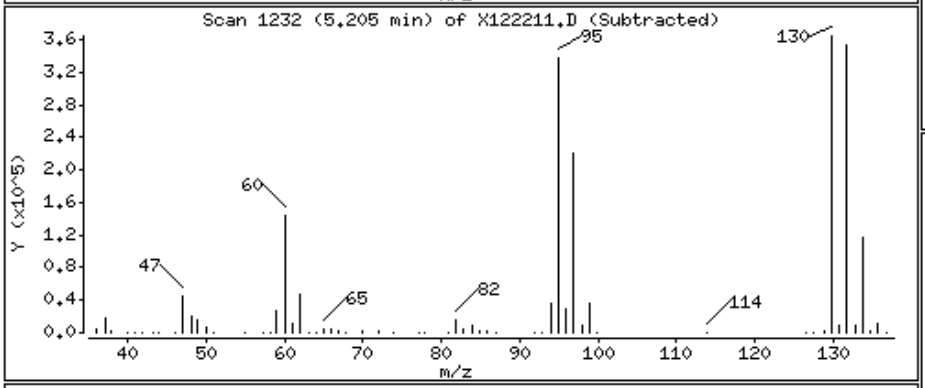
Purge Volume: 5.0 Operator: PC

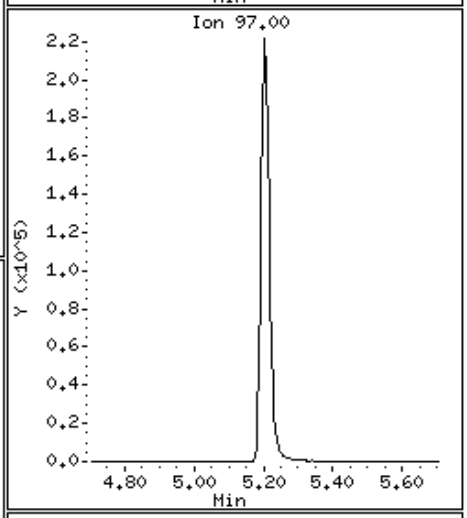
Column phase: DB624 Column diameter: 0.18

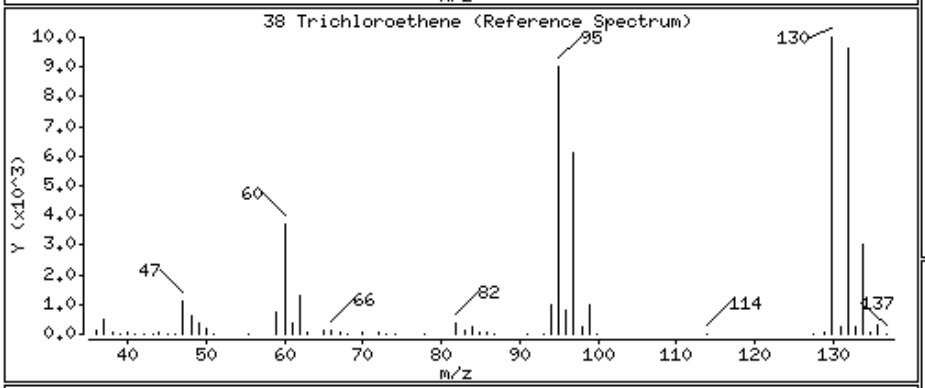
38 Trichloroethene Concentration: 3509.62 ug/l

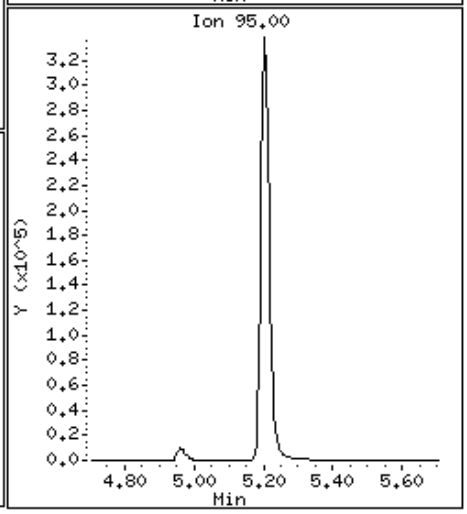


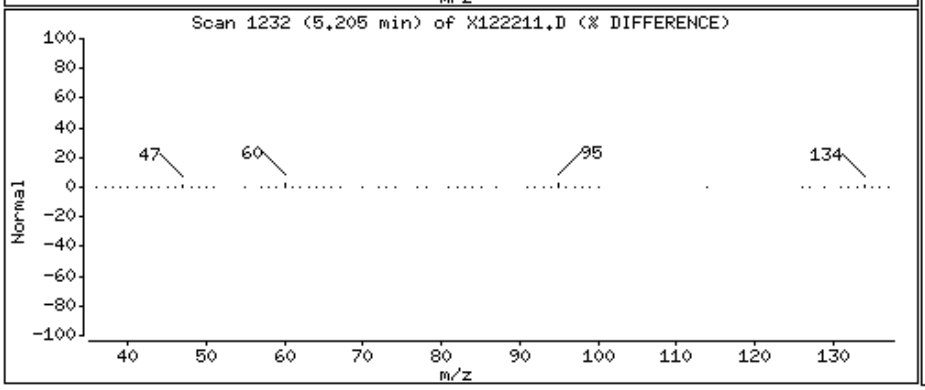












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D

Date : 22-DEC-2022 13:30

Client ID: HS22121096-03

Instrument: voa6.i

Sample Info: HS22121096-03;HS22121096-03;;;

Purge Volume: 5.0

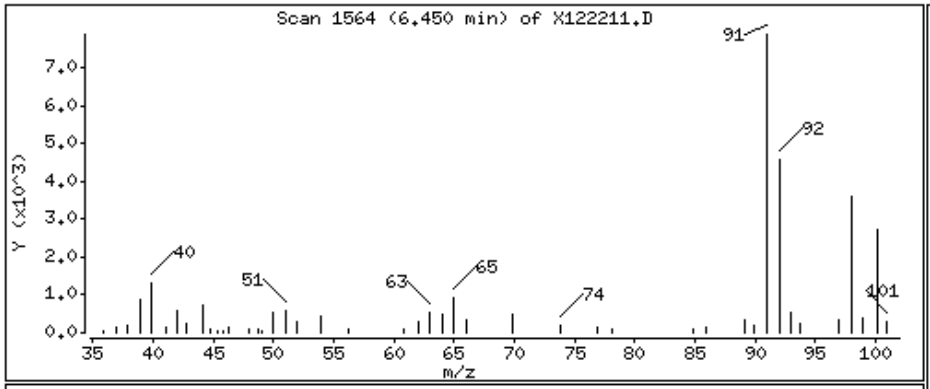
Operator: PC

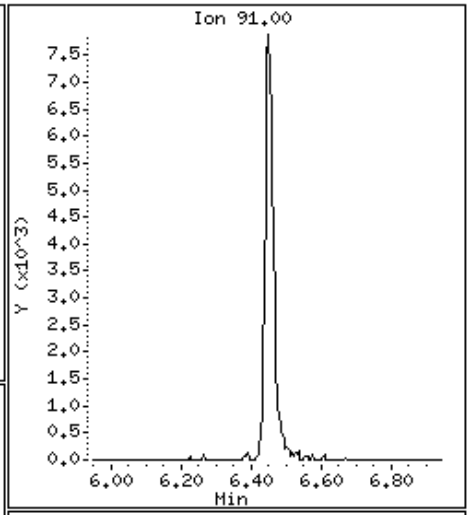
Column phase: DB624

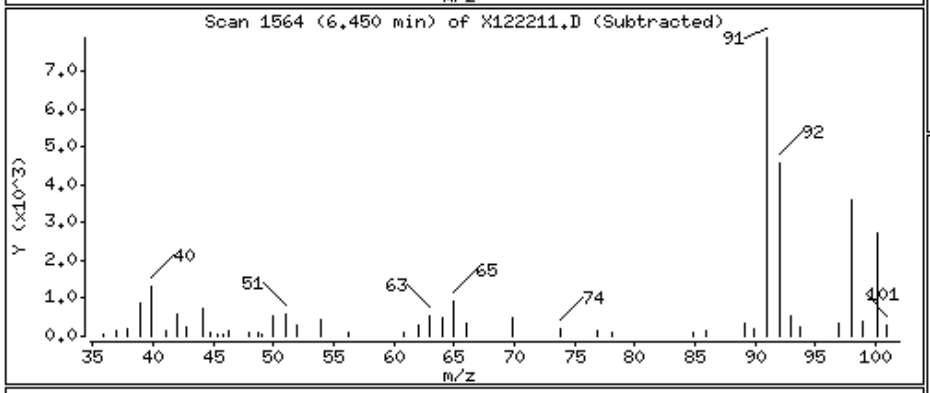
Column diameter: 0.18

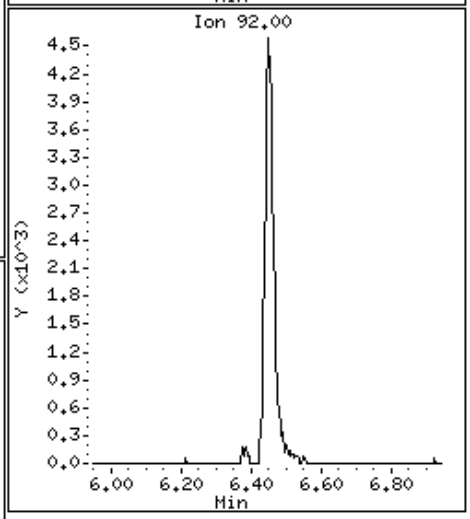
50 Toluene

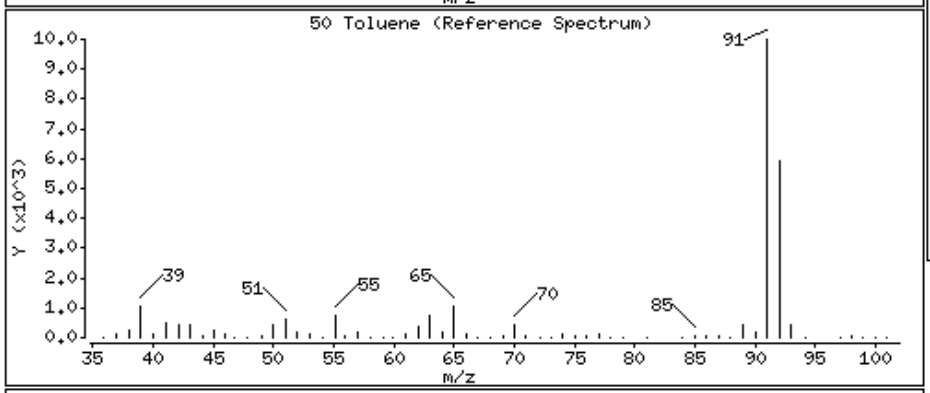
Concentration: 20.76 ug/l

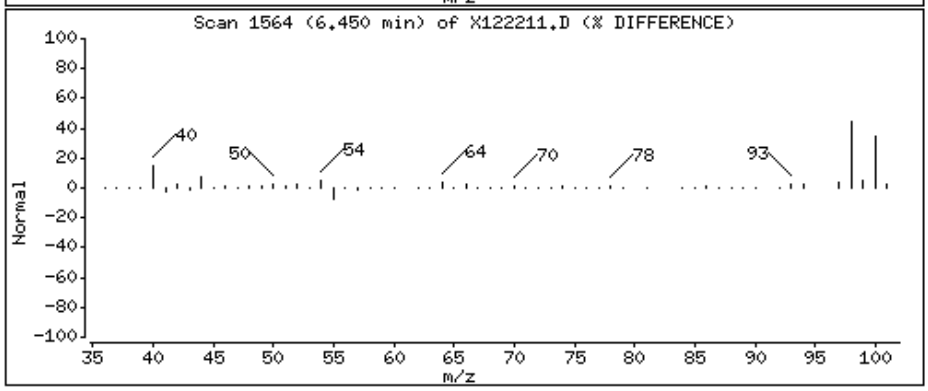












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122111.D Page 10

Date : 22-DEC-2022 13:30

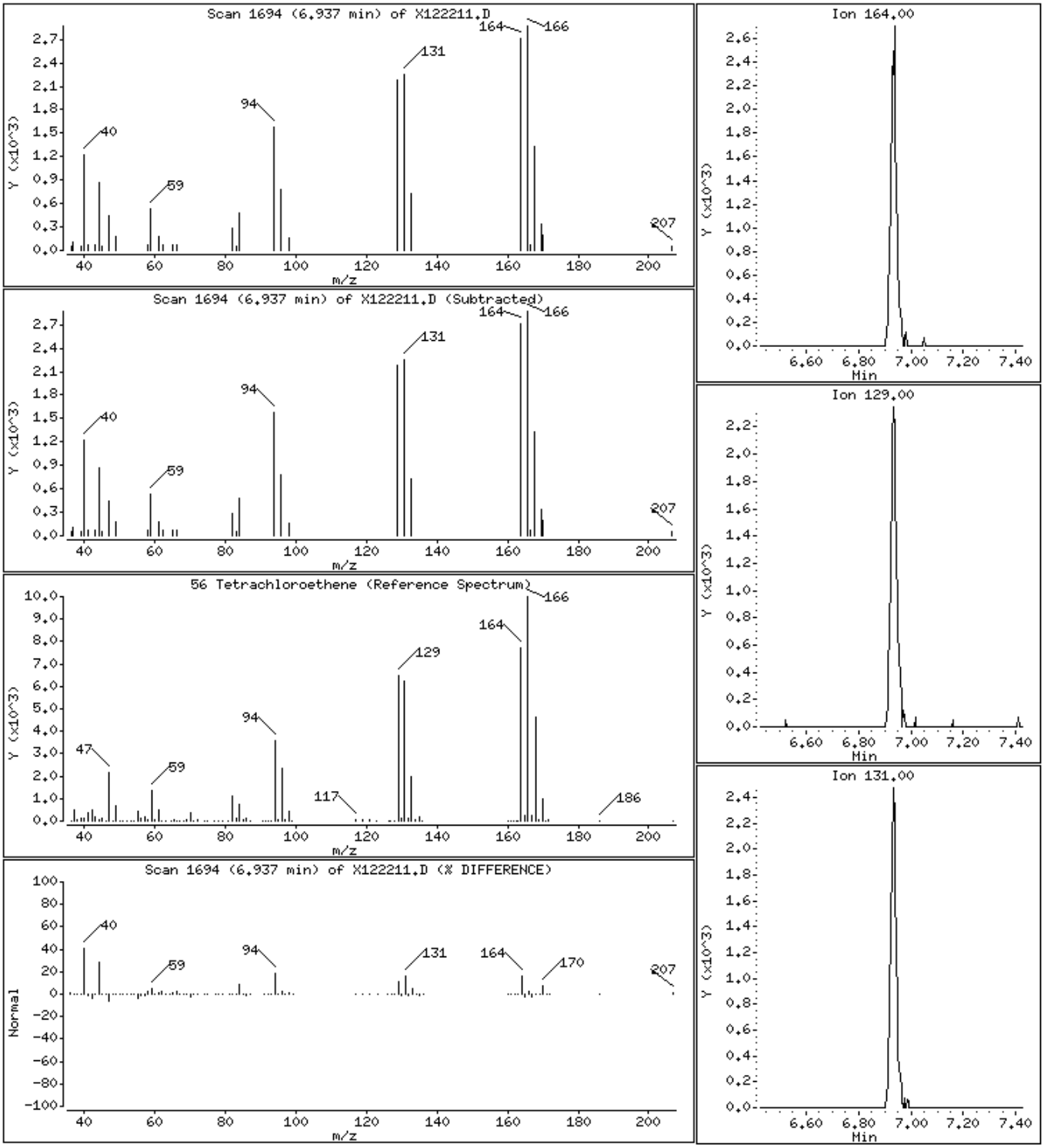
Client ID: HS22121096-03 Instrument: voa6.i

Sample Info: HS22121096-03;HS22121096-03;;;

Purge Volume: 5.0 Operator: PC

Column phase: DB624 Column diameter: 0.18

56 Tetrachloroethene Concentration: 30.16 ug/l



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D Page 11

Date : 22-DEC-2022 13:30

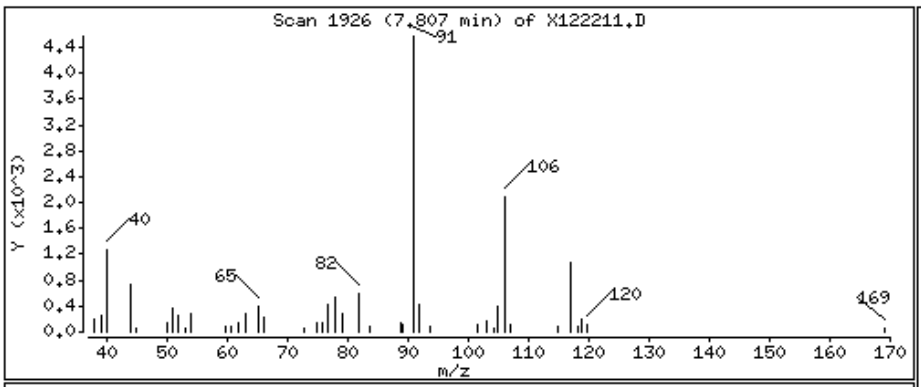
Client ID: HS22121096-03 Instrument: voa6.i

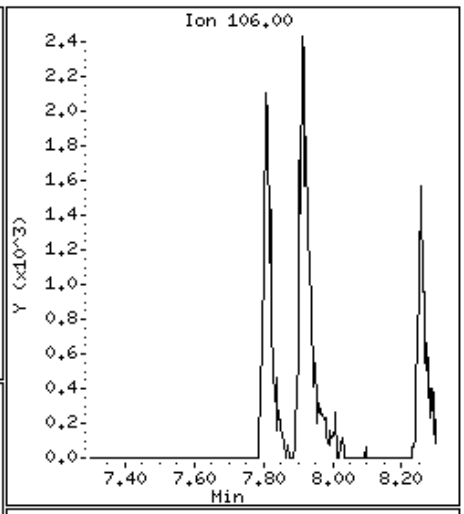
Sample Info: HS22121096-03;HS22121096-03;;;

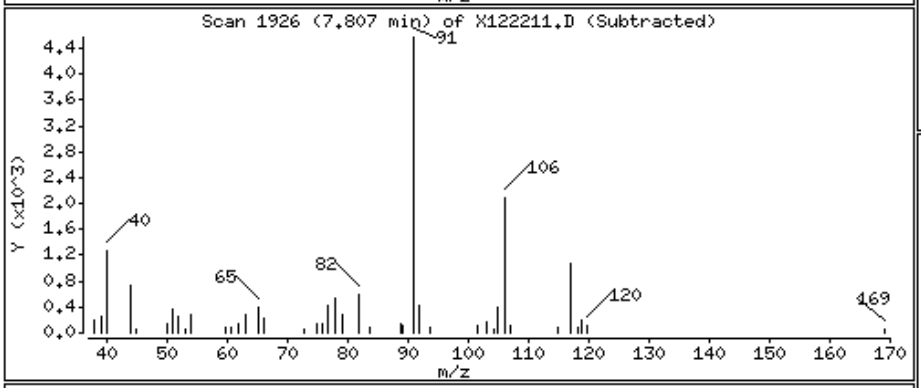
Purge Volume: 5.0 Operator: PC

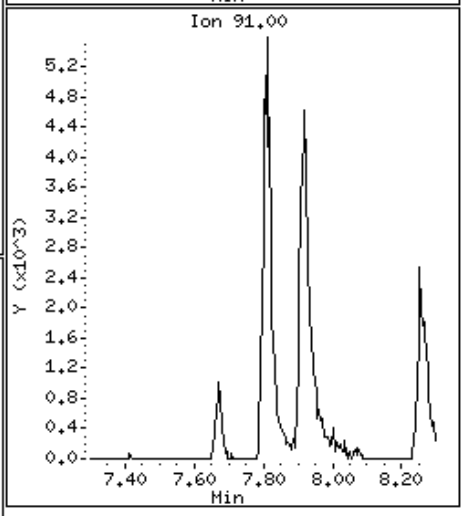
Column phase: DB624 Column diameter: 0.18

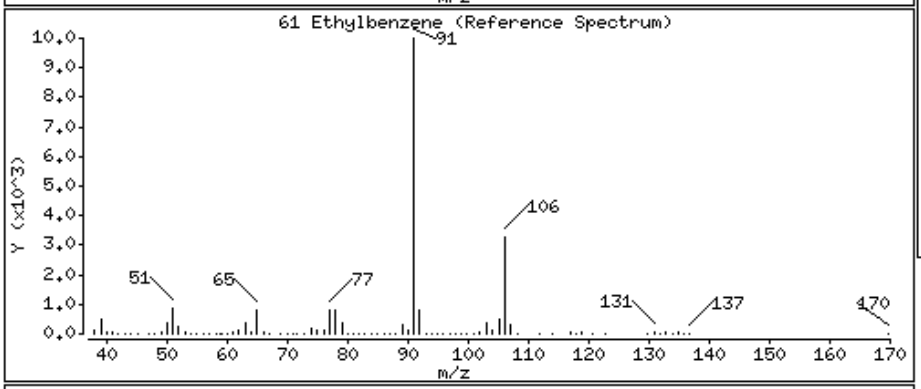
61 Ethylbenzene Concentration: 15.39 ug/l

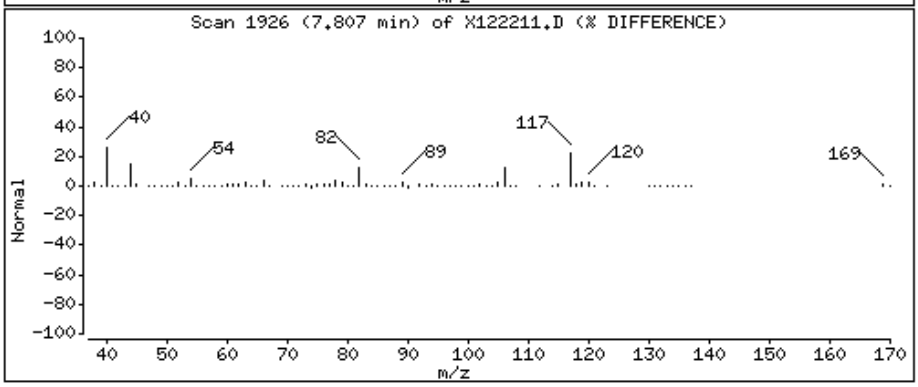












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D Page 12

Date : 22-DEC-2022 13:30

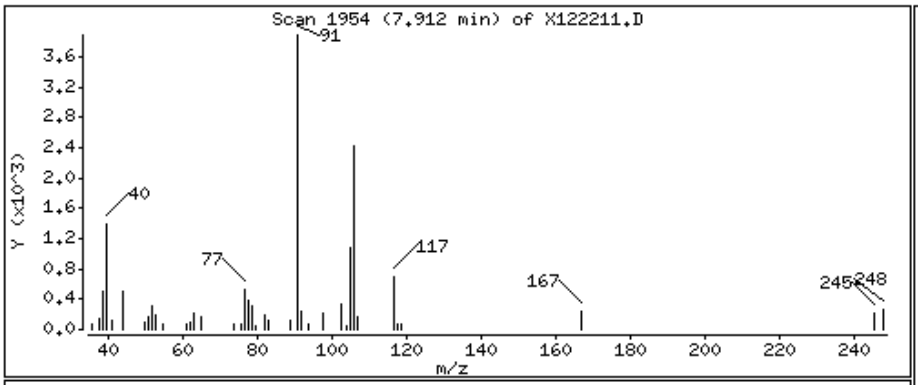
Client ID: HS22121096-03 Instrument: voa6.i

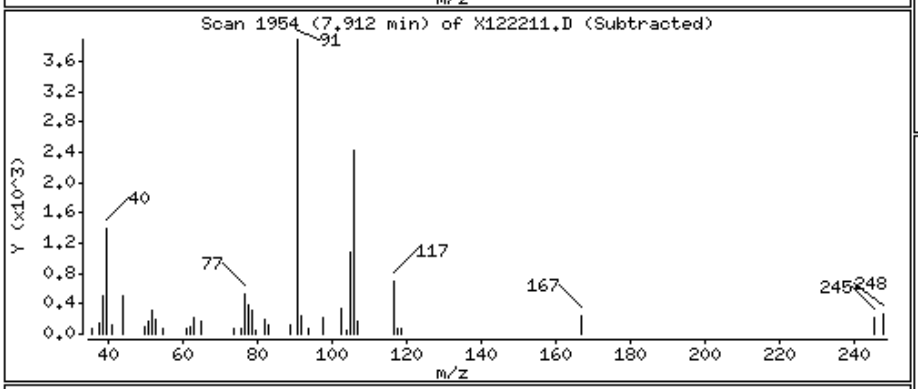
Sample Info: HS22121096-03;HS22121096-03;;;

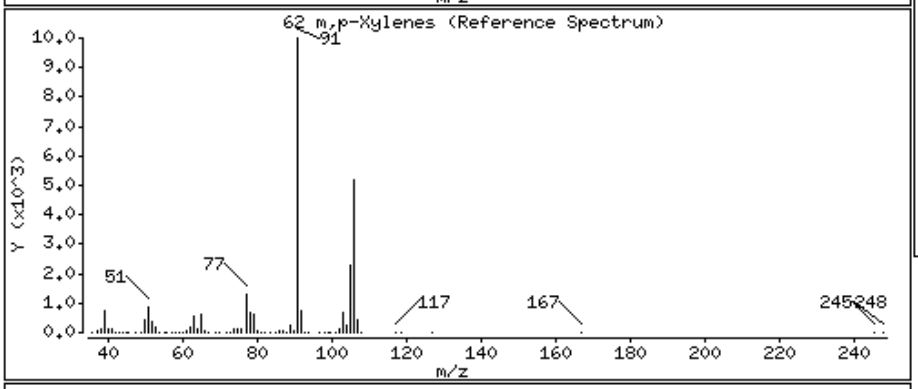
Purge Volume: 5.0 Operator: PC

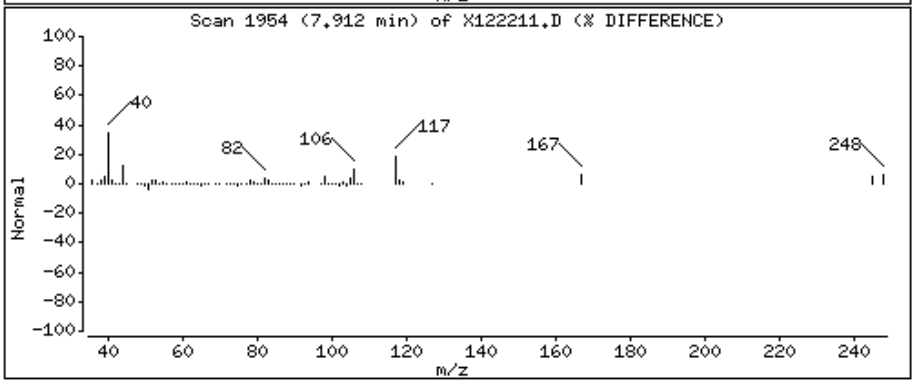
Column phase: DB624 Column diameter: 0.18

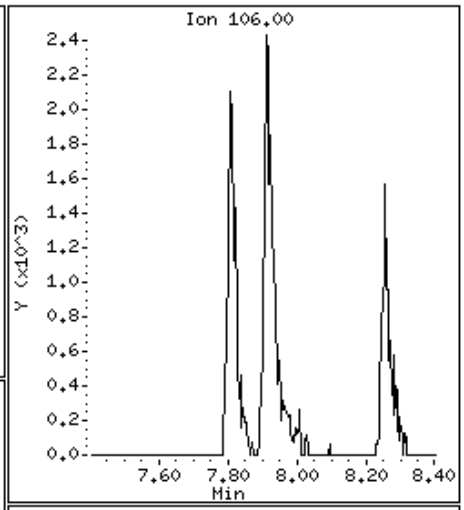
62 m,p-Xylenes Concentration: 16.57 ug/l

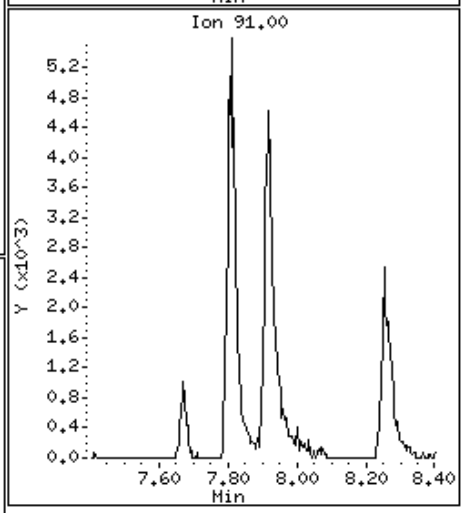












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D Page 13

Date : 22-DEC-2022 13:30

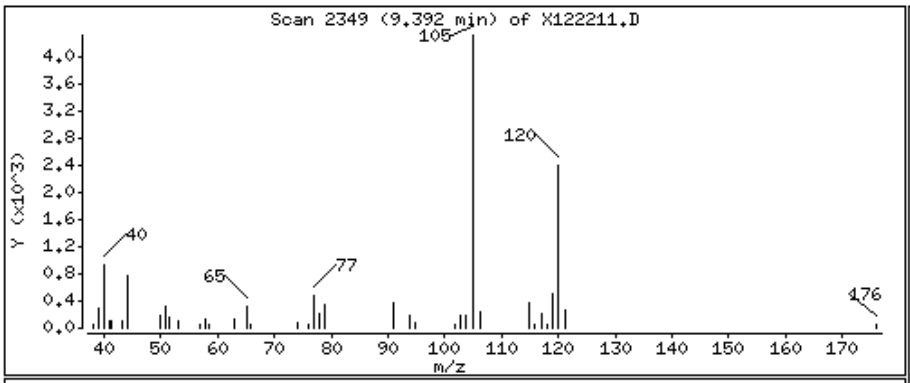
Client ID: HS22121096-03 Instrument: voa6.i

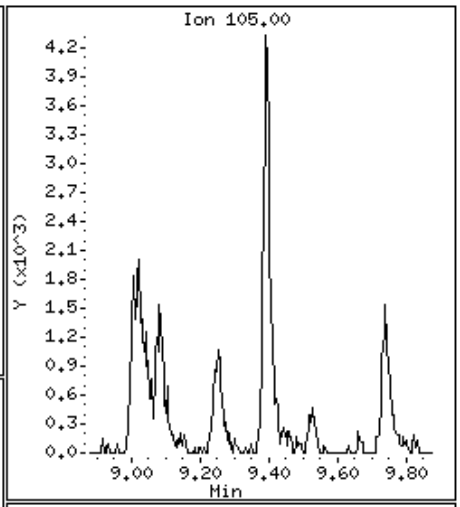
Sample Info: HS22121096-03;HS22121096-03;;;

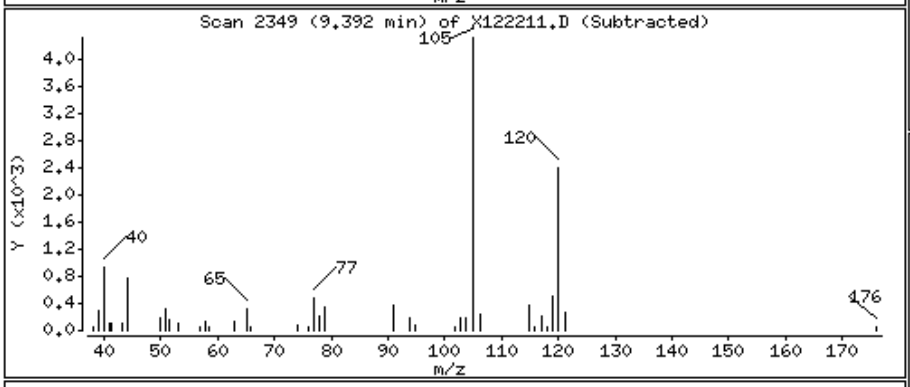
Purge Volume: 5.0 Operator: PC

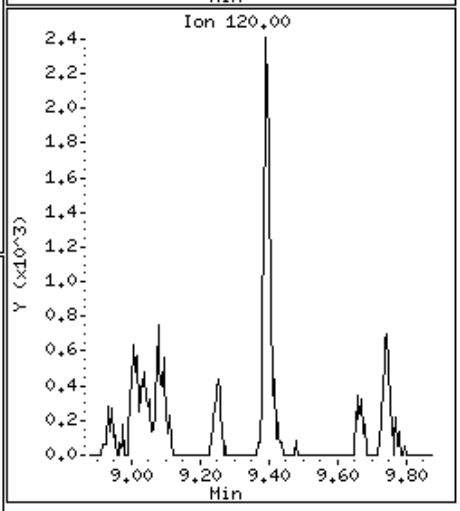
Column phase: DB624 Column diameter: 0.18

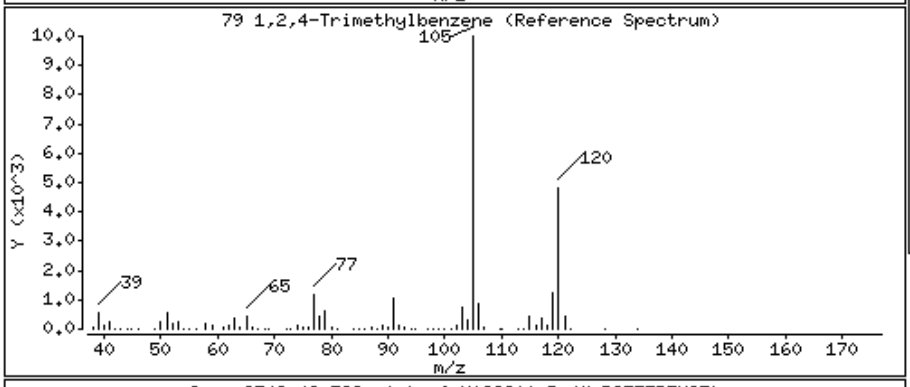
79 1,2,4-Trimethylbenzene Concentration: 12.52 ug/l

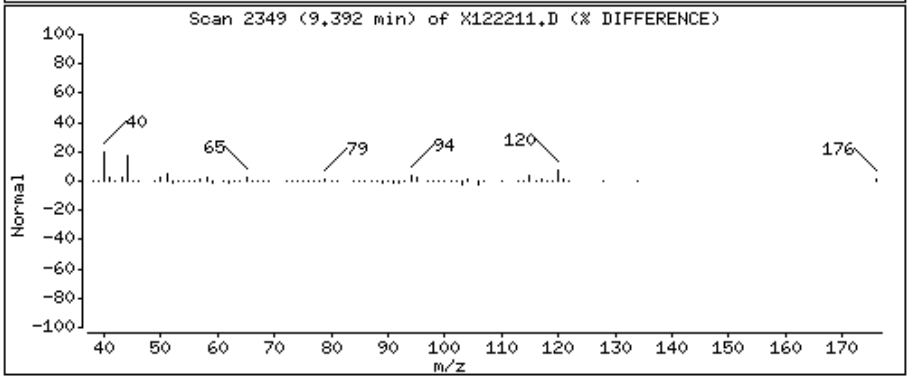












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D

Date : 22-DEC-2022 13:30

Client ID: HS22121096-03

Instrument: voa6.i

Sample Info: HS22121096-03;HS22121096-03;;;

Purge Volume: 5.0

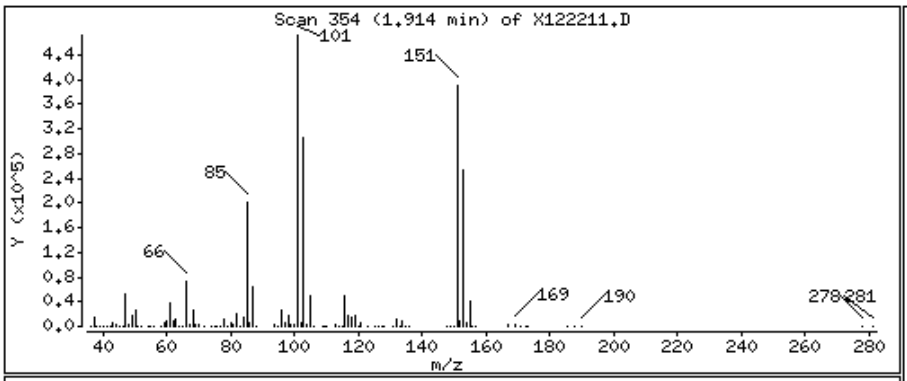
Operator: PC

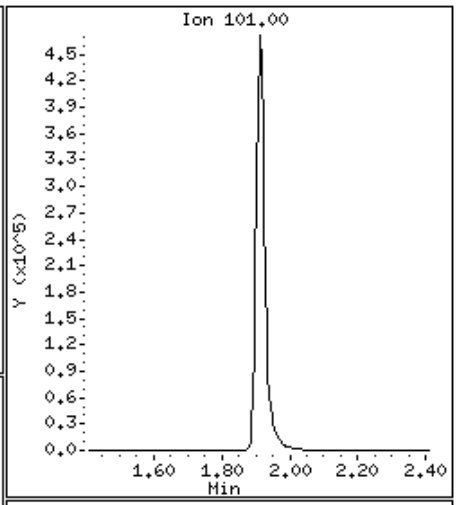
Column phase: DB624

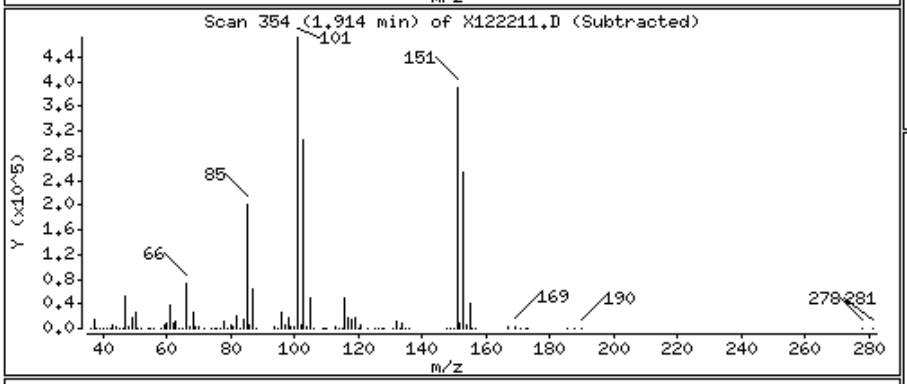
Column diameter: 0.18

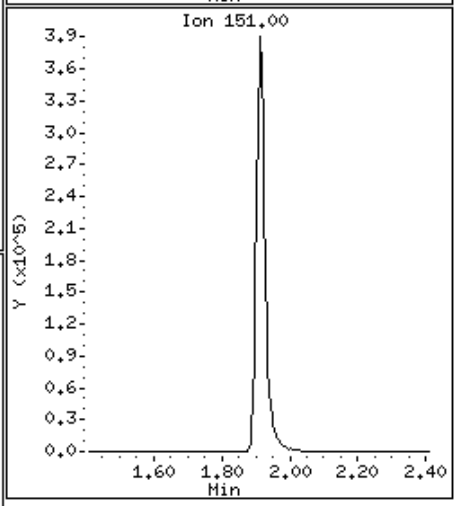
138 Freon TF

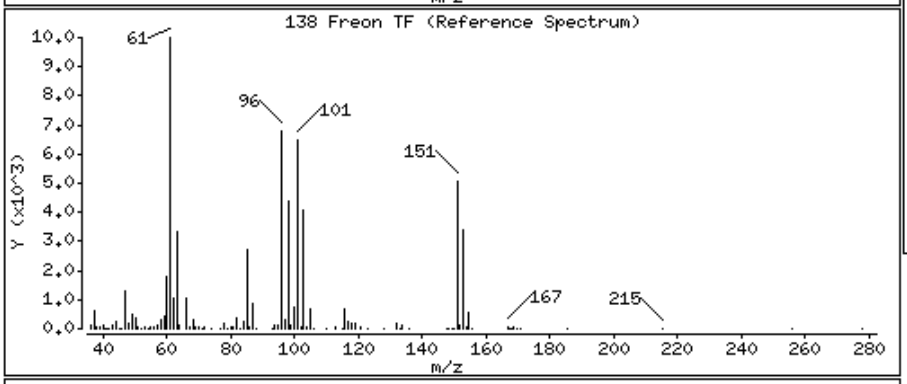
Concentration: 6350.42 ug/l

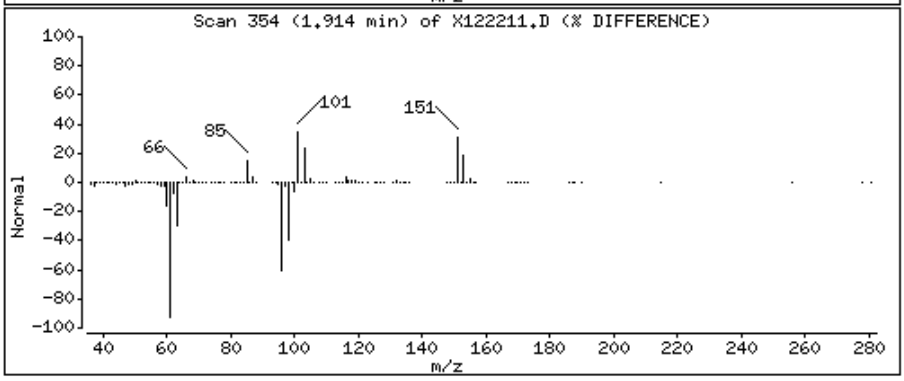












Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122211.D
Inj Date : 22-DEC-2022 13:30
InstruID : voa6.i
LabSampID : HS22121096-03

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122212.D Page 1
Report Date: 29-Dec-2022 13:40

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122212.D
Lab Smp Id: HS22121096-02MS Client Smp ID: HS22121096-02MS
Inj Date : 22-DEC-2022 13:51
Operator : PC Inst ID: voa6.i
Smp Info : HS22121096-02MS;HS22121096-02MS;3;;MS
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 29-Dec-2022 13:40 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 12 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.181	(1.000)	505821	50.0000	
135 1,4-Dioxane	88	5.598	5.598	(1.340)	15634	338.125	338.12(a)
140 1,3-Butadiene	54	1.164	1.160	(0.279)	60826	17.5213	17.52
25 Methacrylonitrile	41	3.822	3.821	(0.915)	54345	15.1732	15.17
2 Dichlorodifluoromethane	85	0.973	0.969	(0.233)	45066	13.0313	13.03
3 Chloromethane	50	1.078	1.077	(0.258)	67763	16.3635	16.36
5 Vinyl Chloride	62	1.141	1.141	(0.273)	74118	16.7740	16.77
6 Bromomethane	94	1.336	1.336	(0.320)	57490	18.3592	18.35
7 Chloroethane	64	1.404	1.400	(0.336)	49162	15.9850	15.98
8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	122668	19.8383	19.83
9 Acrolein	56	1.445	1.441	(0.346)	12597	38.2090	38.20
10 Acetone	43	1.970	1.970	(0.472)	32404	22.8047	22.80
11 1,1-Dichloroethene	96	1.913	1.910	(0.458)	70564	18.3810	18.38
15 Iodomethane	142	2.026	2.022	(0.485)	155703	33.9273	33.92
16 Acrylonitrile	53	2.532	2.532	(0.606)	44620	34.2698	34.26
17 Methylene Chloride	84	2.303	2.300	(0.551)	82260	15.6216	15.62
18 Methyl tert-butyl ether	73	2.532	2.532	(0.606)	209435	16.6672	16.66
19 Carbon Disulfide	76	2.067	2.067	(0.495)	373051	37.1413	37.14
20 trans-1,2-Dichloroethene	96	2.528	2.524	(0.605)	78879	18.3590	18.35
21 Vinyl Acetate	43	2.997	2.993	(0.717)	363108	32.9182	32.91

22 1,1-Dichloroethane	63	2.918	2.918 (0.699)	128136	16.9933	16.99
24 2-Butanone	43	3.582	3.574 (0.857)	39164	28.2529	28.25

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122212.D Page 2
Report Date: 29-Dec-2022 13:40

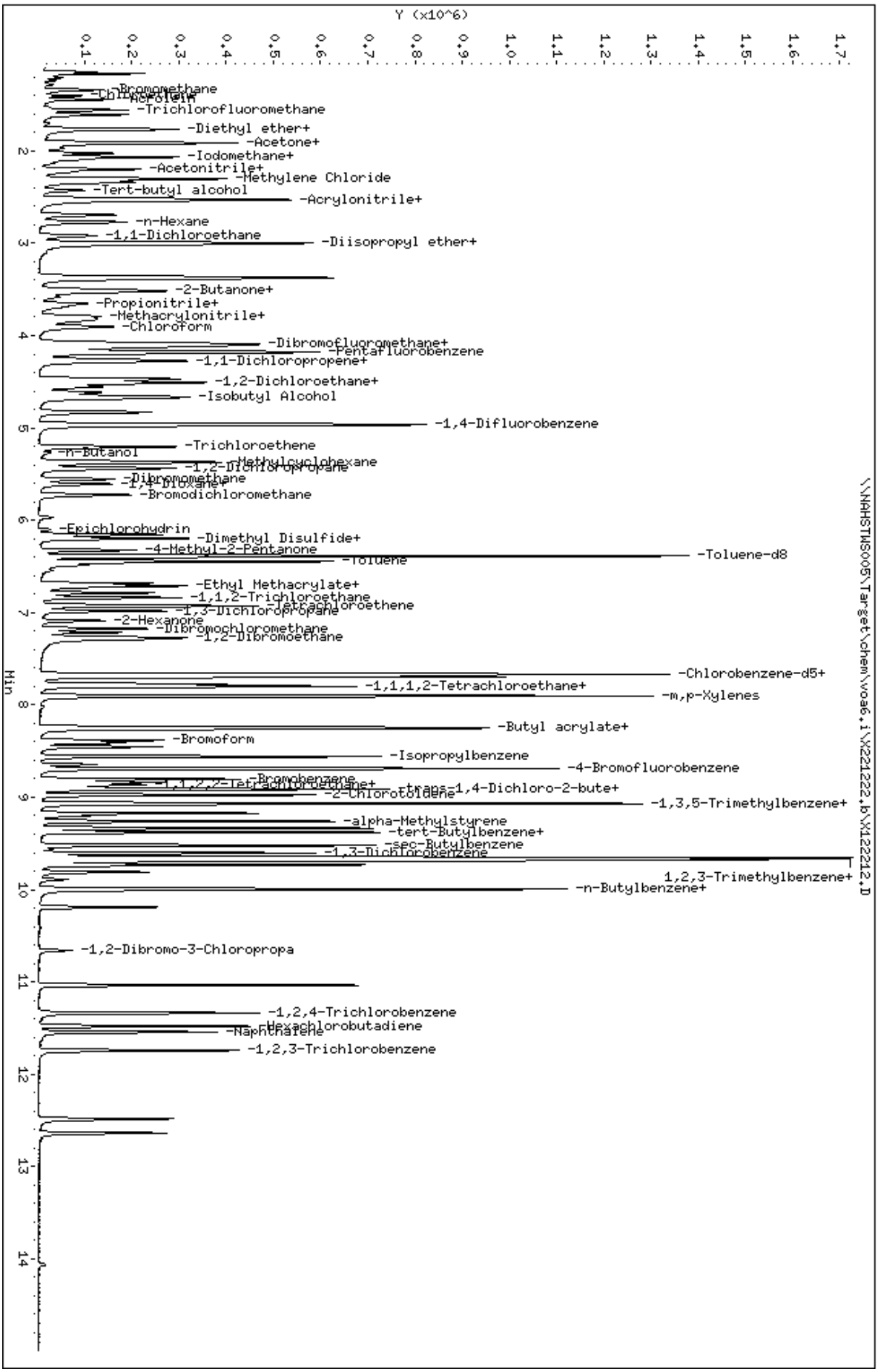
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	124856	19.5020	19.50
27	cis-1,2-Dichloroethene	96	3.525	3.522	(0.844)	94775	18.1257	18.12
28	Chloroform	83	3.900	3.900	(0.934)	146187	17.2974	17.29
29	Bromochloromethane	128	3.792	3.791	(0.908)	46345	16.1884	16.18
$ 30	Dibromofluoromethane	113	4.095	4.099	(0.980)	219917	45.2638	45.26
31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	133921	19.9721	19.97
32	1,1-Dichloropropene	75	4.283	4.279	(0.863)	112680	22.8847	22.88
33	1,2-Dichloroethane	62	4.553	4.552	(0.917)	104042	18.3094	18.30
34	Carbon Tetrachloride	117	4.264	4.264	(0.859)	113722	21.6287	21.62
$ 35	1,2-Dichloroethane-d4	65	4.466	4.470	(1.069)	219137	42.7865	42.78
* 36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	693543	50.0000	
37	Benzene	78	4.511	4.511	(0.909)	324448	19.5903	19.59
38	Trichloroethene	130	5.205	5.205	(1.048)	99203	21.1186	21.11
39	Bromodichloromethane	83	5.726	5.726	(1.153)	111998	18.0193	18.01
42	1,2-Dichloropropane	63	5.437	5.433	(1.095)	80011	18.1616	18.16
44	Dibromomethane	93	5.553	5.553	(1.119)	53277	17.7921	17.79
45	4-Methyl-2-Pentanone	43	6.326	6.322	(0.825)	113760	34.5992	34.59
46	cis-1,3-Dichloropropene	75	6.157	6.153	(1.240)	133126	18.2375	18.23
* 47	Chlorobenzene-d5	117	7.668	7.668	(1.000)	615142	50.0000	
$ 48	Toluene-d8	98	6.386	6.386	(0.833)	786438	51.7373	51.73
50	Toluene	91	6.446	6.445	(0.841)	353002	20.7615	20.76
51	trans-1,3-Dichloropropene	75	6.682	6.678	(1.346)	109588	18.0905	18.09
52	2-Hexanone	43	7.087	7.087	(0.924)	72832	32.5579	32.55
53	1,1,2-Trichloroethane	83	6.839	6.835	(0.892)	63162	18.5170	18.51
54	1,3-Dichloropropane	76	6.982	6.982	(0.911)	127181	18.9426	18.94
55	Dibromochloromethane	129	7.177	7.173	(0.936)	95448	19.3878	19.38
56	Tetrachloroethene	164	6.925	6.925	(0.903)	89400	25.4127	25.41
57	1,2-Dibromoethane	107	7.263	7.259	(0.947)	82572	19.3613	19.36
58	1-Chlorohexane	55	7.694	7.694	(1.550)	82343	24.5678	24.56
59	Chlorobenzene	112	7.694	7.694	(1.003)	241876	20.0562	20.05
60	1,1,1,2-Tetrachloroethane	131	7.773	7.773	(1.014)	89696	19.9854	19.98
61	Ethylbenzene	106	7.799	7.799	(1.017)	129114	22.7279	22.72
62	m,p-Xylenes	106	7.904	7.904	(1.031)	324301	44.2836	44.28
63	o-Xylene	106	8.241	8.241	(1.075)	153740	21.2700	21.27
64	Styrene	104	8.260	8.256	(1.077)	253011	20.8841	20.88
66	Bromoform	173	8.410	8.410	(1.097)	64685	18.9657	18.96
67	Isopropylbenzene	105	8.560	8.560	(1.116)	396008	23.9811	23.98
68	1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	98062	17.7855	17.78
$ 69	4-Bromofluorobenzene	95	8.687	8.687	(1.133)	272286	47.9254	47.92
* 70	1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	345928	50.0000	
71	1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	70554	18.3296	18.32(M)
73	n-Propylbenzene	91	8.912	8.912	(0.922)	463689	24.1992	24.19
74	Bromobenzene	156	8.807	8.803	(0.912)	118277	20.8400	20.84
75	1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	329293	23.2632	23.26
76	2-Chlorotoluene	91	8.976	8.972	(0.929)	269288	21.4165	21.41
77	4-Chlorotoluene	91	9.070	9.070	(0.939)	306058	21.3518	21.35
78	tert-Butylbenzene	119	9.336	9.336	(0.966)	290796	25.0970	25.09
79	1,2,4-Trimethylbenzene	105	9.381	9.377	(0.971)	326003	21.8882	21.88
81	sec-Butylbenzene	105	9.519	9.519	(0.985)	408293	26.4837	26.48
82	p-Isopropyltoluene	119	9.651	9.647	(0.999)	356964	25.8391	25.83
83	1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	207257	22.0018	22.00
84	1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	215564	20.9706	20.97

87 n-Butylbenzene	91	9.996	9.992 (1.035)	306282	23.9630	23.96
88 1,2-Dichlorobenzene	146	9.992	9.992 (1.034)	199756	20.5901	20.59

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
	89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	16555	18.8383	18.83
	90 1,2,4-Trichlorobenzene	180	11.338	11.337	(1.173)	141639	23.1340	23.13
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	75058	27.7860	27.78
	92 Naphthalene	128	11.544	11.540	(1.195)	283671	20.3636	20.36
	93 1,2,3-Trichlorobenzene	180	11.742	11.739	(1.215)	128820	21.9687	21.96
M	94 1,2-Dichloroethylene (total)	96				173654	36.4847	36.48
M	95 Xylenes (total)	106				478041	65.5536	65.55
	141 Cyclohexane	56	4.121	4.118	(0.987)	125689	25.2910	25.29
	138 Freon TF	101	1.913	1.910	(0.458)	87453	23.5529	23.55
	147 Methylcyclohexane	55	5.381	5.377	(1.084)	192002	22.6163	22.61
	146 Methyl Acetate	43	2.232	2.228	(0.534)	34671	15.2328	15.23
	148 Tert-Butyl alcohol	59	2.427	2.427	(0.581)	109216	311.826	311.82
	149 Isopropyl Alcohol	45	2.093	2.093	(0.501)	59447	324.996	324.99

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122212.D
Date : 22-DEC-2022 13:51
Client ID: HS221210%-02HS
Sample Info: HS221210%-02HS;HS221210%-02HS;3;;HS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

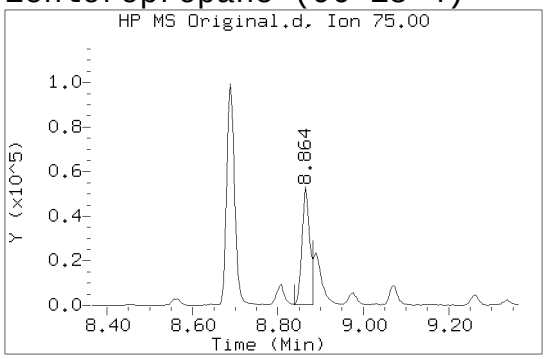
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122212.D
Inj Date : 22-DEC-2022 13:51
InstruID : voa6.i
LabSampID : HS22121096-02MS

1,2,3-Trichloropropane (96-18-4)

Reason Code:

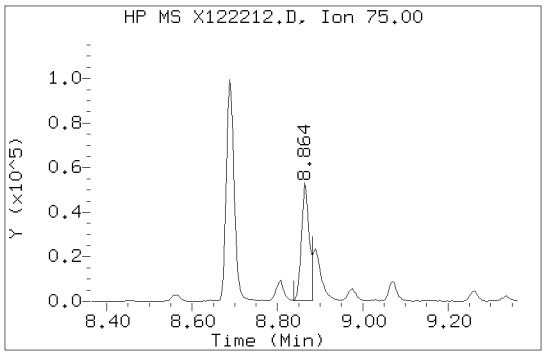
BEFORE

MASS
75
AREA
70554
HEIGHT
53097
29-Dec-2022
13:40
linh
pham



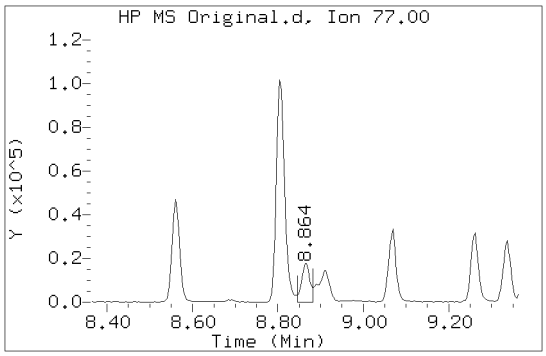
AFTER

MASS
75
AREA
70554
HEIGHT
53097
29-Dec-2022
13:40
linh
pham



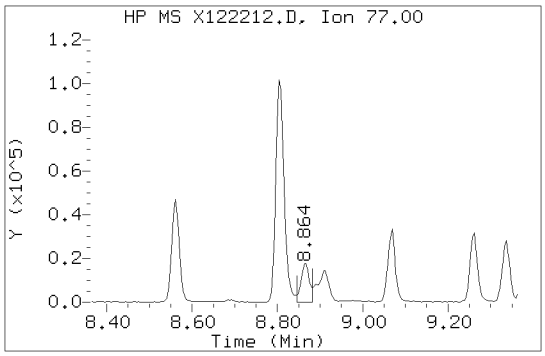
BEFORE

MASS
77
AREA
25436
HEIGHT
17383
29-Dec-2022
13:40
linh
pham



AFTER

MASS
77
AREA
25436
HEIGHT
17383
29-Dec-2022
13:40
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122213.D Page 1
Report Date: 29-Dec-2022 13:40

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122213.D
Lab Smp Id: HS22121096-02MSD Client Smp ID: HS22121096-02MSD
Inj Date : 22-DEC-2022 14:12
Operator : PC Inst ID: voa6.i
Smp Info : HS22121096-02MSD;HS22121096-02MSD;3;;MSD
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 29-Dec-2022 13:40 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 12 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.177	4.181	(1.000)	500496	50.0000	
135 1,4-Dioxane	88	5.598	5.598	(1.340)	15878	347.056	347.05(a)
140 1,3-Butadiene	54	1.164	1.160	(0.279)	59320	17.2693	17.26
25 Methacrylonitrile	41	3.821	3.821	(0.915)	54008	15.2396	15.23
2 Dichlorodifluoromethane	85	0.972	0.969	(0.233)	47157	13.7584	13.75
3 Chloromethane	50	1.077	1.077	(0.258)	64460	15.8170	15.81
5 Vinyl Chloride	62	1.141	1.141	(0.273)	73393	16.7866	16.78
6 Bromomethane	94	1.336	1.336	(0.320)	55456	17.9424	17.94
7 Chloroethane	64	1.403	1.400	(0.336)	49525	16.2744	16.27
8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	121661	19.8847	19.88
9 Acrolein	56	1.445	1.441	(0.346)	10909	33.7931	33.79
10 Acetone	43	1.973	1.970	(0.472)	33156	23.5833	23.58
11 1,1-Dichloroethene	96	1.913	1.910	(0.458)	70318	18.5118	18.51
15 Iodomethane	142	2.026	2.022	(0.485)	164850	36.0416	36.04
16 Acrylonitrile	53	2.536	2.532	(0.607)	45876	35.6093	35.60
17 Methylene Chloride	84	2.299	2.300	(0.550)	82815	15.8943	15.89
18 Methyl tert-butyl ether	73	2.532	2.532	(0.606)	212414	17.0841	17.08
19 Carbon Disulfide	76	2.067	2.067	(0.495)	366390	36.8662	36.86
20 trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	79003	18.5835	18.58
21 Vinyl Acetate	43	2.997	2.993	(0.717)	361913	33.1590	33.15

22 1,1-Dichloroethane	63	2.918	2.918 (0.699)	128540	17.2282	17.22
24 2-Butanone	43	3.585	3.574 (0.858)	41017	29.7276	29.72

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122213.D Page 2
Report Date: 29-Dec-2022 13:40

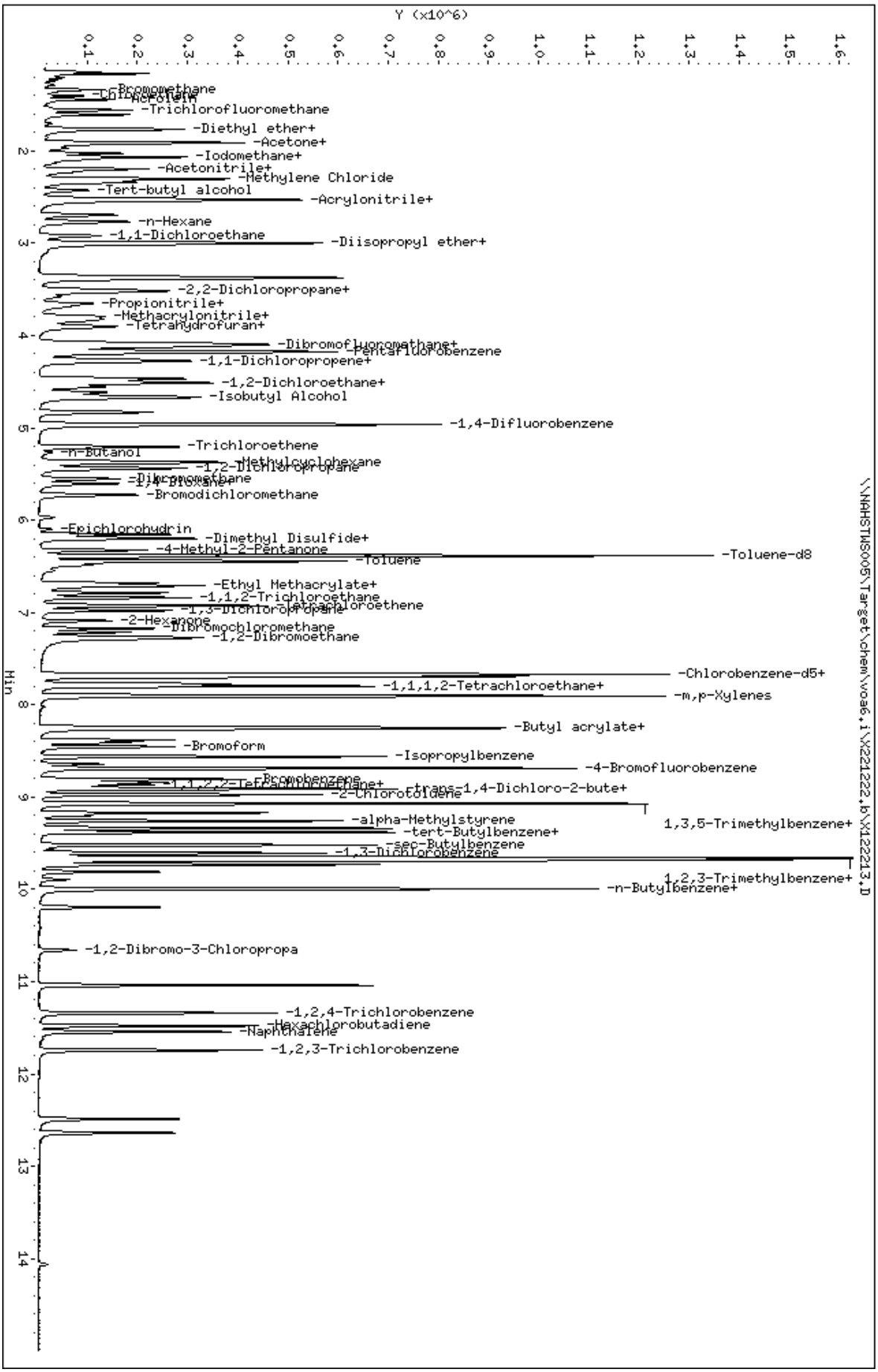
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
26	2,2-Dichloropropane	77	3.506	3.507	(0.839)	120533	19.0270	19.02
27	cis-1,2-Dichloroethene	96	3.525	3.522	(0.844)	90999	17.5887	17.58
28	Chloroform	83	3.904	3.900	(0.935)	143390	17.1470	17.14
29	Bromochloromethane	128	3.791	3.791	(0.908)	46456	16.3998	16.39
$ 30	Dibromofluoromethane	113	4.095	4.099	(0.980)	210538	43.7890	43.78
31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	126691	19.0948	19.09
32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	108562	22.5854	22.58
33	1,2-Dichloroethane	62	4.556	4.552	(0.918)	103904	18.7304	18.73
34	Carbon Tetrachloride	117	4.264	4.264	(0.859)	112548	21.9267	21.92
$ 35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	218044	43.0245	43.02
* 36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	677054	50.0000	
37	Benzene	78	4.511	4.511	(0.909)	311754	19.2823	19.28
38	Trichloroethene	130	5.205	5.205	(1.048)	95341	20.7908	20.79
39	Bromodichloromethane	83	5.726	5.726	(1.153)	109245	18.0044	18.00
42	1,2-Dichloropropane	63	5.437	5.433	(1.095)	77800	18.0899	18.08
44	Dibromomethane	93	5.549	5.553	(1.118)	53141	18.1789	18.17
45	4-Methyl-2-Pentanone	43	6.325	6.322	(0.825)	115850	36.2201	36.22
46	cis-1,3-Dichloropropene	75	6.157	6.153	(1.240)	131322	18.4285	18.42
* 47	Chlorobenzene-d5	117	7.667	7.668	(1.000)	598410	50.0000	
$ 48	Toluene-d8	98	6.385	6.386	(0.833)	766952	51.8662	51.86
50	Toluene	91	6.445	6.445	(0.841)	342081	20.6818	20.68
51	trans-1,3-Dichloropropene	75	6.682	6.678	(1.346)	107484	18.1753	18.17
52	2-Hexanone	43	7.086	7.087	(0.924)	77545	35.6339	35.63
53	1,1,2-Trichloroethane	83	6.839	6.835	(0.892)	63620	19.1727	19.17
54	1,3-Dichloropropane	76	6.981	6.982	(0.911)	124458	19.0554	19.05
55	Dibromochloromethane	129	7.176	7.173	(0.936)	94774	19.7892	19.78
56	Tetrachloroethene	164	6.929	6.925	(0.904)	87309	25.5123	25.51
57	1,2-Dibromoethane	107	7.263	7.259	(0.947)	83428	20.1089	20.10
58	1-Chlorohexane	55	7.694	7.694	(1.550)	78359	23.9485	23.94
59	Chlorobenzene	112	7.694	7.694	(1.003)	234148	19.9582	19.95
60	1,1,1,2-Tetrachloroethane	131	7.772	7.773	(1.014)	87742	20.0967	20.09
61	Ethylbenzene	106	7.799	7.799	(1.017)	125183	22.6521	22.65
62	m,p-Xylenes	106	7.904	7.904	(1.031)	313238	43.9689	43.96
63	o-Xylene	106	8.241	8.241	(1.075)	149576	21.2726	21.27
64	Styrene	104	8.260	8.256	(1.077)	244036	20.7065	20.70
66	Bromoform	173	8.410	8.410	(1.097)	66128	19.9309	19.93
67	Isopropylbenzene	105	8.560	8.560	(1.116)	382758	23.8268	23.82
68	1,1,2,2-Tetrachloroethane	83	8.841	8.837	(0.915)	100758	19.6312	19.63
$ 69	4-Bromofluorobenzene	95	8.687	8.687	(1.133)	260454	47.1257	47.12
* 70	1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	322020	50.0000	
71	1,2,3-Trichloropropane	75	8.867	8.863	(0.918)	71591	19.9799	19.97(M)
73	n-Propylbenzene	91	8.912	8.912	(0.922)	447261	25.0748	25.07
74	Bromobenzene	156	8.807	8.803	(0.912)	117251	22.1931	22.19
75	1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	317561	24.1000	24.10
76	2-Chlorotoluene	91	8.976	8.972	(0.929)	261031	22.3011	22.30
77	4-Chlorotoluene	91	9.069	9.070	(0.939)	296311	22.2066	22.20
78	tert-Butylbenzene	119	9.336	9.336	(0.966)	279462	25.9095	25.90
79	1,2,4-Trimethylbenzene	105	9.381	9.377	(0.971)	318157	22.9473	22.94
81	sec-Butylbenzene	105	9.519	9.519	(0.985)	394072	27.4591	27.45
82	p-Isopropyltoluene	119	9.650	9.647	(0.999)	347675	27.0352	27.03
83	1,3-Dichlorobenzene	146	9.605	9.606	(0.994)	203483	23.2050	23.20
84	1,4-Dichlorobenzene	146	9.684	9.681	(1.002)	211767	22.1307	22.13

87 n-Butylbenzene	91	9.995	9.992 (1.035)	296386	24.8402	24.84
88 1,2-Dichlorobenzene	146	9.992	9.992 (1.034)	197573	21.8771	21.87

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
	89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	16637	20.3298	20.32
	90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	139284	24.4384	24.43
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	74525	29.6274	29.62
	92 Naphthalene	128	11.544	11.540	(1.195)	283442	21.8578	21.85
	93 1,2,3-Trichlorobenzene	180	11.742	11.739	(1.215)	131712	24.1295	24.12
M	94 1,2-Dichloroethylene (total)	96				170002	36.1722	36.17
M	95 Xylenes (total)	106				462814	65.2414	65.24
	141 Cyclohexane	56	4.117	4.118	(0.986)	120545	24.5527	24.55
	138 Freon TF	101	1.913	1.910	(0.458)	85346	23.2300	23.23
	147 Methylcyclohexane	55	5.381	5.377	(1.084)	189745	22.8948	22.89
	146 Methyl Acetate	43	2.232	2.228	(0.534)	36854	16.3642	16.36
	148 Tert-Butyl alcohol	59	2.427	2.427	(0.581)	116703	336.747	336.74
	149 Isopropyl Alcohol	45	2.093	2.093	(0.501)	62044	342.803	342.80

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTMS005\Target\chem\voa6.i\X221222.b\X122213.D
Date : 22-DEC-2022 14:12
Client ID: HS22121096-02HSD
Sample Info: HS22121096-02HSD;HS22121096-02HSD;3;;HSD
Purge Volume: 5.0
Column phase: DB624

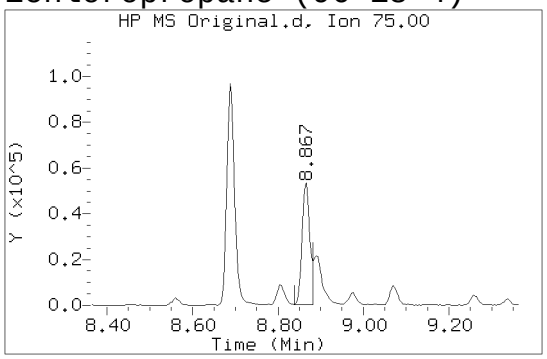
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122213.D
Inj Date : 22-DEC-2022 14:12
InstruID : voa6.i
LabSampID : HS22121096-02MSD

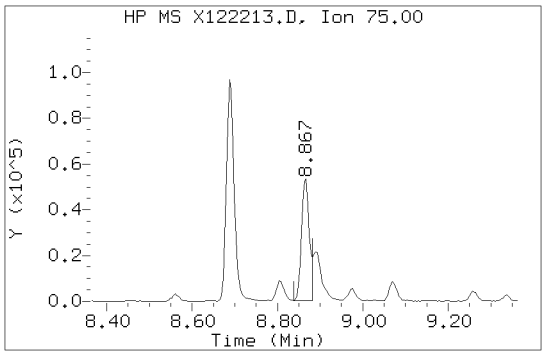
1,2,3-Trichloropropane (96-18-4)

Reason Code:

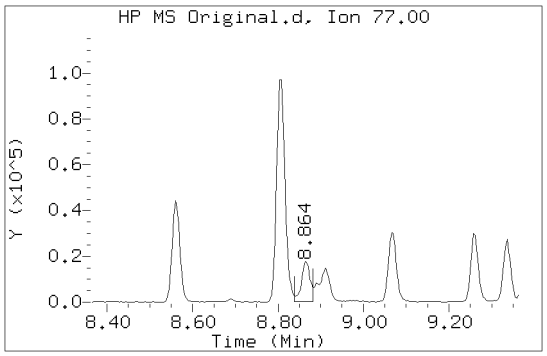
BEFORE
MASS
75
AREA
71591
HEIGHT
53188
29-Dec-2022
13:40
linh
pham



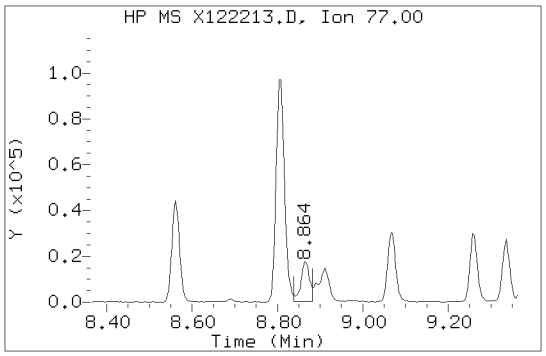
AFTER
MASS
75
AREA
71591
HEIGHT
53188
29-Dec-2022
13:40
linh
pham



BEFORE
MASS
77
AREA
26152
HEIGHT
17516
29-Dec-2022
13:40
linh
pham



AFTER
MASS
77
AREA
26152
HEIGHT
17516
29-Dec-2022
13:40
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122214.D Page 1
Report Date: 29-Dec-2022 13:40

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122214.D
Lab Smp Id: HS22121096-03 Client Smp ID: HS22121096-03
Inj Date : 22-DEC-2022 14:33
Operator : PC Inst ID: voa6.i
Smp Info : HS22121096-03;HS22121096-03;;;
Misc Info : V6;WATER;0;250;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 29-Dec-2022 13:40 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 13
Dil Factor: 250.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

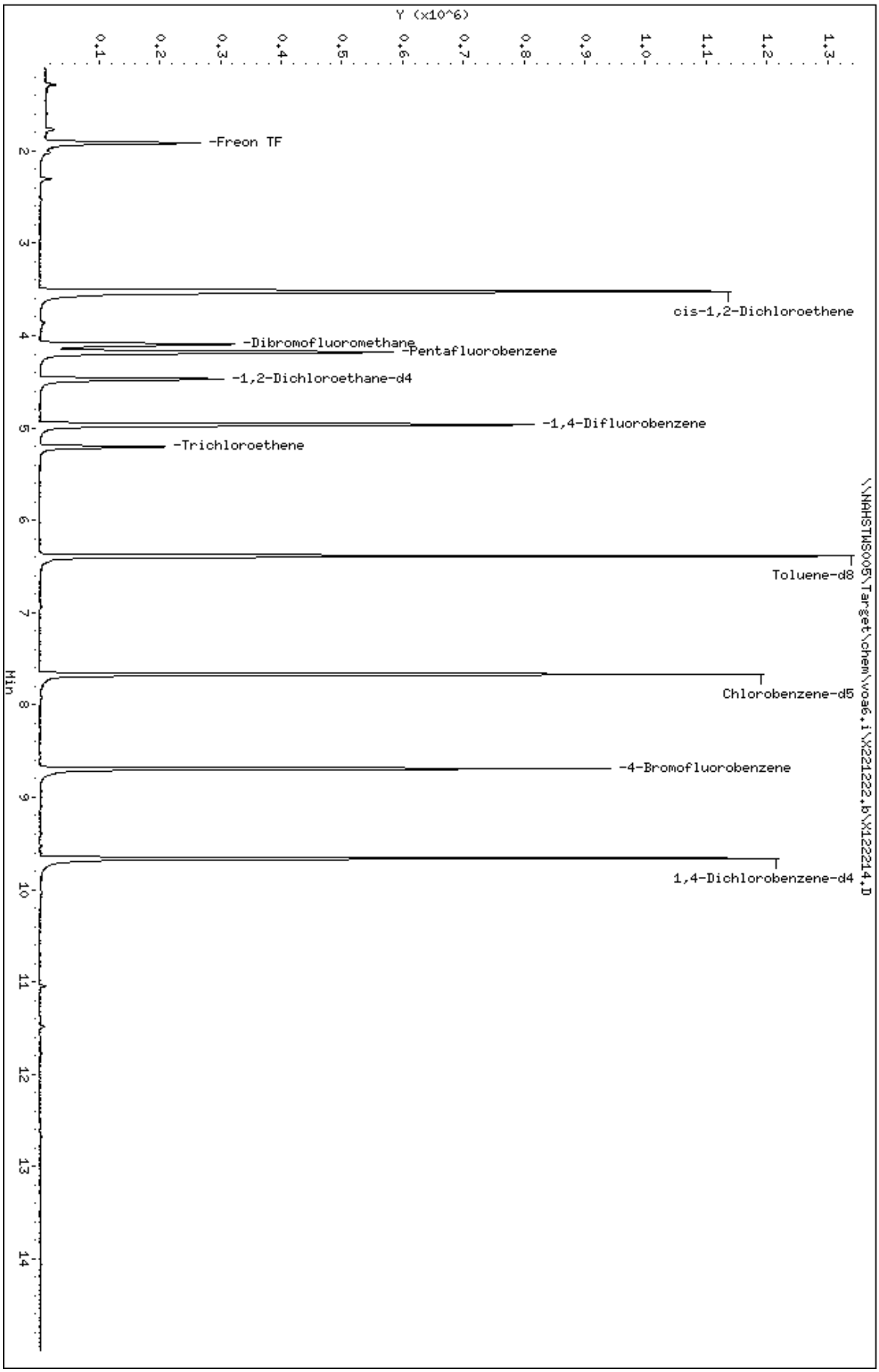
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	250.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.181	(1.000)	499857	50.0000	
27 cis-1,2-Dichloroethene	96	3.522	3.522	(0.843)	611944	118.431	29607.68
$ 30 Dibromofluoromethane	113	4.095	4.099	(0.980)	221803	46.2001	46.20
$ 35 1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	228225	45.0780	45.07
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	693402	50.0000	
38 Trichloroethene	130	5.205	5.205	(1.048)	71326	15.1872	3796.79
* 47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	608118	50.0000	
$ 48 Toluene-d8	98	6.386	6.386	(0.833)	787814	52.4265	52.42
$ 69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	269253	47.9390	47.93
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	313550	50.0000	
M 94 1,2-Dichloroethylene (total)	96				611944	118.431	29607.68
138 Freon TF	101	1.913	1.910	(0.458)	94198	25.6722	6418.04(M)

QC Flag Legend

M - Compound response manually integrated.



Data File: \\NAHSTMS005\Target\chem\voa6.i\X221222.b\X122214.D
Date : 22-DEC-2022 14:33
Client ID: HS22121096-03
Sample Info: HS22121096-03;HS22121096-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122214.D Page 2

Date : 22-DEC-2022 14:33

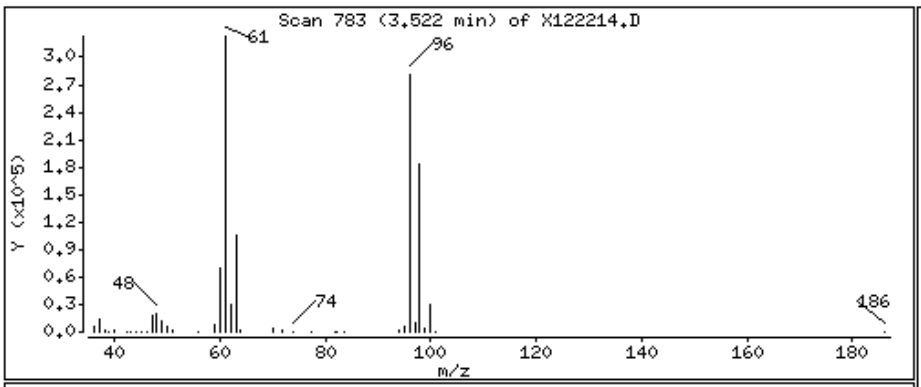
Client ID: HS22121096-03 Instrument: voa6.i

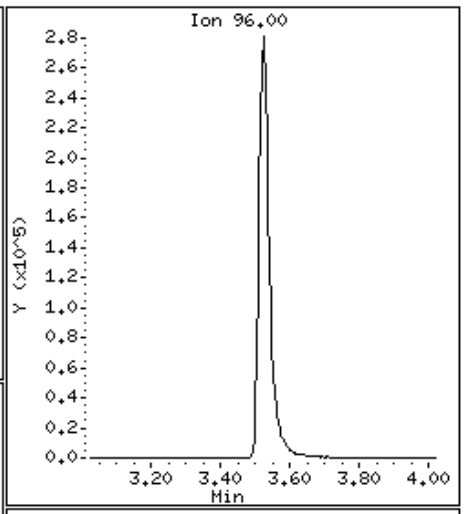
Sample Info: HS22121096-03;HS22121096-03;;;

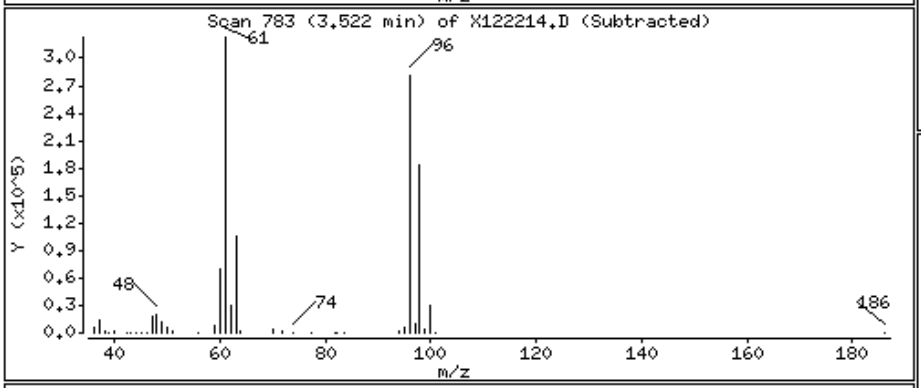
Purge Volume: 5.0 Operator: PC

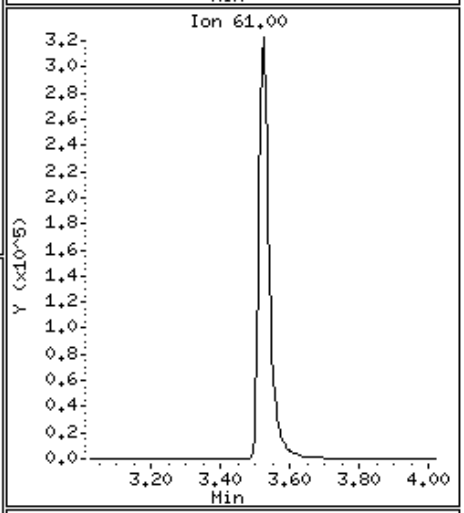
Column phase: DB624 Column diameter: 0.18

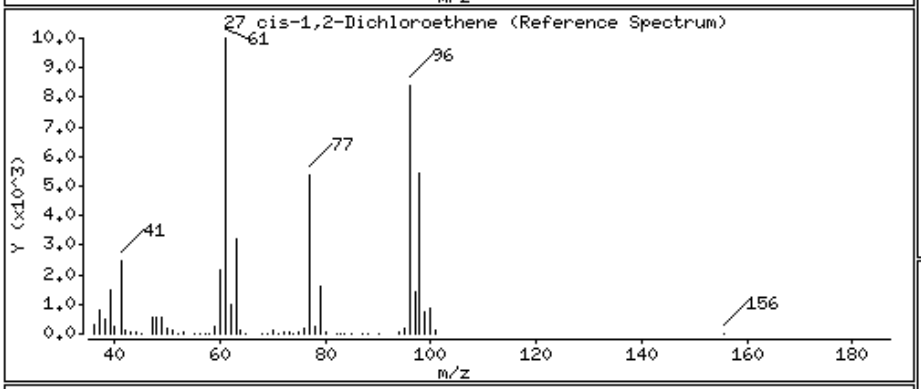
27 cis-1,2-Dichloroethene Concentration: 29607.68 ug/l

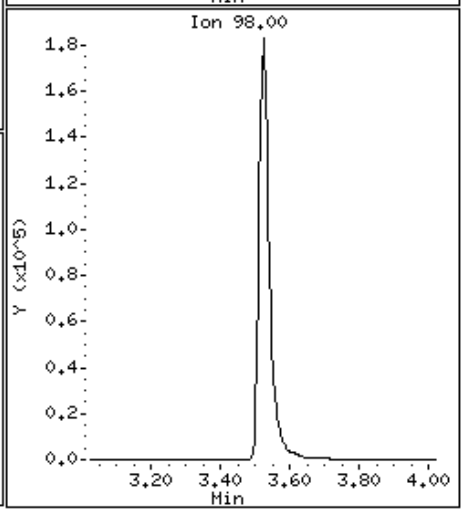


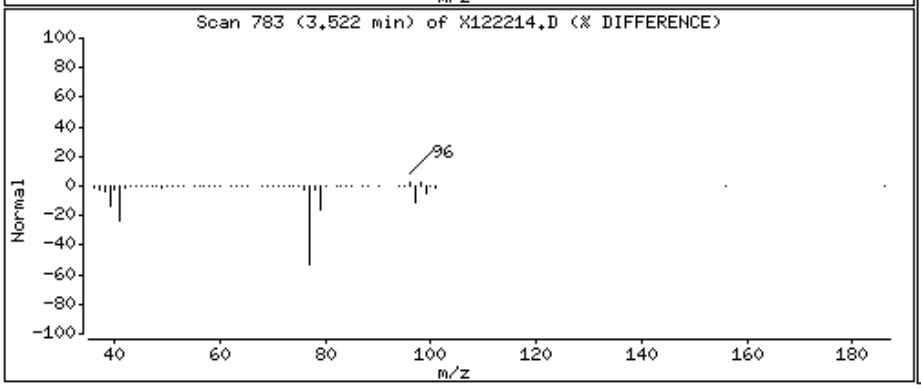












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122214.D Page 3

Date : 22-DEC-2022 14:33

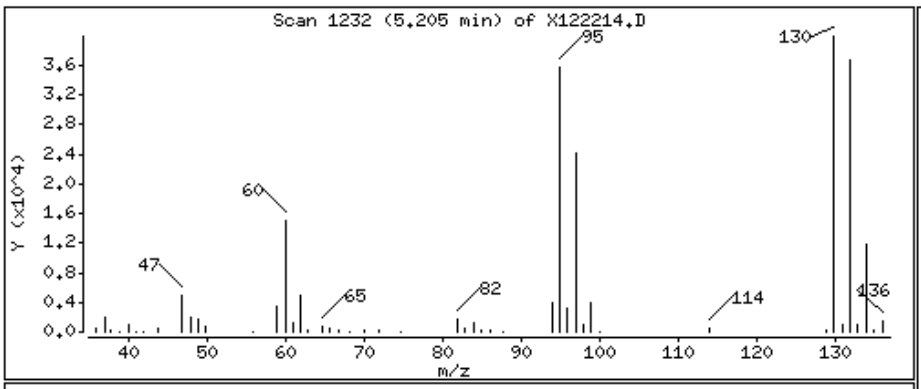
Client ID: HS22121096-03 Instrument: voa6.i

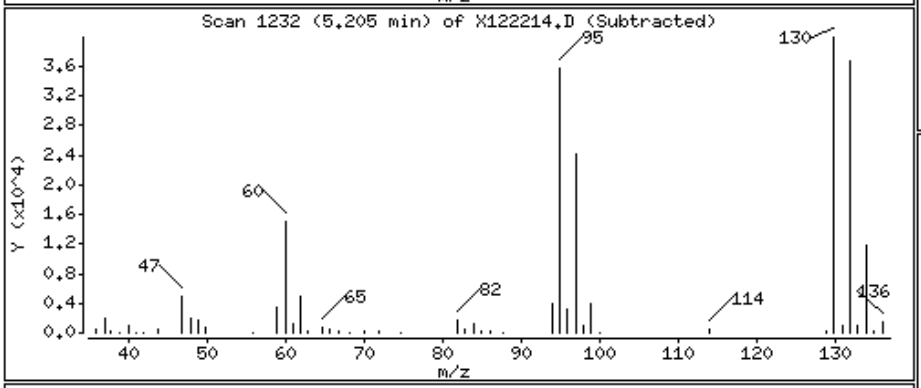
Sample Info: HS22121096-03;HS22121096-03;;;

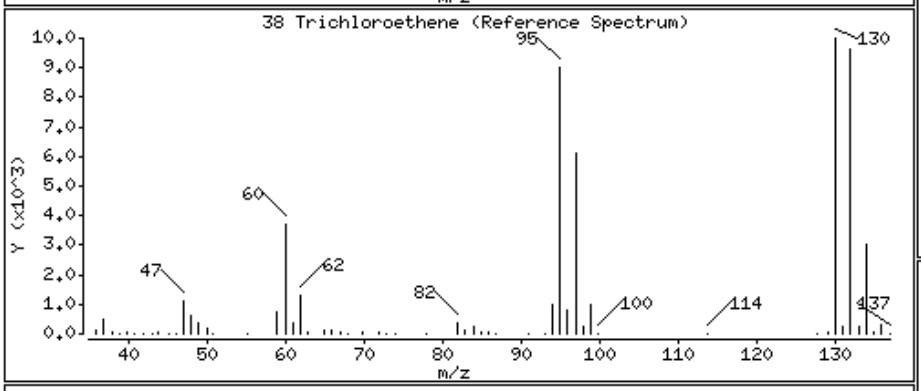
Purge Volume: 5.0 Operator: PC

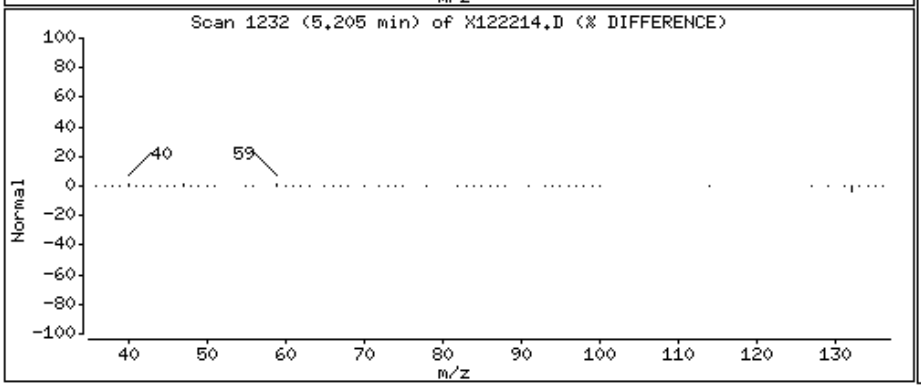
Column phase: DB624 Column diameter: 0.18

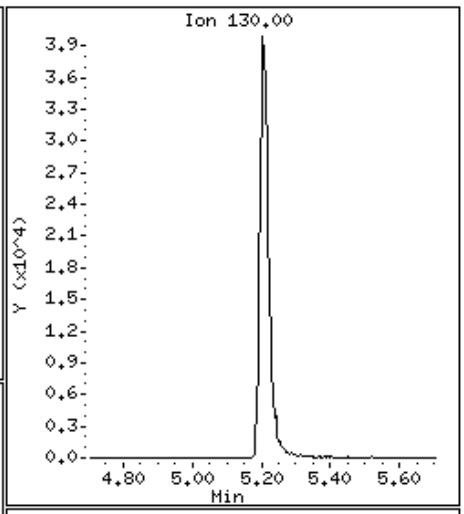
38 Trichloroethene Concentration: 3796.79 ug/l

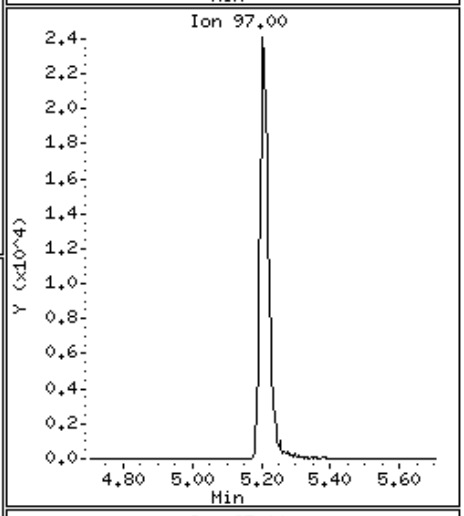


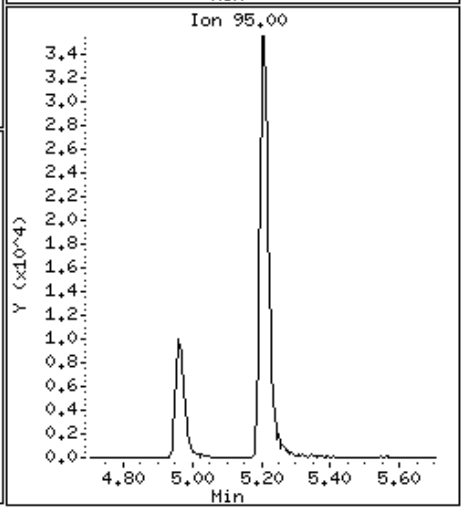












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122214.D Page 4

Date : 22-DEC-2022 14:33

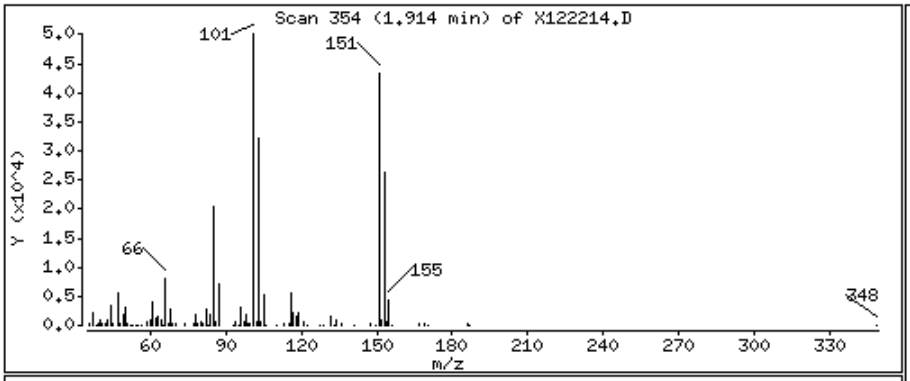
Client ID: HS22121096-03 Instrument: voa6.i

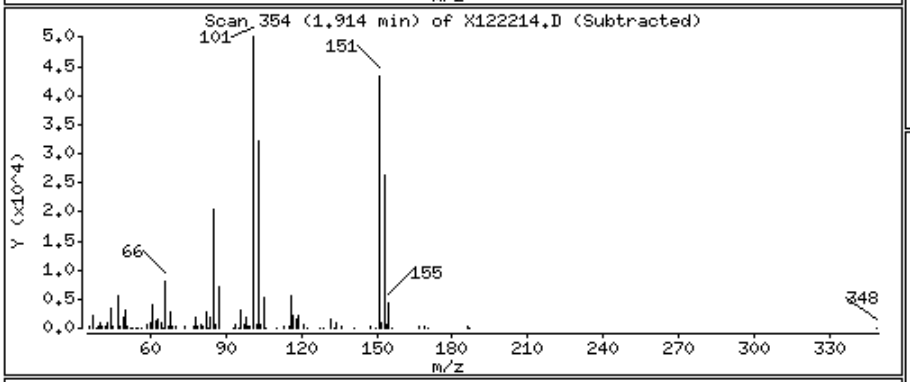
Sample Info: HS22121096-03;HS22121096-03;;;

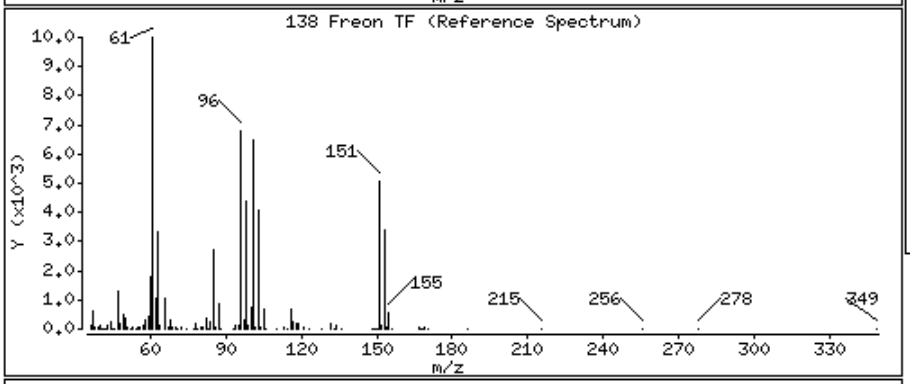
Purge Volume: 5.0 Operator: PC

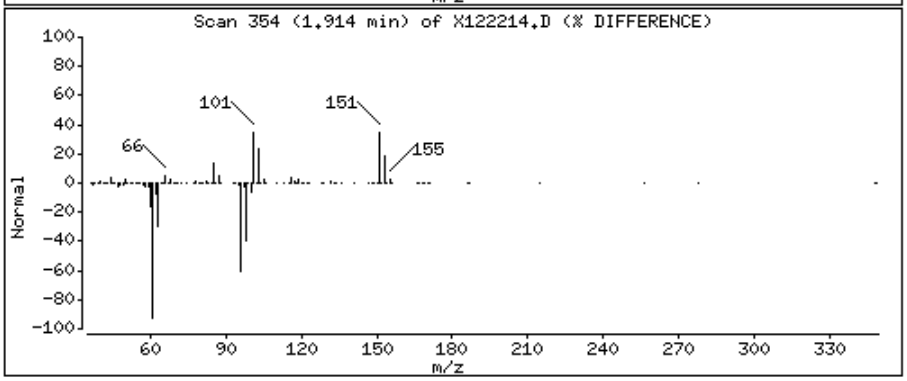
Column phase: DB624 Column diameter: 0.18

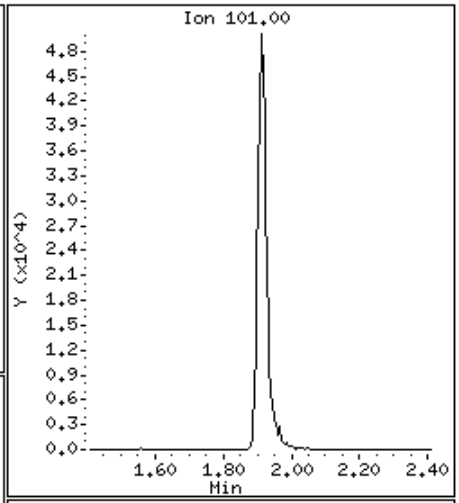
138 Freon TF Concentration: 6418.04 ug/l

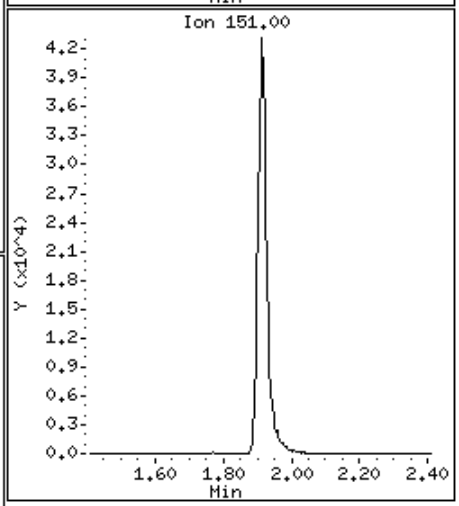












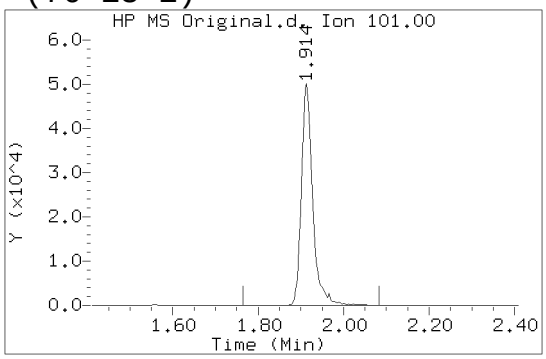
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122214.D
Inj Date : 22-DEC-2022 14:33
InstruID : voa6.i
LabSampID : HS22121096-03

Freon TF (76-13-1)

Reason Code:

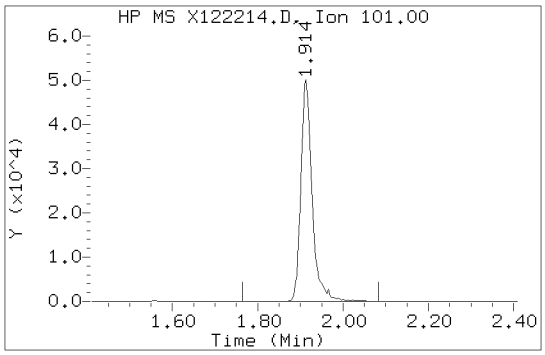
BEFORE

MASS
101
AREA
94198
HEIGHT
50112
29-Dec-2022
13:40
linh
pham



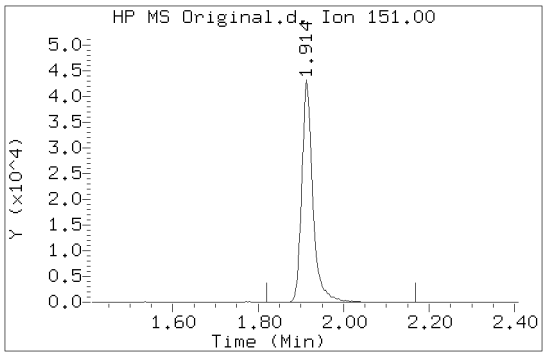
AFTER

MASS
101
AREA
94198
HEIGHT
50112
29-Dec-2022
13:40
linh
pham



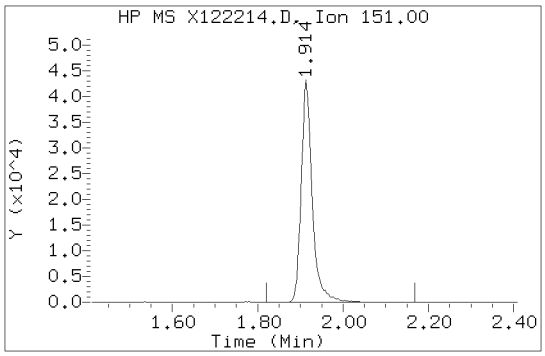
BEFORE

MASS
151
AREA
79207
HEIGHT
43176
29-Dec-2022
13:40
linh
pham



AFTER

MASS
151
AREA
79207
HEIGHT
43176
29-Dec-2022
13:40
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122215.D Page 1
Report Date: 29-Dec-2022 13:40

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122215.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 22-DEC-2022 14:54
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\8260W.m
Meth Date : 29-Dec-2022 13:40 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 14 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.177	4.177	(1.000)	443350	50.0000	
135 1,4-Dioxane	88	5.598	5.598	(1.340)	35861	1000.00	884.87
140 1,3-Butadiene	54	1.163	1.163	(0.279)	157643	50.0000	51.80
25 Methacrylonitrile	41	3.814	3.814	(0.913)	122849	50.0000	39.13
2 Dichlorodifluoromethane	85	0.972	0.972	(0.233)	178281	50.0000	57.43
3 Chloromethane	50	1.077	1.077	(0.258)	189589	50.0000	47.38
5 Vinyl Chloride	62	1.141	1.141	(0.273)	195773	50.0000	50.54
6 Bromomethane	94	1.340	1.340	(0.321)	130008	50.0000	44.58
7 Chloroethane	64	1.403	1.403	(0.336)	123367	50.0000	45.76
8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	287307	50.0000	53.01
9 Acrolein	56	1.441	1.441	(0.345)	26190	100.000	86.76
10 Acetone	43	1.969	1.969	(0.472)	115597	100.000	92.92
11 1,1-Dichloroethene	96	1.913	1.913	(0.458)	167775	50.0000	49.86
15 Iodomethane	142	2.026	2.026	(0.485)	461566	100.000	103.77
16 Acrylonitrile	53	2.532	2.532	(0.606)	102664	100.000	89.96
17 Methylene Chloride	84	2.303	2.303	(0.551)	204645	50.0000	44.33
18 Methyl tert-butyl ether	73	2.532	2.532	(0.606)	467622	50.0000	42.45
19 Carbon Disulfide	76	2.067	2.067	(0.495)	884130	100.000	100.42
20 trans-1,2-Dichloroethene	96	2.528	2.528	(0.605)	181941	50.0000	48.31
21 Vinyl Acetate	43	2.997	2.997	(0.717)	763996	100.000	79.02

22 1,1-Dichloroethane	63	2.922	2.922 (0.699)	302954	50.0000	45.83
24 2-Butanone	43	3.574	3.574 (0.856)	118649	100.000	90.22

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122215.D Page 2
Report Date: 29-Dec-2022 13:40

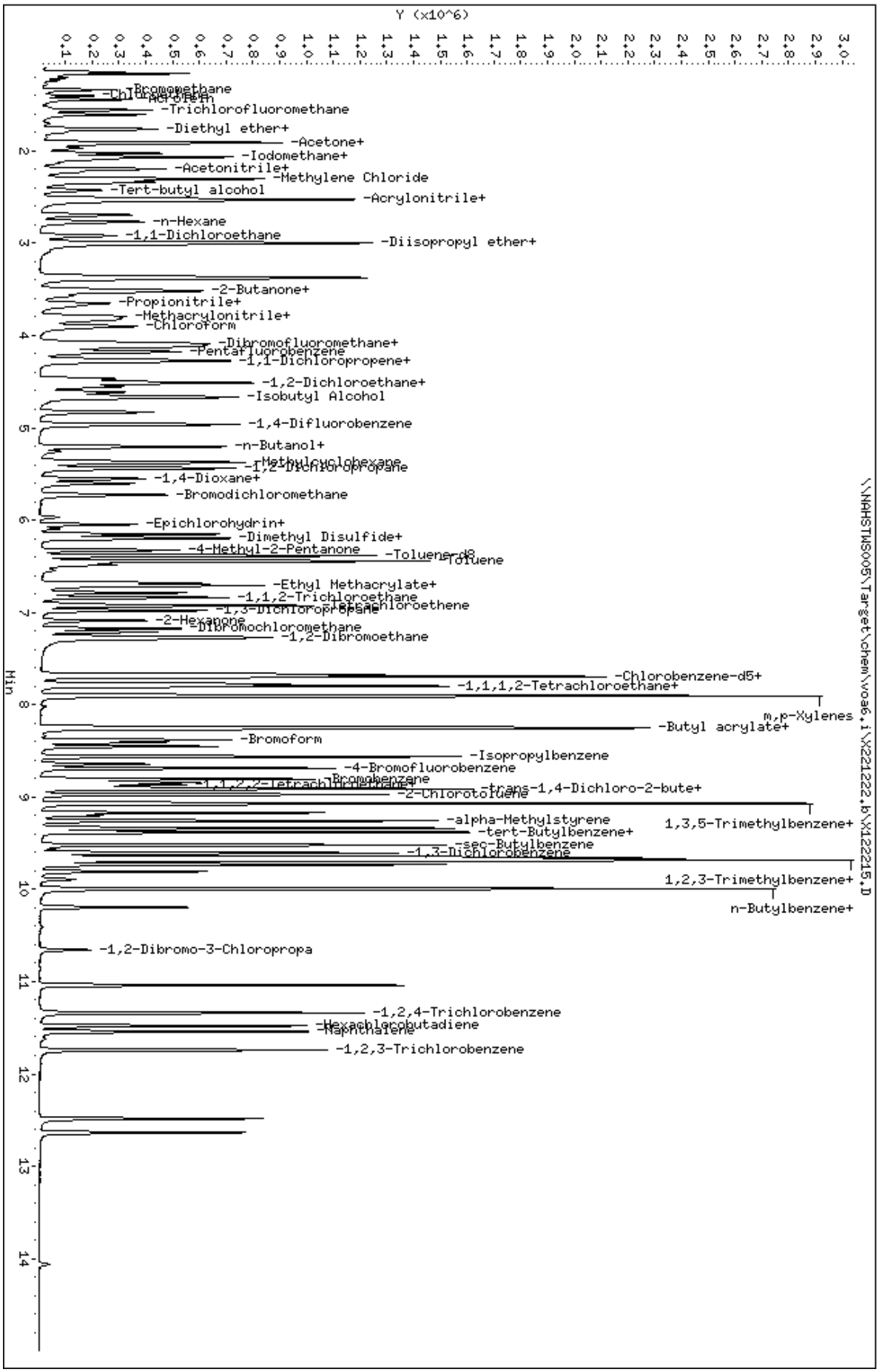
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
26	2,2-Dichloropropane	77	3.506	3.506	(0.839)	265524	50.0000	47.31
27	cis-1,2-Dichloroethene	96	3.525	3.525	(0.844)	208209	50.0000	45.43
28	Chloroform	83	3.904	3.904	(0.935)	337223	50.0000	45.52
29	Bromochloromethane	128	3.791	3.791	(0.908)	110608	50.0000	44.07
$ 30	Dibromofluoromethane	113	4.095	4.095	(0.980)	201517	50.0000	47.32
31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	294452	50.0000	50.10
32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	251303	50.0000	56.07
33	1,2-Dichloroethane	62	4.552	4.552	(0.917)	244282	50.0000	47.22
34	Carbon Tetrachloride	117	4.260	4.260	(0.858)	259712	50.0000	54.26
$ 35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	206347	50.0000	45.94
* 36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	631304	50.0000	
37	Benzene	78	4.511	4.511	(0.909)	737476	50.0000	48.91
38	Trichloroethene	130	5.205	5.205	(1.048)	229753	50.0000	53.73
39	Bromodichloromethane	83	5.726	5.726	(1.153)	264565	50.0000	46.76
41	2-Chloroethylvinyl ether	63	6.048	6.048	(1.218)	142259	100.000	88.38
42	1,2-Dichloropropane	63	5.433	5.433	(1.094)	187528	50.0000	46.76
44	Dibromomethane	93	5.553	5.553	(1.119)	127224	50.0000	46.67
45	4-Methyl-2-Pentanone	43	6.325	6.325	(0.825)	282436	100.000	90.00
46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	319559	50.0000	48.09
* 47	Chlorobenzene-d5	117	7.667	7.667	(1.000)	587116	50.0000	
$ 48	Toluene-d8	98	6.385	6.385	(0.833)	722658	50.0000	49.81
50	Toluene	91	6.445	6.445	(0.841)	804349	50.0000	49.56
51	trans-1,3-Dichloropropene	75	6.681	6.681	(1.346)	263713	50.0000	47.82
52	2-Hexanone	43	7.086	7.086	(0.924)	199755	100.000	93.55
53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	150942	50.0000	46.36
54	1,3-Dichloropropane	76	6.981	6.981	(0.911)	302530	50.0000	47.21
55	Dibromochloromethane	129	7.173	7.173	(0.935)	230694	50.0000	49.09
56	Tetrachloroethene	164	6.925	6.925	(0.903)	199056	50.0000	59.28
57	1,2-Dibromoethane	107	7.259	7.259	(0.947)	200546	50.0000	49.26
58	1-Chlorohexane	55	7.694	7.694	(1.550)	164749	50.0000	54.00
59	Chlorobenzene	112	7.694	7.694	(1.003)	551170	50.0000	47.88
60	1,1,1,2-Tetrachloroethane	131	7.772	7.772	(1.014)	213135	50.0000	49.75
61	Ethylbenzene	106	7.799	7.799	(1.017)	287463	50.0000	53.01
62	m,p-Xylenes	106	7.904	7.904	(1.031)	718757	100.000	102.83
63	o-Xylene	106	8.241	8.241	(1.075)	347508	50.0000	50.37
64	Styrene	104	8.260	8.260	(1.077)	589156	50.0000	50.95
66	Bromoform	173	8.410	8.410	(1.097)	164213	50.0000	50.44
67	Isopropylbenzene	105	8.560	8.560	(1.116)	871013	50.0000	55.26
68	1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	231114	50.0000	43.89
$ 69	4-Bromofluorobenzene	95	8.687	8.687	(1.133)	262757	50.0000	48.45
* 70	1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	330349	50.0000	
71	1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	169988	50.0000	46.24(M)
73	n-Propylbenzene	91	8.912	8.912	(0.922)	1019755	50.0000	55.72
74	Bromobenzene	156	8.803	8.803	(0.911)	277055	50.0000	51.11
75	1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	739058	50.0000	54.67
76	2-Chlorotoluene	91	8.972	8.972	(0.929)	600544	50.0000	50.01
77	4-Chlorotoluene	91	9.069	9.069	(0.939)	698887	50.0000	51.05
78	tert-Butylbenzene	119	9.336	9.336	(0.966)	637036	50.0000	57.57
79	1,2,4-Trimethylbenzene	105	9.380	9.380	(0.971)	736510	50.0000	51.78
81	sec-Butylbenzene	105	9.519	9.519	(0.985)	888980	50.0000	60.38
82	p-Isopropyltoluene	119	9.650	9.650	(0.999)	783895	50.0000	59.41
83	1,3-Dichlorobenzene	146	9.605	9.605	(0.994)	472493	50.0000	52.52

84 1,4-Dichlorobenzene	146	9.680	9.680 (1.002)	488180	50.0000	49.73
87 n-Butylbenzene	91	9.992	9.992 (1.034)	680894	50.0000	53.42

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	
88	1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	469252	50.0000	50.64	
89	1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	43081	50.0000	51.17	
90	1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	346813	50.0000	59.31	
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	172479	50.0000	66.31	
92	Naphthalene	128	11.540	11.540	(1.194)	715243	50.0000	53.76	
93	1,2,3-Trichlorobenzene	180	11.742	11.742	(1.215)	321166	50.0000	57.35	
M 94	1,2-Dichloroethylene (total)	96				390150	100.000		(a)
141	Cyclohexane	56	4.121	4.121	(0.987)	250803	50.0000	55.96	
138	Freon TF	101	1.909	1.909	(0.457)	180964	50.0000	55.60	
147	Methylcyclohexane	55	5.377	5.377	(1.083)	381650	50.0000	49.38	
146	Methyl Acetate	43	2.228	2.228	(0.533)	88175	50.0000	44.19	
148	Tert-Butyl alcohol	59	2.427	2.427	(0.581)	266446	1000.00	867.93	
149	Isopropyl Alcohol	45	2.093	2.093	(0.501)	140698	1000.00	877.58	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122215.D
Date : 22-DEC-2022 14:54
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

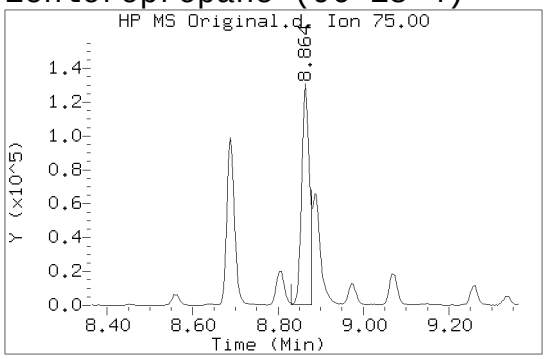
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221222.b\X122215.D
Inj Date : 22-DEC-2022 14:54
InstruID : voa6.i
LabSampID : CCV-END

1,2,3-Trichloropropane (96-18-4)

Reason Code:

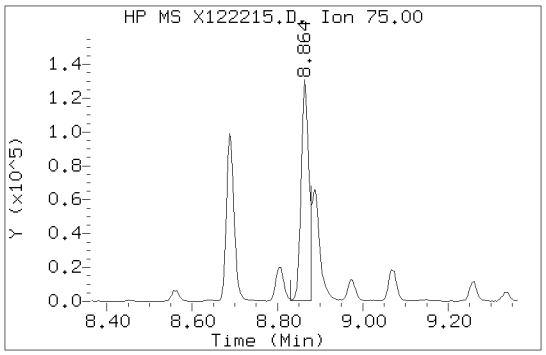
BEFORE

MASS
75
AREA
169988
HEIGHT
130698
29-Dec-2022
13:40
linh
pham



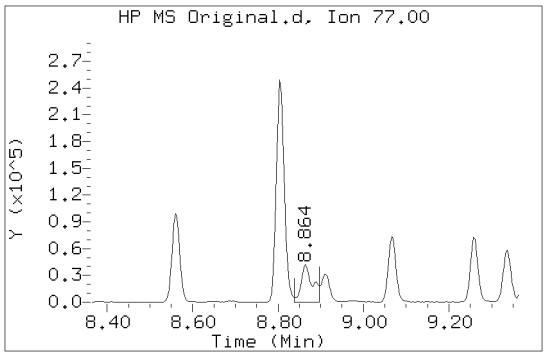
AFTER

MASS
75
AREA
169988
HEIGHT
130698
29-Dec-2022
13:40
linh
pham



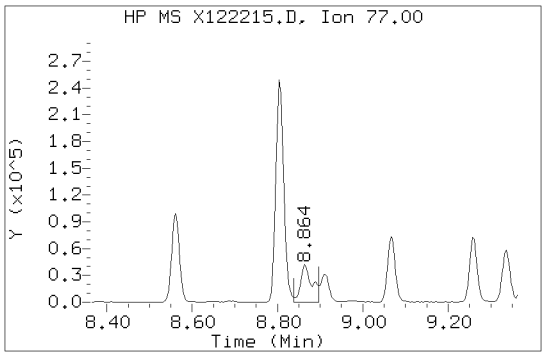
BEFORE

MASS
77
AREA
81882
HEIGHT
42528
29-Dec-2022
13:40
linh
pham



AFTER

MASS
77
AREA
81882
HEIGHT
42528
29-Dec-2022
13:40
linh
pham



HS22121096-MSSEMI-SW8270SIM

ALS WO# HS22121096

right solutions.
right partner.

Form 1

Organic Analysis Data Sheet

Semi-Volatiles by by EPA 8270SIM

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Semi-Volatiles by by EPA 8270SIM

HS22121096-01		Collected	Received	Matrix	Basis
18CPTMW04_121622		12/16/22 07:25	12/19/22 09:05	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile	PrepBatch
1,4-Dioxane	ug/L	0.18		0.010	0.010	0.010	1	01/11/23 18:41	SV-6_425684	12	187710

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Semi-Volatiles by by EPA 8270SIM

HS22121096-02	Collected	Received	Matrix	Basis
18CPTMW04SW_121622	12/16/22 08:15	12/19/22 09:05	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile	PrepBatch
1,4-Dioxane	ug/L	0.014		0.010	0.010	0.010	1	01/11/23 18:59	SV-6_425684	13	187710

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Semi-Volatiles by by EPA 8270SIM

HS22121096-03	Collected	Received	Matrix	Basis
MW2_121522	12/16/22 09:05	12/19/22 09:05	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile	PrepBatch
1,4-Dioxane	ug/L	1.8		0.10	0.10	0.10	10	01/12/23 13:51	SV-6_425684	05	187710

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Semi-Volatiles by by EPA 8270SIM

MBLK-187710	Collected	Received	Matrix	Basis
MBLK-187710	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile	PrepBatch
1,4-Dioxane	ug/L	0.010	U	0.010	0.010	0.010	1	01/11/23 16:18	SV-6_425684	04	187710

right solutions.
right partner.

Form 2

System Monitoring Compound Recovery

Semi-Volatiles by by EPA 8270SIM

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RunID
SV-6_425684

Semi-Volatiles by by EPA 8270SIM

MBLK-187710	Analyzed 01/11/23		Conc Units ug/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
2-Fluorobiphenyl	0.0825	0.08	103	40-140	
4-Terphenyl-d14	0.08324	0.08	104	40-140	
Nitrobenzene-d5	0.07626	0.08	95.3	40-140	

LCS-187710	Analyzed 01/11/23		Conc Units ug/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
2-Fluorobiphenyl	0.05792	0.08	72.4	40-140	
4-Terphenyl-d14	0.07985	0.08	99.8	40-140	
Nitrobenzene-d5	0.04762	0.08	59.5	40-140	

LCSD-187710	Analyzed 01/11/23		Conc Units ug/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
2-Fluorobiphenyl	0.05284	0.08	66.1	40-140	
4-Terphenyl-d14	0.08463	0.08	106	40-140	
Nitrobenzene-d5	0.04877	0.08	61.0	40-140	

HS22121096-01	Analyzed 01/11/23		Conc Units ug/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
2-Fluorobiphenyl	0.098	0.08	122	40-140	
4-Terphenyl-d14	0.095	0.08	119	40-140	
Nitrobenzene-d5	0.087	0.08	109	40-140	

HS22121096-02	Analyzed 01/11/23		Conc Units ug/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
2-Fluorobiphenyl	0.092	0.08	115	40-140	
4-Terphenyl-d14	0.091	0.08	113	40-140	
Nitrobenzene-d5	0.090	0.08	112	40-140	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RunID
SV-6_425684

Semi-Volatiles by by EPA 8270SIM

HS22121096-03	Analyzed 01/12/23	Conc Units ug/L	DF 10

Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
2-Fluorobiphenyl	0.10	0.08	126	40-140	
4-Terphenyl-d14	0.077	0.08	96.8	40-140	
Nitrobenzene-d5	0.091	0.08	114	40-140	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

right solutions.
right partner.

Form 3B

Laboratory Control Sample Recovery

Semi-Volatiles by by EPA 8270SIM

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Semi-Volatiles by by EPA 8270SIM

SV-6_425684		QC ID	LCS-187710			LCS-187710					
QC Matrix	Aqueous	Run Date	01/11/23			01/11/23					
Prep Method	SW3510	Units Run Time	16:36			16:54					
Prep Batch	187710 12/22/22	ug/L Prep Amt	1000 mL			1000 mL					
Analyte		%R Limits	Spike Added	LCS Result	%R	Q	LCSD Result	%R	Q	RPD Limit	RPD	Q
1,4-Dioxane		40-140	0.08	0.04076	51		0.04444	56.0		20	8.65	
2-Fluorobiphenyl		40-140	0.08	0.05792	72		0.05284	66.0		20	9.17	
4-Terphenyl-d14		40-140	0.08	0.07985	100		0.08463	106.0		20	5.81	
Nitrobenzene-d5		40-140	0.08	0.04762	60		0.04877	61.0		20	2.39	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

right solutions.
right partner.

Form 4

Method Blank Summary

Semi-Volatiles by by EPA 8270SIM

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 4 - Method Blank Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

Semi-Volatiles by by EPA 8270SIM

Client Sample ID	Type	Lab Sample ID	File ID	Date Analyzed	Run ID
METHOD BLANK	MBLK	MBLK-187710	04.D	01/11/23 16:18	SV-6_425684
LCS-187710	LCS	LCS-187710	05.D	01/11/23 16:36	SV-6_425684
LCSD-187710	LCSD	LCSD-187710	06.D	01/11/23 16:54	SV-6_425684
18CPTMW04_121622	SAMP	HS22121096-01	12.D	01/11/23 18:41	SV-6_425684
18CPTMW04SW_121622	SAMP	HS22121096-02	13.D	01/11/23 18:59	SV-6_425684
MW2_121522	SAMP	HS22121096-03	05.D	01/12/23 13:51	SV-6_425684

right solutions.
right partner.

Form 5

Instrument Performance Check

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RunID
SV-6_425684

Tune File 01.D 01/11/23 15:05

m / e	Ion Abundance Criterion	%RA
51	30.0 - 80.0% of mass 198	61.7 (61.67)
51	30.0 - 80.0% of mass 198	42.2 (42.23)
68	Less than 2.0% of mass 69	0.9 (1.87) 1
68	Less than 2.0% of mass 69	0.6 (1.84) 1
69	Mass 69 RA	47.5 (47.5)
69	Mass 69 RA	34.6 (34.6)
70	Less than 2.0% of mass 69	0.3 (0.67) 1
70	Less than 2.0% of mass 69	0.3 (0.89) 1
127	25.0 - 75.0% of mass 198	52.7 (52.66)
127	25.0 - 75.0% of mass 198	42.4 (42.42)
197	Less than 1.0% of mass 198	0.9 (0.93)
197	Less than 1.0% of mass 198	0.9 (0.92)
198	Base peak, 100% RA	100 (100)
198	Base peak, 100% RA	100 (84.94)
199	5.0 - 9.0% of mass 198	7 (6.95)
199	5.0 - 9.0% of mass 198	6.2 (6.23)
275	10.0 - 30.0% of mass 198	23.8 (23.78)
275	10.0 - 30.0% of mass 198	27.2 (27.15)
365	Greater than 0.75% of mass	4.3 (4.34)
365	Greater than 0.75% of mass	4.4 (4.37)
441	Present, but less than mass	14.8 (87.86)
441	Present, but less than mass	17.7 (80.77)
442	40.0 - 110.0% of mass 198	96.6 (96.61)
442	40.0 - 110.0% of mass 198	117.7 (117.74)
443	15.0 - 24.0% of mass 442	16.9 (17.49) 2
443	15.0 - 24.0% of mass 442	21.9 (18.62) 2

Value is % of mass 1) 69 2) 442 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	CCV	01/11/23 15:17	02	14DX-0.08
2	MBLK	01/11/23 16:18	04	MBLK-187710
3	LCS	01/11/23 16:36	05	LCS-187710
4	LCSD	01/11/23 16:54	06	LCSD-187710
5	SAMP	01/11/23 18:41	12	18CPTMW04_121622
6	SAMP	01/11/23 18:59	13	18CPTMW04SW_121622
7	CCV	01/11/23 22:17	24	14DX-0.08
8	CCV	01/12/23 13:07	03	14DX-0.08
9	SAMP	01/12/23 13:51	05	MW2_121522
10	CCV	01/12/23 15:47	11	14DX-0.08
11	CCV	01/12/23 20:52	28	14DX-0.08

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RunID
SV-6_425803

Tune File 01.D 01/11/23 08:57

m / e	Ion Abundance Criterion	%RA
51	30.0 - 80.0% of mass 198	63.9 (63.86)
68	Less than 2.0% of mass 69	0.7 (1.35) 1
69	Mass 69 RA	49.3 (49.27)
70	Less than 2.0% of mass 69	0.2 (0.48) 1
127	25.0 - 75.0% of mass 198	55.6 (55.61)
197	Less than 1.0% of mass 198	0.9 (0.86)
198	Base peak, 100% RA	100 (100)
199	5.0 - 9.0% of mass 198	6.8 (6.8)
275	10.0 - 30.0% of mass 198	24.2 (24.21)
365	Greater than 0.75% of mass	3.5 (3.47)
441	Present, but less than mass	10.7 (80.93)
442	40.0 - 110.0% of mass 198	70.3 (70.33)
443	15.0 - 24.0% of mass 442	13.2 (18.75) 2

Value is % of mass 1) 69 2) 442 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	ICAL1	01/11/23 10:32	03	14DX-0.01
2	ICAL2	01/11/23 10:50	04	14DX-0.03
3	ICAL3	01/11/23 11:08	05	14DX-0.05
4	ICAL7	01/11/23 12:20	09	14DX-0.20
5	ICAL8	01/11/23 12:38	10	14DX-0.50
6	ICAL4	01/11/23 13:07	11	14DX-0.08
7	ICAL5	01/11/23 13:30	12	14DX-0.10
8	ICAL6	01/11/23 13:51	13	14DX-0.15
9	ICV	01/11/23 14:32	14	14DX ICV-0.08

right solutions.
right partner.

Form 6

Initial Calibration Data

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID SV-6_425803

Volatiles Organics by Method 8260C

ICAL Start Date 10-MAR-2022 1025
ICAL End Date 11-JAN-2023 1351

Calibration Files

Level 1 ..SV6.i\230111.b\03.D
Level 2 ..SV6.i\230111.b\04.D
Level 3 ..SV6.i\230111.b\05.D
Level 4 ..SV6.i\230111.b\11.D
Level 5 ..SV6.i\230111.b\12.D
Level 6 ..SV6.i\230111.b\13.D
Level 7 ..SV6.i\230111.b\09.D
Level 8 ..SV6.i\230111.b\10.D

Compound	Level 1 0.010 / Level 7 0.200	Level 2 0.030 / Level 8 0.500	Level 3 0.050	Level 4 0.080	Level 5 0.100	Level 6 0.150	Curve	b	m1	m2	%RSD or R^2	Q
1,4-Dioxane	0.37993 0.27536	0.34064 0.32352	0.32364	0.31567	0.33303	0.34799	AVRG		0.32997		9.02801	
----------	0.27536 ----------	0.32352 ----------	----------	----------	----------	----------	AVRG -----	----------	0.32997 ----------	----------	9.02801 ----------	
Nitrobenzene-d5	0.36908 0.39004	0.35681 0.36437	0.35375	0.34907	0.36469	0.38093	AVRG		0.36609		3.77287	
2-Fluorobiphenyl	1.30421 0.92844	1.25670 1.27216	1.26840	1.51358	1.28097	1.50660	AVRG		1.29138		14.03011	
158 4-Terphenyl-d14	847 13412	2227 51258	2657	4001	4951	8059	QUAD	-0.10864	0.78874	-0.02939	0.99669	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

right solutions.
right partner.

Form 6I

Initial Calibration Verification (ICV)

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID SV-6_425803

Volatiles Organics by Method 8260C

R2#
Instrument ID SV6.i ICAL Date 11-JAN-2023
Lab File ID 14.D ICAL Time 1307
Analysis Type SV Level LOW

Compound	CONC Added	CONC Recovered	% Recovered	Limits	Q
1,4-Dioxane	0.08000	0.08095	101.18	40-140	
Nitrobenzene-d5	0.08000	0.07097	88.72	40-140	
2-Fluorobiphenyl	0.08000	0.07875	98.44	40-140	
158 4-Terphenyl-d14	0.08000	0.08218	102.72	40-140	

right solutions.
right partner.

Form 7

Continuing Calibration Verification (CCV)

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID SV-6_425684

Volatiles Organics by Method 8260C

Instrument ID SV6.i Injection Date 11-JAN-2023 1517
Lab File ID 02.D ICAL Date(s) 10-MAR-2022 11-JAN-2023
Analysis Type WATER ICAL Times 1025 1351
Lab Sample ID 14DX-0.08 Quant Type ISTD

Compound	$\overline{RRF}$ / $\overline{RRF}$ / Amount	RF0.080	CCV RRF0.080	Min RRF	%D / %D / %DRIFT	Max %D / %D / %DRIFT	Curve CURVE TYPE	Q
Nitrobenzene-d5	0.36609	0.39345	0.39345	0.010	7.47445	20.0	Averaged	
2-Fluorobiphenyl	1.29138	1.28176	1.28176	0.010	-0.74481	20.0	Averaged	
158 4-Terphenyl-d14	0.08000	0.08840	1.65477	0.010	10.49959	20.0	Quadratic	
1,4-Dioxane	0.32997	0.32933	0.32933	0.010	-0.19369	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID SV-6_425684

Volatiles Organics by Method 8260C

Instrument ID SV6.i Injection Date 11-JAN-2023 2217
Lab File ID 24.D ICAL Date(s) 10-MAR-2022 11-JAN-2023
Analysis Type WATER ICAL Times 1025 1351
Lab Sample ID 14DX-0.08 Quant Type ISTD

Compound	$\overline{RRF}$ / $\overline{RRF}$ / Amount	RF0.080	CCV RRF0.080	Min RRF	%D / %D / %DRIFT	Max %D / %D / %DRIFT	Curve CURVE TYPE	Q
Nitrobenzene-d5	0.36609	0.32818	0.32818	0.010	-10.35665	50.0	Averaged	
2-Fluorobiphenyl	1.29138	1.40827	1.40827	0.010	9.05164	50.0	Averaged	
158 4-Terphenyl-d14	0.08000	0.08659	1.62303	0.010	8.24079	50.0	Quadratic	
1,4-Dioxane	0.32997	0.34604	0.34604	0.010	4.87036	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID SV-6_425684

Volatiles Organics by Method 8260C

Instrument ID SV6.i Injection Date 12-JAN-2023 1307
Lab File ID 03.D ICAL Date(s) 10-MAR-2022 11-JAN-2023
Analysis Type WATER ICAL Times 1025 1351
Lab Sample ID 14DX-0.08 Quant Type ISTD

Compound	$\overline{RRF}$ / $\overline{RRF}$ / Amount	RF0.080	CCV RRF0.080	Min RRF	%D / %D / %DRIFT	Max %D / %D / %DRIFT	Curve CURVE TYPE	Q
Nitrobenzene-d5	0.36609	0.37686	0.37686	0.010	2.94280	20.0	Averaged	
2-Fluorobiphenyl	1.29138	1.23961	1.23961	0.010	-4.00875	20.0	Averaged	
158 4-Terphenyl-d14	0.08000	0.08672	1.62529	0.010	8.40129	20.0	Quadratic	
1,4-Dioxane	0.32997	0.33504	0.33504	0.010	1.53602	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID SV-6_425684

Volatiles Organics by Method 8260C

Instrument ID SV6.i Injection Date 12-JAN-2023 1547
Lab File ID 11.D ICAL Date(s) 10-MAR-2022 11-JAN-2023
Analysis Type WATER ICAL Times 1025 1351
Lab Sample ID 14DX-0.08 Quant Type ISTD

Compound	$\overline{RRF}$ / $\overline{RRF}$ / Amount	RF0.080	CCV RRF0.080	Min RRF	%D / %D / %DRIFT	Max %D / %D / %DRIFT	Curve CURVE TYPE	Q
Nitrobenzene-d5	0.36609	0.35372	0.35372	0.010	-3.37907	50.0	Averaged	
2-Fluorobiphenyl	1.29138	1.24077	1.24077	0.010	-3.91943	50.0	Averaged	
158 4-Terphenyl-d14	0.08000	0.08819	1.65112	0.010	10.23977	50.0	Quadratic	
1,4-Dioxane	0.32997	0.33511	0.33511	0.010	1.55716	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121096

RunID SV-6_425684

Volatiles Organics by Method 8260C

Instrument ID SV6.i Injection Date 12-JAN-2023 2052
Lab File ID 28.D ICAL Date(s) 10-MAR-2022 11-JAN-2023
Analysis Type WATER ICAL Times 1025 1351
Lab Sample ID 14DX-0.08 Quant Type ISTD

Compound	$\overline{RRF}$ / $\overline{RRF}$ / Amount	RF0.080	CCV RRF0.080	Min RRF	%D / %D / %DRIFT	Max %D / %D / %DRIFT	Curve CURVE TYPE	Q
Nitrobenzene-d5	0.36609	0.34343	0.34343	0.010	-6.19107	50.0	Averaged	
2-Fluorobiphenyl	1.29138	1.28894	1.28894	0.010	-0.18948	50.0	Averaged	
158 4-Terphenyl-d14	0.08000	0.08037	1.51433	0.010	0.46875	50.0	Quadratic	
1,4-Dioxane	0.32997	0.33607	0.33607	0.010	1.84783	50.0	Averaged	

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS22121096

Lab File ID (Standard): 02 Date Analyzed: 01/11/23

Instrument ID: SV6 Time Analyzed: 1517

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	3917	3.75	14665	4.88	7595	6.55
	UPPER LIMIT	7834	4.25	29330	5.38	15190	7.05
	LOWER LIMIT	1959	3.25	7333	4.38	3798	6.05
	CLIENT SAMPLE NO.						
01	MBLK-187710	4318	3.75	14744	4.87	6961	6.56
02	LCS-187710	5963	3.76	22050	4.87	10713	6.56
03	LCSD-187710	5271	3.75	20353	4.87	10073	6.55
04	HS22121096-01	3175	3.75	12159	4.88	6526	6.56
05	HS22121096-02	3832	3.75	14662	4.88	8248	6.56
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS22121096

Lab File ID (Standard): 02 Date Analyzed: 01/11/23

Instrument ID: SV6 Time Analyzed: 1517

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	18809	8.01	4064	10.89	2254	13.01
	UPPER LIMIT	37618	8.51	8128	11.39	4508	13.51
	LOWER LIMIT	9405	7.51	2032	10.39	1127	12.51
	CLIENT SAMPLE NO.						
01	MBLK-187710	12124	8.01	3273	10.90	2801	13.01
02	LCS-187710	18602	8.01	4653	10.90	3890	13.01
03	LCSD-187710	21725	8.01	3267	10.90	4485	13.02
04	HS22121096-01	10607	8.01	3334	10.90	2160	13.02
05	HS22121096-02	14505	8.01	5256	10.90	3423	13.02
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS22121096

Lab File ID (Standard): 03 Date Analyzed: 01/12/23

Instrument ID: SV6 Time Analyzed: 1307

		IS1(DCB) AREA	#	RT	#	IS2(NPT) AREA	#	RT	#	IS3(ANT) AREA	#	RT	#
	12 HOUR STD	3757		3.71		14352		4.83		8064		6.51	
	UPPER LIMIT	7514		4.21		28704		5.33		16128		7.01	
	LOWER LIMIT	1879		3.21		7176		4.33		4032		6.01	
	CLIENT SAMPLE NO.												
01	HS22121096-03	3723		3.72		14606		4.83		7516		6.51	
02													
03													
04													
05													
06													
07													
08													
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS22121096

Lab File ID (Standard): 03 Date Analyzed: 01/12/23

Instrument ID: SV6 Time Analyzed: 1307

		IS4(PHN) AREA	#	RT	#	IS5(CRY) AREA	#	RT	#	IS6(PRY) AREA	#	RT	#
	12 HOUR STD	15564		7.96		4350		10.84		2884		12.94	
	UPPER LIMIT	31128		8.46		8700		11.34		5768		13.44	
	LOWER LIMIT	7782		7.46		2175		10.34		1442		12.44	
	CLIENT SAMPLE NO.												
01	HS22121096-03	14514		7.96		4935		10.84		3545		12.94	
02													
03													
04													
05													
06													
07													
08													
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

right solutions.
right partner.

Form 12

Preparation Log

EPA 3510

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 12 - Preparation Log

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RunID
187710

EPA 3510

Prep Batch 187710 **Prep Method** **Prep Date** 12/22/22

	Matrix	Type	Lab Sample ID	Initial Amt (mL)	Final Amt (mL)	Client Sample ID
1	Aqueous	MBLK	MBLK-187710	1000	1	MBLK-187710
2	Aqueous	LCS	LCS-187710	1000	1	LCS-187710
3	Aqueous	LCSD	LCSD-187710	1000	1	LCSD-187710
4	Groundwater	SAMP	HS22121096-01	1000	1	18CPTMW04_121622
5	Groundwater	SAMP	HS22121096-02	1000	1	18CPTMW04SW_121622
6	Groundwater	SAMP	HS22121096-03	1000	1	MW2_121522

right solutions.
right partner.

Analysis Run Log

Semi-Volatiles by by EPA 8270SIM

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

SV06 -Logbook

Batch: 52923 **Analyst:** Marco Gutierrez

Date: 01-11-2023 **Reviewer:**

Method: R8270D SIM 14DX ICAL **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	DFTPP	TUNE	01-11-2023 08:57 am	1.00	0.00 gm	0.00 mL	01.D		Y	NA
2	14DX-0.08	CCV	01-11-2023 09:52 am	1.00	1000.00 mL	1000.00 mL	02.D	Liquid	Y	NA
3	14DX-0.01	ICAL1	01-11-2023 10:32 am	1.00	1000.00 mL	1000.00 mL	03.D	Liquid	Y	NA
4	14DX-0.03	ICAL2	01-11-2023 10:50 am	1.00	1000.00 mL	1000.00 mL	04.D	Liquid	Y	NA
5	14DX-0.05	ICAL3	01-11-2023 11:08 am	1.00	1000.00 mL	1000.00 mL	05.D	Liquid	Y	NA
6	14DX-0.08	SAMP	01-11-2023 11:26 am	1.00	1000.00 mL	1000.00 mL	06.D	Liquid	Y	NA
7	14DX-0.10	SAMP	01-11-2023 11:44 am	1.00	1000.00 mL	1000.00 mL	07.D	Liquid	Y	NA
8	14DX-0.15	SAMP	01-11-2023 12:02 pm	1.00	1000.00 mL	1000.00 mL	08.D	Liquid	Y	NA
9	14DX-0.20	ICAL7	01-11-2023 12:20 pm	1.00	1000.00 mL	1000.00 mL	09.D	Liquid	Y	NA
10	14DX-0.50	ICAL8	01-11-2023 12:38 pm	1.00	1000.00 mL	1000.00 mL	10.D	Liquid	Y	NA
11	14DX-0.08	ICAL4	01-11-2023 01:07 pm	1.00	1000.00 mL	1000.00 mL	11.D	Liquid	Y	NA
12	14DX-0.10	ICAL5	01-11-2023 01:30 pm	1.00	1000.00 mL	1000.00 mL	12.D	Liquid	Y	NA
13	14DX-0.15	ICAL6	01-11-2023 01:51 pm	1.00	1000.00 mL	1000.00 mL	13.D	Liquid	Y	NA
14	14DX ICV-0.08	ICV	01-11-2023 02:32 pm	1.00	1000.00 mL	1000.00 mL	14.D	Liquid	Y	NA

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121096

RUNID
SV-6_425684

Semi-Volatiles by by EPA 8270SIM

Run ID SV-6_425684 **Start Date** 01/11/23 **EndDate** 01/12/23 **Matrix** Aqueous

Client Sample ID	Type	Lab Sample ID	File ID	Analysis Date	DF
MBLK-187710	MBLK	MBLK-187710	04.D	01/11/23 16:18	1
LCS-187710	LCS	LCS-187710	05.D	01/11/23 16:36	1
LCSD-187710	LCSD	LCSD-187710	06.D	01/11/23 16:54	1
18CPTMW04_121622	SAMP	HS22121096-01	12.D	01/11/23 18:41	1
18CPTMW04SW_121622	SAMP	HS22121096-02	13.D	01/11/23 18:59	1
MW2_121522	SAMP	HS22121096-03	05.D	01/12/23 13:51	10

right solutions.
right partner.

Raw Data SV-6 425684

Semi-Volatiles by by EPA 8270SIM

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\01.D Page 1
Report Date: 11-Jan-2023 15:23

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\01.D
Lab Smp Id: DFTPP Client Smp ID: DFTPP
Inj Date : 11-JAN-2023 15:05
Operator : smith Inst ID: SV6.i
Smp Info : DFTPP;DFTPP;3;;DFTPP
Misc Info :
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\DFTPP.m
Meth Date : 27-Sep-2022 15:32 Linh.Pham Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: DFTPP
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: None
Processing Host: NAHSTW7095

					CONCENTRATIONS ON-COL	FINAL		
RT	EXP RT	DLT RT	MASS	RESPONSE	(ug/L)	(ug/L)	TARGET RANGE	RATIO

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	61.67
68	Less than 2.00% of mass 69	0.89 (1.87)
69	Mass 69 relative abundance	47.50
70	Less than 2.00% of mass 69	0.32 (0.67)
127	10.00 - 80.00% of mass 198	52.66
197	Less than 2.00% of mass 198	0.93
199	5.00 - 9.00% of mass 198	6.95
275	10.00 - 60.00% of mass 198	23.78
365	1.00 - 100.00% of mass 198	4.34
441	Present, but less than mass 443	14.85
442	50.00 - 150.00% of mass 198	96.61
443	15.00 - 24.00% of mass 442	16.90 (17.49)

Data File: 01.D
Spectrum: HP ChemStation MS 01.D, Scan 570: 5.636 min. (SUB)
Location of Maximum: 198.00
Number of points: 221

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	447	111.90	390	181.00	877	253.00	367
36.90	197	112.90	235	184.00	379	254.10	371
38.00	376	116.00	636	185.00	1591	255.00	46696
39.00	2912	117.00	13653	186.00	11574	256.00	6543
39.90	52	118.00	1059	187.00	3042	257.00	456
44.00	191	121.90	636	187.90	296	258.00	2840
47.00	196	123.00	1115	189.00	690	259.00	541
49.10	251	123.90	501	189.90	188	265.00	1210
50.10	12885	125.00	570	191.00	390	265.80	205
51.10	44664	126.00	384	192.00	1125	270.90	181
52.00	1810	127.00	38144	193.00	1243	271.90	191
54.90	188	128.00	3075	194.60	385	273.00	1718
55.90	1128	129.00	15512	196.00	2156	274.00	3523
57.00	2826	130.00	1336	196.80	677	275.00	17224
61.00	386	131.00	440	198.00	72432	276.00	2530
62.00	521	132.00	158	199.00	5035	277.00	1839
63.00	1332	134.00	433	200.00	421	277.90	303
63.90	207	135.00	1201	201.60	655	285.00	407
65.10	719	136.00	593	203.00	699	293.00	499
68.00	644	137.00	596	204.10	3360	296.00	6086
69.00	34408	138.00	212	205.00	5293	297.00	780
70.00	230	140.00	206	206.00	19856	303.00	815
72.90	336	140.90	1704	207.00	2564	314.00	311
74.00	3769	142.00	891	207.90	851	315.00	786
75.00	5937	143.00	442	209.00	255	316.00	503
76.00	2225	145.90	482	209.90	489	321.10	294
77.10	43256	147.00	1192	211.00	711	323.10	1899
78.10	2685	148.00	3192	215.00	267	324.00	347
79.00	2815	149.00	522	215.90	517	327.00	410
80.00	1808	151.00	247	217.00	5892	328.10	233
81.00	2965	152.00	268	218.00	756	334.00	1305
81.90	621	152.90	569	221.00	3649	335.00	246
83.00	733	154.00	460	221.90	860	341.00	228
83.90	152	154.90	965	223.00	1551	345.90	629
84.90	470	156.00	1698	224.00	11336	352.00	715
86.00	767	157.00	272	225.00	3109	353.10	410
87.00	349	157.90	420	226.00	240	354.00	639
88.00	157	159.00	282	227.00	5048	365.00	3146
90.90	675	160.00	665	227.90	834	366.00	318
91.90	834	160.90	926	228.90	1045	372.00	978
93.00	4722	161.80	261	231.00	484	373.00	219
94.00	290	164.90	654	233.90	255	383.00	365
96.00	205	165.90	450	234.90	350	401.90	484
98.00	3707	167.00	4958	235.90	277	403.00	601
99.00	2573	168.00	2348	236.90	344	403.90	202

100.00 243	168.90 333	238.90 199	421.00 588
101.00 1643	170.90 190	241.10 300	422.10 472
102.90 439	171.90 308	242.00 696	423.00 3159
104.00 765	173.00 509	243.00 810	424.00 672
105.00 936	174.00 809	244.00 9433	441.10 10755
106.10 356	175.00 1646	245.00 1287	442.10 69976
107.00 12802	175.90 374	246.00 1740	443.10 12241
108.00 1862	176.90 759	246.90 490	444.10 1296
108.90 299	177.90 370	248.90 398	
110.00 18384	179.00 3117	251.00 252	
111.00 3080	180.00 2117	252.00 184	

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\01.D

Date : 11-JAN-2023 15:05

Client ID: DFTPP

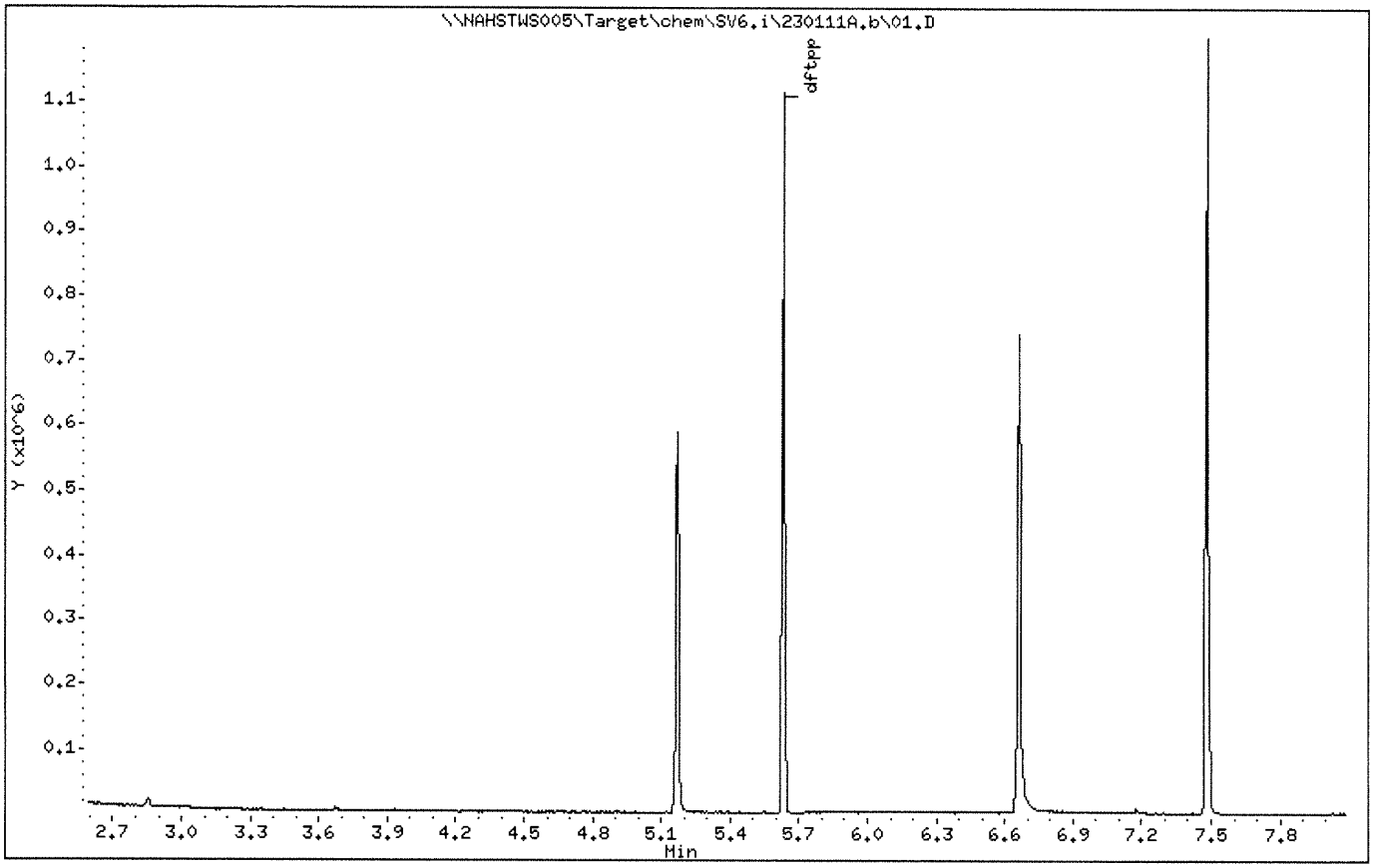
Instrument: SV6.i

Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\01.D

Date : 11-JAN-2023 15:05

Client ID: DFTPP

Instrument: SV6.i

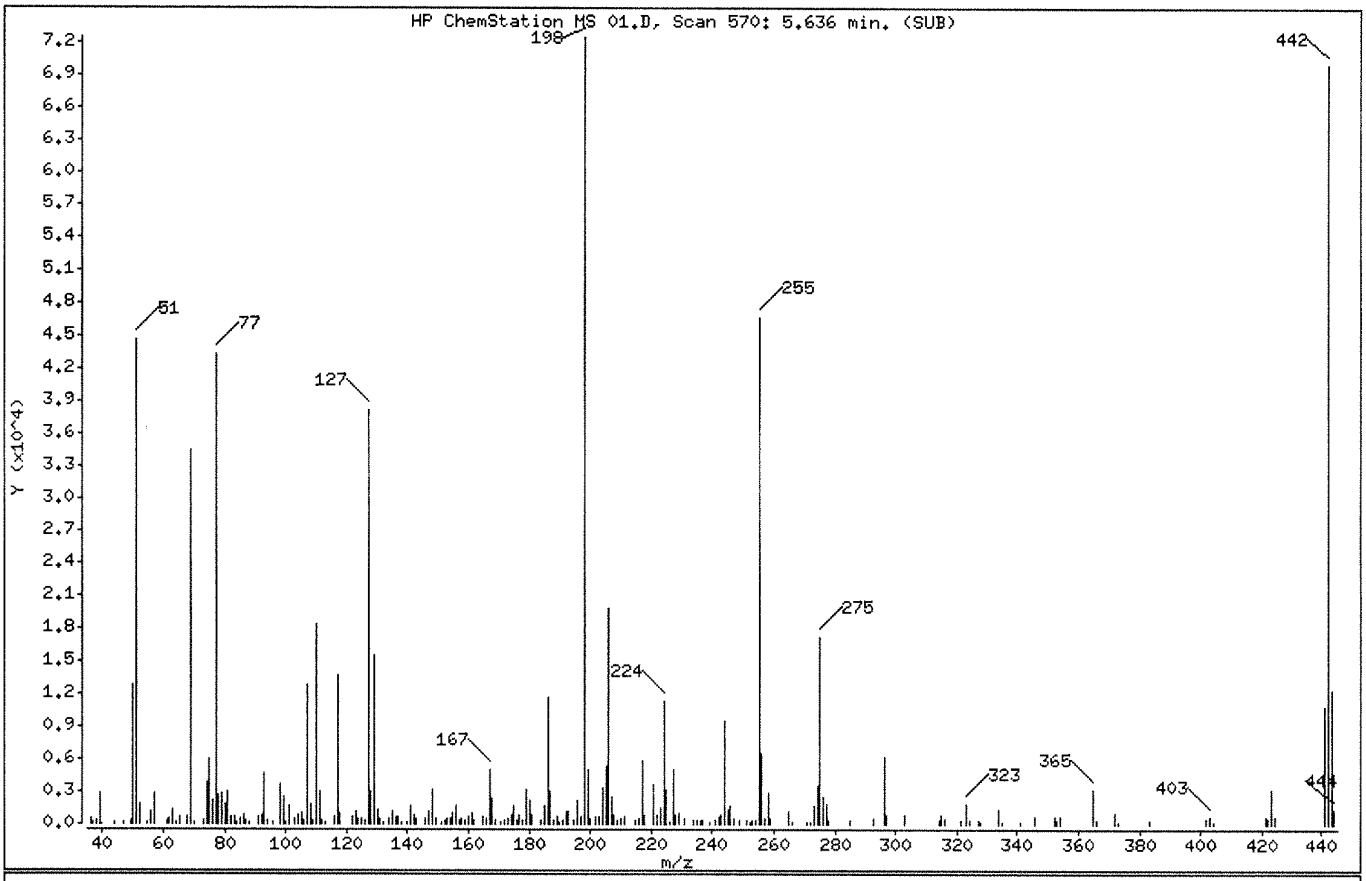
Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	61.67
68	Less than 2.00% of mass 69	0.89 (1.87)
69	Mass 69 relative abundance	47.50
70	Less than 2.00% of mass 69	0.32 (0.67)
127	10.00 - 80.00% of mass 198	52.66
197	Less than 2.00% of mass 198	0.93
199	5.00 - 9.00% of mass 198	6.95
275	10.00 - 60.00% of mass 198	23.78
365	1.00 - 100.00% of mass 198	4.34
441	Present, but less than mass 443	14.85
442	50.00 - 150.00% of mass 198	96.61
443	15.00 - 24.00% of mass 442	16.90 (17.49)

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\01.D

Date : 11-JAN-2023 15:05

Client ID: DFTPP

Instrument: SV6.i

Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25

Data File: 01.D
Spectrum: HP ChemStation MS 01.D, Scan 570: 5.636 min. (SUB)
Location of Maximum: 198.00
Number of points: 221

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	447	111.90	390	181.00	877	253.00	367
36.90	197	112.90	235	184.00	379	254.10	371
38.00	376	116.00	636	185.00	1591	255.00	46696
39.00	2912	117.00	13653	186.00	11574	256.00	6543
39.90	52	118.00	1059	187.00	3042	257.00	456
44.00	191	121.90	636	187.90	296	258.00	2840
47.00	196	123.00	1115	189.00	690	259.00	541
49.10	251	123.90	501	189.90	188	265.00	1210
50.10	12885	125.00	570	191.00	390	265.80	205
51.10	44664	126.00	384	192.00	1125	270.90	181
52.00	1810	127.00	38144	193.00	1243	271.90	191
54.90	188	128.00	3075	194.60	385	273.00	1718
55.90	1128	129.00	15512	196.00	2156	274.00	3523
57.00	2826	130.00	1336	196.80	677	275.00	17224
61.00	386	131.00	440	198.00	72432	276.00	2530
62.00	521	132.00	158	199.00	5035	277.00	1839
63.00	1332	134.00	433	200.00	421	277.90	303
63.90	207	135.00	1201	201.60	655	285.00	407
65.10	719	136.00	593	203.00	699	293.00	499
68.00	644	137.00	596	204.10	3360	296.00	6086
69.00	34408	138.00	212	205.00	5293	297.00	780
70.00	230	140.00	206	206.00	19856	303.00	815
72.90	336	140.90	1704	207.00	2564	314.00	311
74.00	3769	142.00	891	207.90	851	315.00	786
75.00	5937	143.00	442	209.00	255	316.00	503
76.00	2225	145.90	482	209.90	489	321.10	294
77.10	43256	147.00	1192	211.00	711	323.10	1899
78.10	2685	148.00	3192	215.00	267	324.00	347
79.00	2815	149.00	522	215.90	517	327.00	410
80.00	1808	151.00	247	217.00	5892	328.10	233
81.00	2965	152.00	268	218.00	756	334.00	1305
81.90	621	152.90	569	221.00	3649	335.00	246
83.00	733	154.00	460	221.90	860	341.00	228
83.90	152	154.90	965	223.00	1551	345.90	629
84.90	470	156.00	1698	224.00	11336	352.00	715

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\01.D

Date : 11-JAN-2023 15:05

Client ID: DFTPP

Instrument: SV6.i

Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25

Data File: 01.D
Spectrum: HP ChemStation MS 01.D, Scan 570: 5.636 min. (SUB)
Location of Maximum: 198.00
Number of points: 221

m/z	Y	m/z	Y	m/z	Y	m/z	Y
86.00	767	157.00	272	225.00	3109	353.10	410
87.00	349	157.90	420	226.00	240	354.00	639
88.00	157	159.00	282	227.00	5048	365.00	3146
90.90	675	160.00	665	227.90	834	366.00	318
91.90	834	160.90	926	228.90	1045	372.00	978
93.00	4722	161.80	261	231.00	484	373.00	219
94.00	290	164.90	654	233.90	255	383.00	365
96.00	205	165.90	450	234.90	350	401.90	484
98.00	3707	167.00	4958	235.90	277	403.00	601
99.00	2573	168.00	2348	236.90	344	403.90	202
100.00	243	168.90	333	238.90	199	421.00	588
101.00	1643	170.90	190	241.10	300	422.10	472
102.90	439	171.90	308	242.00	696	423.00	3159
104.00	765	173.00	509	243.00	810	424.00	672
105.00	936	174.00	809	244.00	9433	441.10	10755
106.10	356	175.00	1646	245.00	1287	442.10	69976
107.00	12802	175.90	374	246.00	1740	443.10	12241
108.00	1862	176.90	759	246.90	490	444.10	1296
108.90	299	177.90	370	248.90	398		
110.00	18384	179.00	3117	251.00	252		
111.00	3080	180.00	2117	252.00	184		

Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\01.D
Inj Date : 11-JAN-2023 15:05
InstruID : SV6.i
LabSampID : DFTPP

NO MANUAL INTEGRATIONS

ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\02.D
Lab Smp Id: 14DX-0.08 Client Smp ID: 14DX-0.08
Inj Date : 11-JAN-2023 15:17
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.08
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\DXSIM.m
Meth Date : 13-Jan-2023 14:38 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7056

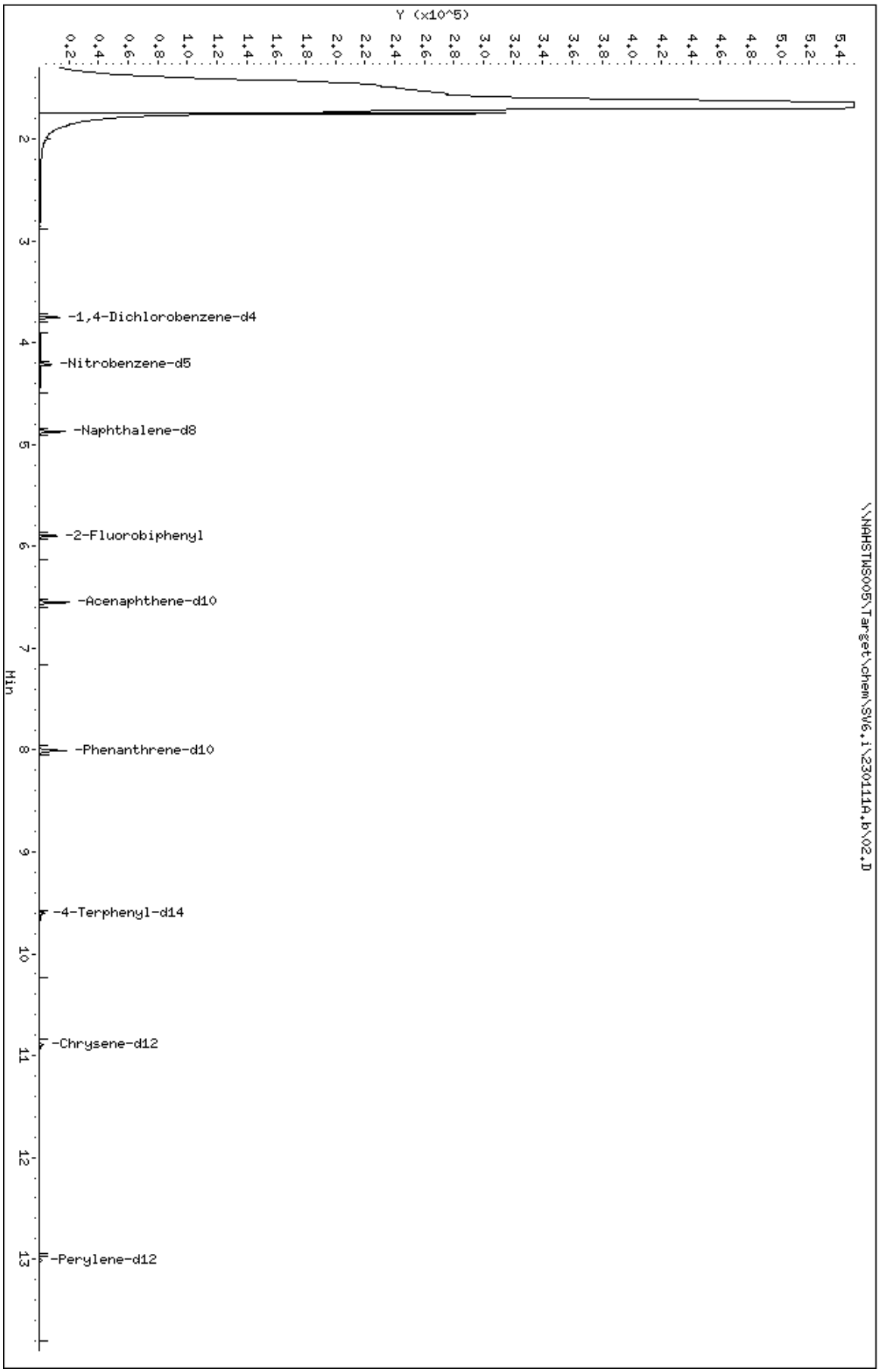
Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	3917	0.10000	(a)
* 45 Naphthalene-d8	136	4.875	4.875	(1.000)	14665	0.10000	
$ 33 Nitrobenzene-d5	82	4.220	4.220	(0.866)	4616	0.08000	0.08598(M)
* 86 Acenaphthene-d10	164	6.551	6.551	(1.000)	7595	0.10000	
$ 69 2-Fluorobiphenyl	172	5.895	5.895	(0.900)	7788	0.08000	0.07940
* 126 Phenanthrene-d10	188	8.007	8.007	(1.000)	18809	0.10000	
* 182 Chrysene-d12	240	10.890	10.890	(1.000)	4064	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.599	9.599	(0.881)	5380	0.08000	0.08840(M)
* 198 Perylene-d12	264	13.011	13.011	(1.000)	2254	0.10000	
1 1,4-Dioxane	58	1.994	1.994	(0.531)	1032	0.08000	0.07984(QM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\02.D
Date : 11-JAN-2023 15:17
Client ID: 14DX-0.08
Sample Info: 14DX-0.08
Purge Volume: 1000.0
Column phase: RTX-5SIL MS

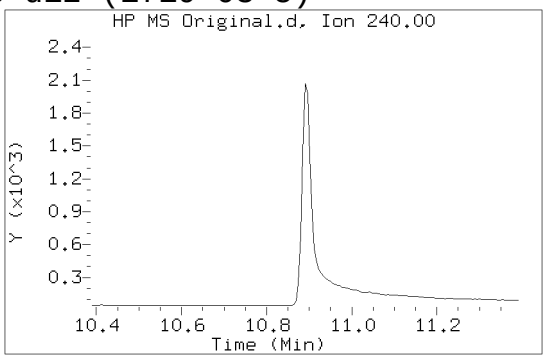
Instrument: SV6.i
Operator: LG
Column diameter: 0.28

Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\02.D
Inj Date : 11-JAN-2023 15:17
InstruID : SV6.i
LabSampID : 14DX-0.08

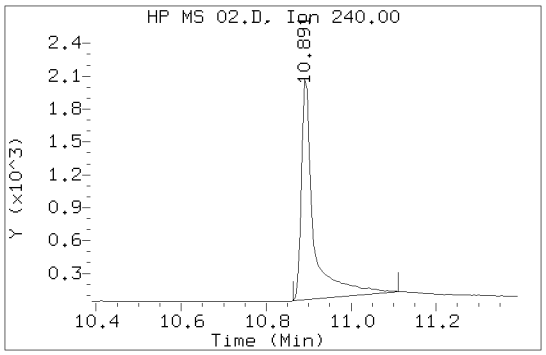
Chrysene-d12 (1719-03-5)

Reason Code:

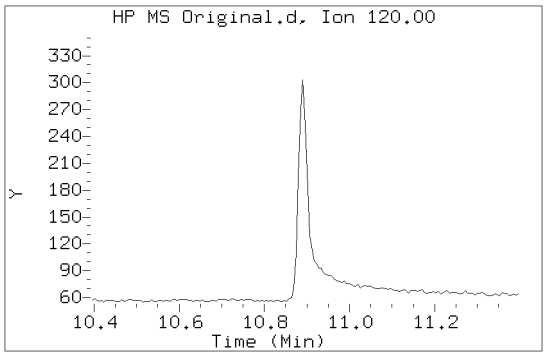
BEFORE
MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
15:32
ALSHS
Server



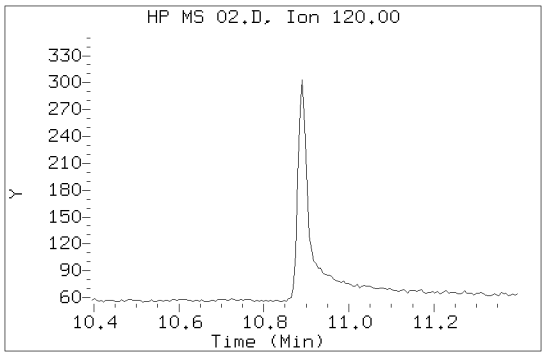
AFTER
MASS
240
AREA
4064
HEIGHT
2008
13-Jan-2023
14:38
ALSHS
Ser



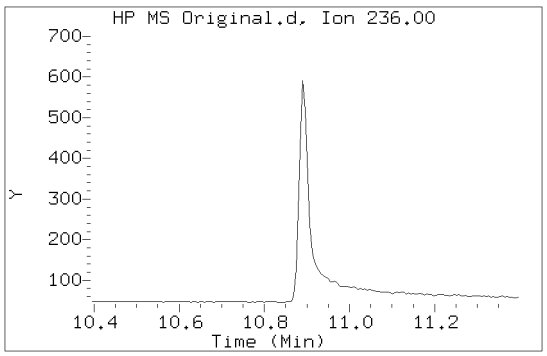
BEFORE
MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
15:32
ALSHS
Server



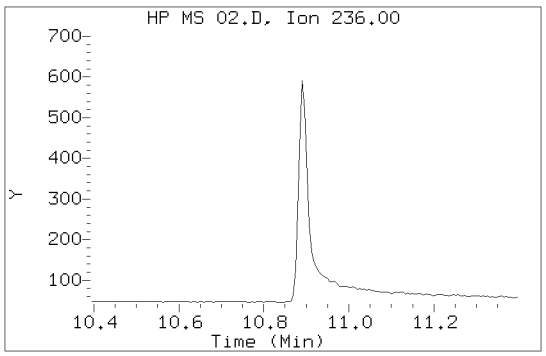
AFTER
MASS
120
AREA
0
HEIGHT
0
13-Jan-2023
14:38
ALSHS
Ser



BEFORE
MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
15:32
ALSHS
Server



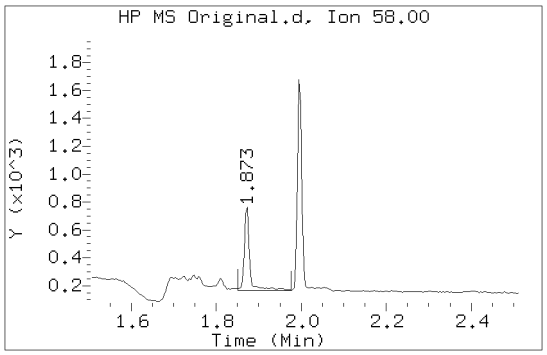
AFTER
MASS
236
AREA
0
HEIGHT
0
13-Jan-2023
14:38
ALSHS
Ser



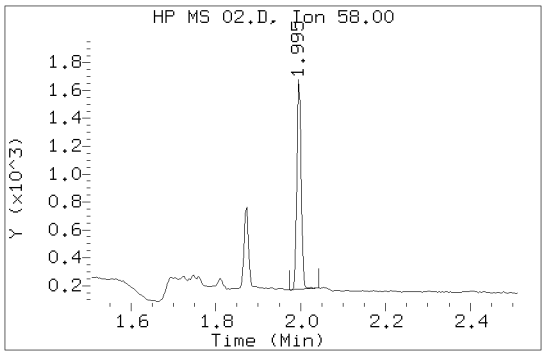
1,4-Dioxane ()

Reason Code:

BEFORE
MASS
58
AREA
512
HEIGHT
597
11-Jan-2023
15:32
ALSHS
Server



AFTER
MASS
58
AREA
1032
HEIGHT
1503
13-Jan-2023
14:38
ALSHS
Ser



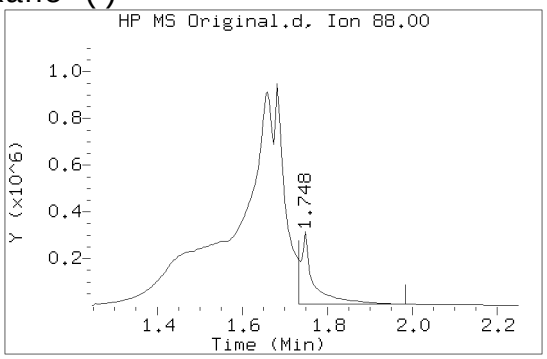
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\02.D
Inj Date : 11-JAN-2023 15:17
InstruID : SV6.i
LabSampID : 14DX-0.08

1,4-Dioxane ()

Reason Code:

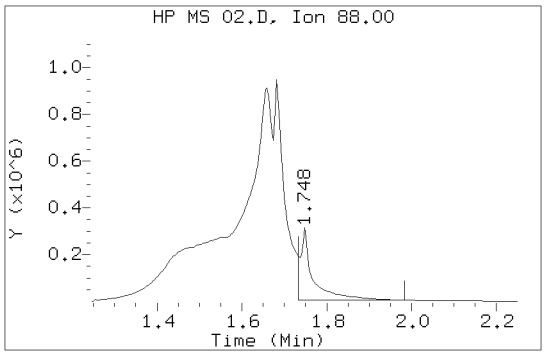
BEFORE

MASS
88
AREA
657640
HEIGHT
309737
11-Jan-2023
15:32
ALSHS
Server



AFTER

MASS
88
AREA
657640
HEIGHT
309737
13-Jan-2023
14:38
ALSHS
Ser

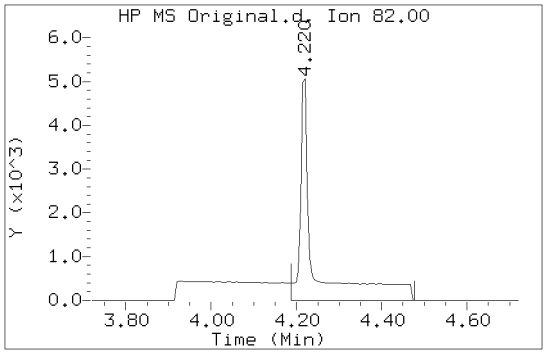


Nitrobenzene-d5 (4165-60-0)

Reason Code:

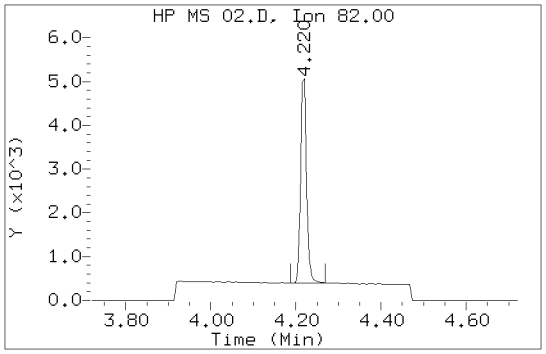
BEFORE

MASS
82
AREA
11097
HEIGHT
5066
11-Jan-2023
15:32
ALSHS
Server



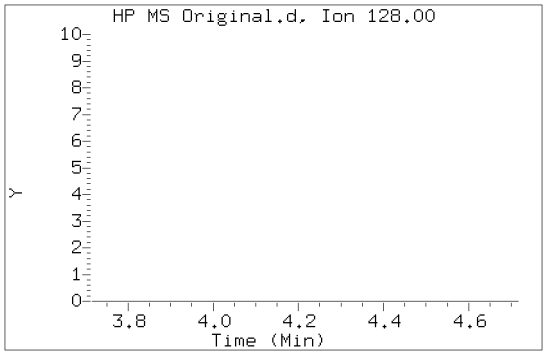
AFTER

MASS
82
AREA
4616
HEIGHT
4668
13-Jan-2023
14:38
ALSHS
Ser



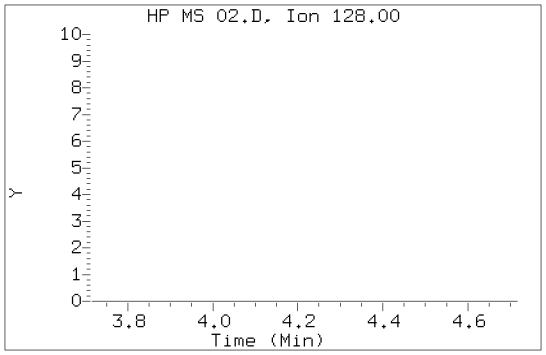
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
15:32
ALSHS
Server



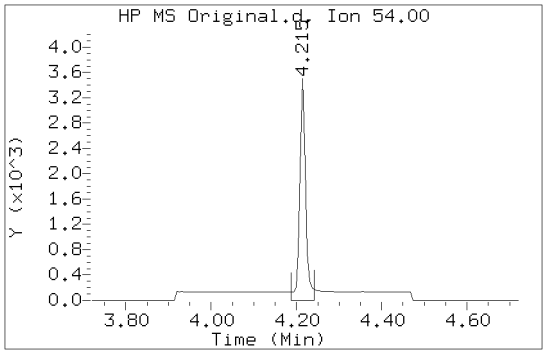
AFTER

MASS
128
AREA
0
HEIGHT
0
13-Jan-2023
14:38
ALSHS
Ser



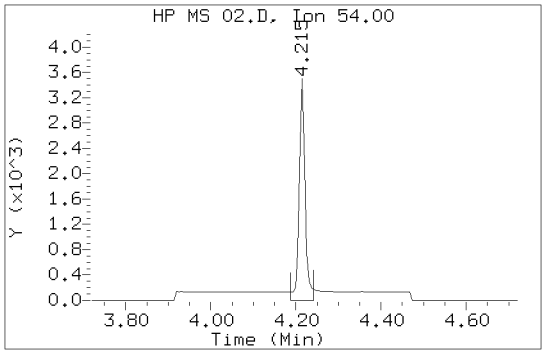
BEFORE

MASS
54
AREA
3468
HEIGHT
3501
11-Jan-2023
15:32
ALSHS
Server



AFTER

MASS
54
AREA
3468
HEIGHT
3501
13-Jan-2023
14:38
ALSHS
Ser

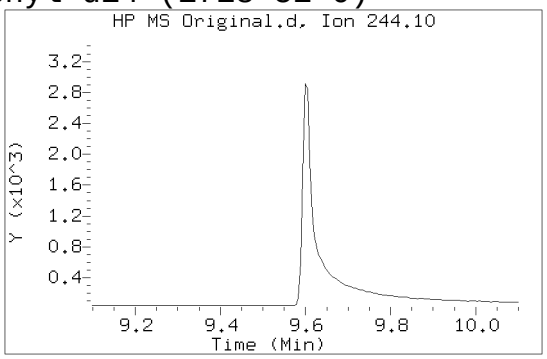


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\02.D
Inj Date : 11-JAN-2023 15:17
InstruID : SV6.i
LabSampID : 14DX-0.08

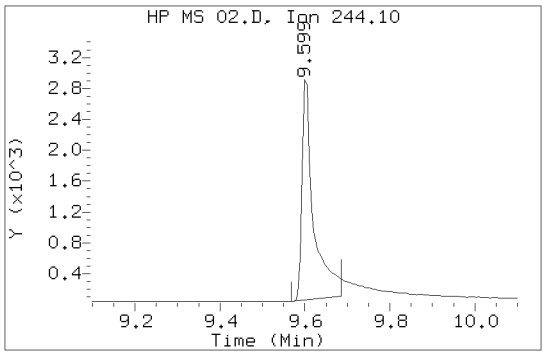
4-Terphenyl-d14 (1718-51-0)

Reason Code:

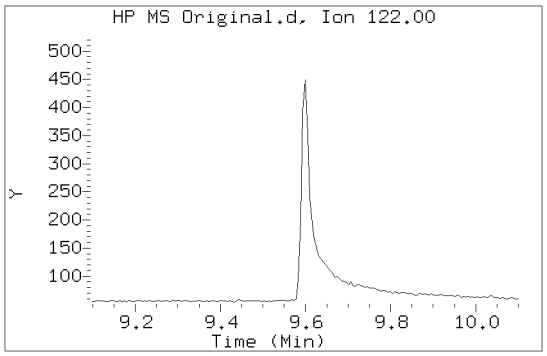
BEFORE
MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
15:32
ALSHS
Server



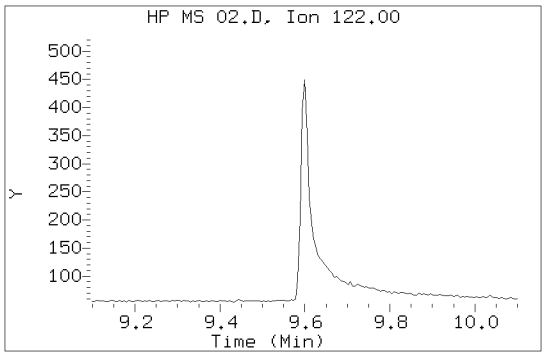
AFTER
MASS
244.1
AREA
5380
HEIGHT
2850
13-Jan-2023
14:38
ALSHS
Ser



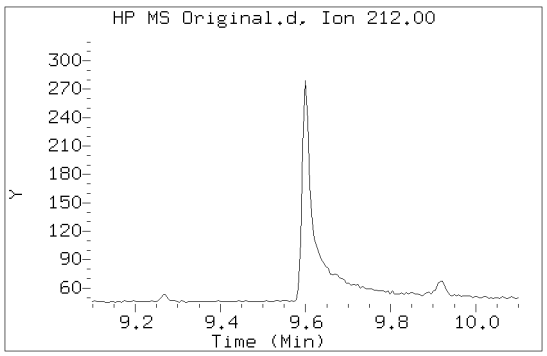
BEFORE
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
15:32
ALSHS
Server



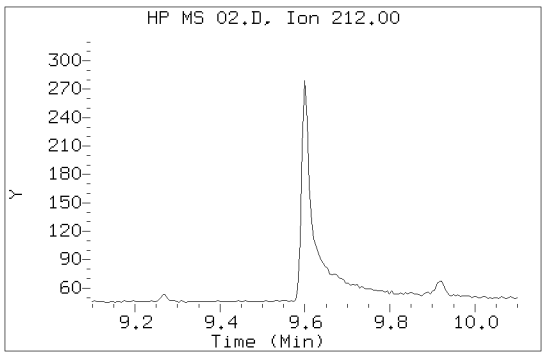
AFTER
MASS
122
AREA
0
HEIGHT
0
13-Jan-2023
14:38
ALSHS
Ser



BEFORE
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
15:32
ALSHS
Server



AFTER
MASS
212
AREA
0
HEIGHT
0
13-Jan-2023
14:38
ALSHS
Ser



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\04.D Page 1
Report Date: 12-Jan-2023 09:05

ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\04.D
Lab Smp Id: MBLK-187710
Inj Date : 11-JAN-2023 16:18
Operator : LG Inst ID: SV6.i
Smp Info : MBLK-187710
Misc Info :
Comment :
Method : \\nahstws005\Target\chem\SV6.i\230111A.b\DXSIM.m
Meth Date : 11-Jan-2023 15:55 marco.guti Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTWS005

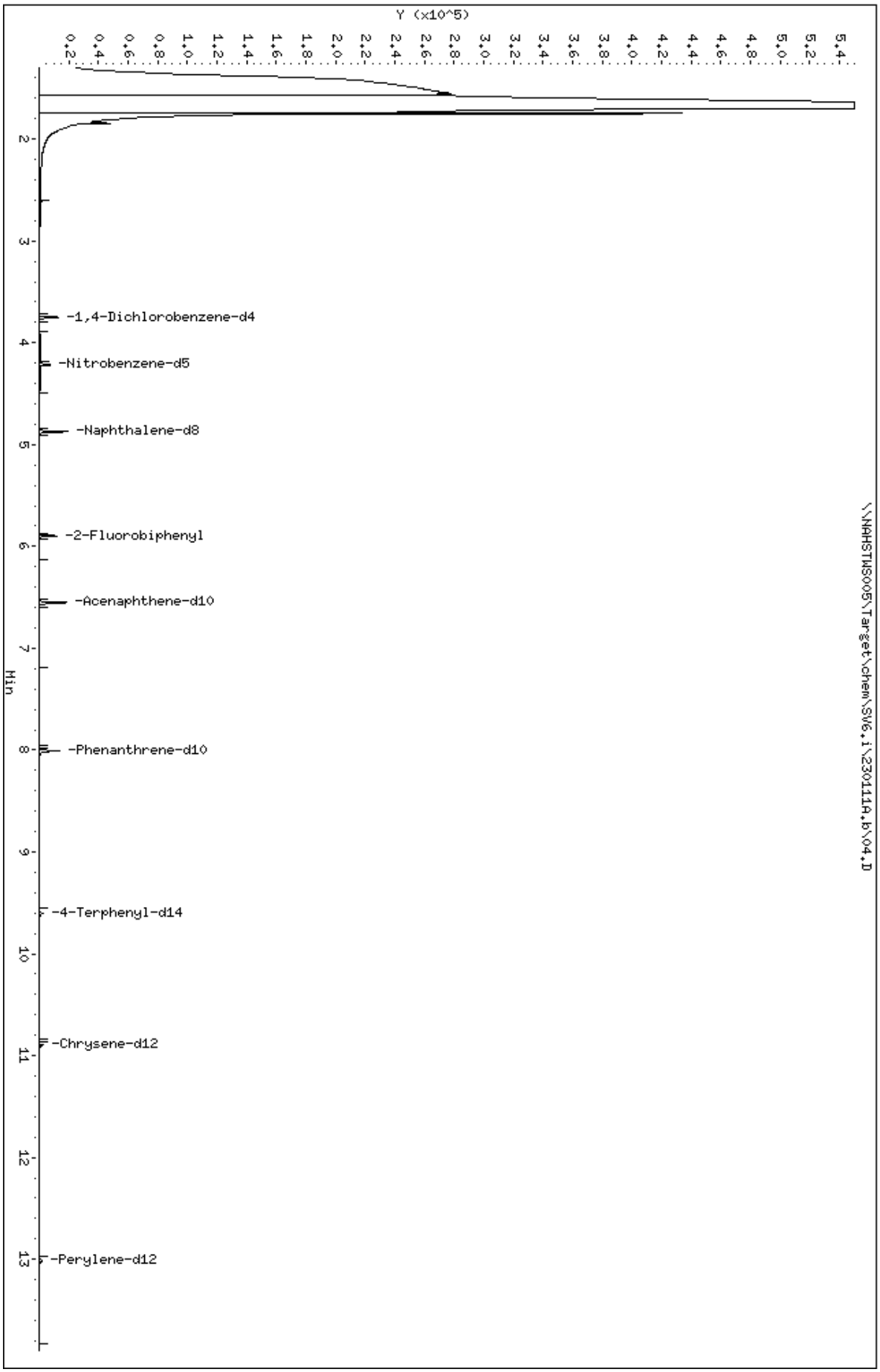
Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/L)	
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	4318	0.10000		(a)
* 45 Naphthalene-d8	136	4.874	4.875	(1.000)	14744	0.10000		
$ 33 Nitrobenzene-d5	82	4.220	4.220	(0.866)	4116	0.07626	0.07626	(M)
* 86 Acenaphthene-d10	164	6.557	6.551	(1.000)	6961	0.10000		
$ 69 2-Fluorobiphenyl	172	5.895	5.895	(0.899)	7416	0.08250	0.08250	
* 126 Phenanthrene-d10	188	8.007	8.007	(1.000)	12124	0.10000		
* 182 Chrysene-d12	240	10.895	10.890	(1.000)	3273	0.10000		(M)
$ 158 4-Terphenyl-d14	244	9.604	9.599	(0.881)	4096	0.08324	0.08324	(M)
* 198 Perylene-d12	264	13.011	13.011	(1.000)	2801	0.10000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\04.D
Date : 11-JAN-2023 16:18
Client ID:
Sample Info: MBLK-187710
Purge Volume: 1000.0
Column phase: RTX-5SIL MS

Instrument: SV6.i
Operator: LG
Column diameter: 0.28

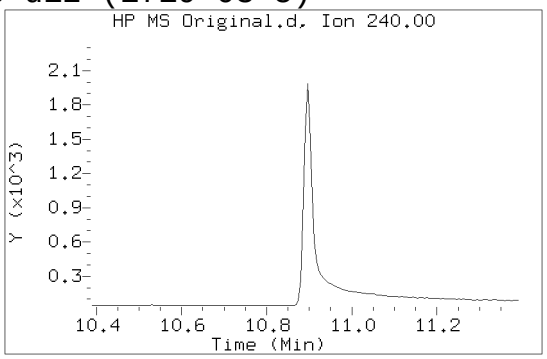
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\04.D
Inj Date : 11-JAN-2023 16:18
InstruID : SV6.i
LabSampID : MBLK-187710

Chrysene-d12 (1719-03-5)

Reason Code:

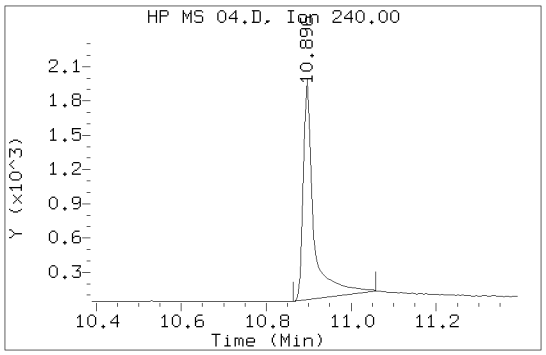
BEFORE

MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
16:36
ALSHS
Server



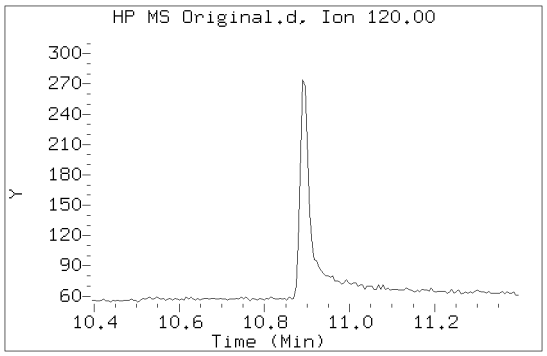
AFTER

MASS
240
AREA
3273
HEIGHT
1923
12-Jan-2023
09:05



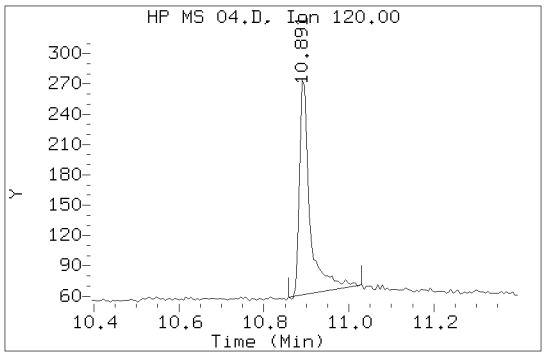
BEFORE

MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
16:36
ALSHS
Server



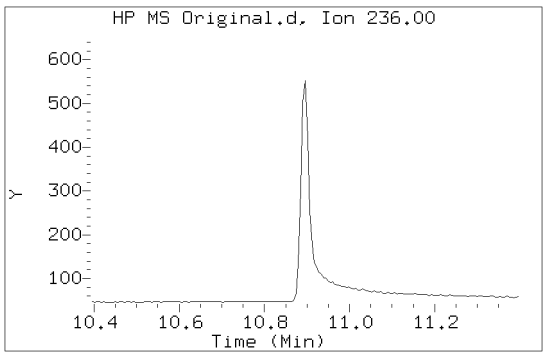
AFTER

MASS
120
AREA
361
HEIGHT
212
12-Jan-2023
09:05



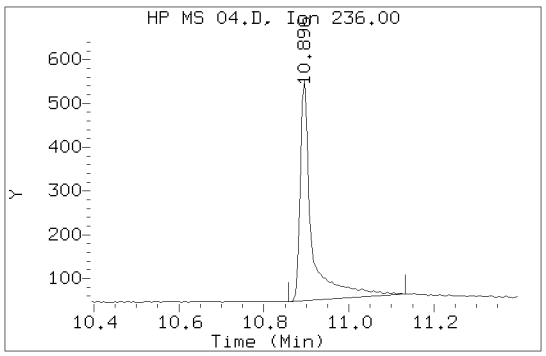
BEFORE

MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
16:36
ALSHS
Server



AFTER

MASS
236
AREA
952
HEIGHT
502
12-Jan-2023
09:05

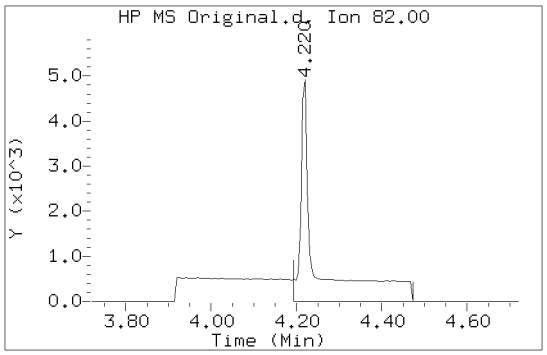


Nitrobenzene-d5 (4165-60-0)

Reason Code:

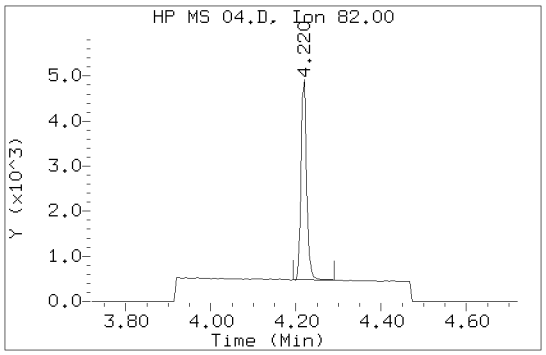
BEFORE

MASS
82
AREA
11860
HEIGHT
4918
11-Jan-2023
16:36
ALSHS
Server



AFTER

MASS
82
AREA
4116
HEIGHT
4436
12-Jan-2023
09:05

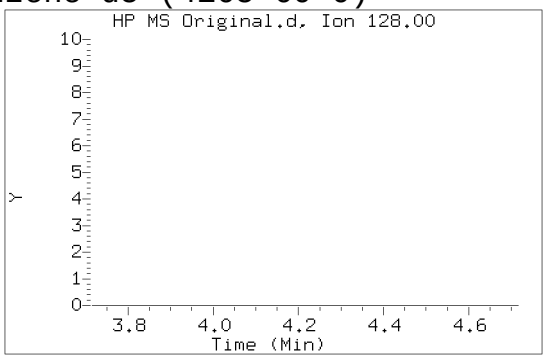


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\04.D
Inj Date : 11-JAN-2023 16:18
InstruID : SV6.i
LabSampID : MBLK-187710

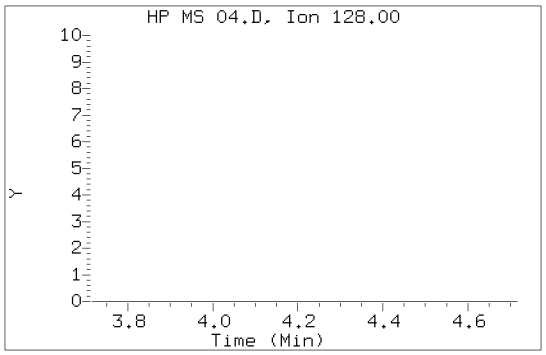
Nitrobenzene-d5 (4165-60-0)

Reason Code:

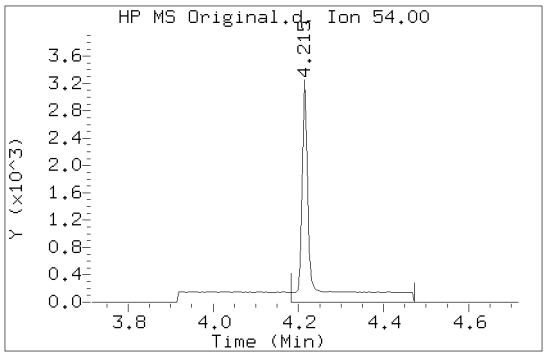
BEFORE
MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
16:36
ALSHS
Server



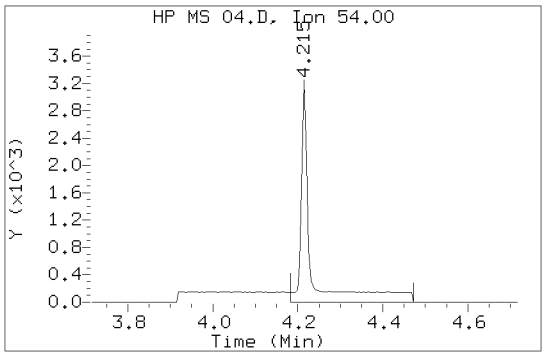
AFTER
MASS
128
AREA
0
HEIGHT
0
12-Jan-2023
09:05



BEFORE
MASS
54
AREA
5224
HEIGHT
3252
11-Jan-2023
16:36
ALSHS
Server



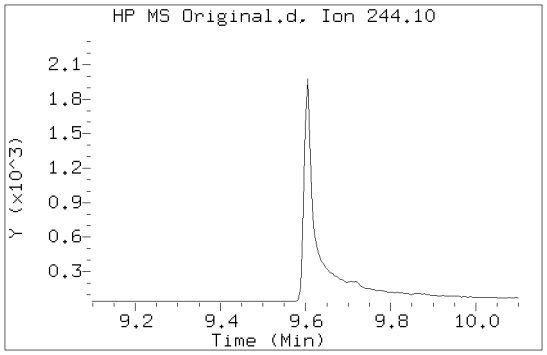
AFTER
MASS
54
AREA
5224
HEIGHT
3252
12-Jan-2023
09:05



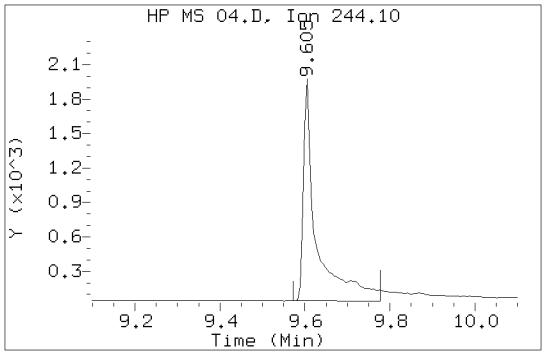
4-Terphenyl-d14 (1718-51-0)

Reason Code:

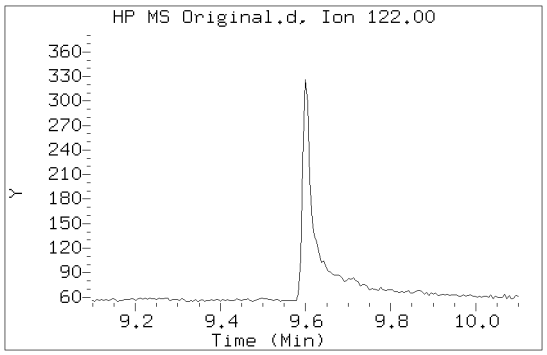
BEFORE
MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
16:36
ALSHS
Server



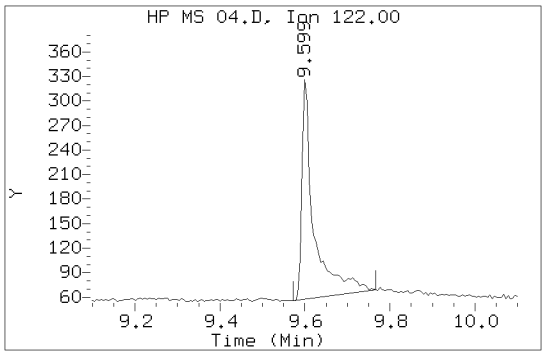
AFTER
MASS
244.1
AREA
4096
HEIGHT
1931
12-Jan-2023
09:05



BEFORE
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
16:36
ALSHS
Server



AFTER
MASS
122
AREA
522
HEIGHT
268
12-Jan-2023
09:05



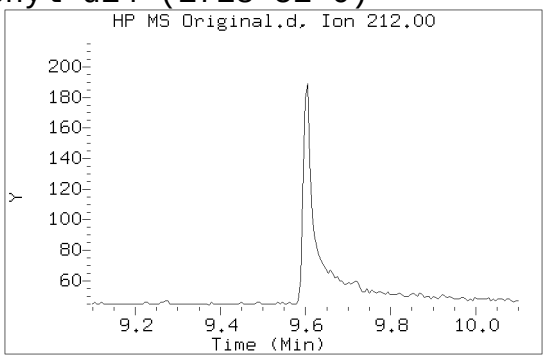
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\04.D
Inj Date : 11-JAN-2023 16:18
InstruID : SV6.i
LabSampID : MBLK-187710

4-Terphenyl-d14 (1718-51-0)

Reason Code:

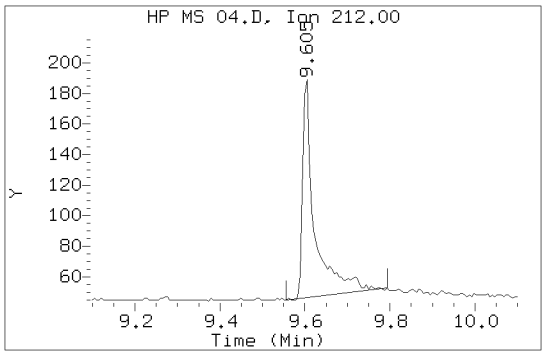
BEFORE

MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
16:36
ALSHS
Server



AFTER

MASS
212
AREA
276
HEIGHT
142
12-Jan-2023
09:05



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\05.D Page 1
Report Date: 12-Jan-2023 09:07

ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\05.D
Lab Smp Id: LCS-187710
Inj Date : 11-JAN-2023 16:36
Operator : LG Inst ID: SV6.i
Smp Info : LCS-187710
Misc Info :
Comment :
Method : \\nahstws005\Target\chem\SV6.i\230111A.b\DXSIM.m
Meth Date : 11-Jan-2023 15:55 marco.guti Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTWS005

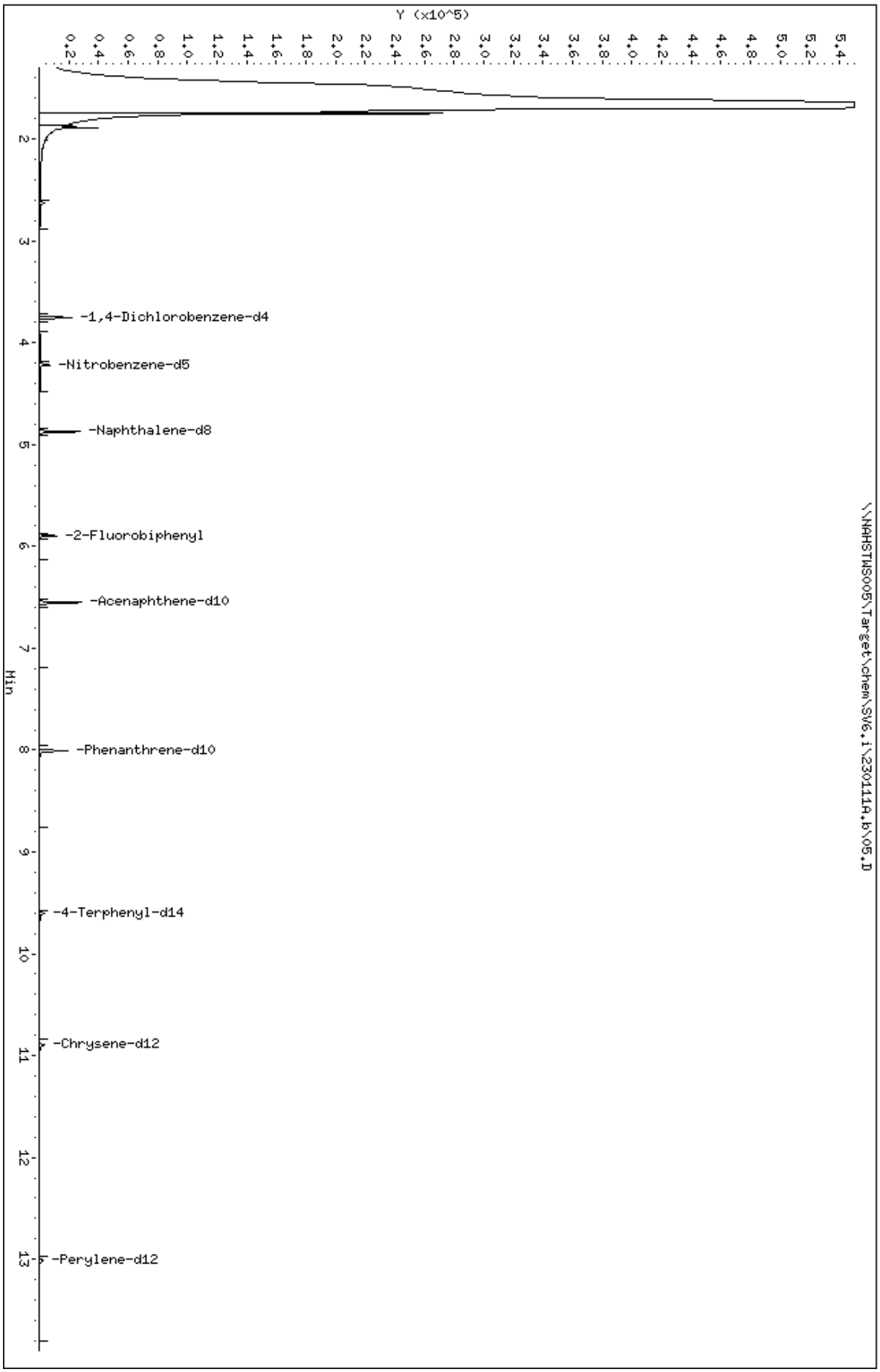
Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/L)	
* 20 1,4-Dichlorobenzene-d4	152	3.758	3.753	(1.000)	5963	0.10000		(a)
* 45 Naphthalene-d8	136	4.874	4.875	(1.000)	22050	0.10000		
$ 33 Nitrobenzene-d5	82	4.220	4.220	(0.866)	3844	0.04762	0.04762(M)	
* 86 Acenaphthene-d10	164	6.557	6.551	(1.000)	10713	0.10000		
$ 69 2-Fluorobiphenyl	172	5.895	5.895	(0.899)	8013	0.05792	0.05792	
* 126 Phenanthrene-d10	188	8.007	8.007	(1.000)	18602	0.10000		
* 182 Chrysene-d12	240	10.895	10.890	(1.000)	4653	0.10000		(M)
$ 158 4-Terphenyl-d14	244	9.604	9.599	(0.000)	5603	0.07985	0.07985(M)	
* 198 Perylene-d12	264	13.011	13.011	(1.000)	3890	0.10000		
1 1,4-Dioxane	58	2.005	1.994	(0.534)	802	0.04076	0.04076(M)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\05.D
Date : 11-JAN-2023 16:36
Client ID:
Sample Info: LCS-187710
Purge Volume: 1000.0
Column phase: RTX-5SIL MS

Instrument: SV6.i
Operator: LG
Column diameter: 0.28

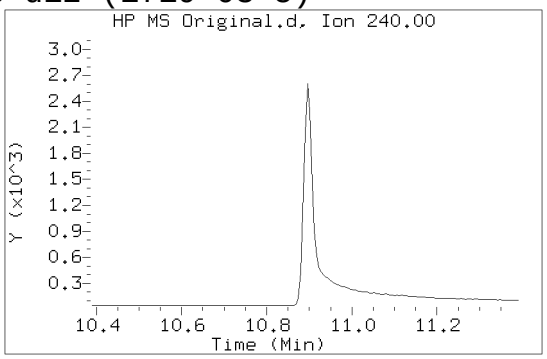
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\05.D
Inj Date : 11-JAN-2023 16:36
InstruID : SV6.i
LabSampID : LCS-187710

Chrysene-d12 (1719-03-5)

Reason Code:

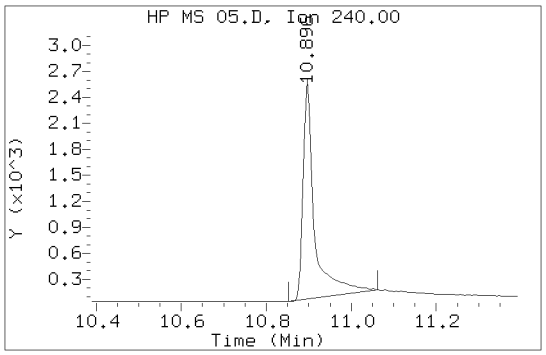
BEFORE

MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
16:55
ALSHS
Server



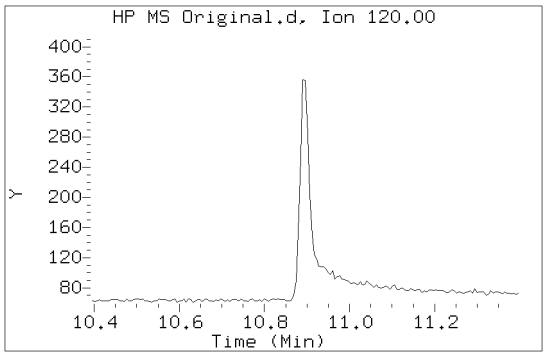
AFTER

MASS
240
AREA
4653
HEIGHT
2529
12-Jan-2023
09:07



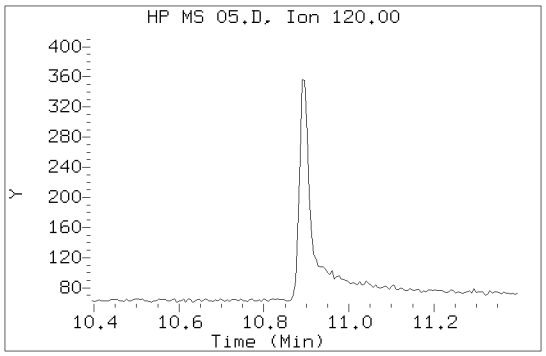
BEFORE

MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
16:55
ALSHS
Server



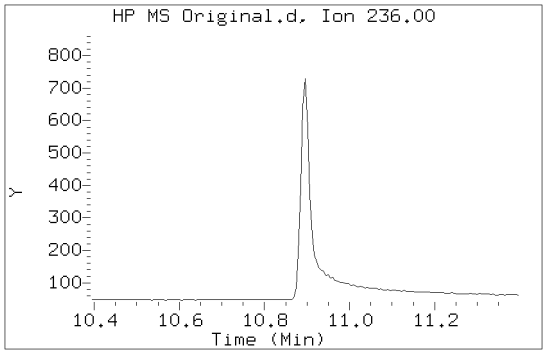
AFTER

MASS
120
AREA
0
HEIGHT
0
12-Jan-2023
09:07



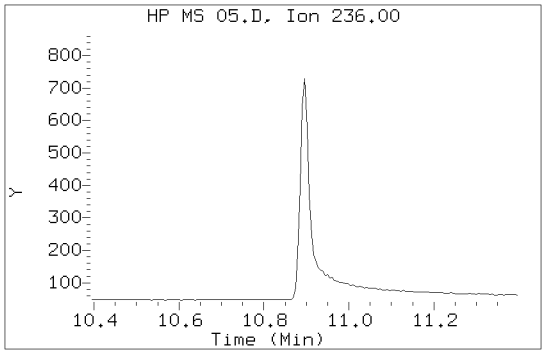
BEFORE

MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
16:55
ALSHS
Server



AFTER

MASS
236
AREA
0
HEIGHT
0
12-Jan-2023
09:07

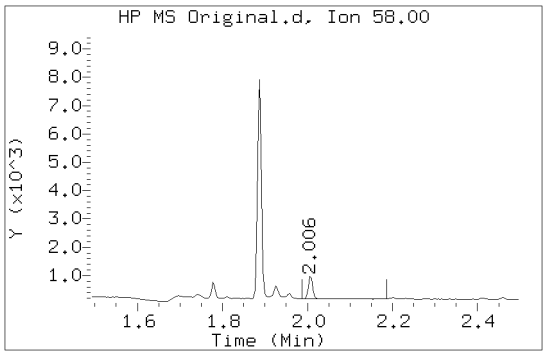


1,4-Dioxane ()

Reason Code:

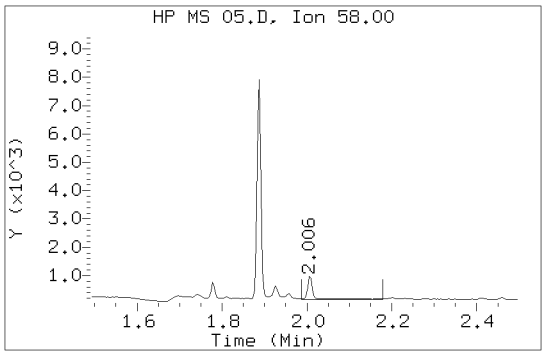
BEFORE

MASS
58
AREA
579
HEIGHT
790
11-Jan-2023
16:55
ALSHS
Server



AFTER

MASS
58
AREA
802
HEIGHT
809
12-Jan-2023
09:07



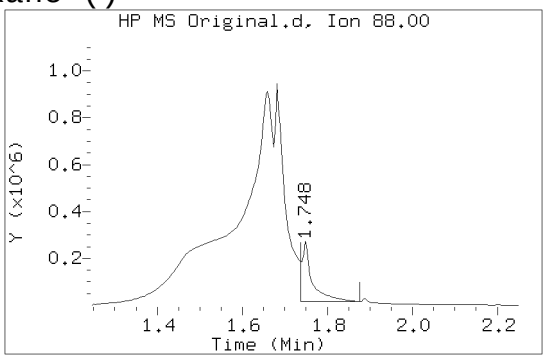
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\05.D
Inj Date : 11-JAN-2023 16:36
InstruID : SV6.i
LabSampID : LCS-187710

1,4-Dioxane ()

Reason Code:

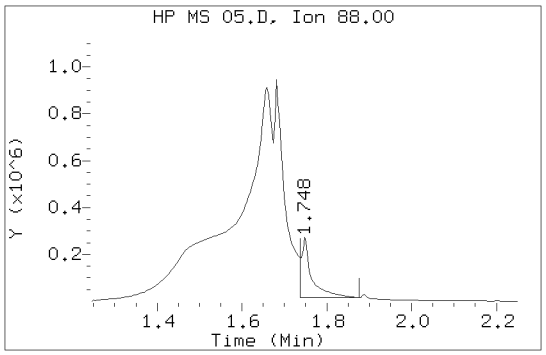
BEFORE

MASS
88
AREA
453373
HEIGHT
256748
11-Jan-2023
16:55
ALSHS
Server



AFTER

MASS
88
AREA
453373
HEIGHT
256748
12-Jan-2023
09:07

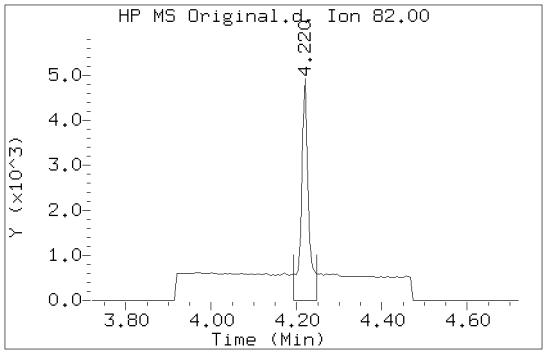


Nitrobenzene-d5 (4165-60-0)

Reason Code:

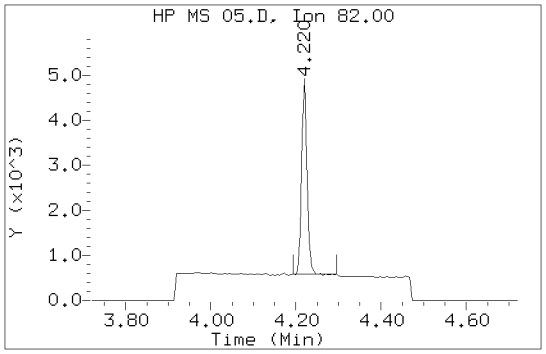
BEFORE

MASS
82
AREA
5909
HEIGHT
4926
11-Jan-2023
16:55
ALSHS
Server



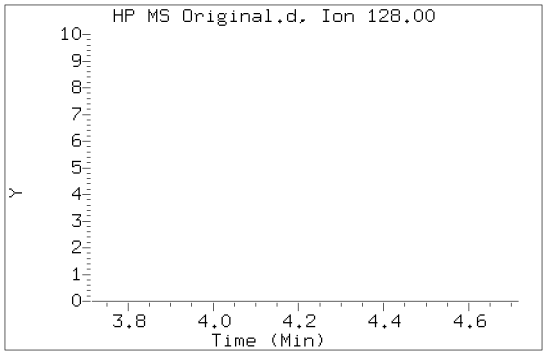
AFTER

MASS
82
AREA
3844
HEIGHT
4346
12-Jan-2023
09:07



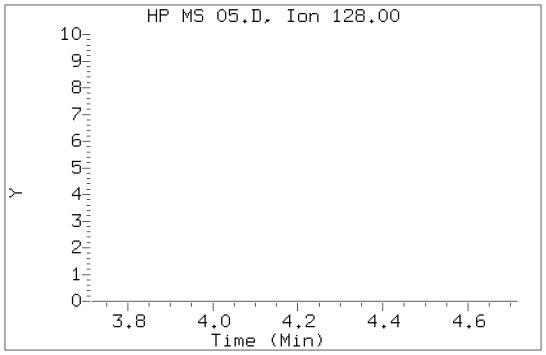
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
16:55
ALSHS
Server



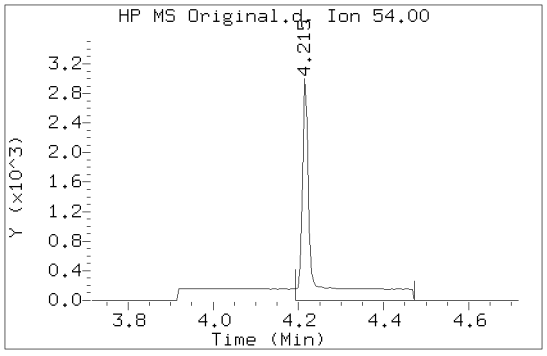
AFTER

MASS
128
AREA
0
HEIGHT
0
12-Jan-2023
09:07



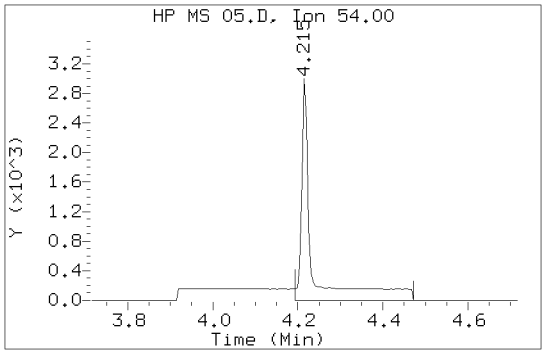
BEFORE

MASS
54
AREA
5225
HEIGHT
2999
11-Jan-2023
16:55
ALSHS
Server



AFTER

MASS
54
AREA
5225
HEIGHT
2999
12-Jan-2023
09:07

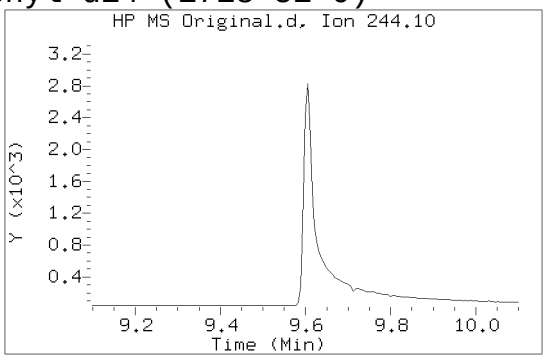


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\05.D
Inj Date : 11-JAN-2023 16:36
InstruID : SV6.i
LabSampID : LCS-187710

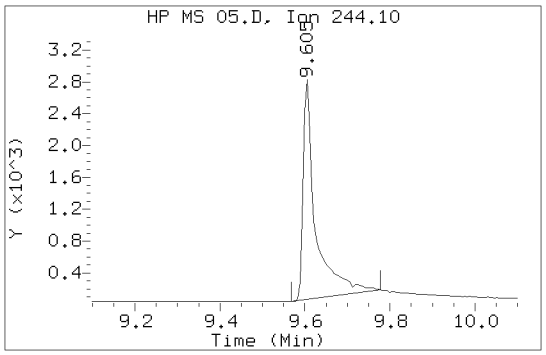
4-Terphenyl-d14 (1718-51-0)

Reason Code:

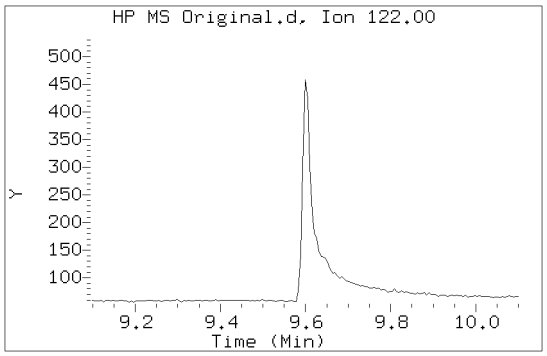
BEFORE
MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
16:55
ALSHS
Server



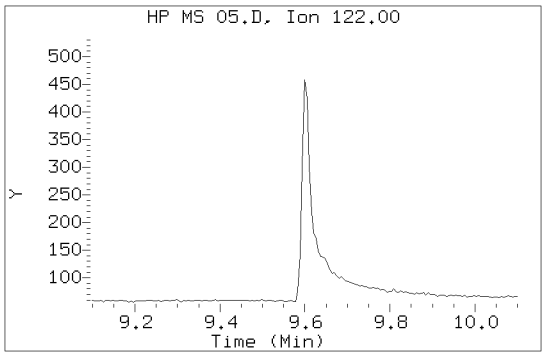
AFTER
MASS
244.1
AREA
5603
HEIGHT
2756
12-Jan-2023
09:07



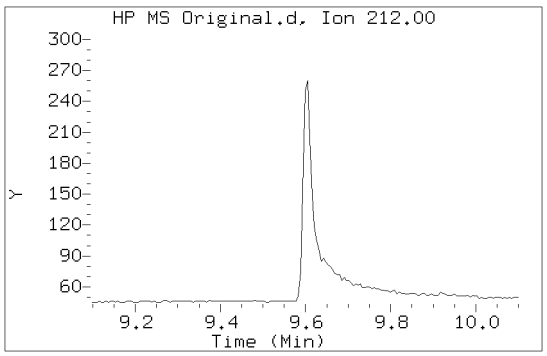
BEFORE
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
16:55
ALSHS
Server



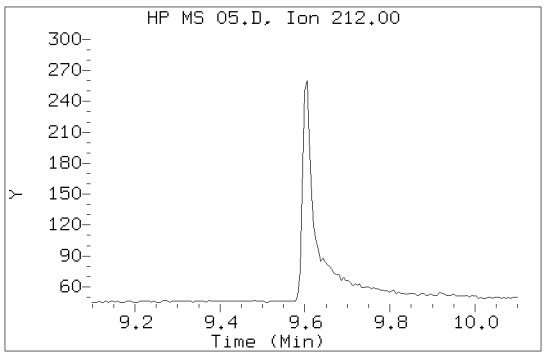
AFTER
MASS
122
AREA
0
HEIGHT
0
12-Jan-2023
09:07



BEFORE
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
16:55
ALSHS
Server



AFTER
MASS
212
AREA
0
HEIGHT
0
12-Jan-2023
09:07



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\06.D Page 1
Report Date: 12-Jan-2023 09:08

ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\06.D
Lab Smp Id: LCSD-187710
Inj Date : 11-JAN-2023 16:54
Operator : LG Inst ID: SV6.i
Smp Info : LCSD-187710
Misc Info :
Comment :
Method : \\nahstws005\Target\chem\SV6.i\230111A.b\DXSIM.m
Meth Date : 11-Jan-2023 15:55 marco.guti Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

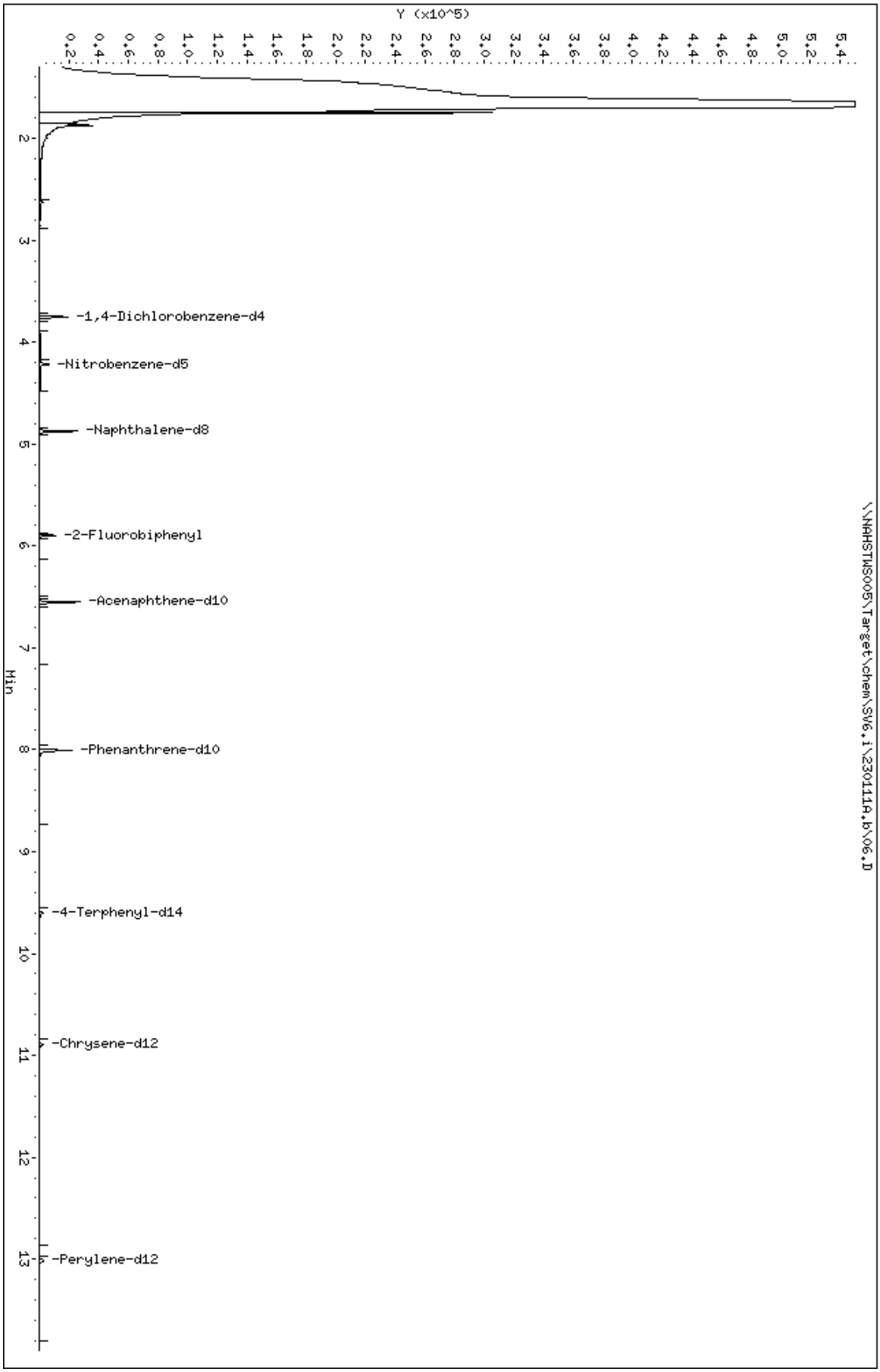
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/L)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	5271	0.10000	(a)
* 45 Naphthalene-d8	136	4.874	4.875	(1.000)	20353	0.10000	
$ 33 Nitrobenzene-d5	82	4.220	4.220	(0.866)	3634	0.04877	0.04877(M)
* 86 Acenaphthene-d10	164	6.551	6.551	(1.000)	10073	0.10000	
$ 69 2-Fluorobiphenyl	172	5.895	5.895	(0.900)	6874	0.05284	0.05284
* 126 Phenanthrene-d10	188	8.007	8.007	(1.000)	21725	0.10000	
* 182 Chrysene-d12	240	10.895	10.890	(1.000)	3267	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.604	9.599	(0.881)	4152	0.08463	0.08463(M)
* 198 Perylene-d12	264	13.017	13.011	(1.000)	4485	0.10000	
1 1,4-Dioxane	58	1.994	1.994	(0.531)	773	0.04444	0.04444(M)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\06.D
Date : 11-JAN-2023 16:54
Client ID:
Sample Info: LCSD-187710
Purge Volume: 1000.0
Column phase: RTX-5SIL MS

Instrument: SV6.i
Operator: LG
Column diameter: 0.28



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\06.D Page 2

Date : 11-JAN-2023 16:54

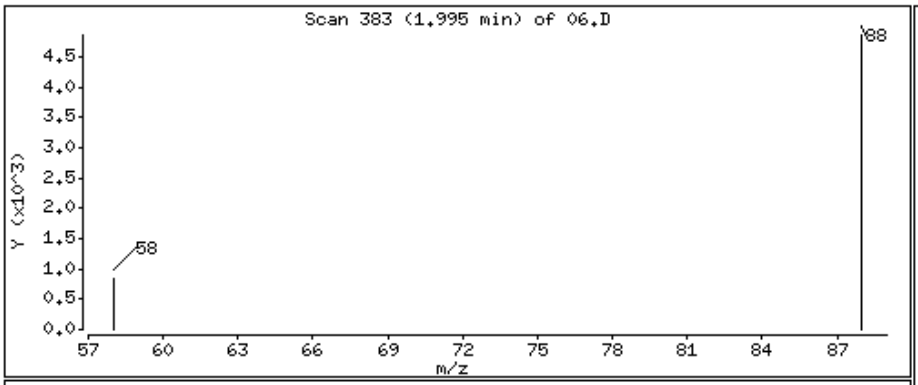
Client ID: Instrument: SV6.i

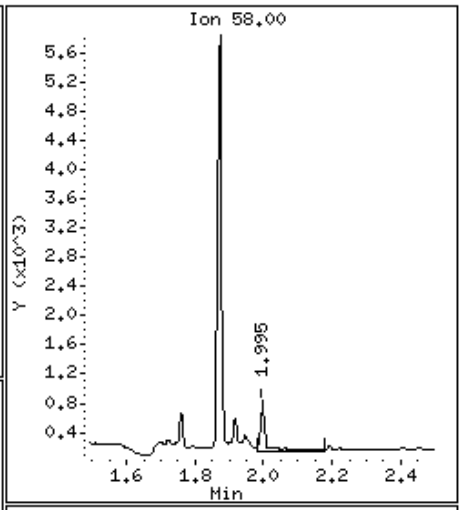
Sample Info: LCSD-187710

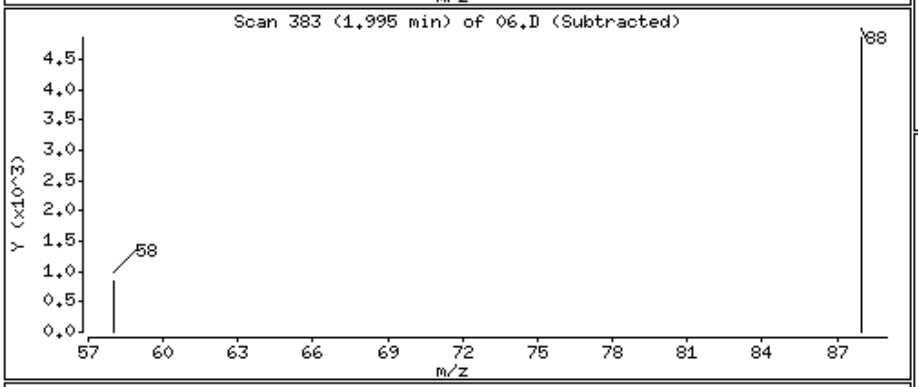
Purge Volume: 1000.0 Operator: LG

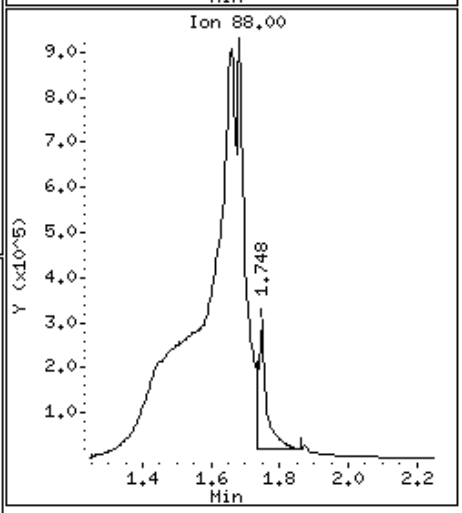
Column phase: RTX-5SIL MS Column diameter: 0.28

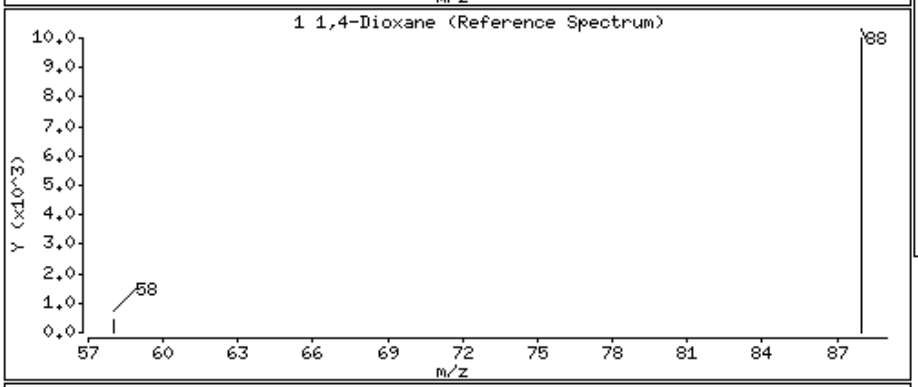
1 1,4-Dioxane Concentration: 0.04444 ug/L

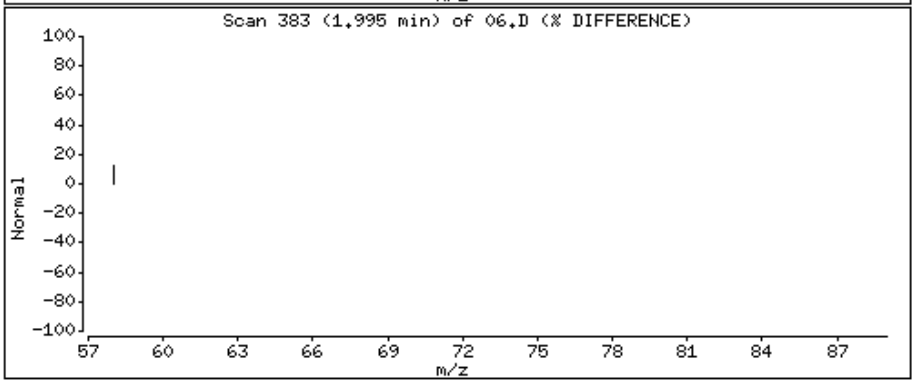












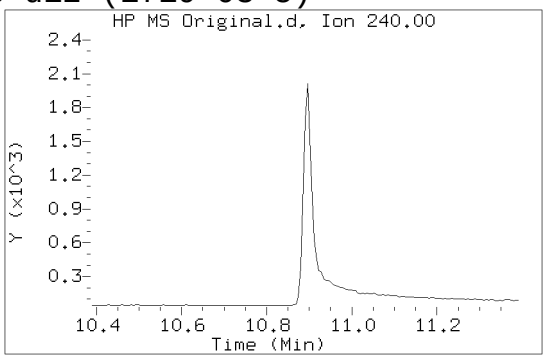
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\06.D
Inj Date : 11-JAN-2023 16:54
InstruID : SV6.i
LabSampID : LCSD-187710

Chrysene-d12 (1719-03-5)

Reason Code:

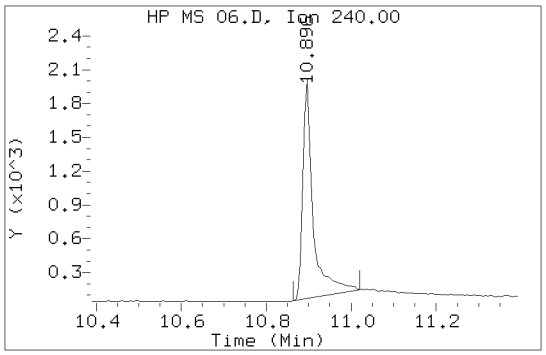
BEFORE

MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
17:09
ALSHS
Server



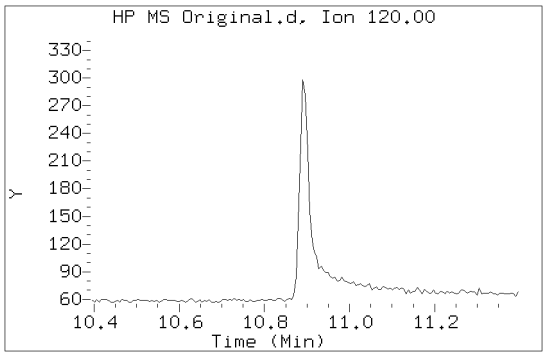
AFTER

MASS
240
AREA
3267
HEIGHT
1942
12-Jan-2023
09:08



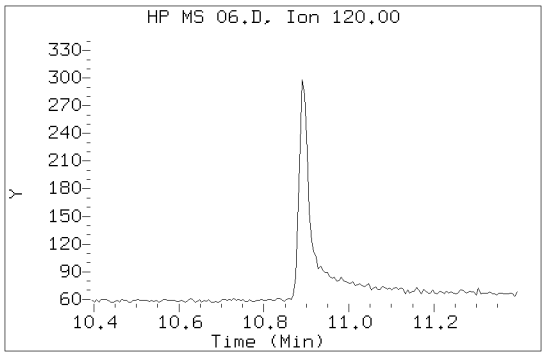
BEFORE

MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
17:09
ALSHS
Server



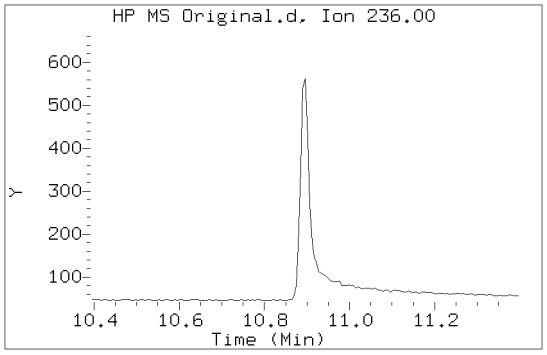
AFTER

MASS
120
AREA
0
HEIGHT
0
12-Jan-2023
09:08



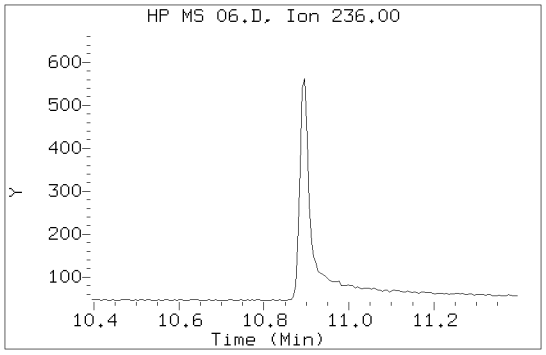
BEFORE

MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
17:09
ALSHS
Server



AFTER

MASS
236
AREA
0
HEIGHT
0
12-Jan-2023
09:08

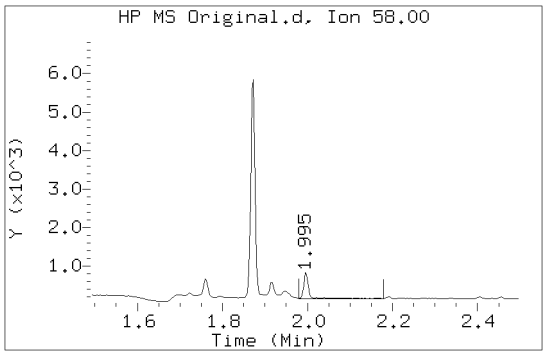


1,4-Dioxane ()

Reason Code:

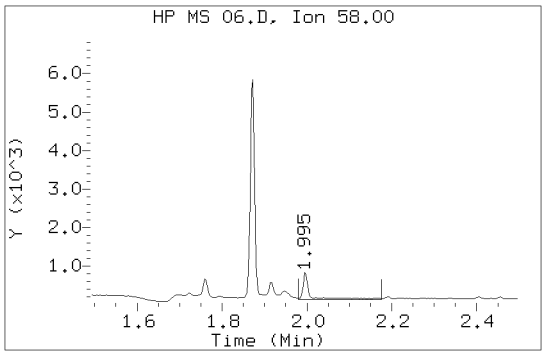
BEFORE

MASS
58
AREA
570
HEIGHT
672
11-Jan-2023
17:09
ALSHS
Server



AFTER

MASS
58
AREA
773
HEIGHT
689
12-Jan-2023
09:08



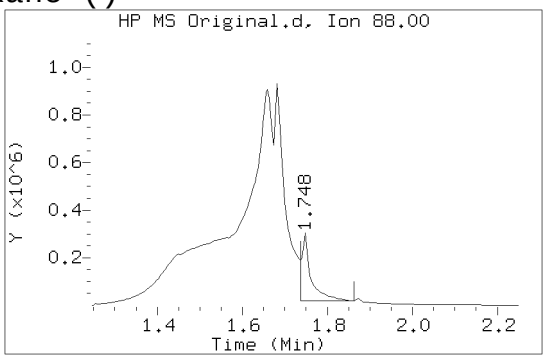
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\06.D
Inj Date : 11-JAN-2023 16:54
InstruID : SV6.i
LabSampID : LCSD-187710

1,4-Dioxane ()

Reason Code:

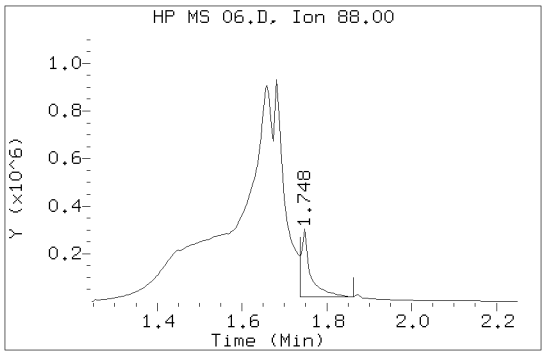
BEFORE

MASS
88
AREA
444408
HEIGHT
286064
11-Jan-2023
17:09
ALSHS
Server



AFTER

MASS
88
AREA
444408
HEIGHT
286064
12-Jan-2023
09:08

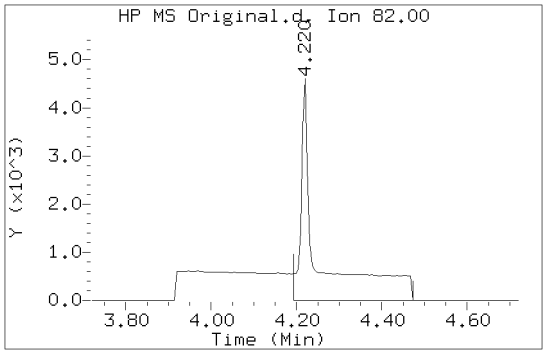


Nitrobenzene-d5 (4165-60-0)

Reason Code:

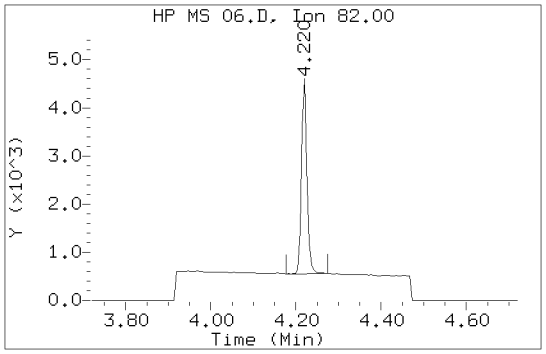
BEFORE

MASS
82
AREA
12573
HEIGHT
4604
11-Jan-2023
17:09
ALSHS
Server



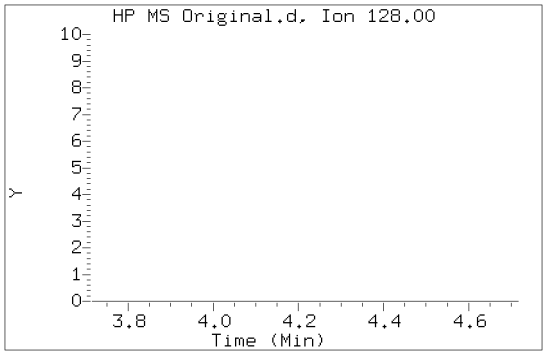
AFTER

MASS
82
AREA
3634
HEIGHT
4051
12-Jan-2023
09:08



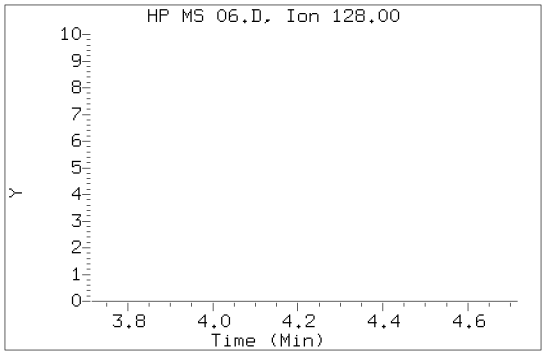
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
17:09
ALSHS
Server



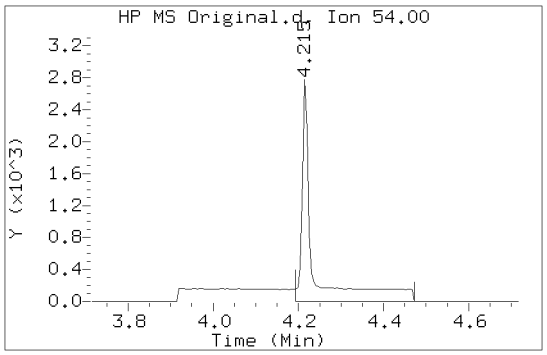
AFTER

MASS
128
AREA
0
HEIGHT
0
12-Jan-2023
09:08



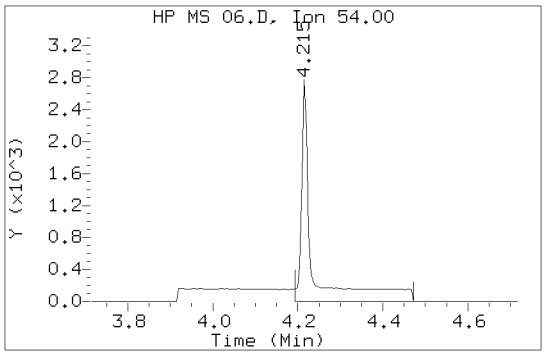
BEFORE

MASS
54
AREA
4971
HEIGHT
2777
11-Jan-2023
17:09
ALSHS
Server



AFTER

MASS
54
AREA
4971
HEIGHT
2777
12-Jan-2023
09:08

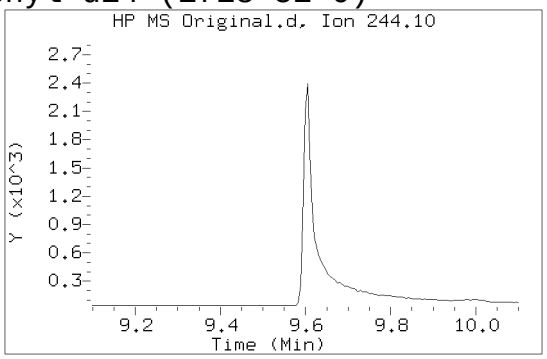


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\06.D
Inj Date : 11-JAN-2023 16:54
InstruID : SV6.i
LabSampID : LCSD-187710

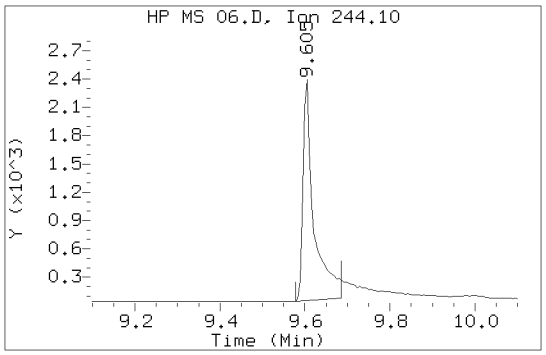
4-Terphenyl-d14 (1718-51-0)

Reason Code:

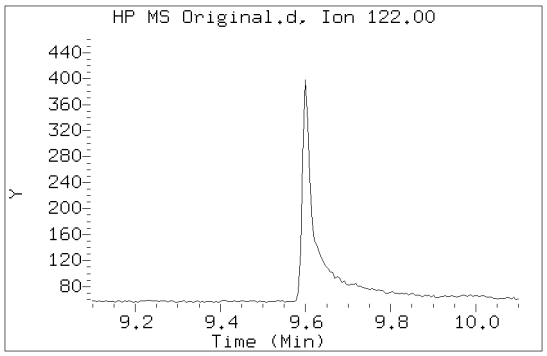
BEFORE
MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
17:09
ALSHS
Server



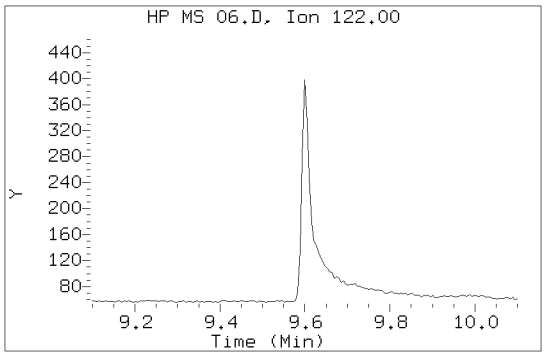
AFTER
MASS
244.1
AREA
4152
HEIGHT
2340
12-Jan-2023
09:08



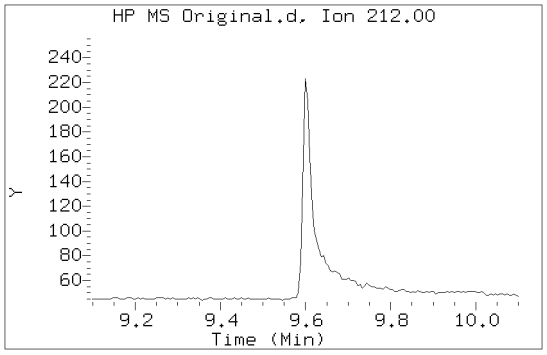
BEFORE
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
17:09
ALSHS
Server



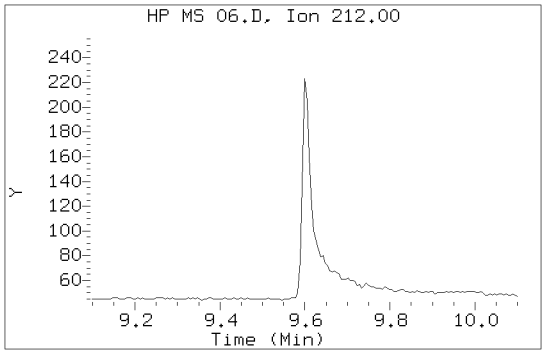
AFTER
MASS
122
AREA
0
HEIGHT
0
12-Jan-2023
09:08



BEFORE
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
17:09
ALSHS
Server



AFTER
MASS
212
AREA
0
HEIGHT
0
12-Jan-2023
09:08



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\12.D Page 1
Report Date: 12-Jan-2023 09:16

ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\12.D
Lab Smp Id: HS22121096-01
Inj Date : 11-JAN-2023 18:41
Operator : LG Inst ID: SV6.i
Smp Info : HS22121096-01
Misc Info :
Comment :
Method : \\nahstws005\Target\chem\SV6.i\230111A.b\DXSIM.m
Meth Date : 11-Jan-2023 15:55 marco.guti Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

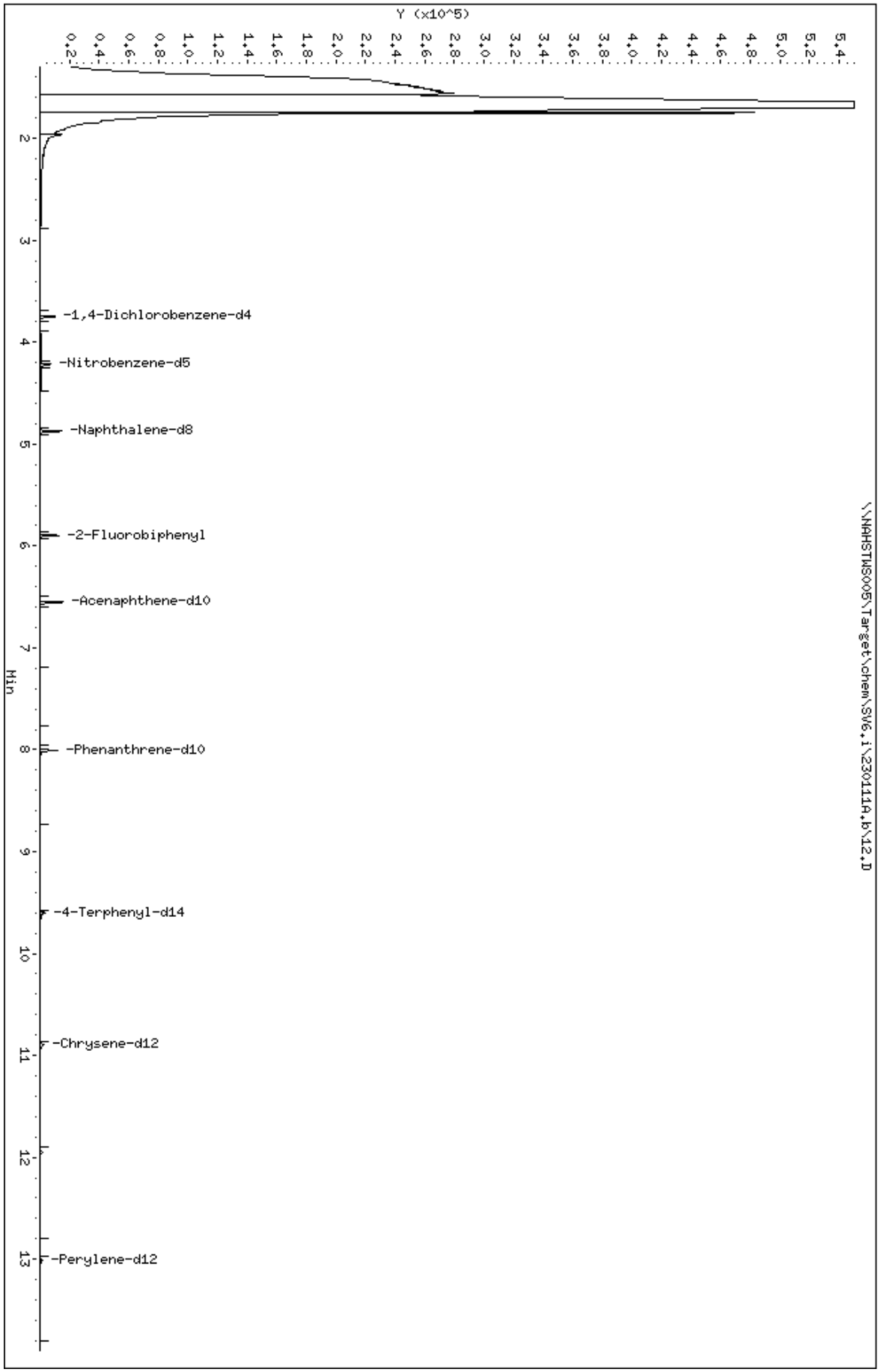
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/L)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	3175	0.10000	(a)
* 45 Naphthalene-d8	136	4.875	4.875	(1.000)	12159	0.10000	
$ 33 Nitrobenzene-d5	82	4.220	4.220	(0.866)	3882	0.08721	0.08721(M)
* 86 Acenaphthene-d10	164	6.557	6.551	(1.000)	6526	0.10000	(M)
$ 69 2-Fluorobiphenyl	172	5.896	5.895	(0.899)	8243	0.09781	0.09781
* 126 Phenanthrene-d10	188	8.007	8.007	(1.000)	10607	0.10000	
* 182 Chrysene-d12	240	10.896	10.890	(1.000)	3334	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.604	9.599	(0.881)	4716	0.09482	0.09482(M)
* 198 Perylene-d12	264	13.017	13.011	(1.000)	2160	0.10000	
1 1,4-Dioxane	58	1.972	1.994	(0.526)	1900	0.18136	0.1814(M)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\12.D
Date : 11-JAN-2023 18:41
Client ID:
Sample Info: HS2212096-01
Purge Volume: 1000.0
Column phase: RTX-5SIL MS

Instrument: SV6.i
Operator: LG
Column diameter: 0.28



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\12.D

Date : 11-JAN-2023 18:41

Client ID:

Instrument: SV6.i

Sample Info: HS22121096-01

Purge Volume: 1000.0

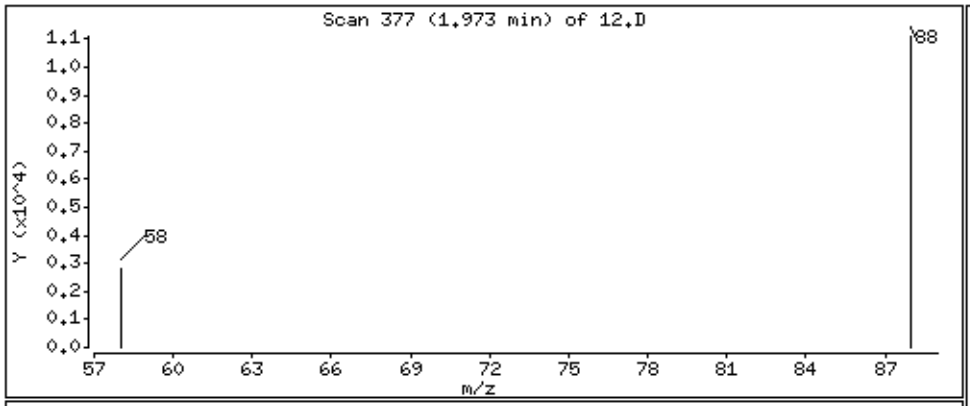
Operator: LG

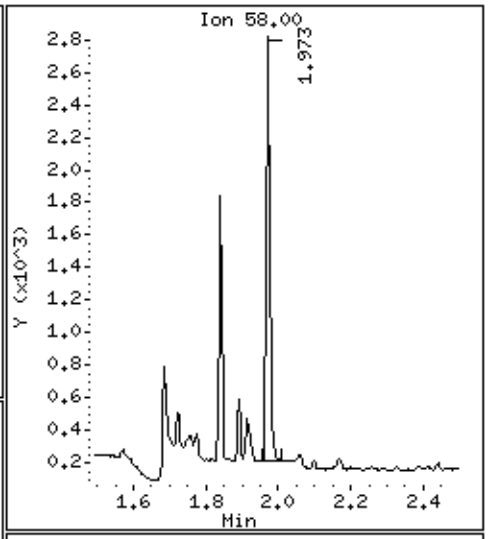
Column phase: RTX-5SIL MS

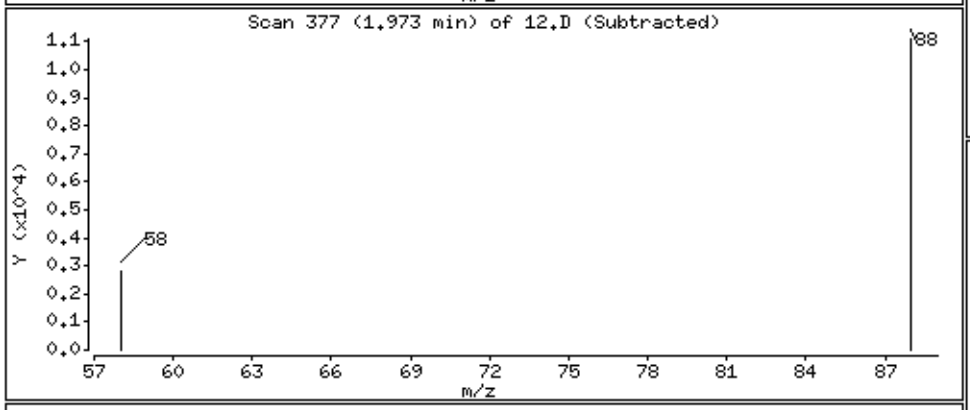
Column diameter: 0.28

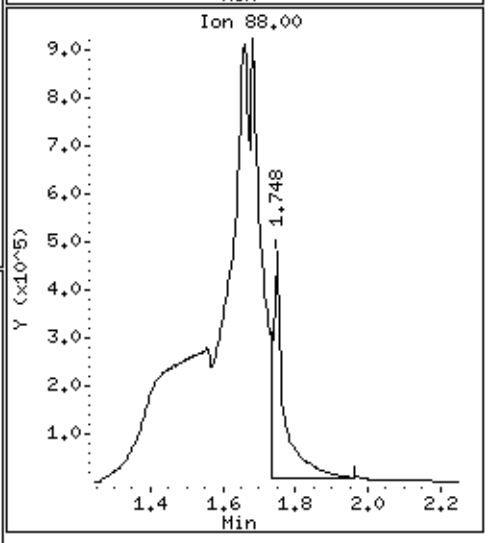
1 1,4-Dioxane

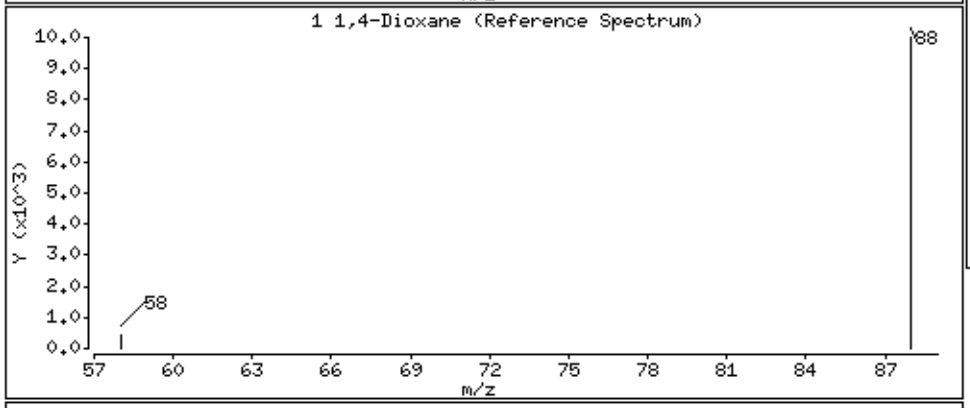
Concentration: 0.1814 ug/L

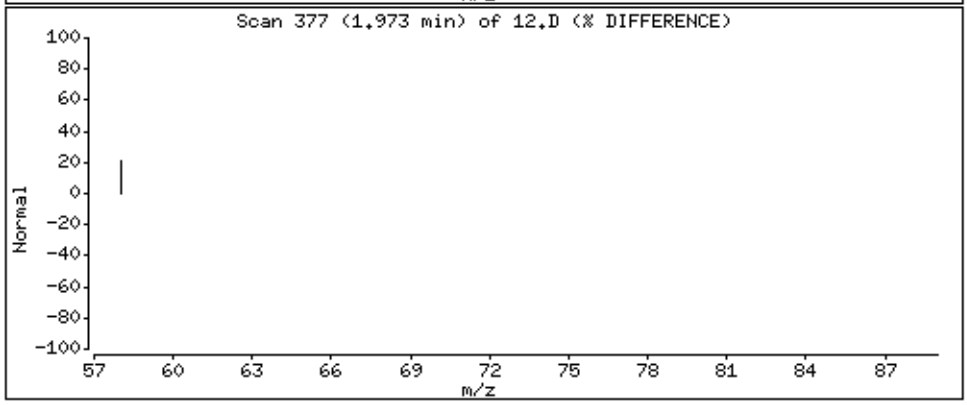












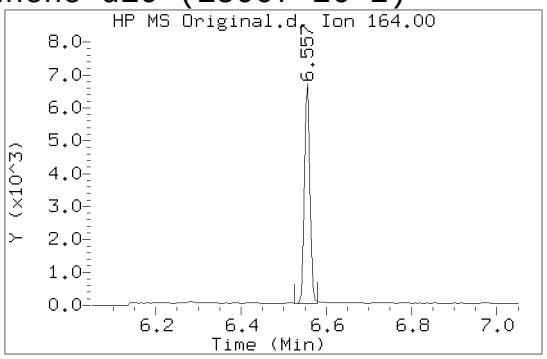
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\12.D
Inj Date : 11-JAN-2023 18:41
InstruID : SV6.i
LabSampID : HS22121096-01

Acenaphthene-d10 (15067-26-2)

Reason Code:

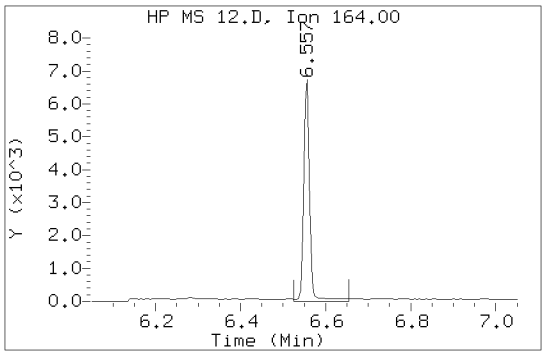
BEFORE

MASS
164
AREA
5938
HEIGHT
6668
11-Jan-2023
18:56
ALSHS
Server



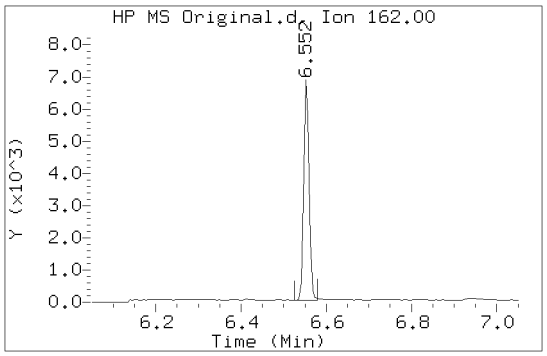
AFTER

MASS
164
AREA
6526
HEIGHT
6735
12-Jan-2023
09:16



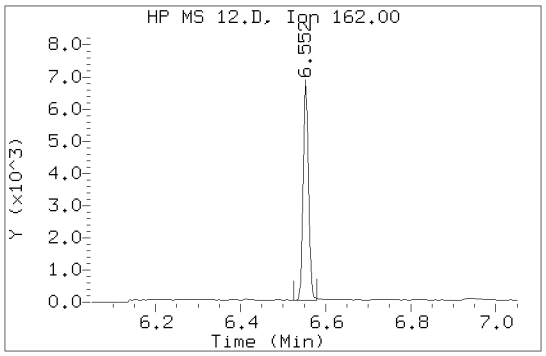
BEFORE

MASS
162
AREA
5963
HEIGHT
6842
11-Jan-2023
18:56
ALSHS
Server



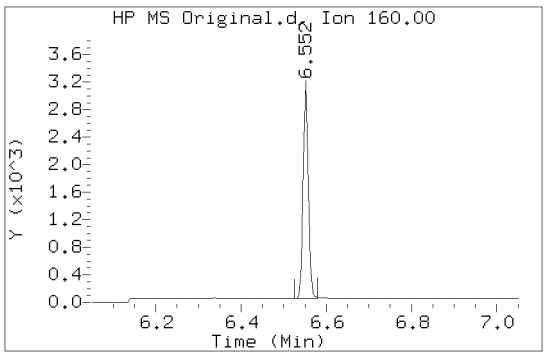
AFTER

MASS
162
AREA
5963
HEIGHT
6842
12-Jan-2023
09:16



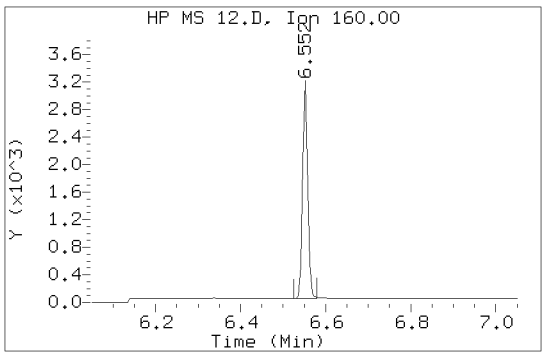
BEFORE

MASS
160
AREA
2660
HEIGHT
3167
11-Jan-2023
18:56
ALSHS
Server



AFTER

MASS
160
AREA
2660
HEIGHT
3167
12-Jan-2023
09:16

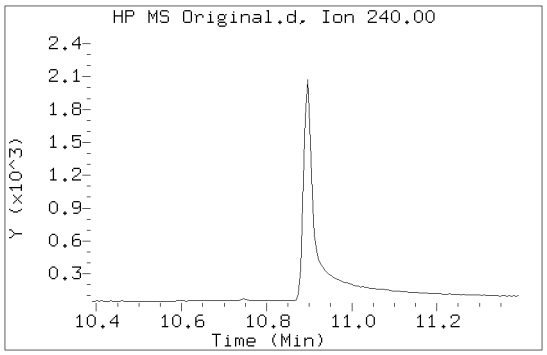


Chrysene-d12 (1719-03-5)

Reason Code:

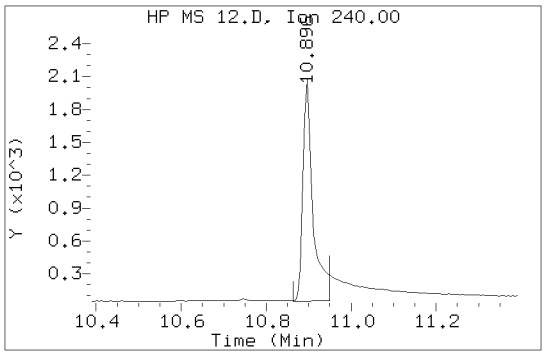
BEFORE

MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
18:56
ALSHS
Server



AFTER

MASS
240
AREA
3334
HEIGHT
2019
12-Jan-2023
09:16



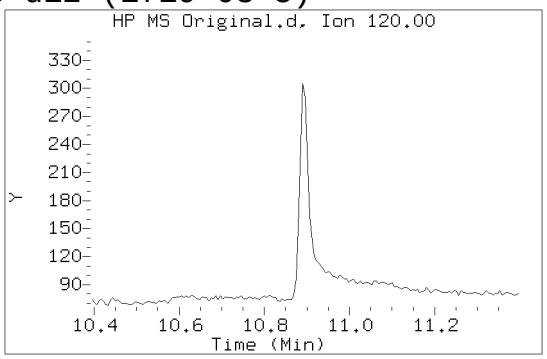
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\12.D
Inj Date : 11-JAN-2023 18:41
InstruID : SV6.i
LabSampID : HS22121096-01

Chrysene-d12 (1719-03-5)

Reason Code:

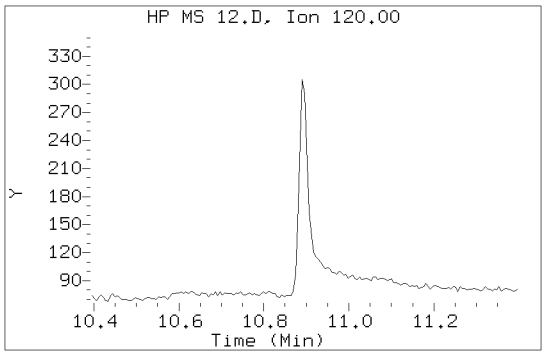
BEFORE

MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
18:56
ALSHS
Server



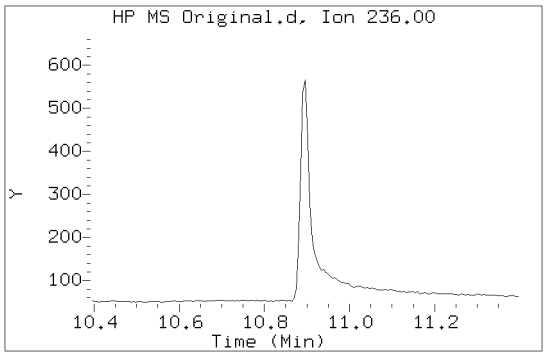
AFTER

MASS
120
AREA
0
HEIGHT
0
12-Jan-2023
09:16



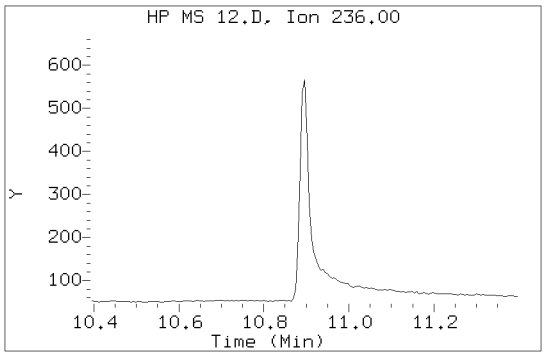
BEFORE

MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
18:56
ALSHS
Server



AFTER

MASS
236
AREA
0
HEIGHT
0
12-Jan-2023
09:16

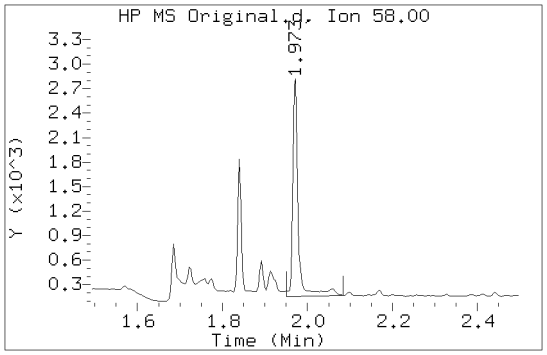


1,4-Dioxane ()

Reason Code:

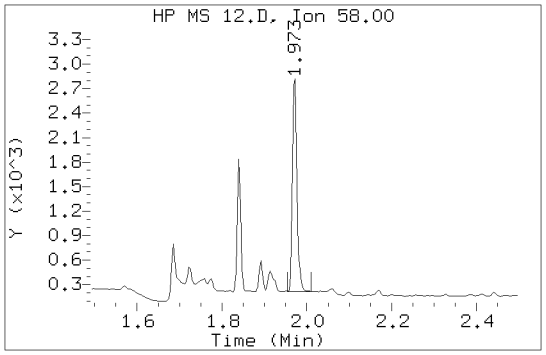
BEFORE

MASS
58
AREA
2337
HEIGHT
2663
11-Jan-2023
18:56
ALSHS
Server



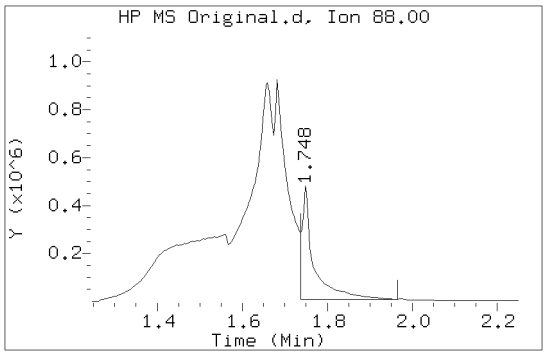
AFTER

MASS
58
AREA
1900
HEIGHT
2601
12-Jan-2023
09:16



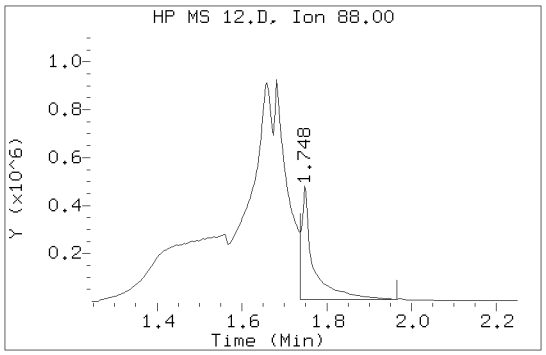
BEFORE

MASS
88
AREA
932578
HEIGHT
473251
11-Jan-2023
18:56
ALSHS
Server



AFTER

MASS
88
AREA
932578
HEIGHT
473251
12-Jan-2023
09:16



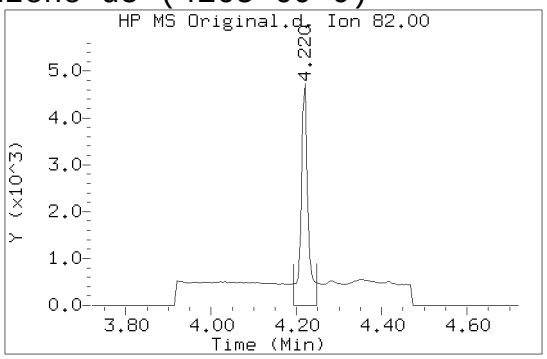
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\12.D
Inj Date : 11-JAN-2023 18:41
InstruID : SV6.i
LabSampID : HS22121096-01

Nitrobenzene-d5 (4165-60-0)

Reason Code:

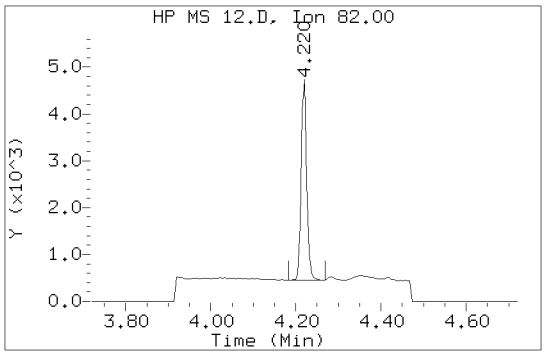
BEFORE

MASS
82
AREA
5501
HEIGHT
4730
11-Jan-2023
18:56
ALSHS
Server



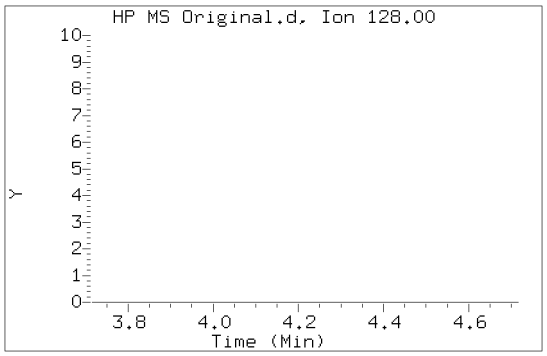
AFTER

MASS
82
AREA
3882
HEIGHT
4274
12-Jan-2023
09:16



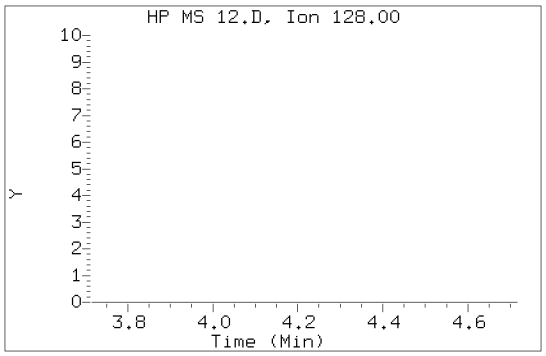
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
18:56
ALSHS
Server



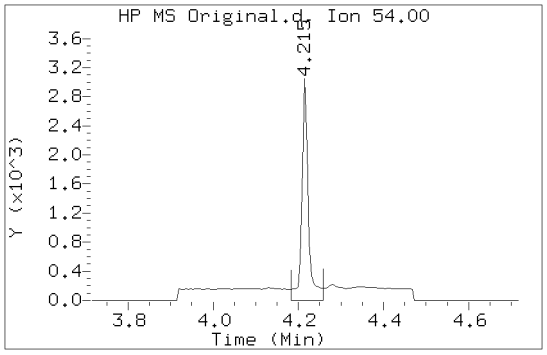
AFTER

MASS
128
AREA
0
HEIGHT
0
12-Jan-2023
09:16



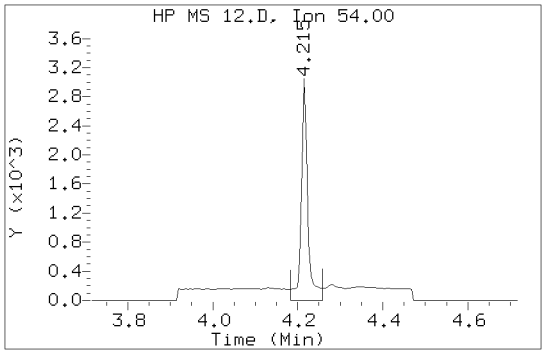
BEFORE

MASS
54
AREA
3292
HEIGHT
3048
11-Jan-2023
18:56
ALSHS
Server



AFTER

MASS
54
AREA
3292
HEIGHT
3048
12-Jan-2023
09:16

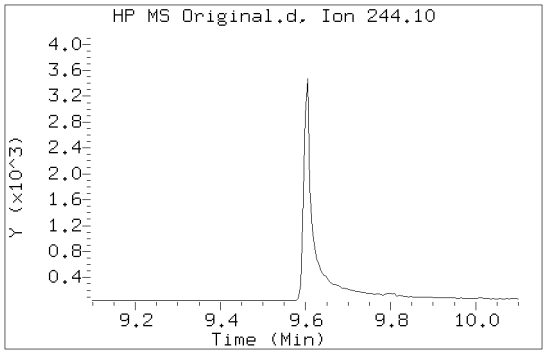


4-Terphenyl-d14 (1718-51-0)

Reason Code:

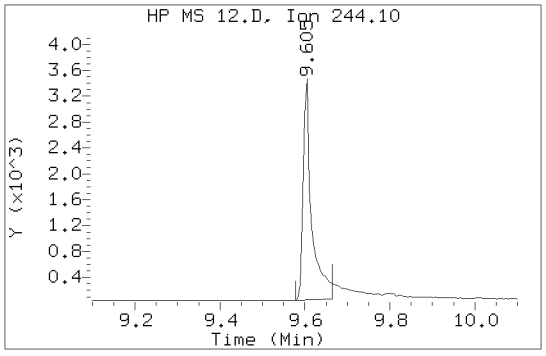
BEFORE

MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
18:56
ALSHS
Server



AFTER

MASS
244.1
AREA
4716
HEIGHT
3419
12-Jan-2023
09:16



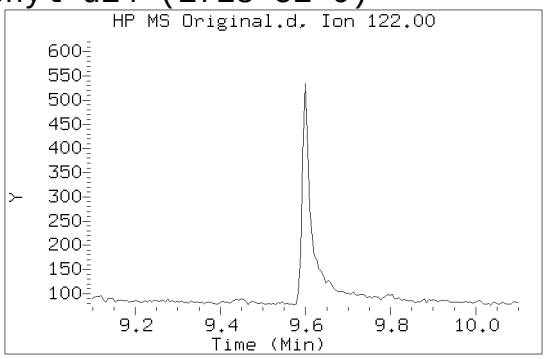
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\12.D
Inj Date : 11-JAN-2023 18:41
InstruID : SV6.i
LabSampID : HS22121096-01

4-Terphenyl-d14 (1718-51-0)

Reason Code:

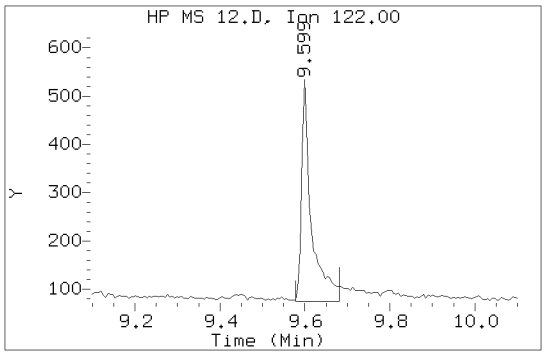
BEFORE

MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
18:56
ALSHS
Server



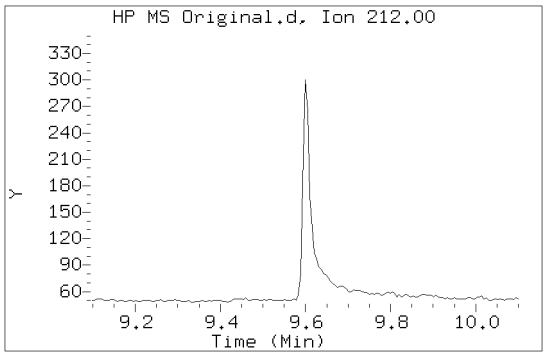
AFTER

MASS
122
AREA
729
HEIGHT
459
12-Jan-2023
09:16



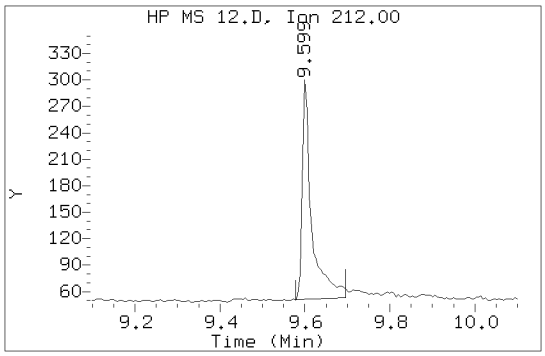
BEFORE

MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
18:56
ALSHS
Server



AFTER

MASS
212
AREA
381
HEIGHT
248
12-Jan-2023
09:16



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\13.D Page 1
Report Date: 12-Jan-2023 09:17

ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\13.D
Lab Smp Id: HS22121096-02
Inj Date : 11-JAN-2023 18:59
Operator : LG Inst ID: SV6.i
Smp Info : HS22121096-02
Misc Info :
Comment :
Method : \\nahstws005\Target\chem\SV6.i\230111A.b\DXSIM.m
Meth Date : 11-Jan-2023 15:55 marco.guti Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/L)	
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	3832	0.10000		(a)
* 45 Naphthalene-d8	136	4.875	4.875	(1.000)	14662	0.10000		
$ 33 Nitrobenzene-d5	82	4.220	4.220	(0.866)	4817	0.08974	0.08974	(M)
* 86 Acenaphthene-d10	164	6.557	6.551	(1.000)	8248	0.10000		
$ 69 2-Fluorobiphenyl	172	5.895	5.895	(0.899)	9762	0.09165	0.09165	
* 126 Phenanthrene-d10	188	8.007	8.007	(1.000)	14505	0.10000		
* 182 Chrysene-d12	240	10.896	10.890	(1.000)	5256	0.10000		(M)
$ 158 4-Terphenyl-d14	244	9.604	9.599	(0.881)	7130	0.09072	0.09072	(M)
* 198 Perylene-d12	264	13.017	13.011	(1.000)	3423	0.10000		(M)
1 1,4-Dioxane	58	1.994	1.994	(0.531)	174	0.01376	0.01376	(M)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\13.D

Date : 11-JAN-2023 18:59

Client ID:

Instrument: SV6.i

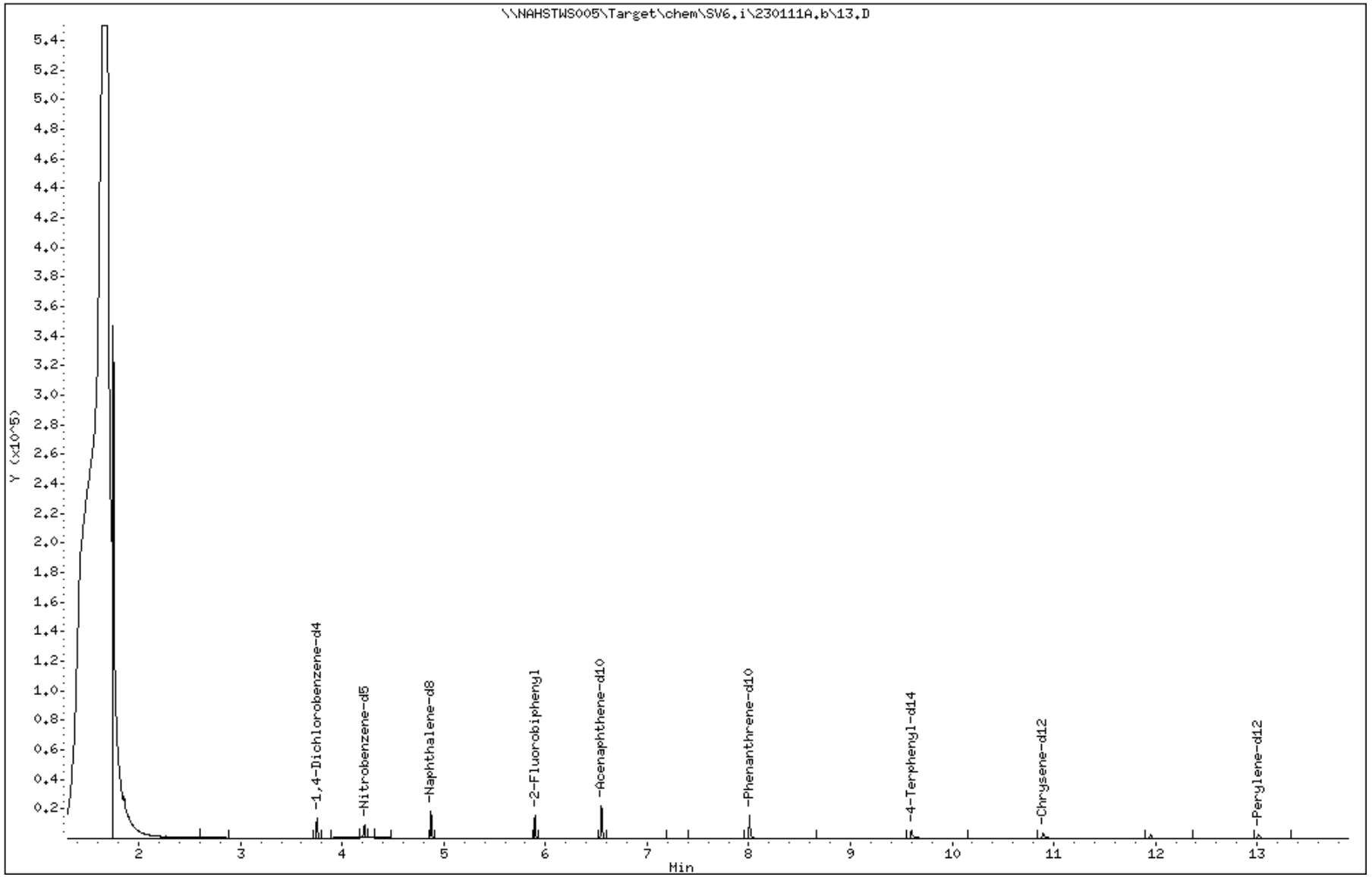
Sample Info: HS22121096-02

Purge Volume: 1000.0

Operator: LG

Column phase: RTX-5SIL MS

Column diameter: 0.28



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111A.b\13.D

Date : 11-JAN-2023 18:59

Client ID:

Instrument: SV6.i

Sample Info: HS22121096-02

Purge Volume: 1000.0

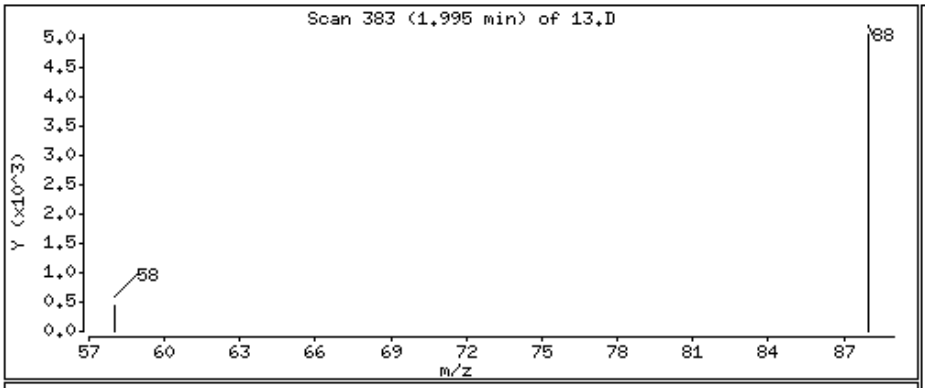
Operator: LG

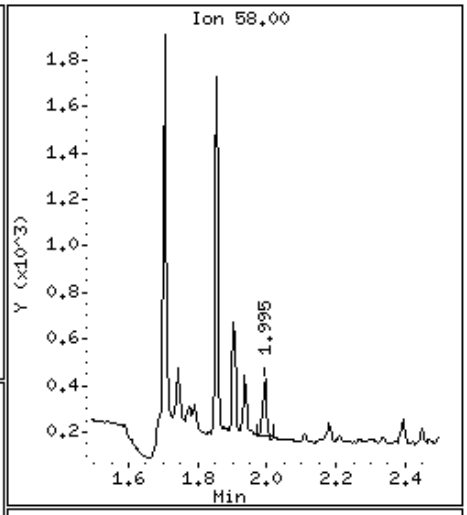
Column phase: RTX-5SIL MS

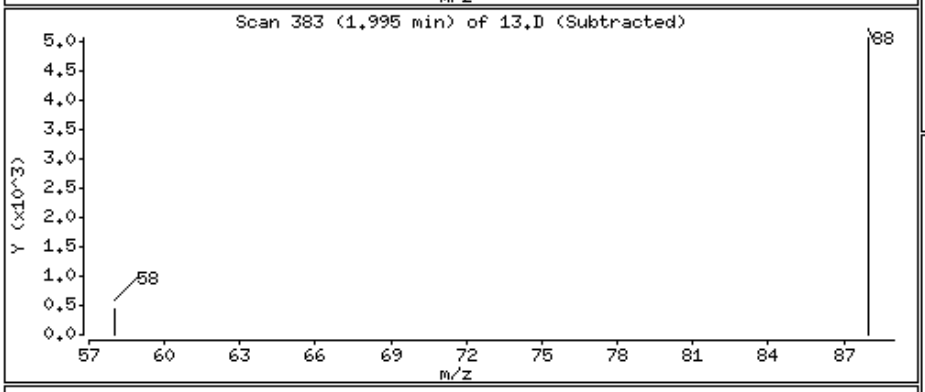
Column diameter: 0.28

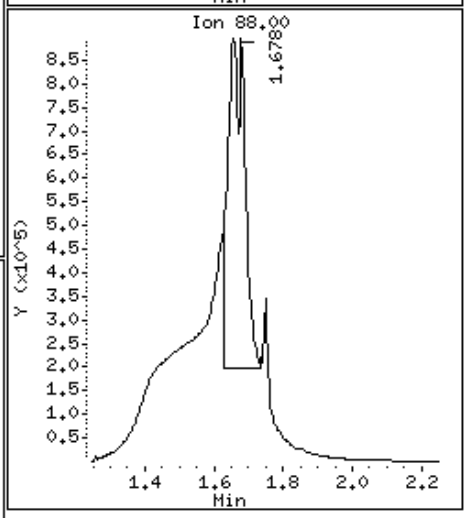
1 1,4-Dioxane

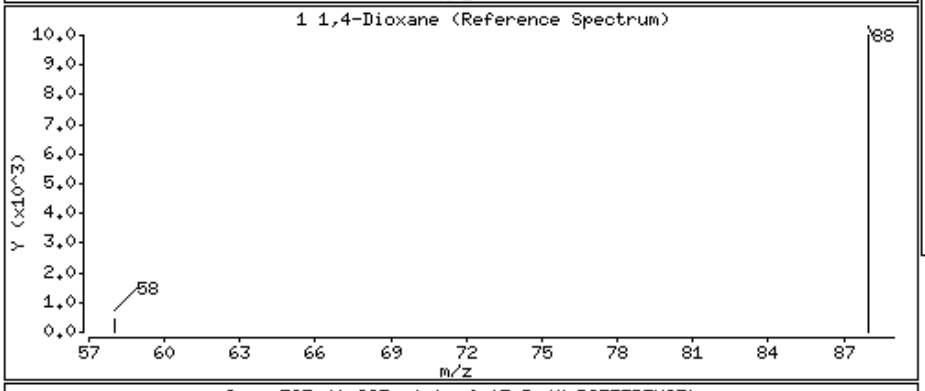
Concentration: 0.01376 ug/L

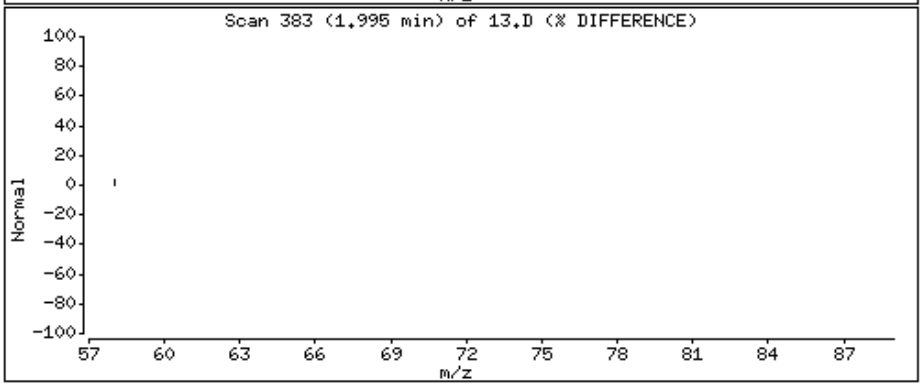












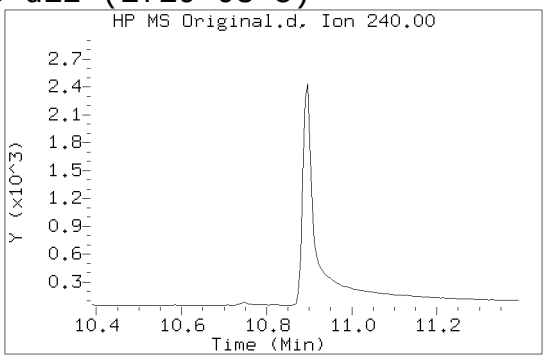
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\13.D
Inj Date : 11-JAN-2023 18:59
InstruID : SV6.i
LabSampID : HS22121096-02

Chrysene-d12 (1719-03-5)

Reason Code:

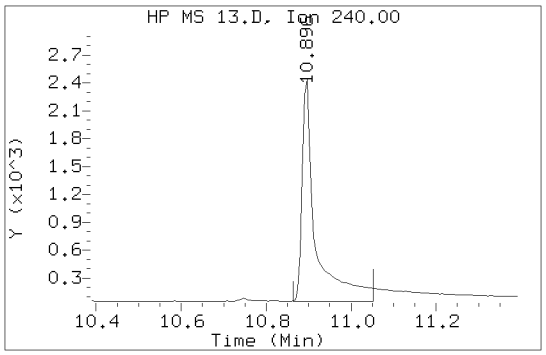
BEFORE

MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
19:15
ALSHS
Server



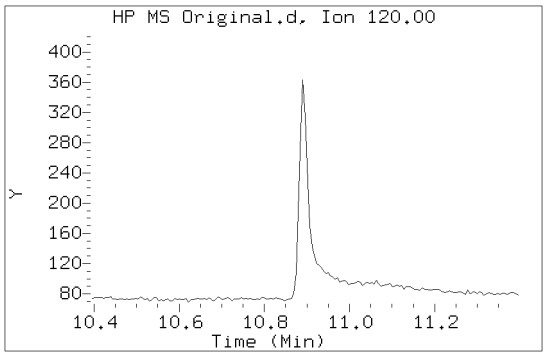
AFTER

MASS
240
AREA
5256
HEIGHT
2382
12-Jan-2023
09:17



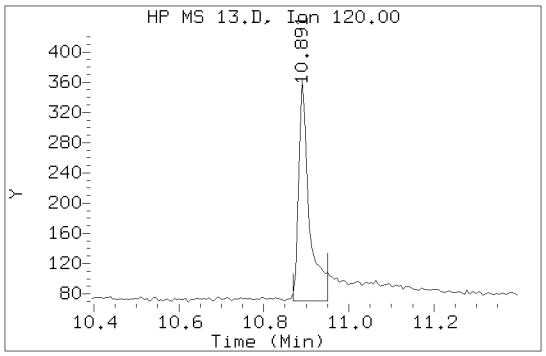
BEFORE

MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
19:15
ALSHS
Server



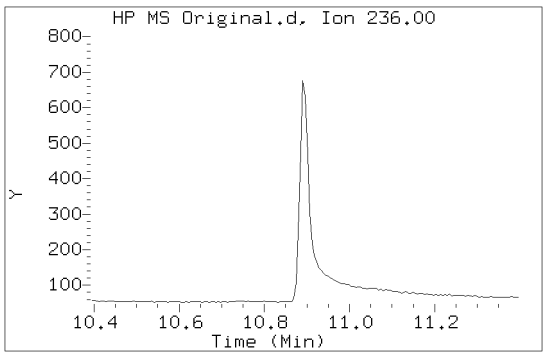
AFTER

MASS
120
AREA
504
HEIGHT
292
12-Jan-2023
09:17



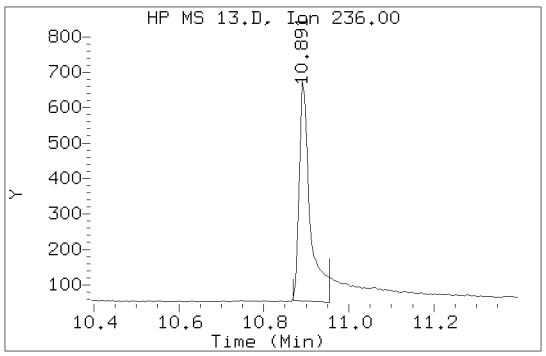
BEFORE

MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
19:15
ALSHS
Server



AFTER

MASS
236
AREA
1104
HEIGHT
620
12-Jan-2023
09:17

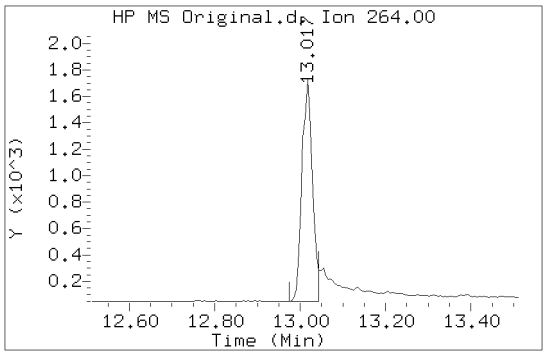


Perylene-d12 (1520-96-3)

Reason Code:

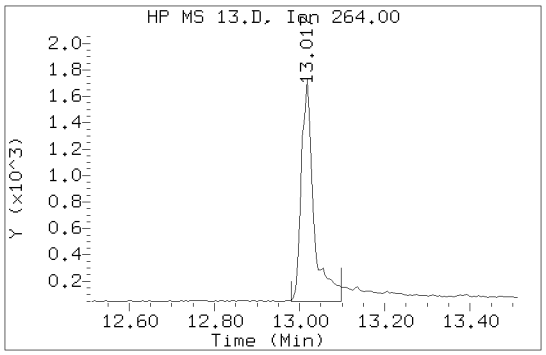
BEFORE

MASS
264
AREA
2875
HEIGHT
1675
11-Jan-2023
19:15
ALSHS
Server



AFTER

MASS
264
AREA
3423
HEIGHT
1678
12-Jan-2023
09:17



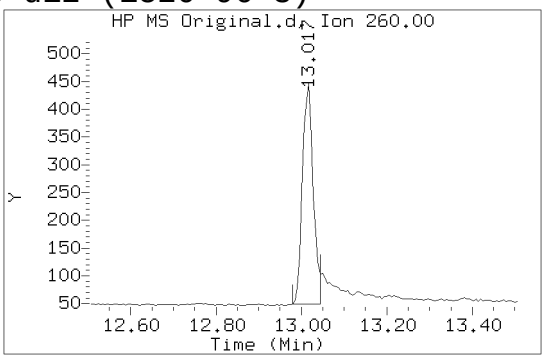
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\13.D
Inj Date : 11-JAN-2023 18:59
InstruID : SV6.i
LabSampID : HS22121096-02

Perylene-d12 (1520-96-3)

Reason Code:

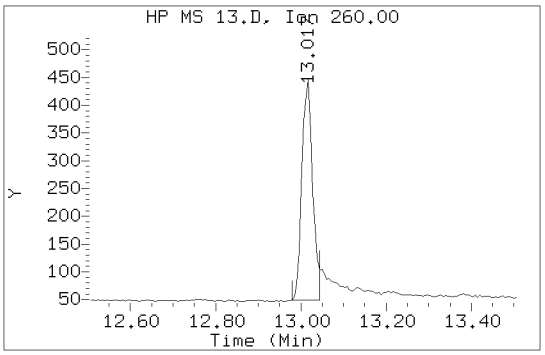
BEFORE

MASS
260
AREA
699
HEIGHT
397
11-Jan-2023
19:15
ALSHS
Server



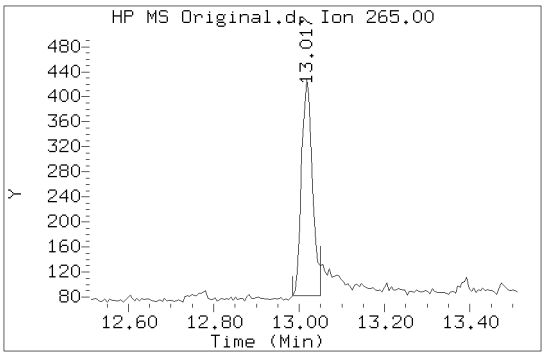
AFTER

MASS
260
AREA
699
HEIGHT
397
12-Jan-2023
09:17



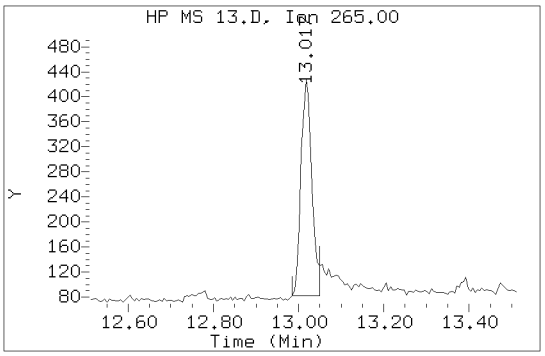
BEFORE

MASS
265
AREA
614
HEIGHT
345
11-Jan-2023
19:15
ALSHS
Server



AFTER

MASS
265
AREA
614
HEIGHT
345
12-Jan-2023
09:17

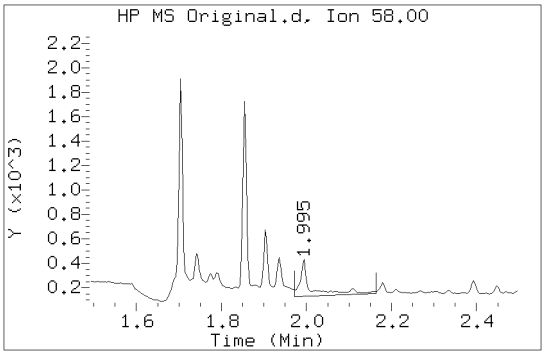


1,4-Dioxane ()

Reason Code:

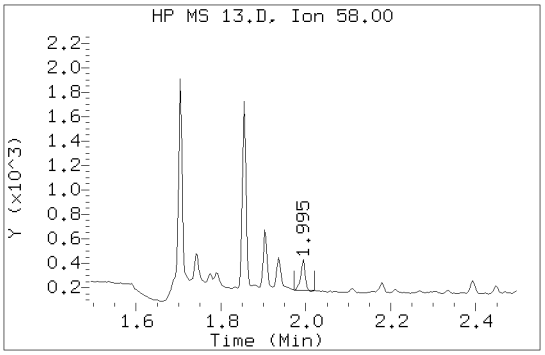
BEFORE

MASS
58
AREA
531
HEIGHT
301
11-Jan-2023
19:15
ALSHS
Server



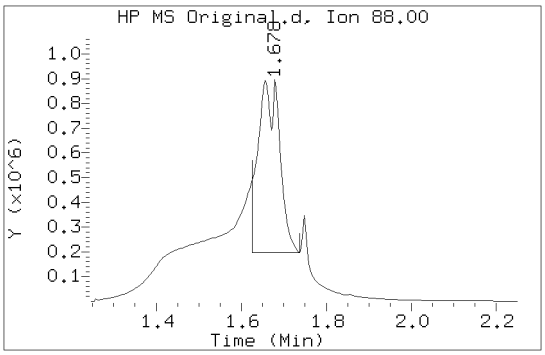
AFTER

MASS
58
AREA
174
HEIGHT
251
12-Jan-2023
09:17



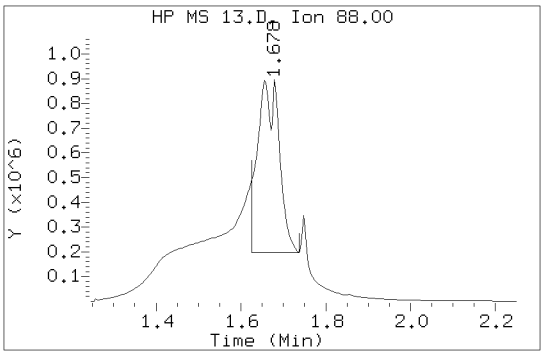
BEFORE

MASS
88
AREA
2450212
HEIGHT
698368
11-Jan-2023
19:15
ALSHS
Server



AFTER

MASS
88
AREA
2450212
HEIGHT
698368
12-Jan-2023
09:17



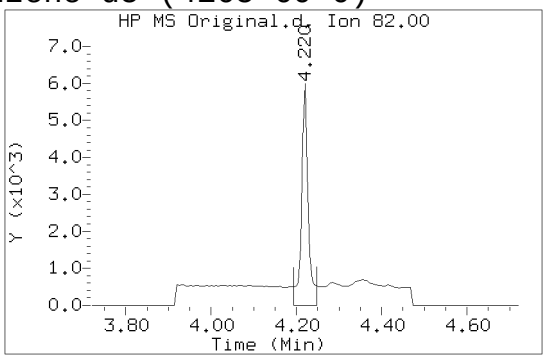
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\13.D
Inj Date : 11-JAN-2023 18:59
InstruID : SV6.i
LabSampID : HS22121096-02

Nitrobenzene-d5 (4165-60-0)

Reason Code:

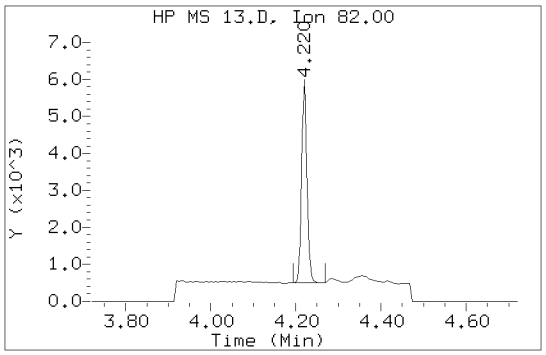
BEFORE

MASS
82
AREA
6594
HEIGHT
5992
11-Jan-2023
19:15
ALSHS
Server



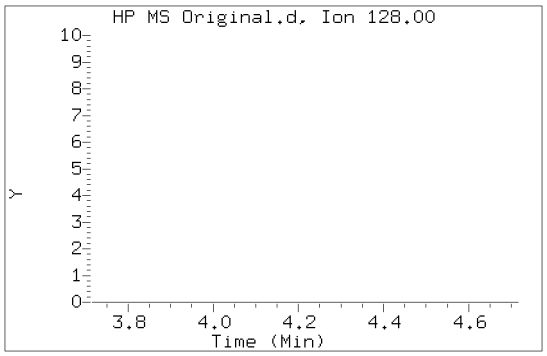
AFTER

MASS
82
AREA
4817
HEIGHT
5489
12-Jan-2023
09:17



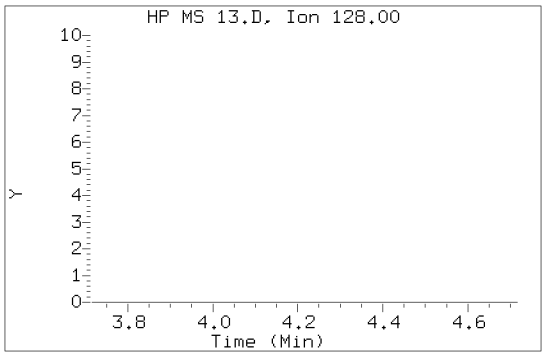
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
19:15
ALSHS
Server



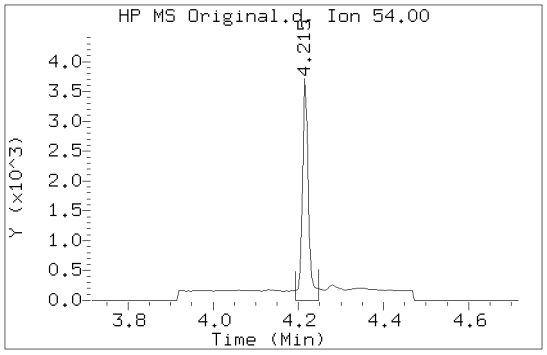
AFTER

MASS
128
AREA
0
HEIGHT
0
12-Jan-2023
09:17



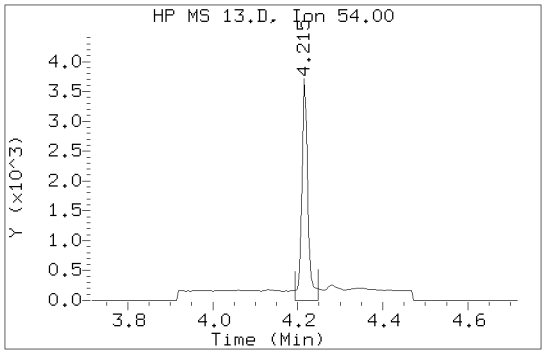
BEFORE

MASS
54
AREA
3734
HEIGHT
3714
11-Jan-2023
19:15
ALSHS
Server



AFTER

MASS
54
AREA
3734
HEIGHT
3714
12-Jan-2023
09:17

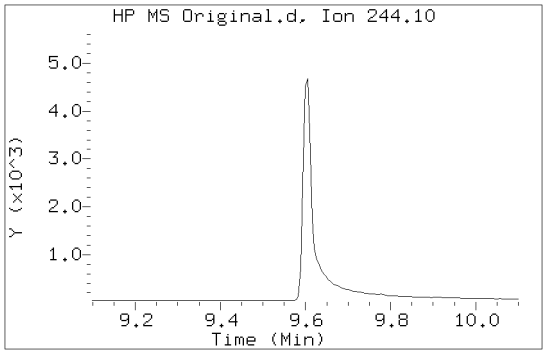


4-Terphenyl-d14 (1718-51-0)

Reason Code:

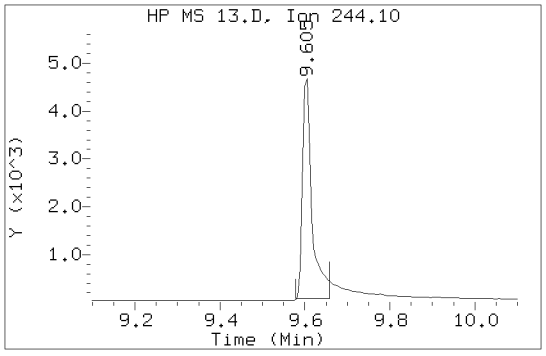
BEFORE

MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
19:15
ALSHS
Server



AFTER

MASS
244.1
AREA
7130
HEIGHT
4591
12-Jan-2023
09:17

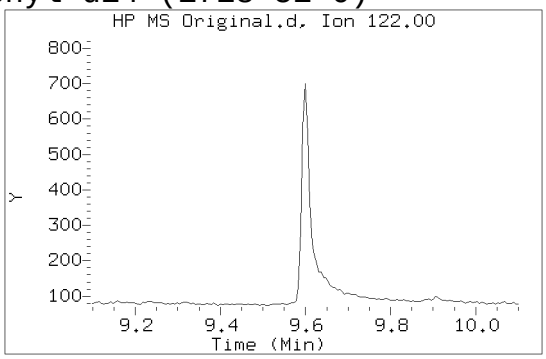


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\13.D
Inj Date : 11-JAN-2023 18:59
InstruID : SV6.i
LabSampID : HS22121096-02

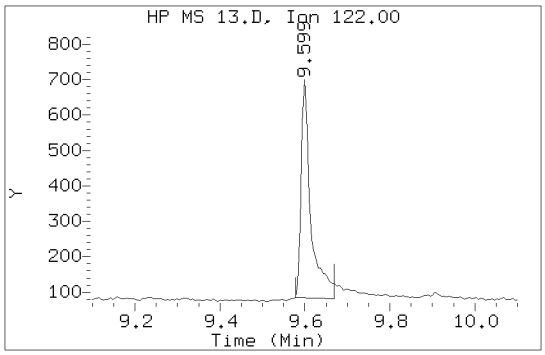
4-Terphenyl-d14 (1718-51-0)

Reason Code:

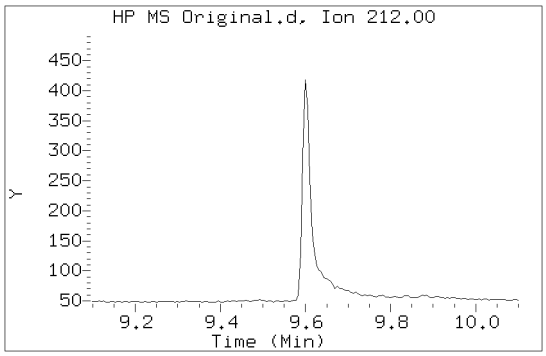
BEFORE
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
19:15
ALSHS
Server



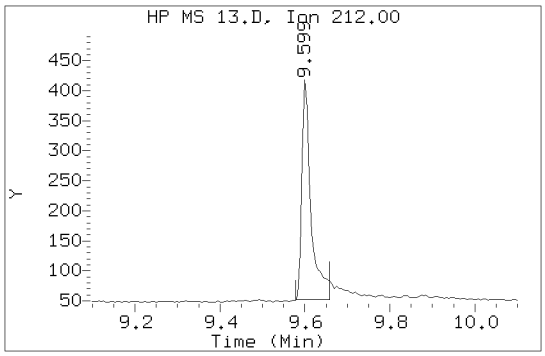
AFTER
MASS
122
AREA
972
HEIGHT
615
12-Jan-2023
09:17



BEFORE
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
19:15
ALSHS
Server



AFTER
MASS
212
AREA
546
HEIGHT
366
12-Jan-2023
09:17



ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\24.D
Lab Smp Id: 14DX-0.08 Client Smp ID: 14DX-0.08
Inj Date : 11-JAN-2023 22:17
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.08
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\DXSIM.m
Meth Date : 13-Jan-2023 14:48 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 23 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.758	3.758	(1.000)	4537	0.10000	(a)
* 45 Naphthalene-d8	136	4.878	4.878	(1.000)	20294	0.10000	
$ 33 Nitrobenzene-d5	82	4.220	4.220	(0.865)	5328	0.08000	0.07171(QM)
* 86 Acenaphthene-d10	164	6.557	6.557	(1.000)	9264	0.10000	(M)
$ 69 2-Fluorobiphenyl	172	5.899	5.899	(0.935)	10437	0.08000	0.08724
* 126 Phenanthrene-d10	188	8.007	8.007	(1.000)	17389	0.10000	
* 182 Chrysene-d12	240	10.901	10.901	(1.000)	5596	0.10000	(QM)
$ 158 4-Terphenyl-d14	244	9.604	9.604	(0.881)	7266	0.08000	0.08659(M)
* 198 Perylene-d12	264	13.011	13.011	(1.000)	2963	0.10000	(M)
1 1,4-Dioxane	58	2.009	2.009	(0.535)	1256	0.08000	0.08390(Q)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

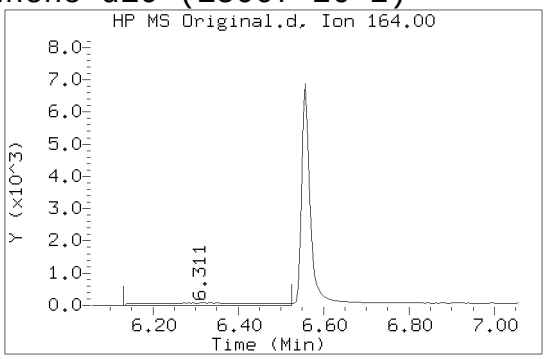
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\24.D
Inj Date : 11-JAN-2023 22:17
InstruID : SV6.i
LabSampID : 14DX-0.08

Acenaphthene-d10 (15067-26-2)

Reason Code:

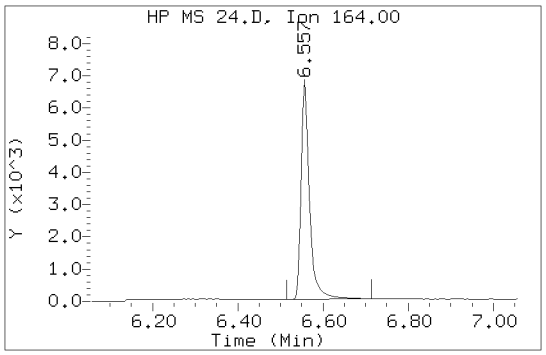
BEFORE

MASS
164
AREA
1580
HEIGHT
71
11-Jan-2023
22:32
ALSHS
Server



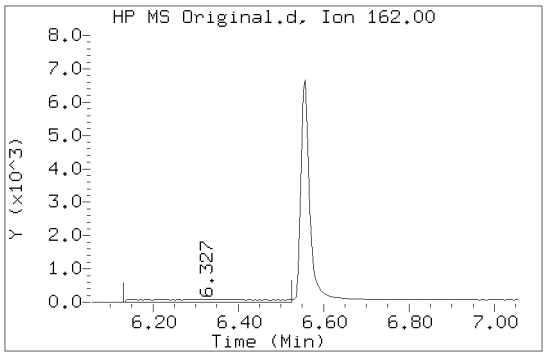
AFTER

MASS
164
AREA
9264
HEIGHT
6806
16-Jan-2023
10:56



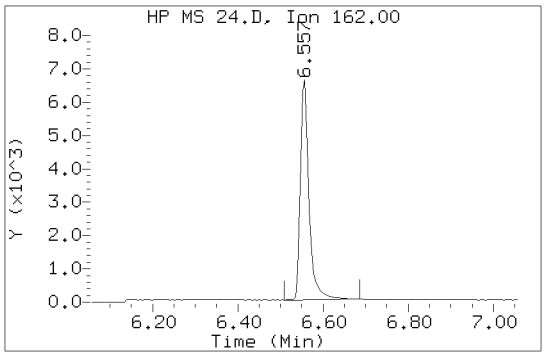
BEFORE

MASS
162
AREA
1596
HEIGHT
72
11-Jan-2023
22:32
ALSHS
Server



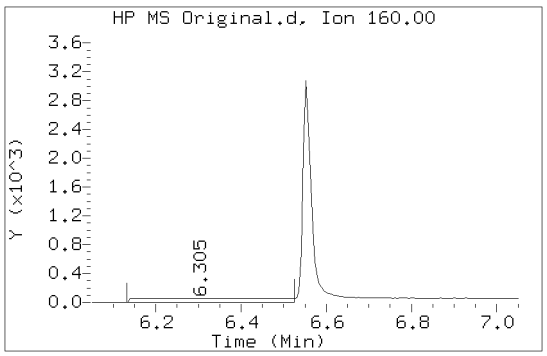
AFTER

MASS
162
AREA
9289
HEIGHT
6595
16-Jan-2023
10:56



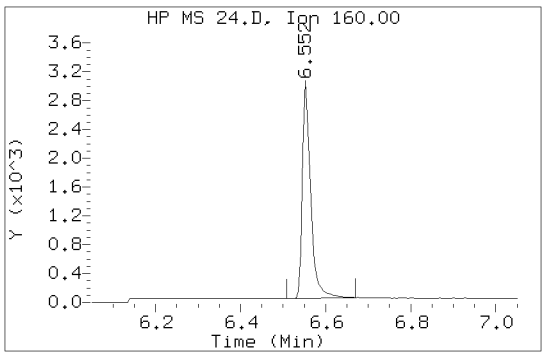
BEFORE

MASS
160
AREA
1276
HEIGHT
57
11-Jan-2023
22:32
ALSHS
Server



AFTER

MASS
160
AREA
4062
HEIGHT
3018
16-Jan-2023
10:56

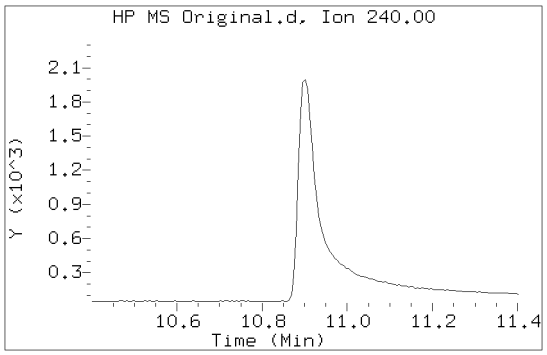


Chrysene-d12 (1719-03-5)

Reason Code:

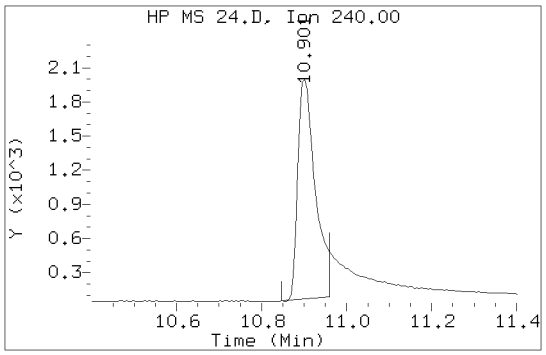
BEFORE

MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
22:32
ALSHS
Server



AFTER

MASS
240
AREA
5596
HEIGHT
1925
16-Jan-2023
10:56

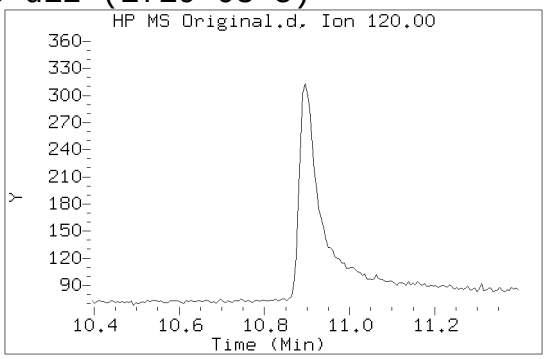


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\24.D
Inj Date : 11-JAN-2023 22:17
InstruID : SV6.i
LabSampID : 14DX-0.08

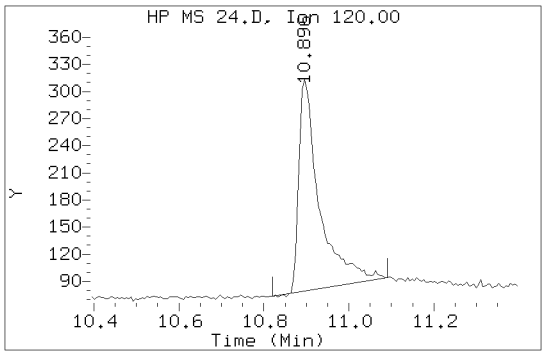
Chrysene-d12 (1719-03-5)

Reason Code:

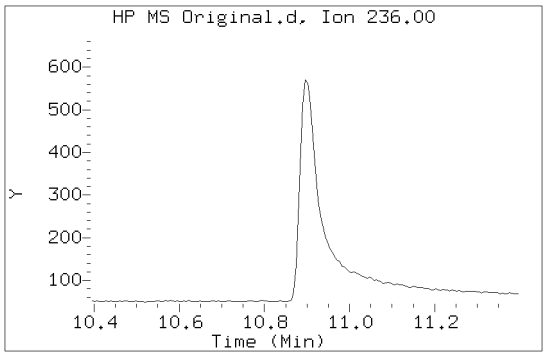
BEFORE
MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
22:32
ALSHS
Server



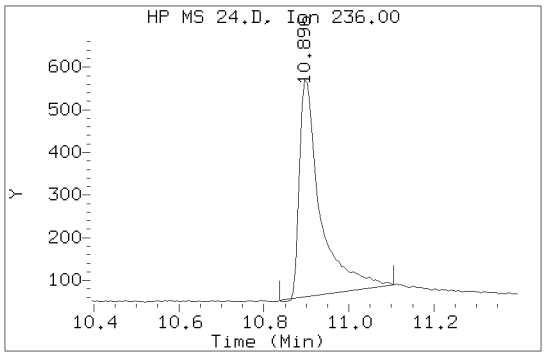
AFTER
MASS
120
AREA
786
HEIGHT
233
16-Jan-2023
10:56



BEFORE
MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
22:32
ALSHS
Server



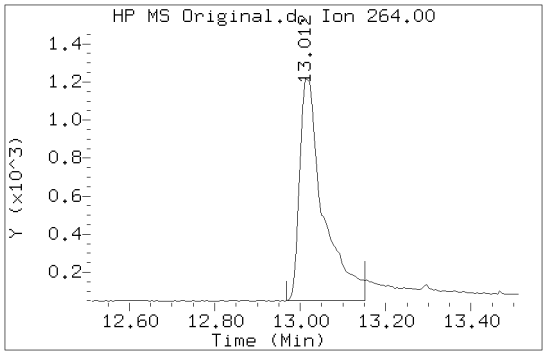
AFTER
MASS
236
AREA
1732
HEIGHT
508
16-Jan-2023
10:56



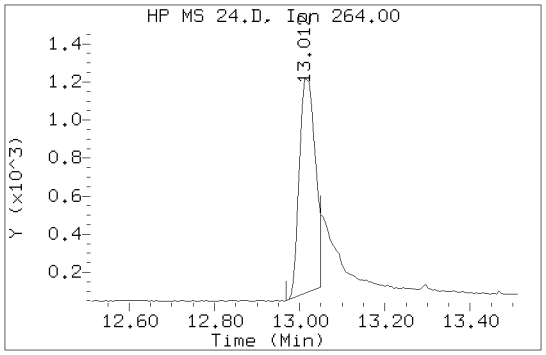
Perylene-d12 (1520-96-3)

Reason Code:

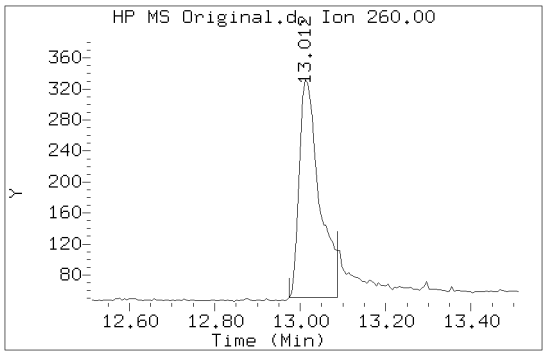
BEFORE
MASS
264
AREA
4479
HEIGHT
1165
11-Jan-2023
22:32
ALSHS
Server



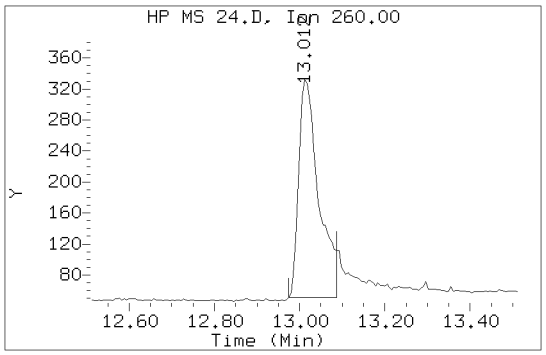
AFTER
MASS
264
AREA
2963
HEIGHT
1127
16-Jan-2023
10:56



BEFORE
MASS
260
AREA
920
HEIGHT
281
11-Jan-2023
22:32
ALSHS
Server



AFTER
MASS
260
AREA
920
HEIGHT
281
16-Jan-2023
10:56



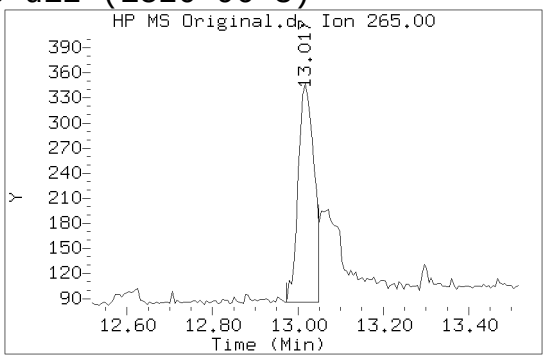
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\24.D
Inj Date : 11-JAN-2023 22:17
InstruID : SV6.i
LabSampID : 14DX-0.08

Perylene-d12 (1520-96-3)

Reason Code:

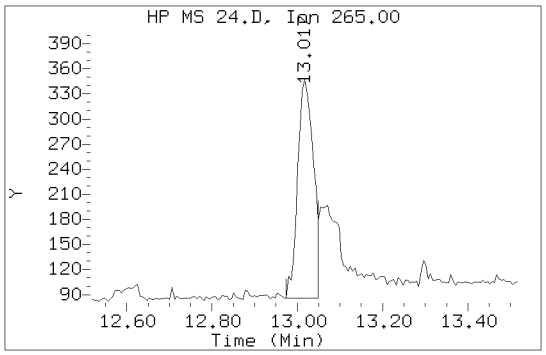
BEFORE

MASS
265
AREA
673
HEIGHT
261
11-Jan-2023
22:32
ALSHS
Server



AFTER

MASS
265
AREA
673
HEIGHT
261
16-Jan-2023
10:56

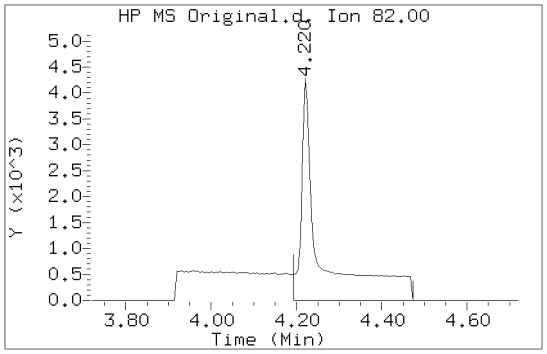


Nitrobenzene-d5 (4165-60-0)

Reason Code:

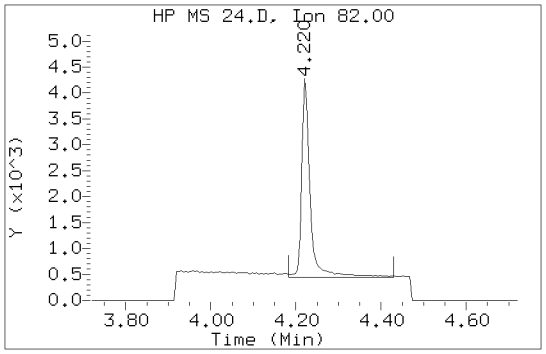
BEFORE

MASS
82
AREA
12807
HEIGHT
4275
11-Jan-2023
22:32
ALSHS
Server



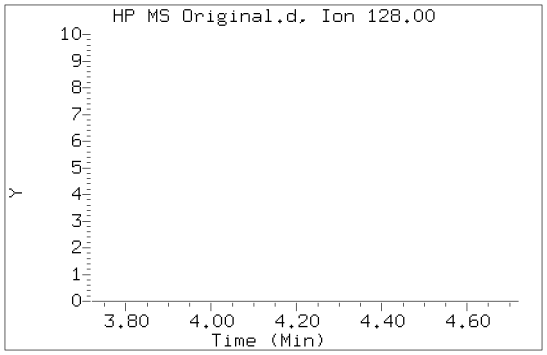
AFTER

MASS
82
AREA
5328
HEIGHT
3828
16-Jan-2023
10:56



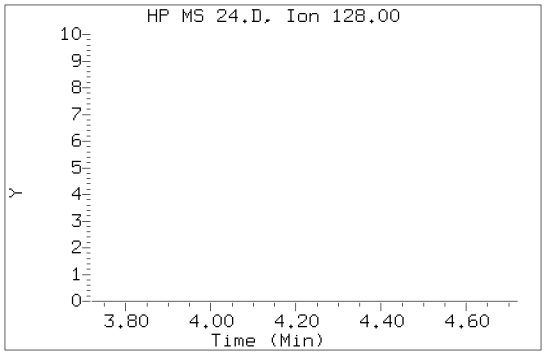
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
22:32
ALSHS
Server



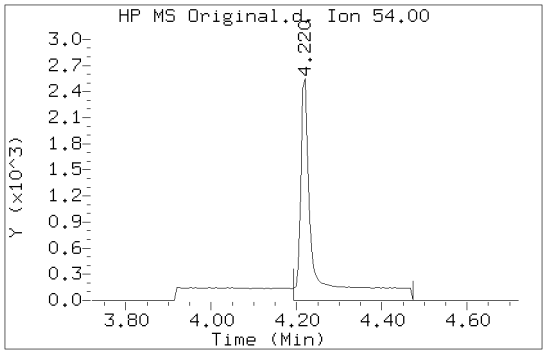
AFTER

MASS
128
AREA
0
HEIGHT
0
16-Jan-2023
10:56



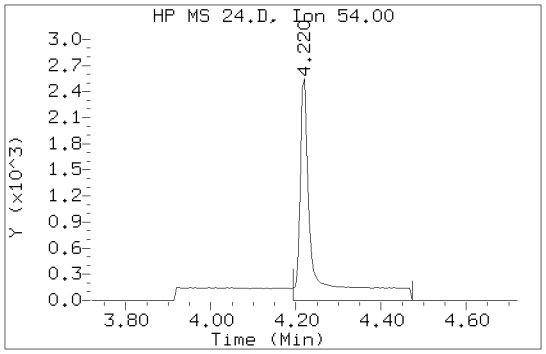
BEFORE

MASS
54
AREA
5474
HEIGHT
2548
11-Jan-2023
22:32
ALSHS
Server



AFTER

MASS
54
AREA
5474
HEIGHT
2548
16-Jan-2023
10:56

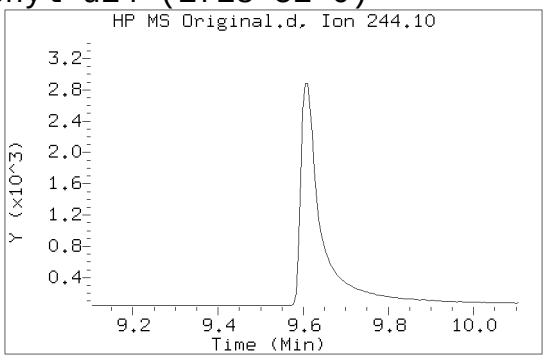


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111A.b\24.D
Inj Date : 11-JAN-2023 22:17
InstruID : SV6.i
LabSampID : 14DX-0.08

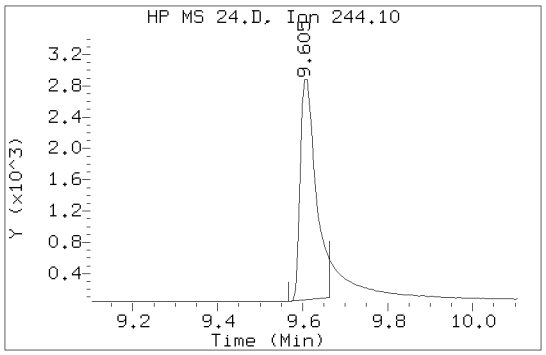
4-Terphenyl-d14 (1718-51-0)

Reason Code:

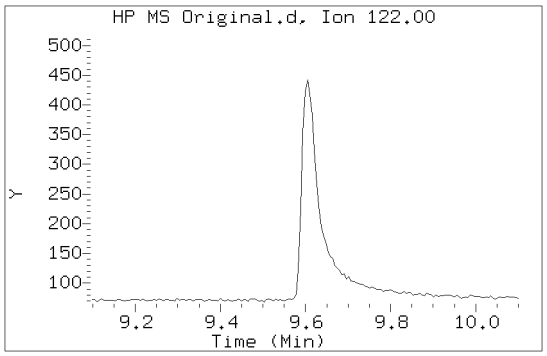
BEFORE
MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
22:32
ALSHS
Server



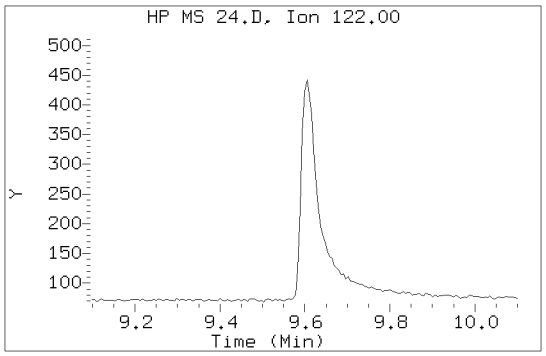
AFTER
MASS
244.1
AREA
7266
HEIGHT
2812
16-Jan-2023
10:56



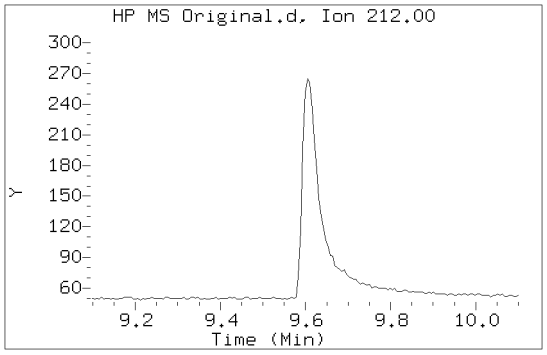
BEFORE
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
22:32
ALSHS
Server



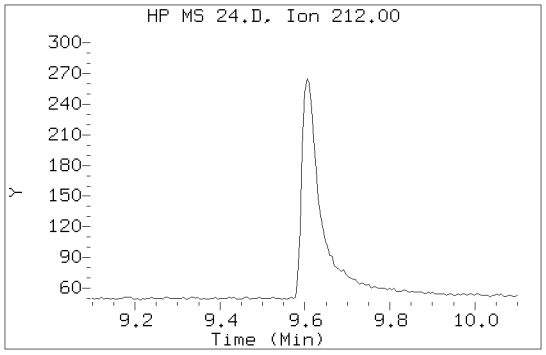
AFTER
MASS
122
AREA
0
HEIGHT
0
16-Jan-2023
10:56



BEFORE
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
22:32
ALSHS
Server



AFTER
MASS
212
AREA
0
HEIGHT
0
16-Jan-2023
10:56



Data File: \\NAHSTWS005\Target\chem\SV6.i\230112.b\01.D Page 1
Report Date: 12-Jan-2023 11:47

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\SV6.i\230112.b\01.D
Lab Smp Id: DFTPP Client Smp ID: DFTPP
Inj Date : 12-JAN-2023 10:41
Operator : smith Inst ID: SV6.i
Smp Info : DFTPP;DFTPP;3;;DFTPP
Misc Info :
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230112.b\DFTPP.m
Meth Date : 27-Sep-2022 15:32 Linh.Pham Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: DFTPP
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: None
Processing Host: NAHSTW7095

RT	EXP RT	DLT RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/L)	TARGET RANGE	RATIO
1 dftpp						CAS #: 5074-71-5		
5.587	6.357	-0.770	198	83693			0.00- 100.00	84.94
5.587	6.357	-0.770	51	35343			10.00- 80.00	42.23
5.587	6.357	-0.770	68	533			0.00- 2.00	1.84
5.587	6.357	-0.770	69	28954			0.00- 0.00	34.60
5.587	6.357	-0.770	70	257			0.00- 2.00	0.89
5.587	6.357	-0.770	127	35501			10.00- 80.00	42.42
5.587	6.357	-0.770	197	767			0.00- 2.00	0.92
5.587	6.357	-0.770	199	5212			5.00- 9.00	6.23
5.587	6.357	-0.770	275	22726			10.00- 60.00	27.15
5.587	6.357	-0.770	365	3661			1.00- 100.00	4.37
5.587	6.357	-0.770	441	14823			0.01- 99.99	80.77
5.587	6.357	-0.770	442	98536			50.00- 150.00	117.74
5.587	6.357	-0.770	443	18352			15.00- 24.00	18.62

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	42.23
68	Less than 2.00% of mass 69	0.64 (1.84)
69	Mass 69 relative abundance	34.60
70	Less than 2.00% of mass 69	0.31 (0.89)
127	10.00 - 80.00% of mass 198	42.42
197	Less than 2.00% of mass 198	0.92
199	5.00 - 9.00% of mass 198	6.23
275	10.00 - 60.00% of mass 198	27.15
365	1.00 - 100.00% of mass 198	4.37
441	Present, but less than mass 443	17.71
442	50.00 - 150.00% of mass 198	117.74
443	15.00 - 24.00% of mass 442	21.93 (18.62)

Data File: 01.D
Spectrum: HP ChemStation MS 01.D, Scan 562: 5.593 min. (SUB)
Location of Maximum: 442.10
Number of points: 232

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	132	117.00	11056	193.00	1279	267.80	72
37.00	130	118.00	775	194.00	234	271.10	169
38.00	319	122.00	692	194.80	262	271.90	203
39.00	2088	123.00	996	196.00	2437	273.00	1875
40.00	251	124.00	483	196.70	767	274.00	4557
41.00	172	125.00	488	198.00	83688	275.00	22720
42.90	168	126.10	436	199.00	5212	276.00	2624
44.00	176	127.00	35496	199.90	449	277.00	2071
47.00	72	128.00	2783	201.60	571	278.00	323
49.00	346	129.00	13927	203.00	799	283.00	219
50.10	9021	130.00	1145	204.00	3582	283.90	152
51.10	35336	131.10	280	205.00	5838	284.90	312
52.00	1637	134.00	392	206.10	21200	293.00	423
54.90	239	135.00	1172	207.00	2586	296.00	7098
56.00	878	135.90	398	208.00	675	297.00	921
57.00	2192	137.00	618	208.90	209	301.90	151
60.90	282	139.90	169	210.10	320	303.10	708
62.00	407	141.00	1609	210.90	940	304.00	200
63.00	1238	142.00	576	211.70	210	314.00	420
65.00	682	143.00	451	215.00	317	314.90	911
68.00	533	145.90	334	216.00	441	316.00	566
69.00	28952	147.00	1075	217.00	6487	321.00	251
69.90	257	148.00	2551	218.00	950	323.10	2725
73.00	231	149.00	513	221.10	4245	324.00	399
74.00	2969	151.20	256	222.00	803	326.90	466
75.00	5240	153.00	569	223.00	1579	328.00	259
76.10	1646	154.00	518	224.00	13112	331.90	196
77.10	34904	155.00	1182	225.00	3267	333.00	212
78.00	2390	156.10	1512	226.10	435	334.10	1695
79.00	2089	157.00	314	227.00	5786	335.10	447
80.00	1527	157.80	349	228.00	744	341.00	316
81.00	2306	158.90	250	229.00	1350	346.00	514
82.00	689	160.00	637	229.90	235	352.00	778
82.90	418	160.90	832	231.10	543	353.10	403
85.00	437	161.90	317	234.00	330	354.00	731
86.00	719	164.90	756	234.90	373	355.00	164
87.00	357	165.90	629	236.00	363	365.00	3661
88.00	65	167.00	4963	237.10	372	366.00	481
91.00	555	168.00	2163	239.00	220	371.00	164
92.00	517	169.00	475	240.10	189	372.10	1201
93.00	3901	171.90	319	240.90	273	373.00	365
94.10	286	172.90	447	242.10	858	383.00	478
96.00	170	174.00	991	243.10	634	384.00	171
98.00	2963	175.00	1750	244.10	10699	390.00	176
99.00	2206	176.10	475	245.00	1353	402.00	493

99.90	246	176.90	738	246.10	2249	403.10	765
100.90	1285	177.90	291	247.00	384	404.00	224
102.00	150	179.00	2733	248.00	151	421.00	733
102.90	420	180.10	2384	248.90	329	422.10	675
103.90	761	181.00	898	252.00	214	423.10	4501
105.00	880	182.00	207	253.00	453	424.10	858
106.10	353	184.00	285	254.00	476	441.10	14823
107.00	10578	185.00	1443	255.00	52424	442.10	98536
108.00	1527	186.00	10858	256.00	7972	443.10	18352
108.90	315	187.00	3463	257.00	530	444.10	1940
110.00	17656	188.00	329	258.00	3740		
111.00	2597	188.90	673	259.00	531		
112.00	338	191.00	537	265.00	1257		
116.00	553	192.00	1070	265.90	209		

Data File: \\NAHSTWS005\Target\chem\SV6.i\230112.b\01.D

Date : 12-JAN-2023 10:41

Client ID: DFTPP

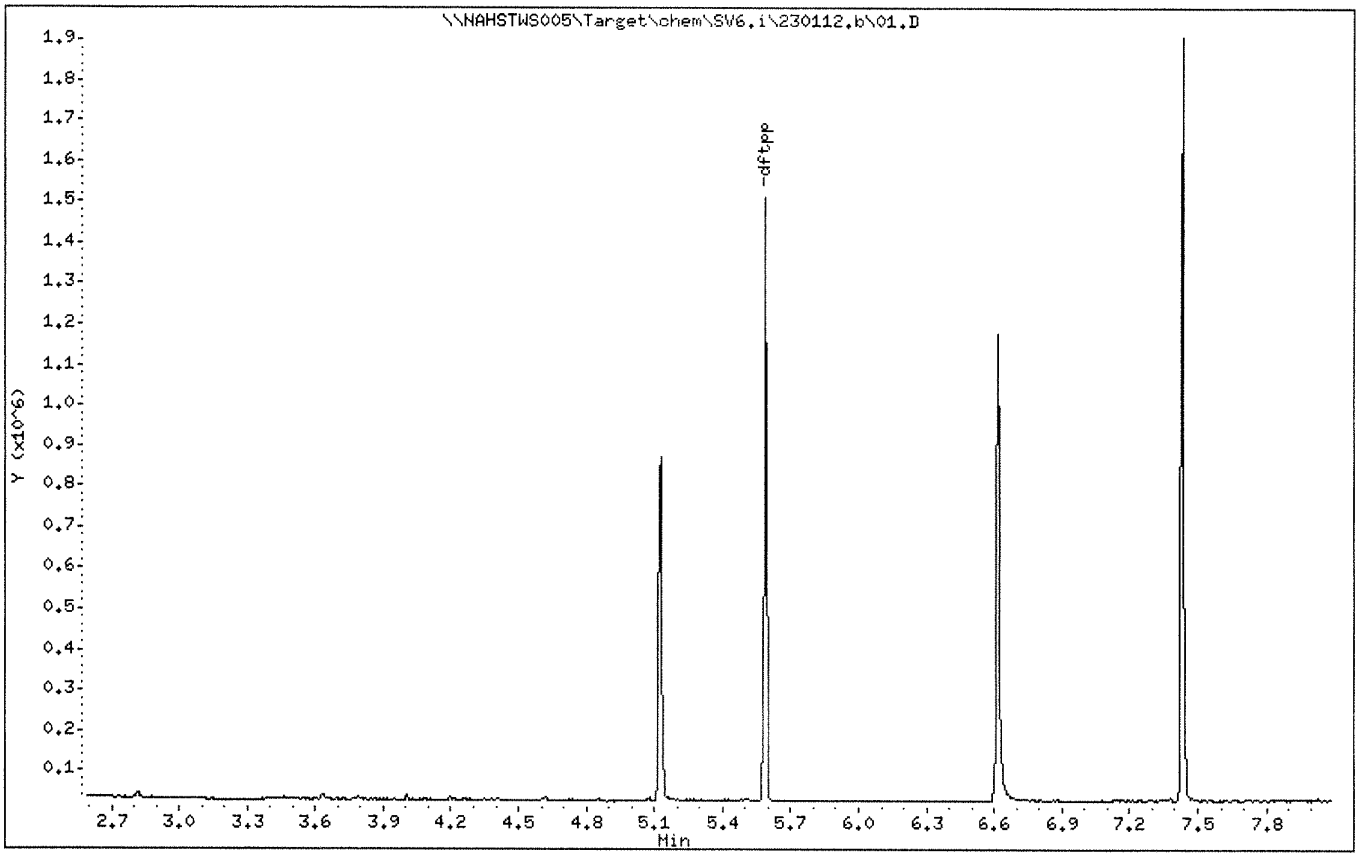
Instrument: SV6.i

Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\SV6.i\230112.b\01.D

Date : 12-JAN-2023 10:41

Client ID: DFTPP

Instrument: SV6.i

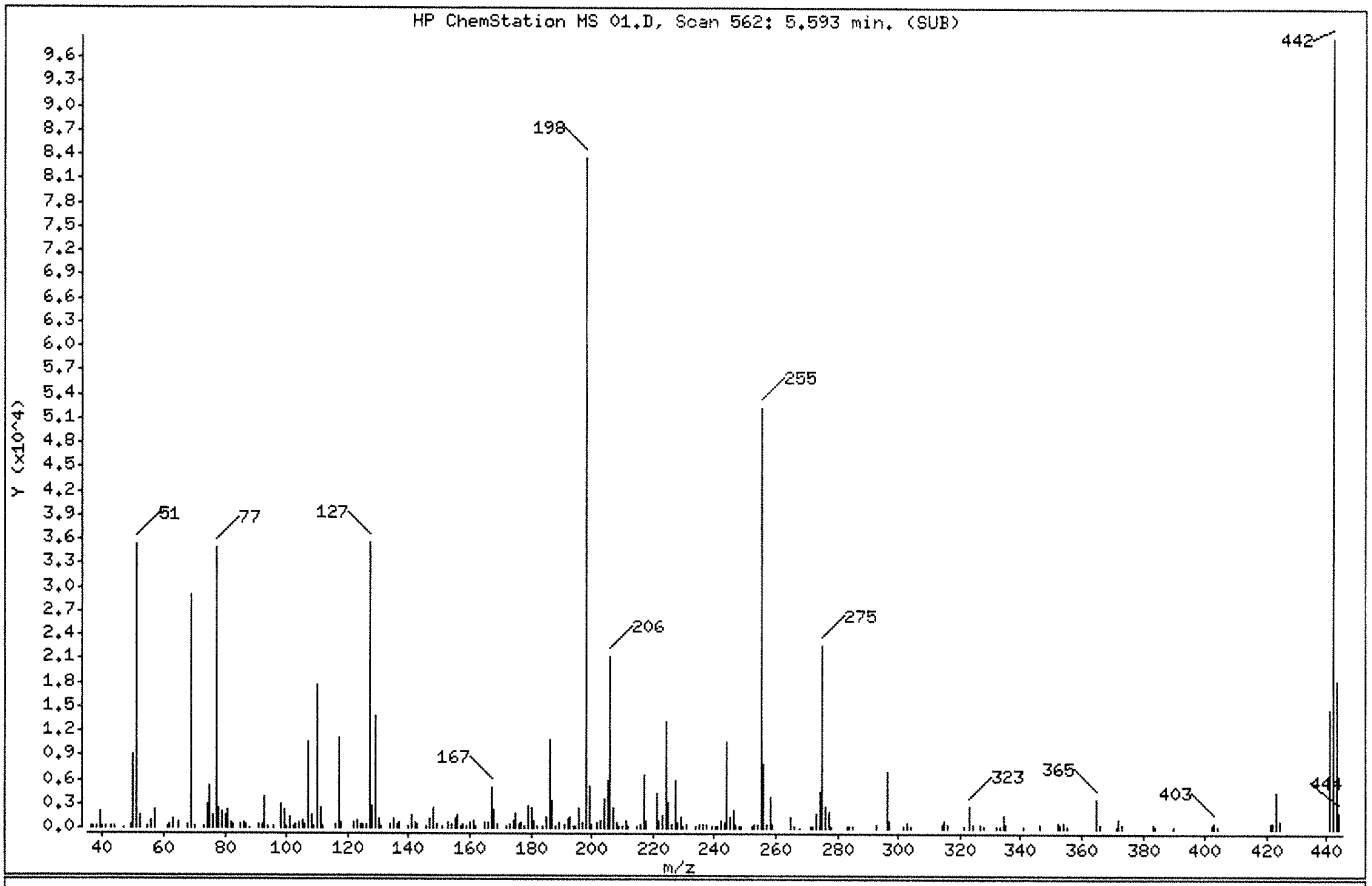
Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	42.23
68	Less than 2.00% of mass 69	0.64 (1.84)
69	Mass 69 relative abundance	34.60
70	Less than 2.00% of mass 69	0.31 (0.89)
127	10.00 - 80.00% of mass 198	42.42
197	Less than 2.00% of mass 198	0.92
199	5.00 - 9.00% of mass 198	6.23
275	10.00 - 60.00% of mass 198	27.15
365	1.00 - 100.00% of mass 198	4.37
441	Present, but less than mass 443	17.71
442	50.00 - 150.00% of mass 198	117.74
443	15.00 - 24.00% of mass 442	21.93 (18.62)

Data File: \\NAHSTWS005\Target\chem\SV6.i\230112.b\01.D

Date : 12-JAN-2023 10:41

Client ID: DFTPP

Instrument: SV6.i

Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25

Data File: 01.D
Spectrum: HP ChemStation MS 01.D, Scan 562: 5.593 min. (SUB)
Location of Maximum: 442.10
Number of points: 232

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	132	117.00	11056	193.00	1279	267.80	72
37.00	130	118.00	775	194.00	234	271.10	169
38.00	319	122.00	692	194.80	262	271.90	203
39.00	2088	123.00	996	196.00	2437	273.00	1875
40.00	251	124.00	483	196.70	767	274.00	4557
41.00	172	125.00	488	198.00	83688	275.00	22720
42.90	168	126.10	436	199.00	5212	276.00	2624
44.00	176	127.00	35496	199.90	449	277.00	2071
47.00	72	128.00	2783	201.60	571	278.00	323
49.00	346	129.00	13927	203.00	799	283.00	219
50.10	9021	130.00	1145	204.00	3582	283.90	152
51.10	35336	131.10	280	205.00	5838	284.90	312
52.00	1637	134.00	392	206.10	21200	293.00	423
54.90	239	135.00	1172	207.00	2586	296.00	7098
56.00	878	135.90	398	208.00	675	297.00	921
57.00	2192	137.00	618	208.90	209	301.90	151
60.90	282	139.90	169	210.10	320	303.10	708
62.00	407	141.00	1609	210.90	940	304.00	200
63.00	1238	142.00	576	211.70	210	314.00	420
65.00	682	143.00	451	215.00	317	314.90	911
68.00	533	145.90	334	216.00	441	316.00	566
69.00	28952	147.00	1075	217.00	6487	321.00	251
69.90	257	148.00	2551	218.00	950	323.10	2725
73.00	231	149.00	513	221.10	4245	324.00	399
74.00	2969	151.20	256	222.00	803	326.90	466
75.00	5240	153.00	569	223.00	1579	328.00	259
76.10	1646	154.00	518	224.00	13112	331.90	196
77.10	34904	155.00	1182	225.00	3267	333.00	212
78.00	2390	156.10	1512	226.10	435	334.10	1695
79.00	2089	157.00	314	227.00	5786	335.10	447
80.00	1527	157.80	349	228.00	744	341.00	316
81.00	2306	158.90	250	229.00	1350	346.00	514
82.00	689	160.00	637	229.90	235	352.00	778
82.90	418	160.90	832	231.10	543	353.10	403
85.00	437	161.90	317	234.00	330	354.00	731

Data File: \\NAHSTWS005\Target\chem\SV6.i\230112.b\01.D

Date : 12-JAN-2023 10:41

Client ID: DFTPP

Instrument: SV6.i

Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25

Data File: 01.D
Spectrum: HP ChemStation MS 01.D, Scan 562: 5.593 min. (SUB)
Location of Maximum: 442.10
Number of points: 232

m/z	Y	m/z	Y	m/z	Y	m/z	Y
86.00	719	164.90	756	234.90	373	355.00	164
87.00	357	165.90	629	236.00	363	365.00	3661
88.00	65	167.00	4963	237.10	372	366.00	481
91.00	555	168.00	2163	239.00	220	371.00	164
92.00	517	169.00	475	240.10	189	372.10	1201
93.00	3901	171.90	319	240.90	273	373.00	365
94.10	286	172.90	447	242.10	858	383.00	478
96.00	170	174.00	991	243.10	634	384.00	171
98.00	2963	175.00	1750	244.10	10699	390.00	176
99.00	2206	176.10	475	245.00	1353	402.00	493
99.90	246	176.90	738	246.10	2249	403.10	765
100.90	1285	177.90	291	247.00	384	404.00	224
102.00	150	179.00	2733	248.00	151	421.00	733
102.90	420	180.10	2384	248.90	329	422.10	675
103.90	761	181.00	898	252.00	214	423.10	4501
105.00	880	182.00	207	253.00	453	424.10	858
106.10	353	184.00	285	254.00	476	441.10	14823
107.00	10578	185.00	1443	255.00	52424	442.10	98536
108.00	1527	186.00	10858	256.00	7972	443.10	18352
108.90	315	187.00	3463	257.00	530	444.10	1940
110.00	17656	188.00	329	258.00	3740		
111.00	2597	188.90	673	259.00	531		
112.00	338	191.00	537	265.00	1257		
116.00	553	192.00	1070	265.90	209		

Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\01.D
Inj Date : 12-JAN-2023 10:41
InstruID : SV6.i
LabSampID : DFTPP

NO MANUAL INTEGRATIONS

ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230112.b\03.D
Lab Smp Id: 14DX-0.08 Client Smp ID: 14DX-0.08
Inj Date : 12-JAN-2023 13:07
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.08
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230112.b\DXSIM.m
Meth Date : 12-Jan-2023 13:27 marco.guti Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	AMOUNTS ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.711	3.711	(1.000)	3757	0.10000	(a)
* 45 Naphthalene-d8	136	4.832	4.832	(1.000)	14352	0.10000	
$ 33 Nitrobenzene-d5	82	4.178	4.178	(0.865)	4327	0.08000	0.08235(M)
* 86 Acenaphthene-d10	164	6.511	6.511	(1.000)	8064	0.10000	
$ 69 2-Fluorobiphenyl	172	5.853	5.853	(0.899)	7997	0.08000	0.07679
* 126 Phenanthrene-d10	188	7.961	7.961	(1.000)	15564	0.10000	
* 182 Chrysene-d12	240	10.839	10.839	(1.000)	4350	0.10000	(QM)
$ 158 4-Terphenyl-d14	244	9.558	9.558	(0.882)	5656	0.08000	0.08672(M)
* 198 Perylene-d12	264	12.944	12.944	(1.000)	2884	0.10000	(M)
1 1,4-Dioxane	58	1.954	1.954	(0.526)	1007	0.08000	0.08123(QM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\SV6.i\230112.b\03.D

Date : 12-JAN-2023 13:07

Client ID: 14DX-0.08

Instrument: SV6.i

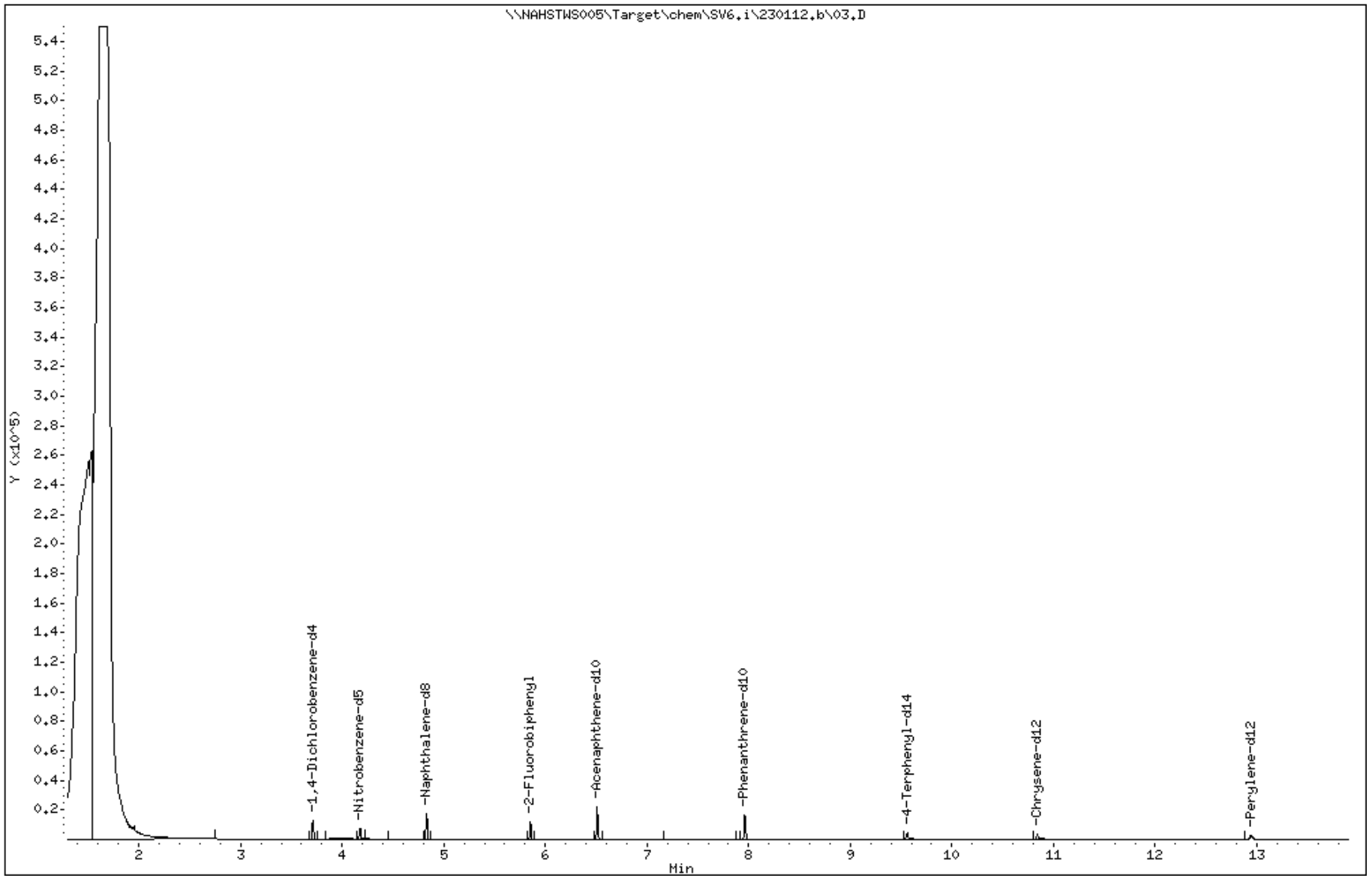
Sample Info: 14DX-0.08

Purge Volume: 1000.0

Operator: LG

Column phase: RTX-5SIL MS

Column diameter: 0.28



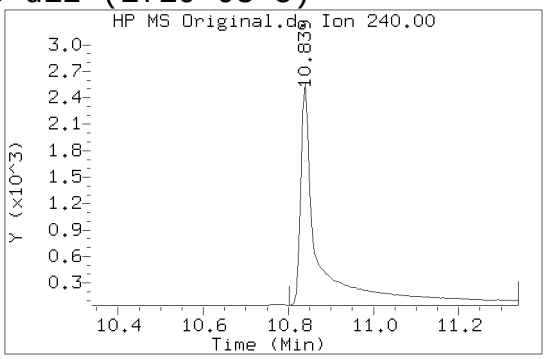
Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\03.D
Inj Date : 12-JAN-2023 13:07
InstruID : SV6.i
LabSampID : 14DX-0.08

Chrysene-d12 (1719-03-5)

Reason Code:

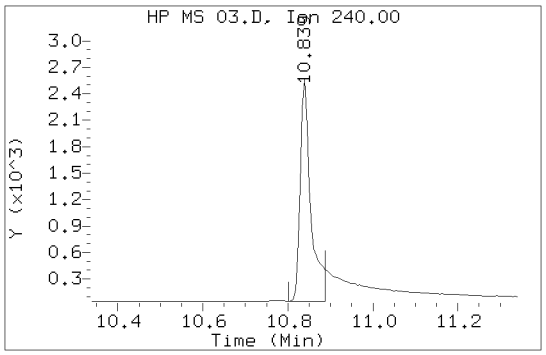
BEFORE

MASS
240
AREA
7524
HEIGHT
2510
12-Jan-2023
13:21
ALSHS
Server



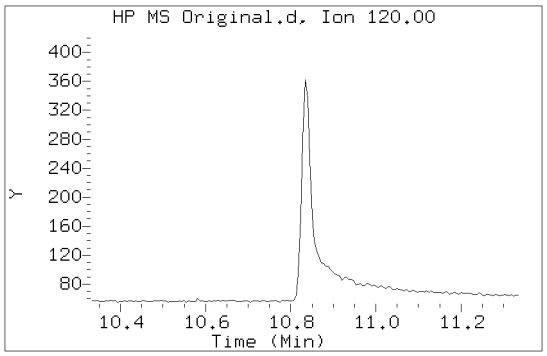
AFTER

MASS
240
AREA
4350
HEIGHT
2510
12-Jan-2023
13:28



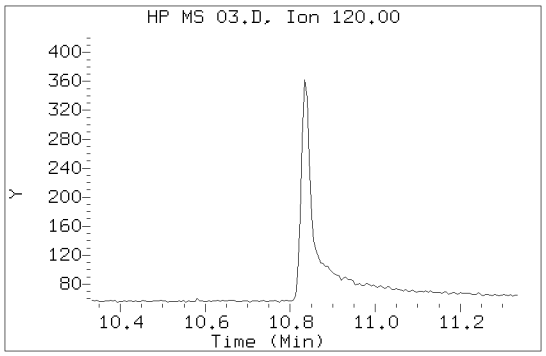
BEFORE

MASS
120
AREA
969
HEIGHT
305
12-Jan-2023
13:21
ALSHS
Server



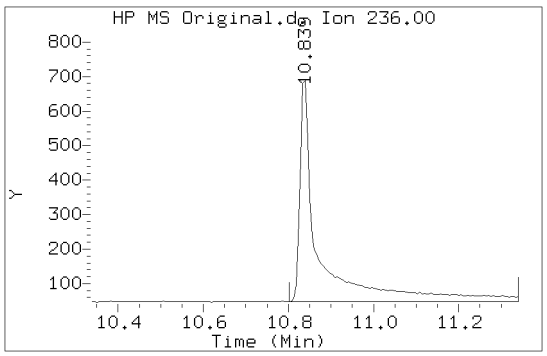
AFTER

MASS
120
AREA
969
HEIGHT
305
12-Jan-2023
13:28



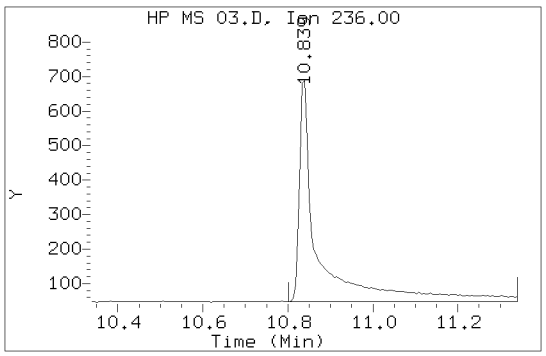
BEFORE

MASS
236
AREA
1991
HEIGHT
640
12-Jan-2023
13:21
ALSHS
Server



AFTER

MASS
236
AREA
1991
HEIGHT
640
12-Jan-2023
13:28

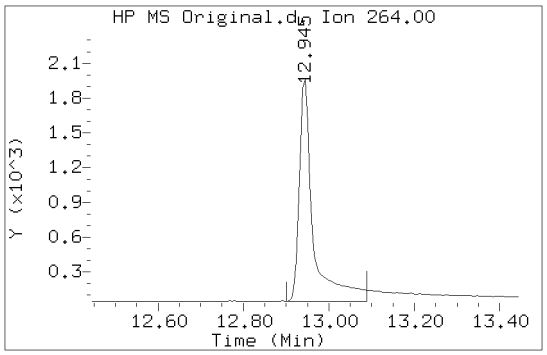


Perylene-d12 (1520-96-3)

Reason Code:

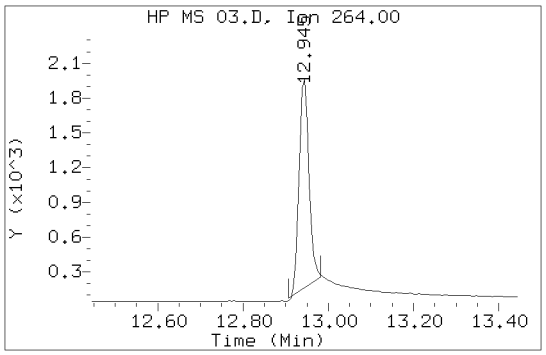
BEFORE

MASS
264
AREA
4311
HEIGHT
1910
12-Jan-2023
13:21
ALSHS
Server



AFTER

MASS
264
AREA
2884
HEIGHT
1794
12-Jan-2023
13:28



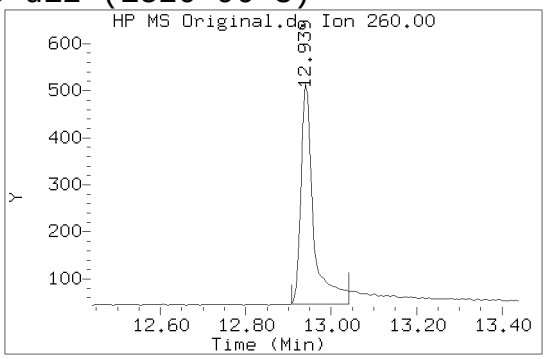
Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\03.D
Inj Date : 12-JAN-2023 13:07
InstruID : SV6.i
LabSampID : 14DX-0.08

Perylene-d12 (1520-96-3)

Reason Code:

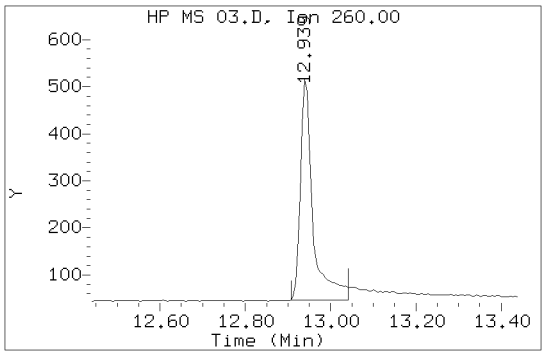
BEFORE

MASS
260
AREA
954
HEIGHT
468
12-Jan-2023
13:21
ALSHS
Server



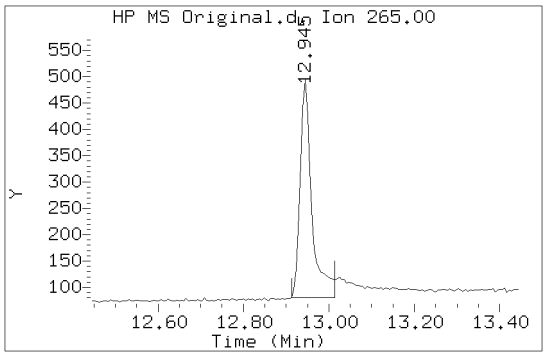
AFTER

MASS
260
AREA
954
HEIGHT
468
12-Jan-2023
13:28



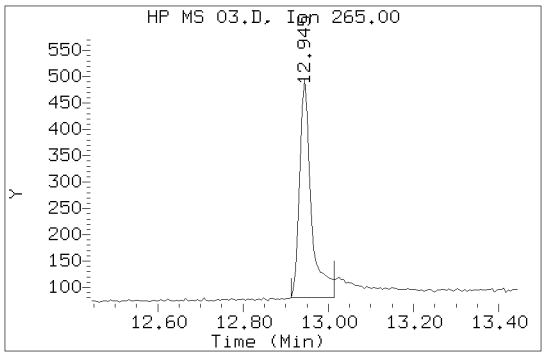
BEFORE

MASS
265
AREA
787
HEIGHT
413
12-Jan-2023
13:21
ALSHS
Server



AFTER

MASS
265
AREA
787
HEIGHT
413
12-Jan-2023
13:28

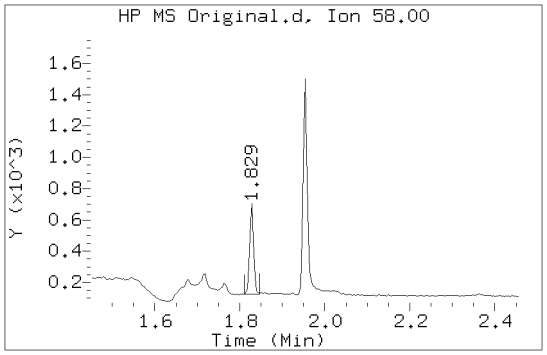


1,4-Dioxane ()

Reason Code:

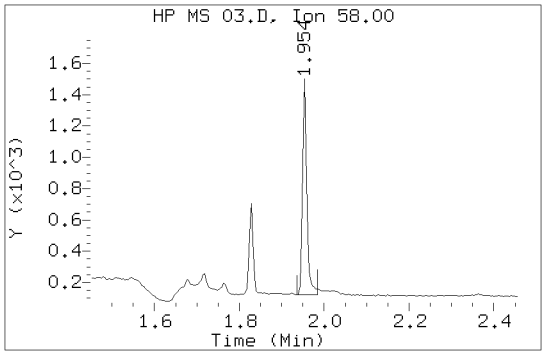
BEFORE

MASS
58
AREA
385
HEIGHT
577
12-Jan-2023
13:21
ALSHS
Server



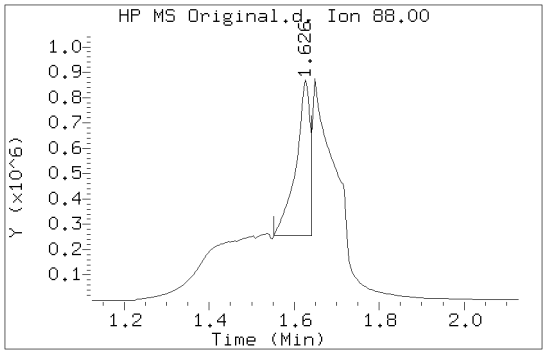
AFTER

MASS
58
AREA
1007
HEIGHT
1378
12-Jan-2023
13:28



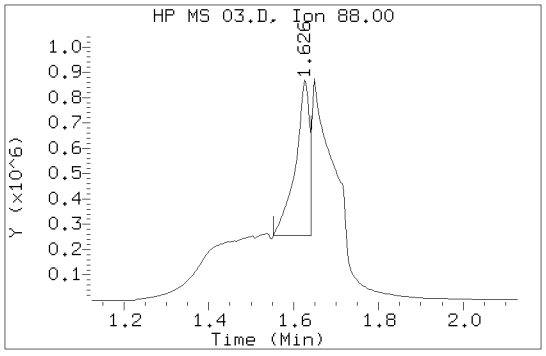
BEFORE

MASS
88
AREA
1435847
HEIGHT
616064
12-Jan-2023
13:21
ALSHS
Server



AFTER

MASS
88
AREA
1435847
HEIGHT
616064
12-Jan-2023
13:28



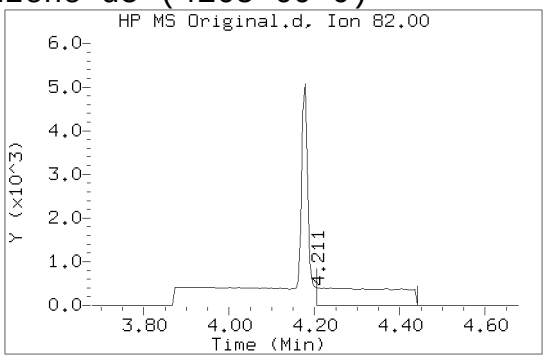
Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\03.D
Inj Date : 12-JAN-2023 13:07
InstruID : SV6.i
LabSampID : 14DX-0.08

Nitrobenzene-d5 (4165-60-0)

Reason Code:

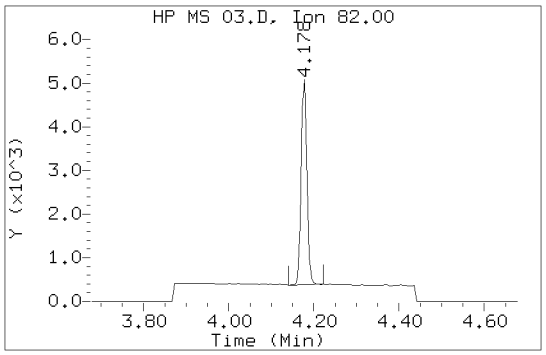
BEFORE

MASS
82
AREA
5277
HEIGHT
400
12-Jan-2023
13:21
ALSHS
Server



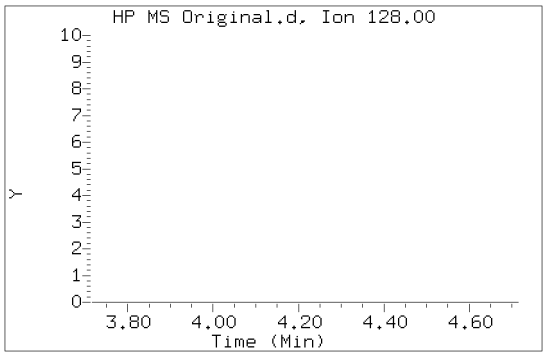
AFTER

MASS
82
AREA
4327
HEIGHT
4696
12-Jan-2023
13:28



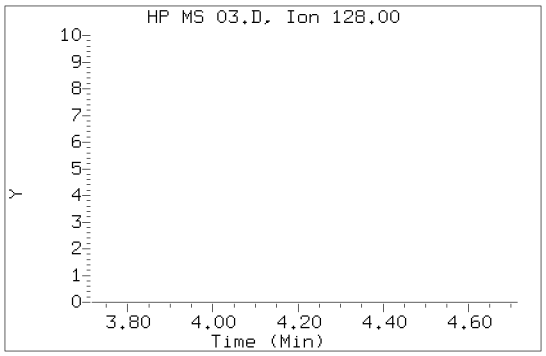
BEFORE

MASS
128
AREA
0
HEIGHT
0
12-Jan-2023
13:21
ALSHS
Server



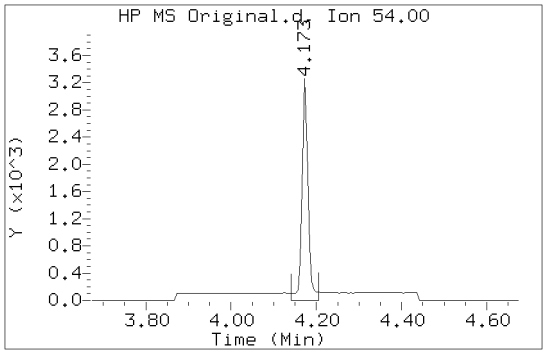
AFTER

MASS
128
AREA
0
HEIGHT
0
12-Jan-2023
13:28



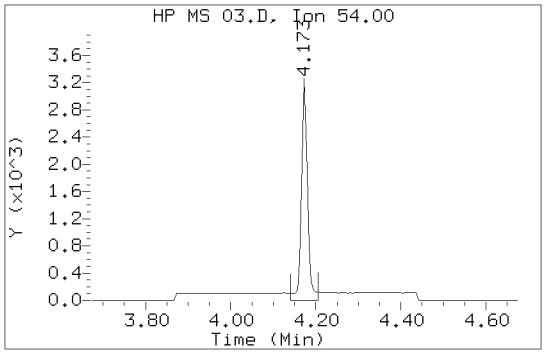
BEFORE

MASS
54
AREA
3221
HEIGHT
3259
12-Jan-2023
13:21
ALSHS
Server



AFTER

MASS
54
AREA
3221
HEIGHT
3259
12-Jan-2023
13:28

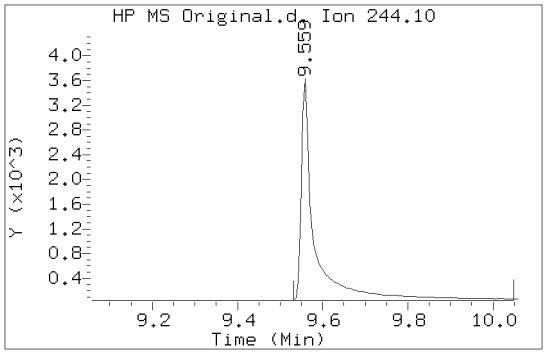


4-Terphenyl-d14 (1718-51-0)

Reason Code:

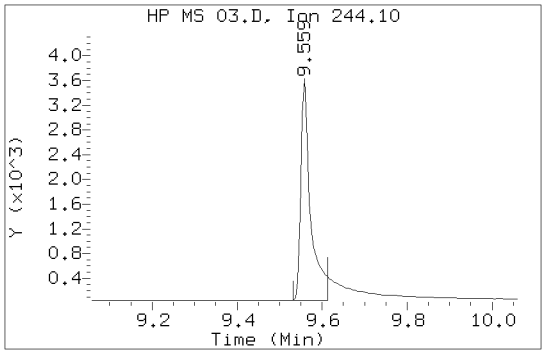
BEFORE

MASS
244.1
AREA
7734
HEIGHT
3579
12-Jan-2023
13:21
ALSHS
Server



AFTER

MASS
244.1
AREA
5656
HEIGHT
3579
12-Jan-2023
13:28



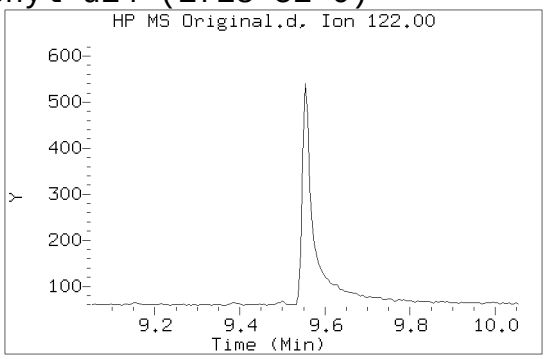
Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\03.D
Inj Date : 12-JAN-2023 13:07
InstruID : SV6.i
LabSampID : 14DX-0.08

4-Terphenyl-d14 (1718-51-0)

Reason Code:

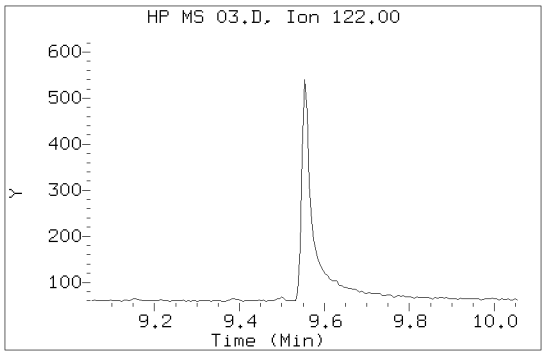
BEFORE

MASS
122
AREA
1072
HEIGHT
480
12-Jan-2023
13:21
ALSHS
Server



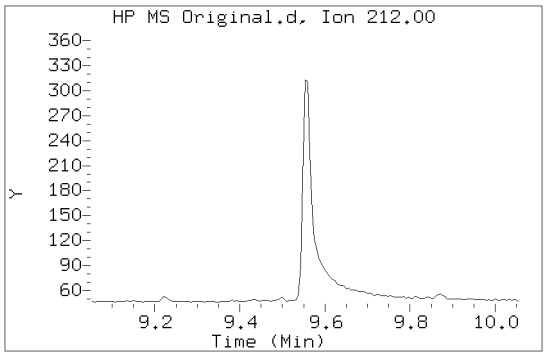
AFTER

MASS
122
AREA
1072
HEIGHT
480
12-Jan-2023
13:28



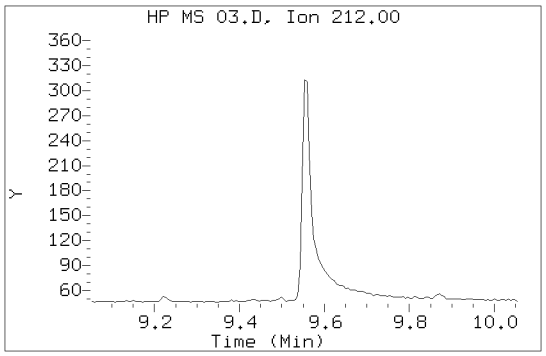
BEFORE

MASS
212
AREA
585
HEIGHT
265
12-Jan-2023
13:21
ALSHS
Server



AFTER

MASS
212
AREA
585
HEIGHT
265
12-Jan-2023
13:28



Data File: \\NAHSTWS005\Target\chem\SV6.i\230112.b\05.D Page 1
Report Date: 12-Jan-2023 15:40

ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230112.b\05.D
Lab Smp Id: HS22121096-03
Inj Date : 12-JAN-2023 13:51
Operator : LG Inst ID: SV6.i
Smp Info : HS22121096-03X10
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230112.b\DXSIM.m
Meth Date : 12-Jan-2023 13:27 marco.guti Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 5
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/L)
* 20 1,4-Dichlorobenzene-d4	152	3.717	3.711	(1.000)	3723	0.10000	(a)
* 45 Naphthalene-d8	136	4.832	4.832	(1.000)	14606	0.10000	
$ 33 Nitrobenzene-d5	82	4.178	4.178	(0.865)	486	0.00909	0.09089(M)
* 86 Acenaphthene-d10	164	6.511	6.511	(1.000)	7516	0.10000	
$ 69 2-Fluorobiphenyl	172	5.853	5.853	(0.899)	976	0.01006	0.1006(M)
* 126 Phenanthrene-d10	188	7.961	7.961	(1.000)	14514	0.10000	
* 182 Chrysene-d12	240	10.839	10.839	(1.000)	4935	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.553	9.558	(0.881)	1175	0.00775	0.07748(M)
* 198 Perylene-d12	264	12.939	12.944	(1.000)	3545	0.10000	
1 1,4-Dioxane	58	1.961	1.954	(0.528)	2174	0.17697	1.770(Q)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\SV6.i\230112.b\05.D

Date : 12-JAN-2023 13:51

Client ID:

Instrument: SV6.i

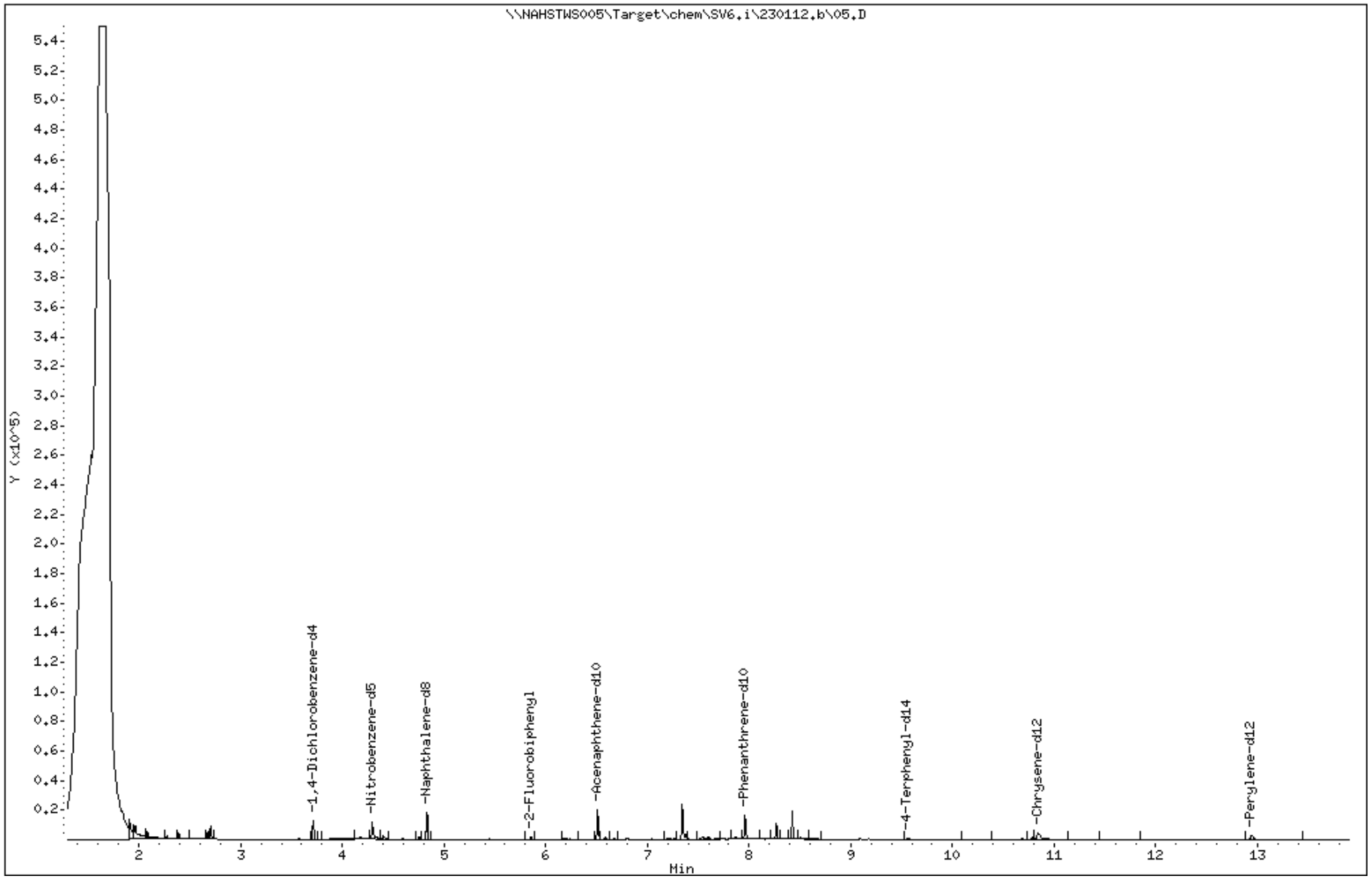
Sample Info: HS22121096-03X10

Purge Volume: 1000.0

Operator: LG

Column phase: RTX-5SIL MS

Column diameter: 0.28



Data File: \\NAHSTWS005\Target\chem\SV6.i\230112.b\05.D

Date : 12-JAN-2023 13:51

Client ID:

Instrument: SV6.i

Sample Info: HS22121096-03X10

Purge Volume: 1000.0

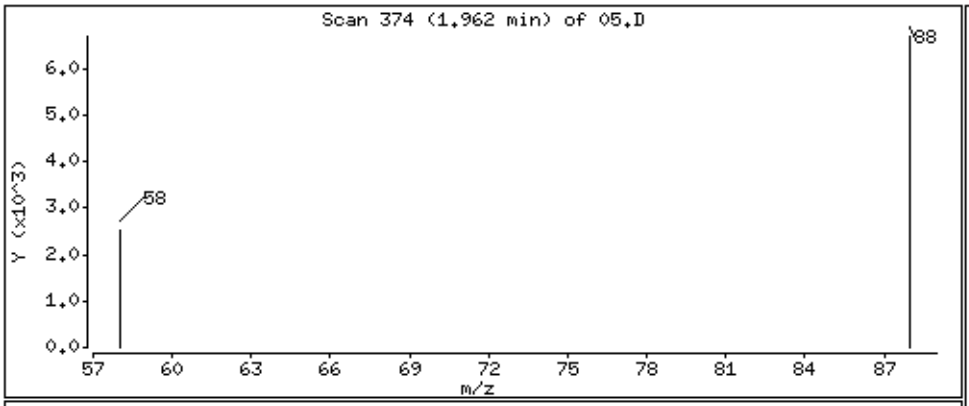
Operator: LG

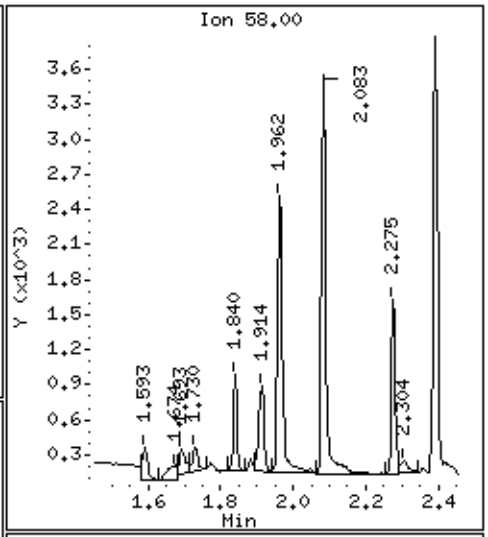
Column phase: RTX-5SIL MS

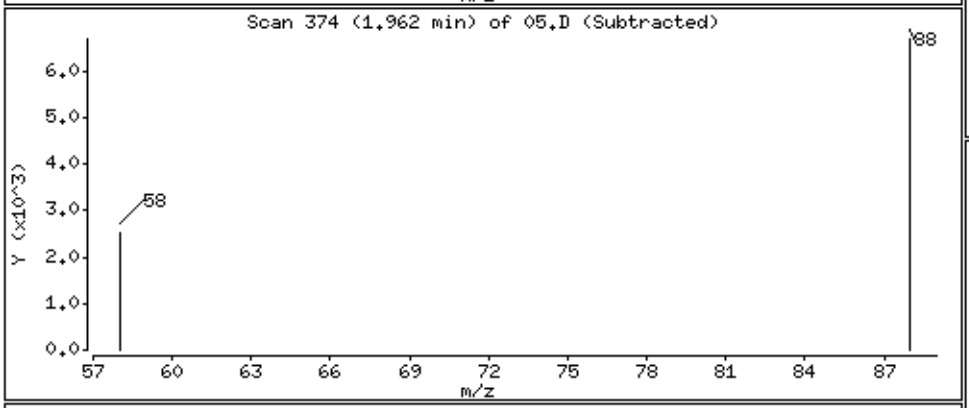
Column diameter: 0.28

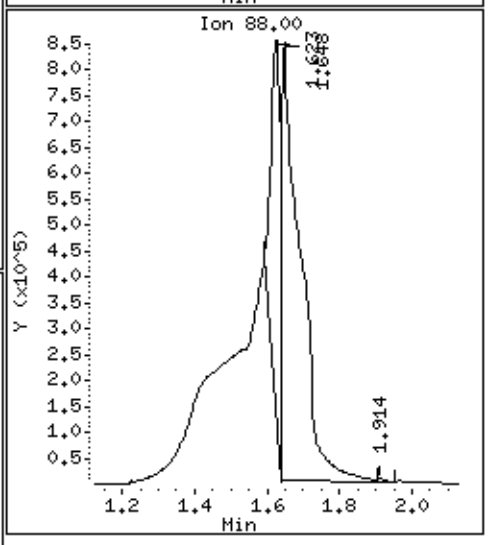
1 1,4-Dioxane

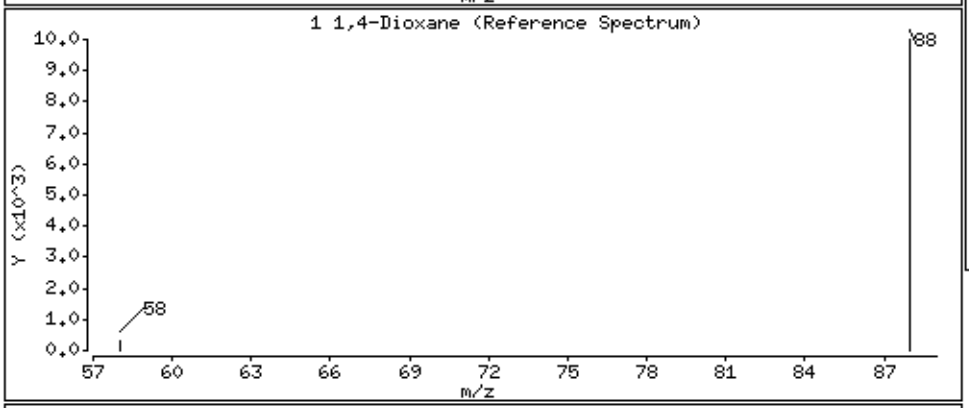
Concentration: 1.770 ug/L

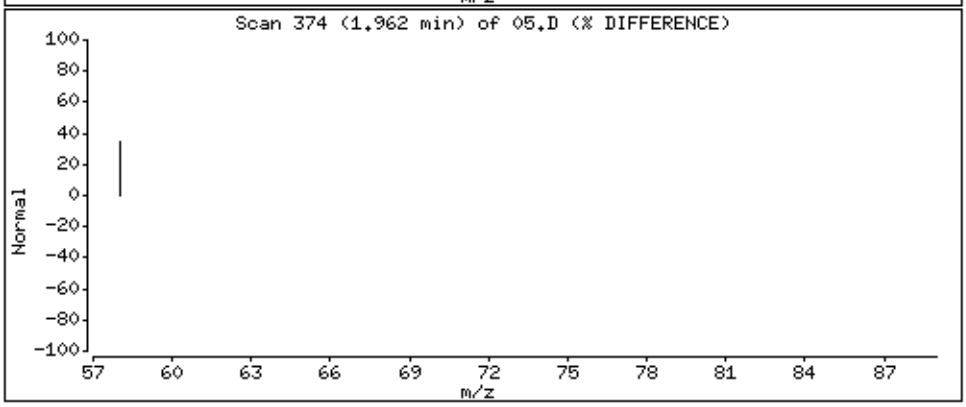












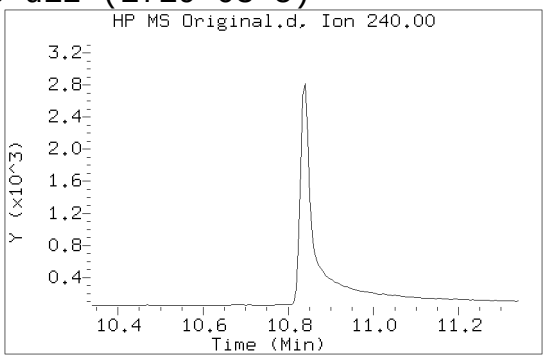
Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\05.D
Inj Date : 12-JAN-2023 13:51
InstruID : SV6.i
LabSampID : HS22121096-03

Chrysene-d12 (1719-03-5)

Reason Code:

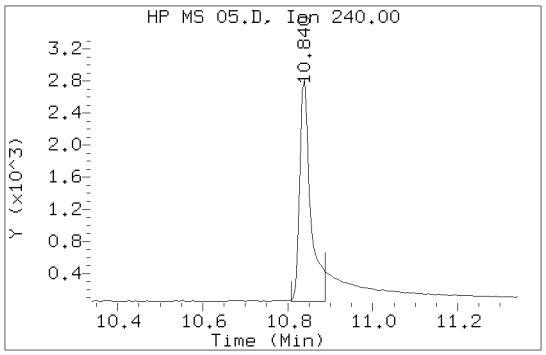
BEFORE

MASS
240
AREA
0
HEIGHT
0
12-Jan-2023
14:06
ALSHS
Server



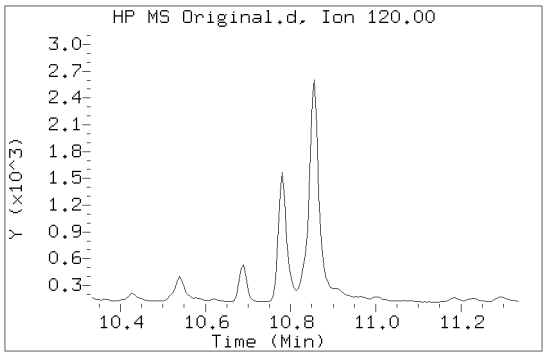
AFTER

MASS
240
AREA
4935
HEIGHT
2762
12-Jan-2023
15:40



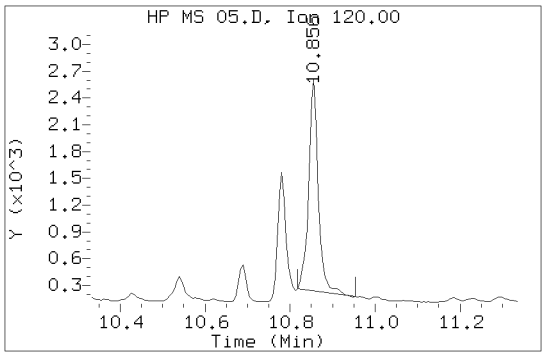
BEFORE

MASS
120
AREA
0
HEIGHT
0
12-Jan-2023
14:06
ALSHS
Server



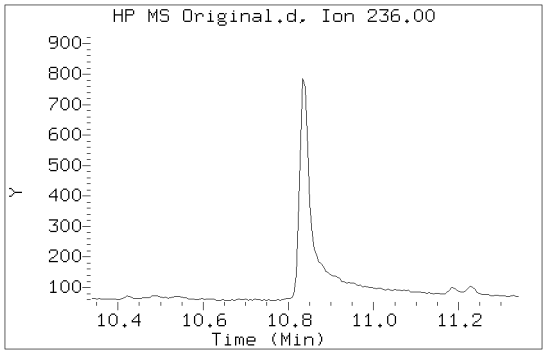
AFTER

MASS
120
AREA
3734
HEIGHT
2361
12-Jan-2023
15:40



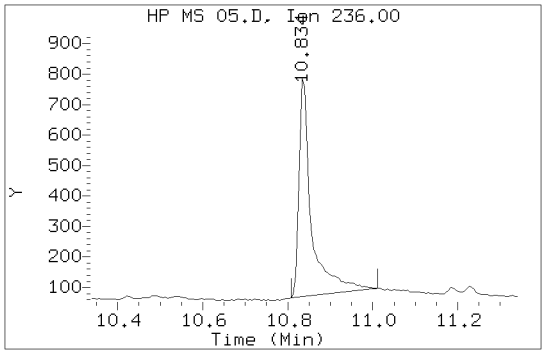
BEFORE

MASS
236
AREA
0
HEIGHT
0
12-Jan-2023
14:06
ALSHS
Server



AFTER

MASS
236
AREA
1459
HEIGHT
714
12-Jan-2023
15:40

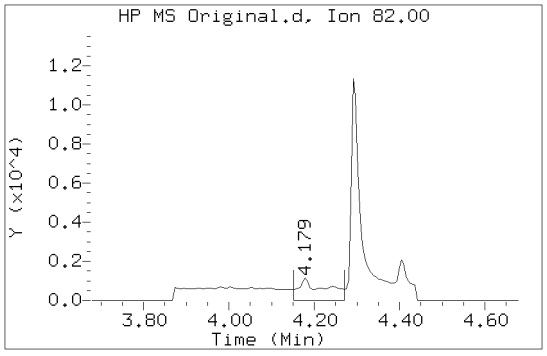


Nitrobenzene-d5 (4165-60-0)

Reason Code:

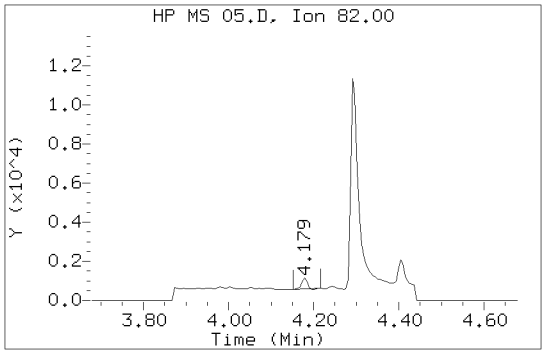
BEFORE

MASS
82
AREA
4964
HEIGHT
1150
12-Jan-2023
14:06
ALSHS
Server



AFTER

MASS
82
AREA
486
HEIGHT
565
12-Jan-2023
15:40

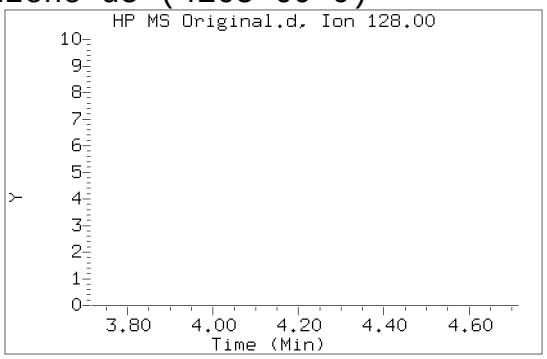


Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\05.D
Inj Date : 12-JAN-2023 13:51
InstruID : SV6.i
LabSampID : HS22121096-03

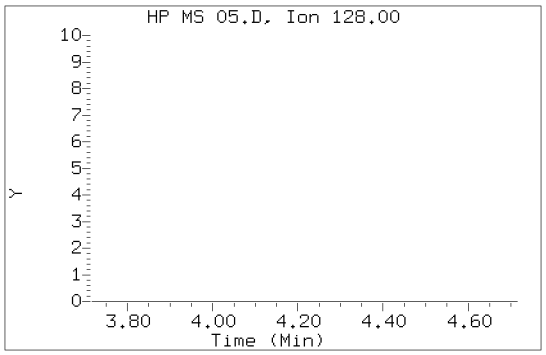
Nitrobenzene-d5 (4165-60-0)

Reason Code:

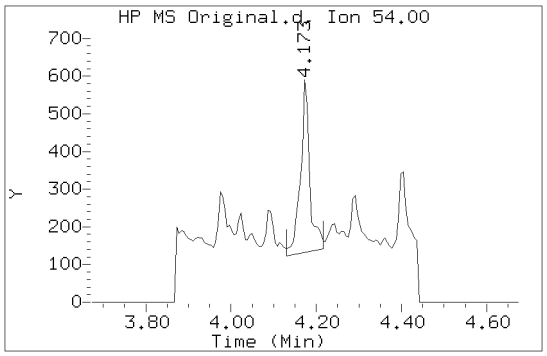
BEFORE
MASS
128
AREA
0
HEIGHT
0
12-Jan-2023
14:06
ALSHS
Server



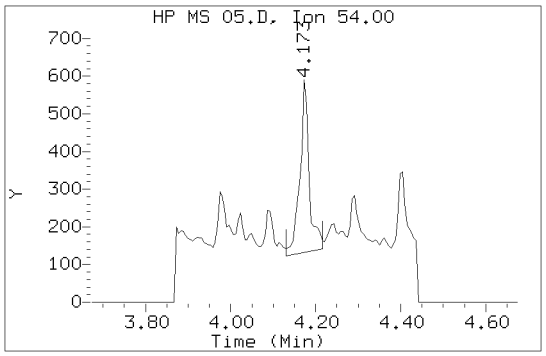
AFTER
MASS
128
AREA
0
HEIGHT
0
12-Jan-2023
15:40



BEFORE
MASS
54
AREA
693
HEIGHT
458
12-Jan-2023
14:06
ALSHS
Server



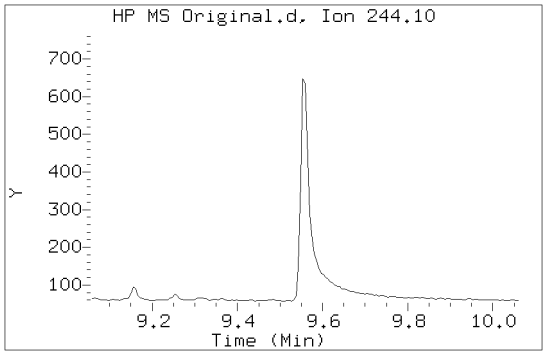
AFTER
MASS
54
AREA
693
HEIGHT
458
12-Jan-2023
15:40



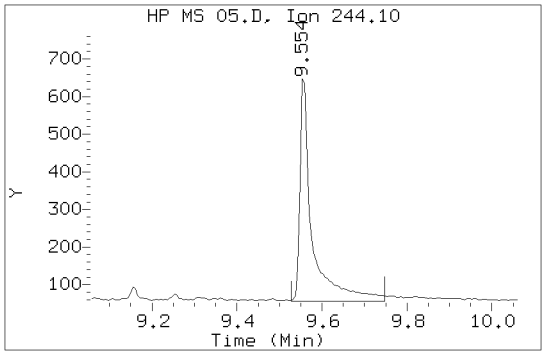
4-Terphenyl-d14 (1718-51-0)

Reason Code:

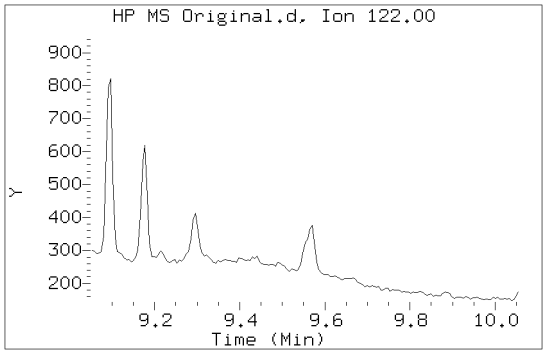
BEFORE
MASS
244.1
AREA
0
HEIGHT
0
12-Jan-2023
14:06
ALSHS
Server



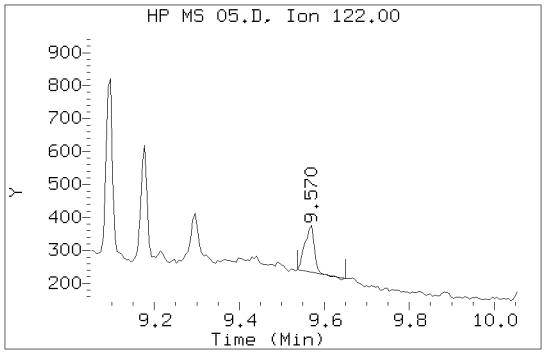
AFTER
MASS
244.1
AREA
1175
HEIGHT
591
12-Jan-2023
15:40



BEFORE
MASS
122
AREA
0
HEIGHT
0
12-Jan-2023
14:06
ALSHS
Server



AFTER
MASS
122
AREA
207
HEIGHT
141
12-Jan-2023
15:40



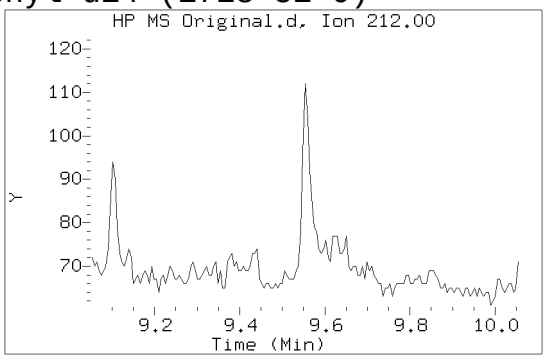
Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\05.D
Inj Date : 12-JAN-2023 13:51
InstruID : SV6.i
LabSampID : HS22121096-03

4-Terphenyl-d14 (1718-51-0)

Reason Code:

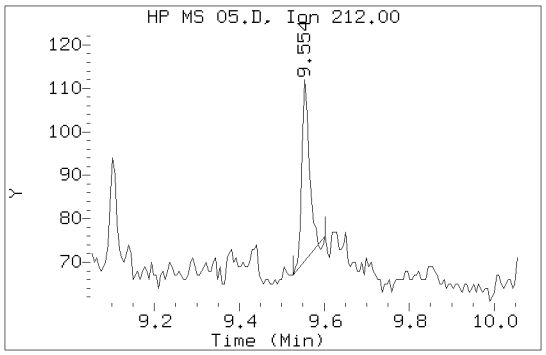
BEFORE

MASS
212
AREA
0
HEIGHT
0
12-Jan-2023
14:06
ALSHS
Server



AFTER

MASS
212
AREA
49
HEIGHT
41
12-Jan-2023
15:40

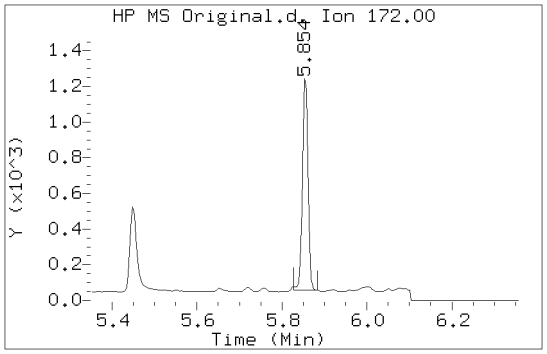


2-Fluorobiphenyl (321-60-8)

Reason Code:

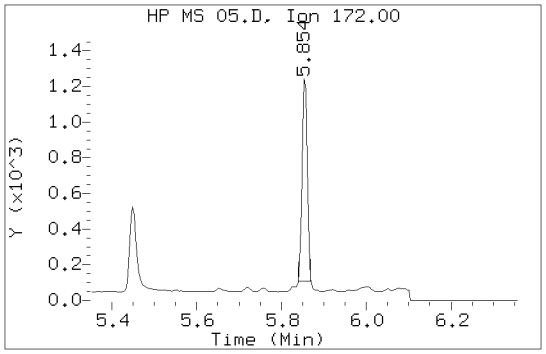
BEFORE

MASS
172
AREA
1096
HEIGHT
1186
12-Jan-2023
14:06
ALSHS
Server



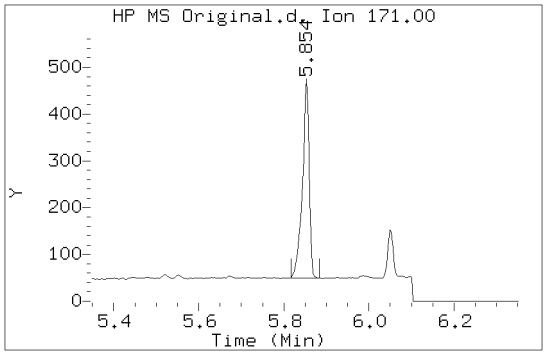
AFTER

MASS
172
AREA
976
HEIGHT
1135
12-Jan-2023
15:40



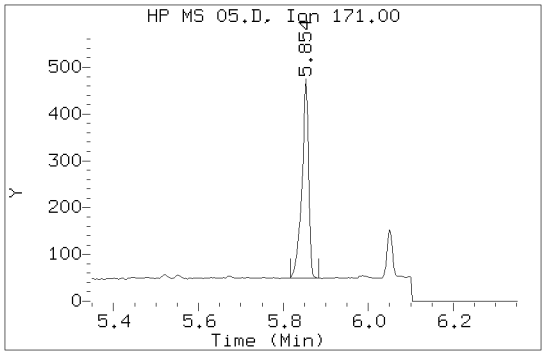
BEFORE

MASS
171
AREA
468
HEIGHT
425
12-Jan-2023
14:06
ALSHS
Server



AFTER

MASS
171
AREA
468
HEIGHT
425
12-Jan-2023
15:40



ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230112.b\11.D
Lab Smp Id: 14DX-0.08 Client Smp ID: 14DX-0.08
Inj Date : 12-JAN-2023 15:47
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.08
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230112.b\DXSIM.m
Meth Date : 16-Jan-2023 10:58 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

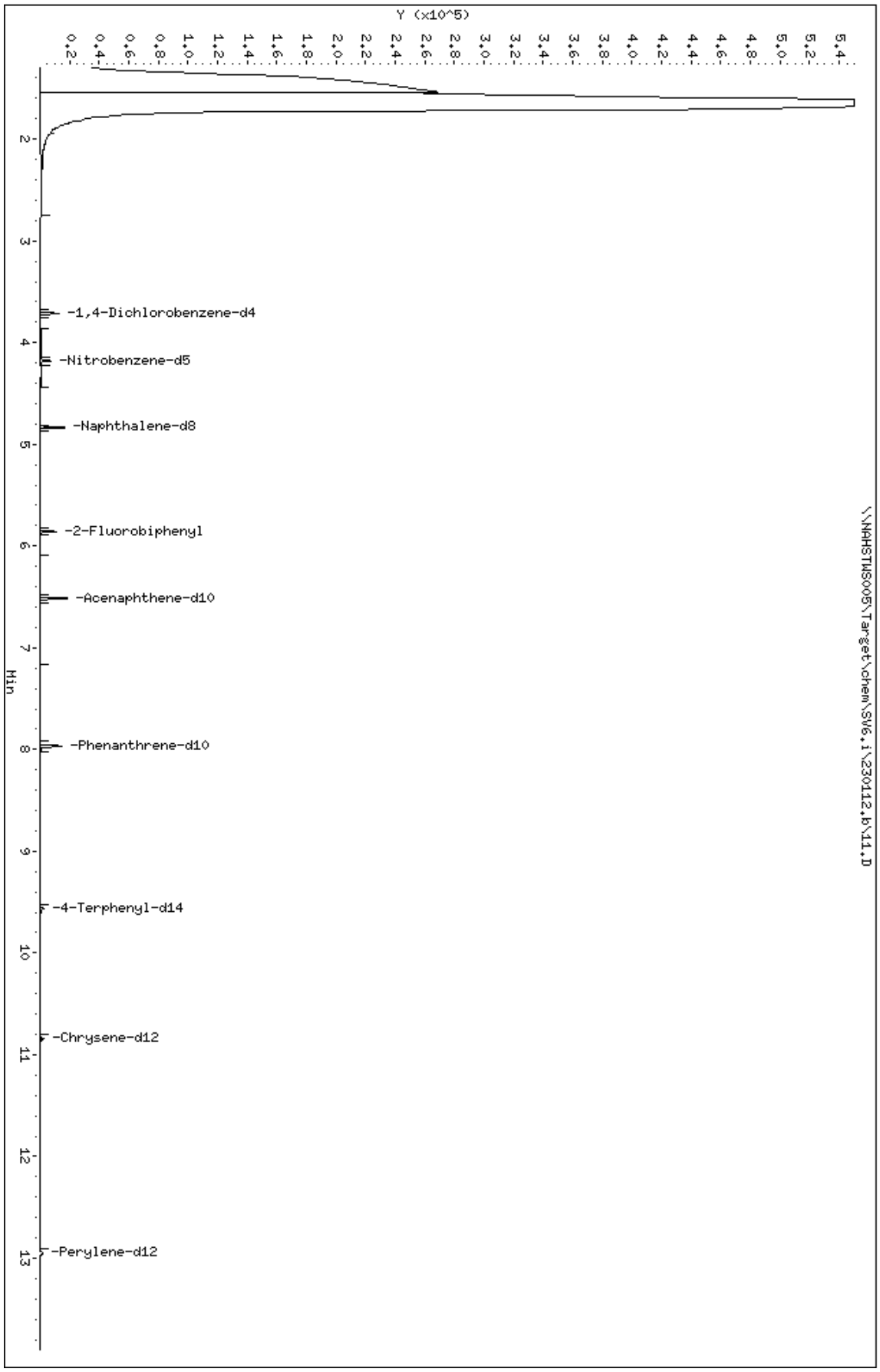
Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	AMOUNTS ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.716	3.716	(1.000)	3469	0.10000	(a)
* 45 Naphthalene-d8	136	4.836	4.836	(1.000)	13669	0.10000	
$ 33 Nitrobenzene-d5	82	4.178	4.178	(0.864)	3868	0.08000	0.07730(M)
* 86 Acenaphthene-d10	164	6.516	6.516	(1.000)	7176	0.10000	
$ 69 2-Fluorobiphenyl	172	5.857	5.857	(0.899)	7123	0.08000	0.07686
* 126 Phenanthrene-d10	188	7.966	7.966	(1.000)	13398	0.10000	
* 182 Chrysene-d12	240	10.844	10.844	(1.000)	3082	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.564	9.564	(0.882)	4071	0.08000	0.08819(M)
* 198 Perylene-d12	264	12.949	12.949	(1.000)	2716	0.10000	
1 1,4-Dioxane	58	1.942	1.942	(0.523)	930	0.08000	0.08124(QM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

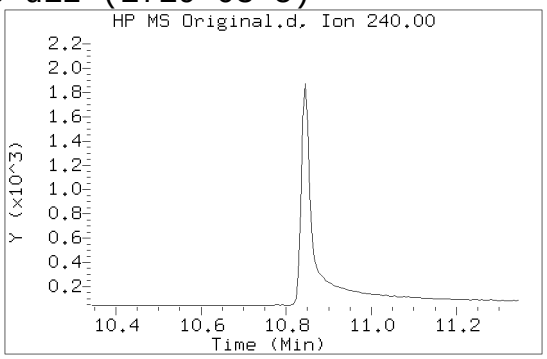

Data File: \\NAHSTWS005\Target\chem\SV6,i\230112,b\11.D
Date : 12-JAN-2023 15:47
Client ID: 14DX-0.08
Sample Info: 14DX-0.08
Purge Volume: 1000.0
Column phase: RTX-5SIL MS
Instrument: SV6,i
Operator: LG
Column diameter: 0.28
Page 1
Y (x10^5)
Min
-1,4-Dichlorobenzene-d4
-Nitrobenzene-d5
-Naphthalene-d8
-2-Fluorobiphenyl
-Acenaphthene-d10
-Phenanthrene-d10
-4-Terphenyl-d14
-Chrysene-d12
-Perylene-d12
\\NAHSTWS005\Target\chem\SV6,i\230112,b\11.D

Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\11.D
Inj Date : 12-JAN-2023 15:47
InstruID : SV6.i
LabSampID : 14DX-0.08

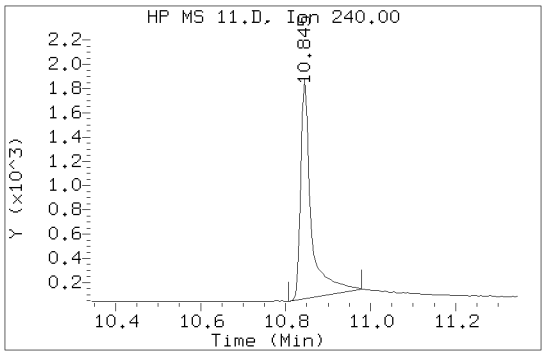
Chrysene-d12 (1719-03-5)

Reason Code:

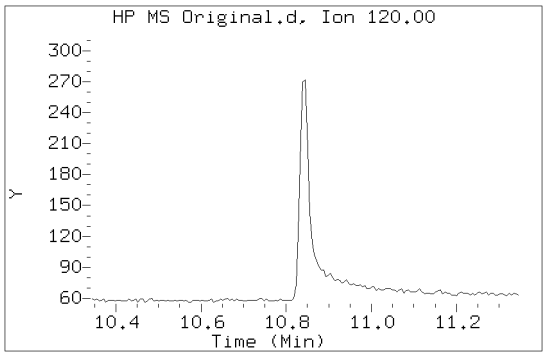
BEFORE
MASS
240
AREA
0
HEIGHT
0
12-Jan-2023
16:02
ALSHS
Server



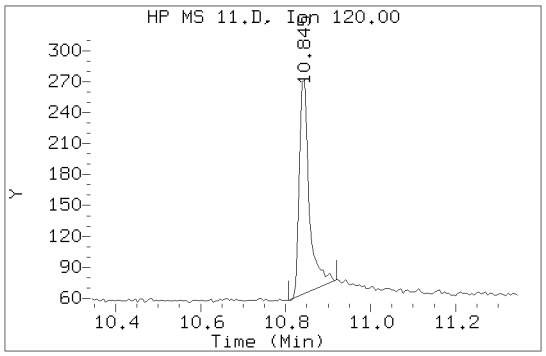
AFTER
MASS
240
AREA
3082
HEIGHT
1802
16-Jan-2023
10:58



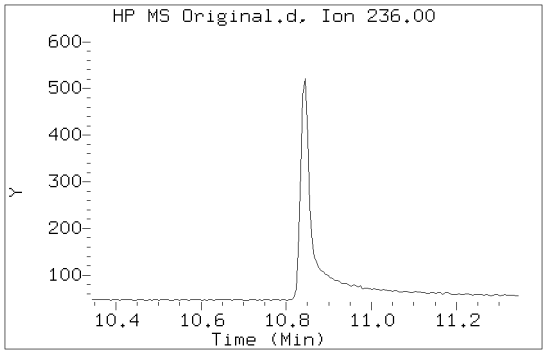
BEFORE
MASS
120
AREA
0
HEIGHT
0
12-Jan-2023
16:02
ALSHS
Server



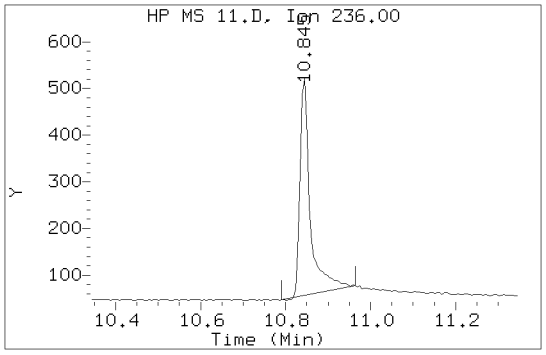
AFTER
MASS
120
AREA
335
HEIGHT
207
16-Jan-2023
10:58



BEFORE
MASS
236
AREA
0
HEIGHT
0
12-Jan-2023
16:02
ALSHS
Server



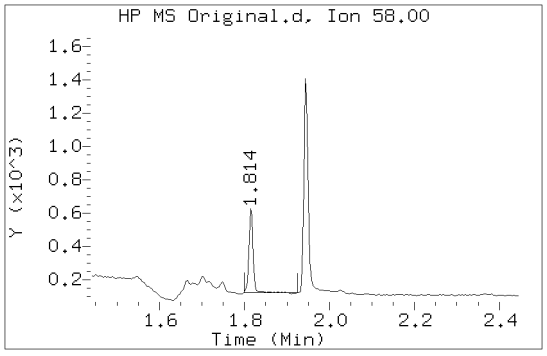
AFTER
MASS
236
AREA
775
HEIGHT
464
16-Jan-2023
10:58



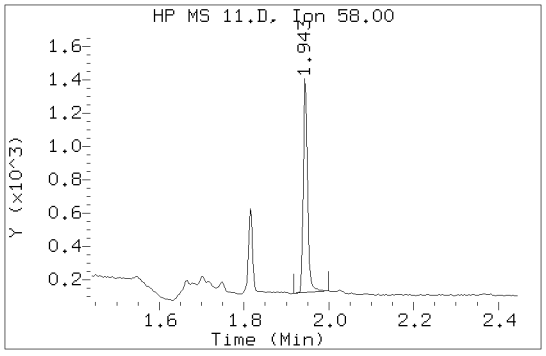
1,4-Dioxane ()

Reason Code:

BEFORE
MASS
58
AREA
356
HEIGHT
503
12-Jan-2023
16:02
ALSHS
Server



AFTER
MASS
58
AREA
930
HEIGHT
1282
16-Jan-2023
10:58



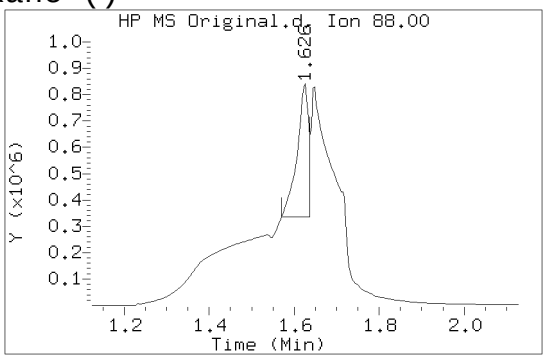
Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\11.D
Inj Date : 12-JAN-2023 15:47
InstruID : SV6.i
LabSampID : 14DX-0.08

1,4-Dioxane ()

Reason Code:

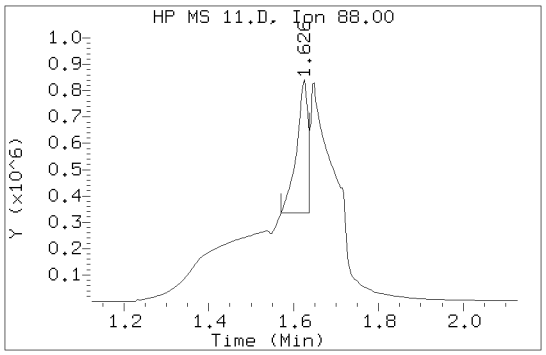
BEFORE

MASS
88
AREA
958709
HEIGHT
504896
12-Jan-2023
16:02
ALSHS
Server



AFTER

MASS
88
AREA
958709
HEIGHT
504896
16-Jan-2023
10:58

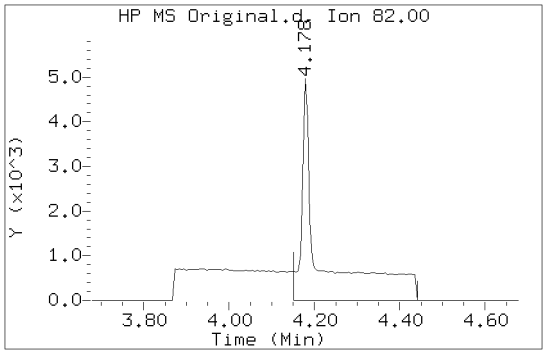


Nitrobenzene-d5 (4165-60-0)

Reason Code:

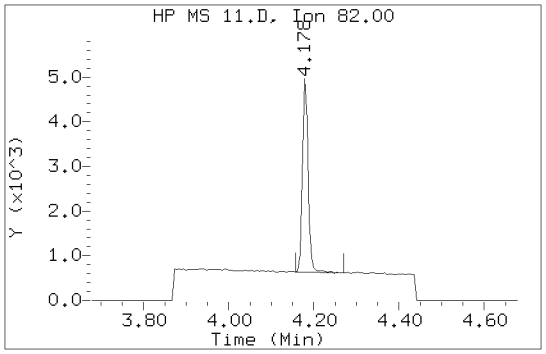
BEFORE

MASS
82
AREA
14530
HEIGHT
4964
12-Jan-2023
16:02
ALSHS
Server



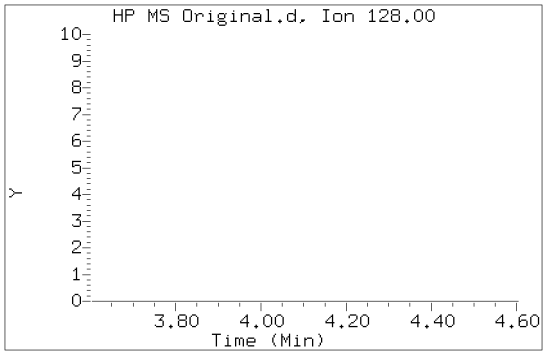
AFTER

MASS
82
AREA
3868
HEIGHT
4328
16-Jan-2023
10:58



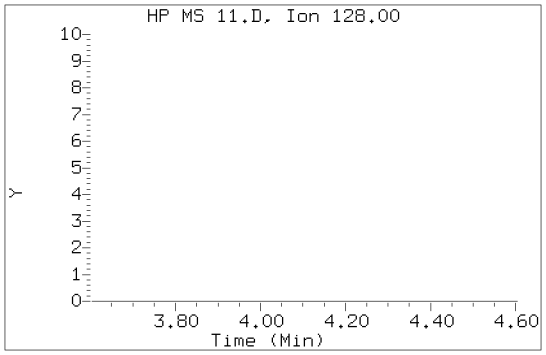
BEFORE

MASS
128
AREA
0
HEIGHT
0
12-Jan-2023
16:02
ALSHS
Server



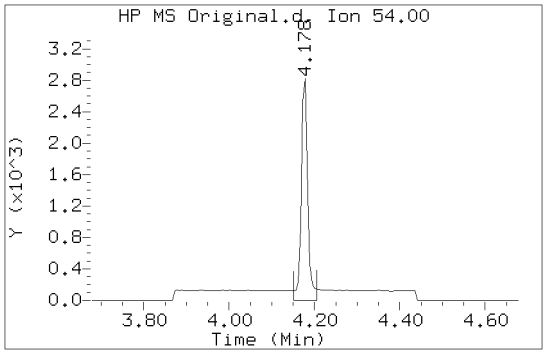
AFTER

MASS
128
AREA
0
HEIGHT
0
16-Jan-2023
10:58



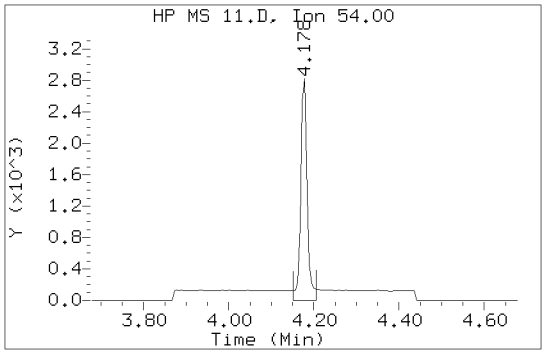
BEFORE

MASS
54
AREA
2927
HEIGHT
2820
12-Jan-2023
16:02
ALSHS
Server



AFTER

MASS
54
AREA
2927
HEIGHT
2820
16-Jan-2023
10:58

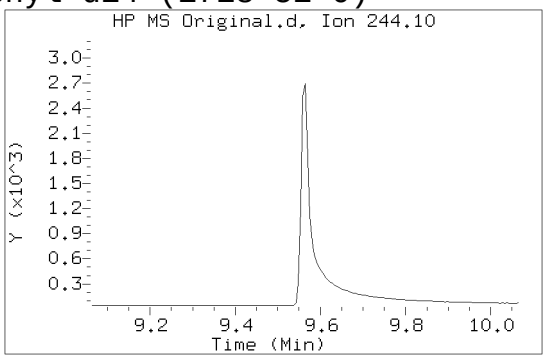


Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\11.D
Inj Date : 12-JAN-2023 15:47
InstruID : SV6.i
LabSampID : 14DX-0.08

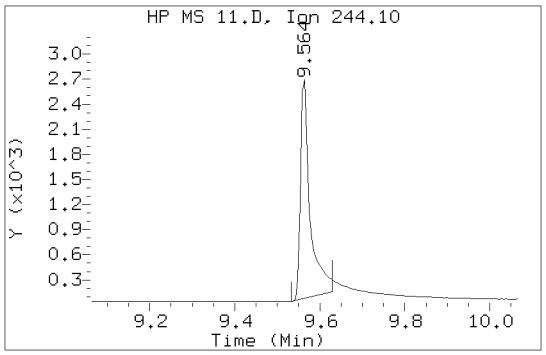
4-Terphenyl-d14 (1718-51-0)

Reason Code:

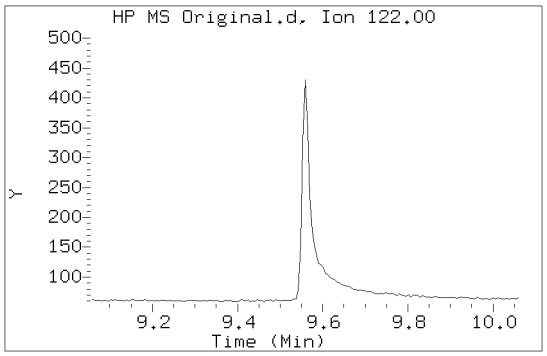
BEFORE
MASS
244.1
AREA
0
HEIGHT
0
12-Jan-2023
16:02
ALSHS
Server



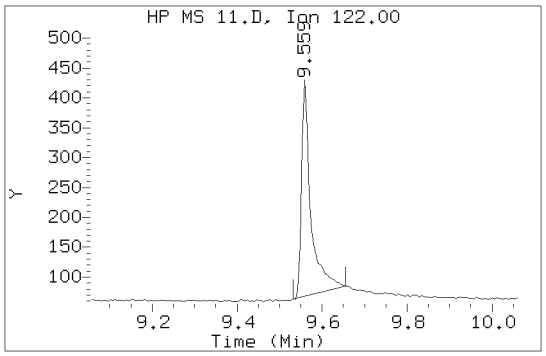
AFTER
MASS
244.1
AREA
4071
HEIGHT
2610
16-Jan-2023
10:58



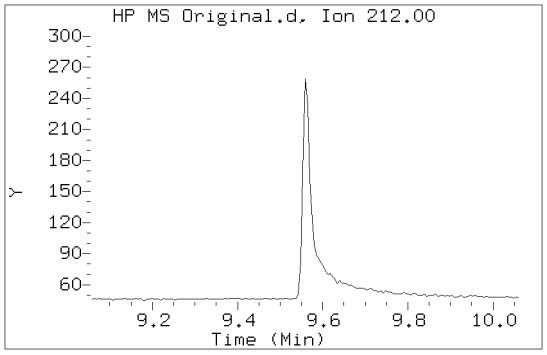
BEFORE
MASS
122
AREA
0
HEIGHT
0
12-Jan-2023
16:02
ALSHS
Server



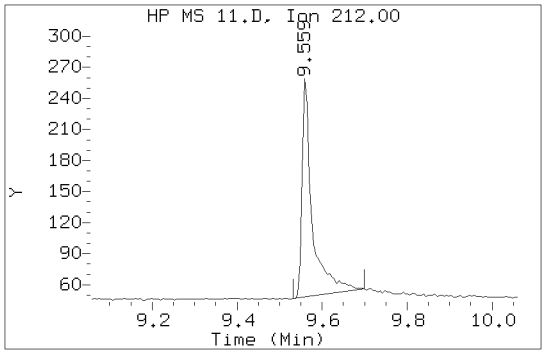
AFTER
MASS
122
AREA
543
HEIGHT
362
16-Jan-2023
10:58



BEFORE
MASS
212
AREA
0
HEIGHT
0
12-Jan-2023
16:02
ALSHS
Server



AFTER
MASS
212
AREA
346
HEIGHT
210
16-Jan-2023
10:58



ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230112.b\28.D
Lab Smp Id: 14DX-0.08 Client Smp ID: 14DX-0.08
Inj Date : 12-JAN-2023 20:52
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.08
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230112.b\DXSIM.m
Meth Date : 13-Jan-2023 14:51 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7056

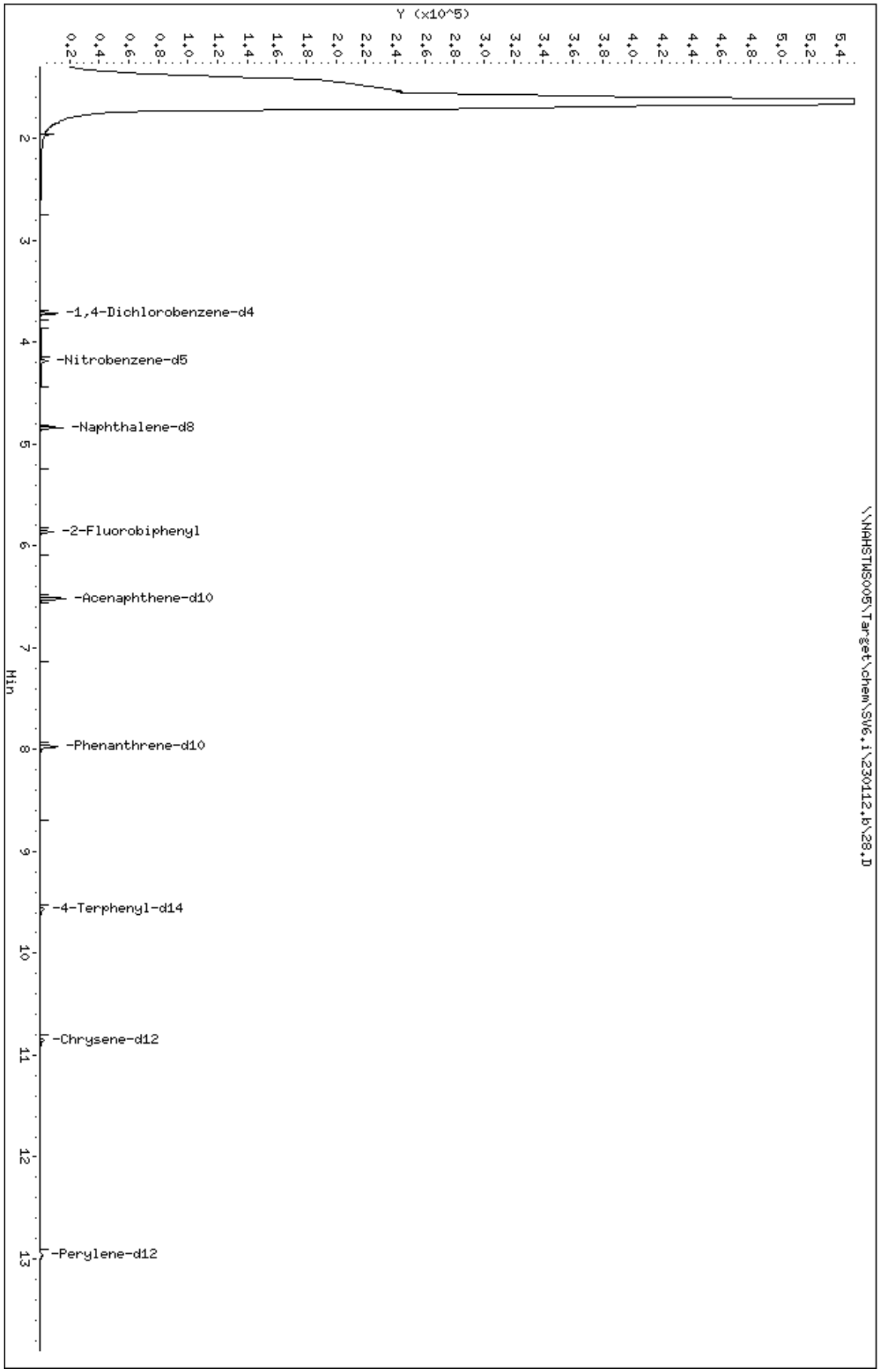
Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.722	3.722	(1.000)	3593	0.10000	(a)
* 45 Naphthalene-d8	136	4.840	4.840	(1.000)	14450	0.10000	(M)
$ 33 Nitrobenzene-d5	82	4.183	4.183	(0.864)	3970	0.08000	0.07505(QM)
* 86 Acenaphthene-d10	164	6.522	6.522	(1.000)	7705	0.10000	(M)
$ 69 2-Fluorobiphenyl	172	5.864	5.864	(0.899)	7945	0.08000	0.07985(M)
* 126 Phenanthrene-d10	188	7.972	7.972	(1.000)	14060	0.10000	
* 182 Chrysene-d12	240	10.850	10.850	(1.000)	4937	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.564	9.564	(0.881)	5981	0.08000	0.08037(M)
* 198 Perylene-d12	264	12.960	12.960	(1.000)	3694	0.10000	
1 1,4-Dioxane	58	1.968	1.968	(0.529)	966	0.08000	0.08148(QM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.


Data File: \\NAHSTWS005\Target\chem\SV6.i\230112.b\28.D
Date : 12-JAN-2023 20:52
Client ID: 14DX-0.08
Sample Info: 14DX-0.08
Purge Volume: 1000.0
Column phase: RTX-5SIL MS
Instrument: SV6.i
Operator: LG
Column diameter: 0.28
Page 1
Y (x10^5)
0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
3.6
3.8
4.0
4.2
4.4
4.6
4.8
5.0
5.2
5.4
2
3
4
5
6
7
8
9
10
11
12
13
Min
-1,4-Dichlorobenzene-d4
-Nitrobenzene-d5
-Naphthalene-d8
-2-Fluorobiphenyl
-Acenaphthene-d10
-Phenanthrene-d10
-4-Terphenyl-d14
-Chrysene-d12
-Perylene-d12
\\NAHSTWS005\Target\chem\SV6.i\230112.b\28.D

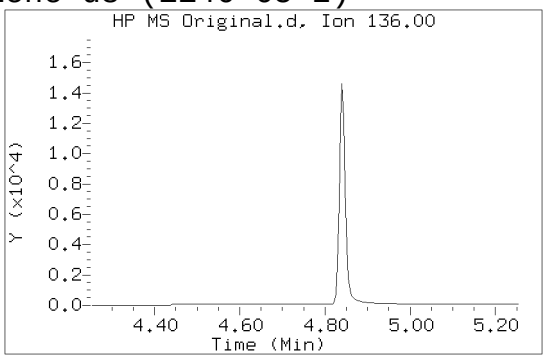
Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\28.D
Inj Date : 12-JAN-2023 20:52
InstruID : SV6.i
LabSampID : 14DX-0.08

Naphthalene-d8 (1146-65-2)

Reason Code:

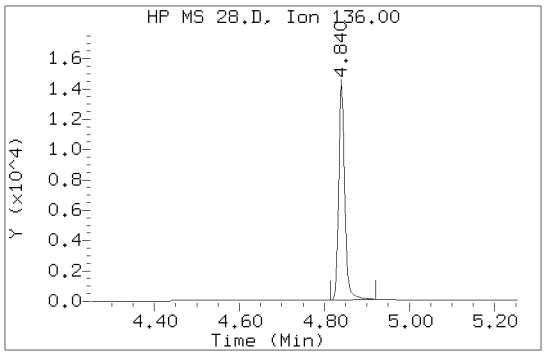
BEFORE

MASS
136
AREA
16949
HEIGHT
14611
12-Jan-2023
21:07
ALSHS
Server



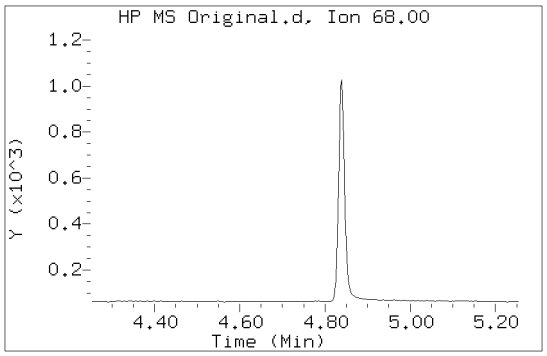
AFTER

MASS
136
AREA
14450
HEIGHT
14521
13-Jan-2023
14:51
ALSHS
Ser



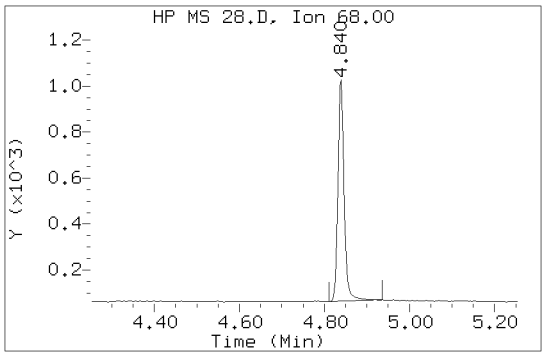
BEFORE

MASS
68
AREA
2802
HEIGHT
1027
12-Jan-2023
21:07
ALSHS
Server



AFTER

MASS
68
AREA
982
HEIGHT
961
13-Jan-2023
14:51
ALSHS
Ser

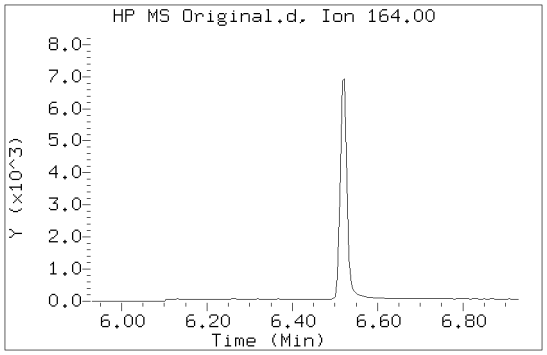


Acenaphthene-d10 (15067-26-2)

Reason Code:

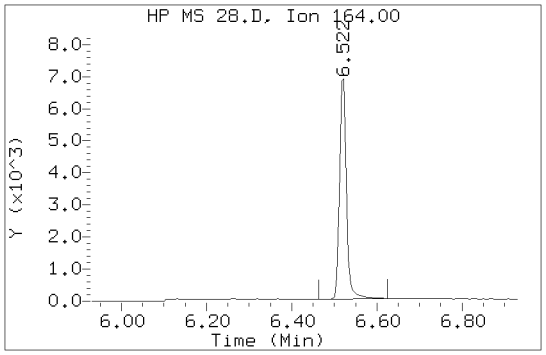
BEFORE

MASS
164
AREA
0
HEIGHT
0
12-Jan-2023
21:07
ALSHS
Server



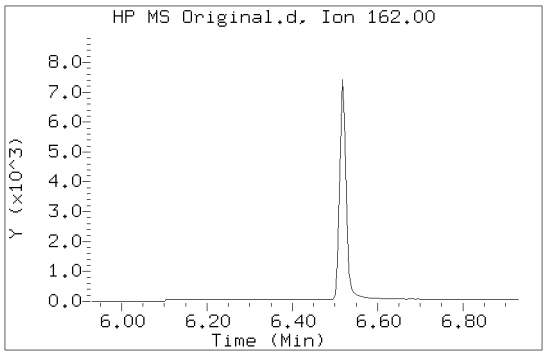
AFTER

MASS
164
AREA
7705
HEIGHT
6855
13-Jan-2023
14:51
ALSHS
Ser



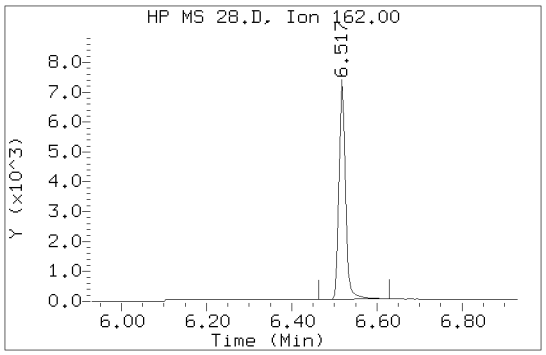
BEFORE

MASS
162
AREA
0
HEIGHT
0
12-Jan-2023
21:07
ALSHS
Server



AFTER

MASS
162
AREA
7741
HEIGHT
7344
13-Jan-2023
14:51
ALSHS
Ser



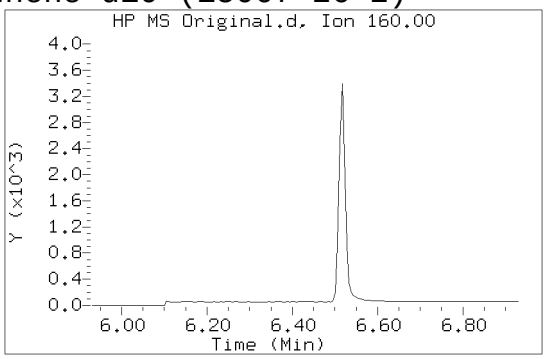
Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\28.D
Inj Date : 12-JAN-2023 20:52
InstruID : SV6.i
LabSampID : 14DX-0.08

Acenaphthene-d10 (15067-26-2)

Reason Code:

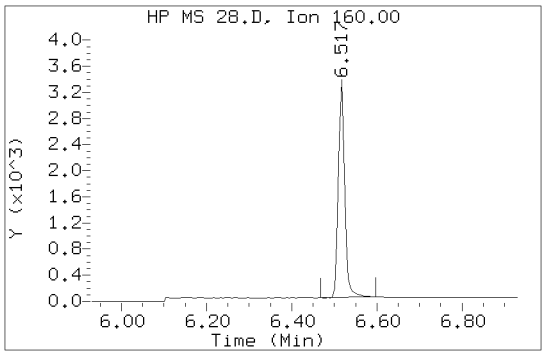
BEFORE

MASS
160
AREA
0
HEIGHT
0
12-Jan-2023
21:07
ALSHS
Server



AFTER

MASS
160
AREA
3400
HEIGHT
3333
13-Jan-2023
14:51
ALSHS
Ser

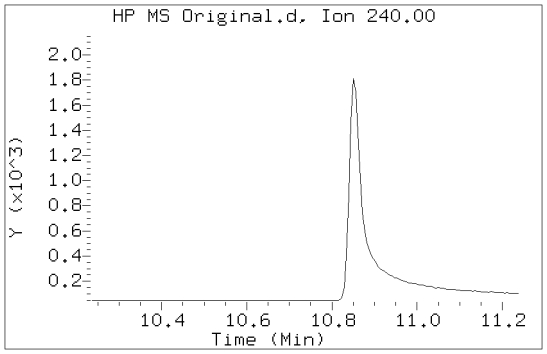


Chrysene-d12 (1719-03-5)

Reason Code:

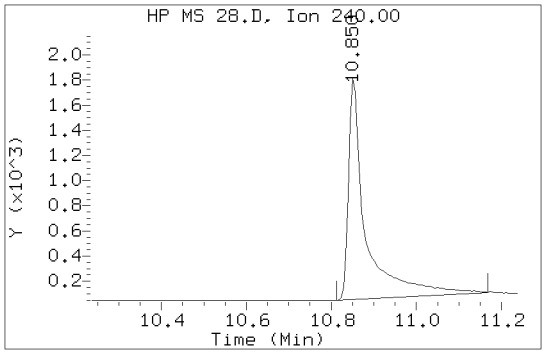
BEFORE

MASS
240
AREA
0
HEIGHT
0
12-Jan-2023
21:07
ALSHS
Server



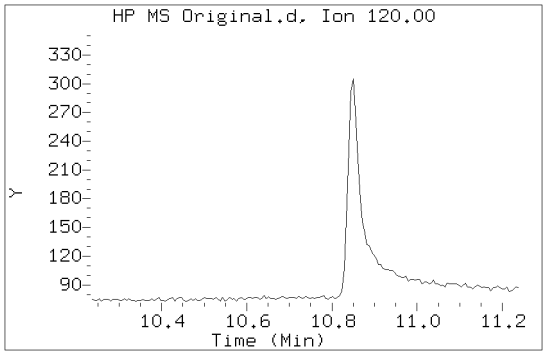
AFTER

MASS
240
AREA
4937
HEIGHT
1754
13-Jan-2023
14:51
ALSHS
Ser



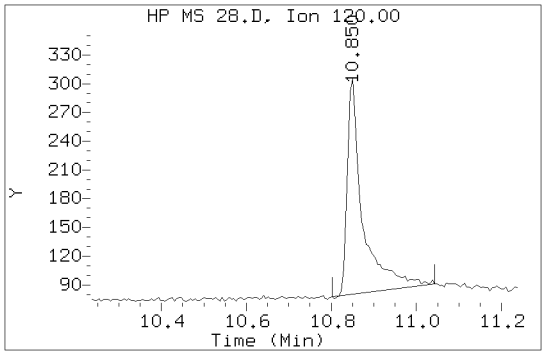
BEFORE

MASS
120
AREA
0
HEIGHT
0
12-Jan-2023
21:07
ALSHS
Server



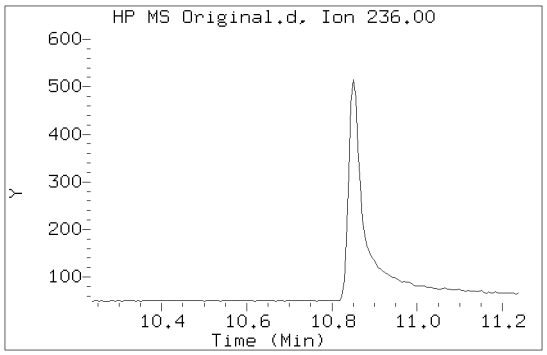
AFTER

MASS
120
AREA
565
HEIGHT
224
13-Jan-2023
14:51
ALSHS
Ser



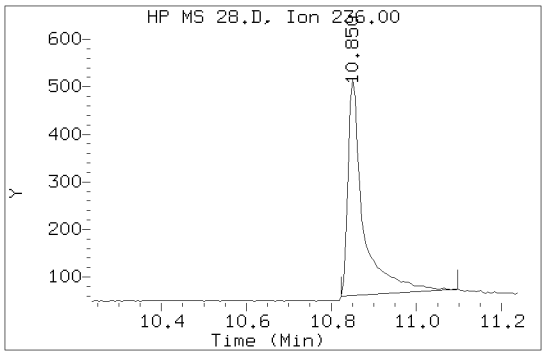
BEFORE

MASS
236
AREA
0
HEIGHT
0
12-Jan-2023
21:07
ALSHS
Server



AFTER

MASS
236
AREA
1134
HEIGHT
453
13-Jan-2023
14:51
ALSHS
Ser

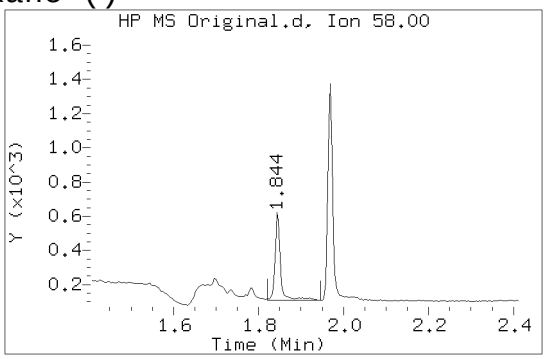


Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\28.D
Inj Date : 12-JAN-2023 20:52
InstruID : SV6.i
LabSampID : 14DX-0.08

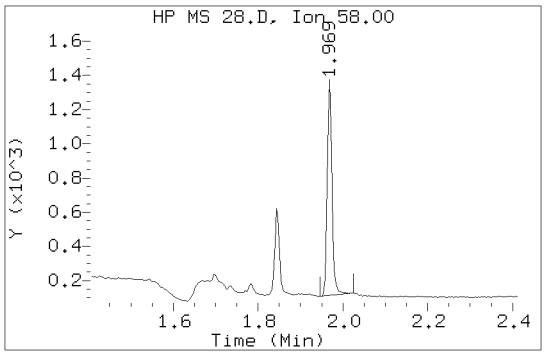
1,4-Dioxane ()

Reason Code:

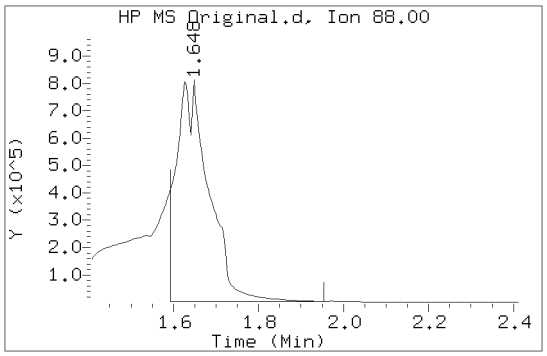
BEFORE
MASS
58
AREA
462
HEIGHT
511
12-Jan-2023
21:07
ALSHS
Server



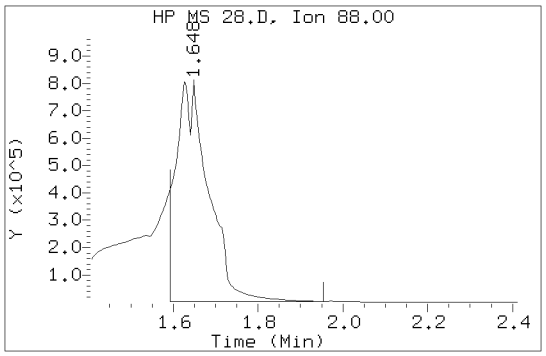
AFTER
MASS
58
AREA
966
HEIGHT
1260
13-Jan-2023
14:51
ALSHS
Ser



BEFORE
MASS
88
AREA
4278858
HEIGHT
809226
12-Jan-2023
21:07
ALSHS
Server



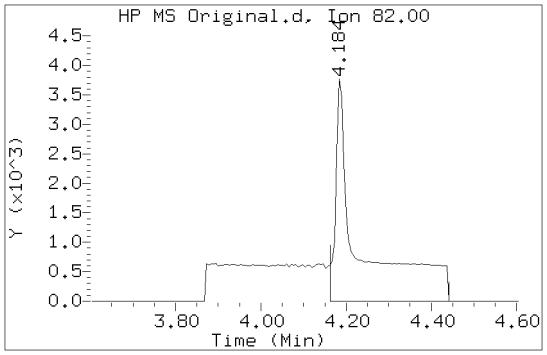
AFTER
MASS
88
AREA
4278858
HEIGHT
809226
13-Jan-2023
14:51
ALSHS
Ser



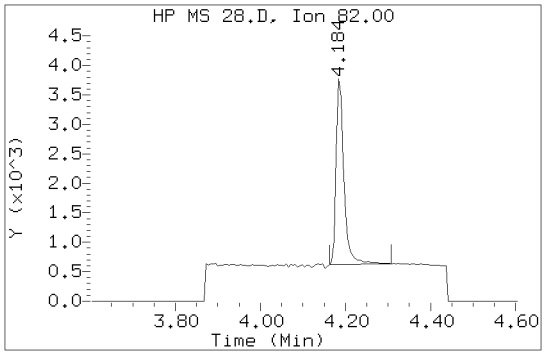
Nitrobenzene-d5 (4165-60-0)

Reason Code:

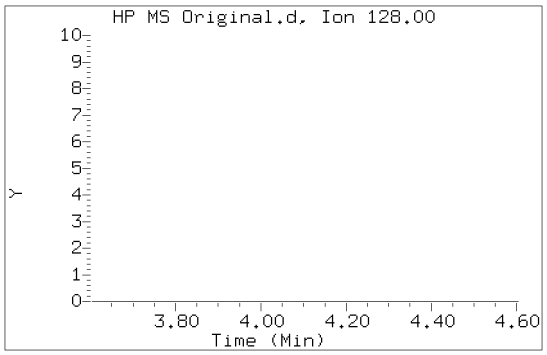
BEFORE
MASS
82
AREA
14445
HEIGHT
3771
12-Jan-2023
21:07
ALSHS
Server



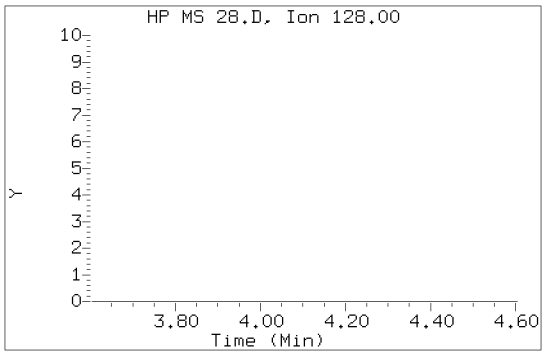
AFTER
MASS
82
AREA
3970
HEIGHT
3146
13-Jan-2023
14:51
ALSHS
Ser



BEFORE
MASS
128
AREA
0
HEIGHT
0
12-Jan-2023
21:07
ALSHS
Server



AFTER
MASS
128
AREA
0
HEIGHT
0
13-Jan-2023
14:51
ALSHS
Ser



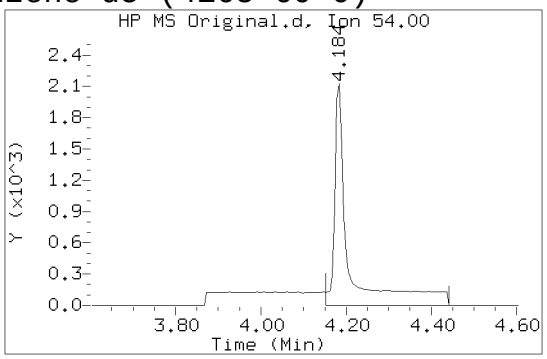
Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\28.D
Inj Date : 12-JAN-2023 20:52
InstruID : SV6.i
LabSampID : 14DX-0.08

Nitrobenzene-d5 (4165-60-0)

Reason Code:

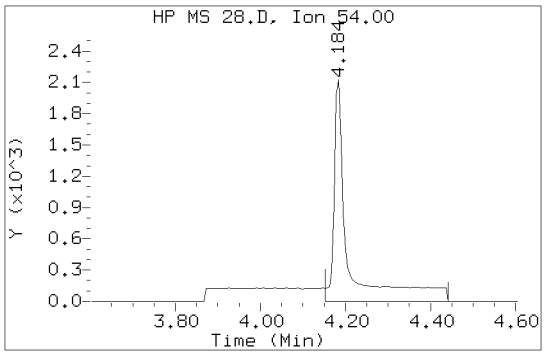
BEFORE

MASS
54
AREA
4854
HEIGHT
2126
12-Jan-2023
21:07
ALSHS
Server



AFTER

MASS
54
AREA
4854
HEIGHT
2126
13-Jan-2023
14:51
ALSHS
Ser

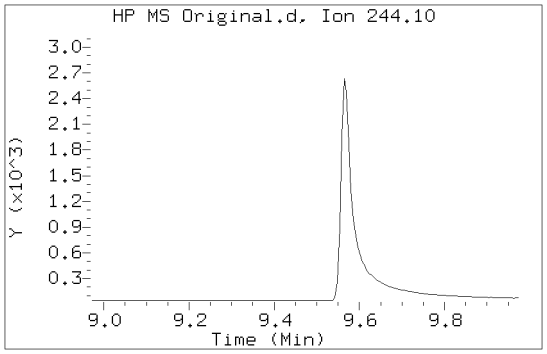


4-Terphenyl-d14 (1718-51-0)

Reason Code:

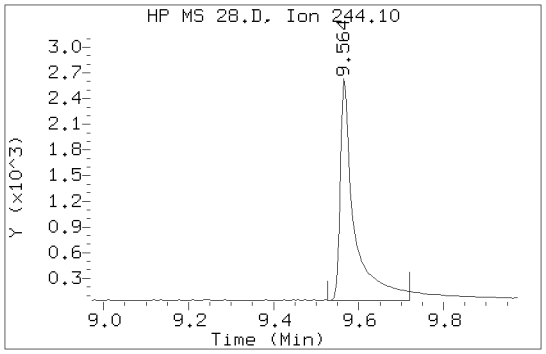
BEFORE

MASS
244.1
AREA
0
HEIGHT
0
12-Jan-2023
21:07
ALSHS
Server



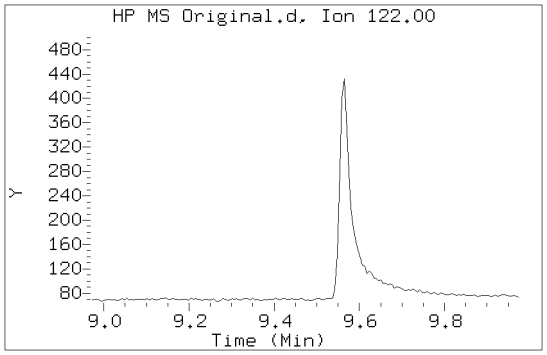
AFTER

MASS
244.1
AREA
5981
HEIGHT
2585
13-Jan-2023
14:51
ALSHS
Ser



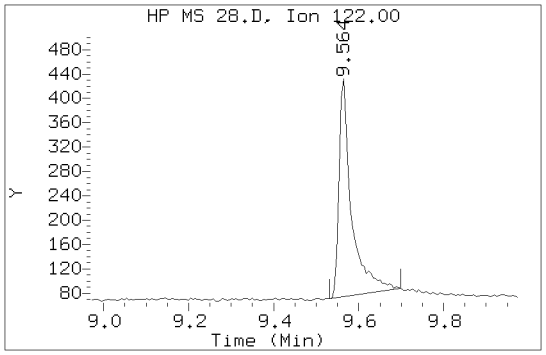
BEFORE

MASS
122
AREA
0
HEIGHT
0
12-Jan-2023
21:07
ALSHS
Server



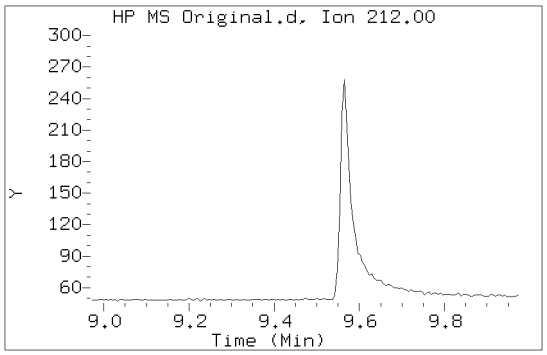
AFTER

MASS
122
AREA
738
HEIGHT
357
13-Jan-2023
14:51
ALSHS
Ser



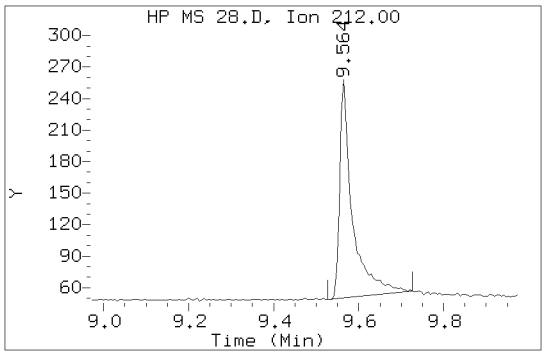
BEFORE

MASS
212
AREA
0
HEIGHT
0
12-Jan-2023
21:07
ALSHS
Server



AFTER

MASS
212
AREA
429
HEIGHT
207
13-Jan-2023
14:51
ALSHS
Ser



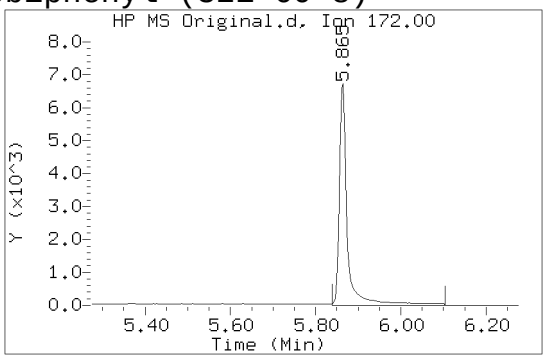
Data File : \\NAHSTWS005\Target\chem\SV6.i\230112.b\28.D
Inj Date : 12-JAN-2023 20:52
InstruID : SV6.i
LabSampID : 14DX-0.08

2-Fluorobiphenyl (321-60-8)

Reason Code:

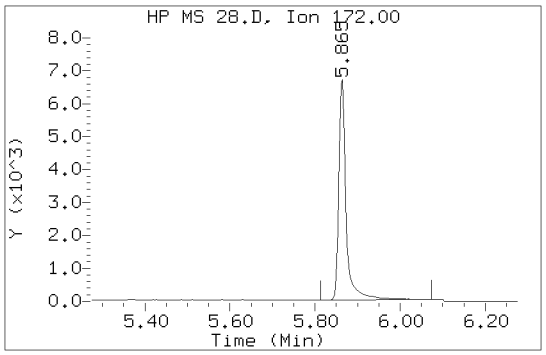
BEFORE

MASS
172
AREA
8795
HEIGHT
6731
12-Jan-2023
21:07
ALSHS
Server



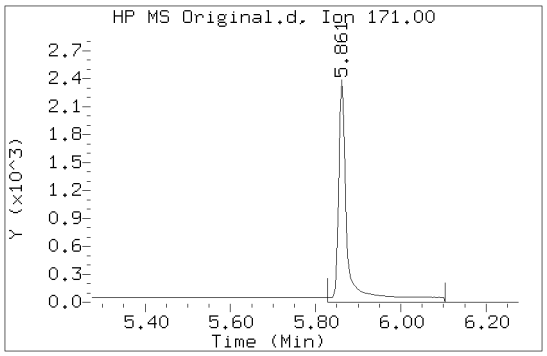
AFTER

MASS
172
AREA
7945
HEIGHT
6681
13-Jan-2023
14:51
ALSHS
Ser



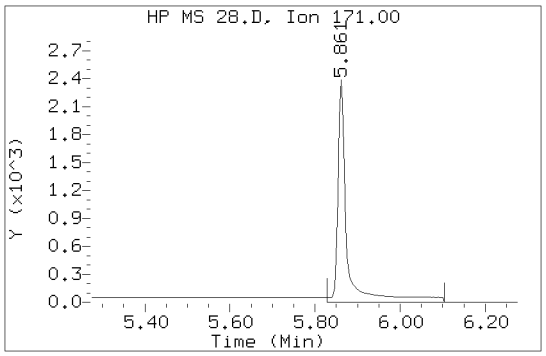
BEFORE

MASS
171
AREA
3566
HEIGHT
2387
12-Jan-2023
21:07
ALSHS
Server



AFTER

MASS
171
AREA
3566
HEIGHT
2387
13-Jan-2023
14:51
ALSHS
Ser



right solutions.
right partner.

Raw Data SV-6 425803

Semi-Volatiles by by EPA 8270SIM

Workorder

HS22121096

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/16/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\01.D Page 1
Report Date: 11-Jan-2023 09:41

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111.b\01.D
Lab Smp Id: DFTPP Client Smp ID: DFTPP
Inj Date : 11-JAN-2023 08:57
Operator : smith Inst ID: SV6.i
Smp Info : DFTPP;DFTPP;3;;DFTPP
Misc Info :
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111.b\DFTPP.m
Meth Date : 27-Sep-2022 15:32 Linh.Pham Quant Type: ESTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: DFTPP
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: None
Processing Host: NAHSTW7095

					CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/L)	TARGET RANGE	RATIO
RT	EXP RT	DLT RT	MASS	RESPONSE				
1 dftpp						CAS #: 5074-71-5		
5.630	6.357	-0.727	198	136128			0.00- 100.00	100.00
5.630	6.357	-0.727	51	86932			10.00- 80.00	63.86
5.630	6.357	-0.727	68	906			0.00- 2.00	1.35
5.630	6.357	-0.727	69	67064			0.00- 0.00	49.27
5.630	6.357	-0.727	70	320			0.00- 2.00	0.48
5.630	6.357	-0.727	127	75696			10.00- 80.00	55.61
5.630	6.357	-0.727	197	1171			0.00- 2.00	0.86
5.630	6.357	-0.727	199	9260			5.00- 9.00	6.80
5.630	6.357	-0.727	275	32952			10.00- 60.00	24.21
5.630	6.357	-0.727	365	4727			1.00- 100.00	3.47
5.630	6.357	-0.727	441	14528			0.01- 99.99	80.93
5.630	6.357	-0.727	442	95736			50.00- 150.00	70.33
5.630	6.357	-0.727	443	17952			15.00- 24.00	18.75

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	63.86
68	Less than 2.00% of mass 69	0.67 (1.35)
69	Mass 69 relative abundance	49.27
70	Less than 2.00% of mass 69	0.24 (0.48)
127	10.00 - 80.00% of mass 198	55.61
197	Less than 2.00% of mass 198	0.86
199	5.00 - 9.00% of mass 198	6.80
275	10.00 - 60.00% of mass 198	24.21
365	1.00 - 100.00% of mass 198	3.47
441	Present, but less than mass 443	10.67
442	50.00 - 150.00% of mass 198	70.33
443	15.00 - 24.00% of mass 442	13.19 (18.75)

Data File: 01.D
Spectrum: HP ChemStation MS 01.D, Scan 569: 5.630 min. (SUB)
Location of Maximum: 198.00
Number of points: 260

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	414	122.00	1297	190.90	454	266.00	283
37.00	286	123.00	1991	192.00	2062	269.90	227
38.00	1029	124.00	1099	193.00	2202	270.90	268
39.10	5975	125.00	897	194.00	446	271.90	410
40.10	392	126.10	648	195.00	421	273.00	2559
41.00	262	127.00	75696	196.00	3608	274.00	6950
45.00	186	128.00	5641	196.80	1171	275.00	32952
47.90	157	129.00	29248	198.00	136128	276.00	4362
49.00	381	130.00	2726	199.00	9260	277.00	3114
50.10	23552	131.00	491	200.00	821	278.00	397
51.10	86928	131.90	307	201.30	580	283.00	407
52.10	4174	133.90	790	203.00	1236	284.00	330
53.10	173	135.00	2115	204.00	5512	285.00	642
54.90	362	136.00	851	205.00	9487	289.90	156
56.00	2485	137.00	1089	206.00	37304	292.10	184
57.00	5121	138.00	249	207.00	4803	293.00	529
58.00	237	138.90	173	208.00	1259	294.00	366
61.00	837	140.00	340	209.00	527	294.90	242
62.00	877	141.00	3681	210.00	545	296.00	10613
63.00	2742	142.00	1149	211.00	1677	297.00	1457
64.10	306	143.00	709	211.70	300	303.00	1236
65.00	1311	144.10	299	214.90	528	304.10	338
68.00	906	145.00	244	216.00	733	308.00	170
69.00	67064	146.00	721	217.00	10815	314.00	426
70.00	320	147.00	1629	218.00	1280	315.00	1038
73.00	557	148.00	5112	218.90	197	316.00	602
74.00	7225	149.00	951	219.90	213	317.00	182
75.00	10879	150.00	208	221.00	6903	321.00	377
76.10	4259	151.00	464	221.90	1423	321.90	171
77.10	87088	152.00	219	223.00	2436	323.10	3312
78.00	5904	152.90	1270	224.00	23304	323.90	509
79.00	4530	154.00	686	225.00	5192	327.00	630
80.00	3262	155.10	2161	226.00	464	328.00	259
81.00	5642	156.00	3274	227.00	9736	331.90	234
81.90	1388	157.00	595	228.00	1484	333.10	219
83.00	1221	157.90	540	229.00	1710	334.00	1797
84.00	163	159.00	644	231.00	838	335.00	544
85.00	1083	160.00	1065	233.00	150	341.10	284
86.00	1553	161.00	1670	233.90	690	346.00	911
86.90	743	161.90	717	234.90	809	352.00	814
87.90	296	163.80	211	236.00	505	353.00	592
91.00	889	164.90	1375	236.90	770	354.00	773
92.00	1219	166.00	1306	239.00	297	365.00	4727
93.00	8777	167.00	9394	239.90	369	365.90	613
93.90	615	168.00	4556	241.00	463	371.00	262

95.00	265	169.00	646	242.00	1017	372.10	1490
96.00	477	170.10	241	243.00	1114	373.00	356
98.00	6509	171.00	307	244.10	16392	383.00	430
99.00	4478	171.90	791	245.00	2172	390.10	177
100.00	462	173.00	830	246.00	2745	391.10	172
101.00	2929	174.00	1745	247.00	669	402.10	628
103.00	851	175.10	3313	247.80	211	403.00	862
104.00	1667	176.00	944	248.90	521	404.00	334
105.00	1838	176.90	1224	249.90	211	421.00	760
106.00	702	177.90	515	251.00	214	422.10	649
107.00	24696	179.00	5789	252.10	215	423.00	5022
108.00	3265	180.00	4139	252.90	475	424.00	920
109.10	661	181.00	1657	254.00	722	435.60	165
110.00	38400	182.60	595	255.00	79920	441.10	14528
111.00	6401	183.90	597	256.00	11566	442.10	95736
112.00	760	185.00	2642	256.90	696	443.10	17952
113.00	175	186.00	19960	258.00	5198	444.00	1556
116.00	1187	187.00	5336	259.00	902		
117.00	23248	188.00	560	259.90	155		
118.00	1450	189.00	1403	263.90	156		
120.00	297	190.00	283	265.00	1930		

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\01.D

Date : 11-JAN-2023 08:57

Client ID: DFTPP

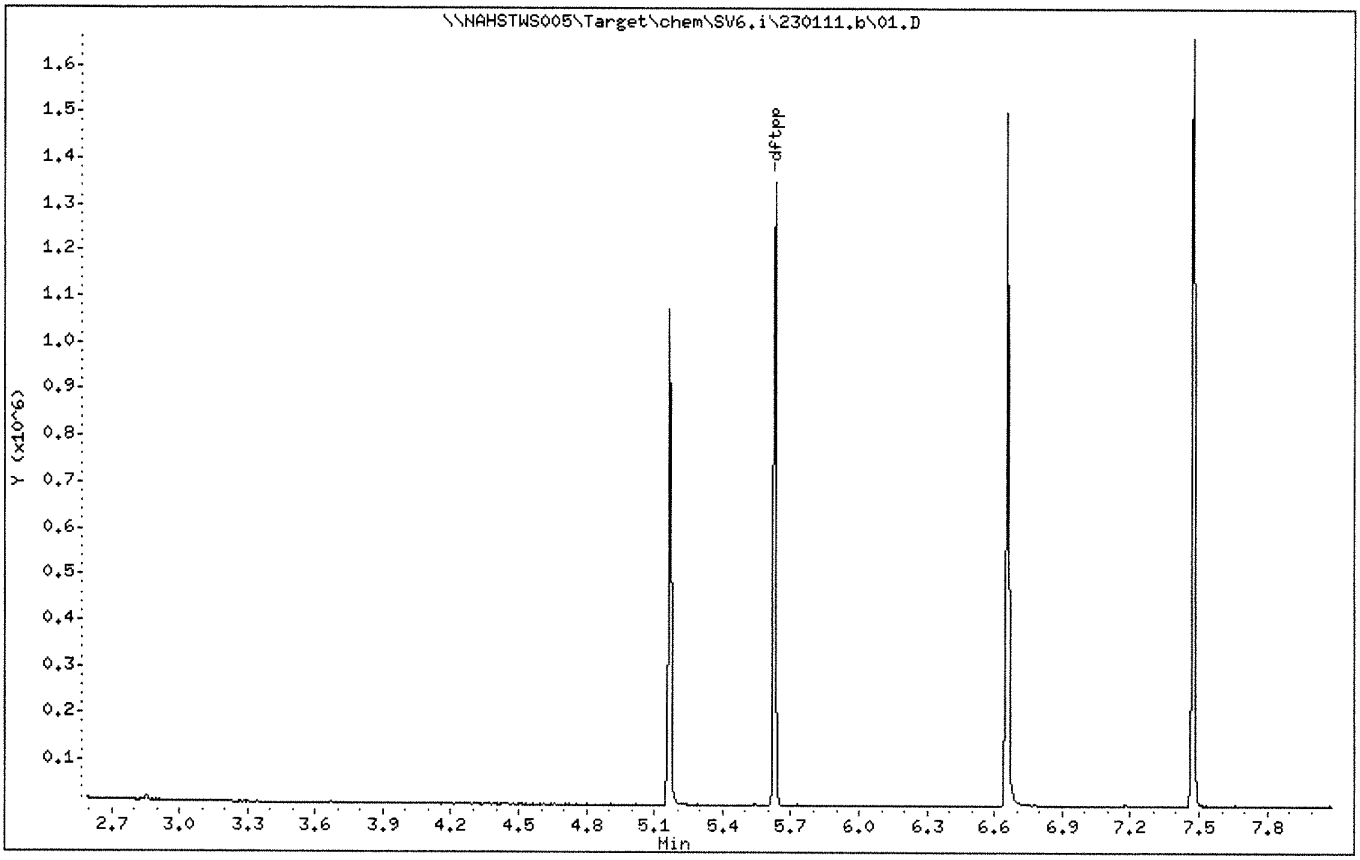
Instrument: SV6.i

Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\01.D

Date : 11-JAN-2023 08:57

Client ID: DFTPP

Instrument: SV6.i

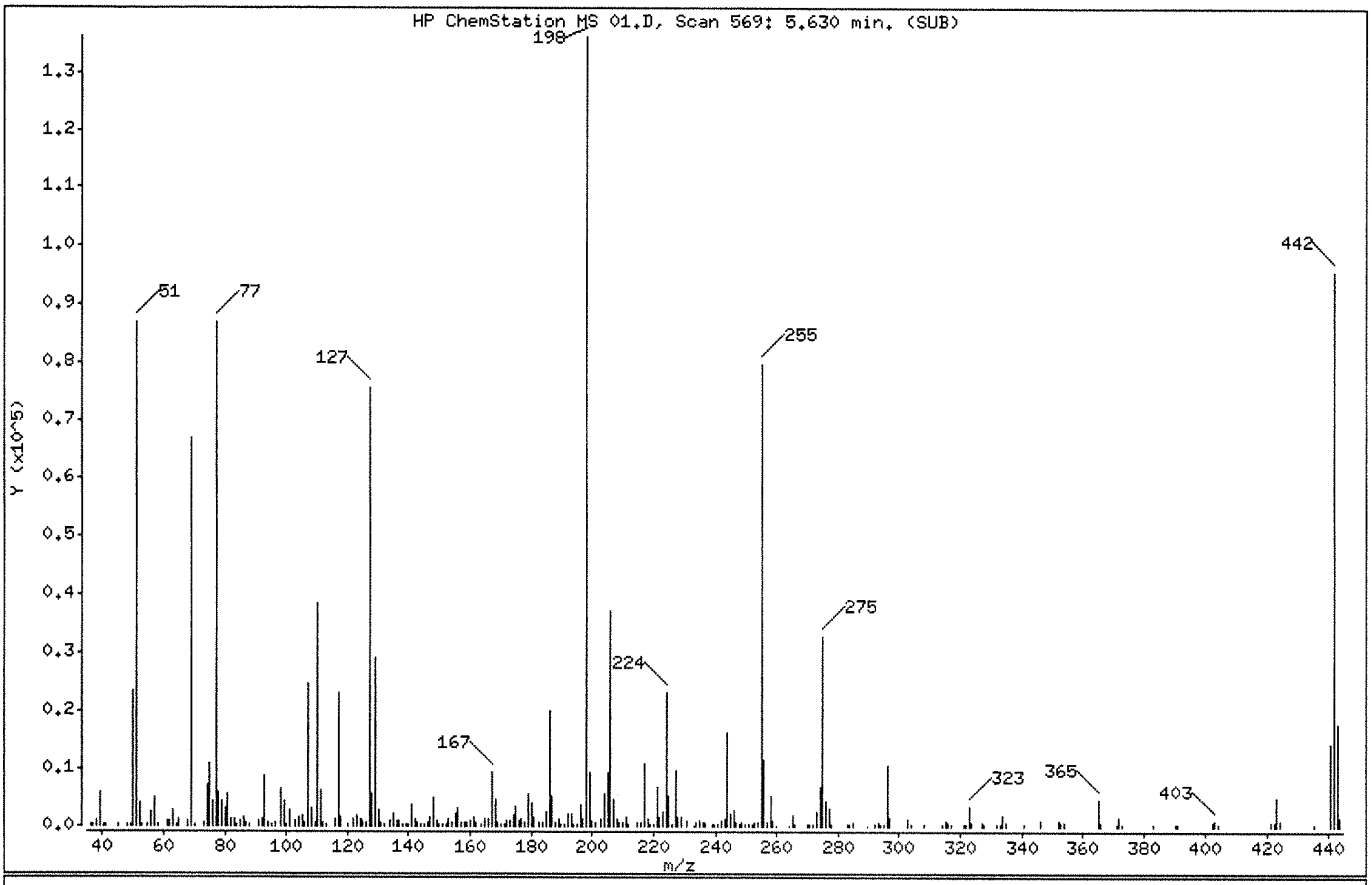
Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	10.00 - 80.00% of mass 198	63.86
68	Less than 2.00% of mass 69	0.67 (1.35)
69	Mass 69 relative abundance	49.27
70	Less than 2.00% of mass 69	0.24 (0.48)
127	10.00 - 80.00% of mass 198	55.61
197	Less than 2.00% of mass 198	0.86
199	5.00 - 9.00% of mass 198	6.80
275	10.00 - 60.00% of mass 198	24.21
365	1.00 - 100.00% of mass 198	3.47
441	Present, but less than mass 443	10.67
442	50.00 - 150.00% of mass 198	70.33
443	15.00 - 24.00% of mass 442	13.19 (18.75)

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\01.D

Date : 11-JAN-2023 08:57

Client ID: DFTPP

Instrument: SV6.i

Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25

Data File: 01.D
Spectrum: HP ChemStation MS 01.D, Scan 569: 5.630 min. (SUB)
Location of Maximum: 198.00
Number of points: 260

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	414	122.00	1297	190.90	454	266.00	283
37.00	286	123.00	1991	192.00	2062	269.90	227
38.00	1029	124.00	1099	193.00	2202	270.90	268
39.10	5975	125.00	897	194.00	446	271.90	410
40.10	392	126.10	648	195.00	421	273.00	2559
41.00	262	127.00	75696	196.00	3608	274.00	6950
45.00	186	128.00	5641	196.80	1171	275.00	32952
47.90	157	129.00	29248	198.00	136128	276.00	4362
49.00	381	130.00	2726	199.00	9260	277.00	3114
50.10	23552	131.00	491	200.00	821	278.00	397
51.10	86928	131.90	307	201.30	580	283.00	407
52.10	4174	133.90	790	203.00	1236	284.00	330
53.10	173	135.00	2115	204.00	5512	285.00	642
54.90	362	136.00	851	205.00	9487	289.90	156
56.00	2485	137.00	1089	206.00	37304	292.10	184
57.00	5121	138.00	249	207.00	4803	293.00	529
58.00	237	138.90	173	208.00	1259	294.00	366
61.00	837	140.00	340	209.00	527	294.90	242
62.00	877	141.00	3681	210.00	545	296.00	10613
63.00	2742	142.00	1149	211.00	1677	297.00	1457
64.10	306	143.00	709	211.70	300	303.00	1236
65.00	1311	144.10	299	214.90	528	304.10	338
68.00	906	145.00	244	216.00	733	308.00	170
69.00	67064	146.00	721	217.00	10815	314.00	426
70.00	320	147.00	1629	218.00	1280	315.00	1038
73.00	557	148.00	5112	218.90	197	316.00	602
74.00	7225	149.00	951	219.90	213	317.00	182
75.00	10879	150.00	208	221.00	6903	321.00	377
76.10	4259	151.00	464	221.90	1423	321.90	171
77.10	87088	152.00	219	223.00	2436	323.10	3312
78.00	5904	152.90	1270	224.00	23304	323.90	509
79.00	4530	154.00	686	225.00	5192	327.00	630
80.00	3262	155.10	2161	226.00	464	328.00	259
81.00	5642	156.00	3274	227.00	9736	331.90	234
81.90	1388	157.00	595	228.00	1484	333.10	219

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\01.D

Date : 11-JAN-2023 08:57

Client ID: DFTPP

Instrument: SV6.i

Sample Info: DFTPP;DFTPP;3;;DFTPP

Operator: smith

Column phase: DB-5MS

Column diameter: 0.25

Data File: 01.D
Spectrum: HP ChemStation MS 01.D, Scan 569: 5.630 min. (SUB)
Location of Maximum: 198.00
Number of points: 260

m/z	Y	m/z	Y	m/z	Y	m/z	Y
83.00	1221	157.90	540	229.00	1710	334.00	1797
84.00	163	159.00	644	231.00	838	335.00	544
85.00	1083	160.00	1065	233.00	150	341.10	284
86.00	1553	161.00	1670	233.90	690	346.00	911
86.90	743	161.90	717	234.90	809	352.00	814
87.90	296	163.80	211	236.00	505	353.00	592
91.00	889	164.90	1375	236.90	770	354.00	773
92.00	1219	166.00	1306	239.00	297	365.00	4727
93.00	8777	167.00	9394	239.90	369	365.90	613
93.90	615	168.00	4556	241.00	463	371.00	262
95.00	265	169.00	646	242.00	1017	372.10	1490
96.00	477	170.10	241	243.00	1114	373.00	356
98.00	6509	171.00	307	244.10	16392	383.00	430
99.00	4478	171.90	791	245.00	2172	390.10	177
100.00	462	173.00	830	246.00	2745	391.10	172
101.00	2929	174.00	1745	247.00	669	402.10	628
103.00	851	175.10	3313	247.80	211	403.00	862
104.00	1667	176.00	944	248.90	521	404.00	334
105.00	1838	176.90	1224	249.90	211	421.00	760
106.00	702	177.90	515	251.00	214	422.10	649
107.00	24696	179.00	5789	252.10	215	423.00	5022
108.00	3265	180.00	4139	252.90	475	424.00	920
109.10	661	181.00	1657	254.00	722	435.60	165
110.00	38400	182.60	595	255.00	79920	441.10	14528
111.00	6401	183.90	597	256.00	11566	442.10	95736
112.00	760	185.00	2642	256.90	696	443.10	17952
113.00	175	186.00	19960	258.00	5198	444.00	1556
116.00	1187	187.00	5336	259.00	902		
117.00	23248	188.00	560	259.90	155		
118.00	1450	189.00	1403	263.90	156		
120.00	297	190.00	283	265.00	1930		

Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\01.D
Inj Date : 11-JAN-2023 08:57
InstruID : SV6.i
LabSampID : DFTPP

NO MANUAL INTEGRATIONS

ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111.b\03.D
Lab Smp Id: 14DX-0.01 Client Smp ID: 14DX-0.01
Inj Date : 11-JAN-2023 10:32
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.01
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111.b\DXSIM.m
Meth Date : 11-Jan-2023 14:23 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 12:20 Cal File: 09.D
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

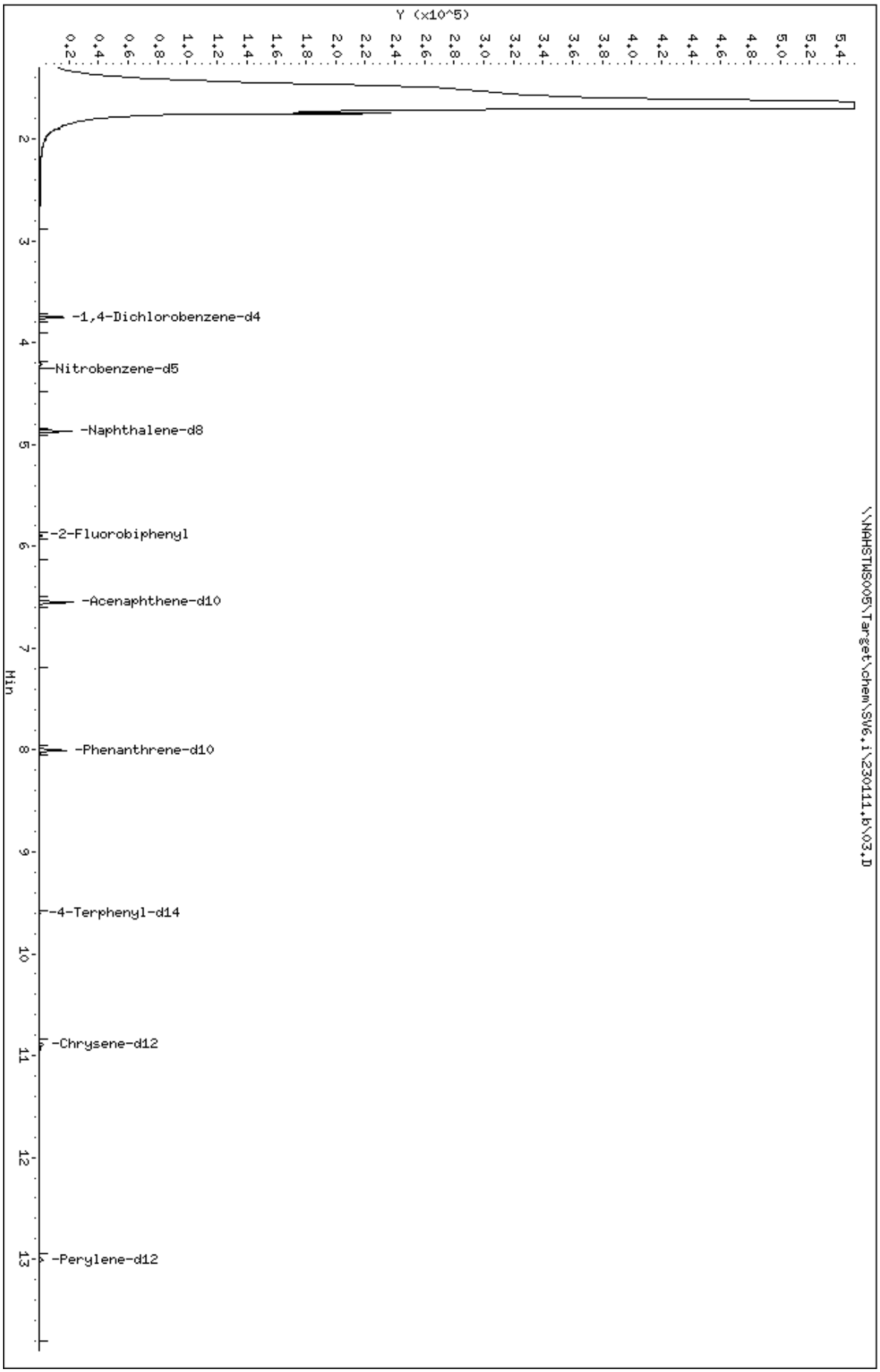
Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	AMOUNTS ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	4843	0.10000	(aM)
* 45 Naphthalene-d8	136	4.871	4.871	(1.000)	18939	0.10000	
$ 33 Nitrobenzene-d5	82	4.214	4.214	(0.865)	699	0.01000	0.01008(QM)
* 86 Acenaphthene-d10	164	6.551	6.551	(1.000)	9799	0.10000	
$ 69 2-Fluorobiphenyl	172	5.892	5.892	(0.899)	1278	0.01000	0.01010(M)
* 126 Phenanthrene-d10	188	8.001	8.001	(1.000)	18325	0.10000	
* 182 Chrysene-d12	240	10.890	10.890	(1.000)	5029	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.599	9.599	(0.881)	847	0.01000	0.009342(M)
* 198 Perylene-d12	264	13.006	13.006	(1.000)	3440	0.10000	(M)
1 1,4-Dioxane	58	2.013	2.013	(0.536)	184	0.01000	0.01151(QM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.



Data File: \\NAHSTMS005\Target\chem\SV6.i\230111.b\03.D
Date : 11-JAN-2023 10:32
Client ID: 14DX-0.01
Sample Info: 14DX-0.01
Purge Volume: 1000.0
Column phase: RTX-5SIL MS

Instrument: SV6.i
Operator: LG
Column diameter: 0.28

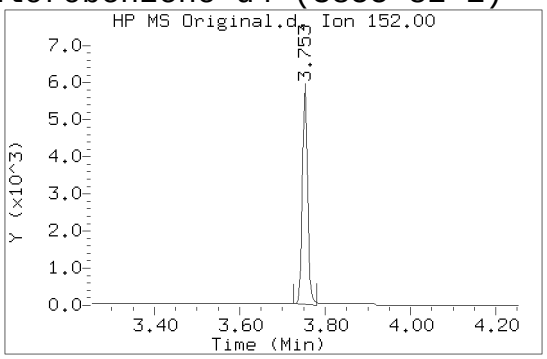
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\03.D
Inj Date : 11-JAN-2023 10:32
InstruID : SV6.i
LabSampID : 14DX-0.01

1,4-Dichlorobenzene-d4 (3855-82-1)

Reason Code:

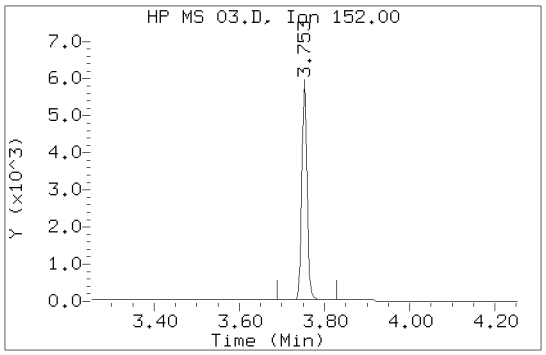
BEFORE

MASS
152
AREA
4932
HEIGHT
5944
11-Jan-2023
10:47
ALSHS
Server



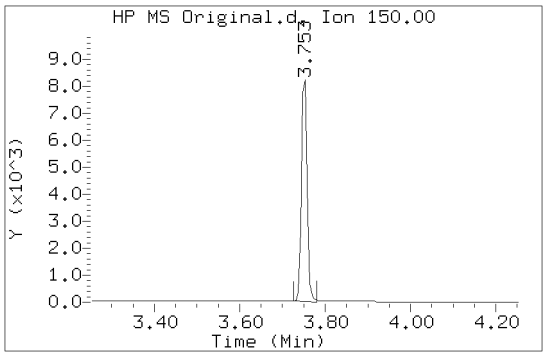
AFTER

MASS
152
AREA
4843
HEIGHT
5918
11-Jan-2023
14:23



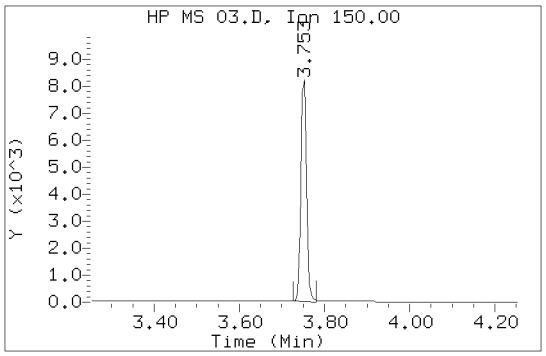
BEFORE

MASS
150
AREA
7478
HEIGHT
8207
11-Jan-2023
10:47
ALSHS
Server



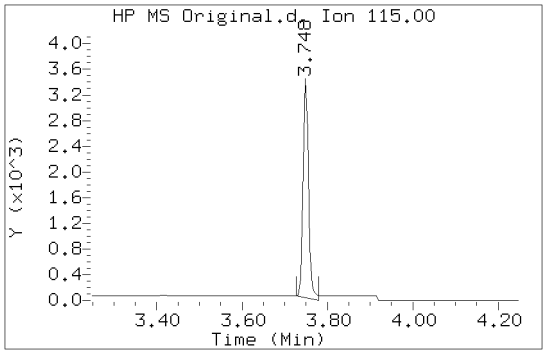
AFTER

MASS
150
AREA
7478
HEIGHT
8207
11-Jan-2023
14:23



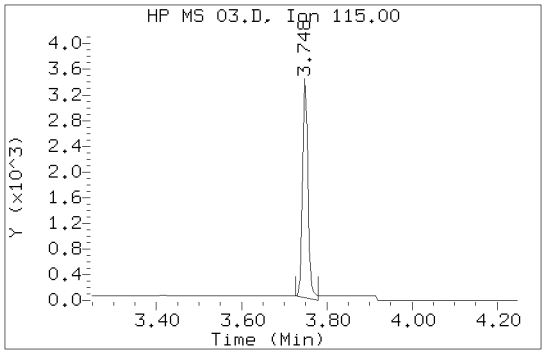
BEFORE

MASS
115
AREA
2949
HEIGHT
3413
11-Jan-2023
10:47
ALSHS
Server



AFTER

MASS
115
AREA
2949
HEIGHT
3413
11-Jan-2023
14:23

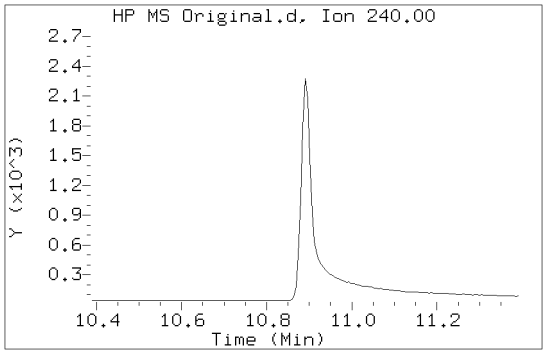


Chrysene-d12 (1719-03-5)

Reason Code:

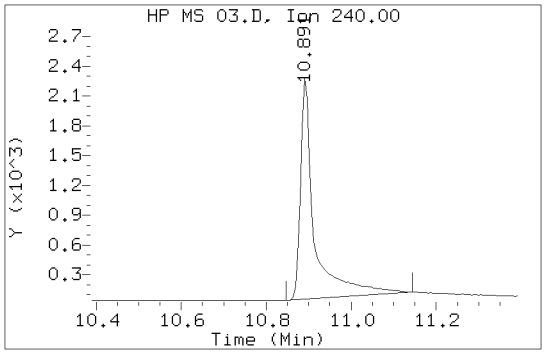
BEFORE

MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
10:47
ALSHS
Server



AFTER

MASS
240
AREA
5029
HEIGHT
2218
11-Jan-2023
14:23



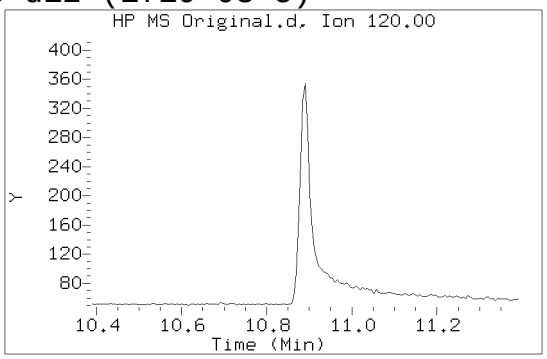
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\03.D
Inj Date : 11-JAN-2023 10:32
InstruID : SV6.i
LabSampID : 14DX-0.01

Chrysene-d12 (1719-03-5)

Reason Code:

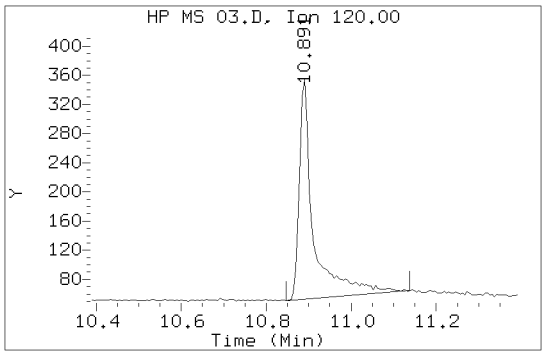
BEFORE

MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
10:47
ALSHS
Server



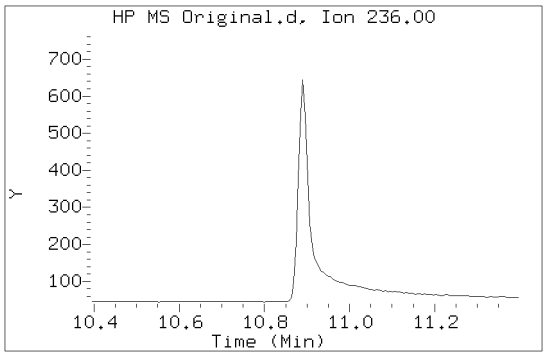
AFTER

MASS
120
AREA
704
HEIGHT
300
11-Jan-2023
14:23



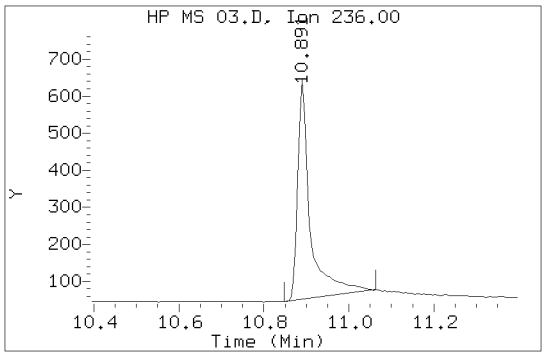
BEFORE

MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
10:47
ALSHS
Server



AFTER

MASS
236
AREA
1215
HEIGHT
592
11-Jan-2023
14:23

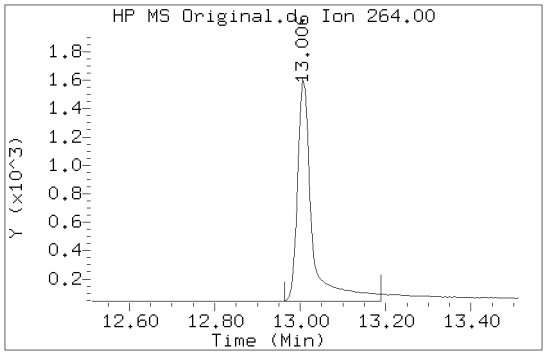


Perylene-d12 (1520-96-3)

Reason Code:

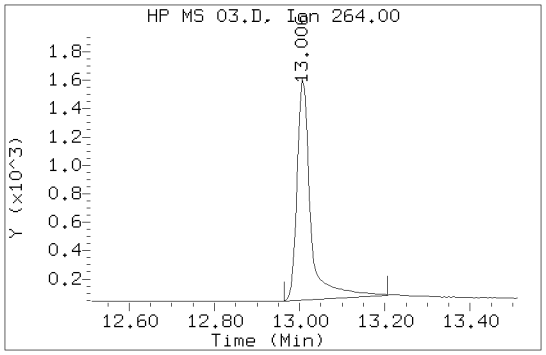
BEFORE

MASS
264
AREA
3692
HEIGHT
1564
11-Jan-2023
10:47
ALSHS
Server



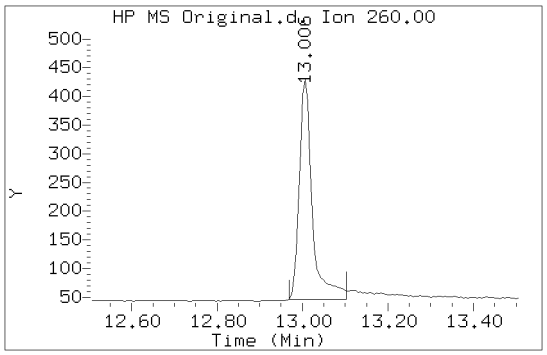
AFTER

MASS
264
AREA
3440
HEIGHT
1556
11-Jan-2023
14:23



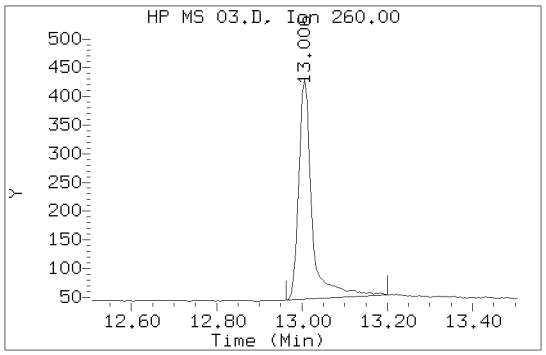
BEFORE

MASS
260
AREA
809
HEIGHT
383
11-Jan-2023
10:47
ALSHS
Server



AFTER

MASS
260
AREA
828
HEIGHT
382
11-Jan-2023
14:23



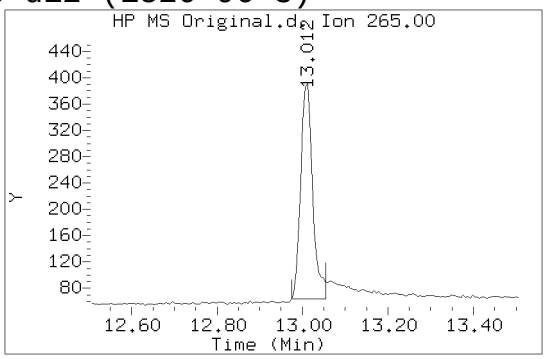
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\03.D
Inj Date : 11-JAN-2023 10:32
InstruID : SV6.i
LabSampID : 14DX-0.01

Perylene-d12 (1520-96-3)

Reason Code:

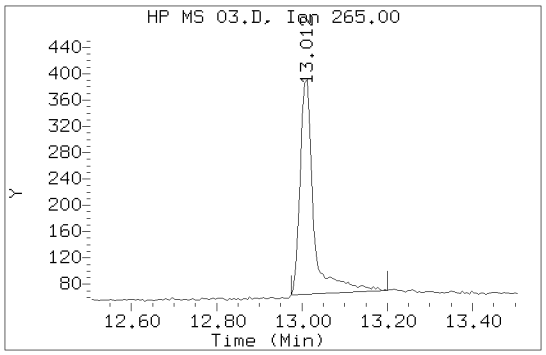
BEFORE

MASS
265
AREA
637
HEIGHT
327
11-Jan-2023
10:47
ALSHS
Server



AFTER

MASS
265
AREA
718
HEIGHT
325
11-Jan-2023
14:23

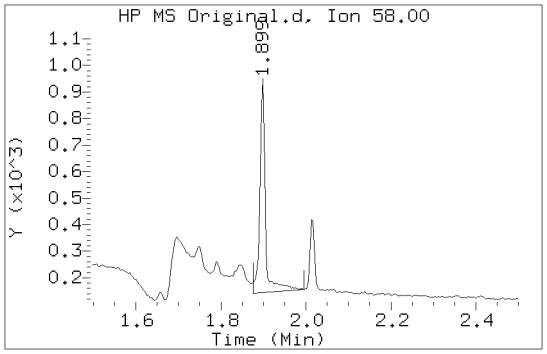


1,4-Dioxane ()

Reason Code:

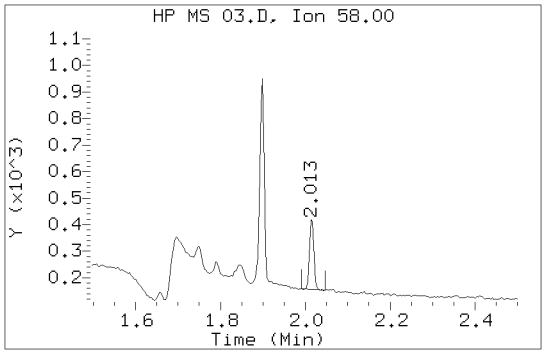
BEFORE

MASS
58
AREA
722
HEIGHT
806
11-Jan-2023
10:47
ALSHS
Server



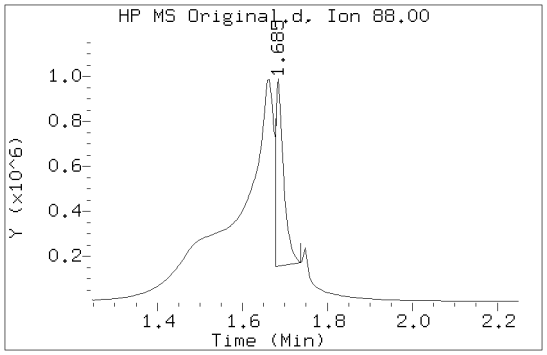
AFTER

MASS
58
AREA
184
HEIGHT
264
11-Jan-2023
14:23



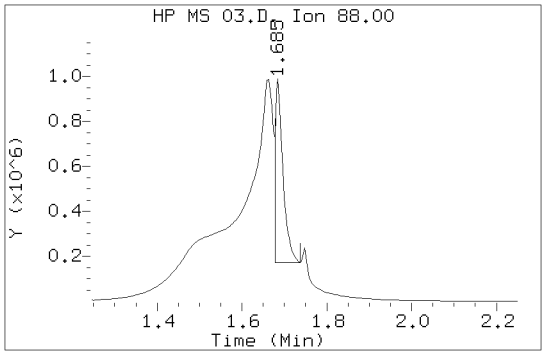
BEFORE

MASS
88
AREA
1087350
HEIGHT
831636
11-Jan-2023
10:47
ALSHS
Server



AFTER

MASS
88
AREA
1057748
HEIGHT
817856
11-Jan-2023
14:23

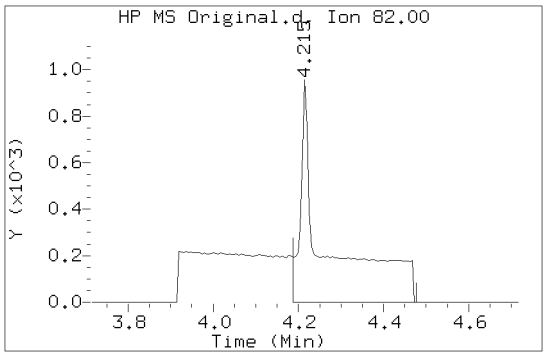


Nitrobenzene-d5 (4165-60-0)

Reason Code:

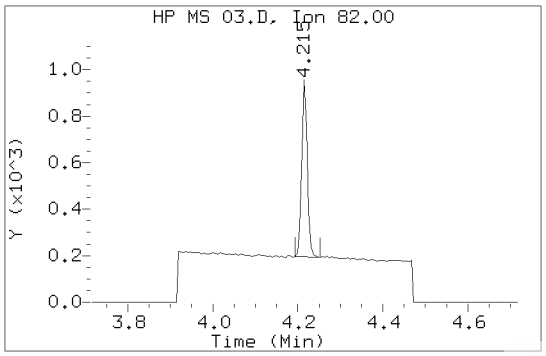
BEFORE

MASS
82
AREA
3861
HEIGHT
956
11-Jan-2023
10:47
ALSHS
Server



AFTER

MASS
82
AREA
699
HEIGHT
761
11-Jan-2023
14:23



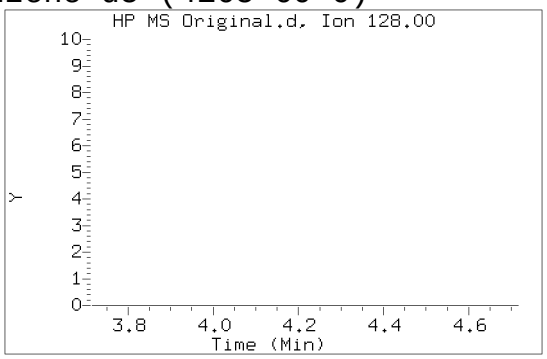
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\03.D
Inj Date : 11-JAN-2023 10:32
InstruID : SV6.i
LabSampID : 14DX-0.01

Nitrobenzene-d5 (4165-60-0)

Reason Code:

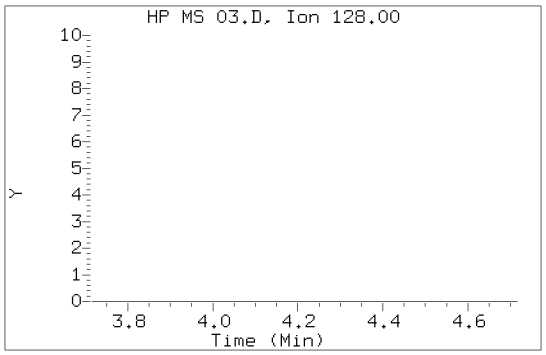
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
10:47
ALSHS
Server



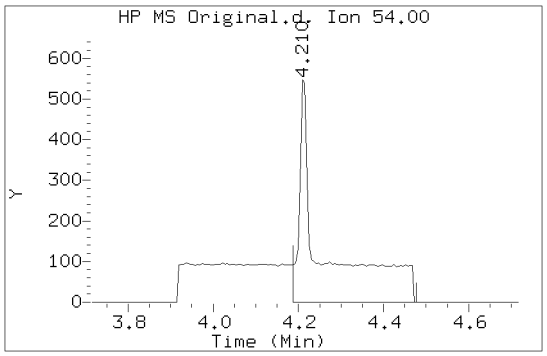
AFTER

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
14:23



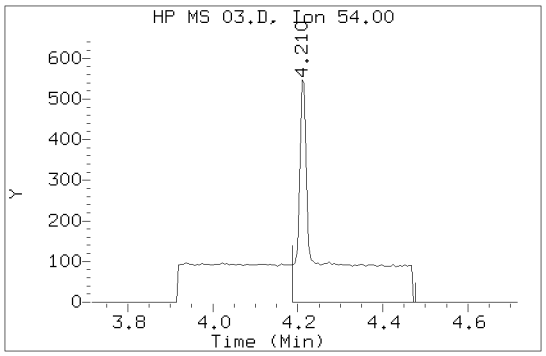
BEFORE

MASS
54
AREA
2010
HEIGHT
547
11-Jan-2023
10:47
ALSHS
Server



AFTER

MASS
54
AREA
2010
HEIGHT
547
11-Jan-2023
14:23

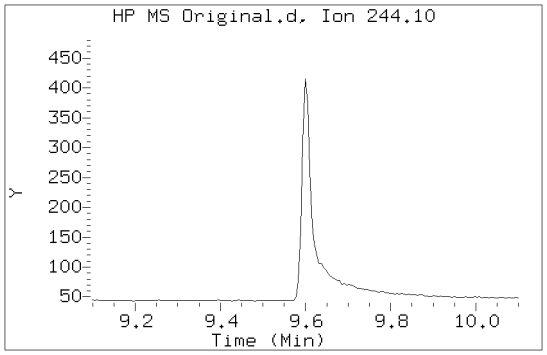


4-Terphenyl-d14 (1718-51-0)

Reason Code:

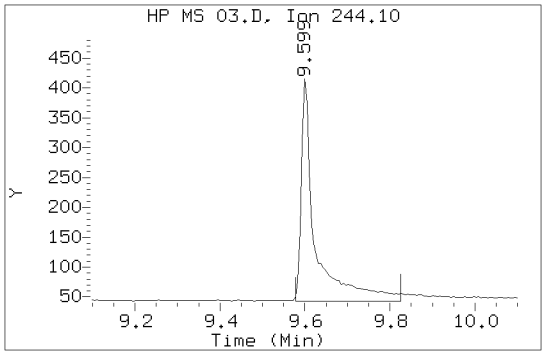
BEFORE

MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
10:47
ALSHS
Server



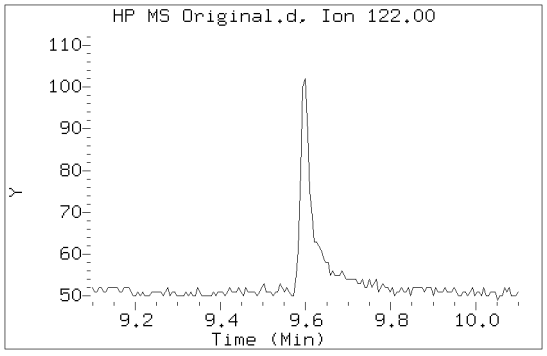
AFTER

MASS
244.1
AREA
847
HEIGHT
372
11-Jan-2023
14:23



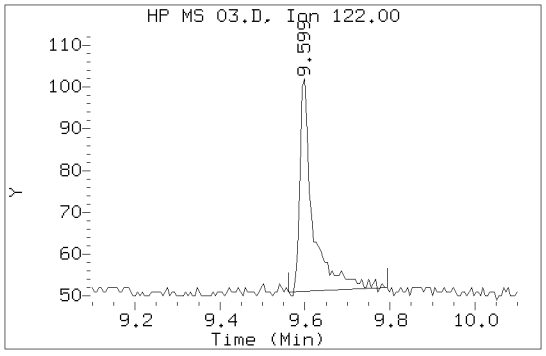
BEFORE

MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
10:47
ALSHS
Server



AFTER

MASS
122
AREA
107
HEIGHT
50
11-Jan-2023
14:23

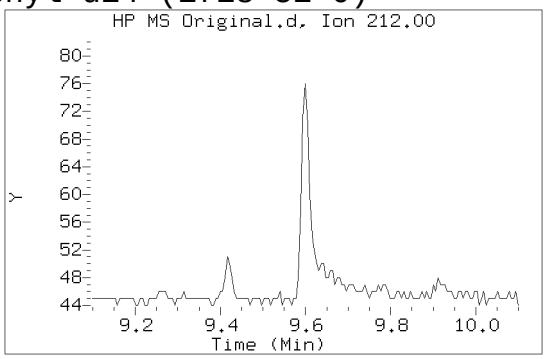


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\03.D
Inj Date : 11-JAN-2023 10:32
InstruID : SV6.i
LabSampID : 14DX-0.01

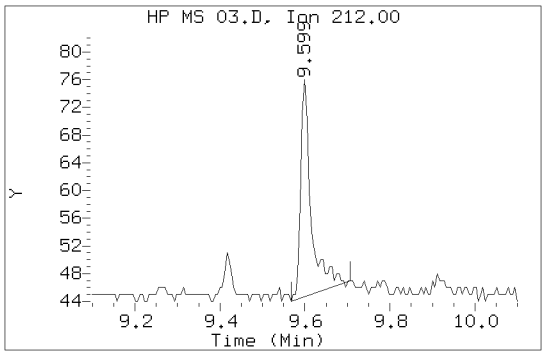
4-Terphenyl-d14 (1718-51-0)

Reason Code:

BEFORE
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
10:47
ALSHS
Server



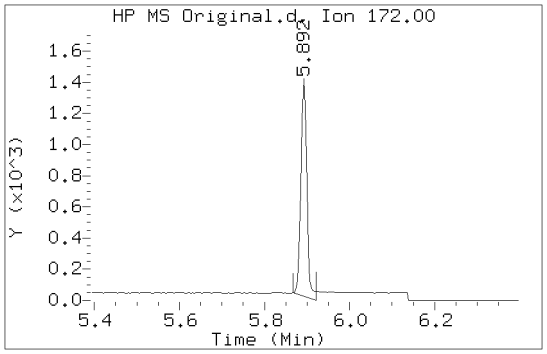
AFTER
MASS
212
AREA
53
HEIGHT
31
11-Jan-2023
14:23



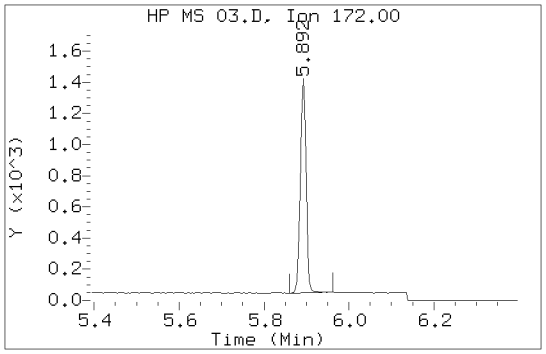
2-Fluorobiphenyl (321-60-8)

Reason Code:

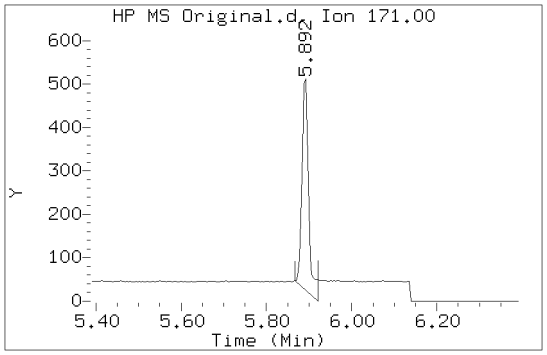
BEFORE
MASS
172
AREA
1364
HEIGHT
1397
11-Jan-2023
10:47
ALSHS
Server



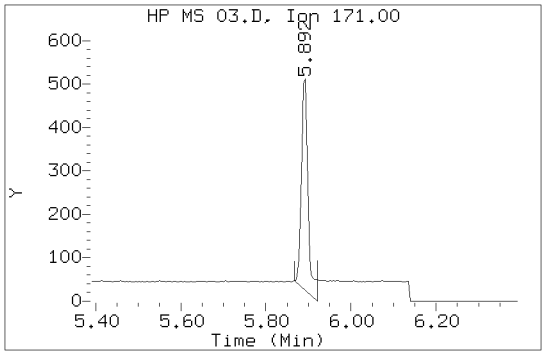
AFTER
MASS
172
AREA
1278
HEIGHT
1374
11-Jan-2023
14:23



BEFORE
MASS
171
AREA
527
HEIGHT
486
11-Jan-2023
10:47
ALSHS
Server



AFTER
MASS
171
AREA
527
HEIGHT
486
11-Jan-2023
14:23



ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111.b\04.D
Lab Smp Id: 14DX-0.03 Client Smp ID: 14DX-0.03
Inj Date : 11-JAN-2023 10:50
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.03
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111.b\DXSIM.m
Meth Date : 11-Jan-2023 14:23 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 10:32 Cal File: 03.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

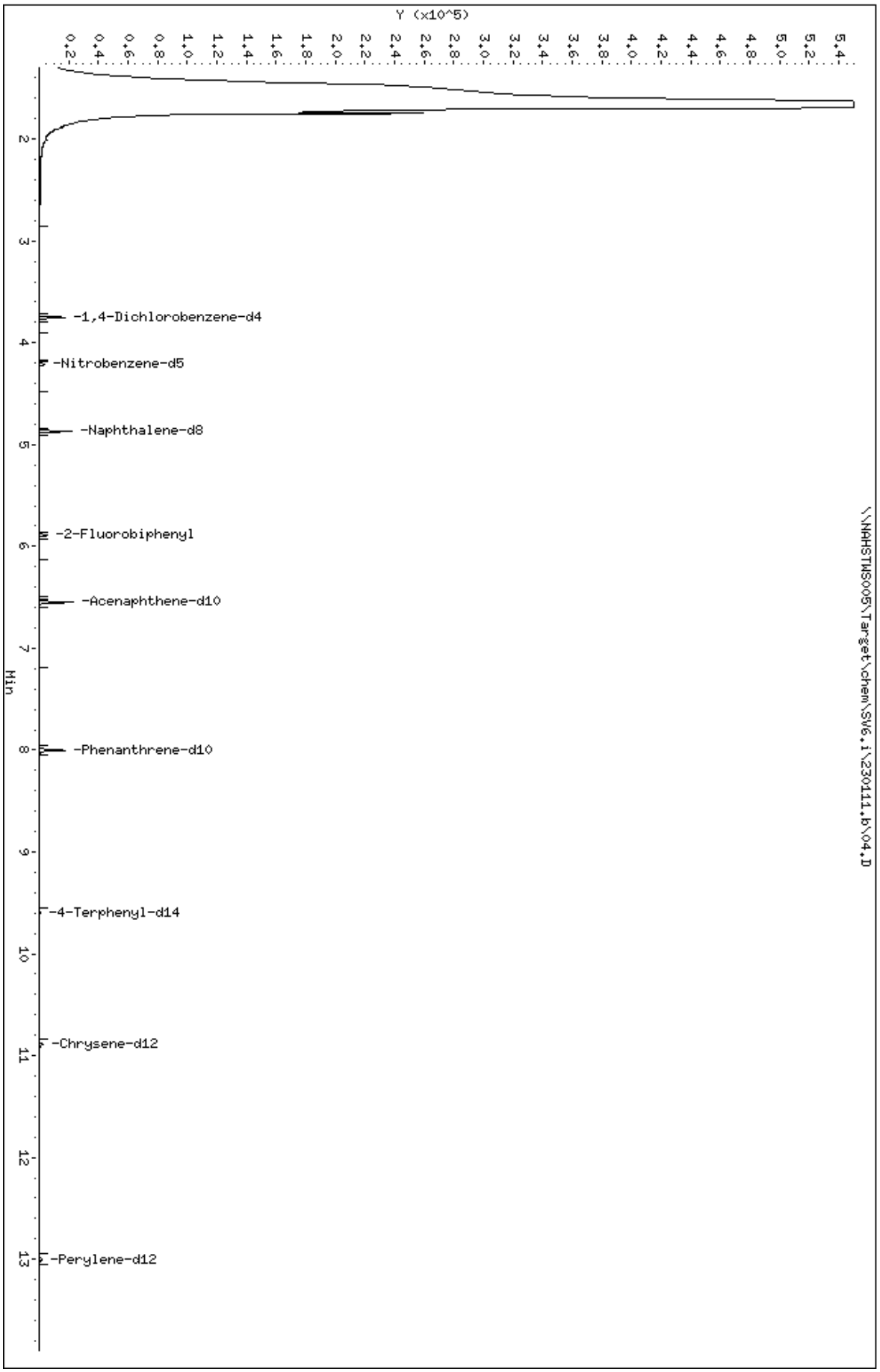
Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	AMOUNTS ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	4697	0.10000	(aM)
* 45 Naphthalene-d8	136	4.871	4.871	(1.000)	18161	0.10000	
$ 33 Nitrobenzene-d5	82	4.214	4.214	(0.865)	1944	0.03000	0.02924(QM)
* 86 Acenaphthene-d10	164	6.551	6.551	(1.000)	9326	0.10000	
$ 69 2-Fluorobiphenyl	172	5.892	5.892	(0.899)	3516	0.03000	0.02919(M)
* 126 Phenanthrene-d10	188	8.001	8.001	(1.000)	17014	0.10000	
* 182 Chrysene-d12	240	10.890	10.890	(1.000)	4185	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.599	9.599	(0.881)	2227	0.03000	0.02952(M)
* 198 Perylene-d12	264	13.006	13.006	(1.000)	3056	0.10000	
1 1,4-Dioxane	58	2.009	2.009	(0.535)	480	0.03000	0.03097(QM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.


Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\04.D
Date : 11-JAN-2023 10:50
Client ID: 14DX-0.03
Sample Info: 14DX-0.03
Purge Volume: 1000.0
Column phase: RTX-5SIL MS
Instrument: SV6.i
Operator: LG
Column diameter: 0.28
Page 1
Y (x10^5)
Min
-1,4-Dichlorobenzene-d4
-Nitrobenzene-d5
-Naphthalene-d8
-2-Fluorobiphenyl
-Acenaphthene-d10
-Phenanthrene-d10
-4-Terphenyl-d14
-Chrysene-d12
-Perylene-d12
\\NAHSTWS005\Target\chem\SV6.i\230111.b\04.D

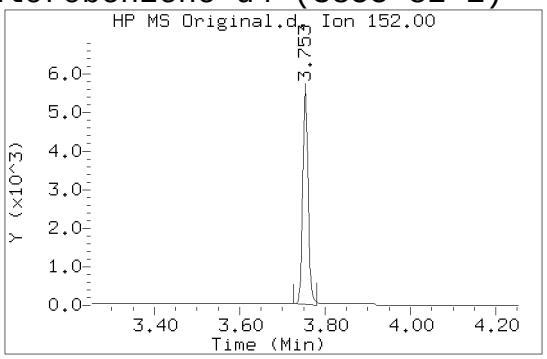
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\04.D
Inj Date : 11-JAN-2023 10:50
InstruID : SV6.i
LabSampID : 14DX-0.03

1,4-Dichlorobenzene-d4 (3855-82-1)

Reason Code:

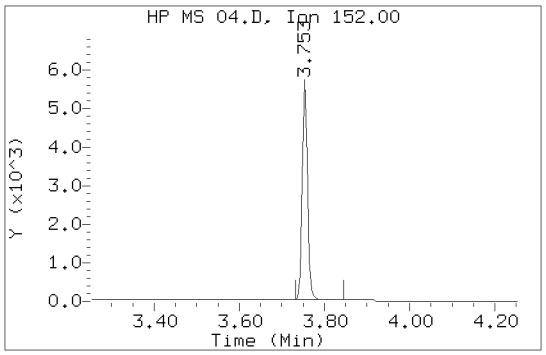
BEFORE

MASS
152
AREA
4791
HEIGHT
5726
11-Jan-2023
11:05
ALSHS
Server



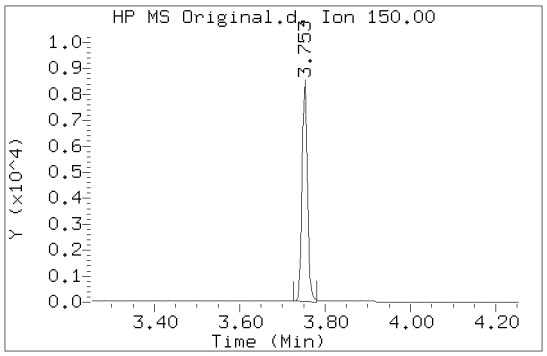
AFTER

MASS
152
AREA
4697
HEIGHT
5698
11-Jan-2023
14:22



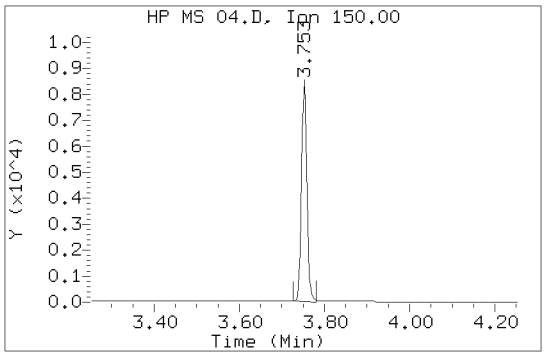
BEFORE

MASS
150
AREA
7297
HEIGHT
8533
11-Jan-2023
11:05
ALSHS
Server



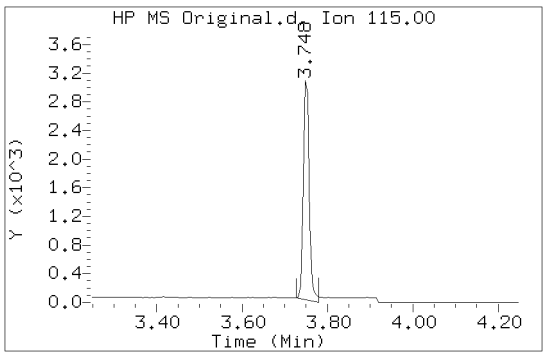
AFTER

MASS
150
AREA
7297
HEIGHT
8533
11-Jan-2023
14:22



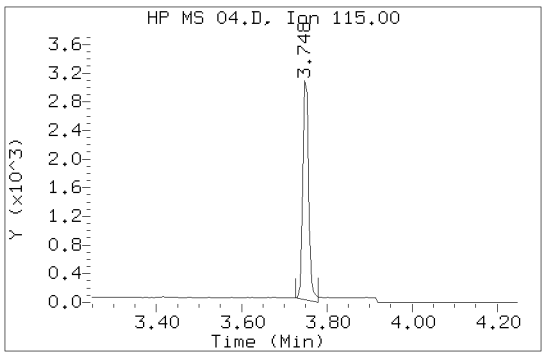
BEFORE

MASS
115
AREA
2889
HEIGHT
3058
11-Jan-2023
11:05
ALSHS
Server



AFTER

MASS
115
AREA
2889
HEIGHT
3058
11-Jan-2023
14:22

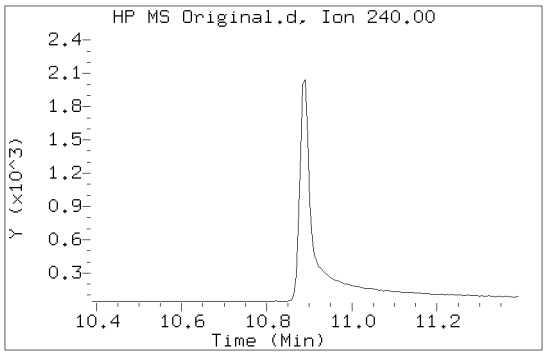


Chrysene-d12 (1719-03-5)

Reason Code:

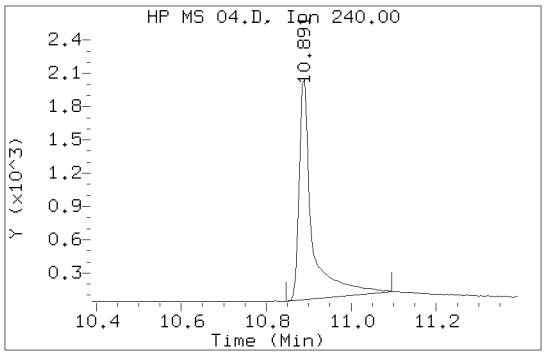
BEFORE

MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
11:05
ALSHS
Server



AFTER

MASS
240
AREA
4185
HEIGHT
1981
11-Jan-2023
14:22



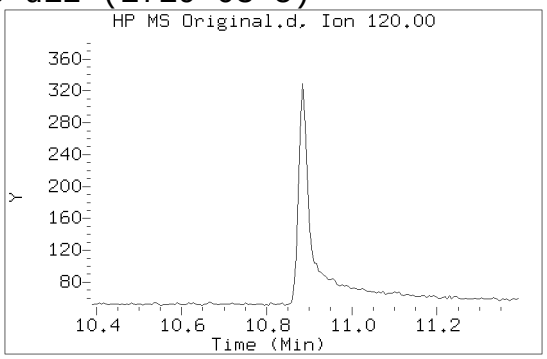
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\04.D
Inj Date : 11-JAN-2023 10:50
InstruID : SV6.i
LabSampID : 14DX-0.03

Chrysene-d12 (1719-03-5)

Reason Code:

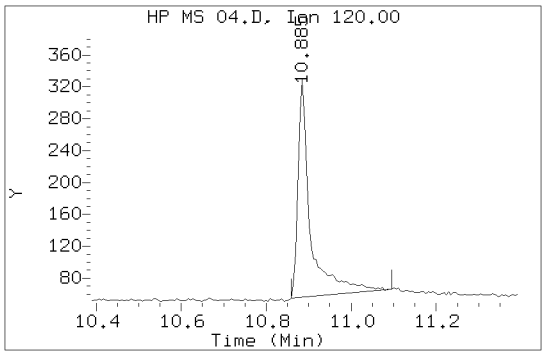
BEFORE

MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
11:05
ALSHS
Server



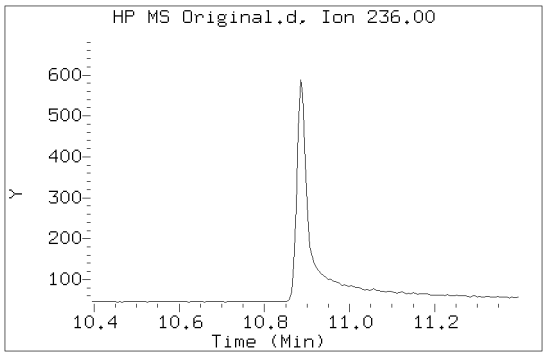
AFTER

MASS
120
AREA
556
HEIGHT
272
11-Jan-2023
14:22



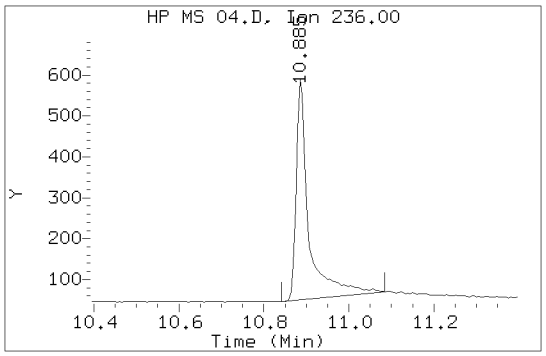
BEFORE

MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
11:05
ALSHS
Server



AFTER

MASS
236
AREA
1116
HEIGHT
537
11-Jan-2023
14:22

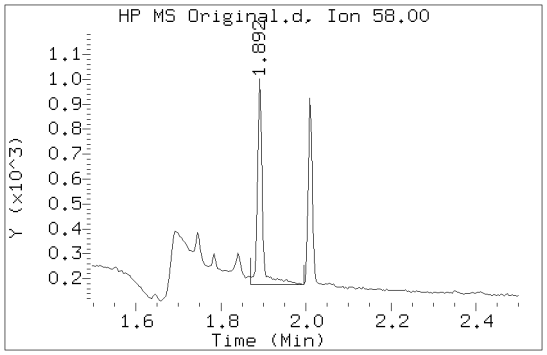


1,4-Dioxane ()

Reason Code:

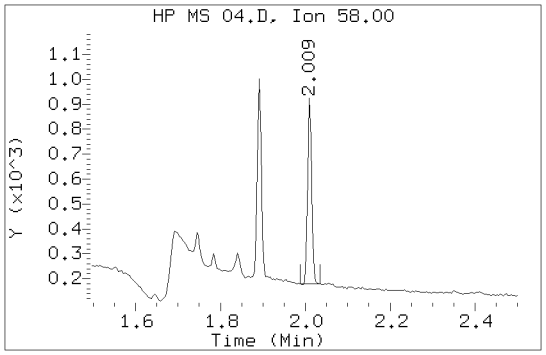
BEFORE

MASS
58
AREA
657
HEIGHT
824
11-Jan-2023
11:05
ALSHS
Server



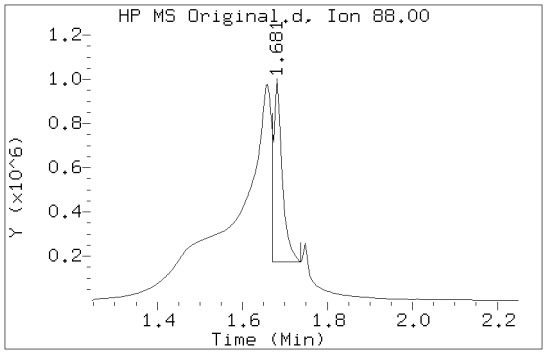
AFTER

MASS
58
AREA
480
HEIGHT
746
11-Jan-2023
14:22



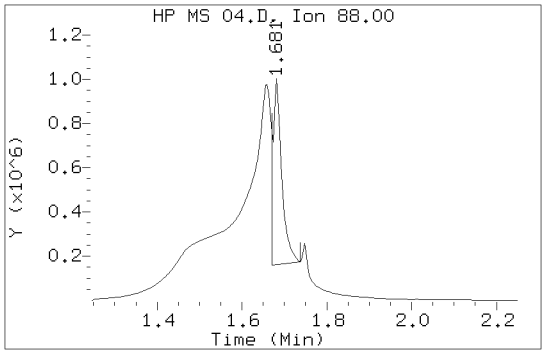
BEFORE

MASS
88
AREA
1211101
HEIGHT
827712
11-Jan-2023
11:05
ALSHS
Server



AFTER

MASS
88
AREA
1245656
HEIGHT
841417
11-Jan-2023
14:22



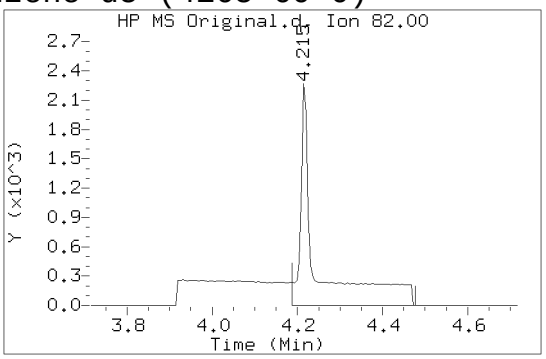
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\04.D
Inj Date : 11-JAN-2023 10:50
InstruID : SV6.i
LabSampID : 14DX-0.03

Nitrobenzene-d5 (4165-60-0)

Reason Code:

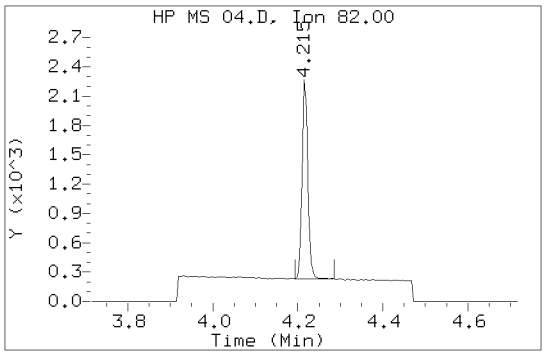
BEFORE

MASS
82
AREA
5696
HEIGHT
2268
11-Jan-2023
11:05
ALSHS
Server



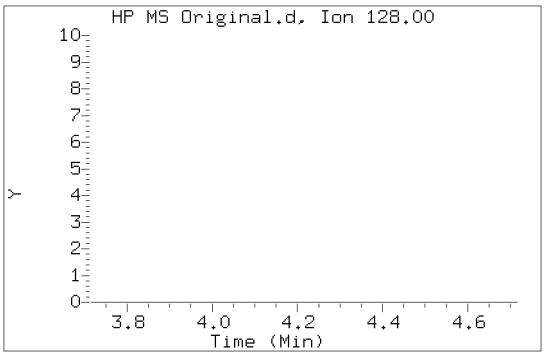
AFTER

MASS
82
AREA
1944
HEIGHT
2038
11-Jan-2023
14:22



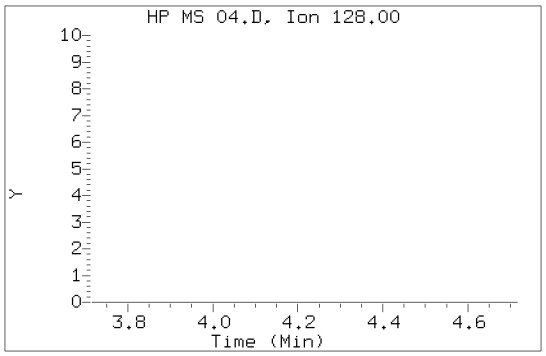
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
11:05
ALSHS
Server



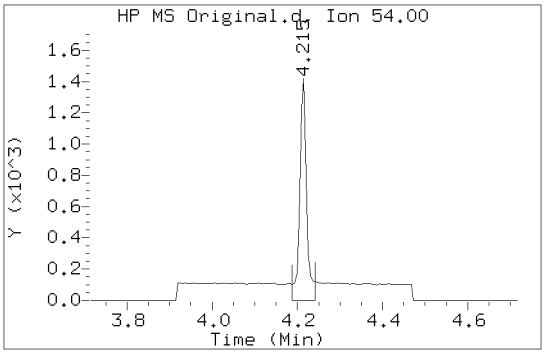
AFTER

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
14:22



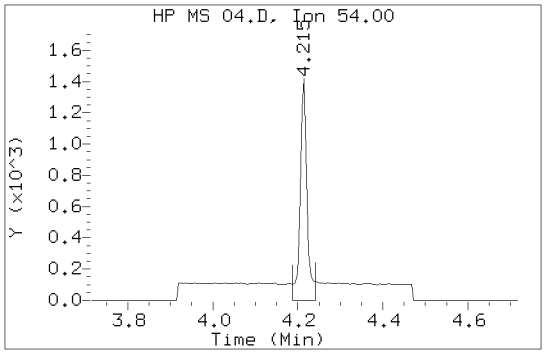
BEFORE

MASS
54
AREA
1622
HEIGHT
1418
11-Jan-2023
11:05
ALSHS
Server



AFTER

MASS
54
AREA
1622
HEIGHT
1418
11-Jan-2023
14:22

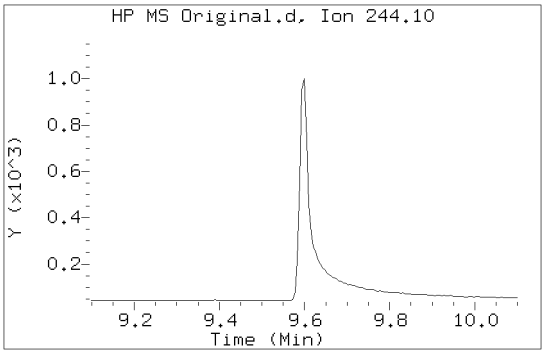


4-Terphenyl-d14 (1718-51-0)

Reason Code:

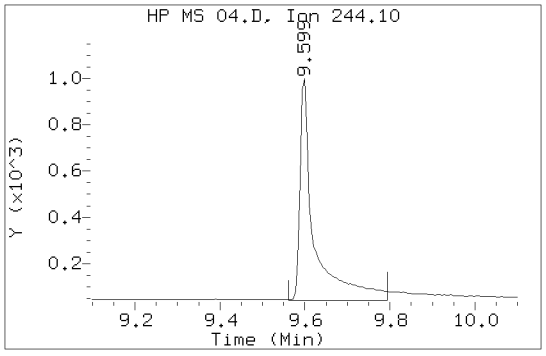
BEFORE

MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
11:05
ALSHS
Server



AFTER

MASS
244.1
AREA
2227
HEIGHT
959
11-Jan-2023
14:22



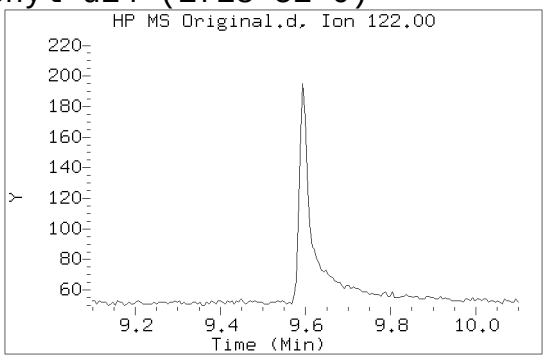
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\04.D
Inj Date : 11-JAN-2023 10:50
InstruID : SV6.i
LabSampID : 14DX-0.03

4-Terphenyl-d14 (1718-51-0)

Reason Code:

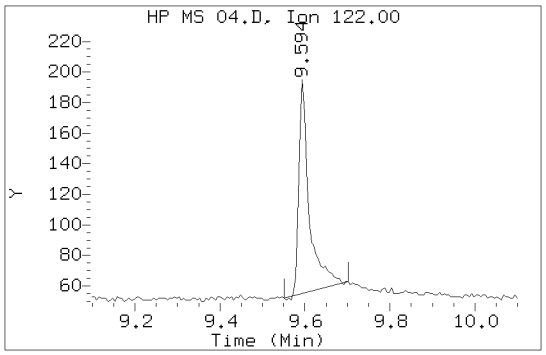
BEFORE

MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
11:05
ALSHS
Server



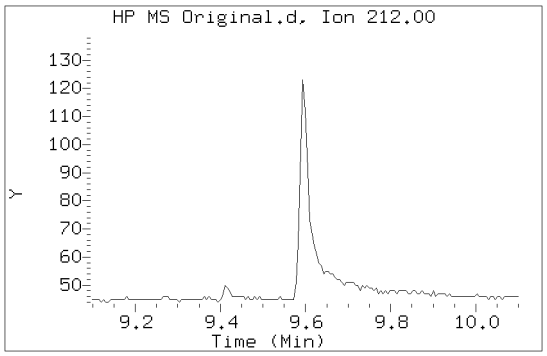
AFTER

MASS
122
AREA
234
HEIGHT
139
11-Jan-2023
14:22



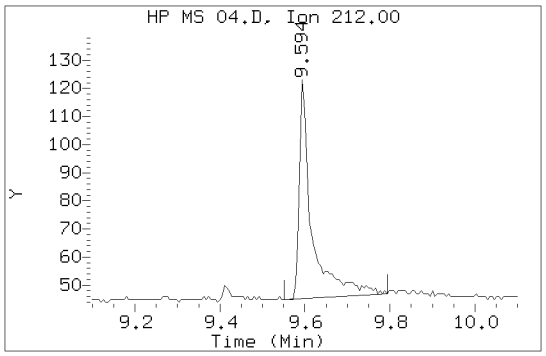
BEFORE

MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
11:05
ALSHS
Server



AFTER

MASS
212
AREA
159
HEIGHT
77
11-Jan-2023
14:22

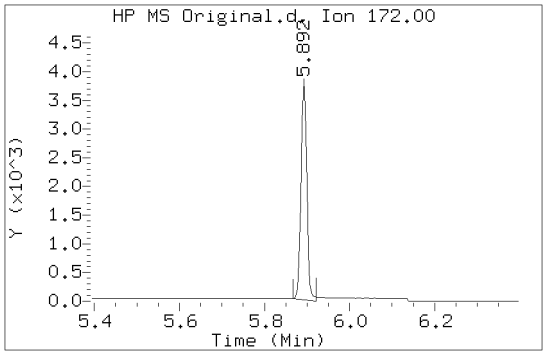


2-Fluorobiphenyl (321-60-8)

Reason Code:

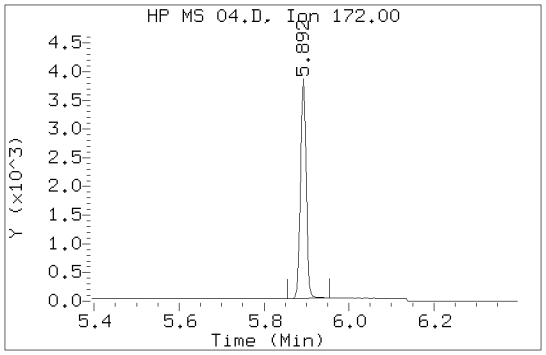
BEFORE

MASS
172
AREA
3608
HEIGHT
3848
11-Jan-2023
11:05
ALSHS
Server



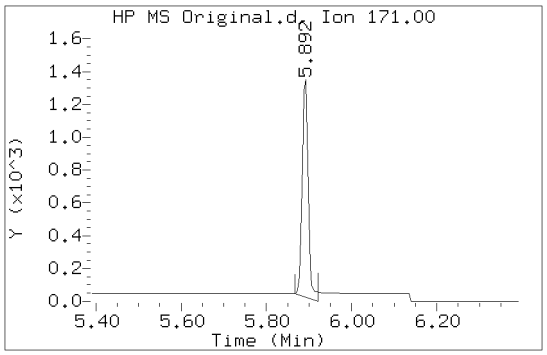
AFTER

MASS
172
AREA
3516
HEIGHT
3821
11-Jan-2023
14:22



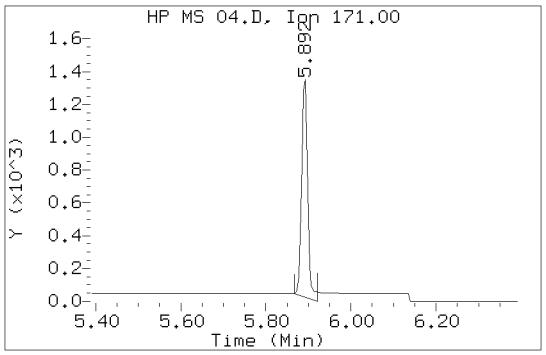
BEFORE

MASS
171
AREA
1302
HEIGHT
1325
11-Jan-2023
11:05
ALSHS
Server



AFTER

MASS
171
AREA
1302
HEIGHT
1325
11-Jan-2023
14:22



ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111.b\05.D
Lab Smp Id: 14DX-0.05 Client Smp ID: 14DX-0.05
Inj Date : 11-JAN-2023 11:08
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.05
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111.b\DXSIM.m
Meth Date : 11-Jan-2023 14:23 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 10:50 Cal File: 04.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	3887	0.10000	(aM)
* 45 Naphthalene-d8	136	4.871	4.871	(1.000)	14773	0.10000	
$ 33 Nitrobenzene-d5	82	4.215	4.215	(0.865)	2613	0.05000	0.04832(M)
* 86 Acenaphthene-d10	164	6.551	6.551	(1.000)	7731	0.10000	
$ 69 2-Fluorobiphenyl	172	5.896	5.896	(0.900)	4903	0.05000	0.04911(M)
* 126 Phenanthrene-d10	188	8.001	8.001	(1.000)	14047	0.10000	
* 182 Chrysene-d12	240	10.890	10.890	(1.000)	3468	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.599	9.599	(0.881)	2657	0.05000	0.04249(M)
* 198 Perylene-d12	264	13.006	13.006	(1.000)	2354	0.10000	
1 1,4-Dioxane	58	1.991	1.991	(0.530)	629	0.05000	0.04904(QM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\05.D

Date : 11-JAN-2023 11:08

Client ID: 14DX-0.05

Instrument: SV6.i

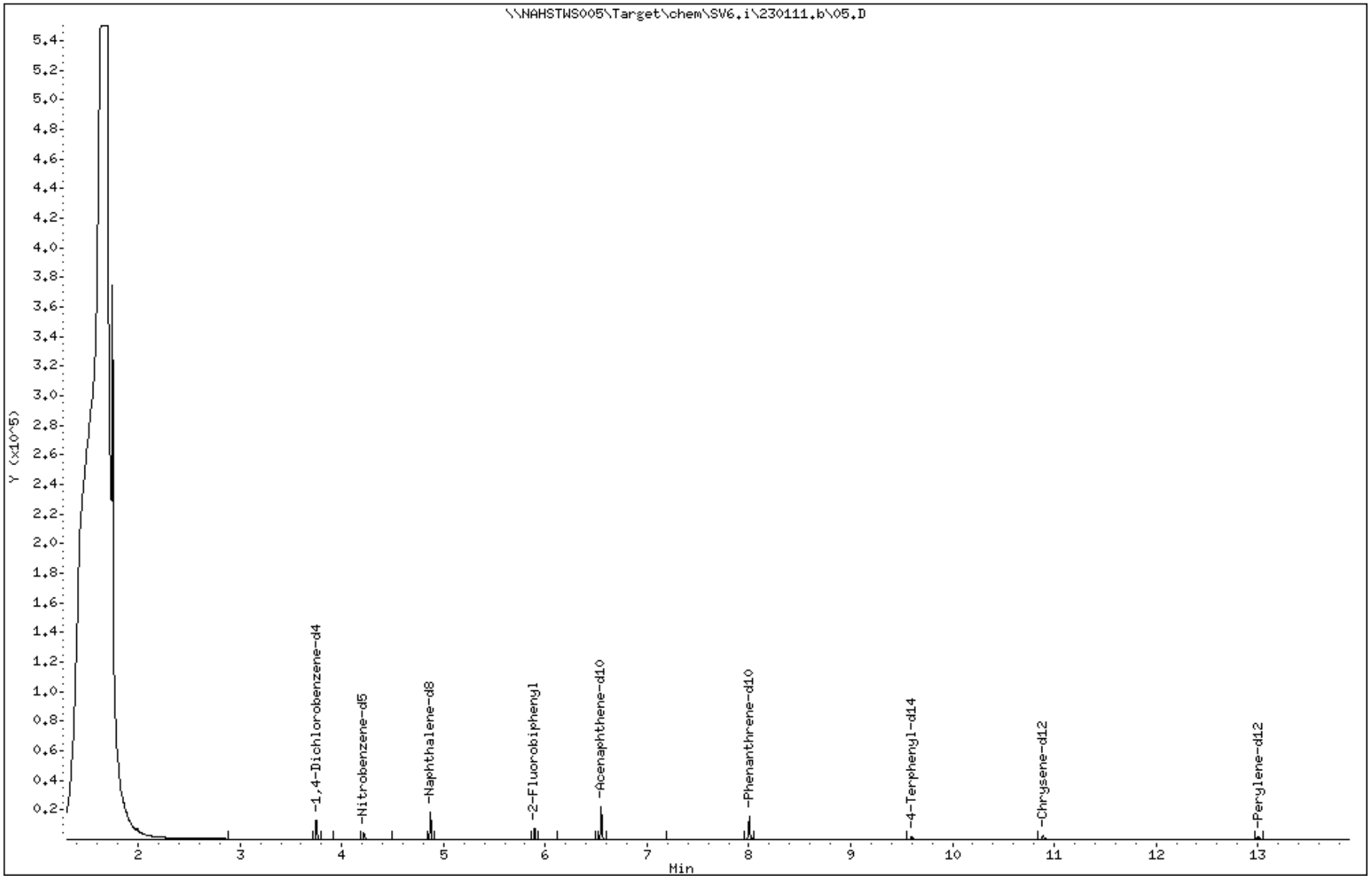
Sample Info: 14DX-0.05

Purge Volume: 1000.0

Operator: LG

Column phase: RTX-5SIL MS

Column diameter: 0.28

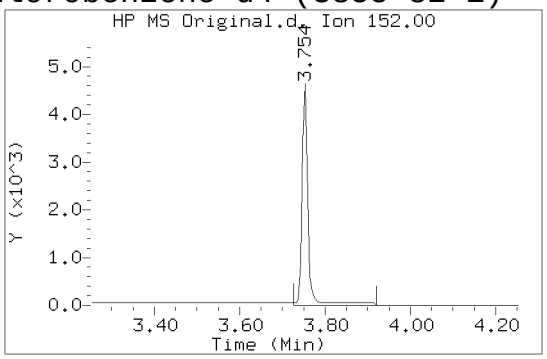


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\05.D
Inj Date : 11-JAN-2023 11:08
InstruID : SV6.i
LabSampID : 14DX-0.05

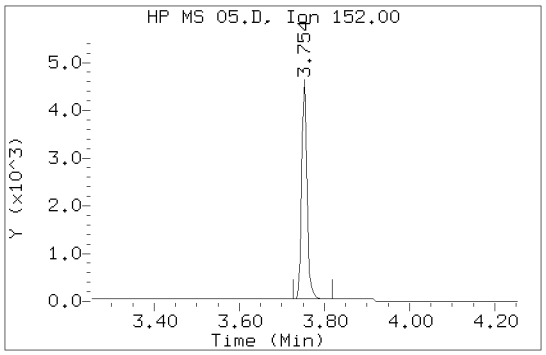
1,4-Dichlorobenzene-d4 (3855-82-1)

Reason Code:

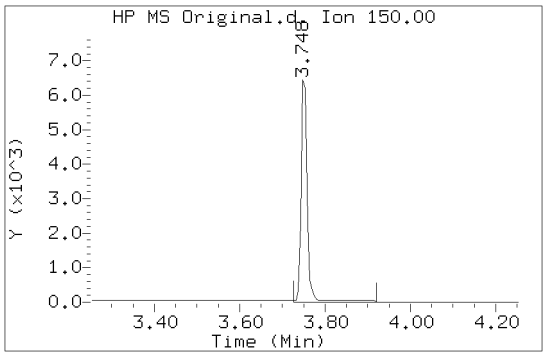
BEFORE
MASS
152
AREA
4496
HEIGHT
4643
11-Jan-2023
11:24
ALSHS
Server



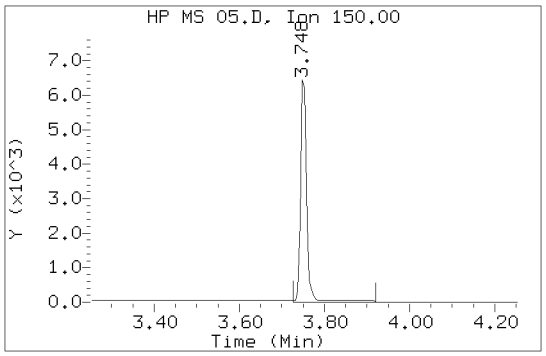
AFTER
MASS
152
AREA
3887
HEIGHT
4590
11-Jan-2023
14:22



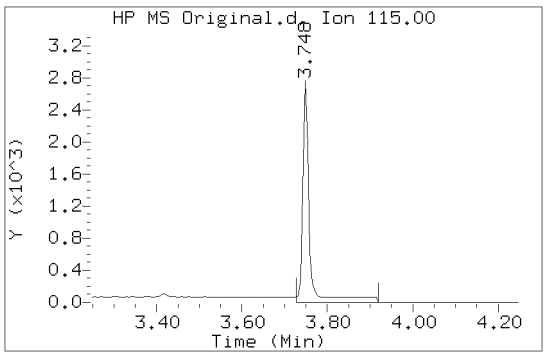
BEFORE
MASS
150
AREA
6511
HEIGHT
6443
11-Jan-2023
11:24
ALSHS
Server



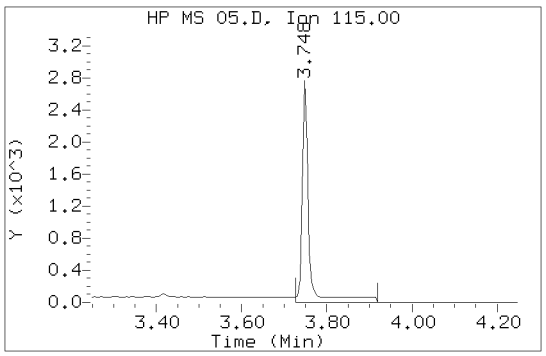
AFTER
MASS
150
AREA
6511
HEIGHT
6443
11-Jan-2023
14:22



BEFORE
MASS
115
AREA
3015
HEIGHT
2766
11-Jan-2023
11:24
ALSHS
Server



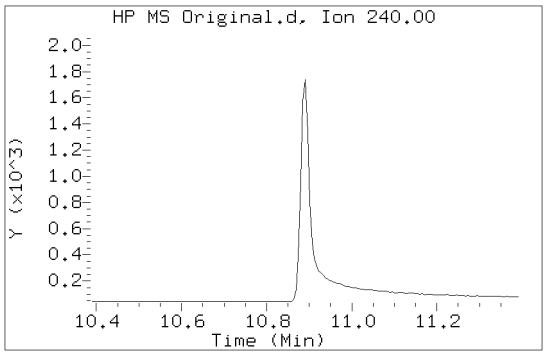
AFTER
MASS
115
AREA
3015
HEIGHT
2766
11-Jan-2023
14:22



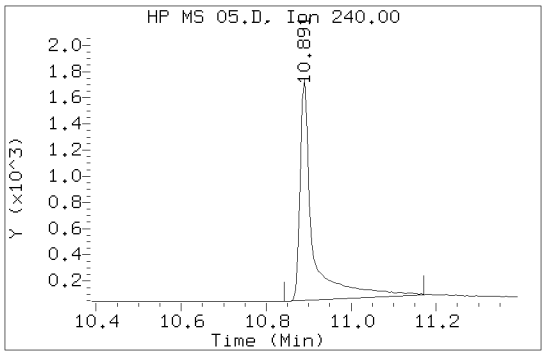
Chrysene-d12 (1719-03-5)

Reason Code:

BEFORE
MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
11:24
ALSHS
Server



AFTER
MASS
240
AREA
3468
HEIGHT
1684
11-Jan-2023
14:22

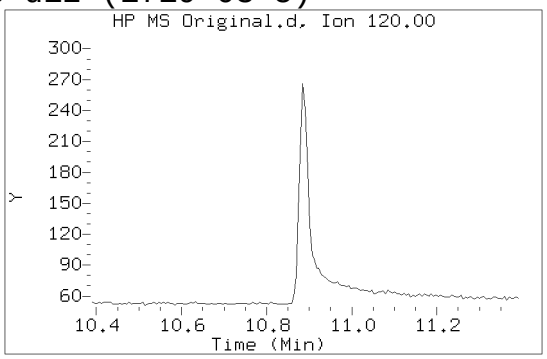


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\05.D
Inj Date : 11-JAN-2023 11:08
InstruID : SV6.i
LabSampID : 14DX-0.05

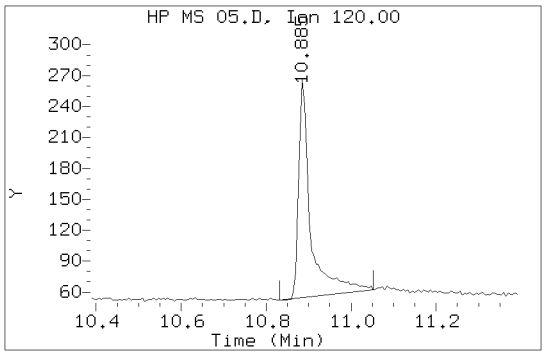
Chrysene-d12 (1719-03-5)

Reason Code:

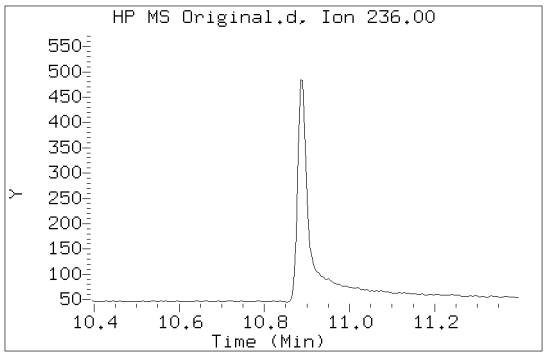
BEFORE
MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
11:24
ALSHS
Server



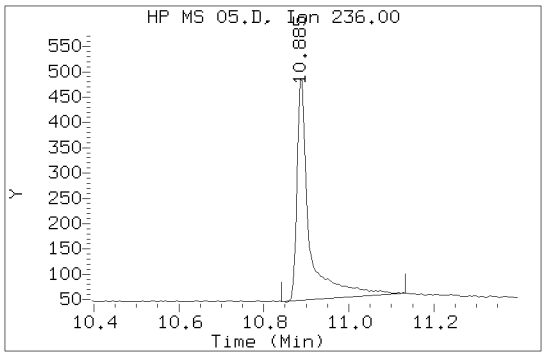
AFTER
MASS
120
AREA
415
HEIGHT
211
11-Jan-2023
14:22



BEFORE
MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
11:24
ALSHS
Server



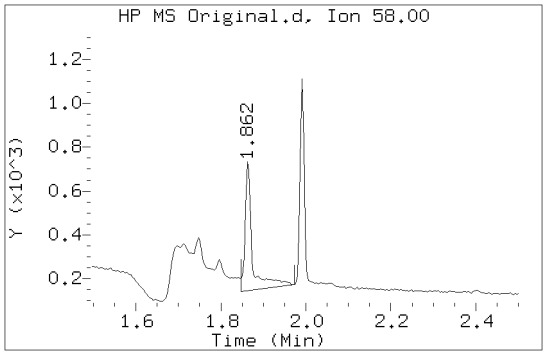
AFTER
MASS
236
AREA
890
HEIGHT
435
11-Jan-2023
14:22



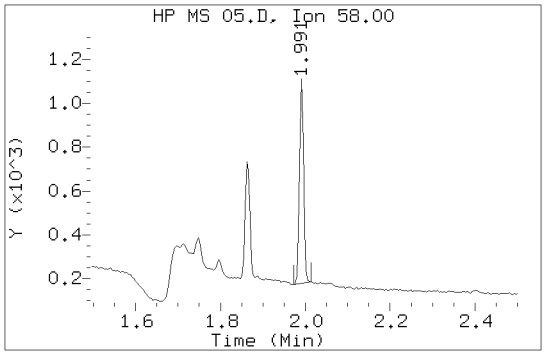
1,4-Dioxane ()

Reason Code:

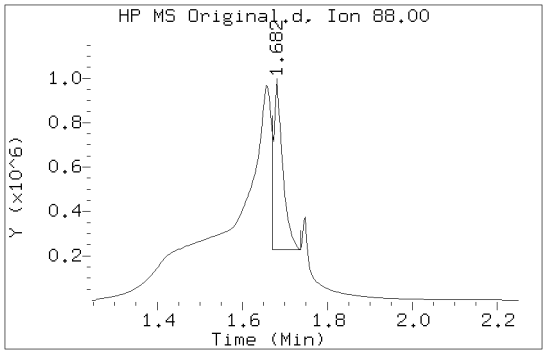
BEFORE
MASS
58
AREA
685
HEIGHT
586
11-Jan-2023
11:24
ALSHS
Server



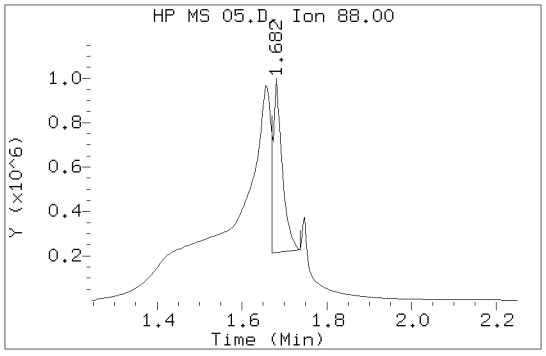
AFTER
MASS
58
AREA
629
HEIGHT
931
11-Jan-2023
14:22



BEFORE
MASS
88
AREA
1173551
HEIGHT
769408
11-Jan-2023
11:24
ALSHS
Server



AFTER
MASS
88
AREA
1202430
HEIGHT
780864
11-Jan-2023
14:22



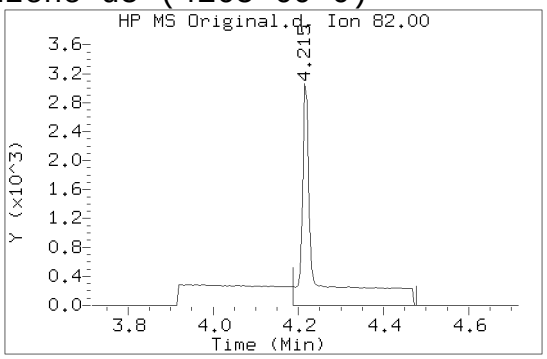
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\05.D
Inj Date : 11-JAN-2023 11:08
InstruID : SV6.i
LabSampID : 14DX-0.05

Nitrobenzene-d5 (4165-60-0)

Reason Code:

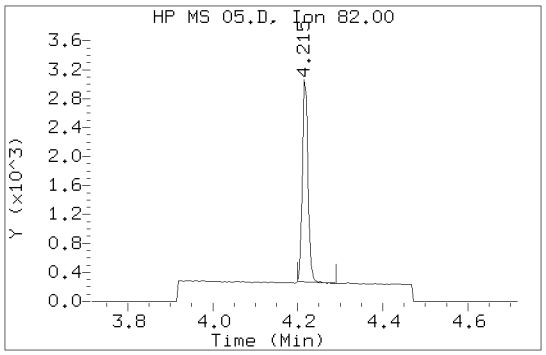
BEFORE

MASS
82
AREA
6807
HEIGHT
3062
11-Jan-2023
11:24
ALSHS
Server



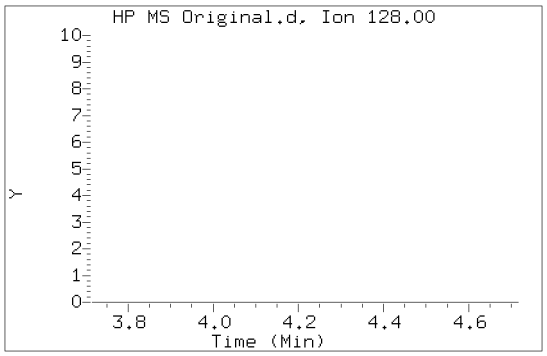
AFTER

MASS
82
AREA
2613
HEIGHT
2794
11-Jan-2023
14:22



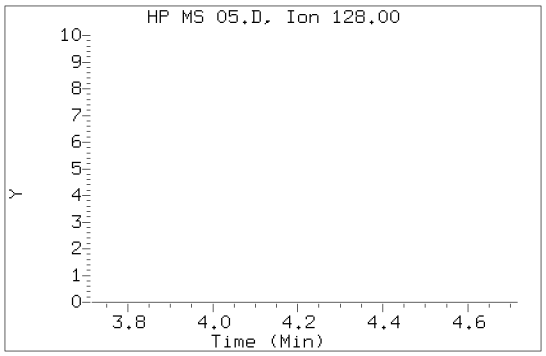
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
11:24
ALSHS
Server



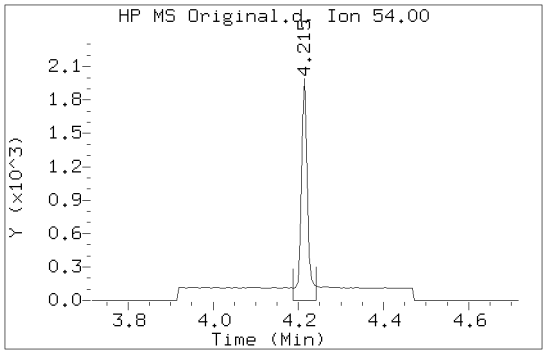
AFTER

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
14:22



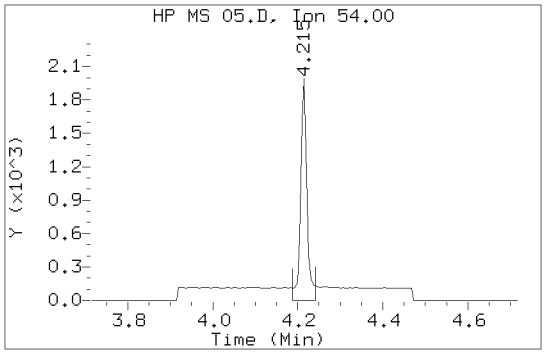
BEFORE

MASS
54
AREA
2104
HEIGHT
1991
11-Jan-2023
11:24
ALSHS
Server



AFTER

MASS
54
AREA
2104
HEIGHT
1991
11-Jan-2023
14:22

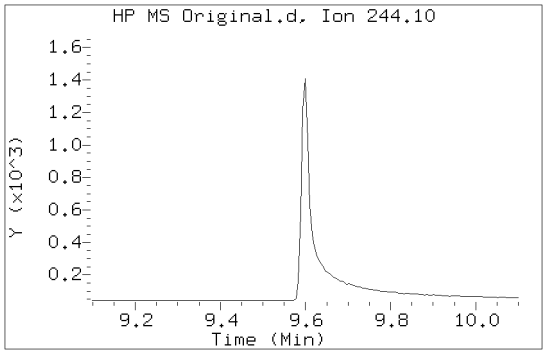


4-Terphenyl-d14 (1718-51-0)

Reason Code:

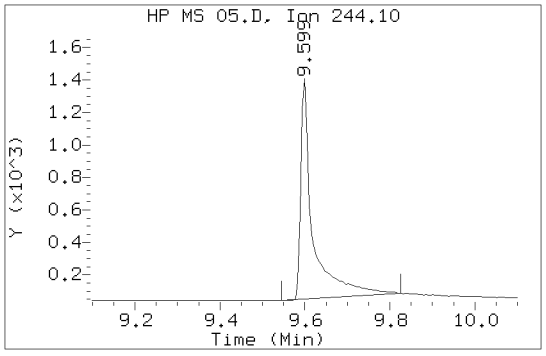
BEFORE

MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
11:24
ALSHS
Server



AFTER

MASS
244.1
AREA
2657
HEIGHT
1355
11-Jan-2023
14:22

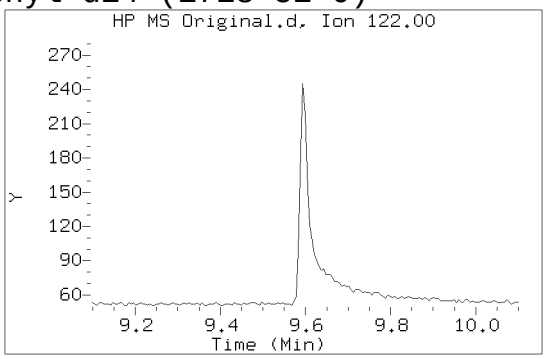


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\05.D
Inj Date : 11-JAN-2023 11:08
InstruID : SV6.i
LabSampID : 14DX-0.05

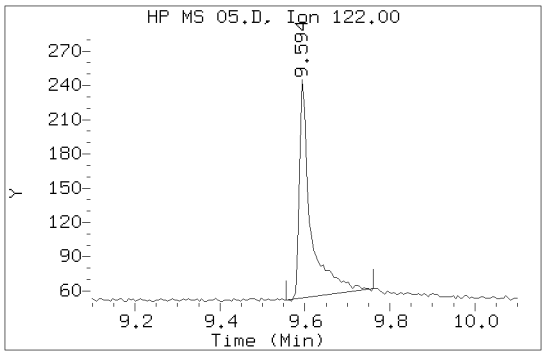
4-Terphenyl-d14 (1718-51-0)

Reason Code:

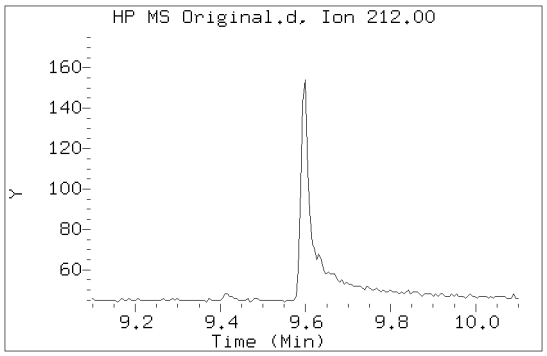
BEFORE
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
11:24
ALSHS
Server



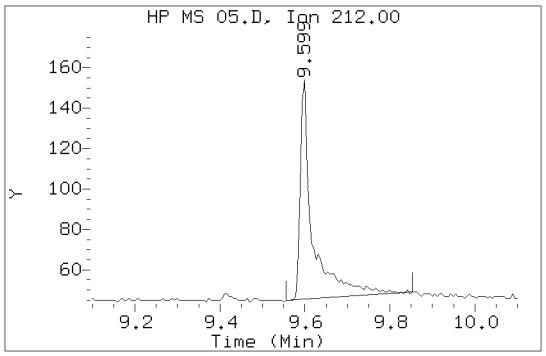
AFTER
MASS
122
AREA
354
HEIGHT
191
11-Jan-2023
14:22



BEFORE
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
11:24
ALSHS
Server



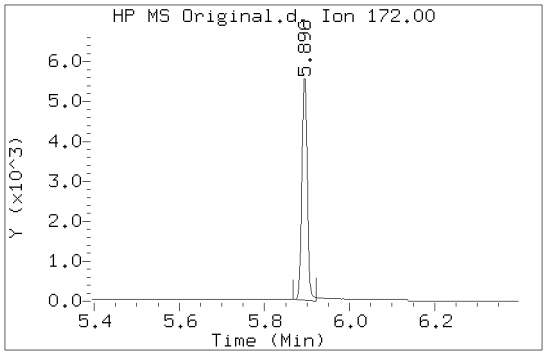
AFTER
MASS
212
AREA
215
HEIGHT
108
11-Jan-2023
14:22



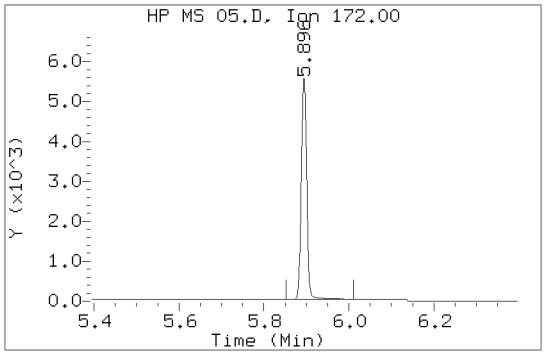
2-Fluorobiphenyl (321-60-8)

Reason Code:

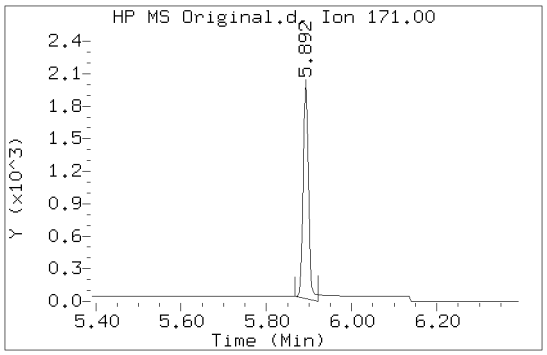
BEFORE
MASS
172
AREA
4937
HEIGHT
5546
11-Jan-2023
11:24
ALSHS
Server



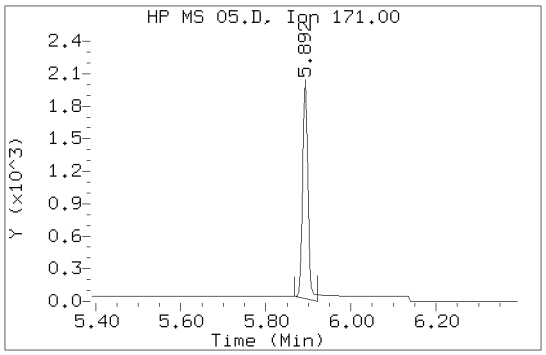
AFTER
MASS
172
AREA
4903
HEIGHT
5517
11-Jan-2023
14:22



BEFORE
MASS
171
AREA
1750
HEIGHT
2020
11-Jan-2023
11:24
ALSHS
Server



AFTER
MASS
171
AREA
1750
HEIGHT
2020
11-Jan-2023
14:22



ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111.b\09.D
Lab Smp Id: 14DX-0.20 Client Smp ID: 14DX-0.20
Inj Date : 11-JAN-2023 12:20
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.20
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111.b\DXSIM.m
Meth Date : 11-Jan-2023 14:23 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 11:08 Cal File: 05.D
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	5146	0.10000	(a)
* 45 Naphthalene-d8	136	4.871	4.871	(1.000)	14632	0.10000	
$ 33 Nitrobenzene-d5	82	4.214	4.214	(0.865)	11414	0.20000	0.2131(AM)
* 86 Acenaphthene-d10	164	6.551	6.551	(1.000)	10257	0.10000	
$ 69 2-Fluorobiphenyl	172	5.895	5.895	(0.900)	19046	0.20000	0.1438
* 126 Phenanthrene-d10	188	8.001	8.001	(1.000)	13099	0.10000	
* 182 Chrysene-d12	240	10.890	10.890	(1.000)	4584	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.599	9.599	(0.881)	13412	0.20000	0.1623(AM)
* 198 Perylene-d12	264	13.011	13.011	(1.000)	2153	0.10000	
1 1,4-Dioxane	58	1.998	1.998	(0.532)	2834	0.20000	0.1669(QM)

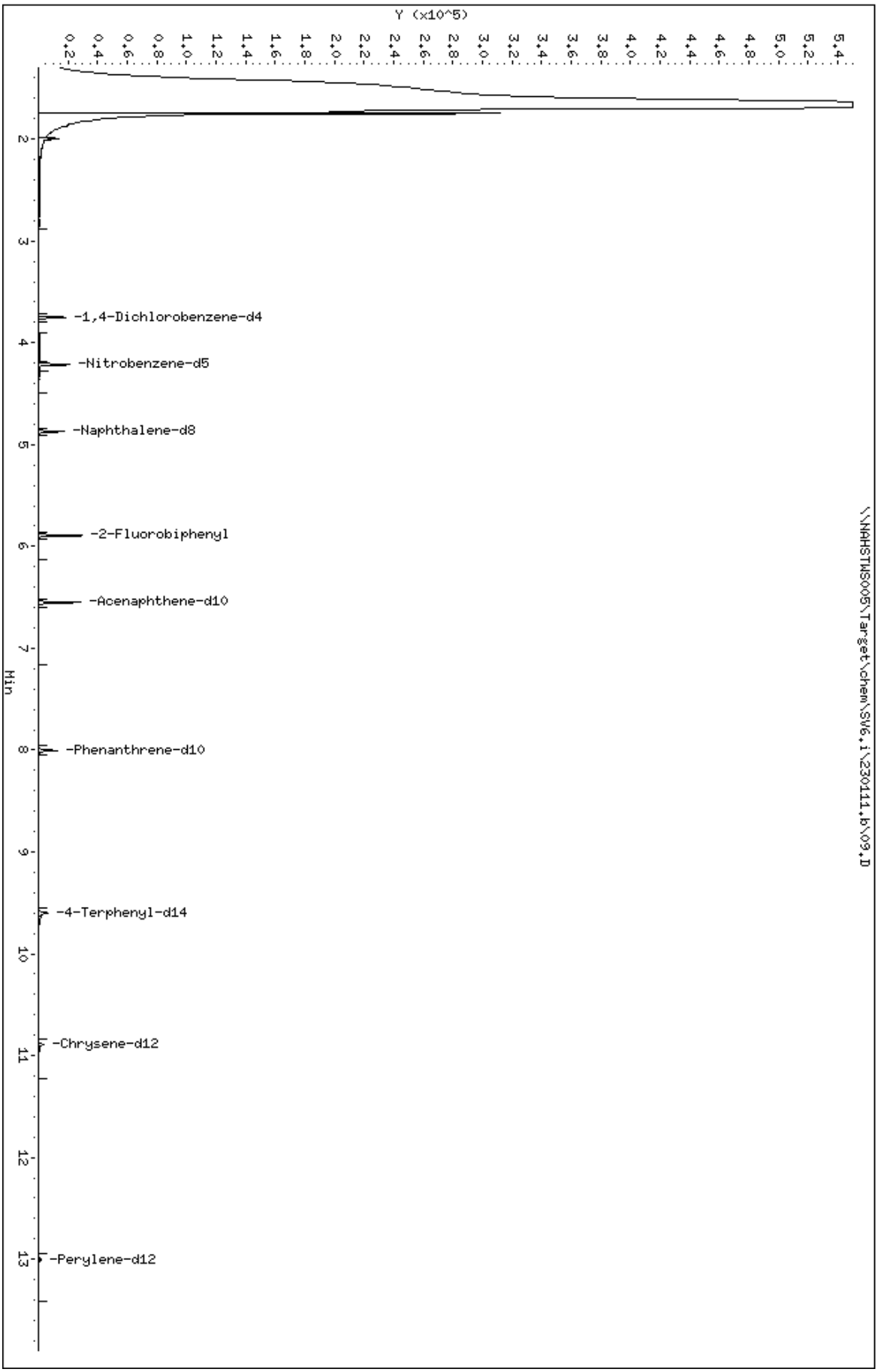
QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
Q - Qualifier signal failed the ratio test.

M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\09.D
Date : 11-JAN-2023 12:20
Client ID: 14DX-0.20
Sample Info: 14DX-0.20
Purge Volume: 1000.0
Column phase: RTX-5SIL MS

Instrument: SV6.i
Operator: LG
Column diameter: 0.28

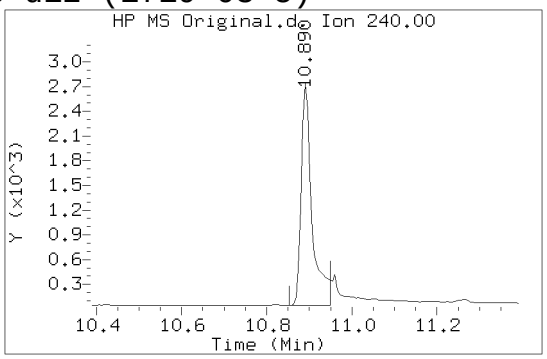


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\09.D
Inj Date : 11-JAN-2023 12:20
InstruID : SV6.i
LabSampID : 14DX-0.20

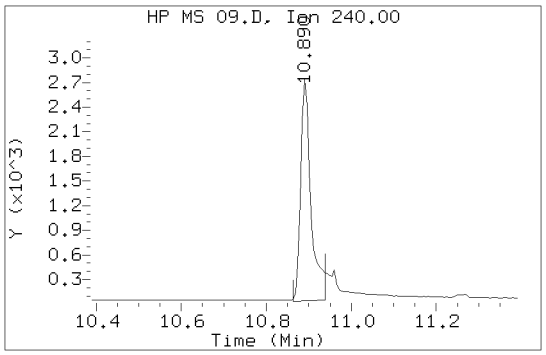
Chrysene-d12 (1719-03-5)

Reason Code:

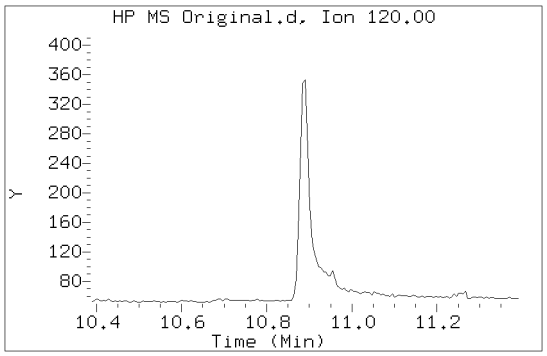
BEFORE
MASS
240
AREA
4746
HEIGHT
2687
11-Jan-2023
12:36
ALSHS
Server



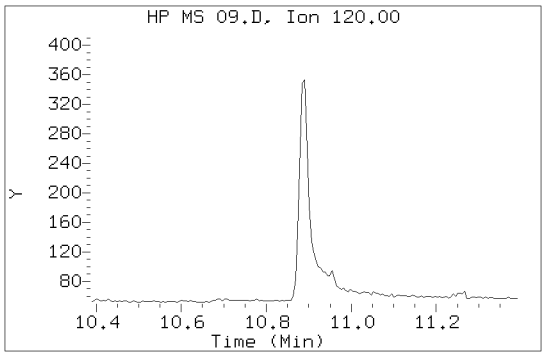
AFTER
MASS
240
AREA
4584
HEIGHT
2696
11-Jan-2023
14:22



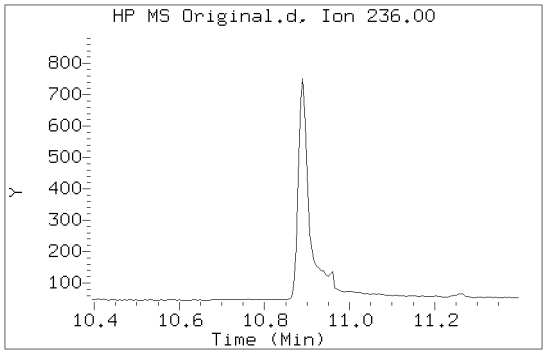
BEFORE
MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
12:36
ALSHS
Server



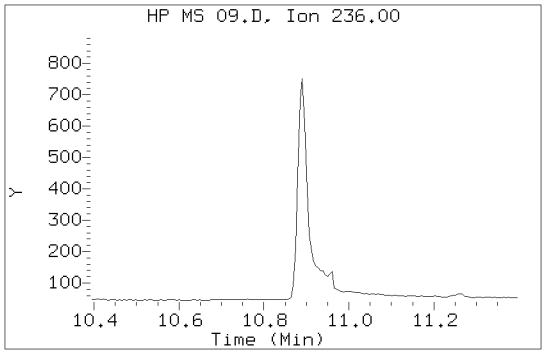
AFTER
MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
14:22



BEFORE
MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
12:36
ALSHS
Server



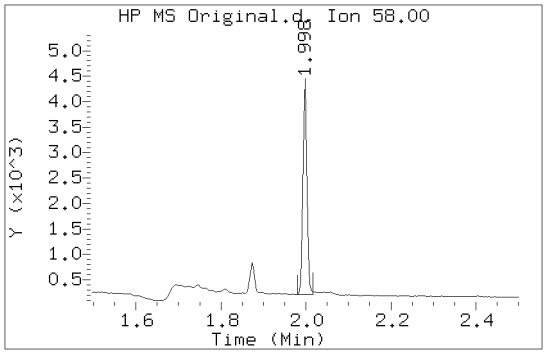
AFTER
MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
14:22



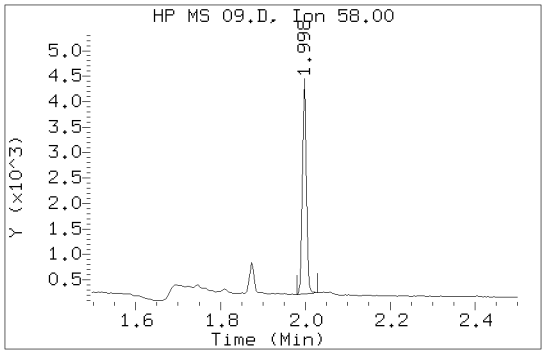
1,4-Dioxane ()

Reason Code:

BEFORE
MASS
58
AREA
2862
HEIGHT
4233
11-Jan-2023
12:36
ALSHS
Server



AFTER
MASS
58
AREA
2834
HEIGHT
4219
11-Jan-2023
14:22



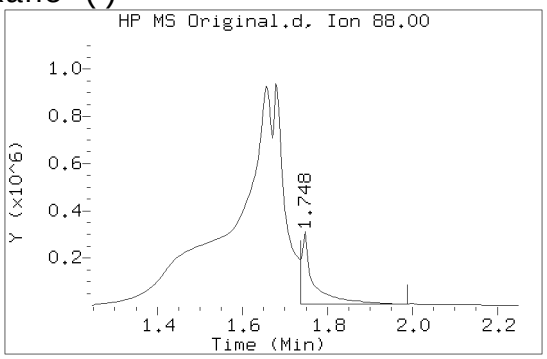
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\09.D
Inj Date : 11-JAN-2023 12:20
InstruID : SV6.i
LabSampID : 14DX-0.20

1,4-Dioxane ()

Reason Code:

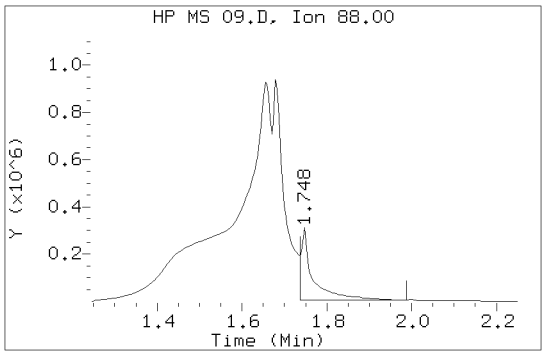
BEFORE

MASS
88
AREA
616850
HEIGHT
306607
11-Jan-2023
12:36
ALSHS
Server



AFTER

MASS
88
AREA
616850
HEIGHT
306607
11-Jan-2023
14:22

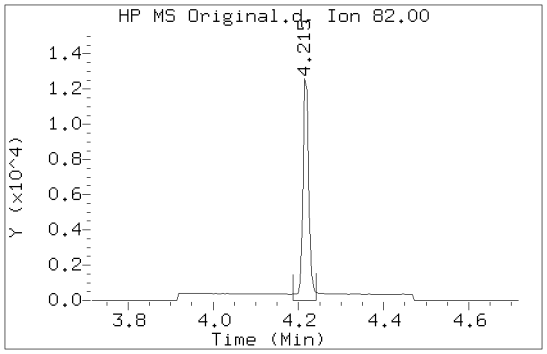


Nitrobenzene-d5 (4165-60-0)

Reason Code:

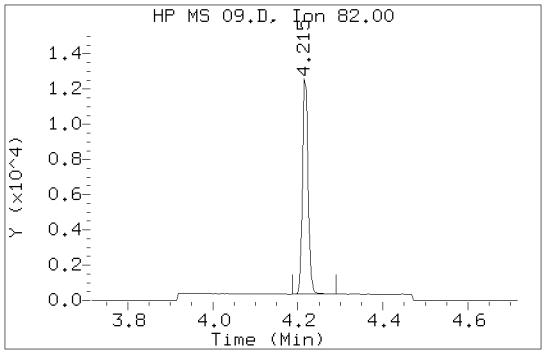
BEFORE

MASS
82
AREA
12667
HEIGHT
12592
11-Jan-2023
12:36
ALSHS
Server



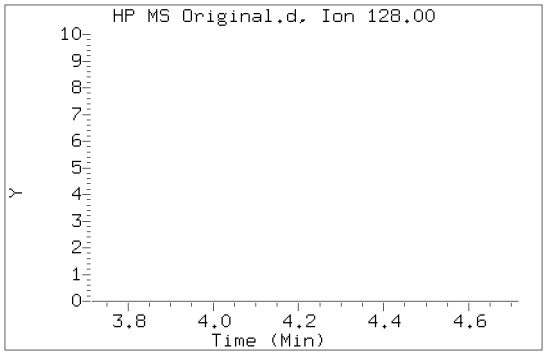
AFTER

MASS
82
AREA
11414
HEIGHT
12230
11-Jan-2023
14:22



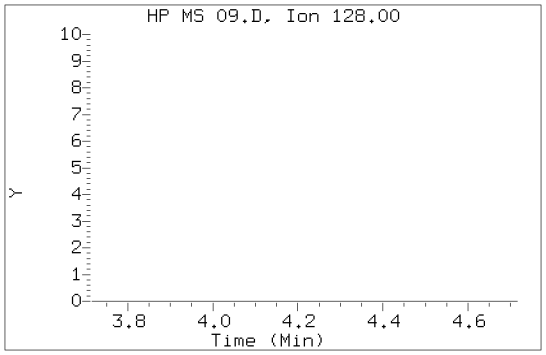
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
12:36
ALSHS
Server



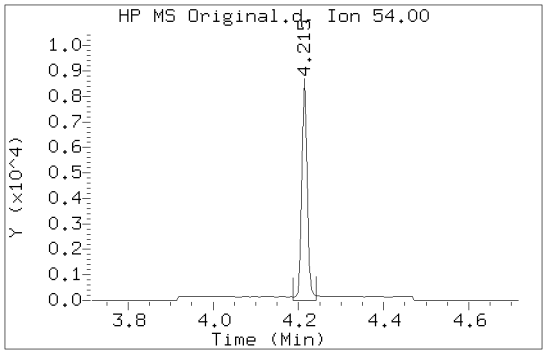
AFTER

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
14:22



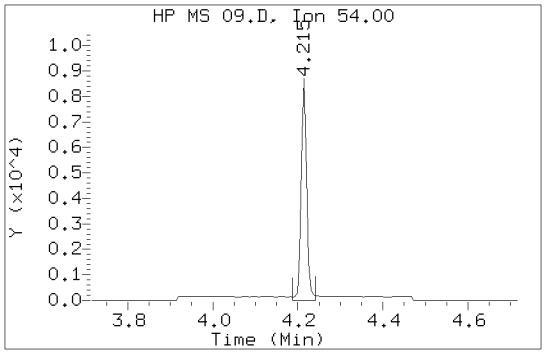
BEFORE

MASS
54
AREA
7995
HEIGHT
8698
11-Jan-2023
12:36
ALSHS
Server



AFTER

MASS
54
AREA
7995
HEIGHT
8698
11-Jan-2023
14:22

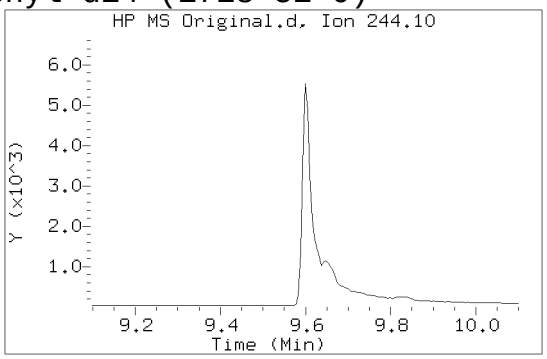


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\09.D
Inj Date : 11-JAN-2023 12:20
InstruID : SV6.i
LabSampID : 14DX-0.20

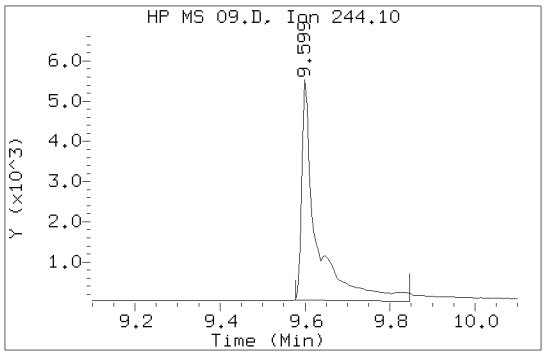
4-Terphenyl-d14 (1718-51-0)

Reason Code:

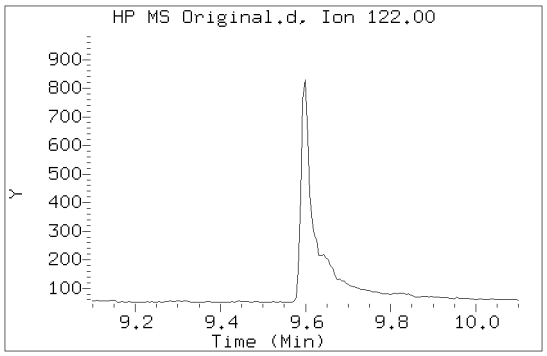
BEFORE
MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
12:36
ALSHS
Server



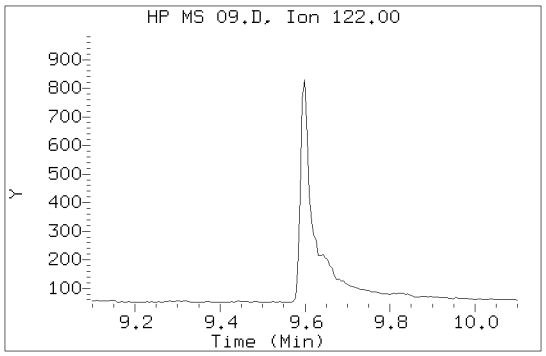
AFTER
MASS
244.1
AREA
13412
HEIGHT
5488
11-Jan-2023
14:22



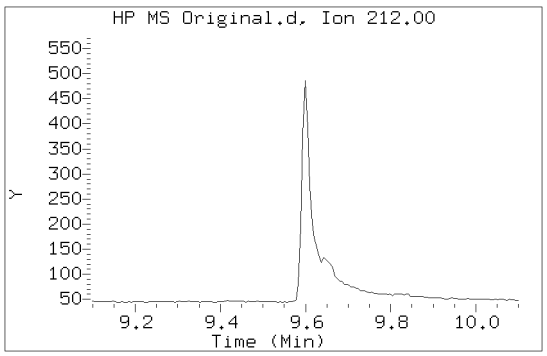
BEFORE
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
12:36
ALSHS
Server



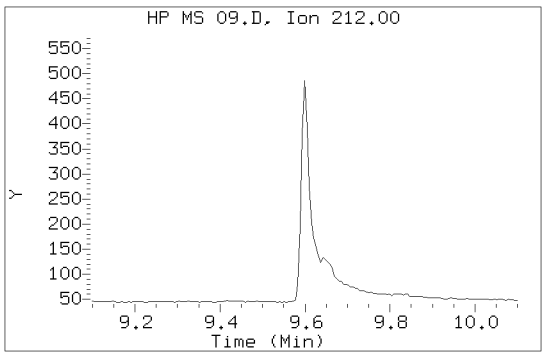
AFTER
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
14:22



BEFORE
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
12:36
ALSHS
Server



AFTER
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
14:22



ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111.b\10.D
Lab Smp Id: 14DX-0.50 Client Smp ID: 14DX-0.50
Inj Date : 11-JAN-2023 12:38
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.50
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111.b\DXSIM.m
Meth Date : 11-Jan-2023 14:23 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 12:20 Cal File: 09.D
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

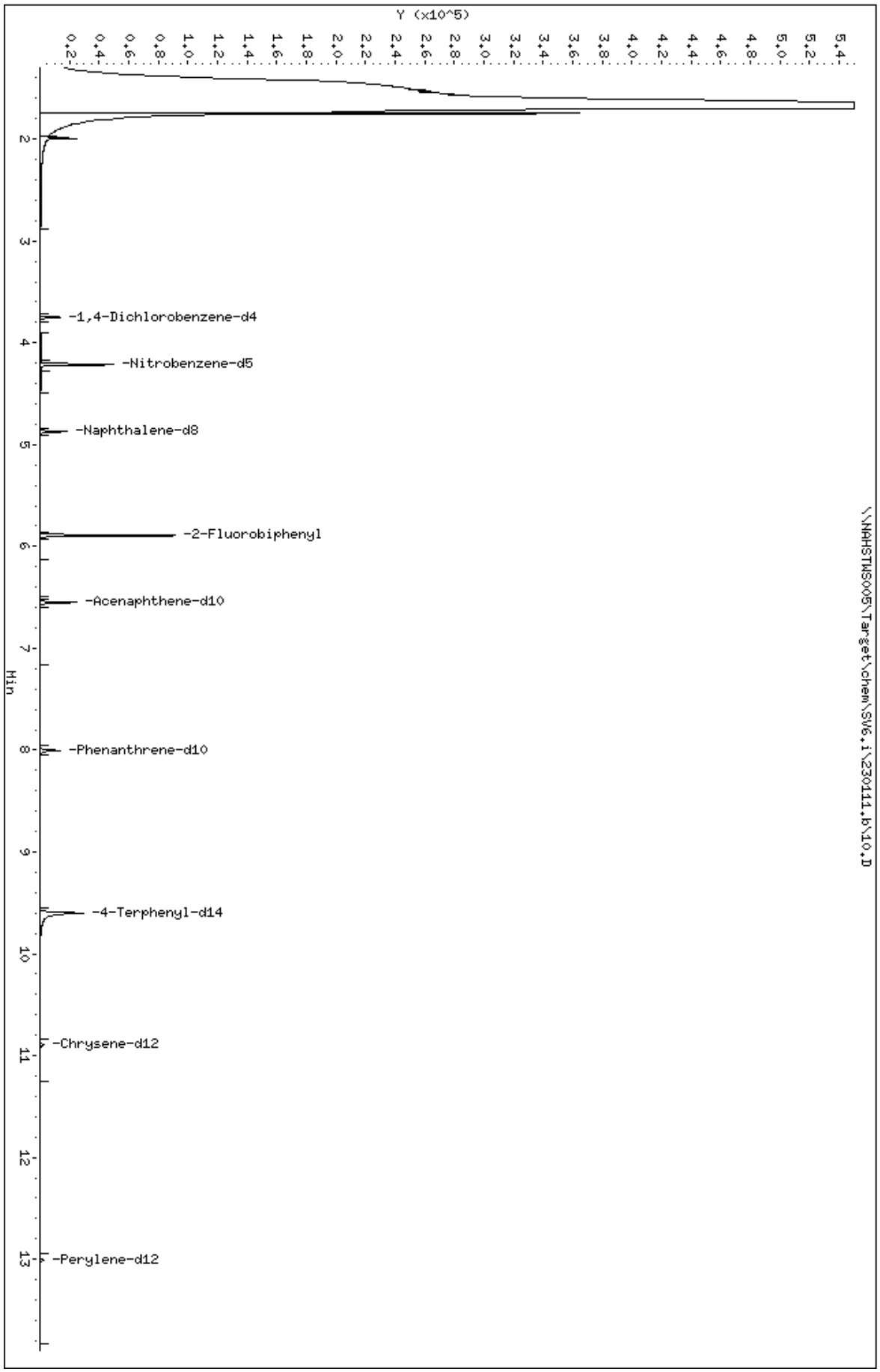
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	3949	0.10000	(a)
* 45 Naphthalene-d8	136	4.871	4.871	(1.000)	14992	0.10000	
$ 33 Nitrobenzene-d5	82	4.214	4.214	(0.865)	27313	0.50000	0.4976(AM)
* 86 Acenaphthene-d10	164	6.551	6.551	(1.000)	9276	0.10000	
$ 69 2-Fluorobiphenyl	172	5.895	5.895	(0.900)	59003	0.50000	0.4926(A)
* 126 Phenanthrene-d10	188	8.001	8.001	(1.000)	13760	0.10000	
* 182 Chrysene-d12	240	10.890	10.890	(1.000)	3222	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.604	9.604	(0.882)	51258	0.50000	0.8824(AM)
* 198 Perylene-d12	264	13.011	13.011	(1.000)	3144	0.10000	
1 1,4-Dioxane	58	1.991	1.991	(0.530)	6388	0.50000	0.4902(QM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
Q - Qualifier signal failed the ratio test.

M - Compound response manually integrated.


Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\10.D
Date : 11-JAN-2023 12:38
Client ID: 14DX-0.50
Sample Info: 14DX-0.50
Purge Volume: 1000.0
Column phase: RTX-5SIL MS
Instrument: SV6.i
Operator: LG
Column diameter: 0.28
\\NAHSTWS005\Target\chem\SV6.i\230111.b\10.D
Y (x10^5)
Min
-1,4-Dichlorobenzene-d4
-Nitrobenzene-d5
-Naphthalene-d8
-2-Fluorobiphenyl
-Acenaphthene-d10
-Phenanthrene-d10
-4-Terphenyl-d14
-Chrysene-d12
-Perylene-d12

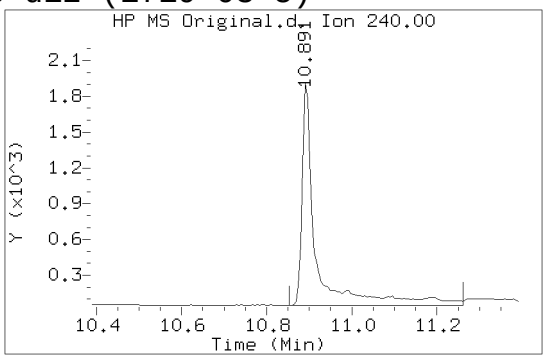
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\10.D
Inj Date : 11-JAN-2023 12:38
InstruID : SV6.i
LabSampID : 14DX-0.50

Chrysene-d12 (1719-03-5)

Reason Code:

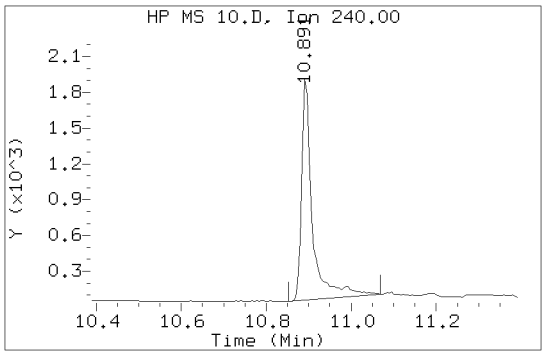
BEFORE

MASS
240
AREA
4232
HEIGHT
1859
11-Jan-2023
12:52
ALSHS
Server



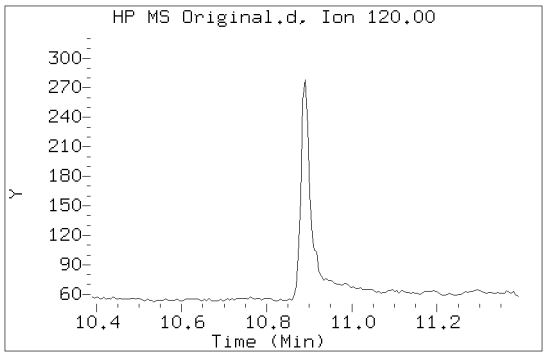
AFTER

MASS
240
AREA
3222
HEIGHT
1848
11-Jan-2023
14:22



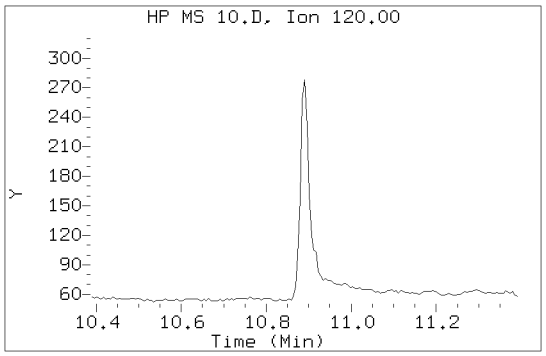
BEFORE

MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
12:52
ALSHS
Server



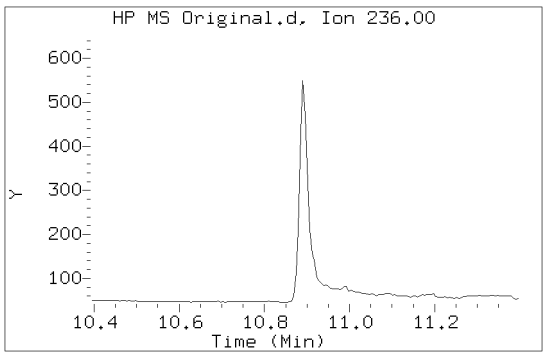
AFTER

MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
14:22



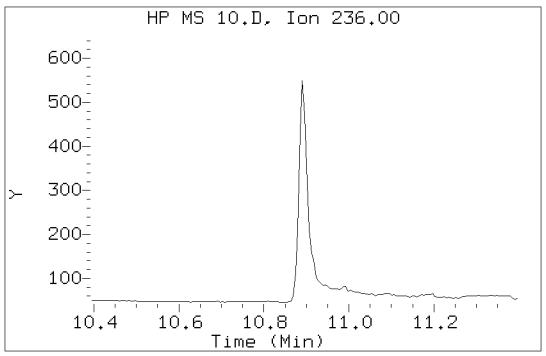
BEFORE

MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
12:52
ALSHS
Server



AFTER

MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
14:22

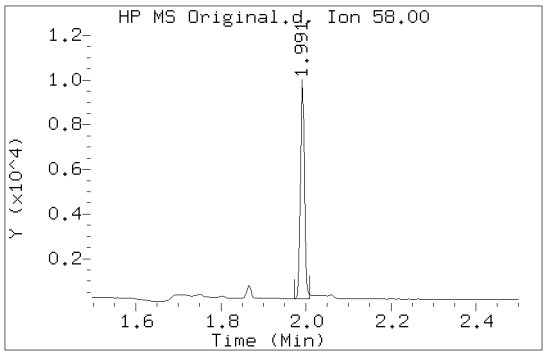


1,4-Dioxane ()

Reason Code:

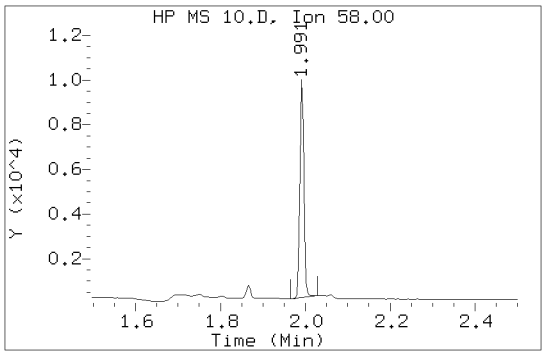
BEFORE

MASS
58
AREA
6504
HEIGHT
9804
11-Jan-2023
12:52
ALSHS
Server



AFTER

MASS
58
AREA
6388
HEIGHT
9746
11-Jan-2023
14:22



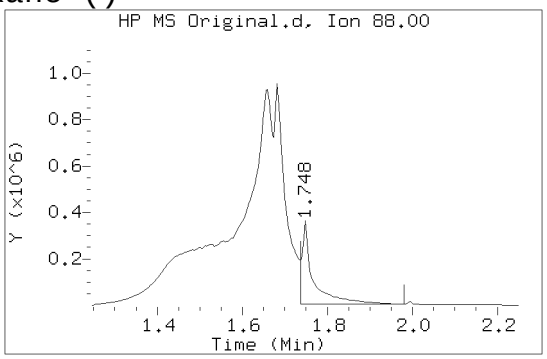
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\10.D
Inj Date : 11-JAN-2023 12:38
InstruID : SV6.i
LabSampID : 14DX-0.50

1,4-Dioxane ()

Reason Code:

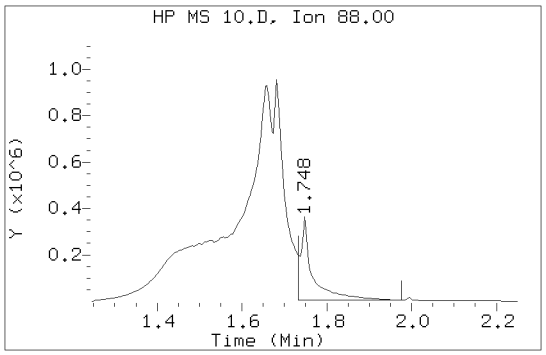
BEFORE

MASS
88
AREA
674130
HEIGHT
358601
11-Jan-2023
12:52
ALSHS
Server



AFTER

MASS
88
AREA
715212
HEIGHT
358482
11-Jan-2023
14:22

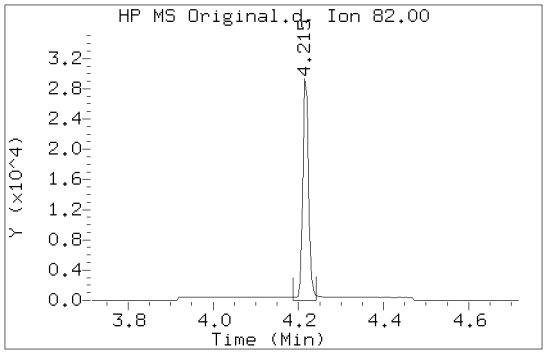


Nitrobenzene-d5 (4165-60-0)

Reason Code:

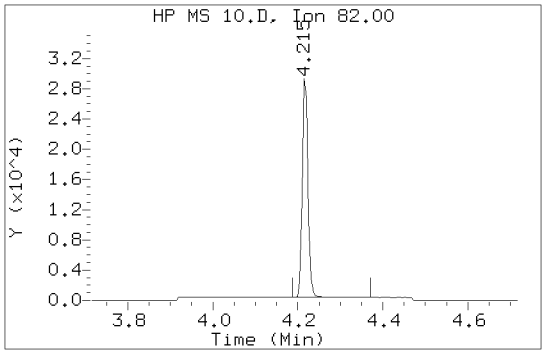
BEFORE

MASS
82
AREA
28596
HEIGHT
29336
11-Jan-2023
12:52
ALSHS
Server



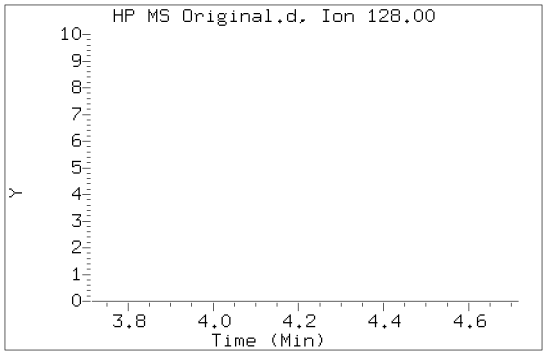
AFTER

MASS
82
AREA
27313
HEIGHT
28923
11-Jan-2023
14:22



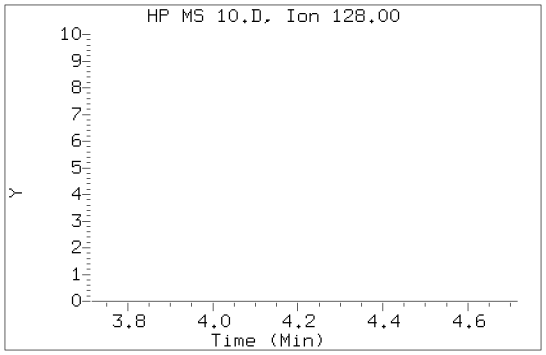
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
12:52
ALSHS
Server



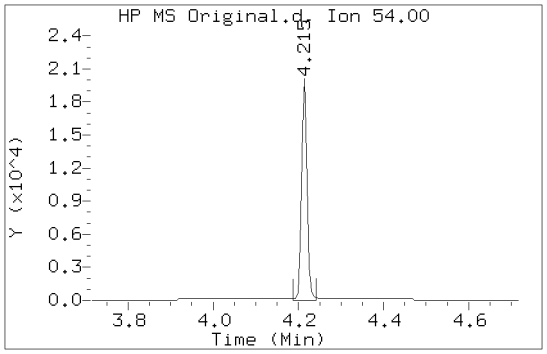
AFTER

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
14:22



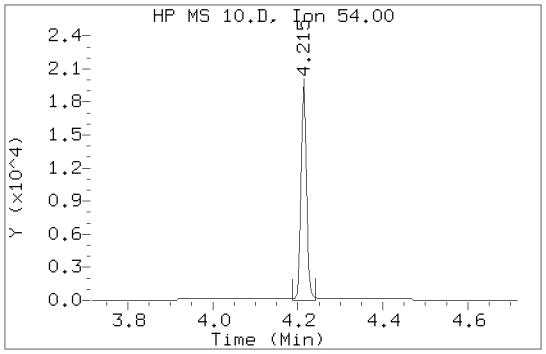
BEFORE

MASS
54
AREA
18327
HEIGHT
20112
11-Jan-2023
12:52
ALSHS
Server



AFTER

MASS
54
AREA
18327
HEIGHT
20112
11-Jan-2023
14:22

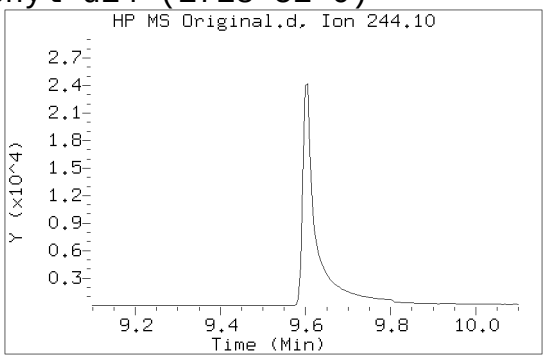


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\10.D
Inj Date : 11-JAN-2023 12:38
InstruID : SV6.i
LabSampID : 14DX-0.50

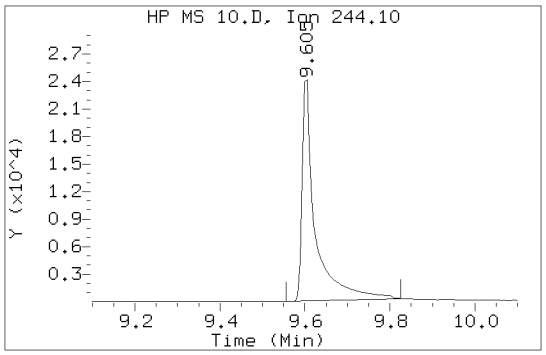
4-Terphenyl-d14 (1718-51-0)

Reason Code:

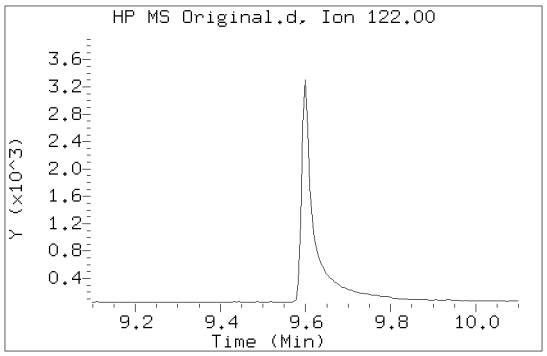
BEFORE
MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
12:52
ALSHS
Server



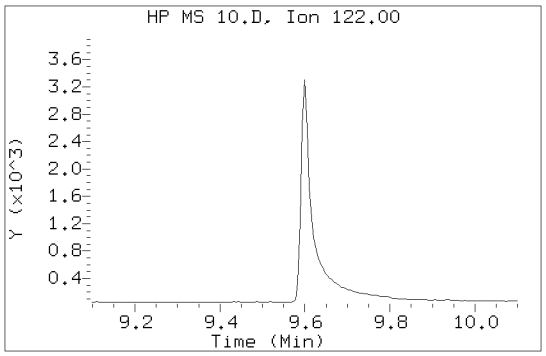
AFTER
MASS
244.1
AREA
51258
HEIGHT
24099
11-Jan-2023
14:22



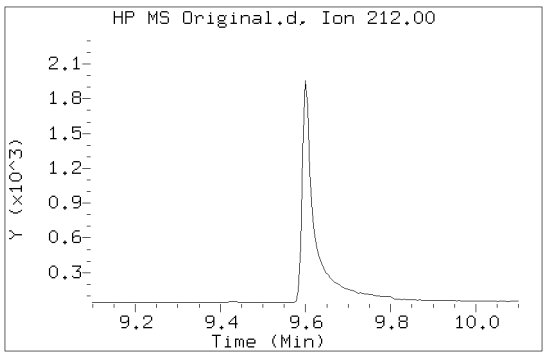
BEFORE
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
12:52
ALSHS
Server



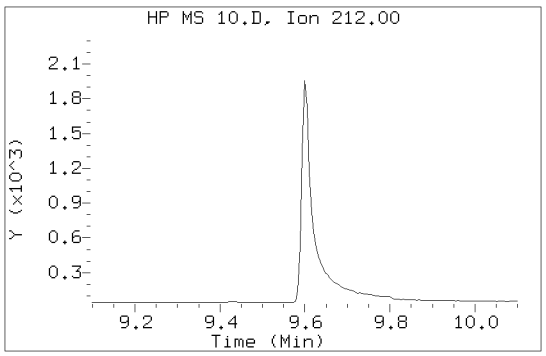
AFTER
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
14:22



BEFORE
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
12:52
ALSHS
Server



AFTER
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
14:22



ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111.b\11.D
Lab Smp Id: 14DX-0.08 Client Smp ID: 14DX-0.08
Inj Date : 11-JAN-2023 13:07
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.08
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111.b\DXSIM.m
Meth Date : 11-Jan-2023 14:23 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 12:38 Cal File: 10.D
Als bottle: 11 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	3350	0.10000	(aM)
* 45 Naphthalene-d8	136	4.874	4.874	(1.000)	12562	0.10000	
$ 33 Nitrobenzene-d5	82	4.214	4.214	(0.865)	3508	0.08000	0.07628(M)
* 86 Acenaphthene-d10	164	6.557	6.557	(1.000)	6094	0.10000	
$ 69 2-Fluorobiphenyl	172	5.895	5.895	(0.899)	7379	0.08000	0.09376
* 126 Phenanthrene-d10	188	8.007	8.007	(1.000)	14121	0.10000	
* 182 Chrysene-d12	240	10.895	10.895	(1.000)	2810	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.604	9.604	(0.881)	4001	0.08000	0.07897(M)
* 198 Perylene-d12	264	13.017	13.017	(1.000)	1495	0.10000	(M)
1 1,4-Dioxane	58	1.979	1.979	(0.527)	846	0.08000	0.07653(QM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\11.D

Date : 11-JAN-2023 13:07

Client ID: 14DX-0.08

Instrument: SV6.i

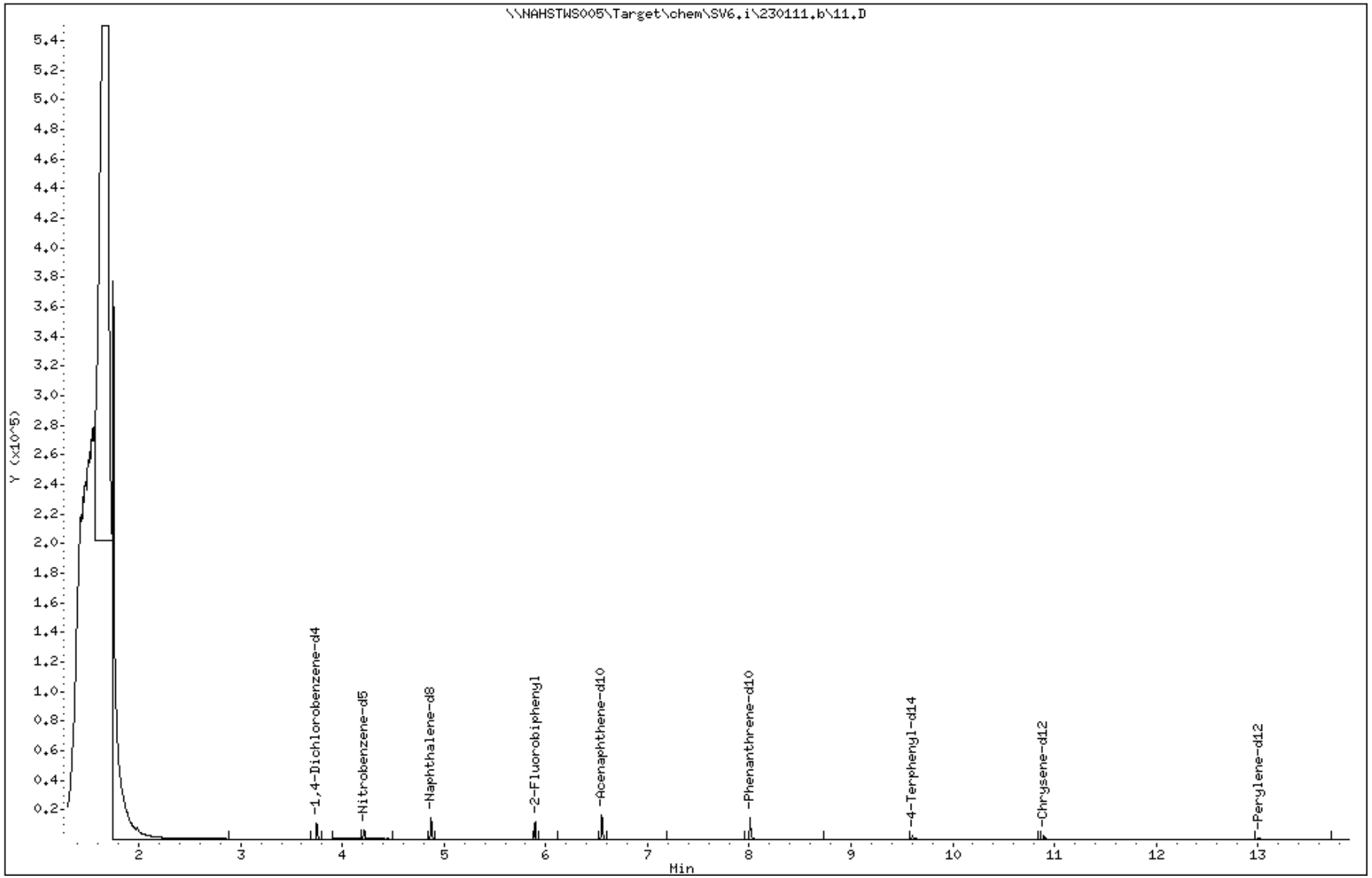
Sample Info: 14DX-0.08

Purge Volume: 1000.0

Operator: LG

Column phase: RTX-5SIL MS

Column diameter: 0.28



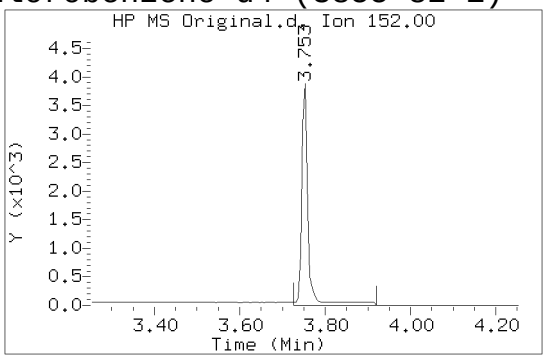
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\11.D
Inj Date : 11-JAN-2023 13:07
InstruID : SV6.i
LabSampID : 14DX-0.08

1,4-Dichlorobenzene-d4 (3855-82-1)

Reason Code:

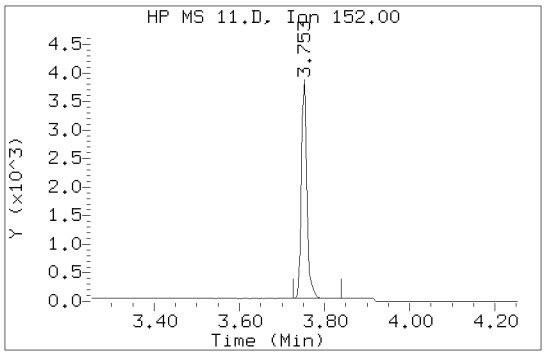
BEFORE

MASS
152
AREA
3950
HEIGHT
3881
11-Jan-2023
13:22
ALSHS
Server



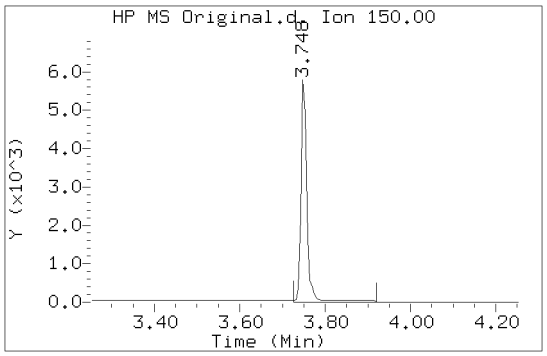
AFTER

MASS
152
AREA
3350
HEIGHT
3829
11-Jan-2023
14:22



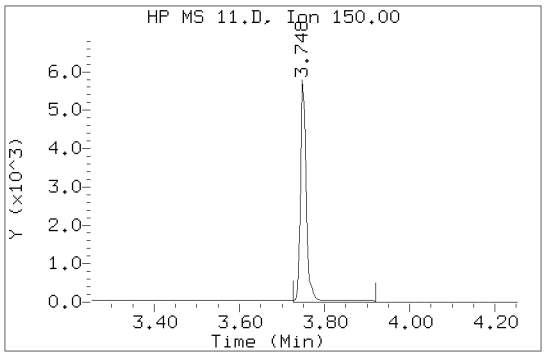
BEFORE

MASS
150
AREA
5673
HEIGHT
5789
11-Jan-2023
13:22
ALSHS
Server



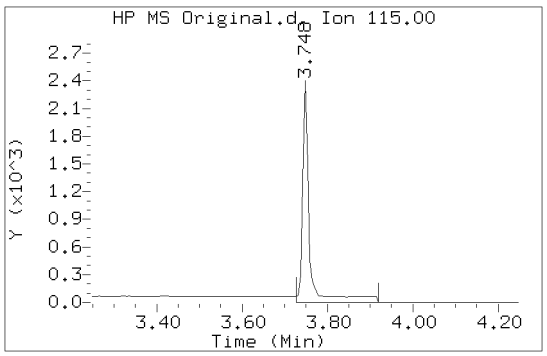
AFTER

MASS
150
AREA
5673
HEIGHT
5789
11-Jan-2023
14:22



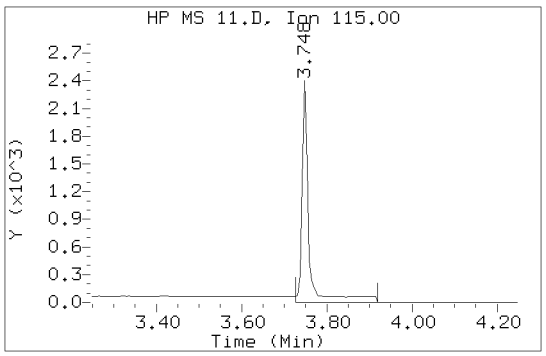
BEFORE

MASS
115
AREA
2649
HEIGHT
2402
11-Jan-2023
13:22
ALSHS
Server



AFTER

MASS
115
AREA
2649
HEIGHT
2402
11-Jan-2023
14:22

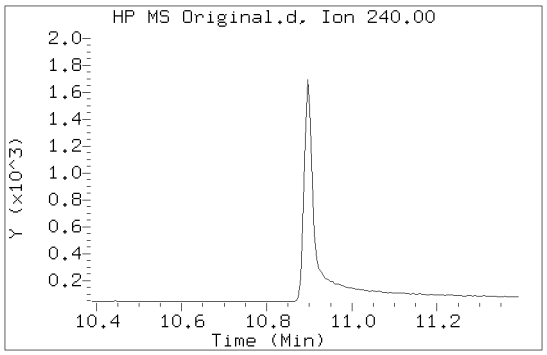


Chrysene-d12 (1719-03-5)

Reason Code:

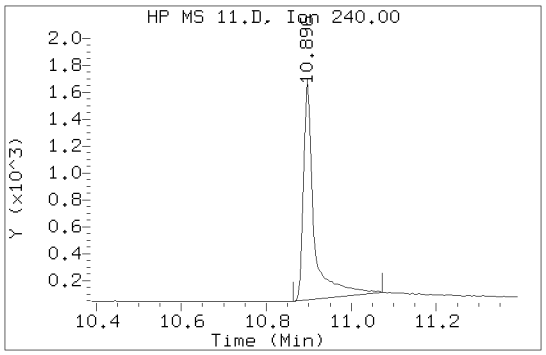
BEFORE

MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
13:22
ALSHS
Server



AFTER

MASS
240
AREA
2810
HEIGHT
1635
11-Jan-2023
14:22



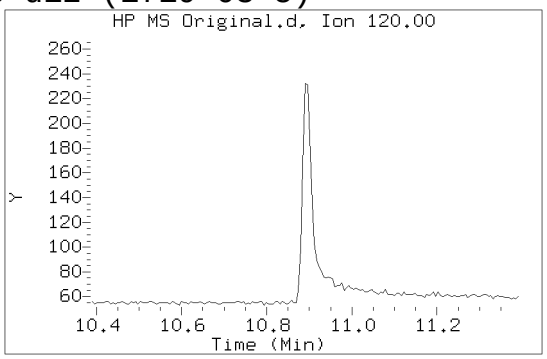
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\11.D
Inj Date : 11-JAN-2023 13:07
InstruID : SV6.i
LabSampID : 14DX-0.08

Chrysene-d12 (1719-03-5)

Reason Code:

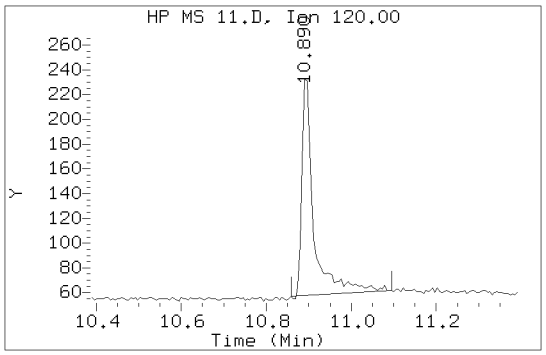
BEFORE

MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
13:22
ALSHS
Server



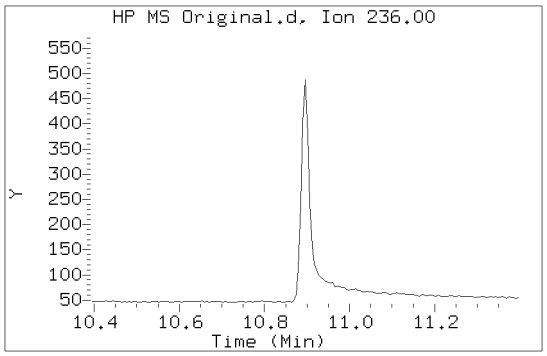
AFTER

MASS
120
AREA
336
HEIGHT
174
11-Jan-2023
14:22



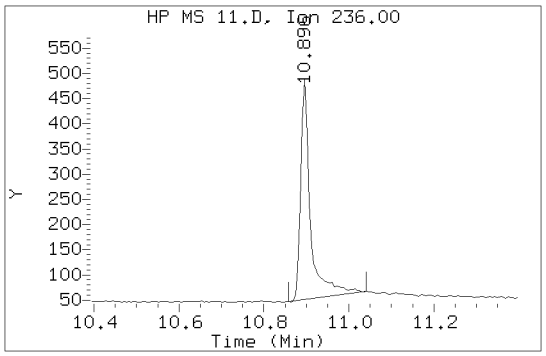
BEFORE

MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
13:22
ALSHS
Server



AFTER

MASS
236
AREA
693
HEIGHT
435
11-Jan-2023
14:22

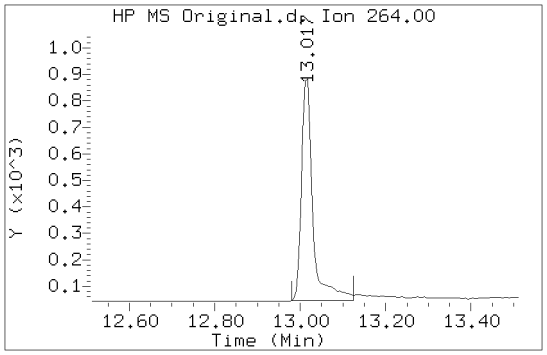


Perylene-d12 (1520-96-3)

Reason Code:

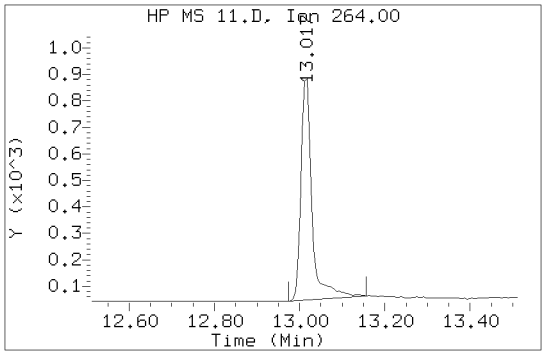
BEFORE

MASS
264
AREA
1551
HEIGHT
837
11-Jan-2023
13:22
ALSHS
Server



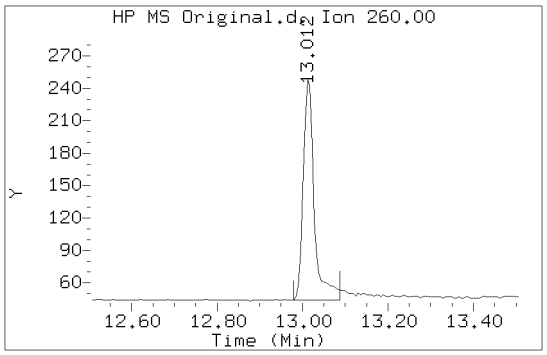
AFTER

MASS
264
AREA
1495
HEIGHT
833
11-Jan-2023
14:22



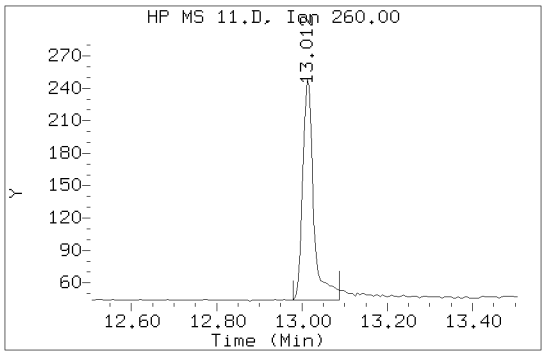
BEFORE

MASS
260
AREA
365
HEIGHT
204
11-Jan-2023
13:22
ALSHS
Server



AFTER

MASS
260
AREA
365
HEIGHT
204
11-Jan-2023
14:22



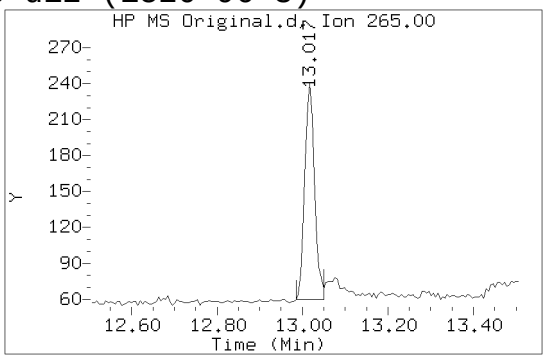
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\11.D
Inj Date : 11-JAN-2023 13:07
InstruID : SV6.i
LabSampID : 14DX-0.08

Perylene-d12 (1520-96-3)

Reason Code:

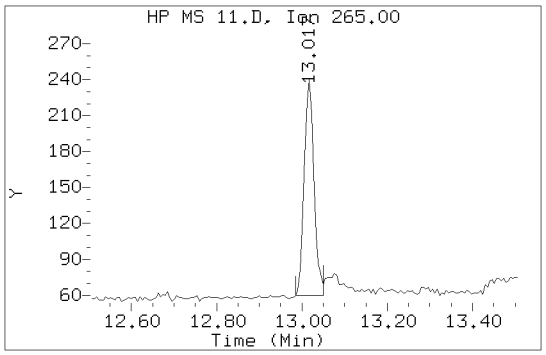
BEFORE

MASS
265
AREA
288
HEIGHT
180
11-Jan-2023
13:22
ALSHS
Server



AFTER

MASS
265
AREA
288
HEIGHT
180
11-Jan-2023
14:22

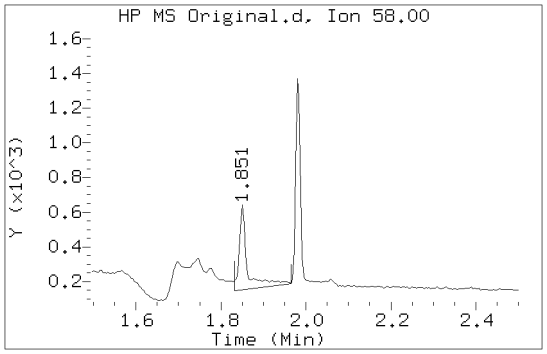


1,4-Dioxane ()

Reason Code:

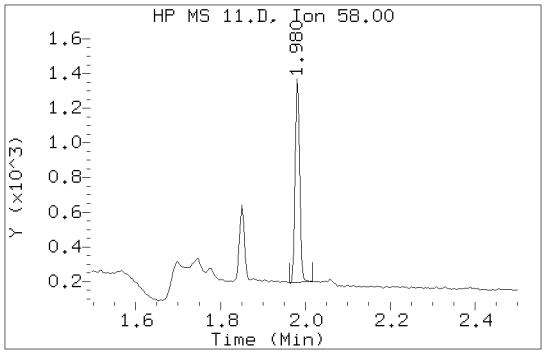
BEFORE

MASS
58
AREA
643
HEIGHT
489
11-Jan-2023
13:22
ALSHS
Server



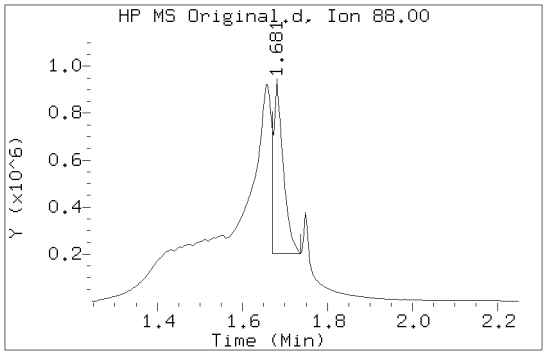
AFTER

MASS
58
AREA
846
HEIGHT
1172
11-Jan-2023
14:22



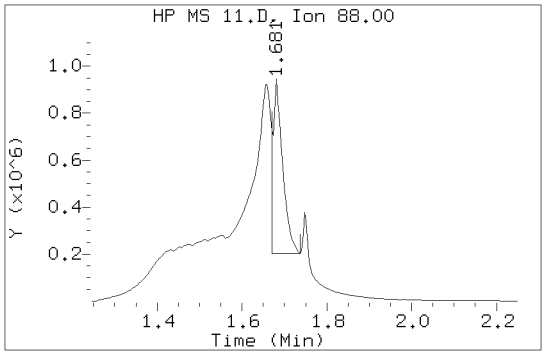
BEFORE

MASS
88
AREA
1219387
HEIGHT
744192
11-Jan-2023
13:22
ALSHS
Server



AFTER

MASS
88
AREA
1219387
HEIGHT
744192
11-Jan-2023
14:22

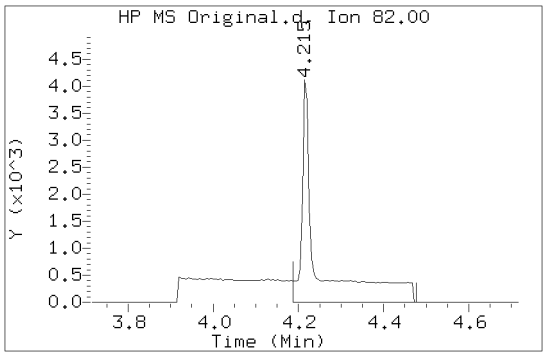


Nitrobenzene-d5 (4165-60-0)

Reason Code:

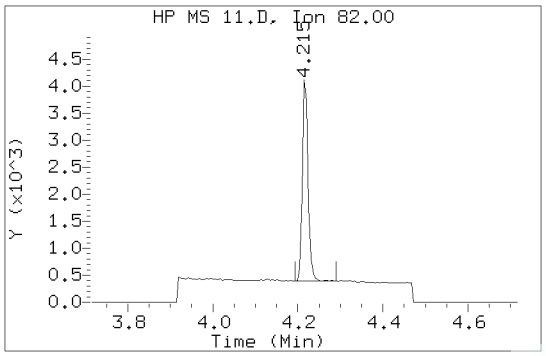
BEFORE

MASS
82
AREA
9921
HEIGHT
4115
11-Jan-2023
13:22
ALSHS
Server



AFTER

MASS
82
AREA
3508
HEIGHT
3719
11-Jan-2023
14:22



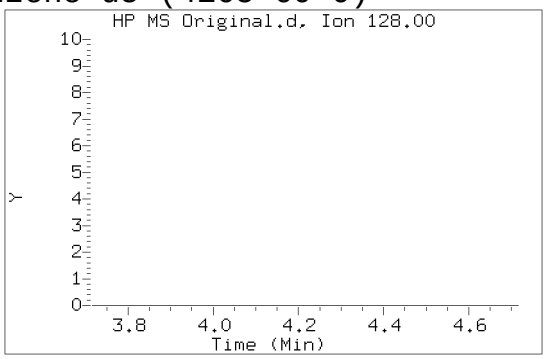
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\11.D
Inj Date : 11-JAN-2023 13:07
InstruID : SV6.i
LabSampID : 14DX-0.08

Nitrobenzene-d5 (4165-60-0)

Reason Code:

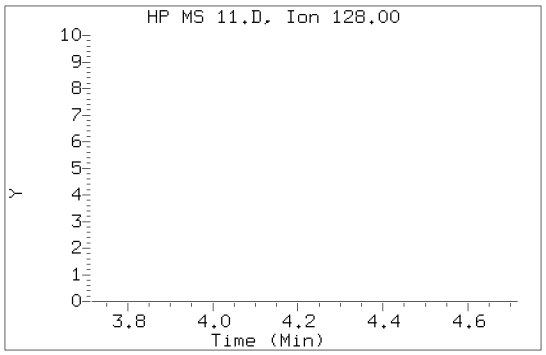
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
13:22
ALSHS
Server



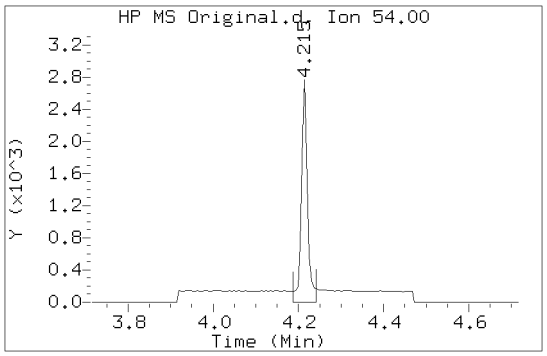
AFTER

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
14:22



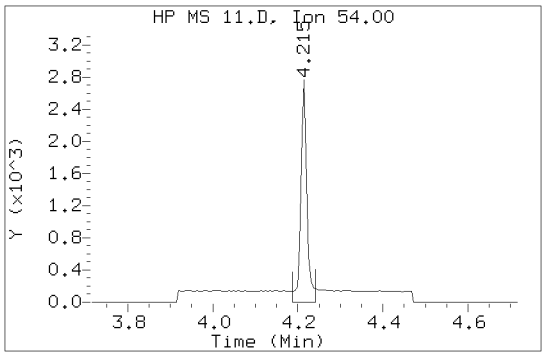
BEFORE

MASS
54
AREA
2801
HEIGHT
2765
11-Jan-2023
13:22
ALSHS
Server



AFTER

MASS
54
AREA
2801
HEIGHT
2765
11-Jan-2023
14:22

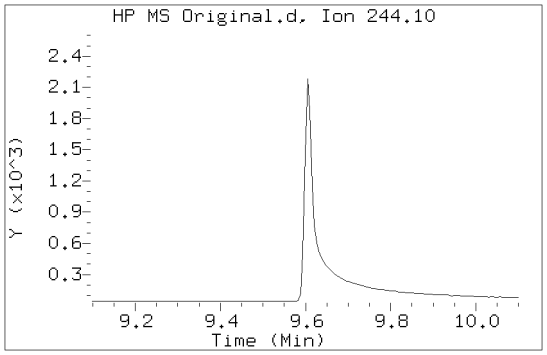


4-Terphenyl-d14 (1718-51-0)

Reason Code:

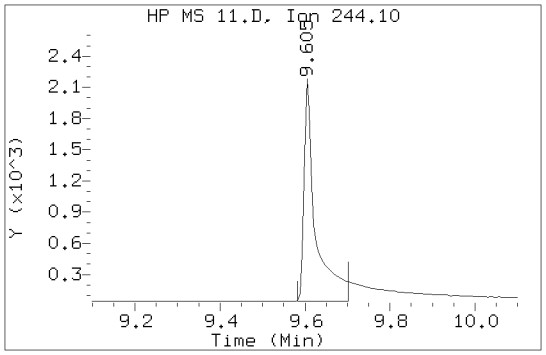
BEFORE

MASS
244.1
AREA
0
HEIGHT
0
11-Jan-2023
13:22
ALSHS
Server



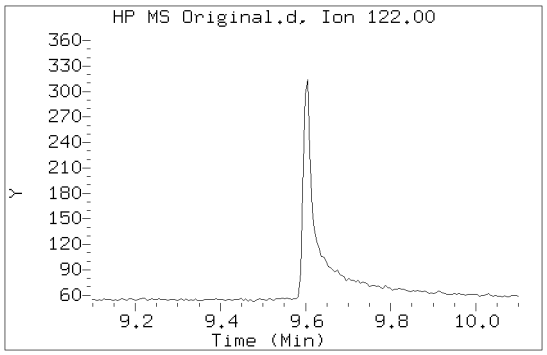
AFTER

MASS
244.1
AREA
4001
HEIGHT
2137
11-Jan-2023
14:22



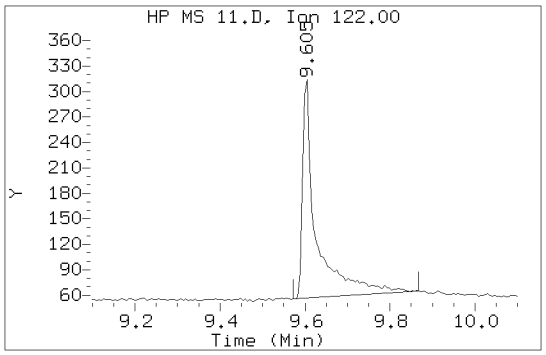
BEFORE

MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
13:22
ALSHS
Server



AFTER

MASS
122
AREA
573
HEIGHT
257
11-Jan-2023
14:22



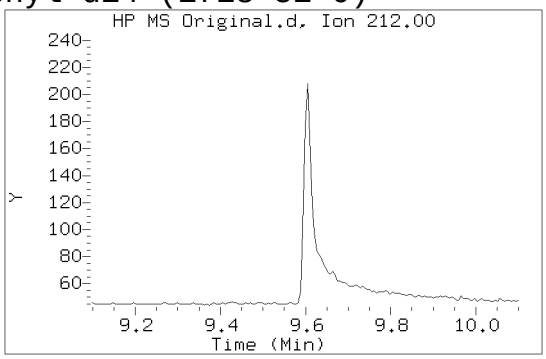
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\11.D
Inj Date : 11-JAN-2023 13:07
InstruID : SV6.i
LabSampID : 14DX-0.08

4-Terphenyl-d14 (1718-51-0)

Reason Code:

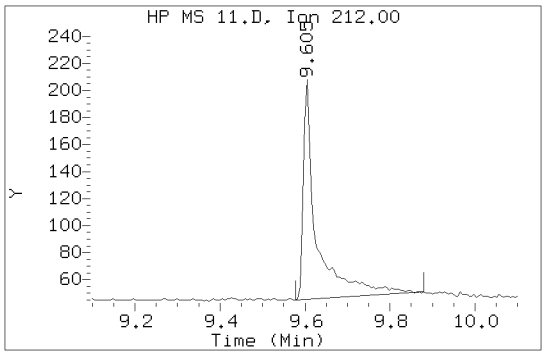
BEFORE

MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
13:22
ALSHS
Server



AFTER

MASS
212
AREA
350
HEIGHT
162
11-Jan-2023
14:22



ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111.b\12.D
Lab Smp Id: 14DX-0.10 Client Smp ID: 14DX-0.10
Inj Date : 11-JAN-2023 13:30
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.10
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111.b\DXSIM.m
Meth Date : 11-Jan-2023 14:23 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 13:07 Cal File: 11.D
Als bottle: 12 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

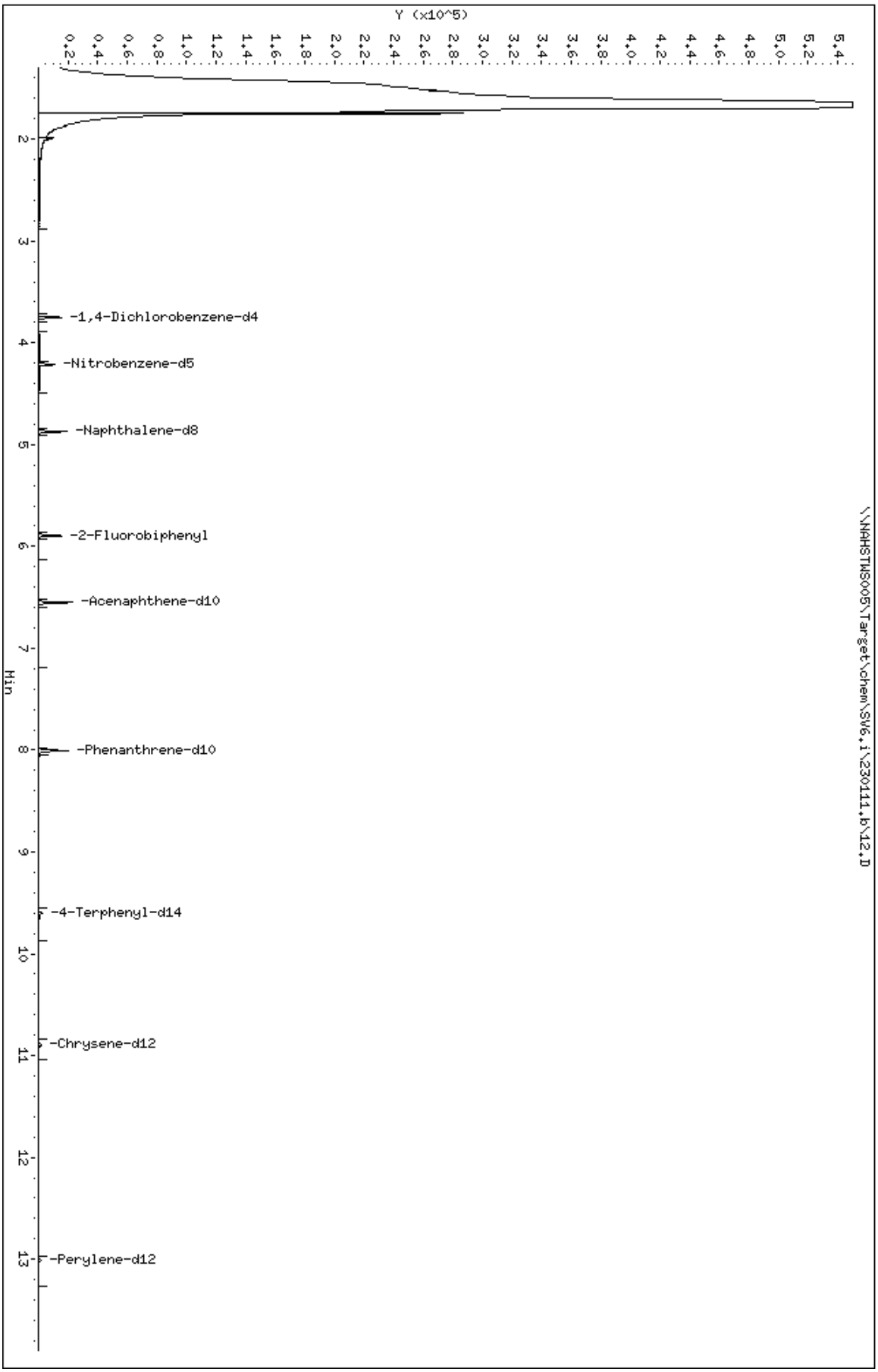
Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	AMOUNTS ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	4327	0.10000	(a)
* 45 Naphthalene-d8	136	4.871	4.871	(1.000)	16469	0.10000	
$ 33 Nitrobenzene-d5	82	4.220	4.220	(0.866)	6006	0.10000	0.09962(M)
* 86 Acenaphthene-d10	164	6.551	6.551	(1.000)	8154	0.10000	
$ 69 2-Fluorobiphenyl	172	5.895	5.895	(0.900)	10445	0.10000	0.09919
* 126 Phenanthrene-d10	188	8.007	8.007	(1.000)	20023	0.10000	
* 182 Chrysene-d12	240	10.895	10.895	(1.000)	3014	0.10000	
$ 158 4-Terphenyl-d14	244	9.604	9.604	(0.881)	4951	0.10000	0.09111(M)
* 198 Perylene-d12	264	13.011	13.011	(1.000)	1962	0.10000	
1 1,4-Dioxane	58	1.998	1.998	(0.532)	1441	0.10000	0.1009(QM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\12.D
Date : 11-JAN-2023 13:30
Client ID: 14DX-0.10
Sample Info: 14DX-0.10
Purge Volume: 1000.0
Column phase: RTX-5SIL MS

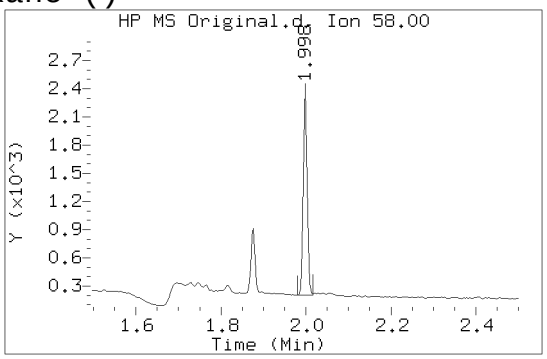
Instrument: SV6.i
Operator: LG
Column diameter: 0.28

Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\12.D
Inj Date : 11-JAN-2023 13:30
InstruID : SV6.i
LabSampID : 14DX-0.10

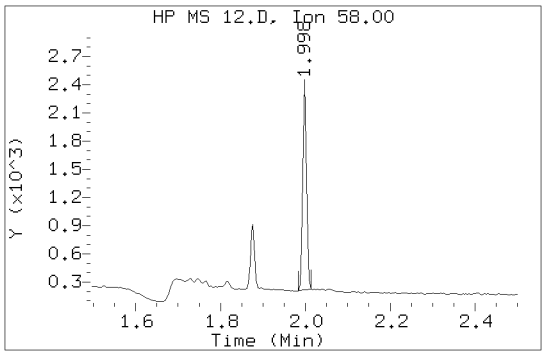
1,4-Dioxane ()

Reason Code:

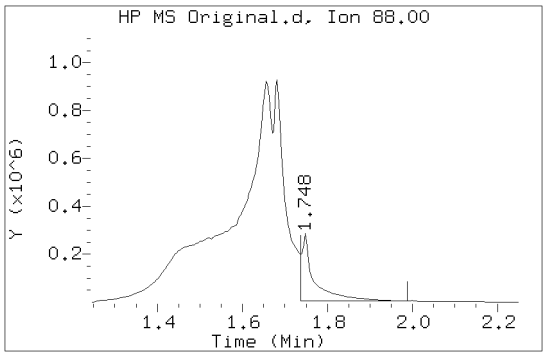
BEFORE
MASS
58
AREA
1461
HEIGHT
2246
11-Jan-2023
13:45
ALSHS
Server



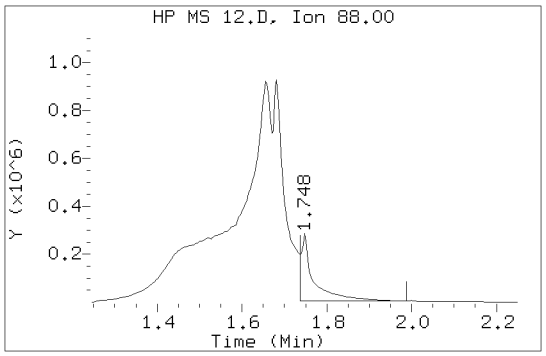
AFTER
MASS
58
AREA
1441
HEIGHT
2237
11-Jan-2023
14:22



BEFORE
MASS
88
AREA
600990
HEIGHT
282004
11-Jan-2023
13:45
ALSHS
Server



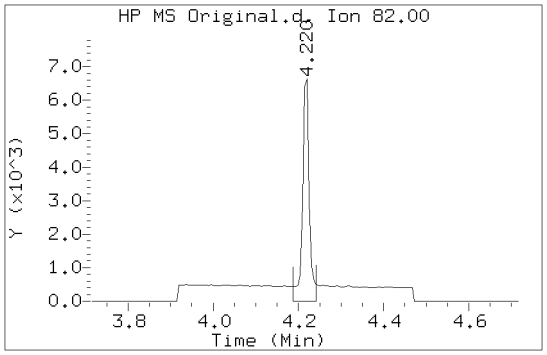
AFTER
MASS
88
AREA
600990
HEIGHT
282004
11-Jan-2023
14:22



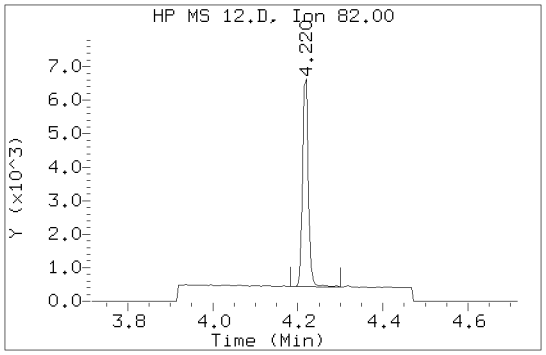
Nitrobenzene-d5 (4165-60-0)

Reason Code:

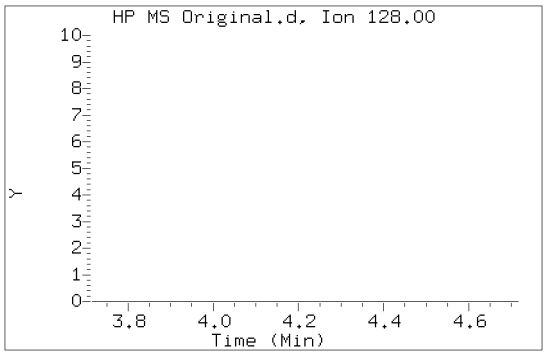
BEFORE
MASS
82
AREA
7472
HEIGHT
6636
11-Jan-2023
13:45
ALSHS
Server



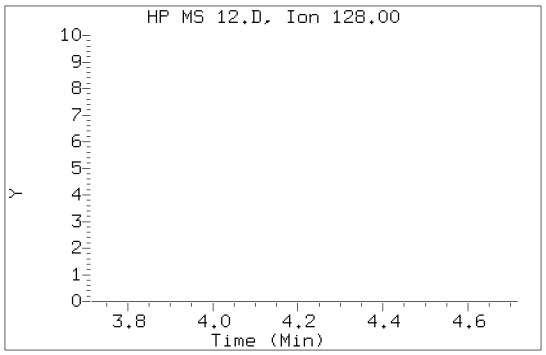
AFTER
MASS
82
AREA
6006
HEIGHT
6199
11-Jan-2023
14:22



BEFORE
MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
13:45
ALSHS
Server



AFTER
MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
14:22



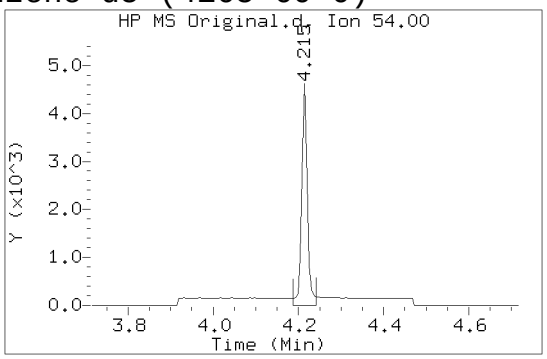
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\12.D
Inj Date : 11-JAN-2023 13:30
InstruID : SV6.i
LabSampID : 14DX-0.10

Nitrobenzene-d5 (4165-60-0)

Reason Code:

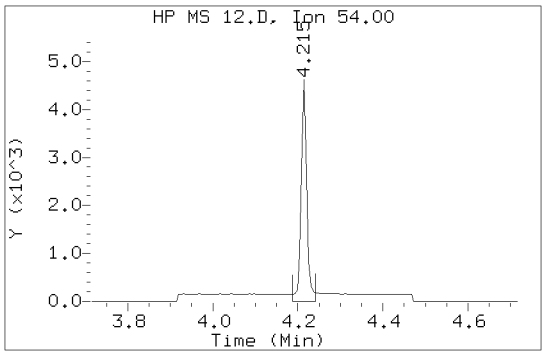
BEFORE

MASS
54
AREA
4369
HEIGHT
4622
11-Jan-2023
13:45
ALSHS
Server



AFTER

MASS
54
AREA
4369
HEIGHT
4622
11-Jan-2023
14:22

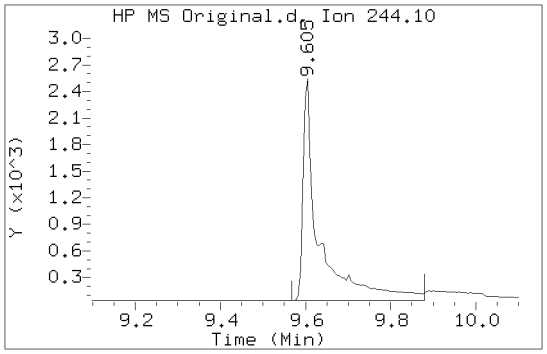


4-Terphenyl-d14 (1718-51-0)

Reason Code:

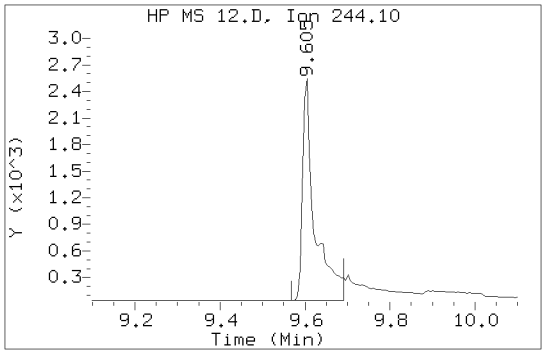
BEFORE

MASS
244.1
AREA
6374
HEIGHT
2499
11-Jan-2023
13:45
ALSHS
Server



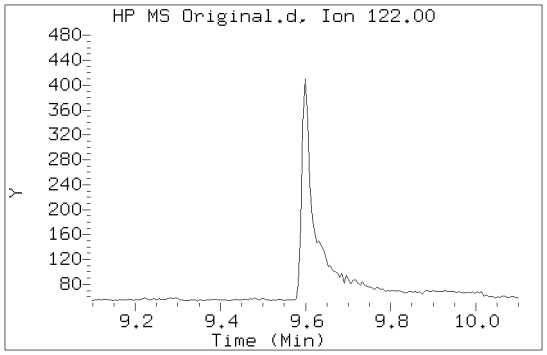
AFTER

MASS
244.1
AREA
4951
HEIGHT
2499
11-Jan-2023
14:22



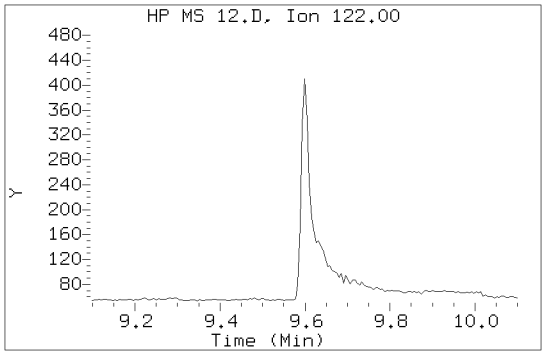
BEFORE

MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
13:45
ALSHS
Server



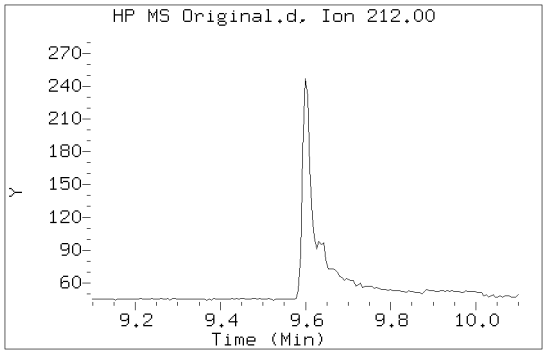
AFTER

MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
14:22



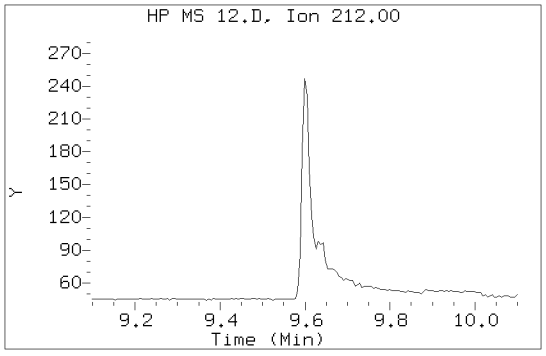
BEFORE

MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
13:45
ALSHS
Server



AFTER

MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
14:22



ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111.b\13.D
Lab Smp Id: 14DX-0.15 Client Smp ID: 14DX-0.15
Inj Date : 11-JAN-2023 13:51
Operator : LG Inst ID: SV6.i
Smp Info : 14DX-0.15
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111.b\DXSIM.m
Meth Date : 11-Jan-2023 14:23 SV6.i Quant Type: ISTD
Cal Date : 11-JAN-2023 13:30 Cal File: 12.D
Als bottle: 13 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

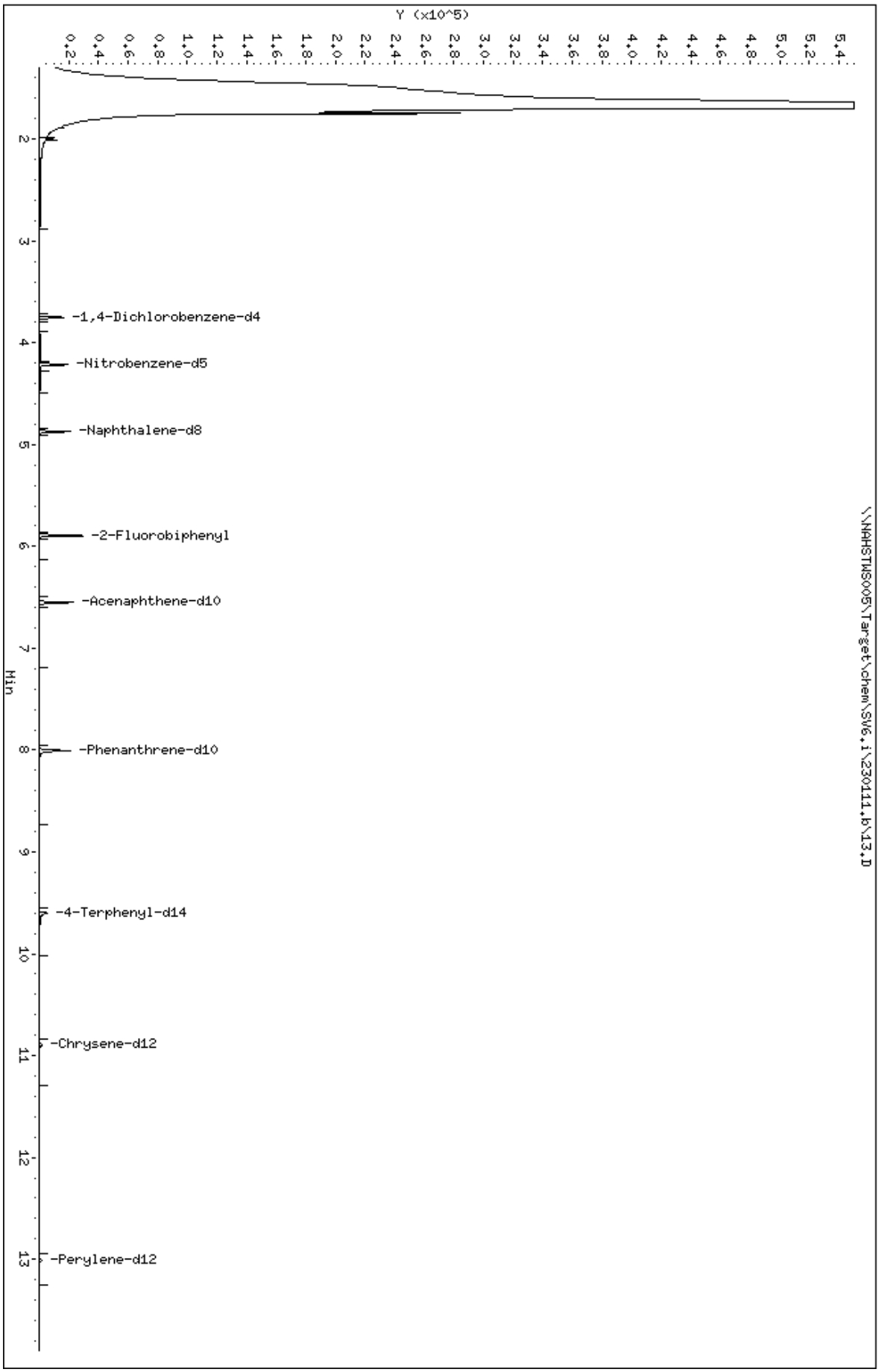
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (NG)	ON-COL (NG)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.753	(1.000)	4732	0.10000	(aM)
* 45 Naphthalene-d8	136	4.871	4.871	(1.000)	17762	0.10000	
$ 33 Nitrobenzene-d5	82	4.215	4.215	(0.865)	10149	0.15000	0.1561(AM)
* 86 Acenaphthene-d10	164	6.551	6.551	(1.000)	9046	0.10000	
$ 69 2-Fluorobiphenyl	172	5.895	5.895	(0.900)	20443	0.15000	0.1750(A)
* 126 Phenanthrene-d10	188	8.007	8.007	(1.000)	22352	0.10000	
* 182 Chrysene-d12	240	10.895	10.895	(1.000)	3933	0.10000	
$ 158 4-Terphenyl-d14	244	9.599	9.599	(0.881)	8059	0.15000	0.1136(M)
* 198 Perylene-d12	264	13.011	13.011	(1.000)	2328	0.10000	
1 1,4-Dioxane	58	2.005	2.005	(0.534)	2470	0.15000	0.1582(QM)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
Q - Qualifier signal failed the ratio test.

M - Compound response manually integrated.


Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\13.D
Date : 11-JAN-2023 13:51
Client ID: 14DX-0.15
Sample Info: 14DX-0.15
Purge Volume: 1000.0
Column phase: RTX-5SIL MS
Instrument: SV6.i
Operator: LG
Column diameter: 0.28
Page 1
Y (x10^5)
-1,4-Dichlorobenzene-d4
-Nitrobenzene-d5
-Naphthalene-d8
-2-Fluorobiphenyl
-Acenaphthene-d10
-Phenanthrene-d10
-4-Terphenyl-d14
-Chrysene-d12
-Perylene-d12
Min
\\NAHSTWS005\Target\chem\SV6.i\230111.b\13.D

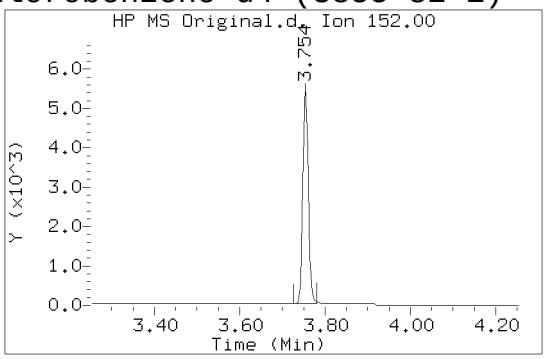
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\13.D
Inj Date : 11-JAN-2023 13:51
InstruID : SV6.i
LabSampID : 14DX-0.15

1,4-Dichlorobenzene-d4 (3855-82-1)

Reason Code:

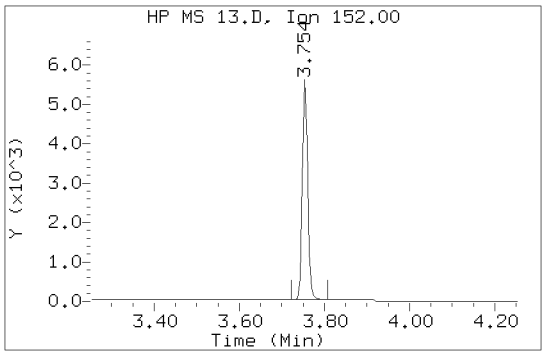
BEFORE

MASS
152
AREA
4724
HEIGHT
5577
11-Jan-2023
14:07
ALSHS
Server



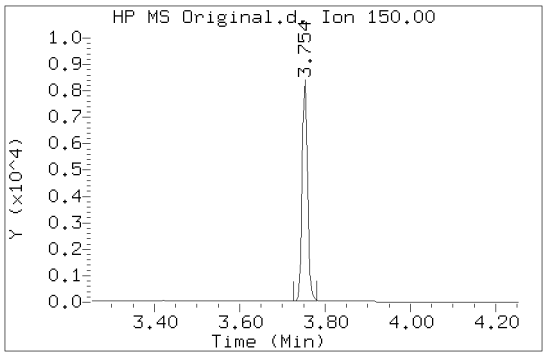
AFTER

MASS
152
AREA
4732
HEIGHT
5578
11-Jan-2023
14:22



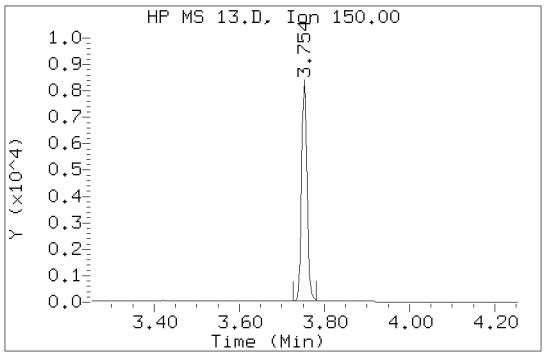
BEFORE

MASS
150
AREA
7233
HEIGHT
8364
11-Jan-2023
14:07
ALSHS
Server



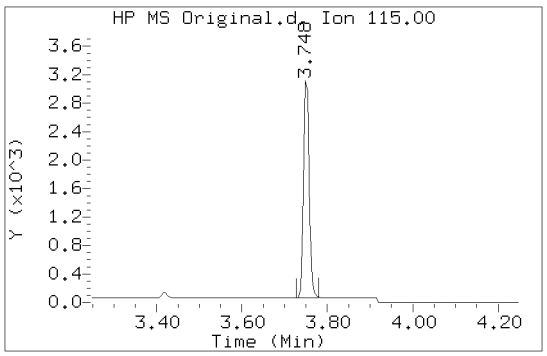
AFTER

MASS
150
AREA
7233
HEIGHT
8364
11-Jan-2023
14:22



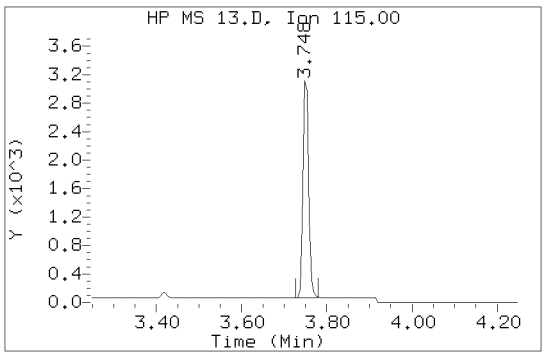
BEFORE

MASS
115
AREA
2775
HEIGHT
3054
11-Jan-2023
14:07
ALSHS
Server



AFTER

MASS
115
AREA
2775
HEIGHT
3054
11-Jan-2023
14:22

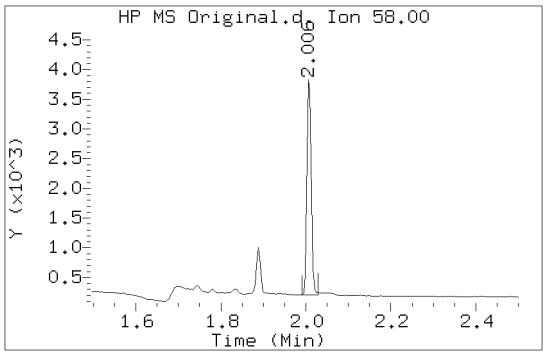


1,4-Dioxane ()

Reason Code:

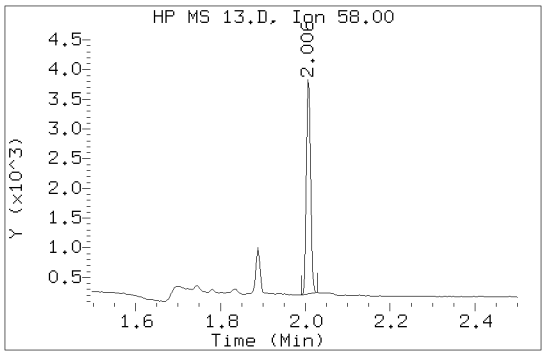
BEFORE

MASS
58
AREA
2522
HEIGHT
3621
11-Jan-2023
14:07
ALSHS
Server



AFTER

MASS
58
AREA
2470
HEIGHT
3603
11-Jan-2023
14:22



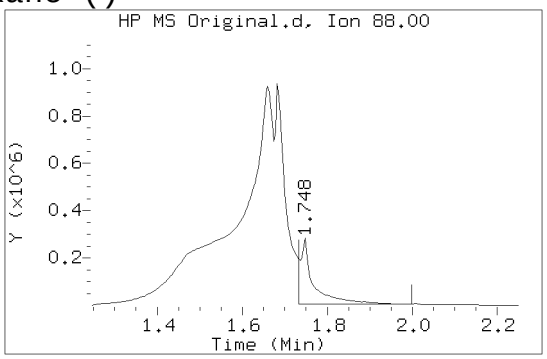
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\13.D
Inj Date : 11-JAN-2023 13:51
InstruID : SV6.i
LabSampID : 14DX-0.15

1,4-Dioxane ()

Reason Code:

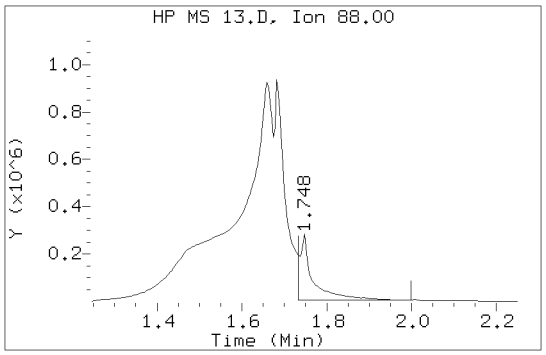
BEFORE

MASS
88
AREA
621156
HEIGHT
279727
11-Jan-2023
14:07
ALSHS
Server



AFTER

MASS
88
AREA
621156
HEIGHT
279727
11-Jan-2023
14:22

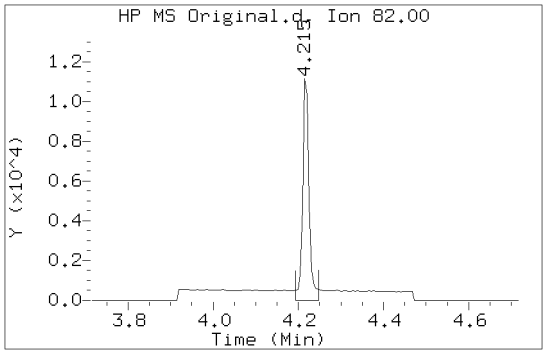


Nitrobenzene-d5 (4165-60-0)

Reason Code:

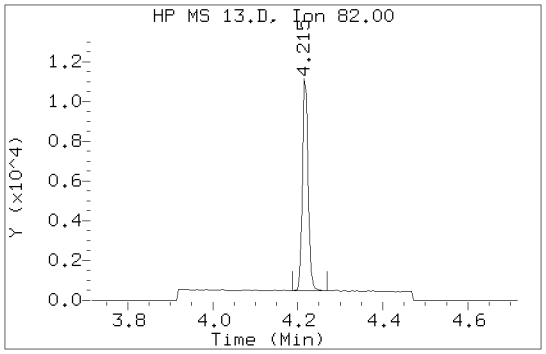
BEFORE

MASS
82
AREA
11827
HEIGHT
11151
11-Jan-2023
14:07
ALSHS
Server



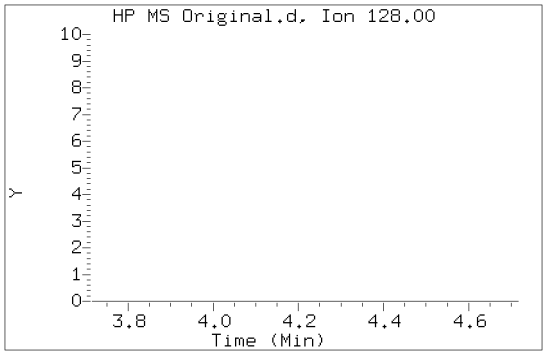
AFTER

MASS
82
AREA
10149
HEIGHT
10672
11-Jan-2023
14:22



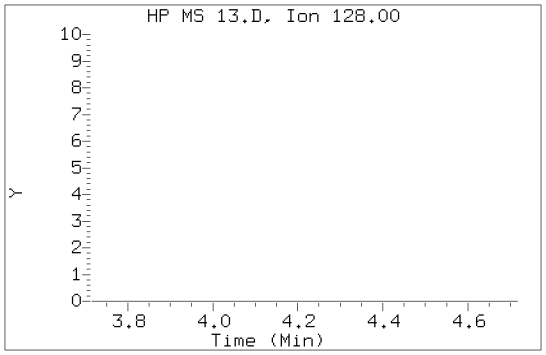
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
14:07
ALSHS
Server



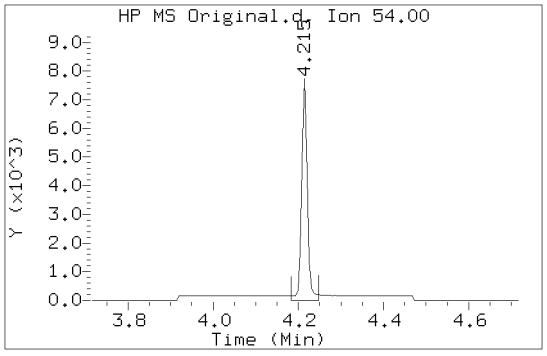
AFTER

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
14:22



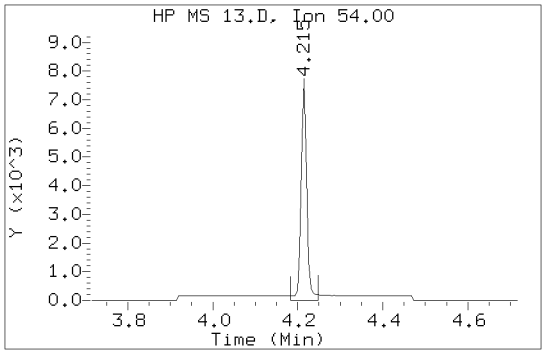
BEFORE

MASS
54
AREA
7335
HEIGHT
7735
11-Jan-2023
14:07
ALSHS
Server



AFTER

MASS
54
AREA
7335
HEIGHT
7735
11-Jan-2023
14:22

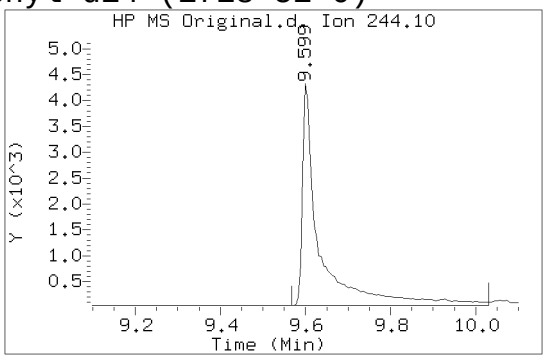


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\13.D
Inj Date : 11-JAN-2023 13:51
InstruID : SV6.i
LabSampID : 14DX-0.15

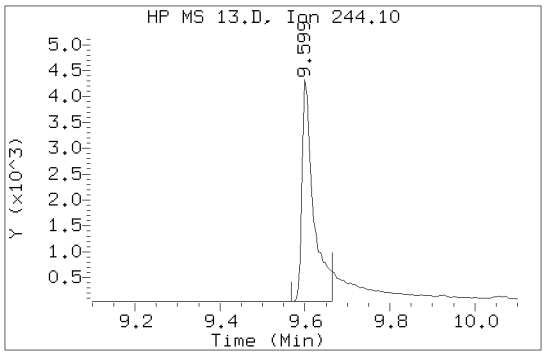
4-Terphenyl-d14 (1718-51-0)

Reason Code:

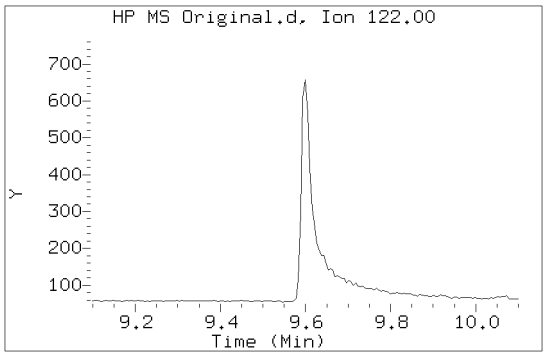
BEFORE
MASS
244.1
AREA
11806
HEIGHT
4279
11-Jan-2023
14:07
ALSHS
Server



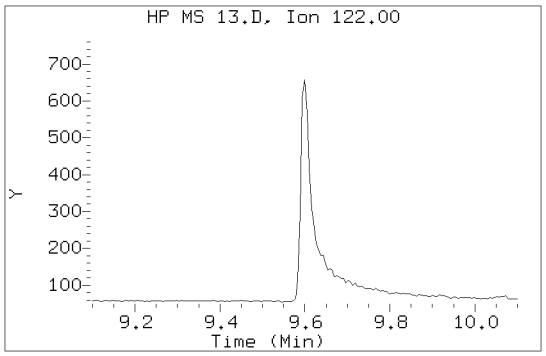
AFTER
MASS
244.1
AREA
8059
HEIGHT
4279
11-Jan-2023
14:22



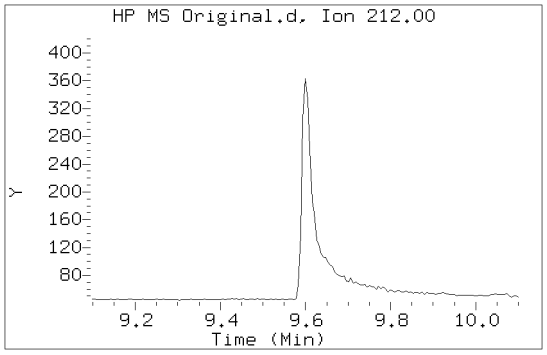
BEFORE
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
14:07
ALSHS
Server



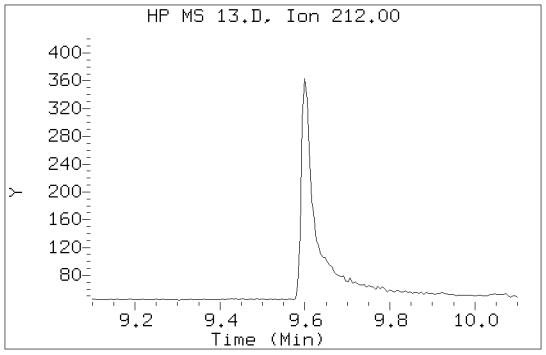
AFTER
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
14:22



BEFORE
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
14:07
ALSHS
Server



AFTER
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
14:22



Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\14.D Page 1
Report Date: 11-Jan-2023 14:49

ALS Laboratory Group

GC/MS Semivolatiles EPA method 8270D

Data file : \\NAHSTWS005\Target\chem\SV6.i\230111.b\14.D
Lab Smp Id: 14DX ICV-0.08
Inj Date : 11-JAN-2023 14:32
Operator : LG Inst ID: SV6.i
Smp Info : 14DX ICV-0.08
Misc Info : ;;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\SV6.i\230111.b\DXSIM.m
Meth Date : 11-Jan-2023 14:23 Marco.Guti Quant Type: ISTD
Cal Date : 11-JAN-2023 13:51 Cal File: 13.D
Als bottle: 14 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 14dx.sub
Target Version: 4.14
Processing Host: NAHSTW7095

Concentration Formula: Amt * DF * Uf * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (mL)
Cpnd Variable		Local Compound Variable

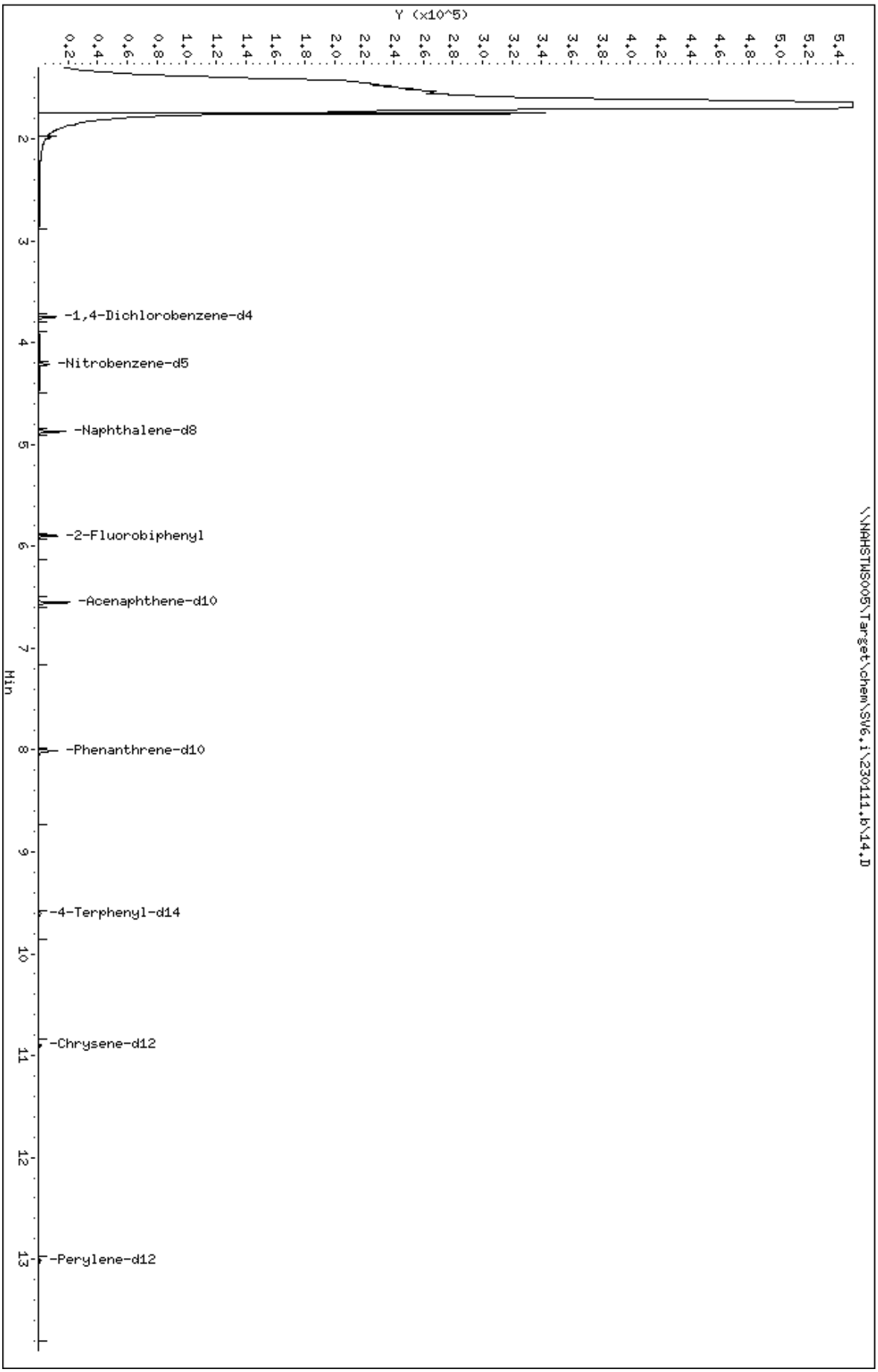
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (NG)	FINAL (ug/L)
* 20 1,4-Dichlorobenzene-d4	152	3.753	3.754	(1.000)	3538	0.10000	(aM)
* 45 Naphthalene-d8	136	4.871	4.871	(1.000)	15033	0.10000	
$ 33 Nitrobenzene-d5	82	4.215	4.215	(0.865)	3906	0.07097	0.07097(M)
* 86 Acenaphthene-d10	164	6.557	6.552	(1.000)	8001	0.10000	
$ 69 2-Fluorobiphenyl	172	5.895	5.896	(0.899)	8137	0.07875	0.07875
* 126 Phenanthrene-d10	188	8.007	8.007	(1.000)	12506	0.10000	
* 182 Chrysene-d12	240	10.895	10.895	(1.000)	2684	0.10000	(M)
$ 158 4-Terphenyl-d14	244	9.604	9.599	(0.881)	3319	0.08218	0.08218(M)
* 198 Perylene-d12	264	13.017	13.011	(1.000)	2059	0.10000	
1 1,4-Dioxane	58	1.987	2.005	(0.529)	945	0.08095	0.08095(M)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\SV6.i\230111.b\14.D
Date : 11-JAN-2023 14:32
Client ID:
Sample Info: 14DX ICV-0.08
Purge Volume: 1000.0
Column phase: RTX-5SIL MS

Instrument: SV6.i
Operator: LG
Column diameter: 0.28

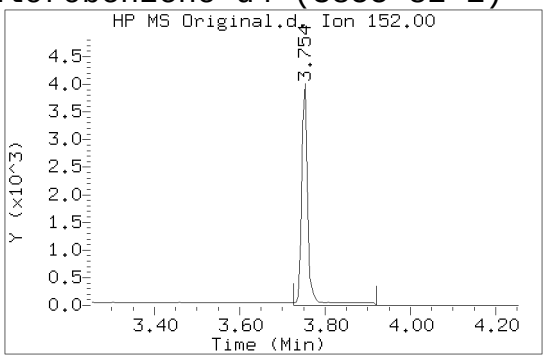


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\14.D
Inj Date : 11-JAN-2023 14:32
InstruID : SV6.i
LabSampID : 14DX ICV-0.08

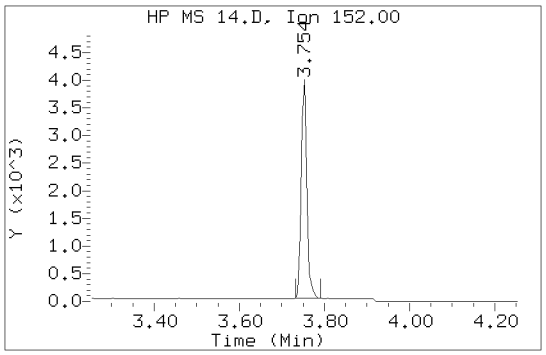
1,4-Dichlorobenzene-d4 (3855-82-1)

Reason Code:

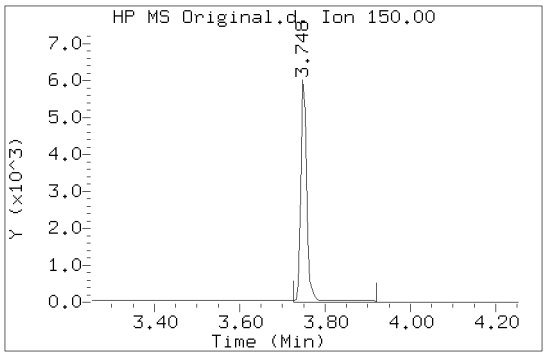
BEFORE
MASS
152
AREA
4146
HEIGHT
4011
11-Jan-2023
14:46
ALSHS
Server



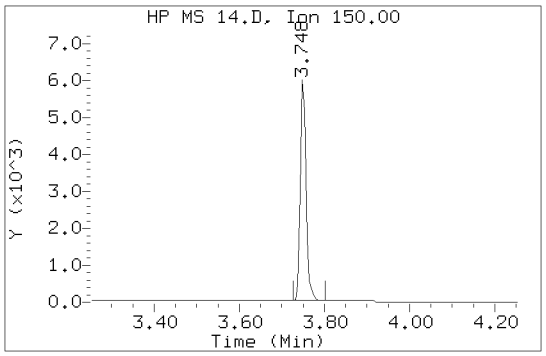
AFTER
MASS
152
AREA
3538
HEIGHT
3956
11-Jan-2023
14:49



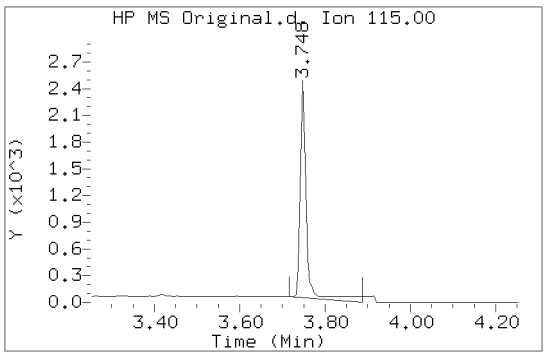
BEFORE
MASS
150
AREA
6107
HEIGHT
6019
11-Jan-2023
14:46
ALSHS
Server



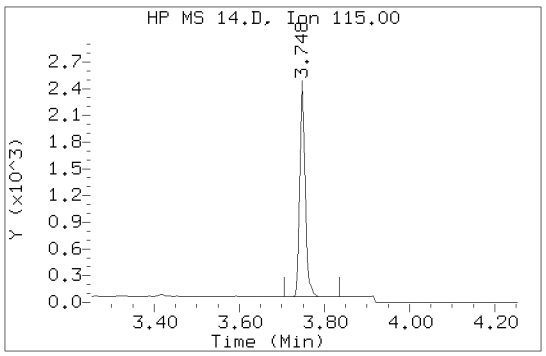
AFTER
MASS
150
AREA
5512
HEIGHT
5968
11-Jan-2023
14:49



BEFORE
MASS
115
AREA
2455
HEIGHT
2437
11-Jan-2023
14:46
ALSHS
Server



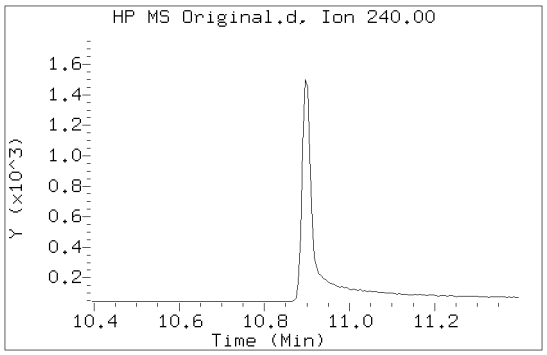
AFTER
MASS
115
AREA
2101
HEIGHT
2424
11-Jan-2023
14:49



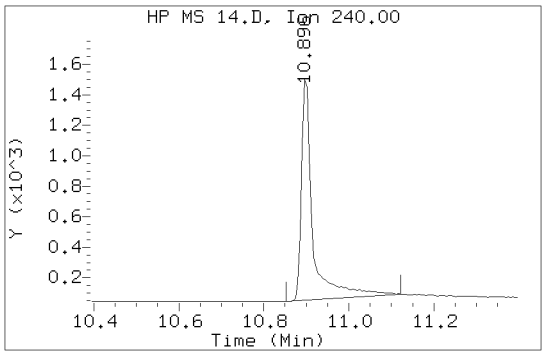
Chrysene-d12 (1719-03-5)

Reason Code:

BEFORE
MASS
240
AREA
0
HEIGHT
0
11-Jan-2023
14:46
ALSHS
Server



AFTER
MASS
240
AREA
2684
HEIGHT
1444
11-Jan-2023
14:49

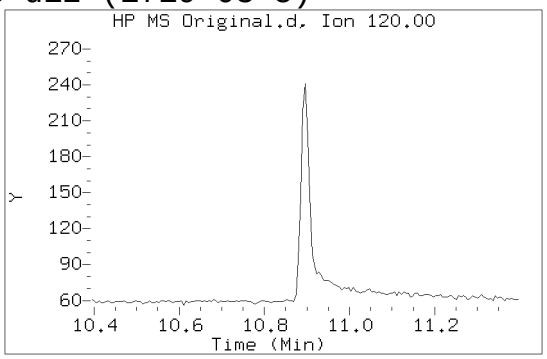


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\14.D
Inj Date : 11-JAN-2023 14:32
InstruID : SV6.i
LabSampID : 14DX ICV-0.08

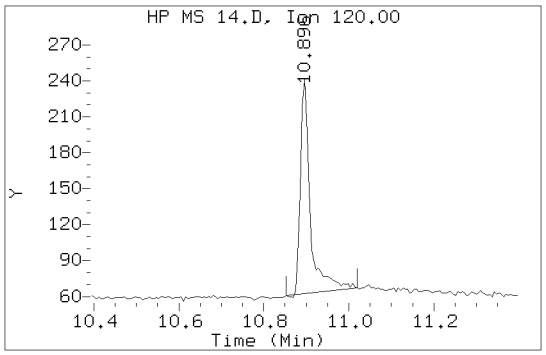
Chrysene-d12 (1719-03-5)

Reason Code:

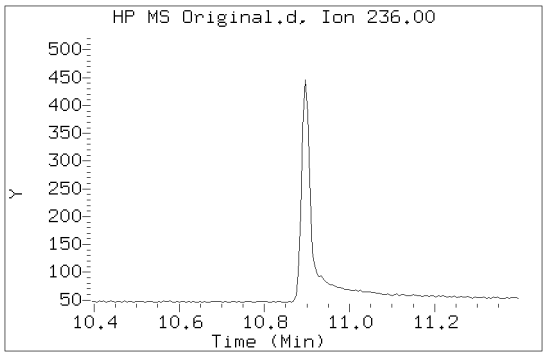
BEFORE
MASS
120
AREA
0
HEIGHT
0
11-Jan-2023
14:46
ALSHS
Server



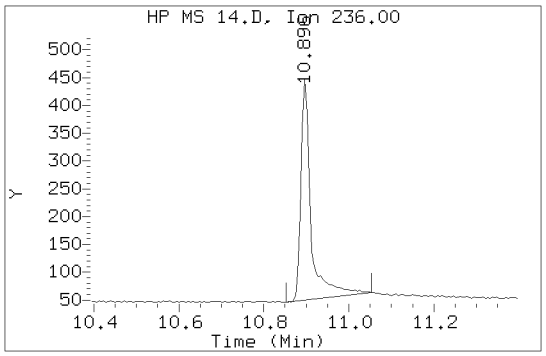
AFTER
MASS
120
AREA
287
HEIGHT
178
11-Jan-2023
14:49



BEFORE
MASS
236
AREA
0
HEIGHT
0
11-Jan-2023
14:46
ALSHS
Server



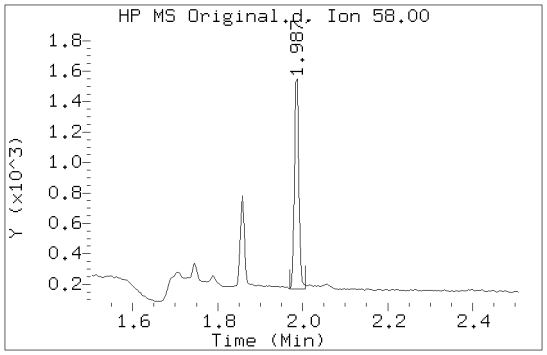
AFTER
MASS
236
AREA
655
HEIGHT
396
11-Jan-2023
14:49



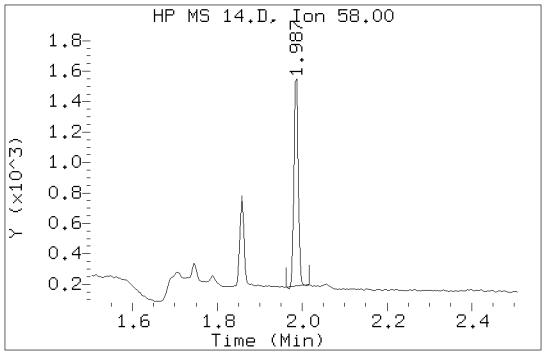
1,4-Dioxane ()

Reason Code:

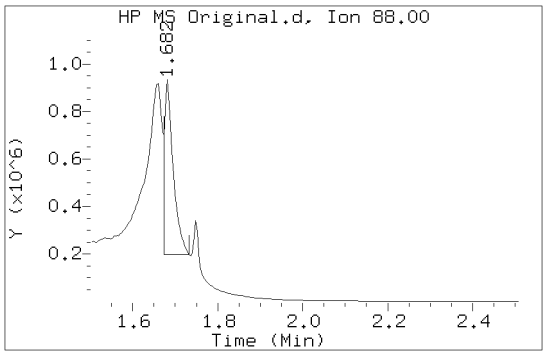
BEFORE
MASS
58
AREA
990
HEIGHT
1378
11-Jan-2023
14:46
ALSHS
Server



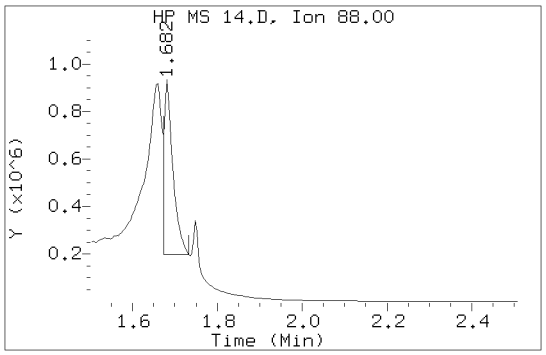
AFTER
MASS
58
AREA
945
HEIGHT
1360
11-Jan-2023
14:49



BEFORE
MASS
88
AREA
1046582
HEIGHT
735360
11-Jan-2023
14:46
ALSHS
Server



AFTER
MASS
88
AREA
1046582
HEIGHT
735360
11-Jan-2023
14:49



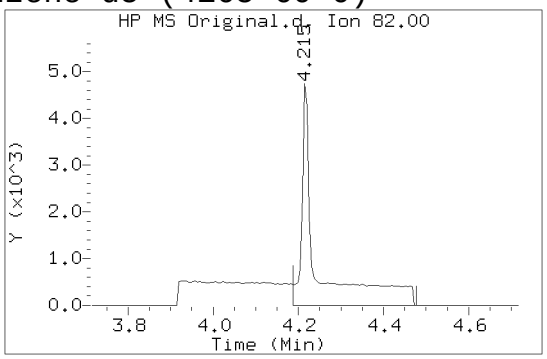
Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\14.D
Inj Date : 11-JAN-2023 14:32
InstruID : SV6.i
LabSampID : 14DX ICV-0.08

Nitrobenzene-d5 (4165-60-0)

Reason Code:

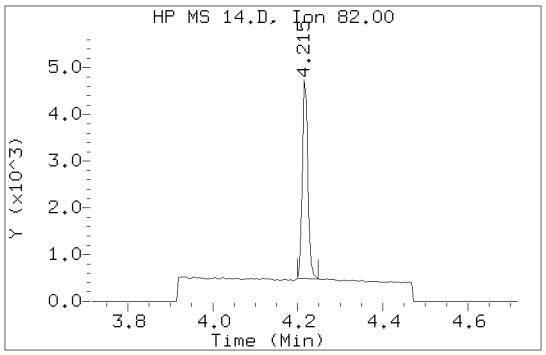
BEFORE

MASS
82
AREA
11413
HEIGHT
4743
11-Jan-2023
14:46
ALSHS
Server



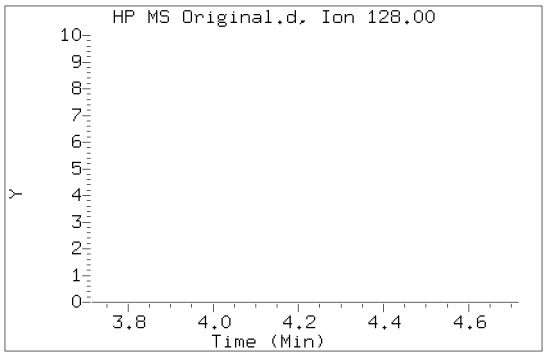
AFTER

MASS
82
AREA
3906
HEIGHT
4255
11-Jan-2023
14:49



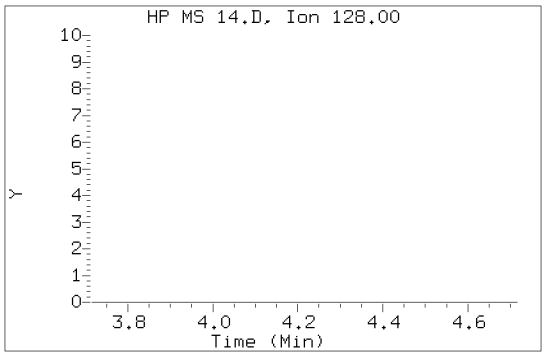
BEFORE

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
14:46
ALSHS
Server



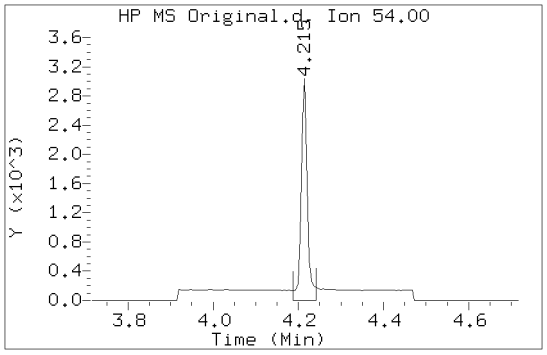
AFTER

MASS
128
AREA
0
HEIGHT
0
11-Jan-2023
14:49



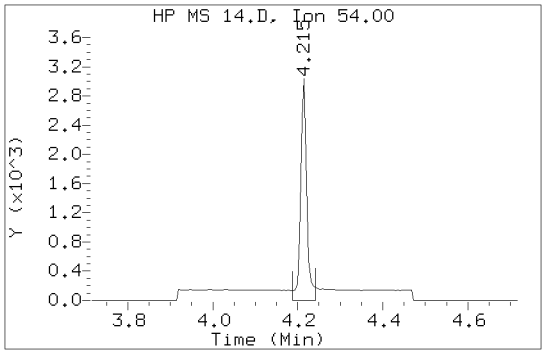
BEFORE

MASS
54
AREA
3120
HEIGHT
3037
11-Jan-2023
14:46
ALSHS
Server



AFTER

MASS
54
AREA
3120
HEIGHT
3037
11-Jan-2023
14:49

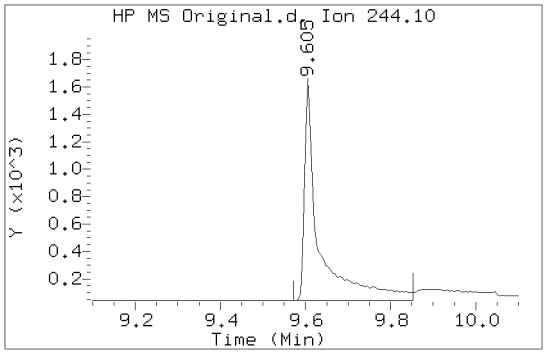


4-Terphenyl-d14 (1718-51-0)

Reason Code:

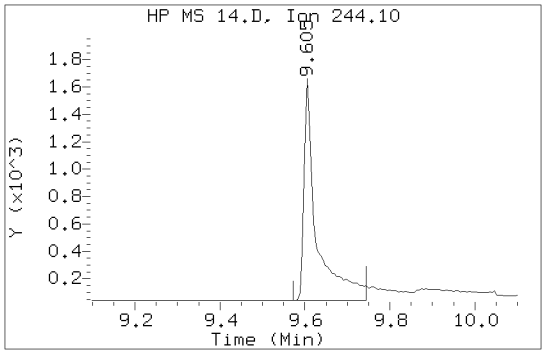
BEFORE

MASS
244.1
AREA
3779
HEIGHT
1616
11-Jan-2023
14:46
ALSHS
Server



AFTER

MASS
244.1
AREA
3319
HEIGHT
1617
11-Jan-2023
14:49

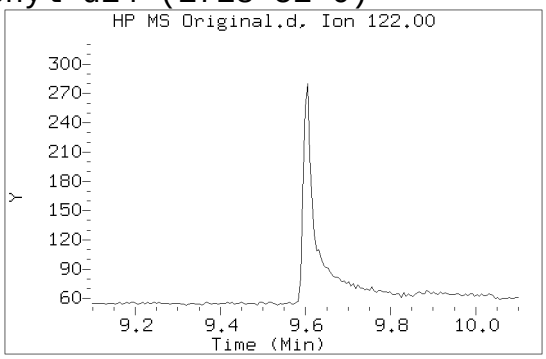


Data File : \\NAHSTWS005\Target\chem\SV6.i\230111.b\14.D
Inj Date : 11-JAN-2023 14:32
InstruID : SV6.i
LabSampID : 14DX ICV-0.08

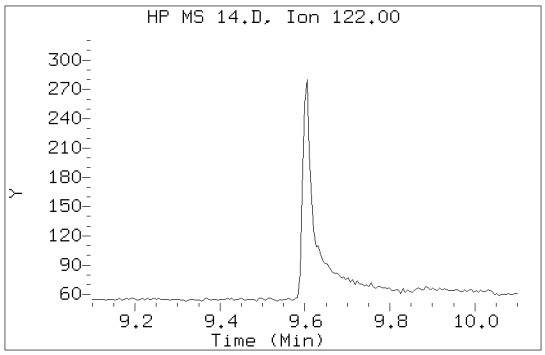
4-Terphenyl-d14 (1718-51-0)

Reason Code:

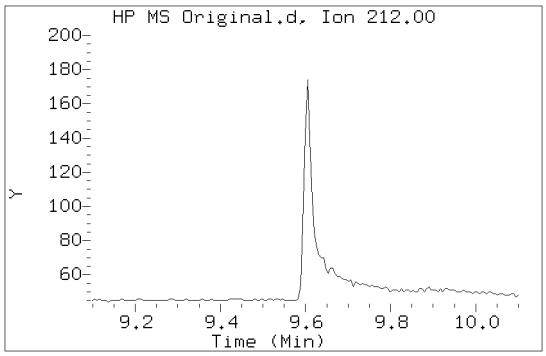
BEFORE
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
14:46
ALSHS
Server



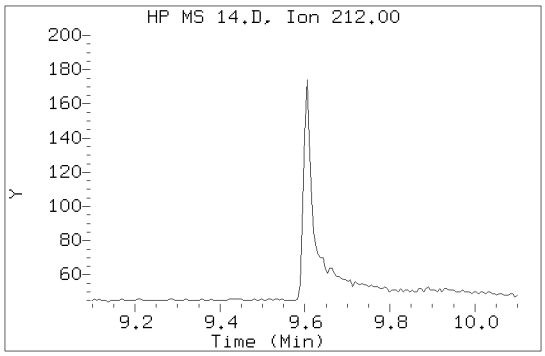
AFTER
MASS
122
AREA
0
HEIGHT
0
11-Jan-2023
14:49



BEFORE
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
14:46
ALSHS
Server



AFTER
MASS
212
AREA
0
HEIGHT
0
11-Jan-2023
14:49



HS22121096 - ME - HG_W_DODICP_W_DOD

ALS WO# HS22121096

ALS Houston, US

Date: 09-Jan-23

FORM 13 - ANALYSIS RUN LOG

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096
Start Date: 03-Jan-2023 End Date: 03-Jan-2023

Run ID:HG04_425209
Instrument:HG04
Method:SW7470A

Sample No.	D/F	Time	FileID	Analytes
ICCV 1	1	03-Jan-2023 14:13	HG04_425209 Raw Data_7059885	HG
ICV	1	03-Jan-2023 14:14	_7059886	HG
ICB	1	03-Jan-2023 14:16	_7059887	HG
CRA	1	03-Jan-2023 14:18	_7059888	HG
CCV 2	1	03-Jan-2023 14:20	_7059889	HG
CCB 1	1	03-Jan-2023 14:22	_7059890	HG
MBLK-188025	1	03-Jan-2023 14:26	_7059891	HG
LCS-188025	1	03-Jan-2023 14:27	_7059892	HG
ZZZZZZMS	1	03-Jan-2023 14:33	_7059895	HG
ZZZZZZMSD	1	03-Jan-2023 14:34	_7059896	HG
CCV 3	1	03-Jan-2023 14:43	_7059901	HG
CCB 2	1	03-Jan-2023 14:45	_7059902	HG
18CPTMW04SW_121622	1	03-Jan-2023 14:52	_7059904	HG
MW2_121522	1	03-Jan-2023 14:54	_7059905	HG
CCV 4	1	03-Jan-2023 15:16	_7059906	HG
CCB 3	1	03-Jan-2023 15:18	_7059907	HG
CCV 5	1	03-Jan-2023 15:43	_7060108	HG
CCB 4	1	03-Jan-2023 15:47	_7060109	HG
CCV 6	1	03-Jan-2023 16:11	_7060116	HG
CCB 5	1	03-Jan-2023 16:12	_7060117	HG
CCV 7	1	03-Jan-2023 16:28	_7060895	HG
CCB 6	1	03-Jan-2023 16:30	_7060896	HG

ALS Houston, US

Date: 09-Jan-23

FORM 13 - ANALYSIS RUN LOG

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096
Start Date: 03-Jan-2023 End Date: 03-Jan-2023

Run ID:ICPMS07_425185
Instrument:ICPMS07
Method:

Sample No.	D/F	Time	FileID	Analytes
ICPMS07_425185_Tune	1	03-Jan-2023 00:00	ICPMS07_425185_Tune_1	
CAL BLK	1	03-Jan-2023 10:30	011CALB.d_7059431	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
2/10/200	1	03-Jan-2023 10:32	012CALS.d_7059432	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
5/25/500	1	03-Jan-2023 10:34	013CALS.d_7059433	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
10/50/100	1	03-Jan-2023 10:36	014CALS.d_7059434	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
100/500/10K	1	03-Jan-2023 10:37	015CALS.d_7059435	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
200/1000/20K	1	03-Jan-2023 10:39	016CALS.d_7059436	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
LLICV2	1	03-Jan-2023 10:45	019LCV2.d_7059439	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
LLICV5	1	03-Jan-2023 10:47	020LCV5.d_7059440	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
ICB	1	03-Jan-2023 10:49	021_ICB.d_7059441	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
ICV	1	03-Jan-2023 10:51	022_ICV.d_7059442	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
ICSA	1	03-Jan-2023 10:53	023ICSA.d_7059443	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
ICSAB	1	03-Jan-2023 10:55	024ICSB.d_7059444	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCV 1	1	03-Jan-2023 14:54	093_CCV.d_7059869	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCB 1	1	03-Jan-2023 14:56	094_CCB.d_7059870	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCB 2	1	03-Jan-2023 15:03	096_CCB.d_7059872	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
MBLK-188020	1	03-Jan-2023 15:05	097SMPL.d_7059873	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
LCS-188020	1	03-Jan-2023 15:07	098SMPL.d_7059874	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
ZZZZZZSD	5	03-Jan-2023 15:13	101SMPL.d_7059877	AG AL AS BA BE CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
ZZZZZZMS	1	03-Jan-2023 15:15	102SMPL.d_7059878	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
ZZZZZZMSD	1	03-Jan-2023 15:17	103SMPL.d_7059879	AG AL AS BA BE CA CD CO CR CU FE MG MN NA NI PB SB SE TL V ZN
ZZZZZZPDS	1	03-Jan-2023 15:19	104SMPL.d_7059880	AG AL AS BA BE CD CO CR CU FE K MN NA NI PB SB SE V ZN
CCV 2	1	03-Jan-2023 15:27	107_CCV.d_7059883	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCB 3	1	03-Jan-2023 15:29	108_CCB.d_7059884	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
ZZZZZZMSD	1	03-Jan-2023 15:49	109SMPL.d_7059971	K
ZZZZZZPDS	1	03-Jan-2023 15:51	110SMPL.d_7059972	MG
CCV 3	1	03-Jan-2023 16:11	119_CCV.d_7059973	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCV 4	1	03-Jan-2023 16:11	119_CCV.d_7060160	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCB 4	1	03-Jan-2023 16:13	120_CCB.d_7059974	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCB 5	1	03-Jan-2023 16:13	120_CCB.d_7060161	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCV 5	1	03-Jan-2023 16:35	131_CCV.d_7060169	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCB 6	1	03-Jan-2023 16:37	132_CCB.d_7060170	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
ZZZZZZSD	50	03-Jan-2023 16:44	134SMPL.d_7060149	CA

ALS Houston, US Date: 09-Jan-23

FORM 13 - ANALYSIS RUN LOG

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096
Start Date: 03-Jan-2023 End Date: 03-Jan-2023

Run ID:ICPMS07_425185
Instrument:ICPMS07
Method:

Sample No.	D/F	Time	FileID	Analytes
ZZZZZZPDS	10	03-Jan-2023 16:46	135SMPL.d_7060150	CA
18CPTMW04SW_121622	1	03-Jan-2023 16:48	136SMPL.d_7060151	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
MW2_121522	1	03-Jan-2023 16:50	137SMPL.d_7060152	AG AL AS BE CA CD CO CR CU FE K MG NI PB SB SE TL V ZN
CCV 6	1	03-Jan-2023 17:02	143_CCV.d_7060158	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCB 7	1	03-Jan-2023 17:04	144_CCB.d_7060159	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCV 7	1	03-Jan-2023 17:30	155_CCV.d_7061192	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
CCB 8	1	03-Jan-2023 17:32	156_CCB.d_7061193	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN

ALS Houston, US Date: 09-Jan-23

FORM 13 - ANALYSIS RUN LOG

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096
Start Date: 04-Jan-2023 End Date: 04-Jan-2023

Run ID:ICPMS07_425281
Instrument:ICPMS07
Method:

Sample No.	D/F	Time	FileID	Analytes
ICPMS07_425281_Tune	1	04-Jan-2023 00:00	ICPMS07_425281_Tune_1	
CAL BLK	1	04-Jan-2023 10:45	009CALB.d_7061719	BA MN NA
2/10/200	1	04-Jan-2023 10:47	010CALS.d_7061720	BA MN NA
5/25/500	1	04-Jan-2023 10:49	011CALS.d_7061721	BA MN NA
10/50/100	1	04-Jan-2023 10:51	012CALS.d_7061722	BA MN NA
100/500/10K	1	04-Jan-2023 10:53	013CALS.d_7061723	BA MN NA
200/1000/20K	1	04-Jan-2023 10:55	014CALS.d_7061724	BA MN NA
LLICV2	1	04-Jan-2023 11:04	017LCV2.d_7061727	BA MN NA
LLICV5	1	04-Jan-2023 11:06	018LCV5.d_7061728	BA MN NA
ICB	1	04-Jan-2023 11:08	019_ICB.d_7061729	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
ICV	1	04-Jan-2023 11:17	021_ICV.d_7061731	AG AL AS BA BE CA CD CO CR CU FE K MG MN NA NI PB SB SE TL V ZN
ICSA	1	04-Jan-2023 11:19	022ICSA.d_7061732	BA MN NA
ICSAB	1	04-Jan-2023 11:21	023ICSB.d_7061733	BA MN NA
CCV 1	1	04-Jan-2023 11:31	025_CCV.d_7061750	BA MN NA
CCB 1	1	04-Jan-2023 11:33	026_CCB.d_7061751	BA MN NA
MW2_121522	100	04-Jan-2023 11:40	027SMPL.d_7061752	BA MN NA
CCV 2	1	04-Jan-2023 11:59	037_CCV.d_7061754	BA MN NA
CCB 2	1	04-Jan-2023 12:01	038_CCB.d_7061755	BA MN NA

ALS Houston, US Date: 09-Jan-23

Form 2 - Initial and Continuing Calibration Verification

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: HG04_425209
Instrument: HG04
Method: SW7470A

ICCV1	Date: 03-Jan-2023 14:13		Seq: 7059885	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Mercury	5	4.95	99	90-110	

ICV	Date: 03-Jan-2023 14:14		Seq: 7059886	ICV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Mercury	5	4.87	97	90-110	

CCV2	Date: 03-Jan-2023 14:20		Seq: 7059889	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Mercury	5	4.93	99	90-110	

CCV3	Date: 03-Jan-2023 14:43		Seq: 7059901	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Mercury	5	4.58	92	90-110	

CCV4	Date: 03-Jan-2023 15:16		Seq: 7059906	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Mercury	5	4.76	95	90-110	

CCV5	Date: 03-Jan-2023 15:43		Seq: 7060108	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Mercury	5	4.83	97	90-110	

CCV6	Date: 03-Jan-2023 16:11		Seq: 7060116	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Mercury	5	4.79	96	90-110	

CCV7	Date: 03-Jan-2023 16:28		Seq: 7060895	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Mercury	5	4.74	95	90-110	

Form 2 - Initial and Continuing Calibration Verification

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425185
Instrument: ICPMS07
Method: SW6020A

ICV Date: 03-Jan-2023 10:51 Seq: 7059442 ICV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Aluminum	100	105.813	106	90-110	
Antimony	100	99.393	99	90-110	
Arsenic	100	100.237	100	90-110	
Barium	100	102.946	103	90-110	
Beryllium	100	99.722	100	90-110	
Cadmium	100	102.438	102	90-110	
Calcium	10000	10026.671	100	90-110	
Chromium	100	100.783	101	90-110	
Cobalt	100	100.694	101	90-110	
Copper	100	100.735	101	90-110	
Iron	10000	10053.055	101	90-110	
Lead	100	94.522	95	90-110	
Magnesium	10000	10064.83	101	90-110	
Manganese	100	99.957	100	90-110	
Nickel	100	100.564	101	90-110	
Potassium	10000	10133.576	101	90-110	
Selenium	100	101.343	101	90-110	
Silver	100	101.026	101	90-110	
Sodium	10000	9854.942	99	90-110	
Thallium	100	93.265	93	90-110	
Vanadium	100	99.76	100	90-110	
Zinc	100	100.691	101	90-110	

CCV1 Date: 03-Jan-2023 14:54 Seq: 7059869 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Aluminum	100	104.529	105	90-110	
Antimony	100	98.206	98	90-110	
Arsenic	100	101.091	101	90-110	
Barium	100	102.447	102	90-110	
Beryllium	100	94.778	95	90-110	
Cadmium	100	99.02	99	90-110	
Calcium	10000	10049.958	100	90-110	
Chromium	100	97.987	98	90-110	
Cobalt	100	99.871	100	90-110	
Copper	100	98.679	99	90-110	
Iron	10000	9799.78	98	90-110	
Lead	100	93.145	93	90-110	
Magnesium	10000	10169.657	102	90-110	
Manganese	100	98.611	99	90-110	
Nickel	100	98.745	99	90-110	
Potassium	10000	10169.057	102	90-110	
Selenium	100	99.556	100	90-110	
Silver	100	99.02	99	90-110	
Sodium	10000	10311.167	103	90-110	
Thallium	100	101.383	101	90-110	
Vanadium	100	98.363	98	90-110	
Zinc	100	97.683	98	90-110	

CCV2 Date: 03-Jan-2023 15:27 Seq: 7059883 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Aluminum	100	98.123	98	90-110	
Antimony	100	99.721	100	90-110	
Arsenic	100	98.253	98	90-110	
Barium	100	104.258	104	90-110	
Beryllium	100	94.026	94	90-110	

ALS Houston, US Date: 09-Jan-23

Form 2 - Initial and Continuing Calibration Verification

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425185
Instrument: ICPMS07
Method: SW6020A

CCV2 Date: 03-Jan-2023 15:27 Seq: 7059883 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Cadmium	100	99.383	99	90-110	
Calcium	10000	9746.545	98	90-110	
Chromium	100	96.533	97	90-110	
Cobalt	100	98.935	99	90-110	
Copper	100	97.884	98	90-110	
Iron	10000	9642.516	96	90-110	
Lead	100	94.448	94	90-110	
Magnesium	10000	9679.43	97	90-110	
Manganese	100	96.92	97	90-110	
Nickel	100	98.37	98	90-110	
Potassium	10000	9696.16	97	90-110	
Selenium	100	97.618	98	90-110	
Silver	100	98.311	98	90-110	
Sodium	10000	9744.572	97	90-110	
Thallium	100	103.083	103	90-110	
Vanadium	100	96.482	97	90-110	
Zinc	100	97.073	97	90-110	

CCV4 Date: 03-Jan-2023 16:11 Seq: 7060160 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Aluminum	100	101.992	102	90-110	
Antimony	100	99.005	99	90-110	
Arsenic	100	100.458	100	90-110	
Barium	100	102.962	103	90-110	
Beryllium	100	95.791	96	90-110	
Cadmium	100	100.81	101	90-110	
Calcium	10000	9944.128	99	90-110	
Chromium	100	97.563	98	90-110	
Cobalt	100	100.37	100	90-110	
Copper	100	99.275	99	90-110	
Iron	10000	9788.932	98	90-110	
Lead	100	93.7	94	90-110	
Magnesium	10000	9922.842	99	90-110	
Manganese	100	99.147	99	90-110	
Nickel	100	99.075	99	90-110	
Potassium	10000	9872.244	99	90-110	
Selenium	100	99.247	99	90-110	
Silver	100	99.514	100	90-110	
Sodium	10000	9945.469	100	90-110	
Thallium	100	101.928	102	90-110	
Vanadium	100	97.608	98	90-110	
Zinc	100	99.209	99	90-110	

CCV3 Date: 03-Jan-2023 16:11 Seq: 7059973 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Aluminum	100	101.992	102	90-110	
Antimony	100	99.005	99	90-110	
Arsenic	100	100.458	100	90-110	
Barium	100	102.962	103	90-110	
Beryllium	100	95.791	96	90-110	
Cadmium	100	100.81	101	90-110	
Calcium	10000	9944.128	99	90-110	
Chromium	100	97.563	98	90-110	
Cobalt	100	100.37	100	90-110	
Copper	100	99.275	99	90-110	

Form 2 - Initial and Continuing Calibration Verification

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425185
Instrument: ICPMS07
Method: SW6020A

CCV3	Date: 03-Jan-2023 16:11		Seq: 7059973	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9788.932	98	90-110	
Lead	100	93.7	94	90-110	
Magnesium	10000	9922.842	99	90-110	
Manganese	100	99.147	99	90-110	
Nickel	100	99.075	99	90-110	
Potassium	10000	9872.244	99	90-110	
Selenium	100	99.247	99	90-110	
Silver	100	99.514	100	90-110	
Sodium	10000	9945.469	100	90-110	
Thallium	100	101.928	102	90-110	
Vanadium	100	97.608	98	90-110	
Zinc	100	99.209	99	90-110	

CCV5	Date: 03-Jan-2023 16:35		Seq: 7060169	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Aluminum	100	100.099	100	90-110	
Antimony	100	98.263	98	90-110	
Arsenic	100	100.972	101	90-110	
Barium	100	102.832	103	90-110	
Beryllium	100	95.469	96	90-110	
Cadmium	100	99.496	100	90-110	
Calcium	10000	9905.353	99	90-110	
Chromium	100	97.324	97	90-110	
Cobalt	100	100.316	100	90-110	
Copper	100	98.856	99	90-110	
Iron	10000	9813.525	98	90-110	
Lead	100	94.668	95	90-110	
Magnesium	10000	9951.251	100	90-110	
Manganese	100	98.356	98	90-110	
Nickel	100	98.173	98	90-110	
Potassium	10000	9864.078	99	90-110	
Selenium	100	98.526	99	90-110	
Silver	100	99.162	99	90-110	
Sodium	10000	9799.578	98	90-110	
Thallium	100	102.14	102	90-110	
Vanadium	100	97.911	98	90-110	
Zinc	100	97.721	98	90-110	

CCV6	Date: 03-Jan-2023 17:02		Seq: 7060158	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Aluminum	100	99.422	99	90-110	
Antimony	100	98.392	98	90-110	
Arsenic	100	98.634	99	90-110	
Barium	100	102.324	102	90-110	
Beryllium	100	94.817	95	90-110	
Cadmium	100	98.883	99	90-110	
Calcium	10000	9833.183	98	90-110	
Chromium	100	96.729	97	90-110	
Cobalt	100	98.03	98	90-110	
Copper	100	96.87	97	90-110	
Iron	10000	9594.167	96	90-110	
Lead	100	94.09	94	90-110	
Magnesium	10000	9816.136	98	90-110	
Manganese	100	96.81	97	90-110	
Nickel	100	96.508	97	90-110	

ALS Houston, US Date: 09-Jan-23

Form 2 - Initial and Continuing Calibration Verification

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425185
Instrument: ICPMS07
Method: SW6020A

CCV6 Date: 03-Jan-2023 17:02 Seq: 7060158 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Potassium	10000	9687.626	97	90-110	
Selenium	100	97.353	97	90-110	
Silver	100	98.282	98	90-110	
Sodium	10000	9584.612	96	90-110	
Thallium	100	101.863	102	90-110	
Vanadium	100	96.54	97	90-110	
Zinc	100	96.35	96	90-110	

CCV7 Date: 03-Jan-2023 17:30 Seq: 7061192 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Aluminum	100	104.762	105	90-110	
Antimony	100	97.44	97	90-110	
Arsenic	100	100.335	100	90-110	
Barium	100	101.514	102	90-110	
Beryllium	100	94.137	94	90-110	
Cadmium	100	100.476	100	90-110	
Calcium	10000	10127.655	101	90-110	
Chromium	100	98.061	98	90-110	
Cobalt	100	99.208	99	90-110	
Copper	100	97.459	98	90-110	
Iron	10000	9819.264	98	90-110	
Lead	100	93.289	93	90-110	
Magnesium	10000	10223.074	102	90-110	
Manganese	100	99.554	100	90-110	
Nickel	100	97.861	98	90-110	
Potassium	10000	10142.697	101	90-110	
Selenium	100	99.032	99	90-110	
Silver	100	99.232	99	90-110	
Sodium	10000	10603.435	106	90-110	
Thallium	100	101.294	101	90-110	
Vanadium	100	99.237	99	90-110	
Zinc	100	97.415	97	90-110	

ALS Houston, US Date: 09-Jan-23

Form 2 - Initial and Continuing Calibration Verification

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425281
Instrument: ICPMS07
Method: SW6020A

ICV Date: 04-Jan-2023 11:17 Seq: 7061731 ICV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Barium	100	104.328	104	90-110	
Manganese	100	98.621	99	90-110	
Sodium	10000	9903.657	99	90-110	

CCV1 Date: 04-Jan-2023 11:31 Seq: 7061750 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Barium	100	98.428	98	90-110	
Manganese	100	97.796	98	90-110	
Sodium	10000	9667.533	97	90-110	

CCV2 Date: 04-Jan-2023 11:59 Seq: 7061754 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Barium	100	108.482	108	90-110	
Manganese	100	101.631	102	90-110	
Sodium	10000	10080.863	101	90-110	

Form 3 - BLANKS

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: HG04_425209
Instrument: HG04
Method: SW7470A

ICB	Date: 03-Jan-2023 14:16	Seq: 7059887	ICB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**
Mercury	0.2	0.03	0.2	U

CCB1	Date: 03-Jan-2023 14:22	Seq: 7059890	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**
Mercury	0.2	0.03	0.2	U

MBLK-188025	Date: 03-Jan-2023 14:26	Seq: 7059891	MBLK	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**
Mercury	0.2	0.03	0.2	U

CCB2	Date: 03-Jan-2023 14:45	Seq: 7059902	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**
Mercury	0.2	0.03	0.2	U

CCB3	Date: 03-Jan-2023 15:18	Seq: 7059907	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**
Mercury	0.2	0.03	0.2	U

CCB4	Date: 03-Jan-2023 15:47	Seq: 7060109	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**
Mercury	0.2	0.03	0.2	U

CCB5	Date: 03-Jan-2023 16:12	Seq: 7060117	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**
Mercury	0.2	0.03	0.2	U

CCB6	Date: 03-Jan-2023 16:30	Seq: 7060896	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**
Mercury	0.2	0.03	0.2	U

Form 3 - BLANKS

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425185
Instrument: ICPMS07
Method: SW6020A

ICB	Date: 03-Jan-2023 10:49		Seq: 7059441	ICB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Aluminum	10	1.8	10	U	
Antimony	5	0.4	5	U	
Arsenic	5	0.4	5	U	
Barium	5	1.9	5	U	
Beryllium	2	0.2	2	U	
Cadmium	2	0.2	2	U	
Calcium	500	34	500	U	
Chromium	5	0.4	5	U	
Cobalt	5	0.1	5	U	
Copper	5	1	5	U	
Iron	200	12	200	U	
Lead	5	0.6	5	U	
Magnesium	200	10	200	U	
Manganese	5	0.7	5	U	
Nickel	5	0.6	5	U	
Potassium	200	18	200	U	
Selenium	5	1.1	5	U	
Silver	5	0.2	5	U	
Sodium	200	14	200	U	
Thallium	2	0.2	2	U	
Vanadium	5	0.6	5	U	
Zinc	5	2	5	U	

CCB1	Date: 03-Jan-2023 14:56		Seq: 7059870	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Aluminum	10	1.8	10	U	
Antimony	2	0.4	2	U	
Arsenic	2	0.4	2	U	
Barium	4	1.9	4	U	
Beryllium	2	0.2	2	U	
Cadmium	2	0.2	2	U	
Calcium	500	34	500	U	
Chromium	4	0.4	4	U	
Cobalt	5	0.2	5	U	
Copper	2	1	2	U	
Iron	200	12	200	U	
Lead	2	0.6	2	U	
Magnesium	200	10	200	U	
Manganese	5	0.7	5	U	
Nickel	2	0.6	2	U	
Potassium	24.89	18	200	J	
Selenium	1.428	1.1	2	J	
Silver	2	0.2	2	U	
Sodium	221.2	14	200		
Thallium	2	0.2	2	U	
Vanadium	5	0.6	5	U	
Zinc	4	2	4	U	

CCB2	Date: 03-Jan-2023 15:03		Seq: 7059872	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Aluminum	10	1.8	10	U	
Antimony	2	0.4	2	U	
Arsenic	2	0.4	2	U	
Barium	4	1.9	4	U	
Beryllium	2	0.2	2	U	

Form 3 - BLANKS

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425185
Instrument: ICPMS07
Method: SW6020A

CCB2	Date: 03-Jan-2023 15:03	Seq: 7059872	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**
Cadmium	2	0.2	2	U
Calcium	500	34	500	U
Chromium	4	0.4	4	U
Cobalt	5	0.2	5	U
Copper	2	1	2	U
Iron	200	12	200	U
Lead	2	0.6	2	U
Magnesium	200	10	200	U
Manganese	5	0.7	5	U
Nickel	2	0.6	2	U
Potassium	200	18	200	U
Selenium	1.562	1.1	2	J
Silver	2	0.2	2	U
Sodium	124.8	14	200	J
Thallium	2	0.2	2	U
Vanadium	5	0.6	5	U
Zinc	4	2	4	U

MBLK-188020	Date: 03-Jan-2023 15:05	Seq: 7059873	MBLK	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**
Aluminum	2.613	1.8	10	J
Antimony	5	0.4	5	U
Arsenic	5	0.4	5	U
Barium	5	1.9	5	U
Beryllium	2	0.2	2	U
Cadmium	2	0.2	2	U
Calcium	500	34	500	U
Chromium	0.425	0.4	5	J
Cobalt	5	0.1	5	U
Copper	5	1	5	U
Iron	200	12	200	U
Lead	5	0.6	5	U
Magnesium	200	10	200	U
Manganese	5	0.7	5	U
Nickel	5	0.6	5	U
Potassium	200	18	200	U
Selenium	5	1.1	5	U
Silver	5	0.2	5	U
Sodium	110.5	14	200	J
Thallium	2	0.2	2	U
Vanadium	5	0.6	5	U
Zinc	5	2	5	U

CCB3	Date: 03-Jan-2023 15:29	Seq: 7059884	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**
Aluminum	10	1.8	10	U
Antimony	0.489	0.4	2	J
Arsenic	2	0.4	2	U
Barium	4	1.9	4	U
Beryllium	2	0.2	2	U
Cadmium	2	0.2	2	U
Calcium	500	34	500	U
Chromium	4	0.4	4	U
Cobalt	5	0.2	5	U
Copper	2	1	2	U

Form 3 - BLANKS

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425185
Instrument: ICPMS07
Method: SW6020A

CCB3	Date: 03-Jan-2023 15:29		Seq: 7059884	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	
Lead	2	0.6	2	U	
Magnesium	200	10	200	U	
Manganese	5	0.7	5	U	
Nickel	2	0.6	2	U	
Potassium	200	18	200	U	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
Sodium	77.04	14	200	J	
Thallium	2	0.2	2	U	
Vanadium	5	0.6	5	U	
Zinc	4	2	4	U	

CCB5	Date: 03-Jan-2023 16:13		Seq: 7060161	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Aluminum	10	1.8	10	U	
Antimony	2	0.4	2	U	
Arsenic	2	0.4	2	U	
Barium	4	1.9	4	U	
Beryllium	2	0.2	2	U	
Cadmium	2	0.2	2	U	
Calcium	500	34	500	U	
Chromium	4	0.4	4	U	
Cobalt	5	0.2	5	U	
Copper	2	1	2	U	
Iron	200	12	200	U	
Lead	2	0.6	2	U	
Magnesium	200	10	200	U	
Manganese	5	0.7	5	U	
Nickel	2	0.6	2	U	
Potassium	200	18	200	U	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
Sodium	67.45	14	200	J	
Thallium	2	0.2	2	U	
Vanadium	5	0.6	5	U	
Zinc	4	2	4	U	

CCB4	Date: 03-Jan-2023 16:13		Seq: 7059974	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Aluminum	10	1.8	10	U	
Antimony	2	0.4	2	U	
Arsenic	2	0.4	2	U	
Barium	4	1.9	4	U	
Beryllium	2	0.2	2	U	
Cadmium	2	0.2	2	U	
Calcium	500	34	500	U	
Chromium	4	0.4	4	U	
Cobalt	5	0.2	5	U	
Copper	2	1	2	U	
Iron	200	12	200	U	
Lead	2	0.6	2	U	
Magnesium	200	10	200	U	
Manganese	5	0.7	5	U	
Nickel	2	0.6	2	U	

Form 3 - BLANKS

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425185
Instrument: ICPMS07
Method: SW6020A

CCB4	Date: 03-Jan-2023 16:13		Seq: 7059974	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Potassium	200	18	200	U	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
Sodium	67.45	14	200	J	
Thallium	2	0.2	2	U	
Vanadium	5	0.6	5	U	
Zinc	4	2	4	U	

CCB6	Date: 03-Jan-2023 16:37		Seq: 7060170	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Aluminum	10	1.8	10	U	
Antimony	2	0.4	2	U	
Arsenic	2	0.4	2	U	
Barium	4	1.9	4	U	
Beryllium	2	0.2	2	U	
Cadmium	2	0.2	2	U	
Calcium	500	34	500	U	
Chromium	4	0.4	4	U	
Cobalt	5	0.2	5	U	
Copper	2	1	2	U	
Iron	200	12	200	U	
Lead	2	0.6	2	U	
Magnesium	200	10	200	U	
Manganese	5	0.7	5	U	
Nickel	2	0.6	2	U	
Potassium	200	18	200	U	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
Sodium	63.3	14	200	J	
Thallium	2	0.2	2	U	
Vanadium	5	0.6	5	U	
Zinc	4	2	4	U	

CCB7	Date: 03-Jan-2023 17:04		Seq: 7060159	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Aluminum	10	1.8	10	U	
Antimony	2	0.4	2	U	
Arsenic	2	0.4	2	U	
Barium	4	1.9	4	U	
Beryllium	2	0.2	2	U	
Cadmium	2	0.2	2	U	
Calcium	500	34	500	U	
Chromium	4	0.4	4	U	
Cobalt	5	0.2	5	U	
Copper	2	1	2	U	
Iron	200	12	200	U	
Lead	2	0.6	2	U	
Magnesium	200	10	200	U	
Manganese	5	0.7	5	U	
Nickel	2	0.6	2	U	
Potassium	200	18	200	U	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
Sodium	47.27	14	200	J	
Thallium	2	0.2	2	U	

Form 3 - BLANKS

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425185
Instrument: ICPMS07
Method: SW6020A

CCB7	Date: 03-Jan-2023 17:04		Seq: 7060159	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Vanadium	5	0.6	5	U	
Zinc	4	2	4	U	

CCB8	Date: 03-Jan-2023 17:32		Seq: 7061193	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Aluminum	10	1.8	10	U	
Antimony	2	0.4	2	U	
Arsenic	2	0.4	2	U	
Barium	4	1.9	4	U	
Beryllium	2	0.2	2	U	
Cadmium	2	0.2	2	U	
Calcium	500	34	500	U	
Chromium	4	0.4	4	U	
Cobalt	5	0.2	5	U	
Copper	2	1	2	U	
Iron	200	12	200	U	
Lead	2	0.6	2	U	
Magnesium	200	10	200	U	
Manganese	5	0.7	5	U	
Nickel	2	0.6	2	U	
Potassium	26.81	18	200	J	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
Sodium	287.9	14	200		
Thallium	2	0.2	2	U	
Vanadium	5	0.6	5	U	
Zinc	4	2	4	U	

ALS Houston, US Date: 09-Jan-23

Form 3 - BLANKS

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425281
Instrument: ICPMS07
Method: SW6020A

ICB	Date: 04-Jan-2023 11:08		Seq: 7061729	ICB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Barium	5	1.9	5	U	
Manganese	5	0.7	5	U	
Sodium	200	14	200	U	

CCB1	Date: 04-Jan-2023 11:33		Seq: 7061751	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Barium	4	1.9	4	U	
Manganese	5	0.7	5	U	
Sodium	200	14	200	U	

CCB2	Date: 04-Jan-2023 12:01		Seq: 7061755	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Barium	4	1.9	4	U	
Manganese	5	0.7	5	U	
Sodium	200	14	200	U	

ALS Houston, US Date: 09-Jan-23

Form 4 - ICP Interference Check Sample

Client: Bhate Environmental Associates, Inc. Run ID:ICPMS07_425185
Project: LHAAP 18 24 Instrument:ICPMS07
WorkOrder: HS22121096 Method:SW6020A

ICSA	Date: 03-Jan-2023 10:53	Seq: 7059443	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Aluminum	100000	95940	95.9	
Antimony		0.25	0	
Arsenic		0.407	0	
Barium		0.96	0	
Beryllium		-0.001	0	
Cadmium		0.744	0	
Calcium	100000	106000	106	
Chromium		0.851	0	
Cobalt		0.913	0	
Copper		0.527	0	
Iron	100000	98130	98.1	
Lead		0.785	0	
Magnesium	100000	99500	99.5	
Manganese		1.351	0	
Nickel		1.116	0	
Potassium	100000	99830	99.8	
Selenium		-0.069	0	
Silver		0.017	0	
Sodium	100000	98310	98.3	
Thallium		0.239	0	
Vanadium		0.048	0	
Zinc		1.792	0	

ICSAB	Date: 03-Jan-2023 10:55	Seq: 7059444	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Aluminum	100500	95930	95.5	
Antimony	100	99.41	99.4	
Arsenic	100	101.3	101	
Barium	100	107.1	107	
Beryllium	100	95.31	95.3	
Cadmium	100	102.5	102	
Calcium	110000	115300	105	
Chromium	100	98.33	98.3	
Cobalt	100	98.55	98.5	
Copper	100	96.69	96.7	
Iron	110000	109200	99.3	
Lead	100	97.13	97.1	
Magnesium	110000	108400	98.6	
Manganese	100	99.36	99.4	
Nickel	100	96.86	96.9	
Potassium	110000	110100	100	
Selenium	100	98.04	98.0	
Silver	100	99.3	99.3	
Sodium	110000	108800	98.9	
Thallium	100	96.04	96.0	
Vanadium	100	98.95	98.9	
Zinc	100	97.2	97.2	

ALS Houston, US Date: 09-Jan-23

Form 4 - ICP Interference Check Sample

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Run ID: ICPMS07_425281
Instrument: ICPMS07
Method: SW6020A

ICSA	Date: 04-Jan-2023 11:19	Seq: 7061732	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Barium		1.054	0	
Manganese		1.287	0	
Sodium	100000	99340	99.3	

ICSAB	Date: 04-Jan-2023 11:21	Seq: 7061733	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Barium	100	108.6	109	
Manganese	100	100.9	101	
Sodium	110000	110000	100.0	

ALS Houston, US Date: 09-Jan-23

Form 5A - Matrix Spike/Matrix Spike Duplicate Recovery

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Date Analyzed: 03-Jan-2023 14:34
Date Extracted: 03-Jan-2023 09:00
Units: ug/L

Matrix Spike: HS22120986-01MS
Client Sample ID:

Analysis Method: SW7470A

Analyte	Sample Result	MS Result	Spike Amount	% Rec	MSD Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Mercury	0.2000	2.750	5.000	55.2	3.250	5.000	65.2	82-119	16.7	20

ALS Houston, US

Date: 09-Jan-23

Form 5A - Matrix Spike/Matrix Spike Duplicate Recovery

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Date Analyzed: 03-Jan-2023 15:17
Date Extracted: 03-Jan-2023 08:30
Units: ug/L

Matrix Spike: HS22121316-01MS
Client Sample ID:

Analysis Method: SW6020A

Analyte	Sample Result	MS Result	Spike Amount	% Rec	MSD Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Aluminum	18.05	116.0	100.0	97.9	122.7	100.0	105	84-117	5.65	20
Antimony	0.6900	51.44	50.00	101	53.61	50.00	106	85-117	4.13	20
Arsenic	7.692	58.55	50.00	102	60.94	50.00	106	84-116	4.00	20
Barium	1147	1216	50.00	137	1281	50.00	267	86-114	5.17	20
Beryllium	2.000	51.35	50.00	103	51.08	50.00	102	83-121	0.529	20
Cadmium	2.000	49.72	50.00	99.4	52.71	50.00	105	87-115	5.83	20
Calcium	33680	43300	5000	192	45800	5000	242	87-118	5.61	20
Chromium	2.331	52.18	50.00	99.7	54.39	50.00	104	85-116	4.15	20
Cobalt	0.8710	51.63	50.00	102	53.85	50.00	106	86-115	4.20	20
Copper	5.000	50.73	50.00	101	52.36	50.00	105	85-118	3.15	20
Iron	47960	54510	5000	131	56570	5000	172	87-118	3.71	20
Lead	5.000	48.38	50.00	96.7	51.04	50.00	102	88-115	5.34	20
Magnesium	21870	27820	5000	119	28610	5000	135	83-118	2.80	20
Manganese	574.7	651.8	50.00	154	681.2	50.00	213	87-115	4.41	20
Nickel	5.921	56.10	50.00	100	59.03	50.00	106	85-117	5.08	20
Selenium	5.000	49.45	50.00	99.0	51.46	50.00	103	80-120	3.99	20
Silver	5.000	47.71	50.00	95.6	50.83	50.00	102	85-116	6.33	20
Sodium	100200	107200	5000	142	112300	5000	243	85-117	4.60	20
Thallium	2.000	41.71	50.00	83.4	43.97	50.00	88.0	82-116	5.28	20
Vanadium	5.000	50.55	50.00	101	52.50	50.00	105	86-115	3.77	20
Zinc	3.646	53.84	50.00	100	56.30	50.00	105	83-119	4.47	20
Potassium	10080	15410	5000	107	15570	5000	110	87-115	1.00	20

ALS Houston, US Date: 09-Jan-23

Form 5B - Post Digest Sample Recovery

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Date Analyzed: 03-Jan-2023 15:19
Date Extracted: 03-Jan-2023 08:30
Units: ug/L

Lab Sample ID: HS22121316-01PDS
Client Sample ID:

Analysis Method: SW6020A

Analyte	Sample Result	PDS Result	Spike Amount	% Rec	% Rec Limits
Aluminum	18.05	128.8	100	111	80-120
Antimony	0.69	114.5	100	114	80-120
Arsenic	7.692	122.3	100	115	80-120
Barium	1147	1333	100	186	80-120
Beryllium	0	112.6	100	113	80-120
Cadmium	0	117.5	100	117	80-120
Chromium	2.331	115.4	100	113	80-120
Cobalt	0.871	115.1	100	114	80-120
Copper	0	113.8	100	114	80-120
Iron	47960	61310	10000	133	80-120
Lead	0	113.6	100	114	80-120
Manganese	574.7	705.2	100	131	80-120
Nickel	5.921	118.6	100	113	80-120
Potassium	10080	21420	10000	113	80-120
Selenium	0	113.9	100	114	80-120
Silver	0	114.3	100	114	80-120
Sodium	100200	114900	10000	148	80-120
Vanadium	0	114.5	100	114	80-120
Zinc	3.646	116.8	100	113	80-120
Magnesium	21870	30950	10000	91	80-120
Calcium	33260	118700	100000	85	80-120

ALS Houston, US Date: 09-Jan-23

Form 7 - Laboratory Control Sample

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Date Analyzed: 03-Jan-2023 14:27
Date Extracted: 03-Jan-2023 09:00
Units: ug/L

Lab Sample ID: LCS-188025 Analysis Method: SW7470A

Analyte	Spike Amount	LCS Result	% Rec	% Rec Limits
Mercury	5	4.84	97	82-119

ALS Houston, US

Date: 09-Jan-23

Form 7 - Laboratory Control Sample

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Date Analyzed: 03-Jan-2023 15:07
Date Extracted: 03-Jan-2023 08:30
Units: ug/L

Lab Sample ID: LCS-188020
Analysis Method: SW6020A

Analyte	Spike Amount	LCS Result	% Rec	% Rec Limits
Aluminum	100	111.1	111	84-117
Antimony	50	50.31	101	85-117
Arsenic	50	49.79	100	84-116
Barium	50	51.7	103	86-114
Beryllium	50	48.74	98	83-121
Cadmium	50	51.7	103	87-115
Calcium	5000	5018	100	87-118
Chromium	50	49.32	99	85-116
Cobalt	50	50.37	101	86-115
Copper	50	50.22	100	85-118
Iron	5000	4908	98	87-118
Lead	50	47.84	96	88-115
Magnesium	5000	5133	103	83-118
Manganese	50	50.28	101	87-115
Nickel	50	49.92	100	85-117
Potassium	5000	4988	100	87-115
Selenium	50	51.17	102	80-120
Silver	50	50.01	100	85-116
Sodium	5000	5098	102	85-117
Thallium	50	47.75	96	82-116
Vanadium	50	49.47	99	86-115
Zinc	50	51.39	103	83-119

ALS Houston, US Date: 09-Jan-23

Form 8 - ICP Serial Dilutions

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121096

Date Analyzed: 03-Jan-2023 15:13
Date Extracted: 03-Jan-2023 08:30
Units: ug/L

Lab Sample ID: HS22121316-01SD
Client Sample ID:

Analysis Method: SW6020A

Analyte	Sample Result	C	SD Result	C	RPD	Q
Aluminum	18.05		18.3	J	1	
Antimony	0.69	J	0	U	0	
Arsenic	7.692		7.86	J	2	
Barium	1147		1059		8	
Beryllium	0	U	0	U	0	
Cadmium	0	U	0	U	0	
Chromium	2.331	J	0	U	0	
Cobalt	0.871	J	0.783	J	10	
Copper	0	U	0	U	0	
Iron	47960		48360		1	
Lead	0	U	0	U	0	
Magnesium	21870		22660		4	
Manganese	574.7		559.4		3	
Nickel	5.921		5.276	J	11	
Potassium	10080		10350		3	
Selenium	0	U	0	U	0	
Silver	0	U	0	U	0	
Sodium	100200		100000		0	
Thallium	0	U	0	U	0	
Vanadium	0	U	0	U	0	
Zinc	3.646	J	0	U	0	
Calcium	33260		32660		2	

Report Generated By Teledyne Leeman QuickTrace

Analyst: ALSHS.NoUser,

Worksheet file: C:\Users\Public\Documents\Teledyne CETAC\QuickTrace\Worksheets\010323AW.wszf

Creation Date: 1/3/2023 12:24:41 PM

Comment:

Results

Sample Name					Type	Date/Time	Conc (ppb)	µAbs	%RSD	Residual	Flags
Calibration Blank					STD	01/03/23 02:00:05 pm	0.000	77	26.53		
	Replicates	51.5	75.0	79.2	101.2						
Standard #1 (0.2 ppb)					STD	01/03/23 02:01:47 pm	0.200	1168	1.37	-0.66%	
	Replicates	1146.3	1177.9	1182.1	1166.9						
Standard #2 (0.5 ppb)					STD	01/03/23 02:03:30 pm	0.500	2892	0.44	1.80%	
	Replicates	2875.9	2905.1	2889.8	2899.1						
Standard #3 (2.0 ppb)					STD	01/03/23 02:05:12 pm	2.000	11023	0.38	-1.39%	
	Replicates	10967.1	11040.9	11064.3	11021.1						
Standard #4 (5.0 ppb)					STD	01/03/23 02:06:55 pm	5.000	27595	0.50	-0.91%	
	Replicates	27409.9	27669.4	27726.6	27572.8						
Standard #5 (10.0 ppb)					STD	01/03/23 02:08:39 pm	10.000	55978	0.42	0.62%	
	Replicates	55683.4	56050.2	56247.8	55932.0						

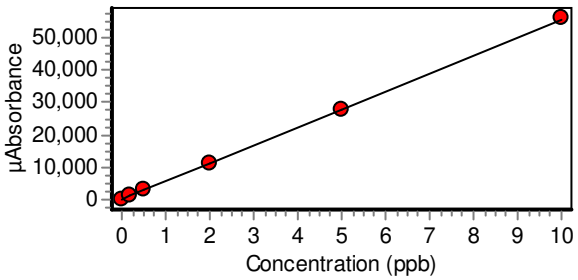
Calibration

Equation: Abs = 5556.715x + 64.235

R2: 0.99991 RSE: 1.51%

SEE: 229.6432

Flags:



ICCV					UNK	01/03/23 02:13:04 pm	4.950	27586	0.18		
	Replicates	27528.8	27592.2	27649.2	27574.2						
ICV					UNK	01/03/23 02:14:46 pm	4.870	27111	0.59		
	Replicates	26904.5	27168.8	27282.0	27087.0						
ICB					UNK	01/03/23 02:16:28 pm	0.001	68	213.46		
	Replicates	60.2	63.3	70.9	75.9						
CRA					UNK	01/03/23 02:18:09 pm	0.198	1165	0.72		
	Replicates	1156.3	1175.5	1163.3	1165.7						
CCV					UNK	01/03/23 02:20:37 pm	4.930	27457	0.52		
	Replicates	27279.0	27534.4	27601.0	27413.2						
CCB					UNK	01/03/23 02:22:20 pm	0.003	82	87.25		
	Replicates	66.1	87.0	102.2	74.0						
MBLK-188025					UNK	01/03/23 02:26:17 pm	0.005	95	64.85		
	Replicates	82.4	74.9	102.9	118.3						

Sample Name				Type	Date/Time	Conc (ppb)	µAbs	%RSD	Residual	Flags
LCS-188025				UNK	01/03/23 02:27:59 pm	4.840	26939	1.42		
Replicates	26386.9	27006.9	27250.5	27111.1						
HS22120898-01				UNK	01/03/23 02:29:41 pm	0.031	235	14.38		
Replicates	207.3	224.6	243.2	264.4						
HS22120986-01				UNK	01/03/23 02:31:24 pm	-0.011	5	6.28		
Replicates	9.0	1.6	7.0	1.8						
HS22120986-01MS				UNK	01/03/23 02:33:06 pm	2.750	15353	0.55		
Replicates	15239.8	15349.2	15436.6	15388.2						
HS22120986-01MSD				UNK	01/03/23 02:34:49 pm	3.250	18105	0.65		
Replicates	17942.0	18108.1	18212.7	18159.1						
HS22120986-04				UNK	01/03/23 02:36:32 pm	0.007	105	28.41		
Replicates	117.7	90.4	102.2	109.4						
HS22120986-05				UNK	01/03/23 02:38:15 pm	0.005	93	34.56		
Replicates	83.3	106.9	90.7	91.1						
HS22120986-06				UNK	01/03/23 02:39:56 pm	0.002	73	96.48		
Replicates	60.6	74.6	79.6	78.6						
HS22120986-07				UNK	01/03/23 02:41:38 pm	-0.004	43	53.77		
Replicates	38.5	57.9	30.7	44.3						
CCV				UNK	01/03/23 02:43:21 pm	4.580	25517	0.34		
Replicates	25408.8	25551.8	25614.0	25493.4						
CCB				UNK	01/03/23 02:45:05 pm	-0.001	57	217.55		
Replicates	60.5	51.5	40.3	76.5						
HS22121013-01				UNK	01/03/23 02:51:00 pm	0.001	70	327.18		
Replicates	44.9	80.9	68.9	83.8						
HS22121096-02				UNK	01/03/23 02:52:42 pm	0.001	70	175.95		
Replicates	83.5	57.4	68.6	72.0						
HS22121096-03				UNK	01/03/23 02:54:24 pm	0.009	112	17.27		
Replicates	107.3	119.7	118.3	102.9						
MBLK-188027				UNK	01/03/23 02:56:06 pm	0.002	77	104.08		
Replicates	80.1	91.9	60.5	74.5						
LCS-188027				UNK	01/03/23 02:57:48 pm	4.790	26665	1.51		
Replicates	26092.6	26680.7	26972.7	26912.9						
HS22121054-02				UNK	01/03/23 02:59:30 pm	-0.006	30	31.19		
Replicates	30.8	23.1	20.1	44.3						
HS22121054-02MS				UNK	01/03/23 03:01:13 pm	4.850	26987	1.59		
Replicates	26376.9	27009.3	27299.9	27262.3						
HS22121054-02MSD				UNK	01/03/23 03:02:56 pm	4.830	26880	1.79		
Replicates	26214.0	26848.1	27210.5	27248.5						

Sample Name					Type	Date/Time	Conc (ppb)	µAbs	%RSD	Residual	Flags
HS22121195-14					UNK	01/03/23 03:04:38 pm	-0.001	56	273.61		
	Replicates	42.5	36.3	84.1	62.3						
HS2212144501					UNK	01/03/23 03:06:22 pm	0.001	70	231.56		
	Replicates	83.4	73.4	73.2	50.8						
CCV					UNK	01/03/23 03:16:55 pm	4.760	26527	1.95		
	Replicates	25825.1	26455.9	26865.9	26959.5						
CCB					UNK	01/03/23 03:18:39 pm	-0.001	61	378.21		
	Replicates	67.7	60.7	71.7	43.9						
HS22121445-02					UNK	01/03/23 03:22:28 pm	-0.001	59	138.17		
	Replicates	58.6	54.5	55.0	69.2						
HS22121445-03					UNK	01/03/23 03:24:10 pm	-0.003	48	50.21		
	Replicates	46.4	41.2	59.8	44.2						
HS22121445-04					UNK	01/03/23 03:25:51 pm	0.005	93	41.34		
	Replicates	93.3	84.7	109.7	84.3						
HS22121445-05					UNK	01/03/23 03:27:33 pm	-0.003	48	48.52		
	Replicates	36.0	49.5	54.9	49.7						
HS22121445-06					UNK	01/03/23 03:29:15 pm	-0.003	48	35.15		
	Replicates	43.8	56.1	44.3	48.3						
HS22121445-07					UNK	01/03/23 03:30:57 pm	-0.003	47	69.03		
	Replicates	35.3	62.5	40.9	49.5						
HS22121445-08					UNK	01/03/23 03:32:39 pm	0.001	69	215.57		
	Replicates	58.0	67.6	67.6	83.6						
HS22121445-09					UNK	01/03/23 03:34:22 pm	-0.002	51	169.37		
	Replicates	18.5	58.3	64.3	63.9						
HS22121445-10					UNK	01/03/23 03:36:04 pm	-0.006	29	40.07		
	Replicates	40.2	10.2	39.2	28.2						
HS22121445-11					UNK	01/03/23 03:37:47 pm	0.000	62	578.84		
	Replicates	66.6	76.4	49.8	56.0						
CCV					UNK	01/03/23 03:43:23 pm	4.830	26905	1.96		
	Replicates	26193.9	26824.5	27254.3	27346.5						
CCB					UNK	01/03/23 03:45:31 pm	-0.535	-2909	0.39		
	Replicates	-2906.3	-2915.0	-2894.4	-2921.0						
CCB					UNK	01/03/23 03:47:42 pm	0.004	89	50.90		
	Replicates	98.9	71.2	95.9	88.8						
HS22121445-12					UNK	01/03/23 03:52:07 pm	0.003	78	74.59		
	Replicates	62.8	81.7	85.4	83.1						
HS22121445-13					UNK	01/03/23 03:53:50 pm	-0.001	56	250.08		
	Replicates	53.8	28.3	70.1	72.3						

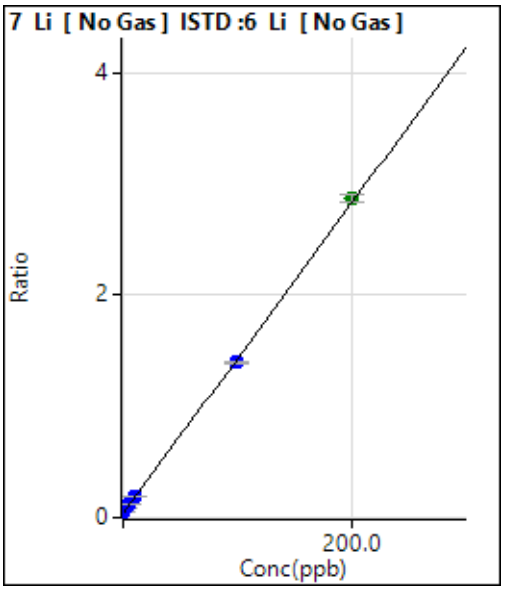
Sample Name		Type	Date/Time	Conc (ppb)	µAbs	%RSD	Residual	Flags
HS22121445-14		UNK	01/03/23 03:55:32 pm	-0.003	48	40.70		
Replicates	43.6	55.9	41.9	51.1				
HS22121445-15		UNK	01/03/23 03:57:14 pm	0.003	81	79.95		
Replicates	61.0	89.7	89.5	85.3				
HS22121446-07		UNK	01/03/23 03:58:56 pm	0.112	684	2.89		
Replicates	660.3	682.1	691.5	702.5				
HS22121446-08		UNK	01/03/23 04:00:37 pm	0.011	125	21.83		
Replicates	140.6	126.2	125.0	108.2				
MBLK-188026		UNK	01/03/23 04:02:19 pm	-0.002	54	138.56		
Replicates	39.3	49.4	57.6	71.4				
LCS-188026		UNK	01/03/23 04:04:02 pm	4.900	27305	0.54		
Replicates	27101.6	27304.4	27433.4	27381.8				
HS22121054-07		UNK	01/03/23 04:05:44 pm	-0.001	57	134.96		
Replicates	47.2	57.3	70.3	53.3				
HS22121311-12		UNK	01/03/23 04:07:26 pm	0.004	87	40.53		
Replicates	86.3	74.2	94.2	93.2				
CCV		UNK	01/03/23 04:11:00 pm	4.790	26684	1.66		
Replicates	26077.4	26642.1	26972.5	27044.7				
CCB		UNK	01/03/23 04:12:43 pm	-0.004	45	44.69		
Replicates	31.7	49.4	50.0	47.6				
HS22121311-12MS		UNK	01/03/23 04:17:20 pm	4.800	26762	1.80		
Replicates	26082.8	26764.5	27109.1	27089.9				
HS22121311-12MSD		UNK	01/03/23 04:19:02 pm	4.760	26495	1.81		
Replicates	25824.8	26475.8	26816.0	26862.6				
HS22121371-03		UNK	01/03/23 04:20:45 pm	0.001	70	279.02		
Replicates	53.7	86.4	76.4	61.4				
MBLKP1-188026		UNK	01/03/23 04:22:28 pm	0.009	111	30.49		
Replicates	93.2	108.4	117.0	127.2				
MBLKP2-188026		UNK	01/03/23 04:24:10 pm	0.004	84	30.32		
Replicates	76.1	83.0	89.0	88.6				
MBLKP3-188026		UNK	01/03/23 04:25:52 pm	0.007	102	36.65		
Replicates	90.2	122.4	99.2	97.4				
CCV		UNK	01/03/23 04:28:39 pm	4.740	26413	2.35		
Replicates	25589.8	26296.1	26801.7	26963.7				
CCB		UNK	01/03/23 04:30:23 pm	-0.003	49	83.14		
Replicates	45.8	39.0	67.6	42.6				

Calibration for 231_ICV.d

Batch Folder: D:\Agilent\ICPMH\1\DATA\010323A.b\
Analysis File: 010323A.batch.bin
DA Date-Time: 01/03/2023 22:05:01
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	224CALB.d	CAL BLK	01/03/2023 21:49:06
2	225CALS.d	2/10/200	01/03/2023 21:51:01
3	226CALS.d	5/25/500	01/03/2023 21:52:56
4	227CALS.d	10/50/100	01/03/2023 21:54:51
5	228CALS.d	100/500/10K	01/03/2023 21:56:45
6	229CALS.d	200/1000/20K	01/03/2023 21:58:38

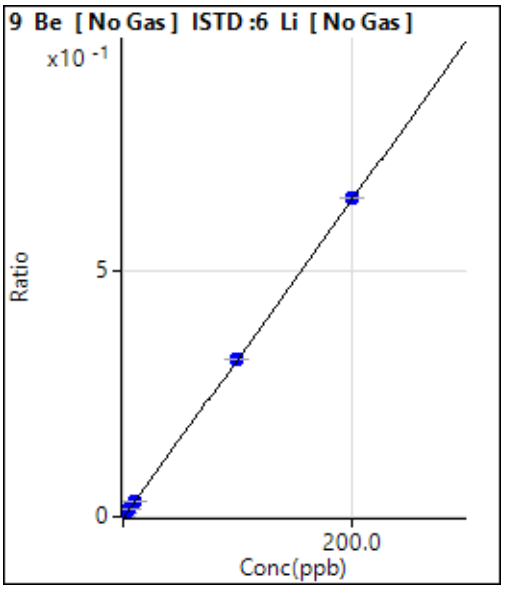
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	27951.09	0.0540	P	2.7	
2	☐	2.000	1.803	40832.56	0.0791	P	0.9	-9.9
3	☐	5.000	4.823	62702.35	0.1212	P	0.6	-3.5
4	☐	10.000	9.589	95579.24	0.1876	P	1.0	-4.1
5	☐	100.000	96.021	700992.75	1.3921	P	0.3	-4.0
6	☐	200.000	202.017	1388486.85	2.8692	A	2.8	1.0

y = 0.0139 * x + 0.0540
R = 0.9997
DL = 0.3085 ppb
BEC = 3.875 ppb

Weight: <None>
Min Conc: <None>

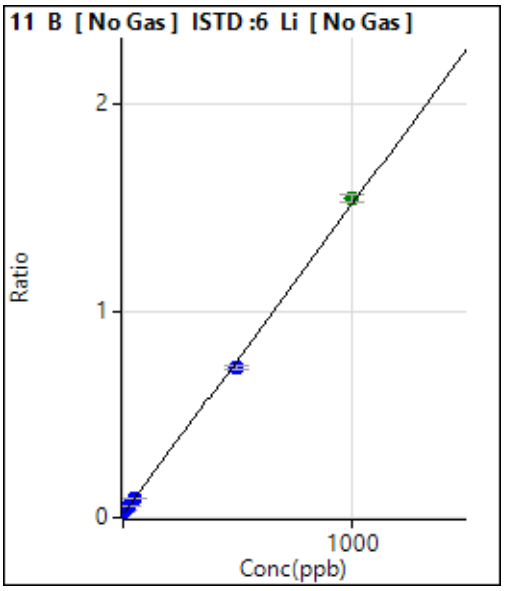


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	10.00	0.0000	P	173.2	
2	☐	2.000	1.913	3205.39	0.0062	P	5.4	-4.4
3	☐	5.000	4.833	8104.06	0.0157	P	0.1	-3.3
4	☐	10.000	9.822	16207.72	0.0318	P	1.4	-1.8
5	☐	100.000	99.056	161491.04	0.3207	P	0.8	-0.9
6	☐	200.000	200.486	314169.14	0.6491	P	0.6	0.2

y = 0.0032 * x + 1.9311E-005
R = 1.0000
DL = 0.03099 ppb
BEC = 0.005965 ppb

Weight: <None>
Min Conc: <None>

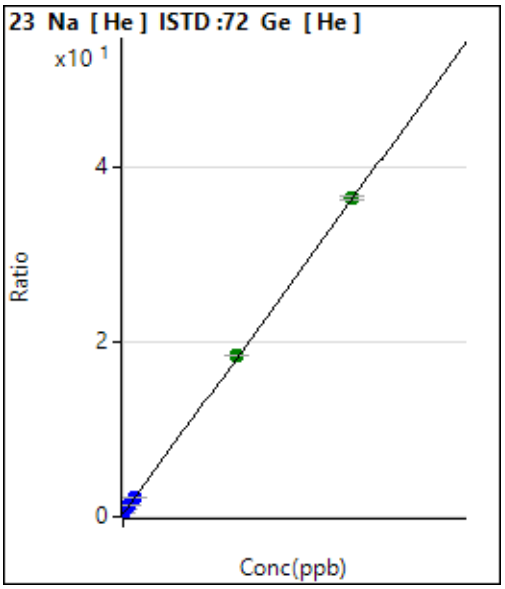
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	12735.85	0.0246	P	1.9	
2	☐	10.000	8.931	19605.44	0.0380	P	1.0	-10.7
3	☐	25.000	23.150	30678.65	0.0593	P	1.4	-7.4
4	☐	50.000	47.714	48966.76	0.0961	P	1.5	-4.6
5	☐	500.000	468.611	366028.20	0.7270	P	2.8	-6.3
6	☐	1000.000	1015.866	748959.03	1.5473	A	2.2	1.6

y = 0.0015 * x + 0.0246
R = 0.9993
DL = 0.9183 ppb
BEC = 16.42 ppb

Weight: <None>
Min Conc: <None>

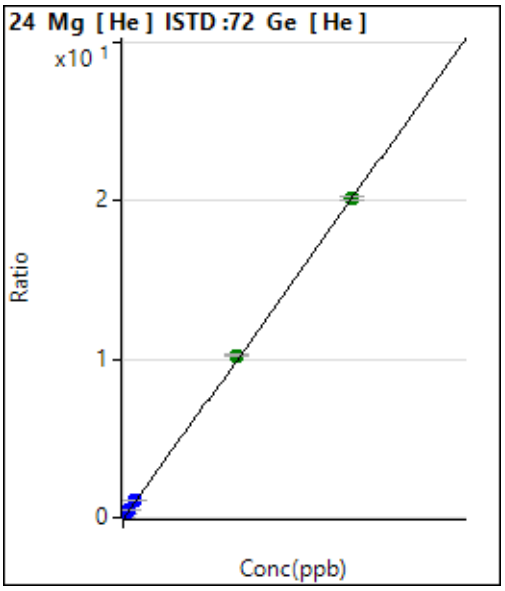


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	161462.36	0.5042	P	0.8	
2	☐	200.000	194.694	271678.31	0.8532	P	1.1	-2.7
3	☐	500.000	496.438	444621.15	1.3942	P	0.6	-0.7
4	☐	1000.000	985.866	725240.04	2.2717	P	0.5	-1.4
5	☐	10000.00	9975.088	5815192.62	18.3884	A	0.5	-0.2
6	☐	20000.00	20013.30	11239537.7	36.3859	A	0.9	0.1

y = 0.0018 * x + 0.5042
R = 1.0000
DL = 7.141 ppb
BEC = 281.2 ppb

Weight: <None>
Min Conc: <None>

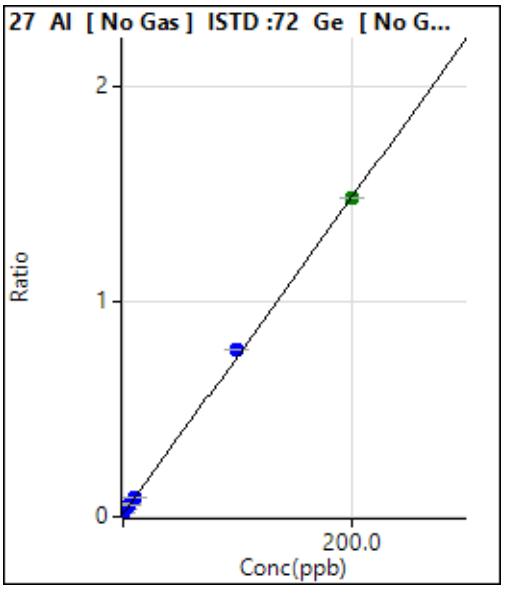
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	620.03	0.0019	P	12.6	
2	☐	200.000	215.440	69952.63	0.2197	P	1.9	7.7
3	☐	500.000	534.412	172886.84	0.5421	P	0.6	6.9
4	☐	1000.000	1053.556	340592.14	1.0669	P	0.3	5.4
5	☐	10000.00	10138.01	3241253.39	10.2493	A	0.7	1.4
6	☐	20000.00	19927.30	6222221.57	20.1441	A	0.9	-0.4

y = 0.0010 * x + 0.0019
R = 1.0000
DL = 0.7211 ppb
BEC = 1.915 ppb

Weight: <None>
Min Conc: <None>

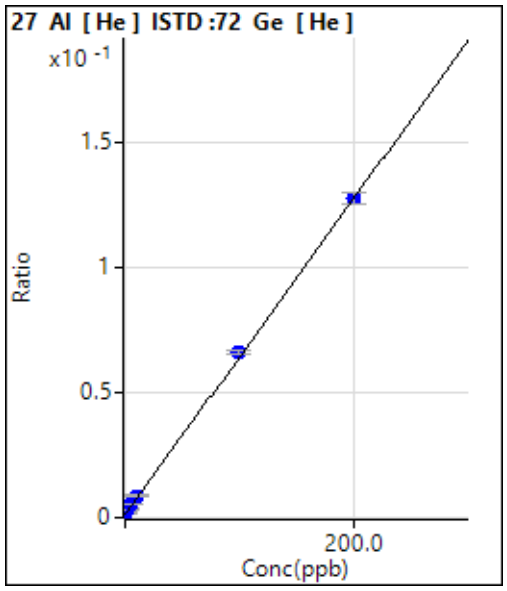


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	16727.00	0.0192	P	2.7	
2	☐	2.000	2.384	32110.76	0.0368	P	2.1	19.2
3	☐	5.000	5.236	49949.95	0.0578	P	1.3	4.7
4	☐	10.000	9.846	78806.54	0.0918	P	2.4	-1.5
5	☐	100.000	102.648	664422.10	0.7753	P	0.4	2.6
6	☐	200.000	198.674	1238921.39	1.4826	A	0.4	-0.7

y = 0.0074 * x + 0.0192
R = 0.9999
DL = 0.2153 ppb
BEC = 2.613 ppb

Weight: <None>
Min Conc: <None>

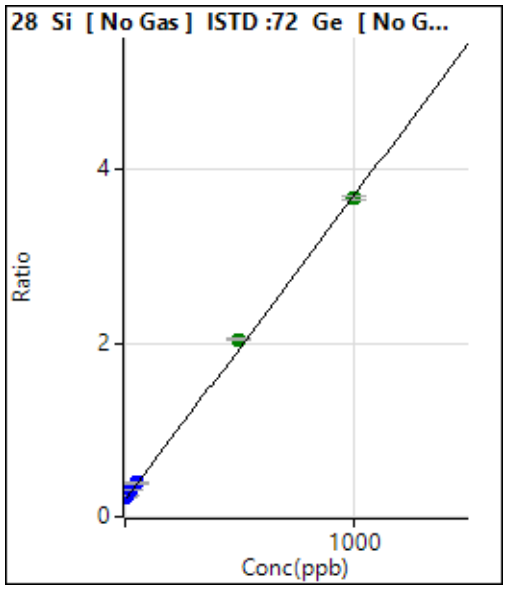
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	603.35	0.0019	P	7.9	
2	☐	2.000	2.349	1073.39	0.0034	P	10.1	17.5
3	☐	5.000	5.745	1760.14	0.0055	P	4.6	14.9
4	☐	10.000	10.618	2747.00	0.0086	P	9.5	6.2
5	☐	100.000	101.658	20939.43	0.0662	P	2.9	1.7
6	☐	200.000	199.118	39503.19	0.1279	P	3.4	-0.4

y = 6.3281E-004 * x + 0.0019
R = 1.0000
DL = 0.7022 ppb
BEC = 2.977 ppb

Weight: <None>
Min Conc: <None>

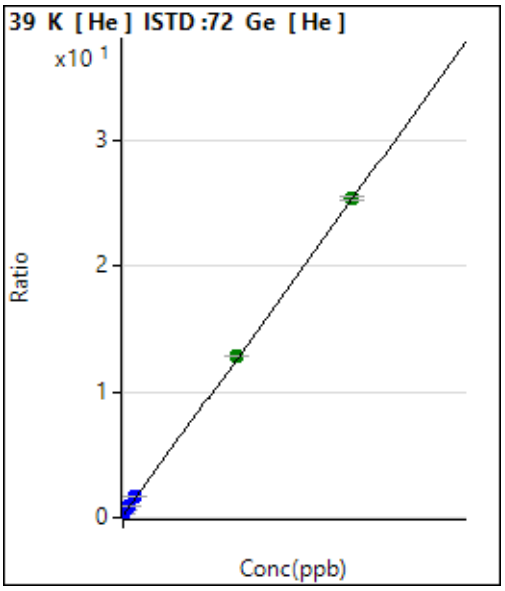


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	184211.81	0.2120	P	0.3	
2	☐	10.000	10.228	216166.70	0.2478	P	0.3	2.3
3	☐	25.000	25.443	260152.72	0.3011	P	0.5	1.8
4	☐	50.000	50.111	332759.99	0.3875	P	0.8	0.2
5	☐	500.000	523.479	1752674.87	2.0453	A	1.5	4.7
6	☐	1000.000	988.242	3068981.93	3.6729	A	1.4	-1.2

y = 0.0035 * x + 0.2120
R = 0.9996
DL = 0.4834 ppb
BEC = 60.52 ppb

Weight: <None>
Min Conc: <None>

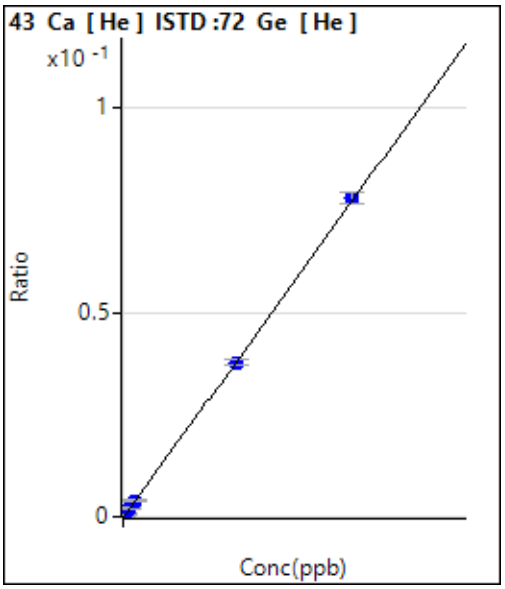
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	95734.96	0.2989	P	1.2	
2	☐	200.000	213.967	180835.03	0.5679	P	1.2	7.0
3	☐	500.000	529.877	307765.89	0.9651	P	0.5	6.0
4	☐	1000.000	1059.079	520490.46	1.6303	P	0.1	5.9
5	☐	10000.00	10006.96	4072868.17	12.8792	A	0.9	0.1
6	☐	20000.00	19992.67	7856021.76	25.4327	A	1.0	0.0

y = 0.0013 * x + 0.2989
R = 1.0000
DL = 8.787 ppb
BEC = 237.8 ppb

Weight: <None>
Min Conc: <None>

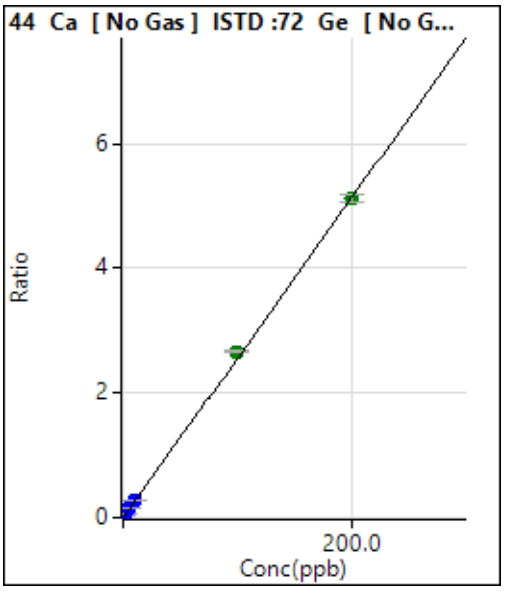


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	36.67	0.0001	P	62.8	
2	☐	200.000	143.681	213.34	0.0007	P	10.7	-28.2
3	☐	500.000	505.476	660.03	0.0021	P	10.4	1.1
4	☐	1000.000	985.362	1253.42	0.0039	P	7.6	-1.5
5	☐	10000.00	9745.697	11955.41	0.0378	P	2.6	-2.5
6	☐	20000.00	20128.30	24084.86	0.0780	P	3.1	0.6

y = 3.8677E-006 * x + 1.1424E-004
R = 0.9999
DL = 55.64 ppb
BEC = 29.54 ppb

Weight: <None>
Min Conc: <None>

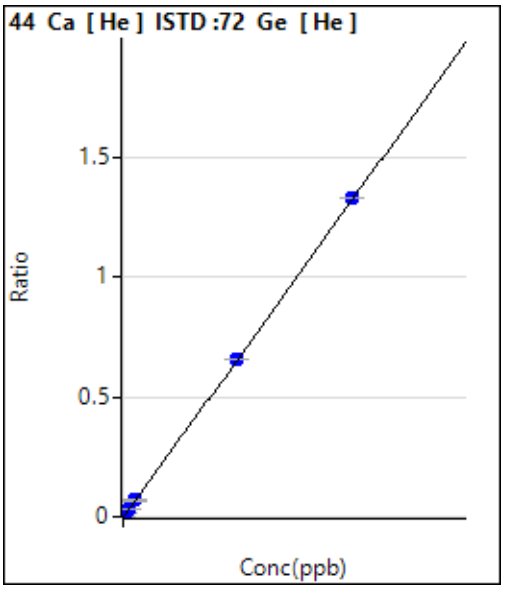
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	18776.53	0.0216	P	0.7	
2	☐	2.000	1.896	61356.53	0.0703	P	1.6	-5.2
3	☐	5.000	4.888	127210.40	0.1472	P	0.2	-2.2
4	☐	10.000	9.635	231188.10	0.2692	P	0.6	-3.7
5	☐	100.000	102.703	2280311.37	2.6609	A	1.1	2.7
6	☐	200.000	198.671	4283913.37	5.1270	A	2.1	-0.7

y = 0.0257 * x + 0.0216
R = 0.9999
DL = 0.01833 ppb
BEC = 0.8407 ppb

Weight: <None>
Min Conc: <None>

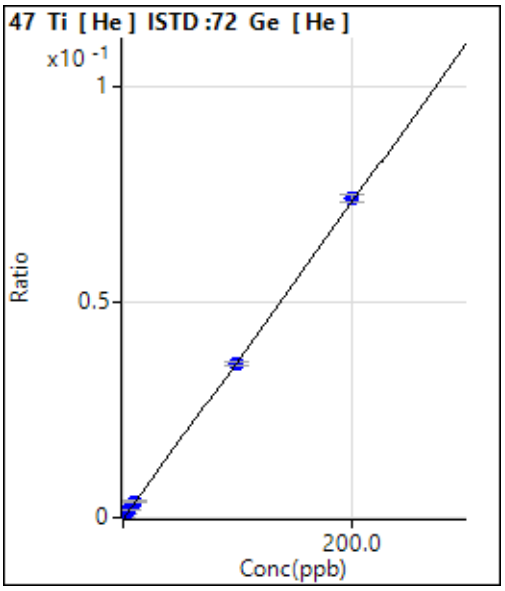


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	736.70	0.0023	P	12.2	
2	☐	200.000	196.396	4870.96	0.0153	P	1.7	-1.8
3	☐	500.000	498.620	11258.12	0.0353	P	3.0	-0.3
4	☐	1000.000	999.246	21847.64	0.0684	P	1.1	-0.1
5	☐	10000.00	9868.507	207271.81	0.6554	P	0.7	-1.3
6	☐	20000.00	20065.85	410935.69	1.3303	P	0.3	0.3

y = 6.6183E-005 * x + 0.0023
R = 1.0000
DL = 12.7 ppb
BEC = 34.75 ppb

Weight: <None>
Min Conc: <None>

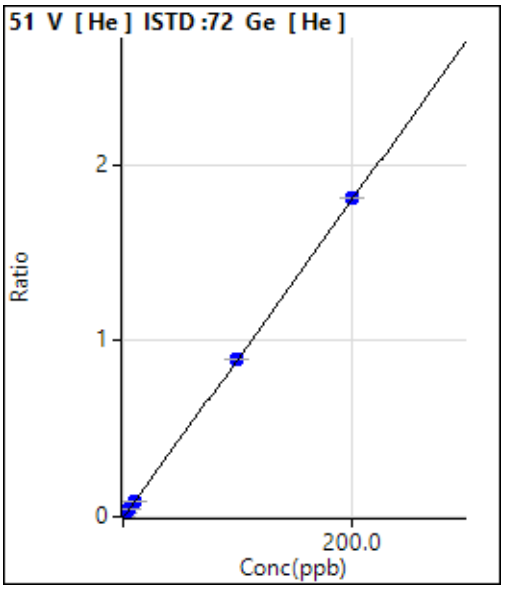
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	6.67	0.0000	P	86.6	
2	☐	2.000	2.166	260.01	0.0008	P	31.2	8.3
3	☐	5.000	4.698	556.69	0.0017	P	12.0	-6.0
4	☐	10.000	10.070	1186.75	0.0037	P	11.1	0.7
5	☐	100.000	96.699	11231.48	0.0355	P	2.5	-3.3
6	☐	200.000	201.653	22869.37	0.0740	P	2.1	0.8

y = 3.6703E-004 * x + 2.0840E-005
R = 0.9998
DL = 0.1475 ppb
BEC = 0.05678 ppb

Weight: <None>
Min Conc: <None>

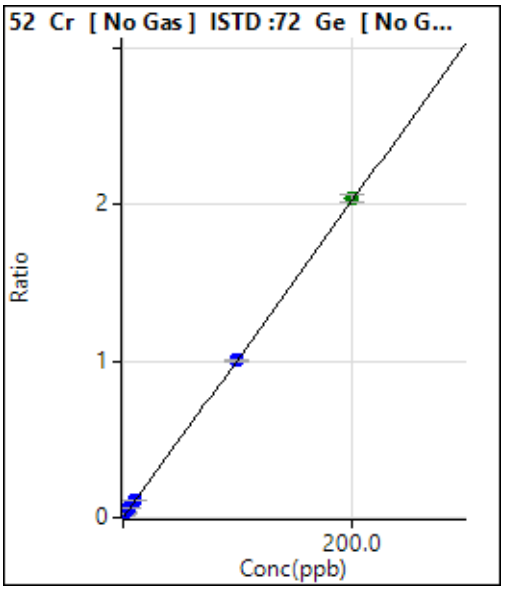


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	537.79	0.0017	P	5.0	
2	☐	2.000	1.936	6095.83	0.0191	P	0.3	-3.2
3	☐	5.000	4.914	14669.03	0.0460	P	1.0	-1.7
4	☐	10.000	9.826	28828.13	0.0903	P	0.8	-1.7
5	☐	100.000	99.022	282948.33	0.8947	P	0.5	-1.0
6	☐	200.000	200.501	559091.70	1.8099	P	0.3	0.3

y = 0.0090 * x + 0.0017
R = 1.0000
DL = 0.02775 ppb
BEC = 0.1862 ppb

Weight: <None>
Min Conc: <None>

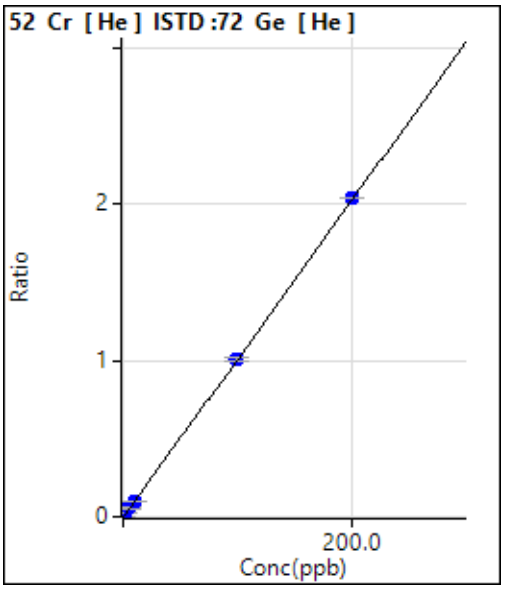
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	9256.63	0.0107	P	2.3	
2	☐	2.000	1.992	26850.06	0.0308	P	1.9	-0.4
3	☐	5.000	5.027	53099.72	0.0614	P	2.0	0.5
4	☐	10.000	9.835	94495.42	0.1100	P	1.7	-1.7
5	☐	100.000	98.149	859097.98	1.0025	P	0.4	-1.9
6	☐	200.000	200.933	1705481.27	2.0412	A	2.5	0.5

y = 0.0101 * x + 0.0107
R = 0.9999
DL = 0.07133 ppb
BEC = 1.054 ppb

Weight: <None>
Min Conc: <None>

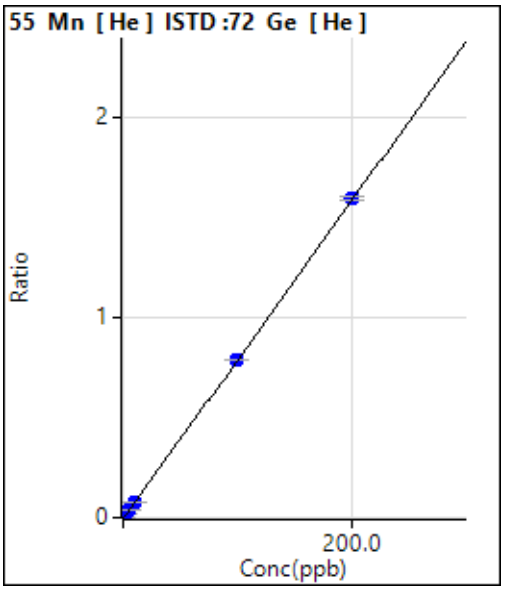


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1626.79	0.0051	P	6.9	
2	☐	2.000	1.927	7832.38	0.0246	P	2.7	-3.6
3	☐	5.000	5.048	17922.11	0.0562	P	4.1	1.0
4	☐	10.000	9.681	32920.07	0.1031	P	1.2	-3.2
5	☐	100.000	98.752	317853.34	1.0051	P	1.5	-1.2
6	☐	200.000	200.639	629202.79	2.0369	P	0.3	0.3

y = 0.0101 * x + 0.0051
R = 1.0000
DL = 0.1037 ppb
BEC = 0.5015 ppb

Weight: <None>
Min Conc: <None>

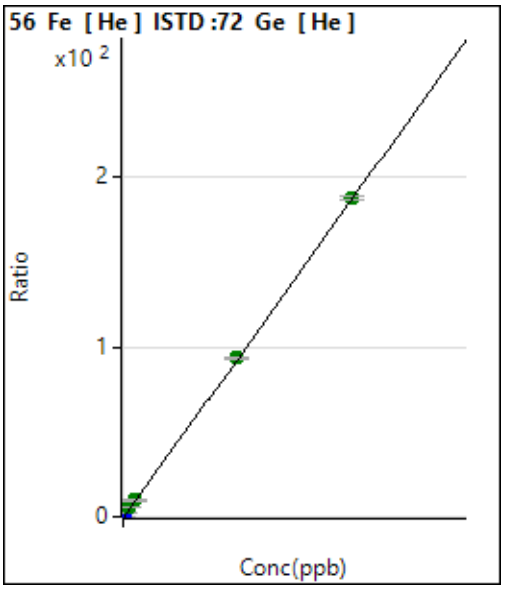
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	553.35	0.0017	P	16.3	
2	☐	2.000	1.974	5547.92	0.0174	P	3.4	-1.3
3	☐	5.000	4.859	12869.66	0.0404	P	2.3	-2.8
4	☐	10.000	9.731	25247.00	0.0791	P	3.6	-2.7
5	☐	100.000	99.042	249557.62	0.7891	P	0.7	-1.0
6	☐	200.000	200.496	492920.51	1.5957	P	1.2	0.2

y = 0.0080 * x + 0.0017
R = 1.0000
DL = 0.1063 ppb
BEC = 0.2174 ppb

Weight: <None>
Min Conc: <None>

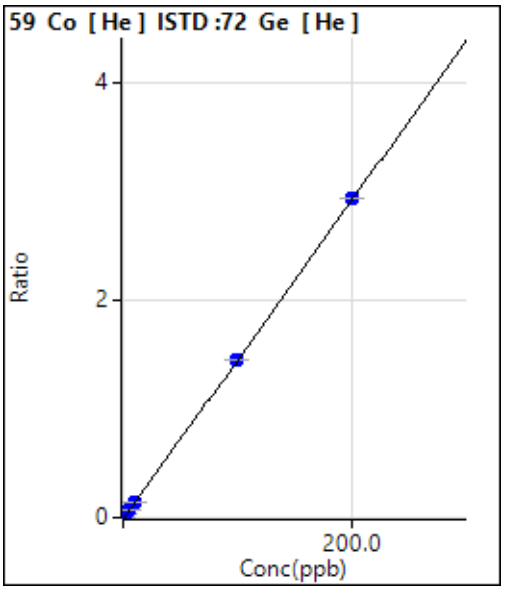


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	25176.96	0.0786	P	1.8	
2	☐	200.000	207.241	643710.16	2.0215	P	0.6	3.6
3	☐	500.000	535.493	1626113.57	5.0989	A	0.4	7.1
4	☐	1000.000	1016.830	3068455.89	9.6116	A	1.3	1.7
5	☐	10000.00	9986.422	29632872.8	93.7029	A	1.0	-0.1
6	☐	20000.00	20004.98	57956642.4	187.628	A	0.7	0.0

y = 0.0094 * x + 0.0786
R = 1.0000
DL = 0.4513 ppb
BEC = 8.385 ppb

Weight: <None>
Min Conc: <None>

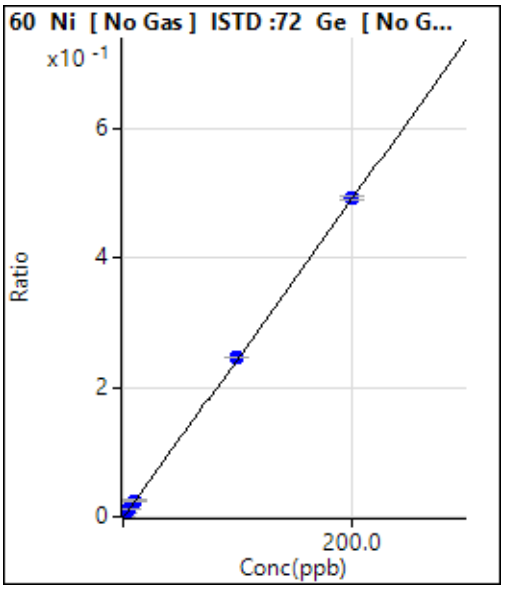
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	106.67	0.0003	P	23.2	
2	☐	2.000	1.980	9366.72	0.0294	P	1.0	-1.0
3	☐	5.000	5.057	23801.15	0.0746	P	2.0	1.1
4	☐	10.000	9.888	46483.02	0.1456	P	1.4	-1.1
5	☐	100.000	99.231	461125.90	1.4581	P	0.4	-0.8
6	☐	200.000	200.389	909477.46	2.9443	P	0.3	0.2

y = 0.0147 * x + 3.3282E-004
R = 1.0000
DL = 0.01578 ppb
BEC = 0.02265 ppb

Weight: <None>
Min Conc: <None>

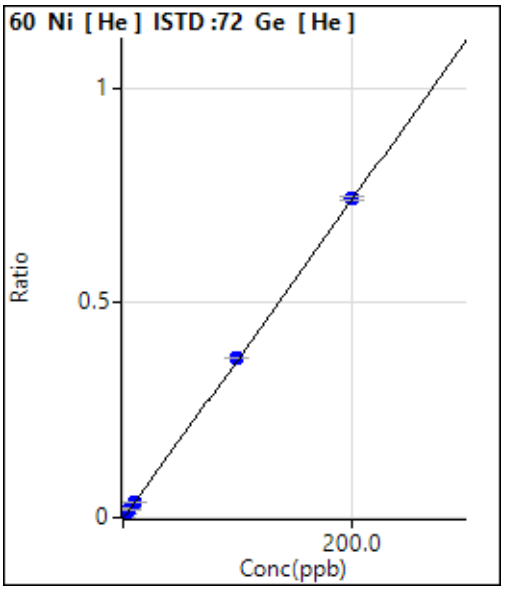


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	473.35	0.0005	P	13.5	
2	☐	2.000	2.000	4764.25	0.0055	P	2.9	0.0
3	☐	5.000	4.990	11067.97	0.0128	P	2.4	-0.2
4	☐	10.000	9.975	21527.30	0.0251	P	2.5	-0.3
5	☐	100.000	100.052	211212.76	0.2465	P	0.8	0.1
6	☐	200.000	199.976	411173.03	0.4921	P	0.9	0.0

y = 0.0025 * x + 5.4464E-004
R = 1.0000
DL = 0.08989 ppb
BEC = 0.2216 ppb

Weight: <None>
Min Conc: <None>

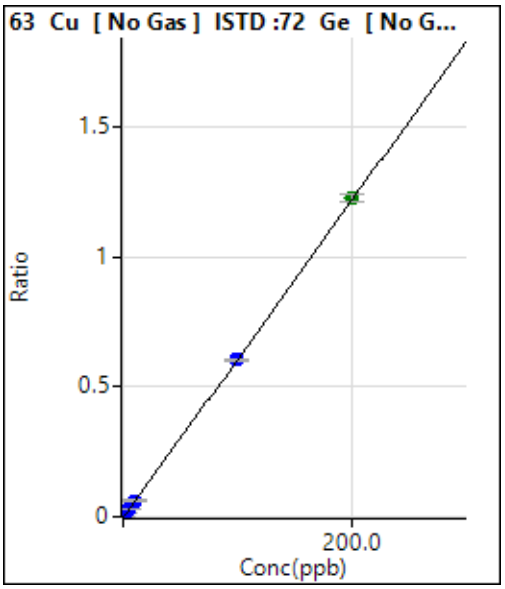
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	130.00	0.0004	P	58.0	
2	☐	2.000	2.061	2566.96	0.0081	P	2.7	3.1
3	☐	5.000	5.272	6374.96	0.0200	P	4.2	5.4
4	☐	10.000	9.905	11875.35	0.0372	P	3.9	-1.0
5	☐	100.000	99.626	117155.10	0.3705	P	0.2	-0.4
6	☐	200.000	200.184	229802.35	0.7440	P	1.0	0.1

y = 0.0037 * x + 4.0612E-004
R = 1.0000
DL = 0.1903 ppb
BEC = 0.1093 ppb

Weight: <None>
Min Conc: <None>

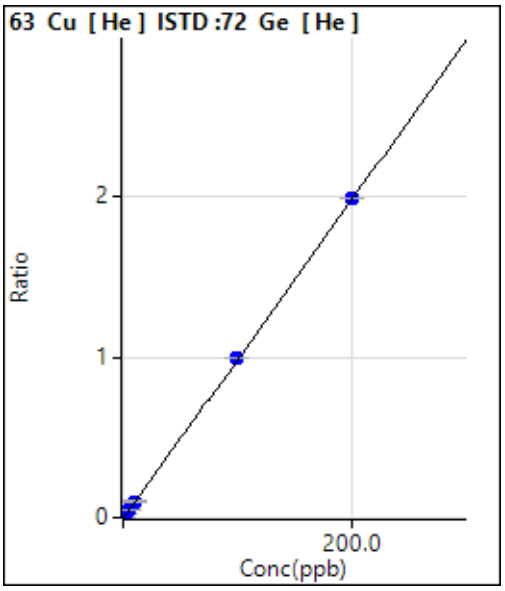


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1593.47	0.0018	P	6.9	
2	☐	2.000	1.887	11661.87	0.0134	P	1.6	-5.6
3	☐	5.000	4.919	27561.80	0.0319	P	3.3	-1.6
4	☐	10.000	9.929	53686.45	0.0625	P	1.9	-0.7
5	☐	100.000	98.762	518754.25	0.6053	P	1.0	-1.2
6	☐	200.000	200.626	1025943.16	1.2278	A	2.6	0.3

y = 0.0061 * x + 0.0018
R = 1.0000
DL = 0.06226 ppb
BEC = 0.3 ppb

Weight: <None>
Min Conc: <None>

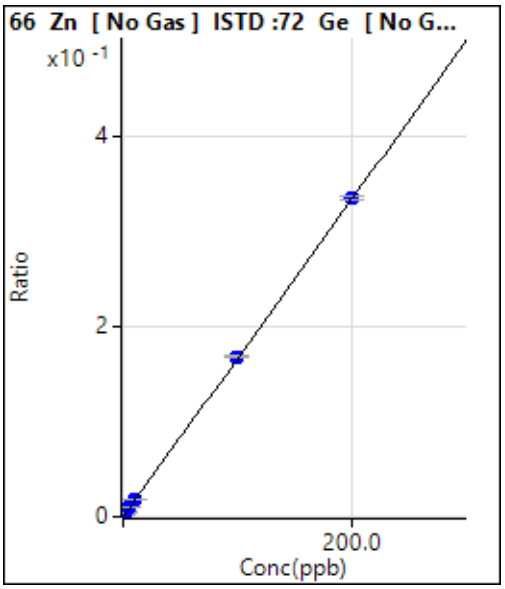
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	833.37	0.0026	P	7.8	
2	☐	2.000	1.941	6971.90	0.0219	P	3.8	-2.9
3	☐	5.000	5.008	16703.89	0.0524	P	2.3	0.2
4	☐	10.000	9.966	32449.17	0.1016	P	1.9	-0.3
5	☐	100.000	99.882	314744.34	0.9953	P	1.0	-0.1
6	☐	200.000	200.061	614995.34	1.9909	P	0.4	0.0

y = 0.0099 * x + 0.0026
R = 1.0000
DL = 0.0614 ppb
BEC = 0.2619 ppb

Weight: <None>
Min Conc: <None>

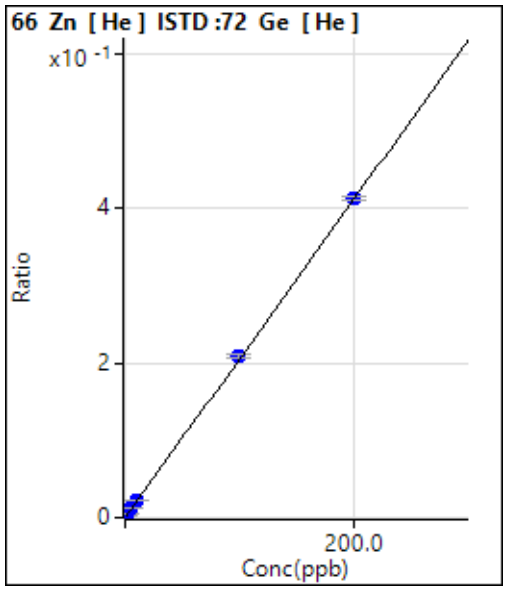


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1510.11	0.0017	P	3.1	
2	☐	2.000	1.930	4327.44	0.0050	P	5.8	-3.5
3	☐	5.000	4.964	8666.25	0.0100	P	3.2	-0.7
4	☐	10.000	9.951	15766.08	0.0184	P	1.4	-0.5
5	☐	100.000	100.044	144693.22	0.1688	P	0.9	0.0
6	☐	200.000	199.982	280577.41	0.3358	P	0.6	0.0

y = 0.0017 * x + 0.0017
R = 1.0000
DL = 0.09546 ppb
BEC = 1.04 ppb

Weight: <None>
Min Conc: <None>

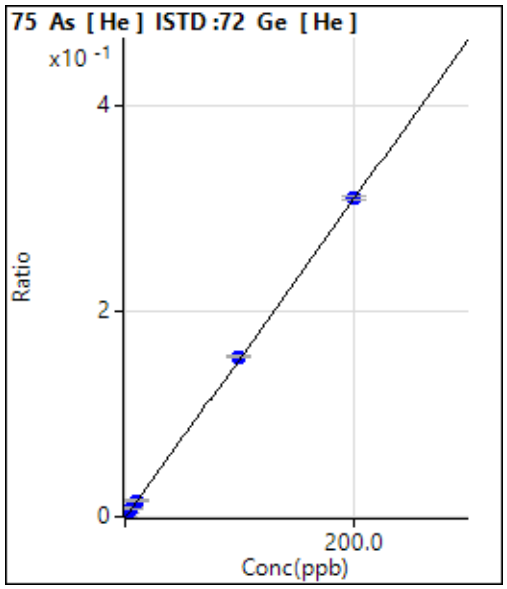
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	670.03	0.0021	P	17.0	
2	☐	2.000	1.877	1896.83	0.0060	P	3.7	-6.1
3	☐	5.000	5.020	3964.00	0.0124	P	7.7	0.4
4	☐	10.000	9.990	7235.38	0.0227	P	2.4	-0.1
5	☐	100.000	100.443	66067.44	0.2089	P	1.9	0.4
6	☐	200.000	199.780	127717.07	0.4135	P	1.0	-0.1

y = 0.0021 * x + 0.0021
R = 1.0000
DL = 0.5169 ppb
BEC = 1.016 ppb

Weight: <None>
Min Conc: <None>

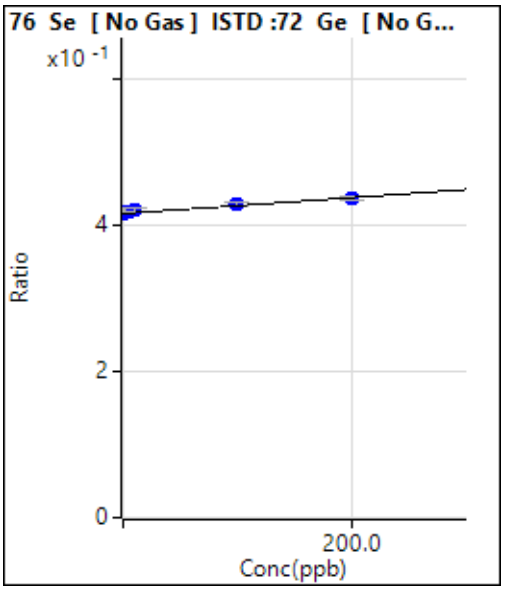


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	74.45	0.0002	P	9.6	
2	☐	2.000	2.010	1065.60	0.0033	P	2.1	0.5
3	☐	5.000	5.205	2644.71	0.0083	P	6.2	4.1
4	☐	10.000	10.020	5028.74	0.0158	P	2.8	0.2
5	☐	100.000	100.271	49190.34	0.1555	P	0.5	0.3
6	☐	200.000	199.858	95692.01	0.3098	P	0.9	-0.1

y = 0.0015 * x + 2.3250E-004
R = 1.0000
DL = 0.0434 ppb
BEC = 0.1501 ppb

Weight: <None>
Min Conc: <None>

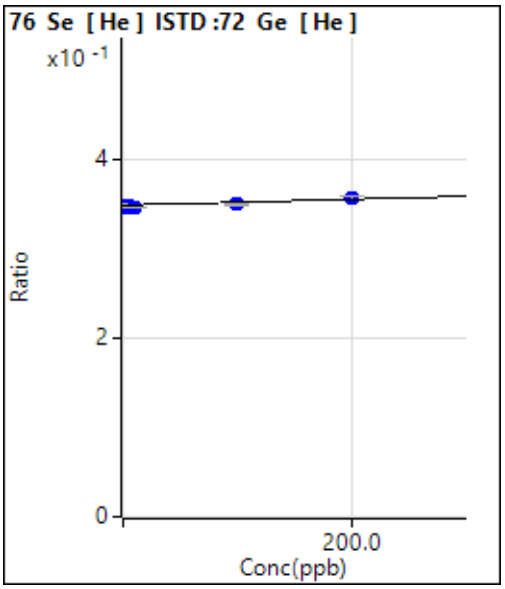
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	361560.96	0.4160	P	0.4	
2	☐	2.000	10.739	363973.69	0.4172	P	0.2	437.0
3	☐	5.000	33.992	362689.48	0.4198	P	1.1	579.8
4	☐	10.000	41.838	361229.49	0.4206	P	0.9	318.4
5	☐	100.000	114.740	367313.93	0.4286	P	1.1	14.7
6	☐	200.000	190.226	365084.28	0.4369	P	0.8	-4.9

y = 1.0975E-004 * x + 0.4160
R = 0.9840
DL = 39.92 ppb
BEC = 3791 ppb

Weight: <None>
Min Conc: <None>

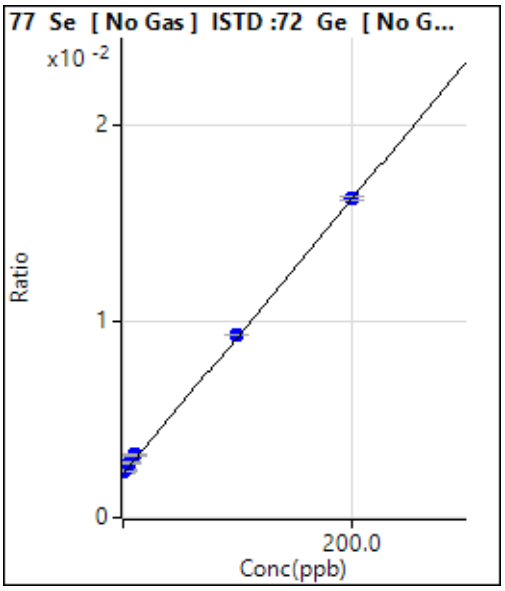


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	111980.33	0.3496	P	1.2	
2	☐	2.000	-87.869	110403.32	0.3467	P	1.3	-4493.
3	☐	5.000	-13.675	111354.41	0.3492	P	0.6	-373.5
4	☐	10.000	-56.889	111008.16	0.3477	P	0.1	-668.9
5	☐	100.000	24.818	110830.55	0.3505	P	1.1	-75.2
6	☐	200.000	242.301	110521.65	0.3578	P	1.2	21.2

y = 3.3626E-005 * x + 0.3496
R = 0.9282
DL = 385.6 ppb
BEC = 1.04E+04 ppb

Weight: <None>
Min Conc: <None>

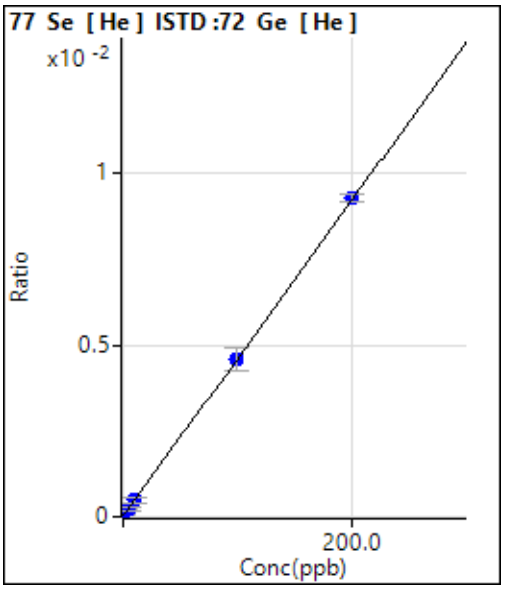
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	2013.52	0.0023	P	1.5	
2	☐	2.000	1.462	2110.21	0.0024	P	5.2	-26.9
3	☐	5.000	6.527	2396.93	0.0028	P	3.9	30.5
4	☐	10.000	12.715	2753.66	0.0032	P	2.6	27.1
5	☐	100.000	100.183	7992.50	0.0093	P	0.3	0.2
6	☐	200.000	199.740	13613.73	0.0163	P	1.0	-0.1

y = 6.9969E-005 * x + 0.0023
R = 0.9999
DL = 1.485 ppb
BEC = 33.11 ppb

Weight: <None>
Min Conc: <None>

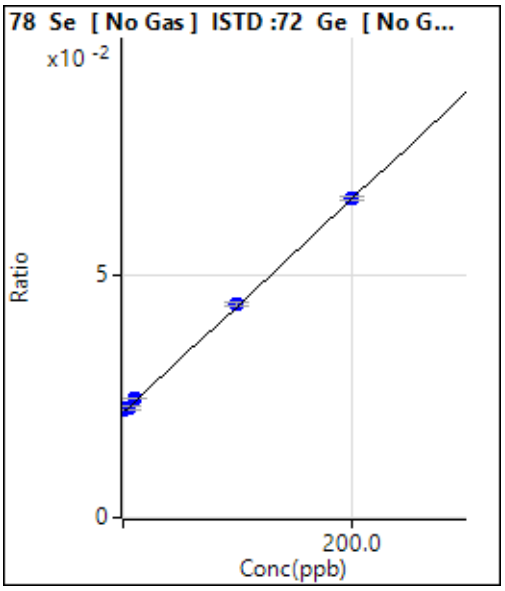


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	20.00	0.0001	P	0.5	
2	☐	2.000	3.201	66.67	0.0002	P	23.8	60.0
3	☐	5.000	3.192	66.67	0.0002	P	48.4	-36.2
4	☐	10.000	9.548	160.00	0.0005	P	32.8	-4.5
5	☐	100.000	98.810	1456.78	0.0046	P	14.6	-1.2
6	☐	200.000	200.651	2870.35	0.0093	P	2.9	0.3

y = 4.5999E-005 * x + 6.2448E-005
R = 0.9999
DL = 0.02101 ppb
BEC = 1.358 ppb

Weight: <None>
Min Conc: <None>

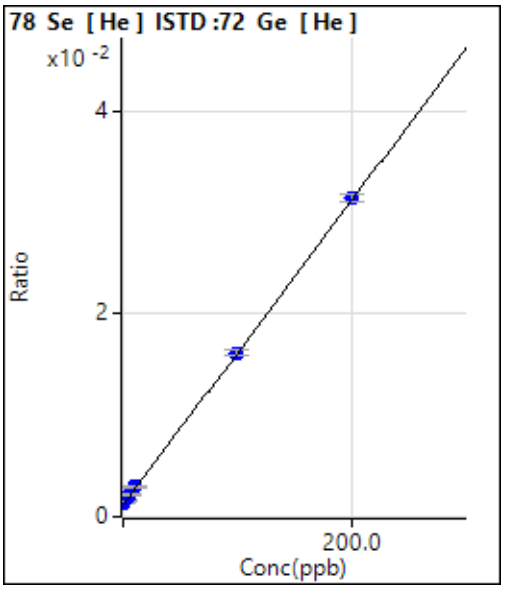
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	19157.20	0.0220	P	2.4	
2	☐	2.000	2.646	19738.20	0.0226	P	3.6	32.3
3	☐	5.000	3.462	19701.45	0.0228	P	3.5	-30.8
4	☐	10.000	12.392	21270.36	0.0248	P	0.3	23.9
5	☐	100.000	100.586	37830.07	0.0441	P	1.9	0.6
6	☐	200.000	199.620	55066.15	0.0659	P	0.8	-0.2

y = 2.1970E-004 * x + 0.0220
R = 0.9999
DL = 7.2 ppb
BEC = 100.3 ppb

Weight: <None>
Min Conc: <None>

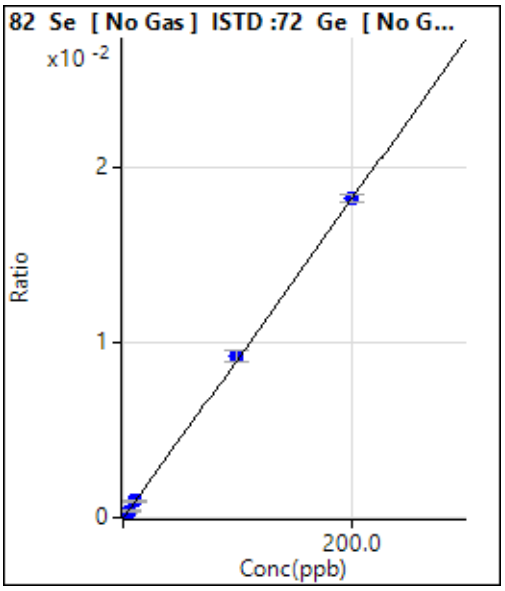


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	430.01	0.0013	P	15.1	
2	☐	2.000	2.103	528.01	0.0017	P	8.1	5.1
3	☐	5.000	5.483	690.69	0.0022	P	5.1	9.7
4	☐	10.000	10.892	950.70	0.0030	P	5.1	8.9
5	☐	100.000	98.689	5110.98	0.0162	P	3.7	-1.3
6	☐	200.000	200.598	9720.19	0.0315	P	2.4	0.3

y = 1.5017E-004 * x + 0.0013
R = 1.0000
DL = 4.054 ppb
BEC = 8.938 ppb

Weight: <None>
Min Conc: <None>

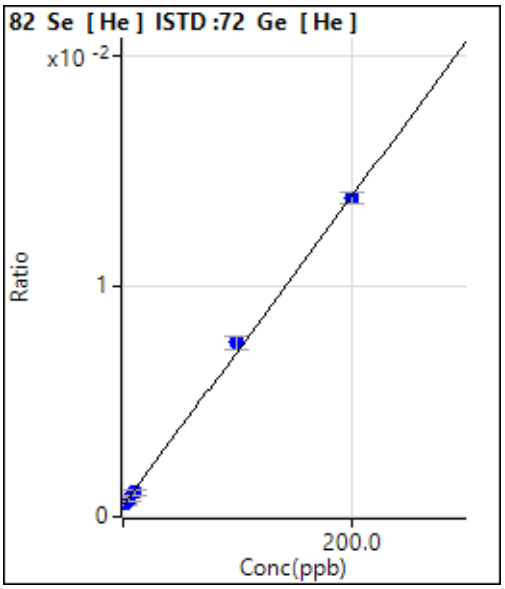
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	26.16	0.0000	P	399.5	
2	☐	2.000	2.185	200.01	0.0002	P	27.6	9.2
3	☐	5.000	3.733	319.90	0.0004	P	13.2	-25.3
4	☐	10.000	10.006	809.92	0.0009	P	12.6	0.1
5	☐	100.000	101.011	7918.46	0.0092	P	7.9	1.0
6	☐	200.000	199.524	15228.76	0.0182	P	2.1	-0.2

y = 9.1188E-005 * x + 3.0101E-005
R = 1.0000
DL = 3.956 ppb
BEC = 0.3301 ppb

Weight: <None>
Min Conc: <None>

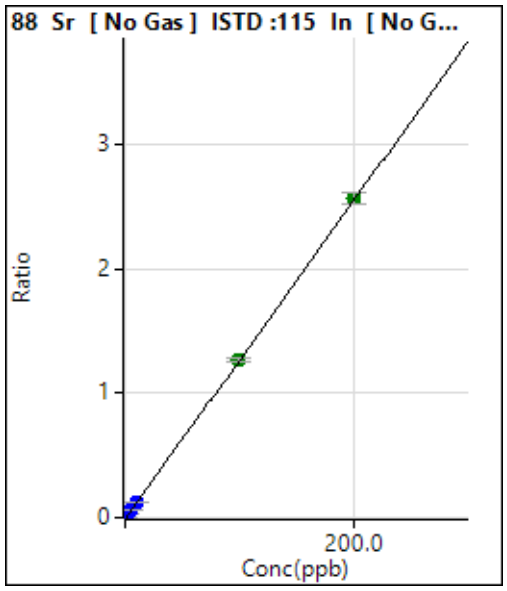


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	180.01	0.0006	P	10.7	
2	☐	2.000	-0.111	176.67	0.0006	P	10.8	-105.5
3	☐	5.000	3.308	250.01	0.0008	P	19.7	-33.8
4	☐	10.000	7.493	340.01	0.0011	P	25.7	-25.1
5	☐	100.000	104.522	2393.59	0.0076	P	7.6	4.5
6	☐	200.000	197.928	4274.08	0.0138	P	3.7	-1.0

y = 6.7056E-005 * x + 5.6188E-004
R = 0.9995
DL = 2.697 ppb
BEC = 8.379 ppb

Weight: <None>
Min Conc: <None>

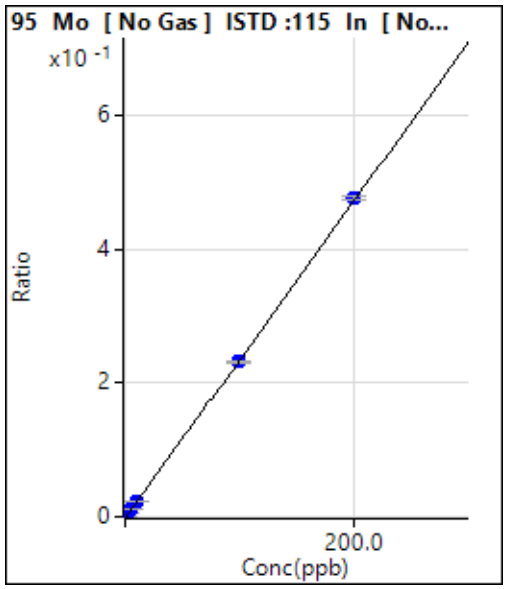
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	890.05	0.0009	P	1.4	
2	☐	2.000	1.895	25207.53	0.0252	P	2.0	-5.2
3	☐	5.000	4.840	61903.51	0.0628	P	1.4	-3.2
4	☐	10.000	9.468	119784.33	0.1221	P	0.5	-5.3
5	☐	100.000	99.033	1241548.39	1.2684	A	1.6	-1.0
6	☐	200.000	200.515	2458010.48	2.5672	A	3.2	0.3

y = 0.0128 * x + 8.9968E-004
R = 1.0000
DL = 0.00293 ppb
BEC = 0.0703 ppb

Weight: <None>
Min Conc: <None>

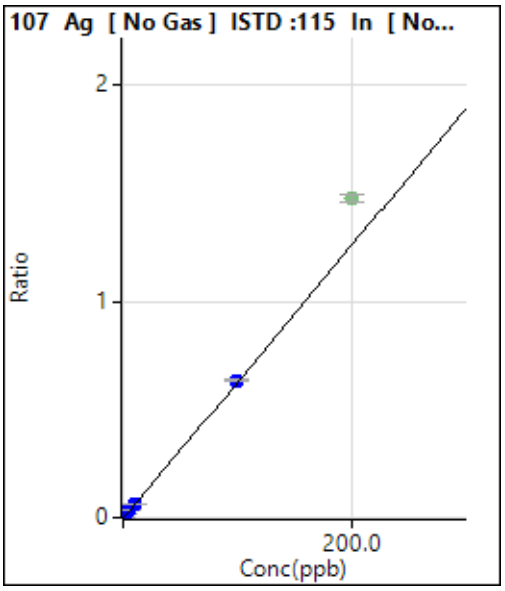


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	73.33	0.0001	P	21.1	
2	☐	2.000	1.965	4744.26	0.0047	P	5.5	-1.8
3	☐	5.000	4.948	11635.30	0.0118	P	0.4	-1.0
4	☐	10.000	9.861	23026.98	0.0235	P	1.1	-1.4
5	☐	100.000	97.741	227027.49	0.2320	P	1.3	-2.3
6	☐	200.000	201.138	457031.31	0.4773	P	0.7	0.6

y = 0.0024 * x + 7.4158E-005
R = 0.9999
DL = 0.01979 ppb
BEC = 0.03126 ppb

Weight: <None>
Min Conc: <None>

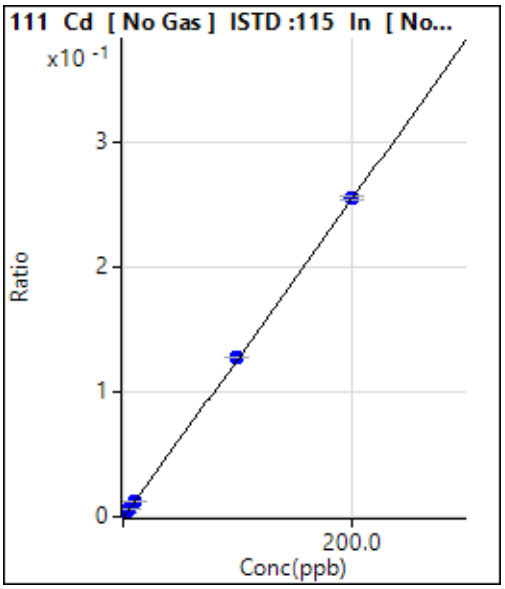
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	2977.06	0.0030	P	11.1	
2	☐	2.000	1.676	13627.31	0.0136	P	1.2	-16.2
3	☐	5.000	4.663	31989.14	0.0325	P	3.2	-6.7
4	☐	10.000	9.538	62096.41	0.0633	P	1.5	-4.6
5	☐	100.000	100.070	621911.42	0.6354	P	1.5	0.1
6	☑	200.000		1414648.00	1.4774	A	2.4	

y = 0.0063 * x + 0.0030
R = 1.0000
DL = 0.158 ppb
BEC = 0.4763 ppb

Weight: <None>
Min Conc: <None>

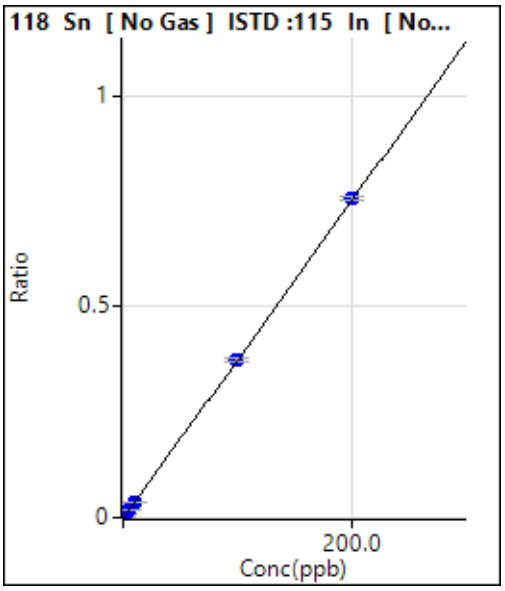


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	0.00	0.0000	P		
2	☐	2.000	2.050	2630.32	0.0026	P	9.1	2.5
3	☐	5.000	4.902	6181.56	0.0063	P	2.1	-2.0
4	☐	10.000	9.919	12459.44	0.0127	P	4.1	-0.8
5	☐	100.000	100.040	125353.80	0.1281	P	0.7	0.0
6	☐	200.000	199.986	245164.76	0.2560	P	1.3	0.0

y = 0.0013 * x + 0.0000E+000
R = 1.0000
DL = 0 ppb
BEC = 0 ppb

Weight: <None>
Min Conc: <None>

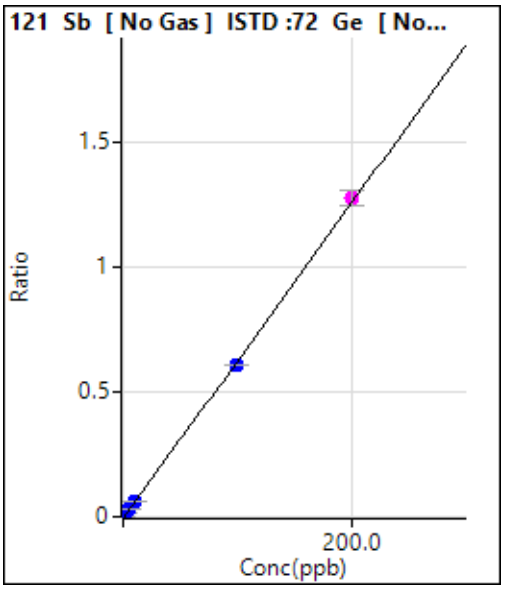
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1326.76	0.0013	P	10.1	
2	☐	2.000	1.763	7999.24	0.0080	P	5.2	-11.9
3	☐	5.000	4.823	19221.01	0.0195	P	2.1	-3.5
4	☐	10.000	9.679	37099.51	0.0378	P	1.9	-3.2
5	☐	100.000	98.958	366263.15	0.3742	P	1.7	-1.0
6	☐	200.000	200.544	724897.57	0.7570	P	0.8	0.3

y = 0.0038 * x + 0.0013
R = 1.0000
DL = 0.1077 ppb
BEC = 0.3558 ppb

Weight: <None>
Min Conc: <None>

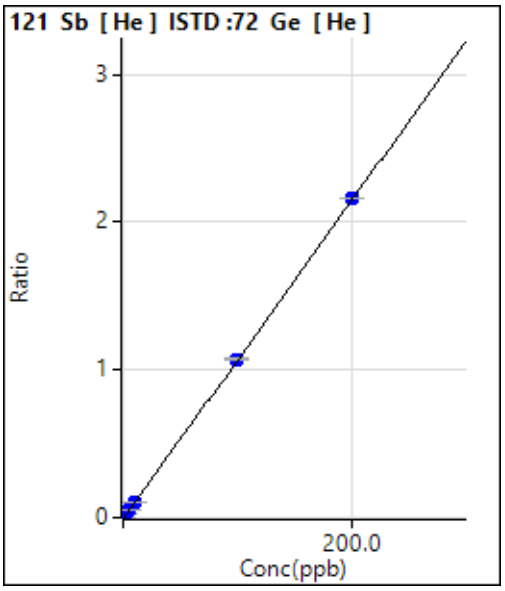


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	493.35	0.0006	P	13.2	
2	☐	2.000	1.867	10791.33	0.0124	P	1.9	-6.7
3	☐	5.000	4.718	26263.35	0.0304	P	2.9	-5.6
4	☐	10.000	9.428	51682.42	0.0602	P	0.5	-5.7
5	☐	100.000	95.917	520219.89	0.6071	P	0.6	-4.1
6	☐	200.000	202.078	1068073.16	1.2783	M	4.4	1.0

y = 0.0063 * x + 5.6766E-004
R = 0.9997
DL = 0.03545 ppb
BEC = 0.08978 ppb

Weight: <None>
Min Conc: <None>

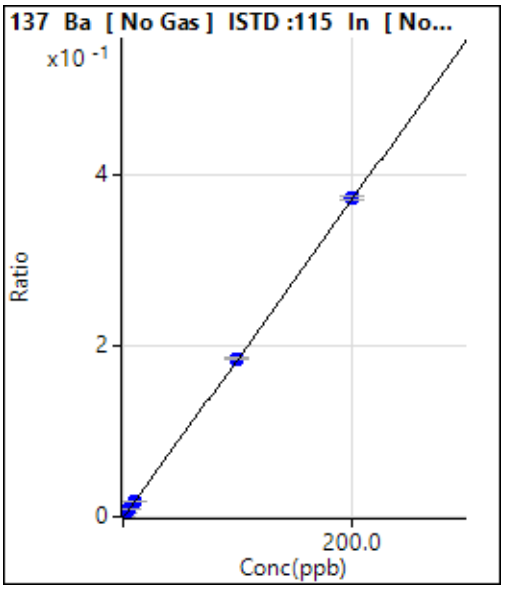
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	350.01	0.0011	P	18.3	
2	☐	2.000	1.988	7172.10	0.0225	P	7.0	-0.6
3	☐	5.000	4.912	17244.96	0.0541	P	2.3	-1.8
4	☐	10.000	9.718	33810.67	0.1059	P	2.7	-2.8
5	☐	100.000	99.224	338812.65	1.0714	P	0.8	-0.8
6	☐	200.000	200.405	668085.33	2.1628	P	0.2	0.2

y = 0.0108 * x + 0.0011
R = 1.0000
DL = 0.05562 ppb
BEC = 0.1013 ppb

Weight: <None>
Min Conc: <None>

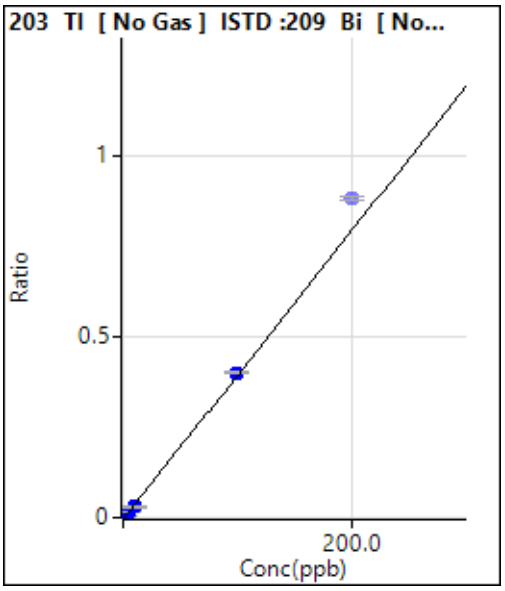


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	336.68	0.0003	P	22.9	
2	☐	2.000	1.828	3750.60	0.0037	P	5.5	-8.6
3	☐	5.000	4.970	9446.95	0.0096	P	2.2	-0.6
4	☐	10.000	9.747	18136.34	0.0185	P	3.7	-2.5
5	☐	100.000	99.352	181324.61	0.1852	P	1.0	-0.6
6	☐	200.000	200.339	357362.73	0.3732	P	1.4	0.2

y = 0.0019 * x + 3.4058E-004
R = 1.0000
DL = 0.1258 ppb
BEC = 0.183 ppb

Weight: <None>
Min Conc: <None>

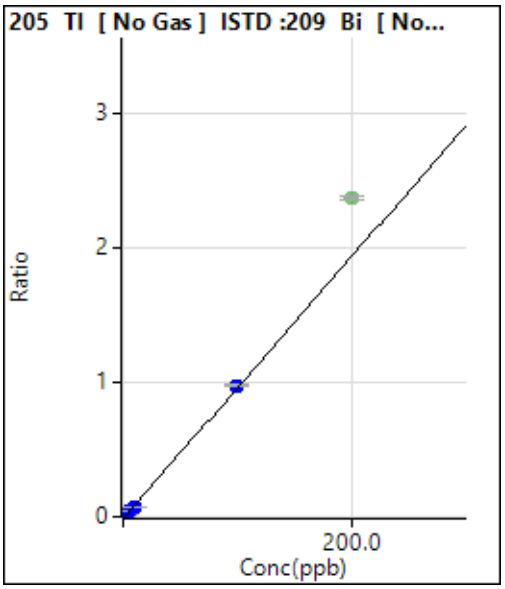
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	43.33	0.0001	P	71.2	
2	☐	2.000	1.789	5934.84	0.0072	P	0.8	-10.6
3	☐	5.000	4.100	13470.86	0.0164	P	2.7	-18.0
4	☐	10.000	7.342	24193.83	0.0293	P	3.9	-26.6
5	☐	100.000	100.315	344558.64	0.3993	P	1.4	0.3
6	☑	200.000		724286.47	0.8811	P	1.1	

y = 0.0040 * x + 5.3313E-005
R = 0.9997
DL = 0.02861 ppb
BEC = 0.0134 ppb

Weight: <None>
Min Conc: <None>

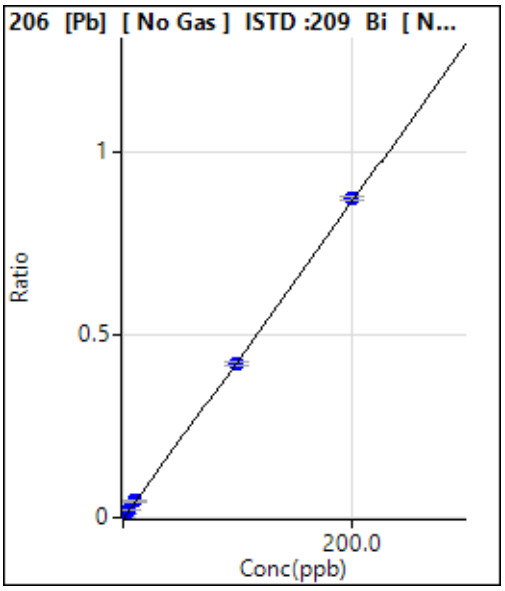


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	160.00	0.0002	P	9.9	
2	☐	2.000	1.842	14989.32	0.0181	P	2.9	-7.9
3	☐	5.000	3.989	32108.56	0.0390	P	1.3	-20.2
4	☐	10.000	7.395	59633.08	0.0721	P	1.6	-26.0
5	☐	100.000	100.314	842551.50	0.9762	P	0.6	0.3
6	☑	200.000		1948052.89	2.3698	A	0.8	

y = 0.0097 * x + 1.9569E-004
R = 0.9997
DL = 0.005984 ppb
BEC = 0.02011 ppb

Weight: <None>
Min Conc: <None>

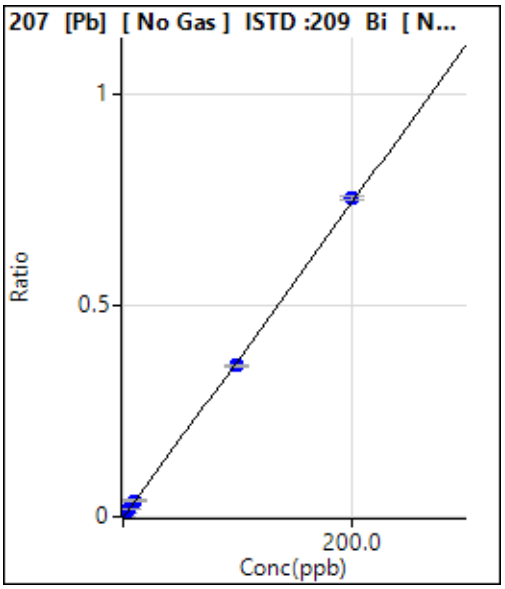
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	126.67	0.0002	P	17.6	
2	☐	2.000	2.018	7372.33	0.0089	P	6.2	0.9
3	☐	5.000	5.131	18440.65	0.0224	P	3.4	2.6
4	☐	10.000	10.330	37152.80	0.0450	P	4.2	3.3
5	☐	100.000	97.041	363307.78	0.4210	P	1.8	-3.0
6	☐	200.000	201.459	718303.30	0.8739	P	1.5	0.7

y = 0.0043 * x + 1.5520E-004
R = 0.9998
DL = 0.0189 ppb
BEC = 0.03579 ppb

Weight: <None>
Min Conc: <None>

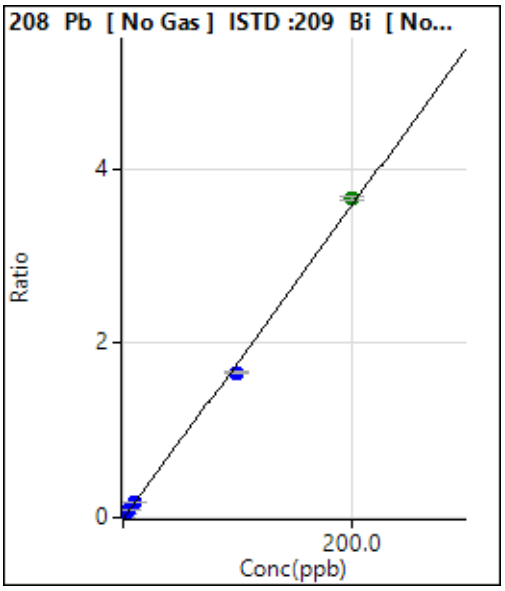


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	702.14	0.0009	P	144.1	
2	☐	2.000	1.819	6345.07	0.0077	P	2.3	-9.0
3	☐	5.000	4.995	16077.33	0.0195	P	2.4	-0.1
4	☐	10.000	10.114	31958.28	0.0387	P	1.1	1.1
5	☐	100.000	95.789	309689.64	0.3588	P	0.8	-4.2
6	☐	200.000	202.102	621527.41	0.7561	P	1.5	1.1

y = 0.0037 * x + 8.6901E-004
R = 0.9997
DL = 1.006 ppb
BEC = 0.2325 ppb

Weight: <None>
Min Conc: <None>

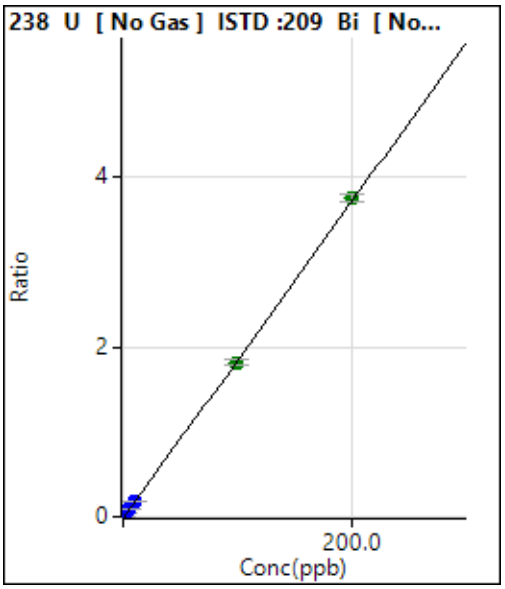
Calibration for 231_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1188.90	0.0015	P	107.9	
2	☐	2.000	1.878	29140.64	0.0352	P	2.1	-6.1
3	☐	5.000	4.913	73854.09	0.0897	P	3.1	-1.7
4	☐	10.000	9.820	147028.92	0.1779	P	1.4	-1.8
5	☐	100.000	92.540	1436117.54	1.6642	P	1.4	-7.5
6	☐	200.000	203.742	3010317.61	3.6621	A	0.8	1.9

y = 0.0180 * x + 0.0015
R = 0.9990
DL = 0.2644 ppb
BEC = 0.08166 ppb

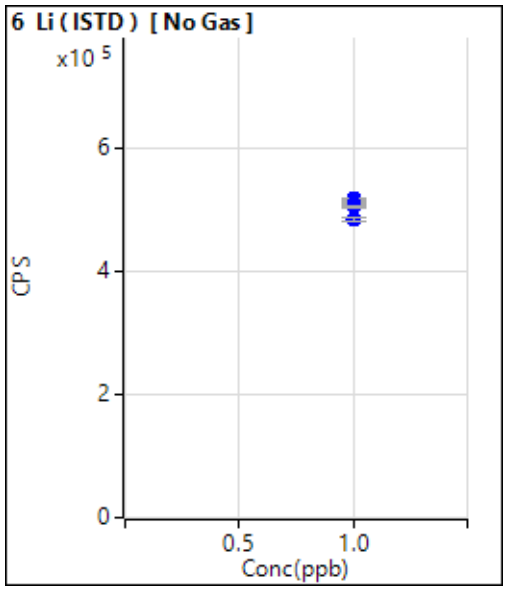
Weight: <None>
Min Conc: <None>



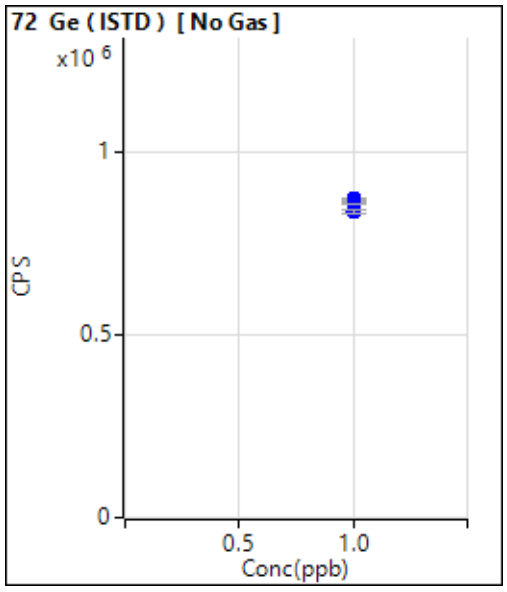
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	26.67	0.0000	P	42.3	
2	☐	2.000	1.851	28607.16	0.0346	P	2.8	-7.5
3	☐	5.000	4.611	70829.20	0.0861	P	1.8	-7.8
4	☐	10.000	9.201	141918.51	0.1717	P	1.5	-8.0
5	☐	100.000	97.483	1569708.15	1.8190	A	3.3	-2.5
6	☐	200.000	201.310	3087598.29	3.7565	A	2.0	0.7

y = 0.0187 * x + 3.2552E-005
R = 0.9999
DL = 0.002214 ppb
BEC = 0.001744 ppb

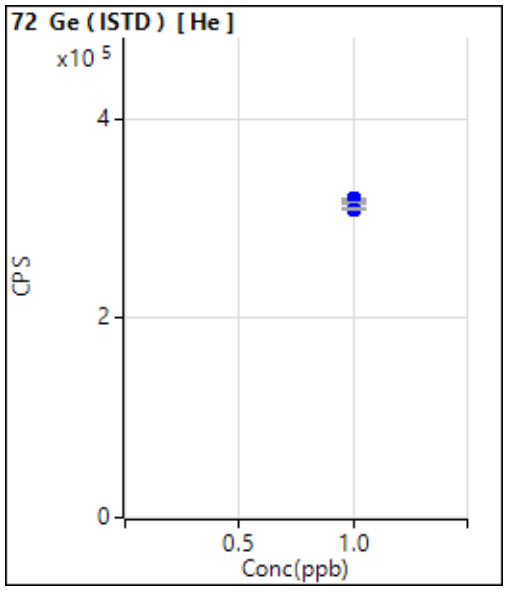
Weight: <None>
Min Conc: <None>



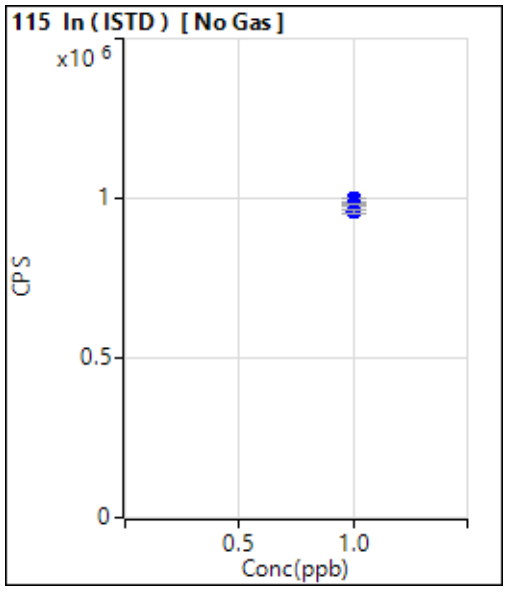
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		517538.66		P	0.2	
2	☐	1.000		516008.61		P	0.2	
3	☐	1.000		517272.31		P	0.3	
4	☐	1.000		509391.95		P	0.3	
5	☐	1.000		503551.23		P	0.9	
6	☐	1.000		484021.14		P	1.1	



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		869069.62		P	0.1	
2	☐	1.000		872397.49		P	0.4	
3	☐	1.000		864080.80		P	0.8	
4	☐	1.000		858836.58		P	0.8	
5	☐	1.000		856963.09		P	0.3	
6	☐	1.000		835619.73		P	0.7	

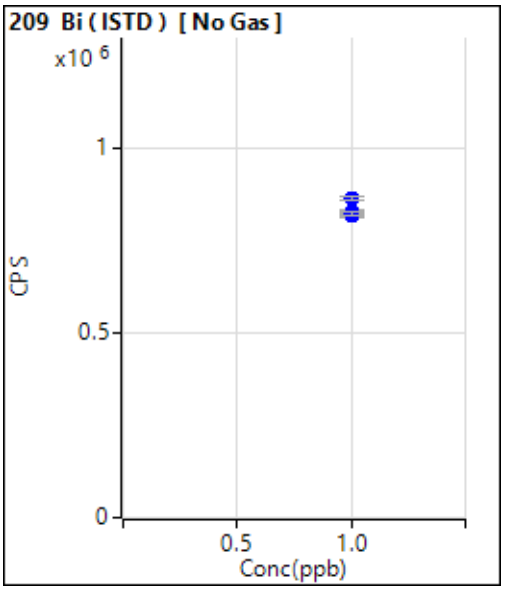


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		320271.64		P	0.5	
2	☐	1.000		318439.39		P	1.0	
3	☐	1.000		318909.93		P	0.4	
4	☐	1.000		319251.03		P	0.4	
5	☐	1.000		316246.77		P	0.5	
6	☐	1.000		308897.68		P	0.7	



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		989325.94		P	0.6	
2	☐	1.000		1002007.00		P	0.1	
3	☐	1.000		985080.60		P	0.5	
4	☐	1.000		981209.78		P	0.6	
5	☐	1.000		978815.98		P	0.6	
6	☐	1.000		957674.83		P	1.1	

Calibration for 231_ICV.d



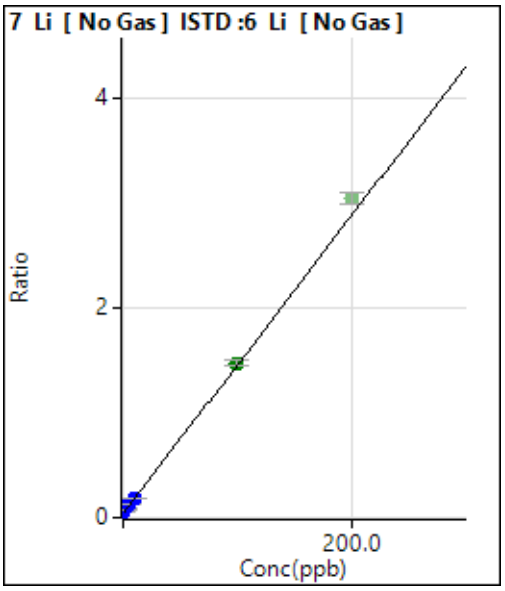
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		817180.85		P	1.2	
2	☐	1.000		827521.34		P	0.6	
3	☐	1.000		823077.88		P	1.1	
4	☐	1.000		826493.89		P	0.4	
5	☐	1.000		863075.09		P	1.3	
6	☐	1.000		822066.66		P	1.2	

Calibration for 022_ICV.d

Batch Folder: D:\Agilent\ICPMH\1\DATA\010323A.b\
Analysis File: 010323A.batch.bin
DA Date-Time: 01/03/2023 22:05:01
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	011CALB.d	CAL BLK	01/03/2023 10:30:19
2	012CALS.d	2/10/200	01/03/2023 10:32:15
3	013CALS.d	5/25/500	01/03/2023 10:34:09
4	014CALS.d	10/50/100	01/03/2023 10:36:04
5	015CALS.d	100/500/10K	01/03/2023 10:37:58
6	016CALS.d	200/1000/20K	01/03/2023 10:39:50

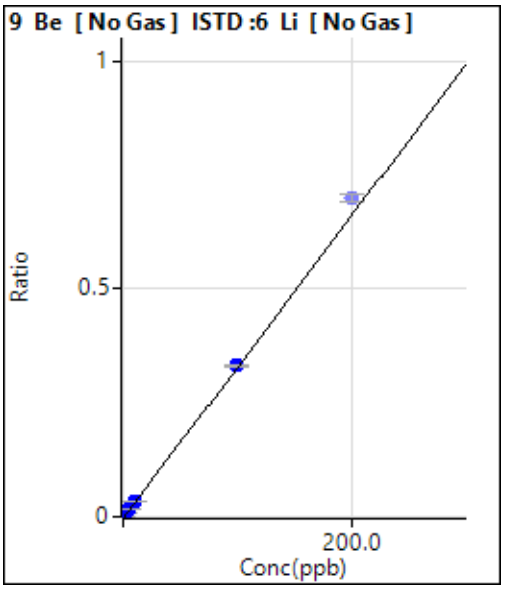
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	30705.30	0.0544	P	0.8	
2	☐	2.000	1.972	46685.58	0.0824	P	0.6	-1.4
3	☐	5.000	4.876	69991.68	0.1236	P	0.3	-2.5
4	☐	10.000	9.428	106930.25	0.1882	P	1.9	-5.7
5	☐	100.000	100.064	824469.49	1.4739	A	3.2	0.1
6	☑	200.000		1594326.85	3.0397	A	3.3	

y = 0.0142 * x + 0.0544
R = 1.0000
DL = 0.08734 ppb
BEC = 3.838 ppb

Weight: <None>
Min Conc: <None>

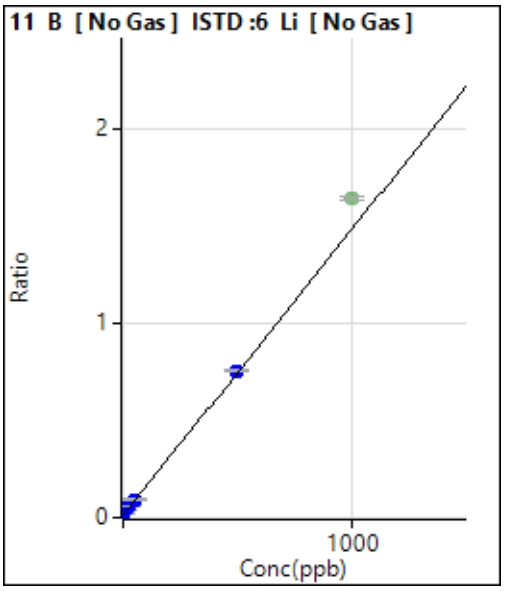


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	41.67	0.0001	P	24.8	
2	☐	2.000	1.950	3712.19	0.0066	P	3.3	-2.5
3	☐	5.000	4.831	9131.36	0.0161	P	4.1	-3.4
4	☐	10.000	9.862	18667.42	0.0329	P	1.6	-1.4
5	☐	100.000	100.023	186017.38	0.3325	P	1.0	0.0
6	☑	200.000		367299.24	0.7001	P	2.2	

y = 0.0033 * x + 7.3856E-005
R = 1.0000
DL = 0.01653 ppb
BEC = 0.02222 ppb

Weight: <None>
Min Conc: <None>

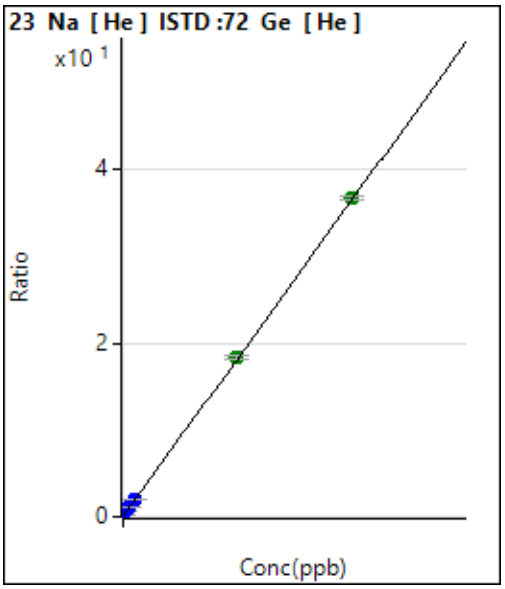
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	12260.42	0.0217	P	2.2	
2	☐	10.000	9.215	19999.29	0.0353	P	0.4	-7.8
3	☐	25.000	24.410	32661.36	0.0577	P	1.2	-2.4
4	☐	50.000	48.434	52889.32	0.0931	P	3.0	-3.1
5	☐	500.000	500.202	424263.31	0.7583	P	2.1	0.0
6	☑	1000.000		864219.28	1.6472	A	1.7	

y = 0.0015 * x + 0.0217
R = 1.0000
DL = 0.9672 ppb
BEC = 14.77 ppb

Weight: <None>
Min Conc: <None>

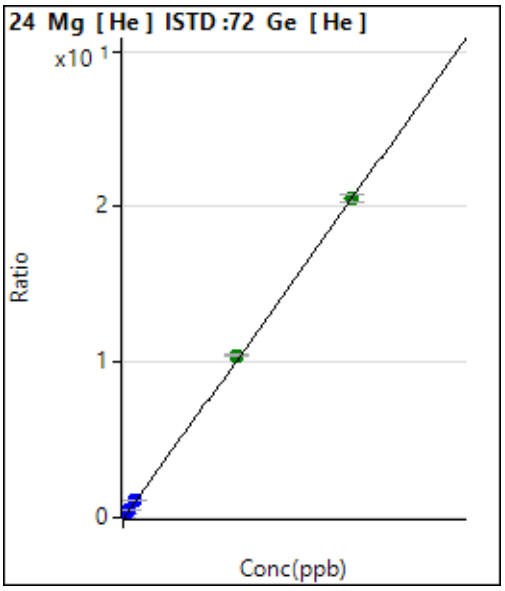


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	77802.84	0.2273	P	0.7	
2	☐	200.000	195.521	200610.24	0.5837	P	1.2	-2.2
3	☐	500.000	492.420	386906.96	1.1250	P	1.0	-1.5
4	☐	1000.000	987.300	694075.30	2.0271	P	0.3	-1.3
5	☐	10000.00	9909.873	6337830.32	18.2919	A	2.3	-0.9
6	☐	20000.00	20045.93	12639728.9	36.7687	A	1.1	0.2

y = 0.0018 * x + 0.2273
R = 1.0000
DL = 2.651 ppb
BEC = 124.7 ppb

Weight: <None>
Min Conc: <None>

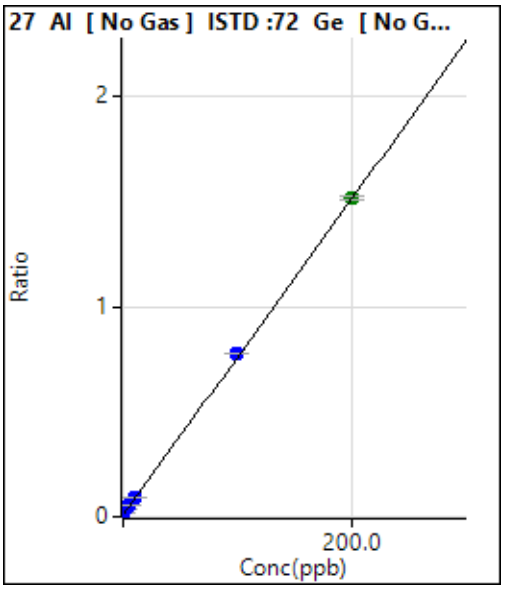
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	476.68	0.0014	P	8.4	
2	☐	200.000	206.079	73450.27	0.2137	P	1.8	3.0
3	☐	500.000	527.176	187293.30	0.5446	P	1.3	5.4
4	☐	1000.000	1048.671	370456.04	1.0819	P	0.8	4.9
5	☐	10000.00	10132.18	3617957.66	10.4415	A	1.7	1.3
6	☐	20000.00	19930.73	7059221.35	20.5378	A	2.7	-0.3

y = 0.0010 * x + 0.0014
R = 1.0000
DL = 0.3406 ppb
BEC = 1.352 ppb

Weight: <None>
Min Conc: <None>

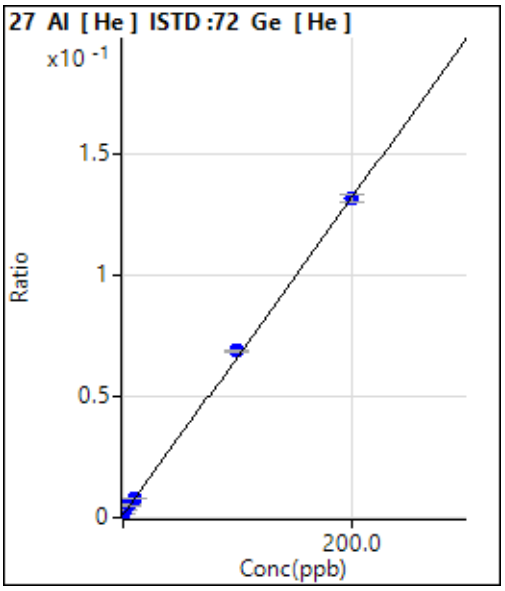


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	15228.59	0.0167	P	0.8	
2	☐	2.000	2.220	30543.98	0.0334	P	0.8	11.0
3	☐	5.000	5.048	50026.84	0.0547	P	0.9	1.0
4	☐	10.000	9.615	81588.70	0.0890	P	0.6	-3.8
5	☐	100.000	100.817	715956.50	0.7750	P	0.4	0.8
6	☐	200.000	199.608	1387238.94	1.5180	A	1.4	-0.2

y = 0.0075 * x + 0.0167
R = 1.0000
DL = 0.05004 ppb
BEC = 2.218 ppb

Weight: <None>
Min Conc: <None>

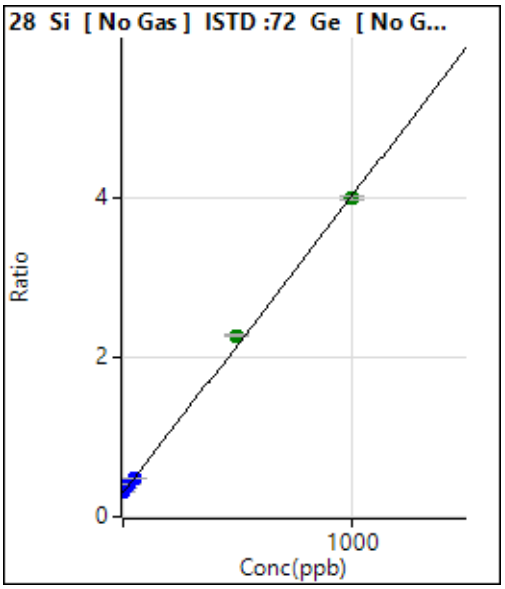
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	610.02	0.0018	P	14.5	
2	☐	2.000	1.735	1003.39	0.0029	P	5.6	-13.3
3	☐	5.000	5.205	1786.81	0.0052	P	2.2	4.1
4	☐	10.000	9.161	2666.97	0.0078	P	2.0	-8.4
5	☐	100.000	102.737	23957.68	0.0691	P	1.2	2.7
6	☐	200.000	198.671	45377.66	0.1320	P	2.7	-0.7

y = 6.5553E-004 * x + 0.0018
R = 0.9998
DL = 1.185 ppb
BEC = 2.72 ppb

Weight: <None>
Min Conc: <None>

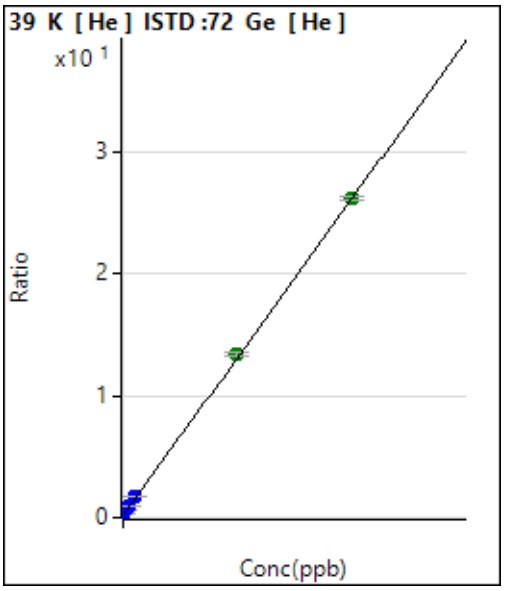


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	291477.05	0.3193	P	1.2	
2	☐	10.000	8.308	320443.80	0.3502	P	0.6	-16.9
3	☐	25.000	22.289	368093.56	0.4022	P	1.4	-10.8
4	☐	50.000	46.177	450070.83	0.4910	P	0.6	-7.6
5	☐	500.000	522.860	2090852.94	2.2630	A	1.0	4.6
6	☐	1000.000	988.846	3651762.65	3.9954	A	0.8	-1.1

y = 0.0037 * x + 0.3193
R = 0.9996
DL = 3.046 ppb
BEC = 85.89 ppb

Weight: <None>
Min Conc: <None>

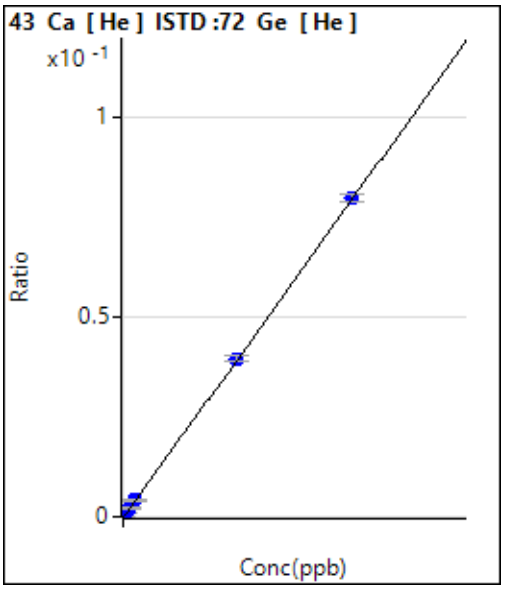
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	110255.38	0.3222	P	1.6	
2	☐	200.000	206.244	202769.57	0.5900	P	1.4	3.1
3	☐	500.000	535.726	350124.36	1.0180	P	0.5	7.1
4	☐	1000.000	1061.116	582214.00	1.7004	P	0.7	6.1
5	☐	10000.00	10099.01	4656790.45	13.4393	A	1.5	1.0
6	☐	20000.00	19946.48	9016510.91	26.2297	A	1.4	-0.3

y = 0.0013 * x + 0.3222
R = 1.0000
DL = 12.24 ppb
BEC = 248 ppb

Weight: <None>
Min Conc: <None>

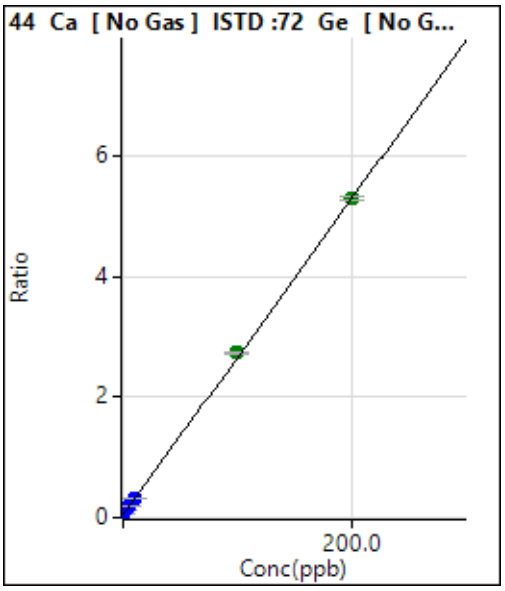


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	30.00	0.0001	P	33.1	
2	☐	200.000	182.635	280.01	0.0008	P	6.8	-8.7
3	☐	500.000	518.617	740.03	0.0022	P	4.6	3.7
4	☐	1000.000	1008.049	1403.44	0.0041	P	18.7	0.8
5	☐	10000.00	9941.560	13740.39	0.0397	P	3.5	-0.6
6	☐	20000.00	20028.52	27434.38	0.0798	P	2.4	0.1

y = 3.9806E-006 * x + 8.7600E-005
R = 1.0000
DL = 21.89 ppb
BEC = 22.01 ppb

Weight: <None>
Min Conc: <None>

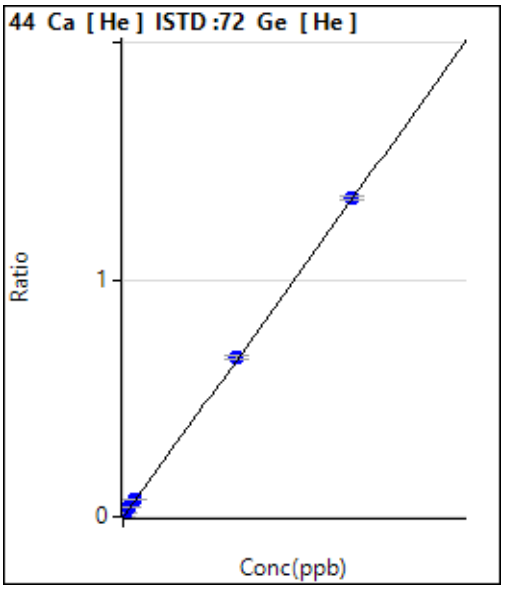
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	62408.71	0.0684	P	1.7	
2	☐	2.000	1.810	105979.28	0.1158	P	0.9	-9.5
3	☐	5.000	4.678	174828.94	0.1910	P	0.8	-6.4
4	☐	10.000	9.237	284666.47	0.3105	P	0.5	-7.6
5	☐	100.000	101.500	2521318.24	2.7292	A	1.6	1.5
6	☐	200.000	199.298	4837162.64	5.2930	A	1.4	-0.4

y = 0.0262 * x + 0.0684
R = 0.9999
DL = 0.1322 ppb
BEC = 2.608 ppb

Weight: <None>
Min Conc: <None>

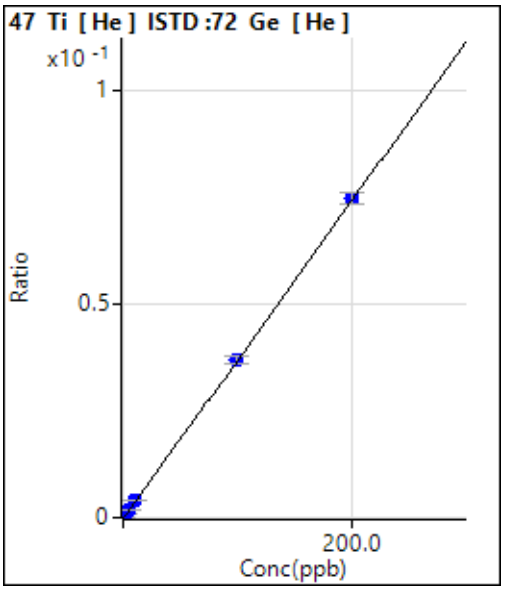


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1310.09	0.0038	P	6.8	
2	☐	200.000	195.919	5824.68	0.0170	P	4.2	-2.0
3	☐	500.000	513.901	13156.55	0.0383	P	1.0	2.8
4	☐	1000.000	985.956	23924.48	0.0699	P	1.9	-1.4
5	☐	10000.00	9975.096	232866.85	0.6720	P	1.5	-0.2
6	☐	20000.00	20012.84	462176.85	1.3444	P	0.8	0.1

y = 6.6988E-005 * x + 0.0038
R = 1.0000
DL = 11.71 ppb
BEC = 57.13 ppb

Weight: <None>
Min Conc: <None>

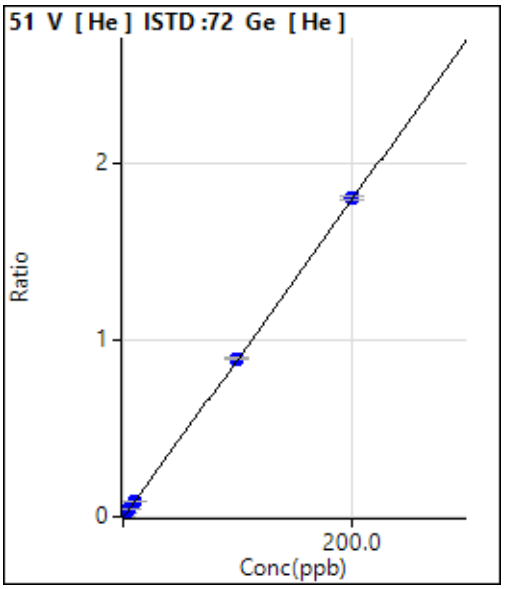
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	16.67	0.0000	P	69.8	
2	☐	2.000	1.747	240.01	0.0007	P	4.5	-12.6
3	☐	5.000	4.510	593.36	0.0017	P	6.4	-9.8
4	☐	10.000	10.447	1346.76	0.0039	P	2.8	4.5
5	☐	100.000	98.600	12719.44	0.0367	P	4.6	-1.4
6	☐	200.000	200.693	25664.32	0.0747	P	3.1	0.3

y = 3.7181E-004 * x + 4.8802E-005
R = 1.0000
DL = 0.2748 ppb
BEC = 0.1313 ppb

Weight: <None>
Min Conc: <None>

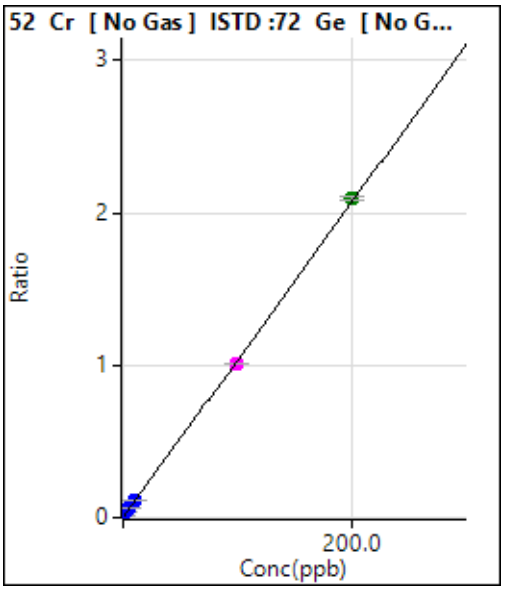


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	392.23	0.0011	P	10.4	
2	☐	2.000	1.921	6353.73	0.0185	P	1.4	-3.9
3	☐	5.000	4.950	15758.01	0.0458	P	1.0	-1.0
4	☐	10.000	9.871	30894.80	0.0902	P	0.7	-1.3
5	☐	100.000	99.304	310913.98	0.8973	P	1.8	-0.7
6	☐	200.000	200.357	621948.25	1.8092	P	1.0	0.2

y = 0.0090 * x + 0.0011
R = 1.0000
DL = 0.0396 ppb
BEC = 0.127 ppb

Weight: <None>
Min Conc: <None>

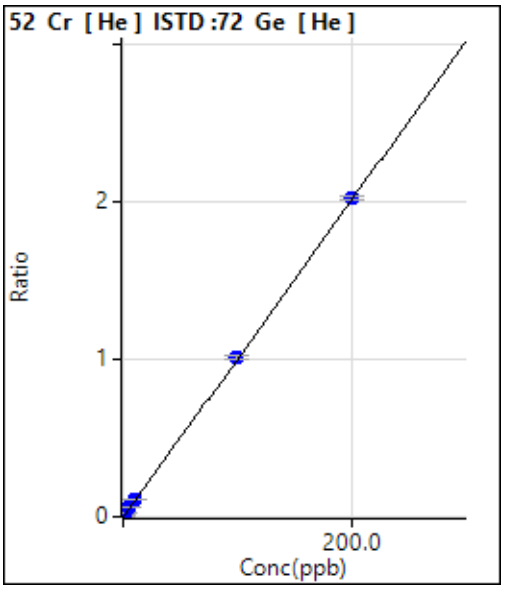
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	11648.51	0.0128	P	1.9	
2	☐	2.000	1.957	30190.30	0.0330	P	2.0	-2.2
3	☐	5.000	4.882	57889.53	0.0632	P	1.3	-2.4
4	☐	10.000	9.778	104376.42	0.1139	P	1.2	-2.2
5	☐	100.000	96.906	937516.16	1.0147	M	0.4	-3.1
6	☐	200.000	201.561	1916187.37	2.0968	A	1.5	0.8

y = 0.0103 * x + 0.0128
R = 0.9998
DL = 0.06954 ppb
BEC = 1.234 ppb

Weight: <None>
Min Conc: <None>

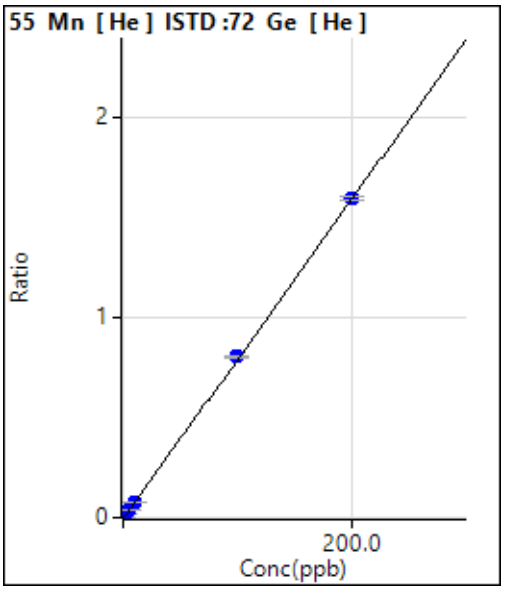


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1973.52	0.0058	P	12.0	
2	☐	2.000	2.096	9256.62	0.0269	P	2.6	4.8
3	☐	5.000	5.089	19661.04	0.0572	P	3.9	1.8
4	☐	10.000	10.027	36646.25	0.1070	P	2.1	0.3
5	☐	100.000	99.399	349763.48	1.0095	P	2.4	-0.6
6	☐	200.000	200.296	697256.47	2.0283	P	1.1	0.1

y = 0.0101 * x + 0.0058
R = 1.0000
DL = 0.2055 ppb
BEC = 0.5713 ppb

Weight: <None>
Min Conc: <None>

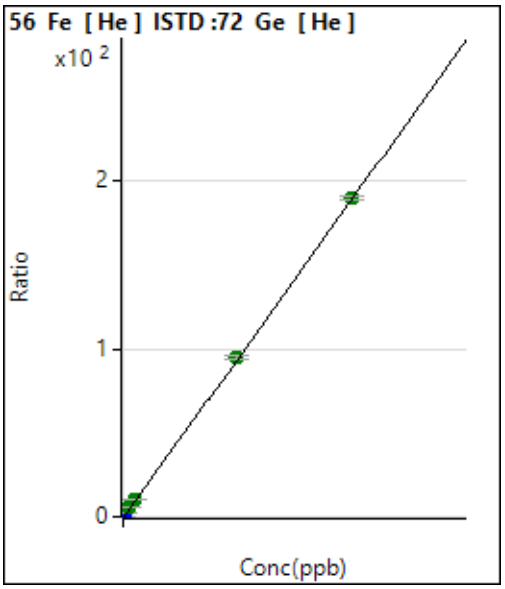
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	476.69	0.0014	P	14.0	
2	☐	2.000	2.070	6151.48	0.0179	P	2.5	3.5
3	☐	5.000	5.032	14277.65	0.0415	P	0.9	0.6
4	☐	10.000	9.968	27688.46	0.0809	P	1.0	-0.3
5	☐	100.000	100.540	278228.43	0.8030	P	1.9	0.5
6	☐	200.000	199.730	547881.58	1.5938	P	1.3	-0.1

y = 0.0080 * x + 0.0014
R = 1.0000
DL = 0.07322 ppb
BEC = 0.1747 ppb

Weight: <None>
Min Conc: <None>

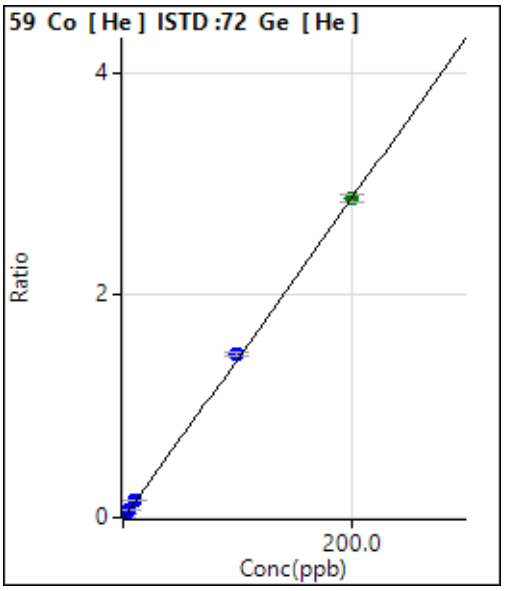


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	24852.93	0.0726	P	1.3	
2	☐	200.000	204.360	692233.22	2.0143	P	0.9	2.2
3	☐	500.000	539.590	1788222.21	5.1994	A	0.8	7.9
4	☐	1000.000	1049.535	3439158.59	10.0444	A	2.1	5.0
5	☐	10000.00	9977.982	32874254.5	94.8750	A	1.7	-0.2
6	☐	20000.00	20007.49	65370479.0	190.167	A	1.6	0.0

y = 0.0095 * x + 0.0726
R = 1.0000
DL = 0.2896 ppb
BEC = 7.643 ppb

Weight: <None>
Min Conc: <None>

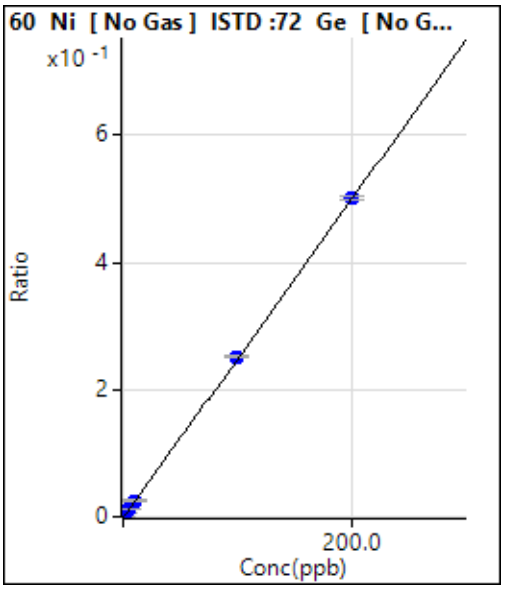
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	140.00	0.0004	P	19.3	
2	☐	2.000	1.990	10010.51	0.0291	P	2.3	-0.5
3	☐	5.000	5.136	25631.07	0.0745	P	2.6	2.7
4	☐	10.000	10.394	51501.18	0.1504	P	2.3	3.9
5	☐	100.000	101.692	508623.13	1.4680	P	2.1	1.7
6	☐	200.000	199.131	988176.91	2.8741	A	2.5	-0.4

y = 0.0144 * x + 4.0931E-004
R = 0.9999
DL = 0.01644 ppb
BEC = 0.02836 ppb

Weight: <None>
Min Conc: <None>

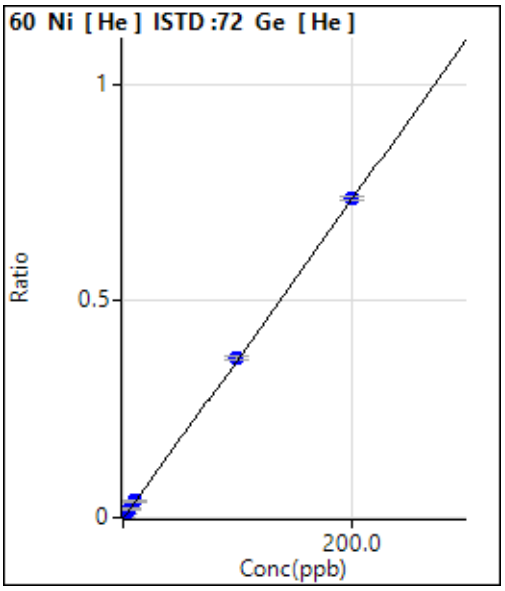


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	446.68	0.0005	P	9.4	
2	☐	2.000	2.012	5061.04	0.0055	P	2.8	0.6
3	☐	5.000	5.040	12008.83	0.0131	P	5.7	0.8
4	☐	10.000	10.028	23480.54	0.0256	P	0.5	0.3
5	☐	100.000	100.337	232732.38	0.2519	P	0.5	0.3
6	☐	200.000	199.829	458035.00	0.5012	P	0.7	-0.1

y = 0.0025 * x + 4.8942E-004
R = 1.0000
DL = 0.05501 ppb
BEC = 0.1953 ppb

Weight: <None>
Min Conc: <None>

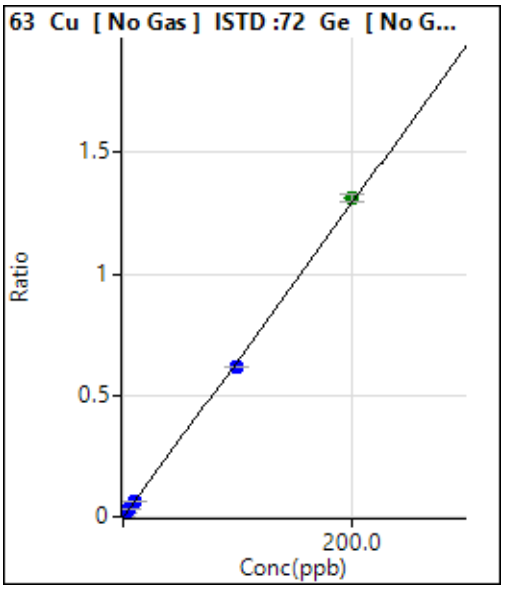
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	163.34	0.0005	P	28.6	
2	☐	2.000	2.103	2827.00	0.0082	P	2.0	5.2
3	☐	5.000	5.129	6661.77	0.0194	P	7.7	2.6
4	☐	10.000	10.280	13129.85	0.0383	P	6.0	2.8
5	☐	100.000	99.989	127772.43	0.3688	P	2.8	0.0
6	☐	200.000	199.987	253388.61	0.7371	P	1.7	0.0

y = 0.0037 * x + 4.7688E-004
R = 1.0000
DL = 0.1112 ppb
BEC = 0.1295 ppb

Weight: <None>
Min Conc: <None>

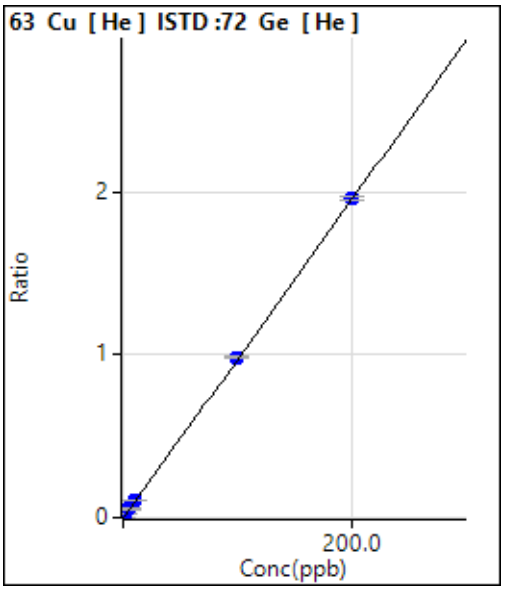


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	2947.04	0.0032	P	9.8	
2	☐	2.000	1.839	13837.23	0.0151	P	2.0	-8.0
3	☐	5.000	4.832	31550.36	0.0345	P	2.1	-3.4
4	☐	10.000	9.558	59614.42	0.0650	P	1.1	-4.4
5	☐	100.000	95.149	571389.67	0.6185	P	0.1	-4.9
6	☐	200.000	202.454	1199205.92	1.3123	A	2.0	1.2

y = 0.0065 * x + 0.0032
R = 0.9996
DL = 0.1472 ppb
BEC = 0.4994 ppb

Weight: <None>
Min Conc: <None>

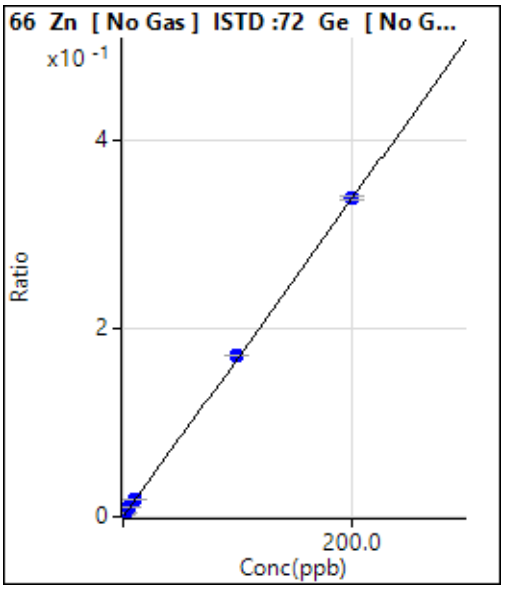
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1690.14	0.0049	P	9.3	
2	☐	2.000	1.922	8169.26	0.0238	P	1.3	-3.9
3	☐	5.000	4.933	18326.00	0.0533	P	1.8	-1.3
4	☐	10.000	10.081	35516.91	0.1037	P	0.8	0.8
5	☐	100.000	100.143	341743.64	0.9863	P	1.8	0.1
6	☐	200.000	199.927	675184.26	1.9641	P	1.0	0.0

y = 0.0098 * x + 0.0049
R = 1.0000
DL = 0.1404 ppb
BEC = 0.5041 ppb

Weight: <None>
Min Conc: <None>

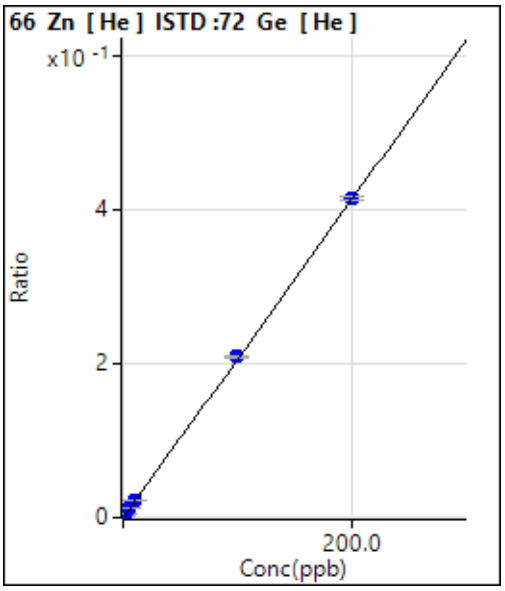


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1316.75	0.0014	P	7.5	
2	☐	2.000	2.069	4520.83	0.0049	P	6.1	3.5
3	☐	5.000	5.023	9089.87	0.0099	P	3.8	0.5
4	☐	10.000	9.748	16426.91	0.0179	P	2.8	-2.5
5	☐	100.000	100.583	158405.44	0.1715	P	0.8	0.6
6	☐	200.000	199.720	309852.42	0.3390	P	0.8	-0.1

y = 0.0017 * x + 0.0014
R = 1.0000
DL = 0.1923 ppb
BEC = 0.8532 ppb

Weight: <None>
Min Conc: <None>

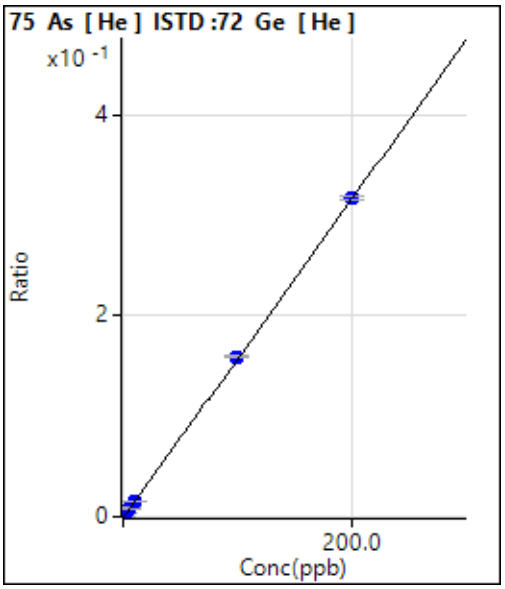
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	590.02	0.0017	P	9.9	
2	☐	2.000	2.000	2016.85	0.0059	P	11.0	0.0
3	☐	5.000	5.221	4310.76	0.0125	P	7.2	4.4
4	☐	10.000	9.997	7678.95	0.0224	P	0.7	0.0
5	☐	100.000	100.207	72507.16	0.2092	P	1.2	0.2
6	☐	200.000	199.891	142897.48	0.4157	P	0.9	-0.1

y = 0.0021 * x + 0.0017
R = 1.0000
DL = 0.248 ppb
BEC = 0.8327 ppb

Weight: <None>
Min Conc: <None>

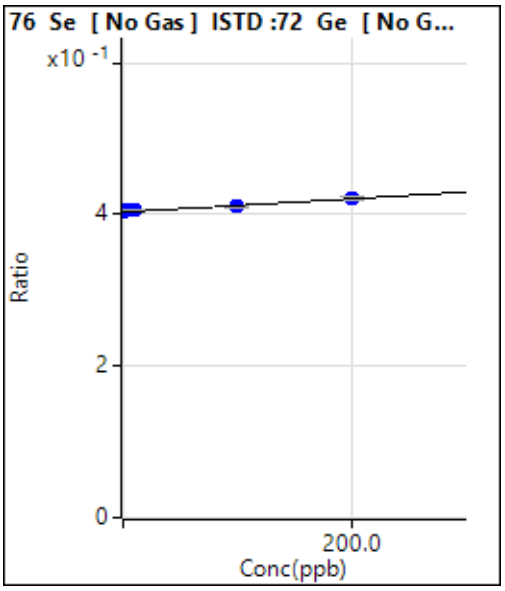


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	82.22	0.0002	P	15.9	
2	☐	2.000	2.033	1192.28	0.0035	P	2.1	1.7
3	☐	5.000	5.236	2942.56	0.0086	P	4.3	4.7
4	☐	10.000	9.914	5473.36	0.0160	P	0.7	-0.9
5	☐	100.000	100.198	55221.27	0.1594	P	1.1	0.2
6	☐	200.000	199.899	109207.72	0.3177	P	1.3	-0.1

y = 0.0016 * x + 2.4037E-004
R = 1.0000
DL = 0.07204 ppb
BEC = 0.1514 ppb

Weight: <None>
Min Conc: <None>

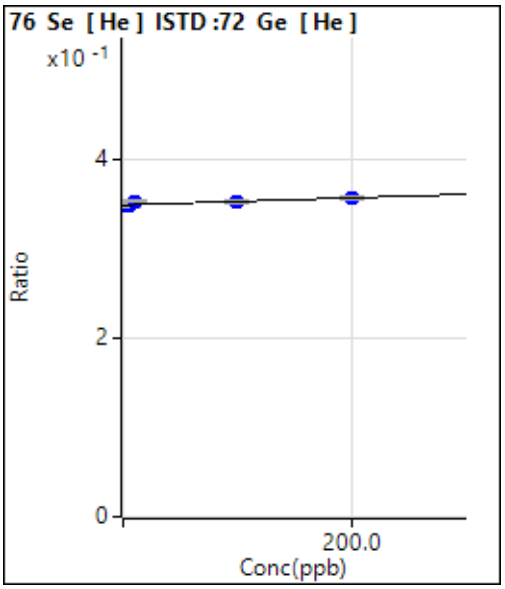
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	368026.53	0.4031	P	0.6	
2	☐	2.000	36.007	371832.99	0.4063	P	1.0	1700.4
3	☐	5.000	28.100	371283.09	0.4056	P	0.8	462.0
4	☐	10.000	30.447	372048.84	0.4058	P	0.3	204.5
5	☐	100.000	84.499	379377.88	0.4106	P	0.9	-15.5
6	☐	200.000	205.811	385102.66	0.4214	P	1.2	2.9

y = 8.8654E-005 * x + 0.4031
R = 0.9777
DL = 78.26 ppb
BEC = 4547 ppb

Weight: <None>
Min Conc: <None>

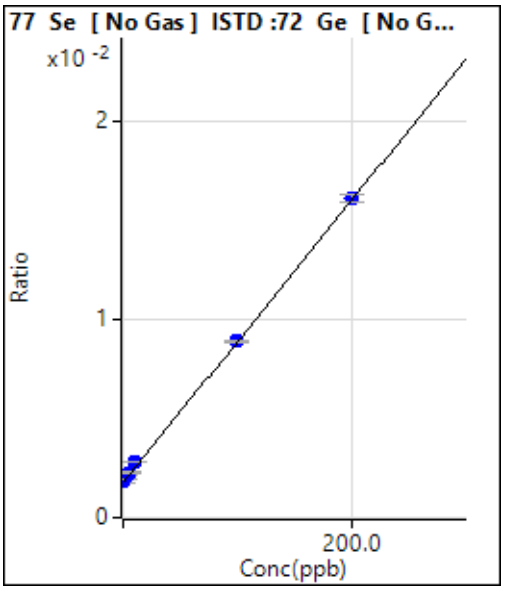


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	119305.59	0.3486	P	2.8	
2	☐	2.000	-21.099	119517.47	0.3478	P	1.0	-1154.
3	☐	5.000	-9.511	119766.04	0.3482	P	1.3	-290.2
4	☐	10.000	112.965	120930.38	0.3532	P	0.6	1029.7
5	☐	100.000	100.563	122211.15	0.3527	P	1.3	0.6
6	☐	200.000	195.164	122550.33	0.3565	P	0.7	-2.4

y = 4.0303E-005 * x + 0.3486
R = 0.8503
DL = 736.9 ppb
BEC = 8650 ppb

Weight: <None>
Min Conc: <None>

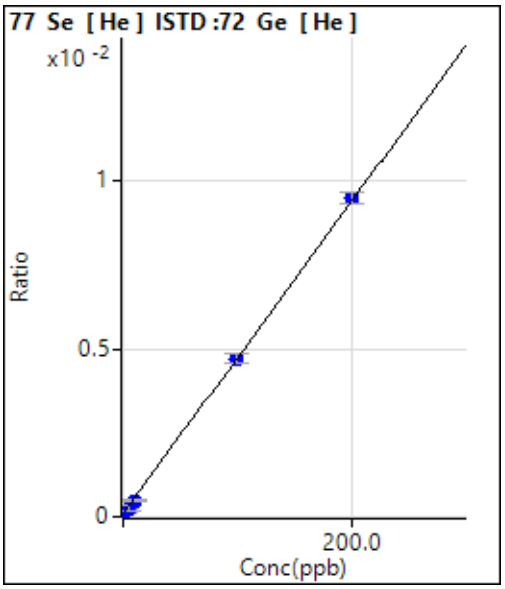
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1700.13	0.0019	P	8.1	
2	☐	2.000	2.290	1853.50	0.0020	P	12.1	14.5
3	☐	5.000	5.823	2083.53	0.0023	P	7.6	16.5
4	☐	10.000	13.283	2573.62	0.0028	P	2.1	32.8
5	☐	100.000	99.046	8229.32	0.0089	P	1.5	-1.0
6	☐	200.000	200.289	14724.98	0.0161	P	2.1	0.1

y = 7.1129E-005 * x + 0.0019
R = 0.9999
DL = 6.332 ppb
BEC = 26.19 ppb

Weight: <None>
Min Conc: <None>

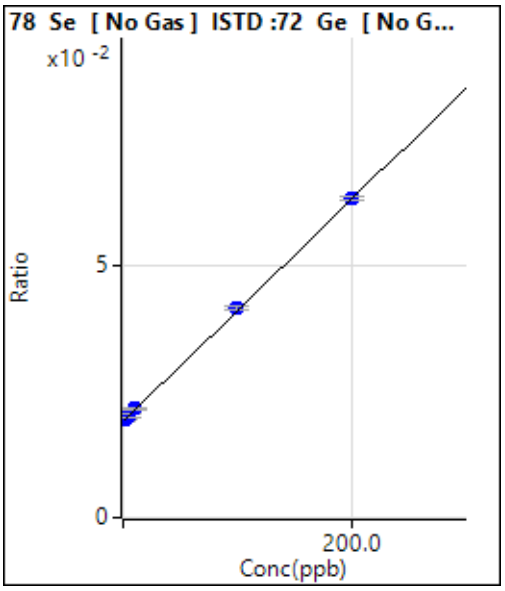


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	50.00	0.0001	P	34.9	
2	☐	2.000	0.825	63.33	0.0002	P	45.9	-58.7
3	☐	5.000	2.289	86.67	0.0003	P	70.7	-54.2
4	☐	10.000	7.114	163.34	0.0005	P	18.5	-28.9
5	☐	100.000	98.252	1633.46	0.0047	P	5.6	-1.7
6	☐	200.000	201.098	3263.79	0.0095	P	3.7	0.5

y = 4.6478E-005 * x + 1.4624E-004
R = 0.9999
DL = 3.299 ppb
BEC = 3.146 ppb

Weight: <None>
Min Conc: <None>

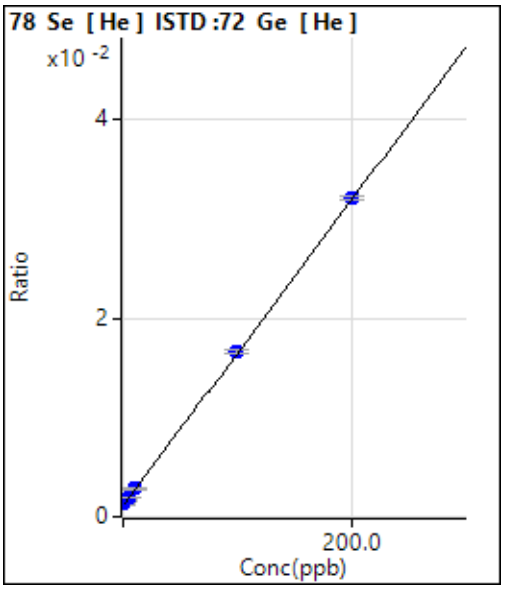
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	17725.25	0.0194	P	2.0	
2	☐	2.000	0.848	17938.92	0.0196	P	0.6	-57.6
3	☐	5.000	3.690	18516.38	0.0202	P	2.9	-26.2
4	☐	10.000	10.631	19948.37	0.0218	P	1.8	6.3
5	☐	100.000	100.869	38485.23	0.0417	P	1.9	0.9
6	☐	200.000	199.578	57974.85	0.0634	P	1.0	-0.2

y = 2.2054E-004 * x + 0.0194
R = 0.9999
DL = 5.311 ppb
BEC = 88.04 ppb

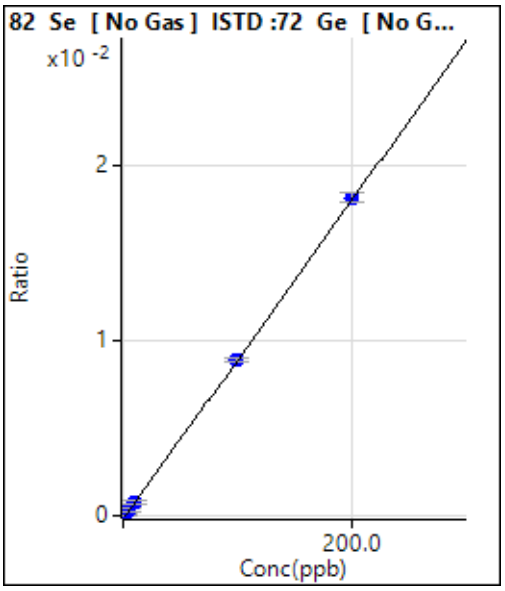
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	437.34	0.0013	P	10.2	
2	☐	2.000	2.607	577.35	0.0017	P	6.2	30.4
3	☐	5.000	4.470	676.69	0.0020	P	2.5	-10.6
4	☐	10.000	10.094	970.70	0.0028	P	6.6	0.9
5	☐	100.000	99.657	5769.92	0.0166	P	2.2	-0.3
6	☐	200.000	200.174	11051.88	0.0322	P	1.6	0.1

y = 1.5423E-004 * x + 0.0013
R = 1.0000
DL = 2.527 ppb
BEC = 8.288 ppb

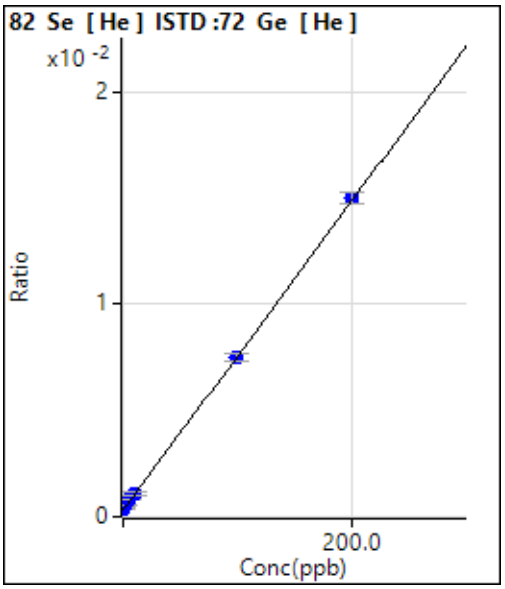
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	-57.42	-0.0001	P	-298.	
2	☐	2.000	1.613	75.95	0.0001	P	83.1	-19.4
3	☐	5.000	5.173	372.76	0.0004	P	52.8	3.5
4	☐	10.000	9.445	728.36	0.0008	P	21.1	-5.5
5	☐	100.000	98.822	8232.82	0.0089	P	3.2	-1.2
6	☐	200.000	200.616	16587.31	0.0182	P	2.9	0.3

y = 9.0797E-005 * x - 6.3389E-005
R = 1.0000
DL = 6.255 ppb
BEC = -0.6981 ppb

Weight: <None>
Min Conc: <None>

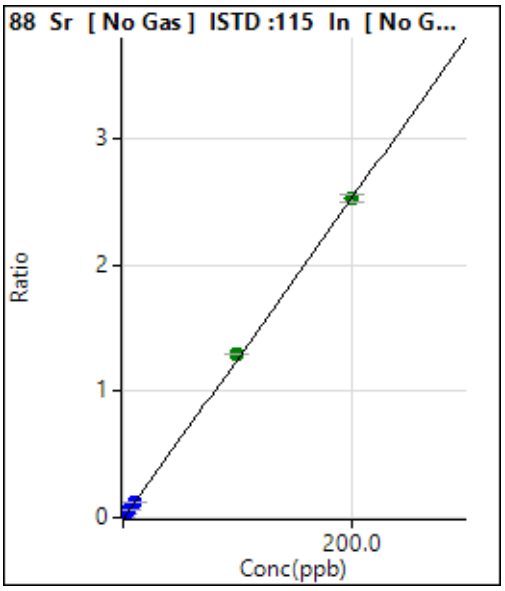


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	130.00	0.0004	P	19.9	
2	☐	2.000	1.845	176.67	0.0005	P	2.6	-7.7
3	☐	5.000	6.100	283.34	0.0008	P	1.4	22.0
4	☐	10.000	9.764	373.34	0.0011	P	10.3	-2.4
5	☐	100.000	97.951	2603.62	0.0075	P	5.6	-2.0
6	☐	200.000	201.010	5161.10	0.0150	P	3.3	0.5

y = 7.2806E-005 * x + 3.7966E-004
R = 0.9999
DL = 3.12 ppb
BEC = 5.215 ppb

Weight: <None>
Min Conc: <None>

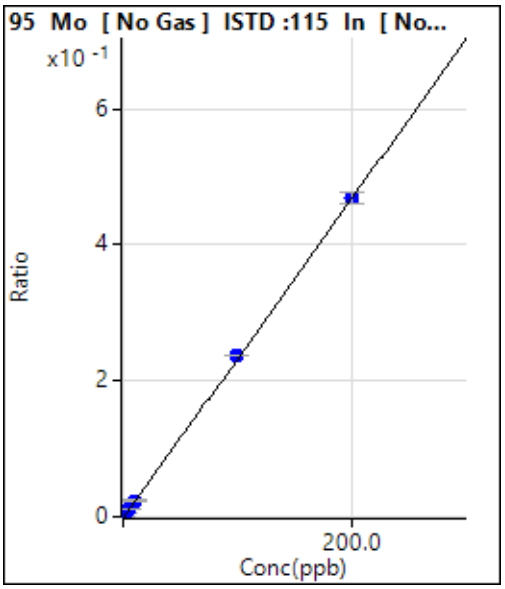
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	660.03	0.0006	P	30.6	
2	☐	2.000	1.920	25875.47	0.0251	P	2.1	-4.0
3	☐	5.000	4.865	64371.87	0.0625	P	1.5	-2.7
4	☐	10.000	9.506	124736.76	0.1216	P	0.6	-4.9
5	☐	100.000	101.925	1347437.69	1.2970	A	1.1	1.9
6	☐	200.000	199.067	2640625.69	2.5325	A	2.1	-0.5

y = 0.0127 * x + 6.4887E-004
R = 0.9999
DL = 0.0468 ppb
BEC = 0.05102 ppb

Weight: <None>
Min Conc: <None>

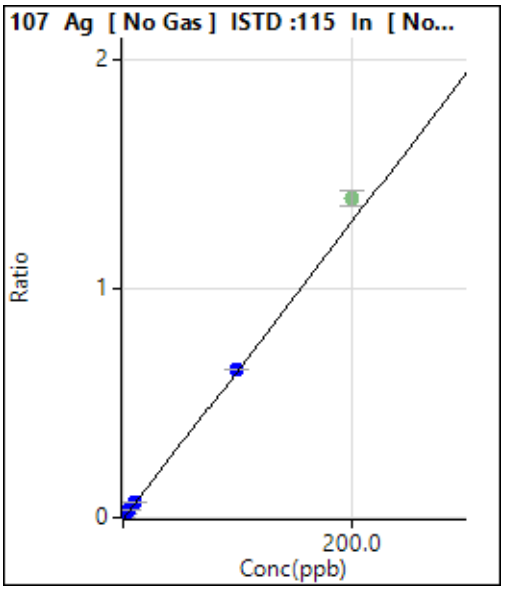


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	50.00	0.0000	P	53.1	
2	☐	2.000	1.988	4874.31	0.0047	P	2.9	-0.6
3	☐	5.000	5.109	12409.35	0.0121	P	2.8	2.2
4	☐	10.000	10.018	24212.41	0.0236	P	3.6	0.2
5	☐	100.000	100.950	246497.60	0.2373	P	1.0	1.0
6	☐	200.000	199.521	488776.84	0.4689	P	3.7	-0.2

y = 0.0024 * x + 4.9239E-005
R = 1.0000
DL = 0.03339 ppb
BEC = 0.02095 ppb

Weight: <None>
Min Conc: <None>

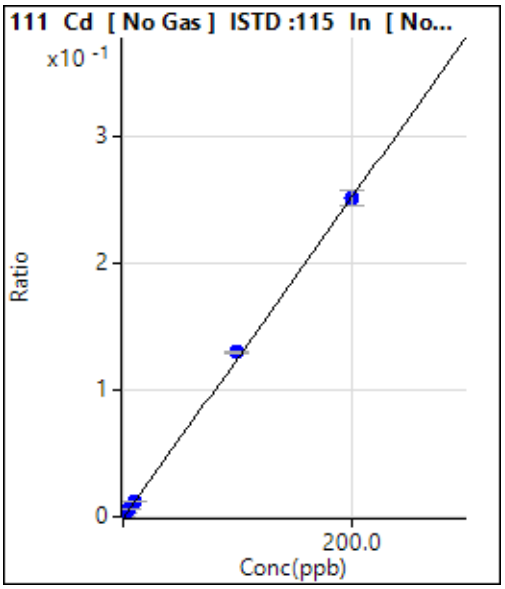
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	566.69	0.0006	P	8.6	
2	☐	2.000	1.953	13667.31	0.0132	P	1.4	-2.4
3	☐	5.000	4.983	33893.99	0.0329	P	1.3	-0.3
4	☐	10.000	10.109	67948.08	0.0662	P	0.5	1.1
5	☐	100.000	99.991	675304.49	0.6500	P	0.4	0.0
6	☑	200.000		1455788.16	1.3972	A	5.1	

y = 0.0065 * x + 5.5759E-004
R = 1.0000
DL = 0.02217 ppb
BEC = 0.08585 ppb

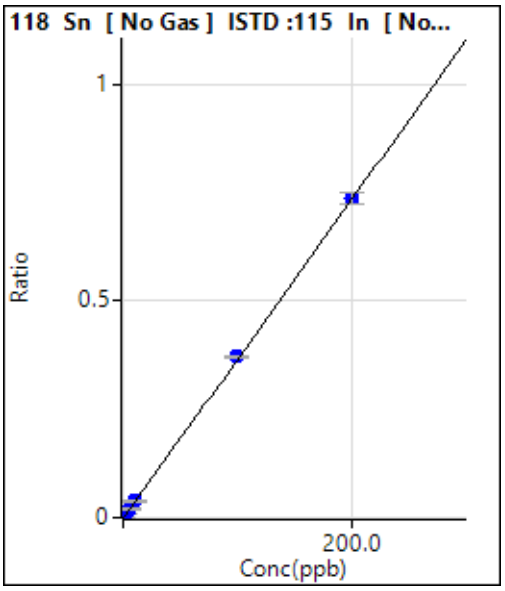
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	6.67	0.0000	P	86.6	
2	☐	2.000	1.986	2606.98	0.0025	P	5.9	-0.7
3	☐	5.000	5.050	6598.46	0.0064	P	4.8	1.0
4	☐	10.000	9.973	12979.96	0.0127	P	3.2	-0.3
5	☐	100.000	102.398	134894.23	0.1298	P	1.4	2.4
6	☐	200.000	198.801	262675.52	0.2521	P	4.3	-0.6

y = 0.0013 * x + 6.5634E-006
R = 0.9999
DL = 0.01345 ppb
BEC = 0.005177 ppb

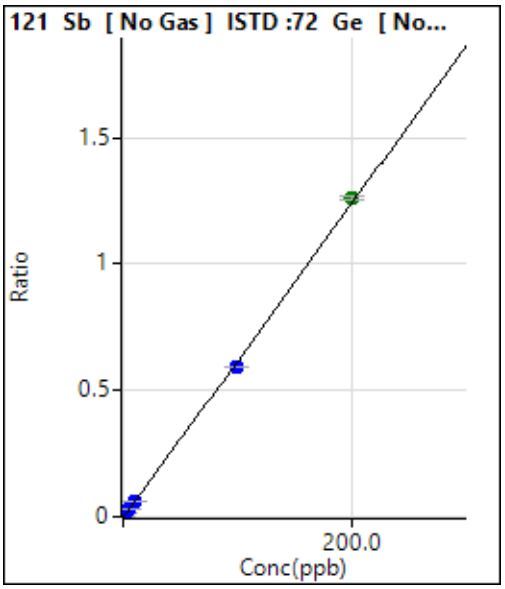
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1796.83	0.0018	P	8.7	
2	☐	2.000	1.897	9029.96	0.0087	P	4.7	-5.2
3	☐	5.000	4.897	20376.21	0.0198	P	2.1	-2.1
4	☐	10.000	9.788	38787.83	0.0378	P	1.4	-2.1
5	☐	100.000	100.434	385916.31	0.3715	P	0.8	0.4
6	☐	200.000	199.797	768376.21	0.7372	P	4.1	-0.1

y = 0.0037 * x + 0.0018
R = 1.0000
DL = 0.1256 ppb
BEC = 0.4804 ppb

Weight: <None>
Min Conc: <None>

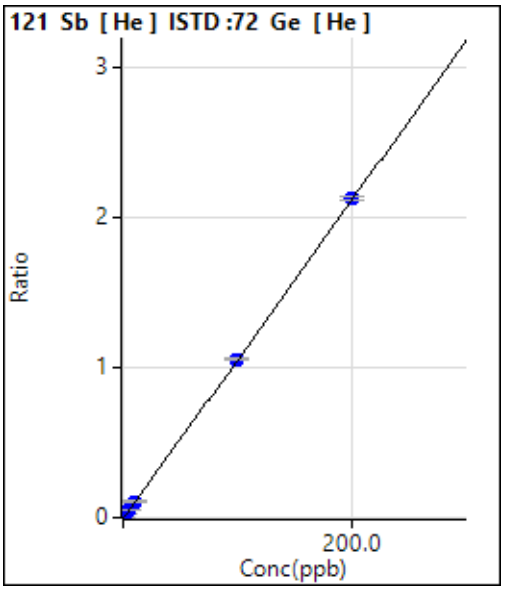


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	886.71	0.0010	P	4.2	
2	☐	2.000	1.980	12162.52	0.0133	P	2.9	-1.0
3	☐	5.000	4.724	27793.12	0.0304	P	1.6	-5.5
4	☐	10.000	9.439	54738.17	0.0597	P	2.6	-5.6
5	☐	100.000	95.040	547240.54	0.5923	P	0.8	-5.0
6	☐	200.000	202.515	1152600.01	1.2611	A	1.2	1.3

y = 0.0062 * x + 9.7122E-004
R = 0.9996
DL = 0.01951 ppb
BEC = 0.1561 ppb

Weight: <None>
Min Conc: <None>

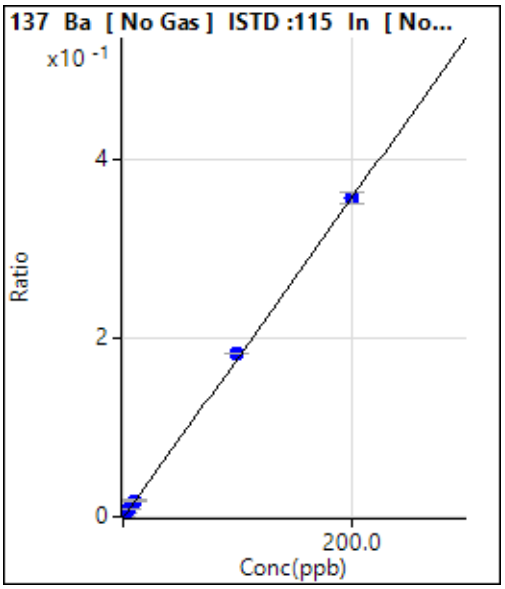
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	586.69	0.0017	P	9.2	
2	☐	2.000	1.968	7759.12	0.0226	P	1.1	-1.6
3	☐	5.000	4.970	18710.32	0.0544	P	2.5	-0.6
4	☐	10.000	10.087	37199.99	0.1086	P	1.0	0.9
5	☐	100.000	99.437	365850.54	1.0558	P	1.8	-0.6
6	☐	200.000	200.278	730427.67	2.1249	P	1.4	0.1

y = 0.0106 * x + 0.0017
R = 1.0000
DL = 0.04477 ppb
BEC = 0.1618 ppb

Weight: <None>
Min Conc: <None>

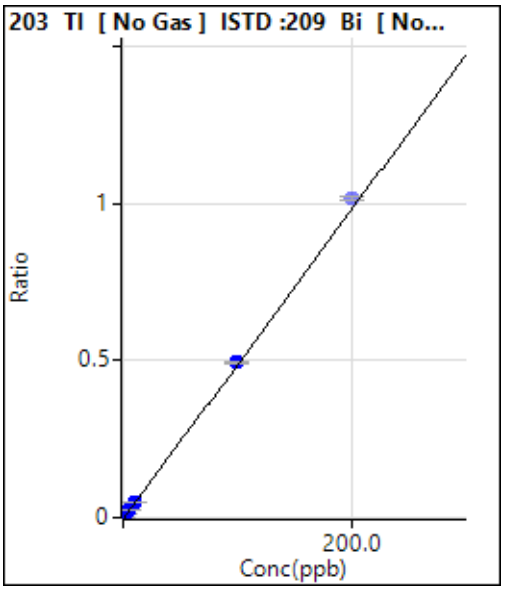


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	263.34	0.0003	P	22.1	
2	☐	2.000	1.953	3883.99	0.0038	P	3.6	-2.3
3	☐	5.000	5.022	9540.32	0.0093	P	2.4	0.4
4	☐	10.000	10.024	18720.47	0.0182	P	6.3	0.2
5	☐	100.000	101.894	190143.94	0.1830	P	0.6	1.9
6	☐	200.000	199.052	372387.40	0.3573	P	4.1	-0.5

y = 0.0018 * x + 2.5909E-004
R = 0.9999
DL = 0.0958 ppb
BEC = 0.1444 ppb

Weight: <None>
Min Conc: <None>

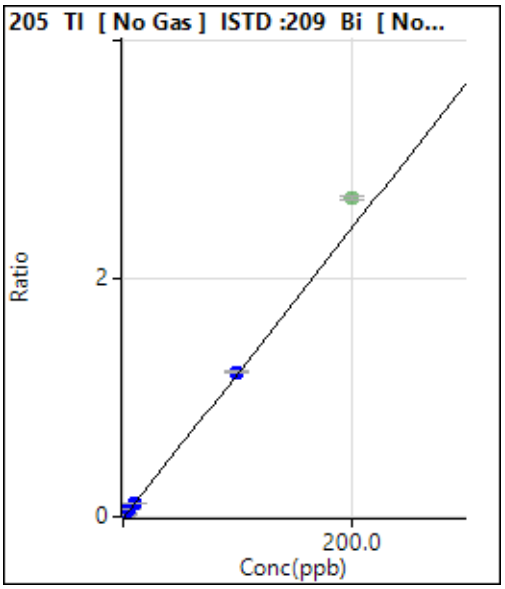
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	110.00	0.0001	P	42.3	
2	☐	2.000	2.020	8219.56	0.0101	P	5.5	1.0
3	☐	5.000	4.897	19736.03	0.0243	P	3.1	-2.1
4	☐	10.000	9.684	39252.39	0.0479	P	0.8	-3.2
5	☐	100.000	100.036	406498.27	0.4936	P	1.2	0.0
6	☑	200.000		818252.12	1.0177	P	1.7	

y = 0.0049 * x + 1.3806E-004
R = 1.0000
DL = 0.03554 ppb
BEC = 0.02799 ppb

Weight: <None>
Min Conc: <None>

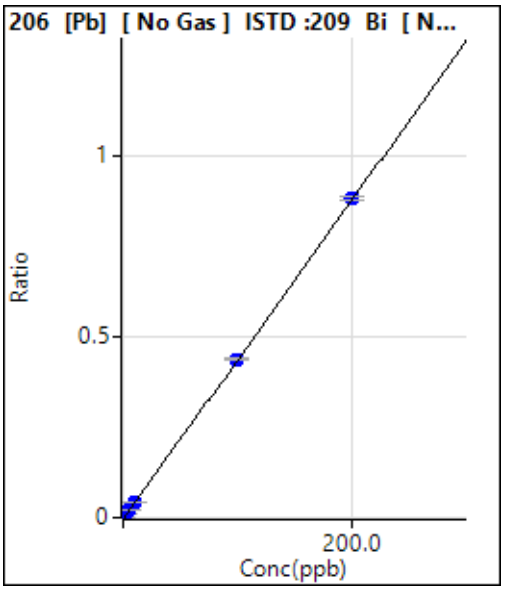


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	206.67	0.0003	P	14.7	
2	☐	2.000	1.960	19635.81	0.0241	P	4.7	-2.0
3	☐	5.000	4.933	49020.47	0.0603	P	0.3	-1.3
4	☐	10.000	9.518	95180.63	0.1162	P	1.1	-4.8
5	☐	100.000	100.052	1003648.79	1.2187	P	0.8	0.1
6	☑	200.000		2155620.02	2.6804	A	0.9	

y = 0.0122 * x + 2.5912E-004
R = 1.0000
DL = 0.009375 ppb
BEC = 0.02128 ppb

Weight: <None>
Min Conc: <None>

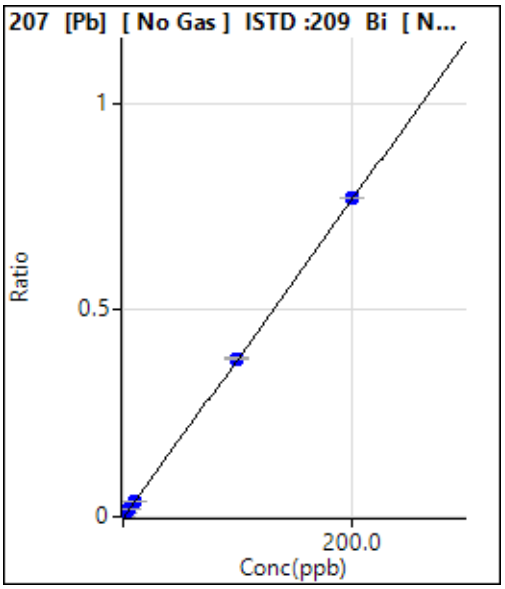
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	296.68	0.0004	P	7.7	
2	☐	2.000	2.012	7525.75	0.0092	P	1.1	0.6
3	☐	5.000	5.015	18277.07	0.0225	P	2.9	0.3
4	☐	10.000	9.785	35675.03	0.0435	P	1.8	-2.2
5	☐	100.000	99.298	361123.76	0.4385	P	0.7	-0.7
6	☐	200.000	200.361	711171.63	0.8844	P	0.9	0.2

y = 0.0044 * x + 3.7186E-004
R = 1.0000
DL = 0.01951 ppb
BEC = 0.08428 ppb

Weight: <None>
Min Conc: <None>

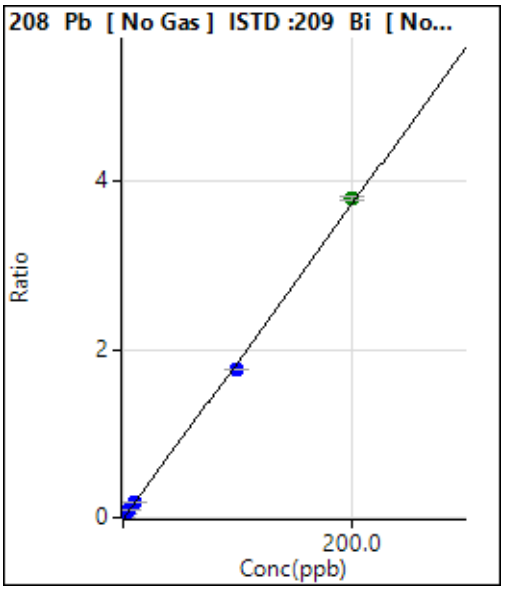


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	240.01	0.0003	P	7.8	
2	☐	2.000	1.904	6208.34	0.0076	P	2.3	-4.8
3	☐	5.000	5.025	15963.92	0.0197	P	1.4	0.5
4	☐	10.000	9.828	31253.11	0.0381	P	1.0	-1.7
5	☐	100.000	99.241	314940.30	0.3824	P	0.7	-0.8
6	☐	200.000	200.388	620739.78	0.7719	P	0.1	0.2

y = 0.0039 * x + 3.0065E-004
R = 1.0000
DL = 0.01838 ppb
BEC = 0.07808 ppb

Weight: <None>
Min Conc: <None>

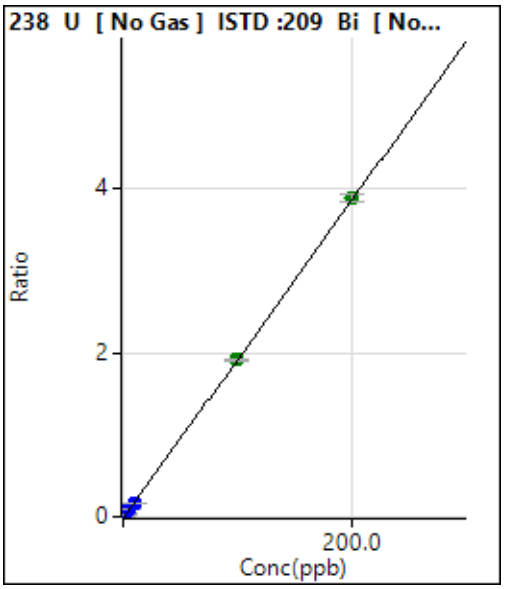
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1170.05	0.0015	P	7.7	
2	☐	2.000	1.845	29304.11	0.0360	P	1.0	-7.7
3	☐	5.000	4.690	72533.69	0.0893	P	1.9	-6.2
4	☐	10.000	9.317	144125.45	0.1759	P	1.0	-6.8
5	☐	100.000	94.078	1451995.39	1.7630	P	0.6	-5.9
6	☐	200.000	203.005	3057832.32	3.8027	A	1.7	1.5

y = 0.0187 * x + 0.0015
R = 0.9994
DL = 0.01806 ppb
BEC = 0.0783 ppb

Weight: <None>
Min Conc: <None>

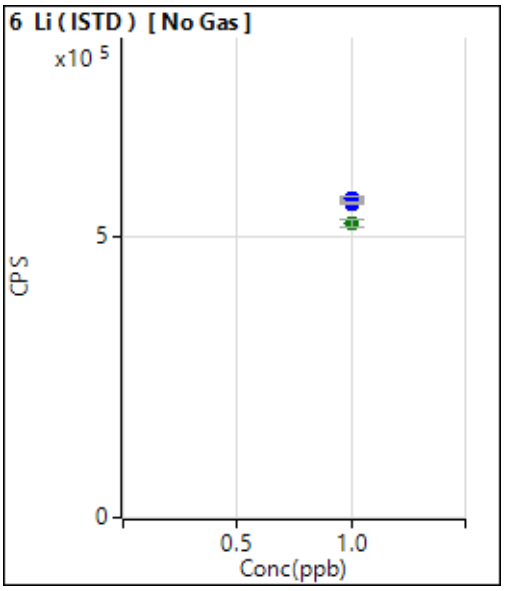


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	26.67	0.0000	P	22.0	
2	☐	2.000	1.819	28680.74	0.0353	P	1.7	-9.1
3	☐	5.000	4.497	70768.96	0.0871	P	0.4	-10.1
4	☐	10.000	8.931	141698.35	0.1730	P	0.6	-10.7
5	☐	100.000	98.892	1576746.75	1.9147	A	1.3	-1.1
6	☐	200.000	200.622	3124012.35	3.8843	A	2.1	0.3

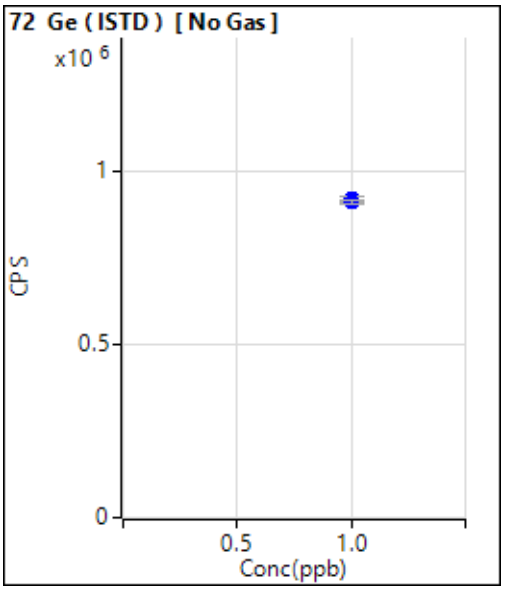
y = 0.0194 * x + 3.3435E-005
R = 1.0000
DL = 0.001141 ppb
BEC = 0.001727 ppb

Weight: <None>
Min Conc: <None>

Calibration for 022_ICV.d

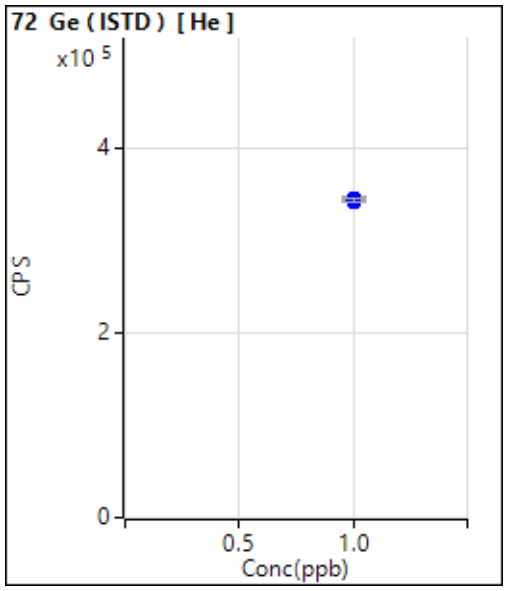


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		563942.97		P	0.3	
2	☐	1.000		566410.85		P	0.6	
3	☐	1.000		566185.41		P	1.0	
4	☐	1.000		568278.29		P	0.8	
5	☐	1.000		559461.78		P	1.0	
6	☐	1.000		524787.69		A	2.4	

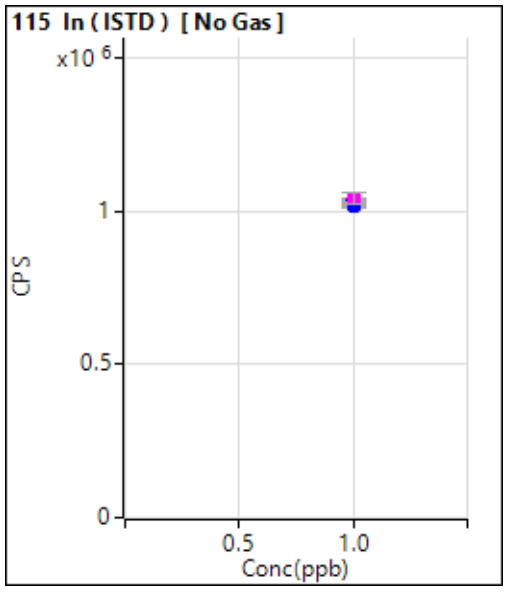


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		912892.62		P	0.4	
2	☐	1.000		915075.98		P	0.1	
3	☐	1.000		915321.58		P	0.7	
4	☐	1.000		916729.49		P	0.7	
5	☐	1.000		923902.77		P	1.4	
6	☐	1.000		913950.27		P	1.1	

Calibration for 022_ICV.d

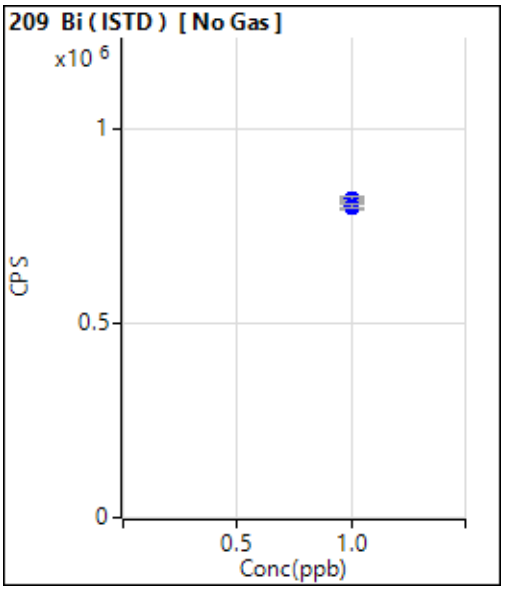


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		342251.13		P	0.5	
2	☐	1.000		343678.37		P	0.7	
3	☐	1.000		343931.86		P	0.6	
4	☐	1.000		342405.79		P	0.3	
5	☐	1.000		346556.45		P	1.5	
6	☐	1.000		343786.57		P	1.1	



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		1016160.82		P	0.6	
2	☐	1.000		1032329.82		P	1.1	
3	☐	1.000		1029426.62		P	0.3	
4	☐	1.000		1026175.50		P	0.6	
5	☐	1.000		1038886.12		P	1.2	
6	☐	1.000		1043215.19		M	3.6	

Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		798100.51		P	0.7	
2	☐	1.000		813649.62		P	0.4	
3	☐	1.000		812435.46		P	0.5	
4	☐	1.000		819319.16		P	0.8	
5	☐	1.000		823572.64		P	1.1	
6	☐	1.000		804180.35		P	1.6	

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	011CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:30:19-06:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	7	1	No Gas	30705	0.00
Be	9	1	No Gas	42	59.95
V	51	2	He	392	2.60
Cr	52	2	He	1974	0.58
Fe	56	2	He	24853	0.00
Se	78	2	He	437	2.22
As	75	2	He	82	18.67
Ca	44	2	He	1310	0.56
Na	23	2	He	77803	0.00
Mg	24	2	He	477	1.67
K	39	2	He	110255	0.00
Mn	55	2	He	477	2.93
Co	59	2	He	140	13.50
Ni	60	2	He	163	17.71
Cu	63	2	He	1690	0.52
Zn	66	2	He	590	1.60
Al	27	2	He	610	2.30
B	11	1	No Gas	12260	0.02
Al	27	1	No Gas	15229	0.01
Si	28	1	No Gas	291477	0.00
Ag	107	1	No Gas	567	1.57
Cd	111	1	No Gas	7	1299.04
Sr	88	1	No Gas	660	4.69
Mo	95	1	No Gas	50	105.83
Sn	118	1	No Gas	1797	0.48
Sb	121	1	No Gas	887	0.51
Ba	137	1	No Gas	263	8.45
Tl	205	1	No Gas	207	6.76
Tl	203	1	No Gas	110	37.87
Pb	208	1	No Gas	1170	0.65
U	238	1	No Gas	27	81.19
Ca	43	2	He	30	111.11
Sb	121	2	He	587	1.49
Ti	47	2	He	17	415.69
Cu	63	1	No Gas	2947	0.32

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD

Calibration Blank Report

Li	6	1	No Gas	563943	0.28
Ge	72	2	He	342251	0.51
Ge	72	1	No Gas	912893	0.39
In	115	1	No Gas	1016161	0.64

Calibration Blank Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Bi	209	1	No Gas	798101	0.68

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	012CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:32:15-06:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	No Gas	3712	0.08
V	51	2	He	6354	0.03
Cr	52	2	He	9257	0.03
Fe	56	2	He	692233	0.00
Se	78	2	He	577	0.97
As	75	2	He	1192	0.12
Ca	44	2	He	5825	0.06
Na	23	2	He	200610	0.00
Mg	24	2	He	73450	0.00
K	39	2	He	202770	0.00
Mn	55	2	He	6151	0.04
Co	59	2	He	10011	0.03
Ni	60	2	He	2827	0.09
Cu	63	2	He	8169	0.02
Zn	66	2	He	2017	0.57
Al	27	2	He	1003	0.49
B	11	1	No Gas	19999	0.00
Al	27	1	No Gas	30544	0.00
Si	28	1	No Gas	320444	0.00
Ag	107	1	No Gas	13667	0.01
Cd	111	1	No Gas	2607	0.26
Sr	88	1	No Gas	25875	0.01
Mo	95	1	No Gas	4874	0.07
Sn	118	1	No Gas	9030	0.04
Sb	121	1	No Gas	12163	0.02
Ba	137	1	No Gas	3884	0.08
Tl	205	1	No Gas	19636	0.02
Tl	203	1	No Gas	8220	0.07
Pb	208	1	No Gas	29304	0.00
U	238	1	No Gas	28681	0.01
Ca	43	2	He	280	2.55
Sb	121	2	He	7759	0.02
Cu	63	1	No Gas	13837	0.01

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	566411	0.55	563943	100.44	70	120	
Ge	72	2	He	343678	0.69	342251	100.42	70	120	
Ge	72	1	No Gas	915076	0.07	912893	100.24	70	120	

Calibration Standard Report

In	115	1	No Gas	1032330	1.05	1016161	101.59	70	120	
Bi	209	1	No Gas	813650	0.39	798101	101.95	70	120	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	013CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:34:09-06:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	No Gas	9131	0.04
V	51	2	He	15758	0.01
Cr	52	2	He	19661	0.02
Fe	56	2	He	1788222	0.00
Se	78	2	He	677	0.34
As	75	2	He	2943	0.14
Ca	44	2	He	13157	0.01
Na	23	2	He	386907	0.00
Mg	24	2	He	187293	0.00
K	39	2	He	350124	0.00
Mn	55	2	He	14278	0.01
Co	59	2	He	25631	0.01
Ni	60	2	He	6662	0.11
Cu	63	2	He	18326	0.01
Zn	66	2	He	4311	0.15
Al	27	2	He	1787	0.10
B	11	1	No Gas	32661	0.01
Al	27	1	No Gas	50027	0.00
Si	28	1	No Gas	368094	0.00
Ag	107	1	No Gas	33894	0.00
Cd	111	1	No Gas	6598	0.08
Sr	88	1	No Gas	64372	0.00
Mo	95	1	No Gas	12409	0.02
Sn	118	1	No Gas	20376	0.01
Sb	121	1	No Gas	27793	0.00
Ba	137	1	No Gas	9540	0.02
Tl	205	1	No Gas	49020	0.00
Tl	203	1	No Gas	19736	0.01
Pb	208	1	No Gas	72534	0.00
U	238	1	No Gas	70769	0.00
Ca	43	2	He	740	0.55
Sb	121	2	He	18710	0.01
Cu	63	1	No Gas	31550	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	566185	1.03	563943	100.40	70	120	
Ge	72	2	He	343932	0.59	342251	100.49	70	120	
Ge	72	1	No Gas	915322	0.68	912893	100.27	70	120	

Calibration Standard Report

In	115	1	No Gas	1029427	0.34	1016161	101.31	70	120	
Bi	209	1	No Gas	812435	0.46	798101	101.80	70	120	

Calibration Standard Report

Sample Table

Sample Name	10/50/100
Data File Name	014CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:36:04-06:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	No Gas	18667	0.00
V	51	2	He	30895	0.00
Cr	52	2	He	36646	0.01
Fe	56	2	He	3439159	0.00
Se	78	2	He	971	0.68
As	75	2	He	5473	0.02
Ca	44	2	He	23924	0.01
Na	23	2	He	694075	0.00
Mg	24	2	He	370456	0.00
K	39	2	He	582214	0.00
Mn	55	2	He	27688	0.00
Co	59	2	He	51501	0.00
Ni	60	2	He	13130	0.05
Cu	63	2	He	35517	0.00
Zn	66	2	He	7679	0.01
Al	27	2	He	2667	0.08
B	11	1	No Gas	52889	0.01
Al	27	1	No Gas	81589	0.00
Si	28	1	No Gas	450071	0.00
Ag	107	1	No Gas	67948	0.00
Cd	111	1	No Gas	12980	0.02
Sr	88	1	No Gas	124737	0.00
Mo	95	1	No Gas	24212	0.02
Sn	118	1	No Gas	38788	0.00
Sb	121	1	No Gas	54738	0.01
Ba	137	1	No Gas	18720	0.04
Tl	205	1	No Gas	95181	0.00
Tl	203	1	No Gas	39252	0.00
Pb	208	1	No Gas	144125	0.00
U	238	1	No Gas	141698	0.00
Ca	43	2	He	1403	1.31
Sb	121	2	He	37200	0.00
Cu	63	1	No Gas	59614	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	568278	0.83	563943	100.77	70	120	
Ge	72	2	He	342406	0.30	342251	100.05	70	120	
Ge	72	1	No Gas	916729	0.68	912893	100.42	70	120	

Calibration Standard Report

In	115	1	No Gas	1026175	0.58	1016161	100.99	70	120	
Bi	209	1	No Gas	819319	0.79	798101	102.66	70	120	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	015CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:37:58-06:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	No Gas	186017	0.00
V	51	2	He	310914	0.00
Cr	52	2	He	349763	0.00
Fe	56	2	He	32874255	0.00
Se	78	2	He	5770	0.05
As	75	2	He	55221	0.00
Ca	44	2	He	232867	0.00
Na	23	2	He	6337830	0.00
Mg	24	2	He	3617958	0.00
K	39	2	He	4656790	0.00
Mn	55	2	He	278228	0.00
Co	59	2	He	508623	0.00
Ni	60	2	He	127772	0.00
Cu	63	2	He	341744	0.00
Zn	66	2	He	72507	0.00
Al	27	2	He	23958	0.01
B	11	1	No Gas	424263	0.00
Al	27	1	No Gas	715956	0.00
Si	28	1	No Gas	2090853	0.00
Ag	107	1	No Gas	675304	0.00
Cd	111	1	No Gas	134894	0.00
Sr	88	1	No Gas	1347438	0.00
Mo	95	1	No Gas	246498	0.00
Sn	118	1	No Gas	385916	0.00
Sb	121	1	No Gas	547241	0.00
Ba	137	1	No Gas	190144	0.00
Tl	205	1	No Gas	1003649	0.00
Tl	203	1	No Gas	406498	0.00
Pb	208	1	No Gas	1451995	0.00
U	238	1	No Gas	1576747	0.00
Ca	43	2	He	13740	0.02
Sb	121	2	He	365851	0.00
Cu	63	1	No Gas	571390	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	559462	1.04	563943	99.21	70	120	
Ge	72	2	He	346556	1.46	342251	101.26	70	120	
Ge	72	1	No Gas	923903	1.40	912893	101.21	70	120	

Calibration Standard Report

In	115	1	No Gas	1038886	1.18	1016161	102.24	70	120	
Bi	209	1	No Gas	823573	1.07	798101	103.19	70	120	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	016CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:39:50-06:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	No Gas	367299	0.00
V	51	2	He	621948	0.00
Cr	52	2	He	697256	0.00
Fe	56	2	He	65370479	0.00
Se	78	2	He	11052	0.01
As	75	2	He	109208	0.00
Ca	44	2	He	462177	0.00
Na	23	2	He	12639729	0.00
Mg	24	2	He	7059221	0.00
K	39	2	He	9016511	0.00
Mn	55	2	He	547882	0.00
Co	59	2	He	988177	0.00
Ni	60	2	He	253389	0.00
Cu	63	2	He	675184	0.00
Zn	66	2	He	142897	0.00
Al	27	2	He	45378	0.00
B	11	1	No Gas	864219	0.00
Al	27	1	No Gas	1387239	0.00
Si	28	1	No Gas	3651763	0.00
Ag	107	1	No Gas	1455788	0.00
Cd	111	1	No Gas	262676	0.00
Sr	88	1	No Gas	2640626	0.00
Mo	95	1	No Gas	488777	0.00
Sn	118	1	No Gas	768376	0.00
Sb	121	1	No Gas	1152600	0.00
Ba	137	1	No Gas	372387	0.00
Tl	205	1	No Gas	2155620	0.00
Tl	203	1	No Gas	818252	0.00
Pb	208	1	No Gas	3057832	0.00
U	238	1	No Gas	3124012	0.00
Ca	43	2	He	27434	0.01
Sb	121	2	He	730428	0.00
Cu	63	1	No Gas	1199206	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	524788	2.40	563943	93.06	70	120	
Ge	72	2	He	343787	1.13	342251	100.45	70	120	
Ge	72	1	No Gas	913950	1.06	912893	100.12	70	120	

Calibration Standard Report

In	115	1	No Gas	1043215	3.64	1016161	102.66	70	120	
Bi	209	1	No Gas	804180	1.57	798101	100.76	70	120	

Sample Report

Sample Table

Sample Name	LLICV2
Data File Name	019LCV2.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:45:42-06:00
Sample Type	LLCCV2
Dilution	1
Comment	
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	1.992	1.992	0.44	47127	0.00	2	
Be	9	1	No Gas	1.978	1.978	8.52	3789	0.05	2	
V	51	2	He	1.972	1.972	2.10	6639	0.03	2	
Cr	52	2	He	2.090	2.090	6.11	9420	0.02	2	
Fe	56	2	He	203.803	203.803	1.08	704318	0.03	200	
Se	78	2	He	1.970	1.970	18.46	555	0.36	2	
As	75	2	He	1.974	1.974	3.21	1183	0.17	2	
Ca	44	2	He	201.020	201.020	5.33	6061	3.32	200	
Na	23	2	He	197.518	197.518	1.87	205926	0.10	200	
Mg	24	2	He	209.151	209.151	2.34	76034	0.28	200	
K	39	2	He	208.961	208.961	0.76	208104	0.10	200	
Mn	55	2	He	1.984	1.984	4.50	6035	0.03	2	
Co	59	2	He	1.982	1.982	2.01	10171	0.02	2	
Ni	60	2	He	2.092	2.092	6.23	2870	0.07	2	
Cu	63	2	He	1.778	1.778	2.90	7842	0.02	2	
Zn	66	2	He	1.937	1.937	17.91	2010	0.10	2	
Al	27	2	He	2.068	2.068	18.62	1100	0.19	2	
B	11	1	No Gas	47.363	47.363	10.24	55419	0.09	10	NewName Main CR1 Failed
Al	27	1	No Gas	2.218	2.218	5.27	31129	0.01	2	
Si	28	1	No Gas	15.510	15.510	14.86	351604	0.00	10	NewName Main CR1 Failed
Ag	107	1	No Gas	1.978	1.978	5.63	13951	0.01	2	
Cd	111	1	No Gas	1.936	1.936	3.43	2560	0.08	2	
Sr	88	1	No Gas	1.902	1.902	1.99	25845	0.01	2	
Mo	95	1	No Gas	2.090	2.090	1.71	5161	0.04	2	
Sn	118	1	No Gas	1.988	1.988	1.68	9454	0.02	2	
Sb	121	1	No Gas	1.922	1.922	6.63	12056	0.02	2	
Ba	137	1	No Gas	1.985	1.985	4.16	3974	0.05	2	
Tl	205	1	No Gas	2.299	2.299	6.89	23085	0.01	2	
Tl	203	1	No Gas	2.176	2.176	4.49	9107	0.02	2	
Pb	208	1	No Gas	1.897	1.897	2.92	30232	0.01	2	
U	238	1	No Gas	1.790	1.790	2.00	28360	0.01	2	
Ca	43	2	He	238.302	238.302	16.44	363	65.59	200	
Sb	121	2	He	1.995	1.995	3.11	8019	0.02	2	
Ti	47	2	He	1.838	1.838	1.83	257	0.72	200	
Cu	63	1	No Gas	1.882	1.882	1.18	14364	0.01	2	
Se	82	1	No Gas	1.767	1.767	148.23	89	1.98	2	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	569824	0.27	563943	101.04	70	120	
Ge	72	2	He	350608	1.08	342251	102.44	70	120	
Ge	72	1	No Gas	932883	1.02	912893	102.19	70	120	
In	115	1	No Gas	1040429	0.45	1016161	102.39	70	120	
Bi	209	1	No Gas	817278	0.57	798101	102.40	70	120	

Sample Report

Sample Table

Sample Name	LLICV5
Data File Name	020LCV5.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:47:36-06:00
Sample Type	LLCCV5
Dilution	1
Comment	
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	4.813	4.813	1.08	69881	0.01	5	
Be	9	1	No Gas	4.868	4.868	1.24	9255	0.05	5	
V	51	2	He	5.000	5.000	1.45	16266	0.03	5	
Cr	52	2	He	5.089	5.089	2.14	20095	0.03	5	
Fe	56	2	He	533.455	533.455	0.73	1807610	0.03	500	
Se	78	2	He	5.949	5.949	3.42	772	0.77	5	
As	75	2	He	5.052	5.052	4.19	2905	0.17	5	
Ca	44	2	He	498.696	498.696	3.96	13090	3.81	500	
Na	23	2	He	495.868	495.868	0.52	397760	0.12	500	
Mg	24	2	He	525.508	525.508	0.59	190885	0.28	500	
K	39	2	He	524.637	524.637	0.09	352880	0.15	500	
Mn	55	2	He	5.141	5.141	3.97	14898	0.03	5	
Co	59	2	He	5.130	5.130	2.72	26176	0.02	5	
Ni	60	2	He	5.006	5.006	7.71	6655	0.08	5	
Cu	63	2	He	5.029	5.029	1.31	19064	0.03	5	
Zn	66	2	He	5.055	5.055	0.49	4287	0.12	5	
Al	27	2	He	4.629	4.629	12.45	1693	0.27	5	
B	11	1	No Gas	41.146	41.146	0.98	49736	0.08	25	NewName2 Main CR1 Failed
Al	27	1	No Gas	5.131	5.131	1.28	51191	0.01	5	
Si	28	1	No Gas	24.880	24.880	0.52	381415	0.01	25	
Ag	107	1	No Gas	5.048	5.048	1.12	34532	0.01	5	
Cd	111	1	No Gas	5.020	5.020	10.23	6595	0.08	5	
Sr	88	1	No Gas	4.891	4.891	1.82	65106	0.01	5	
Mo	95	1	No Gas	5.109	5.109	1.76	12486	0.04	5	
Sn	118	1	No Gas	5.030	5.030	0.50	21007	0.02	5	
Sb	121	1	No Gas	4.764	4.764	2.88	28351	0.02	5	
Ba	137	1	No Gas	4.979	4.979	5.58	9520	0.05	5	
Tl	205	1	No Gas	4.954	4.954	1.95	49382	0.01	5	
Tl	203	1	No Gas	4.710	4.710	1.80	19522	0.02	5	
Pb	208	1	No Gas	4.758	4.758	1.43	73812	0.01	5	
U	238	1	No Gas	4.468	4.468	1.76	70521	0.01	5	
Ca	43	2	He	480.567	480.567	3.99	703	68.32	500	
Sb	121	2	He	4.841	4.841	3.12	18644	0.03	5	
Ti	47	2	He	4.432	4.432	12.17	597	0.74	5	
Cu	63	1	No Gas	4.772	4.772	1.76	31567	0.02	5	
Se	82	1	No Gas	4.735	4.735	36.99	339	1.39	5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	569405	0.58	563943	100.97	70	120	
Ge	72	2	He	351621	1.17	342251	102.74	70	120	
Ge	72	1	No Gas	926239	0.67	912893	101.46	70	120	
In	115	1	No Gas	1035665	1.04	1016161	101.92	70	120	
Bi	209	1	No Gas	815035	0.62	798101	102.12	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	021_ICB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:49:30-06:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	0.025	163.1	30876	1.6	0.5	
Be	9	1	No Gas	0.001	1108.6	43	43.7	0.5	
V	51	2	He	0.041	12.2	523	2.9	2.5	
Cr	52	2	He	0.085	69.3	2287	9.0	2.5	
Fe	56	2	He	3.169	0.7	35453	0.2	100	
Se	78	2	He	0.405	137.3	463	6.3	1	
As	75	2	He	-0.003	-382.4	81	8.6	2.5	
Ca	44	2	He	-1.181	-297.3	1293	6.2	100	
Na	23	2	He	0.854	160.7	78990	1.0	100	
Mg	24	2	He	0.692	65.9	727	22.3	100	
K	39	2	He	2.831	22.0	112446	0.3	100	
Mn	55	2	He	0.028	27.1	557	3.7	2.5	
Co	59	2	He	-0.002	-388.6	133	22.9	2.5	
Ni	60	2	He	-0.025	-97.4	133	22.9	2.5	
Cu	63	2	He	-0.099	-50.1	1370	12.3	1	
Zn	66	2	He	0.179	27.1	723	4.9	2.5	
Al	27	2	He	-0.068	-168.7	600	4.4	5	
B	11	1	No Gas	14.654	4.8	25408	2.1	0.5	ICB Main CR1 Failed
Al	27	1	No Gas	0.266	15.6	17188	1.4	5	
Si	28	1	No Gas	-0.370	-115.9	292546	0.4	10	
Ag	107	1	No Gas	-0.045	-14.4	270	14.8	2.5	
Cd	111	1	No Gas	-0.005	0.0	0	#DIV/0!	1	
Sr	88	1	No Gas	0.010	99.8	793	17.7	2.5	
Mo	95	1	No Gas	0.010	21.3	73	7.9	2.5	
Sn	118	1	No Gas	0.341	24.0	3094	8.3	5	
Sb	121	1	No Gas	0.041	49.5	1130	10.2	2.5	
Ba	137	1	No Gas	0.452	13.8	1097	11.5	2.5	
Tl	205	1	No Gas	0.031	39.0	513	23.6	1	
Tl	203	1	No Gas	0.022	87.8	200	39.7	1	
Pb	208	1	No Gas	-0.007	-214.0	1073	21.2	2.5	
U	238	1	No Gas	0.003	1.6	70	0.0	2.5	
Ca	43	2	He	-5.020	-167.5	23	49.5	100	
Sb	121	2	He	0.022	283.2	673	34.3	2.5	
Ti	47	2	He	-0.105	-42.7	3	173.2	2.5	
Se	82	1	No Gas	-0.309	-219.2	-84	-66.6	1	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	563317	0.50	563943	99.89	70	120	
Ge	72	2	He	345105	0.11	342251	100.83	70	120	
Ge	72	1	No Gas	920206	0.77	912893	100.80	70	120	
In	115	1	No Gas	1023913	1.66	1016161	100.76	70	120	
Bi	209	1	No Gas	800638	0.96	798101	100.32	70	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	022_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:51:25-06:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	No Gas	101.096	3.277	833081	1.96	100	101.1	90	110	
Be	9	1	No Gas	99.722	0.924	185565	0.46	100	99.7	90	110	
V	51	2	He	99.760	1.114	315987	0.47	100	99.8	90	110	
Cr	52	2	He	100.783	2.426	358726	1.08	100	100.8	90	110	
Fe	56	2	He	10053.055	1.734	33506306	0.67	10000	100.5	90	110	
Se	78	2	He	101.343	2.318	5927	1.18	100	101.3	90	110	
As	75	2	He	100.237	0.761	55886	0.64	100	100.2	90	110	
Ca	44	2	He	10026.671	1.322	236787	0.41	10000	100.3	90	110	
Na	23	2	He	9854.942	2.048	6376462	0.66	10000	98.5	90	110	
Mg	24	2	He	10064.830	0.242	3636159	1.14	10000	100.6	90	110	
K	39	2	He	10133.576	2.359	4726307	1.06	10000	101.3	90	110	
Mn	55	2	He	99.957	1.846	279833	0.52	100	100.0	90	110	
Co	59	2	He	100.694	1.581	509517	0.59	100	100.7	90	110	
Ni	60	2	He	100.564	3.160	129999	1.95	100	100.6	90	110	
Cu	63	2	He	100.735	2.120	347739	1.04	100	100.7	90	110	
Zn	66	2	He	100.691	1.653	73701	1.13	100	100.7	90	110	
Al	27	2	He	105.813	3.006	24936	1.62	100	105.8	90	110	
B	11	1	No Gas	470.957	1.835	432613	2.93	500	94.2	90	110	
Al	27	1	No Gas	102.594	0.652	734093	0.43	100	102.6	90	110	
Si	28	1	No Gas	516.469	0.586	2085401	1.51	500	103.3	90	110	
Ag	107	1	No Gas	101.026	0.353	677308	1.07	100	101.0	90	110	
Cd	111	1	No Gas	102.438	0.280	133955	1.51	100	102.4	90	110	
Sr	88	1	No Gas	103.374	1.674	1356466	0.50	100	103.4	90	110	
Mo	95	1	No Gas	102.700	0.913	248947	0.49	100	102.7	90	110	
Sn	118	1	No Gas	101.860	0.643	388528	1.29	100	101.9	90	110	
Sb	121	1	No Gas	95.146	0.709	552217	1.15	100	95.1	90	110	
Ba	137	1	No Gas	102.946	0.716	190730	1.99	100	102.9	90	110	
Tl	205	1	No Gas	100.736	1.092	1002252	0.44	100	100.7	90	110	
Tl	203	1	No Gas	97.894	0.564	404434	0.54	100	97.9	90	110	
Pb	208	1	No Gas	94.522	0.935	1446949	1.48	100	94.5	90	110	
U	238	1	No Gas	100.109	1.946	1583046	0.90	100	100.1	90	110	
Ca	43	2	He	9790.528	3.546	13690	2.64	10000	97.9	90	110	
Sb	121	2	He	99.393	1.439	369952	0.74	100	99.4	90	110	
Ti	47	2	He	97.436	2.367	12719	3.35	100	97.4	90	110	
Cu	63	1	No Gas	95.854	1.319	580137	0.62	100	95.9	90	110	
Se	82	1	No Gas	103.352	0.624	8680	0.75	100	103.4	90	110	

QC ISTD Table

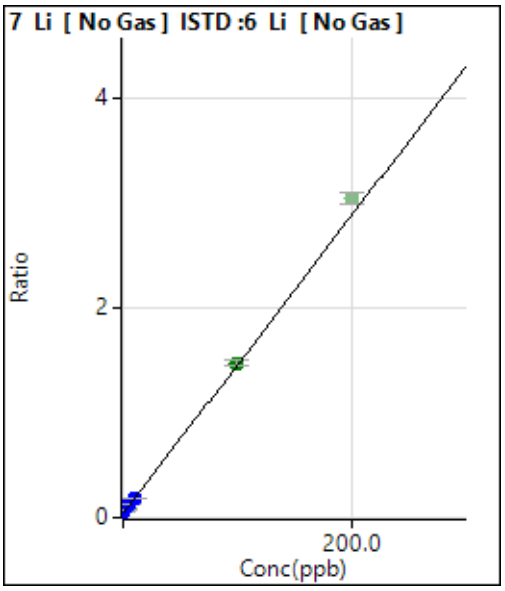
Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	559802	1.29	563943	99.27	70	120	
Ge	72	2	He	350580	1.38	342251	102.43	70	120	
Ge	72	1	No Gas	931251	1.05	912893	102.01	70	120	
In	115	1	No Gas	1031337	1.29	1016161	101.49	70	120	
Bi	209	1	No Gas	816857	1.10	798101	102.35	70	120	

Calibration for 022_ICV.d

Batch Folder: D:\Agilent\ICPMH\1\DATA\010323A.b\
Analysis File: 010323A.batch.bin
DA Date-Time: 01/03/2023 22:05:01
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	011CALB.d	CAL BLK	01/03/2023 10:30:19
2	012CALS.d	2/10/200	01/03/2023 10:32:15
3	013CALS.d	5/25/500	01/03/2023 10:34:09
4	014CALS.d	10/50/100	01/03/2023 10:36:04
5	015CALS.d	100/500/10K	01/03/2023 10:37:58
6	016CALS.d	200/1000/20K	01/03/2023 10:39:50

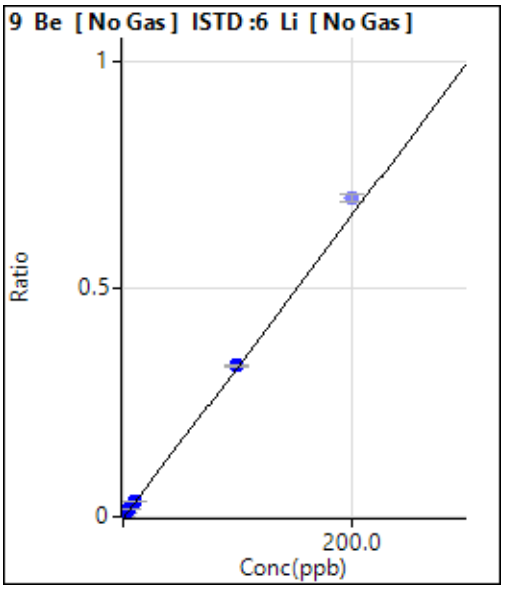
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	30705.30	0.0544	P	0.8	
2	☐	2.000	1.972	46685.58	0.0824	P	0.6	-1.4
3	☐	5.000	4.876	69991.68	0.1236	P	0.3	-2.5
4	☐	10.000	9.428	106930.25	0.1882	P	1.9	-5.7
5	☐	100.000	100.064	824469.49	1.4739	A	3.2	0.1
6	☑	200.000		1594326.85	3.0397	A	3.3	

y = 0.0142 * x + 0.0544
R = 1.0000
DL = 0.08734 ppb
BEC = 3.838 ppb

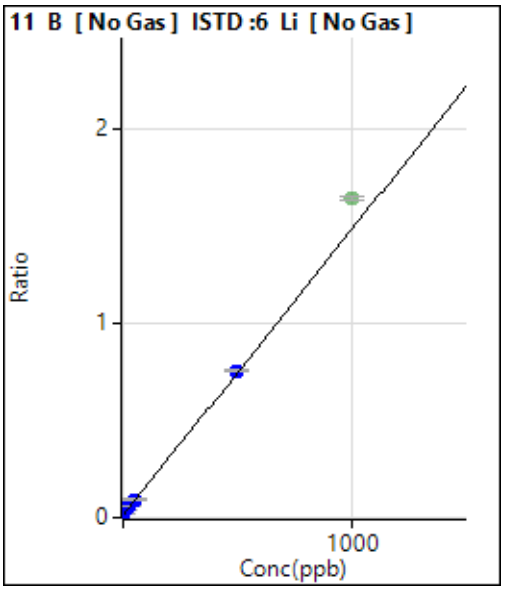
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	41.67	0.0001	P	24.8	
2	☐	2.000	1.950	3712.19	0.0066	P	3.3	-2.5
3	☐	5.000	4.831	9131.36	0.0161	P	4.1	-3.4
4	☐	10.000	9.862	18667.42	0.0329	P	1.6	-1.4
5	☐	100.000	100.023	186017.38	0.3325	P	1.0	0.0
6	☑	200.000		367299.24	0.7001	P	2.2	

y = 0.0033 * x + 7.3856E-005
R = 1.0000
DL = 0.01653 ppb
BEC = 0.02222 ppb

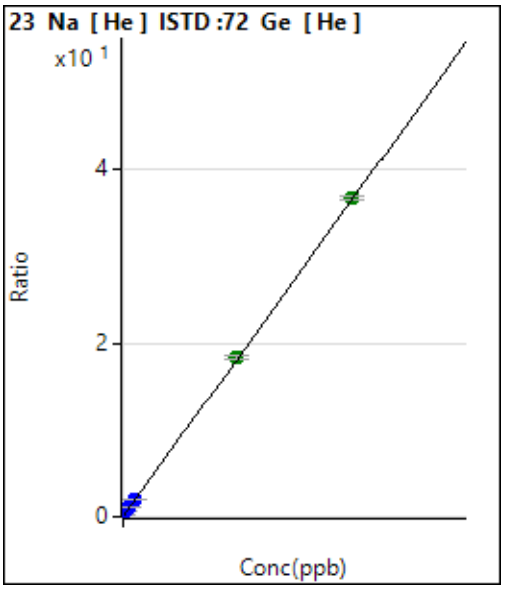
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	12260.42	0.0217	P	2.2	
2	☐	10.000	9.215	19999.29	0.0353	P	0.4	-7.8
3	☐	25.000	24.410	32661.36	0.0577	P	1.2	-2.4
4	☐	50.000	48.434	52889.32	0.0931	P	3.0	-3.1
5	☐	500.000	500.202	424263.31	0.7583	P	2.1	0.0
6	☑	1000.000		864219.28	1.6472	A	1.7	

y = 0.0015 * x + 0.0217
R = 1.0000
DL = 0.9672 ppb
BEC = 14.77 ppb

Weight: <None>
Min Conc: <None>

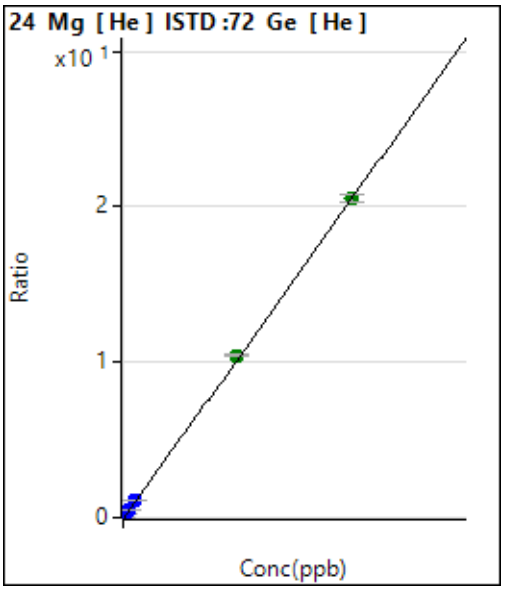


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	77802.84	0.2273	P	0.7	
2	☐	200.000	195.521	200610.24	0.5837	P	1.2	-2.2
3	☐	500.000	492.420	386906.96	1.1250	P	1.0	-1.5
4	☐	1000.000	987.300	694075.30	2.0271	P	0.3	-1.3
5	☐	10000.00	9909.873	6337830.32	18.2919	A	2.3	-0.9
6	☐	20000.00	20045.93	12639728.9	36.7687	A	1.1	0.2

y = 0.0018 * x + 0.2273
R = 1.0000
DL = 2.651 ppb
BEC = 124.7 ppb

Weight: <None>
Min Conc: <None>

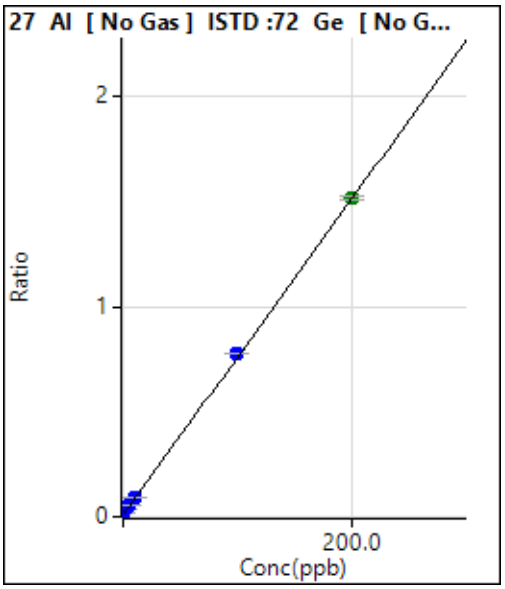
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	476.68	0.0014	P	8.4	
2	☐	200.000	206.079	73450.27	0.2137	P	1.8	3.0
3	☐	500.000	527.176	187293.30	0.5446	P	1.3	5.4
4	☐	1000.000	1048.671	370456.04	1.0819	P	0.8	4.9
5	☐	10000.00	10132.18	3617957.66	10.4415	A	1.7	1.3
6	☐	20000.00	19930.73	7059221.35	20.5378	A	2.7	-0.3

y = 0.0010 * x + 0.0014
R = 1.0000
DL = 0.3406 ppb
BEC = 1.352 ppb

Weight: <None>
Min Conc: <None>

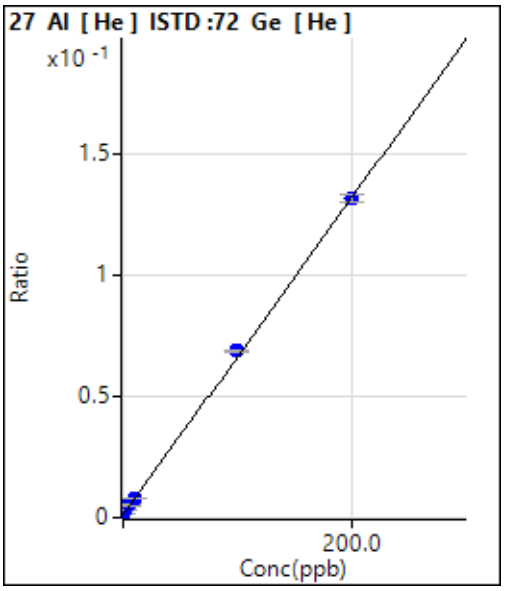


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	15228.59	0.0167	P	0.8	
2	☐	2.000	2.220	30543.98	0.0334	P	0.8	11.0
3	☐	5.000	5.048	50026.84	0.0547	P	0.9	1.0
4	☐	10.000	9.615	81588.70	0.0890	P	0.6	-3.8
5	☐	100.000	100.817	715956.50	0.7750	P	0.4	0.8
6	☐	200.000	199.608	1387238.94	1.5180	A	1.4	-0.2

y = 0.0075 * x + 0.0167
R = 1.0000
DL = 0.05004 ppb
BEC = 2.218 ppb

Weight: <None>
Min Conc: <None>

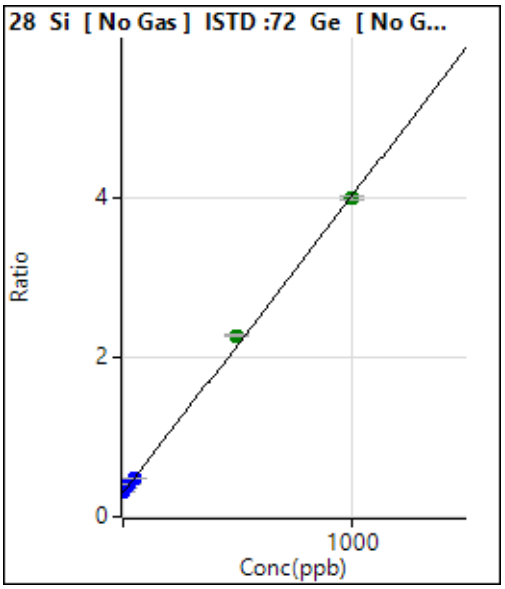
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	610.02	0.0018	P	14.5	
2	☐	2.000	1.735	1003.39	0.0029	P	5.6	-13.3
3	☐	5.000	5.205	1786.81	0.0052	P	2.2	4.1
4	☐	10.000	9.161	2666.97	0.0078	P	2.0	-8.4
5	☐	100.000	102.737	23957.68	0.0691	P	1.2	2.7
6	☐	200.000	198.671	45377.66	0.1320	P	2.7	-0.7

y = 6.5553E-004 * x + 0.0018
R = 0.9998
DL = 1.185 ppb
BEC = 2.72 ppb

Weight: <None>
Min Conc: <None>

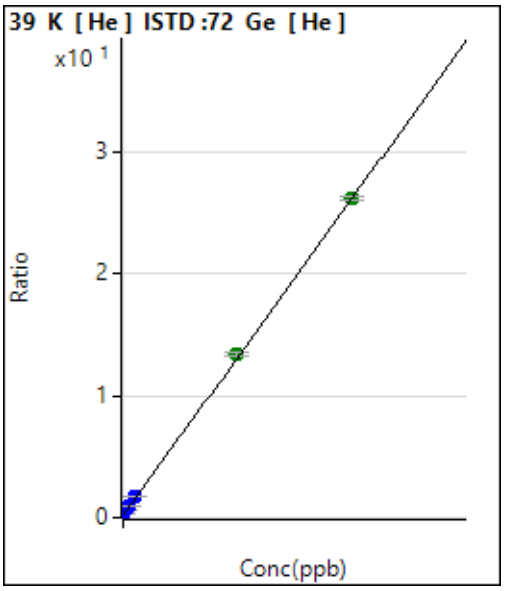


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	291477.05	0.3193	P	1.2	
2	☐	10.000	8.308	320443.80	0.3502	P	0.6	-16.9
3	☐	25.000	22.289	368093.56	0.4022	P	1.4	-10.8
4	☐	50.000	46.177	450070.83	0.4910	P	0.6	-7.6
5	☐	500.000	522.860	2090852.94	2.2630	A	1.0	4.6
6	☐	1000.000	988.846	3651762.65	3.9954	A	0.8	-1.1

y = 0.0037 * x + 0.3193
R = 0.9996
DL = 3.046 ppb
BEC = 85.89 ppb

Weight: <None>
Min Conc: <None>

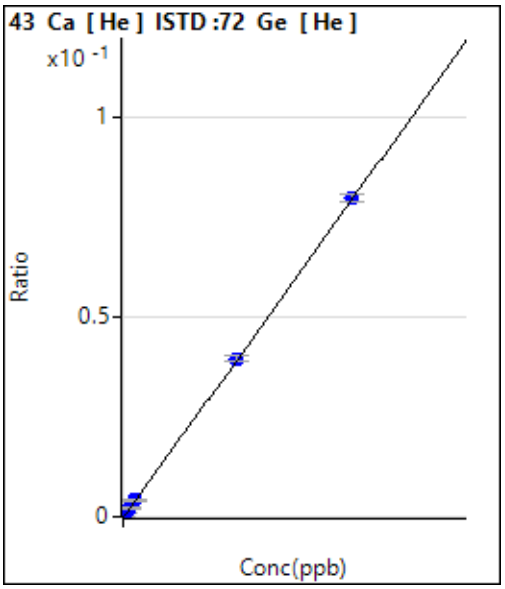
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	110255.38	0.3222	P	1.6	
2	☐	200.000	206.244	202769.57	0.5900	P	1.4	3.1
3	☐	500.000	535.726	350124.36	1.0180	P	0.5	7.1
4	☐	1000.000	1061.116	582214.00	1.7004	P	0.7	6.1
5	☐	10000.00	10099.01	4656790.45	13.4393	A	1.5	1.0
6	☐	20000.00	19946.48	9016510.91	26.2297	A	1.4	-0.3

y = 0.0013 * x + 0.3222
R = 1.0000
DL = 12.24 ppb
BEC = 248 ppb

Weight: <None>
Min Conc: <None>

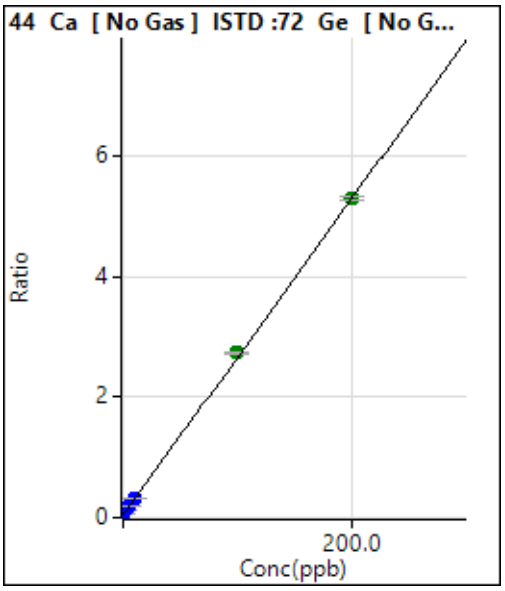


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	30.00	0.0001	P	33.1	
2	☐	200.000	182.635	280.01	0.0008	P	6.8	-8.7
3	☐	500.000	518.617	740.03	0.0022	P	4.6	3.7
4	☐	1000.000	1008.049	1403.44	0.0041	P	18.7	0.8
5	☐	10000.00	9941.560	13740.39	0.0397	P	3.5	-0.6
6	☐	20000.00	20028.52	27434.38	0.0798	P	2.4	0.1

y = 3.9806E-006 * x + 8.7600E-005
R = 1.0000
DL = 21.89 ppb
BEC = 22.01 ppb

Weight: <None>
Min Conc: <None>

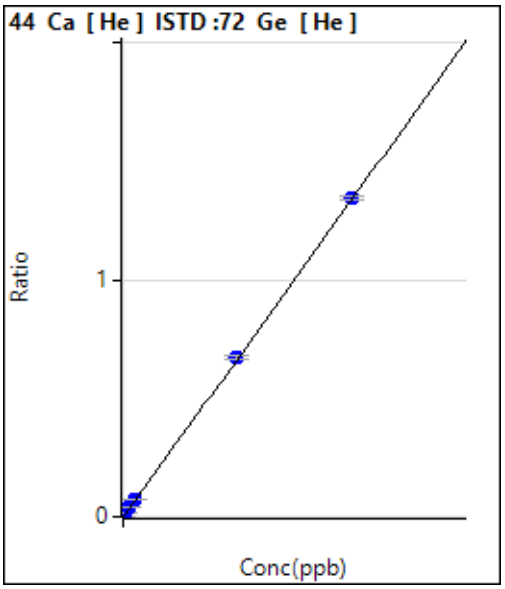
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	62408.71	0.0684	P	1.7	
2	☐	2.000	1.810	105979.28	0.1158	P	0.9	-9.5
3	☐	5.000	4.678	174828.94	0.1910	P	0.8	-6.4
4	☐	10.000	9.237	284666.47	0.3105	P	0.5	-7.6
5	☐	100.000	101.500	2521318.24	2.7292	A	1.6	1.5
6	☐	200.000	199.298	4837162.64	5.2930	A	1.4	-0.4

y = 0.0262 * x + 0.0684
R = 0.9999
DL = 0.1322 ppb
BEC = 2.608 ppb

Weight: <None>
Min Conc: <None>

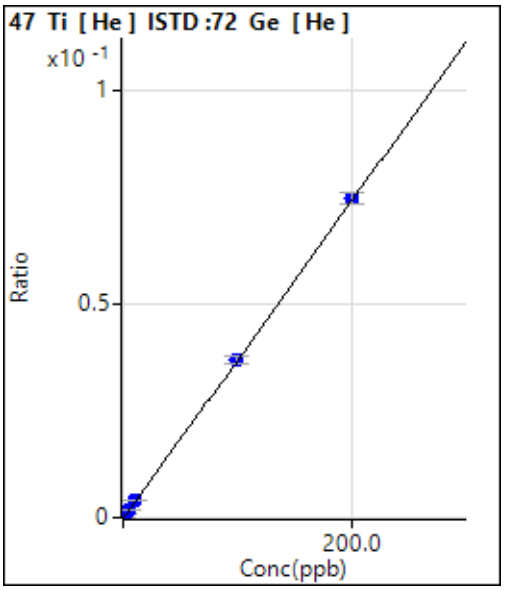


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1310.09	0.0038	P	6.8	
2	☐	200.000	195.919	5824.68	0.0170	P	4.2	-2.0
3	☐	500.000	513.901	13156.55	0.0383	P	1.0	2.8
4	☐	1000.000	985.956	23924.48	0.0699	P	1.9	-1.4
5	☐	10000.00	9975.096	232866.85	0.6720	P	1.5	-0.2
6	☐	20000.00	20012.84	462176.85	1.3444	P	0.8	0.1

y = 6.6988E-005 * x + 0.0038
R = 1.0000
DL = 11.71 ppb
BEC = 57.13 ppb

Weight: <None>
Min Conc: <None>

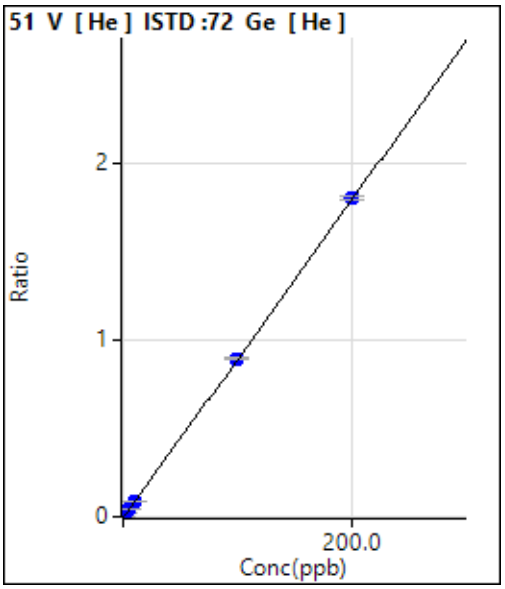
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	16.67	0.0000	P	69.8	
2	☐	2.000	1.747	240.01	0.0007	P	4.5	-12.6
3	☐	5.000	4.510	593.36	0.0017	P	6.4	-9.8
4	☐	10.000	10.447	1346.76	0.0039	P	2.8	4.5
5	☐	100.000	98.600	12719.44	0.0367	P	4.6	-1.4
6	☐	200.000	200.693	25664.32	0.0747	P	3.1	0.3

y = 3.7181E-004 * x + 4.8802E-005
R = 1.0000
DL = 0.2748 ppb
BEC = 0.1313 ppb

Weight: <None>
Min Conc: <None>

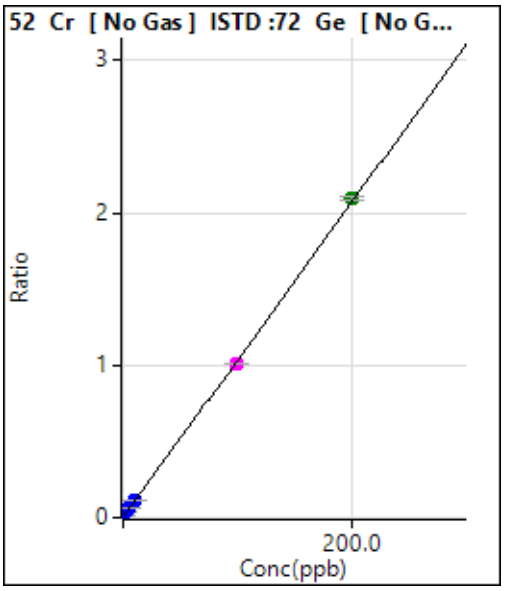


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	392.23	0.0011	P	10.4	
2	☐	2.000	1.921	6353.73	0.0185	P	1.4	-3.9
3	☐	5.000	4.950	15758.01	0.0458	P	1.0	-1.0
4	☐	10.000	9.871	30894.80	0.0902	P	0.7	-1.3
5	☐	100.000	99.304	310913.98	0.8973	P	1.8	-0.7
6	☐	200.000	200.357	621948.25	1.8092	P	1.0	0.2

y = 0.0090 * x + 0.0011
R = 1.0000
DL = 0.0396 ppb
BEC = 0.127 ppb

Weight: <None>
Min Conc: <None>

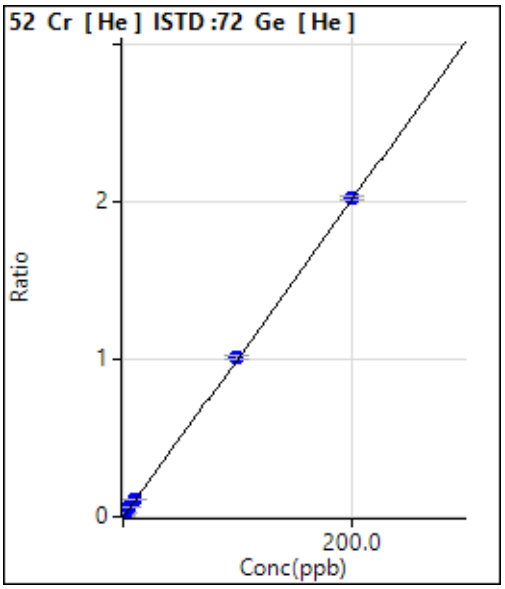
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	11648.51	0.0128	P	1.9	
2	☐	2.000	1.957	30190.30	0.0330	P	2.0	-2.2
3	☐	5.000	4.882	57889.53	0.0632	P	1.3	-2.4
4	☐	10.000	9.778	104376.42	0.1139	P	1.2	-2.2
5	☐	100.000	96.906	937516.16	1.0147	M	0.4	-3.1
6	☐	200.000	201.561	1916187.37	2.0968	A	1.5	0.8

y = 0.0103 * x + 0.0128
R = 0.9998
DL = 0.06954 ppb
BEC = 1.234 ppb

Weight: <None>
Min Conc: <None>

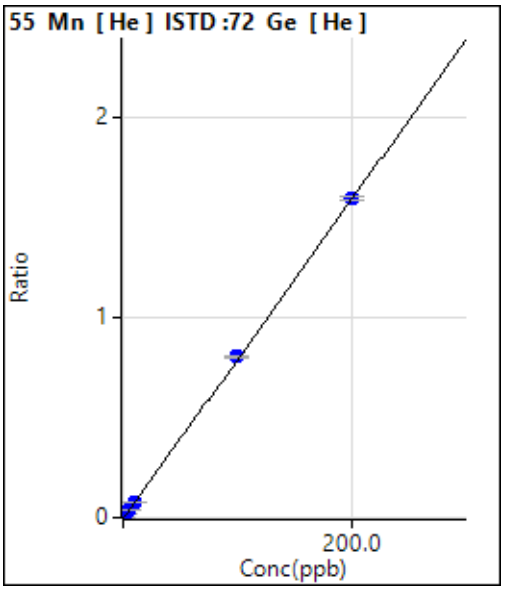


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1973.52	0.0058	P	12.0	
2	☐	2.000	2.096	9256.62	0.0269	P	2.6	4.8
3	☐	5.000	5.089	19661.04	0.0572	P	3.9	1.8
4	☐	10.000	10.027	36646.25	0.1070	P	2.1	0.3
5	☐	100.000	99.399	349763.48	1.0095	P	2.4	-0.6
6	☐	200.000	200.296	697256.47	2.0283	P	1.1	0.1

y = 0.0101 * x + 0.0058
R = 1.0000
DL = 0.2055 ppb
BEC = 0.5713 ppb

Weight: <None>
Min Conc: <None>

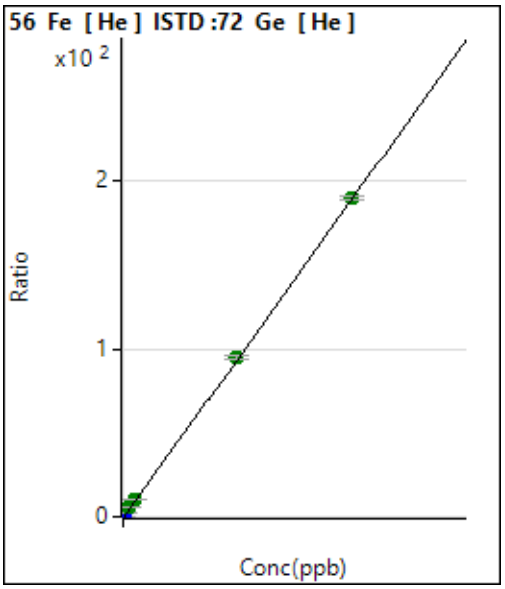
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	476.69	0.0014	P	14.0	
2	☐	2.000	2.070	6151.48	0.0179	P	2.5	3.5
3	☐	5.000	5.032	14277.65	0.0415	P	0.9	0.6
4	☐	10.000	9.968	27688.46	0.0809	P	1.0	-0.3
5	☐	100.000	100.540	278228.43	0.8030	P	1.9	0.5
6	☐	200.000	199.730	547881.58	1.5938	P	1.3	-0.1

y = 0.0080 * x + 0.0014
R = 1.0000
DL = 0.07322 ppb
BEC = 0.1747 ppb

Weight: <None>
Min Conc: <None>

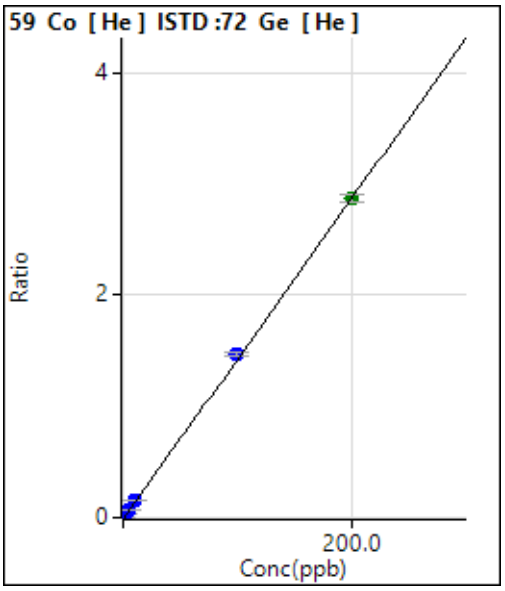


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	24852.93	0.0726	P	1.3	
2	☐	200.000	204.360	692233.22	2.0143	P	0.9	2.2
3	☐	500.000	539.590	1788222.21	5.1994	A	0.8	7.9
4	☐	1000.000	1049.535	3439158.59	10.0444	A	2.1	5.0
5	☐	10000.00	9977.982	32874254.5	94.8750	A	1.7	-0.2
6	☐	20000.00	20007.49	65370479.0	190.167	A	1.6	0.0

y = 0.0095 * x + 0.0726
R = 1.0000
DL = 0.2896 ppb
BEC = 7.643 ppb

Weight: <None>
Min Conc: <None>

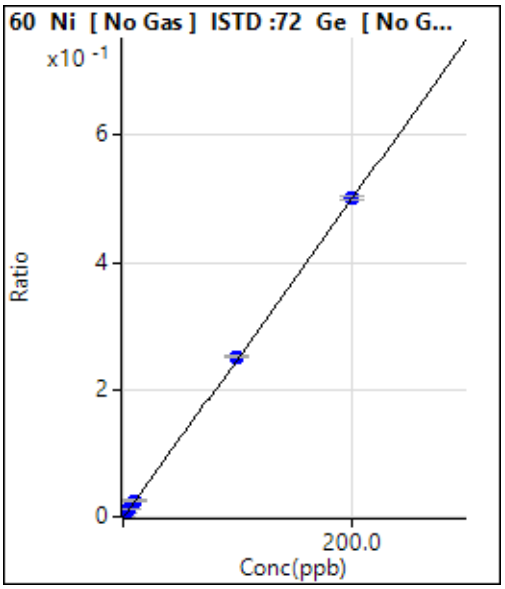
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	140.00	0.0004	P	19.3	
2	☐	2.000	1.990	10010.51	0.0291	P	2.3	-0.5
3	☐	5.000	5.136	25631.07	0.0745	P	2.6	2.7
4	☐	10.000	10.394	51501.18	0.1504	P	2.3	3.9
5	☐	100.000	101.692	508623.13	1.4680	P	2.1	1.7
6	☐	200.000	199.131	988176.91	2.8741	A	2.5	-0.4

y = 0.0144 * x + 4.0931E-004
R = 0.9999
DL = 0.01644 ppb
BEC = 0.02836 ppb

Weight: <None>
Min Conc: <None>

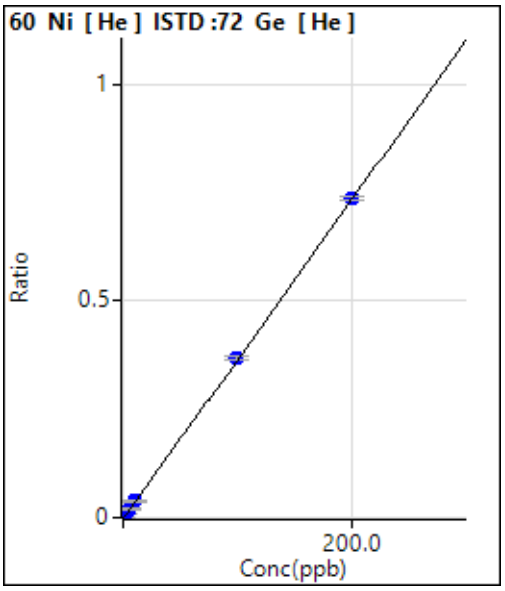


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	446.68	0.0005	P	9.4	
2	☐	2.000	2.012	5061.04	0.0055	P	2.8	0.6
3	☐	5.000	5.040	12008.83	0.0131	P	5.7	0.8
4	☐	10.000	10.028	23480.54	0.0256	P	0.5	0.3
5	☐	100.000	100.337	232732.38	0.2519	P	0.5	0.3
6	☐	200.000	199.829	458035.00	0.5012	P	0.7	-0.1

y = 0.0025 * x + 4.8942E-004
R = 1.0000
DL = 0.05501 ppb
BEC = 0.1953 ppb

Weight: <None>
Min Conc: <None>

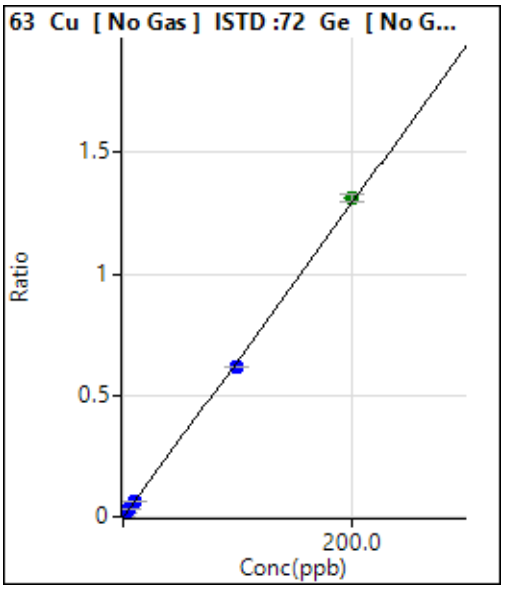
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	163.34	0.0005	P	28.6	
2	☐	2.000	2.103	2827.00	0.0082	P	2.0	5.2
3	☐	5.000	5.129	6661.77	0.0194	P	7.7	2.6
4	☐	10.000	10.280	13129.85	0.0383	P	6.0	2.8
5	☐	100.000	99.989	127772.43	0.3688	P	2.8	0.0
6	☐	200.000	199.987	253388.61	0.7371	P	1.7	0.0

y = 0.0037 * x + 4.7688E-004
R = 1.0000
DL = 0.1112 ppb
BEC = 0.1295 ppb

Weight: <None>
Min Conc: <None>

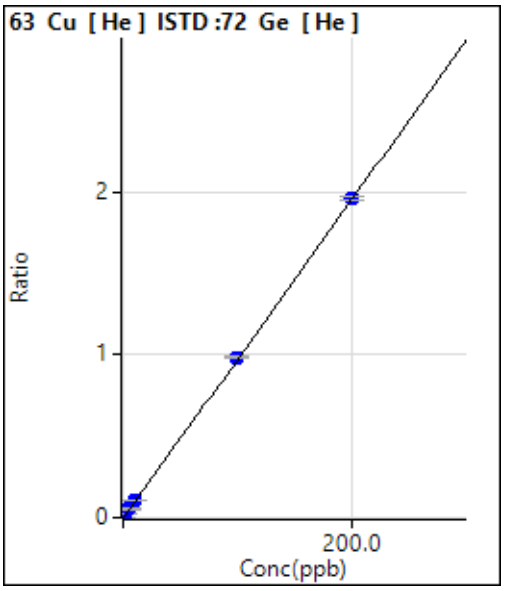


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	2947.04	0.0032	P	9.8	
2	☐	2.000	1.839	13837.23	0.0151	P	2.0	-8.0
3	☐	5.000	4.832	31550.36	0.0345	P	2.1	-3.4
4	☐	10.000	9.558	59614.42	0.0650	P	1.1	-4.4
5	☐	100.000	95.149	571389.67	0.6185	P	0.1	-4.9
6	☐	200.000	202.454	1199205.92	1.3123	A	2.0	1.2

y = 0.0065 * x + 0.0032
R = 0.9996
DL = 0.1472 ppb
BEC = 0.4994 ppb

Weight: <None>
Min Conc: <None>

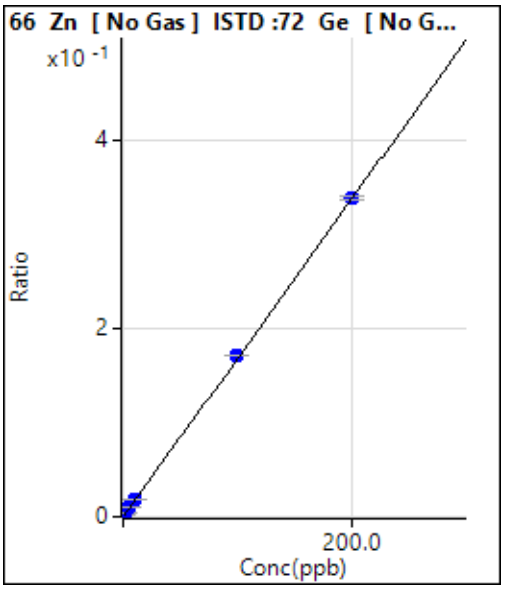
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1690.14	0.0049	P	9.3	
2	☐	2.000	1.922	8169.26	0.0238	P	1.3	-3.9
3	☐	5.000	4.933	18326.00	0.0533	P	1.8	-1.3
4	☐	10.000	10.081	35516.91	0.1037	P	0.8	0.8
5	☐	100.000	100.143	341743.64	0.9863	P	1.8	0.1
6	☐	200.000	199.927	675184.26	1.9641	P	1.0	0.0

y = 0.0098 * x + 0.0049
R = 1.0000
DL = 0.1404 ppb
BEC = 0.5041 ppb

Weight: <None>
Min Conc: <None>

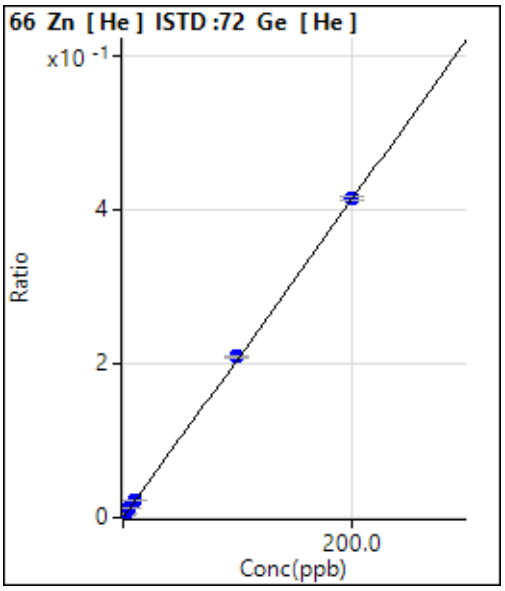


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1316.75	0.0014	P	7.5	
2	☐	2.000	2.069	4520.83	0.0049	P	6.1	3.5
3	☐	5.000	5.023	9089.87	0.0099	P	3.8	0.5
4	☐	10.000	9.748	16426.91	0.0179	P	2.8	-2.5
5	☐	100.000	100.583	158405.44	0.1715	P	0.8	0.6
6	☐	200.000	199.720	309852.42	0.3390	P	0.8	-0.1

y = 0.0017 * x + 0.0014
R = 1.0000
DL = 0.1923 ppb
BEC = 0.8532 ppb

Weight: <None>
Min Conc: <None>

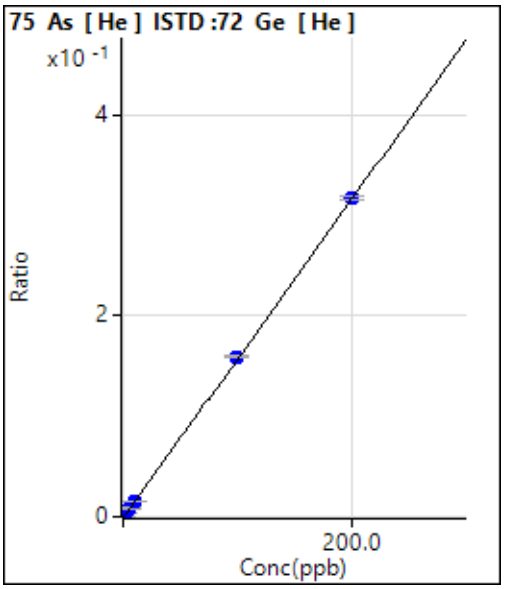
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	590.02	0.0017	P	9.9	
2	☐	2.000	2.000	2016.85	0.0059	P	11.0	0.0
3	☐	5.000	5.221	4310.76	0.0125	P	7.2	4.4
4	☐	10.000	9.997	7678.95	0.0224	P	0.7	0.0
5	☐	100.000	100.207	72507.16	0.2092	P	1.2	0.2
6	☐	200.000	199.891	142897.48	0.4157	P	0.9	-0.1

y = 0.0021 * x + 0.0017
R = 1.0000
DL = 0.248 ppb
BEC = 0.8327 ppb

Weight: <None>
Min Conc: <None>

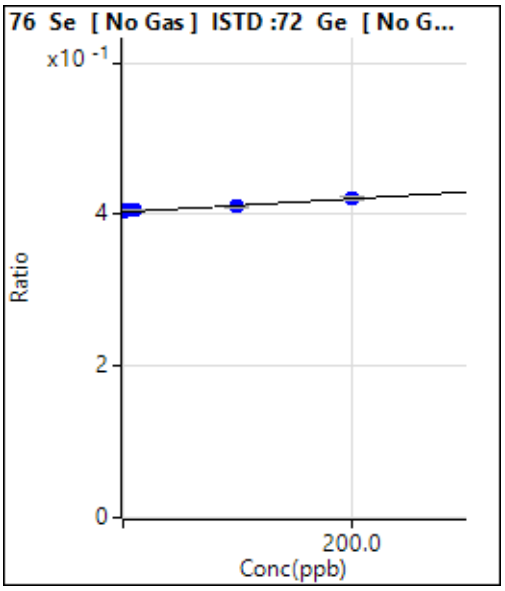


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	82.22	0.0002	P	15.9	
2	☐	2.000	2.033	1192.28	0.0035	P	2.1	1.7
3	☐	5.000	5.236	2942.56	0.0086	P	4.3	4.7
4	☐	10.000	9.914	5473.36	0.0160	P	0.7	-0.9
5	☐	100.000	100.198	55221.27	0.1594	P	1.1	0.2
6	☐	200.000	199.899	109207.72	0.3177	P	1.3	-0.1

y = 0.0016 * x + 2.4037E-004
R = 1.0000
DL = 0.07204 ppb
BEC = 0.1514 ppb

Weight: <None>
Min Conc: <None>

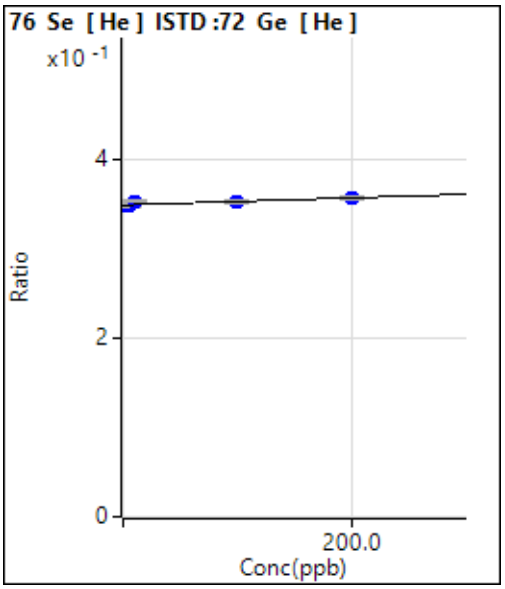
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	368026.53	0.4031	P	0.6	
2	☐	2.000	36.007	371832.99	0.4063	P	1.0	1700.4
3	☐	5.000	28.100	371283.09	0.4056	P	0.8	462.0
4	☐	10.000	30.447	372048.84	0.4058	P	0.3	204.5
5	☐	100.000	84.499	379377.88	0.4106	P	0.9	-15.5
6	☐	200.000	205.811	385102.66	0.4214	P	1.2	2.9

y = 8.8654E-005 * x + 0.4031
R = 0.9777
DL = 78.26 ppb
BEC = 4547 ppb

Weight: <None>
Min Conc: <None>

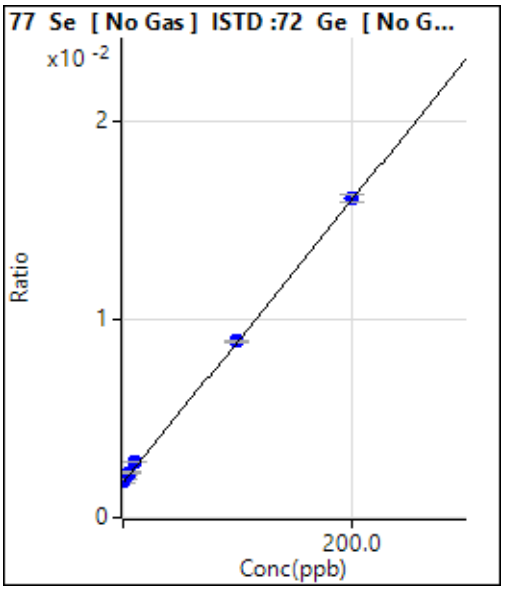


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	119305.59	0.3486	P	2.8	
2	☐	2.000	-21.099	119517.47	0.3478	P	1.0	-1154.
3	☐	5.000	-9.511	119766.04	0.3482	P	1.3	-290.2
4	☐	10.000	112.965	120930.38	0.3532	P	0.6	1029.7
5	☐	100.000	100.563	122211.15	0.3527	P	1.3	0.6
6	☐	200.000	195.164	122550.33	0.3565	P	0.7	-2.4

y = 4.0303E-005 * x + 0.3486
R = 0.8503
DL = 736.9 ppb
BEC = 8650 ppb

Weight: <None>
Min Conc: <None>

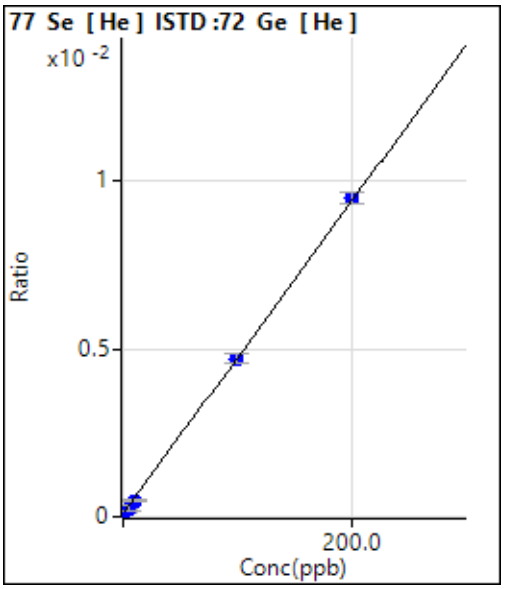
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1700.13	0.0019	P	8.1	
2	☐	2.000	2.290	1853.50	0.0020	P	12.1	14.5
3	☐	5.000	5.823	2083.53	0.0023	P	7.6	16.5
4	☐	10.000	13.283	2573.62	0.0028	P	2.1	32.8
5	☐	100.000	99.046	8229.32	0.0089	P	1.5	-1.0
6	☐	200.000	200.289	14724.98	0.0161	P	2.1	0.1

y = 7.1129E-005 * x + 0.0019
R = 0.9999
DL = 6.332 ppb
BEC = 26.19 ppb

Weight: <None>
Min Conc: <None>

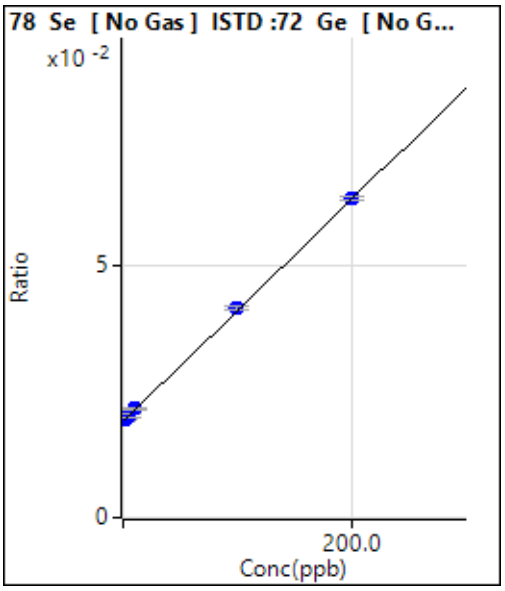


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	50.00	0.0001	P	34.9	
2	☐	2.000	0.825	63.33	0.0002	P	45.9	-58.7
3	☐	5.000	2.289	86.67	0.0003	P	70.7	-54.2
4	☐	10.000	7.114	163.34	0.0005	P	18.5	-28.9
5	☐	100.000	98.252	1633.46	0.0047	P	5.6	-1.7
6	☐	200.000	201.098	3263.79	0.0095	P	3.7	0.5

y = 4.6478E-005 * x + 1.4624E-004
R = 0.9999
DL = 3.299 ppb
BEC = 3.146 ppb

Weight: <None>
Min Conc: <None>

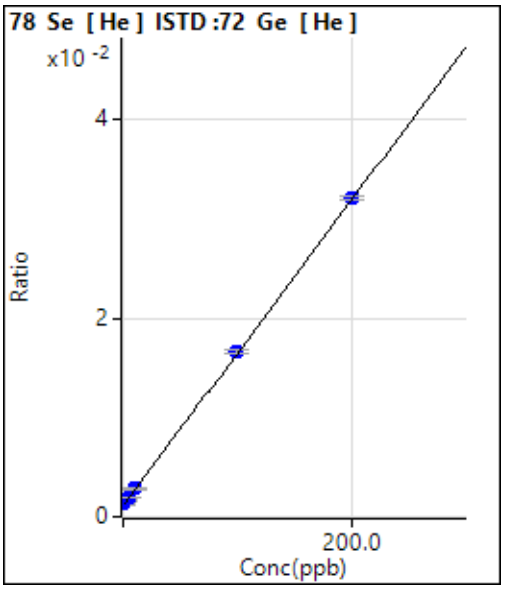
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	17725.25	0.0194	P	2.0	
2	☐	2.000	0.848	17938.92	0.0196	P	0.6	-57.6
3	☐	5.000	3.690	18516.38	0.0202	P	2.9	-26.2
4	☐	10.000	10.631	19948.37	0.0218	P	1.8	6.3
5	☐	100.000	100.869	38485.23	0.0417	P	1.9	0.9
6	☐	200.000	199.578	57974.85	0.0634	P	1.0	-0.2

y = 2.2054E-004 * x + 0.0194
R = 0.9999
DL = 5.311 ppb
BEC = 88.04 ppb

Weight: <None>
Min Conc: <None>

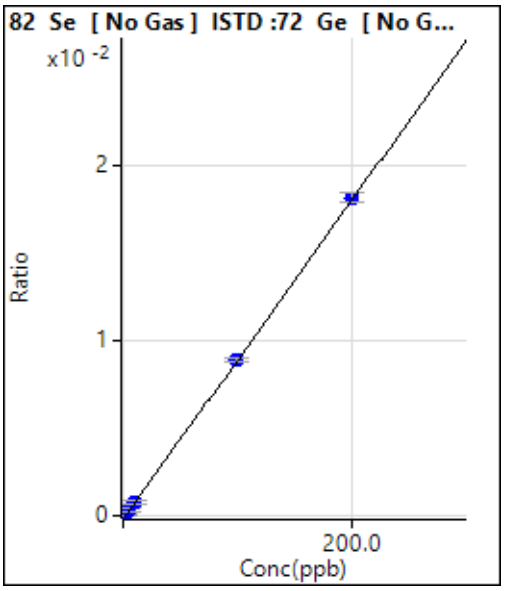


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	437.34	0.0013	P	10.2	
2	☐	2.000	2.607	577.35	0.0017	P	6.2	30.4
3	☐	5.000	4.470	676.69	0.0020	P	2.5	-10.6
4	☐	10.000	10.094	970.70	0.0028	P	6.6	0.9
5	☐	100.000	99.657	5769.92	0.0166	P	2.2	-0.3
6	☐	200.000	200.174	11051.88	0.0322	P	1.6	0.1

y = 1.5423E-004 * x + 0.0013
R = 1.0000
DL = 2.527 ppb
BEC = 8.288 ppb

Weight: <None>
Min Conc: <None>

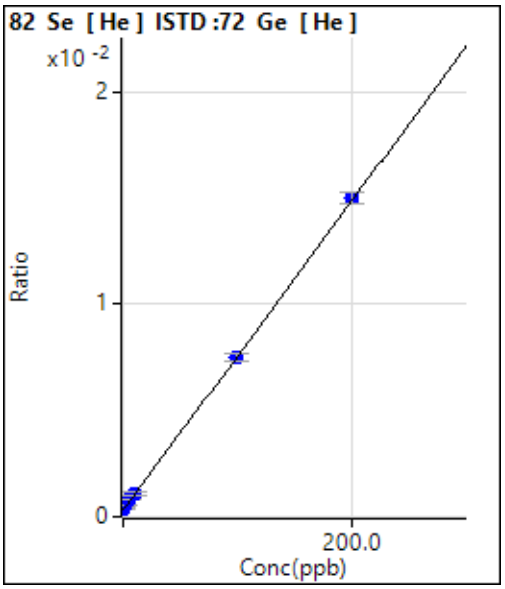
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	-57.42	-0.0001	P	-298.	
2	☐	2.000	1.613	75.95	0.0001	P	83.1	-19.4
3	☐	5.000	5.173	372.76	0.0004	P	52.8	3.5
4	☐	10.000	9.445	728.36	0.0008	P	21.1	-5.5
5	☐	100.000	98.822	8232.82	0.0089	P	3.2	-1.2
6	☐	200.000	200.616	16587.31	0.0182	P	2.9	0.3

y = 9.0797E-005 * x - 6.3389E-005
R = 1.0000
DL = 6.255 ppb
BEC = -0.6981 ppb

Weight: <None>
Min Conc: <None>

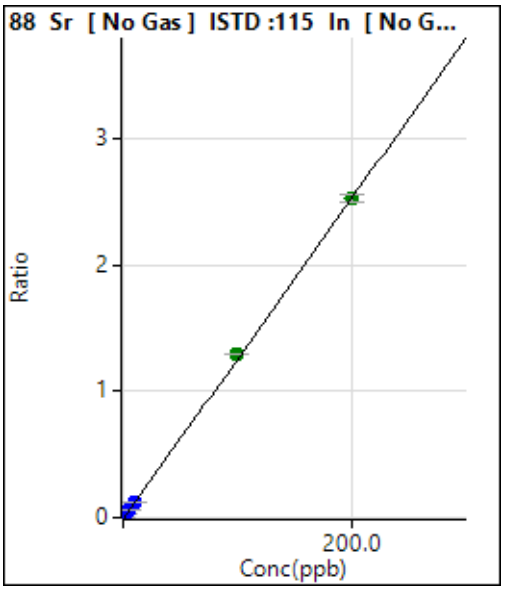


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	130.00	0.0004	P	19.9	
2	☐	2.000	1.845	176.67	0.0005	P	2.6	-7.7
3	☐	5.000	6.100	283.34	0.0008	P	1.4	22.0
4	☐	10.000	9.764	373.34	0.0011	P	10.3	-2.4
5	☐	100.000	97.951	2603.62	0.0075	P	5.6	-2.0
6	☐	200.000	201.010	5161.10	0.0150	P	3.3	0.5

y = 7.2806E-005 * x + 3.7966E-004
R = 0.9999
DL = 3.12 ppb
BEC = 5.215 ppb

Weight: <None>
Min Conc: <None>

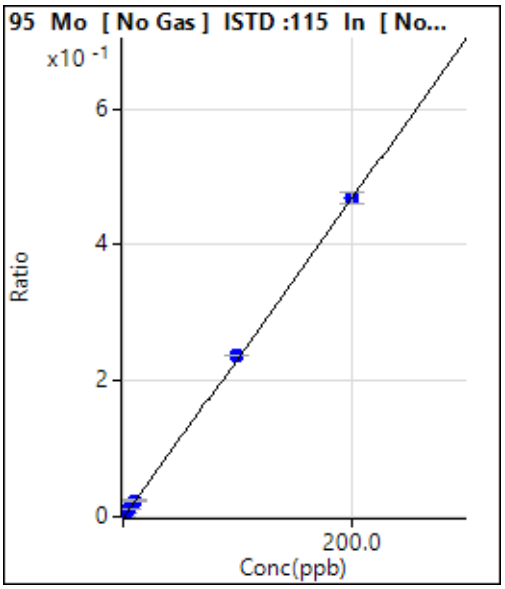
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	660.03	0.0006	P	30.6	
2	☐	2.000	1.920	25875.47	0.0251	P	2.1	-4.0
3	☐	5.000	4.865	64371.87	0.0625	P	1.5	-2.7
4	☐	10.000	9.506	124736.76	0.1216	P	0.6	-4.9
5	☐	100.000	101.925	1347437.69	1.2970	A	1.1	1.9
6	☐	200.000	199.067	2640625.69	2.5325	A	2.1	-0.5

y = 0.0127 * x + 6.4887E-004
R = 0.9999
DL = 0.0468 ppb
BEC = 0.05102 ppb

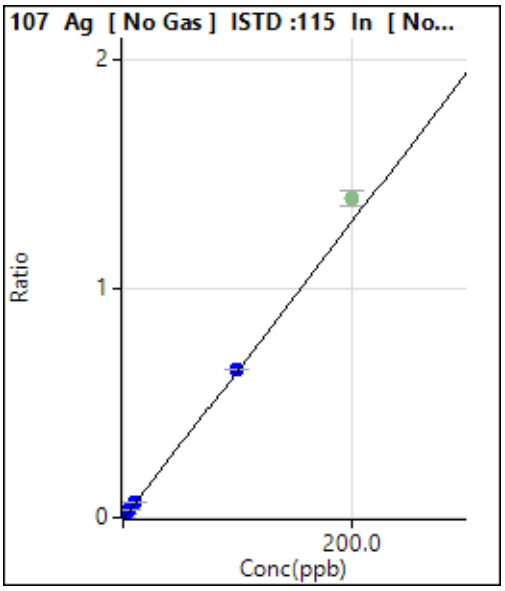
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	50.00	0.0000	P	53.1	
2	☐	2.000	1.988	4874.31	0.0047	P	2.9	-0.6
3	☐	5.000	5.109	12409.35	0.0121	P	2.8	2.2
4	☐	10.000	10.018	24212.41	0.0236	P	3.6	0.2
5	☐	100.000	100.950	246497.60	0.2373	P	1.0	1.0
6	☐	200.000	199.521	488776.84	0.4689	P	3.7	-0.2

y = 0.0024 * x + 4.9239E-005
R = 1.0000
DL = 0.03339 ppb
BEC = 0.02095 ppb

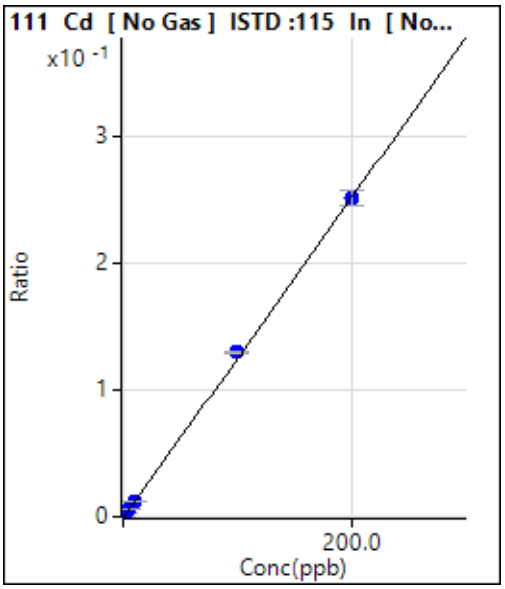
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	566.69	0.0006	P	8.6	
2	☐	2.000	1.953	13667.31	0.0132	P	1.4	-2.4
3	☐	5.000	4.983	33893.99	0.0329	P	1.3	-0.3
4	☐	10.000	10.109	67948.08	0.0662	P	0.5	1.1
5	☐	100.000	99.991	675304.49	0.6500	P	0.4	0.0
6	☑	200.000		1455788.16	1.3972	A	5.1	

y = 0.0065 * x + 5.5759E-004
R = 1.0000
DL = 0.02217 ppb
BEC = 0.08585 ppb

Weight: <None>
Min Conc: <None>

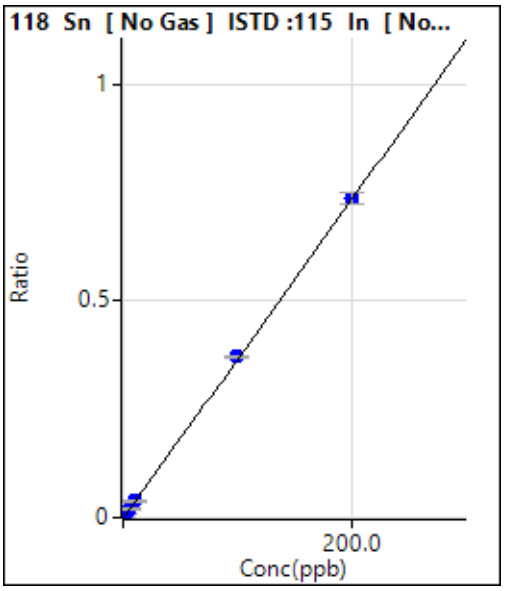


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	6.67	0.0000	P	86.6	
2	☐	2.000	1.986	2606.98	0.0025	P	5.9	-0.7
3	☐	5.000	5.050	6598.46	0.0064	P	4.8	1.0
4	☐	10.000	9.973	12979.96	0.0127	P	3.2	-0.3
5	☐	100.000	102.398	134894.23	0.1298	P	1.4	2.4
6	☐	200.000	198.801	262675.52	0.2521	P	4.3	-0.6

y = 0.0013 * x + 6.5634E-006
R = 0.9999
DL = 0.01345 ppb
BEC = 0.005177 ppb

Weight: <None>
Min Conc: <None>

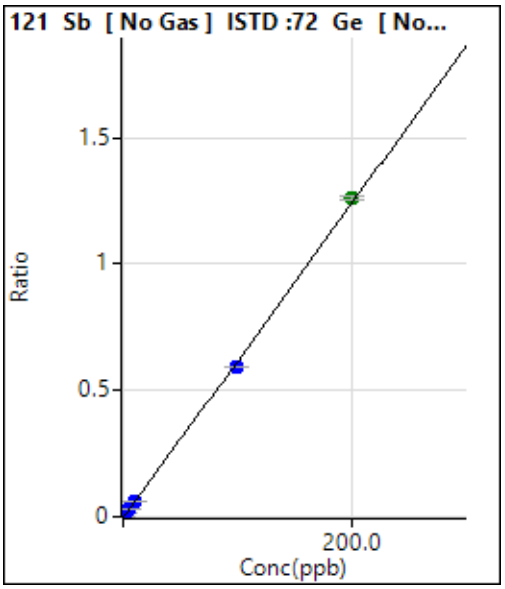
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1796.83	0.0018	P	8.7	
2	☐	2.000	1.897	9029.96	0.0087	P	4.7	-5.2
3	☐	5.000	4.897	20376.21	0.0198	P	2.1	-2.1
4	☐	10.000	9.788	38787.83	0.0378	P	1.4	-2.1
5	☐	100.000	100.434	385916.31	0.3715	P	0.8	0.4
6	☐	200.000	199.797	768376.21	0.7372	P	4.1	-0.1

y = 0.0037 * x + 0.0018
R = 1.0000
DL = 0.1256 ppb
BEC = 0.4804 ppb

Weight: <None>
Min Conc: <None>

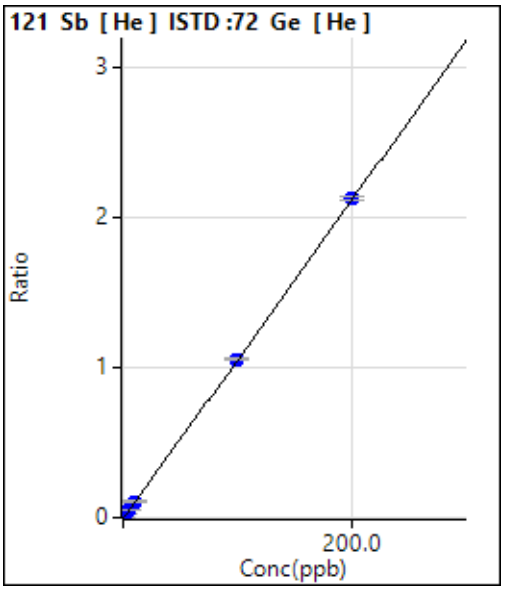


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	886.71	0.0010	P	4.2	
2	☐	2.000	1.980	12162.52	0.0133	P	2.9	-1.0
3	☐	5.000	4.724	27793.12	0.0304	P	1.6	-5.5
4	☐	10.000	9.439	54738.17	0.0597	P	2.6	-5.6
5	☐	100.000	95.040	547240.54	0.5923	P	0.8	-5.0
6	☐	200.000	202.515	1152600.01	1.2611	A	1.2	1.3

y = 0.0062 * x + 9.7122E-004
R = 0.9996
DL = 0.01951 ppb
BEC = 0.1561 ppb

Weight: <None>
Min Conc: <None>

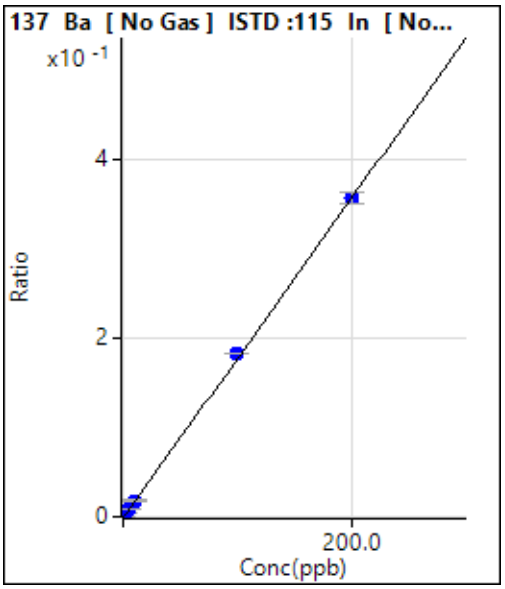
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	586.69	0.0017	P	9.2	
2	☐	2.000	1.968	7759.12	0.0226	P	1.1	-1.6
3	☐	5.000	4.970	18710.32	0.0544	P	2.5	-0.6
4	☐	10.000	10.087	37199.99	0.1086	P	1.0	0.9
5	☐	100.000	99.437	365850.54	1.0558	P	1.8	-0.6
6	☐	200.000	200.278	730427.67	2.1249	P	1.4	0.1

y = 0.0106 * x + 0.0017
R = 1.0000
DL = 0.04477 ppb
BEC = 0.1618 ppb

Weight: <None>
Min Conc: <None>

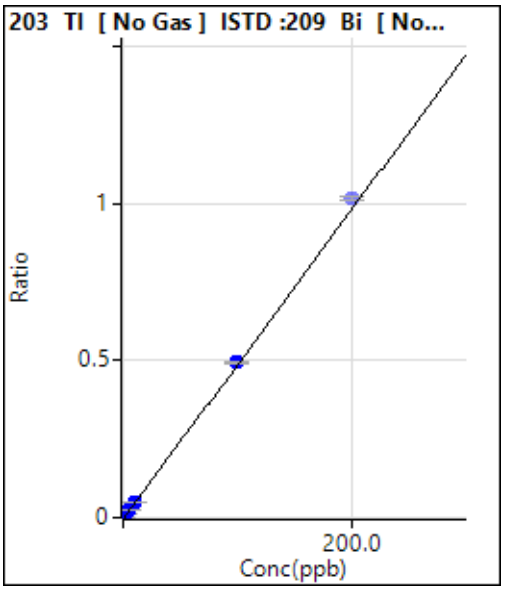


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	263.34	0.0003	P	22.1	
2	☐	2.000	1.953	3883.99	0.0038	P	3.6	-2.3
3	☐	5.000	5.022	9540.32	0.0093	P	2.4	0.4
4	☐	10.000	10.024	18720.47	0.0182	P	6.3	0.2
5	☐	100.000	101.894	190143.94	0.1830	P	0.6	1.9
6	☐	200.000	199.052	372387.40	0.3573	P	4.1	-0.5

y = 0.0018 * x + 2.5909E-004
R = 0.9999
DL = 0.0958 ppb
BEC = 0.1444 ppb

Weight: <None>
Min Conc: <None>

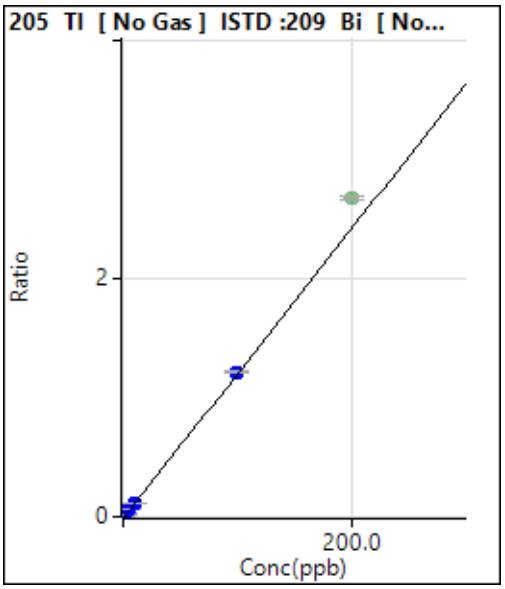
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	110.00	0.0001	P	42.3	
2	☐	2.000	2.020	8219.56	0.0101	P	5.5	1.0
3	☐	5.000	4.897	19736.03	0.0243	P	3.1	-2.1
4	☐	10.000	9.684	39252.39	0.0479	P	0.8	-3.2
5	☐	100.000	100.036	406498.27	0.4936	P	1.2	0.0
6	☑	200.000		818252.12	1.0177	P	1.7	

y = 0.0049 * x + 1.3806E-004
R = 1.0000
DL = 0.03554 ppb
BEC = 0.02799 ppb

Weight: <None>
Min Conc: <None>

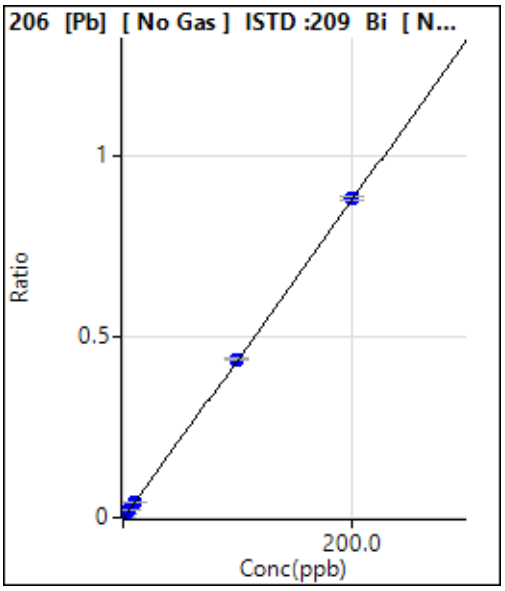


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	206.67	0.0003	P	14.7	
2	☐	2.000	1.960	19635.81	0.0241	P	4.7	-2.0
3	☐	5.000	4.933	49020.47	0.0603	P	0.3	-1.3
4	☐	10.000	9.518	95180.63	0.1162	P	1.1	-4.8
5	☐	100.000	100.052	1003648.79	1.2187	P	0.8	0.1
6	☑	200.000		2155620.02	2.6804	A	0.9	

y = 0.0122 * x + 2.5912E-004
R = 1.0000
DL = 0.009375 ppb
BEC = 0.02128 ppb

Weight: <None>
Min Conc: <None>

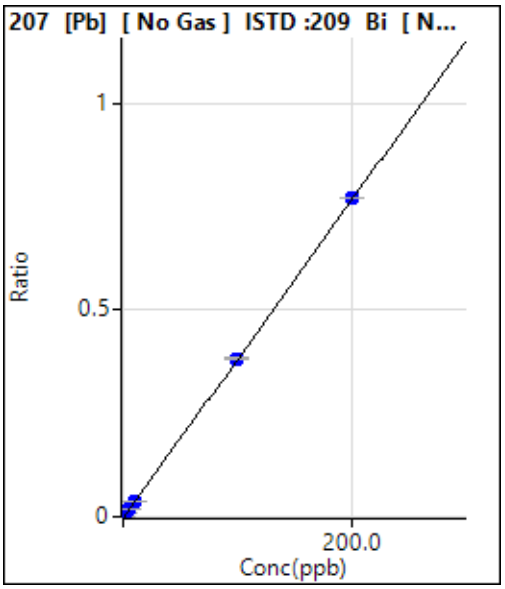
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	296.68	0.0004	P	7.7	
2	☐	2.000	2.012	7525.75	0.0092	P	1.1	0.6
3	☐	5.000	5.015	18277.07	0.0225	P	2.9	0.3
4	☐	10.000	9.785	35675.03	0.0435	P	1.8	-2.2
5	☐	100.000	99.298	361123.76	0.4385	P	0.7	-0.7
6	☐	200.000	200.361	711171.63	0.8844	P	0.9	0.2

y = 0.0044 * x + 3.7186E-004
R = 1.0000
DL = 0.01951 ppb
BEC = 0.08428 ppb

Weight: <None>
Min Conc: <None>

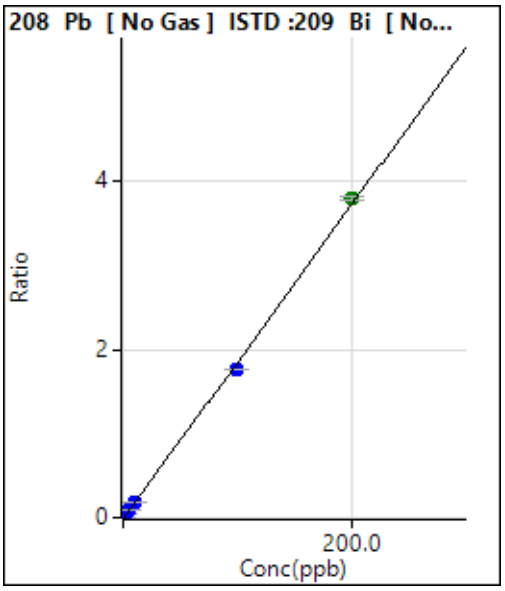


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	240.01	0.0003	P	7.8	
2	☐	2.000	1.904	6208.34	0.0076	P	2.3	-4.8
3	☐	5.000	5.025	15963.92	0.0197	P	1.4	0.5
4	☐	10.000	9.828	31253.11	0.0381	P	1.0	-1.7
5	☐	100.000	99.241	314940.30	0.3824	P	0.7	-0.8
6	☐	200.000	200.388	620739.78	0.7719	P	0.1	0.2

y = 0.0039 * x + 3.0065E-004
R = 1.0000
DL = 0.01838 ppb
BEC = 0.07808 ppb

Weight: <None>
Min Conc: <None>

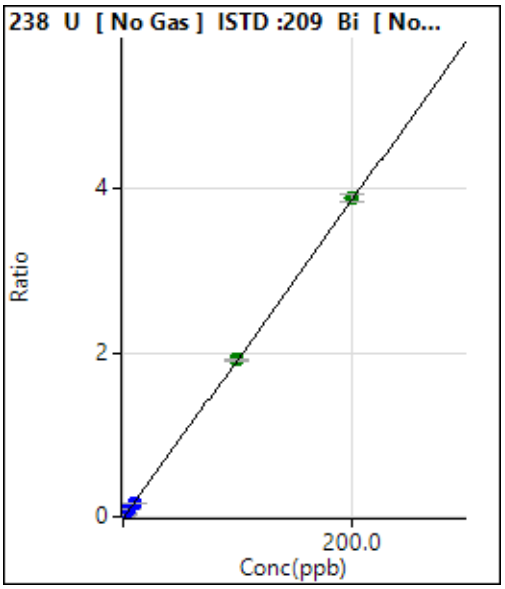
Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1170.05	0.0015	P	7.7	
2	☐	2.000	1.845	29304.11	0.0360	P	1.0	-7.7
3	☐	5.000	4.690	72533.69	0.0893	P	1.9	-6.2
4	☐	10.000	9.317	144125.45	0.1759	P	1.0	-6.8
5	☐	100.000	94.078	1451995.39	1.7630	P	0.6	-5.9
6	☐	200.000	203.005	3057832.32	3.8027	A	1.7	1.5

y = 0.0187 * x + 0.0015
R = 0.9994
DL = 0.01806 ppb
BEC = 0.0783 ppb

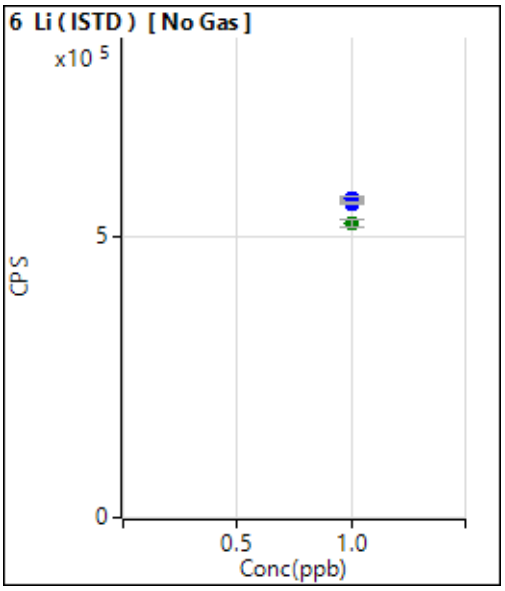
Weight: <None>
Min Conc: <None>



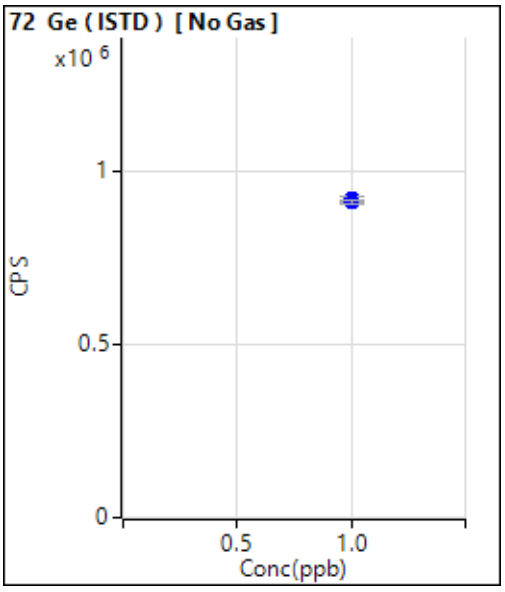
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	26.67	0.0000	P	22.0	
2	☐	2.000	1.819	28680.74	0.0353	P	1.7	-9.1
3	☐	5.000	4.497	70768.96	0.0871	P	0.4	-10.1
4	☐	10.000	8.931	141698.35	0.1730	P	0.6	-10.7
5	☐	100.000	98.892	1576746.75	1.9147	A	1.3	-1.1
6	☐	200.000	200.622	3124012.35	3.8843	A	2.1	0.3

y = 0.0194 * x + 3.3435E-005
R = 1.0000
DL = 0.001141 ppb
BEC = 0.001727 ppb

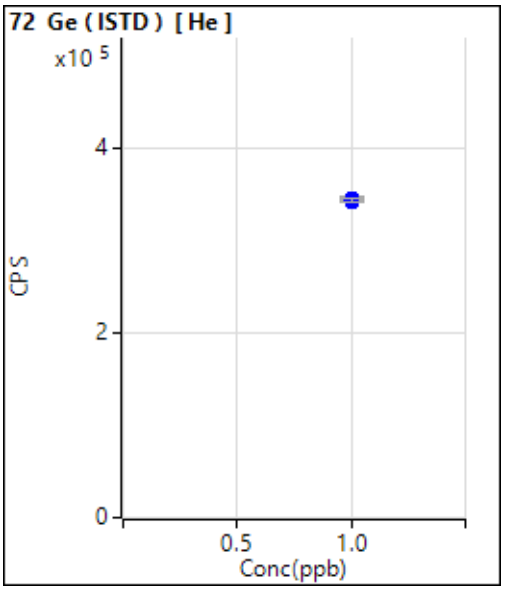
Weight: <None>
Min Conc: <None>



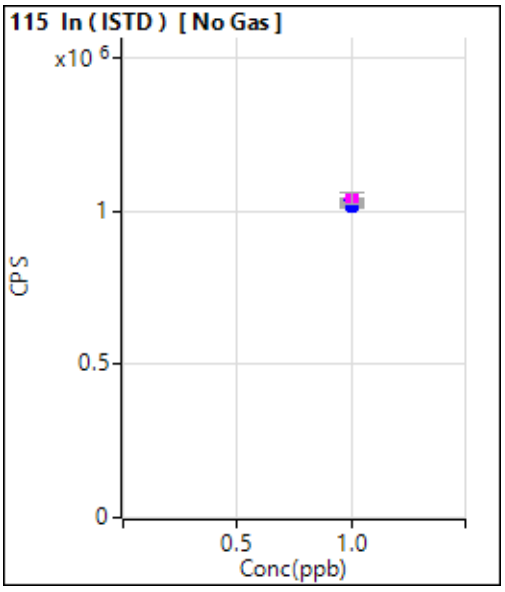
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		563942.97		P	0.3	
2	☐	1.000		566410.85		P	0.6	
3	☐	1.000		566185.41		P	1.0	
4	☐	1.000		568278.29		P	0.8	
5	☐	1.000		559461.78		P	1.0	
6	☐	1.000		524787.69		A	2.4	



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		912892.62		P	0.4	
2	☐	1.000		915075.98		P	0.1	
3	☐	1.000		915321.58		P	0.7	
4	☐	1.000		916729.49		P	0.7	
5	☐	1.000		923902.77		P	1.4	
6	☐	1.000		913950.27		P	1.1	

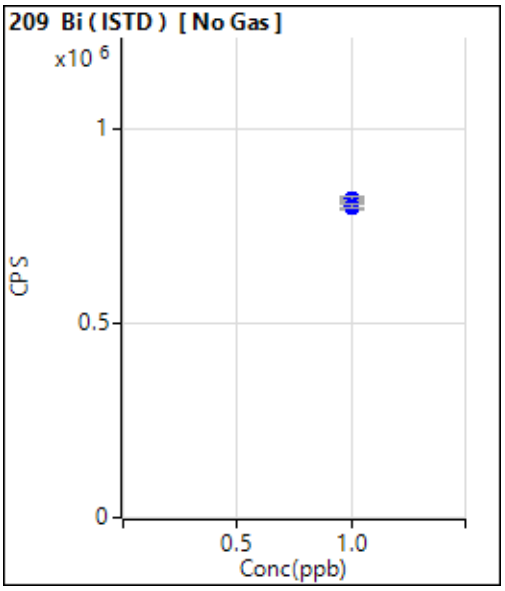


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		342251.13		P	0.5	
2	☐	1.000		343678.37		P	0.7	
3	☐	1.000		343931.86		P	0.6	
4	☐	1.000		342405.79		P	0.3	
5	☐	1.000		346556.45		P	1.5	
6	☐	1.000		343786.57		P	1.1	



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		1016160.82		P	0.6	
2	☐	1.000		1032329.82		P	1.1	
3	☐	1.000		1029426.62		P	0.3	
4	☐	1.000		1026175.50		P	0.6	
5	☐	1.000		1038886.12		P	1.2	
6	☐	1.000		1043215.19		M	3.6	

Calibration for 022_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		798100.51		P	0.7	
2	☐	1.000		813649.62		P	0.4	
3	☐	1.000		812435.46		P	0.5	
4	☐	1.000		819319.16		P	0.8	
5	☐	1.000		823572.64		P	1.1	
6	☐	1.000		804180.35		P	1.6	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	023ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:53:16-06:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	0.463	22.0	34780	2.3	0	ICSA Main CR1 Failed
Be	9	1	No Gas	-0.001	-615.4	40	33.1	0	ICSA Main CR1 Failed
V	51	2	He	0.048	30.9	567	8.2	0	ICSA Main CR1 Failed
Cr	52	2	He	0.851	2.7	5144	2.0	0	ICSA Main CR1 Failed
Fe	56	2	He	98131.530	0.1	333999955	0.4	0	
Se	78	2	He	-0.069	-585.8	454	4.8	0	ICSA Main CR1 Failed
As	75	2	He	0.407	5.0	318	3.2	0	ICSA Main CR1 Failed
Ca	44	2	He	106037.158	0.9	2545798	1.2	0	
Na	23	2	He	98310.747	1.3	64273464	1.2	0	
Mg	24	2	He	99502.161	1.1	36725489	1.1	0	
K	39	2	He	99834.329	0.7	46564503	1.2	0	
Mn	55	2	He	1.351	1.8	4357	1.3	0	ICSA Main CR1 Failed
Co	59	2	He	0.913	2.3	4868	2.3	0	ICSA Main CR1 Failed
Ni	60	2	He	1.116	3.4	1643	3.5	0	ICSA Main CR1 Failed
Cu	63	2	He	0.527	9.2	3621	4.3	0	ICSA Main CR1 Failed
Zn	66	2	He	1.792	3.7	1947	2.1	0	ICSA Main CR1 Failed
Al	27	2	He	95935.610	0.7	22527815	1.0	0	
B	11	1	No Gas	40.218	11.6	48954	8.9	0	
Al	27	1	No Gas	94649.027	4.6	697656710	1.0	0	
Si	28	1	No Gas	53.353	4.3	507974	4.8	0	
Ag	107	1	No Gas	0.017	107.2	747	20.3	0	ICSA Main CR1 Failed
Cd	111	1	No Gas	0.744	12.4	1060	15.8	0	ICSA Main CR1 Failed
Sr	88	1	No Gas	1.052	2.3	15603	3.6	0	ICSA Main CR1 Failed
Mo	95	1	No Gas	1987.510	2.5	5192335	2.2	0	
Sn	118	1	No Gas	0.550	3.6	4221	6.0	0	ICSA Main CR1 Failed
Sb	121	1	No Gas	0.311	18.7	2840	8.3	0	ICSA Main CR1 Failed
Ba	137	1	No Gas	0.960	9.1	2200	5.1	0	ICSA Main CR1 Failed
Tl	205	1	No Gas	0.259	45.9	2747	42.6	0	ICSA Main CR1 Failed
Tl	203	1	No Gas	0.262	39.1	1180	35.6	0	ICSA Main CR1 Failed
Pb	208	1	No Gas	0.785	0.9	13033	1.4	0	ICSA Main CR1 Failed
U	238	1	No Gas	0.025	32.4	417	30.9	0	ICSA Main CR1 Failed
Ca	43	2	He	96753.655	1.7	137997	2.2	0	
Sb	121	2	He	0.250	11.9	1563	7.4	0	ICSA Main CR1 Failed
Ti	47	2	He	2002.449	0.7	266709	0.6	0	
Se	82	1	No Gas	0.490	194.1	-21	-415.2	0	ICSA Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	570015	0.43	563943	101.08	70	120	
Ge	72	2	He	358203	0.49	342251	104.66	70	120	
Ge	72	1	No Gas	981293	4.47	912893	107.49	70	120	
In	115	1	No Gas	1112316	4.06	1016161	109.46	70	120	
Bi	209	1	No Gas	805987	0.83	798101	100.99	70	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	024ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T10:55:12-06:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	No Gas	101.007	2.324	814691	1.76	100	101.0	180	120	ICSB Main CR1 Failed
Be	9	1	No Gas	95.308	0.517	173564	0.38	100	95.3	80	120	
V	51	2	He	98.946	0.474	315653	0.50	100	98.9	80	120	
Cr	52	2	He	98.330	0.679	352592	0.67	100	98.3	80	120	
Fe	56	2	He	109196.792	0.829	366313928	0.70	100	109196.8	80	120	
Se	78	2	He	98.044	1.707	5790	1.66	100	98.0	80	120	
As	75	2	He	101.308	0.319	56885	0.16	100	101.3	80	120	
Ca	44	2	He	115310.906	0.602	2728503	0.73	100	115310.9	80	120	
Na	23	2	He	108778.535	0.727	70087351	0.75	100	108778.5	80	120	
Mg	24	2	He	108445.789	0.811	39451006	0.78	100	108445.8	80	120	
K	39	2	He	110079.352	1.000	50592484	1.12	100	110079.4	80	120	
Mn	55	2	He	99.357	0.531	280169	0.66	100	99.4	80	120	
Co	59	2	He	98.549	0.474	502247	0.33	100	98.5	80	120	
Ni	60	2	He	96.858	0.856	126132	0.91	100	96.9	80	120	
Cu	63	2	He	96.690	0.656	336260	0.57	100	96.7	80	120	
Zn	66	2	He	97.204	0.876	71679	0.79	100	97.2	80	120	
Al	27	2	He	95934.047	0.478	22203348	0.50	100	95934.0	80	120	ICSB Main CR1 Failed
B	11	1	No Gas	516.892	1.613	463436	2.04	100	516.9	80	120	
Al	27	1	No Gas	95323.802	0.518	674186710	1.26	100	95323.8	80	120	ICSB Main CR1 Failed
Si	28	1	No Gas	531.341	1.577	2157450	0.84	100	531.3	80	120	
Ag	107	1	No Gas	99.299	0.390	664720	0.68	100	99.3	80	120	
Cd	111	1	No Gas	102.479	0.213	133800	0.48	100	102.5	80	120	
Sr	88	1	No Gas	104.596	1.769	1370625	2.17	100	104.6	80	120	
Mo	95	1	No Gas	2178.624	1.416	5272350	1.68	100	2178.6	80	120	ICSB Main CR1 Failed
Sn	118	1	No Gas	104.138	0.355	396566	0.74	100	104.1	80	120	
Sb	121	1	No Gas	95.691	0.839	560765	0.90	100	95.7	80	120	
Ba	137	1	No Gas	107.103	1.722	198108	2.07	100	107.1	80	120	
Tl	205	1	No Gas	103.738	0.548	1012813	1.12	100	103.7	80	120	
Tl	203	1	No Gas	100.813	1.915	408676	1.84	100	100.8	80	120	
Pb	208	1	No Gas	97.128	0.379	1458889	0.88	100	97.1	80	120	
U	238	1	No Gas	108.608	1.344	1685388	1.36	100	108.6	80	120	
Ca	43	2	He	107080.503	0.356	150520	0.52	100	107080.5	80	120	
Sb	121	2	He	99.411	0.175	372673	0.19	100	99.4	80	120	
Ti	47	2	He	2119.300	0.775	278218	0.83	100	2119.3	80	120	
Cu	63	1	No Gas	90.740	0.338	554737	1.17	100	90.7	80	120	
Se	82	1	No Gas	98.710	2.556	8369	3.26	100	98.7	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	547810	0.72	563943	97.14	70	120	
Ge	72	2	He	353053	0.16	342251	103.16	70	120	
Ge	72	1	No Gas	940346	1.50	912893	103.01	70	120	
In	115	1	No Gas	1029736	0.40	1016161	101.34	70	120	
Bi	209	1	No Gas	801514	0.65	798101	100.43	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	093_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T14:54:24-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	No Gas	93.146	1.831	733021	1.91	100	93.1	90	110	
Be	9	1	No Gas	94.778	0.199	167872	0.25	100	94.8	90	110	
V	51	2	He	98.363	0.815	290708	0.30	100	98.4	90	110	
Cr	52	2	He	97.987	1.826	325497	1.11	100	98.0	90	110	
Fe	56	2	He	9799.780	0.590	30477598	0.33	10000	98.0	90	110	
Se	78	2	He	99.556	2.614	5440	1.96	100	99.6	90	110	
As	75	2	He	101.091	1.649	52584	1.09	100	101.1	90	110	
Ca	44	2	He	10049.958	1.048	221443	0.41	10000	100.5	90	110	
Na	23	2	He	10311.167	2.509	6221594	1.85	10000	103.1	90	110	
Mg	24	2	He	10169.657	0.377	3427924	1.03	10000	101.7	90	110	
K	39	2	He	10169.057	0.511	4425443	0.37	10000	101.7	90	110	
Mn	55	2	He	98.611	1.681	257593	0.99	100	98.6	90	110	
Co	59	2	He	99.871	0.664	471537	0.39	100	99.9	90	110	
Ni	60	2	He	98.745	2.903	119111	2.18	100	98.7	90	110	
Cu	63	2	He	98.679	1.616	317884	1.10	100	98.7	90	110	
Zn	66	2	He	97.683	0.704	66734	1.41	100	97.7	90	110	
Al	27	2	He	104.529	3.661	22999	4.23	100	104.5	90	110	
B	11	1	No Gas	498.403	2.580	402560	2.16	500	99.7	90	110	
Al	27	1	No Gas	101.261	0.943	672998	0.37	100	101.3	90	110	
Si	28	1	No Gas	501.862	1.813	1889448	1.76	5000	10.0	90	110	CCV Main CR1-2 Failed
Ag	107	1	No Gas	99.020	0.663	618350	0.94	100	99.0	90	110	
Cd	111	1	No Gas	99.020	1.530	120592	0.36	100	99.0	90	110	
Sr	88	1	No Gas	102.743	2.376	1255789	1.94	100	102.7	90	110	
Mo	95	1	No Gas	98.463	1.191	222326	1.39	100	98.5	90	110	
Sn	118	1	No Gas	99.337	0.783	352952	0.56	100	99.3	90	110	
Sb	121	1	No Gas	94.226	0.898	507820	0.85	100	94.2	90	110	
Ba	137	1	No Gas	102.447	0.675	176788	1.76	100	102.4	90	110	
Tl	205	1	No Gas	101.383	0.552	1032721	0.72	100	101.4	90	110	
Tl	203	1	No Gas	107.353	1.566	420388	1.71	100	107.4	90	110	
Pb	208	1	No Gas	93.145	0.693	1351534	1.13	100	93.1	90	110	
U	238	1	No Gas	100.030	0.897	1499500	1.14	100	100.0	90	110	
Ca	43	2	He	10038.672	4.504	13096	3.82	10000	100.4	90	110	
Sb	121	2	He	98.206	0.868	341068	0.28	100	98.2	90	110	
Ti	47	2	He	96.676	2.119	11772	1.40	100	96.7	90	110	
Cu	63	1	No Gas	92.359	1.070	519182	0.73	100	92.4	90	110	
Se	82	1	No Gas	97.507	4.887	7599	4.04	100	97.5	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	532797	0.40	563943	94.48	70	120	
Ge	72	2	He	327085	0.72	342251	95.57	70	120	
Ge	72	1	No Gas	864744	0.87	912893	94.73	70	120	
In	115	1	No Gas	960631	1.24	1016161	94.54	70	120	
Bi	209	1	No Gas	774245	0.46	798101	97.01	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	094_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T14:56:16-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	-0.034	-62.8	28299	1.2	0.5	
Be	9	1	No Gas	-0.001	-1525.6	37	92.8	0.5	
V	51	2	He	0.282	27.2	1167	19.0	2.5	
Cr	52	2	He	0.031	311.0	1924	16.3	2.5	
Fe	56	2	He	9.608	90.6	51894	50.9	100	
Se	78	2	He	1.428	47.2	474	7.6	2	
As	75	2	He	0.072	171.8	112	55.8	2.5	
Ca	44	2	He	17.419	261.2	1581	61.5	100	
Na	23	2	He	221.153	34.2	199472	22.3	100	CCB Main CR1 Failed
Mg	24	2	He	9.552	132.6	3564	116.5	100	
K	39	2	He	24.892	36.4	112097	3.5	100	
Mn	55	2	He	0.339	130.5	1298	86.5	2.5	
Co	59	2	He	0.040	181.8	313	106.9	2.5	
Ni	60	2	He	-0.021	-262.4	127	50.8	2.5	
Cu	63	2	He	-0.173	-43.6	1027	23.4	2	
Zn	66	2	He	0.272	46.7	723	11.3	2.5	
Al	27	2	He	-0.213	-151.9	520	13.3	5	
B	11	1	No Gas	54.728	9.1	53639	6.5	0.5	CCB Main CR1 Failed
Al	27	1	No Gas	0.291	32.9	15856	3.3	5	
Si	28	1	No Gas	-7.611	-7.5	244509	0.8	10	
Ag	107	1	No Gas	-0.046	-44.6	247	52.3	2.5	
Cd	111	1	No Gas	0.022	181.8	33	148.0	1	
Sr	88	1	No Gas	0.065	124.2	1401	70.2	2.5	
Mo	95	1	No Gas	0.049	43.2	157	29.5	2.5	
Sn	118	1	No Gas	0.150	30.0	2204	8.0	5	
Sb	121	1	No Gas	-0.004	-648.8	797	15.5	2.5	
Ba	137	1	No Gas	0.484	5.3	1070	4.3	2.5	
Tl	205	1	No Gas	0.015	148.3	353	65.6	1	
Tl	203	1	No Gas	0.011	264.6	147	74.8	1	
Pb	208	1	No Gas	0.009	125.3	1250	13.5	2.5	
U	238	1	No Gas	0.018	80.5	287	73.5	2.5	
Ca	43	2	He	25.576	163.2	60	88.2	100	
Sb	121	2	He	-0.019	-248.7	480	33.1	2.5	
Ti	47	2	He	-0.074	-66.1	7	86.6	2.5	
Cu	63	1	No Gas	-0.125	-31.1	2034	10.9	2.5	
Se	82	1	No Gas	-1.020	-75.9	-131	-45.0	2	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	524372	0.70	563943	92.98	70	120	
Ge	72	2	He	316216	0.76	342251	92.39	70	120	
Ge	72	1	No Gas	840231	0.51	912893	92.04	70	120	
In	115	1	No Gas	949564	0.88	1016161	93.45	70	120	
Bi	209	1	No Gas	762349	0.28	798101	95.52	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	096_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T15:03:57-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	-0.051	-152.3	27352	1.1	0.5	
Be	9	1	No Gas	-0.014	-52.1	13	94.4	0.5	
V	51	2	He	0.256	11.6	1071	7.1	2.5	
Cr	52	2	He	-0.044	-94.0	1650	7.3	2.5	
Fe	56	2	He	3.644	4.3	33231	2.1	100	
Se	78	2	He	1.562	34.4	471	5.4	2	
As	75	2	He	0.018	98.2	83	10.6	2.5	
Ca	44	2	He	-16.819	-18.4	837	7.7	100	
Na	23	2	He	124.797	0.9	140929	1.1	100	CCB Main CR1 Failed
Mg	24	2	He	0.361	58.0	547	11.6	100	
K	39	2	He	11.022	49.8	104249	1.7	100	
Mn	55	2	He	0.057	78.5	573	19.4	2.5	
Co	59	2	He	0.002	51.2	137	4.2	2.5	
Ni	60	2	He	-0.068	-26.1	70	28.6	2.5	
Cu	63	2	He	-0.229	-5.7	837	5.4	2	
Zn	66	2	He	0.165	74.1	640	12.2	2.5	
Al	27	2	He	-0.047	-1275.8	543	23.0	5	
B	11	1	No Gas	26.906	4.6	31243	3.4	0.5	CCB Main CR1 Failed
Al	27	1	No Gas	0.207	40.4	14968	2.9	5	
Si	28	1	No Gas	-16.193	-16.1	212614	3.1	10	
Ag	107	1	No Gas	-0.061	-2.9	150	6.7	2.5	
Cd	111	1	No Gas	0.003	439.7	10	173.2	1	
Sr	88	1	No Gas	0.001	559.0	613	7.7	2.5	
Mo	95	1	No Gas	-0.003	-329.1	40	50.0	2.5	
Sn	118	1	No Gas	0.023	95.6	1727	3.8	5	
Sb	121	1	No Gas	-0.024	-25.2	673	4.8	2.5	
Ba	137	1	No Gas	0.504	14.8	1083	10.7	2.5	
Tl	205	1	No Gas	-0.006	-88.4	130	42.8	1	
Tl	203	1	No Gas	-0.012	-12.3	57	10.2	1	
Pb	208	1	No Gas	-0.017	-33.4	853	9.4	2.5	
U	238	1	No Gas	0.000	1253.9	27	78.1	2.5	
Ca	43	2	He	-0.404	-1133.1	27	21.7	100	
Sb	121	2	He	-0.048	-51.8	373	21.8	2.5	
Ti	47	2	He	-0.045	-331.1	10	173.2	2.5	
Cu	63	1	No Gas	-0.184	-1.7	1673	0.3	2.5	
Se	82	1	No Gas	0.334	152.7	-27	-139.4	2	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	509170	0.91	563943	90.29	70	120	
Ge	72	2	He	309850	0.70	342251	90.53	70	120	
Ge	72	1	No Gas	820719	0.62	912893	89.90	70	120	
In	115	1	No Gas	932517	1.01	1016161	91.77	70	120	
Bi	209	1	No Gas	746821	0.34	798101	93.57	70	120	

Sample Report

Sample Table

Sample Name	MBLK-188020
Data File Name	097SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T15:05:51-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	-0.119	-0.119	-63.22	28855	0.00	2000	
Be	9	1	No Gas	-0.019	-0.019	-8.71	7	-0.28	2000	
V	51	2	He	0.215	0.215	10.48	1019	0.02	2000	
Cr	52	2	He	0.425	0.425	27.95	3317	0.01	2000	
Fe	56	2	He	3.404	3.404	7.26	34638	0.01	200000	
Se	78	2	He	0.264	0.264	194.30	435	0.06	2000	
As	75	2	He	0.010	0.010	414.59	84	0.01	2000	
Ca	44	2	He	-11.636	-11.636	-61.14	1007	-1.16	200000	
Na	23	2	He	110.519	110.519	3.57	141509	0.08	200000	
Mg	24	2	He	5.247	5.247	6.84	2244	0.23	200000	
K	39	2	He	4.538	4.538	53.29	108273	0.00	200000	
Mn	55	2	He	0.454	0.454	5.40	1653	0.03	2000	
Co	59	2	He	-0.003	-0.003	-250.81	120	0.00	2000	
Ni	60	2	He	0.126	0.126	34.52	310	0.04	2000	
Cu	63	2	He	-0.223	-0.223	-5.96	910	-0.02	2000	
Zn	66	2	He	0.758	0.758	21.87	1087	0.07	2000	
Al	27	2	He	2.613	2.613	20.10	1153	0.23	2000	
B	11	1	No Gas	20.898	20.898	4.06	28721	0.07	2000	
Al	27	1	No Gas	3.010	3.010	1.60	34420	0.01	2000	
Si	28	1	No Gas	27.463	27.463	1.18	368832	0.01	2000	
Ag	107	1	No Gas	-0.069	-0.069	-2.40	107	-0.06	2000	
Cd	111	1	No Gas	0.000	0.000	8432.71	7	0.00	2000	
Sr	88	1	No Gas	0.022	0.022	55.17	917	0.00	2000	
Mo	95	1	No Gas	-0.002	-0.002	-540.46	43	-0.01	2000	
Sn	118	1	No Gas	0.461	0.461	11.20	3427	0.01	2000	
Sb	121	1	No Gas	-0.051	-0.051	-26.55	573	-0.01	2000	
Ba	137	1	No Gas	0.299	0.299	28.78	787	0.04	2000	
Tl	205	1	No Gas	-0.014	-0.014	-13.73	60	-0.02	2000	
Tl	203	1	No Gas	-0.018	-0.018	-20.49	37	-0.05	2000	
Pb	208	1	No Gas	-0.029	-0.029	-18.27	737	0.00	2000	
U	238	1	No Gas	0.001	0.001	153.80	37	0.00	2000	
Ca	43	2	He	5.979	5.979	324.00	37	16.31	200000	
Sb	121	2	He	-0.038	-0.038	-33.11	433	-0.01	2000	
Ti	47	2	He	-0.049	-0.049	-167.04	10	-0.49	2000	
Cu	63	1	No Gas	-0.147	-0.147	-8.25	1994	-0.01	2000	
Zn	66	1	No Gas	0.820	0.820	10.69	2477	0.03	2000	
Se	82	1	No Gas	0.900	0.900	88.09	16	5.49	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	546972	0.58	563943	96.99	70	120	
Ge	72	2	He	330045	0.91	342251	96.43	70	120	
Ge	72	1	No Gas	875285	0.86	912893	95.88	70	120	
In	115	1	No Gas	988286	1.43	1016161	97.26	70	120	

Sample Report

Bi	209	1	No Gas	801470	0.57	798101	100.42	70	120	

Sample Report

Sample Table

Sample Name	LCS-188020
Data File Name	098SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T15:07:45-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	95.829	95.829	2.77	823567	0.01	2000	
Be	9	1	No Gas	48.744	48.744	1.20	94416	0.05	2000	
V	51	2	He	49.466	49.466	1.12	159972	0.03	2000	
Cr	52	2	He	49.323	49.323	1.74	180087	0.03	2000	
Fe	56	2	He	4908.308	4908.308	0.76	16695498	0.03	200000	
Se	78	2	He	51.168	51.168	0.56	3278	1.56	2000	
As	75	2	He	49.795	49.795	0.98	28352	0.18	2000	
Ca	44	2	He	5018.291	5018.291	0.47	121531	4.13	200000	
Na	23	2	He	5098.032	5098.032	1.11	3402929	0.15	200000	
Mg	24	2	He	5132.660	5132.660	0.77	1890909	0.27	200000	
K	39	2	He	4988.097	4988.097	1.71	2431112	0.21	200000	
Mn	55	2	He	50.278	50.278	1.00	143785	0.03	2000	
Co	59	2	He	50.370	50.370	1.15	259987	0.02	2000	
Ni	60	2	He	49.918	49.918	0.69	65896	0.08	2000	
Cu	63	2	He	50.217	50.217	0.22	177662	0.03	2000	
Zn	66	2	He	51.388	51.388	0.57	38655	0.13	2000	
Al	27	2	He	111.090	111.090	1.76	26669	0.42	2000	
B	11	1	No Gas	478.132	478.132	2.56	422819	0.11	2000	
Al	27	1	No Gas	108.477	108.477	0.83	792679	0.01	2000	
Si	28	1	No Gas	566.430	566.430	1.96	2308858	0.02	2000	
Ag	107	1	No Gas	50.006	50.006	0.83	347531	0.01	2000	
Cd	111	1	No Gas	51.698	51.698	2.03	70019	0.07	2000	
Sr	88	1	No Gas	101.900	101.900	2.18	1385059	0.01	2000	
Mo	95	1	No Gas	50.066	50.066	1.80	125728	0.04	2000	
Sn	118	1	No Gas	101.463	101.463	0.31	400841	0.03	2000	
Sb	121	1	No Gas	48.148	48.148	0.89	286157	0.02	2000	
Ba	137	1	No Gas	51.697	51.697	0.81	99333	0.05	2000	
Tl	205	1	No Gas	47.753	47.753	0.42	541052	0.01	2000	
Tl	203	1	No Gas	50.697	50.697	1.33	220819	0.02	2000	
Pb	208	1	No Gas	47.837	47.837	0.82	772479	0.01	2000	
U	238	1	No Gas	99.569	99.569	1.40	1659730	0.01	2000	
Ca	43	2	He	5056.365	5056.365	2.38	7225	69.98	200000	
Sb	121	2	He	50.312	50.312	0.46	191257	0.03	2000	
Ti	47	2	He	147.143	147.143	1.99	19574	0.75	2000	
Cu	63	1	No Gas	47.602	47.602	0.57	296119	0.02	2000	
Zn	66	1	No Gas	50.539	50.539	2.21	82705	0.06	2000	
Se	82	1	No Gas	49.180	49.180	7.45	4191	1.17	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	582555	0.51	563943	103.30	70	120	
Ge	72	2	He	357446	0.54	342251	104.44	70	120	
Ge	72	1	No Gas	952118	0.63	912893	104.30	70	120	
In	115	1	No Gas	1068157	0.18	1016161	105.12	70	120	

Sample Report

Bi	209	1	No Gas	860992	0.76	798101	107.88	70	120	

Sample Report

Sample Table

Sample Name	HS22121316-01SD
Data File Name	101SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T15:13:24-06:00
Sample Type	Sample
Dilution	5
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	8.307	41.537	0.65	90808	0.01	2000	
Be	9	1	No Gas	0.002	0.012	258.39	43	0.01	2000	
V	51	2	He	0.022	0.111	52.99	439	0.01	2000	
Cr	52	2	He	0.347	1.735	7.72	3024	0.01	2000	
Fe	56	2	He	9672.610	48363.048	0.78	29986157	0.03	200000	
Se	78	2	He	-0.068	-0.339	-505.34	413	-0.02	2000	
As	75	2	He	1.572	7.860	0.70	892	0.18	2000	
Ca	44	2	He	6666.794	33333.969	0.36	146848	4.54	200000	
Na	23	2	He	20002.943	100014.716	0.46	11961924	0.17	200000	
Mg	24	2	He	4531.265	22656.323	0.34	1522648	0.30	200000	
K	39	2	He	2069.052	10345.262	1.90	981254	0.21	200000	
Mn	55	2	He	111.872	559.359	0.49	291236	0.04	2000	
Co	59	2	He	0.157	0.783	2.19	870	0.02	2000	
Ni	60	2	He	1.055	5.276	13.01	1423	0.07	2000	
Cu	63	2	He	-0.176	-0.878	-19.66	1050	-0.02	2000	
Zn	66	2	He	0.891	4.455	15.67	1163	0.08	2000	
Al	27	2	He	3.659	18.297	3.87	1363	0.27	2000	
B	11	1	No Gas	34.129	170.647	2.29	37941	0.09	2000	
Al	27	1	No Gas	3.781	18.903	4.38	39270	0.01	2000	
Si	28	1	No Gas	3444.957	17224.786	1.77	11424969	0.03	2000	>LDR
Ag	107	1	No Gas	-0.075	-0.375	-5.29	70	-0.11	2000	
Cd	111	1	No Gas	0.008	0.040	55.74	17	0.05	2000	
Sr	88	1	No Gas	163.382	816.912	1.16	2064560	0.01	2000	
Mo	95	1	No Gas	0.053	0.267	14.00	173	0.03	2000	
Sn	118	1	No Gas	0.398	1.990	17.01	3214	0.01	2000	
Sb	121	1	No Gas	0.373	1.863	8.10	2864	0.01	2000	
Ba	137	1	No Gas	211.737	1058.684	0.69	377492	0.06	2000	
Tl	205	1	No Gas	-0.010	-0.051	-40.99	100	-0.01	2000	
Tl	203	1	No Gas	-0.020	-0.100	-0.49	30	-0.07	2000	
Pb	208	1	No Gas	-0.044	-0.221	-6.50	513	-0.01	2000	
U	238	1	No Gas	0.008	0.042	4.59	157	0.01	2000	
Ca	43	2	He	7004.257	35021.284	3.16	9120	76.80	200000	
Sb	121	2	He	0.281	1.406	20.31	1530	0.02	2000	
Ti	47	2	He	0.061	0.307	206.66	23	0.26	2000	
Cu	63	1	No Gas	-0.098	-0.492	-19.58	2257	0.00	2000	
Zn	66	1	No Gas	0.735	3.676	2.94	2337	0.03	2000	
Se	82	1	No Gas	0.223	1.116	312.90	-38	-0.60	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	527040	0.91	563943	93.46	70	120	
Ge	72	2	He	326018	0.78	342251	95.26	70	120	
Ge	72	1	No Gas	870398	0.07	912893	95.35	70	120	
In	115	1	No Gas	993263	1.26	1016161	97.75	70	120	

Sample Report

Bi	209	1	No Gas	805254	1.32	798101	100.90	70	120	

Sample Report

Sample Table

Sample Name	HS22121316-01MS
Data File Name	102SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T15:15:16-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	143.178	143.178	5.50	1125208	0.01	2000	
Be	9	1	No Gas	51.348	51.348	3.82	92154	0.06	2000	
V	51	2	He	50.554	50.554	0.90	157944	0.03	2000	
Cr	52	2	He	52.180	52.180	0.75	183958	0.03	2000	
Fe	56	2	He	54505.155	54505.155	1.81	178853037	0.03	200000	
Se	78	2	He	49.449	49.449	3.45	3075	1.61	2000	
As	75	2	He	58.551	58.551	0.69	32193	0.18	2000	
Ca	44	2	He	43300.937	43300.937	0.75	1003091	4.32	200000	
Na	23	2	He	107242.546	107242.546	1.77	67586206	0.16	200000	
Mg	24	2	He	27816.974	27816.974	1.49	9898505	0.28	200000	
K	39	2	He	15411.663	15411.663	2.03	7023564	0.22	200000	
Mn	55	2	He	651.847	651.847	0.33	1795254	0.04	2000	
Co	59	2	He	51.630	51.630	1.44	257442	0.02	2000	
Ni	60	2	He	56.104	56.104	0.64	71534	0.08	2000	
Cu	63	2	He	50.734	50.734	1.47	173387	0.03	2000	
Zn	66	2	He	53.843	53.843	1.21	39103	0.14	2000	
Al	27	2	He	115.969	115.969	2.38	26866	0.43	2000	
B	11	1	No Gas	579.435	579.435	5.50	472172	0.12	2000	
Al	27	1	No Gas	113.984	113.984	1.93	820040	0.01	2000	
Si	28	1	No Gas	18240.494	18240.494	0.12	63931224	0.03	2000	>LDR
Ag	107	1	No Gas	47.710	47.710	2.57	337149	0.01	2000	
Cd	111	1	No Gas	49.724	49.724	3.11	68464	0.07	2000	
Sr	88	1	No Gas	893.448	893.448	2.55	12342094	0.01	2000	
Mo	95	1	No Gas	50.069	50.069	2.89	127834	0.04	2000	
Sn	118	1	No Gas	99.844	99.844	3.17	401024	0.02	2000	
Sb	121	1	No Gas	48.939	48.939	0.81	286667	0.02	2000	
Ba	137	1	No Gas	1216.135	1216.135	3.10	2369164	0.05	2000	
Tl	205	1	No Gas	41.708	41.708	0.59	467913	0.01	2000	
Tl	203	1	No Gas	43.946	43.946	1.46	189544	0.02	2000	
Pb	208	1	No Gas	48.383	48.383	0.68	773596	0.01	2000	
U	238	1	No Gas	105.041	105.041	0.51	1733691	0.01	2000	
Ca	43	2	He	40942.366	40942.366	2.66	56305	72.71	200000	
Sb	121	2	He	51.439	51.439	0.95	188905	0.03	2000	
Ti	47	2	He	147.906	147.906	3.05	19010	0.78	2000	
Cu	63	1	No Gas	47.259	47.259	1.78	289767	0.02	2000	
Zn	66	1	No Gas	52.794	52.794	0.75	85093	0.06	2000	
Se	82	1	No Gas	48.773	48.773	5.09	4097	1.19	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	540331	4.17	563943	95.81	70	120	
Ge	72	2	He	345348	0.88	342251	100.90	70	120	
Ge	72	1	No Gas	938388	1.05	912893	102.79	70	120	
In	115	1	No Gas	1086669	3.47	1016161	106.94	70	120	
Bi	209	1	No Gas	852495	0.85	798101	106.82	70	120	

Sample Report

Sample Table

Sample Name	HS22121316-01MSD
Data File Name	103SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T15:17:09-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	145.854	145.854	1.46	1176888	0.01	2000	
Be	9	1	No Gas	51.077	51.077	0.80	94131	0.05	2000	
V	51	2	He	52.495	52.495	0.86	163232	0.03	2000	
Cr	52	2	He	54.393	54.393	1.48	190773	0.03	2000	
Fe	56	2	He	56567.797	56567.797	1.69	184762724	0.03	200000	
Se	78	2	He	51.461	51.461	1.97	3168	1.62	2000	
As	75	2	He	60.938	60.938	2.20	33344	0.18	2000	
Ca	44	2	He	45799.513	45799.513	1.79	1055925	4.34	200000	
Na	23	2	He	112287.419	112287.419	1.84	70437956	0.16	200000	
Mg	24	2	He	28607.774	28607.774	1.81	10132287	0.28	200000	
K	39	2	He	15918.567	15918.567	1.51	7217487	0.22	200000	
Mn	55	2	He	681.245	681.245	2.60	1867460	0.04	2000	
Co	59	2	He	53.846	53.846	0.56	267247	0.02	2000	
Ni	60	2	He	59.030	59.030	0.70	74906	0.08	2000	
Cu	63	2	He	52.357	52.357	1.05	178056	0.03	2000	
Zn	66	2	He	56.304	56.304	0.79	40675	0.14	2000	
Al	27	2	He	122.709	122.709	1.25	28262	0.43	2000	
B	11	1	No Gas	596.747	596.747	0.70	499105	0.12	2000	
Al	27	1	No Gas	125.418	125.418	1.50	879581	0.01	2000	
Si	28	1	No Gas	19073.543	19073.543	1.81	65256267	0.03	2000	>LDR
Ag	107	1	No Gas	50.829	50.829	4.24	348045	0.01	2000	
Cd	111	1	No Gas	52.712	52.712	4.33	70341	0.07	2000	
Sr	88	1	No Gas	942.259	942.259	4.35	12612999	0.01	2000	
Mo	95	1	No Gas	52.681	52.681	3.25	130386	0.04	2000	
Sn	118	1	No Gas	105.651	105.651	5.03	411083	0.03	2000	
Sb	121	1	No Gas	52.058	52.058	1.18	297676	0.02	2000	
Ba	137	1	No Gas	1280.721	1280.721	4.04	2418244	0.05	2000	
Tl	205	1	No Gas	43.972	43.972	1.36	485675	0.01	2000	
Tl	203	1	No Gas	46.635	46.635	1.15	198020	0.02	2000	
Pb	208	1	No Gas	51.040	51.040	0.90	803395	0.01	2000	
U	238	1	No Gas	101.688	101.688	1.41	1652384	0.01	2000	
Ca	43	2	He	42096.203	42096.203	1.58	57631	73.04	200000	
Sb	121	2	He	53.606	53.606	0.55	195930	0.03	2000	
Ti	47	2	He	153.275	153.275	3.27	19604	0.78	2000	
Cu	63	1	No Gas	49.951	49.951	0.57	298891	0.02	2000	
Zn	66	1	No Gas	55.667	55.667	1.68	87539	0.06	2000	
Se	82	1	No Gas	48.995	48.995	3.06	4018	1.22	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	554282	1.09	563943	98.29	70	120	
Ge	72	2	He	343745	0.66	342251	100.44	70	120	
Ge	72	1	No Gas	916292	0.94	912893	100.37	70	120	
In	115	1	No Gas	1053676	4.20	1016161	103.69	70	120	
Bi	209	1	No Gas	839326	0.94	798101	105.17	70	120	

Sample Report

Sample Table

Sample Name	HS22121316-01PDS
Data File Name	104SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T15:19:01-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	43.293	43.293	0.14	374560	0.01	2000	
Be	9	1	No Gas	112.628	112.628	1.52	209749	0.05	2000	
V	51	2	He	114.546	114.546	0.69	362081	0.03	2000	
Cr	52	2	He	115.381	115.381	0.95	409657	0.03	2000	
Fe	56	2	He	61310.560	61310.560	1.07	203836524	0.03	200000	
Se	78	2	He	113.851	113.851	0.51	6591	1.73	2000	
As	75	2	He	122.333	122.333	2.11	68051	0.18	2000	
Ca	44	2	He	49687.155	49687.155	1.64	1165818	4.26	200000	
Na	23	2	He	114929.464	114929.464	2.01	73376006	0.16	200000	
Mg	24	2	He	33985.788	33985.788	0.53	12253080	0.28	200000	
K	39	2	He	21416.380	21416.380	0.57	9845691	0.22	200000	
Mn	55	2	He	705.216	705.216	2.07	1967539	0.04	2000	
Co	59	2	He	115.135	115.135	0.79	581494	0.02	2000	
Ni	60	2	He	118.632	118.632	1.41	153061	0.08	2000	
Cu	63	2	He	113.775	113.775	1.95	391801	0.03	2000	
Zn	66	2	He	116.838	116.838	0.85	85264	0.14	2000	
Al	27	2	He	128.798	128.798	1.51	30163	0.43	2000	
B	11	1	No Gas	82.640	82.640	4.22	80350	0.10	2000	
Al	27	1	No Gas	134.591	134.591	2.15	946506	0.01	2000	
Si	28	1	No Gas	18281.961	18281.961	1.05	62807817	0.03	2000	>LDR
Ag	107	1	No Gas	114.335	114.335	0.41	772176	0.01	2000	
Cd	111	1	No Gas	117.519	117.519	0.69	154815	0.08	2000	
Sr	88	1	No Gas	832.228	832.228	0.57	10998397	0.01	2000	
Mo	95	1	No Gas	120.165	120.165	0.55	293466	0.04	2000	
Sn	118	1	No Gas	0.401	0.401	20.89	3371	0.01	2000	
Sb	121	1	No Gas	113.338	113.338	0.51	649571	0.02	2000	
Ba	137	1	No Gas	1333.280	1333.280	0.67	2485167	0.05	2000	
Tl	205	1	No Gas	121.522	121.522	2.52	1333782	0.01	2000	
Tl	203	1	No Gas	123.245	123.245	0.87	519986	0.02	2000	
Pb	208	1	No Gas	113.567	113.567	0.36	1775145	0.01	2000	
U	238	1	No Gas	0.076	0.076	5.12	1250	0.01	2000	
Ca	43	2	He	46044.108	46044.108	1.33	64163	71.76	200000	
Sb	121	2	He	114.519	114.519	0.81	425372	0.03	2000	
Ti	47	2	He	108.788	108.788	3.97	14171	0.77	2000	
Cu	63	1	No Gas	110.187	110.187	0.90	658301	0.02	2000	
Zn	66	1	No Gas	120.242	120.242	0.31	188284	0.06	2000	
Se	82	1	No Gas	122.004	122.004	1.73	10131	1.20	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	560228	0.33	563943	99.34	70	120	
Ge	72	2	He	349901	1.15	342251	102.24	70	120	
Ge	72	1	No Gas	919823	0.23	912893	100.76	70	120	
In	115	1	No Gas	1039001	0.30	1016161	102.25	70	120	
Bi	209	1	No Gas	834209	0.60	798101	104.52	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	107_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T15:27:47-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	No Gas	90.650	1.411	706597	1.98	100	90.6	90	110	
Be	9	1	No Gas	94.026	0.804	164768	0.77	100	94.0	90	110	
V	51	2	He	96.482	0.436	291819	0.49	100	96.5	90	110	
Cr	52	2	He	96.533	0.592	328215	1.20	100	96.5	90	110	
Fe	56	2	He	9642.516	0.829	30689483	0.95	10000	96.4	90	110	
Se	78	2	He	97.618	0.938	5467	0.87	100	97.6	90	110	
As	75	2	He	98.253	0.559	52309	1.27	100	98.3	90	110	
Ca	44	2	He	9746.545	1.186	219810	0.62	10000	97.5	90	110	
Na	23	2	He	9744.572	0.206	6021811	0.75	10000	97.4	90	110	
Mg	24	2	He	9679.430	1.245	3338986	1.87	10000	96.8	90	110	
K	39	2	He	9696.160	0.698	4323143	0.39	10000	97.0	90	110	
Mn	55	2	He	96.920	0.176	259117	0.84	100	96.9	90	110	
Co	59	2	He	98.935	0.740	478055	1.49	100	98.9	90	110	
Ni	60	2	He	98.370	0.994	121452	1.73	100	98.4	90	110	
Cu	63	2	He	97.884	0.551	322726	1.26	100	97.9	90	110	
Zn	66	2	He	97.073	1.177	67863	0.51	100	97.1	90	110	
Al	27	2	He	98.123	0.770	22128	1.49	100	98.1	90	110	
B	11	1	No Gas	487.723	2.212	390084	3.19	500	97.5	90	110	
Al	27	1	No Gas	97.382	0.717	670845	1.04	100	97.4	90	110	
Si	28	1	No Gas	483.014	0.666	1893910	0.76	5000	9.7	90	110	CCV Main CR1-2 Failed
Ag	107	1	No Gas	98.311	1.680	649489	1.41	100	98.3	90	110	
Cd	111	1	No Gas	99.383	0.898	128060	0.94	100	99.4	90	110	
Sr	88	1	No Gas	99.388	1.172	1285301	0.99	100	99.4	90	110	
Mo	95	1	No Gas	97.564	0.827	233062	0.75	100	97.6	90	110	
Sn	118	1	No Gas	100.167	0.688	376525	0.92	100	100.2	90	110	
Sb	121	1	No Gas	97.088	0.673	541864	1.33	100	97.1	90	110	
Ba	137	1	No Gas	104.258	1.495	190322	1.45	100	104.3	90	110	
Tl	205	1	No Gas	103.083	0.560	1108329	1.39	100	103.1	90	110	
Tl	203	1	No Gas	109.763	0.748	453710	1.91	100	109.8	90	110	
Pb	208	1	No Gas	94.448	0.369	1446518	1.54	100	94.4	90	110	
U	238	1	No Gas	102.094	0.746	1615300	0.50	100	102.1	90	110	
Ca	43	2	He	9810.269	2.472	13100	2.21	10000	98.1	90	110	
Sb	121	2	He	99.721	1.031	354437	1.74	100	99.7	90	110	
Ti	47	2	He	94.016	2.610	11719	3.36	100	94.0	90	110	
Cu	63	1	No Gas	91.846	1.491	534712	1.73	100	91.8	90	110	
Se	82	1	No Gas	97.959	3.457	7909	4.17	100	98.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	527148	1.05	563943	93.48	70	120	
Ge	72	2	He	334721	0.74	342251	97.80	70	120	
Ge	72	1	No Gas	895508	0.68	912893	98.10	70	120	
In	115	1	No Gas	1016347	1.53	1016161	100.02	70	120	
Bi	209	1	No Gas	817230	1.18	798101	102.40	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	108_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T15:29:39-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	-0.012	-198.7	27818	0.2	0.5	
Be	9	1	No Gas	-0.005	-64.1	30	16.7	0.5	
V	51	2	He	0.012	78.7	400	6.6	2.5	
Cr	52	2	He	-0.035	-109.0	1727	7.3	2.5	
Fe	56	2	He	3.937	3.8	35072	1.2	100	
Se	78	2	He	1.070	74.8	460	8.3	2	
As	75	2	He	-0.002	-744.6	76	11.1	2.5	
Ca	44	2	He	-19.529	-35.2	803	18.7	100	
Na	23	2	He	77.036	3.4	117229	0.9	100	
Mg	24	2	He	1.043	14.4	787	6.4	100	
K	39	2	He	-12.249	-8.8	97624	0.2	100	
Mn	55	2	He	0.077	85.0	640	26.1	2.5	
Co	59	2	He	0.001	1578.1	133	34.6	2.5	
Ni	60	2	He	-0.019	-135.5	130	23.1	2.5	
Cu	63	2	He	-0.197	-15.6	960	9.5	2	
Zn	66	2	He	0.112	67.1	623	7.6	2.5	
Al	27	2	He	0.071	399.5	583	10.5	5	
B	11	1	No Gas	43.652	9.5	44073	6.7	0.5	CCB Main CR1 Failed
Al	27	1	No Gas	0.382	56.8	16634	7.3	5	
Si	28	1	No Gas	-10.634	-10.6	238099	0.5	10	
Ag	107	1	No Gas	-0.059	-7.8	173	16.7	2.5	
Cd	111	1	No Gas	0.003	1.2	10	0.0	1	
Sr	88	1	No Gas	0.013	39.2	800	7.5	2.5	
Mo	95	1	No Gas	0.039	68.1	140	44.6	2.5	
Sn	118	1	No Gas	0.890	6.4	4974	4.5	5	
Sb	121	1	No Gas	0.590	12.0	3947	8.5	2.5	
Ba	137	1	No Gas	0.483	28.1	1110	21.5	2.5	
Tl	205	1	No Gas	0.016	49.3	380	22.5	1	
Tl	203	1	No Gas	0.016	31.1	177	11.8	1	
Pb	208	1	No Gas	0.000	4356.5	1180	12.5	2.5	
U	238	1	No Gas	0.011	11.6	203	10.2	2.5	
Ca	43	2	He	9.571	298.0	40	90.1	100	
Sb	121	2	He	0.489	15.9	2200	12.2	2.5	
Ti	47	2	He	-0.019	-525.3	13	86.6	2.5	
Cu	63	1	No Gas	-0.211	-25.0	1590	19.2	2.5	
Se	82	1	No Gas	1.093	70.4	30	195.1	2	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	512466	0.42	563943	90.87	70	120	
Ge	72	2	He	318781	0.46	342251	93.14	70	120	
Ge	72	1	No Gas	851150	1.03	912893	93.24	70	120	
In	115	1	No Gas	985994	0.42	1016161	97.03	70	120	
Bi	209	1	No Gas	802538	0.18	798101	100.56	70	120	

Sample Report

Sample Table

Sample Name	HS22121316-01MSD
Data File Name	109SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T15:49:46-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	141.466	141.466	0.96	1127657	0.01	2000	
Be	9	1	No Gas	50.382	50.382	1.41	91650	0.05	2000	
V	51	2	He	50.449	50.449	0.38	155941	0.03	2000	
Cr	52	2	He	51.916	51.916	0.87	181081	0.03	2000	
Fe	56	2	He	54596.793	54596.793	0.77	177251271	0.03	200000	
Se	78	2	He	48.787	48.787	1.81	3008	1.62	2000	
As	75	2	He	58.147	58.147	1.05	31630	0.18	2000	
Ca	44	2	He	43081.597	43081.597	0.95	987366	4.36	200000	
Na	23	2	He	108351.705	108351.705	1.63	67557407	0.16	200000	
Mg	24	2	He	27954.307	27954.307	0.36	9841657	0.28	200000	
K	39	2	He	15566.488	15566.488	0.80	7018170	0.22	200000	
Mn	55	2	He	649.567	649.567	1.44	1769825	0.04	2000	
Co	59	2	He	50.918	50.918	0.72	251192	0.02	2000	
Ni	60	2	He	55.302	55.302	2.01	69759	0.08	2000	
Cu	63	2	He	49.461	49.461	1.06	167279	0.03	2000	
Zn	66	2	He	53.009	53.009	1.22	38097	0.14	2000	
Al	27	2	He	118.924	118.924	1.07	27244	0.44	2000	
B	11	1	No Gas	551.784	551.784	2.65	456381	0.12	2000	
Al	27	1	No Gas	116.655	116.655	0.43	806286	0.01	2000	
Si	28	1	No Gas	18815.295	18815.295	0.82	63366072	0.03	2000	>LDR
Ag	107	1	No Gas	49.492	49.492	0.33	322455	0.02	2000	
Cd	111	1	No Gas	50.422	50.422	2.33	64019	0.08	2000	
Sr	88	1	No Gas	933.553	933.553	0.38	11890351	0.01	2000	
Mo	95	1	No Gas	51.239	51.239	0.18	120627	0.04	2000	
Sn	118	1	No Gas	102.265	102.265	0.75	378721	0.03	2000	
Sb	121	1	No Gas	49.321	49.321	0.13	277633	0.02	2000	
Ba	137	1	No Gas	1247.825	1247.825	2.55	2241597	0.06	2000	
Tl	205	1	No Gas	39.806	39.806	1.73	433837	0.01	2000	
Tl	203	1	No Gas	41.877	41.877	2.60	175465	0.02	2000	
Pb	208	1	No Gas	46.463	46.463	2.57	721662	0.01	2000	
U	238	1	No Gas	100.530	100.530	2.78	1611782	0.01	2000	
Ca	43	2	He	41501.393	41501.393	1.35	56473	73.49	200000	
Sb	121	2	He	51.382	51.382	1.60	186681	0.03	2000	
Ti	47	2	He	144.830	144.830	1.27	18416	0.79	2000	
Cu	63	1	No Gas	47.512	47.512	0.63	279956	0.02	2000	
Zn	66	1	No Gas	52.447	52.447	1.35	81249	0.06	2000	
Se	82	1	No Gas	49.023	49.023	0.41	3957	1.24	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	547081	0.08	563943	97.01	70	120	
Ge	72	2	He	341663	0.58	342251	99.83	70	120	
Ge	72	1	No Gas	901813	0.35	912893	98.79	70	120	
In	115	1	No Gas	1001365	1.00	1016161	98.54	70	120	
Bi	209	1	No Gas	828269	1.19	798101	103.78	70	120	

Sample Report

Sample Table

Sample Name	HS22121316-01PDS
Data File Name	110SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T15:51:39-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	42.550	42.550	0.44	367388	0.01	2000	
Be	9	1	No Gas	84.391	84.391	1.23	156629	0.05	2000	
V	51	2	He	86.135	86.135	1.28	267577	0.03	2000	
Cr	52	2	He	86.942	86.942	1.01	303754	0.03	2000	
Fe	56	2	He	58060.583	58060.583	1.74	189656111	0.03	200000	
Se	78	2	He	86.632	86.632	3.45	5032	1.72	2000	
As	75	2	He	95.157	95.157	0.82	52025	0.18	2000	
Ca	44	2	He	45890.677	45890.677	2.68	1057922	4.34	200000	
Na	23	2	He	114136.949	114136.949	0.63	71596189	0.16	200000	
Mg	24	2	He	30945.977	30945.977	0.23	10961104	0.28	200000	
K	39	2	He	19083.928	19083.928	1.06	8631481	0.22	200000	
Mn	55	2	He	692.461	692.461	1.50	1898149	0.04	2000	
Co	59	2	He	87.396	87.396	0.27	433679	0.02	2000	
Ni	60	2	He	90.654	90.654	0.76	114950	0.08	2000	
Cu	63	2	He	85.764	85.764	0.65	290582	0.03	2000	
Zn	66	2	He	88.922	88.922	0.29	63894	0.14	2000	
Al	27	2	He	103.456	103.456	0.98	23924	0.43	2000	
B	11	1	No Gas	63.218	63.218	5.63	64084	0.10	2000	
Al	27	1	No Gas	102.181	102.181	1.37	718005	0.01	2000	
Si	28	1	No Gas	18263.631	18263.631	1.34	62375904	0.03	2000	>LDR
Ag	107	1	No Gas	86.000	86.000	0.61	570819	0.02	2000	
Cd	111	1	No Gas	87.813	87.813	2.01	113666	0.08	2000	
Sr	88	1	No Gas	829.989	829.989	0.59	10777437	0.01	2000	
Mo	95	1	No Gas	88.296	88.296	0.85	211886	0.04	2000	
Sn	118	1	No Gas	0.558	0.558	18.29	3901	0.01	2000	
Sb	121	1	No Gas	83.909	83.909	1.53	478305	0.02	2000	
Ba	137	1	No Gas	1283.840	1283.840	0.83	2351280	0.05	2000	
Tl	205	1	No Gas	86.136	86.136	0.90	939535	0.01	2000	
Tl	203	1	No Gas	90.897	90.897	0.45	381151	0.02	2000	
Pb	208	1	No Gas	82.584	82.584	1.50	1283164	0.01	2000	
U	238	1	No Gas	0.069	0.069	11.19	1140	0.01	2000	
Ca	43	2	He	44012.727	44012.727	1.60	60255	73.04	200000	
Sb	121	2	He	86.192	86.192	0.51	314672	0.03	2000	
Ti	47	2	He	83.255	83.255	2.64	10658	0.78	2000	
Cu	63	1	No Gas	81.368	81.368	0.60	484050	0.02	2000	
Zn	66	1	No Gas	89.464	89.464	1.21	139603	0.06	2000	
Se	82	1	No Gas	91.205	91.205	2.83	7515	1.21	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	558311	1.21	563943	99.00	70	120	
Ge	72	2	He	343743	0.55	342251	100.44	70	120	
Ge	72	1	No Gas	914454	0.64	912893	100.17	70	120	
In	115	1	No Gas	1020877	0.04	1016161	100.46	70	120	
Bi	209	1	No Gas	829055	0.66	798101	103.88	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	119_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T16:11:58-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	No Gas	92.536	0.530	691895	0.04	100	92.5	90	110	
Be	9	1	No Gas	95.791	0.521	161167	0.90	100	95.8	90	110	
V	51	2	He	97.608	0.032	284399	0.79	100	97.6	90	110	
Cr	52	2	He	97.563	0.325	319527	0.71	100	97.6	90	110	
Fe	56	2	He	9788.932	1.256	30012188	1.15	10000	97.9	90	110	
Se	78	2	He	99.247	0.436	5348	0.72	100	99.2	90	110	
As	75	2	He	100.458	0.677	51520	1.47	100	100.5	90	110	
Ca	44	2	He	9944.128	0.427	216027	0.78	10000	99.4	90	110	
Na	23	2	He	9945.469	0.736	5919006	0.83	10000	99.5	90	110	
Mg	24	2	He	9922.842	0.442	3297208	0.39	10000	99.2	90	110	
K	39	2	He	9872.244	0.839	4238607	1.45	10000	98.7	90	110	
Mn	55	2	He	99.147	0.590	255334	0.26	100	99.1	90	110	
Co	59	2	He	100.370	0.531	467174	0.40	100	100.4	90	110	
Ni	60	2	He	99.075	0.735	117831	1.15	100	99.1	90	110	
Cu	63	2	He	99.275	0.672	315270	0.23	100	99.3	90	110	
Zn	66	2	He	99.209	0.265	66805	0.99	100	99.2	90	110	
Al	27	2	He	101.992	2.631	22131	2.00	100	102.0	90	110	
B	11	1	No Gas	460.823	3.982	354373	3.46	500	92.2	90	110	
Al	27	1	No Gas	99.607	1.137	657102	0.55	100	99.6	90	110	
Si	28	1	No Gas	473.130	1.568	1783103	1.26	5000	9.5	90	110	CCV Main CR1-2 Failed
Ag	107	1	No Gas	99.514	0.528	617722	0.99	100	99.5	90	110	
Cd	111	1	No Gas	100.810	1.241	122044	0.85	100	100.8	90	110	
Sr	88	1	No Gas	101.805	3.200	1236791	2.39	100	101.8	90	110	
Mo	95	1	No Gas	98.836	0.543	221832	0.71	100	98.8	90	110	
Sn	118	1	No Gas	100.689	0.600	355595	0.23	100	100.7	90	110	
Sb	121	1	No Gas	95.210	0.517	509135	0.08	100	95.2	90	110	
Ba	137	1	No Gas	102.962	1.491	176590	0.80	100	103.0	90	110	
Tl	205	1	No Gas	101.928	0.947	1039735	0.97	100	101.9	90	110	
Tl	203	1	No Gas	107.882	0.589	423058	0.81	100	107.9	90	110	
Pb	208	1	No Gas	93.700	0.538	1361574	1.61	100	93.7	90	110	
U	238	1	No Gas	101.390	1.254	1521956	0.20	100	101.4	90	110	
Ca	43	2	He	9998.119	3.361	12860	2.79	10000	100.0	90	110	
Sb	121	2	He	99.005	0.849	338976	0.98	100	99.0	90	110	
Ti	47	2	He	96.604	1.140	11598	1.95	100	96.6	90	110	
Cu	63	1	No Gas	91.940	0.765	512837	0.26	100	91.9	90	110	
Se	82	1	No Gas	96.134	5.445	7435	5.58	100	96.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	506105	0.54	563943	89.74	70	120	
Ge	72	2	He	322448	0.81	342251	94.21	70	120	
Ge	72	1	No Gas	858029	0.57	912893	93.99	70	120	
In	115	1	No Gas	954864	0.83	1016161	93.97	70	120	
Bi	209	1	No Gas	775371	1.07	798101	97.15	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	119_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T16:11:58-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	No Gas	92.536	0.530	691895	0.04	100	92.5	90	110	
Be	9	1	No Gas	95.791	0.521	161167	0.90	100	95.8	90	110	
V	51	2	He	97.608	0.032	284399	0.79	100	97.6	90	110	
Cr	52	2	He	97.563	0.325	319527	0.71	100	97.6	90	110	
Fe	56	2	He	9788.932	1.256	30012188	1.15	10000	97.9	90	110	
Se	78	2	He	99.247	0.436	5348	0.72	100	99.2	90	110	
As	75	2	He	100.458	0.677	51520	1.47	100	100.5	90	110	
Ca	44	2	He	9944.128	0.427	216027	0.78	10000	99.4	90	110	
Na	23	2	He	9945.469	0.736	5919006	0.83	10000	99.5	90	110	
Mg	24	2	He	9922.842	0.442	3297208	0.39	10000	99.2	90	110	
K	39	2	He	9872.244	0.839	4238607	1.45	10000	98.7	90	110	
Mn	55	2	He	99.147	0.590	255334	0.26	100	99.1	90	110	
Co	59	2	He	100.370	0.531	467174	0.40	100	100.4	90	110	
Ni	60	2	He	99.075	0.735	117831	1.15	100	99.1	90	110	
Cu	63	2	He	99.275	0.672	315270	0.23	100	99.3	90	110	
Zn	66	2	He	99.209	0.265	66805	0.99	100	99.2	90	110	
Al	27	2	He	101.992	2.631	22131	2.00	100	102.0	90	110	
B	11	1	No Gas	460.823	3.982	354373	3.46	500	92.2	90	110	
Al	27	1	No Gas	99.607	1.137	657102	0.55	100	99.6	90	110	
Si	28	1	No Gas	473.130	1.568	1783103	1.26	5000	9.5	90	110	CCV Main CR1-2 Failed
Ag	107	1	No Gas	99.514	0.528	617722	0.99	100	99.5	90	110	
Cd	111	1	No Gas	100.810	1.241	122044	0.85	100	100.8	90	110	
Sr	88	1	No Gas	101.805	3.200	1236791	2.39	100	101.8	90	110	
Mo	95	1	No Gas	98.836	0.543	221832	0.71	100	98.8	90	110	
Sn	118	1	No Gas	100.689	0.600	355595	0.23	100	100.7	90	110	
Sb	121	1	No Gas	95.210	0.517	509135	0.08	100	95.2	90	110	
Ba	137	1	No Gas	102.962	1.491	176590	0.80	100	103.0	90	110	
Tl	205	1	No Gas	101.928	0.947	1039735	0.97	100	101.9	90	110	
Tl	203	1	No Gas	107.882	0.589	423058	0.81	100	107.9	90	110	
Pb	208	1	No Gas	93.700	0.538	1361574	1.61	100	93.7	90	110	
U	238	1	No Gas	101.390	1.254	1521956	0.20	100	101.4	90	110	
Ca	43	2	He	9998.119	3.361	12860	2.79	10000	100.0	90	110	
Sb	121	2	He	99.005	0.849	338976	0.98	100	99.0	90	110	
Ti	47	2	He	96.604	1.140	11598	1.95	100	96.6	90	110	
Cu	63	1	No Gas	91.940	0.765	512837	0.26	100	91.9	90	110	
Se	82	1	No Gas	96.134	5.445	7435	5.58	100	96.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	506105	0.54	563943	89.74	70	120	
Ge	72	2	He	322448	0.81	342251	94.21	70	120	
Ge	72	1	No Gas	858029	0.57	912893	93.99	70	120	
In	115	1	No Gas	954864	0.83	1016161	93.97	70	120	
Bi	209	1	No Gas	775371	1.07	798101	97.15	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	120_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T16:13:51-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	-0.029	-113.1	26664	0.7	0.5	
Be	9	1	No Gas	-0.010	-80.9	20	66.1	0.5	
V	51	2	He	-0.004	-116.5	342	4.8	2.5	
Cr	52	2	He	0.007	507.9	1793	4.5	2.5	
Fe	56	2	He	1.954	13.6	28029	1.4	100	
Se	78	2	He	0.933	27.0	437	3.9	2	
As	75	2	He	-0.035	-71.8	57	21.2	2.5	
Ca	44	2	He	-22.479	-8.9	713	4.5	100	
Na	23	2	He	67.446	4.0	107687	0.1	100	
Mg	24	2	He	0.701	22.0	650	6.2	100	
K	39	2	He	5.553	72.7	101261	1.2	100	
Mn	55	2	He	0.025	156.6	490	19.5	2.5	
Co	59	2	He	-0.001	-720.7	120	36.3	2.5	
Ni	60	2	He	-0.021	-283.0	123	54.0	2.5	
Cu	63	2	He	-0.229	-13.9	827	10.3	2	
Zn	66	2	He	0.088	106.8	587	11.1	2.5	
Al	27	2	He	-0.339	-70.5	480	10.4	5	
B	11	1	No Gas	31.741	12.8	33784	8.5	0.5	CCB Main CR1 Failed
Al	27	1	No Gas	-0.013	-490.2	13594	2.6	5	
Si	28	1	No Gas	-14.519	-5.8	217539	0.6	10	
Ag	107	1	No Gas	-0.057	-10.7	173	21.8	2.5	
Cd	111	1	No Gas	0.009	144.4	17	91.7	1	
Sr	88	1	No Gas	0.008	5.5	700	0.0	2.5	
Mo	95	1	No Gas	0.039	86.5	130	55.5	2.5	
Sn	118	1	No Gas	0.258	4.0	2514	1.3	5	
Sb	121	1	No Gas	0.092	16.2	1263	5.4	2.5	
Ba	137	1	No Gas	0.189	15.2	553	8.5	2.5	
Tl	205	1	No Gas	0.013	68.7	320	27.2	1	
Tl	203	1	No Gas	0.006	138.3	127	25.4	1	
Pb	208	1	No Gas	-0.019	-21.4	830	7.3	2.5	
U	238	1	No Gas	0.012	28.4	203	25.2	2.5	
Ca	43	2	He	18.974	78.0	50	34.6	100	
Sb	121	2	He	0.068	59.9	750	18.7	2.5	
Ti	47	2	He	-0.073	-70.0	7	86.6	2.5	
Cu	63	1	No Gas	-0.271	-11.5	1210	13.7	2.5	
Se	82	1	No Gas	1.366	28.3	50	58.1	2	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	493435	0.32	563943	87.50	70	120	
Ge	72	2	He	307472	1.36	342251	89.84	70	120	
Ge	72	1	No Gas	819942	0.62	912893	89.82	70	120	
In	115	1	No Gas	924942	0.78	1016161	91.02	70	120	
Bi	209	1	No Gas	750499	0.44	798101	94.04	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	120_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T16:13:51-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	-0.029	-113.1	26664	0.7	0.5	
Be	9	1	No Gas	-0.010	-80.9	20	66.1	0.5	
V	51	2	He	-0.004	-116.5	342	4.8	2.5	
Cr	52	2	He	0.007	507.9	1793	4.5	2.5	
Fe	56	2	He	1.954	13.6	28029	1.4	100	
Se	78	2	He	0.933	27.0	437	3.9	2	
As	75	2	He	-0.035	-71.8	57	21.2	2.5	
Ca	44	2	He	-22.479	-8.9	713	4.5	100	
Na	23	2	He	67.446	4.0	107687	0.1	100	
Mg	24	2	He	0.701	22.0	650	6.2	100	
K	39	2	He	5.553	72.7	101261	1.2	100	
Mn	55	2	He	0.025	156.6	490	19.5	2.5	
Co	59	2	He	-0.001	-720.7	120	36.3	2.5	
Ni	60	2	He	-0.021	-283.0	123	54.0	2.5	
Cu	63	2	He	-0.229	-13.9	827	10.3	2	
Zn	66	2	He	0.088	106.8	587	11.1	2.5	
Al	27	2	He	-0.339	-70.5	480	10.4	5	
B	11	1	No Gas	31.741	12.8	33784	8.5	0.5	CCB Main CR1 Failed
Al	27	1	No Gas	-0.013	-490.2	13594	2.6	5	
Si	28	1	No Gas	-14.519	-5.8	217539	0.6	10	
Ag	107	1	No Gas	-0.057	-10.7	173	21.8	2.5	
Cd	111	1	No Gas	0.009	144.4	17	91.7	1	
Sr	88	1	No Gas	0.008	5.5	700	0.0	2.5	
Mo	95	1	No Gas	0.039	86.5	130	55.5	2.5	
Sn	118	1	No Gas	0.258	4.0	2514	1.3	5	
Sb	121	1	No Gas	0.092	16.2	1263	5.4	2.5	
Ba	137	1	No Gas	0.189	15.2	553	8.5	2.5	
Tl	205	1	No Gas	0.013	68.7	320	27.2	1	
Tl	203	1	No Gas	0.006	138.3	127	25.4	1	
Pb	208	1	No Gas	-0.019	-21.4	830	7.3	2.5	
U	238	1	No Gas	0.012	28.4	203	25.2	2.5	
Ca	43	2	He	18.974	78.0	50	34.6	100	
Sb	121	2	He	0.068	59.9	750	18.7	2.5	
Ti	47	2	He	-0.073	-70.0	7	86.6	2.5	
Cu	63	1	No Gas	-0.271	-11.5	1210	13.7	2.5	
Se	82	1	No Gas	1.366	28.3	50	58.1	2	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	493435	0.32	563943	87.50	70	120	
Ge	72	2	He	307472	1.36	342251	89.84	70	120	
Ge	72	1	No Gas	819942	0.62	912893	89.82	70	120	
In	115	1	No Gas	924942	0.78	1016161	91.02	70	120	
Bi	209	1	No Gas	750499	0.44	798101	94.04	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	131_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T16:35:23-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	No Gas	91.392	0.578	688153	0.14	100	91.4	90	110	
Be	9	1	No Gas	95.469	1.314	161668	0.87	100	95.5	90	110	
V	51	2	He	97.911	0.157	285717	0.46	100	97.9	90	110	
Cr	52	2	He	97.324	0.621	319233	0.06	100	97.3	90	110	
Fe	56	2	He	9813.525	0.674	30133802	0.12	10000	98.1	90	110	
Se	78	2	He	98.526	1.930	5320	2.33	100	98.5	90	110	
As	75	2	He	100.972	1.093	51859	0.63	100	101.0	90	110	
Ca	44	2	He	9905.353	0.212	215521	0.61	10000	99.1	90	110	
Na	23	2	He	9799.578	1.816	5841903	1.24	10000	98.0	90	110	
Mg	24	2	He	9951.251	0.307	3311828	0.86	10000	99.5	90	110	
K	39	2	He	9864.078	0.841	4241646	1.25	10000	98.6	90	110	
Mn	55	2	He	98.356	0.942	253687	0.47	100	98.4	90	110	
Co	59	2	He	100.316	0.138	467650	0.46	100	100.3	90	110	
Ni	60	2	He	98.173	1.143	116943	1.70	100	98.2	90	110	
Cu	63	2	He	98.856	0.751	314444	1.27	100	98.9	90	110	
Zn	66	2	He	97.721	0.686	65910	0.44	100	97.7	90	110	
Al	27	2	He	100.099	1.556	21767	1.83	100	100.1	90	110	
B	11	1	No Gas	458.504	3.140	355012	3.42	500	91.7	90	110	
Al	27	1	No Gas	99.273	1.387	658410	0.20	100	99.3	90	110	
Si	28	1	No Gas	529.313	2.124	1973040	2.75	5000	10.6	90	110	CCV Main CR1-2 Failed
Ag	107	1	No Gas	99.162	0.823	617749	0.72	100	99.2	90	110	
Cd	111	1	No Gas	99.496	1.271	120889	0.87	100	99.5	90	110	
Sr	88	1	No Gas	101.889	1.247	1242411	0.23	100	101.9	90	110	
Mo	95	1	No Gas	98.801	0.582	222557	0.94	100	98.8	90	110	
Sn	118	1	No Gas	98.902	0.775	350578	0.53	100	98.9	90	110	
Sb	121	1	No Gas	94.701	1.284	509092	0.55	100	94.7	90	110	
Ba	137	1	No Gas	102.832	0.741	177013	0.60	100	102.8	90	110	
Tl	205	1	No Gas	102.140	1.254	1030609	1.20	100	102.1	90	110	
Tl	203	1	No Gas	108.117	0.881	419381	0.87	100	108.1	90	110	
Pb	208	1	No Gas	94.668	0.866	1360631	0.94	100	94.7	90	110	
U	238	1	No Gas	99.805	3.049	1482057	3.24	100	99.8	90	110	
Ca	43	2	He	10035.162	3.018	12930	3.40	10000	100.4	90	110	
Sb	121	2	He	98.263	0.565	336962	0.98	100	98.3	90	110	
Ti	47	2	He	96.583	2.806	11612	2.28	100	96.6	90	110	
Cu	63	1	No Gas	92.065	1.150	516244	0.27	100	92.1	90	110	
Se	82	1	No Gas	94.106	2.392	7315	1.86	100	94.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	509410	0.46	563943	90.33	70	120	
Ge	72	2	He	322942	0.56	342251	94.36	70	120	
Ge	72	1	No Gas	862641	1.42	912893	94.50	70	120	
In	115	1	No Gas	958350	1.30	1016161	94.31	70	120	
Bi	209	1	No Gas	766942	0.19	798101	96.10	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	132_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T16:37:16-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	-0.011	-288.5	27600	0.7	0.5	
Be	9	1	No Gas	-0.008	-54.6	23	32.7	0.5	
V	51	2	He	0.070	8.9	557	3.2	2.5	
Cr	52	2	He	-0.029	-221.7	1713	11.9	2.5	
Fe	56	2	He	2.070	8.7	28861	1.7	100	
Se	78	2	He	0.736	76.4	435	6.7	2	
As	75	2	He	0.014	56.1	82	4.7	2.5	
Ca	44	2	He	-22.915	-18.9	717	12.5	100	
Na	23	2	He	63.296	3.1	107176	0.9	100	
Mg	24	2	He	0.944	28.7	740	12.0	100	
K	39	2	He	6.054	41.5	103211	1.3	100	
Mn	55	2	He	0.007	336.8	453	12.9	2.5	
Co	59	2	He	-0.005	-95.1	107	19.5	2.5	
Ni	60	2	He	-0.028	-77.1	117	21.6	2.5	
Cu	63	2	He	-0.249	-6.9	783	7.0	2	
Zn	66	2	He	0.182	66.2	657	11.4	2.5	
Al	27	2	He	-0.800	-61.0	393	25.1	5	
B	11	1	No Gas	25.051	18.7	29832	12.7	0.5	CCB Main CR1 Failed
Al	27	1	No Gas	-0.079	-48.3	13594	2.3	5	
Si	28	1	No Gas	10.730	36.9	303509	3.5	10	CCB Main CR1 Failed
Ag	107	1	No Gas	-0.064	-9.5	137	27.7	2.5	
Cd	111	1	No Gas	0.003	269.1	10	100.0	1	
Sr	88	1	No Gas	0.018	40.9	840	11.4	2.5	
Mo	95	1	No Gas	0.052	57.8	163	40.8	2.5	
Sn	118	1	No Gas	0.139	8.0	2174	2.5	5	
Sb	121	1	No Gas	0.068	50.0	1180	14.8	2.5	
Ba	137	1	No Gas	0.210	0.4	607	1.0	2.5	
Tl	205	1	No Gas	0.014	100.2	337	41.2	1	
Tl	203	1	No Gas	0.006	177.4	130	33.5	1	
Pb	208	1	No Gas	-0.026	-8.4	750	4.8	2.5	
U	238	1	No Gas	0.009	40.1	153	33.5	2.5	
Ca	43	2	He	2.115	384.4	30	33.3	100	
Sb	121	2	He	0.052	43.7	710	11.0	2.5	
Ti	47	2	He	-0.131	0.0	0	#DIV/0!	2.5	
Cu	63	1	No Gas	-0.256	-8.3	1330	8.9	2.5	
Se	82	1	No Gas	-0.269	-199.8	-74	-55.2	2	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	508468	0.98	563943	90.16	70	120	
Ge	72	2	He	312736	0.44	342251	91.38	70	120	
Ge	72	1	No Gas	845138	0.68	912893	92.58	70	120	
In	115	1	No Gas	953253	0.75	1016161	93.81	70	120	
Bi	209	1	No Gas	763373	0.68	798101	95.65	70	120	

Sample Report

Sample Table

Sample Name	HS22121316-01SD
Data File Name	134SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T16:44:25-06:00
Sample Type	Sample
Dilution	50
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	0.824	41.216	2.71	33234	0.00	2000	
Be	9	1	No Gas	-0.013	-0.662	-39.23	15	-0.09	2000	
V	51	2	He	0.037	1.860	7.13	469	0.01	2000	
Cr	52	2	He	0.027	1.333	65.16	1910	0.00	2000	
Fe	56	2	He	1010.802	50540.085	1.71	3061553	0.03	200000	
Se	78	2	He	0.618	30.905	72.19	435	0.14	2000	
As	75	2	He	0.129	6.467	27.08	141	0.09	2000	
Ca	44	2	He	653.223	32661.166	5.76	15055	4.34	200000	
Na	23	2	He	2177.927	108896.353	2.05	1328036	0.16	200000	
Mg	24	2	He	469.475	23473.760	2.32	153488	0.31	200000	
K	39	2	He	211.996	10599.807	2.43	189050	0.11	200000	
Mn	55	2	He	11.290	564.511	1.36	28921	0.04	2000	
Co	59	2	He	0.015	0.771	49.65	200	0.01	2000	
Ni	60	2	He	0.082	4.107	14.69	247	0.03	2000	
Cu	63	2	He	-0.298	-14.880	-5.78	640	-0.05	2000	
Zn	66	2	He	-0.039	-1.934	-396.31	520	-0.01	2000	
Al	27	2	He	0.365	18.230	61.66	640	0.06	2000	
B	11	1	No Gas	1.909	95.456	27.69	12337	0.02	2000	
Al	27	1	No Gas	1.047	52.354	27.70	20789	0.01	2000	
Si	28	1	No Gas	357.400	17869.982	1.49	1395308	0.03	2000	
Ag	107	1	No Gas	-0.073	-3.669	-4.58	77	-0.10	2000	
Cd	111	1	No Gas	0.000	0.019	1266.72	7	0.01	2000	
Sr	88	1	No Gas	15.845	792.243	0.59	191502	0.01	2000	
Mo	95	1	No Gas	0.002	0.075	596.62	50	0.00	2000	
Sn	118	1	No Gas	-0.008	-0.408	-977.29	1647	0.00	2000	
Sb	121	1	No Gas	0.079	3.968	21.69	1240	0.01	2000	
Ba	137	1	No Gas	21.185	1059.245	0.54	36241	0.06	2000	
Tl	205	1	No Gas	-0.013	-0.640	-34.99	70	-0.02	2000	
Tl	203	1	No Gas	-0.020	-0.981	-12.78	30	-0.07	2000	
Pb	208	1	No Gas	-0.054	-2.691	-5.90	353	-0.02	2000	
U	238	1	No Gas	0.000	-0.019	-169.80	20	0.00	2000	
Ca	43	2	He	724.419	36220.935	11.49	940	77.06	200000	
Sb	121	2	He	0.041	2.049	18.53	680	0.01	2000	
Ti	47	2	He	0.123	6.141	238.09	30	0.41	2000	
Cu	63	1	No Gas	-0.265	-13.249	-13.90	1283	-0.02	2000	
Zn	66	1	No Gas	-0.036	-1.802	-277.96	1170	0.00	2000	
Se	82	1	No Gas	0.214	10.705	610.12	-37	-0.57	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	502478	0.22	563943	89.10	70	120	
Ge	72	2	He	316408	0.53	342251	92.45	70	120	
Ge	72	1	No Gas	846672	0.77	912893	92.75	70	120	
In	115	1	No Gas	947214	0.20	1016161	93.21	70	120	

Sample Report

Bi	209	1	No Gas	770548	0.79	798101	96.55	70	120	

Sample Report

Sample Table

Sample Name	HS22121316-01PDS
Data File Name	135SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T16:46:19-06:00
Sample Type	Sample
Dilution	10
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	3.861	38.608	1.89	55596	0.01	2000	
Be	9	1	No Gas	87.368	873.678	0.82	147858	0.06	2000	
V	51	2	He	88.962	889.619	0.96	261244	0.03	2000	
Cr	52	2	He	88.207	882.070	1.28	291294	0.03	2000	
Fe	56	2	He	13264.262	132642.616	1.93	40971829	0.03	200000	
Se	78	2	He	89.964	899.642	2.10	4924	1.83	2000	
As	75	2	He	89.161	891.612	0.63	46088	0.19	2000	
Ca	44	2	He	11865.187	118651.868	1.37	259506	4.57	200000	
Na	23	2	He	18355.560	183555.599	1.10	10946358	0.17	200000	
Mg	24	2	He	10900.583	109005.832	2.19	3649822	0.30	200000	
K	39	2	He	9707.035	97070.355	2.03	4201214	0.23	200000	
Mn	55	2	He	141.630	1416.304	1.62	367358	0.04	2000	
Co	59	2	He	89.767	897.667	1.65	421054	0.02	2000	
Ni	60	2	He	89.716	897.163	0.11	107547	0.08	2000	
Cu	63	2	He	88.768	887.684	2.06	284238	0.03	2000	
Zn	66	2	He	90.126	901.258	2.47	61201	0.15	2000	
Al	27	2	He	87.701	877.012	2.63	19264	0.46	2000	
B	11	1	No Gas	2.889	28.892	6.23	13233	0.02	2000	
Al	27	1	No Gas	87.813	878.126	0.25	583707	0.02	2000	
Si	28	1	No Gas	1644.893	16448.925	1.84	5546007	0.03	2000	
Ag	107	1	No Gas	89.339	893.393	0.46	560751	0.02	2000	
Cd	111	1	No Gas	90.117	901.170	0.69	110320	0.08	2000	
Sr	88	1	No Gas	74.468	744.679	2.03	914901	0.01	2000	
Mo	95	1	No Gas	91.065	910.647	1.50	206640	0.04	2000	
Sn	118	1	No Gas	-0.046	-0.458	-121.07	1543	0.00	2000	
Sb	121	1	No Gas	84.897	848.968	1.14	456179	0.02	2000	
Ba	137	1	No Gas	193.580	1935.799	0.81	335487	0.06	2000	
Tl	205	1	No Gas	89.249	892.488	0.85	925066	0.01	2000	
Tl	203	1	No Gas	95.199	951.988	0.38	379327	0.03	2000	
Pb	208	1	No Gas	84.351	843.506	0.65	1245444	0.01	2000	
U	238	1	No Gas	0.005	0.051	42.45	103	0.00	2000	
Ca	43	2	He	11841.483	118414.833	2.07	15345	77.17	200000	
Sb	121	2	He	87.847	878.471	1.39	303154	0.03	2000	
Ti	47	2	He	87.664	876.638	4.70	10604	0.83	2000	
Cu	63	1	No Gas	83.529	835.291	0.38	468342	0.02	2000	
Zn	66	1	No Gas	89.219	892.189	0.86	131245	0.07	2000	
Se	82	1	No Gas	86.467	864.673	6.95	6711	1.29	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	509059	0.32	563943	90.27	70	120	
Ge	72	2	He	324965	1.18	342251	94.95	70	120	
Ge	72	1	No Gas	862012	0.64	912893	94.43	70	120	
In	115	1	No Gas	965457	1.18	1016161	95.01	70	120	

Sample Report

Bi	209	1	No Gas	787786	0.55	798101	98.71	70	120	

Sample Report

Sample Table

Sample Name	HS22121096-02
Data File Name	136SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T16:48:11-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	108.039	108.039	0.80	867178	0.01	2000	
Be	9	1	No Gas	0.032	0.032	4.77	98	0.03	2000	
V	51	2	He	0.178	0.178	5.64	958	0.02	2000	
Cr	52	2	He	13.417	13.417	0.61	49209	0.03	2000	
Fe	56	2	He	20300.876	20300.876	0.28	67222777	0.03	200000	
Se	78	2	He	0.010	0.010	5108.14	446	0.00	2000	
As	75	2	He	6.239	6.239	4.23	3536	0.18	2000	
Ca	44	2	He	23798.812	23798.812	0.44	556734	4.27	200000	
Na	23	2	He	100331.046	100331.046	1.04	63793272	0.16	200000	
Mg	24	2	He	14556.545	14556.545	0.11	5225977	0.28	200000	
K	39	2	He	52722.965	52722.965	0.52	23969098	0.22	200000	
Mn	55	2	He	428.606	428.606	1.33	1190932	0.04	2000	
Co	59	2	He	5.665	5.665	1.21	28621	0.02	2000	
Ni	60	2	He	5.920	5.920	5.49	7762	0.08	2000	
Cu	63	2	He	-0.015	-0.015	-40.53	1670	0.00	2000	
Zn	66	2	He	28.054	28.054	3.87	20843	0.13	2000	
Al	27	2	He	28.787	28.787	0.93	7195	0.40	2000	
B	11	1	No Gas	26.124	26.124	1.09	32897	0.08	2000	
Al	27	1	No Gas	30.664	30.664	7.81	230254	0.01	2000	
Si	28	1	No Gas	15007.461	15007.461	1.09	52240399	0.03	2000	>LDR
Ag	107	1	No Gas	-0.064	-0.064	-14.74	150	-0.04	2000	
Cd	111	1	No Gas	0.063	0.063	32.07	90	0.07	2000	
Sr	88	1	No Gas	587.066	587.066	1.17	7800027	0.01	2000	
Mo	95	1	No Gas	0.229	0.229	19.80	613	0.04	2000	
Sn	118	1	No Gas	0.173	0.173	166.57	2506	0.01	2000	
Sb	121	1	No Gas	0.285	0.285	13.28	2557	0.01	2000	
Ba	137	1	No Gas	792.715	792.715	2.43	1485428	0.05	2000	
Tl	205	1	No Gas	0.001	0.001	167.82	227	0.00	2000	
Tl	203	1	No Gas	0.001	0.001	890.87	120	0.00	2000	
Pb	208	1	No Gas	0.084	0.084	5.91	2547	0.00	2000	
U	238	1	No Gas	0.018	0.018	26.18	317	0.01	2000	
Ca	43	2	He	24281.461	24281.461	1.70	33702	72.05	200000	
Sb	121	2	He	0.198	0.198	6.86	1330	0.01	2000	
Ti	47	2	He	0.255	0.255	1.31	50	0.51	2000	
Cu	63	1	No Gas	0.469	0.469	2.45	5828	0.01	2000	
Zn	66	1	No Gas	28.178	28.178	1.37	45691	0.06	2000	
Se	82	1	No Gas	0.027	0.027	3979.05	-57	-0.05	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	546416	0.37	563943	96.89	70	120	
Ge	72	2	He	348389	0.87	342251	101.79	70	120	
Ge	72	1	No Gas	931087	0.81	912893	101.99	70	120	
In	115	1	No Gas	1044501	0.83	1016161	102.79	70	120	
Bi	209	1	No Gas	839808	0.21	798101	105.23	70	120	

Sample Report

Sample Table

Sample Name	HS22121096-03
Data File Name	137SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T16:50:15-06:00
Sample Type	Sample
Dilution	1
Comment	DOD TW 188020
ISTD Ref FileName	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	42.381	42.381	0.33	364911	0.01	2000	
Be	9	1	No Gas	0.324	0.324	11.59	640	0.05	2000	
V	51	2	He	0.354	0.354	4.52	1489	0.02	2000	
Cr	52	2	He	20.103	20.103	0.52	71554	0.03	2000	
Fe	56	2	He	36184.941	36184.941	0.53	117862012	0.03	200000	
Se	78	2	He	1.186	1.186	51.16	501	0.24	2000	
As	75	2	He	18.072	18.072	3.16	9918	0.18	2000	
Ca	44	2	He	94606.191	94606.191	0.93	2173449	4.35	200000	
Na	23	2	He	259476.304	259476.304	0.63	162195358	0.16	200000	>LDR
Mg	24	2	He	69756.662	69756.662	1.00	24635497	0.28	200000	
K	39	2	He	3213.018	3213.018	0.88	1540825	0.21	200000	
Mn	55	2	He	13103.192	13103.192	0.59	35807362	0.04	2000	>LDR
Co	59	2	He	213.804	213.804	1.24	1057643	0.02	2000	
Ni	60	2	He	155.461	155.461	0.69	196438	0.08	2000	
Cu	63	2	He	0.435	0.435	7.33	3154	0.01	2000	
Zn	66	2	He	43.097	43.097	0.38	31183	0.14	2000	
Al	27	2	He	13.377	13.377	1.78	3617	0.37	2000	
B	11	1	No Gas	12.314	12.314	4.07	22191	0.06	2000	
Al	27	1	No Gas	12.029	12.029	1.91	97209	0.01	2000	
Si	28	1	No Gas	31075.789	31075.789	1.42	105085242	0.03	2000	>LDR
Ag	107	1	No Gas	-0.065	-0.065	-4.64	133	-0.05	2000	
Cd	111	1	No Gas	0.050	0.050	28.71	70	0.07	2000	
Sr	88	1	No Gas	1894.877	1894.877	1.08	24274192	0.01	2000	>LDR
Mo	95	1	No Gas	0.460	0.460	9.14	1137	0.04	2000	
Sn	118	1	No Gas	0.105	0.105	12.11	2170	0.00	2000	
Sb	121	1	No Gas	0.182	0.182	25.36	1907	0.01	2000	
Ba	137	1	No Gas	4609.556	4609.556	1.95	8326313	0.06	2000	>LDR
Tl	205	1	No Gas	-0.006	-0.006	-28.59	147	0.00	2000	
Tl	203	1	No Gas	-0.012	-0.012	-54.91	60	-0.02	2000	
Pb	208	1	No Gas	-0.015	-0.015	-11.25	940	0.00	2000	
U	238	1	No Gas	0.005	0.005	20.58	110	0.00	2000	
Ca	43	2	He	89872.003	89872.003	0.67	122647	73.28	200000	
Sb	121	2	He	0.155	0.155	18.53	1150	0.01	2000	
Ti	47	2	He	0.027	0.027	789.35	20	0.13	2000	
Cu	63	1	No Gas	1.776	1.776	4.34	13353	0.01	2000	
Zn	66	1	No Gas	41.480	41.480	1.98	64909	0.06	2000	
Se	82	1	No Gas	1.061	1.061	82.09	30	3.59	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	556579	0.90	563943	98.69	70	120	
Ge	72	2	He	342756	0.67	342251	100.15	70	120	
Ge	72	1	No Gas	907266	2.05	912893	99.38	70	120	
In	115	1	No Gas	1007126	1.63	1016161	99.11	70	120	
Bi	209	1	No Gas	793309	1.08	798101	99.40	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	143_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T17:02:55-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	No Gas	91.242	0.637	695470	0.41	100	91.2	90	110	
Be	9	1	No Gas	94.817	0.386	162536	0.93	100	94.8	90	110	
V	51	2	He	96.540	1.215	293684	0.69	100	96.5	90	110	
Cr	52	2	He	96.729	0.381	330807	1.62	100	96.7	90	110	
Fe	56	2	He	9594.167	1.698	30710901	0.66	10000	95.9	90	110	
Se	78	2	He	97.353	2.309	5484	0.63	100	97.4	90	110	
As	75	2	He	98.634	1.612	52811	0.60	100	98.6	90	110	
Ca	44	2	He	9833.183	0.384	223079	1.94	10000	98.3	90	110	
Na	23	2	He	9584.612	1.377	5958473	1.05	10000	95.8	90	110	
Mg	24	2	He	9816.136	1.884	3405297	0.67	10000	98.2	90	110	
K	39	2	He	9687.626	2.308	4344178	1.37	10000	96.9	90	110	
Mn	55	2	He	96.810	1.228	260313	0.35	100	96.8	90	110	
Co	59	2	He	98.030	0.845	476414	0.73	100	98.0	90	110	
Ni	60	2	He	96.508	1.361	119835	0.22	100	96.5	90	110	
Cu	63	2	He	96.870	1.671	321219	0.34	100	96.9	90	110	
Zn	66	2	He	96.350	1.655	67773	3.14	100	96.3	90	110	
Al	27	2	He	99.422	1.414	22542	1.27	100	99.4	90	110	
B	11	1	No Gas	457.200	3.128	358371	3.52	500	91.4	90	110	
Al	27	1	No Gas	98.200	0.855	668234	1.38	100	98.2	90	110	
Si	28	1	No Gas	483.883	0.862	1874028	1.29	5000	9.7	90	110	CCV Main CR1-2 Failed
Ag	107	1	No Gas	98.282	0.931	639249	1.29	100	98.3	90	110	
Cd	111	1	No Gas	98.883	0.570	125445	1.47	100	98.9	90	110	
Sr	88	1	No Gas	101.137	1.458	1287686	1.94	100	101.1	90	110	
Mo	95	1	No Gas	98.062	0.694	230612	0.43	100	98.1	90	110	
Sn	118	1	No Gas	99.736	0.972	369083	0.69	100	99.7	90	110	
Sb	121	1	No Gas	95.844	0.202	528480	0.73	100	95.8	90	110	
Ba	137	1	No Gas	102.324	1.172	183897	1.19	100	102.3	90	110	
Tl	205	1	No Gas	101.863	0.684	1078586	0.86	100	101.9	90	110	
Tl	203	1	No Gas	108.373	0.939	441126	0.32	100	108.4	90	110	
Pb	208	1	No Gas	94.090	0.626	1419175	1.21	100	94.1	90	110	
U	238	1	No Gas	102.602	1.805	1598932	2.47	100	102.6	90	110	
Ca	43	2	He	9622.180	4.596	12920	3.04	10000	96.2	90	110	
Sb	121	2	He	98.392	1.253	351720	0.37	100	98.4	90	110	
Ti	47	2	He	93.263	2.812	11689	1.50	100	93.3	90	110	
Cu	63	1	No Gas	91.628	0.143	527021	0.62	100	91.6	90	110	
Se	82	1	No Gas	96.041	1.986	7659	1.76	100	96.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	515643	0.70	563943	91.44	70	120	
Ge	72	2	He	336693	1.56	342251	98.38	70	120	
Ge	72	1	No Gas	884726	0.57	912893	96.91	70	120	
In	115	1	No Gas	1000529	1.12	1016161	98.46	70	120	
Bi	209	1	No Gas	804862	1.26	798101	100.85	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	144_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T17:04:48-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	-0.021	-280.2	27291	1.1	0.5	
Be	9	1	No Gas	-0.009	-81.9	22	58.1	0.5	
V	51	2	He	0.014	90.0	413	9.0	2.5	
Cr	52	2	He	-0.098	-20.8	1547	3.8	2.5	
Fe	56	2	He	1.598	9.2	28440	1.4	100	
Se	78	2	He	0.561	150.7	442	9.4	2	
As	75	2	He	-0.022	-190.9	67	32.8	2.5	
Ca	44	2	He	-24.705	-15.0	703	11.0	100	
Na	23	2	He	47.275	11.1	101538	2.5	100	
Mg	24	2	He	0.914	69.6	757	28.5	100	
K	39	2	He	-8.579	-17.6	100739	0.4	100	
Mn	55	2	He	0.029	74.6	527	10.5	2.5	
Co	59	2	He	0.000	6192.0	133	37.8	2.5	
Ni	60	2	He	-0.040	-49.4	107	21.7	2.5	
Cu	63	2	He	-0.263	-14.9	763	15.8	2	
Zn	66	2	He	0.161	31.5	667	4.6	2.5	
Al	27	2	He	-0.633	-77.9	443	23.9	5	
B	11	1	No Gas	24.568	11.9	29204	8.1	0.5	CCB Main CR1 Failed
Al	27	1	No Gas	-0.217	-25.3	12863	2.7	5	
Si	28	1	No Gas	-7.390	-10.9	249388	1.4	10	
Ag	107	1	No Gas	-0.060	-9.3	160	21.7	2.5	
Cd	111	1	No Gas	0.000	1982.9	7	86.6	1	
Sr	88	1	No Gas	0.007	134.6	710	15.7	2.5	
Mo	95	1	No Gas	0.035	38.2	127	24.1	2.5	
Sn	118	1	No Gas	0.073	62.5	1974	8.0	5	
Sb	121	1	No Gas	0.025	69.3	963	9.9	2.5	
Ba	137	1	No Gas	0.111	40.4	443	17.1	2.5	
Tl	205	1	No Gas	0.021	52.1	413	26.7	1	
Tl	203	1	No Gas	0.006	49.5	133	8.7	1	
Pb	208	1	No Gas	-0.031	-19.9	697	12.0	2.5	
U	238	1	No Gas	0.009	25.6	167	21.1	2.5	
Ca	43	2	He	1.187	1713.8	30	88.2	100	
Sb	121	2	He	0.003	409.8	567	8.0	2.5	
Ti	47	2	He	-0.076	-63.5	7	86.6	2.5	
Cu	63	1	No Gas	-0.277	-11.4	1230	14.3	2.5	
Se	82	1	No Gas	-0.255	-576.4	-74	-154.4	2	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	504100	0.61	563943	89.39	70	120	
Ge	72	2	He	323913	0.55	342251	94.64	70	120	
Ge	72	1	No Gas	854564	0.34	912893	93.61	70	120	
In	115	1	No Gas	968865	0.49	1016161	95.35	70	120	
Bi	209	1	No Gas	781144	1.00	798101	97.88	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	155_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T17:30:46-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	No Gas	95.077	2.659	764446	2.11	100	95.1	90	110	
Be	9	1	No Gas	94.137	0.987	170503	0.81	100	94.1	90	110	
V	51	2	He	99.237	1.831	292938	0.61	100	99.2	90	110	
Cr	52	2	He	98.061	2.102	325356	0.32	100	98.1	90	110	
Fe	56	2	He	9819.264	1.224	30503540	0.57	10000	98.2	90	110	
Se	78	2	He	99.032	4.438	5406	2.35	100	99.0	90	110	
As	75	2	He	100.335	1.945	52131	0.77	100	100.3	90	110	
Ca	44	2	He	10127.655	0.933	222907	0.94	10000	101.3	90	110	
Na	23	2	He	10603.435	1.291	6389066	0.50	10000	106.0	90	110	
Mg	24	2	He	10223.074	0.965	3442544	2.35	10000	102.2	90	110	
K	39	2	He	10142.697	1.775	4408955	0.05	10000	101.4	90	110	
Mn	55	2	He	99.554	1.410	259775	1.11	100	99.6	90	110	
Co	59	2	He	99.208	1.943	467838	0.43	100	99.2	90	110	
Ni	60	2	He	97.861	2.686	117912	1.67	100	97.9	90	110	
Cu	63	2	He	97.459	2.211	313592	0.44	100	97.5	90	110	
Zn	66	2	He	97.415	3.158	66459	1.58	100	97.4	90	110	
Al	27	2	He	104.762	1.172	23019	0.63	100	104.8	90	110	
B	11	1	No Gas	631.359	4.378	518283	3.87	500	126.3	90	110	CCV Main CR1-2 Failed
Al	27	1	No Gas	102.746	1.411	684465	0.27	100	102.7	90	110	
Si	28	1	No Gas	513.913	1.610	1933452	1.91	5000	10.3	90	110	CCV Main CR1-2 Failed
Ag	107	1	No Gas	99.232	0.708	617825	1.63	100	99.2	90	110	
Cd	111	1	No Gas	100.476	0.699	122002	0.54	100	100.5	90	110	
Sr	88	1	No Gas	103.723	2.065	1264253	3.23	100	103.7	90	110	
Mo	95	1	No Gas	98.726	0.363	222258	1.61	100	98.7	90	110	
Sn	118	1	No Gas	99.790	0.380	353511	1.59	100	99.8	90	110	
Sb	121	1	No Gas	93.728	0.726	506514	0.99	100	93.7	90	110	
Ba	137	1	No Gas	101.514	1.490	174655	2.38	100	101.5	90	110	
Tl	205	1	No Gas	101.294	1.665	1018824	1.86	100	101.3	90	110	
Tl	203	1	No Gas	106.781	1.370	412890	1.71	100	106.8	90	110	
Pb	208	1	No Gas	93.289	1.291	1336497	1.02	100	93.3	90	110	
U	238	1	No Gas	101.441	0.536	1501495	0.78	100	101.4	90	110	
Ca	43	2	He	10081.985	1.638	13143	2.88	10000	100.8	90	110	
Sb	121	2	He	97.440	1.742	338022	0.76	100	97.4	90	110	
Ti	47	2	He	99.048	1.395	12049	1.92	100	99.0	90	110	
Cu	63	1	No Gas	93.037	0.634	524413	1.23	100	93.0	90	110	
Se	82	1	No Gas	94.318	3.263	7369	2.06	100	94.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	544863	1.22	563943	96.62	70	120	
Ge	72	2	He	326753	1.78	342251	95.47	70	120	
Ge	72	1	No Gas	867130	1.65	912893	94.99	70	120	
In	115	1	No Gas	957719	1.24	1016161	94.25	70	120	
Bi	209	1	No Gas	764492	0.48	798101	95.79	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	156_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq Date Time	2023-01-03T17:32:38-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	011CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	0.200	16.0	31480	0.6	0.5	
Be	9	1	No Gas	-0.008	-39.9	27	21.7	0.5	
V	51	2	He	0.566	5.5	2026	3.2	2.5	
Cr	52	2	He	-0.026	-136.4	1783	5.1	2.5	
Fe	56	2	He	2.562	4.5	31400	2.3	100	
Se	78	2	He	0.833	39.7	455	2.4	2	
As	75	2	He	0.078	36.0	118	12.8	2.5	
Ca	44	2	He	-18.595	-34.6	837	17.5	100	
Na	23	2	He	287.880	0.9	243524	0.8	100	CCB Main CR1 Failed
Mg	24	2	He	2.759	28.0	1370	17.7	100	
K	39	2	He	26.809	9.3	115582	0.4	100	
Mn	55	2	He	0.073	17.7	640	5.6	2.5	
Co	59	2	He	-0.006	-139.9	107	35.5	2.5	
Ni	60	2	He	-0.034	-93.6	113	33.4	2.5	
Cu	63	2	He	-0.269	-10.5	747	12.4	2	
Zn	66	2	He	0.300	30.6	760	9.1	2.5	
Al	27	2	He	-0.584	-39.6	453	10.9	5	
B	11	1	No Gas	172.701	4.4	151723	4.7	0.5	CCB Main CR1 Failed
Al	27	1	No Gas	-0.021	-378.1	14211	3.8	5	
Si	28	1	No Gas	-9.192	-13.6	245254	1.8	10	
Ag	107	1	No Gas	-0.043	-7.7	267	7.8	2.5	
Cd	111	1	No Gas	0.017	56.8	27	43.3	1	
Sr	88	1	No Gas	0.115	37.7	2047	26.0	2.5	
Mo	95	1	No Gas	0.042	26.5	143	17.6	2.5	
Sn	118	1	No Gas	0.001	307.4	1717	0.3	5	
Sb	121	1	No Gas	0.010	145.3	887	8.0	2.5	
Ba	137	1	No Gas	0.124	9.6	467	4.5	2.5	
Tl	205	1	No Gas	0.021	43.5	410	23.3	1	
Tl	203	1	No Gas	0.016	61.3	167	21.1	1	
Pb	208	1	No Gas	-0.024	-19.1	777	10.4	2.5	
U	238	1	No Gas	0.016	20.8	260	16.8	2.5	
Ca	43	2	He	19.476	63.8	53	28.6	100	
Sb	121	2	He	0.004	421.8	570	11.5	2.5	
Ti	47	2	He	0.035	240.3	20	50.0	2.5	
Cu	63	1	No Gas	-0.154	-2.8	1920	1.6	2.5	
Se	82	1	No Gas	0.265	97.8	-34	-60.6	2	

QC ISTD Table

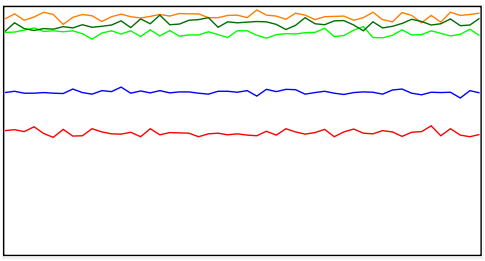
Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	549579	0.89	563943	97.45	70	120	
Ge	72	2	He	323807	1.27	342251	94.61	70	120	
Ge	72	1	No Gas	860163	0.84	912893	94.22	70	120	
In	115	1	No Gas	969506	0.13	1016161	95.41	70	120	
Bi	209	1	No Gas	766093	1.94	798101	95.99	70	120	

Tune Check Report

Operator Name	ALSHS NoUser
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\010323A.b
Acq. Date-Time	01/03/2023 09:45:15
Report Comment	---
Instrument Name	G8422A SG22121190

[No Gas]

Sensitivity



Sampling Period [sec]	0.514
Integration Time [sec]	0.1

Mass	Range	Count	Resp [cps/(ug/l)]	Resp (Required) [cps/(ug/l)]	Resp (Flag)
9	5000	2462	24621.57		
24	10000	8967	89666.84		
59	20000	13143	131433.98		
115	20000	19298	192975.33		
208	10000	9340	93401.49		

Mass	Resp Ratio	Resp Ratio (Required)	Resp Ratio (Flag)
9		-	
24		-	
59		-	
115		-	
208		-	

Mass	RSD%	RSD% (Required)	RSD% (Flag)
9	2.311	5.000	
24	1.321	5.000	
59	1.156	5.000	
115	1.277	5.000	
208	1.636	5.000	

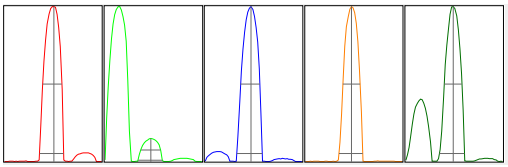
Mass	Background	Background (Required)	Background (Flag)
9	0.900		
24	0.800		
59	0.400		
115	1.400		
208	2.900		

Oxide/Doubly Charged Ratio

Oxide	156 / 140 0.499 %
Doubly Charged	70 / 140 1.110 %

Tune Check Report

Resolution/Axis



Integration Time [sec]	0.1
Acquisition Time [sec]	37.4
Y Axis	Linear

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	2437.94	9.05	8.90 - 9.10	
24	9018.41	23.95	23.90 - 24.10	
59	13594.11	58.95	58.90 - 59.10	
115	19501.95	114.95	114.90 - 115.10	
208	9384.78	208.00	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.58	0.736		
24	0.60	0.742		
59	0.59	0.777		
115	0.52	0.724		
208	0.54	0.764		

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.78 L/min	Dilution Gas	0.25 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.9 V	Deflect	13.0 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-75 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9993	QP Bias	-3.0 V
Mass Offset	126	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	-0.2 mm	Torch V	-0.2 mm

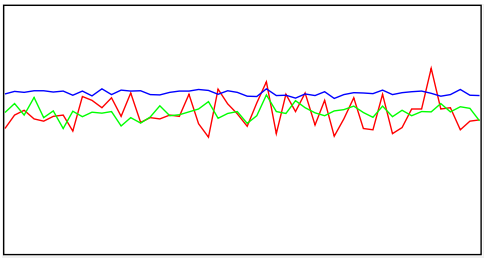
EM

Discriminator	4.5 mV	Analog HV	2161 V	Pulse HV	1203 V

[He]

Tune Check Report

Sensitivity



Sampling Period [sec] 0.306
Integration Time [sec] 0.1

Mass	Range	Count	Resp [cps/(ug/l)]	Resp (Required) [cps/(ug/l)]	Resp (Flag)
9	200	114	1140.45		
24	1000	572	5715.17		
59	10000	6498	64976.82		

Mass	Resp Ratio	Resp Ratio (Required)	Resp Ratio (Flag)
9		-	
24		-	
59		-	

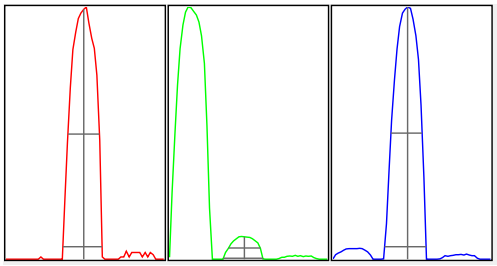
Mass	RSD%	RSD% (Required)	RSD% (Flag)
9	10.756	5.000	Fail
24	4.712	5.000	
59	1.493	5.000	

Mass	Background	Background (Required)	Background (Flag)
9	0.300		
24	0.100		
59	0.200		

Oxide/Doubly Charged Ratio

Oxide 156 / 140 0.335 %
Doubly Charged 70 / 140 0.938 %

Resolution/Axis



Integration Time [sec] 0.1
Acquisition Time [sec] 22.24
Y Axis Linear

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	111.51	9.00	8.90 - 9.10	
24	578.89	23.95	23.90 - 24.10	
59	6490.63	58.95	58.90 - 59.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.59	0.735		
24	0.60	0.739		

Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
59	0.58	0.775		

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.78 L/min	Dilution Gas	0.25 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.9 V	Deflect	0.6 V
Extract 2	-200.0 V	Cell Entrance	-40 V	Plate Bias	-60 V
Omega Bias	-80 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	3.0 V
He Flow	3.6 mL/min	OctP Bias	-18.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9993	QP Bias	-15.0 V
Mass Offset	126	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	-0.2 mm	Torch V	-0.2 mm

EM

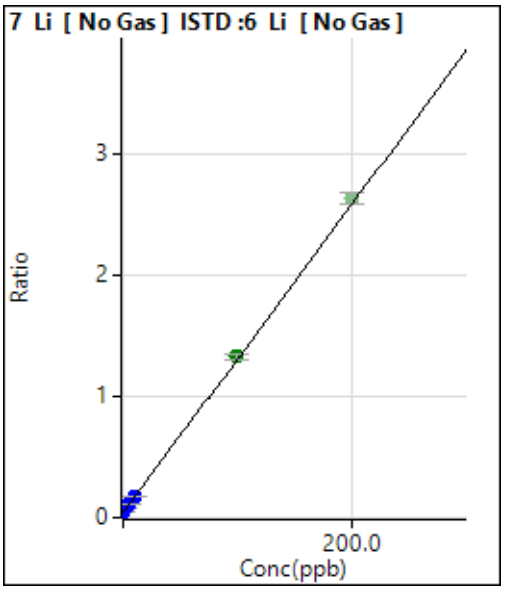
Discriminator	4.5 mV	Analog HV	2161 V	Pulse HV	1203 V

Calibration for 021_ICV.d

Batch Folder: D:\Agilent\ICPMH\1\DATA\010423A.b\
Analysis File: 010423A.batch.bin
DA Date-Time: 01/04/2023 17:26:02
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	009CALB.d	CAL BLK	01/04/2023 10:45:49
2	010CALS.d	2/10/200	01/04/2023 10:47:44
3	011CALS.d	5/25/500	01/04/2023 10:49:39
4	012CALS.d	10/50/100	01/04/2023 10:51:33
5	013CALS.d	100/500/10K	01/04/2023 10:53:27
6	014CALS.d	200/1000/20K	01/04/2023 10:55:19

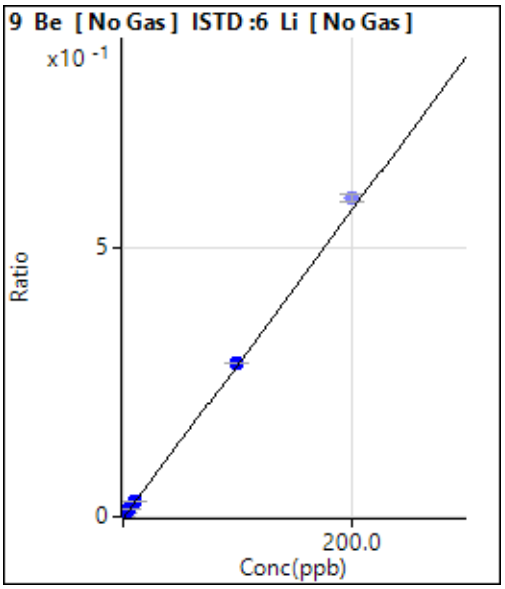
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	33299.50	0.0547	P	2.0	
2	☐	2.000	1.927	47802.74	0.0791	P	1.3	-3.6
3	☐	5.000	4.786	69736.83	0.1153	P	0.4	-4.3
4	☐	10.000	9.558	104997.59	0.1758	P	0.3	-4.4
5	☐	100.000	100.056	789755.17	1.3223	A	2.6	0.1
6	☑	200.000		1489321.28	2.6281	A	3.1	

y = 0.0127 * x + 0.0547
R = 1.0000
DL = 0.2615 ppb
BEC = 4.315 ppb

Weight: <None>
Min Conc: <None>

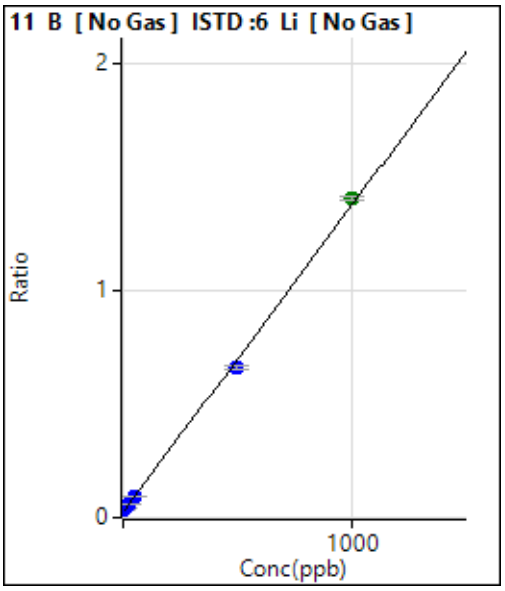


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	31.67	0.0001	P	24.2	
2	☐	2.000	2.032	3535.48	0.0058	P	8.0	1.6
3	☐	5.000	5.061	8764.45	0.0145	P	4.5	1.2
4	☐	10.000	10.093	17228.97	0.0288	P	1.0	0.9
5	☐	100.000	99.987	170372.39	0.2853	P	0.4	0.0
6	☑	200.000		335208.08	0.5914	P	2.2	

y = 0.0029 * x + 5.1995E-005
R = 1.0000
DL = 0.01322 ppb
BEC = 0.01823 ppb

Weight: <None>
Min Conc: <None>

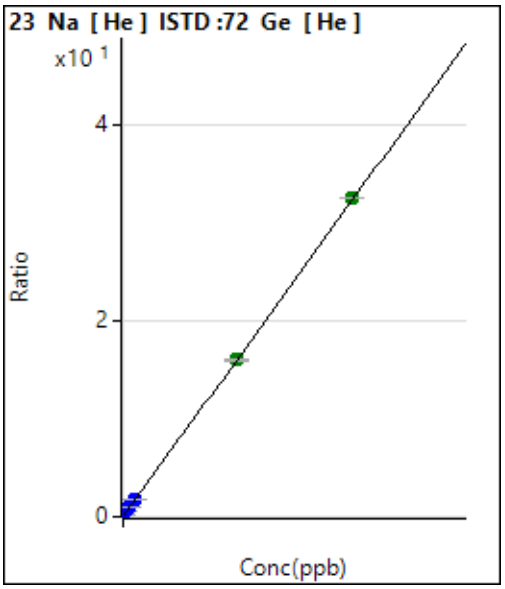
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	19325.04	0.0317	P	1.6	
2	☐	10.000	7.872	25593.36	0.0423	P	0.9	-21.3
3	☐	25.000	22.118	37232.68	0.0616	P	0.8	-11.5
4	☐	50.000	45.935	55966.15	0.0937	P	0.6	-8.1
5	☐	500.000	464.698	393308.81	0.6585	P	2.2	-7.1
6	☐	1000.000	1017.948	796382.38	1.4048	A	1.2	1.8

y = 0.0013 * x + 0.0317
R = 0.9992
DL = 1.163 ppb
BEC = 23.52 ppb

Weight: <None>
Min Conc: <None>

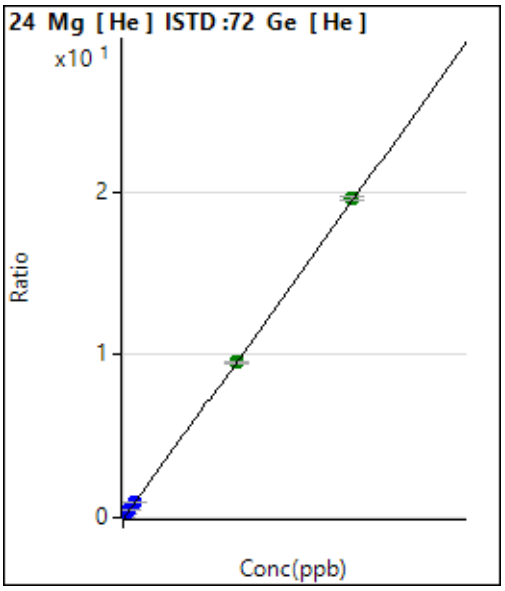


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	75637.52	0.2047	P	0.4	
2	☐	200.000	201.872	196244.89	0.5300	P	1.0	0.9
3	☐	500.000	514.508	380625.74	1.0338	P	1.0	2.9
4	☐	1000.000	1021.841	680851.50	1.8513	P	0.4	2.2
5	☐	10000.00	9819.334	5994494.50	16.0271	A	1.7	-1.8
6	☐	20000.00	20088.85	11637905.6	32.5749	A	0.2	0.4

y = 0.0016 * x + 0.2047
R = 0.9999
DL = 1.686 ppb
BEC = 127 ppb

Weight: <None>
Min Conc: <None>

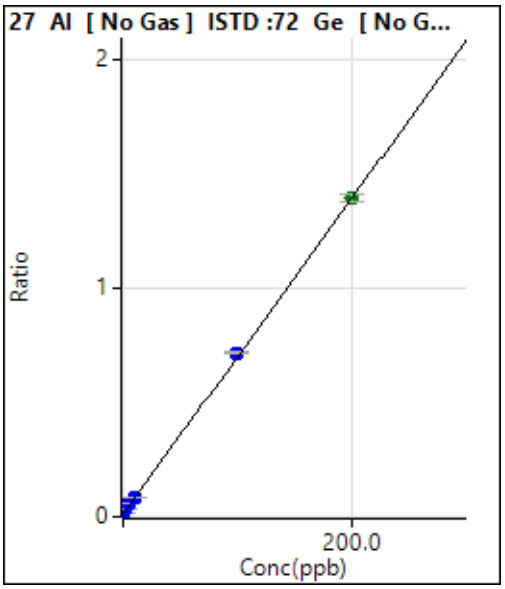
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	540.02	0.0015	P	16.1	
2	☐	200.000	197.385	71731.02	0.1937	P	0.6	-1.3
3	☐	500.000	507.845	182683.22	0.4961	P	0.9	1.6
4	☐	1000.000	1006.496	361096.74	0.9818	P	0.9	0.6
5	☐	10000.00	9774.373	3561619.22	9.5223	A	1.4	-2.3
6	☐	20000.00	20112.31	6999428.44	19.5921	A	1.4	0.6

y = 9.7406E-004 * x + 0.0015
R = 0.9999
DL = 0.7234 ppb
BEC = 1.5 ppb

Weight: <None>
Min Conc: <None>

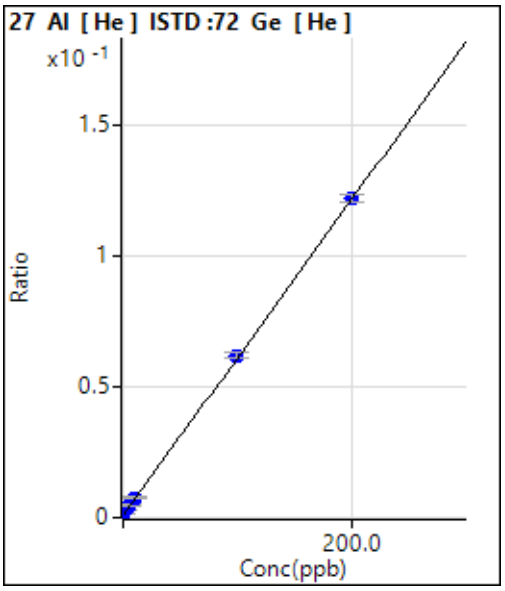


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	18743.34	0.0192	P	5.8	
2	☐	2.000	2.461	35231.53	0.0362	P	1.6	23.0
3	☐	5.000	5.313	55366.91	0.0559	P	1.5	6.3
4	☐	10.000	9.732	83060.93	0.0864	P	1.9	-2.7
5	☐	100.000	101.171	704707.23	0.7177	P	0.9	1.2
6	☐	200.000	199.415	1323731.07	1.3959	A	2.0	-0.3

y = 0.0069 * x + 0.0192
R = 1.0000
DL = 0.4819 ppb
BEC = 2.783 ppb

Weight: <None>
Min Conc: <None>

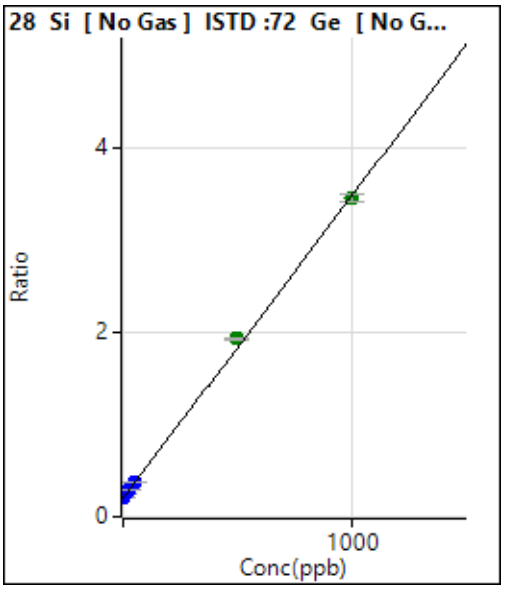
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	566.69	0.0015	P	17.0	
2	☐	2.000	2.725	1176.73	0.0032	P	6.6	36.2
3	☐	5.000	5.333	1750.15	0.0048	P	15.1	6.7
4	☐	10.000	10.103	2807.00	0.0076	P	10.6	1.0
5	☐	100.000	100.399	23246.35	0.0622	P	3.2	0.4
6	☐	200.000	199.780	43642.23	0.1222	P	1.8	-0.1

y = 6.0379E-004 * x + 0.0015
R = 1.0000
DL = 1.291 ppb
BEC = 2.539 ppb

Weight: <None>
Min Conc: <None>

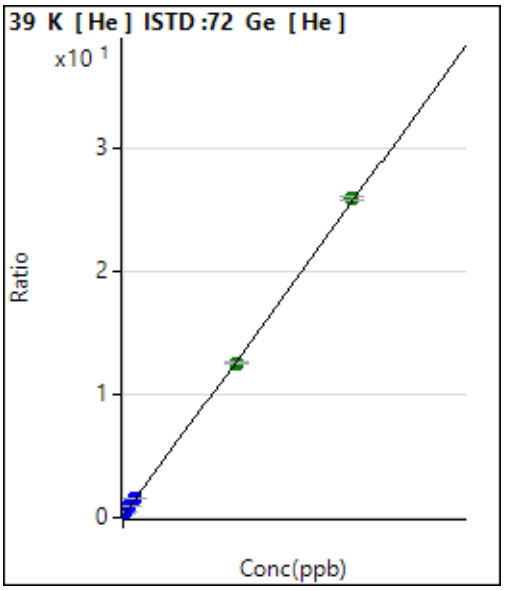


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	213213.46	0.2185	P	0.4	
2	☐	10.000	10.232	245416.79	0.2522	P	0.9	2.3
3	☐	25.000	23.262	292240.27	0.2950	P	1.1	-7.0
4	☐	50.000	49.685	367200.46	0.3819	P	1.0	-0.6
5	☐	500.000	523.553	1904647.37	1.9396	A	1.2	4.7
6	☐	1000.000	988.281	3287923.91	3.4673	A	1.8	-1.2

y = 0.0033 * x + 0.2185
R = 0.9996
DL = 0.7428 ppb
BEC = 66.48 ppb

Weight: <None>
Min Conc: <None>

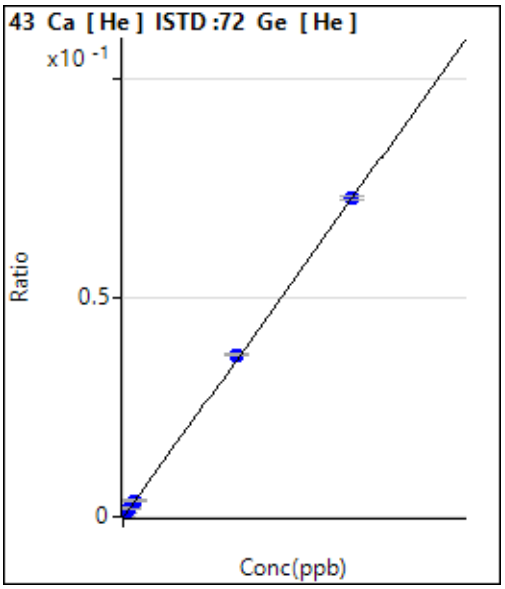
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	99399.80	0.2690	P	1.5	
2	☐	200.000	191.465	189888.26	0.5128	P	0.9	-4.3
3	☐	500.000	496.532	331858.06	0.9013	P	1.2	-0.7
4	☐	1000.000	996.792	565761.74	1.5383	P	0.9	-0.3
5	☐	10000.00	9665.670	4704481.91	12.5772	A	1.1	-3.3
6	☐	20000.00	20167.49	9270958.82	25.9501	A	0.9	0.8

y = 0.0013 * x + 0.2690
R = 0.9998
DL = 9.338 ppb
BEC = 211.3 ppb

Weight: <None>
Min Conc: <None>

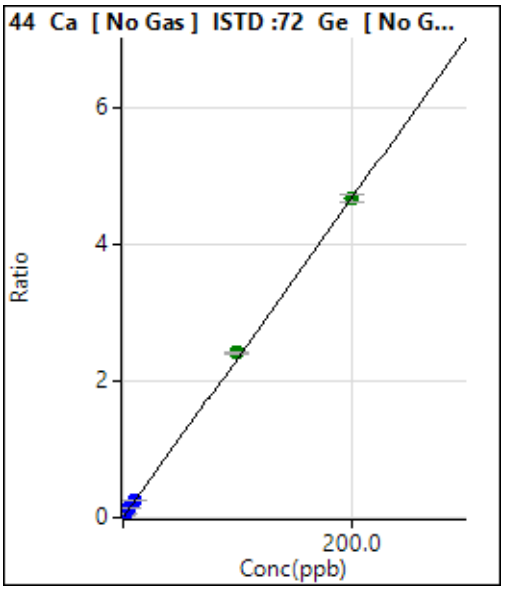


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	43.33	0.0001	P	13.5	
2	☐	200.000	170.778	273.34	0.0007	P	14.1	-14.6
3	☐	500.000	487.698	696.70	0.0019	P	11.5	-2.5
4	☐	1000.000	957.483	1323.42	0.0036	P	9.7	-4.3
5	☐	10000.00	10105.20	13790.50	0.0369	P	1.6	1.1
6	☐	20000.00	19950.12	25964.79	0.0727	P	1.6	-0.2

y = 3.6370E-006 * x + 1.1730E-004
R = 1.0000
DL = 13.03 ppb
BEC = 32.25 ppb

Weight: <None>
Min Conc: <None>

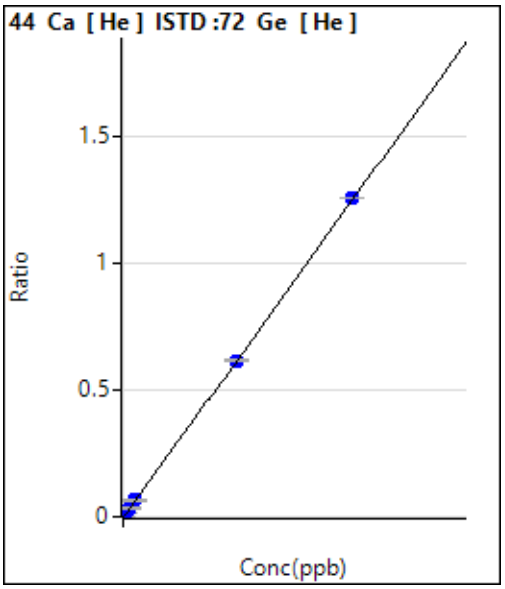
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	23413.61	0.0240	P	0.4	
2	☐	2.000	1.951	67672.88	0.0695	P	0.6	-2.5
3	☐	5.000	4.942	138037.74	0.1394	P	1.9	-1.2
4	☐	10.000	9.990	247258.11	0.2572	P	2.4	-0.1
5	☐	100.000	102.037	2362265.80	2.4058	A	1.6	2.0
6	☐	200.000	198.984	4427295.56	4.6687	A	1.8	-0.5

y = 0.0233 * x + 0.0240
R = 0.9999
DL = 0.01356 ppb
BEC = 1.028 ppb

Weight: <None>
Min Conc: <None>

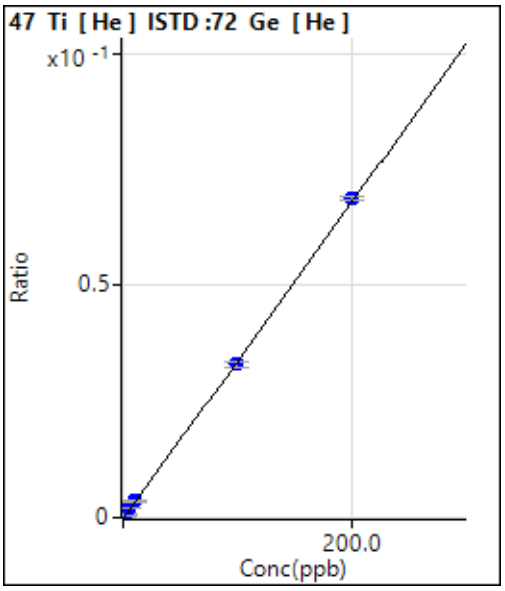


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	756.70	0.0020	P	6.4	
2	☐	200.000	191.348	5191.08	0.0140	P	1.1	-4.3
3	☐	500.000	506.141	12412.53	0.0337	P	3.4	1.2
4	☐	1000.000	1015.885	24128.14	0.0656	P	4.2	1.6
5	☐	10000.00	9822.038	230638.84	0.6166	P	1.0	-1.8
6	☐	20000.00	20088.12	449770.45	1.2589	P	0.4	0.4

y = 6.2568E-005 * x + 0.0020
R = 0.9999
DL = 6.242 ppb
BEC = 32.73 ppb

Weight: <None>
Min Conc: <None>

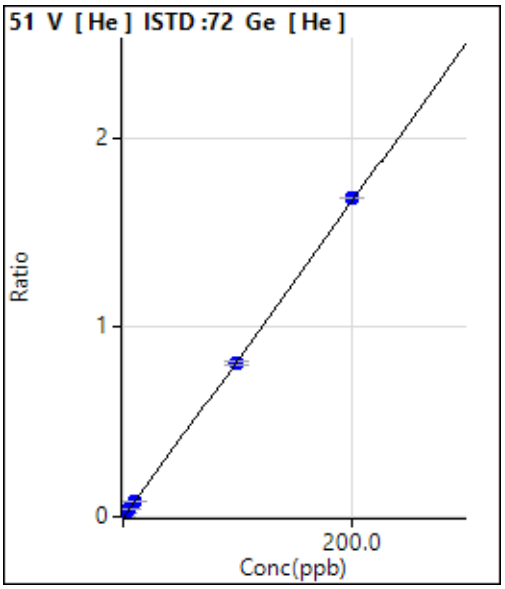
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	23.33	0.0001	P	25.0	
2	☐	2.000	1.873	260.01	0.0007	P	23.7	-6.3
3	☐	5.000	5.599	726.70	0.0020	P	7.6	12.0
4	☐	10.000	10.359	1323.42	0.0036	P	5.6	3.6
5	☐	100.000	96.804	12382.47	0.0331	P	3.3	-3.2
6	☐	200.000	201.566	24602.45	0.0689	P	0.7	0.8

y = 3.4133E-004 * x + 6.3175E-005
R = 0.9998
DL = 0.1387 ppb
BEC = 0.1851 ppb

Weight: <None>
Min Conc: <None>

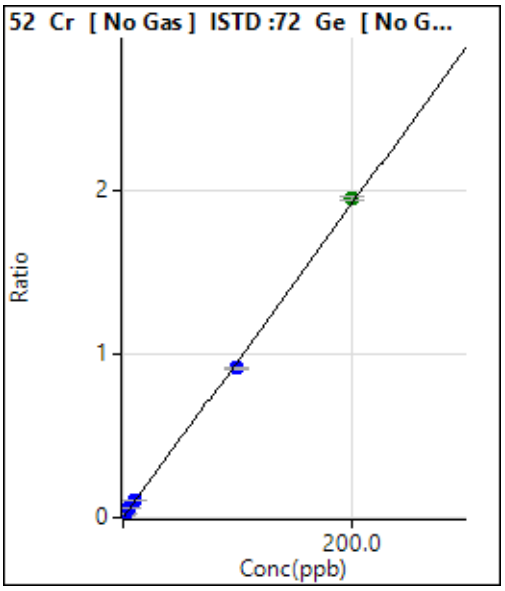


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	313.34	0.0008	P	11.9	
2	☐	2.000	1.982	6443.76	0.0174	P	2.0	-0.9
3	☐	5.000	4.933	15481.02	0.0421	P	3.6	-1.3
4	☐	10.000	9.826	30496.18	0.0829	P	0.8	-1.7
5	☐	100.000	97.089	303635.44	0.8118	P	1.4	-2.9
6	☐	200.000	201.466	601502.42	1.6836	P	0.5	0.7

y = 0.0084 * x + 8.4785E-004
R = 0.9999
DL = 0.03631 ppb
BEC = 0.1015 ppb

Weight: <None>
Min Conc: <None>

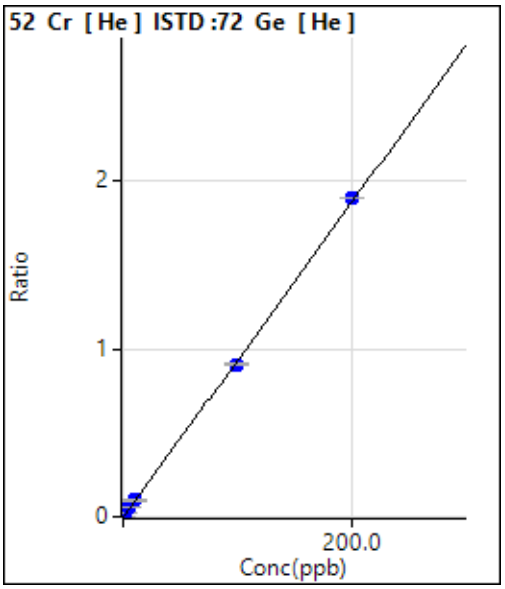
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	9877.05	0.0101	P	2.7	
2	☐	2.000	1.941	27978.85	0.0287	P	1.8	-3.0
3	☐	5.000	4.888	56497.01	0.0570	P	1.2	-2.2
4	☐	10.000	9.718	99396.29	0.1034	P	2.1	-2.8
5	☐	100.000	94.628	901669.18	0.9182	P	1.3	-5.4
6	☐	200.000	202.703	1854238.77	1.9554	A	1.7	1.4

y = 0.0096 * x + 0.0101
R = 0.9995
DL = 0.08433 ppb
BEC = 1.055 ppb

Weight: <None>
Min Conc: <None>

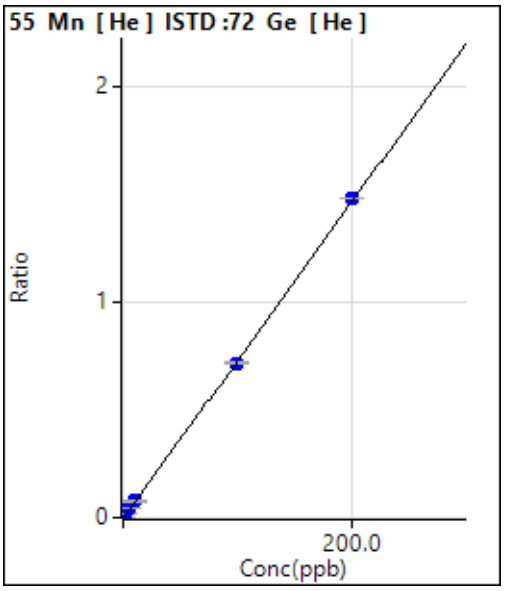


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	2000.19	0.0054	P	0.2	
2	☐	2.000	1.877	8519.46	0.0230	P	3.8	-6.2
3	☐	5.000	5.010	19283.94	0.0524	P	2.2	0.2
4	☐	10.000	9.854	35967.40	0.0978	P	3.1	-1.5
5	☐	100.000	96.105	338995.48	0.9063	P	1.0	-3.9
6	☐	200.000	201.956	678289.05	1.8986	P	0.4	1.0

y = 0.0094 * x + 0.0054
R = 0.9997
DL = 0.003915 ppb
BEC = 0.5775 ppb

Weight: <None>
Min Conc: <None>

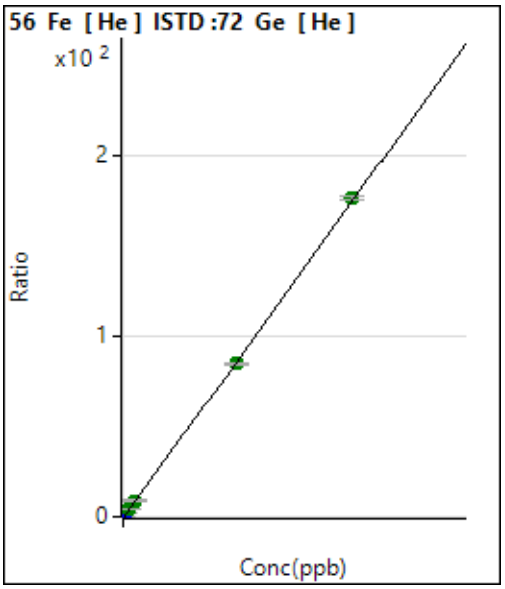
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1446.77	0.0039	P	10.5	
2	☐	2.000	1.934	6715.12	0.0181	P	3.2	-3.3
3	☐	5.000	5.038	15081.94	0.0410	P	3.2	0.8
4	☐	10.000	9.827	28009.08	0.0762	P	1.3	-1.7
5	☐	100.000	97.181	268665.20	0.7183	P	1.8	-2.8
6	☐	200.000	201.418	530390.77	1.4846	P	0.2	0.7

y = 0.0074 * x + 0.0039
R = 0.9999
DL = 0.1678 ppb
BEC = 0.5328 ppb

Weight: <None>
Min Conc: <None>

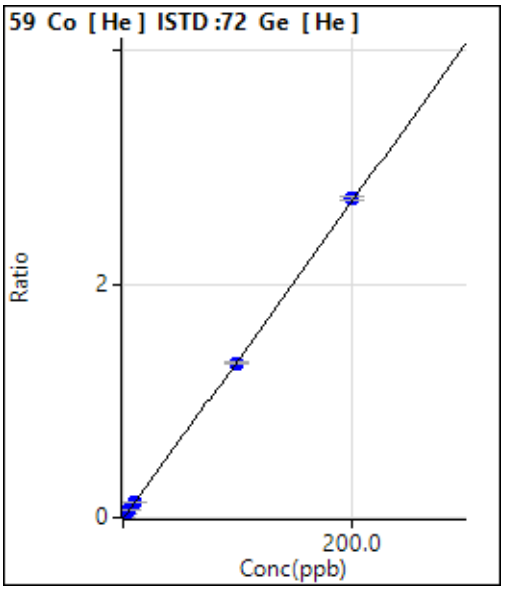


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	32218.16	0.0872	P	0.9	
2	☐	200.000	200.029	681458.17	1.8404	P	1.4	0.0
3	☐	500.000	522.911	1719682.58	4.6705	A	2.5	4.6
4	☐	1000.000	1022.150	3326909.12	9.0463	A	1.3	2.2
5	☐	10000.00	9694.460	31814361.2	85.0584	A	1.3	-3.1
6	☐	20000.00	20151.08	63131174.0	176.709	A	1.3	0.8

y = 0.0088 * x + 0.0872
R = 0.9998
DL = 0.2643 ppb
BEC = 9.949 ppb

Weight: <None>
Min Conc: <None>

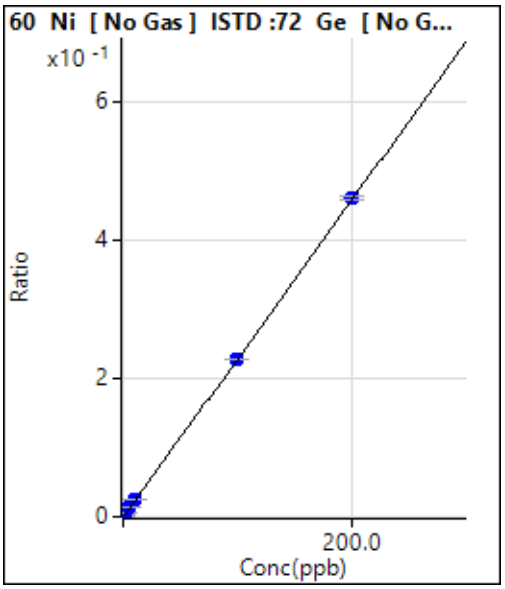
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	823.38	0.0022	P	12.5	
2	☐	2.000	1.863	10194.01	0.0275	P	3.3	-6.9
3	☐	5.000	5.047	26061.94	0.0708	P	2.0	0.9
4	☐	10.000	9.975	50654.45	0.1377	P	0.7	-0.3
5	☐	100.000	97.458	495976.17	1.3261	P	1.8	-2.5
6	☐	200.000	201.272	977570.48	2.7363	P	0.9	0.6

y = 0.0136 * x + 0.0022
R = 0.9999
DL = 0.06158 ppb
BEC = 0.1641 ppb

Weight: <None>
Min Conc: <None>

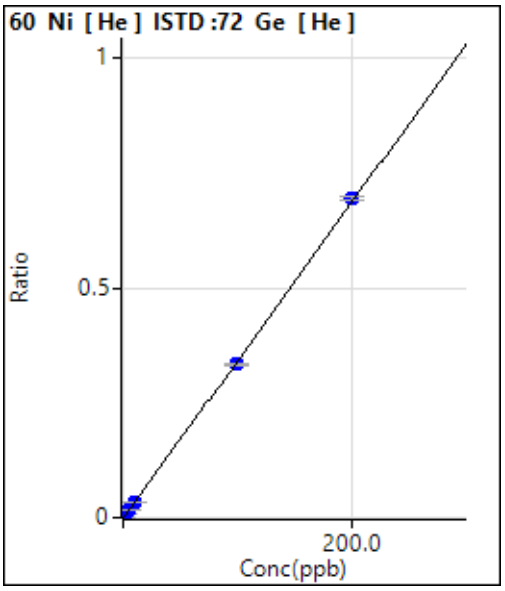


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1383.43	0.0014	P	4.8	
2	☐	2.000	2.007	5864.70	0.0060	P	11.6	0.4
3	☐	5.000	5.205	13246.67	0.0134	P	4.6	4.1
4	☐	10.000	10.097	23654.28	0.0246	P	1.2	1.0
5	☐	100.000	99.074	224802.08	0.2289	P	0.4	-0.9
6	☐	200.000	200.453	437820.63	0.4617	P	1.5	0.2

y = 0.0023 * x + 0.0014
R = 1.0000
DL = 0.08857 ppb
BEC = 0.6174 ppb

Weight: <None>
Min Conc: <None>

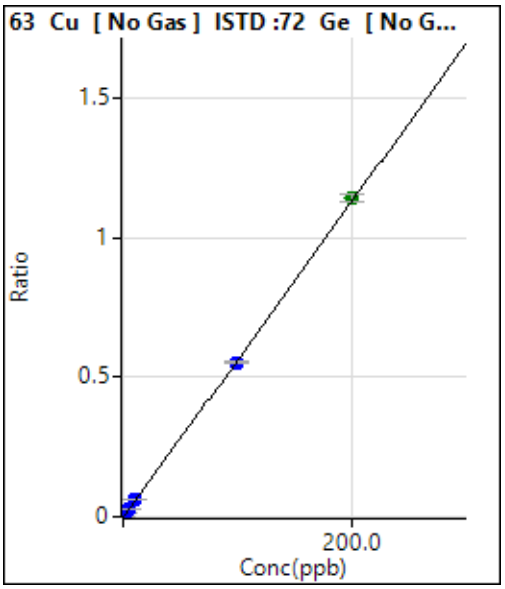
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	643.36	0.0017	P	13.5	
2	☐	2.000	1.836	2980.38	0.0080	P	2.1	-8.2
3	☐	5.000	4.899	6838.52	0.0186	P	0.6	-2.0
4	☐	10.000	9.665	12852.96	0.0349	P	2.7	-3.4
5	☐	100.000	96.592	124778.31	0.3336	P	1.2	-3.4
6	☐	200.000	201.725	248224.08	0.6948	P	0.8	0.9

y = 0.0034 * x + 0.0017
R = 0.9998
DL = 0.2057 ppb
BEC = 0.507 ppb

Weight: <None>
Min Conc: <None>

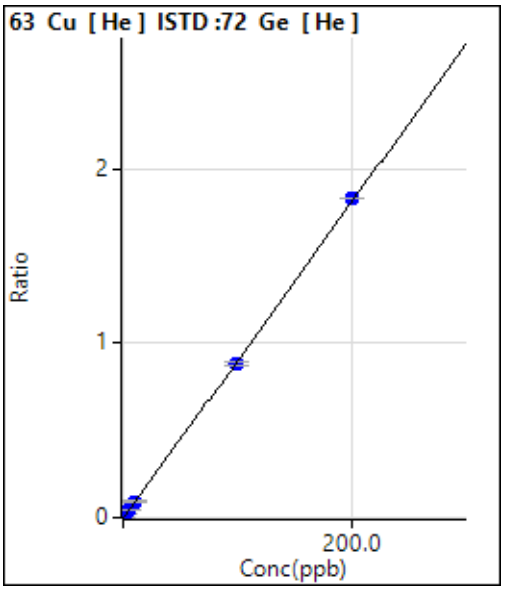


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	2506.94	0.0026	P	2.7	
2	☐	2.000	1.961	13310.05	0.0137	P	1.9	-2.0
3	☐	5.000	4.985	30528.03	0.0308	P	0.9	-0.3
4	☐	10.000	10.091	57431.48	0.0597	P	1.8	0.9
5	☐	100.000	97.253	543577.72	0.5535	P	0.6	-2.7
6	☐	200.000	201.370	1084257.48	1.1434	A	2.6	0.7

y = 0.0057 * x + 0.0026
R = 0.9999
DL = 0.03662 ppb
BEC = 0.4536 ppb

Weight: <None>
Min Conc: <None>

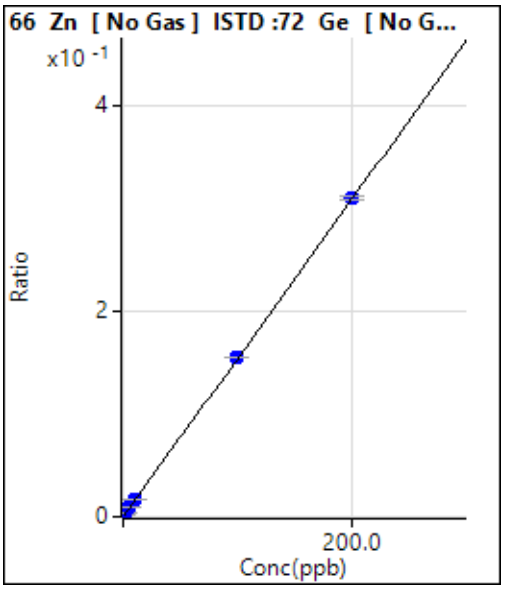
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1403.43	0.0038	P	14.6	
2	☐	2.000	1.982	8062.53	0.0218	P	4.7	-0.9
3	☐	5.000	4.979	18025.54	0.0490	P	1.6	-0.4
4	☐	10.000	9.780	34016.17	0.0925	P	3.7	-2.2
5	☐	100.000	97.098	330790.41	0.8844	P	2.0	-2.9
6	☐	200.000	201.463	654152.69	1.8310	P	0.4	0.7

y = 0.0091 * x + 0.0038
R = 0.9999
DL = 0.1829 ppb
BEC = 0.4187 ppb

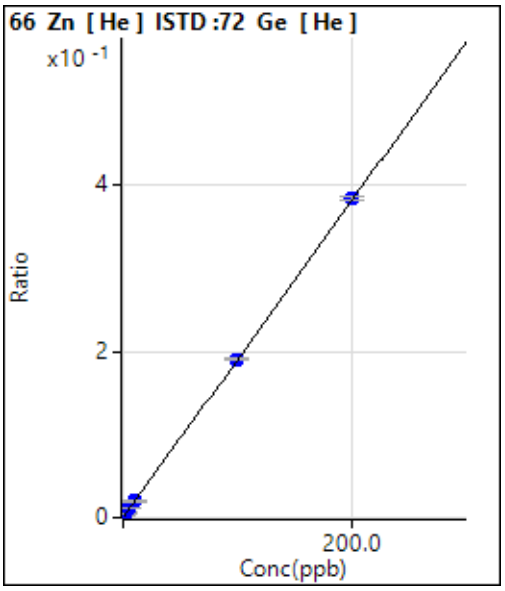
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1473.44	0.0015	P	4.7	
2	☐	2.000	2.019	4500.84	0.0046	P	1.6	0.9
3	☐	5.000	5.152	9373.41	0.0095	P	3.9	3.0
4	☐	10.000	10.047	16360.16	0.0170	P	2.1	0.5
5	☐	100.000	99.915	152878.06	0.1557	P	0.1	-0.1
6	☐	200.000	200.036	294147.03	0.3102	P	0.9	0.0

y = 0.0015 * x + 0.0015
R = 1.0000
DL = 0.137 ppb
BEC = 0.9786 ppb

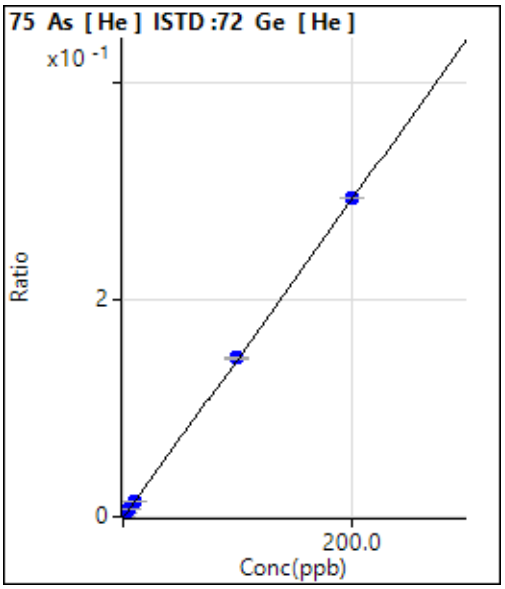
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	766.71	0.0021	P	14.1	
2	☐	2.000	1.879	2093.54	0.0057	P	9.8	-6.0
3	☐	5.000	4.985	4260.74	0.0116	P	5.0	-0.3
4	☐	10.000	9.395	7342.13	0.0200	P	4.0	-6.1
5	☐	100.000	98.952	71263.86	0.1905	P	1.7	-1.0
6	☐	200.000	200.556	137188.54	0.3840	P	1.3	0.3

y = 0.0019 * x + 0.0021
R = 1.0000
DL = 0.4616 ppb
BEC = 1.09 ppb

Weight: <None>
Min Conc: <None>

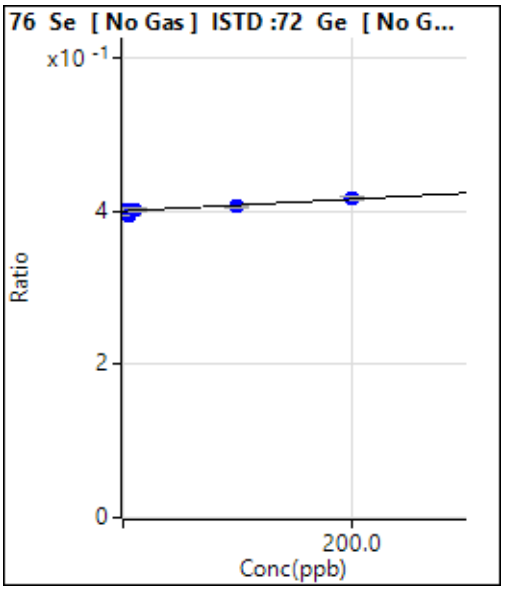


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	103.33	0.0003	P	15.0	
2	☐	2.000	1.997	1190.06	0.0032	P	5.1	-0.2
3	☐	5.000	4.990	2802.53	0.0076	P	3.7	-0.2
4	☐	10.000	9.884	5444.45	0.0148	P	0.7	-1.2
5	☐	100.000	99.718	54915.57	0.1468	P	1.1	-0.3
6	☐	200.000	200.147	105178.46	0.2944	P	0.3	0.1

y = 0.0015 * x + 2.7974E-004
R = 1.0000
DL = 0.08568 ppb
BEC = 0.1904 ppb

Weight: <None>
Min Conc: <None>

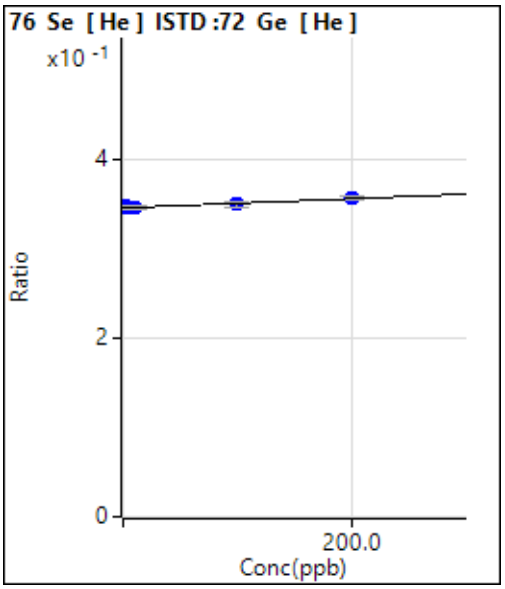
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	390941.26	0.4007	P	0.4	
2	☐	2.000	18.711	391399.47	0.4022	P	0.4	835.5
3	☐	5.000	-75.848	391053.33	0.3947	P	0.5	-1617.
4	☐	10.000	32.229	387707.09	0.4032	P	1.1	222.3
5	☐	100.000	76.673	399387.91	0.4067	P	0.9	-23.3
6	☐	200.000	212.406	395835.24	0.4174	P	1.1	6.2

y = 7.8700E-005 * x + 0.4007
R = 0.9181
DL = 60.92 ppb
BEC = 5091 ppb

Weight: <None>
Min Conc: <None>

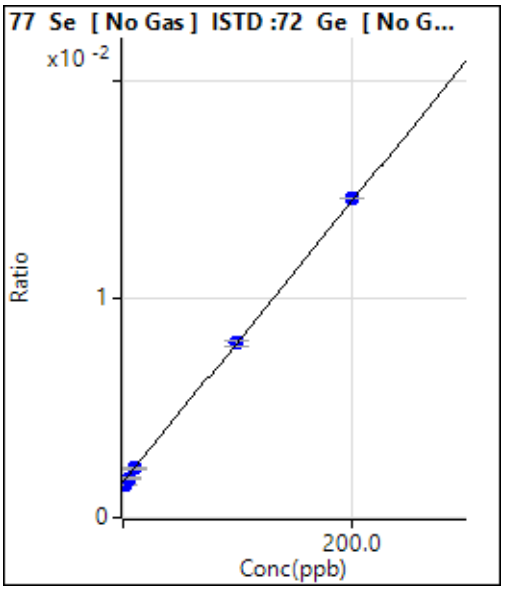


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	127818.91	0.3459	P	1.2	
2	☐	2.000	39.682	128851.73	0.3480	P	0.6	1884.1
3	☐	5.000	-5.602	127268.49	0.3457	P	1.1	-212.0
4	☐	10.000	8.227	127388.59	0.3464	P	0.9	-17.7
5	☐	100.000	71.640	130777.12	0.3497	P	1.7	-28.4
6	☐	200.000	214.157	127559.39	0.3570	P	0.9	7.1

y = 5.1833E-005 * x + 0.3459
R = 0.9632
DL = 237.8 ppb
BEC = 6674 ppb

Weight: <None>
Min Conc: <None>

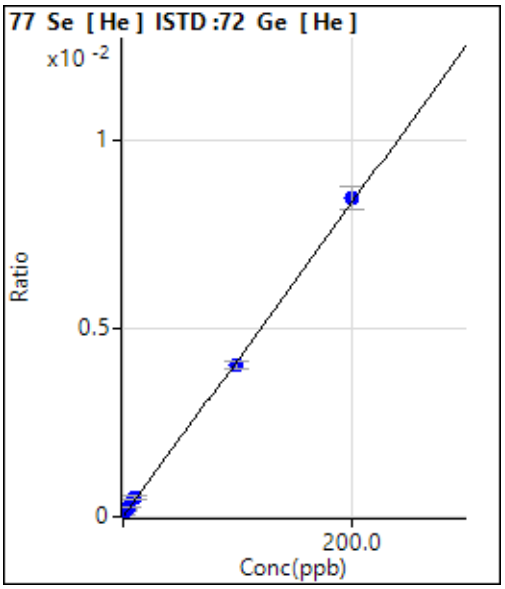
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1660.14	0.0017	P	9.7	
2	☐	2.000	-3.249	1453.44	0.0015	P	2.0	-262.4
3	☐	5.000	1.494	1780.16	0.0018	P	9.0	-70.1
4	☐	10.000	8.675	2170.22	0.0023	P	3.3	-13.2
5	☐	100.000	97.966	7835.75	0.0080	P	3.5	-2.0
6	☐	200.000	201.224	13844.02	0.0146	P	0.5	0.6

y = 6.4088E-005 * x + 0.0017
R = 0.9997
DL = 7.716 ppb
BEC = 26.55 ppb

Weight: <None>
Min Conc: <None>

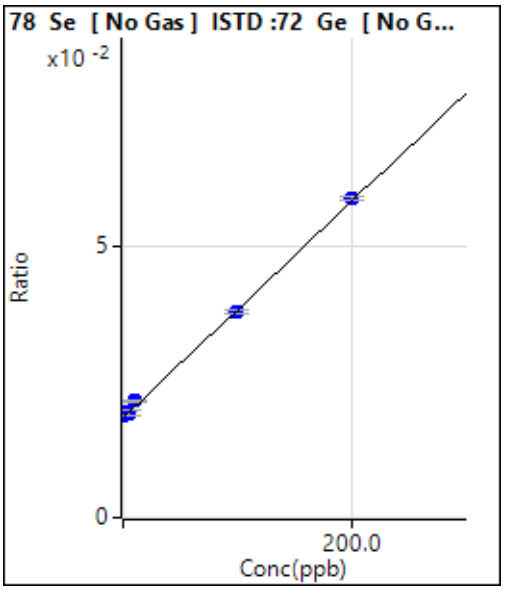


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	16.67	0.0000	P	34.5	
2	☐	2.000	3.026	63.33	0.0002	P	33.1	51.3
3	☐	5.000	4.999	93.33	0.0003	P	11.6	0.0
4	☐	10.000	11.317	190.00	0.0005	P	13.6	13.2
5	☐	100.000	95.592	1506.78	0.0040	P	6.1	-4.4
6	☐	200.000	202.128	3023.72	0.0085	P	7.0	1.1

y = 4.1653E-005 * x + 4.5095E-005
R = 0.9996
DL = 1.122 ppb
BEC = 1.083 ppb

Weight: <None>
Min Conc: <None>

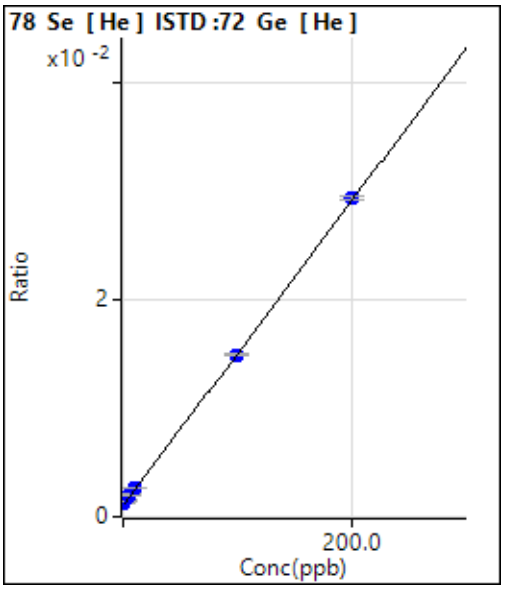
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	18302.73	0.0188	P	2.6	
2	☐	2.000	4.064	19047.06	0.0196	P	1.0	103.2
3	☐	5.000	2.962	19160.67	0.0194	P	5.0	-40.8
4	☐	10.000	13.985	20722.82	0.0216	P	0.8	39.9
5	☐	100.000	96.555	37358.65	0.0380	P	1.9	-3.4
6	☐	200.000	201.553	55976.44	0.0590	P	1.3	0.8

y = 1.9977E-004 * x + 0.0188
R = 0.9994
DL = 7.264 ppb
BEC = 93.91 ppb

Weight: <None>
Min Conc: <None>

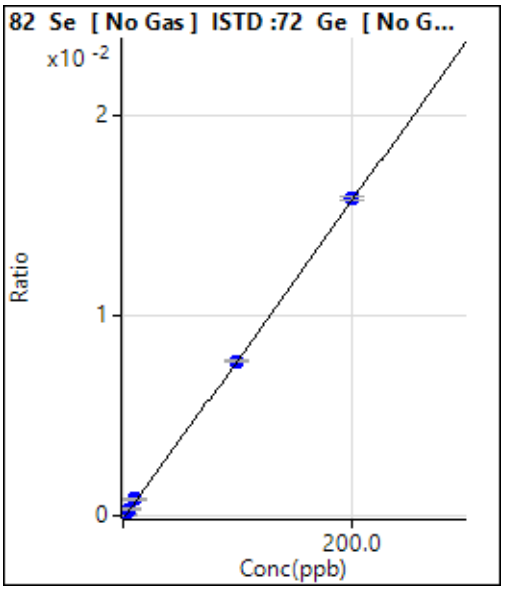


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	438.01	0.0012	P	6.1	
2	☐	2.000	2.581	572.68	0.0015	P	6.1	29.1
3	☐	5.000	5.755	733.36	0.0020	P	6.1	15.1
4	☐	10.000	10.911	998.04	0.0027	P	1.8	9.1
5	☐	100.000	98.036	5579.84	0.0149	P	0.6	-2.0
6	☐	200.000	200.912	10477.42	0.0293	P	1.1	0.5

y = 1.4007E-004 * x + 0.0012
R = 0.9999
DL = 1.554 ppb
BEC = 8.462 ppb

Weight: <None>
Min Conc: <None>

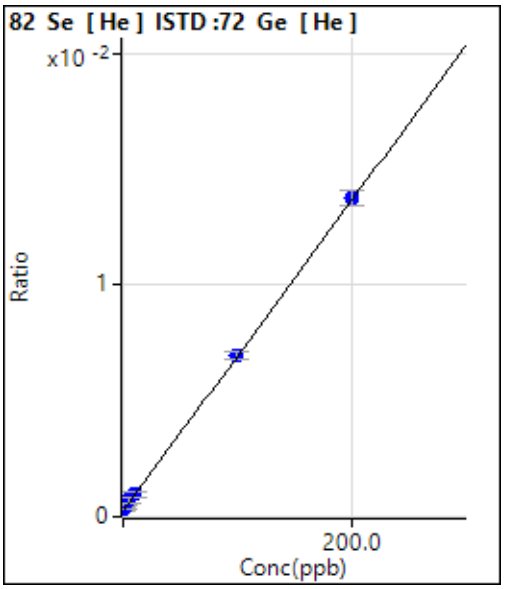
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	-47.03	0.0000	P	-302.	
2	☐	2.000	2.168	119.87	0.0001	P	87.3	8.4
3	☐	5.000	5.093	353.12	0.0004	P	32.4	1.9
4	☐	10.000	11.580	836.17	0.0009	P	3.4	15.8
5	☐	100.000	98.024	7582.26	0.0077	P	1.3	-2.0
6	☐	200.000	200.905	15058.58	0.0159	P	1.2	0.5

y = 7.9266E-005 * x - 4.8490E-005
R = 0.9999
DL = 5.556 ppb
BEC = -0.6117 ppb

Weight: <None>
Min Conc: <None>

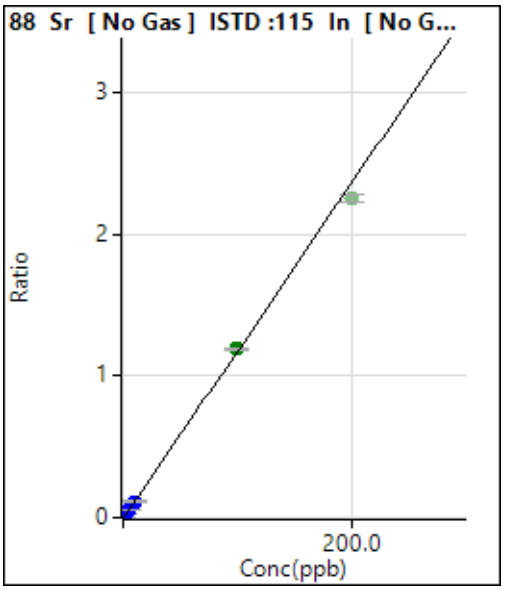


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	120.00	0.0003	P	37.8	
2	☐	2.000	1.740	163.34	0.0004	P	35.3	-13.0
3	☐	5.000	5.682	260.01	0.0007	P	30.9	13.6
4	☐	10.000	9.498	353.34	0.0010	P	22.8	-5.0
5	☐	100.000	98.814	2596.97	0.0069	P	5.1	-1.2
6	☐	200.000	200.604	4917.65	0.0138	P	5.4	0.3

y = 6.7003E-005 * x + 3.2453E-004
R = 1.0000
DL = 5.499 ppb
BEC = 4.844 ppb

Weight: <None>
Min Conc: <None>

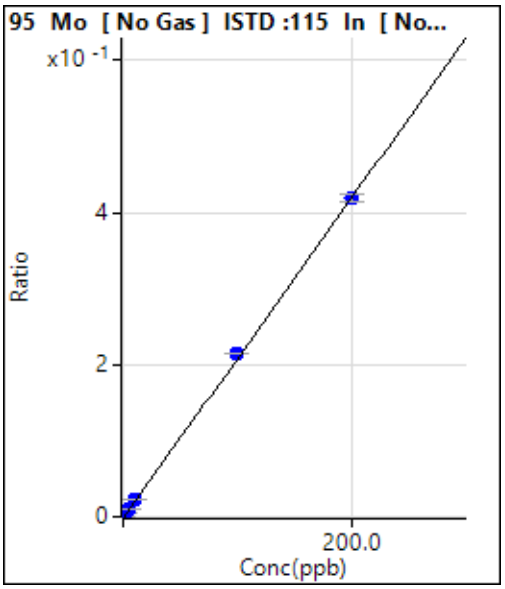
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1133.40	0.0010	P	15.8	
2	☐	2.000	1.914	25965.67	0.0238	P	5.7	-4.3
3	☐	5.000	4.743	62084.49	0.0573	P	1.5	-5.1
4	☐	10.000	9.565	124079.70	0.1146	P	2.0	-4.3
5	☐	100.000	100.058	1286744.51	1.1887	A	1.9	0.1
6	☑	200.000		2510484.55	2.2538	A	2.4	

y = 0.0119 * x + 0.0010
R = 1.0000
DL = 0.041 ppb
BEC = 0.08667 ppb

Weight: <None>
Min Conc: <None>

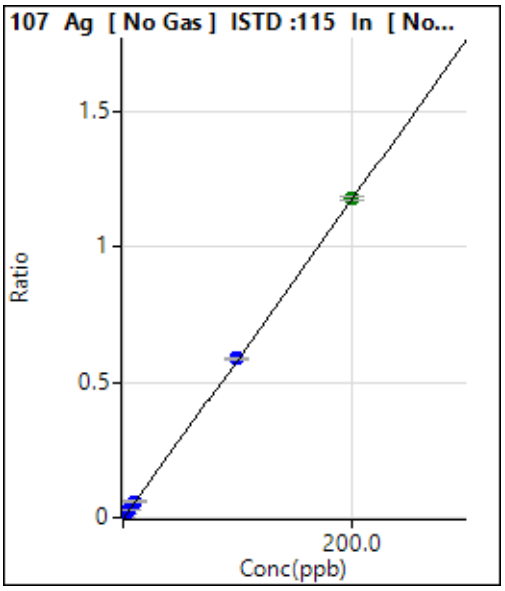


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	60.00	0.0001	P	13.5	
2	☐	2.000	2.074	4830.97	0.0044	P	9.2	3.7
3	☐	5.000	5.257	12049.00	0.0111	P	2.1	5.1
4	☐	10.000	10.369	23714.84	0.0219	P	1.4	3.7
5	☐	100.000	102.035	232713.68	0.2149	P	0.7	2.0
6	☐	200.000	198.957	466808.49	0.4191	P	2.0	-0.5

y = 0.0021 * x + 5.4306E-005
R = 0.9999
DL = 0.01042 ppb
BEC = 0.02579 ppb

Weight: <None>
Min Conc: <None>

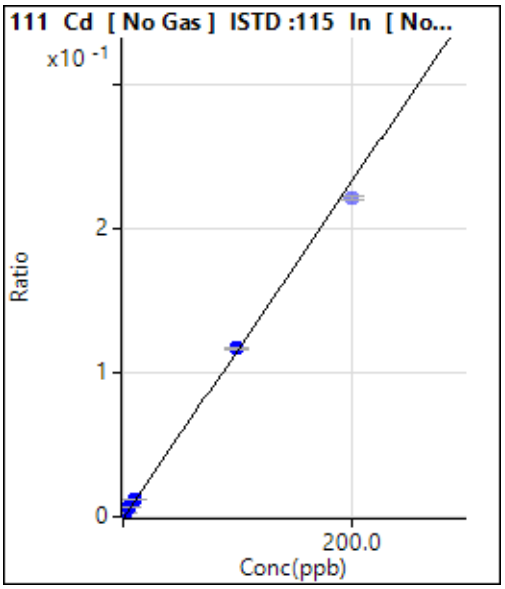
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	630.02	0.0006	P	3.9	
2	☐	2.000	1.894	12816.46	0.0117	P	3.5	-5.3
3	☐	5.000	5.047	32804.45	0.0303	P	1.0	0.9
4	☐	10.000	10.091	64983.24	0.0600	P	1.4	0.9
5	☐	100.000	99.894	637407.26	0.5888	P	1.3	-0.1
6	☐	200.000	200.048	1312842.92	1.1785	A	1.8	0.0

y = 0.0059 * x + 5.7136E-004
R = 1.0000
DL = 0.01139 ppb
BEC = 0.09703 ppb

Weight: <None>
Min Conc: <None>

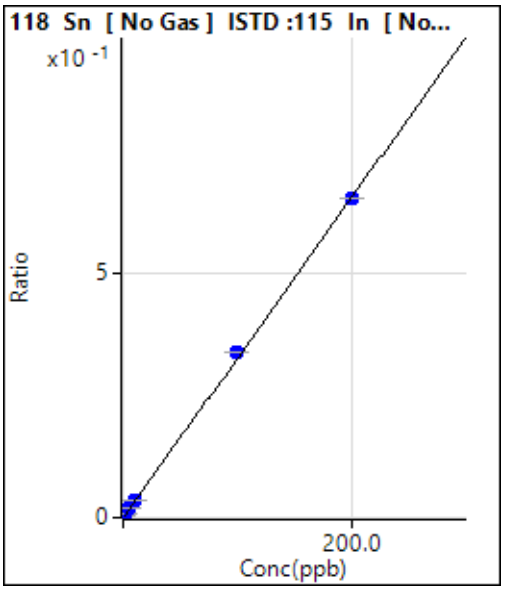


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	0.00	0.0000	P		
2	☐	2.000	2.032	2590.30	0.0024	P	5.8	1.6
3	☐	5.000	5.368	6781.88	0.0063	P	5.7	7.4
4	☐	10.000	10.024	12676.34	0.0117	P	4.6	0.2
5	☐	100.000	99.979	126261.56	0.1166	P	1.1	0.0
6	☑	200.000		246161.21	0.2210	P	1.0	

y = 0.0012 * x + 0.0000E+000
R = 1.0000
DL = 0 ppb
BEC = 0 ppb

Weight: <None>
Min Conc: <None>

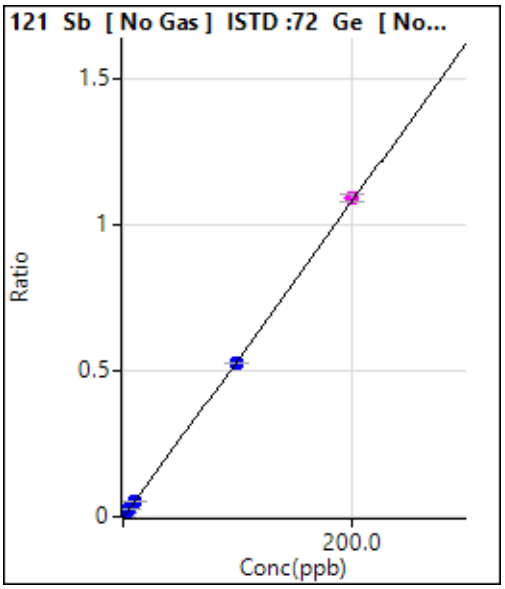
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	2750.33	0.0025	P	1.8	
2	☐	2.000	1.976	9797.18	0.0090	P	4.0	-1.2
3	☐	5.000	5.016	20482.89	0.0189	P	2.7	0.3
4	☐	10.000	10.268	39088.81	0.0361	P	3.5	2.7
5	☐	100.000	102.962	367487.60	0.3394	P	0.1	3.0
6	☐	200.000	198.505	726582.44	0.6521	P	0.4	-0.7

y = 0.0033 * x + 0.0025
R = 0.9998
DL = 0.04104 ppb
BEC = 0.7631 ppb

Weight: <None>
Min Conc: <None>

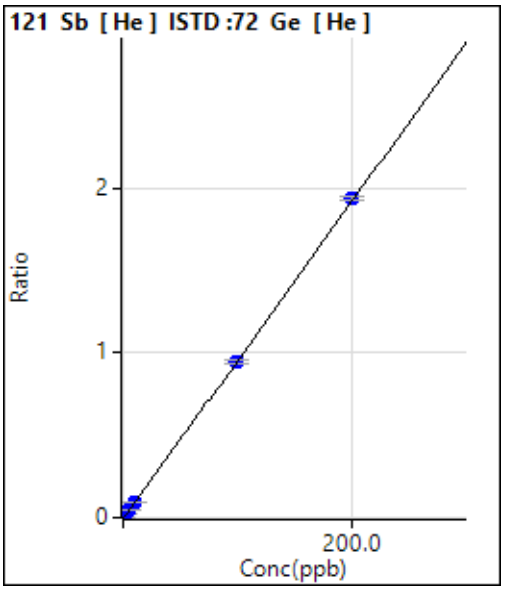


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	773.37	0.0008	P	14.2	
2	☐	2.000	1.980	11208.30	0.0115	P	5.8	-1.0
3	☐	5.000	4.830	26700.80	0.0270	P	3.0	-3.4
4	☐	10.000	9.896	52294.73	0.0544	P	1.8	-1.0
5	☐	100.000	97.084	517147.96	0.5266	P	0.7	-2.9
6	☐	200.000	201.468	1035744.70	1.0920	M	2.3	0.7

y = 0.0054 * x + 7.9264E-004
R = 0.9999
DL = 0.06221 ppb
BEC = 0.1463 ppb

Weight: <None>
Min Conc: <None>

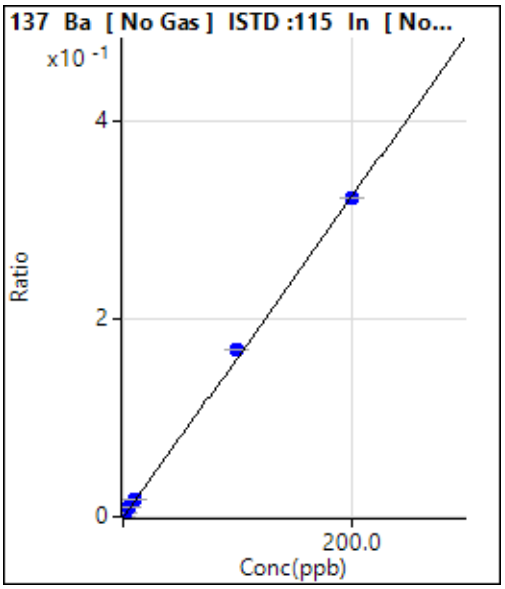
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	433.35	0.0012	P	10.7	
2	☐	2.000	1.922	7298.84	0.0197	P	2.7	-3.9
3	☐	5.000	4.982	18126.12	0.0492	P	1.7	-0.4
4	☐	10.000	9.806	35220.87	0.0958	P	1.3	-1.9
5	☐	100.000	97.770	353188.63	0.9443	P	1.9	-2.2
6	☐	200.000	201.126	693570.61	1.9413	P	0.8	0.6

y = 0.0096 * x + 0.0012
R = 0.9999
DL = 0.03888 ppb
BEC = 0.1216 ppb

Weight: <None>
Min Conc: <None>

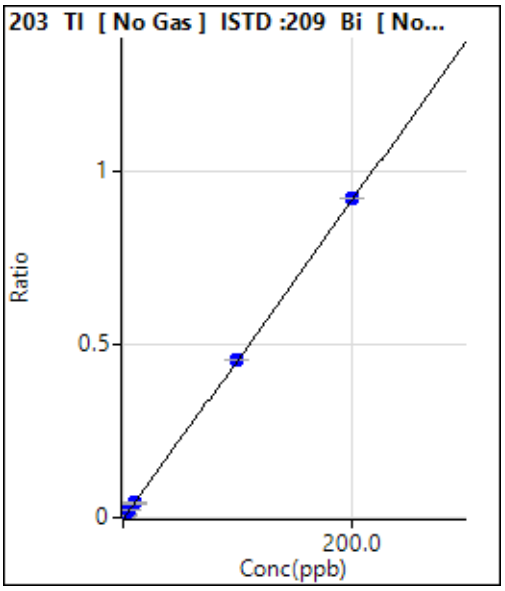


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	633.36	0.0006	P	9.6	
2	☐	2.000	2.045	4257.47	0.0039	P	7.4	2.3
3	☐	5.000	5.382	10087.43	0.0093	P	0.9	7.6
4	☐	10.000	10.309	18747.18	0.0173	P	4.6	3.1
5	☐	100.000	103.473	182533.91	0.1686	P	0.6	3.5
6	☐	200.000	198.238	359308.13	0.3225	P	0.5	-0.9

y = 0.0016 * x + 5.7378E-004
R = 0.9998
DL = 0.1018 ppb
BEC = 0.3533 ppb

Weight: <None>
Min Conc: <None>

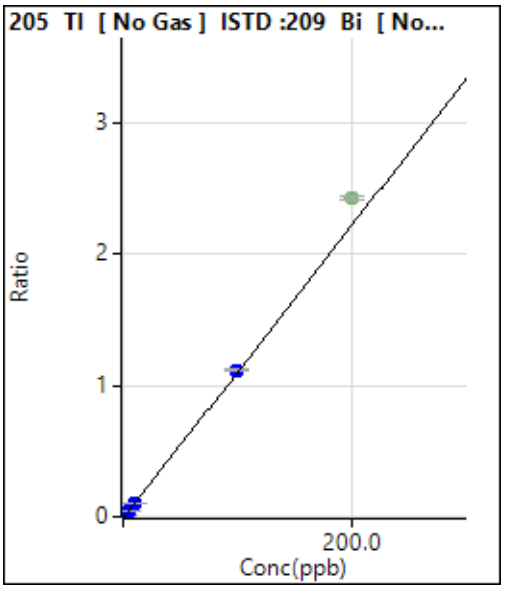
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	70.00	0.0001	P	65.2	
2	☐	2.000	1.816	7382.35	0.0084	P	4.2	-9.2
3	☐	5.000	4.523	18280.38	0.0209	P	0.0	-9.5
4	☐	10.000	9.106	36223.01	0.0420	P	2.9	-8.9
5	☐	100.000	98.940	398024.51	0.4552	P	0.8	-1.1
6	☐	200.000	200.589	774159.60	0.9228	P	0.5	0.3

y = 0.0046 * x + 8.0763E-005
R = 1.0000
DL = 0.03434 ppb
BEC = 0.01756 ppb

Weight: <None>
Min Conc: <None>

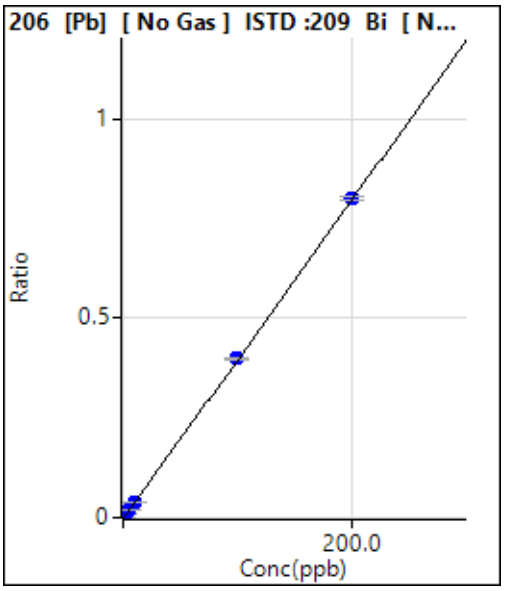


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	193.34	0.0002	P	16.1	
2	☐	2.000	1.849	18246.96	0.0208	P	2.0	-7.6
3	☐	5.000	4.519	44322.98	0.0506	P	1.1	-9.6
4	☐	10.000	9.305	89797.37	0.1040	P	0.7	-7.0
5	☐	100.000	100.097	976662.64	1.1170	P	0.6	0.1
6	☑	200.000		2039312.26	2.4308	A	1.1	

y = 0.0112 * x + 2.2324E-004
R = 1.0000
DL = 0.009682 ppb
BEC = 0.02001 ppb

Weight: <None>
Min Conc: <None>

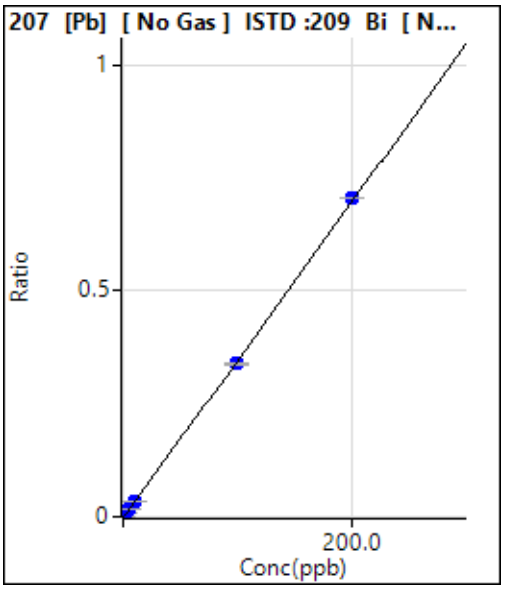
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	520.02	0.0006	P	10.4	
2	☐	2.000	1.933	7282.28	0.0083	P	5.4	-3.3
3	☐	5.000	4.930	17759.67	0.0203	P	2.6	-1.4
4	☐	10.000	9.838	34431.36	0.0399	P	0.9	-1.6
5	☐	100.000	99.492	347943.57	0.3979	P	1.4	-0.5
6	☐	200.000	200.264	671465.15	0.8004	P	1.0	0.1

y = 0.0040 * x + 6.0063E-004
R = 1.0000
DL = 0.04689 ppb
BEC = 0.1504 ppb

Weight: <None>
Min Conc: <None>

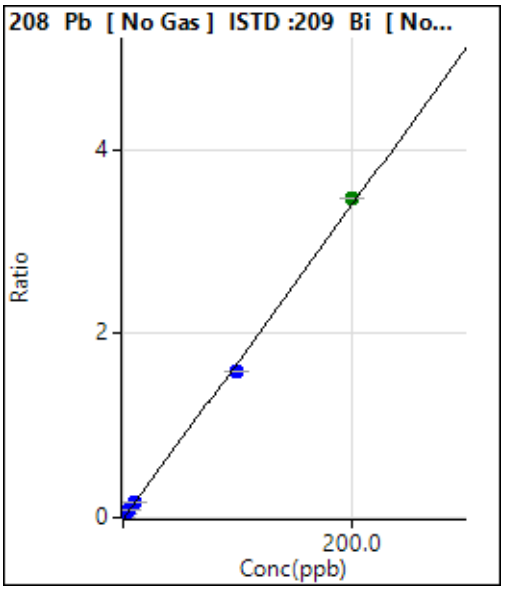


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	460.02	0.0005	P	8.1	
2	☐	2.000	1.924	6355.08	0.0073	P	6.7	-3.8
3	☐	5.000	4.816	15202.88	0.0174	P	0.7	-3.7
4	☐	10.000	9.835	30143.67	0.0349	P	1.8	-1.7
5	☐	100.000	96.823	296495.54	0.3391	P	1.4	-3.2
6	☐	200.000	201.602	591845.66	0.7055	P	0.3	0.8

y = 0.0035 * x + 5.3150E-004
R = 0.9998
DL = 0.03686 ppb
BEC = 0.152 ppb

Weight: <None>
Min Conc: <None>

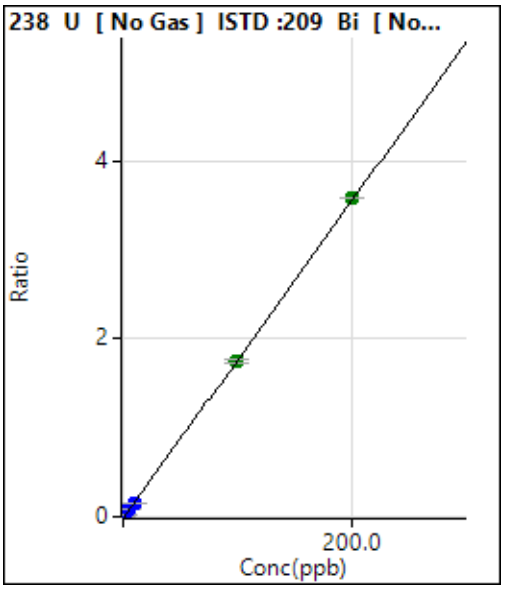
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1870.09	0.0022	P	1.4	
2	☐	2.000	1.842	29367.61	0.0336	P	2.1	-7.9
3	☐	5.000	4.696	71934.23	0.0822	P	0.3	-6.1
4	☐	10.000	9.460	141026.89	0.1634	P	0.7	-5.4
5	☐	100.000	93.119	1389518.50	1.5892	P	1.0	-6.9
6	☐	200.000	203.477	2911144.16	3.4700	A	0.5	1.7

y = 0.0170 * x + 0.0022
R = 0.9992
DL = 0.005475 ppb
BEC = 0.1268 ppb

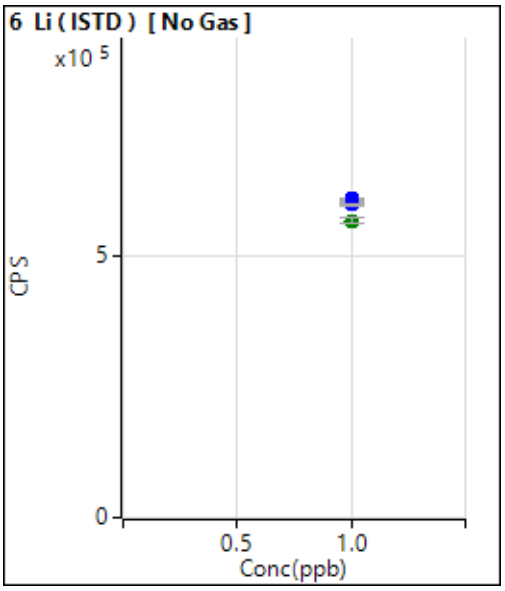
Weight: <None>
Min Conc: <None>



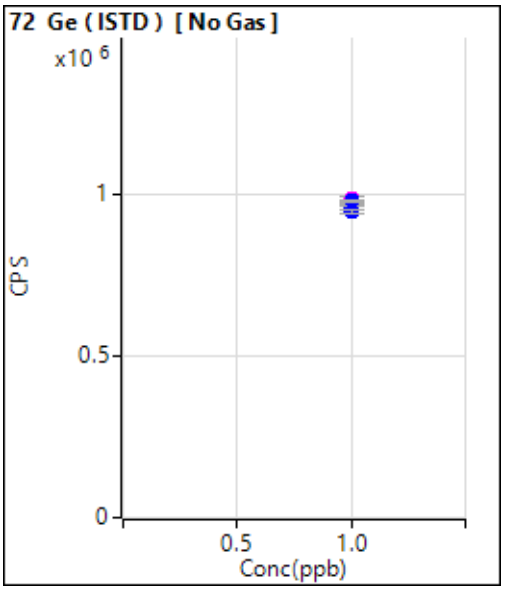
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	43.33	0.0001	P	35.5	
2	☐	2.000	1.760	27477.95	0.0314	P	2.3	-12.0
3	☐	5.000	4.484	69960.46	0.0799	P	1.1	-10.3
4	☐	10.000	9.000	138433.32	0.1604	P	0.9	-10.0
5	☐	100.000	98.265	1530725.65	1.7506	A	1.7	-1.7
6	☐	200.000	200.933	3003075.16	3.5797	A	0.3	0.5

y = 0.0178 * x + 5.0084E-005
R = 0.9999
DL = 0.002996 ppb
BEC = 0.002811 ppb

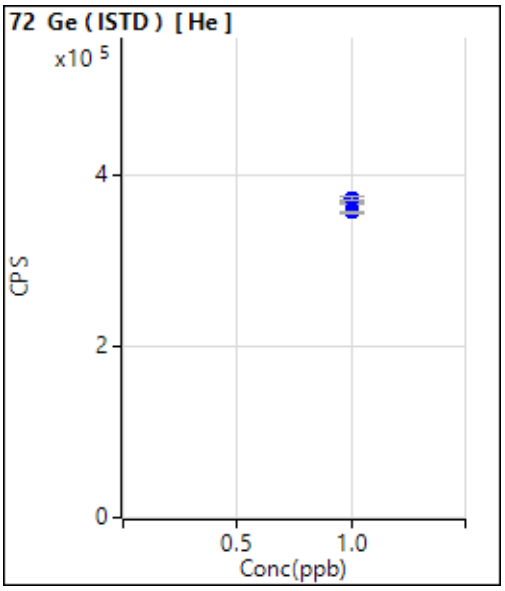
Weight: <None>
Min Conc: <None>



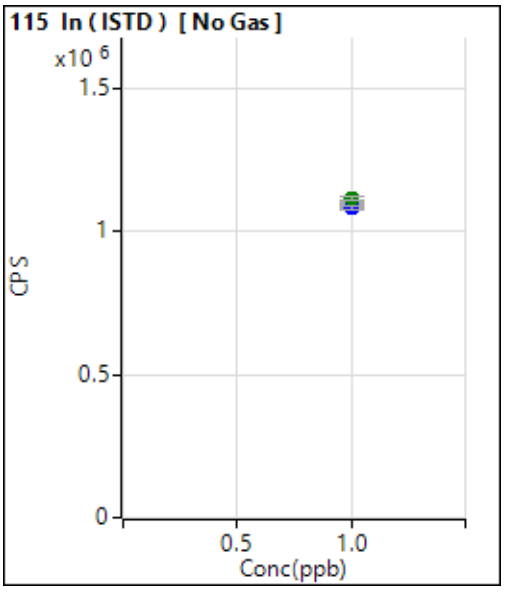
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		609168.64		P	0.6	
2	☐	1.000		604413.20		P	0.3	
3	☐	1.000		604805.74		P	0.4	
4	☐	1.000		597365.69		P	0.7	
5	☐	1.000		597211.65		P	0.4	
6	☐	1.000		566965.80		A	2.5	



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		975685.58		P	0.6	
2	☐	1.000		973231.18		P	0.3	
3	☐	1.000		990770.48		M	1.8	
4	☐	1.000		961560.90		P	1.4	
5	☐	1.000		982020.77		P	1.0	
6	☐	1.000		948400.82		P	1.3	

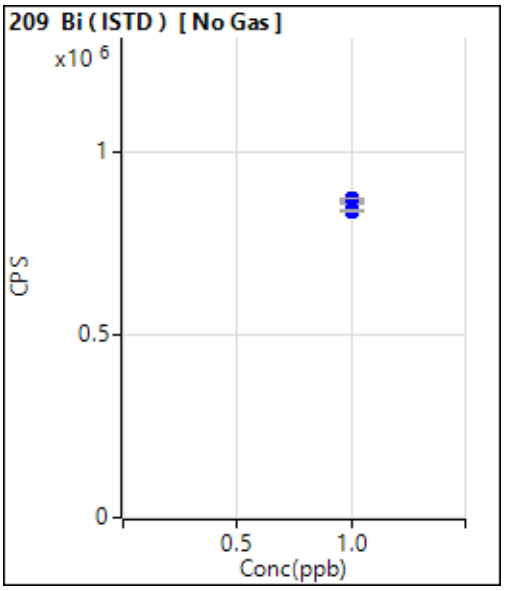


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		369475.52		P	0.3	
2	☐	1.000		370265.97		P	0.3	
3	☐	1.000		368211.15		P	0.8	
4	☐	1.000		367783.00		P	0.6	
5	☐	1.000		374068.68		P	1.2	
6	☐	1.000		357266.53		P	0.2	



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		1101714.06		M	3.3	
2	☐	1.000		1093518.63		M	1.7	
3	☐	1.000		1083066.98		P	0.4	
4	☐	1.000		1083343.21		M	2.1	
5	☐	1.000		1082635.03		P	1.2	
6	☐	1.000		1114170.14		A	1.7	

Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		865615.77		P	0.5	
2	☐	1.000		875290.82		P	0.6	
3	☐	1.000		875216.29		P	0.5	
4	☐	1.000		863166.66		P	0.5	
5	☐	1.000		874380.17		P	0.3	
6	☐	1.000		838935.92		P	0.6	

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	009CALB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T10:45:49-06:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	7	1	No Gas	33300	0.00
Be	9	1	No Gas	32	76.16
V	51	2	He	313	3.92
Cr	52	2	He	2000	0.03
Fe	56	2	He	32218	0.00
Se	78	2	He	438	1.48
As	75	2	He	103	14.31
Ca	44	2	He	757	0.86
Na	23	2	He	75638	0.00
Mg	24	2	He	540	2.99
K	39	2	He	99400	0.00
Mn	55	2	He	1447	0.70
Co	59	2	He	823	1.51
Ni	60	2	He	643	2.05
Cu	63	2	He	1403	1.05
Zn	66	2	He	767	1.80
Al	27	2	He	567	3.06
B	11	1	No Gas	19325	0.01
Al	27	1	No Gas	18743	0.03
Si	28	1	No Gas	213213	0.00
Ag	107	1	No Gas	630	1.15
Sr	88	1	No Gas	1133	1.40
Mo	95	1	No Gas	60	27.78
Sn	118	1	No Gas	2750	0.08
Sb	121	1	No Gas	773	1.84
Ba	137	1	No Gas	633	2.00
Tl	205	1	No Gas	193	8.60
Tl	203	1	No Gas	70	93.52
Pb	208	1	No Gas	1870	0.08
U	238	1	No Gas	43	81.35
Ca	43	2	He	43	30.75
Sb	121	2	He	433	2.40
Ti	47	2	He	23	106.04
Cu	63	1	No Gas	2507	0.09

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	6	1	No Gas	609169	0.56

Calibration Blank Report

Ge	72	2	He	369476	0.35
Ge	72	1	No Gas	975686	0.60
In	115	1	No Gas	1101714	3.34
Bi	209	1	No Gas	865616	0.49

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	010CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T10:47:44-06:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	No Gas	3535	0.23
V	51	2	He	6444	0.03
Cr	52	2	He	8519	0.05
Fe	56	2	He	681458	0.00
Se	78	2	He	573	1.02
As	75	2	He	1190	0.43
Ca	44	2	He	5191	0.02
Na	23	2	He	196245	0.00
Mg	24	2	He	71731	0.00
K	39	2	He	189888	0.00
Mn	55	2	He	6715	0.05
Co	59	2	He	10194	0.03
Ni	60	2	He	2980	0.06
Cu	63	2	He	8063	0.06
Zn	66	2	He	2094	0.47
Al	27	2	He	1177	0.53
B	11	1	No Gas	25593	0.00
Al	27	1	No Gas	35232	0.00
Si	28	1	No Gas	245417	0.00
Ag	107	1	No Gas	12816	0.01
Cd	111	1	No Gas	2590	0.17
Sr	88	1	No Gas	25966	0.02
Mo	95	1	No Gas	4831	0.16
Sn	118	1	No Gas	9797	0.03
Sb	121	1	No Gas	11208	0.05
Ba	137	1	No Gas	4257	0.15
Tl	205	1	No Gas	18247	0.01
Tl	203	1	No Gas	7382	0.05
Pb	208	1	No Gas	29368	0.01
U	238	1	No Gas	27478	0.01
Ca	43	2	He	273	5.07
Sb	121	2	He	7299	0.03
Cu	63	1	No Gas	13310	0.01

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	604413	0.27	609169	99.22	70	120	
Ge	72	2	He	370266	0.29	369476	100.21	70	120	
Ge	72	1	No Gas	973231	0.30	975686	99.75	70	120	

Calibration Standard Report

In	115	1	No Gas	1093519	1.67	1101714	99.26	70	120	
Bi	209	1	No Gas	875291	0.58	865616	101.12	70	120	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	011CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T10:49:39-06:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	No Gas	8764	0.05
V	51	2	He	15481	0.02
Cr	52	2	He	19284	0.01
Fe	56	2	He	1719683	0.00
Se	78	2	He	733	0.89
As	75	2	He	2803	0.12
Ca	44	2	He	12413	0.02
Na	23	2	He	380626	0.00
Mg	24	2	He	182683	0.00
K	39	2	He	331858	0.00
Mn	55	2	He	15082	0.03
Co	59	2	He	26062	0.01
Ni	60	2	He	6839	0.02
Cu	63	2	He	18026	0.01
Zn	66	2	He	4261	0.14
Al	27	2	He	1750	0.87
B	11	1	No Gas	37233	0.00
Al	27	1	No Gas	55367	0.00
Si	28	1	No Gas	292240	0.00
Ag	107	1	No Gas	32804	0.00
Cd	111	1	No Gas	6782	0.08
Sr	88	1	No Gas	62084	0.00
Mo	95	1	No Gas	12049	0.02
Sn	118	1	No Gas	20483	0.01
Sb	121	1	No Gas	26701	0.01
Ba	137	1	No Gas	10087	0.01
Tl	205	1	No Gas	44323	0.00
Tl	203	1	No Gas	18280	0.00
Pb	208	1	No Gas	71934	0.00
U	238	1	No Gas	69960	0.00
Ca	43	2	He	697	1.75
Sb	121	2	He	18126	0.01
Cu	63	1	No Gas	30528	0.01

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	604806	0.35	609169	99.28	70	120	
Ge	72	2	He	368211	0.80	369476	99.66	70	120	
Ge	72	1	No Gas	990770	1.80	975686	101.55	70	120	

Calibration Standard Report

In	115	1	No Gas	1083067	0.38	1101714	98.31	70	120	
Bi	209	1	No Gas	875216	0.52	865616	101.11	70	120	

Calibration Standard Report

Sample Table

Sample Name	10/50/100
Data File Name	012CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T10:51:33-06:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	No Gas	17229	0.00
V	51	2	He	30496	0.00
Cr	52	2	He	35967	0.01
Fe	56	2	He	3326909	0.00
Se	78	2	He	998	0.19
As	75	2	He	5444	0.00
Ca	44	2	He	24128	0.02
Na	23	2	He	680852	0.00
Mg	24	2	He	361097	0.00
K	39	2	He	565762	0.00
Mn	55	2	He	28009	0.00
Co	59	2	He	50654	0.00
Ni	60	2	He	12853	0.02
Cu	63	2	He	34016	0.01
Zn	66	2	He	7342	0.05
Al	27	2	He	2807	0.37
B	11	1	No Gas	55966	0.00
Al	27	1	No Gas	83061	0.00
Si	28	1	No Gas	367200	0.00
Ag	107	1	No Gas	64983	0.00
Cd	111	1	No Gas	12676	0.05
Sr	88	1	No Gas	124080	0.00
Mo	95	1	No Gas	23715	0.01
Sn	118	1	No Gas	39089	0.00
Sb	121	1	No Gas	52295	0.00
Ba	137	1	No Gas	18747	0.02
Tl	205	1	No Gas	89797	0.00
Tl	203	1	No Gas	36223	0.01
Pb	208	1	No Gas	141027	0.00
U	238	1	No Gas	138433	0.00
Ca	43	2	He	1323	0.69
Sb	121	2	He	35221	0.00
Cu	63	1	No Gas	57431	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	597366	0.65	609169	98.06	70	120	
Ge	72	2	He	367783	0.58	369476	99.54	70	120	
Ge	72	1	No Gas	961561	1.44	975686	98.55	70	120	

Calibration Standard Report

In	115	1	No Gas	1083343	2.06	1101714	98.33	70	120	
Bi	209	1	No Gas	863167	0.54	865616	99.72	70	120	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	013CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T10:53:27-06:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	No Gas	170372	0.00
V	51	2	He	303635	0.00
Cr	52	2	He	338995	0.00
Fe	56	2	He	31814361	0.00
Se	78	2	He	5580	0.01
As	75	2	He	54916	0.00
Ca	44	2	He	230639	0.00
Na	23	2	He	5994494	0.00
Mg	24	2	He	3561619	0.00
K	39	2	He	4704482	0.00
Mn	55	2	He	268665	0.00
Co	59	2	He	495976	0.00
Ni	60	2	He	124778	0.00
Cu	63	2	He	330790	0.00
Zn	66	2	He	71264	0.00
Al	27	2	He	23246	0.01
B	11	1	No Gas	393309	0.00
Al	27	1	No Gas	704707	0.00
Si	28	1	No Gas	1904647	0.00
Ag	107	1	No Gas	637407	0.00
Cd	111	1	No Gas	126262	0.00
Sr	88	1	No Gas	1286745	0.00
Mo	95	1	No Gas	232714	0.00
Sn	118	1	No Gas	367488	0.00
Sb	121	1	No Gas	517148	0.00
Ba	137	1	No Gas	182534	0.00
Tl	205	1	No Gas	976663	0.00
Tl	203	1	No Gas	398025	0.00
Pb	208	1	No Gas	1389519	0.00
U	238	1	No Gas	1530726	0.00
Ca	43	2	He	13790	0.01
Sb	121	2	He	353189	0.00
Cu	63	1	No Gas	543578	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	597212	0.35	609169	98.04	70	120	
Ge	72	2	He	374069	1.21	369476	101.24	70	120	
Ge	72	1	No Gas	982021	1.02	975686	100.65	70	120	

Calibration Standard Report

In	115	1	No Gas	1082635	1.18	1101714	98.27	70	120	
Bi	209	1	No Gas	874380	0.32	865616	101.01	70	120	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	014CALS.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T10:55:19-06:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	No Gas	335208	0.00
V	51	2	He	601502	0.00
Cr	52	2	He	678289	0.00
Fe	56	2	He	63131174	0.00
Se	78	2	He	10477	0.01
As	75	2	He	105178	0.00
Ca	44	2	He	449770	0.00
Na	23	2	He	11637906	0.00
Mg	24	2	He	6999428	0.00
K	39	2	He	9270959	0.00
Mn	55	2	He	530391	0.00
Co	59	2	He	977570	0.00
Ni	60	2	He	248224	0.00
Cu	63	2	He	654153	0.00
Zn	66	2	He	137189	0.00
Al	27	2	He	43642	0.00
B	11	1	No Gas	796382	0.00
Al	27	1	No Gas	1323731	0.00
Si	28	1	No Gas	3287924	0.00
Ag	107	1	No Gas	1312843	0.00
Cd	111	1	No Gas	246161	0.00
Sr	88	1	No Gas	2510485	0.00
Mo	95	1	No Gas	466808	0.00
Sn	118	1	No Gas	726582	0.00
Sb	121	1	No Gas	1035745	0.00
Ba	137	1	No Gas	359308	0.00
Tl	205	1	No Gas	2039312	0.00
Tl	203	1	No Gas	774160	0.00
Pb	208	1	No Gas	2911144	0.00
U	238	1	No Gas	3003075	0.00
Ca	43	2	He	25965	0.01
Sb	121	2	He	693571	0.00
Cu	63	1	No Gas	1084257	0.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	566966	2.51	609169	93.07	70	120	
Ge	72	2	He	357267	0.25	369476	96.70	70	120	
Ge	72	1	No Gas	948401	1.27	975686	97.20	70	120	

Calibration Standard Report

In	115	1	No Gas	1114170	1.73	1101714	101.13	70	120	
Bi	209	1	No Gas	838936	0.56	865616	96.92	70	120	

Sample Report

Sample Table

Sample Name	LLICV2
Data File Name	017LCV2.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T11:04:13-06:00
Sample Type	LLCCV2
Dilution	1
Comment	
ISTD Ref FileName	009CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	1.874	1.874	3.20	47413	0.00	2	
Be	9	1	No Gas	2.056	2.056	3.45	3564	0.06	2	
V	51	2	He	1.977	1.977	1.51	6355	0.03	2	
Cr	52	2	He	2.001	2.001	6.86	8850	0.02	2	
Fe	56	2	He	202.019	202.019	0.62	680105	0.03	200	
Se	78	2	He	2.019	2.019	29.03	537	0.38	2	
As	75	2	He	1.974	1.974	2.25	1165	0.17	2	
Ca	44	2	He	199.444	199.444	0.47	5318	3.75	200	
Na	23	2	He	201.115	201.115	1.55	193575	0.10	200	
Mg	24	2	He	202.237	202.237	1.07	72649	0.28	200	
K	39	2	He	200.322	200.322	1.07	191865	0.10	200	
Mn	55	2	He	1.918	1.918	1.12	6595	0.03	2	
Co	59	2	He	1.868	1.868	4.67	10107	0.02	2	
Ni	60	2	He	1.868	1.868	6.18	2987	0.06	2	
Cu	63	2	He	2.030	2.030	3.70	8129	0.02	2	
Zn	66	2	He	1.938	1.938	12.62	2110	0.09	2	
Al	27	2	He	2.423	2.423	12.77	1097	0.22	2	
B	11	1	No Gas	32.549	32.549	14.50	45549	0.07	10	NewName Main CR1 Failed
Al	27	1	No Gas	2.472	2.472	1.63	35232	0.01	2	
Si	28	1	No Gas	13.513	13.513	1.74	255362	0.01	10	NewName Main CR1 Failed
Ag	107	1	No Gas	2.018	2.018	2.88	13284	0.02	2	
Cd	111	1	No Gas	2.002	2.002	2.27	2490	0.08	2	
Sr	88	1	No Gas	2.039	2.039	2.22	25862	0.01	2	
Mo	95	1	No Gas	2.123	2.123	3.13	4828	0.04	2	
Sn	118	1	No Gas	2.071	2.071	2.85	9891	0.02	2	
Sb	121	1	No Gas	1.928	1.928	1.77	10911	0.02	2	
Ba	137	1	No Gas	2.005	2.005	2.78	4084	0.05	2	
Tl	205	1	No Gas	2.144	2.144	5.81	20634	0.01	2	
Tl	203	1	No Gas	2.202	2.202	12.21	8727	0.03	2	
Pb	208	1	No Gas	1.860	1.860	3.72	28941	0.01	2	
U	238	1	No Gas	1.758	1.758	1.17	26810	0.01	2	
Ca	43	2	He	167.996	167.996	13.22	267	63.00	200	
Sb	121	2	He	2.086	2.086	2.82	7796	0.03	2	
Ti	47	2	He	1.682	1.682	21.08	233	0.72	200	
Cu	63	1	No Gas	1.940	1.940	2.53	13167	0.01	2	
Se	82	1	No Gas	0.593	0.593	320.23	-1	-60.32	2	NewName Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	602430	0.50	609169	98.89	70	120	
Ge	72	2	He	366072	0.48	369476	99.08	70	120	
Ge	72	1	No Gas	971138	0.48	975686	99.53	70	120	
In	115	1	No Gas	1066611	0.72	1101714	96.81	70	120	
Bi	209	1	No Gas	854539	0.63	865616	98.72	70	120	

Sample Report

Sample Table

Sample Name	LLICV5
Data File Name	018LCV5.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T11:06:08-06:00
Sample Type	LLCCV5
Dilution	1
Comment	
ISTD Ref FileName	009CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	4.684	4.684	2.56	69072	0.01	5	
Be	9	1	No Gas	4.966	4.966	3.09	8559	0.06	5	
V	51	2	He	5.000	5.000	1.53	15633	0.03	5	
Cr	52	2	He	5.029	5.029	1.54	19284	0.03	5	
Fe	56	2	He	519.051	519.051	0.65	1701329	0.03	500	
Se	78	2	He	5.832	5.832	4.29	735	0.79	5	
As	75	2	He	4.946	4.946	2.94	2769	0.18	5	
Ca	44	2	He	504.175	504.175	1.69	12326	4.09	500	
Na	23	2	He	509.129	509.129	0.89	376128	0.14	500	
Mg	24	2	He	510.235	510.235	0.80	182895	0.28	500	
K	39	2	He	502.582	502.582	0.87	333540	0.15	500	
Mn	55	2	He	4.795	4.795	3.97	14371	0.03	5	
Co	59	2	He	4.932	4.932	1.52	25401	0.02	5	
Ni	60	2	He	4.749	4.749	9.15	6625	0.07	5	
Cu	63	2	He	4.923	4.923	3.36	17775	0.03	5	
Zn	66	2	He	4.897	4.897	7.47	4184	0.12	5	
Al	27	2	He	5.485	5.485	18.33	1777	0.31	5	
B	11	1	No Gas	30.435	30.435	2.67	43810	0.07	25	
Al	27	1	No Gas	5.442	5.442	2.67	54711	0.01	5	
Si	28	1	No Gas	26.537	26.537	0.76	294631	0.01	25	
Ag	107	1	No Gas	5.100	5.100	0.61	32420	0.02	5	
Cd	111	1	No Gas	5.072	5.072	6.70	6268	0.08	5	
Sr	88	1	No Gas	5.130	5.130	0.32	62969	0.01	5	
Mo	95	1	No Gas	5.361	5.361	3.78	12019	0.04	5	
Sn	118	1	No Gas	5.357	5.357	1.28	21218	0.03	5	
Sb	121	1	No Gas	4.872	4.872	1.37	26190	0.02	5	
Ba	137	1	No Gas	5.019	5.019	2.05	9243	0.05	5	
Tl	205	1	No Gas	4.649	4.649	1.23	44778	0.01	5	
Tl	203	1	No Gas	4.530	4.530	1.53	17980	0.03	5	
Pb	208	1	No Gas	4.715	4.715	2.27	70922	0.01	5	
U	238	1	No Gas	4.461	4.461	0.32	68355	0.01	5	
Ca	43	2	He	459.641	459.641	11.70	657	69.99	500	
Sb	121	2	He	4.846	4.846	0.83	17585	0.03	5	
Ti	47	2	He	4.871	4.871	16.08	633	0.77	5	
Cu	63	1	No Gas	5.010	5.010	1.95	29826	0.02	5	
Se	82	1	No Gas	5.881	5.881	32.41	403	1.46	5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	601980	0.31	609169	98.82	70	120	
Ge	72	2	He	366929	0.63	369476	99.31	70	120	
Ge	72	1	No Gas	963588	0.13	975686	98.76	70	120	

Sample Report

In	115	1	No Gas	1059379	0.74	1101714	96.16	70	120	
Bi	209	1	No Gas	859498	0.70	865616	99.29	70	120	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	019_ICB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T11:08:02-06:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	-0.073	-111.0	32381	1.8	0.5	
Be	9	1	No Gas	0.006	75.0	42	18.3	0.5	
V	51	2	He	0.033	54.5	418	13.6	2.5	
Cr	52	2	He	0.006	375.0	2030	3.4	2.5	
Fe	56	2	He	-1.045	-21.6	28984	2.6	100	
Se	78	2	He	0.342	168.3	458	6.6	1	
As	75	2	He	-0.042	-93.4	81	26.4	2.5	
Ca	44	2	He	3.132	116.1	833	10.2	100	
Na	23	2	He	0.077	219.4	76074	0.2	100	
Mg	24	2	He	0.287	124.6	647	20.2	100	
K	39	2	He	-1.398	-179.2	99253	1.0	100	
Mn	55	2	He	-0.121	-25.7	1123	7.6	2.5	
Co	59	2	He	-0.060	-20.4	523	11.7	2.5	
Ni	60	2	He	-0.209	-11.4	380	7.9	2.5	
Cu	63	2	He	-0.002	-1179.1	1403	6.0	1	
Zn	66	2	He	-0.015	-849.4	760	12.1	2.5	
Al	27	2	He	0.107	261.3	593	10.7	5	
B	11	1	No Gas	4.466	16.8	22748	2.7	0.5	ICB Main CR1 Failed
Al	27	1	No Gas	-0.124	-60.4	17952	2.7	5	
Si	28	1	No Gas	-0.733	-26.3	211364	0.2	10	
Ag	107	1	No Gas	-0.046	-25.8	323	23.4	2.5	
Cd	111	1	No Gas	0.008	100.1	10	100.0	1	
Sr	88	1	No Gas	-0.026	-12.2	793	4.1	2.5	
Mo	95	1	No Gas	0.002	423.9	63	32.9	2.5	
Sn	118	1	No Gas	0.280	20.3	3674	5.9	5	
Sb	121	1	No Gas	-0.015	-118.7	697	13.6	2.5	
Ba	137	1	No Gas	-0.163	-10.8	333	9.6	2.5	
Tl	205	1	No Gas	0.048	38.0	660	26.6	1	
Tl	203	1	No Gas	0.031	17.5	193	10.8	1	
Pb	208	1	No Gas	-0.026	-9.0	1497	2.7	2.5	
U	238	1	No Gas	0.001	67.0	67	22.9	2.5	
Ca	43	2	He	-2.634	-487.1	40	43.3	100	
Sb	121	2	He	-0.020	-84.1	363	16.6	2.5	
Ti	47	2	He	-0.080	-227.8	13	173.2	2.5	
Se	82	1	No Gas	1.340	69.6	56	127.8	1	ICB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	602609	0.44	609169	98.92	70	120	
Ge	72	2	He	371379	0.21	369476	100.52	70	120	
Ge	72	1	No Gas	977997	0.26	975686	100.24	70	120	
In	115	1	No Gas	1075665	0.75	1101714	97.64	70	120	
Bi	209	1	No Gas	869675	0.44	865616	100.47	70	120	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	021_ICV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T11:17:25-06:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	No Gas	97.751	1.786	765884	1.29	100	97.8	90	110	
Be	9	1	No Gas	101.449	0.577	169421	0.32	100	101.4	90	110	
V	51	2	He	97.860	0.704	302198	0.34	100	97.9	90	110	
Cr	52	2	He	98.001	0.745	341288	0.42	100	98.0	90	110	
Fe	56	2	He	9729.650	1.160	31527739	0.80	10000	97.3	90	110	
Se	78	2	He	100.629	2.476	5643	1.95	100	100.6	90	110	
As	75	2	He	100.051	0.903	54404	0.59	100	100.1	90	110	
Ca	44	2	He	9939.137	1.352	230428	1.21	10000	99.4	90	110	
Na	23	2	He	9903.657	1.374	5969478	1.39	10000	99.0	90	110	
Mg	24	2	He	9979.130	0.895	3590454	0.49	10000	99.8	90	110	
K	39	2	He	9853.656	1.892	4733333	1.47	10000	98.5	90	110	
Mn	55	2	He	98.621	0.999	269198	0.64	100	98.6	90	110	
Co	59	2	He	97.901	0.719	491979	0.34	100	97.9	90	110	
Ni	60	2	He	96.371	0.777	122926	0.46	100	96.4	90	110	
Cu	63	2	He	97.443	0.655	327808	0.68	100	97.4	90	110	
Zn	66	2	He	97.965	2.213	69669	2.35	100	98.0	90	110	
Al	27	2	He	103.040	0.932	23544	0.62	100	103.0	90	110	
B	11	1	No Gas	469.323	2.745	389144	3.02	500	93.9	90	110	
Al	27	1	No Gas	101.214	0.998	698926	0.42	100	101.2	90	110	
Si	28	1	No Gas	526.827	0.305	1898767	0.85	500	105.4	90	110	
Ag	107	1	No Gas	100.217	0.872	625585	0.76	100	100.2	90	110	
Cd	111	1	No Gas	99.608	0.364	123064	0.26	100	99.6	90	110	
Sr	88	1	No Gas	106.545	1.315	1285940	1.41	100	106.5	90	110	
Mo	95	1	No Gas	102.563	0.532	228822	0.45	100	102.6	90	110	
Sn	118	1	No Gas	103.122	0.718	360045	0.64	100	103.1	90	110	
Sb	121	1	No Gas	96.595	0.816	510115	0.55	100	96.6	90	110	
Ba	137	1	No Gas	104.328	1.381	180039	1.36	100	104.3	90	110	
Tl	205	1	No Gas	99.716	1.109	955185	1.49	100	99.7	90	110	
Tl	203	1	No Gas	98.435	0.816	388761	1.10	100	98.4	90	110	
Pb	208	1	No Gas	92.384	0.578	1353408	1.03	100	92.4	90	110	
U	238	1	No Gas	99.068	1.111	1515146	2.00	100	99.1	90	110	
Ca	43	2	He	10121.183	4.624	13637	4.21	10000	101.2	90	110	
Sb	121	2	He	97.681	0.175	348449	0.54	100	97.7	90	110	
Ti	47	2	He	98.806	1.109	12479	1.25	100	98.8	90	110	
Cu	63	1	No Gas	96.637	0.674	535488	0.72	100	96.6	90	110	
Se	82	1	No Gas	100.306	4.628	7693	4.49	100	100.3	90	110	

QC ISTD Table

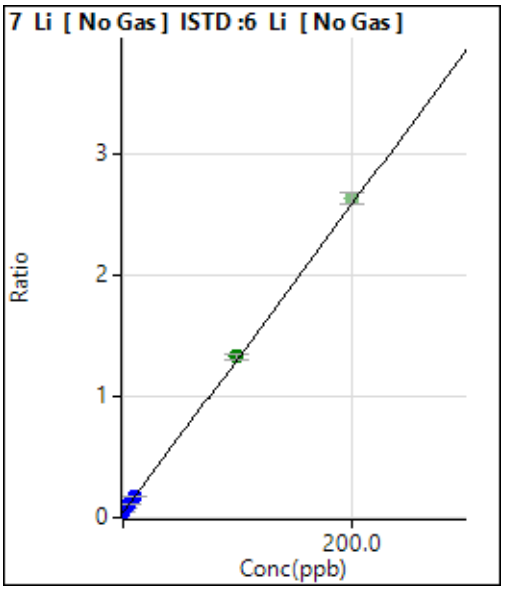
Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	585331	0.69	609169	96.09	70	120	
Ge	72	2	He	369331	0.41	369476	99.96	70	120	
Ge	72	1	No Gas	973565	1.03	975686	99.78	70	120	
In	115	1	No Gas	1059080	0.15	1101714	96.13	70	120	
Bi	209	1	No Gas	858408	0.89	865616	99.17	70	120	

Calibration for 021_ICV.d

Batch Folder: D:\Agilent\ICPMH\1\DATA\010423A.b\
Analysis File: 010423A.batch.bin
DA Date-Time: 01/04/2023 17:26:02
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	009CALB.d	CAL BLK	01/04/2023 10:45:49
2	010CALS.d	2/10/200	01/04/2023 10:47:44
3	011CALS.d	5/25/500	01/04/2023 10:49:39
4	012CALS.d	10/50/100	01/04/2023 10:51:33
5	013CALS.d	100/500/10K	01/04/2023 10:53:27
6	014CALS.d	200/1000/20K	01/04/2023 10:55:19

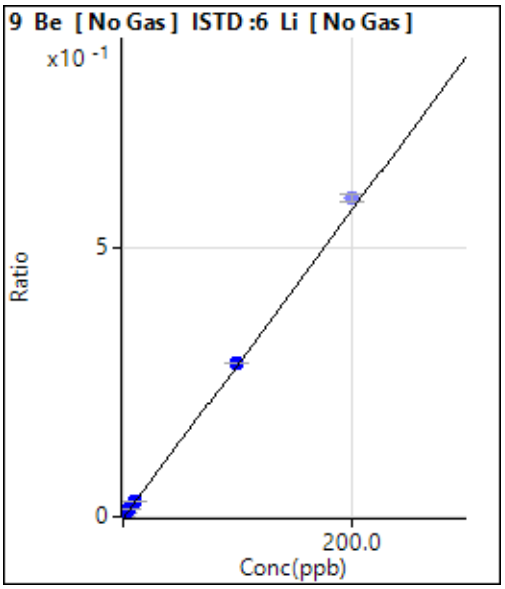
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	33299.50	0.0547	P	2.0	
2	☐	2.000	1.927	47802.74	0.0791	P	1.3	-3.6
3	☐	5.000	4.786	69736.83	0.1153	P	0.4	-4.3
4	☐	10.000	9.558	104997.59	0.1758	P	0.3	-4.4
5	☐	100.000	100.056	789755.17	1.3223	A	2.6	0.1
6	☑	200.000		1489321.28	2.6281	A	3.1	

y = 0.0127 * x + 0.0547
R = 1.0000
DL = 0.2615 ppb
BEC = 4.315 ppb

Weight: <None>
Min Conc: <None>

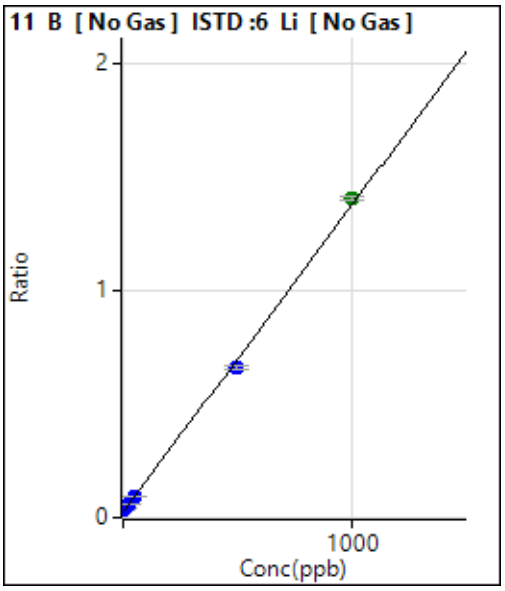


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	31.67	0.0001	P	24.2	
2	☐	2.000	2.032	3535.48	0.0058	P	8.0	1.6
3	☐	5.000	5.061	8764.45	0.0145	P	4.5	1.2
4	☐	10.000	10.093	17228.97	0.0288	P	1.0	0.9
5	☐	100.000	99.987	170372.39	0.2853	P	0.4	0.0
6	☑	200.000		335208.08	0.5914	P	2.2	

y = 0.0029 * x + 5.1995E-005
R = 1.0000
DL = 0.01322 ppb
BEC = 0.01823 ppb

Weight: <None>
Min Conc: <None>

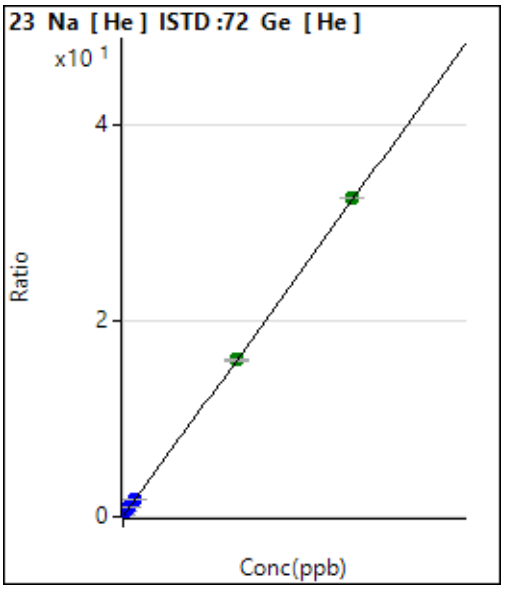
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	19325.04	0.0317	P	1.6	
2	☐	10.000	7.872	25593.36	0.0423	P	0.9	-21.3
3	☐	25.000	22.118	37232.68	0.0616	P	0.8	-11.5
4	☐	50.000	45.935	55966.15	0.0937	P	0.6	-8.1
5	☐	500.000	464.698	393308.81	0.6585	P	2.2	-7.1
6	☐	1000.000	1017.948	796382.38	1.4048	A	1.2	1.8

y = 0.0013 * x + 0.0317
R = 0.9992
DL = 1.163 ppb
BEC = 23.52 ppb

Weight: <None>
Min Conc: <None>

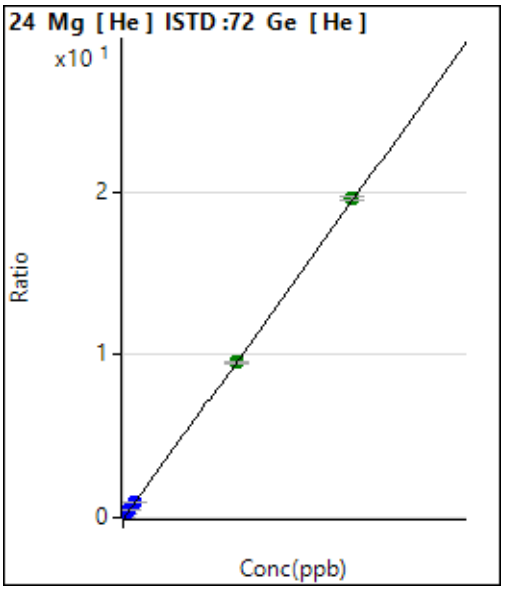


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	75637.52	0.2047	P	0.4	
2	☐	200.000	201.872	196244.89	0.5300	P	1.0	0.9
3	☐	500.000	514.508	380625.74	1.0338	P	1.0	2.9
4	☐	1000.000	1021.841	680851.50	1.8513	P	0.4	2.2
5	☐	10000.00	9819.334	5994494.50	16.0271	A	1.7	-1.8
6	☐	20000.00	20088.85	11637905.6	32.5749	A	0.2	0.4

y = 0.0016 * x + 0.2047
R = 0.9999
DL = 1.686 ppb
BEC = 127 ppb

Weight: <None>
Min Conc: <None>

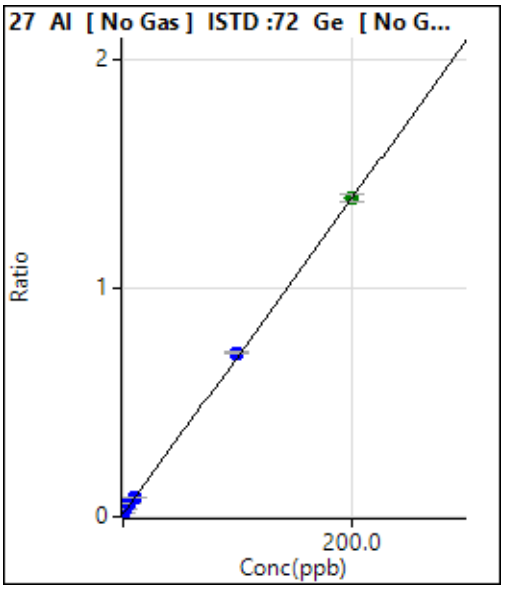
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	540.02	0.0015	P	16.1	
2	☐	200.000	197.385	71731.02	0.1937	P	0.6	-1.3
3	☐	500.000	507.845	182683.22	0.4961	P	0.9	1.6
4	☐	1000.000	1006.496	361096.74	0.9818	P	0.9	0.6
5	☐	10000.00	9774.373	3561619.22	9.5223	A	1.4	-2.3
6	☐	20000.00	20112.31	6999428.44	19.5921	A	1.4	0.6

y = 9.7406E-004 * x + 0.0015
R = 0.9999
DL = 0.7234 ppb
BEC = 1.5 ppb

Weight: <None>
Min Conc: <None>

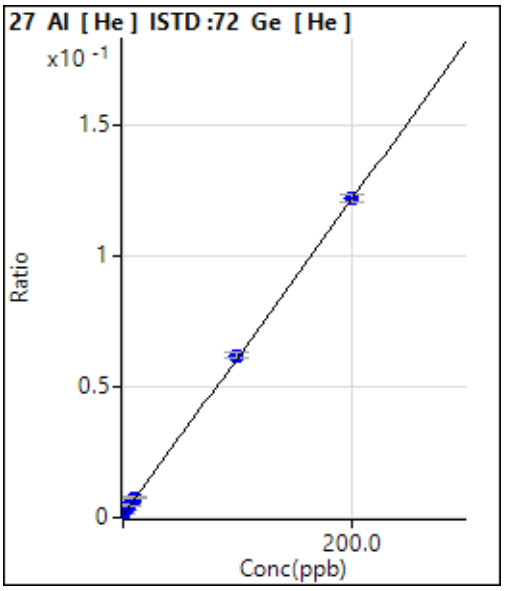


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	18743.34	0.0192	P	5.8	
2	☐	2.000	2.461	35231.53	0.0362	P	1.6	23.0
3	☐	5.000	5.313	55366.91	0.0559	P	1.5	6.3
4	☐	10.000	9.732	83060.93	0.0864	P	1.9	-2.7
5	☐	100.000	101.171	704707.23	0.7177	P	0.9	1.2
6	☐	200.000	199.415	1323731.07	1.3959	A	2.0	-0.3

y = 0.0069 * x + 0.0192
R = 1.0000
DL = 0.4819 ppb
BEC = 2.783 ppb

Weight: <None>
Min Conc: <None>

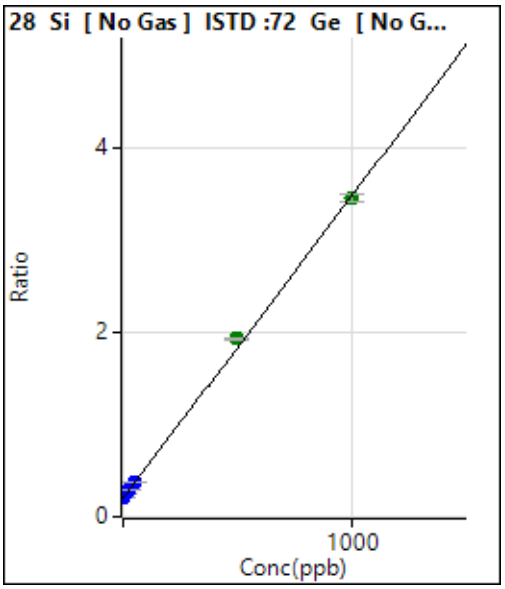
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	566.69	0.0015	P	17.0	
2	☐	2.000	2.725	1176.73	0.0032	P	6.6	36.2
3	☐	5.000	5.333	1750.15	0.0048	P	15.1	6.7
4	☐	10.000	10.103	2807.00	0.0076	P	10.6	1.0
5	☐	100.000	100.399	23246.35	0.0622	P	3.2	0.4
6	☐	200.000	199.780	43642.23	0.1222	P	1.8	-0.1

y = 6.0379E-004 * x + 0.0015
R = 1.0000
DL = 1.291 ppb
BEC = 2.539 ppb

Weight: <None>
Min Conc: <None>

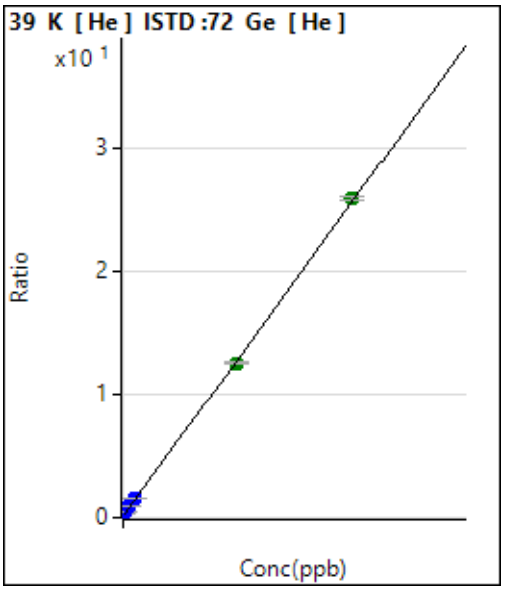


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	213213.46	0.2185	P	0.4	
2	☐	10.000	10.232	245416.79	0.2522	P	0.9	2.3
3	☐	25.000	23.262	292240.27	0.2950	P	1.1	-7.0
4	☐	50.000	49.685	367200.46	0.3819	P	1.0	-0.6
5	☐	500.000	523.553	1904647.37	1.9396	A	1.2	4.7
6	☐	1000.000	988.281	3287923.91	3.4673	A	1.8	-1.2

y = 0.0033 * x + 0.2185
R = 0.9996
DL = 0.7428 ppb
BEC = 66.48 ppb

Weight: <None>
Min Conc: <None>

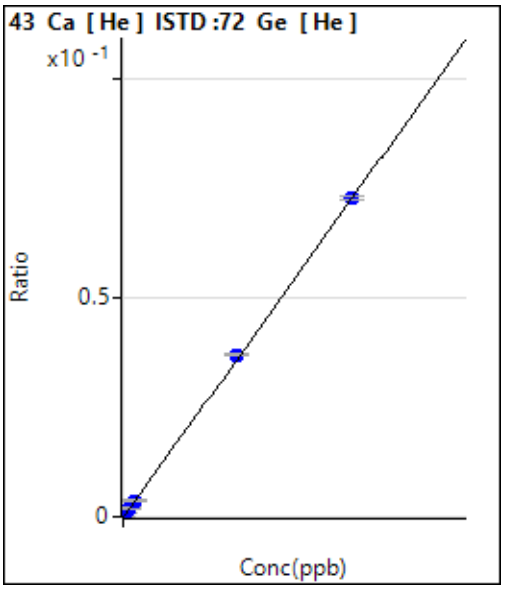
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	99399.80	0.2690	P	1.5	
2	☐	200.000	191.465	189888.26	0.5128	P	0.9	-4.3
3	☐	500.000	496.532	331858.06	0.9013	P	1.2	-0.7
4	☐	1000.000	996.792	565761.74	1.5383	P	0.9	-0.3
5	☐	10000.00	9665.670	4704481.91	12.5772	A	1.1	-3.3
6	☐	20000.00	20167.49	9270958.82	25.9501	A	0.9	0.8

y = 0.0013 * x + 0.2690
R = 0.9998
DL = 9.338 ppb
BEC = 211.3 ppb

Weight: <None>
Min Conc: <None>

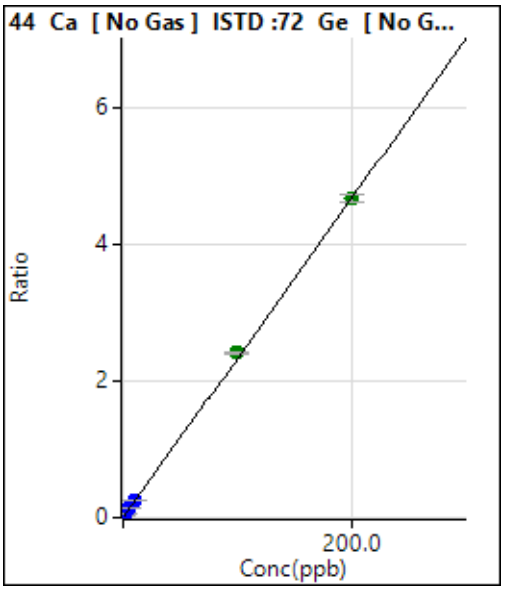


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	43.33	0.0001	P	13.5	
2	☐	200.000	170.778	273.34	0.0007	P	14.1	-14.6
3	☐	500.000	487.698	696.70	0.0019	P	11.5	-2.5
4	☐	1000.000	957.483	1323.42	0.0036	P	9.7	-4.3
5	☐	10000.00	10105.20	13790.50	0.0369	P	1.6	1.1
6	☐	20000.00	19950.12	25964.79	0.0727	P	1.6	-0.2

y = 3.6370E-006 * x + 1.1730E-004
R = 1.0000
DL = 13.03 ppb
BEC = 32.25 ppb

Weight: <None>
Min Conc: <None>

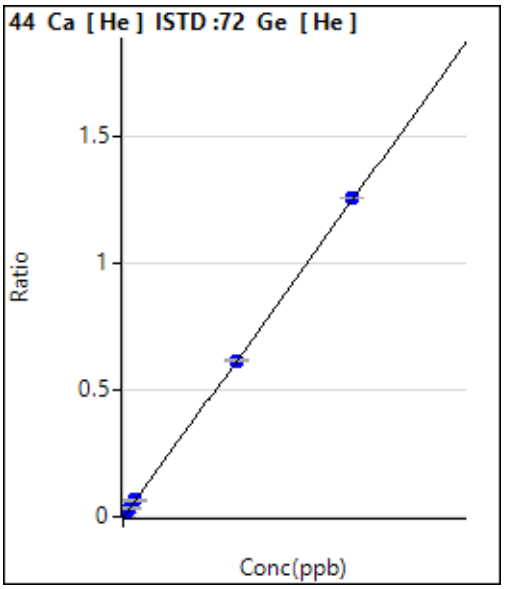
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	23413.61	0.0240	P	0.4	
2	☐	2.000	1.951	67672.88	0.0695	P	0.6	-2.5
3	☐	5.000	4.942	138037.74	0.1394	P	1.9	-1.2
4	☐	10.000	9.990	247258.11	0.2572	P	2.4	-0.1
5	☐	100.000	102.037	2362265.80	2.4058	A	1.6	2.0
6	☐	200.000	198.984	4427295.56	4.6687	A	1.8	-0.5

y = 0.0233 * x + 0.0240
R = 0.9999
DL = 0.01356 ppb
BEC = 1.028 ppb

Weight: <None>
Min Conc: <None>

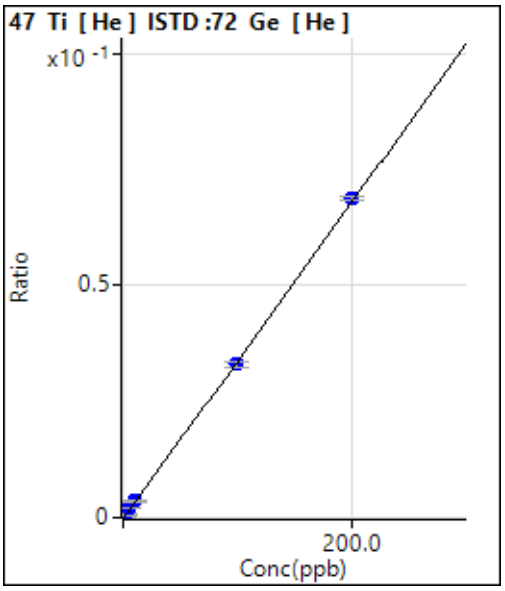


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	756.70	0.0020	P	6.4	
2	☐	200.000	191.348	5191.08	0.0140	P	1.1	-4.3
3	☐	500.000	506.141	12412.53	0.0337	P	3.4	1.2
4	☐	1000.000	1015.885	24128.14	0.0656	P	4.2	1.6
5	☐	10000.00	9822.038	230638.84	0.6166	P	1.0	-1.8
6	☐	20000.00	20088.12	449770.45	1.2589	P	0.4	0.4

y = 6.2568E-005 * x + 0.0020
R = 0.9999
DL = 6.242 ppb
BEC = 32.73 ppb

Weight: <None>
Min Conc: <None>

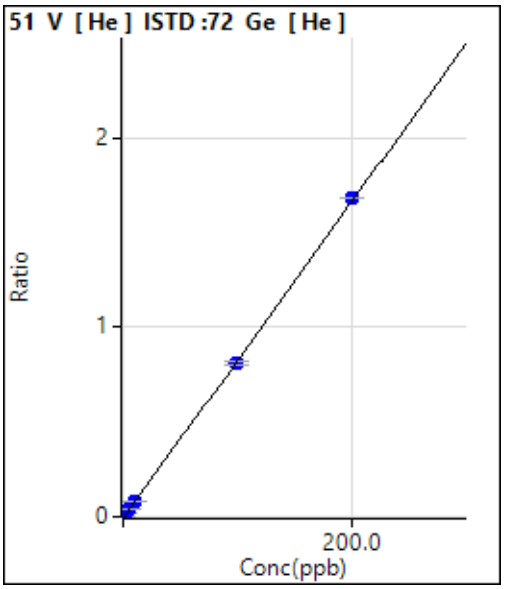
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	23.33	0.0001	P	25.0	
2	☐	2.000	1.873	260.01	0.0007	P	23.7	-6.3
3	☐	5.000	5.599	726.70	0.0020	P	7.6	12.0
4	☐	10.000	10.359	1323.42	0.0036	P	5.6	3.6
5	☐	100.000	96.804	12382.47	0.0331	P	3.3	-3.2
6	☐	200.000	201.566	24602.45	0.0689	P	0.7	0.8

y = 3.4133E-004 * x + 6.3175E-005
R = 0.9998
DL = 0.1387 ppb
BEC = 0.1851 ppb

Weight: <None>
Min Conc: <None>

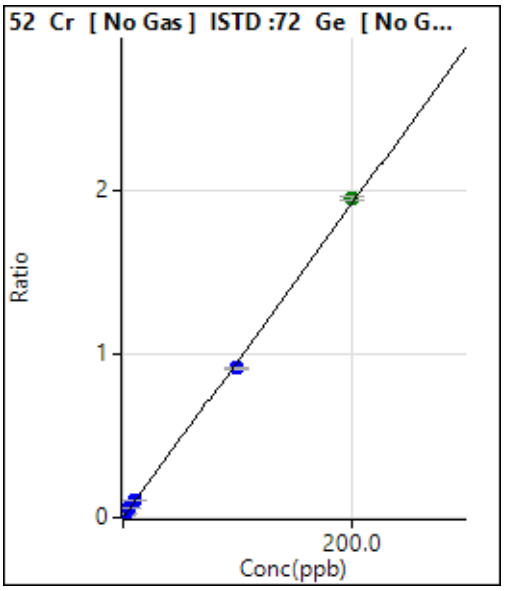


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	313.34	0.0008	P	11.9	
2	☐	2.000	1.982	6443.76	0.0174	P	2.0	-0.9
3	☐	5.000	4.933	15481.02	0.0421	P	3.6	-1.3
4	☐	10.000	9.826	30496.18	0.0829	P	0.8	-1.7
5	☐	100.000	97.089	303635.44	0.8118	P	1.4	-2.9
6	☐	200.000	201.466	601502.42	1.6836	P	0.5	0.7

y = 0.0084 * x + 8.4785E-004
R = 0.9999
DL = 0.03631 ppb
BEC = 0.1015 ppb

Weight: <None>
Min Conc: <None>

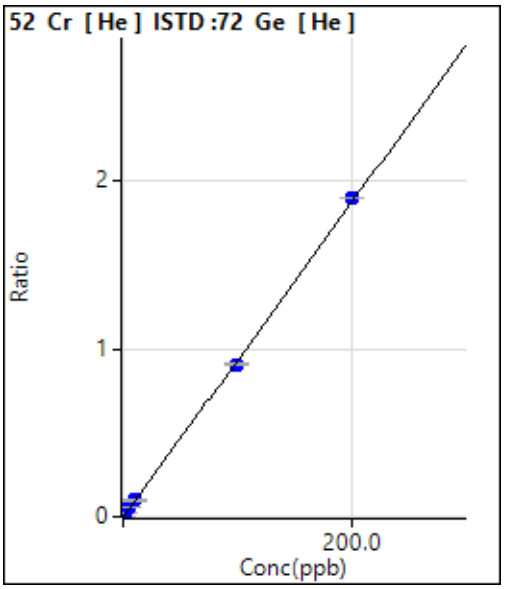
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	9877.05	0.0101	P	2.7	
2	☐	2.000	1.941	27978.85	0.0287	P	1.8	-3.0
3	☐	5.000	4.888	56497.01	0.0570	P	1.2	-2.2
4	☐	10.000	9.718	99396.29	0.1034	P	2.1	-2.8
5	☐	100.000	94.628	901669.18	0.9182	P	1.3	-5.4
6	☐	200.000	202.703	1854238.77	1.9554	A	1.7	1.4

y = 0.0096 * x + 0.0101
R = 0.9995
DL = 0.08433 ppb
BEC = 1.055 ppb

Weight: <None>
Min Conc: <None>

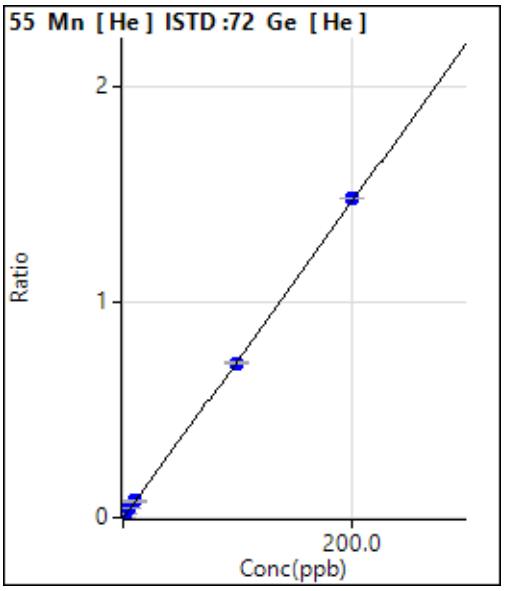


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	2000.19	0.0054	P	0.2	
2	☐	2.000	1.877	8519.46	0.0230	P	3.8	-6.2
3	☐	5.000	5.010	19283.94	0.0524	P	2.2	0.2
4	☐	10.000	9.854	35967.40	0.0978	P	3.1	-1.5
5	☐	100.000	96.105	338995.48	0.9063	P	1.0	-3.9
6	☐	200.000	201.956	678289.05	1.8986	P	0.4	1.0

y = 0.0094 * x + 0.0054
R = 0.9997
DL = 0.003915 ppb
BEC = 0.5775 ppb

Weight: <None>
Min Conc: <None>

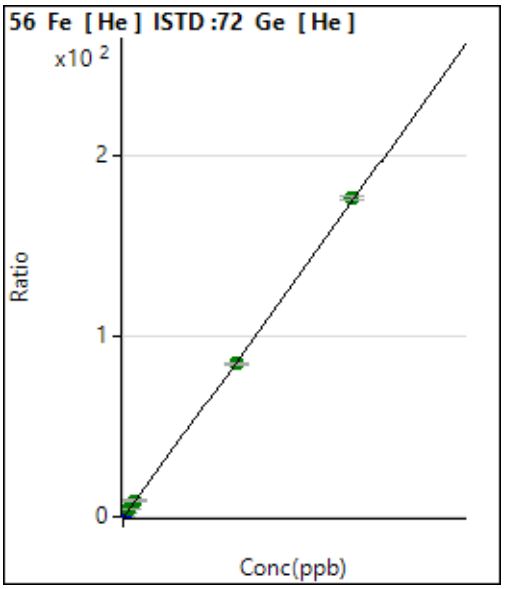
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1446.77	0.0039	P	10.5	
2	☐	2.000	1.934	6715.12	0.0181	P	3.2	-3.3
3	☐	5.000	5.038	15081.94	0.0410	P	3.2	0.8
4	☐	10.000	9.827	28009.08	0.0762	P	1.3	-1.7
5	☐	100.000	97.181	268665.20	0.7183	P	1.8	-2.8
6	☐	200.000	201.418	530390.77	1.4846	P	0.2	0.7

y = 0.0074 * x + 0.0039
R = 0.9999
DL = 0.1678 ppb
BEC = 0.5328 ppb

Weight: <None>
Min Conc: <None>

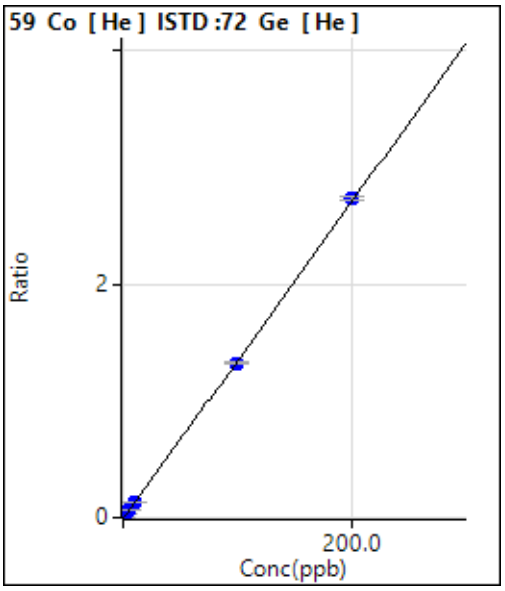


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	32218.16	0.0872	P	0.9	
2	☐	200.000	200.029	681458.17	1.8404	P	1.4	0.0
3	☐	500.000	522.911	1719682.58	4.6705	A	2.5	4.6
4	☐	1000.000	1022.150	3326909.12	9.0463	A	1.3	2.2
5	☐	10000.00	9694.460	31814361.2	85.0584	A	1.3	-3.1
6	☐	20000.00	20151.08	63131174.0	176.709	A	1.3	0.8

y = 0.0088 * x + 0.0872
R = 0.9998
DL = 0.2643 ppb
BEC = 9.949 ppb

Weight: <None>
Min Conc: <None>

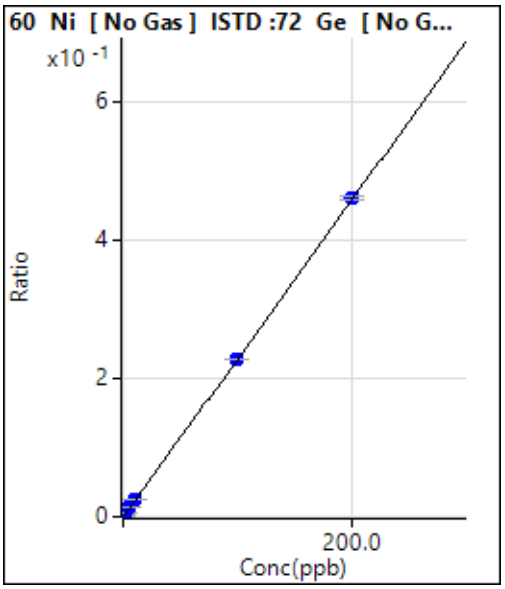
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	823.38	0.0022	P	12.5	
2	☐	2.000	1.863	10194.01	0.0275	P	3.3	-6.9
3	☐	5.000	5.047	26061.94	0.0708	P	2.0	0.9
4	☐	10.000	9.975	50654.45	0.1377	P	0.7	-0.3
5	☐	100.000	97.458	495976.17	1.3261	P	1.8	-2.5
6	☐	200.000	201.272	977570.48	2.7363	P	0.9	0.6

y = 0.0136 * x + 0.0022
R = 0.9999
DL = 0.06158 ppb
BEC = 0.1641 ppb

Weight: <None>
Min Conc: <None>

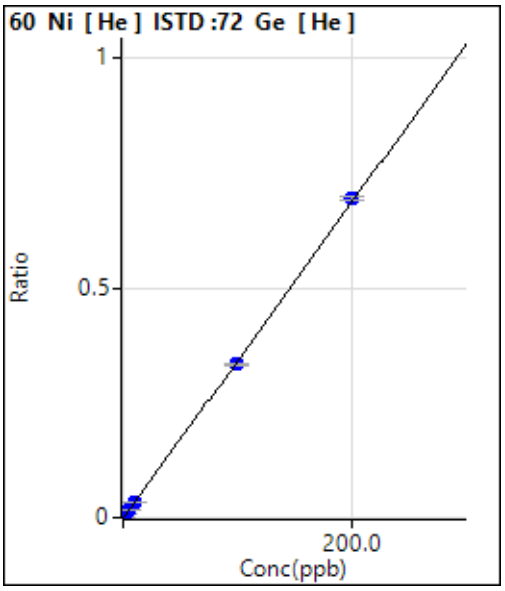


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1383.43	0.0014	P	4.8	
2	☐	2.000	2.007	5864.70	0.0060	P	11.6	0.4
3	☐	5.000	5.205	13246.67	0.0134	P	4.6	4.1
4	☐	10.000	10.097	23654.28	0.0246	P	1.2	1.0
5	☐	100.000	99.074	224802.08	0.2289	P	0.4	-0.9
6	☐	200.000	200.453	437820.63	0.4617	P	1.5	0.2

y = 0.0023 * x + 0.0014
R = 1.0000
DL = 0.08857 ppb
BEC = 0.6174 ppb

Weight: <None>
Min Conc: <None>

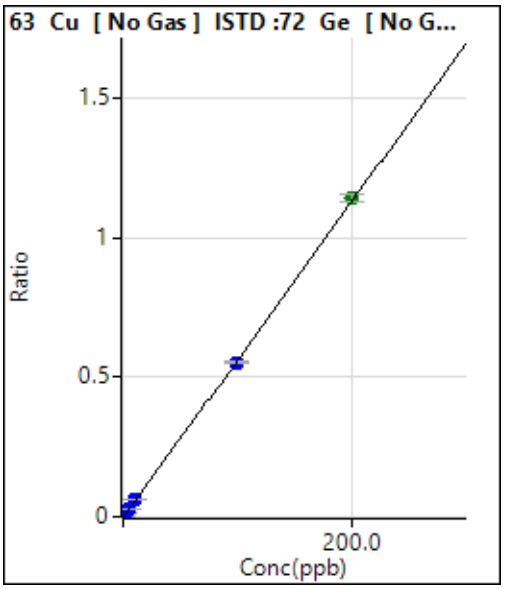
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	643.36	0.0017	P	13.5	
2	☐	2.000	1.836	2980.38	0.0080	P	2.1	-8.2
3	☐	5.000	4.899	6838.52	0.0186	P	0.6	-2.0
4	☐	10.000	9.665	12852.96	0.0349	P	2.7	-3.4
5	☐	100.000	96.592	124778.31	0.3336	P	1.2	-3.4
6	☐	200.000	201.725	248224.08	0.6948	P	0.8	0.9

y = 0.0034 * x + 0.0017
R = 0.9998
DL = 0.2057 ppb
BEC = 0.507 ppb

Weight: <None>
Min Conc: <None>

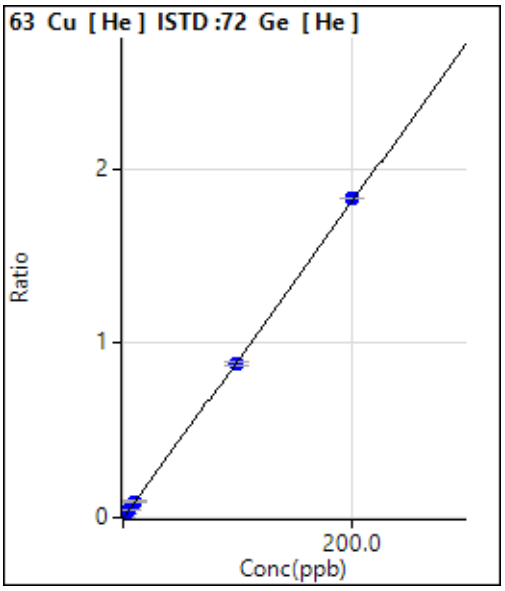


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	2506.94	0.0026	P	2.7	
2	☐	2.000	1.961	13310.05	0.0137	P	1.9	-2.0
3	☐	5.000	4.985	30528.03	0.0308	P	0.9	-0.3
4	☐	10.000	10.091	57431.48	0.0597	P	1.8	0.9
5	☐	100.000	97.253	543577.72	0.5535	P	0.6	-2.7
6	☐	200.000	201.370	1084257.48	1.1434	A	2.6	0.7

y = 0.0057 * x + 0.0026
R = 0.9999
DL = 0.03662 ppb
BEC = 0.4536 ppb

Weight: <None>
Min Conc: <None>

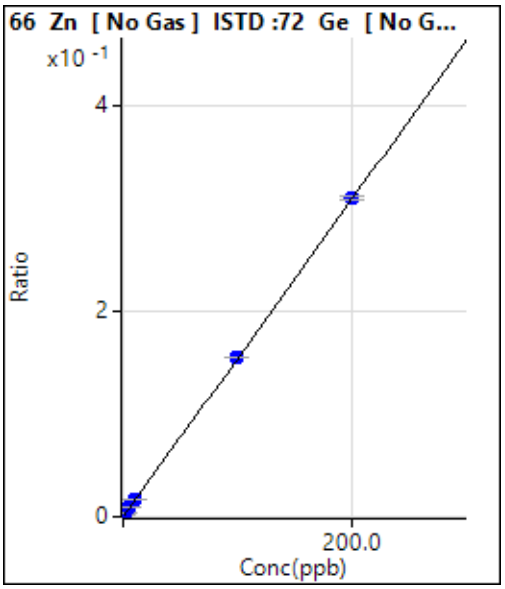
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1403.43	0.0038	P	14.6	
2	☐	2.000	1.982	8062.53	0.0218	P	4.7	-0.9
3	☐	5.000	4.979	18025.54	0.0490	P	1.6	-0.4
4	☐	10.000	9.780	34016.17	0.0925	P	3.7	-2.2
5	☐	100.000	97.098	330790.41	0.8844	P	2.0	-2.9
6	☐	200.000	201.463	654152.69	1.8310	P	0.4	0.7

y = 0.0091 * x + 0.0038
R = 0.9999
DL = 0.1829 ppb
BEC = 0.4187 ppb

Weight: <None>
Min Conc: <None>

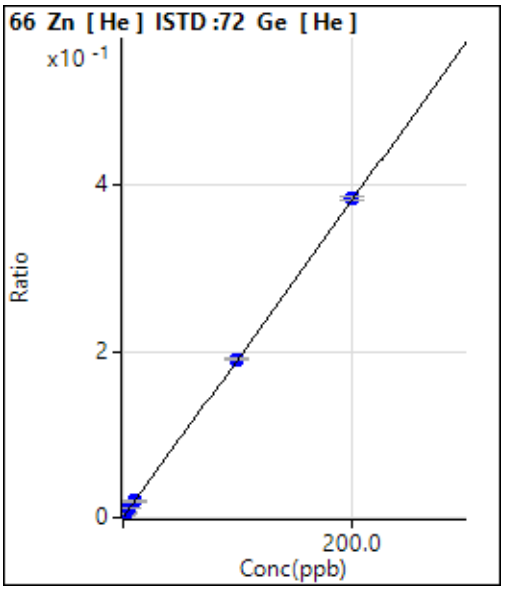


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1473.44	0.0015	P	4.7	
2	☐	2.000	2.019	4500.84	0.0046	P	1.6	0.9
3	☐	5.000	5.152	9373.41	0.0095	P	3.9	3.0
4	☐	10.000	10.047	16360.16	0.0170	P	2.1	0.5
5	☐	100.000	99.915	152878.06	0.1557	P	0.1	-0.1
6	☐	200.000	200.036	294147.03	0.3102	P	0.9	0.0

y = 0.0015 * x + 0.0015
R = 1.0000
DL = 0.137 ppb
BEC = 0.9786 ppb

Weight: <None>
Min Conc: <None>

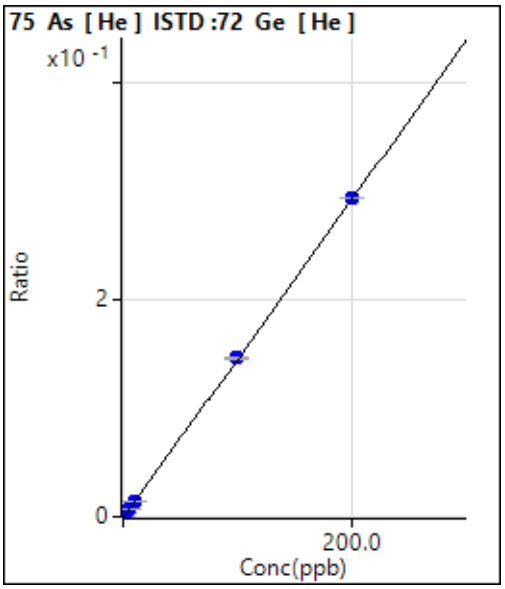
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	766.71	0.0021	P	14.1	
2	☐	2.000	1.879	2093.54	0.0057	P	9.8	-6.0
3	☐	5.000	4.985	4260.74	0.0116	P	5.0	-0.3
4	☐	10.000	9.395	7342.13	0.0200	P	4.0	-6.1
5	☐	100.000	98.952	71263.86	0.1905	P	1.7	-1.0
6	☐	200.000	200.556	137188.54	0.3840	P	1.3	0.3

y = 0.0019 * x + 0.0021
R = 1.0000
DL = 0.4616 ppb
BEC = 1.09 ppb

Weight: <None>
Min Conc: <None>

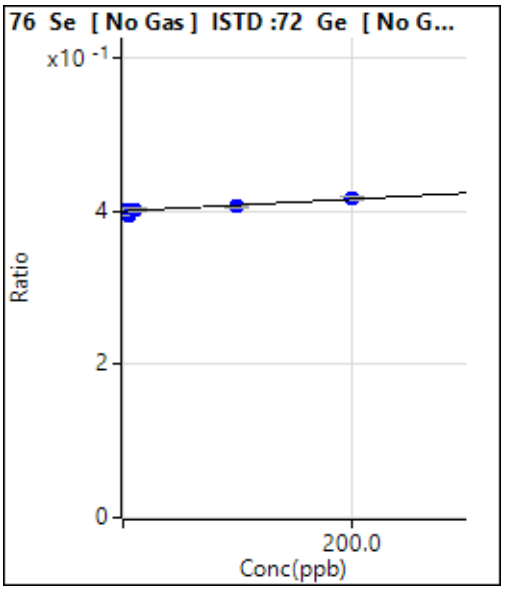


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	103.33	0.0003	P	15.0	
2	☐	2.000	1.997	1190.06	0.0032	P	5.1	-0.2
3	☐	5.000	4.990	2802.53	0.0076	P	3.7	-0.2
4	☐	10.000	9.884	5444.45	0.0148	P	0.7	-1.2
5	☐	100.000	99.718	54915.57	0.1468	P	1.1	-0.3
6	☐	200.000	200.147	105178.46	0.2944	P	0.3	0.1

y = 0.0015 * x + 2.7974E-004
R = 1.0000
DL = 0.08568 ppb
BEC = 0.1904 ppb

Weight: <None>
Min Conc: <None>

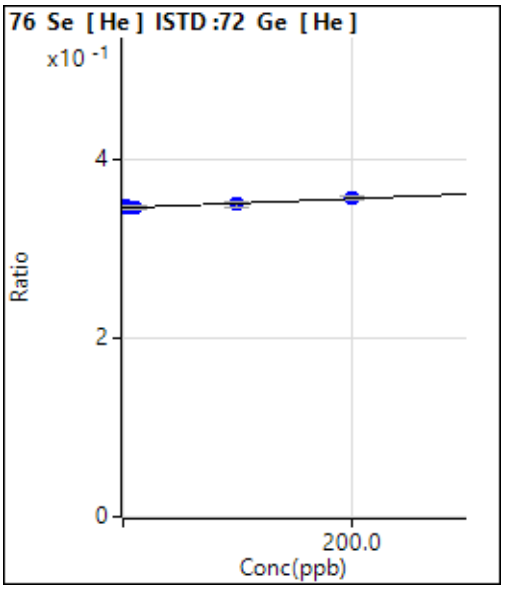
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	390941.26	0.4007	P	0.4	
2	☐	2.000	18.711	391399.47	0.4022	P	0.4	835.5
3	☐	5.000	-75.848	391053.33	0.3947	P	0.5	-1617.
4	☐	10.000	32.229	387707.09	0.4032	P	1.1	222.3
5	☐	100.000	76.673	399387.91	0.4067	P	0.9	-23.3
6	☐	200.000	212.406	395835.24	0.4174	P	1.1	6.2

y = 7.8700E-005 * x + 0.4007
R = 0.9181
DL = 60.92 ppb
BEC = 5091 ppb

Weight: <None>
Min Conc: <None>

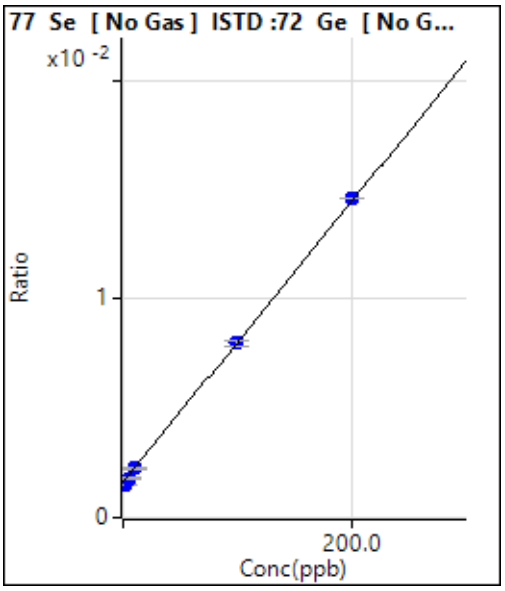


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	127818.91	0.3459	P	1.2	
2	☐	2.000	39.682	128851.73	0.3480	P	0.6	1884.1
3	☐	5.000	-5.602	127268.49	0.3457	P	1.1	-212.0
4	☐	10.000	8.227	127388.59	0.3464	P	0.9	-17.7
5	☐	100.000	71.640	130777.12	0.3497	P	1.7	-28.4
6	☐	200.000	214.157	127559.39	0.3570	P	0.9	7.1

y = 5.1833E-005 * x + 0.3459
R = 0.9632
DL = 237.8 ppb
BEC = 6674 ppb

Weight: <None>
Min Conc: <None>

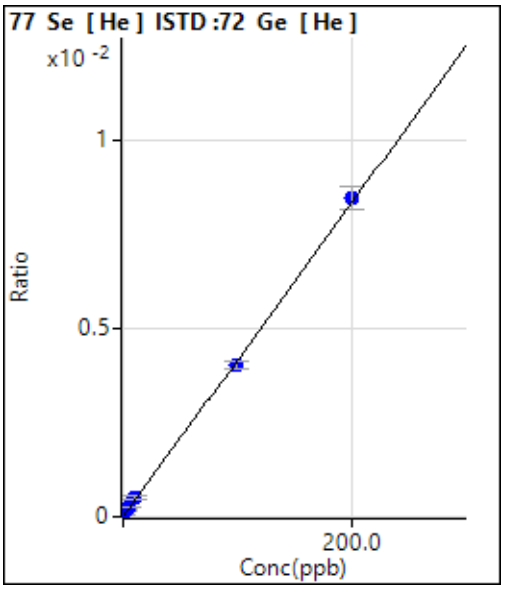
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1660.14	0.0017	P	9.7	
2	☐	2.000	-3.249	1453.44	0.0015	P	2.0	-262.4
3	☐	5.000	1.494	1780.16	0.0018	P	9.0	-70.1
4	☐	10.000	8.675	2170.22	0.0023	P	3.3	-13.2
5	☐	100.000	97.966	7835.75	0.0080	P	3.5	-2.0
6	☐	200.000	201.224	13844.02	0.0146	P	0.5	0.6

y = 6.4088E-005 * x + 0.0017
R = 0.9997
DL = 7.716 ppb
BEC = 26.55 ppb

Weight: <None>
Min Conc: <None>

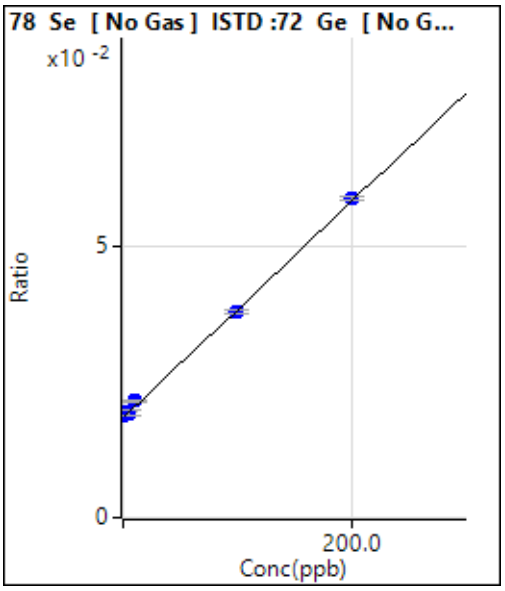


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	16.67	0.0000	P	34.5	
2	☐	2.000	3.026	63.33	0.0002	P	33.1	51.3
3	☐	5.000	4.999	93.33	0.0003	P	11.6	0.0
4	☐	10.000	11.317	190.00	0.0005	P	13.6	13.2
5	☐	100.000	95.592	1506.78	0.0040	P	6.1	-4.4
6	☐	200.000	202.128	3023.72	0.0085	P	7.0	1.1

y = 4.1653E-005 * x + 4.5095E-005
R = 0.9996
DL = 1.122 ppb
BEC = 1.083 ppb

Weight: <None>
Min Conc: <None>

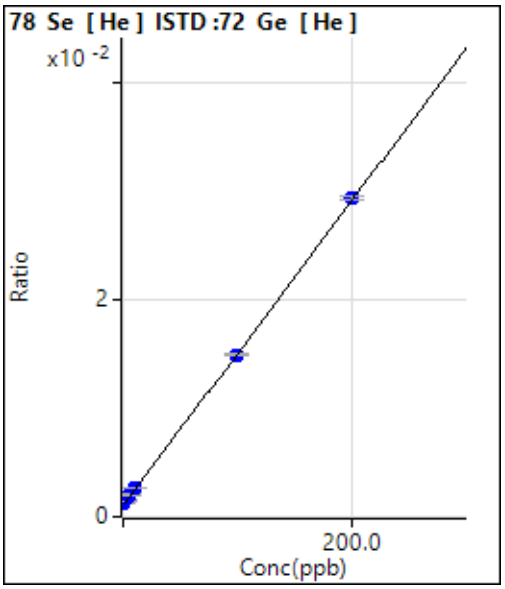
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	18302.73	0.0188	P	2.6	
2	☐	2.000	4.064	19047.06	0.0196	P	1.0	103.2
3	☐	5.000	2.962	19160.67	0.0194	P	5.0	-40.8
4	☐	10.000	13.985	20722.82	0.0216	P	0.8	39.9
5	☐	100.000	96.555	37358.65	0.0380	P	1.9	-3.4
6	☐	200.000	201.553	55976.44	0.0590	P	1.3	0.8

y = 1.9977E-004 * x + 0.0188
R = 0.9994
DL = 7.264 ppb
BEC = 93.91 ppb

Weight: <None>
Min Conc: <None>

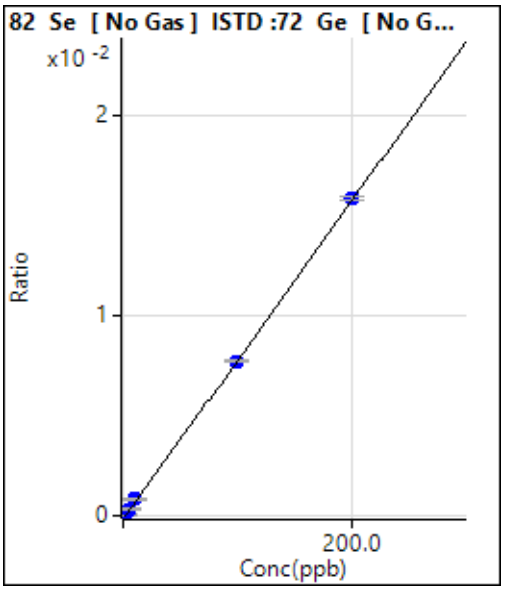


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	438.01	0.0012	P	6.1	
2	☐	2.000	2.581	572.68	0.0015	P	6.1	29.1
3	☐	5.000	5.755	733.36	0.0020	P	6.1	15.1
4	☐	10.000	10.911	998.04	0.0027	P	1.8	9.1
5	☐	100.000	98.036	5579.84	0.0149	P	0.6	-2.0
6	☐	200.000	200.912	10477.42	0.0293	P	1.1	0.5

y = 1.4007E-004 * x + 0.0012
R = 0.9999
DL = 1.554 ppb
BEC = 8.462 ppb

Weight: <None>
Min Conc: <None>

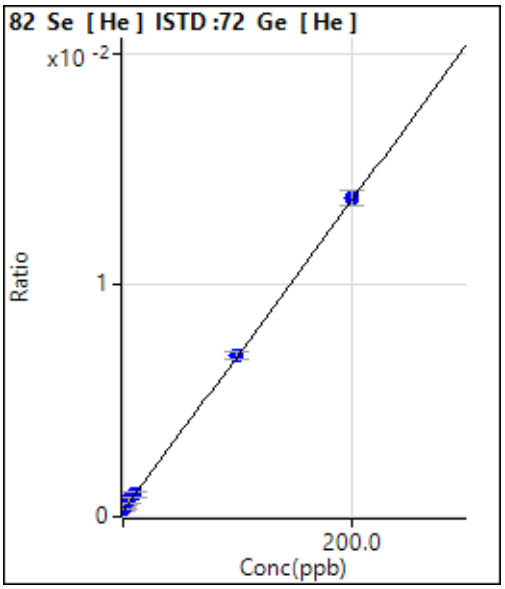
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	-47.03	0.0000	P	-302.	
2	☐	2.000	2.168	119.87	0.0001	P	87.3	8.4
3	☐	5.000	5.093	353.12	0.0004	P	32.4	1.9
4	☐	10.000	11.580	836.17	0.0009	P	3.4	15.8
5	☐	100.000	98.024	7582.26	0.0077	P	1.3	-2.0
6	☐	200.000	200.905	15058.58	0.0159	P	1.2	0.5

y = 7.9266E-005 * x - 4.8490E-005
R = 0.9999
DL = 5.556 ppb
BEC = -0.6117 ppb

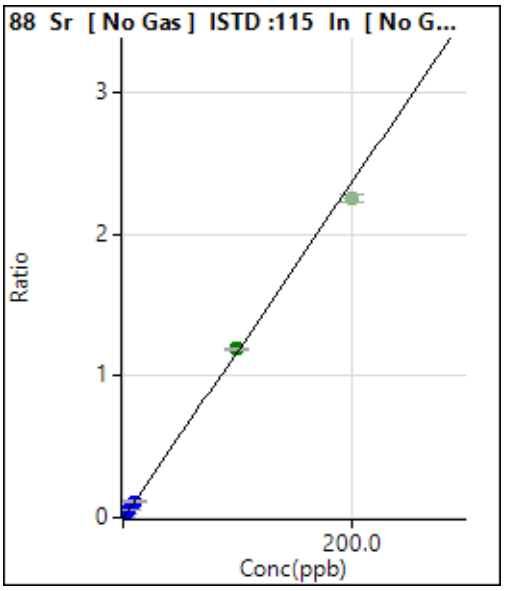
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	120.00	0.0003	P	37.8	
2	☐	2.000	1.740	163.34	0.0004	P	35.3	-13.0
3	☐	5.000	5.682	260.01	0.0007	P	30.9	13.6
4	☐	10.000	9.498	353.34	0.0010	P	22.8	-5.0
5	☐	100.000	98.814	2596.97	0.0069	P	5.1	-1.2
6	☐	200.000	200.604	4917.65	0.0138	P	5.4	0.3

y = 6.7003E-005 * x + 3.2453E-004
R = 1.0000
DL = 5.499 ppb
BEC = 4.844 ppb

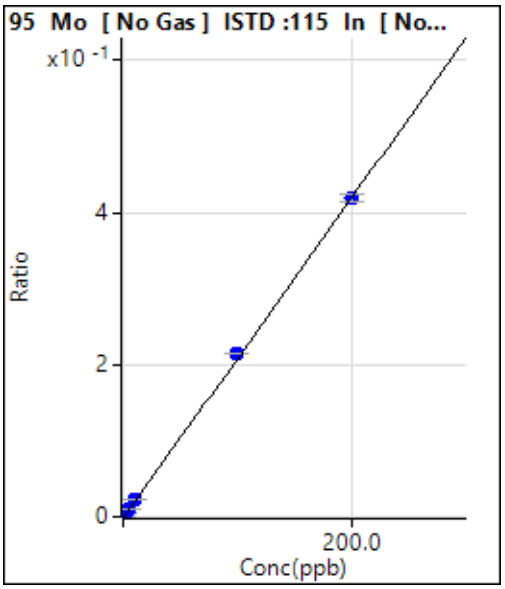
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1133.40	0.0010	P	15.8	
2	☐	2.000	1.914	25965.67	0.0238	P	5.7	-4.3
3	☐	5.000	4.743	62084.49	0.0573	P	1.5	-5.1
4	☐	10.000	9.565	124079.70	0.1146	P	2.0	-4.3
5	☐	100.000	100.058	1286744.51	1.1887	A	1.9	0.1
6	☑	200.000		2510484.55	2.2538	A	2.4	

y = 0.0119 * x + 0.0010
R = 1.0000
DL = 0.041 ppb
BEC = 0.08667 ppb

Weight: <None>
Min Conc: <None>

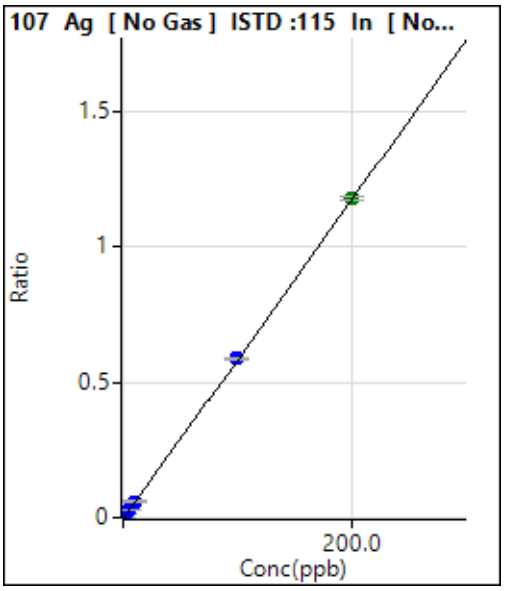


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	60.00	0.0001	P	13.5	
2	☐	2.000	2.074	4830.97	0.0044	P	9.2	3.7
3	☐	5.000	5.257	12049.00	0.0111	P	2.1	5.1
4	☐	10.000	10.369	23714.84	0.0219	P	1.4	3.7
5	☐	100.000	102.035	232713.68	0.2149	P	0.7	2.0
6	☐	200.000	198.957	466808.49	0.4191	P	2.0	-0.5

y = 0.0021 * x + 5.4306E-005
R = 0.9999
DL = 0.01042 ppb
BEC = 0.02579 ppb

Weight: <None>
Min Conc: <None>

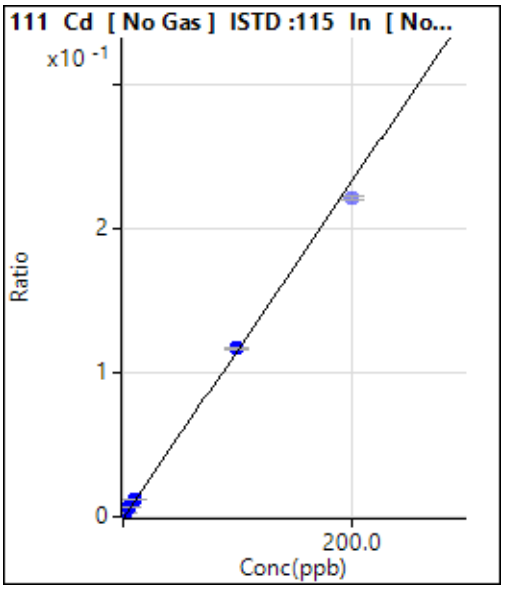
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	630.02	0.0006	P	3.9	
2	☐	2.000	1.894	12816.46	0.0117	P	3.5	-5.3
3	☐	5.000	5.047	32804.45	0.0303	P	1.0	0.9
4	☐	10.000	10.091	64983.24	0.0600	P	1.4	0.9
5	☐	100.000	99.894	637407.26	0.5888	P	1.3	-0.1
6	☐	200.000	200.048	1312842.92	1.1785	A	1.8	0.0

y = 0.0059 * x + 5.7136E-004
R = 1.0000
DL = 0.01139 ppb
BEC = 0.09703 ppb

Weight: <None>
Min Conc: <None>

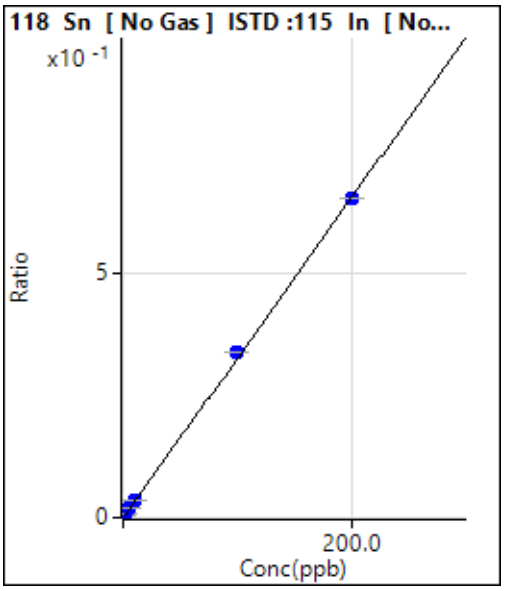


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	0.00	0.0000	P		
2	☐	2.000	2.032	2590.30	0.0024	P	5.8	1.6
3	☐	5.000	5.368	6781.88	0.0063	P	5.7	7.4
4	☐	10.000	10.024	12676.34	0.0117	P	4.6	0.2
5	☐	100.000	99.979	126261.56	0.1166	P	1.1	0.0
6	☑	200.000		246161.21	0.2210	P	1.0	

y = 0.0012 * x + 0.0000E+000
R = 1.0000
DL = 0 ppb
BEC = 0 ppb

Weight: <None>
Min Conc: <None>

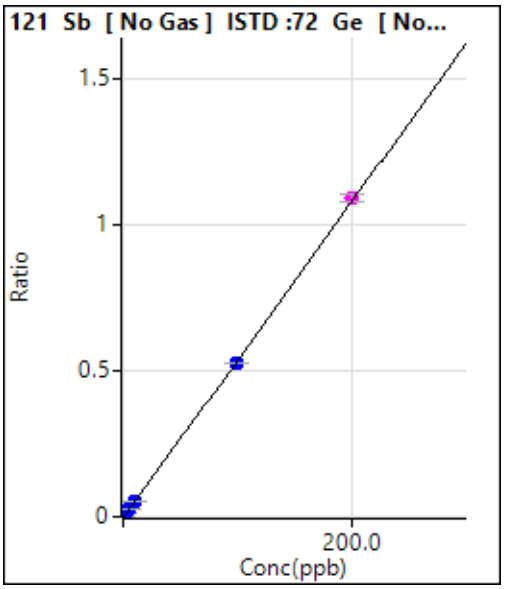
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	2750.33	0.0025	P	1.8	
2	☐	2.000	1.976	9797.18	0.0090	P	4.0	-1.2
3	☐	5.000	5.016	20482.89	0.0189	P	2.7	0.3
4	☐	10.000	10.268	39088.81	0.0361	P	3.5	2.7
5	☐	100.000	102.962	367487.60	0.3394	P	0.1	3.0
6	☐	200.000	198.505	726582.44	0.6521	P	0.4	-0.7

y = 0.0033 * x + 0.0025
R = 0.9998
DL = 0.04104 ppb
BEC = 0.7631 ppb

Weight: <None>
Min Conc: <None>

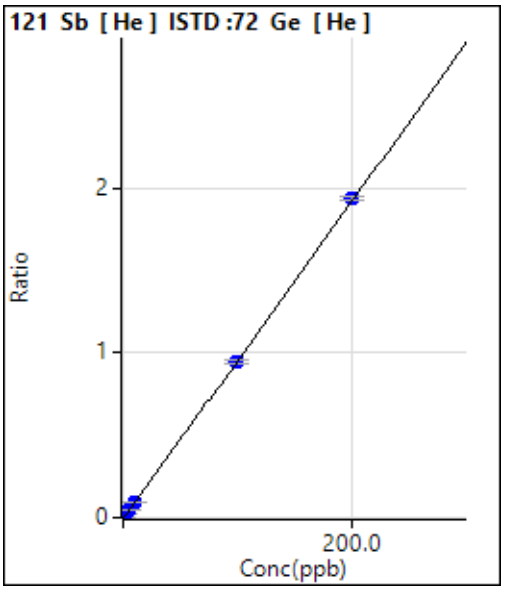


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	773.37	0.0008	P	14.2	
2	☐	2.000	1.980	11208.30	0.0115	P	5.8	-1.0
3	☐	5.000	4.830	26700.80	0.0270	P	3.0	-3.4
4	☐	10.000	9.896	52294.73	0.0544	P	1.8	-1.0
5	☐	100.000	97.084	517147.96	0.5266	P	0.7	-2.9
6	☐	200.000	201.468	1035744.70	1.0920	M	2.3	0.7

y = 0.0054 * x + 7.9264E-004
R = 0.9999
DL = 0.06221 ppb
BEC = 0.1463 ppb

Weight: <None>
Min Conc: <None>

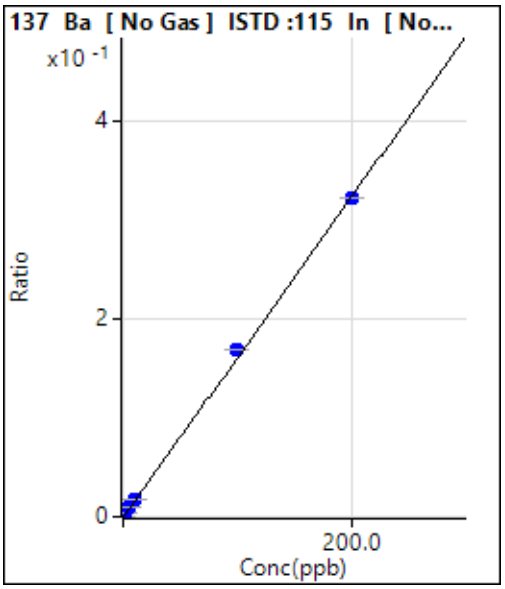
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	433.35	0.0012	P	10.7	
2	☐	2.000	1.922	7298.84	0.0197	P	2.7	-3.9
3	☐	5.000	4.982	18126.12	0.0492	P	1.7	-0.4
4	☐	10.000	9.806	35220.87	0.0958	P	1.3	-1.9
5	☐	100.000	97.770	353188.63	0.9443	P	1.9	-2.2
6	☐	200.000	201.126	693570.61	1.9413	P	0.8	0.6

y = 0.0096 * x + 0.0012
R = 0.9999
DL = 0.03888 ppb
BEC = 0.1216 ppb

Weight: <None>
Min Conc: <None>

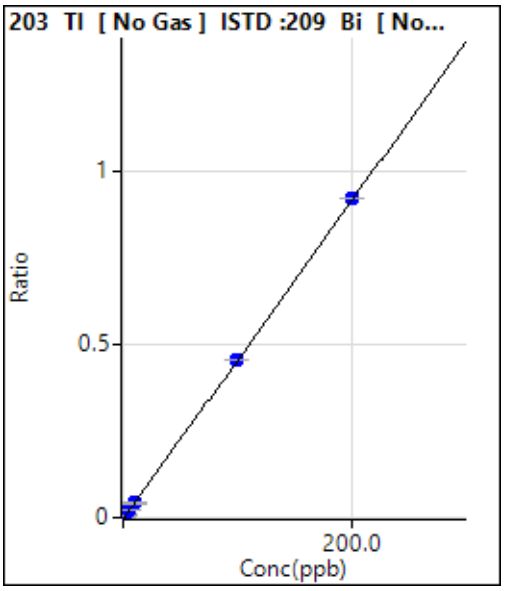


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	633.36	0.0006	P	9.6	
2	☐	2.000	2.045	4257.47	0.0039	P	7.4	2.3
3	☐	5.000	5.382	10087.43	0.0093	P	0.9	7.6
4	☐	10.000	10.309	18747.18	0.0173	P	4.6	3.1
5	☐	100.000	103.473	182533.91	0.1686	P	0.6	3.5
6	☐	200.000	198.238	359308.13	0.3225	P	0.5	-0.9

y = 0.0016 * x + 5.7378E-004
R = 0.9998
DL = 0.1018 ppb
BEC = 0.3533 ppb

Weight: <None>
Min Conc: <None>

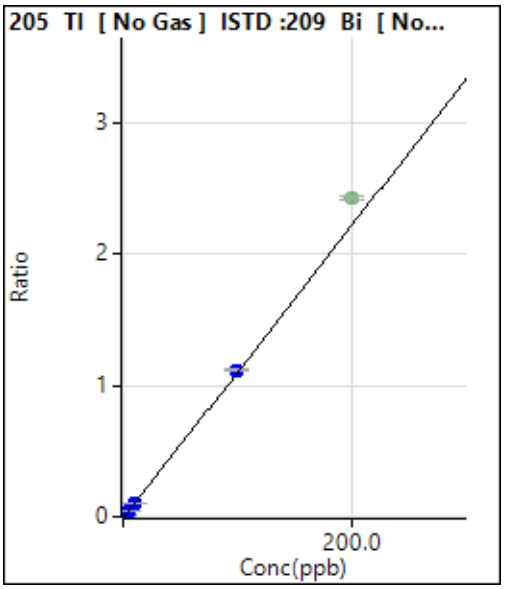
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	70.00	0.0001	P	65.2	
2	☐	2.000	1.816	7382.35	0.0084	P	4.2	-9.2
3	☐	5.000	4.523	18280.38	0.0209	P	0.0	-9.5
4	☐	10.000	9.106	36223.01	0.0420	P	2.9	-8.9
5	☐	100.000	98.940	398024.51	0.4552	P	0.8	-1.1
6	☐	200.000	200.589	774159.60	0.9228	P	0.5	0.3

y = 0.0046 * x + 8.0763E-005
R = 1.0000
DL = 0.03434 ppb
BEC = 0.01756 ppb

Weight: <None>
Min Conc: <None>

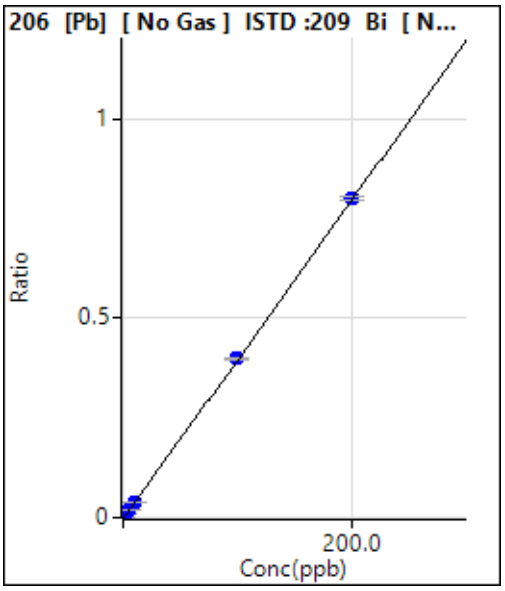


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	193.34	0.0002	P	16.1	
2	☐	2.000	1.849	18246.96	0.0208	P	2.0	-7.6
3	☐	5.000	4.519	44322.98	0.0506	P	1.1	-9.6
4	☐	10.000	9.305	89797.37	0.1040	P	0.7	-7.0
5	☐	100.000	100.097	976662.64	1.1170	P	0.6	0.1
6	☑	200.000		2039312.26	2.4308	A	1.1	

y = 0.0112 * x + 2.2324E-004
R = 1.0000
DL = 0.009682 ppb
BEC = 0.02001 ppb

Weight: <None>
Min Conc: <None>

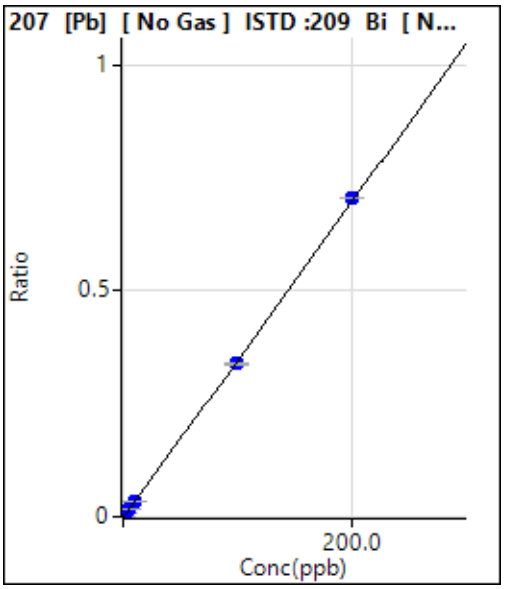
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	520.02	0.0006	P	10.4	
2	☐	2.000	1.933	7282.28	0.0083	P	5.4	-3.3
3	☐	5.000	4.930	17759.67	0.0203	P	2.6	-1.4
4	☐	10.000	9.838	34431.36	0.0399	P	0.9	-1.6
5	☐	100.000	99.492	347943.57	0.3979	P	1.4	-0.5
6	☐	200.000	200.264	671465.15	0.8004	P	1.0	0.1

y = 0.0040 * x + 6.0063E-004
R = 1.0000
DL = 0.04689 ppb
BEC = 0.1504 ppb

Weight: <None>
Min Conc: <None>

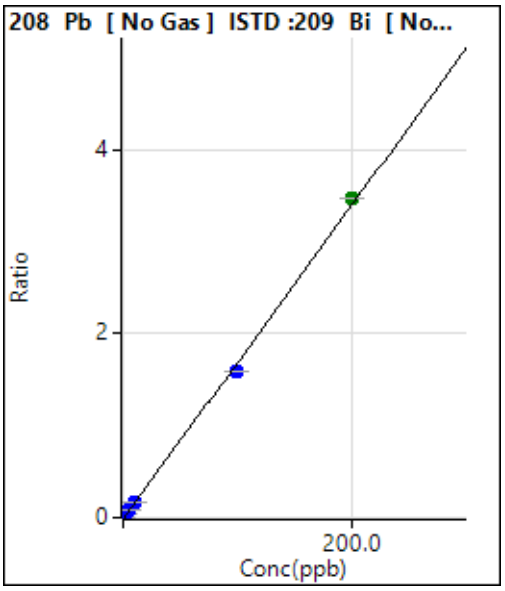


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	460.02	0.0005	P	8.1	
2	☐	2.000	1.924	6355.08	0.0073	P	6.7	-3.8
3	☐	5.000	4.816	15202.88	0.0174	P	0.7	-3.7
4	☐	10.000	9.835	30143.67	0.0349	P	1.8	-1.7
5	☐	100.000	96.823	296495.54	0.3391	P	1.4	-3.2
6	☐	200.000	201.602	591845.66	0.7055	P	0.3	0.8

y = 0.0035 * x + 5.3150E-004
R = 0.9998
DL = 0.03686 ppb
BEC = 0.152 ppb

Weight: <None>
Min Conc: <None>

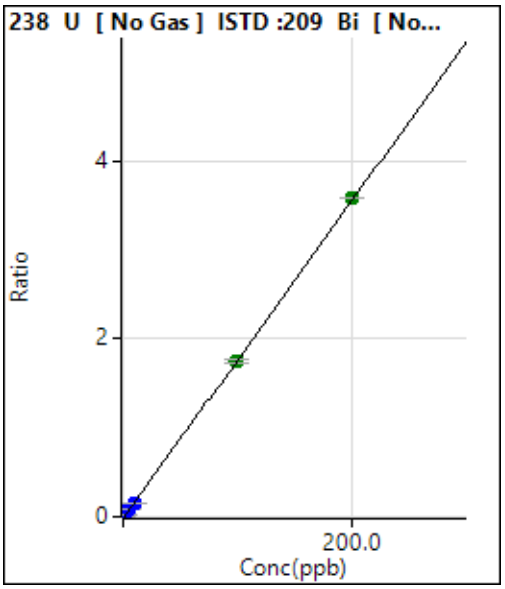
Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	1870.09	0.0022	P	1.4	
2	☐	2.000	1.842	29367.61	0.0336	P	2.1	-7.9
3	☐	5.000	4.696	71934.23	0.0822	P	0.3	-6.1
4	☐	10.000	9.460	141026.89	0.1634	P	0.7	-5.4
5	☐	100.000	93.119	1389518.50	1.5892	P	1.0	-6.9
6	☐	200.000	203.477	2911144.16	3.4700	A	0.5	1.7

y = 0.0170 * x + 0.0022
R = 0.9992
DL = 0.005475 ppb
BEC = 0.1268 ppb

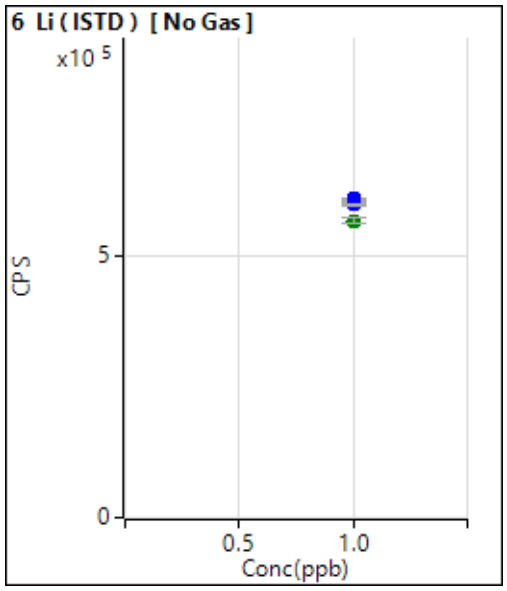
Weight: <None>
Min Conc: <None>



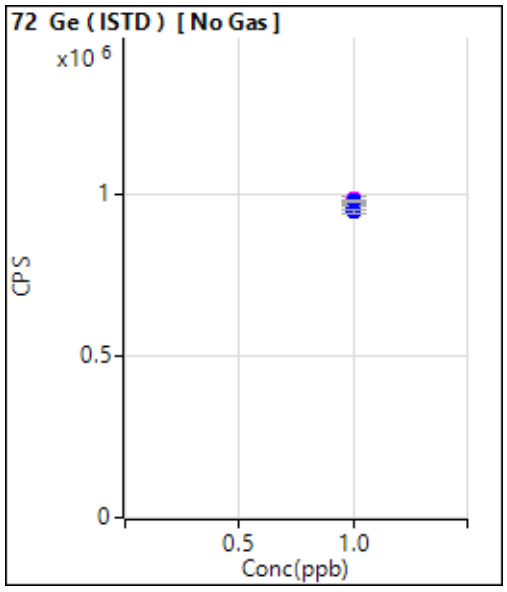
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	0.000	0.000	43.33	0.0001	P	35.5	
2	☐	2.000	1.760	27477.95	0.0314	P	2.3	-12.0
3	☐	5.000	4.484	69960.46	0.0799	P	1.1	-10.3
4	☐	10.000	9.000	138433.32	0.1604	P	0.9	-10.0
5	☐	100.000	98.265	1530725.65	1.7506	A	1.7	-1.7
6	☐	200.000	200.933	3003075.16	3.5797	A	0.3	0.5

y = 0.0178 * x + 5.0084E-005
R = 0.9999
DL = 0.002996 ppb
BEC = 0.002811 ppb

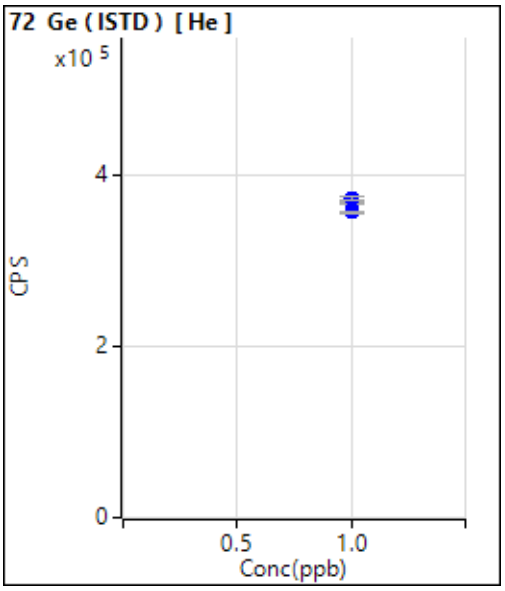
Weight: <None>
Min Conc: <None>



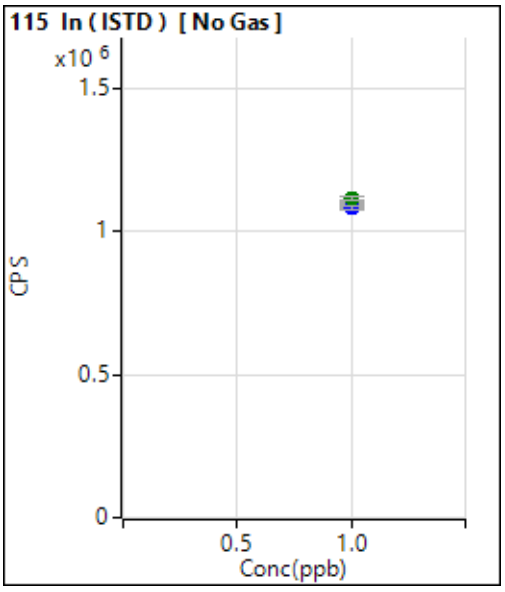
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		609168.64		P	0.6	
2	☐	1.000		604413.20		P	0.3	
3	☐	1.000		604805.74		P	0.4	
4	☐	1.000		597365.69		P	0.7	
5	☐	1.000		597211.65		P	0.4	
6	☐	1.000		566965.80		A	2.5	



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		975685.58		P	0.6	
2	☐	1.000		973231.18		P	0.3	
3	☐	1.000		990770.48		M	1.8	
4	☐	1.000		961560.90		P	1.4	
5	☐	1.000		982020.77		P	1.0	
6	☐	1.000		948400.82		P	1.3	

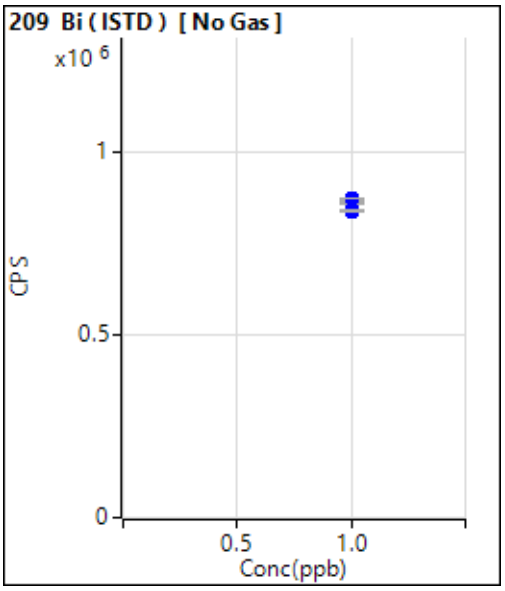


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		369475.52		P	0.3	
2	☐	1.000		370265.97		P	0.3	
3	☐	1.000		368211.15		P	0.8	
4	☐	1.000		367783.00		P	0.6	
5	☐	1.000		374068.68		P	1.2	
6	☐	1.000		357266.53		P	0.2	



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		1101714.06		M	3.3	
2	☐	1.000		1093518.63		M	1.7	
3	☐	1.000		1083066.98		P	0.4	
4	☐	1.000		1083343.21		M	2.1	
5	☐	1.000		1082635.03		P	1.2	
6	☐	1.000		1114170.14		A	1.7	

Calibration for 021_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD	%RE
1	☐	1.000		865615.77		P	0.5	
2	☐	1.000		875290.82		P	0.6	
3	☐	1.000		875216.29		P	0.5	
4	☐	1.000		863166.66		P	0.5	
5	☐	1.000		874380.17		P	0.3	
6	☐	1.000		838935.92		P	0.6	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	022ICSA.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T11:19:18-06:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	0.282	38.0	34842	2.9	0	ICSA Main CR1 Failed
Be	9	1	No Gas	0.002	338.1	35	37.8	0	ICSA Main CR1 Failed
V	51	2	He	0.056	20.3	490	7.7	0	ICSA Main CR1 Failed
Cr	52	2	He	0.925	3.6	5244	2.2	0	ICSA Main CR1 Failed
Fe	56	2	He	97975.711	1.1	319766035	0.5	0	
Se	78	2	He	0.299	422.6	457	13.9	0	ICSA Main CR1 Failed
As	75	2	He	0.362	14.9	302	10.2	0	ICSA Main CR1 Failed
Ca	44	2	He	102592.346	1.5	2390703	1.1	0	
Na	23	2	He	99344.557	0.3	59679907	0.5	0	
Mg	24	2	He	99786.401	1.3	36189779	0.8	0	
K	39	2	He	99755.930	1.1	47395871	0.5	0	
Mn	55	2	He	1.287	1.7	4981	1.7	0	ICSA Main CR1 Failed
Co	59	2	He	0.876	4.7	5261	4.3	0	ICSA Main CR1 Failed
Ni	60	2	He	1.093	14.4	2047	9.5	0	ICSA Main CR1 Failed
Cu	63	2	He	0.509	11.9	3134	6.3	0	ICSA Main CR1 Failed
Zn	66	2	He	1.232	11.6	1647	6.7	0	ICSA Main CR1 Failed
Al	27	2	He	95962.798	1.0	21573780	0.7	0	
B	11	1	No Gas	26.736	20.6	40490	10.1	0	
Al	27	1	No Gas	92525.916	2.0	663712857	0.5	0	
Si	28	1	No Gas	47.823	6.8	390545	3.9	0	
Ag	107	1	No Gas	0.005	91.6	683	5.1	0	ICSA Main CR1 Failed
Cd	111	1	No Gas	0.649	3.1	860	4.0	0	ICSA Main CR1 Failed
Sr	88	1	No Gas	1.108	4.6	15493	3.5	0	ICSA Main CR1 Failed
Mo	95	1	No Gas	2045.479	0.7	4890741	0.4	0	
Sn	118	1	No Gas	0.546	14.2	4864	5.8	0	ICSA Main CR1 Failed
Sb	121	1	No Gas	0.205	23.7	1974	12.9	0	ICSA Main CR1 Failed
Ba	137	1	No Gas	1.054	13.9	2594	9.5	0	ICSA Main CR1 Failed
Tl	205	1	No Gas	0.233	44.8	2354	41.6	0	ICSA Main CR1 Failed
Tl	203	1	No Gas	0.219	58.8	907	54.6	0	ICSA Main CR1 Failed
Pb	208	1	No Gas	0.716	2.4	11969	1.2	0	ICSA Main CR1 Failed
U	238	1	No Gas	0.018	13.9	313	11.2	0	ICSA Main CR1 Failed
Ca	43	2	He	98836.585	1.1	133883	0.6	0	
Sb	121	2	He	0.168	19.6	1040	10.8	0	ICSA Main CR1 Failed
Ti	47	2	He	2014.082	1.0	255987	0.6	0	
Se	82	1	No Gas	0.235	81.7	-31	-50.0	0	ICSA Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	597705	1.12	609169	98.12	70	120	
Ge	72	2	He	372342	0.62	369476	100.78	70	120	
Ge	72	1	No Gas	1039243	1.51	975686	106.51	70	120	
In	115	1	No Gas	1135347	1.17	1101714	103.05	70	120	
Bi	209	1	No Gas	833088	0.86	865616	96.24	70	120	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	023ICSB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T11:21:13-06:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Li	7	1	No Gas	99.877	1.372	770494	0.14	100	99.9	180	120	ICSB Main CR1 Failed
Be	9	1	No Gas	96.979	0.370	159614	1.13	100	97.0	80	120	
V	51	2	He	100.850	1.713	299140	1.24	100	100.8	80	120	
Cr	52	2	He	99.698	1.237	333483	1.01	100	99.7	80	120	
Fe	56	2	He	109445.609	1.278	340356035	0.97	100	109445.6	80	120	
Se	78	2	He	95.622	3.992	5172	3.11	100	95.6	80	120	
As	75	2	He	100.959	1.766	52735	1.85	100	101.0	80	120	
Ca	44	2	He	111812.728	0.889	2482664	0.51	100	111812.7	80	120	
Na	23	2	He	109994.586	1.193	62952002	0.84	100	109994.6	80	120	
Mg	24	2	He	110457.836	1.392	38170289	0.73	100	110457.8	80	120	
K	39	2	He	110450.707	1.294	49991441	0.42	100	110450.7	80	120	
Mn	55	2	He	100.862	0.064	264460	1.40	100	100.9	80	120	
Co	59	2	He	97.489	1.448	470597	0.93	100	97.5	80	120	
Ni	60	2	He	95.557	2.143	117077	0.98	100	95.6	80	120	
Cu	63	2	He	96.267	1.153	311094	0.27	100	96.3	80	120	
Zn	66	2	He	98.726	0.971	67444	2.11	100	98.7	80	120	
Al	27	2	He	96956.487	2.335	20767675	1.60	100	96956.5	80	120	ICSB Main CR1 Failed
B	11	1	No Gas	520.646	1.452	423387	0.88	100	520.6	80	120	
Al	27	1	No Gas	95395.796	3.449	640900044	1.02	100	95395.8	80	120	ICSB Main CR1 Failed
Si	28	1	No Gas	529.584	3.993	1906835	1.61	100	529.6	80	120	
Ag	107	1	No Gas	100.270	0.236	611093	0.59	100	100.3	80	120	
Cd	111	1	No Gas	101.410	1.172	122325	1.43	100	101.4	80	120	
Sr	88	1	No Gas	110.402	0.668	1300888	0.93	100	110.4	80	120	
Mo	95	1	No Gas	2288.007	0.662	4982431	0.42	100	2288.0	80	120	ICSB Main CR1 Failed
Sn	118	1	No Gas	108.638	0.134	370179	0.29	100	108.6	80	120	
Sb	121	1	No Gas	97.091	3.715	512491	0.96	100	97.1	80	120	
Ba	137	1	No Gas	108.625	0.446	182990	0.70	100	108.6	80	120	
Tl	205	1	No Gas	99.377	0.066	913366	0.58	100	99.4	80	120	
Tl	203	1	No Gas	98.506	1.142	373294	1.65	100	98.5	80	120	
Pb	208	1	No Gas	96.732	0.547	1359576	0.49	100	96.7	80	120	
U	238	1	No Gas	102.272	1.101	1500719	1.62	100	102.3	80	120	
Ca	43	2	He	110354.821	1.552	142425	0.38	100	110354.8	80	120	
Sb	121	2	He	99.924	1.377	342380	0.76	100	99.9	80	120	
Ti	47	2	He	2131.251	0.942	258132	1.86	100	2131.3	80	120	
Cu	63	1	No Gas	93.579	3.721	518362	0.41	100	93.6	80	120	
Se	82	1	No Gas	96.793	2.829	7425	4.66	100	96.8	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	576859	1.19	609169	94.70	70	120	
Ge	72	2	He	354802	1.39	369476	96.03	70	120	
Ge	72	1	No Gas	974034	4.12	975686	99.83	70	120	
In	115	1	No Gas	1033986	0.40	1101714	93.85	70	120	
Bi	209	1	No Gas	823625	0.52	865616	95.15	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	025_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T11:31:20-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	No Gas	97.290	4.446	753315	1.41	100	97.3	90	110	
Be	9	1	No Gas	103.715	4.122	171128	0.83	100	103.7	90	110	
V	51	2	He	97.783	0.083	308340	0.20	100	97.8	90	110	
Cr	52	2	He	98.258	0.259	349410	0.45	100	98.3	90	110	
Fe	56	2	He	9760.344	0.978	32295266	0.70	10000	97.6	90	110	
Se	78	2	He	98.511	3.246	5651	2.79	100	98.5	90	110	
As	75	2	He	101.735	0.437	56486	0.23	100	101.7	90	110	
Ca	44	2	He	9904.570	1.181	234478	0.99	10000	99.0	90	110	
Na	23	2	He	9667.533	0.385	5952009	0.11	10000	96.7	90	110	
Mg	24	2	He	9885.279	0.895	3631831	0.68	10000	98.9	90	110	
K	39	2	He	9799.654	0.738	4807547	0.62	10000	98.0	90	110	
Mn	55	2	He	97.796	0.930	272601	0.85	100	97.8	90	110	
Co	59	2	He	97.202	0.893	498789	0.64	100	97.2	90	110	
Ni	60	2	He	98.160	0.455	127840	0.33	100	98.2	90	110	
Cu	63	2	He	96.839	0.414	332664	0.28	100	96.8	90	110	
Zn	66	2	He	97.748	1.384	70982	1.42	100	97.7	90	110	
Al	27	2	He	103.626	0.365	24175	0.60	100	103.6	90	110	
B	11	1	No Gas	482.470	8.289	394295	3.69	500	96.5	90	110	
Al	27	1	No Gas	99.689	2.540	711619	1.41	100	99.7	90	110	
Si	28	1	No Gas	576.751	1.888	2127455	2.20	5000	11.5	90	110	CCV Main CR1-2 Failed
Ag	107	1	No Gas	96.869	4.992	641799	1.53	100	96.9	90	110	
Cd	111	1	No Gas	96.622	4.385	126729	2.15	100	96.6	90	110	
Sr	88	1	No Gas	96.202	2.900	1285491	2.20	100	96.2	90	110	
Mo	95	1	No Gas	97.873	4.233	231807	1.52	100	97.9	90	110	
Sn	118	1	No Gas	98.807	4.808	366283	1.50	100	98.8	90	110	
Sb	121	1	No Gas	95.377	3.054	520385	0.88	100	95.4	90	110	
Ba	137	1	No Gas	98.428	5.115	180294	0.49	100	98.4	90	110	
Tl	205	1	No Gas	103.759	0.527	1015997	1.38	100	103.8	90	110	
Tl	203	1	No Gas	101.943	0.611	411564	1.40	100	101.9	90	110	
Pb	208	1	No Gas	92.838	0.481	1390272	1.30	100	92.8	90	110	
U	238	1	No Gas	99.120	0.278	1549511	1.06	100	99.1	90	110	
Ca	43	2	He	9956.040	0.636	13700	0.91	10000	99.6	90	110	
Sb	121	2	He	97.815	0.552	356292	0.28	100	97.8	90	110	
Ti	47	2	He	98.395	3.440	12689	3.34	100	98.4	90	110	
Cu	63	1	No Gas	95.321	2.572	545801	1.37	100	95.3	90	110	
Se	82	1	No Gas	102.302	2.414	8109	2.11	100	102.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	578966	4.23	609169	95.04	70	120	
Ge	72	2	He	377130	0.28	369476	102.07	70	120	
Ge	72	1	No Gas	1006582	3.90	975686	103.17	70	120	
In	115	1	No Gas	1125641	4.51	1101714	102.17	70	120	
Bi	209	1	No Gas	877468	0.87	865616	101.37	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	026_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T11:33:12-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	-0.015	-316.6	33076	0.8	0.5	
Be	9	1	No Gas	-0.003	-210.9	27	39.0	0.5	
V	51	2	He	0.015	95.9	359	12.4	2.5	
Cr	52	2	He	-0.065	-14.1	1767	2.0	2.5	
Fe	56	2	He	0.603	22.9	33993	1.1	100	
Se	78	2	He	-0.745	-36.8	397	3.8	2	
As	75	2	He	-0.085	-35.8	57	29.4	2.5	
Ca	44	2	He	-4.471	-91.3	650	14.7	100	
Na	23	2	He	-0.679	-398.1	74837	1.9	100	
Mg	24	2	He	0.791	59.9	820	20.5	100	
K	39	2	He	-2.268	-84.7	97822	1.2	100	
Mn	55	2	He	-0.033	-181.4	1350	12.2	2.5	
Co	59	2	He	-0.015	-136.8	747	13.5	2.5	
Ni	60	2	He	-0.100	-112.2	513	27.6	2.5	
Cu	63	2	He	-0.080	-57.9	1130	13.4	2	
Zn	66	2	He	-0.381	-21.5	497	11.8	2.5	
Al	27	2	He	-0.106	-339.1	540	14.7	5	
B	11	1	No Gas	18.634	25.5	34514	10.9	0.5	CCB Main CR1 Failed
Al	27	1	No Gas	-0.319	-23.2	16717	2.0	5	
Si	28	1	No Gas	0.861	70.8	217564	0.4	10	
Ag	107	1	No Gas	-0.050	-6.5	297	7.0	2.5	
Cd	111	1	No Gas	0.018	65.3	23	65.5	1	
Sr	88	1	No Gas	-0.009	-53.5	997	6.0	2.5	
Mo	95	1	No Gas	0.096	7.0	277	5.5	2.5	
Sn	118	1	No Gas	-0.101	-65.6	2344	9.8	5	
Sb	121	1	No Gas	-0.031	-79.7	617	20.9	2.5	
Ba	137	1	No Gas	-0.099	-84.3	447	32.6	2.5	
Tl	205	1	No Gas	0.140	28.1	1567	24.3	1	
Tl	203	1	No Gas	0.157	38.0	703	34.1	1	
Pb	208	1	No Gas	-0.033	-10.5	1400	3.8	2.5	
U	238	1	No Gas	0.011	49.9	220	39.4	2.5	
Ca	43	2	He	-12.266	-187.0	27	114.6	100	
Sb	121	2	He	-0.020	-61.9	360	12.1	2.5	
Ti	47	2	He	0.054	255.3	30	57.7	2.5	
Cu	63	1	No Gas	-0.092	-6.5	2014	2.0	2.5	
Se	82	1	No Gas	-0.121	-532.3	-57	-88.5	2	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	607150	0.36	609169	99.67	70	120	
Ge	72	2	He	367539	0.27	369476	99.48	70	120	
Ge	72	1	No Gas	982922	1.25	975686	100.74	70	120	
In	115	1	No Gas	1081765	0.20	1101714	98.19	70	120	
Bi	209	1	No Gas	876299	0.98	865616	101.23	70	120	

Sample Report

Sample Table

Sample Name	HS22121096-03
Data File Name	027SMPL.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T11:40:45-06:00
Sample Type	Sample
Dilution	100
Comment	DOD TW 188020
ISTD Ref FileName	009CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Li	7	1	No Gas	0.318	31.787	26.71	34741	0.00	2000	
Be	9	1	No Gas	0.003	0.253	121.78	35	0.01	2000	
V	51	2	He	0.020	2.011	85.49	371	0.01	2000	
Cr	52	2	He	0.178	17.800	41.17	2587	0.01	2000	
Fe	56	2	He	385.622	38562.185	2.41	1266078	0.03	200000	
Se	78	2	He	0.329	32.857	254.42	449	0.07	2000	
As	75	2	He	0.122	12.199	50.48	168	0.07	2000	
Ca	44	2	He	882.788	88278.798	2.48	20913	4.22	200000	
Na	23	2	He	2652.714	265271.431	1.01	1635487	0.16	200000	
Mg	24	2	He	701.509	70150.888	1.23	250024	0.28	200000	
K	39	2	He	32.221	3222.088	12.63	113215	0.03	200000	
Mn	55	2	He	132.663	13266.344	1.34	357516	0.04	2000	
Co	59	2	He	2.109	210.940	5.32	11275	0.02	2000	
Ni	60	2	He	1.664	166.377	4.31	2724	0.06	2000	
Cu	63	2	He	-0.132	-13.185	-5.56	950	-0.01	2000	
Zn	66	2	He	-0.212	-21.205	-61.35	610	-0.03	2000	
Al	27	2	He	-0.166	-16.649	-96.52	523	-0.03	2000	
B	11	1	No Gas	-1.221	-122.092	-95.57	17786	-0.01	2000	
Al	27	1	No Gas	-0.502	-50.189	-23.25	14885	0.00	2000	
Si	28	1	No Gas	354.927	35492.682	3.19	1309292	0.03	2000	
Ag	107	1	No Gas	-0.071	-7.120	-10.16	157	-0.05	2000	
Cd	111	1	No Gas	0.011	1.116	114.17	13	0.08	2000	
Sr	88	1	No Gas	18.269	1826.943	1.73	225096	0.01	2000	
Mo	95	1	No Gas	0.022	2.169	23.85	103	0.02	2000	
Sn	118	1	No Gas	-0.174	-17.437	-22.50	1990	-0.01	2000	
Sb	121	1	No Gas	0.096	9.646	21.07	1243	0.01	2000	
Ba	137	1	No Gas	43.197	4319.660	0.94	73089	0.06	2000	
Tl	205	1	No Gas	0.018	1.826	40.25	363	0.01	2000	
Tl	203	1	No Gas	0.016	1.564	29.08	130	0.01	2000	
Pb	208	1	No Gas	-0.049	-4.863	-17.42	1133	0.00	2000	
U	238	1	No Gas	-0.002	-0.171	-22.04	17	-0.01	2000	
Ca	43	2	He	943.977	94397.710	4.92	1297	72.80	200000	
Sb	121	2	He	0.023	2.256	220.59	507	0.00	2000	
Ti	47	2	He	-0.105	-10.484	-0.75	10	-1.05	2000	
Cu	63	1	No Gas	-0.117	-11.748	-16.27	1800	-0.01	2000	
Zn	66	1	No Gas	-0.153	-15.325	-21.95	1203	-0.01	2000	
Se	82	1	No Gas	0.650	64.985	66.62	3	22.96	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	591450	0.92	609169	97.09	70	120	
Ge	72	2	He	365145	0.97	369476	98.83	70	120	
Ge	72	1	No Gas	945446	1.81	975686	96.90	70	120	
In	115	1	No Gas	1033342	2.07	1101714	93.79	70	120	

Sample Report

Bi	209	1	No Gas	851538	0.70	865616	98.37	70	120	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	037_CCV.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T11:59:40-06:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Li	7	1	No Gas	100.000	1.273	758204	1.22	100	100.0	90	110	
Be	9	1	No Gas	105.001	0.086	169844	0.57	100	105.0	90	110	
V	51	2	He	101.851	0.595	304982	0.81	100	101.9	90	110	
Cr	52	2	He	102.181	0.611	344985	0.75	100	102.2	90	110	
Fe	56	2	He	10081.082	0.436	31676632	0.82	10000	100.8	90	110	
Se	78	2	He	101.918	0.854	5537	0.97	100	101.9	90	110	
As	75	2	He	104.176	0.383	54927	0.44	100	104.2	90	110	
Ca	44	2	He	10176.050	1.613	228771	2.14	10000	101.8	90	110	
Na	23	2	He	10080.863	1.785	5891165	2.22	10000	100.8	90	110	
Mg	24	2	He	10133.976	0.529	3535767	0.81	10000	101.3	90	110	
K	39	2	He	10040.455	1.700	4675607	2.22	10000	100.4	90	110	
Mn	55	2	He	101.631	0.697	268966	0.27	100	101.6	90	110	
Co	59	2	He	102.790	0.786	500862	0.95	100	102.8	90	110	
Ni	60	2	He	102.527	0.153	126777	0.56	100	102.5	90	110	
Cu	63	2	He	102.649	0.091	334787	0.62	100	102.6	90	110	
Zn	66	2	He	103.548	0.662	71365	1.14	100	103.5	90	110	
Al	27	2	He	116.691	2.180	25784	2.65	100	116.7	90	110	CCV Main CR1-2 Failed
B	11	1	No Gas	493.475	3.154	395402	3.52	500	98.7	90	110	
Al	27	1	No Gas	116.065	0.730	779393	1.07	100	116.1	90	110	CCV Main CR1-2 Failed
Si	28	1	No Gas	714.857	0.519	2439792	0.26	5000	14.3	90	110	CCV Main CR1-2 Failed
Ag	107	1	No Gas	103.402	0.276	634931	1.58	100	103.4	90	110	
Cd	111	1	No Gas	104.266	0.430	126720	1.67	100	104.3	90	110	
Sr	88	1	No Gas	104.721	1.321	1295892	0.33	100	104.7	90	110	
Mo	95	1	No Gas	105.534	0.535	231596	0.79	100	105.5	90	110	
Sn	118	1	No Gas	107.683	0.560	369733	1.77	100	107.7	90	110	
Sb	121	1	No Gas	100.548	1.093	518109	1.68	100	100.5	90	110	
Ba	137	1	No Gas	108.482	0.839	184118	0.85	100	108.5	90	110	
Tl	205	1	No Gas	101.912	0.522	960254	0.82	100	101.9	90	110	
Tl	203	1	No Gas	100.989	0.573	392321	0.38	100	101.0	90	110	
Pb	208	1	No Gas	97.233	0.327	1401064	0.77	100	97.2	90	110	
U	238	1	No Gas	102.627	2.156	1543760	1.97	100	102.6	90	110	
Ca	43	2	He	10290.847	2.308	13447	2.53	10000	102.9	90	110	
Sb	121	2	He	102.161	0.544	353367	0.75	100	102.2	90	110	
Ti	47	2	He	98.649	0.930	12082	1.44	100	98.6	90	110	
Cu	63	1	No Gas	99.989	1.369	540567	1.94	100	100.0	90	110	
Se	82	1	No Gas	110.305	0.808	8260	1.23	100	110.3	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	566936	0.52	609169	93.07	70	120	
Ge	72	2	He	358140	0.56	369476	96.93	70	120	
Ge	72	1	No Gas	949922	0.60	975686	97.36	70	120	
In	115	1	No Gas	1041795	1.33	1101714	94.56	70	120	
Bi	209	1	No Gas	844371	0.47	865616	97.55	70	120	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	038_CCB.d
Data Path Name	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq Date Time	2023-01-04T12:01:32-06:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	009CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Li	7	1	No Gas	-0.029	-147.6	31701	1.8	0.5	
Be	9	1	No Gas	0.015	73.5	55	32.8	0.5	
V	51	2	He	0.042	23.0	427	6.9	2.5	
Cr	52	2	He	-0.047	-52.9	1773	4.2	2.5	
Fe	56	2	He	-0.794	-19.3	28614	1.1	100	
Se	78	2	He	-0.411	-170.8	402	8.2	2	
As	75	2	He	-0.069	-43.0	63	24.1	2.5	
Ca	44	2	He	-6.268	-86.1	590	20.0	100	
Na	23	2	He	0.043	5337.9	73031	2.2	100	
Mg	24	2	He	0.131	75.8	567	6.7	100	
K	39	2	He	-0.295	-830.5	95802	0.6	100	
Mn	55	2	He	-0.216	-4.4	830	3.6	2.5	
Co	59	2	He	-0.090	-23.5	357	28.8	2.5	
Ni	60	2	He	-0.208	-22.3	367	15.0	2.5	
Cu	63	2	He	-0.142	-24.0	897	12.8	2	
Zn	66	2	He	-0.555	-3.5	363	4.2	2.5	
Al	27	2	He	-0.851	-21.8	363	10.4	5	
B	11	1	No Gas	17.711	23.1	32454	9.1	0.5	CCB Main CR1 Failed
Al	27	1	No Gas	-1.166	-4.6	10618	3.7	5	
Si	28	1	No Gas	-4.735	-22.7	193049	1.0	10	
Ag	107	1	No Gas	-0.058	-18.6	240	28.9	2.5	
Cd	111	1	No Gas	0.005	86.6	7	86.6	1	
Sr	88	1	No Gas	-0.026	-5.4	760	1.3	2.5	
Mo	95	1	No Gas	0.065	38.6	200	26.5	2.5	
Sn	118	1	No Gas	-0.228	-8.5	1840	2.9	5	
Sb	121	1	No Gas	-0.006	-293.4	723	11.8	2.5	
Ba	137	1	No Gas	-0.238	-11.6	197	22.9	2.5	
Tl	205	1	No Gas	0.281	48.9	2837	44.5	1	
Tl	203	1	No Gas	0.265	44.2	1097	40.4	1	
Pb	208	1	No Gas	-0.051	-39.4	1090	25.4	2.5	
U	238	1	No Gas	0.013	34.6	237	27.5	2.5	
Ca	43	2	He	-14.247	-31.9	23	24.7	100	
Sb	121	2	He	-0.019	-128.0	353	22.9	2.5	
Ti	47	2	He	-0.103	-0.5	10	0.0	2.5	
Cu	63	1	No Gas	-0.134	-12.7	1723	6.0	2.5	
Se	82	1	No Gas	0.649	42.2	3	712.4	2	

QC ISTD Table

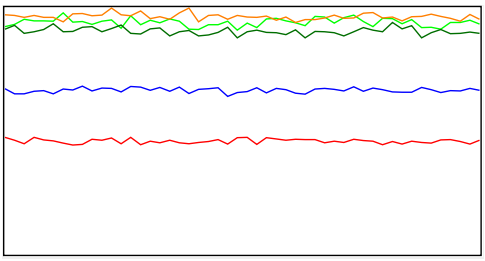
Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	No Gas	583863	0.83	609169	95.85	70	120	
Ge	72	2	He	356603	0.60	369476	96.52	70	120	
Ge	72	1	No Gas	951229	0.79	975686	97.49	70	120	
In	115	1	No Gas	1050655	1.04	1101714	95.37	70	120	
Bi	209	1	No Gas	846732	1.04	865616	97.82	70	120	

Tune Check Report

Operator Name	ALSHS NoUser
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\010423A.b
Acq. Date-Time	01/04/2023 09:47:38
Report Comment	---
Instrument Name	G8422A SG22121190

[No Gas]

Sensitivity



Sampling Period [sec]	0.514
Integration Time [sec]	0.1

Mass	Range	Count	Resp [cps/(ug/l)]	Resp (Required) [cps/(ug/l)]	Resp (Flag)
9	5000	2292	22923.12		
24	10000	9409	94094.31		
59	20000	13304	133037.15		
115	20000	19285	192847.70		
208	10000	9050	90503.55		

Mass	Resp Ratio	Resp Ratio (Required)	Resp Ratio (Flag)
9		-	
24		-	
59		-	
115		-	
208		-	

Mass	RSD%	RSD% (Required)	RSD% (Flag)
9	2.007	5.000	
24	1.724	5.000	
59	1.443	5.000	
115	1.297	5.000	
208	1.582	5.000	

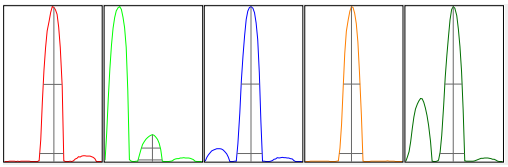
Mass	Background	Background (Required)	Background (Flag)
9	0.900		
24	0.700		
59	0.900		
115	1.300		
208	3.000		

Oxide/Doubly Charged Ratio

Oxide	156 / 140 3.012 %
Doubly Charged	70 / 140 2.311 %

Tune Check Report

Resolution/Axis



Integration Time [sec]	0.1
Acquisition Time [sec]	37.4
Y Axis	Linear

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	2313.23	9.05	8.90 - 9.10	
24	9419.25	24.00	23.90 - 24.10	
59	13342.84	58.95	58.90 - 59.10	
115	19177.69	114.95	114.90 - 115.10	
208	9021.19	208.00	207.90 - 208.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.57	0.728		
24	0.57	0.735		
59	0.57	0.768		
115	0.51	0.713		
208	0.53	0.751		

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.78 L/min	Dilution Gas	0.25 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.9 V	Deflect	13.0 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-75 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.0 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9993	QP Bias	-3.0 V
Mass Offset	127	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	-0.2 mm	Torch V	-0.2 mm

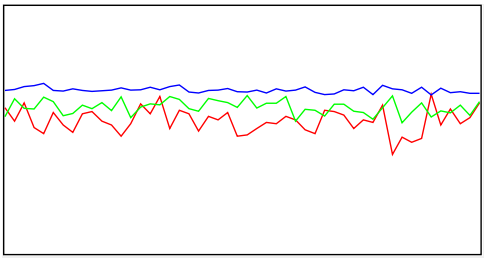
EM

Discriminator	4.5 mV	Analog HV	2161 V	Pulse HV	1203 V

[He]

Tune Check Report

Sensitivity



Sampling Period [sec]	0.306
Integration Time [sec]	0.1

Mass	Range	Count	Resp [cps/(ug/l)]	Resp (Required) [cps/(ug/l)]	Resp (Flag)
9	200	107	1073.04		
24	1000	592	5918.45		
59	10000	6614	66144.99		

Mass	Resp Ratio	Resp Ratio (Required)	Resp Ratio (Flag)
9		-	
24		-	
59		-	

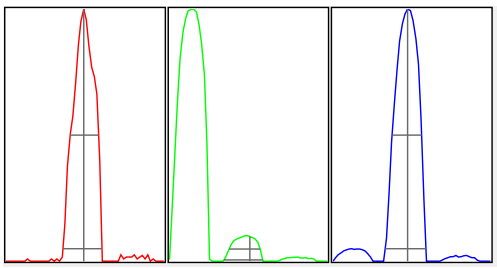
Mass	RSD%	RSD% (Required)	RSD% (Flag)
9	9.263	5.000	Fail
24	4.834	5.000	
59	1.623	5.000	

Mass	Background	Background (Required)	Background (Flag)
9	0.100		
24	0.200		
59	0.200		

Oxide/Doubly Charged Ratio

Oxide	156 / 140 1.388 %
Doubly Charged	70 / 140 1.298 %

Resolution/Axis



Integration Time [sec]	0.1
Acquisition Time [sec]	22.24
Y Axis	Linear

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	119.26	9.00	8.90 - 9.10	
24	573.89	24.05	23.90 - 24.10	
59	6717.01	58.95	58.90 - 59.10	

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
9	0.53	0.731		
24	0.58	0.729		

Tune Check Report

Mass	W-50%	W-5%	W-5% (Required)	W-5% (Flag)
59	0.55	0.762		

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	0.78 L/min	Dilution Gas	0.25 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	1.80 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	8.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.9 V	Deflect	0.6 V
Extract 2	-200.0 V	Cell Entrance	-40 V	Plate Bias	-60 V
Omega Bias	-80 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	Yes	3rd Gas Flow	---	Energy Discrimination	3.0 V
He Flow	3.6 mL/min	OctP Bias	-18.0 V		
H2 Flow	0.0 mL/min	OctP RF	190 V		

QP Parameters

Mass Gain	124	Axis Gain	0.9993	QP Bias	-15.0 V
Mass Offset	127	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	-0.2 mm	Torch V	-0.2 mm

EM

Discriminator	4.5 mV	Analog HV	2161 V	Pulse HV	1203 V

HS22121096-E2201206 Level IV Perchlorate Report

ALS WO# HS22121096

December 22, 2022 Service Request No:E2201206

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22121096

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory December 19, 2022
For your reference, these analyses have been assigned our service request number **E2201206.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at James.Guin@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

James Guin

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099
PHONE +1 281 530 5656 | FAX +1 281 530 5887
ALS Group USA, Corp.
dba ALS Environmental

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Environmental - US	**Service Request No.:**	E2201206
Project:	HS221206	**Date Received:**	12/19/22
Sample Matrix:	Ground Water		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Three samples were received for analysis at ALS Environmental in Houston on 12/19/22.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200580: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2201206
Project: HS22121096

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2201206-001	18CPTMW04_121622	12/16/2022	0725
E2201206-002	18CPTMW04SW_121622	12/16/2022	0815
E2201206-003	MW2_121522	12/16/2022	0905

Service Request Summary

Folder #: **E2201206**
Client Name: ALS Environmental - US
Project Name: HS22121096
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 12/19/22
Internal Due Date: 1/4/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22121096
EDD: BASIC_WQC_CASNo

3 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 4B
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2201206-001	18CPTMW04_121622	Ground Water	12/16/22 0725	**IV**
E2201206-002	18CPTMW04SW_121622	Ground Water	12/16/22 0815	**IV**
E2201206-003	MW2_121522	Ground Water	12/16/22 0905	**IV**

Service Request Summary

Folder #: **E2201206**
Client Name: ALS Environmental - US
Project Name: HS22121096
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 12/19/22
Internal Due Date: 1/4/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22121096
EDD: BASIC_WQC_CASNo

3 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 4B
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	3	Level IV due 1/11

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.

Data Qualifiers

Lab Standard

M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2368363	12/31/2023
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Ecology	C819-22	11/14/2023

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 20565

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS22121096
TSR:	Holly Tignac

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22121096-01**	**18CPTMW04_121622**	**Groundwater**	**16 Dec 2022 07:25**
	Provide Level II and Level IV reports in separate pdf			05 Jan 2023
2.	**HS22121096-02**	**18CPTMW04SW_121622**	**Groundwater**	**16 Dec 2022 08:15**
	Provide Level II and Level IV reports in separate pdf			05 Jan 2023
3.	**HS22121096-03**	**MW20_121522**	**Groundwater**	**16 Dec 2022 09:05**
	Provide Level II and Level IV reports in separate pdf			05 Jan 2023

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: NR Date/Time:

Received By: Date/Time: 12.19.22 1603

Cooler ID(s): Temperature(s):

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Sample Receipt Checklist

Work Order ID: HS22121096 **Date/Time received:** 19 Dec 2022 09:05

Client name: Bhate Environmental Associates, Inc. **Received by:** Paresh M. Giga

Completed/By: 19 Dec 2022 15:05 (Date/Time) Corey Grandits (eSignature) **Reviewed/By:** (Date/Time) (eSignature)

Matrices: W **Carrier name:** FedEx

Shipping container/cooler in good condition?	☑ Yes	☐ No	☐ Not Present	
Custody seals intact on shipping container/cooler?	☑ Yes	☐ No	☐ Not Present	
Custody seals intact on Sample bottles?	☐ Yes	☐ No	☑ Not Present	
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	☐ Yes	☐ No	☑ Not Present	
Chain of custody present?	☑ Yes	☐ No	1 Page(s)	
Chain of custody signed when relinquished and received?	☑ Yes	☐ No	COC ID(s):	
Samplers name present on COC?	☑ Yes	☐ No		
Chain of custody agrees with sample labels?	☐ Yes	☑ No		
Samples in proper container/bottle?	☑ Yes	☐ No		
Sample containers intact?	☑ Yes	☐ No		
Sufficient sample volume for indicated test?	☑ Yes	☐ No		
All samples received within holding time?	☑ Yes	☐ No		
Container/Temp Blank temperature in compliance?	☑ Yes	☐ No		

Temperature(s)/Thermometer(s): 1.3UC/0.8C IR31

Cooler Information: 1 Cooler(s), 49560

Date/Time sample(s) sent to storage: 12/19/2022

Water - VOA vials have zero headspace?	☑ Yes	☐ No	☐ No VOA vials submitted
Water - pH acceptable upon receipt?	☑ Yes	☐ No	☐ Not Applicable
pH adjusted?	☐ Yes	☑ No	☐ Not Applicable

pH adjusted by:

Login notes: Collection times missing from COC, logged in per container labels.

Client contacted: **Date contacted:** **Person contacted:**

Contacted by: **Regarding:**

Comments:

Corrective action:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 411932 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 12/21/22 08:20

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2201200-001	HBW7_121622	.01	6850/ClO4 DOD			Water	10mL	
2	E2201200-002	HBW7_121622_a	.01	6850/ClO4 DOD			Water	10mL	
3	E2201200-003	HBW10_121622	.01	6850/ClO4 DOD			Water	10mL	
4	E2201200-004	HBW1_121622	.01	6850/ClO4 DOD			Water	10mL	
5	E2201200-005	GPW1_121622	.01	6850/ClO4 DOD			Water	10mL	
6	E2201200-006	GPW3_121622	.01	6850/ClO4 DOD			Water	10mL	
7	E2201205-001	MW5_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2201205-002	18CPTMW08DW_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2201205-003	18CPTMW08SW_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
10	E2201205-004	AWD3_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
11	E2201205-005	AWD3_121522_a	.01	6850/ClO4 DOD			Ground Water	10mL	
12	E2201205-006	18CPTMW22R_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
13	E2201205-007	18CPTMW22SW_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
14	E2201205-008	MW2_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
15	E2201206-001	18CPTMW04_121622	.01	6850/ClO4 DOD			Ground Water	10mL	
16	E2201206-002	18CPTMW04SW_121622	.01	6850/ClO4 DOD			Ground Water	10mL	
17	E2201206-003	MW2_121522	.01	6850/ClO4 DOD			Ground Water	10mL	
18	EQ2200580-01	MB		6850/ClO4			Liquid	10mL	
19	EQ2200580-02	LCS		6850/ClO4			Liquid	10mL	
20	EQ2200580-03	DLCS		6850/ClO4			Liquid	10mL	
21	R2211772-004	2212071447Y 200-G-175	.01	6850/ClO4			Water	10mL	
22	R2211773-013	2212070823 600L-HA-01	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 225386 Logbook Ref: Perchlorate (1st Source) Expires On: 01/31/2023

EQ2200580-02	1.00µL	EQ2200580-02	1.00µL	EQ2200580-03	1.00µL	EQ2200580-03	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 225719 Logbook Ref: Perchlorate Internal Standard Expires On: 01/31/2023

E2201200-001	100.00µL	E2201200-002	100.00µL	E2201200-003	100.00µL	E2201200-004	100.00µL	E2201200-005	100.00µL	E2201200-006	100.00µL
E2201205-001	100.00µL	E2201205-002	100.00µL	E2201205-003	100.00µL	E2201205-004	100.00µL	E2201205-005	100.00µL	E2201205-006	100.00µL
E2201205-007	100.00µL	E2201205-008	100.00µL	E2201206-001	100.00µL	E2201206-002	100.00µL	E2201206-003	100.00µL	EQ2200580-01	100.00µL
EQ2200580-01	100.00µL	EQ2200580-02	100.00µL	EQ2200580-02	100.00µL	EQ2200580-03	100.00µL	EQ2200580-03	100.00µL	R2211772-004	100.00µL
R2211773-013	100.00µL										

Preparation Information Benchsheet

Prep Run#: 411932 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 12/21/22 08:20

Preparation Materials

Water HPLC Grade	10/24/2022 Water (225656)	6850 Amber Glass screw vial	2mL Screw Top Vial (221308)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221307)		

Preparation Steps

Step: Preparation
Started: 12/21/22 08:20
Finished: 12/21/22 09:20
By: XMI
Comments

Comments: _____

Reviewed By: XMI Date: 12/21/22

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	12/16/22 0725
Sample Matrix:	Ground Water	**Date Received:**	12/19/22
Sample Name:	18CPTMW04_121622	**Units:**	µg/L
Lab Code:	E2201206-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**75.7**		0.500	0.250	0.125	5	12/21/22	12/21/22 17:36	411932	789386	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	12/16/22 0815
Sample Matrix:	Ground Water	**Date Received:**	12/19/22
Sample Name:	18CPTMW04SW_121622	**Units:**	µg/L
Lab Code:	E2201206-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/21/22	12/22/22 09:08	411932	789389	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	12/16/22 0905
Sample Matrix:	Ground Water	**Date Received:**	12/19/22
Sample Name:	MW2_121522	**Units:**	µg/L
Lab Code:	E2201206-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/21/22	12/22/22 09:16	411932	789389	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200580-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/21/22	12/21/22 16:15	411932	789386	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096
Sample Matrix: Ground Water

Service Request: E2201206
Date Analyzed: 12/21/22

Lab Control Sample Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 411932

	Lab Control Sample EQ2200580-02			Duplicate Lab Control Sample EQ2200580-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.103	0.100	103	0.101	0.100	101	84 - 119	1	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200580-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.103**		0.100	0.0500	0.0250	1	12/21/22	12/21/22 16:21	411932	789386	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200580-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.101**		0.100	0.0500	0.0250	1	12/21/22	12/21/22 16:26	411932	789386	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20221214

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : **A:**0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	IB		20221214_001	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:12
2	ICS		20221214_002	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:29
3	LODV		20221214_003	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:35
4	PERCHLORATE1		20221214_004	Perchlorate6850c.lcm	1x	☒	226061	12/14/2022 15:40
5	PERCHLORATE2		20221214_005	Perchlorate6850c.lcm	1x	☒	226062	12/14/2022 15:46
6	PERCHLORATE3		20221214_006	Perchlorate6850c.lcm	1x	☒	226063	12/14/2022 15:51
7	PERCHLORATE4		20221214_007	Perchlorate6850c.lcm	1x	☒	226064	12/14/2022 15:57
8	PERCHLORATE5		20221214_008	Perchlorate6850c.lcm	1x	☒	226065	12/14/2022 16:02
9	PERCHLORATE6		20221214_009	Perchlorate6850c.lcm	1x	☒	226066	12/14/2022 16:09
10	PERCHLORATE7		20221214_010	Perchlorate6850c.lcm	1x	☒	225881	12/14/2022 16:15
11	PERCHLORATE8		20221214_011	Perchlorate6850c.lcm	1x	☒	226068	12/14/2022 16:20
12	PERCHLORATE9		20221214_012	Perchlorate6850c.lcm	1x	☒	226069	12/14/2022 16:25
13	PERCHLORATE10		20221214_013	Perchlorate6850c.lcm	1x	☒	226070	12/14/2022 16:31
14	PERCHLORATEICV		20221214_014	Perchlorate6850c.lcm	1x	☒	226067	12/14/2022 16:37

Initial Calibration - Detailed Report

Calibration ID: EC2200016 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2200016-01	PERCHLORATE1	20221214_004	12/14/2022 15:40
02	EC2200016-02	PERCHLORATE2	20221214_005	12/14/2022 15:46
03	EC2200016-03	PERCHLORATE3	20221214_006	12/14/2022 15:51
04	EC2200016-04	PERCHLORATE4	20221214_007	12/14/2022 15:57
05	EC2200016-05	PERCHLORATE5	20221214_008	12/14/2022 16:02
06	EC2200016-06	PERCHLORATE6	20221214_009	12/14/2022 16:09
07	EC2200016-07	PERCHLORATE7	20221214_010	12/14/2022 16:15
08	EC2200016-08	PERCHLORATE8	20221214_011	12/14/2022 16:20
09	EC2200016-09	PERCHLORATE9	20221214_012	12/14/2022 16:25
10	EC2200016-10	PERCHLORATE10	20221214_013	12/14/2022 16:31

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 2.927** **Average RF = 0.1567**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1615	02	0.5000	0.1479	03	0.7000	0.1579	04	1.0000	0.1573
05	2.0000	0.1505	06	5.0000	0.1573	07	10.0000	0.1541	08	20.0000	0.162
09	30.0000	0.1598	10	50.0000	0.1587						

Analyte

Perchlorate RSE = 2.93

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.103	3.1	02	0.5000	0.472	-5.6	03	0.7000	0.705	0.8
04	1.0000	1.00	0.4	05	2.0000	1.92	-3.9	06	5.0000	5.02	0.4
07	10.0000	9.83	-1.7	08	20.0000	20.7	3.4	09	30.0000	30.6	2.0
10	50.0000	50.6	1.3								

Initial Calibration Verification Summary Report

Calibration ID:	EC2200016	**Instrument ID:**	E-LCMS-01
Datafile ID:	20221214_014	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2200016-11	T	Average RF	10	9.359	ng/mL	-6.4	<= 15

Insight Report

Printed at 12/15/2022 10:55:51 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221214\12142022 ICAL.damlp

PERCHLORATE1

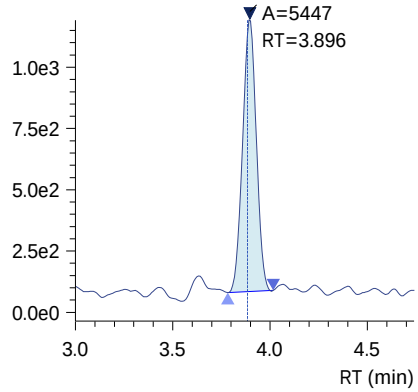
Sample ID: PERCHLORATE1
Date Acquired: 12/14/2022 3:40:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_004.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.896	5447	337240	0.1031	ng/mL	101.00 >85.00	35.31	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.889	337240	337240	1.0000	ng/mL	----	----	

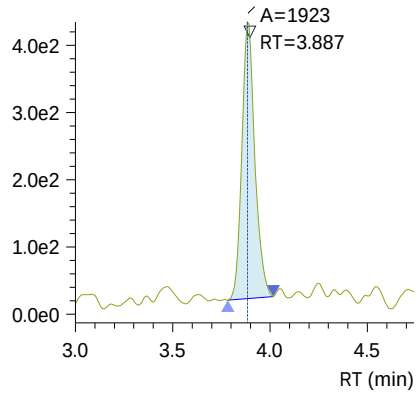
Perchlorate

Conc 0.1031
R#1 35.31 (34.02)

Q 99.00>83.00 (-) 1.19e3



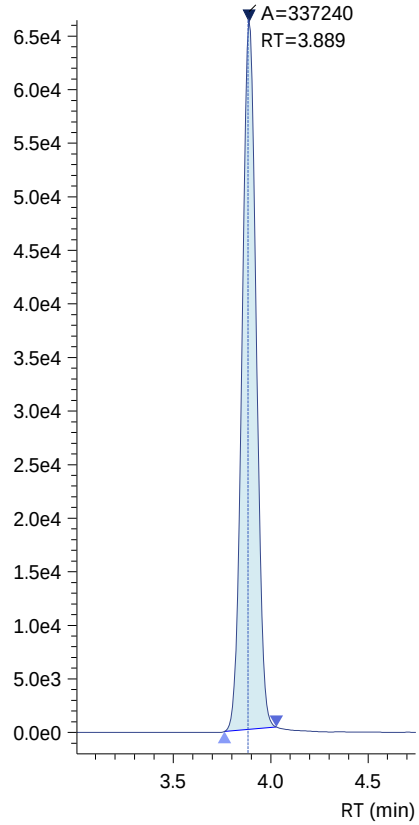
R1 101.00>85.00 (-) 4.35e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.65e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE2

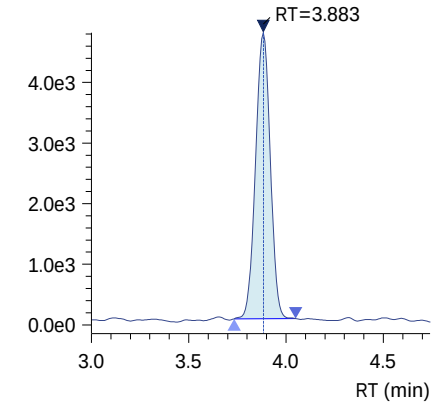
Sample ID: PERCHLORATE2
Date Acquired: 12/14/2022 3:46:03 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_005.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.883	24897	336620	0.4720	ng/mL	101.00 >85.00	33.26	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.878	336620	336620	1.0000	ng/mL	----	----	

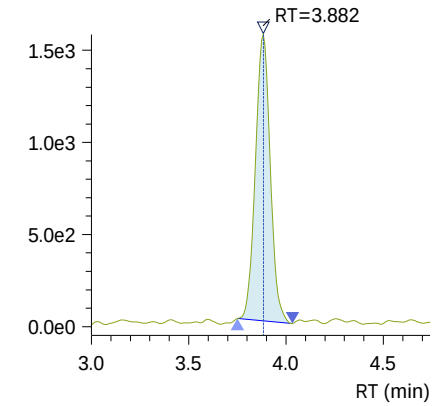
Perchlorate

Conc 0.4720
R#1 33.26 (34.02)

Q 99.00>83.00 (-) A=24897 4.82e3



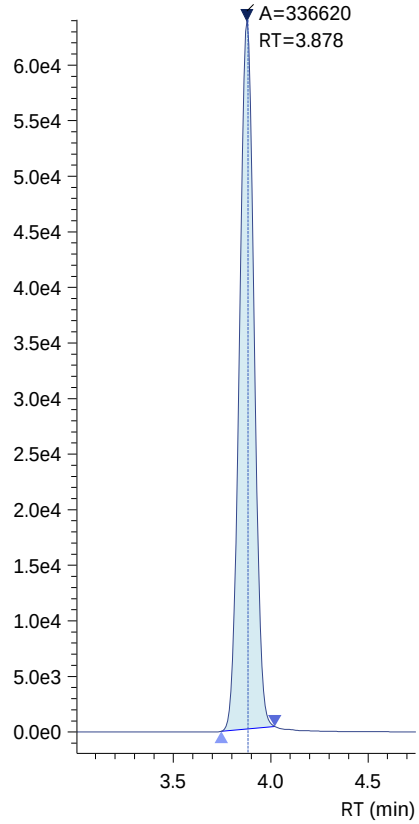
R1 101.00>85.00 (-) A=8281 1.59e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.41e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE3

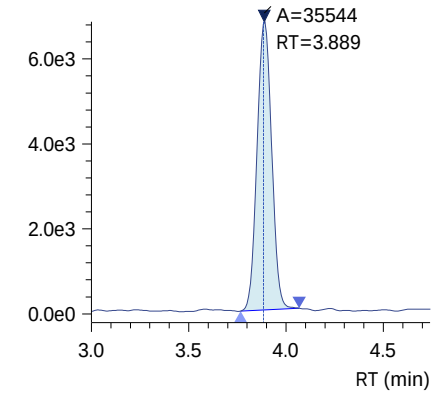
Sample ID: PERCHLORATE3
Date Acquired: 12/14/2022 3:51:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_006.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.889	35544	321596	0.7053	ng/mL	101.00 >85.00	35.09	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.885	321596	321596	1.0000	ng/mL	----	----	

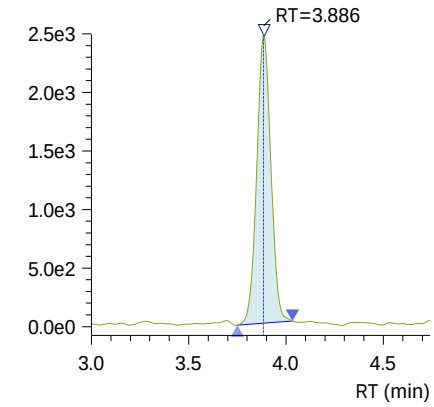
Perchlorate

Conc 0.7053
R#1 35.09 (34.02)

Q 99.00>83.00 (-) 6.88e3



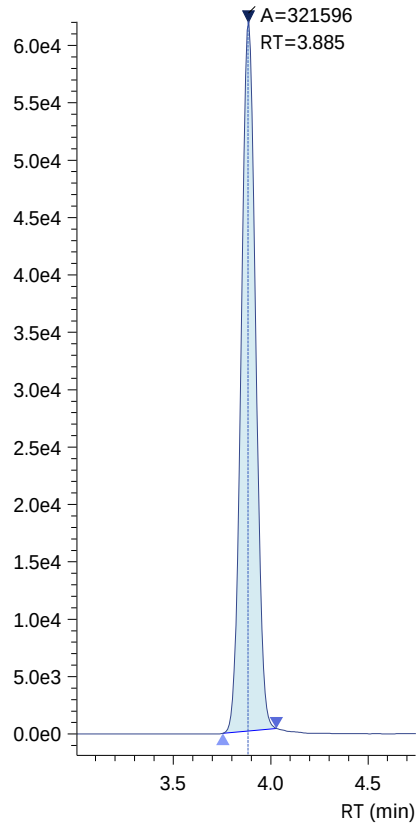
R1 101.00>85.00 (-) A=12471 2.50e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.21e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE4

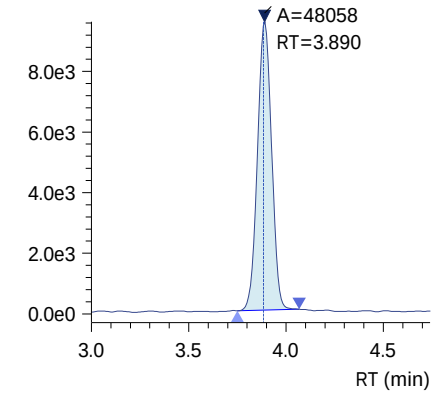
Sample ID: PERCHLORATE4
Date Acquired: 12/14/2022 3:57:06 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_007.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.890	48058	305584	1.0036	ng/mL	101.00 >85.00	33.87	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.886	305584	305584	1.0000	ng/mL	----	----	

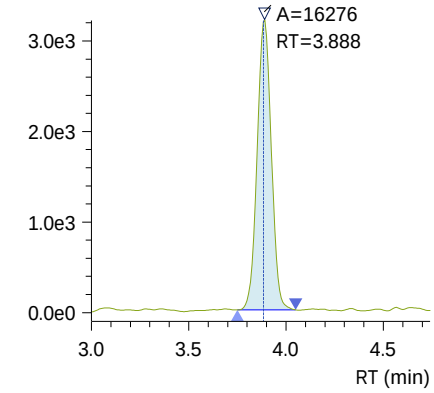
Perchlorate

Conc 1.0036
R#1 33.87 (34.02)

Q 99.00>83.00 (-) 9.64e3



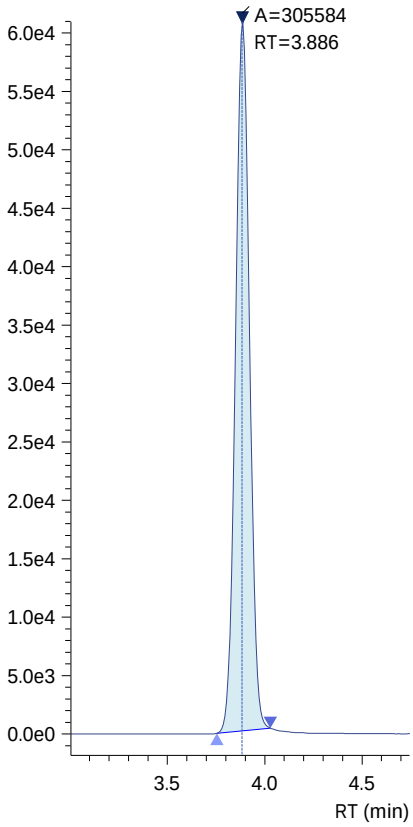
R1 101.00>85.00 (-) 3.23e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.10e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE5

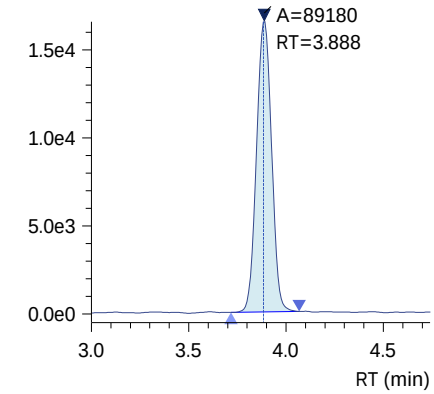
Sample ID: PERCHLORATE5
Date Acquired: 12/14/2022 4:02:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_008.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.888	89180	296200	1.9213	ng/mL	101.00 >85.00	32.32	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.885	296200	296200	1.0000	ng/mL	----	----	

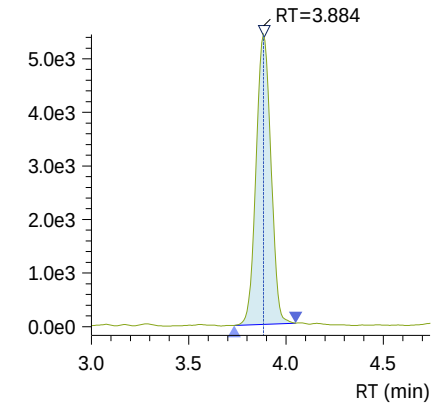
Perchlorate

Conc 1.9213
R#1 32.32 (34.02)

Q 99.00>83.00 (-) 1.66e4



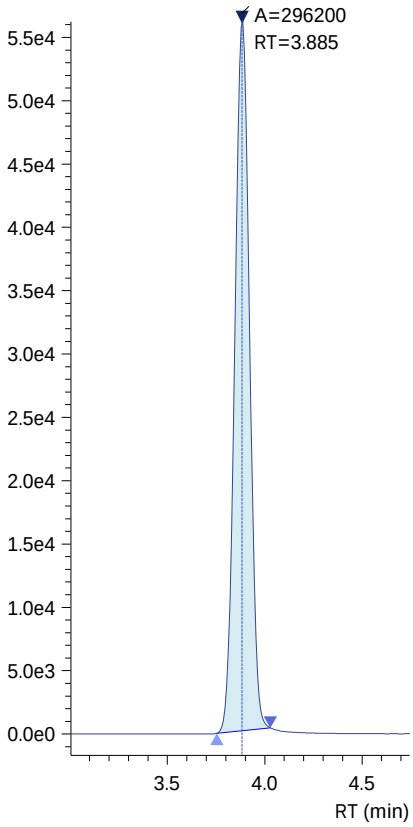
R1 101.00>85.00 (-) A=28822 5.45e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.62e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE6

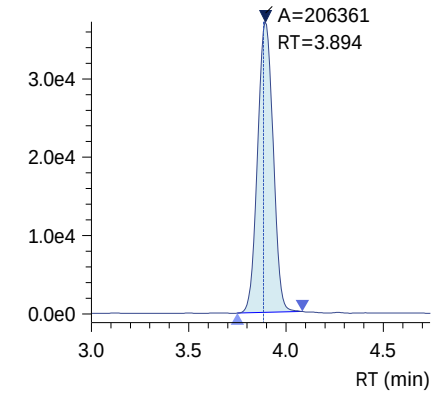
Sample ID: PERCHLORATE6
Date Acquired: 12/14/2022 4:09:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_009.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.894	206361	262312	5.0202	ng/mL	101.00 >85.00	33.93	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.889	262312	262312	1.0000	ng/mL	----	----	

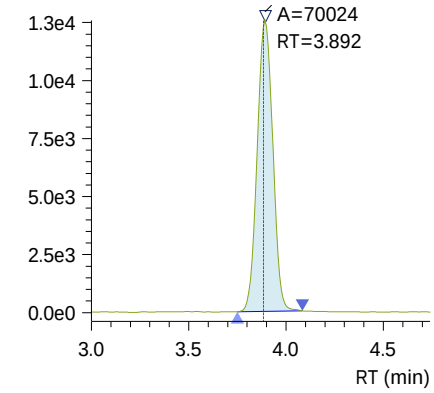
Perchlorate

Conc 5.0202
R#1 33.93 (34.02)

Q 99.00>83.00 (-) 3.73e4



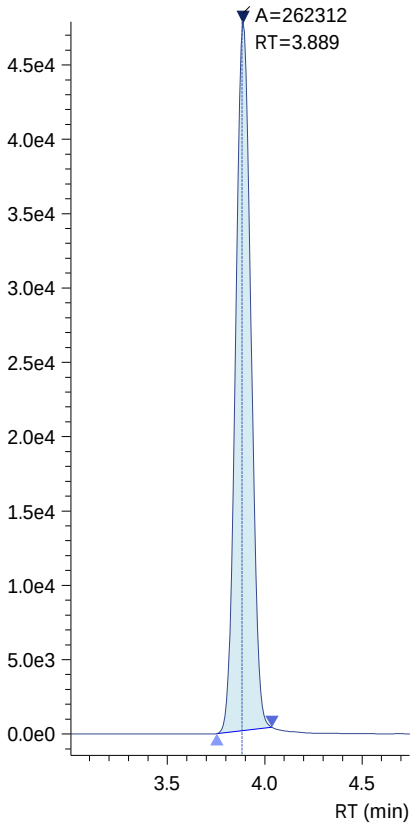
R1 101.00>85.00 (-) 1.26e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.79e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE7

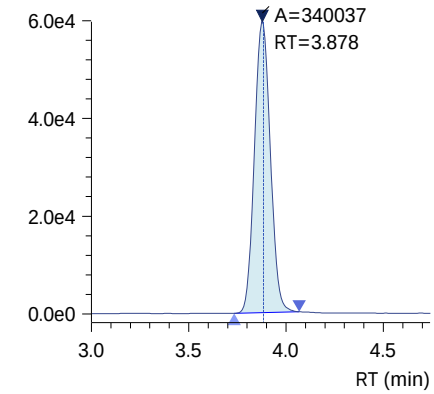
Sample ID: PERCHLORATE7
Date Acquired: 12/14/2022 4:15:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_010.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.878	340037	220702	9.8317	ng/mL	101.00 >85.00	34.05	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.875	220702	220702	1.0000	ng/mL	----	----	

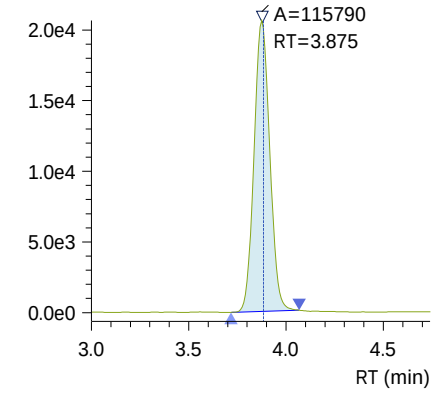
Perchlorate

Conc 9.8317
R#1 34.05 (34.02)

Q 99.00>83.00 (-) 5.98e4



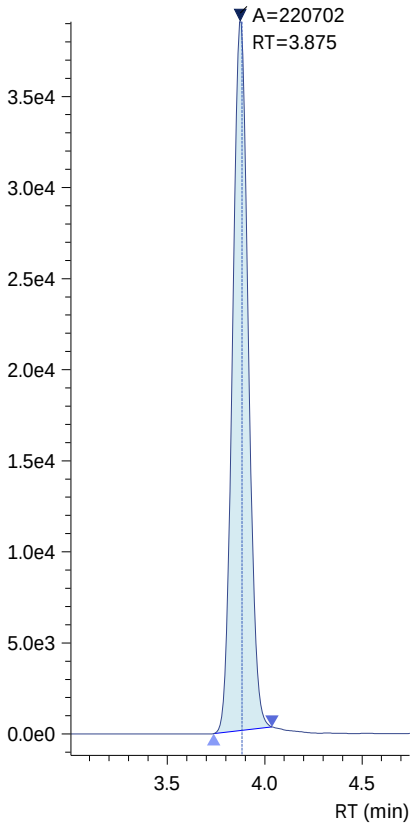
R1 101.00>85.00 (-) 2.07e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.91e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE8

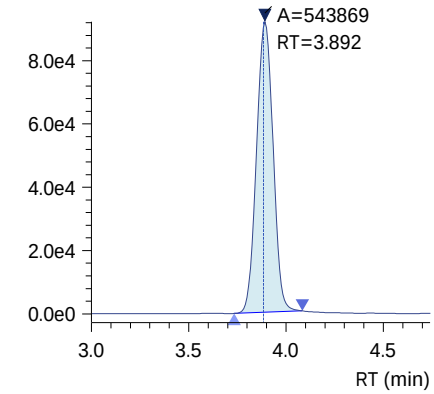
Sample ID: PERCHLORATE8
Date Acquired: 12/14/2022 4:20:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_011.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.892	543869 6806	167819	20.6	ng/mL	101.00 >85.00	33.45	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.888	167819	167819	1.0000	ng/mL	----	----	

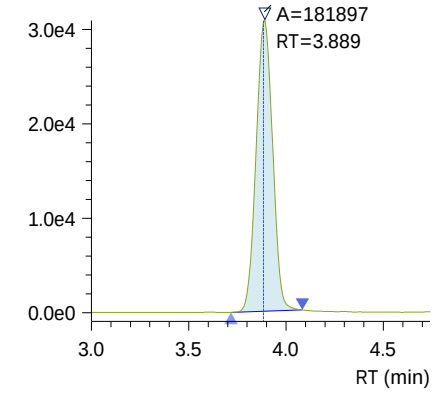
Perchlorate

Conc 20.6806
R#1 33.45 (34.02)

Q 99.00>83.00 (-) 9.23e4



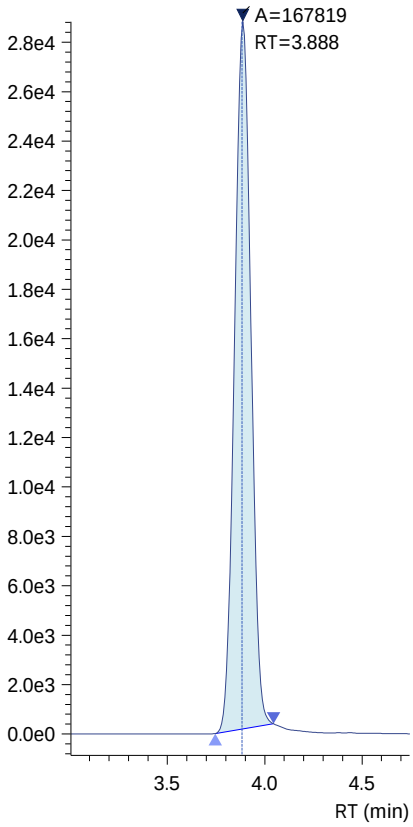
R1 101.00>85.00 (-) 3.09e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.88e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE9

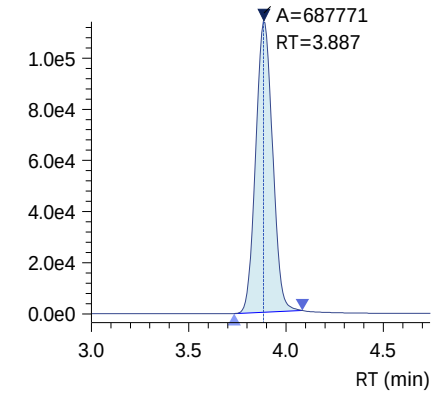
Sample ID: PERCHLORATE9
Date Acquired: 12/14/2022 4:25:58 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_012.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.887	687771	143493	30.5860	ng/mL	101.00 >85.00	33.79	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.883	143493	143493	1.0000	ng/mL	----	----	

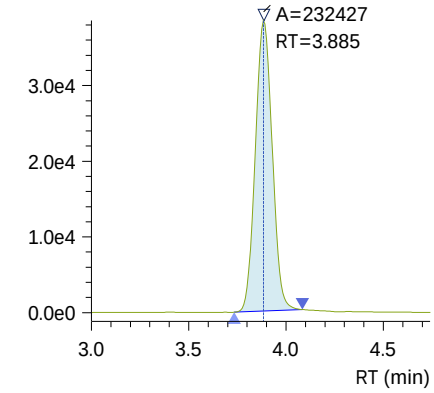
Perchlorate

Conc 30.5860
R#1 33.79 (34.02)

Q 99.00>83.00 (-) 1.14e5



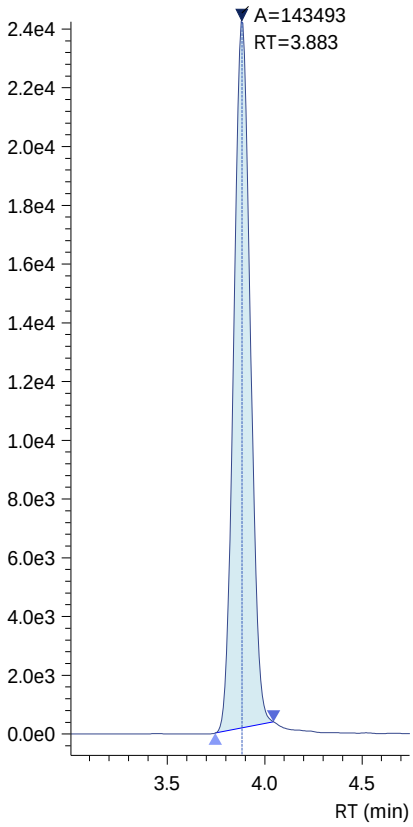
R1 101.00>85.00 (-) 3.86e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.43e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE10

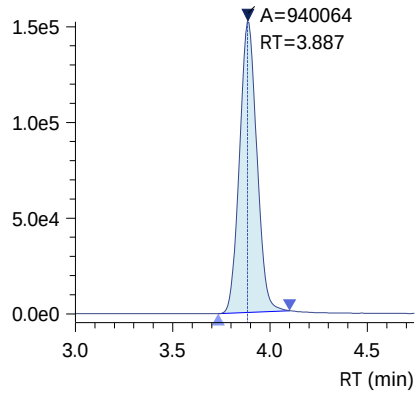
Sample ID: PERCHLORATE10
Date Acquired: 12/14/2022 4:31:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_013.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.887	9400 64	118445	50.6 464	ng/mL	101.00 >85.00	33.39	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.883	1184 45	118445	1.0000	ng/mL	----	----	

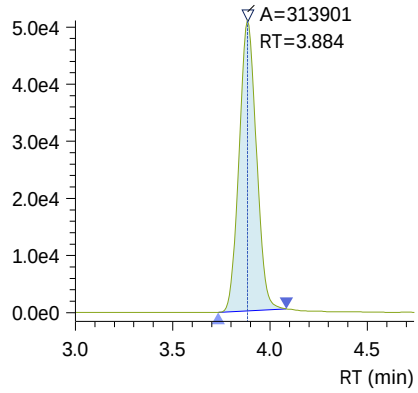
Perchlorate

Conc 50.6464
R#1 33.39 (34.02)

Q 99.00>83.00 (-) 1.53e5



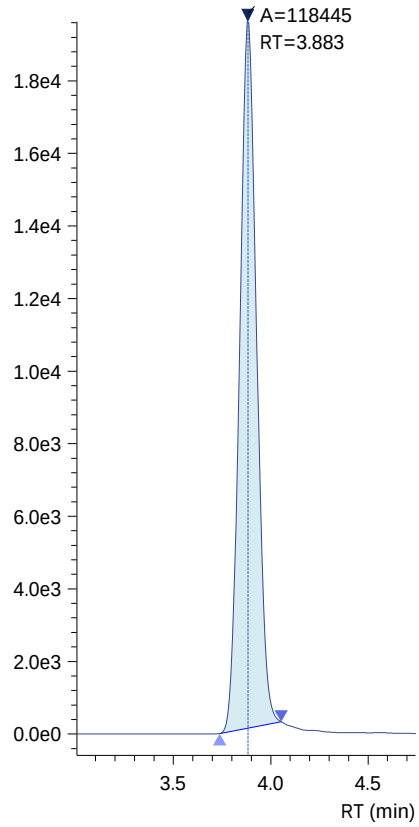
R1 101.00>85.00 (-) 5.12e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 1.96e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

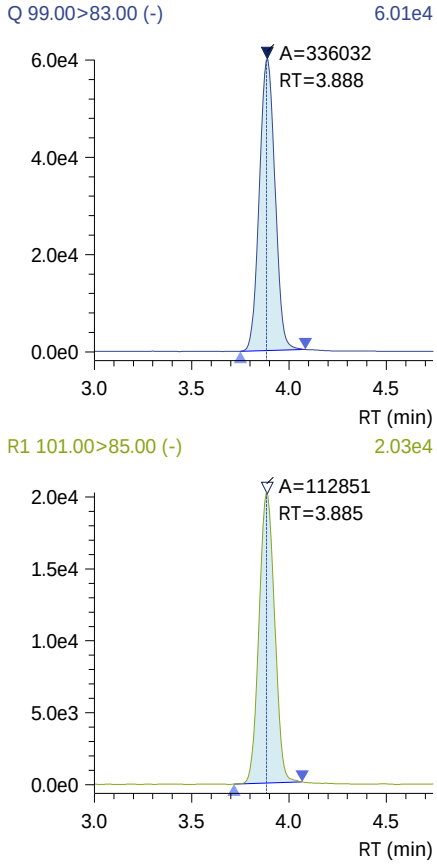
PERCHLORATEICV

Sample ID: PERCHLORATEICV
Date Acquired: 12/14/2022 4:37:01 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_014.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.888	3360 32	229124	9.3588	ng/mL	101.00 >85.00	33.58	23.94 -44.46
Sodium Perchlorate-18O4 _IS	Auto	3.884	2291 24	229124	1.0000	ng/mL	----	----	

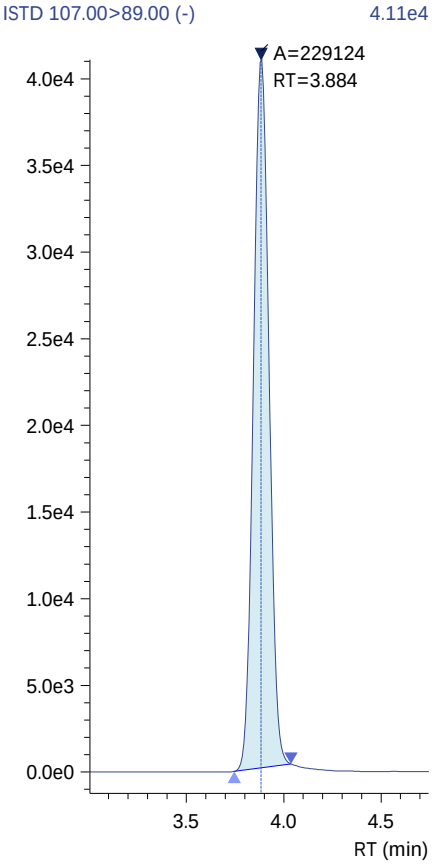
Perchlorate

Conc 9.3588
R#1 33.58 (34.02)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20221221WATER

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : A:0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	IB		20221221W-001	Perchlorate6850c.lcm	1x	☒		12/21/2022 15:53
2	ICS		20221221W-002	Perchlorate6850c.lcm	1x	☒		12/21/2022 15:58
3	LODV		20221221W-003	Perchlorate6850c.lcm	1x	☒	225199	12/21/2022 16:04
4	PERCHLORATE7		20221221W-004	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 16:09
5	EQ2200580-01		20221221W-005	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:15
6	EQ2200580-02		20221221W-006	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:21
7	EQ2200580-03		20221221W-007	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:26
8	E2201205-001X1K		20221221W-008	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:32
9	E2201205-003X1K		20221221W-009	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:43
10	E2201205-007X1K		20221221W-010	Perchlorate6850c.lcm	1x	☒		12/21/2022 16:49
11	E2201206-001X5		20221221W-011	Perchlorate6850c.lcm	1x	☒		12/21/2022 17:36
12	E2201205-002X200		20221221W-012	Perchlorate6850c.lcm	1x	☒		12/21/2022 17:42
13	PERCHLORATE7		20221221W-013	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 17:47
14	IB		20221221W-014	Perchlorate6850c.lcm	1x	☒		12/21/2022 17:59
15	E2201200-001		20221221W-015	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:05
16	E2201200-002		20221221W-016	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:11
17	E2201200-003		20221221W-017	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:17
18	E2201200-004		20221221W-018	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:22
19	E2201200-005		20221221W-019	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:28
20	E2201200-006		20221221W-020	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:34
21	PERCHLORATE7		20221221W-021	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 18:39
22	E2201205-004		20221221W-022	Perchlorate6850c.lcm	1x	☒	DNU-IS	12/21/2022 18:45
23	E2201205-005		20221221W-023	Perchlorate6850c.lcm	1x	☒	DNU-IS	12/21/2022 18:51
24	E2201205-006		20221221W-024	Perchlorate6850c.lcm	1x	☒		12/21/2022 18:57
25	E2201205-008		20221221W-025	Perchlorate6850c.lcm	1x	☒		12/21/2022 19:02
26	E2201206-002		20221221W-026	Perchlorate6850c.lcm	1x	☒	DNU-CONFIRM PEAK	12/21/2022 19:08
27	E2201206-003		20221221W-027	Perchlorate6850c.lcm	1x	☒	DNU-CONFIRM PEAK	12/21/2022 19:14
28	R2211772-004		20221221W-028	Perchlorate6850c.lcm	1x	☒		12/21/2022 19:19
29	R2211773-013		20221221W-029	Perchlorate6850c.lcm	1x	☒		12/21/2022 19:25
30	PERCHLORATE7		20221221W-030	Perchlorate6850c.lcm	1x	☒	226067	12/21/2022 19:31

20221222WATER

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : **A:**0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	IB		20221221W-001	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:18
2	ICS		20221222W-002	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:23
3	LODV		20221222W-003	Perchlorate6850c.lcm	1x	☒	225199	12/22/2022 8:28
4	PERCHLORATE7		20221222W-004	Perchlorate6850c.lcm	1x	☒	226067	12/22/2022 8:34
5	E2201205-005		20221222W-005	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:45
6	E2201205-004		20221222W-006	Perchlorate6850c.lcm	1x	☒		12/22/2022 8:51
7	E2201206-002		20221222W-007	Perchlorate6850c.lcm	1x	☒		12/22/2022 9:08
8	E2201206-003		20221222W-008	Perchlorate6850c.lcm	1x	☒		12/22/2022 9:16
9	PERCHLORATE7		20221222W-009	Perchlorate6850c.lcm	1x	☒	226067	12/22/2022 9:27

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-004

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1579	0.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-013

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1575	0.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-021

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1575	0.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/21/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221221\20221221W-030

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789386
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.2	0.1567	0.1590	1.4	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/22/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\New folder\20221222W-004

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789389
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1584	1.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121096

Service Request: E2201206
Date Analyzed: 12/22/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\New folder\20221222W-009

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789389
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.96	0.1567	0.1558	-0.6	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/21/22 16:09

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-004	**Lab Code:**	EQ2200588-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-01	226,860	3.72
Method Blank	EQ2200580-01	338,792	3.73
Lab Control Sample	EQ2200580-02	322,701	3.73
Duplicate Lab Control Sample	EQ2200580-03	328,166	3.73
18CPTMW04_121622	E2201206-001	183,810	3.74

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/21/22 17:47

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-013	**Lab Code:**	EQ2200588-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-02	237,291	3.72

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/21/22 18:39

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-021	**Lab Code:**	EQ2200588-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-03	240,095	3.72

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/21/22 19:31

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221221\20221221W-030	**Lab Code:**	EQ2200588-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789386
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200588-04	239,454	3.71

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/22/22 08:34

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\New folder\20221222W-004	**Lab Code:**	EQ2200589-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789389
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200589-01	256,146	3.71
18CPTMW04SW_121622	E2201206-002	355,678	3.70
MW2_121522	E2201206-003	320,329	3.70

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201206
Project:	HS22121096	**Date Analyzed:**	12/22/22 09:27

Internal Standard Area and RT Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\New folder\20221222W-009	**Lab Code:**	EQ2200589-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789389
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200589-02	234,742	3.71

Results flagged with an asterisk (*) indicate values outside control criteria.

Insight Report

Printed at 12/22/2022 9:51:13 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221221\12212022 WATER.damlp

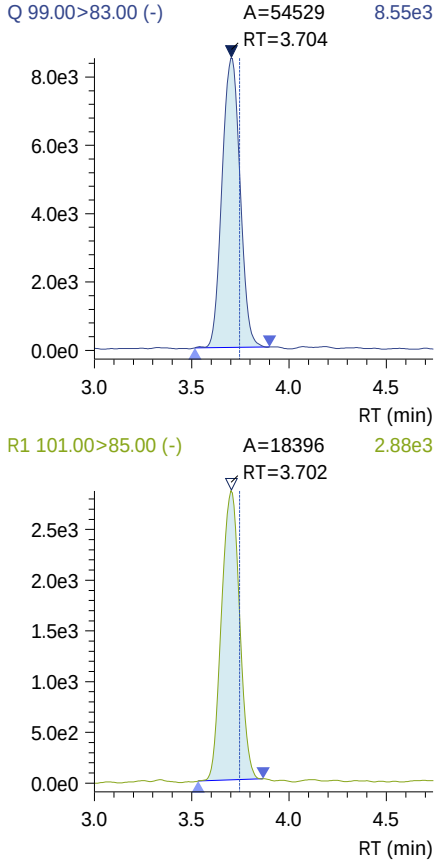
ICS

Sample ID: ICS
Date Acquired: 12/21/2022 3:58:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-002.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.704	54529	342386	1.0187	ng/mL	101.00 >85.00	33.74	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.698	342386	342386	1.0000	ng/mL	----	----	

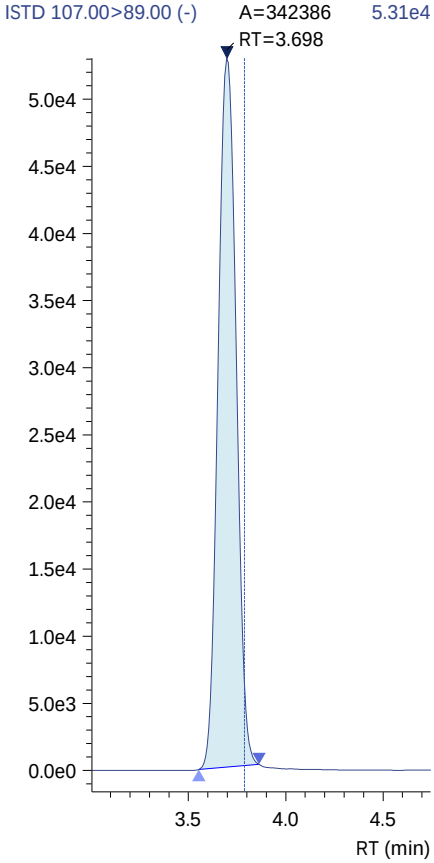
Perchlorate

Conc 1.0187
R#1 33.74 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

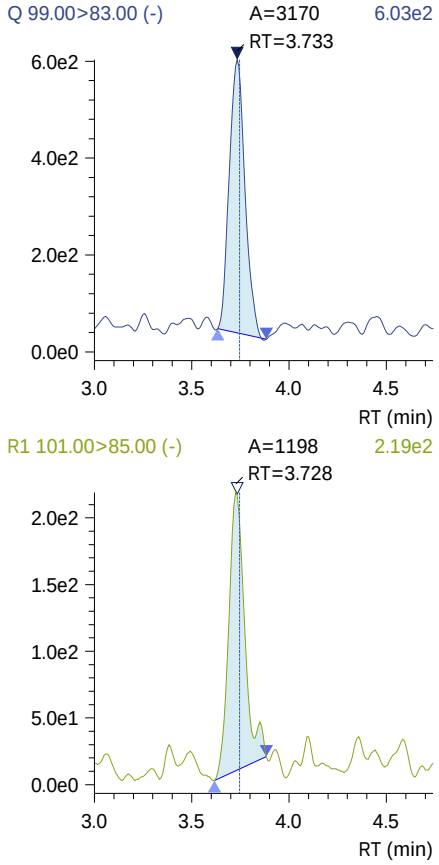
LODV

Sample ID: LODV
Date Acquired: 12/21/2022 4:04:18 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-003.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.733	3170	359225	0.0564	ng/mL	101.00 >85.00	37.79	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.727	359225	359225	1.0000	ng/mL	----	----	

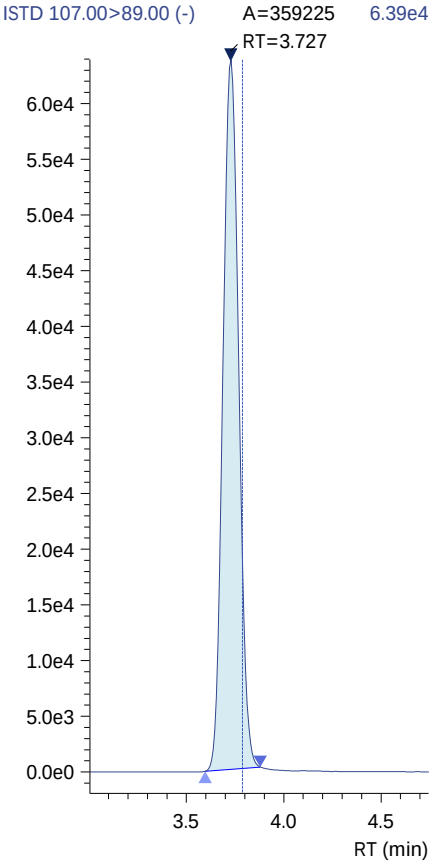
Perchlorate

Conc 0.0564
R#1 37.79 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

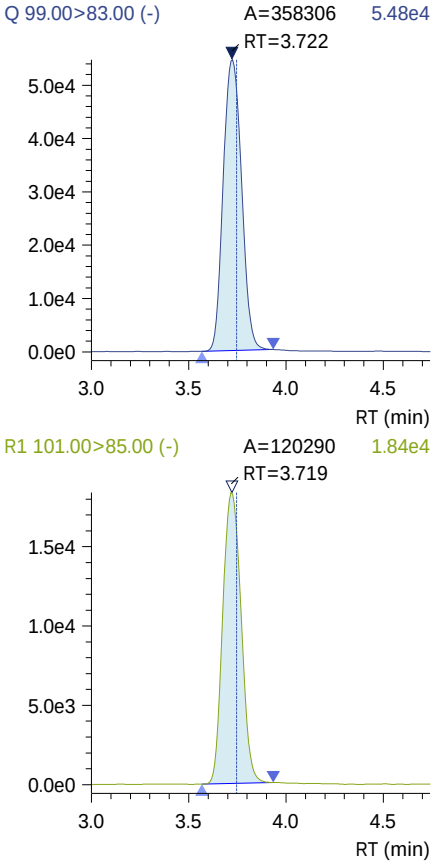
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/21/2022 4:09:58 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-004.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.722	358306	226860	10.1026	ng/mL	101.00 >85.00	33.57	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.717	226860	226860	1.0000	ng/mL	----	----	

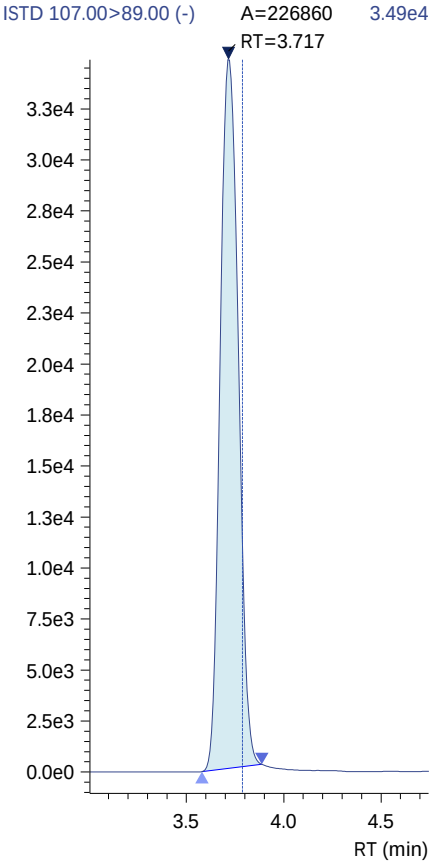
Perchlorate

Conc 10.1026
R#1 33.57 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

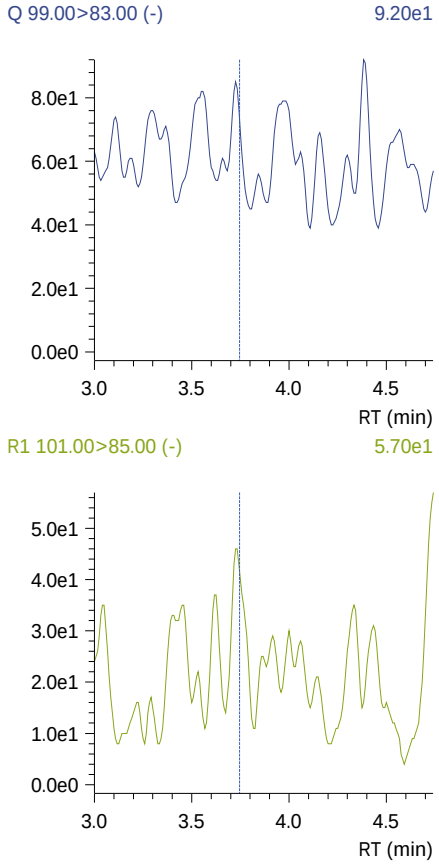
EQ2200580-01

Sample ID: EQ2200580-01
Date Acquired: 12/21/2022 4:15:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-005.lcd
Vial: 25 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	338792	----	ng/mL	101.00 >85.00	0.00	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.734	338792	338792	1.0000	ng/mL	----	----	

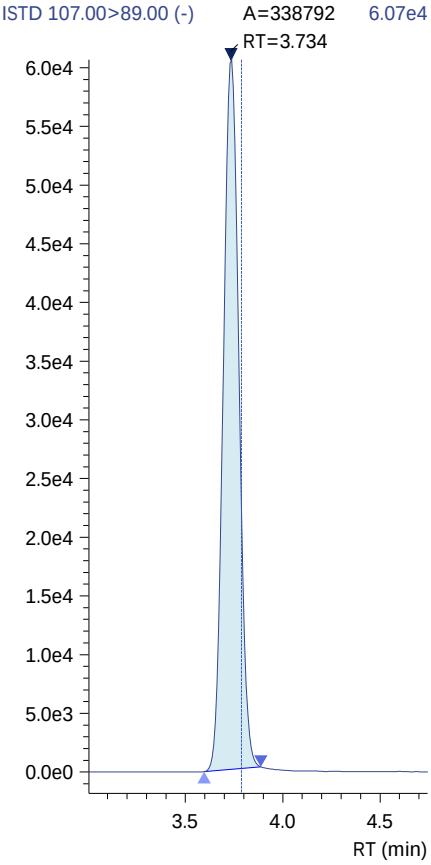
Perchlorate

Conc ----
R#1 0.00 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

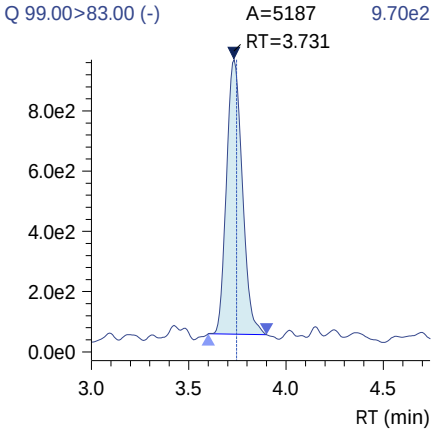
EQ2200580-02

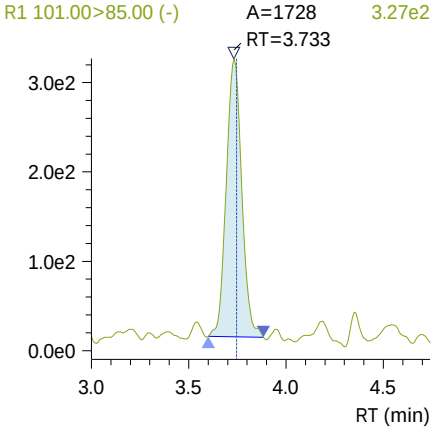
Sample ID: EQ2200580-02
Date Acquired: 12/21/2022 4:21:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-006.lcd
Vial: 26 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.731	5187	322701	0.1028	ng/mL	101.00 >85.00	33.31	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.732	322701	322701	1.0000	ng/mL	----	----	

Perchlorate

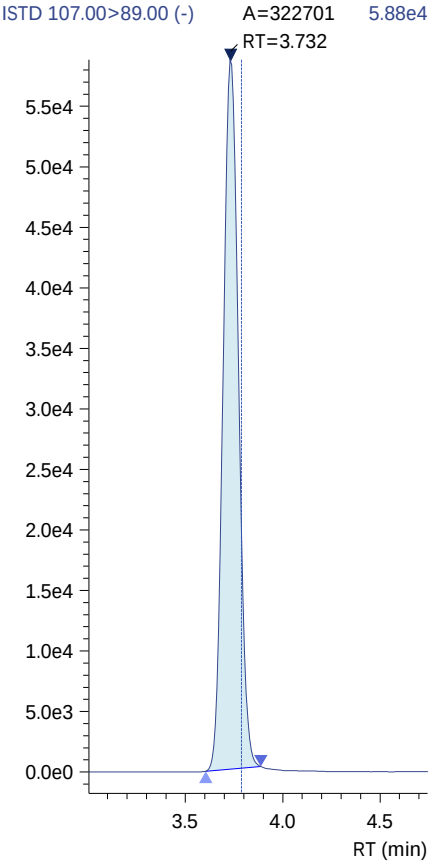
Conc 0.1028
R#1 33.31 (33.82)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

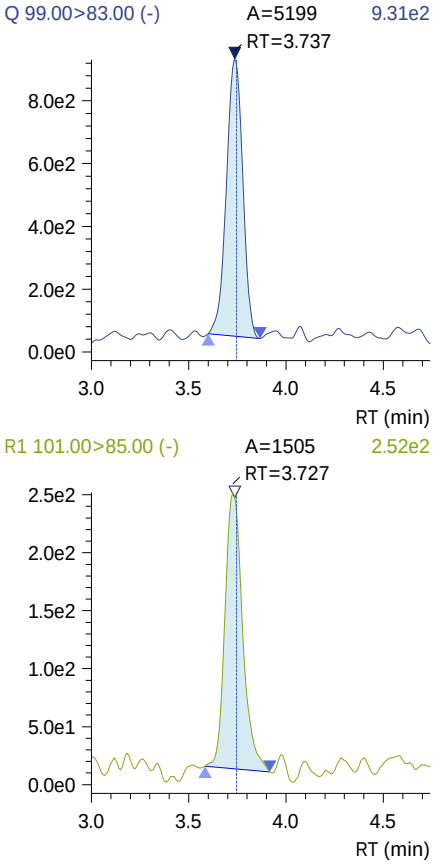
EQ2200580-03

Sample ID: EQ2200580-03
Date Acquired: 12/21/2022 4:26:56 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-007.lcd
Vial: 27 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.737	5199	328166	0.1013	ng/mL	101.00 >85.00	28.96	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.732	3281 66	328166	1.0000	ng/mL	----	----	

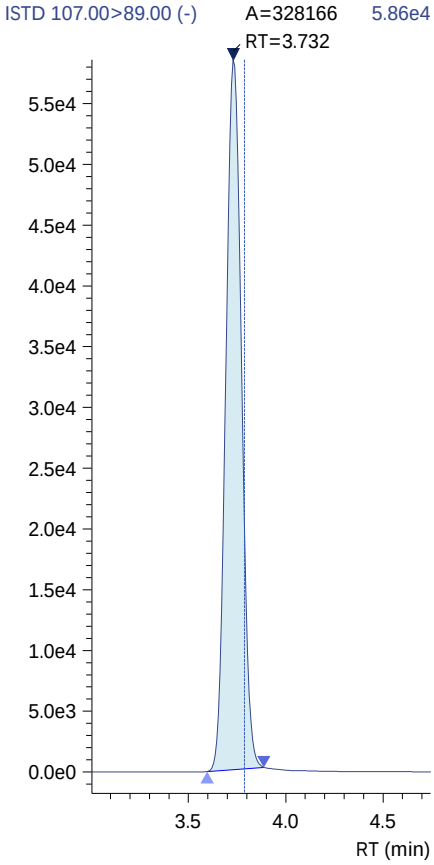
Perchlorate

Conc 0.1013
R#1 28.96 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

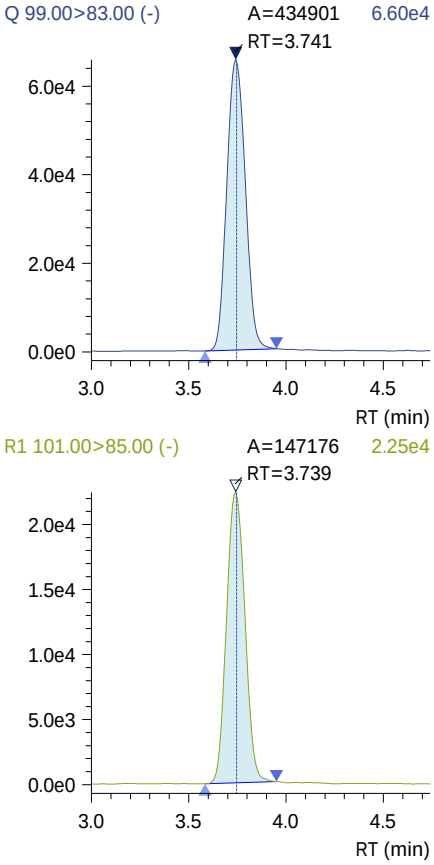
E2201206-001X5

Sample ID: E2201206-001
Date Acquired: 12/21/2022 5:36:24 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-011.lcd
Vial: 42 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.741	434901	183810	15.1342	ng/mL	101.00 >85.00	33.84	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.736	183810	183810	1.0000	ng/mL	----	----	

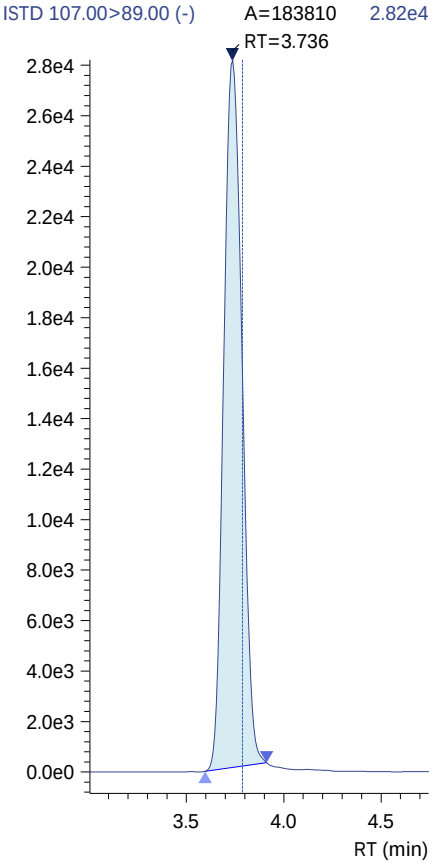
Perchlorate

Conc 15.1342
R#1 33.84 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:51:13 AM

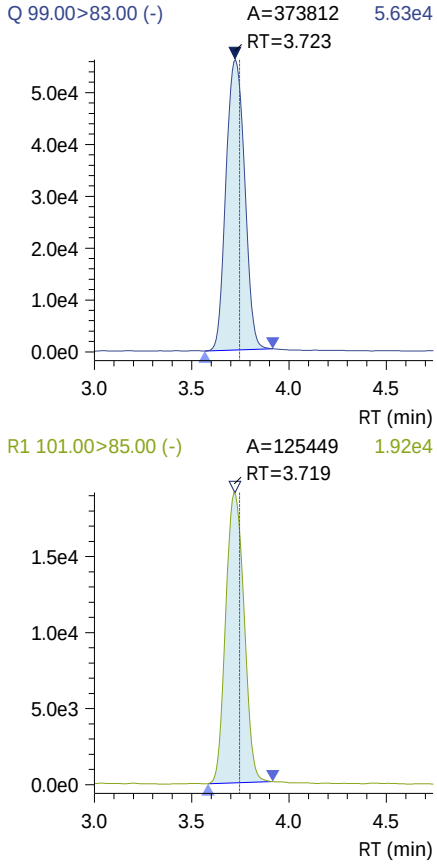
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/21/2022 5:47:50 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221221\20221221W-013.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.723	3738 12	237291	10.0 765	ng/mL	101.00 >85.00	33.56	23.68 -43.97
Sodium Perchlorate-18O4_IS	Auto	3.717	2372 91	237291	1.0000	ng/mL	----	----	

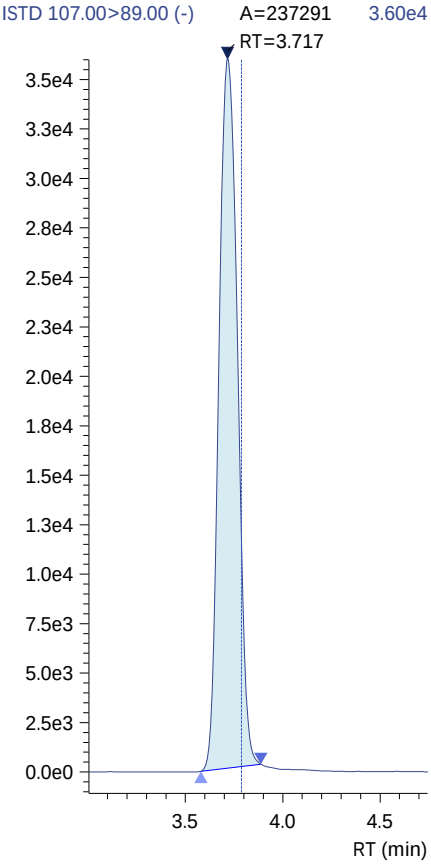
Perchlorate

Conc 10.0765
R#1 33.56 (33.82)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221222\12222022WATER.damlp

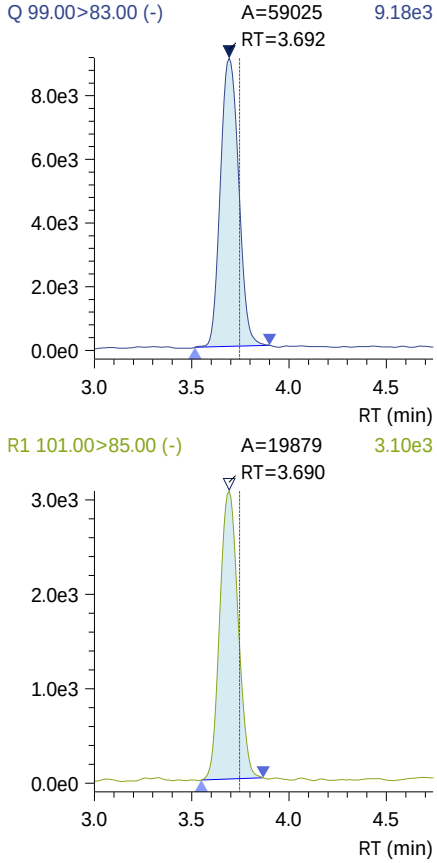
ICS

Sample ID: ICS
Date Acquired: 12/22/2022 8:23:15 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-002.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.692	59025	372945	1.0123	ng/mL	101.00 >85.00	33.68	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.690	372945	372945	1.0000	ng/mL	----	----	

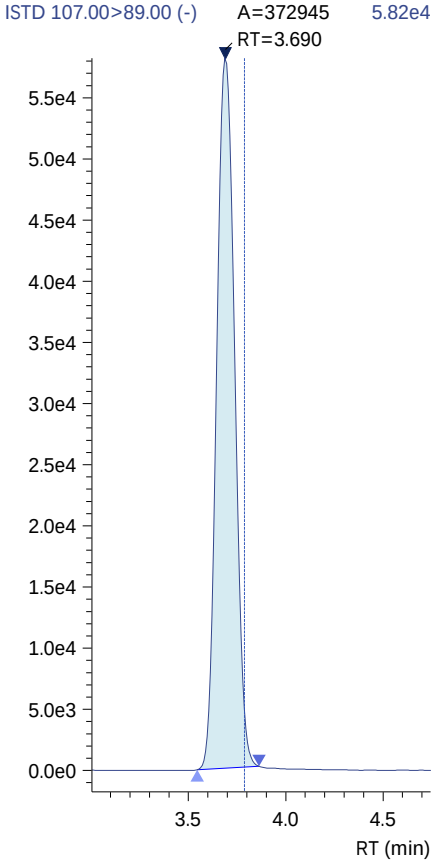
Perchlorate

Conc 1.0123
R#1 33.68 (33.58)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

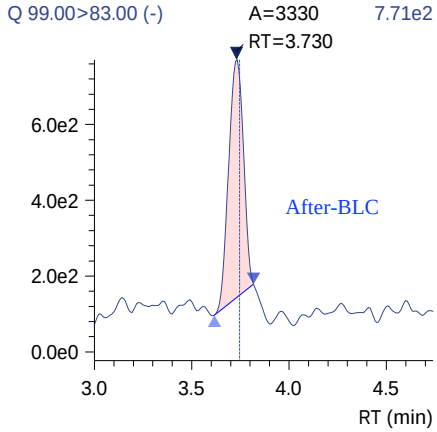
LODV

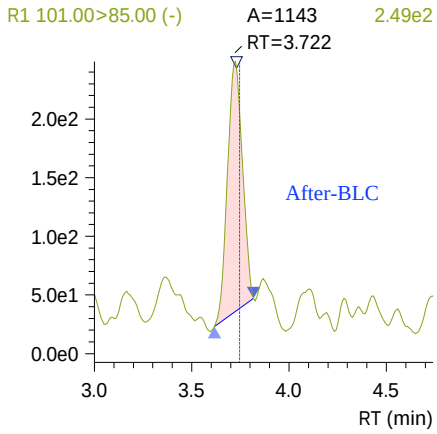
Sample ID: LODV
Date Acquired: 12/22/2022 8:28:56 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-003.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.730	3330	370994	0.0574	ng/mL	101.00 >85.00	34.32	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.721	370994	370994	1.0000	ng/mL	----	----	

Perchlorate

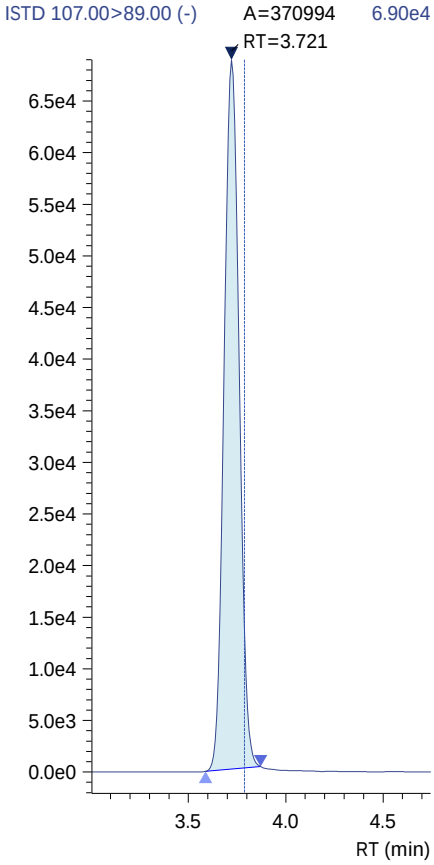
Conc 0.0574
R#1 34.32 (33.58)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:58:38 AM

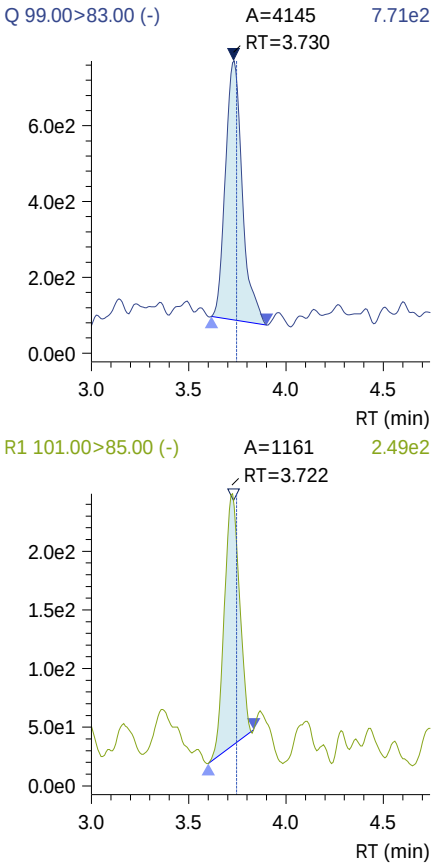
Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221222\12222022WATER.damlp

LODV

Sample ID: LODV
Date Acquired: 12/22/2022 8:28:56 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-003.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

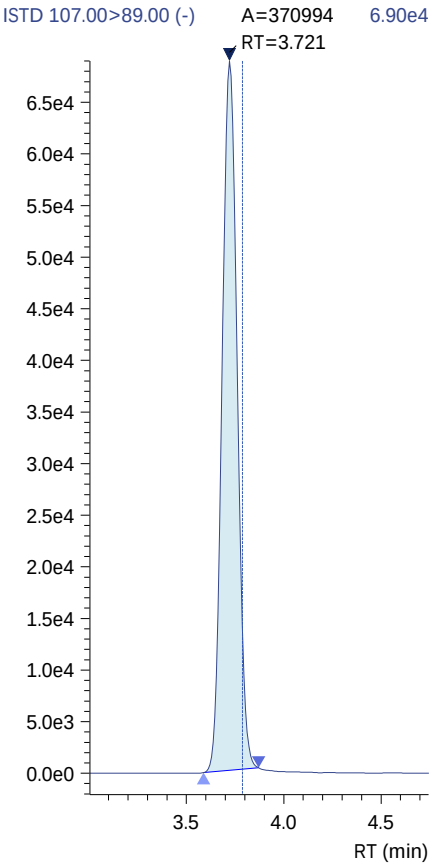
Perchlorate

Conc 0.0715
R#1 28.01 (33.58)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

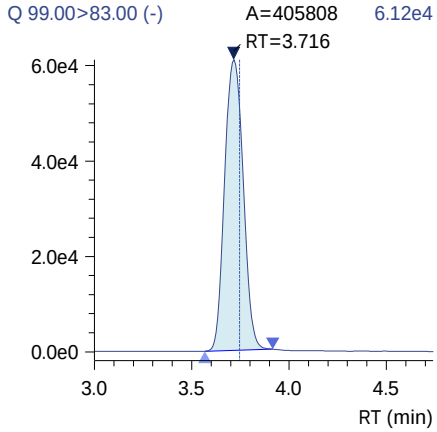
PERCHLORATE7

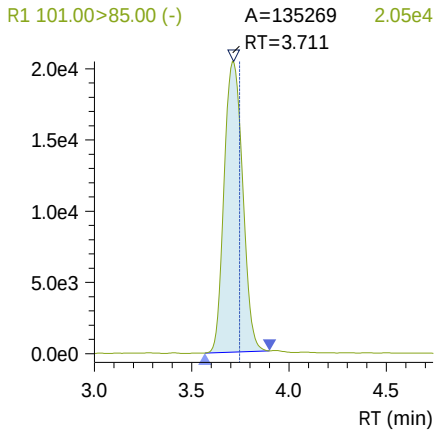
Sample ID: PERCHLORATE7
Date Acquired: 12/22/2022 8:34:34 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-004.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.716	405808	256146	10.1338	ng/mL	101.00 >85.00	33.33	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.708	256146	256146	1.0000	ng/mL	----	----	

Perchlorate

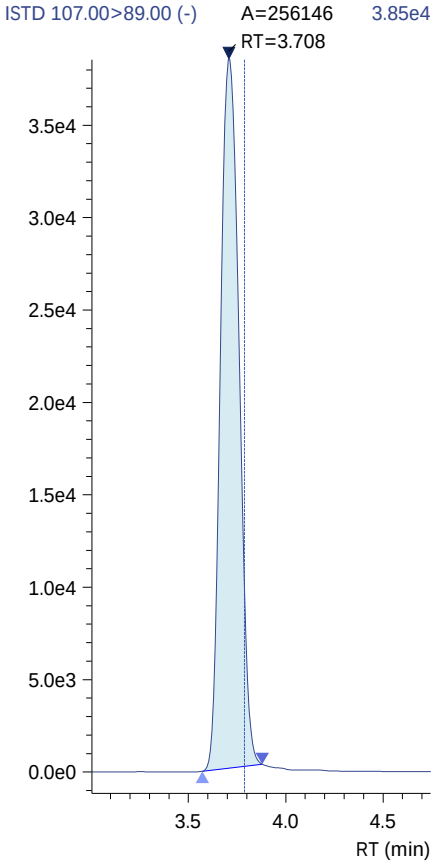
Conc 10.1338
R#1 33.33 (33.58)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

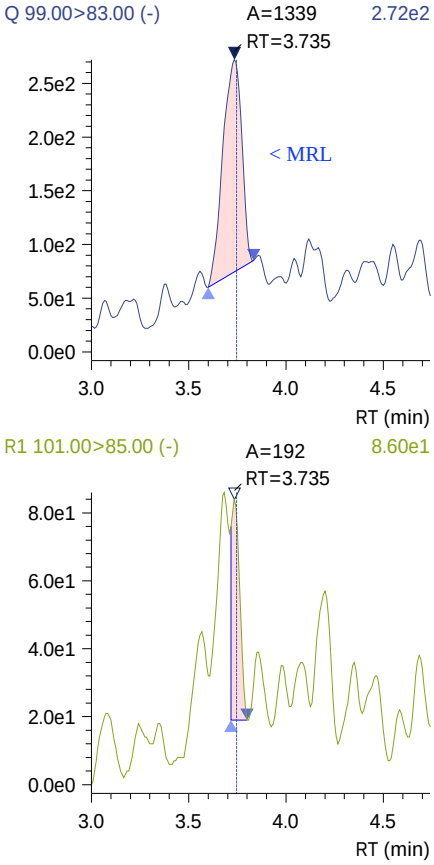
E2201206-002

Sample ID: E2201206-002
Date Acquired: 12/22/2022 9:08:46 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-007.lcd
Vial: 43 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.735	1339	355678	0.0241	ng/mL	101.00 >85.00	14.32	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.702	355678	355678	1.0000	ng/mL	----	----	

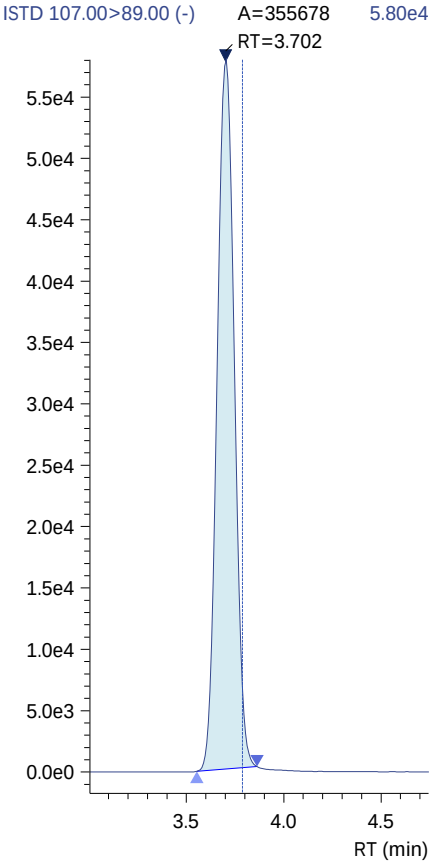
Perchlorate

Conc 0.0241
R#1 14.32 (33.58)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:58:38 AM

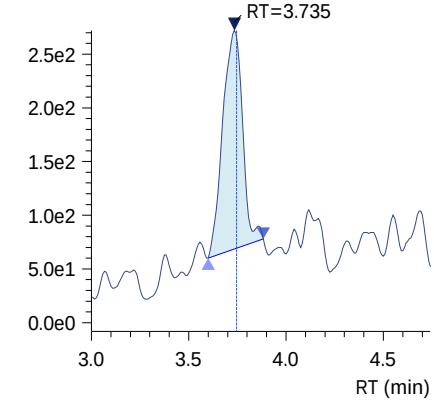
E2201206-002

Sample ID: E2201206-002
Date Acquired: 12/22/2022 9:08:46 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-007.lcd
Vial: 43 | Inj. Volume: 25.0000uL | Tray: 5

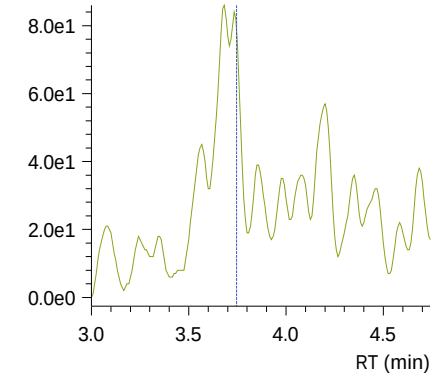
Perchlorate

Conc 0.0259
R#1 0.00 (33.58)

Q 99.00>83.00 (-) A=1442 2.72e2



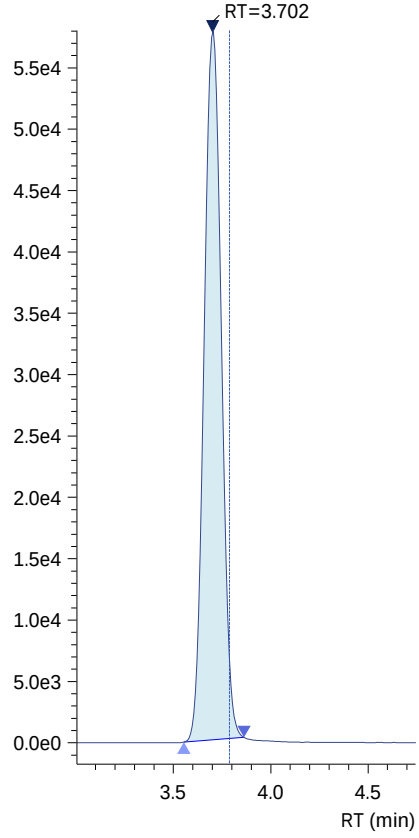
R1 101.00>85.00 (-) 8.60e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=355678 5.80e4



Insight Report

Printed at 12/22/2022 9:57:36 AM

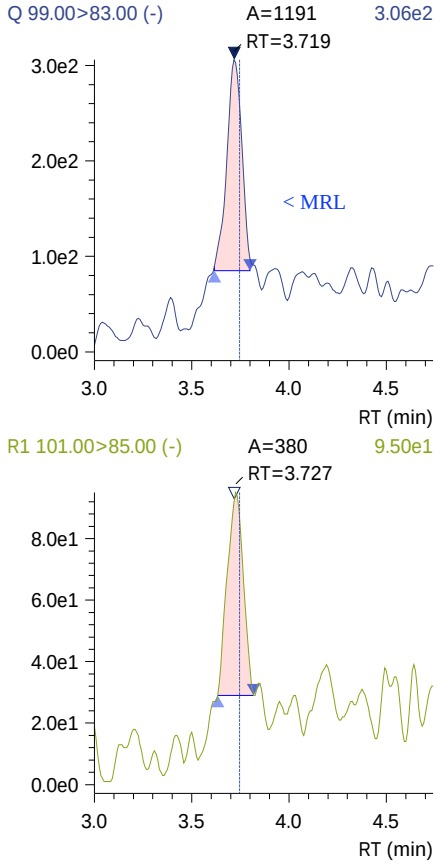
E2201206-003

Sample ID: E2201206-003
Date Acquired: 12/22/2022 9:16:10 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-008.lcd
Vial: 44 | Inj. Volume: 25.0000uL | Tray: 5

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	M	3.719	1191	320329	0.0238	ng/mL	101.00 >85.00	31.90	23.51 -43.65
Sodium Perchlorate-18O4_IS	Auto	3.697	320329	320329	1.0000	ng/mL	----	----	

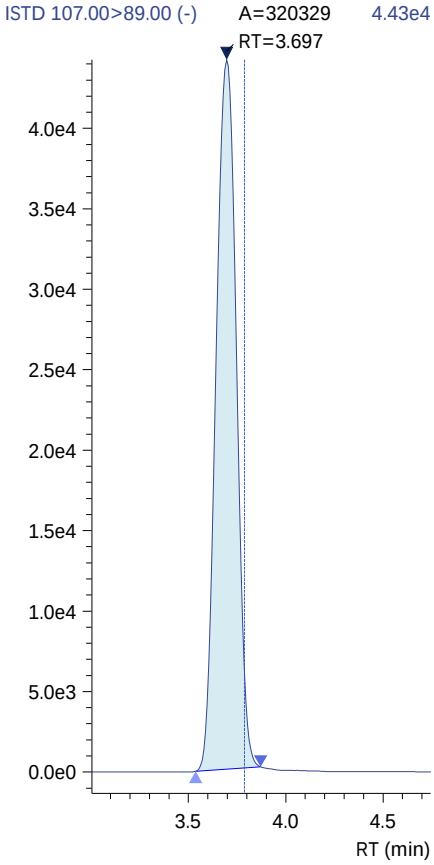
Perchlorate

Conc 0.0238
R#1 31.90 (33.58)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

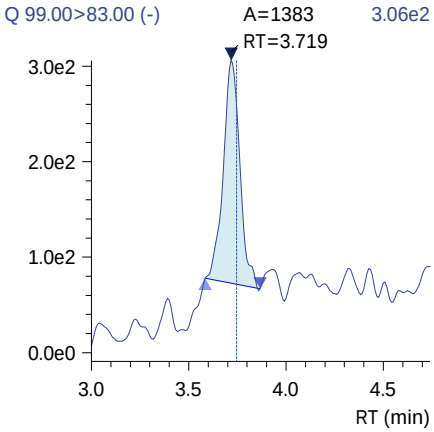
Printed at 12/22/2022 9:58:38 AM

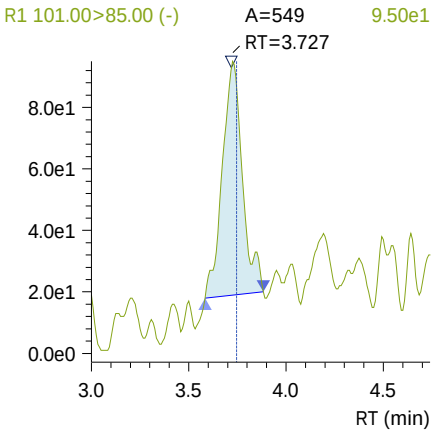
E2201206-003

Sample ID: E2201206-003
Date Acquired: 12/22/2022 9:16:10 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-008.lcd
Vial: 44 | Inj. Volume: 25.0000uL | Tray: 5

Perchlorate

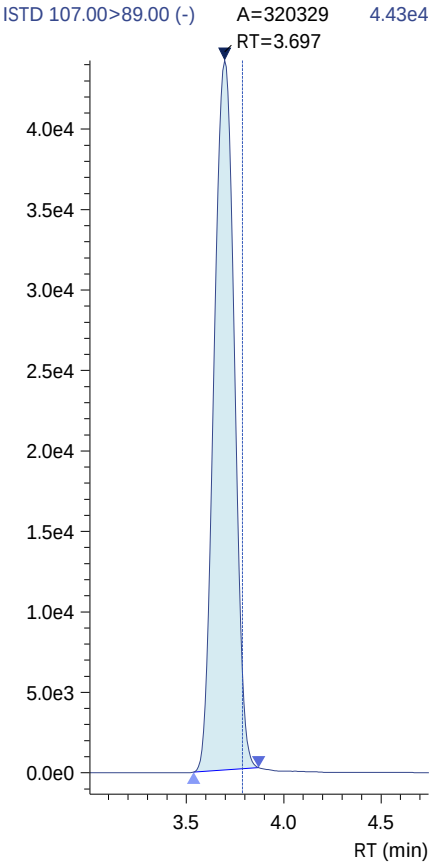
Conc 0.0276
R#1 39.65 (33.58)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/22/2022 9:57:36 AM

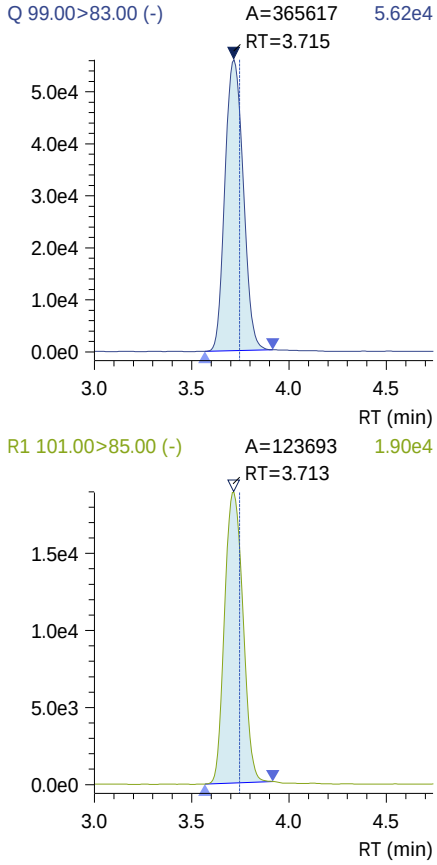
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/22/2022 9:27:33 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221222\20221222W-009.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.715	3656 17	234742	9.9626	ng/mL	101.00 >85.00	33.83	23.51 -43.65
Sodium Perchlorate-18O4 _IS	Auto	3.710	2347 42	234742	1.0000	ng/mL	----	----	

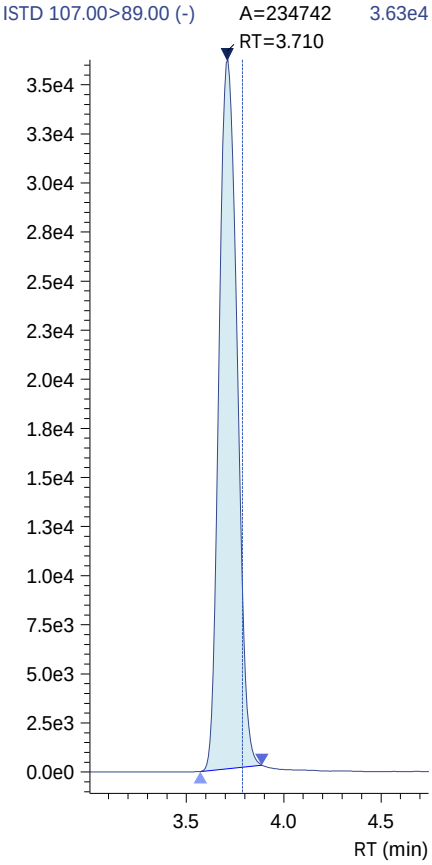
Perchlorate

Conc 9.9626
R#1 33.83 (33.58)



Sodium Perchlorate-18O4_IS

Conc 1.0000



December 30, 2022 Service Request No:E2201221

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22121316

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory December 21, 2022
For your reference, these analyses have been assigned our service request number **E2201221.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at James.Guin@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

James Guin

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Environmental - US	**Service Request No.:**	E2201221
Project:	HS22121316	**Date Received:**	12/21/22
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Eight samples were received for analysis at ALS Environmental in Houston on 12/21/22.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200594: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2201221
Project: HS22121316

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2201221-001	18CPTMW01SW_122022	12/20/2022	0755
E2201221-002	AWD1_122022	12/20/2022	0840
E2201221-003	120_122022	12/20/2022	0925
E2201221-004	MW14_122022	12/20/2022	1010
E2201221-005	MW23_122022	12/20/2022	1100
E2201221-006	18CPTMW10DW_122022	12/20/2022	1150
E2201221-007	18CPTMW10SW_122022	12/20/2022	1235
E2201221-008	AWD4_122022	12/20/2022	1320

Service Request Summary

Folder #: **E2201221**
Client Name: ALS Environmental - US
Project Name: HS22121316
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 12/21/22
Internal Due Date: 1/6/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22121316
EDD: No EDD Specified

8 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2201221-001	18CPTMW01SW_122022	Water	12/20/22 0755	**IV**
E2201221-002	AWD1_122022	Water	12/20/22 0840	**IV**
E2201221-003	120_122022	Water	12/20/22 0925	**IV**
E2201221-004	MW14_122022	Water	12/20/22 1010	**IV**
E2201221-005	MW23_122022	Water	12/20/22 1100	**IV**
E2201221-006	18CPTMW10DW_122022	Water	12/20/22 1150	**IV**
E2201221-007	18CPTMW10SW_122022	Water	12/20/22 1235	**IV**
E2201221-008	AWD4_122022	Water	12/20/22 1320	**IV**

Service Request Summary

Folder #:	**E2201221**
Client Name:	ALS Environmental - US
Project Name:	HS22121316
Project Number:	

Report To:	Dane Wacasey ALS Group USA, Corp. 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-575-2190
Cell Number:	
Fax Number:	281-530-5887
E-mail:	dane.wacasey@alsglobal.com

Project Chemist:	James Guin
Originating Lab:	HOUSTON
Logged By:	CGRANDITS
Date Received:	12/21/22
Internal Due Date:	1/6/2023
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS22121316
EDD:	No EDD Specified

8 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	8	Level IV due 1/13

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.

Data Qualifiers

Lab Standard

M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2368363	12/31/2023
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Ecology	C819-22	11/14/2023

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 20604

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS22121316
TSR:	Holly Tignac

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22121316-01**	**18CPTMW01SW_122022**	**Water**	**20 Dec 2022 07:55**
	Provide Level II and Level IV reports in separate pdf			06 Jan 2023
2.	**HS22121316-02**	**AWD1_122022**	**Water**	**20 Dec 2022 08:40**
	Provide Level II and Level IV reports in separate pdf			06 Jan 2023
3.	**HS22121316-03**	**120_122022**	**Water**	**20 Dec 2022 09:25**
	Provide Level II and Level IV reports in separate pdf			06 Jan 2023
4.	**HS22121316-04**	**MW14_122022**	**Water**	**20 Dec 2022 10:10**
	Provide Level II and Level IV reports in separate pdf			06 Jan 2023
5.	**HS22121316-05**	**MW23_122022**	**Water**	**20 Dec 2022 11:00**
	Provide Level II and Level IV reports in separate pdf			06 Jan 2023
6.	**HS22121316-06**	**18CPTMW10DW_122022**	**Water**	**20 Dec 2022 11:50**
	Provide Level II and Level IV reports in separate pdf			06 Jan 2023
7.	**HS22121316-07**	**18CPTMW10SW_122022**	**Water**	**20 Dec 2022 12:35**
	Provide Level II and Level IV reports in separate pdf			06 Jan 2023
8.	**HS22121316-08**	**AWD4_122022**	**Water**	**20 Dec 2022 13:20**
	Provide Level II and Level IV reports in separate pdf			06 Jan 2023

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 20604

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: 12-21-22 1915

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental

Cooler Receipt Form

Project Chemist JH

Client/Project 12-2122 Thermometer ID IR21

Date/Time Received: 12-21-22 ALS-H Initials: CG Date/Time Logged in: 12-21-22 Initials CG

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ⊗ Courier (ALS) ○ Client

2. Samples received in: ⊗ Cooler ○ Box ○ Envelope ○ Other _____

3. Were custody seals on coolers? ○ Yes ⊗ No If yes, how many and where? _____

Were they intact? ○ Yes ○ No ⊗ N/A

Were they signed and dated? ○ Yes ○ No ⊗ N/A

4. Packing Material: ○ Inserts ⊗ Baggies ○ Bubble Wrap ○ Gel Packs ⊗ Wet Ice ○ Sleeves ○ Other _____

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling: _____

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
NA		12-21-22	1915	CG	3.9	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ⊗ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ⊗ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ⊗ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ⊗ Yes ○ No

10. Did sample labels and tags agree with custody documents? ⊗ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 412258 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 12/28/22 08:59

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2201207-001	MOSA-23-265142	.01	6850/ClO4			Water	10mL	
2	E2201207-002	MOSA-23-265465	.01	6850/ClO4			Water	10mL	
3	E2201207-003	MOSA-23-265469	.01	6850/ClO4			Water	10mL	
4	E2201208-001	LACO-23-265475	.01	6850/ClO4			Water	10mL	
5	E2201208-002	LACO-23-265471	.01	6850/ClO4			Water	10mL	
6	E2201208-003	LACO-23-265472	.01	6850/ClO4			Water	10mL	
7	E2201208-004	LACO-23-265473	.01	6850/ClO4			Water	10mL	
8	E2201208-005	LACO-23-265474	.01	6850/ClO4			Water	10mL	
9	E2201221-001	18CPTMW01SW_122022	.01	6850/ClO4 DOD			Water	10mL	
10	E2201221-002	AWD1_122022	.01	6850/ClO4 DOD			Water	10mL	
11	E2201221-003	120_122022	.01	6850/ClO4 DOD			Water	10mL	
12	E2201221-004	MW14_122022	.01	6850/ClO4 DOD			Water	10mL	
13	E2201221-005	MW23_122022	.01	6850/ClO4 DOD			Water	10mL	
14	E2201221-006	18CPTMW10DW_122022	.01	6850/ClO4 DOD			Water	10mL	
15	E2201221-007	18CPTMW10SW_122022	.01	6850/ClO4 DOD			Water	10mL	
16	E2201221-008	AWD4_122022	.01	6850/ClO4 DOD			Water	10mL	
17	EQ2200594-01	MB		6850/ClO4			Liquid	10mL	
18	EQ2200594-02	LCS		6850/ClO4			Liquid	10mL	
19	EQ2200594-03	DLCS		6850/ClO4			Liquid	10mL	
20	R2211880-013	2212120838 600L-HA-05	.01	6850/ClO4			Water	10mL	
21	R2211923-008	2212131605C 700-B-510	.01	6850/ClO4			Water	10mL	
22	R2211958-013	2212130833 100L-HA-01	.01	6850/ClO4			Water	10mL	
23	R2212004-013	2212140813 STGT-HA-01	.01	6850/ClO4			Water	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 225386 Logbook Ref: Perchlorate (1st Source) Expires On: 01/31/2023

EQ2200594-02	1.00µL	EQ2200594-02	1.00µL	EQ2200594-03	1.00µL	EQ2200594-03	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 226778 Logbook Ref: Perchlorate Internal Standard Expires On: 05/31/2023

E2201207-001	100.00µL	E2201207-002	100.00µL	E2201207-003	100.00µL	E2201208-001	100.00µL	E2201208-002	100.00µL	E2201208-003	100.00µL
E2201208-004	100.00µL	E2201208-005	100.00µL	E2201221-001	100.00µL	E2201221-002	100.00µL	E2201221-003	100.00µL	E2201221-004	100.00µL
E2201221-005	100.00µL	E2201221-006	100.00µL	E2201221-007	100.00µL	E2201221-008	100.00µL	EQ2200594-01	100.00µL	EQ2200594-01	100.00µL
EQ2200594-02	100.00µL	EQ2200594-02	100.00µL	EQ2200594-03	100.00µL	EQ2200594-03	100.00µL	R2211880-013	100.00µL	R2211923-008	100.00µL
R2211958-013	100.00µL	R2212004-013	100.00µL								

Preparation Information Benchsheet

Prep Run#: 412258 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 12/28/22 08:59

Preparation Materials

Water HPLC Grade	10/24/2022 Water (225656)	6850 Amber Glass screw vial	2mL Screw Top Vial (221308)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221307)		

Preparation Steps

Step: Preparation
Started: 12/28/22 08:59
Finished: 12/28/22 13:30
By: XMI
Comments

Comments: _____

Reviewed By: XMI Date: 12/28/22

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Collected:**	12/20/22 0755
Sample Matrix:	Water	**Date Received:**	12/21/22
Sample Name:	18CPTMW01SW_122022	**Units:**	µg/L
Lab Code:	E2201221-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/28/22	12/29/22 11:37	412258	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Collected:**	12/20/22 0840
Sample Matrix:	Water	**Date Received:**	12/21/22
Sample Name:	AWD1_122022	**Units:**	µg/L
Lab Code:	E2201221-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0491**	J	0.100	0.0500	0.0250	1	12/28/22	12/29/22 11:42	412258	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Collected:**	12/20/22 0925
Sample Matrix:	Water	**Date Received:**	12/21/22
Sample Name:	120_122022	**Units:**	µg/L
Lab Code:	E2201221-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**22400**		200	100	50.0	2000	12/28/22	12/29/22 17:47	412258	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Collected:**	12/20/22 1010
Sample Matrix:	Water	**Date Received:**	12/21/22
Sample Name:	MW14_122022	**Units:**	µg/L
Lab Code:	E2201221-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**24400**		200	100	50.0	2000	12/28/22	12/29/22 17:53	412258	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Collected:**	12/20/22 1100
Sample Matrix:	Water	**Date Received:**	12/21/22
Sample Name:	MW23_122022	**Units:**	µg/L
Lab Code:	E2201221-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**72900**		500	250	125	5000	12/28/22	12/29/22 17:58	412258	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Collected:**	12/20/22 1150
Sample Matrix:	Water	**Date Received:**	12/21/22
Sample Name:	18CPTMW10DW_122022	**Units:**	µg/L
Lab Code:	E2201221-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0558**	J	0.100	0.0500	0.0250	1	12/28/22	12/29/22 11:48	412258	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Collected:**	12/20/22 1235
Sample Matrix:	Water	**Date Received:**	12/21/22
Sample Name:	18CPTMW10SW_122022	**Units:**	µg/L
Lab Code:	E2201221-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/28/22	12/29/22 15:00	412258	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Collected:**	12/20/22 1320
Sample Matrix:	Water	**Date Received:**	12/21/22
Sample Name:	AWD4_122022	**Units:**	µg/L
Lab Code:	E2201221-008	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**1060**		5.00	2.50	1.25	50	12/28/22	12/29/22 15:06	412258	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200594-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/28/22	12/29/22 09:23	412258	789961	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Analyzed:**	12/29/22
Sample Matrix:	Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	412258

	Lab Control Sample EQ2200594-02			Duplicate Lab Control Sample EQ2200594-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.104	0.100	104	0.0955	0.100	96	84 - 119	9	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200594-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.104**		0.100	0.0500	0.0250	1	12/28/22	12/29/22 09:28	412258	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200594-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0955**	J	0.100	0.0500	0.0250	1	12/28/22	12/29/22 09:34	412258	789961	

Initial Calibration

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20221214

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : **A:**0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	IB		20221214_001	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:12
2	ICS		20221214_002	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:29
3	LODV		20221214_003	Perchlorate6850c.lcm	1x	☒		12/14/2022 15:35
4	PERCHLORATE1		20221214_004	Perchlorate6850c.lcm	1x	☒	226061	12/14/2022 15:40
5	PERCHLORATE2		20221214_005	Perchlorate6850c.lcm	1x	☒	226062	12/14/2022 15:46
6	PERCHLORATE3		20221214_006	Perchlorate6850c.lcm	1x	☒	226063	12/14/2022 15:51
7	PERCHLORATE4		20221214_007	Perchlorate6850c.lcm	1x	☒	226064	12/14/2022 15:57
8	PERCHLORATE5		20221214_008	Perchlorate6850c.lcm	1x	☒	226065	12/14/2022 16:02
9	PERCHLORATE6		20221214_009	Perchlorate6850c.lcm	1x	☒	226066	12/14/2022 16:09
10	PERCHLORATE7		20221214_010	Perchlorate6850c.lcm	1x	☒	225881	12/14/2022 16:15
11	PERCHLORATE8		20221214_011	Perchlorate6850c.lcm	1x	☒	226068	12/14/2022 16:20
12	PERCHLORATE9		20221214_012	Perchlorate6850c.lcm	1x	☒	226069	12/14/2022 16:25
13	PERCHLORATE10		20221214_013	Perchlorate6850c.lcm	1x	☒	226070	12/14/2022 16:31
14	PERCHLORATEICV		20221214_014	Perchlorate6850c.lcm	1x	☒	226067	12/14/2022 16:37

Initial Calibration - Detailed Report

Calibration ID: EC2200016 **Instrument ID:** E-LCMS-01
Column Name: 1

#	Lab Code	Sample Name	File Location	Aquisition Date
01	EC2200016-01	PERCHLORATE1	20221214_004	12/14/2022 15:40
02	EC2200016-02	PERCHLORATE2	20221214_005	12/14/2022 15:46
03	EC2200016-03	PERCHLORATE3	20221214_006	12/14/2022 15:51
04	EC2200016-04	PERCHLORATE4	20221214_007	12/14/2022 15:57
05	EC2200016-05	PERCHLORATE5	20221214_008	12/14/2022 16:02
06	EC2200016-06	PERCHLORATE6	20221214_009	12/14/2022 16:09
07	EC2200016-07	PERCHLORATE7	20221214_010	12/14/2022 16:15
08	EC2200016-08	PERCHLORATE8	20221214_011	12/14/2022 16:20
09	EC2200016-09	PERCHLORATE9	20221214_012	12/14/2022 16:25
10	EC2200016-10	PERCHLORATE10	20221214_013	12/14/2022 16:31

Analyte **Curve Fit** **Weighting**

Perchlorate **Average RF** **RSD = 2.927** **Average RF = 0.1567**

#	Amount	RF	#	Amount	RF	#	Amount	RF	#	Amount	RF
01	0.1000	0.1615	02	0.5000	0.1479	03	0.7000	0.1579	04	1.0000	0.1573
05	2.0000	0.1505	06	5.0000	0.1573	07	10.0000	0.1541	08	20.0000	0.162
09	30.0000	0.1598	10	50.0000	0.1587						

Analyte

Perchlorate RSE = 2.93

#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D	#	Amount	Calculated Conc	%D
01	0.1000	0.103	3.1	02	0.5000	0.472	-5.6	03	0.7000	0.705	0.8
04	1.0000	1.00	0.4	05	2.0000	1.92	-3.9	06	5.0000	5.02	0.4
07	10.0000	9.83	-1.7	08	20.0000	20.7	3.4	09	30.0000	30.6	2.0
10	50.0000	50.6	1.3								

Initial Calibration Verification Summary Report

Calibration ID:	EC2200016	**Instrument ID:**	E-LCMS-01
Datafile ID:	20221214_014	**Column Name:**	1

Analyte	Lab Code	Type	Curve Fit	True Value	Calc Conc	Units	Result	Criteria
Perchlorate	EC2200016-11	T	Average RF	10	9.359	ng/mL	-6.4	<= 15

Insight Report

Printed at 12/15/2022 10:55:51 AM

Method File: I:\LCMS01\DATA\20221013ICAL\20221013ICAL.lcm
Project File: I:\LCMS01\DATA\20221214\12142022 ICAL.damlp

PERCHLORATE1

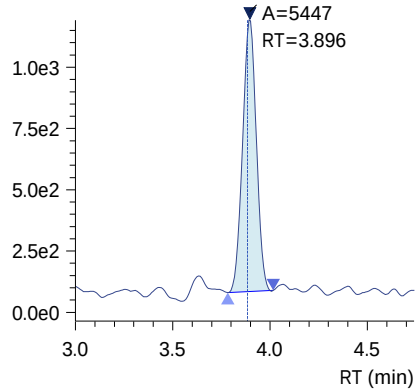
Sample ID: PERCHLORATE1
Date Acquired: 12/14/2022 3:40:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_004.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.896	5447	337240	0.1031	ng/mL	101.00 >85.00	35.31	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.889	337240	337240	1.0000	ng/mL	----	----	

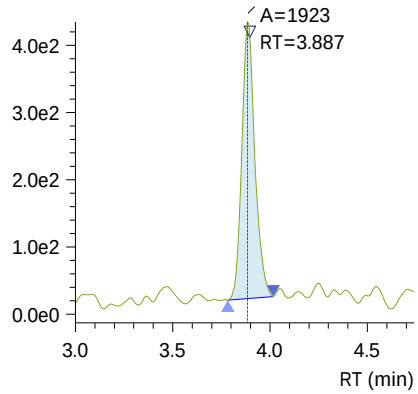
Perchlorate

Conc 0.1031
R#1 35.31 (34.02)

Q 99.00>83.00 (-) 1.19e3



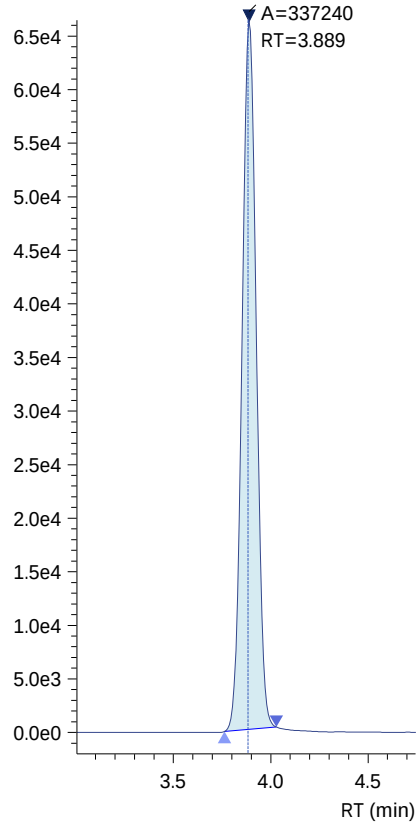
R1 101.00>85.00 (-) 4.35e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.65e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE2

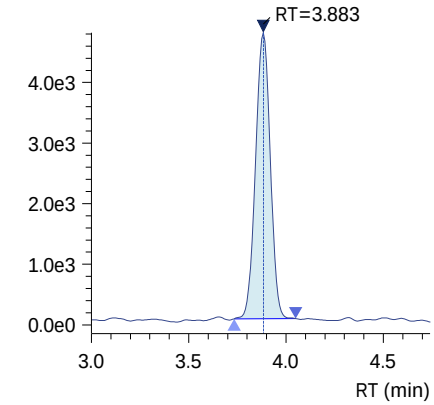
Sample ID: PERCHLORATE2
Date Acquired: 12/14/2022 3:46:03 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_005.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.883	24897	336620	0.4720	ng/mL	101.00 >85.00	33.26	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.878	336620	336620	1.0000	ng/mL	----	----	

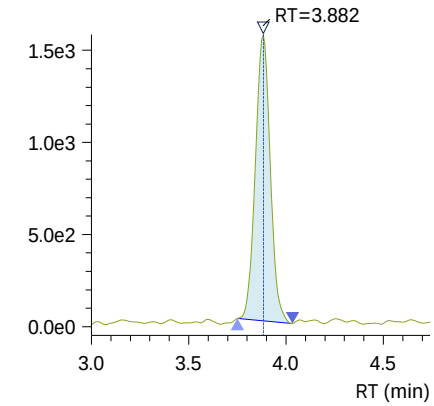
Perchlorate

Conc 0.4720
R#1 33.26 (34.02)

Q 99.00>83.00 (-) A=24897 4.82e3



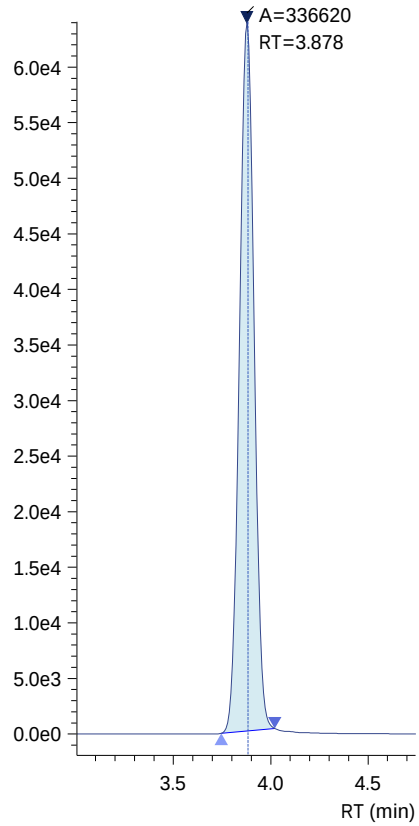
R1 101.00>85.00 (-) A=8281 1.59e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.41e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE3

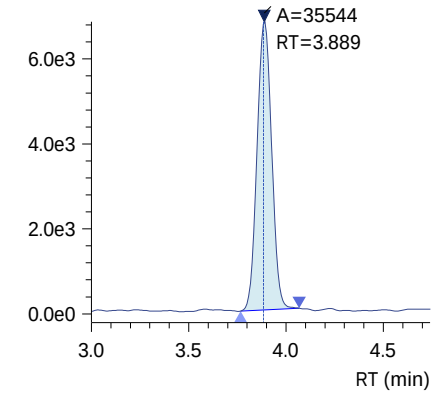
Sample ID: PERCHLORATE3
Date Acquired: 12/14/2022 3:51:33 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_006.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.889	35544	321596	0.7053	ng/mL	101.00 >85.00	35.09	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.885	321596	321596	1.0000	ng/mL	----	----	

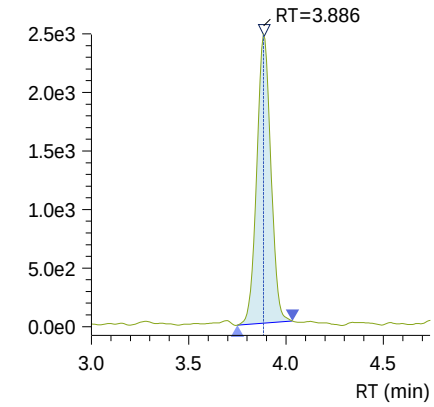
Perchlorate

Conc 0.7053
R#1 35.09 (34.02)

Q 99.00>83.00 (-) 6.88e3



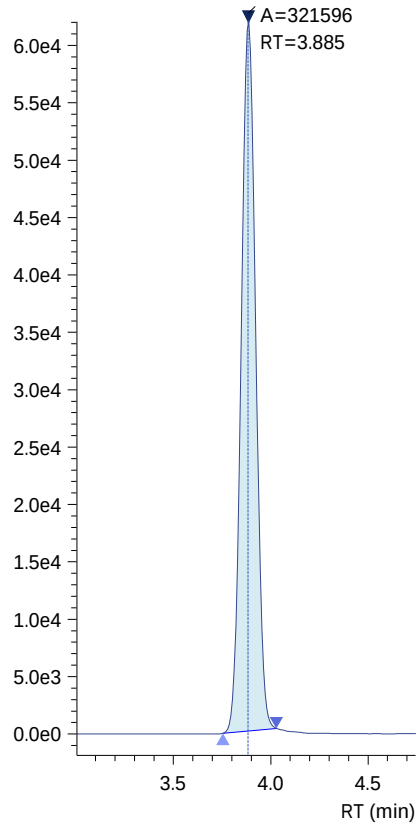
R1 101.00>85.00 (-) A=12471 2.50e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.21e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE4

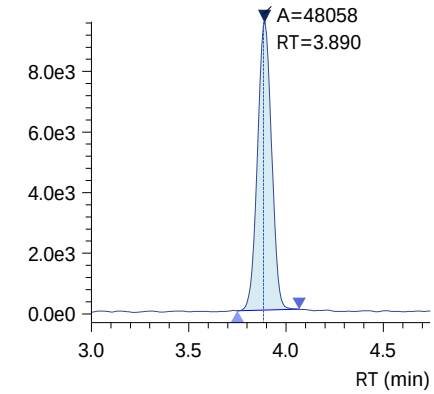
Sample ID: PERCHLORATE4
Date Acquired: 12/14/2022 3:57:06 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_007.lcd
Vial: 4 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.890	48058	305584	1.0036	ng/mL	101.00 >85.00	33.87	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.886	305584	305584	1.0000	ng/mL	----	----	

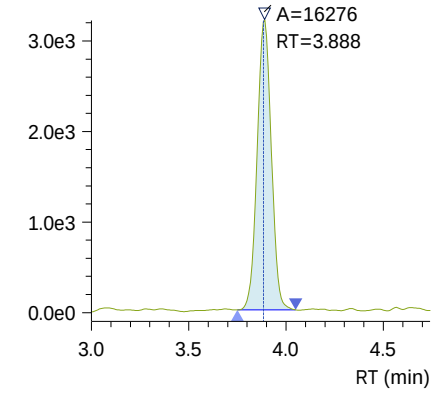
Perchlorate

Conc 1.0036
R#1 33.87 (34.02)

Q 99.00>83.00 (-) 9.64e3



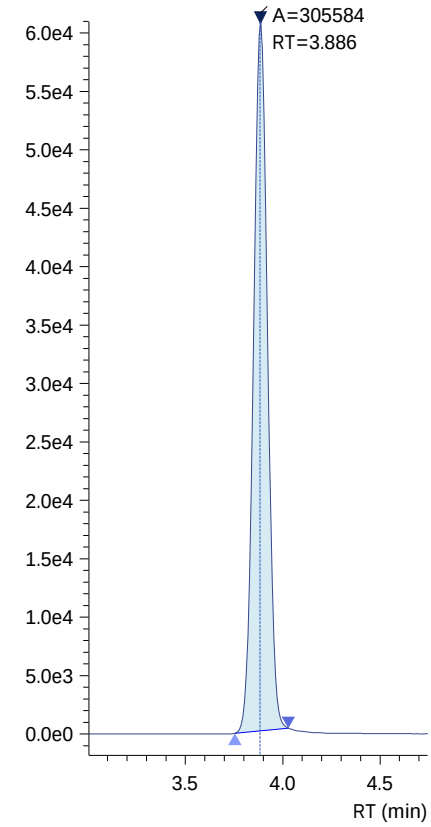
R1 101.00>85.00 (-) 3.23e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.10e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE5

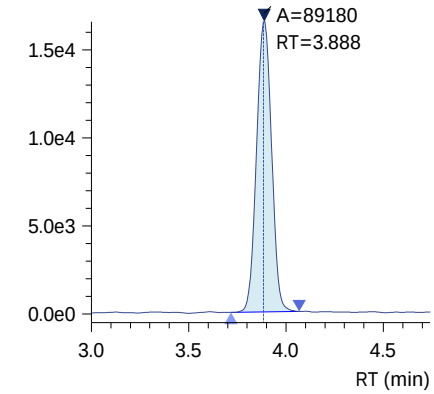
Sample ID: PERCHLORATE5
Date Acquired: 12/14/2022 4:02:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_008.lcd
Vial: 5 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.888	89180	296200	1.9213	ng/mL	101.00 >85.00	32.32	23.94 -44.46
Sodium Perchlorate-18O4 _IS	Auto	3.885	296200	296200	1.0000	ng/mL	----	----	

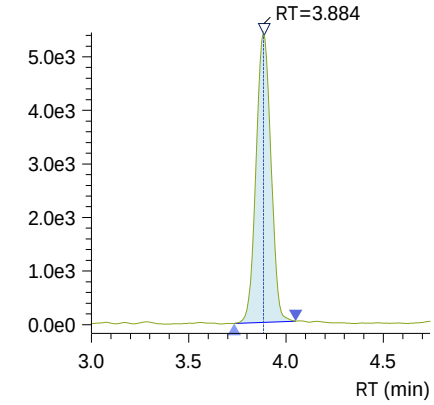
Perchlorate

Conc 1.9213
R#1 32.32 (34.02)

Q 99.00>83.00 (-) 1.66e4



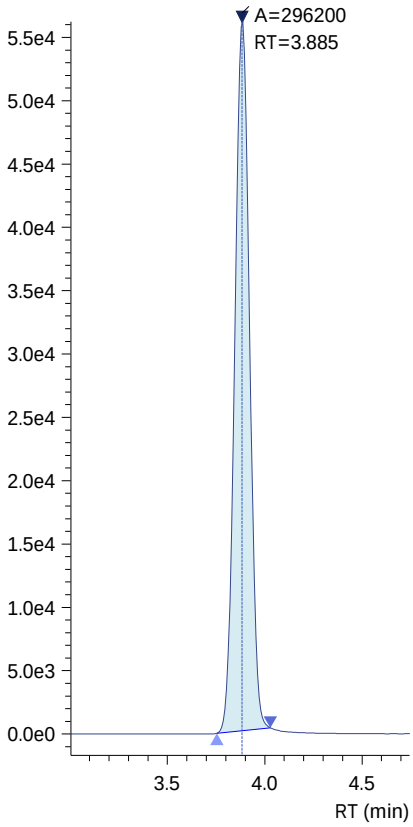
R1 101.00>85.00 (-) A=28822 5.45e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.62e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE6

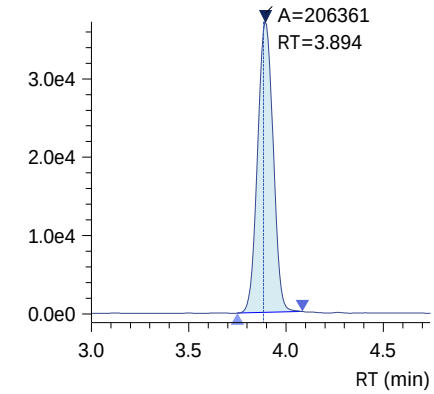
Sample ID: PERCHLORATE6
Date Acquired: 12/14/2022 4:09:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_009.lcd
Vial: 6 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.894	206361	262312	5.0202	ng/mL	101.00 >85.00	33.93	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.889	262312	262312	1.0000	ng/mL	----	----	

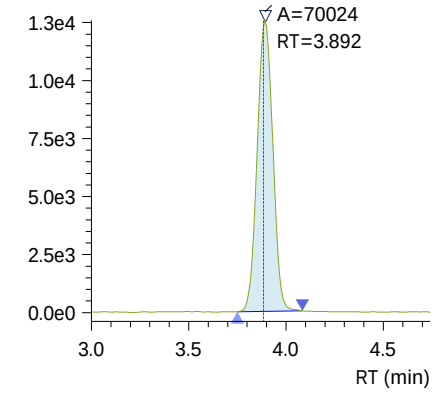
Perchlorate

Conc 5.0202
R#1 33.93 (34.02)

Q 99.00>83.00 (-) 3.73e4



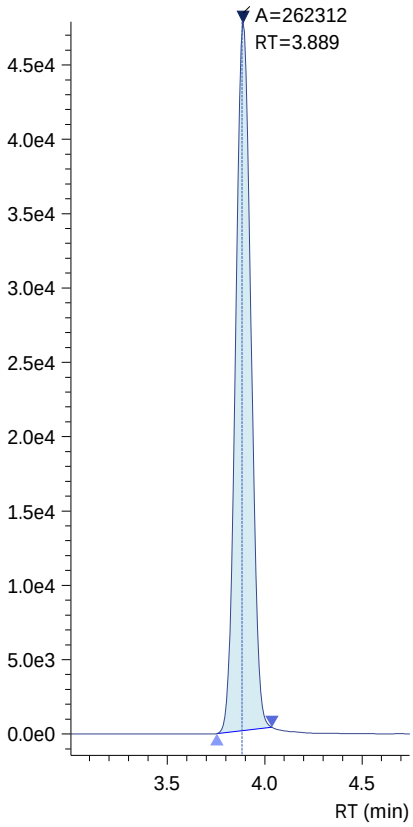
R1 101.00>85.00 (-) 1.26e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.79e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE7

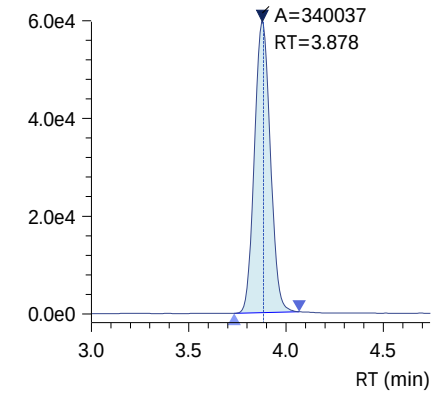
Sample ID: PERCHLORATE7
Date Acquired: 12/14/2022 4:15:00 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_010.lcd
Vial: 7 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.878	340037	220702	9.8317	ng/mL	101.00 >85.00	34.05	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.875	220702	220702	1.0000	ng/mL	----	----	

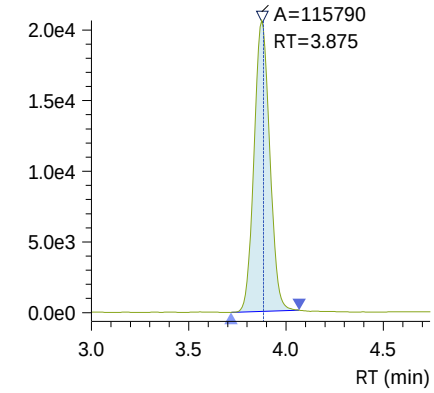
Perchlorate

Conc 9.8317
R#1 34.05 (34.02)

Q 99.00>83.00 (-) 5.98e4



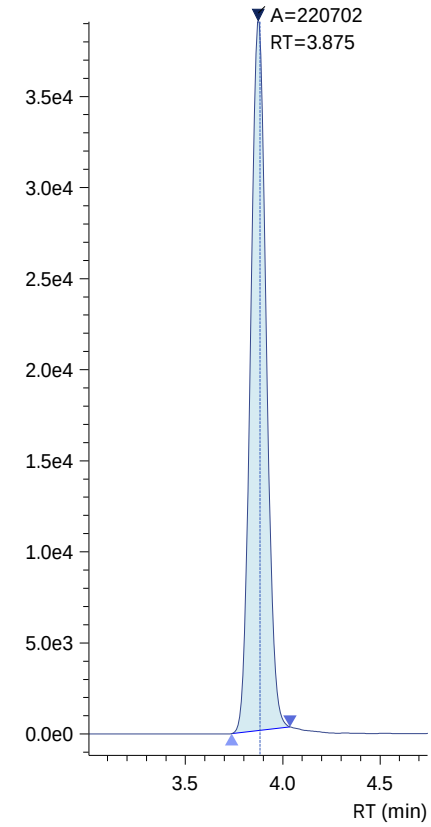
R1 101.00>85.00 (-) 2.07e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 3.91e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE8

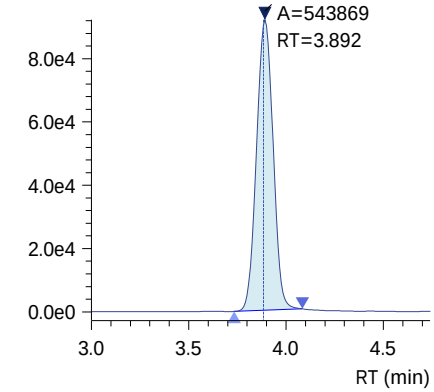
Sample ID: PERCHLORATE8
Date Acquired: 12/14/2022 4:20:30 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_011.lcd
Vial: 8 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.892	543869	167819	20.6806	ng/mL	101.00 >85.00	33.45	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.888	167819	167819	1.0000	ng/mL	----	----	

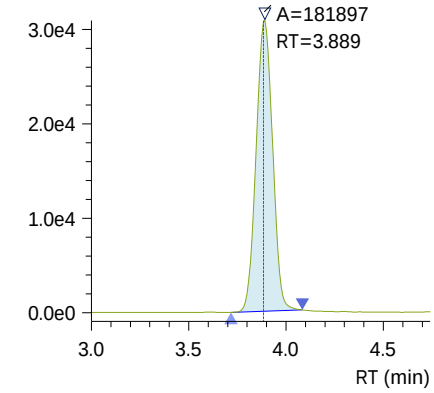
Perchlorate

Conc 20.6806
R#1 33.45 (34.02)

Q 99.00>83.00 (-) 9.23e4



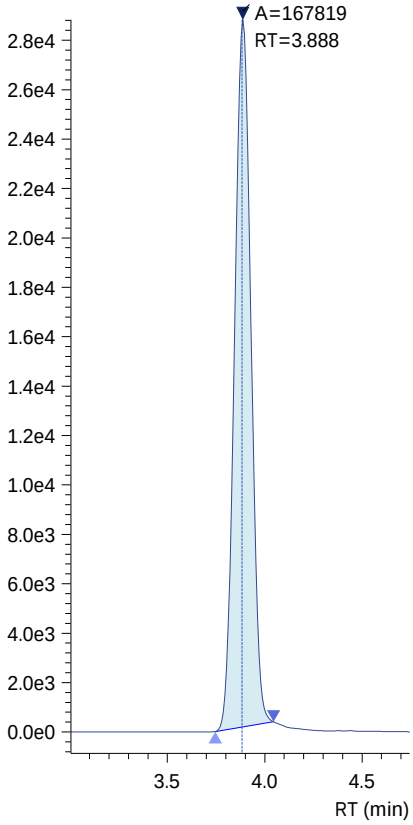
R1 101.00>85.00 (-) 3.09e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.88e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE9

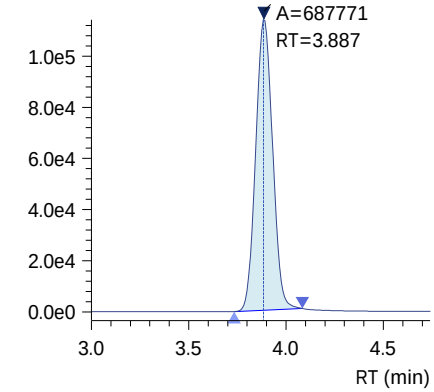
Sample ID: PERCHLORATE9
Date Acquired: 12/14/2022 4:25:58 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_012.lcd
Vial: 9 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.887	687771	143493	30.5860	ng/mL	101.00 >85.00	33.79	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.883	143493	143493	1.0000	ng/mL	----	----	

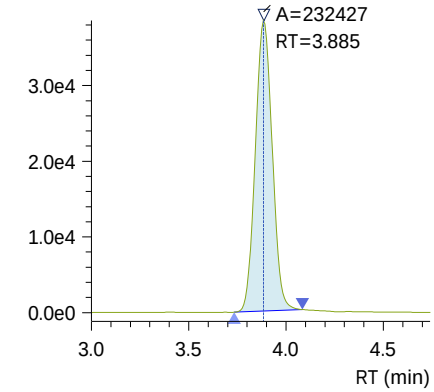
Perchlorate

Conc 30.5860
R#1 33.79 (34.02)

Q 99.00>83.00 (-) 1.14e5



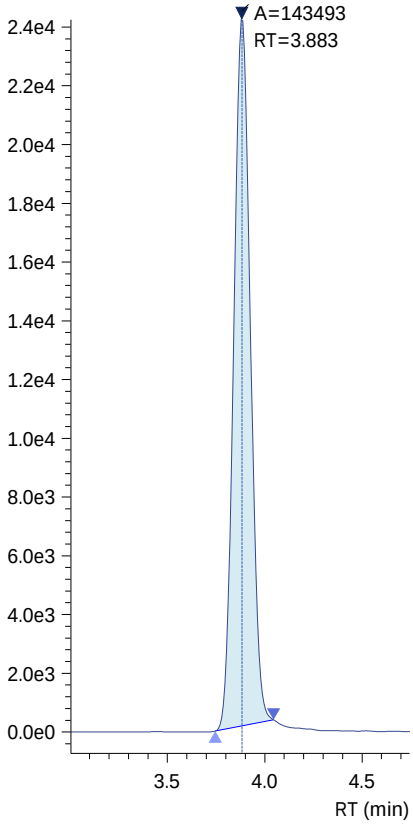
R1 101.00>85.00 (-) 3.86e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.43e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

PERCHLORATE10

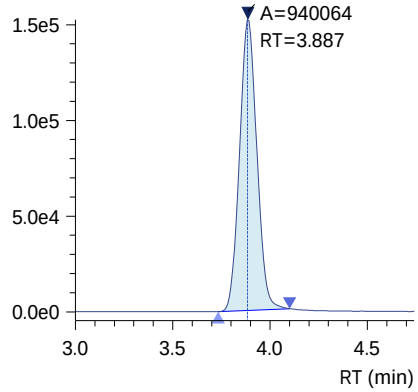
Sample ID: PERCHLORATE10
Date Acquired: 12/14/2022 4:31:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_013.lcd
Vial: 10 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.887	9400 64	118445	50.6 464	ng/mL	101.00 >85.00	33.39	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.883	1184 45	118445	1.0000	ng/mL	----	----	

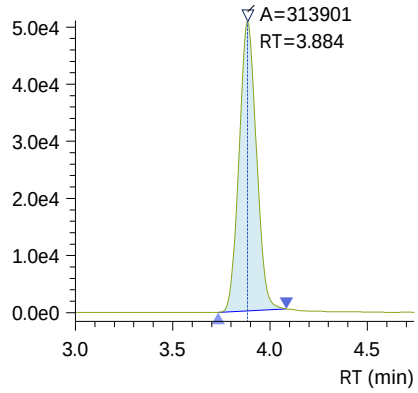
Perchlorate

Conc 50.6464
R#1 33.39 (34.02)

Q 99.00>83.00 (-) 1.53e5



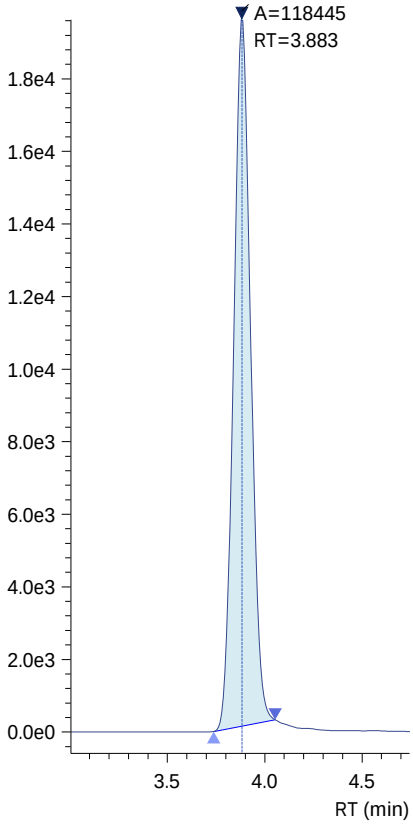
R1 101.00>85.00 (-) 5.12e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 1.96e4



Insight Report

Printed at 12/15/2022 10:55:51 AM

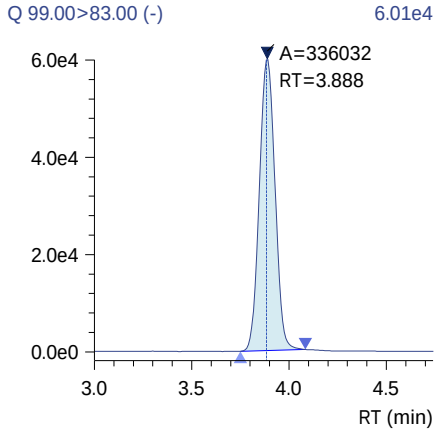
PERCHLORATEICV

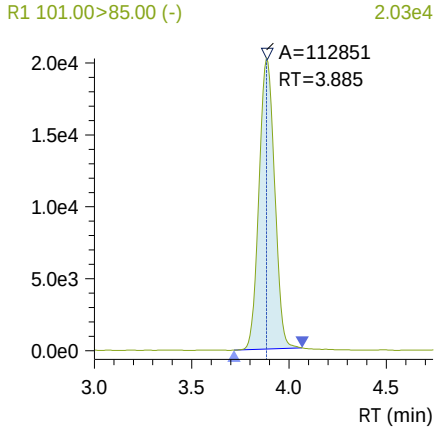
Sample ID: PERCHLORATEICV
Date Acquired: 12/14/2022 4:37:01 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221214\20221214_014.lcd
Vial: 11 | Inj. Volume: 25.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.888	3360 32	229124	9.3588	ng/mL	101.00 >85.00	33.58	23.94 -44.46
Sodium Perchlorate-18O4_IS	Auto	3.884	2291 24	229124	1.0000	ng/mL	----	----	

Perchlorate

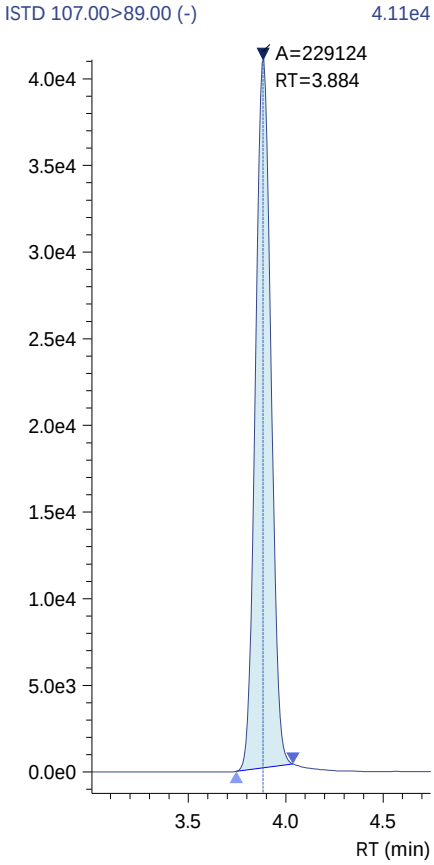
Conc 9.3588
R#1 33.58 (34.02)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Chromatograms and Selected Ion Monitoring

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 320, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

20221229WATER

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : A:0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
1	ICS		20221229-005	Perchlorate6850c.lcm	1x	☒	32103024	12/29/2022 9:06
2	LODV		20221229-006	Perchlorate6850c.lcm	1x	☒	225199	12/29/2022 9:11
3	PERCHLORATE7		20221229-007	Perchlorate6850c.lcm	1x	☒	226067	12/29/2022 9:17
4	EQ2200594-01		20221229-008	Perchlorate6850c.lcm	1x	☒		12/29/2022 9:23
5	EQ2200594-02		20221229-009	Perchlorate6850c.lcm	1x	☒		12/29/2022 9:28
6	EQ2200594-03		20221229-010	Perchlorate6850c.lcm	1x	☒		12/29/2022 9:34
7	E2201207-001		20221229-011	Perchlorate6850c.lcm	1x	☒		12/29/2022 9:40
8	E2201207-002		20221229-012	Perchlorate6850c.lcm	1x	☒		12/29/2022 9:46
9	E2201207-003		20221229-013	Perchlorate6850c.lcm	1x	☒		12/29/2022 9:51
10	E2201208-001		20221229-014	Perchlorate6850c.lcm	1x	☒		12/29/2022 9:57
11	E2201208-002		20221229-015	Perchlorate6850c.lcm	1x	☒		12/29/2022 10:03
12	E2201208-003		20221229-016	Perchlorate6850c.lcm	1x	☒		12/29/2022 10:08
13	E2201208-004		20221229-017	Perchlorate6850c.lcm	1x	☒		12/29/2022 10:14
14	PERCHLORATE7		20221229-018	Perchlorate6850c.lcm	1x	☒	226067	12/29/2022 10:20
15	E2201208-005		20221229-019	Perchlorate6850c.lcm	1x	☒		12/29/2022 10:26
16	R2211880-013		20221229-020	Perchlorate6850c.lcm	1x	☒		12/29/2022 10:31
17	R2211923-008		20221229-021	Perchlorate6850c.lcm	1x	☒		12/29/2022 10:37
18	R2211958-013		20221229-022	Perchlorate6850c.lcm	1x	☒		12/29/2022 10:43
19	R2212004-013		20221229-023	Perchlorate6850c.lcm	1x	☒		12/29/2022 10:48
20	E2201221-001		20221229-024	Perchlorate6850c.lcm	1x	☒		12/29/2022 11:37
21	E2201221-002		20221229-025	Perchlorate6850c.lcm	1x	☒		12/29/2022 11:42
22	E2201221-006		20221229-026	Perchlorate6850c.lcm	1x	☒		12/29/2022 11:48
23	E2201221-007		20221229-027	Perchlorate6850c.lcm	1x	☒	DNU-IS	12/29/2022 11:54
24	E2201221-008		20221229-028	Perchlorate6850c.lcm	1x	☒	DNU-IS	12/29/2022 11:59
25	PERCHLORATE7		20221229-029	Perchlorate6850c.lcm	1x	☒	226067	12/29/2022 12:05
26	EQ2200596-01		20221229-030	Perchlorate6850c.lcm	1x	☒		12/29/2022 12:11
27	EQ2200596-02		20221229-031	Perchlorate6850c.lcm	1x	☒	DNU-IS	12/29/2022 12:16
28	EQ2200596-03		20221229-032	Perchlorate6850c.lcm	1x	☒		12/29/2022 12:22
29	E2201222-001		20221229-033	Perchlorate6850c.lcm	1x	☒		12/29/2022 12:28
30	E2201222-002		20221229-034	Perchlorate6850c.lcm	1x	☒	DNU-OUT OF RANGE	12/29/2022 12:33
31	E2201222-003		20221229-035	Perchlorate6850c.lcm	1x	☒		12/29/2022 12:39
32	E2201222-004		20221229-036	Perchlorate6850c.lcm	1x	☒		12/29/2022 12:45
33	E2201222-005		20221229-037	Perchlorate6850c.lcm	1x	☒		12/29/2022 12:51
34	E2201222-006		20221229-038	Perchlorate6850c.lcm	1x	☒	DNU-IS	12/29/2022 12:56
35	PERCHLORATE7		20221229-039	Perchlorate6850c.lcm	1x	☒	226067	12/29/2022 13:39
36	IB		20221229-040	Perchlorate6850c.lcm	1x	☒		12/29/2022 14:21
37	IB		20221229-041	Perchlorate6850c.lcm	1x	☒		12/29/2022 14:27
38	PERCHLORATE7		20221229-042	Perchlorate6850c.lcm	1x	☒	226067	12/29/2022 14:55
39	E2201221-007		20221229-043	Perchlorate6850c.lcm	1x	☒		12/29/2022 15:00
40	E2201221-008		20221229-044	Perchlorate6850c.lcm	50x	☒		12/29/2022 15:06

20221229WATER

Injection Log

LCMS01 -Shimadzu 8050

1st Review: XMI
2nd Review: Kneir

ICAL Date: 12/14/2022
Cal. Std. xp: 01/31/2023
ICAL ID: EC2200016

Mobile Phases : **A:**0.10% Formic Acid/Water 3210301-08 **B:**MeOH 224417

	Sample Name		File Name	Acquisition Method	Dilution	R	Comments	Date/Time
41	EQ2200596-02		20221229-045	Perchlorate6850c.lcm	1x	☒		12/29/2022 15:12
42	E2201222-006		20221229-046	Perchlorate6850c.lcm	1x	☒		12/29/2022 15:23
43	E2201224-004		20221229-047	Perchlorate6850c.lcm	1x	☒	DNU-CONFIRM PEAK	12/29/2022 15:56
44	E2201224-005		20221229-048	Perchlorate6850c.lcm	1x	☒	DNU-IR	12/29/2022 16:01
45	EQ2200596-04		20221229-049	Perchlorate6850c.lcm	1x	☒		12/29/2022 16:07
46	EQ2200596-05		20221229-050	Perchlorate6850c.lcm	1x	☒		12/29/2022 16:13
47	E2201224-006		20221229-051	Perchlorate6850c.lcm	1x	☒	DNU-CONFIRM PEAK	12/29/2022 16:18
48	E2201224-005		20221229-052	Perchlorate6850c.lcm	1x	☒		12/29/2022 16:24
49	PERCHLORATE7		20221229-053	Perchlorate6850c.lcm	1x	☒	226067	12/29/2022 16:30
50	IB		20221229-054	Perchlorate6850c.lcm	1x	☒		12/29/2022 16:36
51	E2201224-004		20221229-055	Perchlorate6850c.lcm	1x	☒		12/29/2022 16:42
52	E2201224-006		20221229-056	Perchlorate6850c.lcm	1x	☒		12/29/2022 16:48
53	E2201224-007		20221229-057	Perchlorate6850c.lcm	1x	☒	DNU-OUT OF RANGE	12/29/2022 16:55
54	E2201224-008		20221229-058	Perchlorate6850c.lcm	1x	☒	DNU-CARRYOVER	12/29/2022 17:01
55	E2201222-002		20221229-059	Perchlorate6850c.lcm	5x	☒		12/29/2022 17:07
56	E2201222-007		20221229-060	Perchlorate6850c.lcm	5000x	☒		12/29/2022 17:13
57	E2201222-008		20221229-061	Perchlorate6850c.lcm	200x	☒		12/29/2022 17:18
58	E2201224-001		20221229-062	Perchlorate6850c.lcm	1000x	☒		12/29/2022 17:24
59	E2201224-002		20221229-063	Perchlorate6850c.lcm	500x	☒		12/29/2022 17:30
60	PERCHLORATE7		20221229-064	Perchlorate6850c.lcm	1x	☒	226067	12/29/2022 17:35
61	E2201224-003		20221229-065	Perchlorate6850c.lcm	200x	☒		12/29/2022 17:41
62	E2201221-003		20221229-066	Perchlorate6850c.lcm	2000x	☒		12/29/2022 17:47
63	E2201221-004		20221229-067	Perchlorate6850c.lcm	2000x	☒		12/29/2022 17:53
64	E2201221-005		20221229-068	Perchlorate6850c.lcm	5000x	☒		12/29/2022 17:58
65	PERCHLORATE7		20221229-069	Perchlorate6850c.lcm	1x	☒	226067	12/29/2022 18:04

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Analyzed:**	12/29/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	12/14/22
File ID:	I:\LCMS01\DATA\20221229\20221229-007	**Calibration ID:**	EC2200016
		Analysis Lot:	789961
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.67	0.1567	0.1512	-3.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121316

Service Request: E2201221
Date Analyzed: 12/29/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221229\20221229-018

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789961
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.91	0.1567	0.1550	-1.1	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Analyzed:**	12/29/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Calibration Date:**	12/14/22
File ID:	I:\LCMS01\DATA\20221229\20221229-029	**Calibration ID:**	EC2200016
		Analysis Lot:	789961
		Units:	ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1567	0.1580	0.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121316

Service Request: E2201221
Date Analyzed: 12/29/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221229\20221229-039

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789961
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.87	0.1567	0.1543	-1.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121316

Service Request: E2201221
Date Analyzed: 12/29/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221229\20221229-042

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789961
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.04	0.1567	0.1413	-9.8	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121316

Service Request: E2201221
Date Analyzed: 12/29/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221229\20221229-053

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789961
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.02	0.1567	0.1410	-10.0	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121316

Service Request: E2201221
Date Analyzed: 12/29/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221229\20221229-064

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789961
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.21	0.1567	0.1439	-8.2	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: ALS Environmental - US
Project: HS22121316

Service Request: E2201221
Date Analyzed: 12/29/22

Continuing Calibration Verification Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
File ID: I:\LCMS01\DATA\20221229\20221229-069

Calibration Date: 12/14/22
Calibration ID: EC2200016
Analysis Lot: 789961
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	8.97	0.1567	0.1402	-10.5	NA	± 15 %	Average RF

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Analyzed:**	12/29/22 09:17

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221229\20221229-007	**Lab Code:**	EQ2200597-01
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789961
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200597-01	131,633	3.70
Method Blank	EQ2200594-01	153,387	3.74
Lab Control Sample	EQ2200594-02	141,709	3.74
Duplicate Lab Control Sample	EQ2200594-03	151,383	3.74

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Analyzed:**	12/29/22 10:20

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221229\20221229-018	**Lab Code:**	EQ2200597-02
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789961
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200597-02	130,249	3.70
18CPTMW01SW_122022	E2201221-001	130,585	3.69
AWD1_122022	E2201221-002	199,000	3.69
18CPTMW10DW_122022	E2201221-006	153,570	3.68

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Analyzed:**	12/29/22 12:05

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221229\20221229-029	**Lab Code:**	EQ2200597-03
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789961
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200597-03	130,679	3.70

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Analyzed:**	12/29/22 13:39

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221229\20221229-039	**Lab Code:**	EQ2200597-04
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789961
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200597-04	127,544	3.70

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Analyzed:**	12/29/22 14:55

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221229\20221229-042	**Lab Code:**	EQ2200597-05
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789961
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200597-05	208,904	3.72
18CPTMW10SW_122022	E2201221-007	326,887	3.68
AWD4_122022	E2201221-008	139,344	3.72

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Analyzed:**	12/29/22 16:30

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221229\20221229-053	**Lab Code:**	EQ2200597-06
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789961
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200597-06	203,036	3.71

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Analyzed:**	12/29/22 17:35

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221229\20221229-064	**Lab Code:**	EQ2200597-07
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789961
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200597-07	191,961	3.71
120_122022	E2201221-003	170,882	3.72
MW14_122022	E2201221-004	168,516	3.71
MW23_122022	E2201221-005	153,930	3.71

Results flagged with an asterisk (*) indicate values outside control criteria.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201221
Project:	HS22121316	**Date Analyzed:**	12/29/22 18:04

Internal Standard Area and RT Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

File ID:	I:\LCMS01\DATA\20221229\20221229-069	**Lab Code:**	EQ2200597-08
Instrument ID:	E-LCMS-01	**Analysis Lot:**	789961
Analytical Method:	6850	**Signal ID:**	1

		Sodium Perchlorate-18O4	
		Area	**RT**
	ICAL Average ==>	251,001	3.88
	Upper Limit ==>	376,502	5.88
	Lower Limit ==>	125,501	1.88
Associated Analyses			
Continuing Calibration Verification	EQ2200597-08	192,593	3.71

Results flagged with an asterisk (*) indicate values outside control criteria.

Insight Report

Printed at 12/30/2022 10:50:17 AM

Method File: I:\LCMS01\DATA\20221228\12282022W.lcm
Project File: I:\LCMS01\DATA\20221229\12292022.damlp

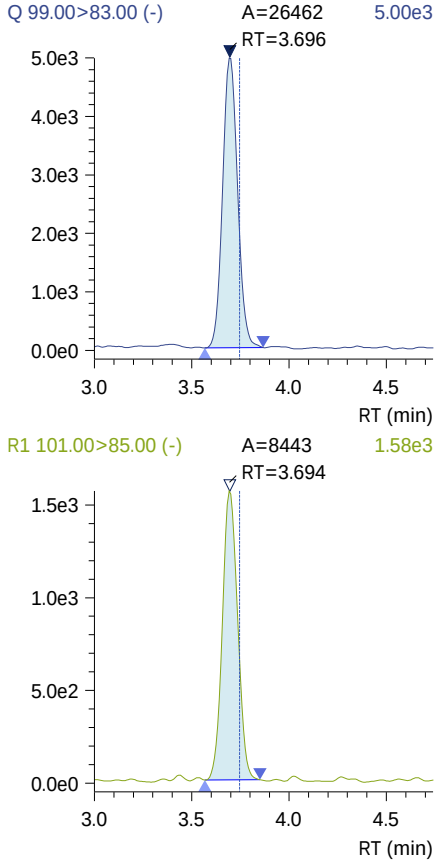
ICS

Sample ID: ICS
Date Acquired: 12/29/2022 9:06:14 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-005.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.696	26462	163816	1.0332	ng/mL	101.00 >85.00	31.91	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.694	163816	163816	1.0000	ng/mL	----	----	

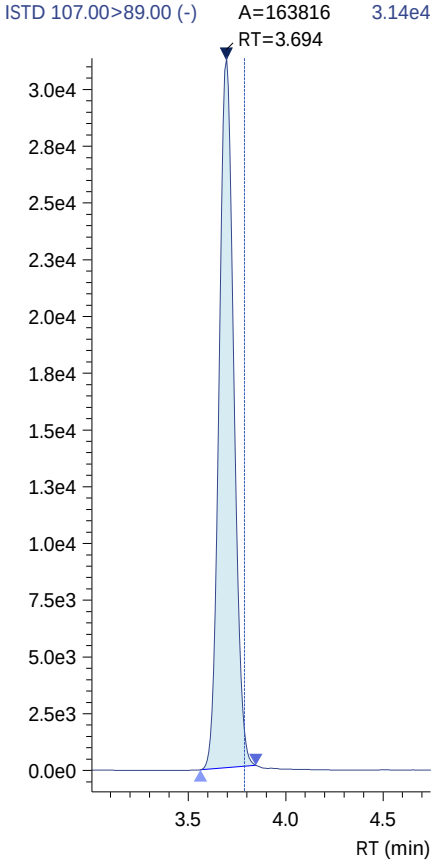
Perchlorate

Conc 1.0332
R#1 31.91 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

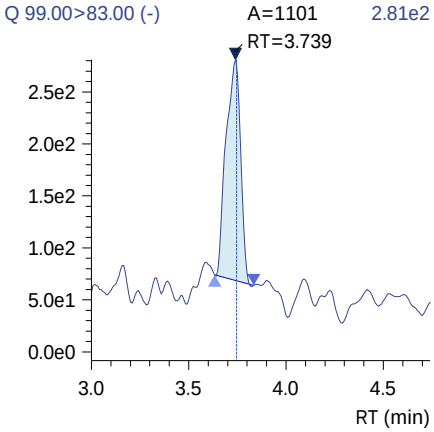
LODV

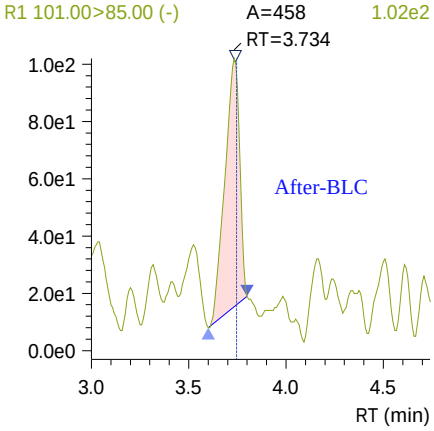
Sample ID: LODV
Date Acquired: 12/29/2022 9:11:55 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-006.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	MI R1	3.739	1101	154854	0.0455	ng/mL	101.00 >85.00	41.64	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.725	154854	154854	1.0000	ng/mL	----	----	

Perchlorate

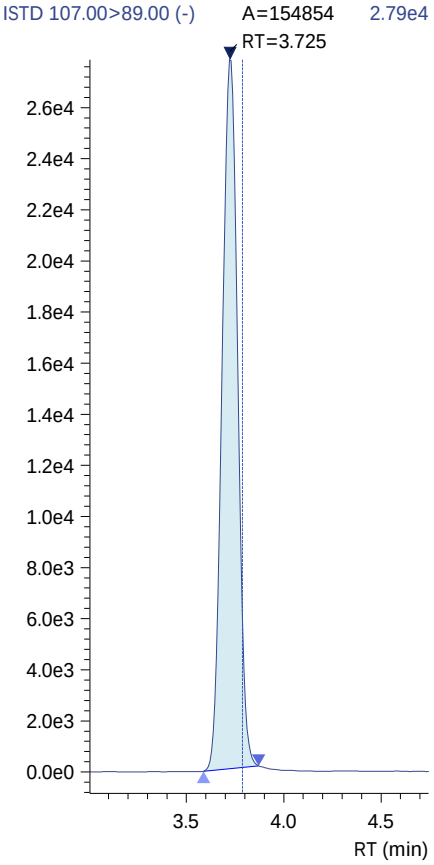
Conc 0.0455
R#1 41.64 (33.23)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:52:26 AM

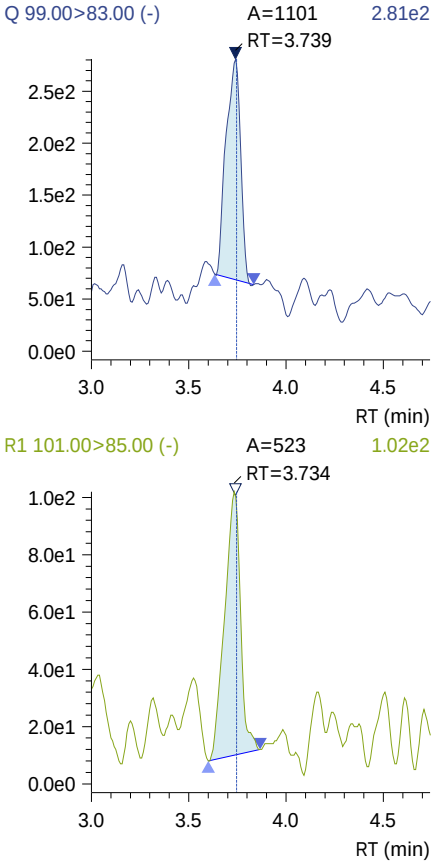
Method File: I:\LCMS01\DATA\20221228\12282022W.lcm
Project File: I:\LCMS01\DATA\20221229\12292022.damlp

LODV

Sample ID: LODV
Date Acquired: 12/29/2022 9:11:55 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-006.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 0

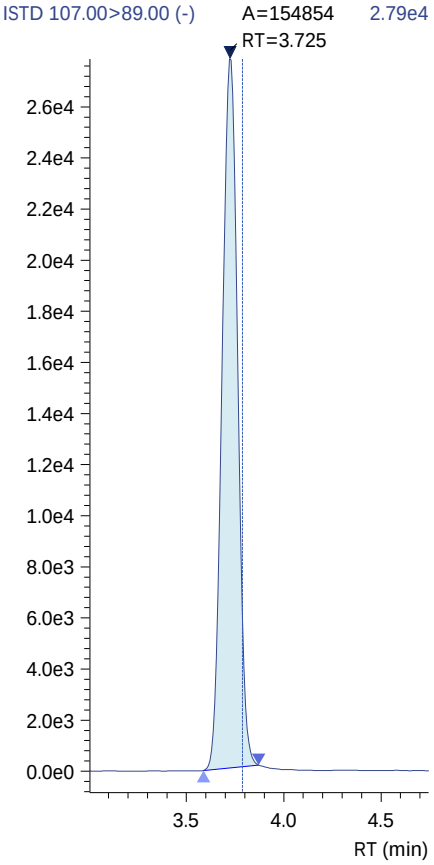
Perchlorate

Conc 0.0455
R#1 47.48 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

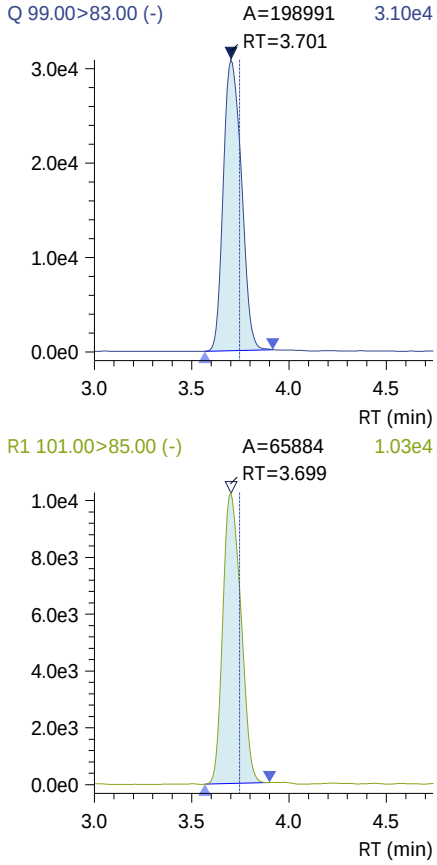
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/29/2022 9:17:35 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-007.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.701	198991	131633	9.6695	ng/mL	101.00 >85.00	33.11	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.698	131633	131633	1.0000	ng/mL	----	----	

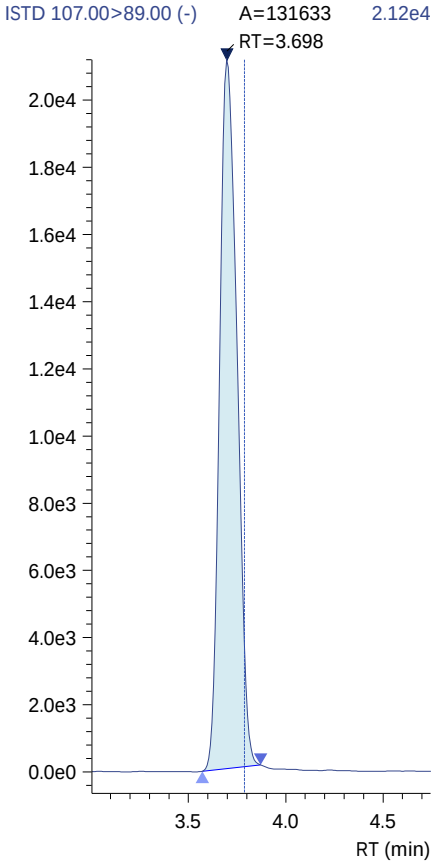
Perchlorate

Conc 9.6695
R#1 33.11 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

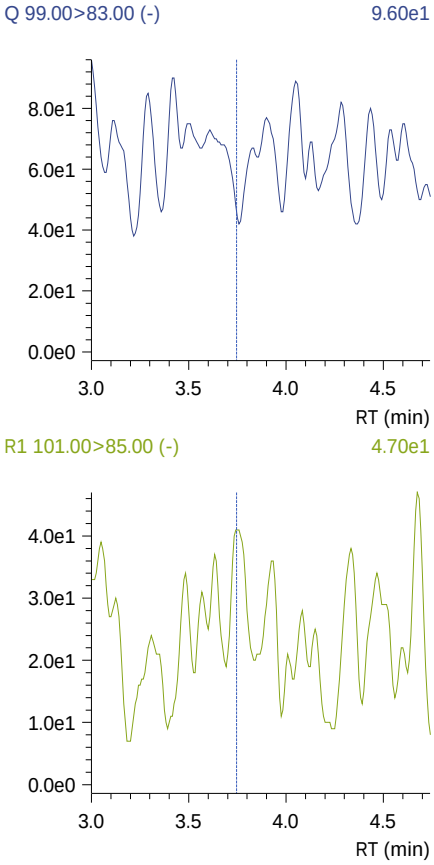
EQ2200594-01

Sample ID: EQ2200594-01
Date Acquired: 12/29/2022 9:23:16 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-008.lcd
Vial: 1 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	153387	----	ng/mL	101.00 >85.00	0.00	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.735	153387	153387	1.0000	ng/mL	----	----	

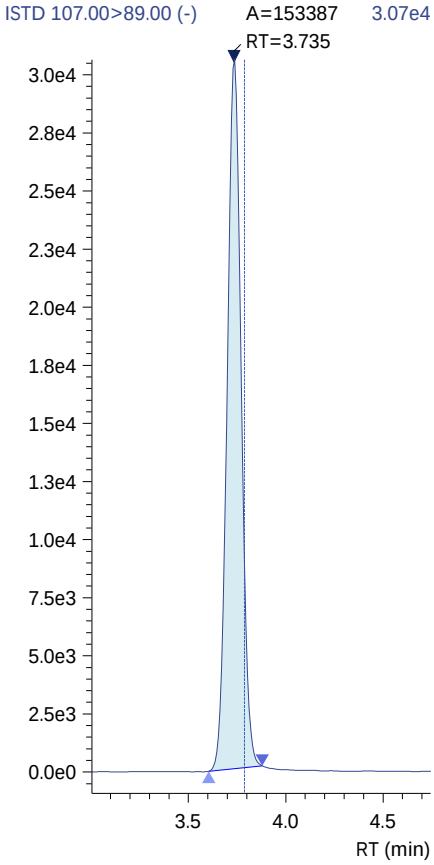
Perchlorate

Conc ----
R#1 0.00 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

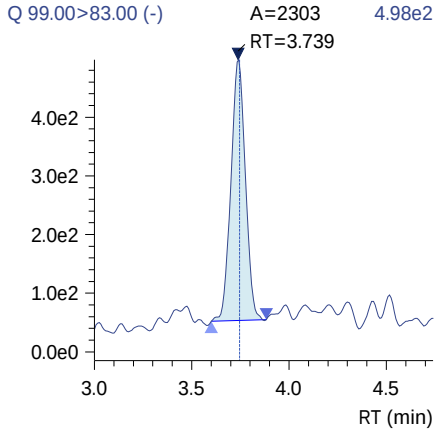
EQ2200594-02

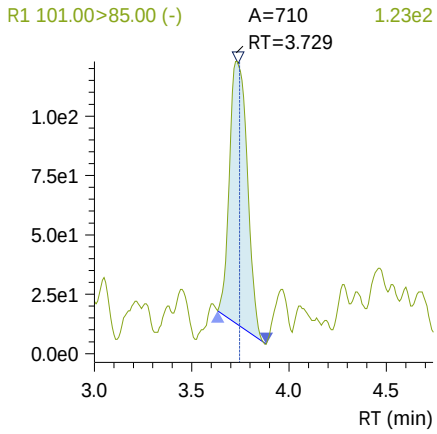
Sample ID: EQ2200594-02
Date Acquired: 12/29/2022 9:28:59 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-009.lcd
Vial: 2 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.739	2303	141709	0.1040	ng/mL	101.00 >85.00	30.83	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.735	141709	141709	1.0000	ng/mL	----	----	

Perchlorate

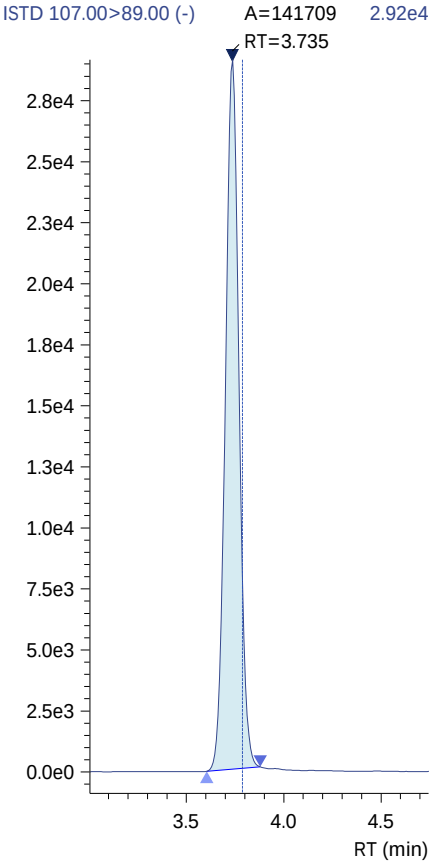
Conc 0.1040
R#1 30.83 (33.23)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

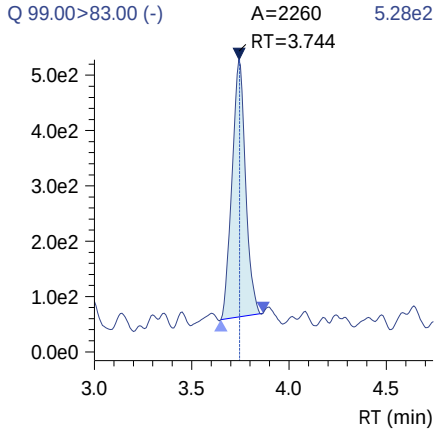
EQ2200594-03

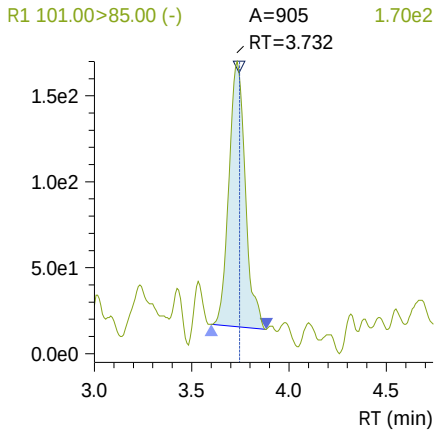
Sample ID: EQ2200594-03
Date Acquired: 12/29/2022 9:34:40 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-010.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.744	2260	151383	0.0955	ng/mL	101.00 >85.00	40.06	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.738	151383	151383	1.0000	ng/mL	----	----	

Perchlorate

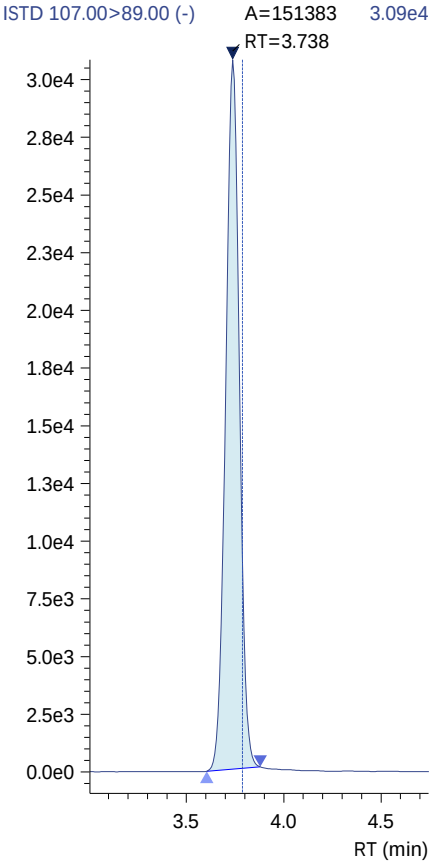
Conc 0.0955
R#1 40.06 (33.23)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

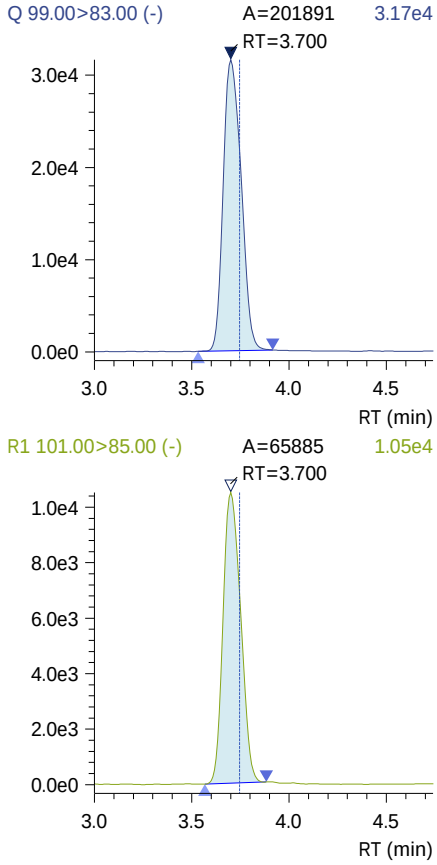
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/29/2022 10:20:20 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-018.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.700	201891	130249	9.9147	ng/mL	101.00 >85.00	32.63	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.698	130249	130249	1.0000	ng/mL	----	----	

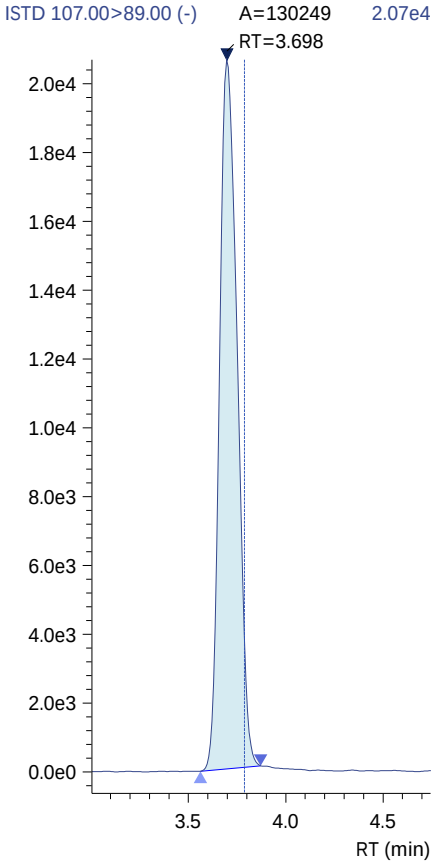
Perchlorate

Conc 9.9147
R#1 32.63 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

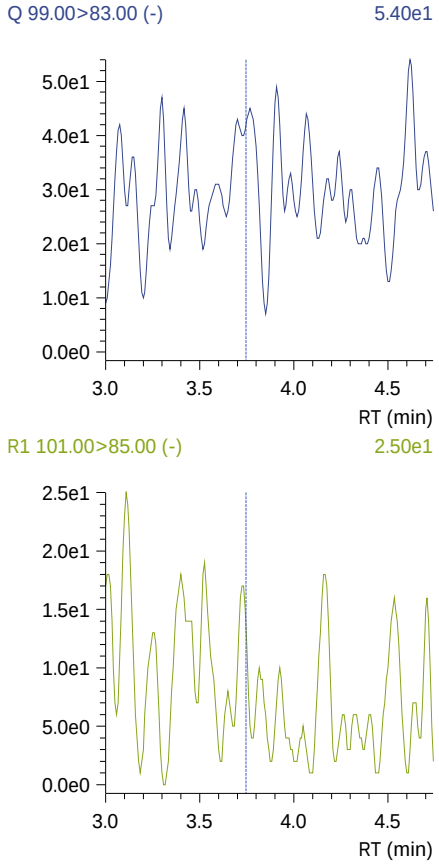
E2201221-001

Sample ID: E2201221-001
Date Acquired: 12/29/2022 11:37:05 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-024.lcd
Vial: 16 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	130585	----	ng/mL	101.00 >85.00	0.00	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.692	130585	130585	1.0000	ng/mL	----	----	

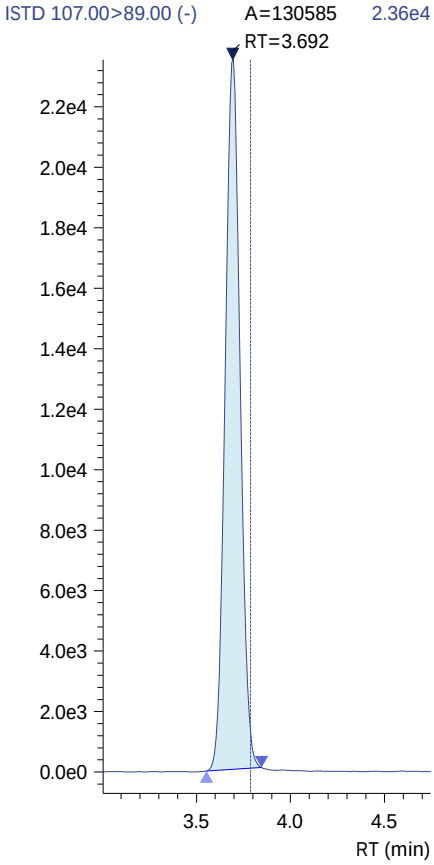
Perchlorate

Conc ----
R#1 0.00 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

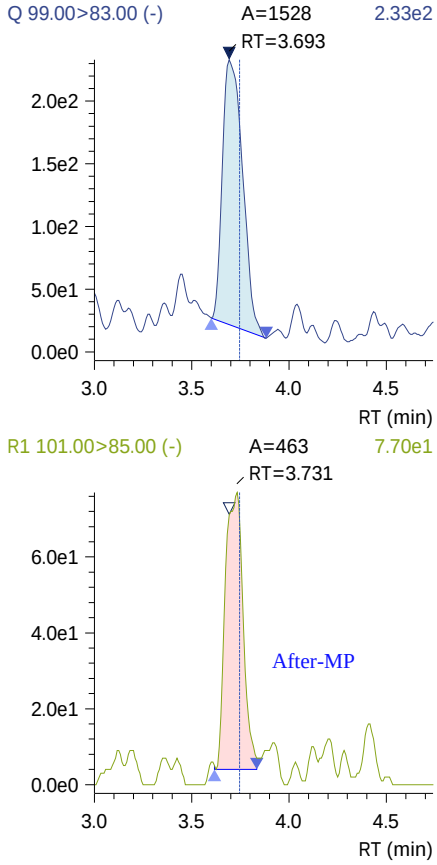
E2201221-002

Sample ID: E2201221-002
Date Acquired: 12/29/2022 11:42:47 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-025.lcd
Vial: 17 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	MI R1	3.693	1528	199000	0.0491	ng/mL	101.00 >85.00	30.27	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.693	199000	199000	1.0000	ng/mL	----	----	

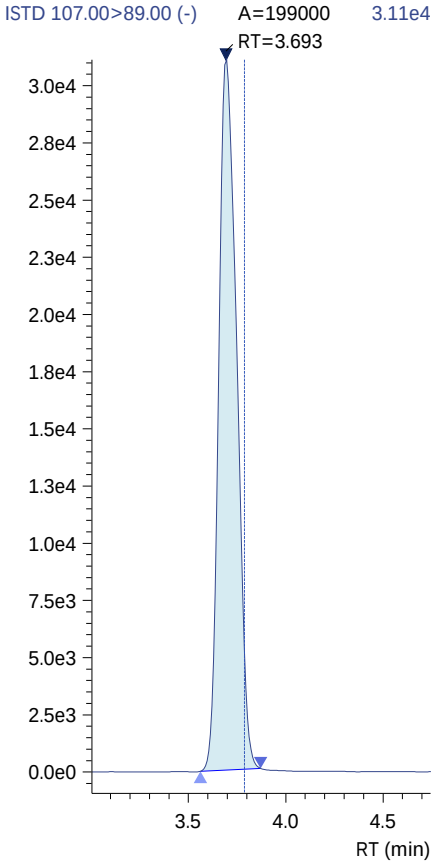
Perchlorate

Conc 0.0491
R#1 30.27 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:52:26 AM

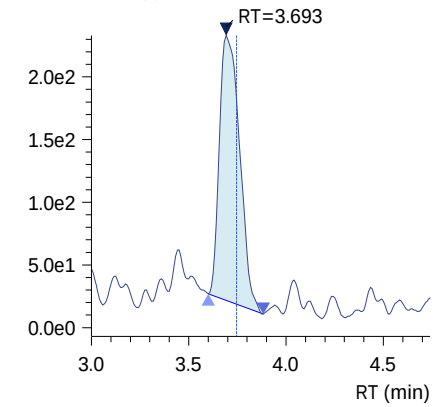
E2201221-002

Sample ID: E2201221-002
Date Acquired: 12/29/2022 11:42:47 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-025.lcd
Vial: 17 | Inj. Volume: 25.0000uL | Tray: 3

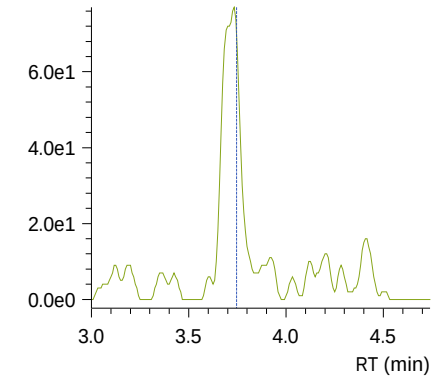
Perchlorate

Conc 0.0491
R#1 0.00 (33.23)

Q 99.00>83.00 (-) A=1528 2.33e2



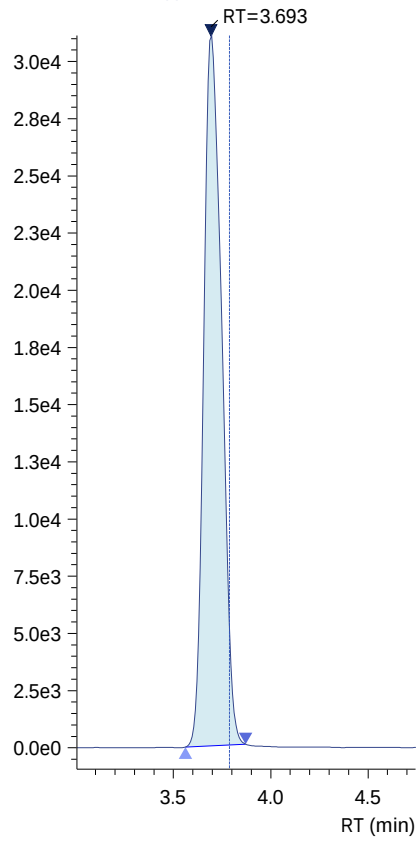
R1 101.00>85.00 (-) 7.70e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=199000 3.11e4



Insight Report

Printed at 12/30/2022 10:50:17 AM

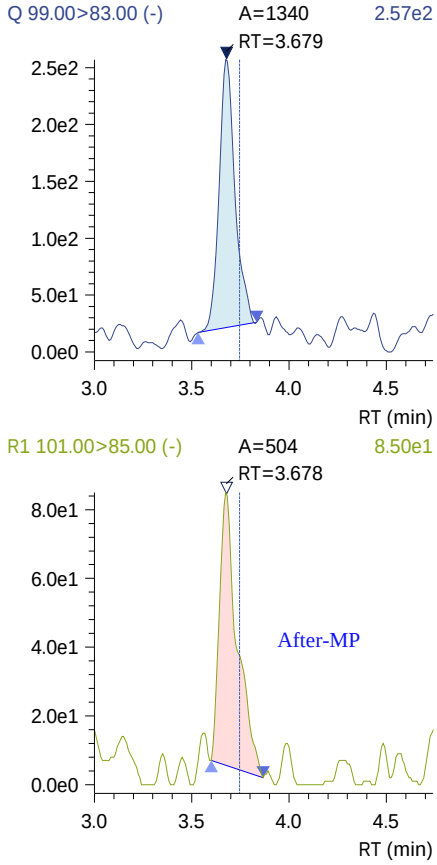
E2201221-006

Sample ID: E2201221-006
Date Acquired: 12/29/2022 11:48:26 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-026.lcd
Vial: 21 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	MI R1	3.679	1340	153570	0.0558	ng/mL	101.00 >85.00	37.62	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.681	153570	153570	1.0000	ng/mL	----	----	

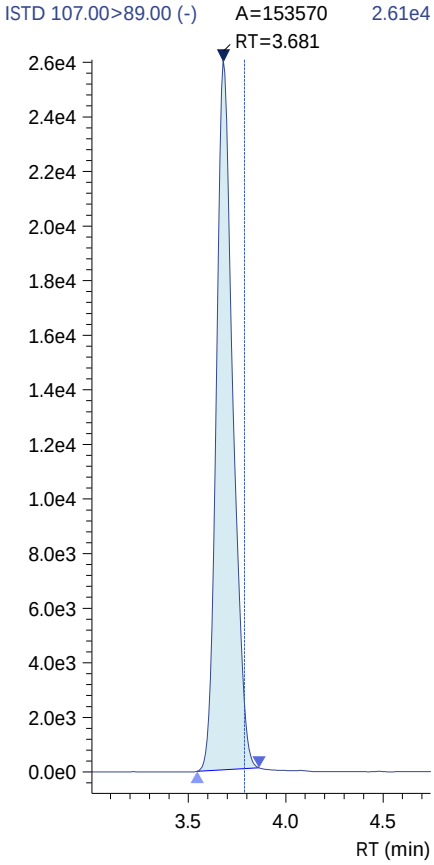
Perchlorate

Conc 0.0558
R#1 37.62 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:52:26 AM

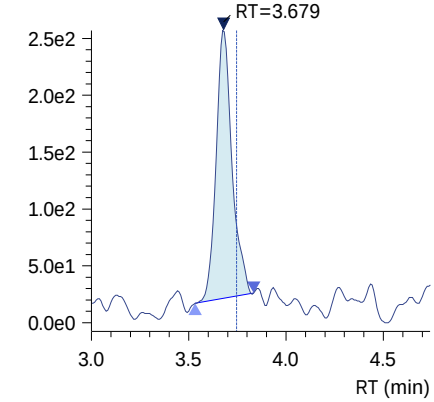
E2201221-006

Sample ID: E2201221-006
Date Acquired: 12/29/2022 11:48:26 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-026.lcd
Vial: 21 | Inj. Volume: 25.0000uL | Tray: 3

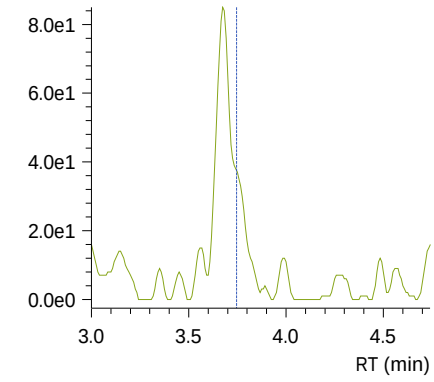
Perchlorate

Conc 0.0558
R#1 0.00 (33.23)

Q 99.00>83.00 (-) A=1340 2.57e2



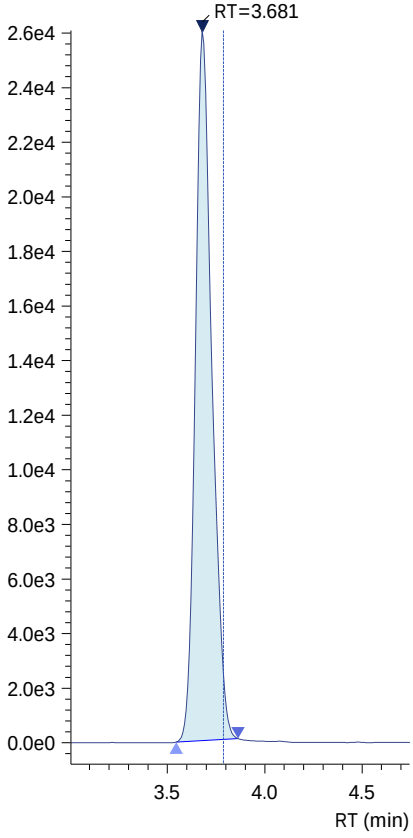
R1 101.00>85.00 (-) 8.50e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) A=153570 2.61e4



Insight Report

Printed at 12/30/2022 10:50:17 AM

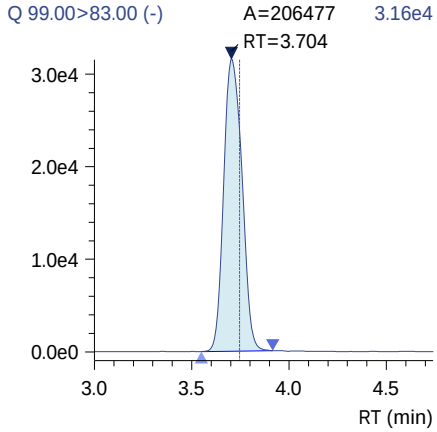
PERCHLORATE7

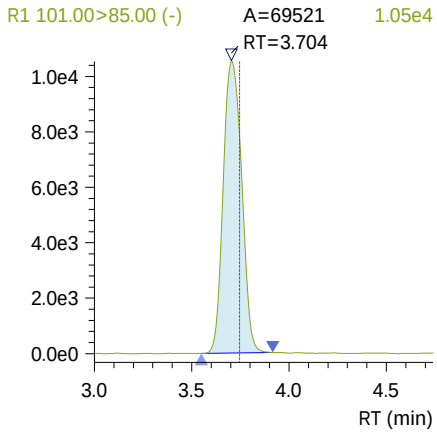
Sample ID: PERCHLORATE7
Date Acquired: 12/29/2022 12:05:28 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-029.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.704	2064 77	130679	10.1 066	ng/mL	101.00 >85.00	33.67	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.701	1306 79	130679	1.0000	ng/mL	----	----	

Perchlorate

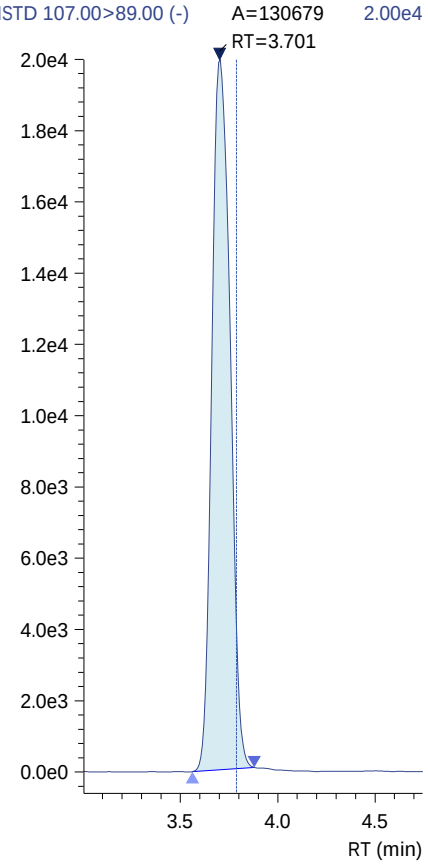
Conc 10.1066
R#1 33.67 (33.23)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

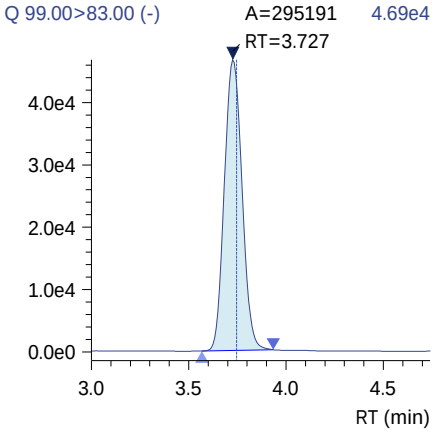
PERCHLORATE7

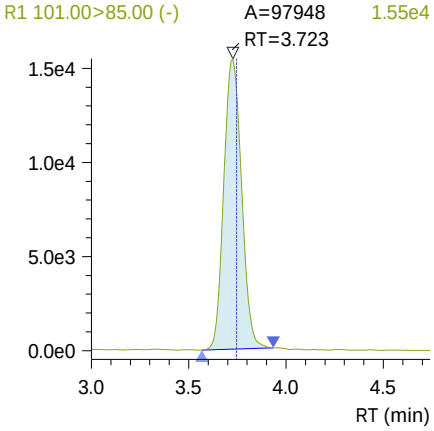
Sample ID: PERCHLORATE7
Date Acquired: 12/29/2022 2:55:13 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-042.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.727	295191	208904	9.0384	ng/mL	101.00 >85.00	33.18	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.722	208904	208904	1.0000	ng/mL	----	----	

Perchlorate

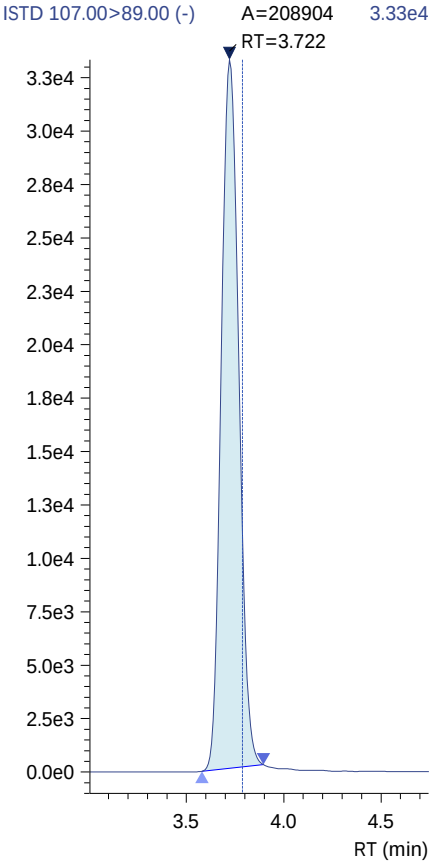
Conc 9.0384
R#1 33.18 (33.23)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

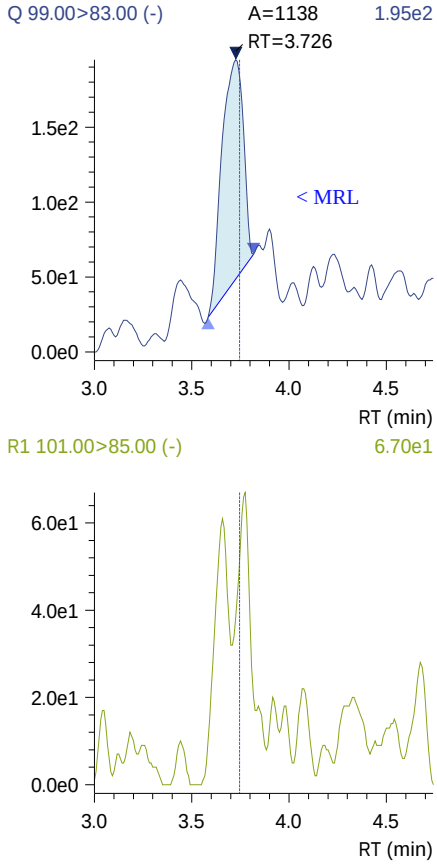
E2201221-007

Sample ID: E2201221-007
Date Acquired: 12/29/2022 3:00:54 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-043.lcd
Vial: 22 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.726	1138	326887	0.0223	ng/mL	101.00 >85.00	0.00	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.677	326887	326887	1.0000	ng/mL	----	----	

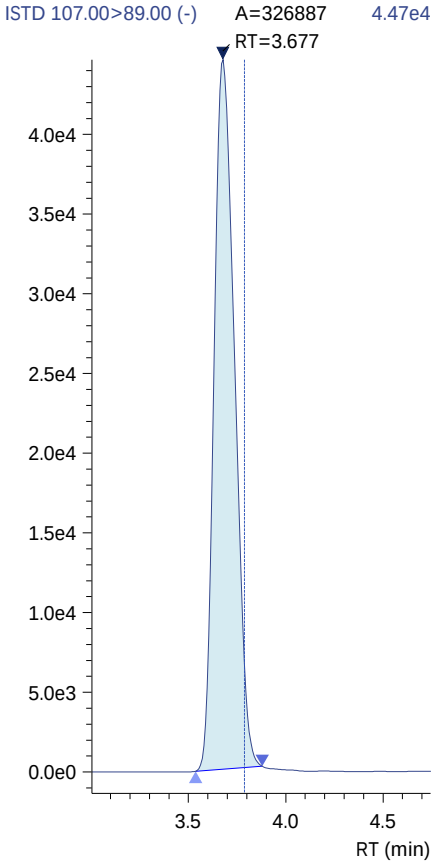
Perchlorate

Conc 0.0223
R#1 0.00 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

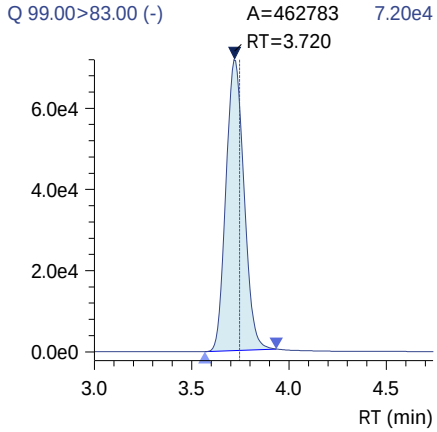
E2201221-008X50

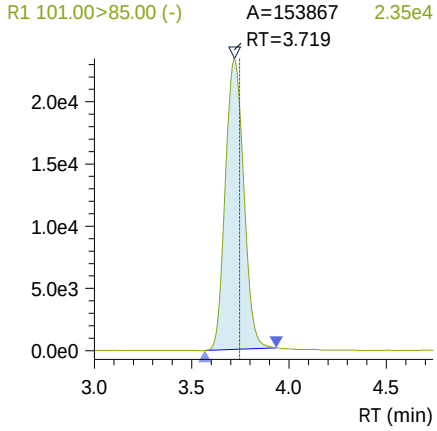
Sample ID: E2201221-008X50
Date Acquired: 12/29/2022 3:06:40 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-044.lcd
Vial: 23 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.720	4627 83	139344	21.2 435	ng/mL	101.00 >85.00	33.25	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.715	1393 44	139344	1.0000	ng/mL	----	----	

Perchlorate

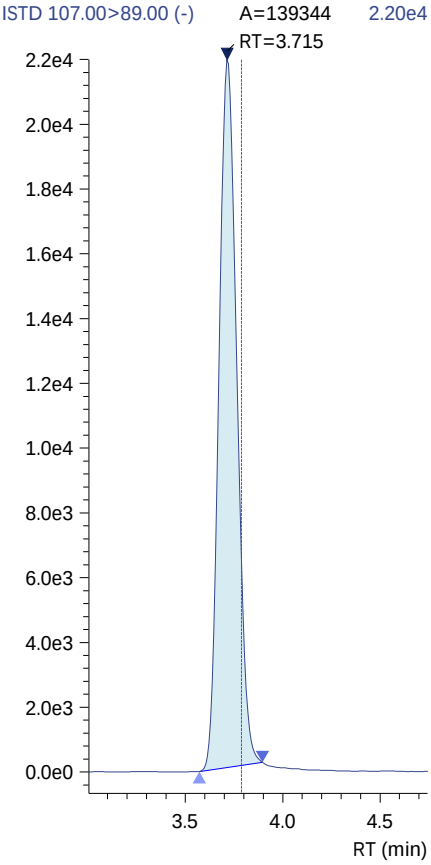
Conc 21.2435
R#1 33.25 (33.23)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

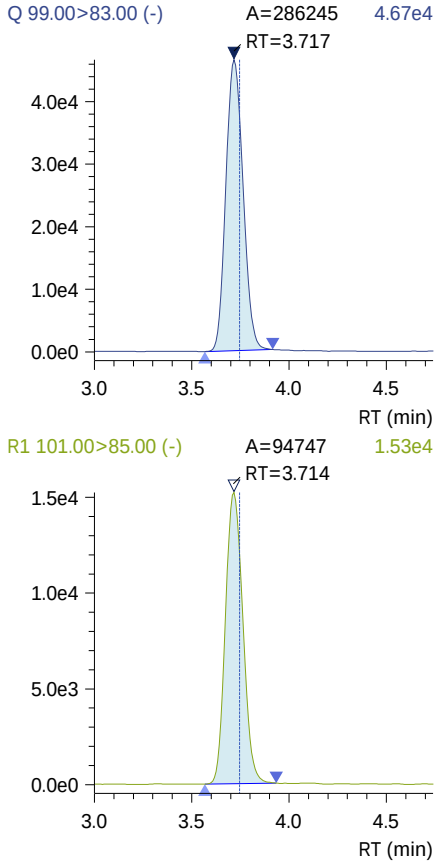
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/29/2022 4:30:35 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-053.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.717	286245	203036	9.0178	ng/mL	101.00 >85.00	33.10	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.713	203036	203036	1.0000	ng/mL	----	----	

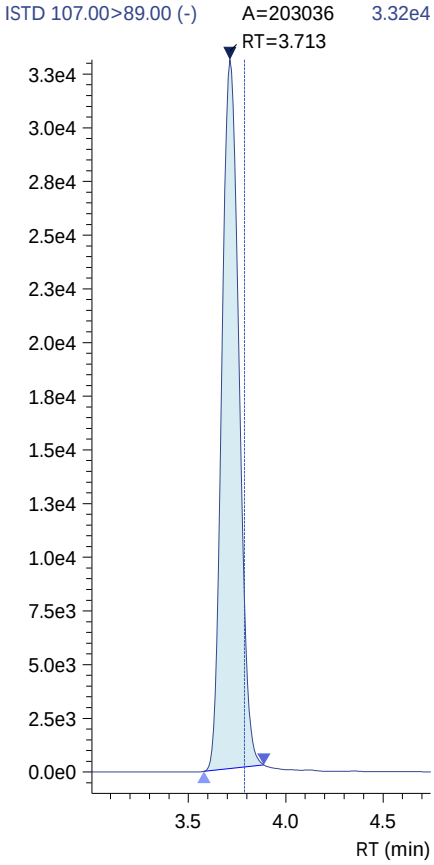
Perchlorate

Conc 9.0178
R#1 33.10 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

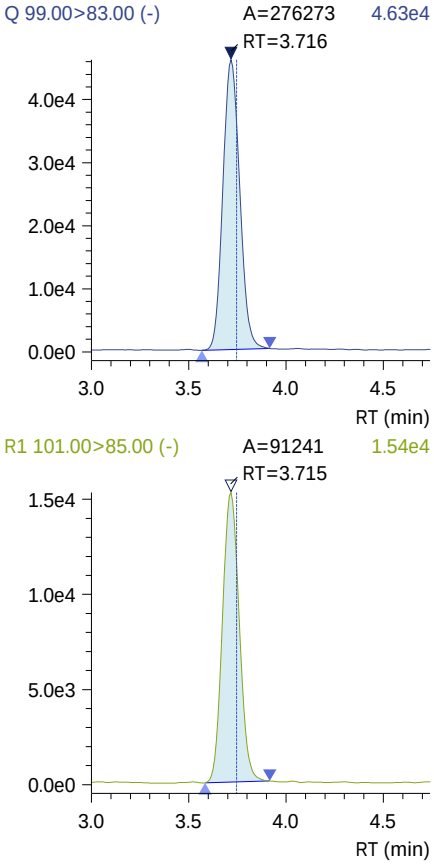
PERCHLORATE7

Sample ID: PERCHLORATE7
Date Acquired: 12/29/2022 5:35:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-064.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.716	276273	191961	9.2058	ng/mL	101.00	33.03	23.26
							>85.00		-43.20
Sodium Perchlorate-18O4_IS	Auto	3.714	191961	191961	1.0000	ng/mL	----	----	

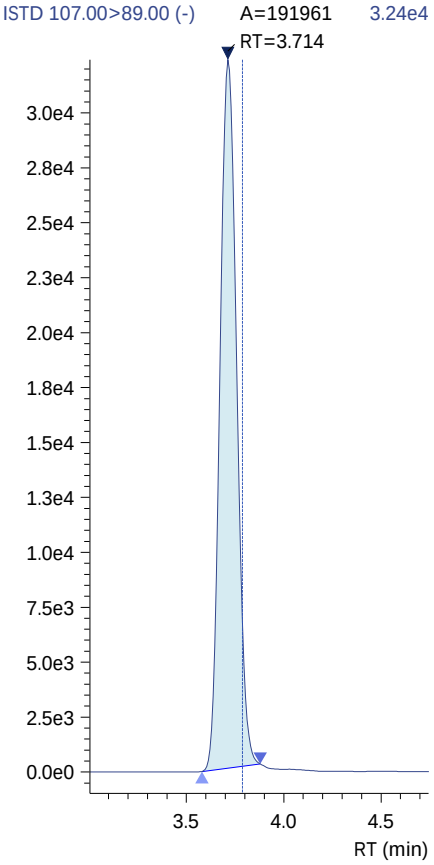
Perchlorate

Conc 9.2058
R#1 33.03 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

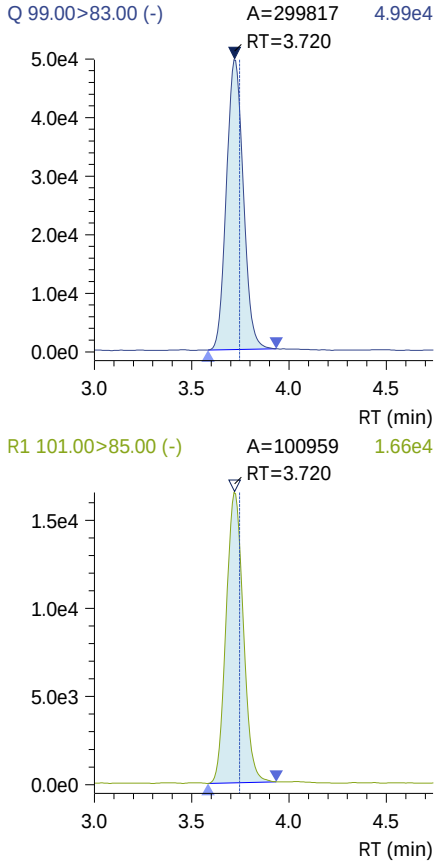
E2201221-003X2K

Sample ID: E2201221-003X2K
Date Acquired: 12/29/2022 5:47:22 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-066.lcd
Vial: 18 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.720	2998 17	170882	11.2 227	ng/mL	101.00 >85.00	33.67	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.717	1708 82	170882	1.0000	ng/mL	----	----	

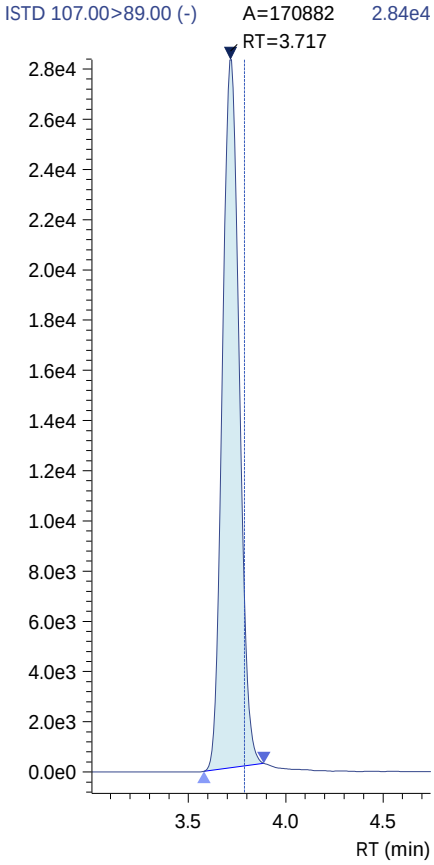
Perchlorate

Conc 11.2227
R#1 33.67 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

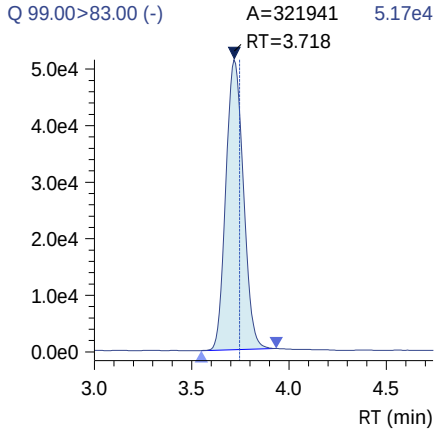
E2201221-004X2K

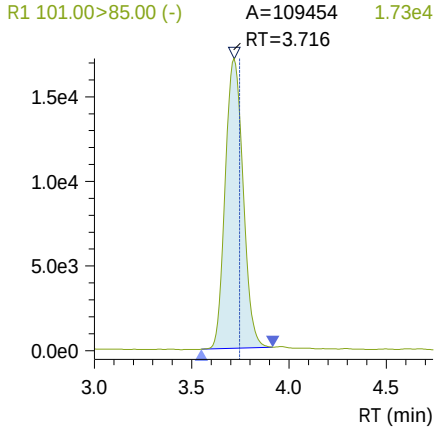
Sample ID: E2201221-004X2K
Date Acquired: 12/29/2022 5:53:03 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-067.lcd
Vial: 19 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.718	3219 41	168516	12.2 200	ng/mL	101.00 >85.00	34.00	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.713	1685 16	168516	1.0000	ng/mL	----	----	

Perchlorate

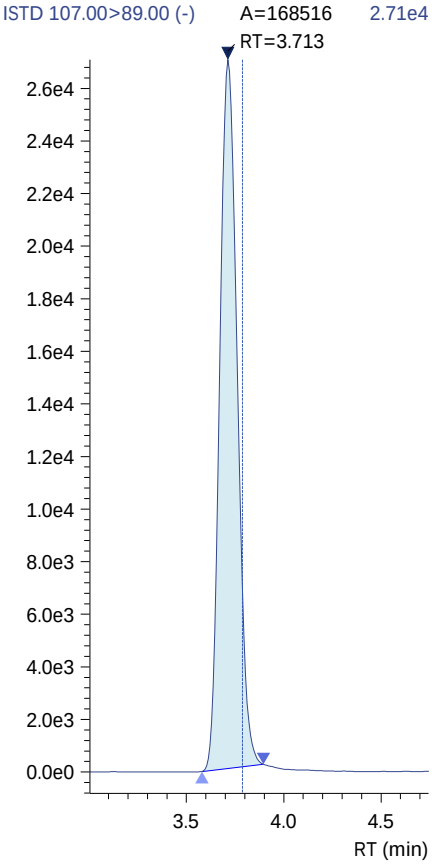
Conc 12.2200
R#1 34.00 (33.23)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

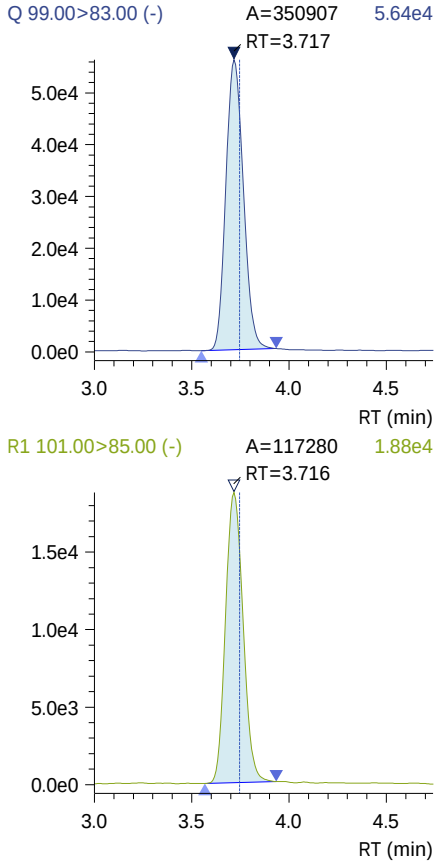
E2201221-005X5K

Sample ID: E2201221-005X5K
Date Acquired: 12/29/2022 5:58:45 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-068.lcd
Vial: 20 | Inj. Volume: 25.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.717	350907	153930	14.5816	ng/mL	101.00 >85.00	33.42	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.714	153930	153930	1.0000	ng/mL	----	----	

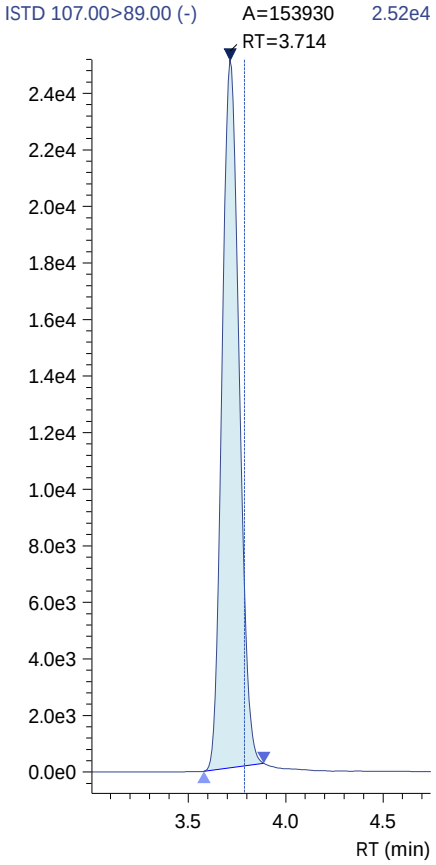
Perchlorate

Conc 14.5816
R#1 33.42 (33.23)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 12/30/2022 10:50:17 AM

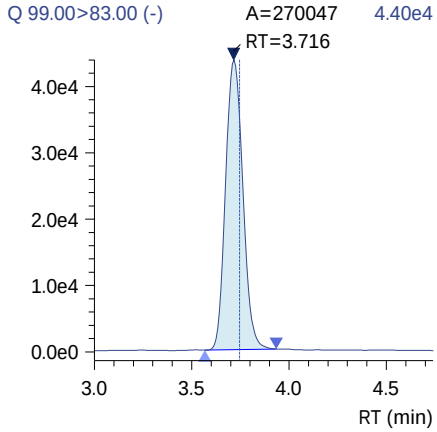
PERCHLORATE7

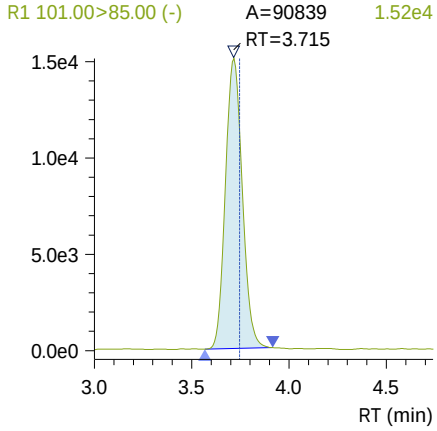
Sample ID: PERCHLORATE7
Date Acquired: 12/29/2022 6:04:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20221229\20221229-069.lcd
Vial: 3 | Inj. Volume: 25.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.716	270047	192593	8.9688	ng/mL	101.00 >85.00	33.64	23.26 -43.20
Sodium Perchlorate-18O4_IS	Auto	3.712	192593	192593	1.0000	ng/mL	----	----	

Perchlorate

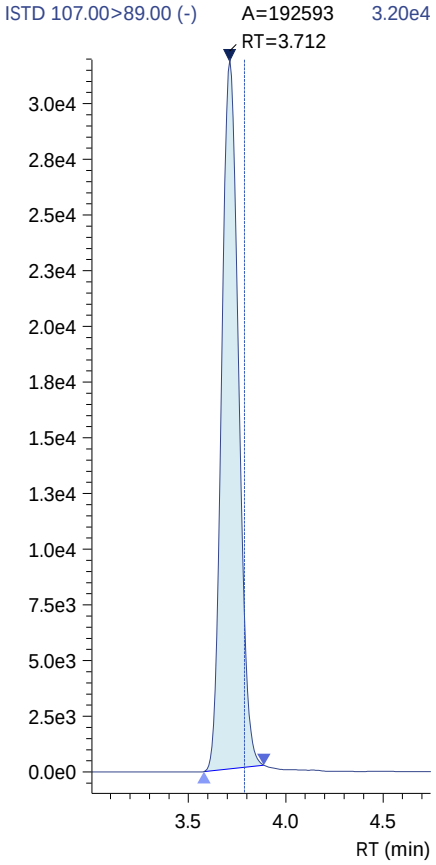
Conc 8.9688
R#1 33.64 (33.23)





Sodium Perchlorate-18O4_IS

Conc 1.0000



HS22121478 LHAAP 18 24 Cover Page

ALS WO# HS22121478

ALS Environmental
ALS Group USA, Corp
10450 Stancliff Road, Suite 210
Houston, TX 77099
T : +1 281 530 5656
F : +1 281 530 5887
www.alsglobal.com

Table of Contents

HS22121478 LHAAP 18 24 Cover Page
- CoverPage
- HS22121478 LHAAP 18 24 Final
  - CoverLetter
  - Sample Summary
  - CaseNarrative
  - 18CPTMW03SW_122222
  - 18CPTMW24_122222
  - 18CPTMW07_122222
  - 18WW22_122222
  - 18CPTMW18_122222
  - CO3_122222
  - 18WW17_122222
  - 125_122222
  - Trip Blank
  - Weight/Volume Log
  - Dates Report
  - QC
  - Acronyms
  - Certifications
  - SampleReceiptCheckList
  - COC

Table of Contents (continued)

HS22121478-E2201222 Level II Perchlorate Report
HS22121478-MSVOA-SW8260
Form 1 - Sample Results
Form 2 - Surrogates
Form 3A - MS/MSD
Form 3B - LCS/LCSD
Form 4 - MB Assoc
Form 5 - Tune
Form 6 - ICAL
Form 6I - ICV
Form 7 - CCV
Form 8 - ISTD
Run Log
Raw Data VOA6 424237
Raw Data VOA6 425095
HS22121478-MSSEMI-SW8270SIM
Form 1 - Sample Results
Form 2 - Surrogates
Form 3B - LCS/LCSD
Form 4 - MB Assoc
Form 5 - Tune
Form 6 - ICAL
Form 6I - ICV
Form 7 - CCV
Form 8 - ISTD
Prep Log
Run Log
Raw Data SV-6 425785
Raw Data SV-6 425803
HS22121478 - ME - HG_W_DODICP_W_DOD
Form 11 - ICPMS06 Internal Standard Association
Form 13 - HG04_425583 Run Log
Form 13 - ICPMS06_425518 Run Log
Form 13 - ICPMS07_425571 Run Log
Form 2 - HG04_425583 CCV

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
alsglobal.com

right solutions.
right partner.

WorkOrder: HS22121478

LHAAP 18 24

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

04-Jan-2023

HS22121478 LHAAP 18 24 Final

ALS WO# HS22121478

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

January 13, 2023

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS22121478**

Laboratory Results for: **LHAAP 18 24**

Dear Marcia Olive,

ALS Environmental received 9 sample(s) on Dec 23, 2022 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
Dane J. Wacasey

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Work Order: HS22121478

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS22121478-01	18CPTMW03SW_122222	Groundwater		22-Dec-2022 07:30	23-Dec-2022 12:10	☐
HS22121478-02	18CPTMW24_122222	Groundwater		22-Dec-2022 08:15	23-Dec-2022 12:10	☐
HS22121478-03	18CPTMW07_122222	Groundwater		22-Dec-2022 09:00	23-Dec-2022 12:10	☐
HS22121478-04	18WW22_122222	Groundwater		22-Dec-2022 09:45	23-Dec-2022 12:10	☐
HS22121478-05	18CPTMW18_122222	Groundwater		22-Dec-2022 10:30	23-Dec-2022 12:10	☐
HS22121478-06	CO3_122222	Groundwater		22-Dec-2022 11:15	23-Dec-2022 12:10	☐
HS22121478-07	18WW17_122222	Groundwater		22-Dec-2022 11:25	23-Dec-2022 12:10	☐
HS22121478-08	125_122222	Groundwater		22-Dec-2022 11:40	23-Dec-2022 12:10	☐
HS22121478-09	Trip Blank	Water	CG-102122-381	22-Dec-2022 00:00	23-Dec-2022 12:10	☐

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP 18 24
Work Order: HS22121478

Work Order Comments

• The analysis for Perchlorate was subcontracted to our ALS Houston TX, High Resolution Lab. Final report attached.

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 187834

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW8260

Batch ID: R425095

Sample ID: 125_122222 (HS22121478-08)

• Lowest practical dilution due to high concentration of non-target compound.

Sample ID: 18CPTMW24_122222 (HS22121478-02)

• Lowest practical dilution due to high concentration of non-target compound.

Sample ID: HS22121494-05MS

• MS and/or MSD recovered outside control limits

Metals by Method SW7470A

Batch ID: 188268

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW6020A

Batch ID: 188228

Sample ID: HS22121494-05MS

• MS/MSD and DUPs are for an unrelated sample

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW03SW_122222
Collection Date: 22-Dec-2022 07:30

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 18:48
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 18:48
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	30-Dec-2022 18:48
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 18:48
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	30-Dec-2022 18:48
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 18:48
Benzene	**1.4**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-Dec-2022 18:48
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	30-Dec-2022 18:48
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW03SW_122222
Collection Date: 22-Dec-2022 07:30

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
cis-1,2-Dichloroethene	**31**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-Dec-2022 18:48
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 18:48
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 18:48
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 18:48
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
trans-1,2-Dichloroethene	**1.0**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-Dec-2022 18:48
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Trichloroethene	**7.1**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-Dec-2022 18:48
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 18:48
Surr: 1,2-Dichloroethane-d4	*88.9*			**0**	*81-118*	*%REC*	*1*	*30-Dec-2022 18:48*
Surr: 4-Bromofluorobenzene	*96.8*			**0**	*85-114*	*%REC*	*1*	*30-Dec-2022 18:48*
Surr: Dibromofluoromethane	*85.7*			**0**	*80-119*	*%REC*	*1*	*30-Dec-2022 18:48*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*30-Dec-2022 18:48*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 28-Dec-2022		Analyst: MBG
1,4-Dioxane	0.0050	U	0.010	0.0050	0.010	ug/L	1	12-Jan-2023 17:17
Surr: 2-Fluorobiphenyl	*93.5*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 17:17*
Surr: 4-Terphenyl-d14	*106*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 17:17*
Surr: Nitrobenzene-d5	*95.6*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 17:17*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW03SW_122222
Collection Date: 22-Dec-2022 07:30

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 09-Jan-2023		Analyst: JC
Aluminum	**0.362**		**0.00180**	**0.0150**	**0.0100**	**mg/L**	1	09-Jan-2023 23:52
Antimony	0.00125	U	0.000400	0.00125	0.00500	mg/L	1	09-Jan-2023 23:52
Arsenic	**0.00341**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:52
Barium	**0.527**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	09-Jan-2023 23:52
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	09-Jan-2023 23:52
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	09-Jan-2023 23:52
Calcium	**108**		**0.0340**	**1.00**	**0.500**	**mg/L**	1	09-Jan-2023 23:52
Chromium	**0.00754**		**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:52
Cobalt	**0.00155**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	09-Jan-2023 23:52
Copper	**0.00234**	J	**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	09-Jan-2023 23:52
Iron	**7.54**		**0.0120**	**1.00**	**0.200**	**mg/L**	1	09-Jan-2023 23:52
Lead	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	09-Jan-2023 23:52
Magnesium	**19.4**		**0.0100**	**1.00**	**0.200**	**mg/L**	1	09-Jan-2023 23:52
Manganese	**0.611**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	09-Jan-2023 23:52
Nickel	**0.00387**	J	**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:52
Potassium	**103**		**0.0180**	**1.00**	**0.200**	**mg/L**	1	09-Jan-2023 23:52
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	09-Jan-2023 23:52
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	09-Jan-2023 23:52
Sodium	**215**		**0.140**	**0.500**	**2.00**	**mg/L**	10	10-Jan-2023 13:11
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	09-Jan-2023 23:52
Vanadium	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	09-Jan-2023 23:52
Zinc	**0.00589**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	09-Jan-2023 23:52
MERCURY BY SW7470A		**Method:SW7470A**				Prep:SW7470A / 10-Jan-2023		Analyst: JS
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	10-Jan-2023 13:25
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	30-Dec-2022 16:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW24_122222
Collection Date: 22-Dec-2022 08:15

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,1,1-Trichloroethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,1,2,2-Tetrachloroethane	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,1-Dichloroethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,1-Dichloroethene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,1-Dichloropropene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,2,3-Trichlorobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,2,3-Trichloropropane	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,2,4-Trichlorobenzene	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,2,4-Trimethylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,2-Dibromo-3-chloropropane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,2-Dibromoethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,2-Dichlorobenzene	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,2-Dichloroethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,2-Dichloropropane	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,3,5-Trimethylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,3-Dichlorobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,3-Dichloropropane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
1,4-Dichlorobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
2,2-Dichloropropane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
2-Butanone	5.0	U	2.5	5.0	10	ug/L	5	30-Dec-2022 20:54
2-Chlorotoluene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
2-Hexanone	5.0	U	5.0	5.0	10	ug/L	5	30-Dec-2022 20:54
4-Chlorotoluene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
4-Isopropyltoluene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
4-Methyl-2-pentanone	5.0	U	3.5	5.0	10	ug/L	5	30-Dec-2022 20:54
Acetone	5.0	U	2.0	5.0	10	ug/L	5	30-Dec-2022 20:54
Benzene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Bromobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Bromochloromethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Bromodichloromethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Bromoform	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Bromomethane	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Carbon disulfide	5.0	U	3.0	5.0	10	ug/L	5	30-Dec-2022 20:54
Carbon tetrachloride	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Chlorobenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Chloroethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Chloroform	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW24_122222
Collection Date: 22-Dec-2022 08:15

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
cis-1,2-Dichloroethene	**11**		**1.0**	**5.0**	**5.0**	**ug/L**	5	30-Dec-2022 20:54
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Dibromochloromethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Dibromomethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Dichlorodifluoromethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Ethylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Hexachlorobutadiene	5.0	U	5.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Isopropylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
m,p-Xylene	5.0	U	2.5	5.0	10	ug/L	5	30-Dec-2022 20:54
Methylene chloride	**8.8**	J	**2.0**	**5.0**	**10**	**ug/L**	5	30-Dec-2022 20:54
n-Butylbenzene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
n-Propylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Naphthalene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
o-Xylene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
sec-Butylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Styrene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
tert-Butylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Tetrachloroethene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Toluene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
trans-1,2-Dichloroethene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
trans-1,3-Dichloropropene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Trichloroethene	**22**		**1.0**	**5.0**	**5.0**	**ug/L**	5	30-Dec-2022 20:54
Trichlorofluoromethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 20:54
Vinyl chloride	**35**		**1.0**	**5.0**	**5.0**	**ug/L**	5	30-Dec-2022 20:54
Surr: 1,2-Dichloroethane-d4	*87.4*			**0**	*81-118*	*%REC*	*5*	*30-Dec-2022 20:54*
Surr: 4-Bromofluorobenzene	*96.0*			**0**	*85-114*	*%REC*	*5*	*30-Dec-2022 20:54*
Surr: Dibromofluoromethane	*85.2*			**0**	*80-119*	*%REC*	*5*	*30-Dec-2022 20:54*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*5*	*30-Dec-2022 20:54*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 28-Dec-2022		Analyst: MBG
1,4-Dioxane	**0.013**		**0.010**	**0.0050**	**0.010**	**ug/L**	1	12-Jan-2023 17:35
Surr: 2-Fluorobiphenyl	*118*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 17:35*
Surr: 4-Terphenyl-d14	*104*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 17:35*
Surr: Nitrobenzene-d5	*108*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 17:35*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW24_122222
Collection Date: 22-Dec-2022 08:15

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 09-Jan-2023		Analyst: JC
Aluminum	**0.0102**		**0.00180**	**0.0150**	**0.0100**	**mg/L**	1	09-Jan-2023 23:54
Antimony	0.00125	U	0.000400	0.00125	0.00500	mg/L	1	09-Jan-2023 23:54
Arsenic	**0.00640**		**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:54
Barium	**9.26**		**0.0380**	**0.0500**	**0.100**	**mg/L**	20	10-Jan-2023 13:13
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	09-Jan-2023 23:54
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	09-Jan-2023 23:54
Calcium	**373**		**0.680**	**1.00**	**10.0**	**mg/L**	20	10-Jan-2023 13:13
Chromium	**0.00234**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:54
Cobalt	**0.00277**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	09-Jan-2023 23:54
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	09-Jan-2023 23:54
Iron	**6.66**		**0.0120**	**1.00**	**0.200**	**mg/L**	1	09-Jan-2023 23:54
Lead	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	09-Jan-2023 23:54
Magnesium	**244**		**0.200**	**2.00**	**4.00**	**mg/L**	20	10-Jan-2023 13:13
Manganese	**0.411**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	09-Jan-2023 23:54
Nickel	**0.00445**	J	**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:54
Potassium	**2.60**		**0.0180**	**1.00**	**0.200**	**mg/L**	1	09-Jan-2023 23:54
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	09-Jan-2023 23:54
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	09-Jan-2023 23:54
Sodium	**979**		**0.280**	**1.00**	**4.00**	**mg/L**	20	10-Jan-2023 13:13
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	09-Jan-2023 23:54
Vanadium	**0.000972**	J	**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:54
Zinc	**0.00576**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	09-Jan-2023 23:54
MERCURY BY SW7470A		**Method:SW7470A**				Prep:SW7470A / 10-Jan-2023		Analyst: JS
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	10-Jan-2023 13:26
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	30-Dec-2022 16:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW07_122222
Collection Date: 22-Dec-2022 09:00

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:09
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 19:09
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	30-Dec-2022 19:09
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:09
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	30-Dec-2022 19:09
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 19:09
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	30-Dec-2022 19:09
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW07_122222
Collection Date: 22-Dec-2022 09:00

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 19:09
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 19:09
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:09
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:09
Surr: 1,2-Dichloroethane-d4	*89.8*			**0**	*81-118*	*%REC*	*1*	*30-Dec-2022 19:09*
Surr: 4-Bromofluorobenzene	*96.4*			**0**	*85-114*	*%REC*	*1*	*30-Dec-2022 19:09*
Surr: Dibromofluoromethane	*88.2*			**0**	*80-119*	*%REC*	*1*	*30-Dec-2022 19:09*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*30-Dec-2022 19:09*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 28-Dec-2022		Analyst: MBG
1,4-Dioxane	**0.029**		**0.010**	**0.0050**	**0.010**	**ug/L**	1	12-Jan-2023 17:53
Surr: 2-Fluorobiphenyl	*120*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 17:53*
Surr: 4-Terphenyl-d14	*112*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 17:53*
Surr: Nitrobenzene-d5	*107*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 17:53*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	30-Dec-2022 16:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW22_122222
Collection Date: 22-Dec-2022 09:45

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:30
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 19:30
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	30-Dec-2022 19:30
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:30
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	30-Dec-2022 19:30
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 19:30
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	30-Dec-2022 19:30
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW22_122222
Collection Date: 22-Dec-2022 09:45

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 19:30
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 19:30
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:30
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:30
Surr: 1,2-Dichloroethane-d4	*89.8*			**0**	*81-118*	*%REC*	*1*	*30-Dec-2022 19:30*
Surr: 4-Bromofluorobenzene	*96.3*			**0**	*85-114*	*%REC*	*1*	*30-Dec-2022 19:30*
Surr: Dibromofluoromethane	*88.2*			**0**	*80-119*	*%REC*	*1*	*30-Dec-2022 19:30*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*30-Dec-2022 19:30*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 28-Dec-2022		Analyst: MBG
1,4-Dioxane	**0.019**		**0.010**	**0.0050**	**0.010**	**ug/L**	1	12-Jan-2023 18:11
Surr: 2-Fluorobiphenyl	*112*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 18:11*
Surr: 4-Terphenyl-d14	*110*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 18:11*
Surr: Nitrobenzene-d5	*110*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 18:11*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW22_122222
Collection Date: 22-Dec-2022 09:45

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 09-Jan-2023		Analyst: JC
Aluminum	**0.199**		**0.00180**	**0.0150**	**0.0100**	**mg/L**	1	09-Jan-2023 23:56
Antimony	0.00125	U	0.000400	0.00125	0.00500	mg/L	1	09-Jan-2023 23:56
Arsenic	**0.00224**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:56
Barium	**0.0427**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	09-Jan-2023 23:56
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	09-Jan-2023 23:56
Cadmium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	09-Jan-2023 23:56
Calcium	**8.51**		**0.0340**	**1.00**	**0.500**	**mg/L**	1	09-Jan-2023 23:56
Chromium	**0.0235**		**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:56
Cobalt	**0.000226**	J	**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	09-Jan-2023 23:56
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	09-Jan-2023 23:56
Iron	**0.0457**	J	**0.0120**	**1.00**	**0.200**	**mg/L**	1	09-Jan-2023 23:56
Lead	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	09-Jan-2023 23:56
Magnesium	**1.12**		**0.0100**	**1.00**	**0.200**	**mg/L**	1	09-Jan-2023 23:56
Manganese	**0.00137**	J	**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	09-Jan-2023 23:56
Nickel	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	09-Jan-2023 23:56
Potassium	**3.46**		**0.0180**	**1.00**	**0.200**	**mg/L**	1	09-Jan-2023 23:56
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	09-Jan-2023 23:56
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	09-Jan-2023 23:56
Sodium	**45.8**		**0.0140**	**1.00**	**0.200**	**mg/L**	1	09-Jan-2023 23:56
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	09-Jan-2023 23:56
Vanadium	**0.0205**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:56
Zinc	0.00250	U	0.00200	0.00250	0.00500	mg/L	1	09-Jan-2023 23:56
MERCURY BY SW7470A		**Method:SW7470A**				Prep:SW7470A / 10-Jan-2023		Analyst: JS
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	10-Jan-2023 13:28
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	30-Dec-2022 16:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW18_122222
Collection Date: 22-Dec-2022 10:30

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:51
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 19:51
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	30-Dec-2022 19:51
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:51
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	30-Dec-2022 19:51
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 19:51
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	30-Dec-2022 19:51
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW18_122222
Collection Date: 22-Dec-2022 10:30

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 19:51
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 19:51
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 19:51
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 19:51
Surr: 1,2-Dichloroethane-d4	*87.9*			**0**	*81-118*	*%REC*	*1*	*30-Dec-2022 19:51*
Surr: 4-Bromofluorobenzene	*97.1*			**0**	*85-114*	*%REC*	*1*	*30-Dec-2022 19:51*
Surr: Dibromofluoromethane	*85.9*			**0**	*80-119*	*%REC*	*1*	*30-Dec-2022 19:51*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*30-Dec-2022 19:51*
SEMIVOLATILES SIM	**Method:SW8270SIM**					Prep:SW3510 / 28-Dec-2022		Analyst: MBG
1,4-Dioxane	**0.015**		**0.010**	**0.0050**	**0.010**	**ug/L**	1	12-Jan-2023 18:29
Surr: 2-Fluorobiphenyl	*97.2*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 18:29*
Surr: 4-Terphenyl-d14	*108*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 18:29*
Surr: Nitrobenzene-d5	*102*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 18:29*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18CPTMW18_122222
Collection Date: 22-Dec-2022 10:30

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 09-Jan-2023		Analyst: JC
Aluminum	**0.0152**		**0.00180**	**0.0150**	**0.0100**	**mg/L**	1	09-Jan-2023 23:58
Antimony	0.00125	U	0.000400	0.00125	0.00500	mg/L	1	09-Jan-2023 23:58
Arsenic	**0.00114**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:58
Barium	**0.575**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	09-Jan-2023 23:58
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	09-Jan-2023 23:58
Cadmium	**0.000270**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	09-Jan-2023 23:58
Calcium	**279**		**0.680**	**1.00**	**10.0**	**mg/L**	20	10-Jan-2023 13:15
Chromium	**0.00252**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:58
Cobalt	**0.0158**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	09-Jan-2023 23:58
Copper	0.00250	U	0.00100	0.00250	0.00500	mg/L	1	09-Jan-2023 23:58
Iron	**0.622**		**0.0120**	**1.00**	**0.200**	**mg/L**	1	09-Jan-2023 23:58
Lead	0.00125	U	0.000600	0.00125	0.00500	mg/L	1	09-Jan-2023 23:58
Magnesium	**194**		**0.200**	**2.00**	**4.00**	**mg/L**	20	10-Jan-2023 13:15
Manganese	**2.33**		**0.0140**	**0.0500**	**0.100**	**mg/L**	20	10-Jan-2023 13:15
Nickel	**0.0131**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:58
Potassium	**2.95**		**0.0180**	**1.00**	**0.200**	**mg/L**	1	09-Jan-2023 23:58
Selenium	0.00250	U	0.00110	0.00250	0.00500	mg/L	1	09-Jan-2023 23:58
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	09-Jan-2023 23:58
Sodium	**797**		**0.280**	**1.00**	**4.00**	**mg/L**	20	10-Jan-2023 13:15
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	09-Jan-2023 23:58
Vanadium	**0.000761**	J	**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	09-Jan-2023 23:58
Zinc	**0.0130**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	09-Jan-2023 23:58
MERCURY BY SW7470A		**Method:SW7470A**				Prep:SW7470A / 10-Jan-2023		Analyst: JS
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	10-Jan-2023 13:36
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	30-Dec-2022 16:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO3_122222
Collection Date: 22-Dec-2022 11:15

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:12
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 20:12
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	30-Dec-2022 20:12
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:12
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	30-Dec-2022 20:12
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 20:12
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	30-Dec-2022 20:12
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: CO3_122222
Collection Date: 22-Dec-2022 11:15

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 20:12
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 20:12
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:12
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:12
Surr: 1,2-Dichloroethane-d4	*88.0*			**0**	*81-118*	*%REC*	*1*	*30-Dec-2022 20:12*
Surr: 4-Bromofluorobenzene	*96.5*			**0**	*85-114*	*%REC*	*1*	*30-Dec-2022 20:12*
Surr: Dibromofluoromethane	*86.8*			**0**	*80-119*	*%REC*	*1*	*30-Dec-2022 20:12*
Surr: Toluene-d8	*106*			**0**	*89-112*	*%REC*	*1*	*30-Dec-2022 20:12*
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 28-Dec-2022		Analyst: MBG
1,4-Dioxane	**0.027**		**0.010**	**0.0050**	**0.010**	**ug/L**	1	12-Jan-2023 18:47
Surr: 2-Fluorobiphenyl	*120*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 18:47*
Surr: 4-Terphenyl-d14	*123*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 18:47*
Surr: Nitrobenzene-d5	*102*			**0**	*40-140*	*%REC*	*1*	*12-Jan-2023 18:47*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	30-Dec-2022 16:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW17_122222
Collection Date: 22-Dec-2022 11:25

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:33
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 20:33
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	30-Dec-2022 20:33
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:33
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	30-Dec-2022 20:33
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 20:33
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	30-Dec-2022 20:33
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW17_122222
Collection Date: 22-Dec-2022 11:25

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
cis-1,2-Dichloroethene	**16**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-Dec-2022 20:33
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 20:33
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 20:33
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 20:33
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Trichloroethene	**73**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-Dec-2022 20:33
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 20:33
Vinyl chloride	**6.8**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-Dec-2022 20:33
Surr: 1,2-Dichloroethane-d4	*87.6*			**0**	*81-118*	*%REC*	*1*	*30-Dec-2022 20:33*
Surr: 4-Bromofluorobenzene	*97.1*			**0**	*85-114*	*%REC*	*1*	*30-Dec-2022 20:33*
Surr: Dibromofluoromethane	*85.0*			**0**	*80-119*	*%REC*	*1*	*30-Dec-2022 20:33*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*30-Dec-2022 20:33*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 18WW17_122222
Collection Date: 22-Dec-2022 11:25

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 09-Jan-2023		Analyst: JC
Aluminum	**0.0104**		**0.00180**	**0.0150**	**0.0100**	**mg/L**	1	10-Jan-2023 00:00
Antimony	0.00125	U	0.000400	0.00125	0.00500	mg/L	1	10-Jan-2023 00:00
Arsenic	**0.00241**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	10-Jan-2023 00:00
Barium	**3.19**		**0.0380**	**0.0500**	**0.100**	**mg/L**	20	10-Jan-2023 13:16
Beryllium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	10-Jan-2023 00:00
Cadmium	**0.000447**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	10-Jan-2023 00:00
Calcium	**335**		**0.680**	**1.00**	**10.0**	**mg/L**	20	10-Jan-2023 13:16
Chromium	**0.686**		**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	10-Jan-2023 00:00
Cobalt	**0.00626**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	10-Jan-2023 00:00
Copper	**0.467**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	10-Jan-2023 00:00
Iron	**8.67**		**0.0120**	**1.00**	**0.200**	**mg/L**	1	10-Jan-2023 00:00
Lead	**0.0203**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	10-Jan-2023 00:00
Magnesium	**216**		**0.200**	**2.00**	**4.00**	**mg/L**	20	10-Jan-2023 13:16
Manganese	**0.137**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	10-Jan-2023 00:00
Nickel	**0.415**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	10-Jan-2023 00:00
Potassium	**1.71**		**0.0180**	**1.00**	**0.200**	**mg/L**	1	10-Jan-2023 00:00
Selenium	**0.00204**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	10-Jan-2023 00:00
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	10-Jan-2023 00:00
Sodium	**1,120**		**0.280**	**1.00**	**4.00**	**mg/L**	20	10-Jan-2023 13:16
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	10-Jan-2023 00:00
Vanadium	**0.00760**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	10-Jan-2023 00:00
Zinc	**2.26**		**0.0400**	**0.0500**	**0.100**	**mg/L**	20	10-Jan-2023 13:16
MERCURY BY SW7470A		**Method:SW7470A**				Prep:SW7470A / 10-Jan-2023		Analyst: JS
Mercury	**0.0000340**	J	**0.0000300**	**0.000100**	**0.000200**	**mg/L**	1	10-Jan-2023 13:37
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	30-Dec-2022 16:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 125_122222
Collection Date: 22-Dec-2022 11:40

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,1,1-Trichloroethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,1,2,2-Tetrachloroethane	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,1,2-Trichloroethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,1-Dichloroethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,1-Dichloroethene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,1-Dichloropropene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,2,3-Trichlorobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,2,3-Trichloropropane	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,2,4-Trichlorobenzene	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,2,4-Trimethylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,2-Dibromo-3-chloropropane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,2-Dibromoethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,2-Dichlorobenzene	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,2-Dichloroethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,2-Dichloropropane	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,3,5-Trimethylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,3-Dichlorobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,3-Dichloropropane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
1,4-Dichlorobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
2,2-Dichloropropane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
2-Butanone	5.0	U	2.5	5.0	10	ug/L	5	30-Dec-2022 21:16
2-Chlorotoluene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
2-Hexanone	5.0	U	5.0	5.0	10	ug/L	5	30-Dec-2022 21:16
4-Chlorotoluene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
4-Isopropyltoluene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
4-Methyl-2-pentanone	5.0	U	3.5	5.0	10	ug/L	5	30-Dec-2022 21:16
Acetone	5.0	U	2.0	5.0	10	ug/L	5	30-Dec-2022 21:16
Benzene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Bromobenzene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Bromochloromethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Bromodichloromethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Bromoform	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Bromomethane	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Carbon disulfide	5.0	U	3.0	5.0	10	ug/L	5	30-Dec-2022 21:16
Carbon tetrachloride	5.0	U	2.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Chlorobenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Chloroethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Chloroform	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 125_122222
Collection Date: 22-Dec-2022 11:40

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
cis-1,2-Dichloroethene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
cis-1,3-Dichloropropene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Dibromochloromethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Dibromomethane	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Dichlorodifluoromethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Ethylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Hexachlorobutadiene	5.0	U	5.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Isopropylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
m,p-Xylene	5.0	U	2.5	5.0	10	ug/L	5	30-Dec-2022 21:16
Methylene chloride	**8.5**	J	**2.0**	**5.0**	**10**	**ug/L**	5	30-Dec-2022 21:16
n-Butylbenzene	5.0	U	2.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
n-Propylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Naphthalene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
o-Xylene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
sec-Butylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Styrene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
tert-Butylbenzene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Tetrachloroethene	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Toluene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
trans-1,2-Dichloroethene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
trans-1,3-Dichloropropene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Trichloroethene	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Trichlorofluoromethane	5.0	U	1.5	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Vinyl chloride	5.0	U	1.0	5.0	5.0	ug/L	5	30-Dec-2022 21:16
Surr: 1,2-Dichloroethane-d4	*88.0*			**0**	*81-118*	*%REC*	*5*	*30-Dec-2022 21:16*
Surr: 4-Bromofluorobenzene	*97.4*			**0**	*85-114*	*%REC*	*5*	*30-Dec-2022 21:16*
Surr: Dibromofluoromethane	*87.0*			**0**	*80-119*	*%REC*	*5*	*30-Dec-2022 21:16*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*5*	*30-Dec-2022 21:16*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: 125_122222
Collection Date: 22-Dec-2022 11:40

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
METALS BY ICPMS BY SW6020A		**Method:SW6020A**				Prep:SW3010A / 09-Jan-2023		Analyst: JC
Aluminum	**3.45**		**0.0360**	**0.100**	**0.200**	**mg/L**	20	10-Jan-2023 13:18
Antimony	0.00125	U	0.000400	0.00125	0.00500	mg/L	1	10-Jan-2023 00:02
Arsenic	**0.00408**	J	**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	10-Jan-2023 00:02
Barium	**0.382**		**0.00190**	**0.00250**	**0.00500**	**mg/L**	1	10-Jan-2023 00:02
Beryllium	**0.000780**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	10-Jan-2023 00:02
Cadmium	**0.00161**	J	**0.000200**	**0.000500**	**0.00200**	**mg/L**	1	10-Jan-2023 00:02
Calcium	**4.29**		**0.0340**	**1.00**	**0.500**	**mg/L**	1	10-Jan-2023 00:02
Chromium	**0.00758**		**0.000400**	**0.00125**	**0.00500**	**mg/L**	1	10-Jan-2023 00:02
Cobalt	**0.00723**		**0.000100**	**0.000500**	**0.00500**	**mg/L**	1	10-Jan-2023 00:02
Copper	**0.00860**		**0.00100**	**0.00250**	**0.00500**	**mg/L**	1	10-Jan-2023 00:02
Iron	**5.60**		**0.0120**	**1.00**	**0.200**	**mg/L**	1	10-Jan-2023 00:02
Lead	**0.0129**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	10-Jan-2023 00:02
Magnesium	**3.66**		**0.0100**	**1.00**	**0.200**	**mg/L**	1	10-Jan-2023 00:02
Manganese	**0.182**		**0.000700**	**0.00250**	**0.00500**	**mg/L**	1	10-Jan-2023 00:02
Nickel	**0.00960**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	10-Jan-2023 00:02
Potassium	**1.01**		**0.0180**	**1.00**	**0.200**	**mg/L**	1	10-Jan-2023 00:02
Selenium	**0.00141**	J	**0.00110**	**0.00250**	**0.00500**	**mg/L**	1	10-Jan-2023 00:02
Silver	0.000500	U	0.000200	0.000500	0.00500	mg/L	1	10-Jan-2023 00:02
Sodium	**35.5**		**0.0140**	**1.00**	**0.200**	**mg/L**	1	10-Jan-2023 00:02
Thallium	0.000500	U	0.000200	0.000500	0.00200	mg/L	1	10-Jan-2023 00:02
Vanadium	**0.0116**		**0.000600**	**0.00125**	**0.00500**	**mg/L**	1	10-Jan-2023 00:02
Zinc	**0.0430**		**0.00200**	**0.00250**	**0.00500**	**mg/L**	1	10-Jan-2023 00:02
MERCURY BY SW7470A		**Method:SW7470A**				Prep:SW7470A / 10-Jan-2023		Analyst: JS
Mercury	0.000100	U	0.0000300	0.000100	0.000200	mg/L	1	10-Jan-2023 13:39
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	30-Dec-2022 16:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 22-Dec-2022 00:00

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,1,1-Trichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,1,2,2-Tetrachloroethane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,1,2-Trichloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,1-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,1-Dichloropropene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,2,3-Trichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,2,3-Trichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,2,4-Trichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,2,4-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,2-Dibromo-3-chloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,2-Dibromoethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,2-Dichlorobenzene	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,2-Dichloropropane	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,3,5-Trimethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,3-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,3-Dichloropropane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
1,4-Dichlorobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 17:24
2,2-Dichloropropane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 17:24
2-Chlorotoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	30-Dec-2022 17:24
4-Chlorotoluene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 17:24
4-Isopropyltoluene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	30-Dec-2022 17:24
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 17:24
Benzene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Bromobenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Bromochloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Bromodichloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Bromoform	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Bromomethane	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	30-Dec-2022 17:24
Carbon tetrachloride	1.0	U	0.50	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Chlorobenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Chloroethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Chloroform	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
Sample ID: Trip Blank
Collection Date: 22-Dec-2022 00:00

ANALYTICAL REPORT
WorkOrder:HS22121478
Lab ID:HS22121478-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloromethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
cis-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Dibromochloromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Dibromomethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Dichlorodifluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Ethylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Hexachlorobutadiene	1.0	U	1.0	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Isopropylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	30-Dec-2022 17:24
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	30-Dec-2022 17:24
n-Butylbenzene	1.0	U	0.40	1.0	1.0	ug/L	1	30-Dec-2022 17:24
n-Propylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Naphthalene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
o-Xylene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
sec-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Styrene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
tert-Butylbenzene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Toluene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
trans-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
trans-1,3-Dichloropropene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Trichlorofluoromethane	1.0	U	0.30	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-Dec-2022 17:24
Surr: 1,2-Dichloroethane-d4	*88.6*			**0**	*81-118*	*%REC*	*1*	*30-Dec-2022 17:24*
Surr: 4-Bromofluorobenzene	*95.9*			**0**	*85-114*	*%REC*	*1*	*30-Dec-2022 17:24*
Surr: Dibromofluoromethane	*87.9*			**0**	*80-119*	*%REC*	*1*	*30-Dec-2022 17:24*
Surr: Toluene-d8	*105*			**0**	*89-112*	*%REC*	*1*	*30-Dec-2022 17:24*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Jan-23

Weight / Prep Log

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

Batch ID: 187834 **Start Date:** 28 Dec 2022 10:00 **End Date:** 28 Dec 2022 14:30
Method: SV AQ SEP FUN EXTRACT-LOWLEV - 3510C **Prep Code:** 3510_B_SIM

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22121478-01	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22121478-02	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22121478-03	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22121478-04	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22121478-05	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS22121478-06	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

Batch ID: 188228 **Start Date:** 09 Jan 2023 09:00 **End Date:** 09 Jan 2023 13:00
Method: WATER - SW3010A **Prep Code:** 3010A

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22121478-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121478-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121478-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121478-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121478-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121478-08		10 (mL)	10 (mL)	1	120 plastic HNO3

Batch ID: 188268 **Start Date:** 10 Jan 2023 08:00 **End Date:** 10 Jan 2023 11:00
Method: MERCURY PREP BY 7470A- WATER **Prep Code:** HG_WPR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS22121478-01		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121478-02		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121478-04		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121478-05		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121478-07		10 (mL)	10 (mL)	1	120 plastic HNO3
HS22121478-08		10 (mL)	10 (mL)	1	120 plastic HNO3

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 187834 (0)	**Test Name :** SEMIVOLATILES SIM				**Matrix:** Groundwater	
HS22121478-01	18CPTMW03SW_122222	22 Dec 2022 07:30		28 Dec 2022 07:38	12 Jan 2023 17:17	1
HS22121478-02	18CPTMW24_122222	22 Dec 2022 08:15		28 Dec 2022 07:38	12 Jan 2023 17:35	1
HS22121478-03	18CPTMW07_122222	22 Dec 2022 09:00		28 Dec 2022 07:38	12 Jan 2023 17:53	1
HS22121478-04	18WW22_122222	22 Dec 2022 09:45		28 Dec 2022 07:38	12 Jan 2023 18:11	1
HS22121478-05	18CPTMW18_122222	22 Dec 2022 10:30		28 Dec 2022 07:38	12 Jan 2023 18:29	1
HS22121478-06	CO3_122222	22 Dec 2022 11:15		28 Dec 2022 07:38	12 Jan 2023 18:47	1
Batch ID: 188228 (0)	**Test Name :** METALS BY ICPMS BY SW6020A				**Matrix:** Groundwater	
HS22121478-01	18CPTMW03SW_122222	22 Dec 2022 07:30		09 Jan 2023 09:00	10 Jan 2023 13:11	10
HS22121478-01	18CPTMW03SW_122222	22 Dec 2022 07:30		09 Jan 2023 09:00	09 Jan 2023 23:52	1
HS22121478-02	18CPTMW24_122222	22 Dec 2022 08:15		09 Jan 2023 09:00	10 Jan 2023 13:13	20
HS22121478-02	18CPTMW24_122222	22 Dec 2022 08:15		09 Jan 2023 09:00	09 Jan 2023 23:54	1
HS22121478-04	18WW22_122222	22 Dec 2022 09:45		09 Jan 2023 09:00	09 Jan 2023 23:56	1
HS22121478-05	18CPTMW18_122222	22 Dec 2022 10:30		09 Jan 2023 09:00	10 Jan 2023 13:15	20
HS22121478-05	18CPTMW18_122222	22 Dec 2022 10:30		09 Jan 2023 09:00	09 Jan 2023 23:58	1
HS22121478-07	18WW17_122222	22 Dec 2022 11:25		09 Jan 2023 09:00	10 Jan 2023 13:16	20
HS22121478-07	18WW17_122222	22 Dec 2022 11:25		09 Jan 2023 09:00	10 Jan 2023 00:00	1
HS22121478-08	125_122222	22 Dec 2022 11:40		09 Jan 2023 09:00	10 Jan 2023 13:18	20
HS22121478-08	125_122222	22 Dec 2022 11:40		09 Jan 2023 09:00	10 Jan 2023 00:02	1
Batch ID: 188268 (0)	**Test Name :** MERCURY BY SW7470A				**Matrix:** Groundwater	
HS22121478-01	18CPTMW03SW_122222	22 Dec 2022 07:30		10 Jan 2023 08:00	10 Jan 2023 13:25	1
HS22121478-02	18CPTMW24_122222	22 Dec 2022 08:15		10 Jan 2023 08:00	10 Jan 2023 13:26	1
HS22121478-04	18WW22_122222	22 Dec 2022 09:45		10 Jan 2023 08:00	10 Jan 2023 13:28	1
HS22121478-05	18CPTMW18_122222	22 Dec 2022 10:30		10 Jan 2023 08:00	10 Jan 2023 13:36	1
HS22121478-07	18WW17_122222	22 Dec 2022 11:25		10 Jan 2023 08:00	10 Jan 2023 13:37	1
HS22121478-08	125_122222	22 Dec 2022 11:40		10 Jan 2023 08:00	10 Jan 2023 13:39	1
Batch ID: R425084 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS22121478-01	18CPTMW03SW_122222	22 Dec 2022 07:30			30 Dec 2022 16:35	1
HS22121478-02	18CPTMW24_122222	22 Dec 2022 08:15			30 Dec 2022 16:35	1
HS22121478-03	18CPTMW07_122222	22 Dec 2022 09:00			30 Dec 2022 16:35	1
HS22121478-04	18WW22_122222	22 Dec 2022 09:45			30 Dec 2022 16:35	1
HS22121478-05	18CPTMW18_122222	22 Dec 2022 10:30			30 Dec 2022 16:35	1
HS22121478-06	CO3_122222	22 Dec 2022 11:15			30 Dec 2022 16:35	1
HS22121478-07	18WW17_122222	22 Dec 2022 11:25			30 Dec 2022 16:35	1
HS22121478-08	125_122222	22 Dec 2022 11:40			30 Dec 2022 16:35	1
Batch ID: R425095 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS22121478-09	Trip Blank	22 Dec 2022 00:00			30 Dec 2022 17:24	1

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R425095 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS22121478-01	18CPTMW03SW_122222	22 Dec 2022 07:30			30 Dec 2022 18:48	1
HS22121478-02	18CPTMW24_122222	22 Dec 2022 08:15			30 Dec 2022 20:54	5
HS22121478-03	18CPTMW07_122222	22 Dec 2022 09:00			30 Dec 2022 19:09	1
HS22121478-04	18WW22_122222	22 Dec 2022 09:45			30 Dec 2022 19:30	1
HS22121478-05	18CPTMW18_122222	22 Dec 2022 10:30			30 Dec 2022 19:51	1
HS22121478-06	CO3_122222	22 Dec 2022 11:15			30 Dec 2022 20:12	1
HS22121478-07	18WW17_122222	22 Dec 2022 11:25			30 Dec 2022 20:33	1
HS22121478-08	125_122222	22 Dec 2022 11:40			30 Dec 2022 21:16	5

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: 188228 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MBLK Sample ID: **MBLK-188228** Units: **mg/L** Analysis Date: **10-Jan-2023 12:41**
Client ID: Run ID: **ICPMS07_425571** SeqNo: **7068389** PrepDate: **09-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.00500	0.0100								U
Antimony	0.00125	0.00500								U
Arsenic	0.00125	0.00500								U
Barium	0.00250	0.00500								U
Beryllium	0.000500	0.00200								U
Cadmium	0.000500	0.00200								U
Calcium	0.0500	0.500								U
Chromium	0.00125	0.00500								U
Cobalt	0.000500	0.00500								U
Copper	0.00250	0.00500								U
Iron	0.0500	0.200								U
Lead	0.00125	0.00500								U
Magnesium	0.100	0.200								U
Manganese	0.00250	0.00500								U
Nickel	0.00125	0.00500								U
Potassium	0.0500	0.200								U
Selenium	0.00250	0.00500								U
Silver	0.000500	0.00500								U
Sodium	0.0500	0.200								U
Thallium	0.000500	0.00200								U
Vanadium	0.00125	0.00500								U
Zinc	0.00250	0.00500								U

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: 188228 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

LCS Sample ID: **LCS-188228** Units: **mg/L** Analysis Date: **09-Jan-2023 22:15**
Client ID: Run ID: **ICPMS06_425518** SeqNo: **7067610** PrepDate: **09-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1999	0.0100	0.2	0	99.9	84 - 117				
Antimony	0.0543	0.00500	0.05	0	109	85 - 117				
Arsenic	0.05251	0.00500	0.05	0	105	84 - 116				
Barium	0.05128	0.00500	0.05	0	103	86 - 114				
Cadmium	0.05186	0.00200	0.05	0	104	87 - 115				
Calcium	5.303	0.500	5	0	106	87 - 118				
Chromium	0.05457	0.00500	0.05	0	109	85 - 116				
Cobalt	0.05536	0.00500	0.05	0	111	86 - 115				
Copper	0.05554	0.00500	0.05	0	111	85 - 118				
Iron	5.387	0.200	5	0	108	87 - 118				
Lead	0.05324	0.00500	0.05	0	106	88 - 115				
Magnesium	5.358	0.200	5	0	107	83 - 118				
Manganese	0.05408	0.00500	0.05	0	108	87 - 115				
Nickel	0.05471	0.00500	0.05	0	109	85 - 117				
Potassium	5.107	0.200	5	0	102	87 - 115				
Selenium	0.05093	0.00500	0.05	0	102	80 - 120				
Silver	0.05285	0.00500	0.05	0	106	85 - 116				
Sodium	5.456	0.200	5	0	109	85 - 117				
Vanadium	0.05496	0.00500	0.05	0	110	86 - 115				

LCS Sample ID: **LCS-188228** Units: **mg/L** Analysis Date: **10-Jan-2023 12:43**
Client ID: Run ID: **ICPMS07_425571** SeqNo: **7068400** PrepDate: **09-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Beryllium	0.05152	0.00200	0.05	0	103	83 - 121				
Thallium	0.04699	0.00200	0.05	0	94.0	82 - 116				
Zinc	0.05642	0.00500	0.05	0	113	83 - 119				

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: 188228 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MS Sample ID: **HS22121494-05MS** Units: **mg/L** Analysis Date: **09-Jan-2023 22:20**
Client ID: Run ID: **ICPMS06_425518** SeqNo: **7067613** PrepDate: **09-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.2682	0.0100	0.1	0.1666	102	84 - 117				
Antimony	0.04992	0.00500	0.05	0.000239	99.4	85 - 117				
Arsenic	0.05143	0.00500	0.05	0.000699	101	84 - 116				
Barium	0.1084	0.00500	0.05	0.06226	92.3	86 - 114				
Cadmium	0.0477	0.00200	0.05	0.000439	94.5	87 - 115				
Calcium	57.43	0.500	5	54.05	67.7	87 - 118				SO
Chromium	0.0519	0.00500	0.05	0.001306	101	85 - 116				
Cobalt	0.06517	0.00500	0.05	0.01582	98.7	86 - 115				
Copper	0.05043	0.00500	0.05	0.001668	97.5	85 - 118				
Iron	5.237	0.200	5	0.2559	99.6	87 - 118				
Lead	0.05069	0.00500	0.05	0.000221	101	88 - 115				
Magnesium	47.54	0.200	5	44.59	59.0	83 - 118				SO
Manganese	3.325	0.00500	0.05	3.359	-67.0	87 - 115				SEO
Nickel	0.1367	0.00500	0.05	0.0865	100	85 - 117				
Potassium	5.661	0.200	5	0.7361	98.5	87 - 115				
Selenium	0.04863	0.00500	0.05	0.000511	96.2	80 - 120				
Silver	0.04736	0.00500	0.05	0.000029	94.7	85 - 116				
Sodium	703.5	0.200	5	720.5	-341	85 - 117				SEO
Vanadium	0.05415	0.00500	0.05	0.001054	106	86 - 115				
Zinc	0.08898	0.00500	0.05	0.0399	98.2	83 - 119				

MS Sample ID: **HS22121494-05MS** Units: **mg/L** Analysis Date: **10-Jan-2023 12:48**
Client ID: Run ID: **ICPMS07_425571** SeqNo: **7068393** PrepDate: **09-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Beryllium	0.05068	0.00200	0.05	0.000347	101	83 - 121				
Thallium	0.04054	0.00200	0.05	0.000192	80.7	82 - 116				S

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: 188228 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

MSD Sample ID: **HS22121494-05MSD** Units: **mg/L** Analysis Date: **09-Jan-2023 22:22**
Client ID: Run ID: **ICPMS06_425518** SeqNo: **7067614** PrepDate: **09-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.2704	0.0100	0.1	0.1666	104	84 - 117	0.2682	0.84	20	
Antimony	0.04968	0.00500	0.05	0.000239	98.9	85 - 117	0.04992	0.482	20	
Arsenic	0.05106	0.00500	0.05	0.000699	101	84 - 116	0.05143	0.718	20	
Barium	0.1067	0.00500	0.05	0.06226	89.0	86 - 114	0.1084	1.57	20	
Cadmium	0.04778	0.00200	0.05	0.000439	94.7	87 - 115	0.0477	0.182	20	
Calcium	56.88	0.500	5	54.05	56.6	87 - 118	57.43	0.97	20	SO
Chromium	0.05216	0.00500	0.05	0.001306	102	85 - 116	0.0519	0.502	20	
Cobalt	0.06513	0.00500	0.05	0.01582	98.6	86 - 115	0.06517	0.0721	20	
Copper	0.05112	0.00500	0.05	0.001668	98.9	85 - 118	0.05043	1.37	20	
Iron	5.299	0.200	5	0.2559	101	87 - 118	5.237	1.19	20	
Lead	0.05063	0.00500	0.05	0.000221	101	88 - 115	0.05069	0.111	20	
Magnesium	47.13	0.200	5	44.59	50.8	83 - 118	47.54	0.862	20	SO
Manganese	3.261	0.00500	0.05	3.359	-195	87 - 115	3.325	1.95	20	SEO
Nickel	0.1293	0.00500	0.05	0.0865	85.6	85 - 117	0.1367	5.54	20	
Potassium	5.708	0.200	5	0.7361	99.4	87 - 115	5.661	0.837	20	
Selenium	0.04842	0.00500	0.05	0.000511	95.8	80 - 120	0.04863	0.441	20	
Silver	0.04719	0.00500	0.05	0.000029	94.3	85 - 116	0.04736	0.36	20	
Sodium	703.5	0.200	5	720.5	-342	85 - 117	703.5	0.00131	20	SEO
Vanadium	0.05433	0.00500	0.05	0.001054	107	86 - 115	0.05415	0.323	20	
Zinc	0.08916	0.00500	0.05	0.0399	98.5	83 - 119	0.08898	0.196	20	

MSD Sample ID: **HS22121494-05MSD** Units: **mg/L** Analysis Date: **10-Jan-2023 12:50**
Client ID: Run ID: **ICPMS07_425571** SeqNo: **7068394** PrepDate: **09-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Beryllium	0.04963	0.00200	0.05	0.000347	98.6	83 - 121	0.05068	2.1	20	
Thallium	0.04115	0.00200	0.05	0.000192	81.9	82 - 116	0.04054	1.49	20	S

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: 188228 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

PDS Sample ID: **HS22121494-05PDS** Units: **mg/L** Analysis Date: **09-Jan-2023 22:24**
Client ID: Run ID: **ICPMS06_425518** SeqNo: **7067615** PrepDate: **09-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1005	0.00500	0.1	0.000239	100	80 - 120				
Arsenic	0.1036	0.00500	0.1	0.000699	103	80 - 120				
Calcium	65.98	0.500	10	54.05	119	80 - 120				O
Chromium	0.1055	0.00500	0.1	0.001306	104	80 - 120				
Cobalt	0.118	0.00500	0.1	0.01582	102	80 - 120				
Copper	0.1021	0.00500	0.1	0.001668	100	80 - 120				
Iron	10.45	0.200	10	0.2559	102	80 - 120				
Magnesium	57.38	0.200	10	44.59	128	80 - 120				SO
Nickel	0.1873	0.00500	0.1	0.0865	101	80 - 120				
Potassium	10.98	0.200	10	0.7361	102	80 - 120				
Selenium	0.1011	0.00500	0.1	0.000511	101	80 - 120				
Vanadium	0.1096	0.00500	0.1	0.001054	109	80 - 120				
Zinc	0.1431	0.00500	0.1	0.0399	103	80 - 120				

PDS Sample ID: **HS22121494-05PDS** Units: **mg/L** Analysis Date: **10-Jan-2023 12:52**
Client ID: Run ID: **ICPMS07_425571** SeqNo: **7068395** PrepDate: **09-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Beryllium	0.1027	0.00200	0.1	0.000347	102	80 - 120				
Thallium	0.09236	0.00200	0.1	0.000192	92.2	80 - 120				

PDS Sample ID: **HS22121494-05PDS** Units: **mg/L** Analysis Date: **10-Jan-2023 13:09**
Client ID: Run ID: **ICPMS07_425571** SeqNo: **7068406** PrepDate: **09-Jan-2023** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Manganese	5.71	0.100	2	3.664	102	80 - 120				
Sodium	900.9	4.00	200	710.5	95.2	80 - 120				

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: 188228 (0) **Instrument: ICPMS07** **Method: METALS BY ICPMS BY SW6020A**

SD Sample ID: **HS22121494-05SD** Units: **mg/L** Analysis Date: **09-Jan-2023 22:18**
Client ID: Run ID: **ICPMS06_425518** SeqNo: **7067612** PrepDate: **09-Jan-2023** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Aluminum	0.1672	0.0500					0.1666	0.349	10	
Antimony	0.00625	0.0250					0.000239	0	10	U
Arsenic	0.00625	0.0250					0.000699	0	10	U
Barium	0.06322	0.0250					0.06226	1.55	10	
Cadmium	0.00250	0.0100					0.000439	0	10	U
Calcium	54.16	2.50					54.05	0.209	10	
Chromium	0.007103	0.0250					0.001306	0	10	J
Cobalt	0.01633	0.0250					0.01582	0	10	J
Copper	0.0125	0.0250					0.001668	0	10	U
Iron	0.2523	1.00					0.2559	0	10	J
Magnesium	43.31	1.00					44.59	2.87	10	
Manganese	3.465	0.0250					3.359	3.16	10	
Nickel	0.0899	0.0250					0.0865	3.93	10	
Potassium	0.6019	1.00					0.7361	0	10	J
Selenium	0.0125	0.0250					0.000511	0	10	U
Silver	0.00250	0.0250					0.000029	0	10	U
Vanadium	0.004672	0.0250					0.001054	0	10	J
Zinc	0.04154	0.0250					0.0399	4.14	10	

SD Sample ID: **HS22121494-05SD** Units: **mg/L** Analysis Date: **10-Jan-2023 12:46**
Client ID: Run ID: **ICPMS07_425571** SeqNo: **7068392** PrepDate: **09-Jan-2023** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Beryllium	0.00250	0.0100					0.000347	0	10	U
Thallium	0.00250	0.0100					0.000192	0	10	U

SD Sample ID: **HS22121494-05SD** Units: **mg/L** Analysis Date: **10-Jan-2023 13:07**
Client ID: Run ID: **ICPMS07_425571** SeqNo: **7068405** PrepDate: **09-Jan-2023** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Manganese	3.689	0.500					3.664	0.657	10	
Sodium	719.9	20.0					710.5	1.31	10	

The following samples were analyzed in this batch: HS22121478-01 HS22121478-02 HS22121478-04 HS22121478-05 HS22121478-07 HS22121478-08

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: 188268 (0) **Instrument: HG04** **Method: MERCURY BY SW7470A**

MBLK Sample ID: **MBLK-188268** Units: **mg/L** Analysis Date: **10-Jan-2023 13:08**
Client ID: Run ID: **HG04_425583** SeqNo: **7068623** PrepDate: **10-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.000100	0.000200								U

LCS Sample ID: **LCS-188268** Units: **mg/L** Analysis Date: **10-Jan-2023 13:14**
Client ID: Run ID: **HG04_425583** SeqNo: **7068624** PrepDate: **10-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00505	0.000200	0.005	0	101	82 - 119				

MS Sample ID: **HS22121494-05MS** Units: **mg/L** Analysis Date: **10-Jan-2023 13:46**
Client ID: Run ID: **HG04_425583** SeqNo: **7068641** PrepDate: **10-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00477	0.000200	0.005	0.000009000	95.2	82 - 119				

MSD Sample ID: **HS22121494-05MSD** Units: **mg/L** Analysis Date: **10-Jan-2023 13:48**
Client ID: Run ID: **HG04_425583** SeqNo: **7068642** PrepDate: **10-Jan-2023** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00497	0.000200	0.005	0.000009000	99.2	82 - 119	0.004770	4.11	20	

The following samples were analyzed in this batch:

HS22121478-01	HS22121478-02	HS22121478-04	HS22121478-05
HS22121478-07	HS22121478-08		

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: 187834 (0) **Instrument: SV-6** **Method: SEMIVOLATILES SIM**

MBLK Sample ID: **MBLK-187834** Units: **ug/L** Analysis Date: **12-Jan-2023 16:23**
Client ID: Run ID: **SV-6_425785** SeqNo: **7073074** PrepDate: **28-Dec-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.0050	0.010								U
Surr: 2-Fluorobiphenyl	*0.09215*	*0*	*0.08*	*0*	*115*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.0894*	*0*	*0.08*	*0*	*112*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.08397*	*0*	*0.08*	*0*	*105*	*40 - 140*				

LCS Sample ID: **LCS-187834** Units: **ug/L** Analysis Date: **12-Jan-2023 16:41**
Client ID: Run ID: **SV-6_425785** SeqNo: **7073075** PrepDate: **28-Dec-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.04655	0.010	0.08	0	58.2	40 - 140				
Surr: 2-Fluorobiphenyl	*0.07037*	*0*	*0.08*	*0*	*88.0*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.08588*	*0*	*0.08*	*0*	*107*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07058*	*0*	*0.08*	*0*	*88.2*	*40 - 140*				

LCSD Sample ID: **LCSD-187834** Units: **ug/L** Analysis Date: **12-Jan-2023 16:59**
Client ID: Run ID: **SV-6_425785** SeqNo: **7073076** PrepDate: **28-Dec-2022** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.05058	0.010	0.08	0	63.2	40 - 140	0.04655	8.3	20	
Surr: 2-Fluorobiphenyl	*0.06845*	*0*	*0.08*	*0*	*85.6*	*40 - 140*	*0.07037*	*2.77*	*20*	
Surr: 4-Terphenyl-d14	*0.09193*	*0*	*0.08*	*0*	*115*	*40 - 140*	*0.08588*	*6.8*	*20*	
Surr: Nitrobenzene-d5	*0.06195*	*0*	*0.08*	*0*	*77.4*	*40 - 140*	*0.07058*	*13*	*20*	

The following samples were analyzed in this batch: HS22121478-01 HS22121478-02 HS22121478-03 HS22121478-04 HS22121478-05 HS22121478-06

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: R425095 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-221230** Units: **ug/L** Analysis Date: **30-Dec-2022 13:33**
Client ID: Run ID: **VOA6_425095** SeqNo: **7057670** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	1.0	1.0								U
1,1,1-Trichloroethane	1.0	1.0								U
1,1,2,2-Tetrachloroethane	1.0	1.0								U
1,1,2-Trichloroethane	1.0	1.0								U
1,1-Dichloroethane	1.0	1.0								U
1,1-Dichloroethene	1.0	1.0								U
1,1-Dichloropropene	1.0	1.0								U
1,2,3-Trichlorobenzene	1.0	1.0								U
1,2,3-Trichloropropane	1.0	1.0								U
1,2,4-Trichlorobenzene	1.0	1.0								U
1,2,4-Trimethylbenzene	1.0	1.0								U
1,2-Dibromo-3-chloropropane	1.0	1.0								U
1,2-Dibromoethane	1.0	1.0								U
1,2-Dichlorobenzene	1.0	1.0								U
1,2-Dichloroethane	1.0	1.0								U
1,2-Dichloropropane	1.0	1.0								U
1,3,5-Trimethylbenzene	1.0	1.0								U
1,3-Dichlorobenzene	1.0	1.0								U
1,3-Dichloropropane	1.0	1.0								U
1,4-Dichlorobenzene	1.0	1.0								U
2,2-Dichloropropane	1.0	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	1.0	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	1.0	1.0								U
4-Isopropyltoluene	1.0	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	1.0	1.0								U
Bromobenzene	1.0	1.0								U
Bromochloromethane	1.0	1.0								U
Bromodichloromethane	1.0	1.0								U
Bromoform	1.0	1.0								U
Bromomethane	1.0	1.0								U

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: R425095 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-221230** Units: **ug/L** Analysis Date: **30-Dec-2022 13:33**
Client ID: Run ID: **VOA6_425095** SeqNo: **7057670** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	1.0	1.0								U
Chlorobenzene	1.0	1.0								U
Chloroethane	1.0	1.0								U
Chloroform	1.0	1.0								U
Chloromethane	1.0	1.0								U
cis-1,2-Dichloroethene	1.0	1.0								U
cis-1,3-Dichloropropene	1.0	1.0								U
Dibromochloromethane	1.0	1.0								U
Dibromomethane	1.0	1.0								U
Dichlorodifluoromethane	1.0	1.0								U
Ethylbenzene	1.0	1.0								U
Hexachlorobutadiene	1.0	1.0								U
Isopropylbenzene	1.0	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	1.0	1.0								U
n-Butylbenzene	1.0	1.0								U
n-Propylbenzene	1.0	1.0								U
o-Xylene	1.0	1.0								U
sec-Butylbenzene	1.0	1.0								U
Styrene	1.0	1.0								U
tert-Butylbenzene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Toluene	1.0	1.0								U
trans-1,2-Dichloroethene	1.0	1.0								U
trans-1,3-Dichloropropene	1.0	1.0								U
Trichloroethene	1.0	1.0								U
Trichlorofluoromethane	1.0	1.0								U
Vinyl chloride	1.0	1.0								U
Surr: 1,2-Dichloroethane-d4	*44.13*	*1.0*	*50*	*0*	*88.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*49.21*	*1.0*	*50*	*0*	*98.4*	*85 - 114*				
Surr: Dibromofluoromethane	*43.22*	*1.0*	*50*	*0*	*86.4*	*80 - 119*				
Surr: Toluene-d8	*53.49*	*1.0*	*50*	*0*	*107*	*89 - 112*				

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: R425095 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-221230** Units: **ug/L** Analysis Date: **30-Dec-2022 12:50**
Client ID: Run ID: **VOA6_425095** SeqNo: **7057669** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	18.16	1.0	20	0	90.8	78 - 124				
1,1,1-Trichloroethane	16.76	1.0	20	0	83.8	74 - 131				
1,1,2,2-Tetrachloroethane	19.96	1.0	20	0	99.8	71 - 121				
1,1,2-Trichloroethane	18.92	1.0	20	0	94.6	80 - 119				
1,1-Dichloroethane	16.81	1.0	20	0	84.1	77 - 125				
1,1-Dichloroethene	16.23	1.0	20	0	81.2	71 - 131				
1,1-Dichloropropene	18.43	1.0	20	0	92.1	78 - 125				
1,2,3-Trichlorobenzene	20.82	1.0	20	0	104	69 - 129				
1,2,3-Trichloropropane	21.78	1.0	20	0	109	73 - 122				
1,2,4-Trichlorobenzene	21.55	1.0	20	0	108	69 - 130				
1,2,4-Trimethylbenzene	18.28	1.0	20	0	91.4	76 - 124				
1,2-Dibromo-3-chloropropane	20.98	1.0	20	0	105	62 - 128				
1,2-Dibromoethane	19.94	1.0	20	0	99.7	77 - 121				
1,2-Dichlorobenzene	18.66	1.0	20	0	93.3	80 - 119				
1,2-Dichloroethane	19.25	1.0	20	0	96.3	73 - 128				
1,2-Dichloropropane	18.61	1.0	20	0	93.0	78 - 122				
1,3,5-Trimethylbenzene	18.12	1.0	20	0	90.6	75 - 124				
1,3-Dichlorobenzene	18.97	1.0	20	0	94.8	80 - 119				
1,3-Dichloropropane	19.51	1.0	20	0	97.6	80 - 119				
1,4-Dichlorobenzene	18.49	1.0	20	0	92.5	79 - 118				
2,2-Dichloropropane	17.15	1.0	20	0	85.8	60 - 139				
2-Butanone	40.61	2.0	40	0	102	56 - 143				
2-Chlorotoluene	18.44	1.0	20	0	92.2	79 - 122				
2-Hexanone	46.54	2.0	40	0	116	57 - 139				
4-Chlorotoluene	18.73	1.0	20	0	93.7	78 - 122				
4-Isopropyltoluene	18.25	1.0	20	0	91.2	77 - 127				
4-Methyl-2-pentanone	44.24	2.0	40	0	111	67 - 130				
Acetone	42.34	2.0	40	0	106	39 - 160				
Benzene	18.63	1.0	20	0	93.1	79 - 120				
Bromobenzene	18.43	1.0	20	0	92.1	80 - 120				
Bromochloromethane	16.49	1.0	20	0	82.4	78 - 123				
Bromodichloromethane	17.8	1.0	20	0	89.0	79 - 125				
Bromoform	19.15	1.0	20	0	95.8	66 - 130				
Bromomethane	18.17	1.0	20	0	90.9	53 - 141				

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: R425095 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCS Sample ID: **VLCSW-221230** Units: **ug/L** Analysis Date: **30-Dec-2022 12:50**
Client ID: Run ID: **VOA6_425095** SeqNo: **7057669** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	33.58	2.0	40	0	83.9	64 - 133				
Carbon tetrachloride	16.34	1.0	20	0	81.7	72 - 136				
Chlorobenzene	17.85	1.0	20	0	89.2	82 - 118				
Chloroethane	17.37	1.0	20	0	86.9	60 - 138				
Chloroform	16.92	1.0	20	0	84.6	79 - 124				
Chloromethane	21.77	1.0	20	0	109	50 - 139				
cis-1,2-Dichloroethene	16.66	1.0	20	0	83.3	78 - 123				
cis-1,3-Dichloropropene	18.88	1.0	20	0	94.4	75 - 124				
Dibromochloromethane	19.32	1.0	20	0	96.6	74 - 126				
Dibromomethane	18.21	1.0	20	0	91.1	79 - 123				
Dichlorodifluoromethane	19.08	1.0	20	0	95.4	32 - 152				
Ethylbenzene	18.14	1.0	20	0	90.7	79 - 121				
Hexachlorobutadiene	18.9	1.0	20	0	94.5	66 - 134				
Isopropylbenzene	17.86	1.0	20	0	89.3	72 - 131				
m,p-Xylene	35.52	2.0	40	0	88.8	80 - 121				
Methylene chloride	18.27	2.0	20	0	91.4	74 - 124				
Naphthalene	22.32	1.0	20	0	112	61 - 128				
n-Butylbenzene	17.49	1.0	20	0	87.5	75 - 128				
n-Propylbenzene	17.99	1.0	20	0	90.0	76 - 126				
o-Xylene	17.9	1.0	20	0	89.5	78 - 122				
sec-Butylbenzene	17.75	1.0	20	0	88.7	77 - 126				
Styrene	19.11	1.0	20	0	95.5	78 - 123				
tert-Butylbenzene	17.5	1.0	20	0	87.5	78 - 124				
Tetrachloroethene	17.66	1.0	20	0	88.3	74 - 129				
Toluene	18.05	1.0	20	0	90.3	80 - 121				
trans-1,2-Dichloroethene	16.8	1.0	20	0	84.0	75 - 124				
trans-1,3-Dichloropropene	19.7	1.0	20	0	98.5	73 - 127				
Trichloroethene	17.78	1.0	20	0	88.9	79 - 123				
Trichlorofluoromethane	17.11	1.0	20	0	85.5	65 - 141				
Vinyl chloride	17.71	1.0	20	0	88.5	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.33*	*1.0*	*50*	*0*	*98.7*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.41*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*45.4*	*1.0*	*50*	*0*	*90.8*	*80 - 119*				
Surr: Toluene-d8	*49.62*	*1.0*	*50*	*0*	*99.2*	*89 - 112*				

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: R425095 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22121494-05MS** Units: **ug/L** Analysis Date: **30-Dec-2022 16:00**
Client ID: Run ID: **VOA6_425095** SeqNo: **7057677** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	20.11	1.0	20	0	101	78 - 124				
1,1,1-Trichloroethane	20.18	1.0	20	0	101	74 - 131				
1,1,2,2-Tetrachloroethane	20.9	1.0	20	0	104	71 - 121				
1,1,2-Trichloroethane	20.07	1.0	20	0	100	80 - 119				
1,1-Dichloroethane	17.62	1.0	20	0	88.1	77 - 125				
1,1-Dichloroethene	20	1.0	20	0	100	71 - 131				
1,1-Dichloropropene	24.24	1.0	20	0	121	78 - 125				
1,2,3-Trichlorobenzene	23.59	1.0	20	0	118	69 - 129				
1,2,3-Trichloropropane	22.68	1.0	20	0	113	73 - 122				
1,2,4-Trichlorobenzene	24.42	1.0	20	0	122	69 - 130				
1,2,4-Trimethylbenzene	23.34	1.0	20	0	117	76 - 124				
1,2-Dibromo-3-chloropropane	21.35	1.0	20	0	107	62 - 128				
1,2-Dibromoethane	20.8	1.0	20	0	104	77 - 121				
1,2-Dichlorobenzene	21.49	1.0	20	0	107	80 - 119				
1,2-Dichloroethane	19.35	1.0	20	0	96.7	73 - 128				
1,2-Dichloropropane	19.46	1.0	20	0	97.3	78 - 122				
1,3,5-Trimethylbenzene	24.82	1.0	20	0	124	75 - 124				S
1,3-Dichlorobenzene	22.81	1.0	20	0	114	80 - 119				
1,3-Dichloropropane	20.56	1.0	20	0	103	80 - 119				
1,4-Dichlorobenzene	22.04	1.0	20	0	110	79 - 118				
2,2-Dichloropropane	19.13	1.0	20	0	95.7	60 - 139				
2-Butanone	35.22	2.0	40	0	88.0	56 - 143				
2-Chlorotoluene	23.11	1.0	20	0	116	79 - 122				
2-Hexanone	41.98	2.0	40	0	105	57 - 139				
4-Chlorotoluene	23.03	1.0	20	0	115	78 - 122				
4-Isopropyltoluene	26.97	1.0	20	0	135	77 - 127				S
4-Methyl-2-pentanone	43.24	2.0	40	0	108	67 - 130				
Acetone	29.68	2.0	40	2.143	68.8	39 - 160				
Benzene	20.68	1.0	20	0	103	79 - 120				
Bromobenzene	21.15	1.0	20	0	106	80 - 120				
Bromochloromethane	15.93	1.0	20	0	79.6	78 - 123				
Bromodichloromethane	18.9	1.0	20	0	94.5	79 - 125				
Bromoform	19.5	1.0	20	0	97.5	66 - 130				
Bromomethane	19.05	1.0	20	0	95.3	53 - 141				

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: R425095 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS22121494-05MS** Units: **ug/L** Analysis Date: **30-Dec-2022 16:00**
Client ID: Run ID: **VOA6_425095** SeqNo: **7057677** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	38.68	2.0	40	0	96.7	64 - 133				
Carbon tetrachloride	22.22	1.0	20	0	111	72 - 136				
Chlorobenzene	20.69	1.0	20	0	103	82 - 118				
Chloroethane	19.11	1.0	20	0	95.5	60 - 138				
Chloroform	17.15	1.0	20	0	85.8	79 - 124				
Chloromethane	23.37	1.0	20	0	117	50 - 139				
cis-1,2-Dichloroethene	17.04	1.0	20	0	85.2	78 - 123				
cis-1,3-Dichloropropene	19.23	1.0	20	0	96.2	75 - 124				
Dibromochloromethane	19.79	1.0	20	0	98.9	74 - 126				
Dibromomethane	18.74	1.0	20	0	93.7	79 - 123				
Dichlorodifluoromethane	22.94	1.0	20	0	115	32 - 152				
Ethylbenzene	22.91	1.0	20	0	115	79 - 121				
Hexachlorobutadiene	25.95	1.0	20	0	130	66 - 134				
Isopropylbenzene	24.99	1.0	20	0	125	72 - 131				
m,p-Xylene	44.9	2.0	40	0	112	80 - 121				
Methylene chloride	17.04	2.0	20	0	85.2	74 - 124				
Naphthalene	23.39	1.0	20	0	117	61 - 128				
n-Butylbenzene	25.41	1.0	20	0	127	75 - 128				
n-Propylbenzene	25.83	1.0	20	0	129	76 - 126				S
o-Xylene	21.79	1.0	20	0	109	78 - 122				
sec-Butylbenzene	27.15	1.0	20	0	136	77 - 126				S
Styrene	21.59	1.0	20	0	108	78 - 123				
tert-Butylbenzene	25.88	1.0	20	0	129	78 - 124				S
Tetrachloroethene	24.83	1.0	20	0	124	74 - 129				
Toluene	22	1.0	20	0	110	80 - 121				
trans-1,2-Dichloroethene	18.39	1.0	20	0	92.0	75 - 124				
trans-1,3-Dichloropropene	19.47	1.0	20	0	97.4	73 - 127				
Trichloroethene	22.66	1.0	20	0.5782	110	79 - 123				
Trichlorofluoromethane	22.27	1.0	20	0	111	65 - 141				
Vinyl chloride	21.3	1.0	20	0	106	58 - 137				
Surr: 1,2-Dichloroethane-d4	*43.88*	*1.0*	*50*	*0*	*87.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.98*	*1.0*	*50*	*0*	*98.0*	*85 - 114*				
Surr: Dibromofluoromethane	*41.65*	*1.0*	*50*	*0*	*83.3*	*80 - 119*				
Surr: Toluene-d8	*52.48*	*1.0*	*50*	*0*	*105*	*89 - 112*				

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: R425095 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS22121494-05MSD** Units: **ug/L** Analysis Date: **30-Dec-2022 16:21**
Client ID: Run ID: **VOA6_425095** SeqNo: **7057678** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	19.31	1.0	20	0	96.6	78 - 124	20.11	4.03	20	
1,1,1-Trichloroethane	19.18	1.0	20	0	95.9	74 - 131	20.18	5.06	20	
1,1,2,2-Tetrachloroethane	20.1	1.0	20	0	100	71 - 121	20.9	3.89	20	
1,1,2-Trichloroethane	19.04	1.0	20	0	95.2	80 - 119	20.07	5.31	20	
1,1-Dichloroethane	17.13	1.0	20	0	85.7	77 - 125	17.62	2.78	20	
1,1-Dichloroethene	18.91	1.0	20	0	94.5	71 - 131	20	5.63	20	
1,1-Dichloropropene	22.32	1.0	20	0	112	78 - 125	24.24	8.26	20	
1,2,3-Trichlorobenzene	22.5	1.0	20	0	112	69 - 129	23.59	4.75	20	
1,2,3-Trichloropropane	22.11	1.0	20	0	111	73 - 122	22.68	2.52	20	
1,2,4-Trichlorobenzene	23.22	1.0	20	0	116	69 - 130	24.42	5.04	20	
1,2,4-Trimethylbenzene	22.35	1.0	20	0	112	76 - 124	23.34	4.34	20	
1,2-Dibromo-3-chloropropane	21.14	1.0	20	0	106	62 - 128	21.35	0.989	20	
1,2-Dibromoethane	19.79	1.0	20	0	99.0	77 - 121	20.8	4.95	20	
1,2-Dichlorobenzene	20.47	1.0	20	0	102	80 - 119	21.49	4.86	20	
1,2-Dichloroethane	18.64	1.0	20	0	93.2	73 - 128	19.35	3.75	20	
1,2-Dichloropropane	18.63	1.0	20	0	93.1	78 - 122	19.46	4.37	20	
1,3,5-Trimethylbenzene	23.52	1.0	20	0	118	75 - 124	24.82	5.39	20	
1,3-Dichlorobenzene	21.58	1.0	20	0	108	80 - 119	22.81	5.51	20	
1,3-Dichloropropane	19.53	1.0	20	0	97.6	80 - 119	20.56	5.14	20	
1,4-Dichlorobenzene	20.78	1.0	20	0	104	79 - 118	22.04	5.89	20	
2,2-Dichloropropane	17.98	1.0	20	0	89.9	60 - 139	19.13	6.24	20	
2-Butanone	33.04	2.0	40	0	82.6	56 - 143	35.22	6.38	20	
2-Chlorotoluene	21.53	1.0	20	0	108	79 - 122	23.11	7.07	20	
2-Hexanone	41.27	2.0	40	0	103	57 - 139	41.98	1.7	20	
4-Chlorotoluene	22.12	1.0	20	0	111	78 - 122	23.03	4.03	20	
4-Isopropyltoluene	25.33	1.0	20	0	127	77 - 127	26.97	6.28	20	
4-Methyl-2-pentanone	41.27	2.0	40	0	103	67 - 130	43.24	4.66	20	
Acetone	28.53	2.0	40	2.143	66.0	39 - 160	29.68	3.96	20	
Benzene	19.5	1.0	20	0	97.5	79 - 120	20.68	5.86	20	
Bromobenzene	20.51	1.0	20	0	103	80 - 120	21.15	3.07	20	
Bromochloromethane	15.4	1.0	20	0	77.0	78 - 123	15.93	3.32	20	S
Bromodichloromethane	18.2	1.0	20	0	91.0	79 - 125	18.9	3.82	20	
Bromoform	19.05	1.0	20	0	95.2	66 - 130	19.5	2.36	20	
Bromomethane	18.29	1.0	20	0	91.4	53 - 141	19.05	4.09	20	

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: R425095 (0) **Instrument:** VOA6 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS22121494-05MSD** Units: **ug/L** Analysis Date: **30-Dec-2022 16:21**
Client ID: Run ID: **VOA6_425095** SeqNo: **7057678** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	36.21	2.0	40	0	90.5	64 - 133	38.68	6.61	20	
Carbon tetrachloride	21.38	1.0	20	0	107	72 - 136	22.22	3.89	20	
Chlorobenzene	19.4	1.0	20	0	97.0	82 - 118	20.69	6.44	20	
Chloroethane	17.8	1.0	20	0	89.0	60 - 138	19.11	7.08	20	
Chloroform	16.74	1.0	20	0	83.7	79 - 124	17.15	2.44	20	
Chloromethane	21.98	1.0	20	0	110	50 - 139	23.37	6.1	20	
cis-1,2-Dichloroethene	16.39	1.0	20	0	82.0	78 - 123	17.04	3.87	20	
cis-1,3-Dichloropropene	18.54	1.0	20	0	92.7	75 - 124	19.23	3.64	20	
Dibromochloromethane	19.34	1.0	20	0	96.7	74 - 126	19.79	2.28	20	
Dibromomethane	17.62	1.0	20	0	88.1	79 - 123	18.74	6.15	20	
Dichlorodifluoromethane	21.17	1.0	20	0	106	32 - 152	22.94	8.05	20	
Ethylbenzene	21.56	1.0	20	0	108	79 - 121	22.91	6.06	20	
Hexachlorobutadiene	24.42	1.0	20	0	122	66 - 134	25.95	6.09	20	
Isopropylbenzene	23.25	1.0	20	0	116	72 - 131	24.99	7.23	20	
m,p-Xylene	42.55	2.0	40	0	106	80 - 121	44.9	5.36	20	
Methylene chloride	16.18	2.0	20	0	80.9	74 - 124	17.04	5.14	20	
Naphthalene	23.06	1.0	20	0	115	61 - 128	23.39	1.43	20	
n-Butylbenzene	23.73	1.0	20	0	119	75 - 128	25.41	6.82	20	
n-Propylbenzene	24.41	1.0	20	0	122	76 - 126	25.83	5.66	20	
o-Xylene	20.59	1.0	20	0	103	78 - 122	21.79	5.68	20	
sec-Butylbenzene	25.99	1.0	20	0	130	77 - 126	27.15	4.37	20	S
Styrene	20.38	1.0	20	0	102	78 - 123	21.59	5.73	20	
tert-Butylbenzene	24.59	1.0	20	0	123	78 - 124	25.88	5.11	20	
Tetrachloroethene	22.81	1.0	20	0	114	74 - 129	24.83	8.49	20	
Toluene	20.37	1.0	20	0	102	80 - 121	22	7.7	20	
trans-1,2-Dichloroethene	17.62	1.0	20	0	88.1	75 - 124	18.39	4.28	20	
trans-1,3-Dichloropropene	18.69	1.0	20	0	93.4	73 - 127	19.47	4.14	20	
Trichloroethene	20.75	1.0	20	0.5782	101	79 - 123	22.66	8.78	20	
Trichlorofluoromethane	20.78	1.0	20	0	104	65 - 141	22.27	6.95	20	
Vinyl chloride	19.73	1.0	20	0	98.6	58 - 137	21.3	7.66	20	
Surr: 1,2-Dichloroethane-d4	*44.37*	*1.0*	*50*	*0*	*88.7*	*81 - 118*	*43.88*	*1.13*	*20*	
Surr: 4-Bromofluorobenzene	*48.97*	*1.0*	*50*	*0*	*97.9*	*85 - 114*	*48.98*	*0.0366*	*20*	
Surr: Dibromofluoromethane	*42.49*	*1.0*	*50*	*0*	*85.0*	*80 - 119*	*41.65*	*1.99*	*20*	
Surr: Toluene-d8	*51.96*	*1.0*	*50*	*0*	*104*	*89 - 112*	*52.48*	*0.999*	*20*	

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: HS22121478

QC BATCH REPORT

Batch ID: R425095 (0)	Instrument: VOA6	Method: VOLATILES ORGANICS BY METHOD 8260C

The following samples were analyzed in this batch:

HS22121478-01	HS22121478-02	HS22121478-03	HS22121478-04
HS22121478-05	HS22121478-06	HS22121478-07	HS22121478-08
HS22121478-09			

ALS Houston, US Date: 13-Jan-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP 18 24
WorkOrder: **HS22121478**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

ALS Houston, US Date: 13-Jan-23

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	22-041-0	27-Mar-2023
California	2919 2022-2023	30-Apr-2023
Dept of Defense	L21-682	31-Dec-2023
Florida	E87611-36	30-Jun-2023
Illinois	2000322022-9	09-May-2023
Kansas	E-10352; 2022-2023	31-Jul-2023
Kentucky	123043, 2022-2023	30-Apr-2023
Louisiana	03087, 2022-2023	30-Jun-2023
Maryland	343, 2022-2023	30-Jun-2023
North Carolina	624-2023	31-Dec-2023
North Dakota	R-193 2022-2023	30-Apr-2023
Oklahoma	2022-141	31-Aug-2023
Texas	T104704231-22-29	30-Apr-2023
Utah	TX026932022-13	31-Jul-2023

ALS Houston, US Date: 13-Jan-23

Sample Receipt Checklist

Work Order ID: HS22121478 **Date/Time Received:** 23-Dec-2022 12:10

Client Name: Bhate Environmental **Received by:** Corey Grandits

Completed By:	/S/ Paresh M. Giga	27-Dec-2022 12:27	**Reviewed by:**	/S/ Dane J. Wacasey	10-Jan-2023 11:09
	eSignature	Date/Time		eSignature	Date/Time

Matrices: **GW/Water** Carrier name: **FedEx Priority Overnight**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
VOA/TX1005/TX1006 Solids in hermetically sealed vials?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	1 Page(s)
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	COC IDs:NWO1312.0150
Samplers name present on COC?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Temperature(s)/Thermometer(s):	1.0C/0.5C U/C	IR31
Cooler(s)/Kit(s):	49440	
Date/Time sample(s) sent to storage:	12/23/22 18:00	

Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

01179133

bhate ENVIRONMENTAL ASSOCIATES

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Page: ____ of ____

Project/Phase No: NWO1312.0150

COC Number(1): ____

LIMS Number: ____

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 18/24

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC	PERCHLORATE	TOTAL METALS	1, 4 - DIOXANE	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
Sample Analysis Requested (5)												Quality Assurance Samples (6)			
18CPTMW03SW_122222	22 DEC 2022	0730	-	N		WG	6	X	X	X	X				
18CPTMW24_122222	22 DEC 2022	0815	-	N		WG	6	X	X	X	X				
18CPTMW07_122222	22 DEC 2022	0900	-	N		WG	5	X	X		X				
18WW22_122222	22 DEC 2022	0945		N		WG	6	X	X	X	X				
18CPTMW18_122222	22 DEC 2022	1030		N		WG	6	X	X	X	X				
C03_122222	22 DEC 2022	1115	-	N		WG	5	X	X		X				
18WW17_122222	22 DEC 2022	1125	-	N		WG	5	X	X	X					
125_122222	22 DEC 2022	1140	-	N		WG	5	X	X	X					
TRIP BLANK	22 DEC 2022		-	TB		W	2	X							
			-												
			-												

HS22121478

Bhate Environmental Associates, Inc.

LHAAP 18 24

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	12/22/22	1330	1. [illegible]	12/22/22	1330
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: ____ Shipped

Method of Shipment: ____

Fed Ex ____ Airbill Number: ____

Analytical Lab: ALS 10450 Stanciff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: Dane Wagasey Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

ALS

01179134

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

491440

CUSTODY SEAL

Date: 12/22/22 Time: 1330
Name: Scott Beesiner
Company: Biotera

Seal Broken By:
Date: 12123122

491440 DEC 23 2022

491440

ORIGIN ID:SGRA (903) 930-8193
SCOTT BEESINER
BHATE ENVIRONMENTAL ASSOCIATES
1203-B EAST GRAND AVE. PMB202

MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 19NOV21
ACTWGT: 1.00 LB MAN
CAD: 0221247/CAFE3507
DIMS: 28x14x14 IN

TO SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099

(281) 530-5656
REF: LHAAP - 18/24 - BG 81919 - RG

RMA:

FedEx Express

FedEx
TRK# 0221 5300 5225 1651

FRI - 23 DEC AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

4730674 7/Dec2022 COGA 58165/CBCF/C808

December 30, 2022 Service Request No:E2201222

Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS22121478

Dear Dane,

Enclosed are the results of the sample(s) submitted to our laboratory December 27, 2022
For your reference, these analyses have been assigned our service request number **E2201222.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at James.Guin@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

James Guin

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Environmental

Client:	ALS Environmental - US	**Service Request No.:**	E2201222
Project:	HS22121478	**Date Received:**	12/27/22
Sample Matrix:	Ground Water		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Eight samples were received for analysis at ALS Environmental in Houston on 12/27/22.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy:

EQ2200596: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: ALS Environmental - US **Service Request:**E2201222
Project: HS22121478

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2201222-001	18CPTMW03SW_122222	12/22/2022	0730
E2201222-002	18CPTMW24_122222	12/22/2022	0815
E2201222-003	18CPTMW07_122222	12/22/2022	0900
E2201222-004	18WW22_122222	12/22/2022	0945
E2201222-005	18CPTMW18_122222	12/22/2022	1030
E2201222-006	CO3_122222	12/22/2022	1115
E2201222-007	18WW17_122222	12/22/2022	1125
E2201222-008	125_122222	12/22/2022	1140

Service Request Summary

Folder #: **E2201222**
Client Name: ALS Environmental - US
Project Name: HS22121478
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 12/27/22
Internal Due Date: 1/10/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22121478
EDD: No EDD Specified

8 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2201222-001	18CPTMW03SW_122222	Ground Water	12/22/22 0730	**IV**
E2201222-002	18CPTMW24_122222	Ground Water	12/22/22 0815	**IV**
E2201222-003	18CPTMW07_122222	Ground Water	12/22/22 0900	**IV**
E2201222-004	18WW22_122222	Ground Water	12/22/22 0945	**IV**
E2201222-005	18CPTMW18_122222	Ground Water	12/22/22 1030	**IV**
E2201222-006	CO3_122222	Ground Water	12/22/22 1115	**IV**
E2201222-007	18WW17_122222	Ground Water	12/22/22 1125	**IV**
E2201222-008	125_122222	Ground Water	12/22/22 1140	**IV**

Service Request Summary

Folder #: **E2201222**
Client Name: ALS Environmental - US
Project Name: HS22121478
Project Number:

Report To: Dane Wacasey
ALS Group USA, Corp.
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-575-2190
Cell Number:
Fax Number: 281-530-5887
E-mail: dane.wacasey@alsglobal.com

Project Chemist: James Guin
Originating Lab: HOUSTON
Logged By: CGRANDITS
Date Received: 12/27/22
Internal Due Date: 1/10/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS22121478
EDD: No EDD Specified

8 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-AirArch 1
Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	8	Level IV due 1/17

Data Qualifiers

Lab Standard

+	Possible Tedlar bag artifact.
A	TIC is a suspected aldol-condensation product
B	Analyte found in the associated method blank as well as in the sample.
BC	Reported results are not blank corrected.
BH	The back section of the tube yielded higher results than the front.
BT	Results indicated possible breakthrough; back section >=10% front section.
C	Result identification confirmed.
D	Compound identified in an analysis at a secondary dilution factor
D	Spike was diluted out
DE	Reported results are corrected for desorption efficiency.
E	Estimated value. Concentration above calibration range
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
H1	Sample analysis performed past holding time. See case narrative.
H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
H3	Sample was received and analyzed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time. See case narrative.
I	(Auto) The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
I	Internal standard not within the specified limits. See case narrative.
I	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
J	Estimated Value. Concentration found below MRL.
K	A deflection in the QC ion may indicate interference with the quantitation of this ion. The concentration of this analyte should be considered as an estimate.
K	Analyte was detected above the method reporting limit prior to normalization.
K	The reference ion ratio was outside acceptance criteria, which may indicate a potential bias to this result.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
L1	Laboratory control sample recovery outside the specified limits; results may be biased high.
L2	Laboratory control sample recovery outside the specified limits; results may be biased low.
L3	Laboratory control sample recovery outside the specified limits.
M	Matrix interference; results may be biased high.
M	The duplicate injection precision not met.

Data Qualifiers

Lab Standard

M1	Matrix interference due to coelution with a non-target compound; results may be biased high.
N	Presumptive evidence of a compound for TICs that have been identified based on a mass spectral library search.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
P	Indicates chlorodiphenyl ether interference present at the retention time of the target compound.
P	Pesticide/Aroclor target analyte > 40% difference for detected concentrations between GC columns
Q	Indicates as estimated value because the P and P + 2 theoretical abundance ratio does not meet method criteria.
R	Duplicate Precision not met.
R1	Duplicate precision not within the specified limits; however, the results are below the MRL and considered estimated.
S	Surrogate recovery not within specified limits.
S	The reported value was determined by the Method of Standard Additions (MSA).
T	Analyte is a tentatively identified compound, result is estimated.
U	Compound was analyzed for, but was not detected (ND).
V1	The continuing calibration verification standard was outside (biased high) the specified limits for this compound.
V2	The continuing calibration verification standard was outside (biased low) the specified limits for this compound.
W	Result quantified, but the corresponding peak was detected outside the generated retention time window.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
X	See case narrative.
Y	Recovery outside limits
Y	The chromatogram resembles a petroleum product but does not match the calibration standard.
Z	The chromatogram does not resemble a petroleum product.
i	The MRL/MDL has been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

10450 Stancliff Rd, Houston, TX 77099 | 281-530-5656 | www.alsglobal.com

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Depratment of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2368363	12/31/2023
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Concervation	04016-2022	4/30/2023
Texas Commision on Environmental Quality	T104704231-22-29	4/30/2023
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Ecology	C819-22	11/14/2023

ALS

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Texas **COC ID:** 20623

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Dane J. Wacasey
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	Dane.Wacasey@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS22121478
TSR:	Holly Tignac

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS22121478-01**	**18CPTMW03SW_122222**	**Groundwater**	**22 Dec 2022 07:30**
	Provide Level II and Level IV reports in separate pdf			10 Jan 2023
2.	**HS22121478-02**	**18CPTMW24_122222**	**Groundwater**	**22 Dec 2022 08:15**
	Provide Level II and Level IV reports in separate pdf			10 Jan 2023
3.	**HS22121478-03**	**18CPTMW07_122222**	**Groundwater**	**22 Dec 2022 09:00**
	Provide Level II and Level IV reports in separate pdf			10 Jan 2023
4.	**HS22121478-04**	**18WW22_122222**	**Groundwater**	**22 Dec 2022 09:45**
	Provide Level II and Level IV reports in separate pdf			10 Jan 2023
5.	**HS22121478-05**	**18CPTMW18_122222**	**Groundwater**	**22 Dec 2022 10:30**
	Provide Level II and Level IV reports in separate pdf			10 Jan 2023
6.	**HS22121478-06**	**CO3_122222**	**Groundwater**	**22 Dec 2022 11:15**
	Provide Level II and Level IV reports in separate pdf			10 Jan 2023
7.	**HS22121478-07**	**18WW17_122222**	**Groundwater**	**22 Dec 2022 11:25**
	Provide Level II and Level IV reports in separate pdf			10 Jan 2023
8.	**HS22121478-08**	**125_122222**	**Groundwater**	**22 Dec 2022 11:40**
	Provide Level II and Level IV reports in separate pdf			10 Jan 2023

Subcontract Chain of Custody

SAMPLING STATE: Texas

COC ID: 20623

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: _____

Received By: _____ Date/Time: 12-22-22 1134

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental

Cooler Receipt Form

Project Chemist JG

Client/Project ALS-H

Thermometer ID 1821

Date/Time Received: 12-27-22 Initials: CA Date/Time Logged in: 12-27-22 Initials CA

1. Method of delivery: ○ US Mail ○ Fed Ex ○ UPS ○ DHL ☒ ALS Courier ○ Client

2. Samples received in: ☒ Cooler ○ Box ○ Envelope ○ Other

3. Were custody seals on coolers? ○ Yes ☒ No If yes, how many and where?

Were they intact? ○ Yes ○ No ☒ N/A

Were they signed and dated? ○ Yes ○ No ☒ N/A

4. Packing Material: ○ Inserts ☒ Baggies ○ Bubble Wrap ○ Gel Packs ☒ Wet Ice ○ Sleeves ○ Other

5. Foreign or Regulated Soil? ○ Yes ○ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
-		12-27-22	1144	RG	0.7	☒
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ☒ Yes ○ No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ☒ Yes ○ No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ☒ Yes ○ No

9. Were appropriate bottles/containers and volumes received for the requested tests? ☒ Yes ○ No

10. Did sample labels and tags agree with custody documents? ☒ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label:

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 412284 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 12/28/22 13:30

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2201222-001	18CPTMW03SW_122222	.01	6850/ClO4 DOD			Ground Water	10mL	
2	E2201222-002	18CPTMW24_122222	.01	6850/ClO4 DOD			Ground Water	10mL	
3	E2201222-003	18CPTMW07_122222	.01	6850/ClO4 DOD			Ground Water	10mL	
4	E2201222-004	18WW22_122222	.01	6850/ClO4 DOD			Ground Water	10mL	
5	E2201222-005	18CPTMW18_122222	.01	6850/ClO4 DOD			Ground Water	10mL	
6	E2201222-006	CO3_122222	.01	6850/ClO4 DOD			Ground Water	10mL	
7	E2201222-007	18WW17_122222	.01	6850/ClO4 DOD			Ground Water	10mL	
8	E2201222-008	125_122222	.01	6850/ClO4 DOD			Ground Water	10mL	
9	E2201224-001	109_122122	.01	6850/ClO4 DOD			Water	10mL	
10	E2201224-002	MW21_122122	.01	6850/ClO4 DOD			Water	10mL	
11	E2201224-003	MW3_122122	.01	6850/ClO4 DOD			Water	10mL	
12	E2201224-004	18CPTMW23_122122	.01	6850/ClO4 DOD			Water	10mL	
13	E2201224-005	18WW24_122122	.01	6850/ClO4 DOD			Water	10mL	
14	E2201224-006	18CPTMW15_122122	.01	6850/ClO4 DOD			Water	10mL	
15	E2201224-007	18WW08_122122	.01	6850/ClO4 DOD			Water	10mL	
16	E2201224-008	18CPTMW19_122122	.01	6850/ClO4 DOD			Water	10mL	
17	EQ2200596-01	MB		6850/ClO4 DOD			Liquid	10mL	
18	EQ2200596-02	LCS		6850/ClO4 DOD			Liquid	10mL	
19	EQ2200596-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
20	EQ2200596-04	18WW24_122122 MS	.01	6850/ClO4 DOD			Liquid	10mL	
21	EQ2200596-05	18WW24_122122 DMS	.01	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Intermediate Stock1 Inventory ID 225386 Logbook Ref: Perchlorate (1st Source) Expires On: 01/31/2023

EQ2200596-02	1.00µL	EQ2200596-03	1.00µL	EQ2200596-04	1.00µL	EQ2200596-05	1.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 226778 Logbook Ref: Perchlorate Internal Standard Expires On: 05/31/2023

E2201222-001	100.00µL	E2201222-002	100.00µL	E2201222-003	100.00µL	E2201222-004	100.00µL	E2201222-005	100.00µL	E2201222-006	100.00µL
E2201222-007	100.00µL	E2201222-008	100.00µL	E2201224-001	100.00µL	E2201224-002	100.00µL	E2201224-003	100.00µL	E2201224-004	100.00µL
E2201224-005	100.00µL	E2201224-006	100.00µL	E2201224-007	100.00µL	E2201224-008	100.00µL	EQ2200596-01	100.00µL	EQ2200596-02	100.00µL
EQ2200596-03	100.00µL	EQ2200596-04	100.00µL	EQ2200596-05	100.00µL						

Preparation Information Benchsheet

Prep Run#: 412284 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 12/28/22 13:30

Preparation Materials

Water HPLC Grade	10/24/2022 Water (225656)	6850 Amber Glass screw vial	2mL Screw Top Vial (221308)	6850 0.45um syringe filters	6850 Syringe Filters (224414)
6850 Luer-Lok Syringes	Luer-Lok Syringes (221305)	6850 Pipette Tips 50-1000 uL	6850 Pipette Tips (221307)		

Preparation Steps

Step: Preparation
Started: 12/28/22 13:30
Finished: 12/29/22 11:54
By: XMI
Comments

Comments: _____

Reviewed By: XMI Date: 12/28/22

Chain of Custody

Relinquished By: _____ Date: _____ Extracts Examined

Received By: _____ Date: _____ Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Collected:**	12/22/22 0730
Sample Matrix:	Ground Water	**Date Received:**	12/27/22
Sample Name:	18CPTMW03SW_122222	**Units:**	µg/L
Lab Code:	E2201222-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0808**	J	0.100	0.0500	0.0250	1	12/28/22	12/29/22 12:28	412284	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Collected:**	12/22/22 0815
Sample Matrix:	Ground Water	**Date Received:**	12/27/22
Sample Name:	18CPTMW24_122222	**Units:**	µg/L
Lab Code:	E2201222-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**51.5**		0.500	0.250	0.125	5	12/28/22	12/29/22 17:07	412284	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Collected:**	12/22/22 0900
Sample Matrix:	Ground Water	**Date Received:**	12/27/22
Sample Name:	18CPTMW07_122222	**Units:**	µg/L
Lab Code:	E2201222-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/28/22	12/29/22 12:39	412284	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Collected:**	12/22/22 0945
Sample Matrix:	Ground Water	**Date Received:**	12/27/22
Sample Name:	18WW22_122222	**Units:**	µg/L
Lab Code:	E2201222-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.181**		0.100	0.0500	0.0250	1	12/28/22	12/29/22 12:45	412284	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Collected:**	12/22/22 1030
Sample Matrix:	Ground Water	**Date Received:**	12/27/22
Sample Name:	18CPTMW18_122222	**Units:**	µg/L
Lab Code:	E2201222-005	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/28/22	12/29/22 12:51	412284	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Collected:**	12/22/22 1115
Sample Matrix:	Ground Water	**Date Received:**	12/27/22
Sample Name:	CO3_122222	**Units:**	µg/L
Lab Code:	E2201222-006	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**8.54**		0.100	0.0500	0.0250	1	12/28/22	12/29/22 15:23	412284	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Collected:**	12/22/22 1125
Sample Matrix:	Ground Water	**Date Received:**	12/27/22
Sample Name:	18WW17_122222	**Units:**	µg/L
Lab Code:	E2201222-007	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**86200**		500	250	125	5000	12/28/22	12/29/22 17:13	412284	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Collected:**	12/22/22 1140
Sample Matrix:	Ground Water	**Date Received:**	12/27/22
Sample Name:	125_122222	**Units:**	µg/L
Lab Code:	E2201222-008	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**3210**		20.0	10.0	5.00	200	12/28/22	12/29/22 17:18	412284	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2200596-01	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	ND	U	0.100	0.0500	0.0250	1	12/28/22	12/29/22 12:11	412284	789961	

Accuracy & Precision

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Analyzed:**	12/29/22
Sample Matrix:	Ground Water		

Lab Control Sample Summary

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method:	6850	**Units:**	µg/L
Prep Method:	Method	**Basis:**	NA
		Extraction Lot:	412284

	Lab Control Sample EQ2200596-02			Duplicate Lab Control Sample EQ2200596-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0945	0.100	95	0.0879	0.100	88	84 - 119	7	15

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200596-02	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0945**	J	0.100	0.0500	0.0250	1	12/28/22	12/29/22 15:12	412284	789961	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2201222
Project:	HS22121478	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2200596-03	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	**0.0879**	J	0.100	0.0500	0.0250	1	12/28/22	12/29/22 12:22	412284	789961	

HS22121478-MSVOA-SW8260

ALS WO# HS22121478

01179168

right solutions.
right partner.

Form 1

Organic Analysis Data Sheet

Volatiles by by EPA 8260

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-01	Collected	Received	Matrix	Basis
18CPTMW03SW_122222	12/22/22 07:30	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 18:48	VOA6_425095	X123022
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	12/30/22 18:48	VOA6_425095	X123022
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	12/30/22 18:48	VOA6_425095	X123022
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 18:48	VOA6_425095	X123022
Benzene	ug/L	1.4		0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-01		Collected	Received	Matrix	Basis
18CPTMW03SW_122222		12/22/22 07:30	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	12/30/22 18:48	VOA6_425095	X123022
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
cis-1,2-Dichloroethene	ug/L	31		0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 18:48	VOA6_425095	X123022
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 18:48	VOA6_425095	X123022
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
trans-1,2-Dichloroethene	ug/L	1.0		0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Trichloroethene	ug/L	7.1		0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 18:48	VOA6_425095	X123022

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-02	Collected	Received	Matrix	Basis
18CPTMW24_122222	12/22/22 08:15	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,1,1-Trichloroethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,1,2,2-Tetrachloroethane	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,1,2-Trichloroethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,1-Dichloroethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,1-Dichloroethene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,1-Dichloropropene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,2,3-Trichlorobenzene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,2,3-Trichloropropane	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,2,4-Trichlorobenzene	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,2,4-Trimethylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,2-Dibromo-3-	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,2-Dibromoethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,2-Dichlorobenzene	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,2-Dichloroethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,2-Dichloropropane	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,3,5-Trimethylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,3-Dichlorobenzene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,3-Dichloropropane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
1,4-Dichlorobenzene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
2,2-Dichloropropane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
2-Butanone	ug/L	10	U	2.5	10	10	5	12/30/22 20:54	VOA6_425095	X123028
2-Chlorotoluene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
2-Hexanone	ug/L	10	U	5.0	10	10	5	12/30/22 20:54	VOA6_425095	X123028
4-Chlorotoluene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
4-Isopropyltoluene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
4-Methyl-2-pentanone	ug/L	10	U	3.5	10	10	5	12/30/22 20:54	VOA6_425095	X123028
Acetone	ug/L	10	U	2.0	10	10	5	12/30/22 20:54	VOA6_425095	X123028
Benzene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Bromobenzene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Bromochloromethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Bromodichloromethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Bromoform	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-02	Collected	Received	Matrix	Basis
18CPTMW24_122222	12/22/22 08:15	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Carbon disulfide	ug/L	10	U	3.0	10	10	5	12/30/22 20:54	VOA6_425095	X123028
Carbon tetrachloride	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Chlorobenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Chloroethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Chloroform	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Chloromethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
cis-1,2-Dichloroethene	ug/L	11		1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
cis-1,3-Dichloropropene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Dibromochloromethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Dibromomethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Dichlorodifluoromethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Ethylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Hexachlorobutadiene	ug/L	5.0	U	5.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Isopropylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
m,p-Xylene	ug/L	10	U	2.5	10	10	5	12/30/22 20:54	VOA6_425095	X123028
Methylene chloride	ug/L	8.8	J	2.0	10	10	5	12/30/22 20:54	VOA6_425095	X123028
Naphthalene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
n-Butylbenzene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
n-Propylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
o-Xylene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
sec-Butylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Styrene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
tert-Butylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Tetrachloroethene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Toluene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
trans-1,2-Dichloroethene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
trans-1,3-Dichloropropene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Trichloroethene	ug/L	22		1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Trichlorofluoromethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028
Vinyl chloride	ug/L	35		1.0	5.0	5.0	5	12/30/22 20:54	VOA6_425095	X123028

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-03	Collected	Received	Matrix	Basis
18CPTMW07_122222	12/22/22 09:00	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 19:09	VOA6_425095	X123023
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	12/30/22 19:09	VOA6_425095	X123023
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	12/30/22 19:09	VOA6_425095	X123023
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 19:09	VOA6_425095	X123023
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-03		Collected	Received	Matrix	Basis
18CPTMW07_122222		12/22/22 09:00	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	12/30/22 19:09	VOA6_425095	X123023
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 19:09	VOA6_425095	X123023
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 19:09	VOA6_425095	X123023
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:09	VOA6_425095	X123023

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-04	Collected	Received	Matrix	Basis
18WW22_122222	12/22/22 09:45	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 19:30	VOA6_425095	X123024
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	12/30/22 19:30	VOA6_425095	X123024
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	12/30/22 19:30	VOA6_425095	X123024
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 19:30	VOA6_425095	X123024
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-04		Collected	Received	Matrix	Basis
18WW22_122222		12/22/22 09:45	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	12/30/22 19:30	VOA6_425095	X123024
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 19:30	VOA6_425095	X123024
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 19:30	VOA6_425095	X123024
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:30	VOA6_425095	X123024

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-05	Collected	Received	Matrix	Basis
18CPTMW18_122222	12/22/22 10:30	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 19:51	VOA6_425095	X123025
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	12/30/22 19:51	VOA6_425095	X123025
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	12/30/22 19:51	VOA6_425095	X123025
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 19:51	VOA6_425095	X123025
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-05	Collected	Received	Matrix	Basis
18CPTMW18_122222	12/22/22 10:30	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	12/30/22 19:51	VOA6_425095	X123025
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 19:51	VOA6_425095	X123025
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 19:51	VOA6_425095	X123025
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 19:51	VOA6_425095	X123025

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-06	Collected	Received	Matrix	Basis
CO3_122222	12/22/22 11:15	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 20:12	VOA6_425095	X123026
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	12/30/22 20:12	VOA6_425095	X123026
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	12/30/22 20:12	VOA6_425095	X123026
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 20:12	VOA6_425095	X123026
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-06		Collected	Received	Matrix	Basis
CO3_122222		12/22/22 11:15	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	12/30/22 20:12	VOA6_425095	X123026
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 20:12	VOA6_425095	X123026
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 20:12	VOA6_425095	X123026
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:12	VOA6_425095	X123026

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-07	Collected	Received	Matrix	Basis
18WW17_122222	12/22/22 11:25	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 20:33	VOA6_425095	X123027
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	12/30/22 20:33	VOA6_425095	X123027
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	12/30/22 20:33	VOA6_425095	X123027
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 20:33	VOA6_425095	X123027
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-07	Collected	Received	Matrix	Basis
18WW17_122222	12/22/22 11:25	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	12/30/22 20:33	VOA6_425095	X123027
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
cis-1,2-Dichloroethene	ug/L	16		0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 20:33	VOA6_425095	X123027
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 20:33	VOA6_425095	X123027
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Trichloroethene	ug/L	73		0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027
Vinyl chloride	ug/L	6.8		0.20	1.0	1.0	1	12/30/22 20:33	VOA6_425095	X123027

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-08	Collected	Received	Matrix	Basis
125_122222	12/22/22 11:40	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,1,1-Trichloroethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,1,2,2-Tetrachloroethane	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,1,2-Trichloroethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,1-Dichloroethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,1-Dichloroethene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,1-Dichloropropene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,2,3-Trichlorobenzene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,2,3-Trichloropropane	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,2,4-Trichlorobenzene	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,2,4-Trimethylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,2-Dibromo-3-	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,2-Dibromoethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,2-Dichlorobenzene	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,2-Dichloroethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,2-Dichloropropane	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,3,5-Trimethylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,3-Dichlorobenzene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,3-Dichloropropane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
1,4-Dichlorobenzene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
2,2-Dichloropropane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
2-Butanone	ug/L	10	U	2.5	10	10	5	12/30/22 21:16	VOA6_425095	X123029
2-Chlorotoluene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
2-Hexanone	ug/L	10	U	5.0	10	10	5	12/30/22 21:16	VOA6_425095	X123029
4-Chlorotoluene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
4-Isopropyltoluene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
4-Methyl-2-pentanone	ug/L	10	U	3.5	10	10	5	12/30/22 21:16	VOA6_425095	X123029
Acetone	ug/L	10	U	2.0	10	10	5	12/30/22 21:16	VOA6_425095	X123029
Benzene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Bromobenzene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Bromochloromethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Bromodichloromethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Bromoform	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-08	Collected	Received	Matrix	Basis
125_122222	12/22/22 11:40	12/23/22 12:10	Groundwater	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Carbon disulfide	ug/L	10	U	3.0	10	10	5	12/30/22 21:16	VOA6_425095	X123029
Carbon tetrachloride	ug/L	5.0	U	2.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Chlorobenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Chloroethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Chloroform	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Chloromethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
cis-1,2-Dichloroethene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
cis-1,3-Dichloropropene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Dibromochloromethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Dibromomethane	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Dichlorodifluoromethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Ethylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Hexachlorobutadiene	ug/L	5.0	U	5.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Isopropylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
m,p-Xylene	ug/L	10	U	2.5	10	10	5	12/30/22 21:16	VOA6_425095	X123029
Methylene chloride	ug/L	8.5	J	2.0	10	10	5	12/30/22 21:16	VOA6_425095	X123029
Naphthalene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
n-Butylbenzene	ug/L	5.0	U	2.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
n-Propylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
o-Xylene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
sec-Butylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Styrene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
tert-Butylbenzene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Tetrachloroethene	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Toluene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
trans-1,2-Dichloroethene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
trans-1,3-Dichloropropene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Trichloroethene	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Trichlorofluoromethane	ug/L	5.0	U	1.5	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029
Vinyl chloride	ug/L	5.0	U	1.0	5.0	5.0	5	12/30/22 21:16	VOA6_425095	X123029

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-09	Collected	Received	Matrix	Basis
Trip Blank	12/22/22 00:00	12/23/22 12:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 17:24	VOA6_425095	X123018
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	12/30/22 17:24	VOA6_425095	X123018
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	12/30/22 17:24	VOA6_425095	X123018
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 17:24	VOA6_425095	X123018
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

HS22121478-09	Collected	Received	Matrix	Basis
Trip Blank	12/22/22 00:00	12/23/22 12:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	12/30/22 17:24	VOA6_425095	X123018
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 17:24	VOA6_425095	X123018
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 17:24	VOA6_425095	X123018
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 17:24	VOA6_425095	X123018

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

VBLKW-221230	Collected	Received	Matrix	Basis
VBLKW-221230	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1,1,2-Tetrachloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,1,1-Trichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,1,2,2-Tetrachloroethane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,1,2-Trichloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,1-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,1-Dichloropropene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,2,3-Trichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,2,3-Trichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,2,4-Trichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,2,4-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,2-Dibromo-3-	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,2-Dibromoethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,2-Dichlorobenzene	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,2-Dichloropropane	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,3,5-Trimethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,3-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,3-Dichloropropane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
1,4-Dichlorobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
2,2-Dichloropropane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
2-Butanone	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 13:33	VOA6_425095	X123007
2-Chlorotoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
2-Hexanone	ug/L	2.0	U	1.0	2.0	2.0	1	12/30/22 13:33	VOA6_425095	X123007
4-Chlorotoluene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
4-Isopropyltoluene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
4-Methyl-2-pentanone	ug/L	2.0	U	0.70	2.0	2.0	1	12/30/22 13:33	VOA6_425095	X123007
Acetone	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 13:33	VOA6_425095	X123007
Benzene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Bromobenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Bromochloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Bromodichloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Bromoform	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

VBLKW-221230	Collected	Received	Matrix	Basis
VBLKW-221230	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Bromomethane	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Carbon disulfide	ug/L	2.0	U	0.60	2.0	2.0	1	12/30/22 13:33	VOA6_425095	X123007
Carbon tetrachloride	ug/L	1.0	U	0.50	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Chlorobenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Chloroethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Chloroform	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Chloromethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
cis-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Dibromochloromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Dibromomethane	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Dichlorodifluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Ethylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Hexachlorobutadiene	ug/L	1.0	U	1.0	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Isopropylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
m,p-Xylene	ug/L	2.0	U	0.50	2.0	2.0	1	12/30/22 13:33	VOA6_425095	X123007
Methylene chloride	ug/L	2.0	U	0.40	2.0	2.0	1	12/30/22 13:33	VOA6_425095	X123007
Naphthalene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
n-Butylbenzene	ug/L	1.0	U	0.40	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
n-Propylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
o-Xylene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
sec-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Styrene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
tert-Butylbenzene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Toluene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
trans-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
trans-1,3-Dichloropropene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Trichlorofluoromethane	ug/L	1.0	U	0.30	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	12/30/22 13:33	VOA6_425095	X123007

01179189

right solutions.
right partner.

Form 2

System Monitoring Compound Recovery

Volatiles by by EPA 8260

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

RunID
VOA6_425095

Volatiles by by EPA 8260

CCV	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	45.79	50	91.6	80-120	
4-Bromofluorobenzene	51.46	50	103	80-120	
Dibromofluoromethane	44.9	50	89.8	80-120	
Toluene-d8	50.47	50	101	80-120	

CCB	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	44.43	50	88.9	80-120	
4-Bromofluorobenzene	48.32	50	96.6	80-120	
Dibromofluoromethane	43.42	50	86.8	80-120	
Toluene-d8	53.52	50	107	80-120	

VLCSW-221230	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	49.33	50	98.7	81-118	
4-Bromofluorobenzene	50.41	50	101	85-114	
Dibromofluoromethane	45.4	50	90.8	80-119	
Toluene-d8	49.62	50	99.2	89-112	

VBLKW-221230	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	44.13	50	88.3	81-118	
4-Bromofluorobenzene	49.21	50	98.4	85-114	
Dibromofluoromethane	43.22	50	86.4	80-119	
Toluene-d8	53.49	50	107	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

RunID
VOA6_425095

Volatiles by by EPA 8260

HS22121494-05MS	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	43.88	50	87.8	81-118	
4-Bromofluorobenzene	48.98	50	98.0	85-114	
Dibromofluoromethane	41.65	50	83.3	80-119	
Toluene-d8	52.48	50	105	89-112	

HS22121494-05MSD	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	44.37	50	88.7	81-118	
4-Bromofluorobenzene	48.97	50	97.9	85-114	
Dibromofluoromethane	42.49	50	85.0	80-119	
Toluene-d8	51.96	50	104	89-112	

HS22121478-09	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	44	50	88.6	81-118	
4-Bromofluorobenzene	48	50	95.9	85-114	
Dibromofluoromethane	44	50	87.9	80-119	
Toluene-d8	52	50	105	89-112	

HS22121478-01	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	44	50	88.9	81-118	
4-Bromofluorobenzene	48	50	96.8	85-114	
Dibromofluoromethane	43	50	85.7	80-119	
Toluene-d8	53	50	106	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

RunID
VOA6_425095

Volatiles by by EPA 8260

HS22121478-03	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	45	50	89.8	81-118	
4-Bromofluorobenzene	48	50	96.4	85-114	
Dibromofluoromethane	44	50	88.2	80-119	
Toluene-d8	53	50	106	89-112	

HS22121478-04	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	45	50	89.8	81-118	
4-Bromofluorobenzene	48	50	96.3	85-114	
Dibromofluoromethane	44	50	88.2	80-119	
Toluene-d8	53	50	106	89-112	

HS22121478-05	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	44	50	87.9	81-118	
4-Bromofluorobenzene	49	50	97.1	85-114	
Dibromofluoromethane	43	50	85.9	80-119	
Toluene-d8	53	50	107	89-112	

HS22121478-06	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	44	50	88.0	81-118	
4-Bromofluorobenzene	48	50	96.5	85-114	
Dibromofluoromethane	43	50	86.8	80-119	
Toluene-d8	53	50	106	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

RunID
VOA6_425095

Volatiles by by EPA 8260

HS22121478-07	Analyzed 12/30/22		Conc Units µg/L		DF 1
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	44	50	87.6	81-118	
4-Bromofluorobenzene	49	50	97.1	85-114	
Dibromofluoromethane	42	50	85.0	80-119	
Toluene-d8	53	50	105	89-112	

HS22121478-02	Analyzed 12/30/22		Conc Units µg/L		DF 5
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	220	250	87.4	81-118	
4-Bromofluorobenzene	240	250	96.0	85-114	
Dibromofluoromethane	210	250	85.2	80-119	
Toluene-d8	260	250	106	89-112	

HS22121478-08	Analyzed 12/30/22		Conc Units µg/L		DF 5
Surrogate	Result Conc	Spike Conc	%Recovery	%Recovery Limits	Q
1,2-Dichloroethane-d4	220	250	88.0	81-118	
4-Bromofluorobenzene	240	250	97.4	85-114	
Dibromofluoromethane	220	250	87.0	80-119	
Toluene-d8	270	250	107	89-112	

Q - Surrogate %Recovery Flag * - %Recovery / RPD Outside Limits

01179194

right solutions.
right partner.

Form 3A

Matrix Spike/Spike Duplicate Recovery

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

		HS22121494-05		HS22121494-05MS				HS22121494-05MSD						
Sample Matrix	Aqueous	**Run Date**	12/30/22	12/30/22				12/30/22						
Units	µg/L	**Run Time**	14:15	16:00				16:21						
		Data File	X123009.D	X123014.D				X123015.D						
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
1,1,1,2-Tetrachloroethane	78-124	1	0	20.11	20.00	101		19.31	20.00	97		20	4.00	
1,1,1-Trichloroethane	74-131	1	0	20.18	20.00	101		19.18	20.00	96		20	5.10	
1,1,2,2-Tetrachloroethane	71-121	1	0	20.90	20.00	104		20.1	20.00	100		20	3.90	
1,1,2-Trichloroethane	80-119	1	0	20.07	20.00	100		19.04	20.00	95		20	5.30	
1,1-Dichloroethane	77-125	1	0	17.62	20.00	88		17.13	20.00	86		20	2.80	
1,1-Dichloroethene	71-131	1	0	20.00	20.00	100		18.91	20.00	95		20	5.60	
1,1-Dichloropropene	78-125	1	0	24.24	20.00	121		22.32	20.00	112		20	8.30	
1,2,3-Trichlorobenzene	69-129	1	0	23.59	20.00	118		22.5	20.00	112		20	4.70	
1,2,3-Trichloropropane	73-122	1	0	22.68	20.00	113		22.11	20.00	111		20	2.50	
1,2,4-Trichlorobenzene	69-130	1	0	24.42	20.00	122		23.22	20.00	116		20	5.00	
1,2,4-Trimethylbenzene	76-124	1	0	23.34	20.00	117		22.35	20.00	112		20	4.30	
1,2-Dibromo-3-	62-128	1	0	21.35	20.00	107		21.14	20.00	106		20	1.00	
1,2-Dibromoethane	77-121	1	0	20.80	20.00	104		19.79	20.00	99		20	5.00	
1,2-Dichlorobenzene	80-119	1	0	21.49	20.00	107		20.47	20.00	102		20	4.90	
1,2-Dichloroethane	73-128	1	0	19.35	20.00	97		18.64	20.00	93		20	3.70	
1,2-Dichloropropane	78-122	1	0	19.46	20.00	97		18.63	20.00	93		20	4.40	
1,3,5-Trimethylbenzene	75-124	1	0	24.82	20.00	124	*	23.52	20.00	118		20	5.40	
1,3-Dichlorobenzene	80-119	1	0	22.81	20.00	114		21.58	20.00	108		20	5.50	
1,3-Dichloropropane	80-119	1	0	20.56	20.00	103		19.53	20.00	98		20	5.10	
1,4-Dichlorobenzene	79-118	1	0	22.04	20.00	110		20.78	20.00	104		20	5.90	
2,2-Dichloropropane	60-139	1	0	19.13	20.00	96		17.98	20.00	90		20	6.20	
2-Butanone	56-143	1	0	35.22	40.00	88		33.04	40.00	83		20	6.40	
2-Chlorotoluene	79-122	1	0	23.11	20.00	116		21.53	20.00	108		20	7.10	
2-Hexanone	57-139	1	0	41.98	40.00	105		41.27	40.00	103		20	1.70	
4-Chlorotoluene	78-122	1	0	23.03	20.00	115		22.12	20.00	111		20	4.00	
4-Isopropyltoluene	77-127	1	0	26.97	20.00	135	*	25.33	20.00	127		20	6.30	
4-Methyl-2-pentanone	67-130	1	0	43.24	40.00	108		41.27	40.00	103		20	4.70	
Acetone	39-160	1	2.143	29.68	40.00	69		28.53	40.00	66		20	4.00	
Benzene	79-120	1	0	20.68	20.00	103		19.5	20.00	98		20	5.90	
Bromobenzene	80-120	1	0	21.15	20.00	106		20.51	20.00	103		20	3.10	
Bromochloromethane	78-123	1	0	15.93	20.00	80		15.4	20.00	77	*	20	3.30	
Bromodichloromethane	79-125	1	0	18.90	20.00	95		18.2	20.00	91		20	3.80	
Bromoform	66-130	1	0	19.50	20.00	98		19.05	20.00	95		20	2.40	
Bromomethane	53-141	1	0	19.05	20.00	95		18.29	20.00	91		20	4.10	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

Form 3A - Matrix Spike/Spike Duplicate Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

		HS22121494-05		HS22121494-05MS				HS22121494-05MSD						
Sample Matrix	Aqueous	**Run Date**	12/30/22	12/30/22				12/30/22						
Units	µg/L	**Run Time**	14:15	16:00				16:21						
		Data File	X123009.D	X123014.D				X123015.D						
Analyte	%R Limits	DF	Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
Carbon disulfide	64-133	1	0	38.68	40.00	97		36.21	40.00	91		20	6.60	
Carbon tetrachloride	72-136	1	0	22.22	20.00	111		21.38	20.00	107		20	3.90	
Chlorobenzene	82-118	1	0	20.69	20.00	103		19.4	20.00	97		20	6.40	
Chloroethane	60-138	1	0	19.11	20.00	96		17.8	20.00	89		20	7.10	
Chloroform	79-124	1	0	17.15	20.00	86		16.74	20.00	84		20	2.40	
Chloromethane	50-139	1	0	23.37	20.00	117		21.98	20.00	110		20	6.10	
cis-1,2-Dichloroethene	78-123	1	0	17.04	20.00	85		16.39	20.00	82		20	3.90	
cis-1,3-Dichloropropene	75-124	1	0	19.23	20.00	96		18.54	20.00	93		20	3.60	
Dibromochloromethane	74-126	1	0	19.79	20.00	99		19.34	20.00	97		20	2.30	
Dibromomethane	79-123	1	0	18.74	20.00	94		17.62	20.00	88		20	6.20	
Dichlorodifluoromethane	32-152	1	0	22.94	20.00	115		21.17	20.00	106		20	8.10	
Ethylbenzene	79-121	1	0	22.91	20.00	115		21.56	20.00	108		20	6.10	
Hexachlorobutadiene	66-134	1	0	25.95	20.00	130		24.42	20.00	122		20	6.10	
Isopropylbenzene	72-131	1	0	24.99	20.00	125		23.25	20.00	116		20	7.20	
m,p-Xylene	80-121	1	0	44.90	40.00	112		42.55	40.00	106		20	5.40	
Methylene chloride	74-124	1	0	17.04	20.00	85		16.18	20.00	81		20	5.10	
n-Butylbenzene	75-128	1	0	25.41	20.00	127		23.73	20.00	119		20	6.80	
n-Propylbenzene	76-126	1	0	25.83	20.00	129	*	24.41	20.00	122		20	5.70	
Naphthalene	61-128	1	0	23.39	20.00	117		23.06	20.00	115		20	1.40	
o-Xylene	78-122	1	0	21.79	20.00	109		20.59	20.00	103		20	5.70	
sec-Butylbenzene	77-126	1	0	27.15	20.00	136	*	25.99	20.00	130	*	20	4.40	
Styrene	78-123	1	0	21.59	20.00	108		20.38	20.00	102		20	5.70	
tert-Butylbenzene	78-124	1	0	25.88	20.00	129	*	24.59	20.00	123		20	5.10	
Tetrachloroethene	74-129	1	0	24.83	20.00	124		22.81	20.00	114		20	8.50	
Toluene	80-121	1	0	22.00	20.00	110		20.37	20.00	102		20	7.70	
trans-1,2-Dichloroethene	75-124	1	0	18.39	20.00	92		17.62	20.00	88		20	4.30	
trans-1,3-Dichloropropene	73-127	1	0	19.47	20.00	97		18.69	20.00	93		20	4.10	
Trichloroethene	79-123	1	0.5782	22.66	20.00	110		20.75	20.00	101		20	8.80	
Trichlorofluoromethane	65-141	1	0	22.27	20.00	111		20.78	20.00	104		20	6.90	
Vinyl chloride	58-137	1	0	21.30	20.00	106		19.73	20.00	99		20	7.70	

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits

01179197

right solutions.
right partner.

Form 3B

Laboratory Control Sample Recovery

Volatiles by by EPA 8260

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

VOA6_425095		QC ID	VLCSW-221230			
QC Matrix Aqueous	Units ug/L	Run Date Run Time	12/30/22 12:50			
Analyte	%R Limits	Spike Added	LCS Result	%R	Q	
1,1,1,2-Tetrachloroethane	78-124	20	18.16	91		
1,1,1-Trichloroethane	74-131	20	16.76	84		
1,1,2,2-Tetrachloroethane	71-121	20	19.96	100		
1,1,2-Trichloroethane	80-119	20	18.92	95		
1,1-Dichloroethane	77-125	20	16.81	84		
1,1-Dichloroethene	71-131	20	16.23	81		
1,1-Dichloropropene	78-125	20	18.43	92		
1,2,3-Trichlorobenzene	69-129	20	20.82	104		
1,2,3-Trichloropropane	73-122	20	21.78	109		
1,2,4-Trichlorobenzene	69-130	20	21.55	108		
1,2,4-Trimethylbenzene	76-124	20	18.28	91		
1,2-Dibromo-3-chloropropane	62-128	20	20.98	105		
1,2-Dibromoethane	77-121	20	19.94	100		
1,2-Dichlorobenzene	80-119	20	18.66	93		
1,2-Dichloroethane	73-128	20	19.25	96		
1,2-Dichloroethane-d4	81-118	50	49.33	99		
1,2-Dichloropropane	78-122	20	18.61	93		
1,3,5-Trimethylbenzene	75-124	20	18.12	91		
1,3-Dichlorobenzene	80-119	20	18.97	95		
1,3-Dichloropropane	80-119	20	19.51	98		
1,4-Dichlorobenzene	79-118	20	18.49	92		
2,2-Dichloropropane	60-139	20	17.15	86		
2-Butanone	56-143	40	40.61	102		
2-Chlorotoluene	79-122	20	18.44	92		
2-Hexanone	57-139	40	46.54	116		
4-Bromofluorobenzene	85-114	50	50.41	101		
4-Chlorotoluene	78-122	20	18.73	94		
4-Isopropyltoluene	77-127	20	18.25	91		
4-Methyl-2-pentanone	67-130	40	44.24	111		
Acetone	39-160	40	42.34	106		
Benzene	79-120	20	18.63	93		
Bromobenzene	80-120	20	18.43	92		
Bromochloromethane	78-123	20	16.49	82		
Bromodichloromethane	79-125	20	17.8	89		
Bromoform	66-130	20	19.15	96		
Bromomethane	53-141	20	18.17	91		

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

VOA6_425095		QC ID	VLCSW-221230			
QC Matrix Aqueous	Units	Run Date	12/30/22			
	ug/L	Run Time	12:50			
Analyte	%R Limits	Spike Added	LCS Result	%R	Q	
Carbon disulfide	64-133	40	33.58	84		
Carbon tetrachloride	72-136	20	16.34	82		
Chlorobenzene	82-118	20	17.85	89		
Chloroethane	60-138	20	17.37	87		
Chloroform	79-124	20	16.92	85		
Chloromethane	50-139	20	21.77	109		
cis-1,2-Dichloroethene	78-123	20	16.66	83		
cis-1,3-Dichloropropene	75-124	20	18.88	94		
Dibromochloromethane	74-126	20	19.32	97		
Dibromofluoromethane	80-119	50	45.4	91		
Dibromomethane	79-123	20	18.21	91		
Dichlorodifluoromethane	32-152	20	19.08	95		
Ethylbenzene	79-121	20	18.14	91		
Hexachlorobutadiene	66-134	20	18.9	94		
Isopropylbenzene	72-131	20	17.86	89		
m,p-Xylene	80-121	40	35.52	89		
Methylene chloride	74-124	20	18.27	91		
Naphthalene	61-128	20	22.32	112		
n-Butylbenzene	75-128	20	17.49	88		
n-Propylbenzene	76-126	20	17.99	90		
o-Xylene	78-122	20	17.9	90		
sec-Butylbenzene	77-126	20	17.75	89		
Styrene	78-123	20	19.11	96		
tert-Butylbenzene	78-124	20	17.5	88		
Tetrachloroethene	74-129	20	17.66	88		
Toluene	80-121	20	18.05	90		
Toluene-d8	89-112	50	49.62	99		
trans-1,2-Dichloroethene	75-124	20	16.8	84		
trans-1,3-Dichloropropene	73-127	20	19.7	98		
Trichloroethene	79-123	20	17.78	89		
Trichlorofluoromethane	65-141	20	17.11	86		
Vinyl chloride	58-137	20	17.71	88		

- %Recovery / RPD Flag * - %Recovery / RPD Outside Limits

01179200

right solutions.
right partner.

Form 4

Method Blank Summary

Volatiles by by EPA 8260

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 4 - Method Blank Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

Client Sample ID	Type	Lab Sample ID	File ID	Date Analyzed	Run ID
METHOD BLANK	MBLK	VBLKW-221230	X123007.D	12/30/22 13:33	VOA6_425095
VLCSW-221230	LCS	VLCSW-221230	X123005.D	12/30/22 12:50	VOA6_425095
BatchQC	MS	HS22121494-05MS	X123014.D	12/30/22 16:00	VOA6_425095
BatchQC	MSD	HS22121494-05MSD	X123015.D	12/30/22 16:21	VOA6_425095
Trip Blank	SAMP	HS22121478-09	X123018.D	12/30/22 17:24	VOA6_425095
18CPTMW03SW_122222	SAMP	HS22121478-01	X123022.D	12/30/22 18:48	VOA6_425095
18CPTMW07_122222	SAMP	HS22121478-03	X123023.D	12/30/22 19:09	VOA6_425095
18WW22_122222	SAMP	HS22121478-04	X123024.D	12/30/22 19:30	VOA6_425095
18CPTMW18_122222	SAMP	HS22121478-05	X123025.D	12/30/22 19:51	VOA6_425095
CO3_122222	SAMP	HS22121478-06	X123026.D	12/30/22 20:12	VOA6_425095
18WW17_122222	SAMP	HS22121478-07	X123027.D	12/30/22 20:33	VOA6_425095
18CPTMW24_122222	SAMP	HS22121478-02	X123028.D	12/30/22 20:54	VOA6_425095
125_122222	SAMP	HS22121478-08	X123029.D	12/30/22 21:16	VOA6_425095

01179202

right solutions.
right partner.

Form 5

Instrument Performance Check

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

RunID
VOA6_424237

Tune File X121601.D 12/16/22 11:17

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	18.3 (18.4)
75	30.0 - 60.0% of mass 95	46.1 (46.1)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	7.2 (7.16)
173	Less than 2.0% of mass 174	0.8 (0.897) 1
174	50.0 - 120.0% of mass 95	89 (89)
175	4.0 - 9.0% of mass 174	7 (7.82) 1
176	93.0 - 101.0% of mass 174	87.4 (98.2) 1
177	5.0 - 9.0% of mass 176	5.8 (6.59) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	ICAL1	12/16/22 11:38	X121602	VSTD000.25
2	ICAL2	12/16/22 12:20	X121603	VSTD000.5
3	ICAL3	12/16/22 12:41	X121604	VSTD001
4	ICAL4	12/16/22 13:02	X121605	VSTD002
5	ICAL5	12/16/22 13:23	X121606	VSTD005
6	ICAL6	12/16/22 13:43	X121607	VSTD020
7	ICAL7	12/16/22 14:04	X121608	VSTD050
8	ICAL8	12/16/22 14:25	X121609	VSTD100
9	ICAL9	12/16/22 14:46	X121610	VSTD150
10	ICAL	12/16/22 15:07	X121611	VSTD200
11	ICV	12/16/22 15:49	X121613	CCV

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

RunID
VOA6_425095

Tune File X123001.D 12/30/22 11:27

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	20.7 (20.7)
75	30.0 - 60.0% of mass 95	48.7 (48.7)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	7.6 (7.59)
173	Less than 2.0% of mass 174	0.8 (0.877) 1
174	50.0 - 120.0% of mass 95	88.1 (88.1)
175	4.0 - 9.0% of mass 174	7.2 (8.22) 1
176	93.0 - 101.0% of mass 174	86.9 (98.7) 1
177	5.0 - 9.0% of mass 176	6.1 (7.01) 2

Value is % of mass 1) 174 2) 176 RA - Relative Abundance

This check applies to the following analyses

	Type	Date Analyzed	Lab File ID	Sample ID
1	CCV	12/30/22 11:47	X123002	CCV
2	CCB	12/30/22 12:30	X123004	CCB
3	LCS	12/30/22 12:50	X123005	VLCSW-221230
4	MBLK	12/30/22 13:33	X123007	VBLKW-221230
5	MS	12/30/22 16:00	X123014	ZZZZZZMS
6	MSD	12/30/22 16:21	X123015	ZZZZZZMSD
7	SAMP	12/30/22 17:24	X123018	Trip Blank
8	SAMP	12/30/22 18:48	X123022	18CPTMW03SW_122222
9	SAMP	12/30/22 19:09	X123023	18CPTMW07_122222
10	SAMP	12/30/22 19:30	X123024	18WW22_122222
11	SAMP	12/30/22 19:51	X123025	18CPTMW18_122222
12	SAMP	12/30/22 20:12	X123026	CO3_122222
13	SAMP	12/30/22 20:33	X123027	18WW17_122222
14	SAMP	12/30/22 20:54	X123028	18CPTMW24_122222
15	SAMP	12/30/22 21:16	X123029	125_122222
16	CCV_EN	12/30/22 21:36	X123030	CCV-END

01179205

right solutions.
right partner.

Form 6

Initial Calibration Data

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138
ICAL End Date 16-DEC-2022 1507

Calibration Files

Level 1 ..voa6.i\X221216.b\X121602.D
Level 2 ..voa6.i\X221216.b\X121603.D
Level 3 ..voa6.i\X221216.b\X121604.D
Level 4 ..voa6.i\X221216.b\X121605.D
Level 5 ..voa6.i\X221216.b\X121606.D
Level 6 ..voa6.i\X221216.b\X121607.D
Level 7 ..voa6.i\X221216.b\X121608.D
Level 8 ..voa6.i\X221216.b\X121609.D
Level 9 ..voa6.i\X221216.b\X121610.D
Level 10 ..voa6.i\X221216.b\X121611.D

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Dichlorodifluoromethane	NE 160392	1990 309019	2911 476130	6239 635808	15008	63382	LINR	0.00786	0.35247		0.99971	
Chloromethane	NE 192710	2466 388163	3670 621048	8057 865151	19623	72324	LINR	0.04423	0.47332		0.99747	
Propionitrile	NE 0.04851	0.06018 0.04917	0.05265 0.05178	0.04739 0.05178	0.05114	0.04656	AVRG		0.05102		7.91502	
Vinyl Chloride	NE 0.44103	0.52268 0.42953	0.40472 0.44923	0.39786 0.45909	0.42164	0.40520	AVRG		0.43678		8.81916	
Bromomethane	NE 139689	1893 284165	3293 470318	5996 NE	15112	52034	LINR	0.03529	0.34244		0.99519	
Chloroethane	NE 0.29447	0.35820 0.28714	0.27936 0.30494	0.31044 0.30410	0.31436	0.28309	AVRG		0.30401		7.80750	
Trichlorofluoromethane	NE 0.60756	0.71207 0.59817	0.54474 0.64605	0.57316 0.65074	0.59068	0.57785	AVRG		0.61122		8.28859	
Acrolein	NE 27445	440 60756	761 96139	1317 125874	2699	12279	LINR	0.05644	0.03519		0.99833	
Acetone	NE 124798	2669 243517	4787 373504	7041 514105	17632	50987	LINR	-0.00069	0.14025		0.99910	
1,1-Dichloroethene	NE 0.36912	0.44142 0.36226	0.35953 0.38517	0.37590 0.39076	0.37389	0.35725	AVRG		0.37948		6.80558	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Isobutyl Alcohol	NE 0.05462	0.05610 0.05559	0.05239 0.05946	0.05650 0.05952	0.05728	0.05469	AVRG		0.05624		4.10209	
Acetonitrile	NE 0.04430	0.04776 0.04552	0.04645 0.04791	0.04253 0.04736	0.04357	0.04417	AVRG		0.04551		4.32823	
Allyl Chloride	NE 0.81324	0.99118 0.83169	0.95202 0.86799	0.81682 0.86396	0.84304	0.82034	AVRG		0.86670		7.30464	
Iodomethane	NE 455792	2397 958603	3865 1554547	8702 2193685	26708	143457	QUAD	0.06641	2.01333	-0.08031	0.99956	
Acrylonitrile	NE 0.12970	0.12113 0.12956	0.12536 0.13857	0.12482 0.13997	0.12256	0.12666	AVRG		0.12870		5.15060	
Methylene Chloride	NE 0.49311	0.63666 0.46611	0.59459 0.48892	0.50364 0.47907	0.50885	0.51372	AVRG		0.52052		10.92514	
Methyl tert-butyl ether	NE 1.16844	1.26574 1.18584	1.39027 1.23813	1.27259 1.24075	1.24993	1.16729	AVRG		1.24211		5.52745	
Carbon Disulfide	NE 0.97542	1.07494 0.97088	1.00609 1.02392	0.95722 1.06178	0.94769	0.91773	AVRG		0.99285		5.32584	
trans-1,2-Dichloroethene	NE 0.41851	0.48064 0.41454	0.42427 0.43221	0.38965 0.43554	0.42173	0.40526	AVRG		0.42470		5.92187	
Vinyl Acetate	NE 1.07506	1.09845 1.07519	0.99054 1.16529	1.06368 1.16741	1.12321	1.05445	AVRG		1.09037		5.13969	
1,1-Dichloroethane	NE 0.72125	0.83949 0.70504	0.80145 0.74074	0.69997 0.74459	0.75023	0.70550	AVRG		0.74536		6.34771	
Chloroprene	NE 0.16145	0.19503 0.16116	0.18721 0.16823	0.17124 0.17481	0.15874	0.15219	AVRG		0.17001		8.17551	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
2-Butanone	NE 130179	1292 264221	2498 407629	5418 555896	11771	47830	LINR	0.06050	0.15346		0.99924	
Methacrylonitrile	NE 0.32328	0.44770 0.32565	0.36475 0.34081	0.34993 0.34351	0.34840	0.34235	AVRG		0.35404		10.52608	
2,2-Dichloropropane	NE 0.62063	0.70167 0.61027	0.65466 0.64008	0.60521 0.65162	0.61866	0.59289	AVRG		0.63286		5.25207	
cis-1,2-Dichloroethene	NE 0.49985	0.61803 0.48778	0.49622 0.51710	0.52999 0.51455	0.50446	0.48374	AVRG		0.51686		7.86616	
Chloroform	NE 0.81023	0.87547 0.78725	0.86252 0.84612	0.85352 0.84457	0.84666	0.79238	AVRG		0.83541		3.73708	
Bromochloromethane	NE 0.26364	0.32093 0.26287	0.29857 0.28290	0.28124 0.28282	0.29319	0.26077	AVRG		0.28299		6.91423	
1,1,1-Trichloroethane	NE 0.65703	0.76105 0.64156	0.65666 0.67604	0.60049 0.69720	0.64387	0.63152	AVRG		0.66283		6.90392	
1,1-Dichloropropene	NE 0.37084	0.35889 0.35979	0.34245 0.36734	0.33027 0.37324	0.34789	0.34406	AVRG		0.35497		4.12237	
1,2-Dichloroethane	NE 0.39909	0.45501 0.40154	0.40587 0.41082	0.39492 0.41030	0.41104	0.39842	AVRG		0.40967		4.39762	
Carbon Tetrachloride	NE 0.36348	0.40179 0.35355	0.45347 0.36349	0.40515 0.37429	0.35265	0.34370	AVRG		0.37906		9.25223	
Benzene	NE 1.17241	1.34410 1.15323	1.19304 1.17461	1.18322 1.18197	1.19608	1.14722	AVRG		1.19399		4.90945	
Trichloroethene	NE 0.33750	0.37562 0.33140	0.31723 0.33891	0.33885 0.34649	0.33109	0.33079	AVRG		0.33865		4.73809	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 / Level 7 50.0	Level 2 0.500 / Level 8 100.0	Level 3 1.00 / Level 9 150.0	Level 4 2.00 / Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Bromodichloromethane	NE 0.42913	0.53078 0.42602	0.45893 0.44706	0.43689 0.45009	0.42833	0.42563	AVRG		0.44810		7.41292	
Methyl Methacrylate	NE 0.32238	0.38746 0.32465	0.34921 0.34726	0.33881 0.35704	0.33548	0.30606	AVRG		0.34093		6.87301	
2-Chloroethylvinyl ether	NE 0.13057	0.13531 0.12541	0.11670 0.12799	0.12141 0.12973	0.12912	0.13108	AVRG		0.12748		4.37734	
1,2-Dichloropropane	NE 0.31044	0.35613 0.30521	0.33560 0.31542	0.29692 0.31856	0.31629	0.30391	AVRG		0.31761		5.71516	
2-Nitropropane	NE 0.73644	1.05598 0.73807	0.76159 0.78445	0.80915 0.80253	0.77468	0.75211	AVRG		0.80167		12.32619	
Dibromomethane	NE 0.20672	0.25085 0.20317	0.21183 0.21324	0.22317 0.21357	0.21081	0.20954	AVRG		0.21588		6.58330	
4-Methyl-2-Pentanone	NE 0.25814	0.28987 0.25156	0.26418 0.26114	0.28502 0.26166	0.26684	0.26684	AVRG		0.26725		4.64865	
cis-1,3-Dichloropropene	NE 0.52860	0.53732 0.53368	0.47650 0.55605	0.50179 0.56353	0.51804	0.52075	AVRG		0.52625		5.04185	
Ethyl Methacrylate	NE 0.20804	0.28138 0.22619	0.24077 0.24786	0.23910 0.26163	0.20135	0.21276	AVRG		0.23545		11.14205	
Toluene	NE 1.36202	1.60765 1.32088	1.37997 1.35198	1.37463 1.35870	1.36957	1.31273	AVRG		1.38201		6.34459	
trans-1,3-Dichloropropene	NE 0.44682	0.44236 0.44877	0.39493 0.47075	0.40065 0.48573	0.41433	0.42619	AVRG		0.43673		7.01005	
2-Hexanone	NE 0.17839	0.19991 0.17192	0.17409 0.18312	0.17972 0.18566	0.18386	0.17978	AVRG		0.18183		4.45920	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
1,1,2-Trichloroethane	NE 0.26479	0.32419 0.25654	0.26954 0.26825	0.29087 0.26649	0.28491	0.26973	AVRG		0.27726		7.37510	
1,3-Dichloropropane	NE 0.53007	0.62065 0.51166	0.55587 0.53587	0.54217 0.53590	0.54663	0.53274	AVRG		0.54573		5.60982	
Dibromochloromethane	NE 0.39906	0.43810 0.39075	0.38701 0.40792	0.39402 0.40793	0.38762	0.38903	AVRG		0.40016		4.08851	
Tetrachloroethene	NE 0.29836	0.33024 0.28012	0.25660 0.28506	0.28292 0.28889	0.26322	0.28810	AVRG		0.28594		7.36821	
1,2-Dibromoethane	NE 0.35151	0.36263 0.33998	0.33509 0.35512	0.32714 0.35096	0.35422	0.34322	AVRG		0.34665		3.22017	
1-Chlorohexane	NE 0.24556	0.26597 0.23682	0.22998 0.25047	0.21386 0.26558	0.22191	0.24457	AVRG		0.24163		7.44215	
Chlorobenzene	NE 0.95622	1.20054 0.92158	0.96715 0.96470	0.94773 0.97511	0.95913	0.93014	AVRG		0.98026		8.61127	
1,1,1,2-Tetrachloroethane	NE 0.36060	0.42477 0.35457	0.34549 0.36940	0.36191 0.37188	0.34596	0.34861	AVRG		0.36480		6.70616	
Ethylbenzene	NE 0.47797	0.47482 0.45902	0.43893 0.46986	0.45503 0.47447	0.45171	0.45394	AVRG		0.46175		2.86128	
m,p-Xylenes	NE 0.60205	0.69860 0.58346	0.55710 0.60071	0.56286 0.61493	0.56012	0.57743	AVRG		0.59525		7.35638	
o-Xylene	NE 0.59049	0.68372 0.57562	0.51381 0.60058	0.56977 0.61516	0.56849	0.56994	AVRG		0.58751		7.79066	
Styrene	NE 1.03116	1.02806 1.01266	0.79991 1.07651	0.88633 1.09594	0.95404	0.97800	AVRG		0.98473		9.52837	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Bromoform	NE	0.31195	0.25221	0.26817	0.25683	0.26696						
	0.27805	0.27584	0.29222	0.29278			AVRG		0.27722		6.87336	
Isopropylbenzene	NE	1.35706	1.16805	1.25967	1.30607	1.32939						
	1.41077	1.36357	1.42773	1.45784			AVRG		1.34224		6.69875	
1,1,2,2-Tetrachloroethane	NE	0.91828	0.84470	0.83187	0.83648	0.79018						
	0.74007	0.71754	0.75363	0.73962			AVRG		0.79693		8.24435	
1,2,3-Trichloropropane	NE	0.58047	0.56626	0.53238	0.58048	0.54015						
	0.53505	0.52761	0.60583	0.53897			AVRG		0.55636		4.97536	
trans-1,4-Dichloro-2-butene	NE	0.12274	0.09213	0.10381	0.10162	0.10094						
	0.10800	0.10845	0.11623	0.11751			AVRG		0.10794		8.88299	
n-Propylbenzene	NE	3.20938	2.13608	2.47845	2.73904	2.83806						
	2.90611	2.78733	2.90643	2.92515			AVRG		2.76956		11.03336	
Bromobenzene	NE	0.90477	0.79060	0.83045	0.81066	0.82521						
	0.80056	0.78064	0.82147	0.81857			AVRG		0.82033		4.35370	
1,3,5-Trimethylbenzene	NE	2.06484	1.68256	1.97796	2.03460	2.07048						
	2.12398	2.07652	2.18148	2.20122			AVRG		2.04596		7.47801	
2-Chlorotoluene	NE	1.93144	1.77508	1.90257	1.85141	1.80074						
	1.79455	1.71779	1.79669	1.78644			AVRG		1.81741		3.65582	
4-Chlorotoluene	NE	2.19766	1.72811	1.99610	2.10678	2.06499						
	2.09570	2.05624	2.19099	2.20989			AVRG		2.07183		7.13984	
tert-Butylbenzene	NE	1.83685	1.33195	1.56610	1.66625	1.69957						
	1.74647	1.66742	1.77236	1.78580			AVRG		1.67475		9.03914	
1,2,4-Trimethylbenzene	NE	2.44261	1.84882	2.01055	2.12502	2.14371						
	2.18278	2.12445	2.25368	2.24326			AVRG		2.15277		7.66012	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
sec-Butylbenzene	NE 2.38144	2.28219 2.30322	1.76441 2.43114	1.95855 2.46321	2.17705	2.29365	AVRG		2.22832		10.32115	
p-Isopropyltoluene	NE 2.16946	2.11113 2.07989	1.42476 2.19272	1.76888 2.20460	1.95504	2.06459	AVRG		1.99679		12.72950	
1,3-Dichlorobenzene	NE 1.39279	1.34465 1.34586	1.21323 1.42324	1.32549 1.42237	1.40186	1.38449	AVRG		1.36155		4.82043	
1,4-Dichlorobenzene	NE 1.45712	1.63128 1.44362	1.40441 1.52301	1.45614 1.52190	1.47766	1.45673	AVRG		1.48576		4.44368	
Benzyl Chloride	NE 472387	3642 1009234	4632 1650494	12783 2286488	35254	163895	LINR	0.05387	0.82700		0.99832	
n-Butylbenzene	NE 696355	5149 1425779	8459 2293126	19853 3216534	54831	248190	LINR	0.03551	1.99525		0.99890	
1,2-Dichlorobenzene	NE 1.39065	1.58241 1.36532	1.22790 1.44207	1.34058 1.43128	1.42827	1.41177	AVRG		1.40225		6.73504	
1,2-Dibromo-3-Chloropropane	NE 48660	441 94321	778 149691	1619 205063	4911	18635	LINR	0.00184	0.12764		0.99948	
1,2,4-Trichlorobenzene	NE 0.95146	0.91627 0.90293	0.65608 0.94400	0.83350 0.95022	0.89445	0.91558	AVRG		0.88494		10.53488	
Hexachlorobutadiene	NE 155390	1477 299042	1928 466452	3970 654615	13454	55912	QUAD	-0.00107	2.58308	-0.07816	0.99966	
Naphthalene	NE 2.14094	2.01970 2.06230	1.60683 2.15450	1.85985 2.12714	2.04153	2.10842	AVRG		2.01347		8.78393	
1,2,3-Trichlorobenzene	NE 0.85880	1.02696 0.83163	0.68341 0.85478	0.79977 0.84995	0.84958	0.87304	AVRG		0.84755		10.42886	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Ethyl Acetate	NE 0.37280	0.44748 0.34980	0.34909 0.38488	0.40657 0.39192	0.39985	0.40902	AVRG		0.39016		7.92750	
Methyl Acrylate	NE 0.33014	0.38247 0.33914	0.34243 0.35741	0.29817 0.35867	0.33173	0.31494	AVRG		0.33946		7.36740	
n-Butanol	NE 54418	622 124057	1171 210842	2004 297334	4891	15012	QUAD	0.80435	158	-58.97368	0.99813	*
Ethyl Acrylate	NE 420886	NE 862071	NE 1358300	9825 1836030	26414	172044	LINR	0.05859	1.02468		0.99901	*
Cyclohexanone	NE 0.01934	0.07093 0.01945	0.03374 0.01993	0.02556 0.01966	0.01884	0.01912	AVRG		0.02740		62.21369	*
1,4-Dioxane	0.00463 0.00443	0.00501 0.00442	0.00455 0.00480	0.00386 0.00497	0.00466	0.00438	AVRG		0.00457		7.29408	
n-Hexane	NE 0.39852	0.41368 0.36338	0.26016 0.39788	0.32309 0.40267	0.32437	0.35631	AVRG		0.36001		13.97418	
Freon TF	NE 0.37622	0.40111 0.36030	0.37263 0.38547	0.33005 0.39624	0.32940	0.35185	AVRG		0.36703		7.16337	
Methyl Acetate	NE 0.21071	0.27499 0.21615	0.23617 0.22455	0.22728 0.22667	0.19900	0.20937	AVRG		0.22499		9.73149	
Methylcyclohexane	NE 0.60749	0.69525 0.62521	0.49917 0.65111	0.58500 0.65095	0.56389	0.63030	AVRG		0.61204		9.36456	
Isopropyl alcohol	NE 0.01716	0.02240 0.01767	0.01652 0.01919	0.01536 0.01934	0.01833	0.01677	AVRG		0.01808		11.41496	
Amyl alcohol	NE 0.00433	NE 0.00498	NE 0.00582	NE 0.00605	0.00196	0.00315	AVRG		0.00438		36.19033	*

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Allyl alcohol	NE 0.01993	0.03347 0.01817	0.01301 0.01989	0.01615 0.02013	0.01622	0.01782	AVRG		0.01942		29.60962	*
4-Methyl-2-pentanol	NE 0.04191	0.13977 0.04448	0.06768 0.05120	0.05740 0.05444	0.04467	0.04137	AVRG		0.06032		51.38639	*
Tert-butyl alcohol	NE 0.03307	0.04145 0.03257	0.03359 0.03586	0.03291 0.03628	0.03387	0.03199	AVRG		0.03462		8.48705	
Diethyl ether	NE 0.30968	0.40393 0.31674	0.33122 0.33062	0.34807 0.33029	0.33548	0.30080	AVRG		0.33409		8.92652	
1,3-Butadiene	NE 0.33288	0.38854 0.32994	0.38107 0.34951	0.31405 0.35836	0.31693	0.31715	AVRG		0.34316		8.15203	
Cyclohexane	NE 237699	2803 432198	4003 682728	7375 943314	19859	84355	LINR	0.02522	0.51703		0.99847	
Tetrahydrofuran	NE 58181	900 109518	1361 162133	2867 219995	7598	28221	LINR	-0.06333	0.06025		0.99942	
alpha-Methylstyrene	NE 1.13399	1.35155 1.10993	0.85865 1.16502	1.02359 1.17184	1.06165	1.09458	AVRG		1.10787		11.89593	
Diisopropyl ether	NE 1.21127	1.41201 1.25239	1.35074 1.32366	1.30436 1.33324	1.25459	1.23114	AVRG		1.29704		5.00179	
Dichlorofluoromethane	NE 0.05734	NE 0.05842	NE 0.06234	NE 0.06214	0.06484	0.06089	AVRG		0.06099		4.51209	*
Propylene oxide	NE 0.03071	NE 0.03174	0.05613 0.03407	0.03062 0.03228	0.03687	0.02961	AVRG		0.03525		24.79698	*
3-Methyl-1-butanol	NE 0.00489	NE 0.00483	NE 0.00601	NE 0.00612	0.00211	0.00438	AVRG		0.00472		30.80128	*

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Butyl acrylate	NE 0.63698	0.73114 0.67566	0.58907 0.72950	0.57945 0.74630	0.58578	0.60437	AVRG		0.65314		10.52624	
1,2,3-Trimethylbenzene	NE 2.21302	2.76749 2.29498	2.61167 2.36627	2.52848 2.30685	2.25428	2.32678	AVRG		2.40776		7.74526	
Ethanol	NE 29714	458 56794	787 87890	1703 117751	3072	12594	LINR	-0.06594	0.00325		0.99956	
1-Propanol	NE 0.00727	0.00862 0.00784	0.00964 0.00802	0.00852 0.00816	0.00825	0.00721	AVRG		0.00817		9.04495	
tert-Butyl formate	NE 0.24908	NE 0.25521	NE 0.29218	0.25634 0.29283	0.33766	0.24706	AVRG		0.27577		12.14219	*
3,3-Dimethyl-1-butanol	NE 0.02235	NE 0.02388	NE 0.02628	NE 0.02679	0.01912	0.02169	AVRG		0.02335		12.46791	*
tert-Amyl methyl ether	NE 1.32775	2.53777 1.35994	1.82297 1.44272	1.67155 1.43312	1.55575	1.35887	AVRG		1.61227		23.79383	*
tert-Butyl ethyl ether	NE 1.27589	1.81984 1.30743	1.44501 1.37993	1.35004 1.39745	1.35223	1.28319	AVRG		1.40122		11.86386	
tert-Amyl alcohol	NE 0.02491	0.03129 0.02552	0.02457 0.02922	0.02972 0.02928	0.03377	0.02471	AVRG		0.02811		11.82574	
Epichlorohydrin	NE 58515	926 126478	1242 183469	2483 257397	5941	23842	LINR	0.04999	0.02268		0.99921	
Isoprene	NE 0.13550	0.20890 0.13652	0.10782 0.14294	0.12769 0.14612	0.14811	0.13210	AVRG		0.14286		19.27805	*
n-Amyl acetate	NE 0.52035	NE 0.54240	NE 0.59479	NE 0.61078	NE	0.53118	AVRG		0.55990		7.20069	*

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

ICAL Start Date 16-DEC-2022 1138 **ICAL End Date** 16-DEC-2022 1507

Compound	Level 1 0.250 Level 7 50.0	Level 2 0.500 Level 8 100.0	Level 3 1.00 Level 9 150.0	Level 4 2.00 Level 10 200.0	Level 5 5.00	Level 6 20.00	Curve	b	m1	m2	%RSD or R^2	Q
Isopropyl acetate	NE 0.72227	1.34716 0.73275	0.78367 0.76494	0.79130 0.76466	0.77391	0.74796	AVRG		0.82540		23.86221	*
n-Butyl acetate	NE 0.19856	0.47947 0.20815	0.28533 0.21762	0.15799 0.22438	0.22627	0.22783	AVRG		0.24729		37.68114	*
Acetaldehyde	NE 67188	NE 107798	3384 161053	5661 205547	6161	32393	LINR	-0.46573	0.02837		0.99553	
Methyl Amyl Ketone	NE 0.62641	1.24254 0.65992	0.68451 0.69377	0.63815 0.71197	0.57607	0.60726	AVRG		0.71562		28.26825	*
Dimethyl Disulfide	NE 0.67210	0.79855 0.68414	0.63899 0.70500	0.61608 0.69777	0.61366	0.66406	AVRG		0.67671		8.32695	
1,2-Dichloroethylene (total)	NE 0.45918	0.54933 0.45116	0.46024 0.47466	0.45982 0.47504	0.46309	0.44450	AVRG		0.47078		6.59168	
Xylenes (total)	NE 0.56357	0.65089 0.56191	0.51351 0.58028	0.53491 0.60523	0.53725	0.54549	AVRG		0.56589		7.37687	
Dibromofluoromethane	NE 211939	2321 438954	4769 652724	9050 856027	24255	90108	LINR	-0.00333	0.47851		0.99972	
1,2-Dichloroethane-d4	NE 222293	2849 455890	5559 686218	9783 919752	24938	92990	LINR	0.00543	0.50950		0.99982	
Toluene-d8	NE 1.18347	1.47608 1.20166	1.31472 1.16429	1.20749 1.10711	1.24798	1.21701	AVRG		1.23554		8.62469	
4-Bromofluorobenzene	NE 292753	3870 615584	7790 936681	13631 1277239	32501	116878	LINR	0.00128	0.46242		0.99992	

NE - Not Evaluated, AVRG - Averaged, LINR - Linear Regression, WLIN - Weighted Linear, QUAD - Quadratic, * - Curve Fit Outside Limits

01179217

right solutions.
right partner.

Form 6I

Initial Calibration Verification (ICV)

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 1404
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
1,1,1,2-Tetrachlor	50.00	48.61	97.24	80-120	
1,1,1-Trichloroeth	50.00	50.16	100.33	80-120	
1,1,2,2-Tetrachlor	50.00	46.75	93.50	80-120	
Freon TF	50.00	52.90	105.81	80-120	
Methyl Acetate	50.00	48.17	96.35	80-120	
Cyclohexane	50.00	51.73	103.47	80-120	
Methylcyclohexane	50.00	50.89	101.79	80-120	
Carbon Disulfide	100.00	98.50	98.50	80-120	
2-Hexanone	100.00	96.73	96.74	80-120	
1,1,2-Trichloroeth	50.00	47.91	95.83	80-120	
1,1-Dichloroethane	50.00	48.19	96.39	80-120	
1,1-Dichloroethene	50.00	49.34	98.68	80-120	
1,1-Dichloropropen	50.00	52.11	104.24	80-120	
1,2,3-Trichloroben	50.00	52.79	105.58	80-120	
1,2,3-Trichloropro	50.00	48.07	96.16	80-120	
1,2,4-Trichloroben	50.00	54.66	109.32	80-120	
1,2,4-Trimethylben	50.00	51.32	102.65	80-120	
1,2-Dibromo-3-Chlo	50.00	50.53	101.07	80-120	
1,2-Dibromoethane	50.00	50.24	100.49	80-120	
Acrolein	100.00	95.06	95.07	80-120	
Acrylonitrile	100.00	101.42	101.43	80-120	
1,2-Dichlorobenzen	50.00	49.52	99.05	80-120	
1,2-Dichloroethane	50.00	49.52	99.05	80-120	
1,2-Dichloropropan	50.00	49.60	99.22	80-120	
1,3,5-Trimethylben	50.00	52.30	104.61	80-120	
1,3-Dichlorobenzen	50.00	51.21	102.43	80-120	
1,3-Dichloropropan	50.00	47.82	95.66	80-120	
1,4-Dichlorobenzen	50.00	49.71	99.44	80-120	
1-Chlorohexane	50.00	51.98	103.97	80-120	
2,2-Dichloropropan	50.00	50.98	101.98	80-120	
2-Butanone	100.00	97.74	97.74	80-120	
2-Chlorotoluene	50.00	49.94	99.89	80-120	
4-Chlorotoluene	50.00	51.25	102.51	80-120	
p-Isopropyltoluene	50.00	54.75	109.51	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_424237

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 1404
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
4-Methyl-2-Pentano	100.00	94.03	94.03	80-120	
Acetone	100.00	101.89	101.90	80-120	
Benzene	50.00	50.29	100.58	80-120	
Bromobenzene	50.00	49.62	99.25	80-120	
Bromochloromethane	50.00	47.25	94.51	80-120	
Bromodichlorometha	50.00	49.22	98.45	80-120	
Bromoform	50.00	49.33	98.66	80-120	
Bromomethane	50.00	50.78	101.58	80-120	
Carbon Tetrachlori	50.00	49.06	98.12	80-120	
Chlorobenzene	50.00	48.34	96.68	80-120	
Chloroethane	50.00	48.32	96.64	80-120	
Chloroform	50.00	48.45	96.91	80-120	
Chloromethane	50.00	50.17	100.35	80-120	
cis-1,2-Dichloroet	50.00	48.25	96.51	80-120	
cis-1,3-Dichloropr	50.00	52.11	104.22	80-120	
Dibromochlorometha	50.00	49.50	99.02	80-120	
Dibromomethane	50.00	49.19	98.38	80-120	
Dichlorodifluorome	50.00	52.19	104.38	80-120	
Ethylbenzene	50.00	51.31	102.63	80-120	
Hexachlorobutadien	50.00	57.73	115.48	80-120	
Isopropylbenzene	50.00	52.09	104.19	80-120	
m,p-Xylenes	100.00	100.17	100.17	80-120	
Methyl tert-butyl	50.00	48.12	96.25	80-120	
Methylene Chloride	50.00	47.56	95.14	80-120	
n-Butylbenzene	50.00	50.66	101.33	80-120	
n-Propylbenzene	50.00	52.67	105.35	80-120	
Naphthalene	50.00	52.67	105.35	80-120	
o-Xylene	50.00	49.75	99.51	80-120	
sec-Butylbenzene	50.00	54.16	108.34	80-120	
Styrene	50.00	52.09	104.20	80-120	
tert-Butylbenzene	50.00	52.83	105.67	80-120	
Tetrachloroethene	50.00	50.99	101.99	80-120	
Toluene	50.00	49.20	98.42	80-120	
trans-1,2-Dichloro	50.00	49.99	99.98	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder
HS22121478

RunID
VOA6_424237

Volatiles Organics by Method 8260C

Instrument ID voa6.i ICAL Date 16-DEC-2022
Lab File ID X121613.D ICAL Time 1404
?VAL? ?VAL? Conc Units ug/L
Analysis Type VOA Level LOW

Compound	Amount Added	Amount Recovered	% Recovered	Limits	Q
trans-1,3-Dichloro	50.00	52.50	105.01	80-120	
Trichloroethene	50.00	51.28	102.56	80-120	
Trichlorofluoromet	50.00	51.00	102.02	80-120	
Vinyl Chloride	50.00	50.57	101.15	80-120	
1,2-Dichloroethyle	100.00	98.24	98.25	80-120	
Xylenes (total)	150.00	149.92	99.95	80-120	
1,4-Dioxane	1000.00	1021.76	102.18	80-120	
Dibromofluorometha	50.00	50.91	101.84	71-125	
1,2-Dichloroethane	50.00	50.36	100.73	70-125	
Toluene-d8	50.00	49.50	99.00	75-125	
4-Bromofluorobenze	50.00	49.98	99.97	72-125	

01179221

right solutions.
right partner.

Form 7

Continuing Calibration Verification (CCV)

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory

10450 Stancliff Road, Suite 210, Houston, TX 77099

Phone (281) 530-5656 Fax (281) 530-5887

www.alsglobal.com

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_425095

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 30-DEC-2022 1147
Lab File ID X123002.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,4-Dioxane	0.00457	0.00454	0.00454	0.001	0.63614	20.0	Averaged	
1,3-Butadiene	0.34316	0.31595	0.31595	0.100	7.93028	20.0	Averaged	
Methacrylonitrile	0.35404	0.34257	0.34257	0.100	3.24120	20.0	Averaged	
Isobutyl Alcohol	0.05624	0.05856	0.05856	0.005	-4.13319	20.0	Averaged	
Acetonitrile	0.04551	0.04065	0.04065	0.005	10.67311	20.0	Averaged	
Dichlorodifluoromethane	50.0	52.83674	0.36970	0.100	-5.67349	20.0	Linear	
Chloromethane	50.0	54.14977	0.49166	0.100	-8.29954	20.0	Linear	
Vinyl Chloride	0.43678	0.41648	0.41648	0.100	4.64622	20.0	Averaged	
Bromomethane	50.0	41.11208	0.26949	0.100	17.77584	20.0	Linear	
Chloroethane	0.30401	0.26455	0.26455	0.100	12.98107	20.0	Averaged	
Trichlorofluoromethane	0.61122	0.56998	0.56998	0.100	6.74861	20.0	Averaged	
Acrolein	100	82.21582	0.02794	0.010	17.78418	20.0	Linear	
Acetone	100	101	0.14113	0.100	-0.59721	20.0	Linear	
1,1-Dichloroethene	0.37948	0.33067	0.33067	0.100	12.86215	20.0	Averaged	
Iodomethane	100	81.77050	0.40258	0.100	18.22950	20.0	Quadratic	
Acrylonitrile	0.12870	0.13086	0.13086	0.050	-1.67884	20.0	Averaged	
Methylene Chloride	0.52052	0.44452	0.44452	0.100	14.59980	20.0	Averaged	
Methyl tert-butyl ether	1.24211	1.12191	1.12191	0.100	9.67708	20.0	Averaged	
Carbon Disulfide	0.99285	0.88523	0.88523	0.100	10.83934	20.0	Averaged	
trans-1,2-Dichloroethene	0.42470	0.36647	0.36647	0.100	13.71136	20.0	Averaged	
Vinyl Acetate	1.09037	1.12915	1.12915	0.010	-3.55729	20.0	Averaged	
1,1-Dichloroethane	0.74536	0.63760	0.63760	0.200	14.45812	20.0	Averaged	
2-Butanone	100	100	0.14849	0.100	0.21262	20.0	Linear	
2,2-Dichloropropane	0.63286	0.56801	0.56801	0.100	10.24649	20.0	Averaged	
cis-1,2-Dichloroethene	0.51686	0.43152	0.43152	0.100	16.51181	20.0	Averaged	
Chloroform	0.83541	0.70806	0.70806	0.200	15.24379	20.0	Averaged	
Bromochloromethane	0.28299	0.22974	0.22974	0.100	18.81696	20.0	Averaged	
Dibromofluoromethane	50.0	44.89549	0.43125	0.100	10.20901	20.0	Linear	
1,1,1-Trichloroethane	0.66283	0.59309	0.59309	0.100	10.52083	20.0	Averaged	
1,1-Dichloropropene	0.35497	0.36858	0.36858	0.100	-3.83404	20.0	Averaged	
1,2-Dichloroethane	0.40967	0.38890	0.38890	0.100	5.06912	20.0	Averaged	
Carbon Tetrachloride	0.37906	0.34787	0.34787	0.100	8.22916	20.0	Averaged	
1,2-Dichloroethane-d4	50.0	45.78759	0.46381	0.100	8.42481	20.0	Linear	
Benzene	1.19399	1.17154	1.17154	0.500	1.88028	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder
HS22121478

RunID
VOA6_425095

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 30-DEC-2022 1147
Lab File ID X123002.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Trichloroethene	0.33865	0.32598	0.32598	0.200	3.74112	20.0	Averaged	
Bromodichloromethane	0.44810	0.40739	0.40739	0.200	9.08395	20.0	Averaged	
2-Chloroethylvinyl ether	0.12748	0.16753	0.16753	0.001	-31.41598	20.0	Averaged	<-
1,2-Dichloropropane	0.31761	0.30644	0.30644	0.100	3.51644	20.0	Averaged	
Dibromomethane	0.21588	0.19466	0.19466	0.100	9.82977	20.0	Averaged	
4-Methyl-2-Pentanone	0.26725	0.29368	0.29368	0.100	-9.88919	20.0	Averaged	
cis-1,3-Dichloropropene	0.52625	0.52613	0.52613	0.200	0.02385	20.0	Averaged	
Toluene-d8	1.23554	1.24708	1.24708	0.100	-0.93437	20.0	Averaged	
Toluene	1.38201	1.34014	1.34014	0.400	3.03029	20.0	Averaged	
trans-1,3-Dichloropropene	0.43673	0.45163	0.45163	0.100	-3.41226	20.0	Averaged	
2-Hexanone	0.18183	0.21058	0.21058	0.100	-15.81215	20.0	Averaged	
1,1,2-Trichloroethane	0.27726	0.26884	0.26884	0.100	3.03683	20.0	Averaged	
1,3-Dichloropropane	0.54573	0.54098	0.54098	0.100	0.87092	20.0	Averaged	
Dibromochloromethane	0.40016	0.38373	0.38373	0.100	4.10596	20.0	Averaged	
Tetrachloroethene	0.28594	0.27856	0.27856	0.200	2.58183	20.0	Averaged	
1,2-Dibromoethane	0.34665	0.34933	0.34933	0.100	-0.77384	20.0	Averaged	
1-Chlorohexane	0.24163	0.23943	0.23943	0.100	0.91374	20.0	Averaged	
Chlorobenzene	0.98026	0.92976	0.92976	0.500	5.15135	20.0	Averaged	
1,1,1,2-Tetrachloroethane	0.36480	0.34996	0.34996	0.100	4.06692	20.0	Averaged	
Ethylbenzene	0.46175	0.45388	0.45388	0.100	1.70464	20.0	Averaged	
m,p-Xylenes	0.59525	0.57447	0.57447	0.100	3.49073	20.0	Averaged	
o-Xylene	0.58751	0.56282	0.56282	0.300	4.20250	20.0	Averaged	
Styrene	0.98473	1.00373	1.00373	0.300	-1.92952	20.0	Averaged	
Bromoform	0.27722	0.27974	0.27974	0.100	-0.90962	20.0	Averaged	
Isopropylbenzene	1.34224	1.33709	1.33709	0.100	0.38358	20.0	Averaged	
1,1,2,2-Tetrachloroethane	0.79693	0.79129	0.79129	0.300	0.70732	20.0	Averaged	
4-Bromofluorobenzene	50.0	51.46394	0.47536	0.100	-2.92788	20.0	Linear	
1,2,3-Trichloropropane	0.55636	0.62656	0.62656	0.100	-12.61896	20.0	Averaged	
n-Propylbenzene	2.76956	2.75735	2.75735	0.100	0.44073	20.0	Averaged	
Bromobenzene	0.82033	0.77294	0.77294	0.100	5.77634	20.0	Averaged	
1,3,5-Trimethylbenzene	2.04596	2.01232	2.01232	0.100	1.64402	20.0	Averaged	
2-Chlorotoluene	1.81741	1.74882	1.74882	0.100	3.77431	20.0	Averaged	
4-Chlorotoluene	2.07183	2.04663	2.04663	0.100	1.21640	20.0	Averaged	
tert-Butylbenzene	1.67475	1.63524	1.63524	0.100	2.35919	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_425095

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 30-DEC-2022 1147
Lab File ID X123002.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,2,4-Trimethylbenzene	2.15277	2.09211	2.09211	0.100	2.81759	20.0	Averaged	
sec-Butylbenzene	2.22832	2.26861	2.26861	0.100	-1.80818	20.0	Averaged	
p-Isopropyltoluene	1.99679	2.05922	2.05922	0.100	-3.12658	20.0	Averaged	
1,3-Dichlorobenzene	1.36155	1.32141	1.32141	0.600	2.94817	20.0	Averaged	
1,4-Dichlorobenzene	1.48576	1.40980	1.40980	0.400	5.11275	20.0	Averaged	
n-Butylbenzene	50.0	48.92760	1.88160	0.500	2.14479	20.0	Linear	
1,2-Dichlorobenzene	1.40225	1.35454	1.35454	0.400	3.40233	20.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	53.94554	0.13748	0.040	-7.89107	20.0	Linear	
1,2,4-Trichlorobenzene	0.88494	0.94750	0.94750	0.100	-7.06939	20.0	Averaged	
Hexachlorobutadiene	50.0	54.78510	0.43020	0.100	-9.57020	20.0	Quadratic	
Naphthalene	2.01347	2.20983	2.20983	0.200	-9.75266	20.0	Averaged	
1,2,3-Trichlorobenzene	0.84755	0.89671	0.89671	0.010	-5.80001	20.0	Averaged	
1,2-Dichloroethylene (total	0.47078	0.39899	0.39899	0.200	15.24863	20.0	Averaged	
Xylenes (total)	0.56589	0.54576	0.54576	0.100	3.55808	20.0	Averaged	
Cyclohexane	50.0	46.57047	0.46853	0.100	6.85905	20.0	Linear	
Freon TF	0.36703	0.32987	0.32987	0.100	10.12596	20.0	Averaged	
Methylcyclohexane	0.61204	0.67488	0.67488	0.100	-10.26674	20.0	Averaged	
Methyl Acetate	0.22499	0.22422	0.22422	0.100	0.34295	20.0	Averaged	
Tert-butyl alcohol	0.03462	0.03707	0.03707	0.005	-7.06625	20.0	Averaged	
Isopropyl alcohol	0.01808	0.02005	0.02005	0.005	-10.88341	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder HS22121478

RunID VOA6_425095

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 30-DEC-2022 2136
Lab File ID X123030.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,4-Dioxane	0.00457	0.00426	0.00426	0.001	6.76177	50.0	Averaged	
1,3-Butadiene	0.34316	0.33966	0.33966	0.100	1.01843	50.0	Averaged	
Methacrylonitrile	0.35404	0.33098	0.33098	0.100	6.51483	50.0	Averaged	
Isobutyl Alcohol	0.05624	0.05528	0.05528	0.005	1.69909	50.0	Averaged	
Acetonitrile	0.04551	0.03980	0.03980	0.005	12.53479	50.0	Averaged	
Dichlorodifluoromethane	50.0	55.28061	0.38693	0.100	-10.56122	50.0	Linear	
Chloromethane	50.0	50.81872	0.46013	0.100	-1.63743	50.0	Linear	
Vinyl Chloride	0.43678	0.43475	0.43475	0.100	0.46404	50.0	Averaged	
Bromomethane	50.0	42.56580	0.27945	0.100	14.86839	50.0	Linear	
Chloroethane	0.30401	0.27763	0.27763	0.100	8.67781	50.0	Averaged	
Trichlorofluoromethane	0.61122	0.61109	0.61109	0.100	0.02233	50.0	Averaged	
Acrolein	100	83.76471	0.02848	0.010	16.23529	50.0	Linear	
Acetone	100	85.40019	0.11982	0.100	14.59981	50.0	Linear	
1,1-Dichloroethene	0.37948	0.34908	0.34908	0.100	8.00967	50.0	Averaged	
Iodomethane	100	84.94206	0.41944	0.100	15.05794	50.0	Quadratic	
Acrylonitrile	0.12870	0.12702	0.12702	0.050	1.30458	50.0	Averaged	
Methylene Chloride	0.52052	0.45748	0.45748	0.100	12.11107	50.0	Averaged	
Methyl tert-butyl ether	1.24211	1.10344	1.10344	0.100	11.16356	50.0	Averaged	
Carbon Disulfide	0.99285	0.93038	0.93038	0.100	6.29194	50.0	Averaged	
trans-1,2-Dichloroethene	0.42470	0.38174	0.38174	0.100	10.11559	50.0	Averaged	
Vinyl Acetate	1.09037	0.86715	0.86715	0.010	20.47197	50.0	Averaged	
1,1-Dichloroethane	0.74536	0.66366	0.66366	0.200	10.96146	50.0	Averaged	
2-Butanone	100	92.61010	0.13747	0.100	7.38990	50.0	Linear	
2,2-Dichloropropane	0.63286	0.53362	0.53362	0.100	15.68022	50.0	Averaged	
cis-1,2-Dichloroethene	0.51686	0.44677	0.44677	0.100	13.56002	50.0	Averaged	
Chloroform	0.83541	0.74030	0.74030	0.200	11.38461	50.0	Averaged	
Bromochloromethane	0.28299	0.23639	0.23639	0.100	16.46769	50.0	Averaged	
Dibromofluoromethane	50.0	45.69165	0.43887	0.100	8.61670	50.0	Linear	
1,1,1-Trichloroethane	0.66283	0.63087	0.63087	0.100	4.82135	50.0	Averaged	
1,1-Dichloropropene	0.35497	0.37198	0.37198	0.100	-4.79007	50.0	Averaged	
1,2-Dichloroethane	0.40967	0.39349	0.39349	0.100	3.94986	50.0	Averaged	
Carbon Tetrachloride	0.37906	0.36435	0.36435	0.100	3.88133	50.0	Averaged	
1,2-Dichloroethane-d4	50.0	46.88466	0.47499	0.100	6.23068	50.0	Linear	
Benzene	1.19399	1.15811	1.15811	0.500	3.00483	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder
HS22121478

RunID
VOA6_425095

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 30-DEC-2022 2136
Lab File ID X123030.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Trichloroethene	0.33865	0.34538	0.34538	0.200	-1.98667	50.0	Averaged	
Bromodichloromethane	0.44810	0.41102	0.41102	0.200	8.27294	50.0	Averaged	
2-Chloroethylvinyl ether	0.12748	0.16074	0.16074	0.001	-26.09162	50.0	Averaged	
1,2-Dichloropropane	0.31761	0.30603	0.30603	0.100	3.64455	50.0	Averaged	
Dibromomethane	0.21588	0.19506	0.19506	0.100	9.64256	50.0	Averaged	
4-Methyl-2-Pentanone	0.26725	0.27867	0.27867	0.100	-4.27458	50.0	Averaged	
cis-1,3-Dichloropropene	0.52625	0.50178	0.50178	0.200	4.65004	50.0	Averaged	
Toluene-d8	1.23554	1.23385	1.23385	0.100	0.13677	50.0	Averaged	
Toluene	1.38201	1.34727	1.34727	0.400	2.51373	50.0	Averaged	
trans-1,3-Dichloropropene	0.43673	0.42829	0.42829	0.100	1.93267	50.0	Averaged	
2-Hexanone	0.18183	0.18834	0.18834	0.100	-3.58209	50.0	Averaged	
1,1,2-Trichloroethane	0.27726	0.26530	0.26530	0.100	4.31101	50.0	Averaged	
1,3-Dichloropropane	0.54573	0.52820	0.52820	0.100	3.21200	50.0	Averaged	
Dibromochloromethane	0.40016	0.38363	0.38363	0.100	4.13019	50.0	Averaged	
Tetrachloroethene	0.28594	0.29428	0.29428	0.200	-2.91488	50.0	Averaged	
1,2-Dibromoethane	0.34665	0.34255	0.34255	0.100	1.18368	50.0	Averaged	
1-Chlorohexane	0.24163	0.24711	0.24711	0.100	-2.26807	50.0	Averaged	
Chlorobenzene	0.98026	0.92308	0.92308	0.500	5.83270	50.0	Averaged	
1,1,1,2-Tetrachloroethane	0.36480	0.34676	0.34676	0.100	4.94535	50.0	Averaged	
Ethylbenzene	0.46175	0.46812	0.46812	0.100	-1.38014	50.0	Averaged	
m,p-Xylenes	0.59525	0.59100	0.59100	0.100	0.71424	50.0	Averaged	
o-Xylene	0.58751	0.57796	0.57796	0.300	1.62466	50.0	Averaged	
Styrene	0.98473	1.00667	1.00667	0.300	-2.22739	50.0	Averaged	
Bromoform	0.27722	0.27092	0.27092	0.100	2.27250	50.0	Averaged	
Isopropylbenzene	1.34224	1.42382	1.42382	0.100	-6.07779	50.0	Averaged	
1,1,2,2-Tetrachloroethane	0.79693	0.72358	0.72358	0.300	9.20380	50.0	Averaged	
4-Bromofluorobenzene	50.0	50.23321	0.46398	0.100	-0.46642	50.0	Linear	
1,2,3-Trichloropropane	0.55636	0.56610	0.56610	0.100	-1.75190	50.0	Averaged	
n-Propylbenzene	2.76956	2.91180	2.91180	0.100	-5.13583	50.0	Averaged	
Bromobenzene	0.82033	0.77594	0.77594	0.100	5.41064	50.0	Averaged	
1,3,5-Trimethylbenzene	2.04596	2.12249	2.12249	0.100	-3.74073	50.0	Averaged	
2-Chlorotoluene	1.81741	1.78138	1.78138	0.100	1.98241	50.0	Averaged	
4-Chlorotoluene	2.07183	2.08287	2.08287	0.100	-0.53312	50.0	Averaged	
tert-Butylbenzene	1.67475	1.77220	1.77220	0.100	-5.81862	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP 18 24

Workorder
HS22121478

RunID
VOA6_425095

Volatiles Organics by Method 8260C

Instrument ID voa6.i Injection Date 30-DEC-2022 2136
Lab File ID X123030.D ICAL Date(s) 16-DEC-2022 16-DEC-2022
Analysis Type WATER ICAL Times 1138 1507
Lab Sample ID CCV-END Quant Type ISTD

Compound	$\overline{RRF}$ / Amount	RF50	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
1,2,4-Trimethylbenzene	2.15277	2.17869	2.17869	0.100	-1.20444	50.0	Averaged	
sec-Butylbenzene	2.22832	2.48630	2.48630	0.100	-11.57753	50.0	Averaged	
p-Isopropyltoluene	1.99679	2.19864	2.19864	0.100	-10.10886	50.0	Averaged	
1,3-Dichlorobenzene	1.36155	1.35109	1.35109	0.600	0.76863	50.0	Averaged	
1,4-Dichlorobenzene	1.48576	1.42973	1.42973	0.400	3.77162	50.0	Averaged	
n-Butylbenzene	50.0	50.74156	1.95399	0.500	-1.48313	50.0	Linear	
1,2-Dichlorobenzene	1.40225	1.35987	1.35987	0.400	3.02269	50.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	49.99640	0.12740	0.040	0.00720	50.0	Linear	
1,2,4-Trichlorobenzene	0.88494	0.97619	0.97619	0.100	-10.31120	50.0	Averaged	
Hexachlorobutadiene	50.0	53.14902	0.41720	0.100	-6.29803	50.0	Quadratic	
Naphthalene	2.01347	2.21130	2.21130	0.200	-9.82532	50.0	Averaged	
1,2,3-Trichlorobenzene	0.84755	0.90548	0.90548	0.010	-6.83479	50.0	Averaged	
1,2-Dichloroethylene (total	0.47078	0.41426	0.41426	0.200	12.00637	50.0	Averaged	
Xylenes (total)	0.56589	0.55627	0.55627	0.100	1.70134	50.0	Averaged	
Cyclohexane	50.0	52.16721	0.52640	0.100	-4.33443	50.0	Linear	
Freon TF	0.36703	0.36360	0.36360	0.100	0.93370	50.0	Averaged	
Methylcyclohexane	0.61204	0.61408	0.61408	0.100	-0.33298	50.0	Averaged	
Methyl Acetate	0.22499	0.21572	0.21572	0.100	4.11843	50.0	Averaged	
Tert-butyl alcohol	0.03462	0.03484	0.03484	0.005	-0.64024	50.0	Averaged	
Isopropyl alcohol	0.01808	0.01901	0.01901	0.005	-5.14812	50.0	Averaged	

01179228

right solutions.
right partner.

Form 8

Internal Standard Area and RT Summary

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory
10450 Stancliff Road, Suite 210, Houston, TX 77099
Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 8 - Internal Standard Area and RT Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

RunID
VOA6_425095

		IS1				IS2				IS3				IS4			
Sample ID	File ID	Area		RT		Area		RT		Area		RT		Area		RT	
12-HOUR STD (CCV)	X123002	444605	#	4.18	#	638022	#	4.97	#	610260	#	7.67	#	353938	#	9.66	#
CCB	X123004	500652		4.18		688644		4.97		604517		7.67		309752		9.66	
VLCSW-221230	X123005	453928		4.18		653980		4.96		623052		7.67		352191		9.66	
VBLKW-221230	X123007	493462		4.18		676536		4.97		594832		7.67		318874		9.66	
ZZZZZZMS	X123014	494469		4.17		668033		4.97		601076		7.67		329114		9.66	
ZZZZZZMSD	X123015	504045		4.17		695311		4.96		628155		7.67		341296		9.66	
HS22121478-09	X123018	506642		4.18		695659		4.96		617342		7.67		326954		9.66	
HS22121478-01	X123022	499926		4.18		682668		4.97		601889		7.67		328485		9.66	
HS22121478-03	X123023	498051		4.18		681126		4.97		598929		7.67		315419		9.66	
HS22121478-04	X123024	487132		4.18		667884		4.97		590724		7.67		309751		9.66	
HS22121478-05	X123025	496855		4.18		666896		4.97		586252		7.67		300830		9.66	
HS22121478-06	X123026	503613		4.18		688160		4.97		602101		7.67		316291		9.66	
HS22121478-07	X123027	498559		4.18		671766		4.97		593191		7.67		318395		9.66	
HS22121478-02	X123028	504033		4.18		681564		4.97		599780		7.67		315196		9.66	
HS22121478-08	X123029	493929		4.18		676076		4.97		584589		7.67		302870		9.66	
CCV-END	X123030	430743		4.18		630943		4.96		598262		7.67		344270		9.66	

IS1 - Pentafluorobenzene IS2 - 1,4-Difluorobenzene IS3 - Chlorobenzene-d5 IS4 - 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of 12H STD IS Area
AREA LOWER LIMIT = - 50% of 12H STD IS Area
RT - Retention Time IS - Internal Standard

RT UPPER LIMIT = + 0.50 of 12H STD IS RT
RT LOWER LIMIT = - 0.50 of 12H STD IS RT
CCV - Continuing Calibration Verification

- Area or RT Limit Flag
* - Value Outside Area or RT limits
H - Hour STD - Standard

01179230

right solutions.
right partner.

Analysis Run Log

Volatiles by by EPA 8260

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory

10450 Stancliff Road, Suite 210, Houston, TX 77099

Phone (281) 530-5656 Fax (281) 530-5887

www.alsglobal.com

MSVOA06 -Logbook

Batch: 52417 **Analyst:** Presenta Cabascango

Date: 12-16-2022 **Reviewer:**

Method: 8260 **Laboratory:** Houston

Comments:

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	12-16-2022 11:17 am	1.00	50 mL	50 mL	X121601.D	Liquid	Y	NA
2	VSTD000.25	ICAL1	12-16-2022 11:38 am	1.00	50 mL	50 mL	X121602.D	Liquid	Y	NA
3	VSTD000.5	ICAL2	12-16-2022 12:20 pm	1.00	50 mL	50 mL	X121603.D	Liquid	Y	NA
4	VSTD001	ICAL3	12-16-2022 12:41 pm	1.00	50 mL	50 mL	X121604.D	Liquid	Y	NA
5	VSTD002	ICAL4	12-16-2022 01:02 pm	1.00	50 mL	50 mL	X121605.D	Liquid	Y	NA
6	VSTD005	ICAL5	12-16-2022 01:23 pm	1.00	50 mL	50 mL	X121606.D	Liquid	Y	NA
7	VSTD020	ICAL6	12-16-2022 01:43 pm	1.00	50 mL	50 mL	X121607.D	Liquid	Y	NA
8	VSTD050	ICAL7	12-16-2022 02:04 pm	1.00	50 mL	50 mL	X121608.D	Liquid	Y	NA
9	VSTD100	ICAL8	12-16-2022 02:25 pm	1.00	50 mL	50 mL	X121609.D	Liquid	Y	NA
10	VSTD150	ICAL9	12-16-2022 02:46 pm	1.00	50 mL	50 mL	X121610.D	Liquid	Y	NA
11	VSTD200	ICAL	12-16-2022 03:07 pm	1.00	50 mL	50 mL	X121611.D	Liquid	Y	NA
12	BLANK	SAMP	12-16-2022 03:28 pm	1.00	50 mL	50 mL	X121612.D	Liquid	Y	NA
13	CCV	CCV	12-16-2022 03:49 pm	1.00	50 mL	50 mL	X121613.D	Liquid	Y	NA
14	BLANK	SAMP	12-16-2022 04:10 pm	1.00	50 mL	50 mL	X121614.D	Liquid	Y	NA
15	CCB	SAMP	12-16-2022 04:31 pm	1.00	50 mL	50 mL	X121615.D	Liquid	Y	NA
16	VLCSW-221216	LCS	12-16-2022 04:52 pm	1.00	50 mL	50 mL	X121616.D	Liquid	Y	NA
17	BLANK	SAMP	12-16-2022 05:13 pm	1.00	50 mL	50 mL	X121617.D	Liquid	Y	NA
18	VBLKW-221216	MBLK	12-16-2022 05:34 pm	1.00	50 mL	50 mL	X121618.D	Liquid	Y	NA
19	HS22120648-05	SAMP	12-16-2022 05:55 pm	1.00	50 mL	50 mL	X121619.D	Liquid	Y	NA
20	HS22120648-09	SAMP	12-16-2022 06:16 pm	1.00	50 mL	50 mL	X121620.D	Liquid	Y	NA
21	HS22120648-01	SAMP	12-16-2022 06:37 pm	1.00	50 mL	50 mL	X121621.D	Liquid	Y	NA
22	HS22120648-02	SAMP	12-16-2022 06:58 pm	1.00	50 mL	50 mL	X121622.D	Liquid	Y	NA
23	HS22120648-03	SAMP	12-16-2022 07:19 pm	1.00	50 mL	50 mL	X121623.D	Liquid	Y	NA
24	HS22120648-04	SAMP	12-16-2022 07:40 pm	1.00	50 mL	50 mL	X121624.D	Liquid	Y	NA
25	HS22120648-06	SAMP	12-16-2022 08:01 pm	1.00	50 mL	50 mL	X121625.D	Liquid	Y	NA
26	HS22120648-07	SAMP	12-16-2022 08:22 pm	1.00	50 mL	50 mL	X121626.D	Liquid	Y	NA
27	HS22120648-08	SAMP	12-16-2022 08:43 pm	1.00	50 mL	50 mL	X121627.D	Liquid	Y	NA
28	HS22120648-06MS	MS	12-16-2022 09:04 pm	1.00	50 mL	50 mL	X121628.D	Liquid	Y	NA
29	HS22120648-06MSD	MSD	12-16-2022 09:25 pm	1.00	50 mL	50 mL	X121629.D	Liquid	Y	NA
30	CCV-END	CCV	12-16-2022 09:46 pm	1.00	50 mL	50 mL	X121630.D	Liquid	Y	NA
31	BFB	TUNE	12-16-2022 10:07 pm	1.00	50 mL	50 mL	Y121601.D	Liquid	Y	NA
32	CCV	CCV	12-16-2022 10:28 pm	1.00	50 mL	50 mL	Y121602a.D	Liquid	Y	NA
33	CCV	CCV	12-16-2022 10:49 pm	1.00	50 mL	50 mL	Y121603.D	Liquid	Y	NA
34	CCB	SAMP	12-16-2022 11:10 pm	1.00	50 mL	50 mL	Y121604.D	Liquid	Y	NA
35	VLCSW-221215	LCS	12-16-2022 11:31 pm	1.00	50 mL	50 mL	Y121605.D	Liquid	Y	NA
36	BLANK	SAMP	12-16-2022 11:52 pm	1.00	50 mL	50 mL	Y121606.D	Liquid	Y	NA
37	VBLKW-221215	MBLK	12-17-2022 12:13 am	1.00	50 mL	50 mL	Y121607.D	Liquid	Y	NA
38	HS22120974-13	SAMP	12-17-2022 12:34 am	1.00	50 mL	50 mL	Y121608.D	Liquid	Y	NA
39	HS22120974-01	SAMP	12-17-2022 12:55 am	1.00	50 mL	50 mL	Y121609.D	Liquid	Y	NA
40	HS22120974-01MS	MS	12-17-2022 01:16 am	1.00	50 mL	50 mL	Y121610.D	Liquid	Y	NA
41	HS22120974-01MSD	MSD	12-17-2022 01:38 am	1.00	50 mL	50 mL	Y121611.D	Liquid	Y	NA

MSVOA06 -Logbook

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
42	BLANK	SAMP	12-17-2022 01:59 am	1.00	50 mL	50 mL	Y121612.D	Liquid	Y	NA
43	HS22120974-02	SAMP	12-17-2022 02:20 am	1.00	50 mL	50 mL	Y121613.D	Liquid	Y	NA
44	HS22120974-03	SAMP	12-17-2022 02:41 am	1.00	50 mL	50 mL	Y121614.D	Liquid	Y	NA
45	HS22120974-04	SAMP	12-17-2022 03:02 am	1.00	50 mL	50 mL	Y121615.D	Liquid	Y	NA
46	HS22120974-05	SAMP	12-17-2022 03:23 am	1.00	50 mL	50 mL	Y121616.D	Liquid	Y	NA
47	HS22120974-06	SAMP	12-17-2022 03:44 am	1.00	50 mL	50 mL	Y121617.D	Liquid	Y	NA
48	HS22120974-07	SAMP	12-17-2022 04:05 am	1.00	50 mL	50 mL	Y121618.D	Liquid	Y	NA
49	HS22120974-08	SAMP	12-17-2022 04:26 am	1.00	50 mL	50 mL	Y121619.D	Liquid	Y	NA
50	HS22120974-09	SAMP	12-17-2022 04:47 am	1.00	50 mL	50 mL	Y121620.D	Liquid	Y	NA
51	HS22120974-10	SAMP	12-17-2022 05:08 am	1.00	50 mL	50 mL	Y121621.D	Liquid	Y	NA
52	HS22120974-11	SAMP	12-17-2022 05:29 am	1.00	50 mL	50 mL	Y121622.D	Liquid	Y	NA
53	HS22120974-12	SAMP	12-17-2022 05:50 am	1.00	50 mL	50 mL	Y121623.D	Liquid	Y	NA
54	HS22120974-14	SAMP	12-17-2022 06:11 am	1.00	50 mL	50 mL	Y121624.D	Liquid	Y	NA
55	HS22120974-15	SAMP	12-17-2022 06:32 am	1.00	50 mL	50 mL	Y121625.D	Liquid	Y	NA
56	HS22120574-15	SAMP	12-17-2022 06:53 am	5.00	10 mL	50 mL	Y121626.D	Liquid	Y	NA
57	HS22120574-17	SAMP	12-17-2022 07:14 am	5.00	10 mL	50 mL	Y121627.D	Liquid	Y	NA
58	HS22120770-07	SAMP	12-17-2022 07:36 am	10.00	5 mL	50 mL	Y121628.D	Liquid	Y	NA
59	HS22120770-07	SAMP	12-17-2022 07:57 am	100.0(	500 µL	50 mL	Y121629.D	Liquid	Y	NA
60	HS22120770-10	SAMP	12-17-2022 08:18 am	5.00	10 mL	50 mL	Y121630.D	Liquid	Y	NA
61	BLANK	SAMP	12-17-2022 08:39 am	1.00	50 mL	50 mL	Y121631.D	Liquid	Y	NA

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project LHAAP 18 24

Workorder
HS22121478

Volatiles by by EPA 8260

RUNID
VOA6_425095

Run ID VOA6_425095 **Start Date** 12/30/22 **EndDate** 12/30/22 **Matrix** Aqueous

Client Sample ID	Type	Lab Sample ID	File ID	Analysis Date	DF
CCV	CCV	CCV	X123002.D	12/30/22 11:47	1
CCB	CCB	CCB	X123004.D	12/30/22 12:30	1
VLCSW-221230	LCS	VLCSW-221230	X123005.D	12/30/22 12:50	1
VBLKW-221230	MBLK	VBLKW-221230	X123007.D	12/30/22 13:33	1
BatchQC	MS	HS22121494-05MS	X123014.D	12/30/22 16:00	1
BatchQC	MSD	HS22121494-05MSD	X123015.D	12/30/22 16:21	1
Trip Blank	SAMP	HS22121478-09	X123018.D	12/30/22 17:24	1
18CPTMW03SW_122222	SAMP	HS22121478-01	X123022.D	12/30/22 18:48	1
18CPTMW07_122222	SAMP	HS22121478-03	X123023.D	12/30/22 19:09	1
18WW22_122222	SAMP	HS22121478-04	X123024.D	12/30/22 19:30	1
18CPTMW18_122222	SAMP	HS22121478-05	X123025.D	12/30/22 19:51	1
CO3_122222	SAMP	HS22121478-06	X123026.D	12/30/22 20:12	1
18WW17_122222	SAMP	HS22121478-07	X123027.D	12/30/22 20:33	1
18CPTMW24_122222	SAMP	HS22121478-02	X123028.D	12/30/22 20:54	5
125_122222	SAMP	HS22121478-08	X123029.D	12/30/22 21:16	5

01179234

right solutions.
right partner.

Raw Data VOA6 424237

Volatiles by by EPA 8260

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory

10450 Stancliff Road, Suite 210, Houston, TX 77099

Phone (281) 530-5656 Fax (281) 530-5887

www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D Page 1
Report Date: 16-Dec-2022 12:08

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 16-DEC-2022 11:17
Operator : PC Inst ID: voa6.i
Smp Info : BFB;BFB;3;;BFB
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\bfb.m
Meth Date : 01-Dec-2022 12:59 Linh.Pham Quant Type: ISTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vf	1.000	Volumetric correction factor
Vi	2.000	Injection Volume
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/l)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
8.691	8.889	(0.000)	95	72328			0.00- 100.00	100.00
8.691	8.889	(0.000)	50	13272			15.00- 40.00	18.35
8.691	8.889	(0.000)	75	33368			30.00- 60.00	46.13
8.691	8.889	(0.000)	96	5178			5.00- 9.00	7.16
8.691	8.889	(0.000)	173	577			0.00- 2.00	0.90
8.691	8.889	(0.000)	174	64360			50.00- 0.00	88.98
8.691	8.889	(0.000)	175	5033			5.00- 9.00	7.82
8.691	8.889	(0.000)	176	63184			95.00- 101.00	98.17
8.691	8.889	(0.000)	177	4164			5.00- 9.00	6.59

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.35
75	30.00 - 60.00% of mass 95	46.13
96	5.00 - 9.00% of mass 95	7.16
173	Less than 2.00% of mass 174	0.80 (0.90)
174	Greater than 50.00% of mass 95	88.98
175	5.00 - 9.00% of mass 174	6.96 (7.82)
176	95.00 - 101.00% of mass 174	87.36 (98.17)
177	5.00 - 9.00% of mass 176	5.76 (6.59)

Data File: X121601.D
Spectrum: Scan 2160 (8.68)
Location of Maximum: 95.00
Number of points: 84

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.90	686	63.00	2521	93.00	2705	136.90	215
37.00	3051	64.10	316	94.00	9587	140.90	735
38.00	2957	66.90	155	95.00	72328	141.70	91
39.00	1321	67.90	6274	96.00	5178	142.80	683
39.90	1146	69.00	6990	96.90	213	145.60	119
42.00	114	69.90	604	103.00	58	148.00	107
42.90	301	71.80	385	104.00	313	149.80	105
44.00	1509	72.90	2986	104.70	125	153.80	54
45.00	716	74.00	11163	105.10	132	154.80	169
46.80	723	75.00	33368	105.90	451	156.80	155
48.00	503	76.00	3228	110.60	54	160.80	71
49.00	3278	76.90	395	113.00	74	171.60	83
50.00	13272	77.80	187	114.80	159	172.80	577
51.00	3648	78.90	2224	115.80	342	173.90	64360
52.10	365	79.80	718	116.90	386	174.90	5033
54.00	52	80.90	2158	117.90	425	175.90	63184
54.90	278	81.80	420	118.80	260	176.90	4164
56.00	1513	83.00	51	127.90	191	178.00	133
57.00	1763	86.90	2878	128.90	172		
59.90	665	87.80	2342	129.80	237		
61.00	3173	91.00	516	130.80	156		
62.00	3572	92.00	2006	134.70	222		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D Page 1

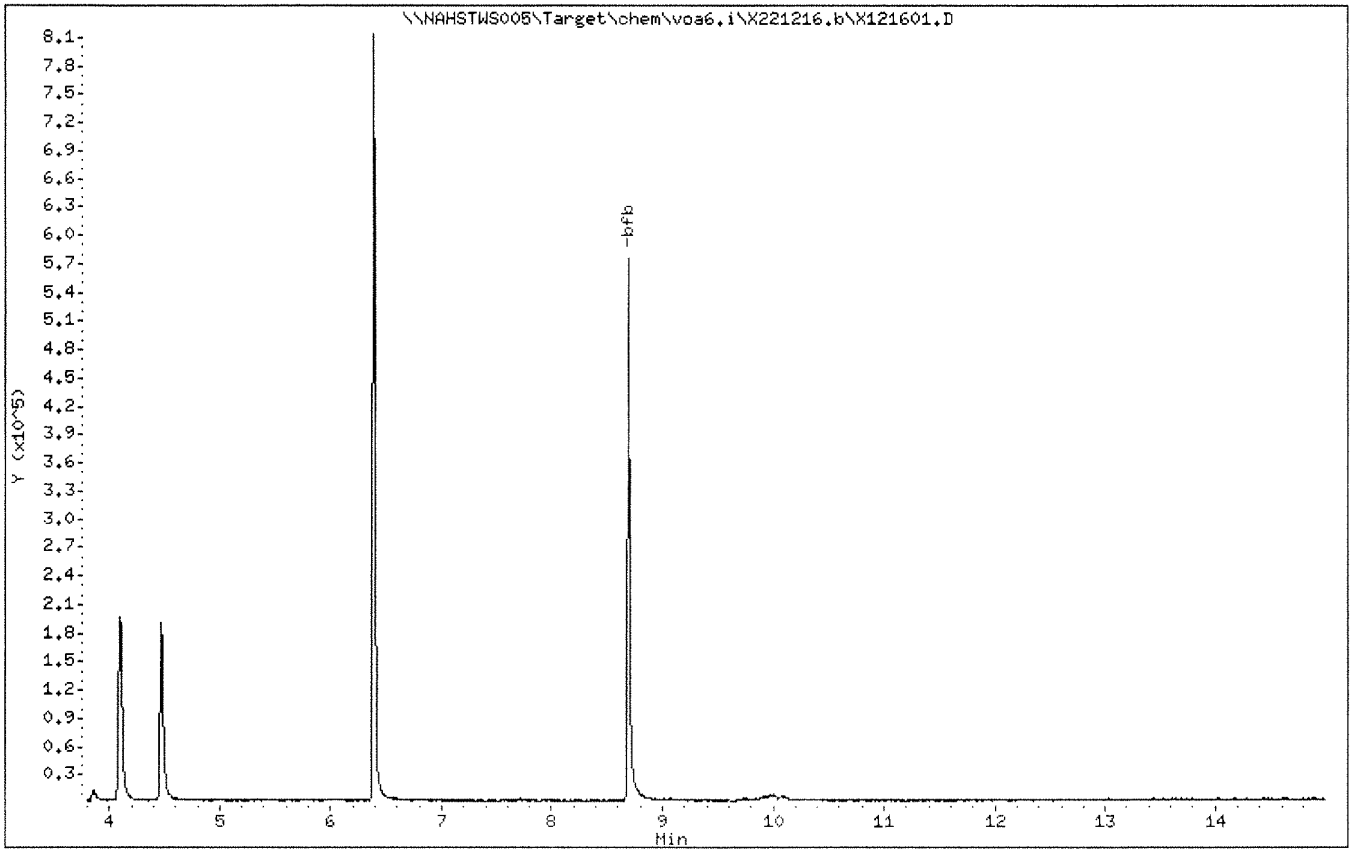
Date : 16-DEC-2022 11:17

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D Page 2

Date : 16-DEC-2022 11:17

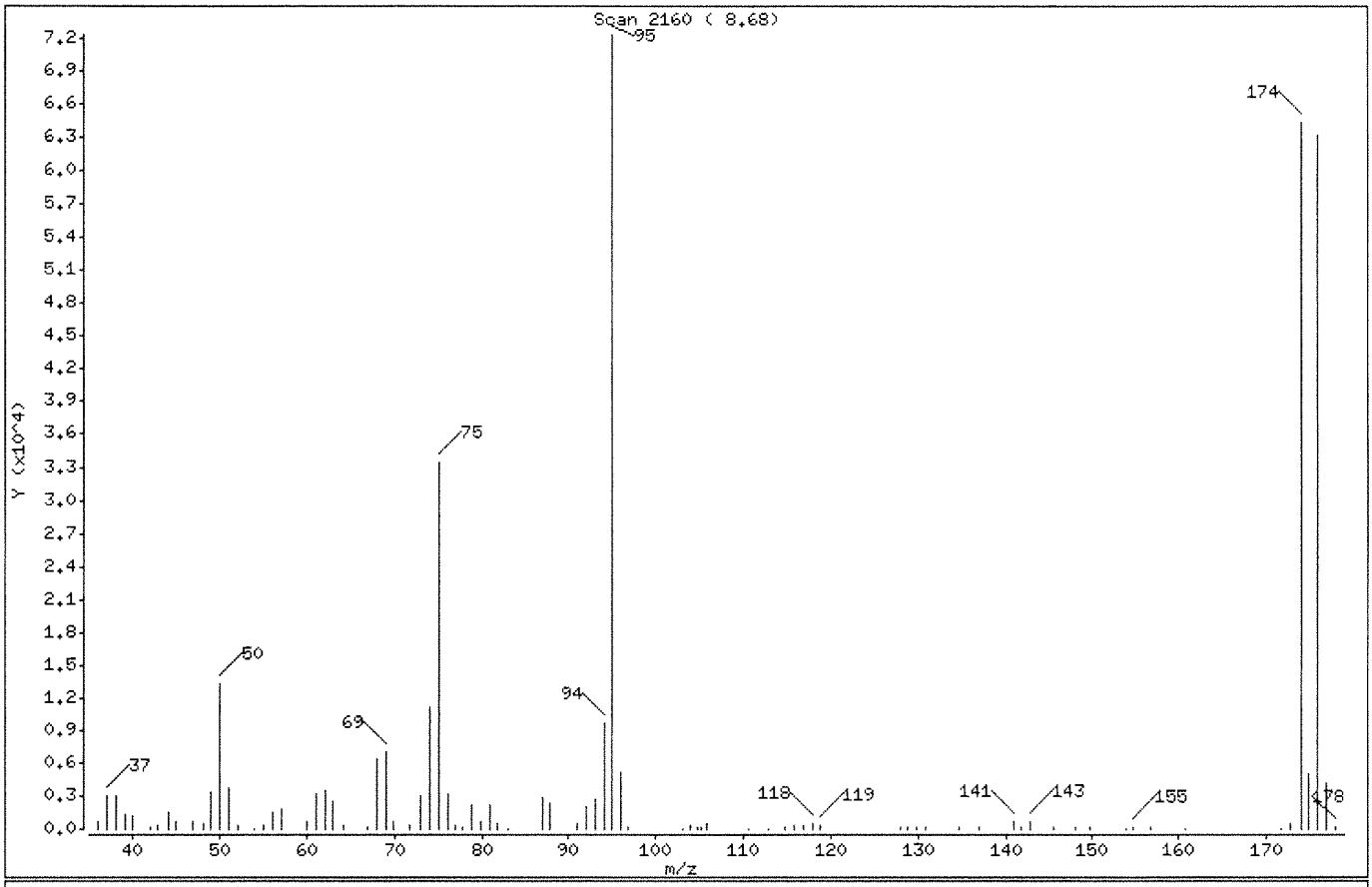
Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.35
75	30.00 - 60.00% of mass 95	46.13
96	5.00 - 9.00% of mass 95	7.16
173	Less than 2.00% of mass 174	0.80 (0.90)
174	Greater than 50.00% of mass 95	88.98
175	5.00 - 9.00% of mass 174	6.96 (7.82)
176	95.00 - 101.00% of mass 174	87.36 (98.17)
177	5.00 - 9.00% of mass 176	5.76 (6.59)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121601.D

Date : 16-DEC-2022 11:17

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X121601.D
Spectrum: Scan 2160 (8.68)
Location of Maximum: 95.00
Number of points: 84

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.90	686	63.00	2521	93.00	2705	136.90	215
37.00	3051	64.10	316	94.00	9587	140.90	735
38.00	2957	66.90	155	95.00	72328	141.70	91
39.00	1321	67.90	6274	96.00	5178	142.80	683
39.90	1146	69.00	6990	96.90	213	145.60	119
42.00	114	69.90	604	103.00	58	148.00	107
42.90	301	71.80	385	104.00	313	149.80	105
44.00	1509	72.90	2986	104.70	125	153.80	54
45.00	716	74.00	11163	105.10	132	154.80	169
46.80	723	75.00	33368	105.90	451	156.80	155
48.00	503	76.00	3228	110.60	54	160.80	71
49.00	3278	76.90	395	113.00	74	171.60	83
50.00	13272	77.80	187	114.80	159	172.80	577
51.00	3648	78.90	2224	115.80	342	173.90	64360
52.10	365	79.80	718	116.90	386	174.90	5033
54.00	52	80.90	2158	117.90	425	175.90	63184
54.90	278	81.80	420	118.80	260	176.90	4164
56.00	1513	83.00	51	127.90	191	178.00	133
57.00	1763	86.90	2878	128.90	172		
59.90	665	87.80	2342	129.80	237		
61.00	3173	91.00	516	130.80	156		
62.00	3572	92.00	2006	134.70	222		

Data File : \\NAHSTWS005\Target\chem\voa6.i\x221216.b\X121601.D
Inj Date : 16-DEC-2022 11:17
InstruID : voa6.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 16-DEC-2022 11:38
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.25;VSTD000.25;1;1;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	461807	50.0000	
135 1,4-Dioxane	88	5.625	5.625	(1.346)	214	5.00000	5.06(M)
140 1,3-Butadiene	54	1.164	1.164	(0.279)	1172	0.25000	0.36
25 Methacrylonitrile	41	3.855	3.855	(0.923)	5876	0.25000	1.79
12 Isobutyl Alcohol	43	4.687	4.687	(1.122)	2537	5.00000	4.88(TM)
13 Acetonitrile	39	2.202	2.202	(0.527)	730	2.50000	1.73
14 Allyl Chloride	41	2.206	2.206	(0.528)	1591	0.25000	0.19
4 Propionitrile	54	3.702	3.702	(0.886)	1165	2.50000	2.47(M)
72 trans-1,4-Dichloro-2-butene	53	8.931	8.931	(1.164)	280	0.25000	0.19(M)
145 alpha-Methylstyrene	118	9.268	9.268	(0.959)	2322	0.25000	0.30
200 Dimethyl Disulfide	94	6.213	6.213	(0.810)	1870	0.25000	0.21
139 Diethyl ether	59	1.760	1.760	(0.421)	687	0.25000	0.22
49 Ethyl Methacrylate	69	6.738	6.738	(1.357)	625	0.25000	0.19
142 Tetrahydrofuran	42	3.836	3.836	(0.918)	358	0.50000	(M)
166 1,2,3-Trimethylbenzene	105	9.737	9.737	(1.008)	4360	0.25000	0.25
2 Dichlorodifluoromethane	85	0.969	0.969	(0.232)	801	0.25000	0.63(M)
3 Chloromethane	50	1.077	1.077	(0.258)	1420	0.25000	2.53
5 Vinyl Chloride	62	1.141	1.141	(0.273)	1134	0.25000	0.28(M)
6 Bromomethane	94	1.340	1.340	(0.321)	1009	0.25000	2.08(M)
8 Trichlorofluoromethane	101	1.561	1.561	(0.374)	1468	0.25000	0.26

10 Acetone	43	1.977	1.977 (0.473)	2727	0.50000	2.07
11 1,1-Dichloroethene	96	1.910	1.910 (0.457)	1010	0.25000	0.28(M)

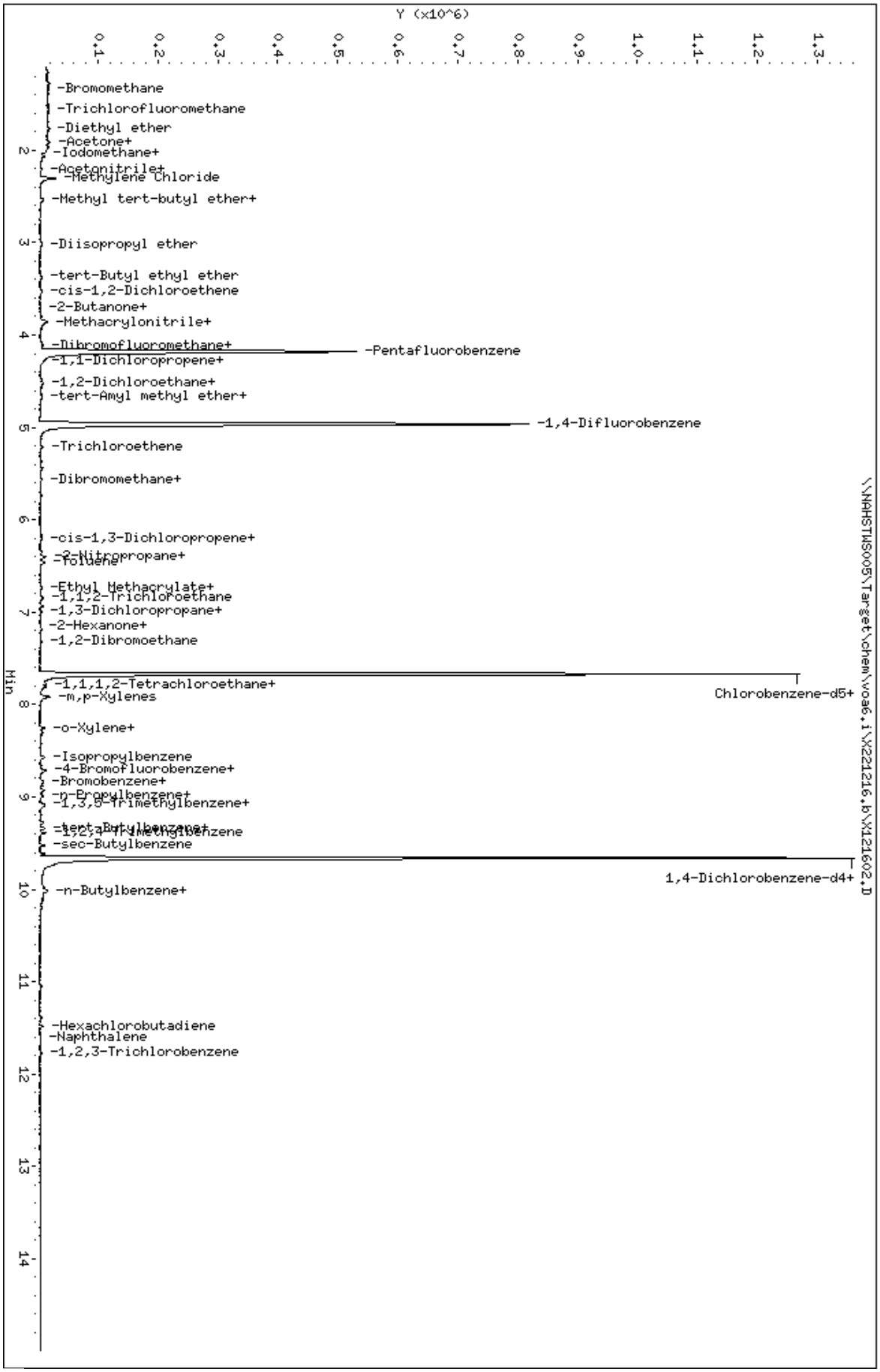
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	15 Iodomethane	142	2.026	2.026	(0.485)	1106	0.50000	3.56(T)
	17 Methylene Chloride	84	2.292	2.292	(0.549)	1436	0.25000	0.29(M)
	18 Methyl tert-butyl ether	73	2.536	2.536	(0.607)	2787	0.25000	0.24
	19 Carbon Disulfide	76	2.071	2.071	(0.496)	5999	0.50000	0.65
	20 trans-1,2-Dichloroethene	96	2.539	2.539	(0.608)	1302	0.25000	0.33
	24 2-Butanone	43	3.698	3.698	(0.885)	1014	0.50000	3.74
	27 cis-1,2-Dichloroethene	96	3.533	3.533	(0.846)	1402	0.25000	0.29
	28 Chloroform	83	3.908	3.908	(0.935)	2553	0.25000	0.33
	29 Bromochloromethane	128	3.799	3.799	(0.909)	802	0.25000	0.30(M)
$	30 Dibromofluoromethane	113	4.103	4.103	(0.982)	1706	0.25000	0.21
	31 1,1,1-Trichloroethane	97	4.076	4.076	(0.976)	1648	0.25000	0.26
	32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	2114	0.25000	0.43
	33 1,2-Dichloroethane	62	4.571	4.571	(0.921)	2167	0.25000	0.38
	34 Carbon Tetrachloride	117	4.256	4.256	(0.857)	1685	0.25000	0.32(M)
$	35 1,2-Dichloroethane-d4	65	4.481	4.481	(1.073)	2260	0.25000	0.75(T)
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	690224	50.0000	
	37 Benzene	78	4.522	4.522	(0.911)	5768	0.25000	0.34
	38 Trichloroethene	130	5.212	5.212	(1.050)	1544	0.25000	0.33
	44 Dibromomethane	93	5.565	5.565	(1.121)	1046	0.25000	0.35
	45 4-Methyl-2-Pentanone	43	6.352	6.352	(0.828)	2297	0.50000	0.65
	46 cis-1,3-Dichloropropene	75	6.168	6.168	(1.242)	1839	0.25000	0.25
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	653787	50.0000	
$	48 Toluene-d8	98	6.401	6.401	(0.834)	6828	0.25000	0.42(T)
	50 Toluene	91	6.457	6.457	(0.842)	6778	0.25000	0.37
	52 2-Hexanone	43	7.150	7.150	(0.932)	974	0.50000	0.40(T)
	53 1,1,2-Trichloroethane	83	6.847	6.847	(0.893)	1098	0.25000	0.30
	54 1,3-Dichloropropane	76	6.993	6.993	(0.912)	2278	0.25000	0.31
	55 Dibromochloromethane	129	7.184	7.184	(0.936)	1732	0.25000	0.33
	56 Tetrachloroethene	164	6.933	6.933	(0.904)	1051	0.25000	0.28
	57 1,2-Dibromoethane	107	7.278	7.278	(0.949)	1100	0.25000	0.24
	58 1-Chlorohexane	55	7.668	7.668	(1.544)	6570	0.25000	1.96
	59 Chlorobenzene	112	7.694	7.694	(1.003)	3981	0.25000	0.31
	60 1,1,1,2-Tetrachloroethane	131	7.780	7.780	(1.014)	1245	0.25000	0.26
	61 Ethylbenzene	106	7.810	7.810	(1.018)	1854	0.25000	0.30
	62 m,p-Xylenes	106	7.915	7.915	(1.032)	5083	0.50000	0.65
	63 o-Xylene	106	8.252	8.252	(1.076)	2471	0.25000	0.32
	64 Styrene	104	8.297	8.297	(1.082)	3214	0.25000	0.24
	67 Isopropylbenzene	105	8.575	8.575	(1.118)	5495	0.25000	0.31
$	69 4-Bromofluorobenzene	95	8.706	8.706	(1.135)	4271	0.25000	0.77
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	348702	50.0000	
	71 1,2,3-Trichloropropane	75	8.875	8.875	(0.919)	766	0.25000	0.19(M)
	73 n-Propylbenzene	91	8.931	8.931	(0.924)	5570	0.25000	0.28
	74 Bromobenzene	156	8.826	8.826	(0.913)	1517	0.25000	0.26
	75 1,3,5-Trimethylbenzene	105	9.081	9.081	(0.940)	4893	0.25000	0.34
	76 2-Chlorotoluene	91	8.991	8.991	(0.931)	4890	0.25000	0.38
	77 4-Chlorotoluene	91	9.107	9.107	(0.943)	3881	0.25000	0.26
	78 tert-Butylbenzene	119	9.343	9.343	(0.967)	4059	0.25000	0.34
	79 1,2,4-Trimethylbenzene	105	9.392	9.392	(0.972)	5202	0.25000	0.34
	81 sec-Butylbenzene	105	9.523	9.523	(0.986)	4818	0.25000	0.31
	82 p-Isopropyltoluene	119	9.662	9.662	(1.000)	4406	0.25000	0.31
	83 1,3-Dichlorobenzene	146	9.621	9.621	(0.996)	3005	0.25000	0.31
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	3674	0.25000	0.35

87	n-Butylbenzene	91	10.033	10.033 (1.038)	1595	0.25000	1.89
88	1,2-Dichlorobenzene	146	10.010	10.010 (1.036)	2937	0.25000	0.30

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	91 Hexachlorobutadiene	225	11.484	11.484	(1.189)	726	0.25000	0.21(M)
	92 Naphthalene	128	11.607	11.607	(1.201)	1969	0.25000	0.14
	93 1,2,3-Trichlorobenzene	180	11.769	11.769	(1.218)	1816	0.25000	0.30(M)
M	94 1,2-Dichloroethylene (total)	96				2704	0.50000	
M	95 Xylenes (total)	106				7554	0.75000	
	141 Cyclohexane	56	4.125	4.125	(0.987)	1235	0.25000	1.51(M)
	138 Freon TF	101	1.917	1.917	(0.459)	765	0.25000	0.22(M)

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6,i\X221216,b\X121602.D
Date : 16-DEC-2022 11:38
Client ID: VSTD000.25
Sample Info: VSTD000.25;VSTD000.25;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

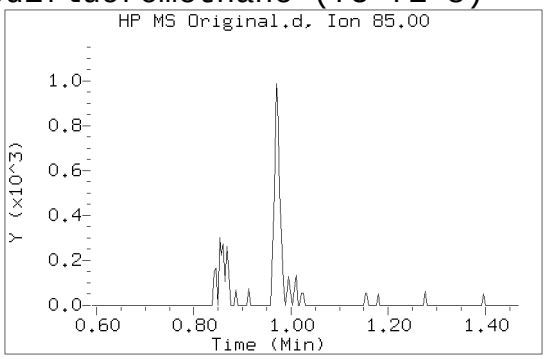
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Dichlorodifluoromethane (75-71-8)

Reason Code:

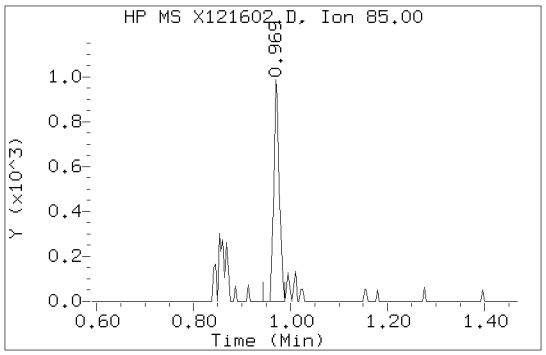
BEFORE

MASS
50
AREA
1420
HEIGHT
1809
16-Dec-2022
11:54
ALSHS
Server



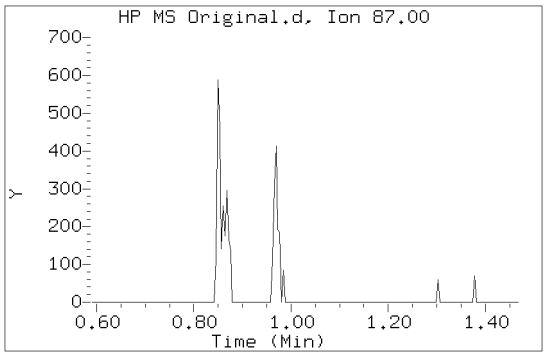
AFTER

MASS
85
AREA
801
HEIGHT
987
27-Dec-2022
16:07
ALSHS
Ser



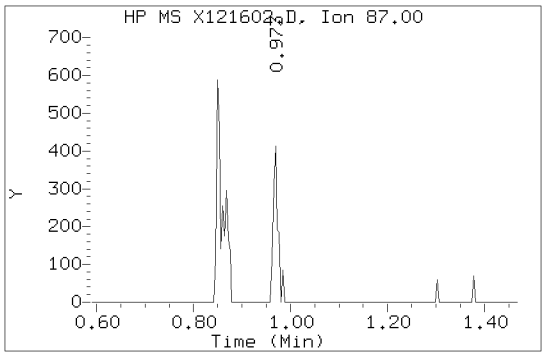
BEFORE

MASS
52
AREA
731
HEIGHT
740
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
87
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

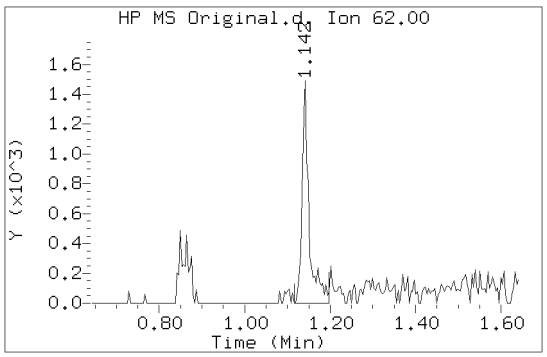


Vinyl Chloride (75-01-4)

Reason Code:

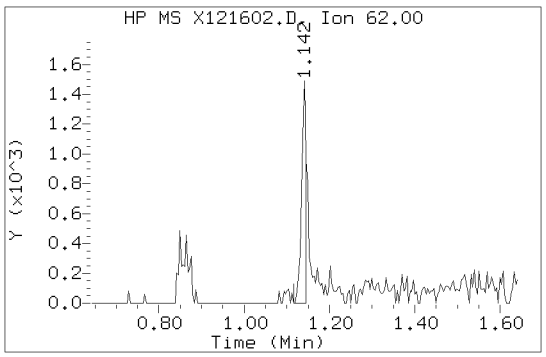
BEFORE

MASS
94
AREA
1572
HEIGHT
983
16-Dec-2022
11:54
ALSHS
Server



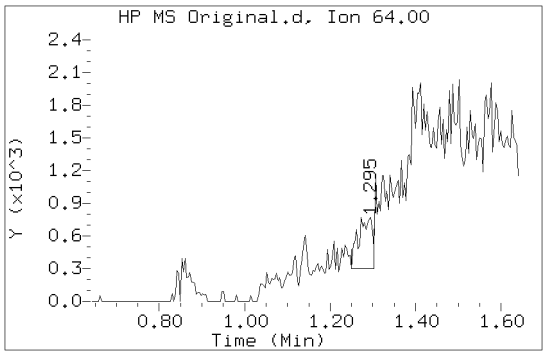
AFTER

MASS
62
AREA
1134
HEIGHT
1490
27-Dec-2022
16:07
ALSHS
Ser



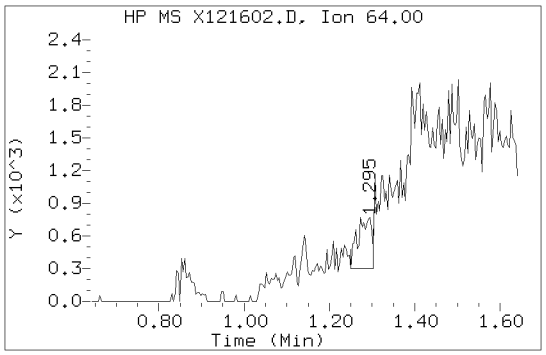
BEFORE

MASS
96
AREA
1330
HEIGHT
961
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
64
AREA
1053
HEIGHT
470
27-Dec-2022
16:07
ALSHS
Ser

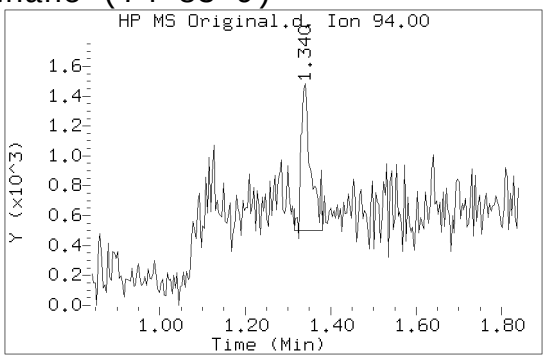


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Bromomethane (74-83-9)

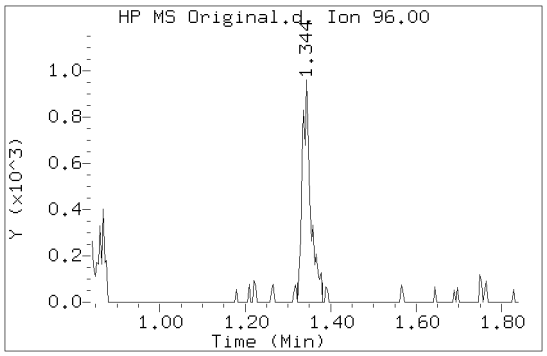
BEFORE

MASS
64
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



BEFORE

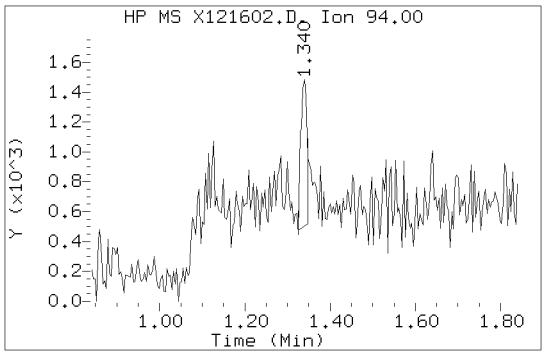
MASS
66
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

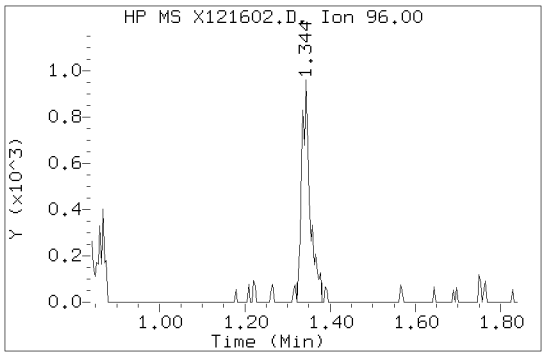
AFTER

MASS
94
AREA
1009
HEIGHT
977
27-Dec-2022
16:07
ALSHS
Ser



AFTER

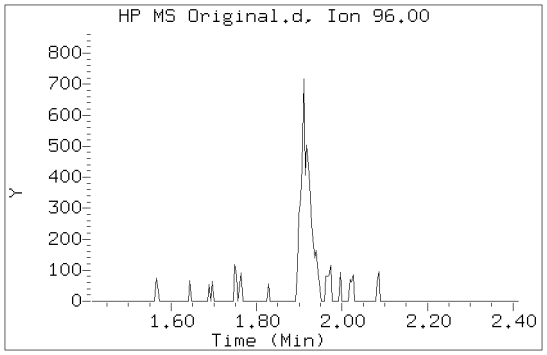
MASS
96
AREA
1330
HEIGHT
961
27-Dec-2022
16:07
ALSHS
Ser



1,1-Dichloroethene (75-35-4)

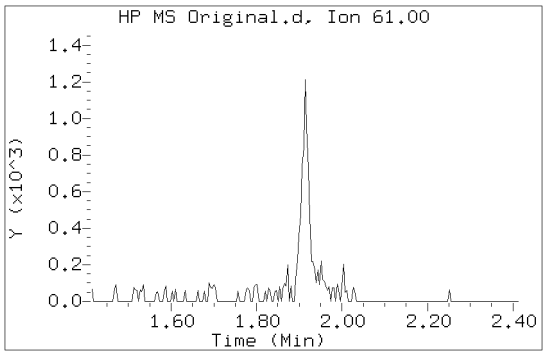
BEFORE

MASS
142
AREA
1106
HEIGHT
699
16-Dec-2022
11:54
ALSHS
Server



BEFORE

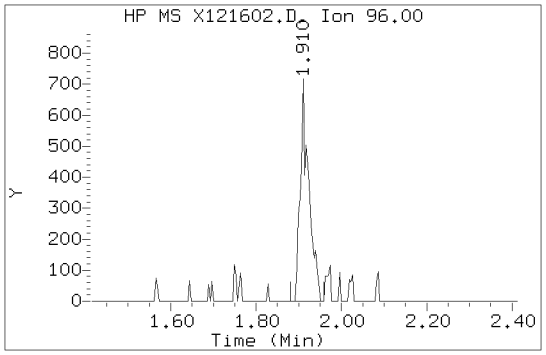
MASS
127
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

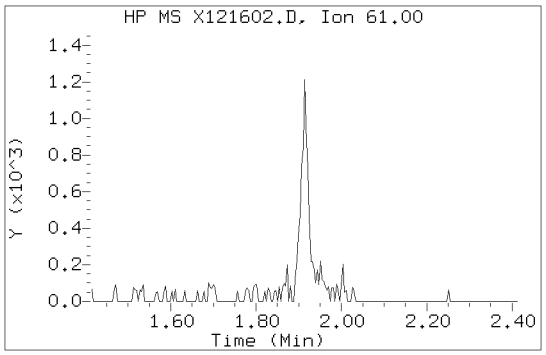
AFTER

MASS
96
AREA
1010
HEIGHT
717
27-Dec-2022
16:07
ALSHS
Ser



AFTER

MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



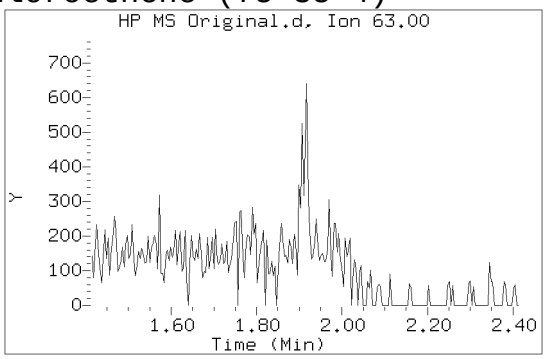
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

1,1-Dichloroethene (75-35-4)

Reason Code:

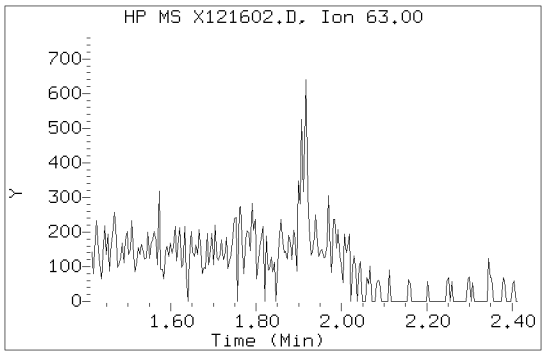
BEFORE

MASS
141
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

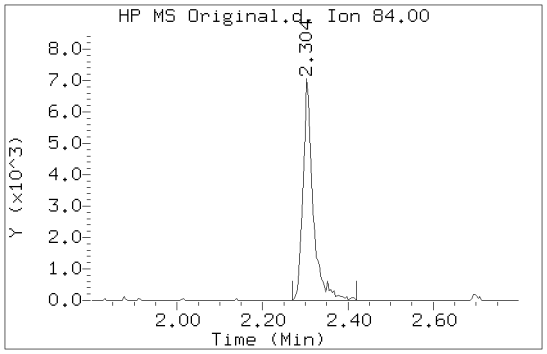


Methylene Chloride (75-09-2)

Reason Code:

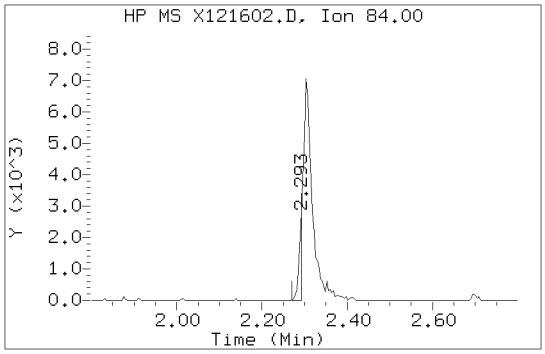
BEFORE

MASS
84
AREA
11777
HEIGHT
7057
16-Dec-2022
11:54
ALSHS
Server



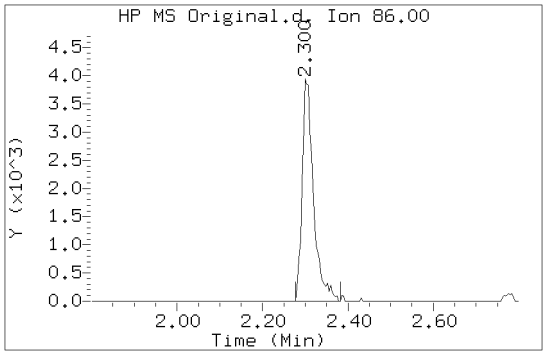
AFTER

MASS
84
AREA
1436
HEIGHT
2786
27-Dec-2022
16:07
ALSHS
Ser



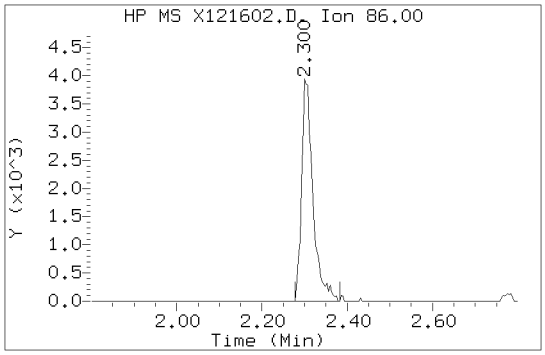
BEFORE

MASS
86
AREA
7453
HEIGHT
3944
16-Dec-2022
11:54
ALSHS
Server



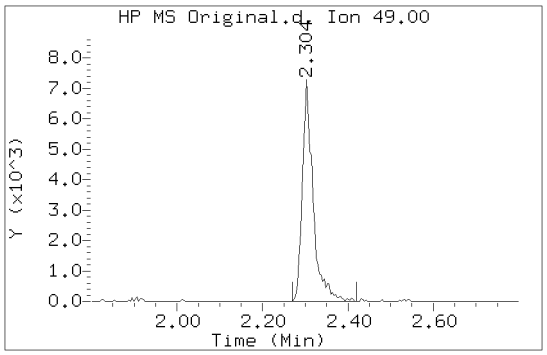
AFTER

MASS
86
AREA
7453
HEIGHT
3944
27-Dec-2022
16:07
ALSHS
Ser



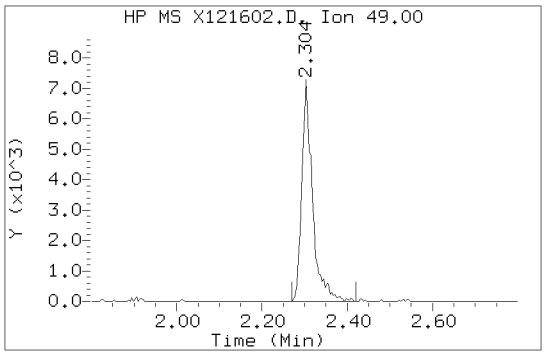
BEFORE

MASS
49
AREA
12974
HEIGHT
7289
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
49
AREA
12974
HEIGHT
7289
27-Dec-2022
16:07
ALSHS
Ser

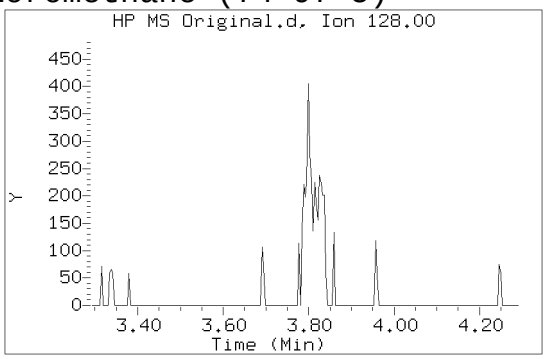


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Bromochloromethane (74-97-5)

BEFORE

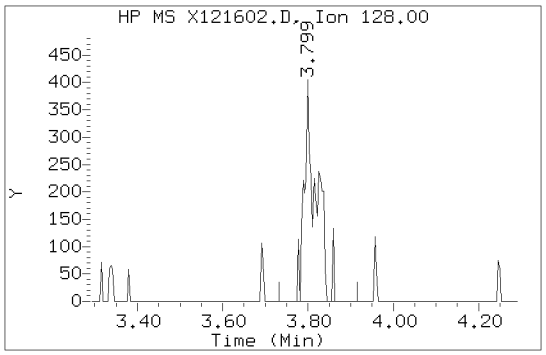
MASS
96
AREA
1402
HEIGHT
854
16-Dec-2022
11:54
ALSHS
Server



AFTER

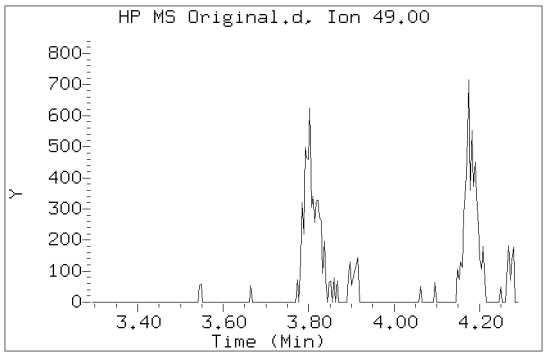
MASS
128
AREA
802
HEIGHT
405
27-Dec-2022
16:07
ALSHS
Ser

Reason Code:



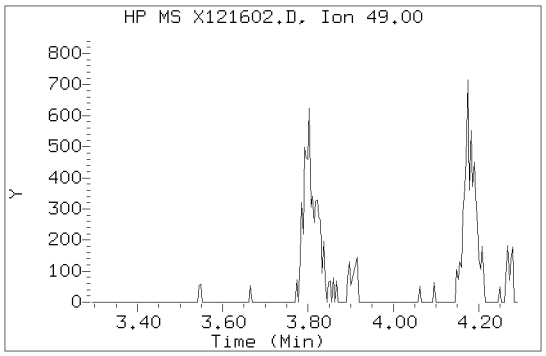
BEFORE

MASS
61
AREA
1975
HEIGHT
828
16-Dec-2022
11:54
ALSHS
Server



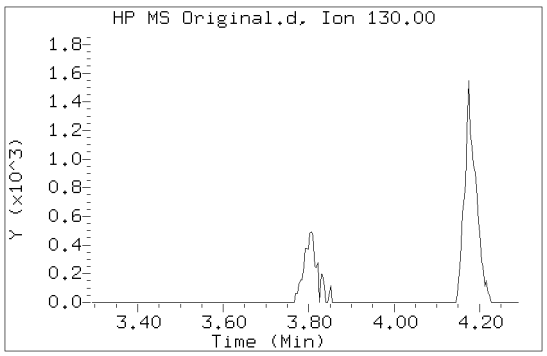
AFTER

MASS
49
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



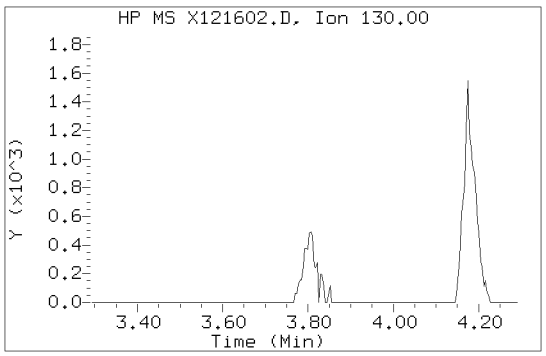
BEFORE

MASS
98
AREA
1027
HEIGHT
608
16-Dec-2022
11:54
ALSHS
Server



AFTER

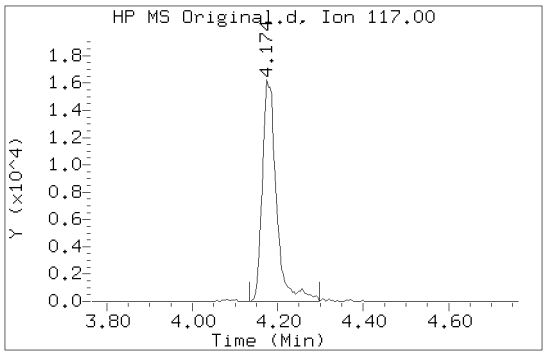
MASS
130
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



Carbon Tetrachloride (56-23-5)

BEFORE

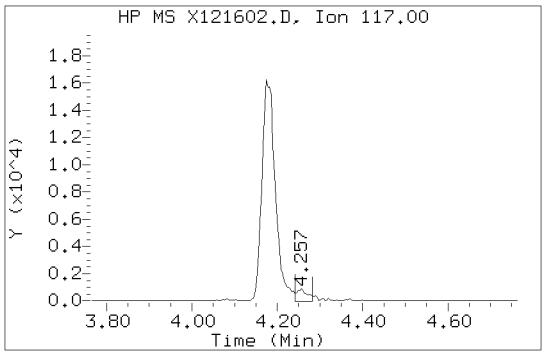
MASS
97
AREA
1700
HEIGHT
1016
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
117
AREA
1685
HEIGHT
944
27-Dec-2022
16:07
ALSHS
Ser

Reason Code:



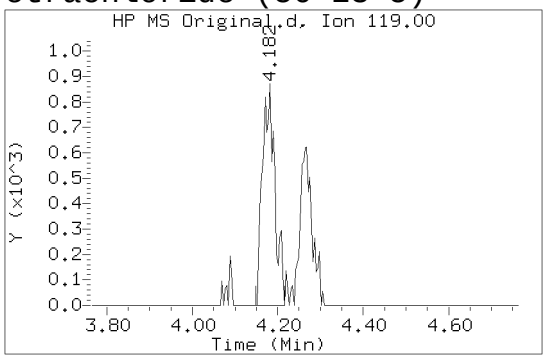
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Carbon Tetrachloride (56-23-5)

Reason Code:

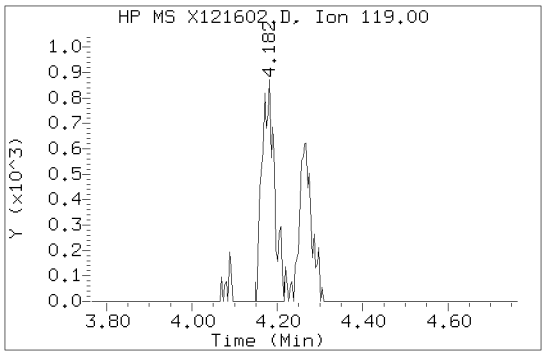
BEFORE

MASS
99
AREA
207130
HEIGHT
91368
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
119
AREA
1748
HEIGHT
872
27-Dec-2022
16:07
ALSHS
Ser

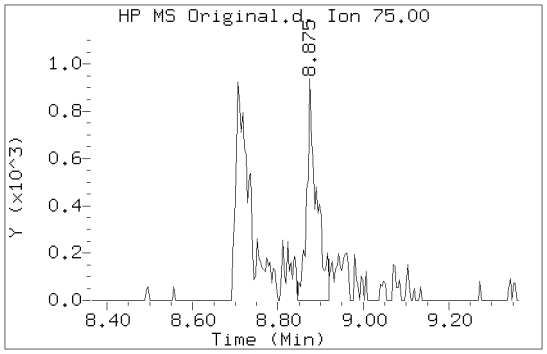


1,2,3-Trichloropropane (96-18-4)

Reason Code:

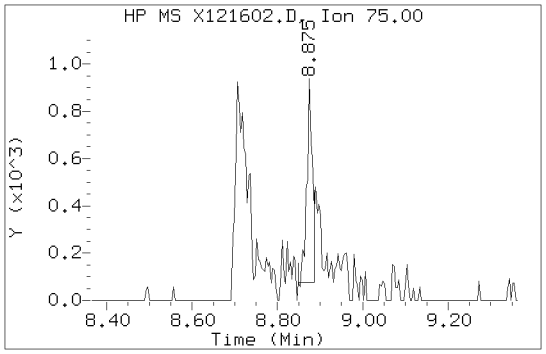
BEFORE

MASS
152
AREA
348702
HEIGHT
242350
16-Dec-2022
11:54
ALSHS
Server



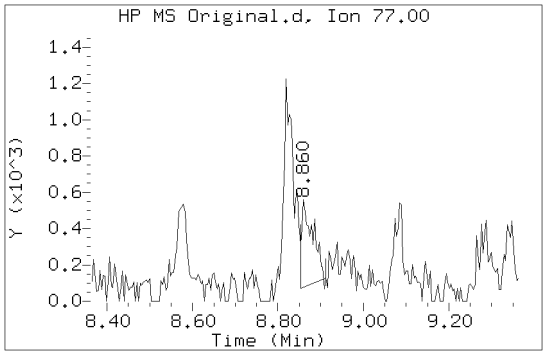
AFTER

MASS
75
AREA
766
HEIGHT
862
27-Dec-2022
16:07
ALSHS
Ser



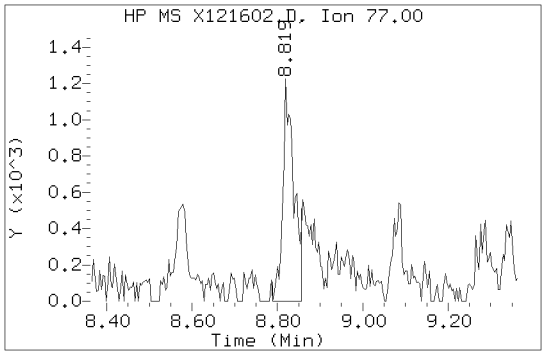
BEFORE

MASS
115
AREA
184413
HEIGHT
133835
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
77
AREA
2223
HEIGHT
1225
27-Dec-2022
16:07
ALSHS
Ser

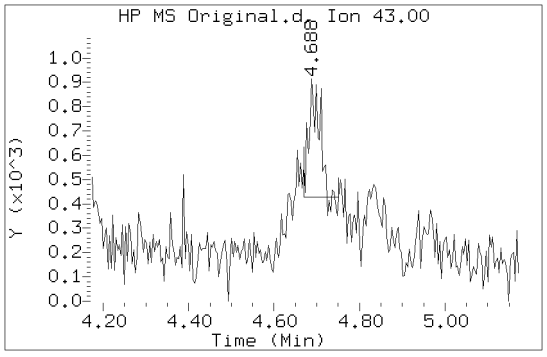


Isobutyl Alcohol (78-83-1)

Reason Code:

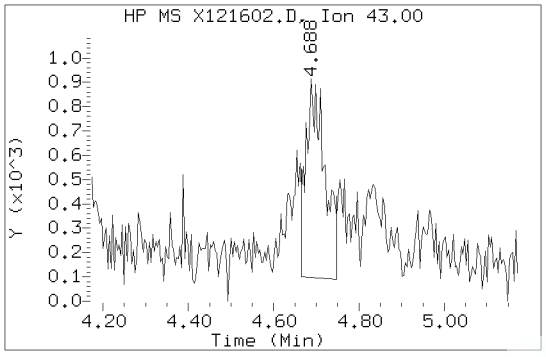
BEFORE

MASS
75
AREA
1475
HEIGHT
938
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
43
AREA
2537
HEIGHT
816
27-Dec-2022
16:07
ALSHS
Ser

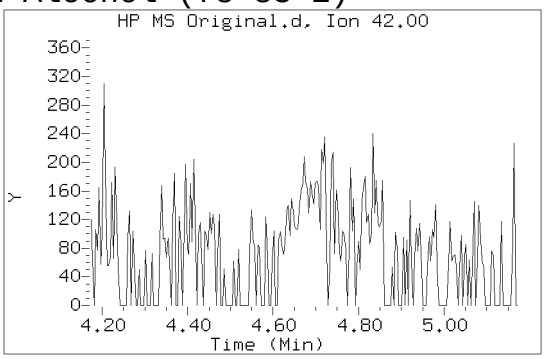


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Isobutyl Alcohol (78-83-1)

BEFORE

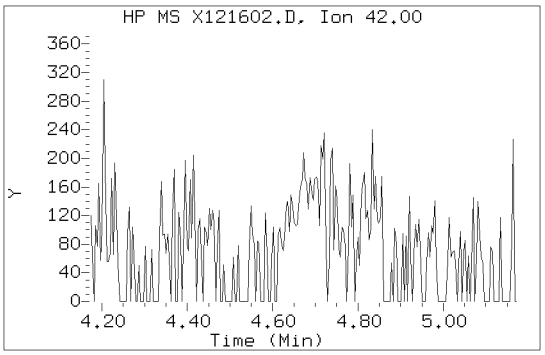
MASS
77
AREA
888
HEIGHT
483
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

AFTER

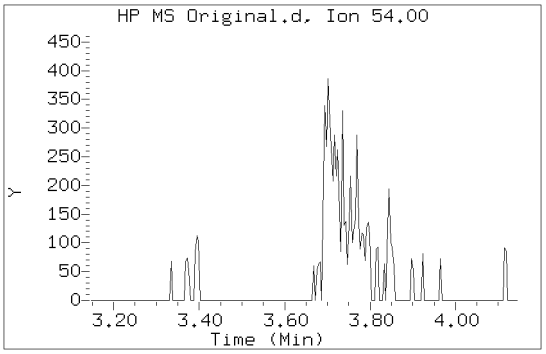
MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



Propionitrile (107-12-0)

BEFORE

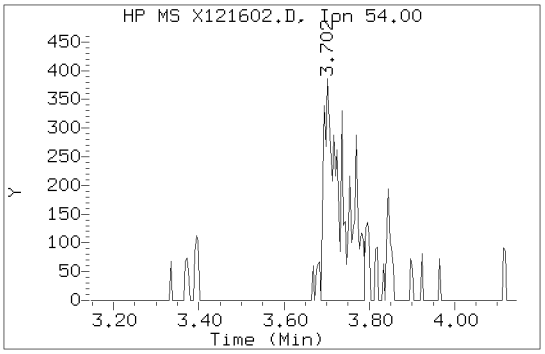
MASS
91
AREA
3881
HEIGHT
1822
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

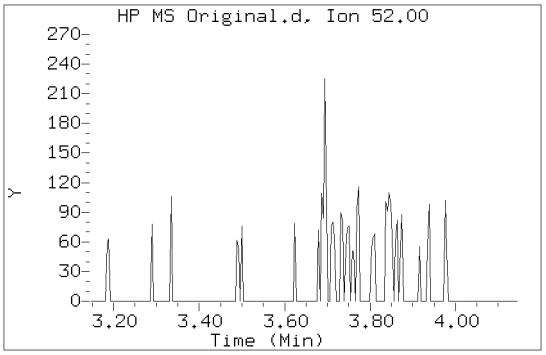
AFTER

MASS
54
AREA
1165
HEIGHT
386
27-Dec-2022
16:07
ALSHS
Ser



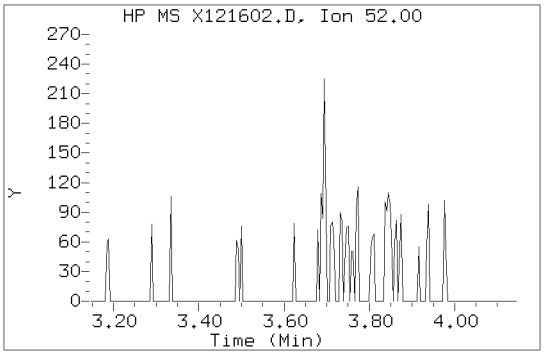
BEFORE

MASS
126
AREA
1511
HEIGHT
914
16-Dec-2022
11:54
ALSHS
Server



AFTER

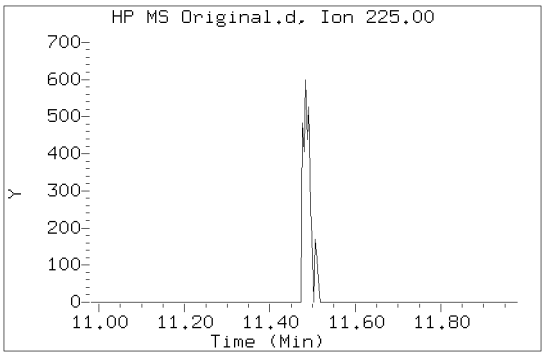
MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



Hexachlorobutadiene (87-68-3)

BEFORE

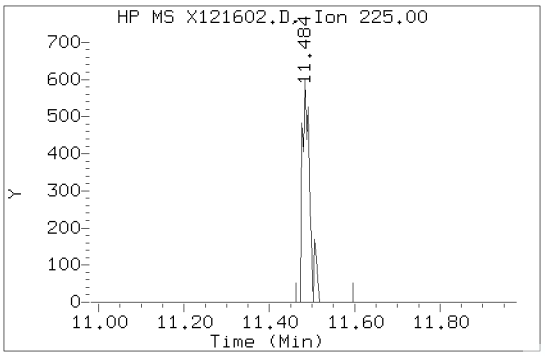
MASS
155
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

AFTER

MASS
225
AREA
726
HEIGHT
599
27-Dec-2022
16:07
ALSHS
Ser

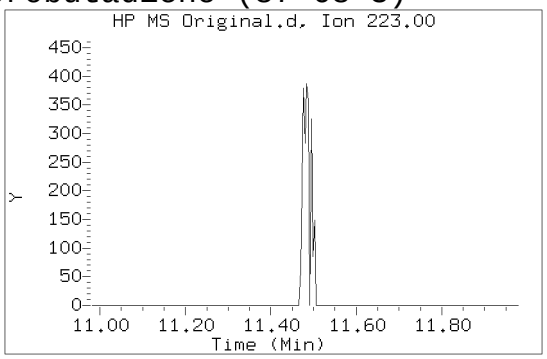


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

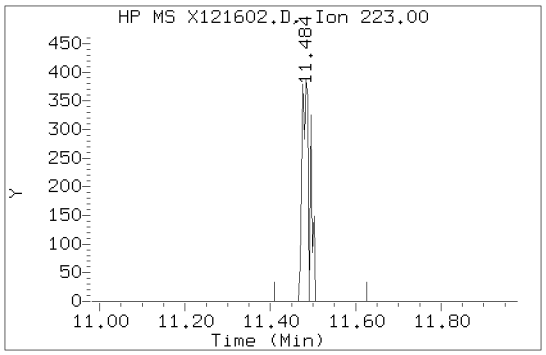
Hexachlorobutadiene (87-68-3)

Reason Code:

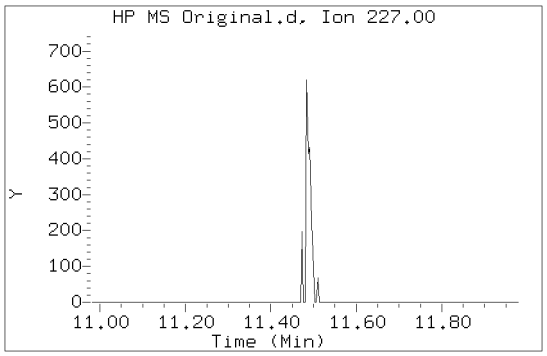
BEFORE
MASS
157
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



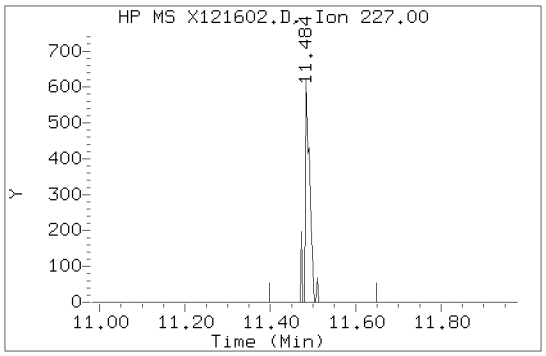
AFTER
MASS
223
AREA
502
HEIGHT
387
27-Dec-2022
16:07
ALSHS
Ser



BEFORE
MASS
75
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



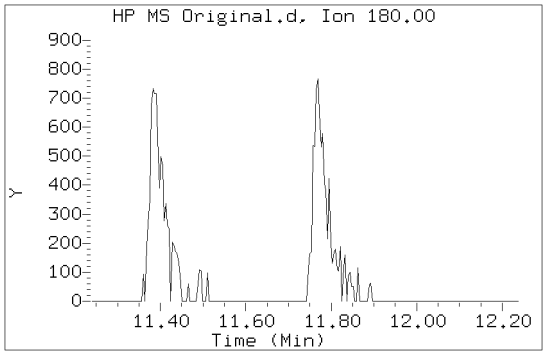
AFTER
MASS
227
AREA
469
HEIGHT
620
27-Dec-2022
16:07
ALSHS
Ser



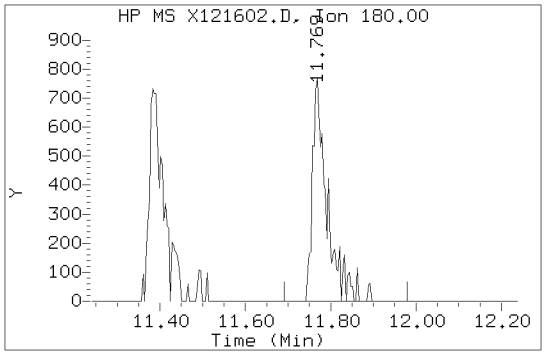
1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

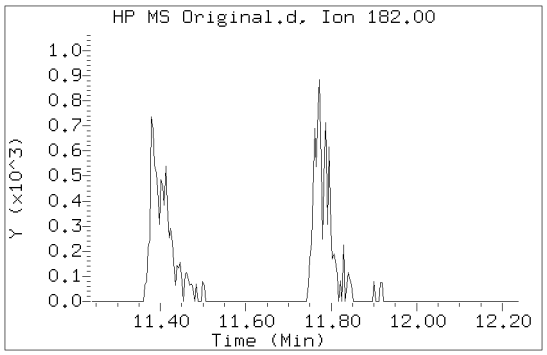
BEFORE
MASS
225
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



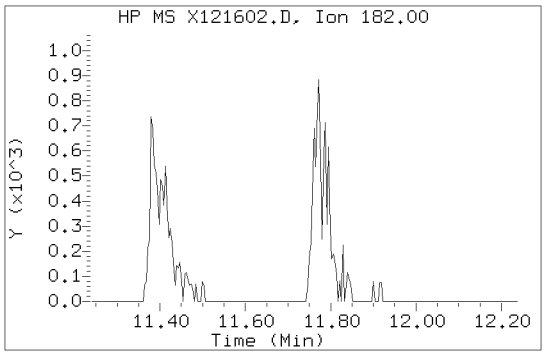
AFTER
MASS
180
AREA
1816
HEIGHT
766
27-Dec-2022
16:07
ALSHS
Ser



BEFORE
MASS
223
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER
MASS
182
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



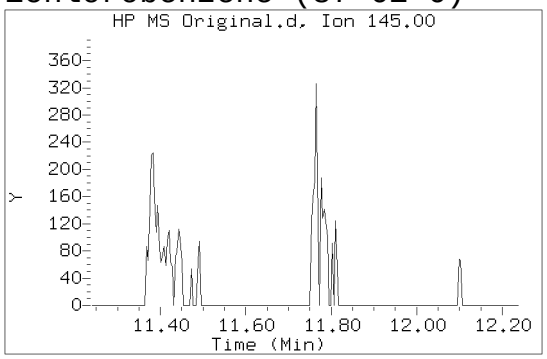
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

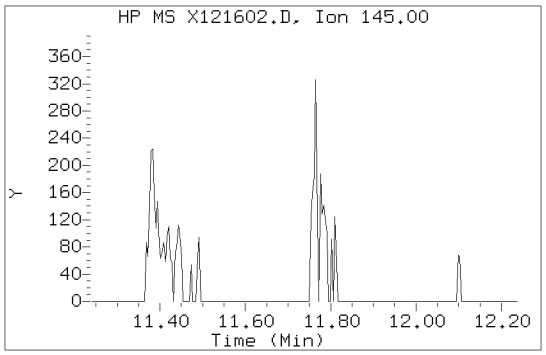
BEFORE

MASS
227
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
145
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

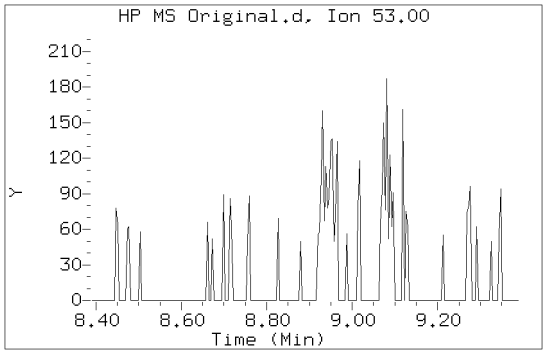


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

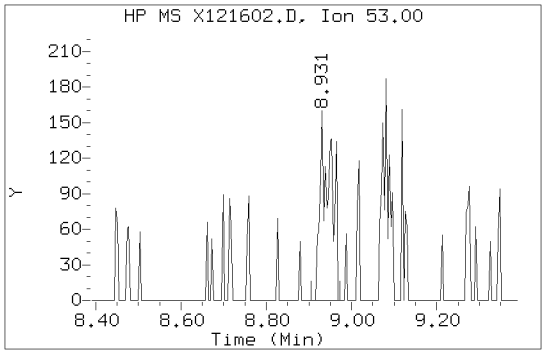
BEFORE

MASS
53
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



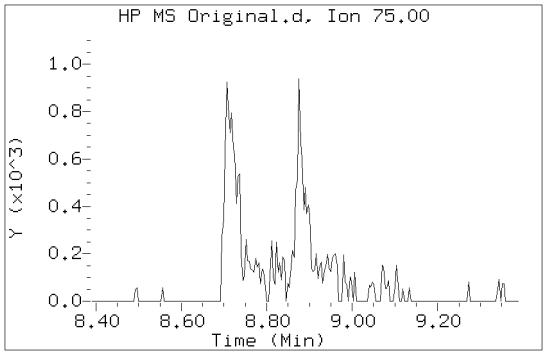
AFTER

MASS
53
AREA
280
HEIGHT
160
27-Dec-2022
16:07
ALSHS
Ser



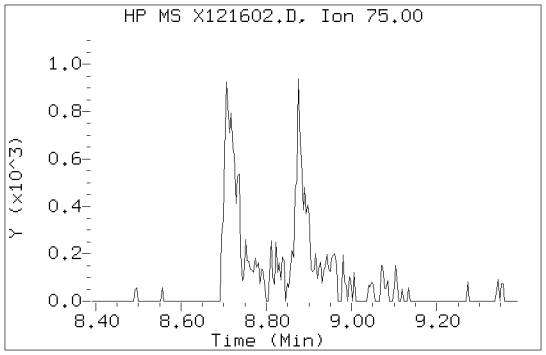
BEFORE

MASS
88
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

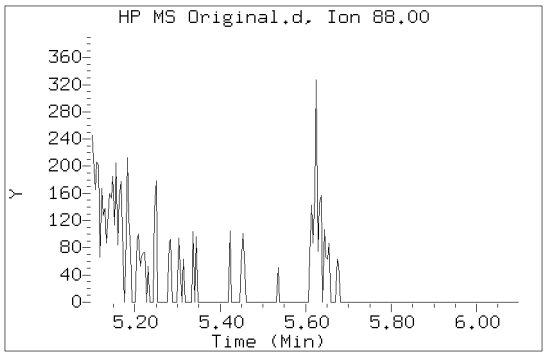


1,4-Dioxane ()

Reason Code:

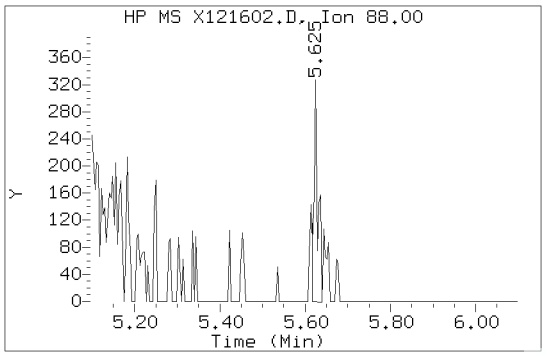
BEFORE

MASS
57
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
88
AREA
214
HEIGHT
327
27-Dec-2022
16:07
ALSHS
Ser



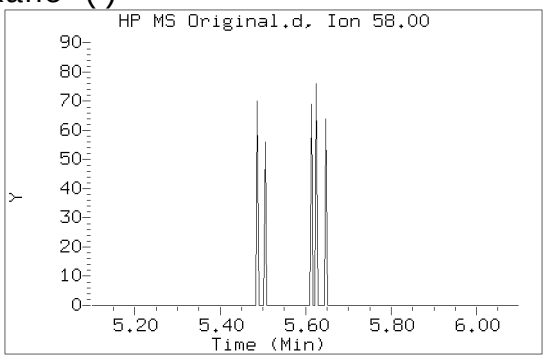
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

1,4-Dioxane ()

Reason Code:

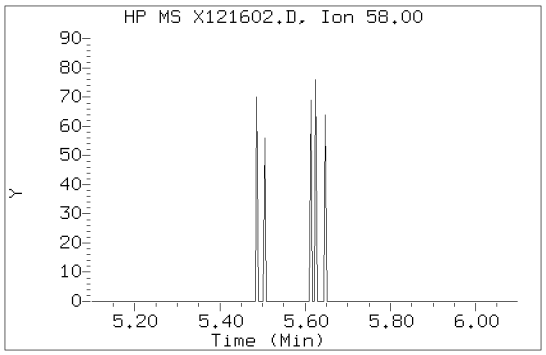
BEFORE

MASS
41
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser

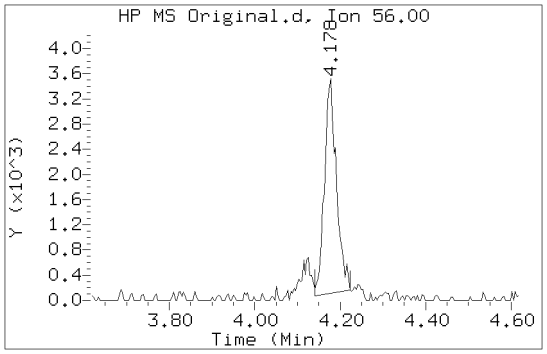


Cyclohexane (110-82-7)

Reason Code:

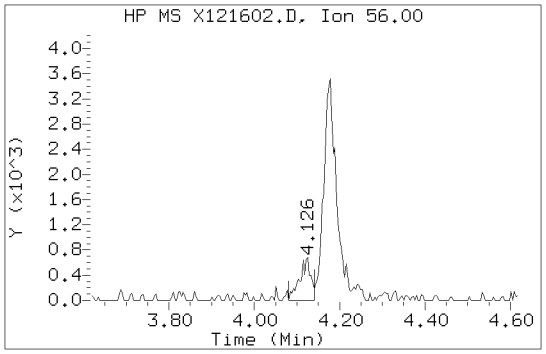
BEFORE

MASS
42
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



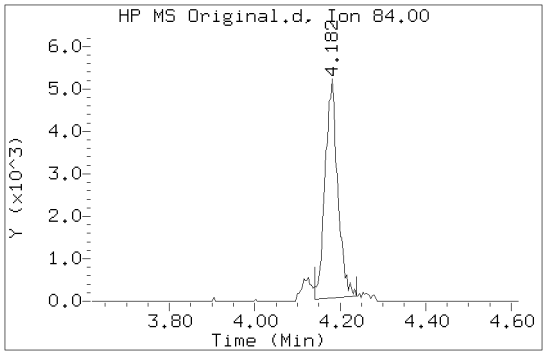
AFTER

MASS
56
AREA
1235
HEIGHT
682
27-Dec-2022
16:07
ALSHS
Ser



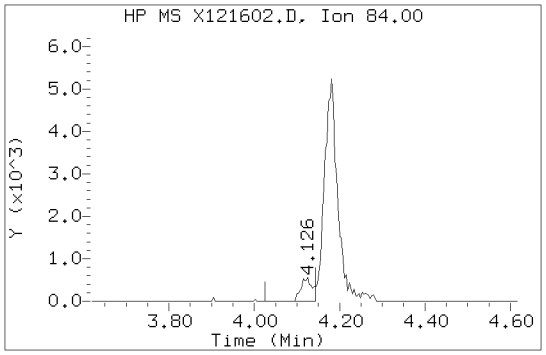
BEFORE

MASS
71
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
84
AREA
1062
HEIGHT
557
27-Dec-2022
16:07
ALSHS
Ser

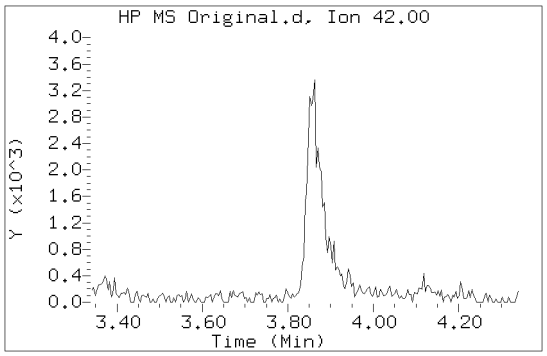


Tetrahydrofuran (109-99-9)

Reason Code:

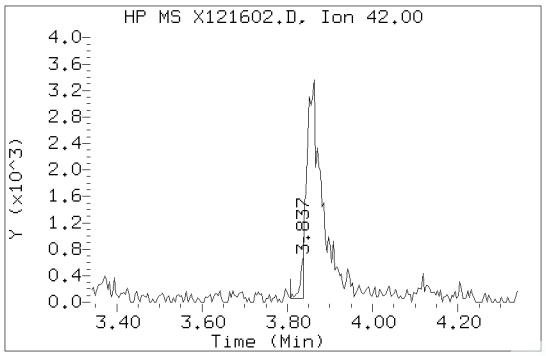
BEFORE

MASS
101
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
42
AREA
358
HEIGHT
628
27-Dec-2022
16:07
ALSHS
Ser

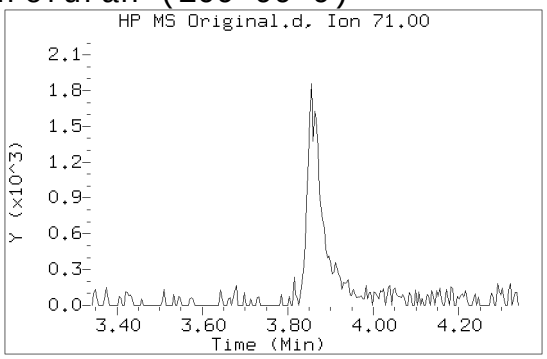


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121602.D
Inj Date : 16-DEC-2022 11:38
InstruID : voa6.i
LabSampID : VSTD000.25

Tetrahydrofuran (109-99-9)

BEFORE

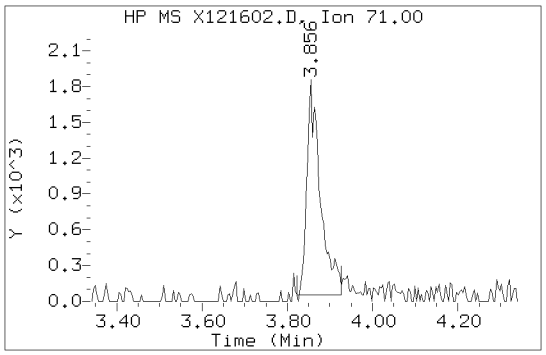
MASS
151
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

AFTER

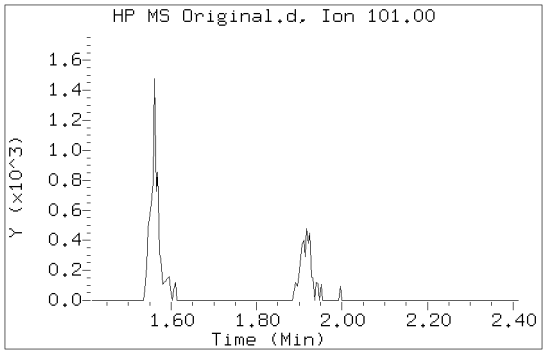
MASS
71
AREA
3962
HEIGHT
1803
27-Dec-2022
16:07
ALSHS
Ser



Freon TF (76-13-1)

BEFORE

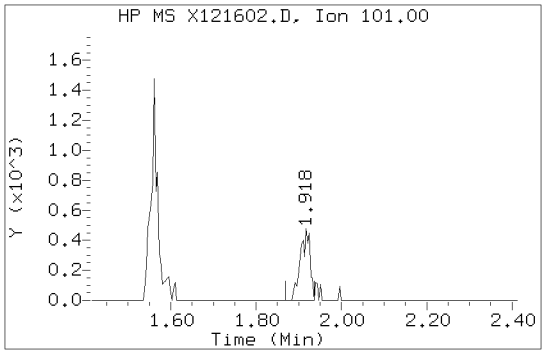
MASS
118
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



Reason Code:

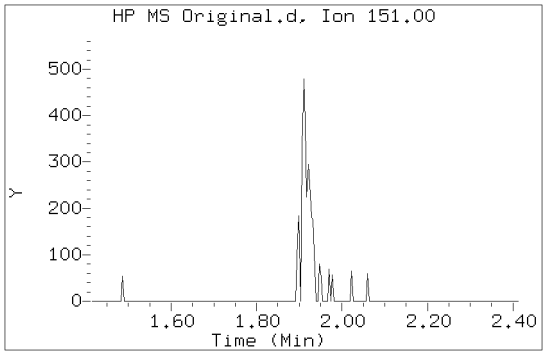
AFTER

MASS
101
AREA
765
HEIGHT
479
27-Dec-2022
16:07
ALSHS
Ser



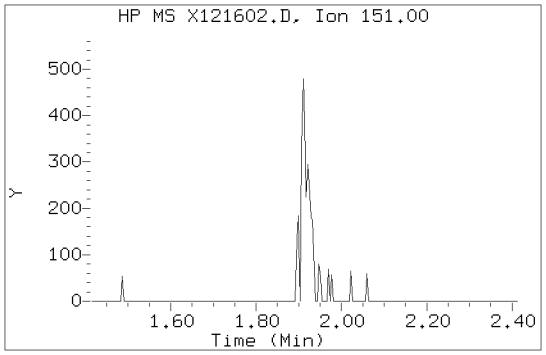
BEFORE

MASS
103
AREA
0
HEIGHT
0
16-Dec-2022
11:54
ALSHS
Server



AFTER

MASS
151
AREA
0
HEIGHT
0
27-Dec-2022
16:07
ALSHS
Ser



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Lab Smp Id: VSTD000.5 Client Smp ID: VSTD000.5
Inj Date : 16-DEC-2022 12:20
Operator : PC Inst ID: voa6.i
Smp Info : VSTD000.5;VSTD000.5;1;2;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 11:38 Cal File: X121602.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	461469	50.0000	
135 1,4-Dioxane	88	5.625	5.625	(1.346)	462	10.0000	10.95(M)
140 1,3-Butadiene	54	1.164	1.164	(0.279)	1793	0.50000	0.56(M)
25 Methacrylonitrile	41	3.848	3.848	(0.921)	2066	0.50000	0.63(M)
12 Isobutyl Alcohol	43	4.695	4.695	(1.124)	5178	10.0000	9.97(M)
13 Acetonitrile	39	2.210	2.210	(0.529)	2204	5.00000	5.24(M)
14 Allyl Chloride	41	2.206	2.206	(0.528)	4574	0.50000	0.57(M)
4 Propionitrile	54	3.686	3.686	(0.882)	2777	5.00000	5.89(M)
136 n-Hexane	57	2.772	2.772	(0.664)	1909	0.50000	0.57(M)
72 trans-1,4-Dichloro-2-butene	53	8.931	8.931	(1.165)	792	0.50000	0.56(M)
23 Chloroprene	53	1.771	1.771	(0.424)	900	0.50000	0.57(M)
145 alpha-Methylstyrene	118	9.272	9.272	(0.960)	4701	0.50000	0.60
200 Dimethyl Disulfide	94	6.202	6.202	(0.809)	5153	0.50000	0.59(M)
139 Diethyl ether	59	1.760	1.760	(0.421)	1864	0.50000	0.60
130 Ethyl Acetate	43	3.679	3.679	(0.881)	2065	0.50000	0.57(M)
40 Methyl Methacrylate	41	5.628	5.628	(1.347)	1788	0.50000	0.56(M)
49 Ethyl Methacrylate	69	6.727	6.727	(1.355)	1935	0.50000	0.59(M)
132 n-Butanol	56	5.291	5.291	(1.266)	622	10.0000	50.83(M)
142 Tetrahydrofuran	42	3.840	3.840	(0.919)	900	1.00000	(M)
150 Allyl alcohol	57	2.772	2.772	(0.664)	3089	10.0000	17.23

166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	9626	0.50000	0.57(M)
131	Methyl Acrylate	55	3.743	3.743 (0.896)	1765	0.50000	0.56(M)

			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	162	Butyl acrylate	55	8.271	8.271	(1.079)	4718	0.50000	0.55(M)
	2	Dichlorodifluoromethane	85	0.972	0.972	(0.233)	1990	0.50000	1.00(M)
	3	Chloromethane	50	1.077	1.077	(0.258)	2466	0.50000	2.77(M)
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	2412	0.50000	0.59(M)
	6	Bromomethane	94	1.336	1.336	(0.320)	1893	0.50000	2.36(M)
	7	Chloroethane	64	1.407	1.407	(0.337)	1653	0.50000	0.58(M)
	8	Trichlorofluoromethane	101	1.561	1.561	(0.374)	3286	0.50000	0.58(M)
	9	Acrolein	56	1.441	1.441	(0.345)	440	1.00000	4.17(M)
	10	Acetone	43	1.977	1.977	(0.473)	2669	1.00000	2.02(M)
	11	1,1-Dichloroethene	96	1.913	1.913	(0.458)	2037	0.50000	0.58(M)
	15	Iodomethane	142	2.026	2.026	(0.485)	2397	1.00000	3.84(TM)
	16	Acrylonitrile	53	2.566	2.566	(0.614)	1118	1.00000	0.94(M)
	17	Methylene Chloride	84	2.296	2.296	(0.550)	2938	0.50000	0.61(M)
	18	Methyl tert-butyl ether	73	2.536	2.536	(0.607)	5841	0.50000	0.50(M)
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	9921	1.00000	1.08(M)
	20	trans-1,2-Dichloroethene	96	2.543	2.543	(0.609)	2218	0.50000	0.56(M)
	21	Vinyl Acetate	43	3.023	3.023	(0.724)	10138	1.00000	1.00(M)
	22	1,1-Dichloroethane	63	2.926	2.926	(0.700)	3874	0.50000	0.56(M)
	24	2-Butanone	43	3.649	3.649	(0.873)	1292	1.00000	3.93(M)
	26	2,2-Dichloropropane	77	3.514	3.514	(0.841)	3238	0.50000	0.55(M)
	27	cis-1,2-Dichloroethene	96	3.544	3.544	(0.848)	2852	0.50000	0.59
	28	Chloroform	83	3.908	3.908	(0.935)	4040	0.50000	0.52(M)
	29	Bromochloromethane	128	3.799	3.799	(0.909)	1481	0.50000	0.56
$	30	Dibromofluoromethane	113	4.110	4.110	(0.984)	2321	0.50000	0.35
	31	1,1,1-Trichloroethane	97	4.084	4.084	(0.978)	3512	0.50000	0.57(M)
	32	1,1-Dichloropropene	75	4.290	4.290	(0.864)	2468	0.50000	0.50(M)
	33	1,2-Dichloroethane	62	4.567	4.567	(0.920)	3129	0.50000	0.55(M)
	34	Carbon Tetrachloride	117	4.264	4.264	(0.859)	2763	0.50000	0.52(MH)
$	35	1,2-Dichloroethane-d4	65	4.481	4.481	(1.073)	2849	0.50000	0.87(T)
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	687671	50.0000	
	37	Benzene	78	4.519	4.519	(0.910)	9243	0.50000	0.56
	38	Trichloroethene	130	5.216	5.216	(1.051)	2583	0.50000	0.55(M)
	39	Bromodichloromethane	83	5.730	5.730	(1.154)	3650	0.50000	0.59(M)
	41	2-Chloroethylvinyl ether	63	6.071	6.071	(1.223)	1861	1.00000	1.06(M)
	42	1,2-Dichloropropane	63	5.441	5.441	(1.096)	2449	0.50000	0.56(M)
	44	Dibromomethane	93	5.557	5.557	(1.119)	1725	0.50000	0.58
	45	4-Methyl-2-Pentanone	43	6.337	6.337	(0.826)	3741	1.00000	1.08(M)
	46	cis-1,3-Dichloropropene	75	6.168	6.168	(1.242)	3695	0.50000	0.51(M)
*	47	Chlorobenzene-d5	117	7.668	7.668	(1.000)	645291	50.0000	
$	48	Toluene-d8	98	6.401	6.401	(0.835)	9525	0.50000	0.59
	50	Toluene	91	6.460	6.460	(0.843)	10374	0.50000	0.58(M)
	51	trans-1,3-Dichloropropene	75	6.697	6.697	(1.349)	3042	0.50000	0.50
	52	2-Hexanone	43	7.117	7.117	(0.928)	2580	1.00000	1.09
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	2092	0.50000	0.58(M)
	54	1,3-Dichloropropane	76	6.993	6.993	(0.912)	4005	0.50000	0.56(M)
	55	Dibromochloromethane	129	7.180	7.180	(0.936)	2827	0.50000	0.54
	56	Tetrachloroethene	164	6.933	6.933	(0.904)	2131	0.50000	0.57(M)
	57	1,2-Dibromoethane	107	7.270	7.270	(0.948)	2340	0.50000	0.52(M)
	58	1-Chlorohexane	55	7.705	7.705	(1.552)	1829	0.50000	0.55(MH)
	59	Chlorobenzene	112	7.694	7.694	(1.003)	7747	0.50000	0.61
	60	1,1,1,2-Tetrachloroethane	131	7.784	7.784	(1.015)	2741	0.50000	0.58(M)
	61	Ethylbenzene	106	7.806	7.806	(1.018)	3064	0.50000	0.51(M)

62 m,p-Xylenes	106	7.911	7.911 (1.032)	9016	1.00000	1.17(M)
63 o-Xylene	106	8.252	8.252 (1.076)	4412	0.50000	0.58(M)

			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	64	Styrene	104	8.286	8.286	(1.081)	6634	0.50000	0.52(M)
	66	Bromoform	173	8.421	8.421	(1.098)	2013	0.50000	0.56(TM)
	67	Isopropylbenzene	105	8.567	8.567	(1.117)	8757	0.50000	0.50(M)
	68	1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	3194	0.50000	0.57(M)
$	69	4-Bromofluorobenzene	95	8.706	8.706	(1.135)	3870	0.50000	0.71(M)
*	70	1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	347824	50.0000	
	71	1,2,3-Trichloropropane	75	8.871	8.871	(0.918)	2019	0.50000	0.52(M)
	73	n-Propylbenzene	91	8.923	8.923	(0.924)	11163	0.50000	0.57(M)
	74	Bromobenzene	156	8.818	8.818	(0.913)	3147	0.50000	0.55(M)
	75	1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	7182	0.50000	0.50(M)
	76	2-Chlorotoluene	91	8.983	8.983	(0.930)	6718	0.50000	0.53(M)
	77	4-Chlorotoluene	91	9.088	9.088	(0.941)	7644	0.50000	0.53(M)
	78	tert-Butylbenzene	119	9.339	9.339	(0.967)	6389	0.50000	0.54(M)
	79	1,2,4-Trimethylbenzene	105	9.384	9.384	(0.971)	8496	0.50000	0.56(M)
	81	sec-Butylbenzene	105	9.523	9.523	(0.986)	7938	0.50000	0.51(M)
	82	p-Isopropyltoluene	119	9.651	9.651	(0.999)	7343	0.50000	0.52(M)
	83	1,3-Dichlorobenzene	146	9.613	9.613	(0.995)	4677	0.50000	0.49(M)
	84	1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	5674	0.50000	0.54(M)
	86	Benzyl Chloride	91	9.831	9.831	(1.282)	3642	0.50000	3.03
	87	n-Butylbenzene	91	10.014	10.014	(1.036)	5149	0.50000	2.14(M)
	88	1,2-Dichlorobenzene	146	10.010	10.010	(1.036)	5504	0.50000	0.56(M)
	89	1,2-Dibromo-3-Chloropropane	155	10.678	10.678	(1.105)	441	0.50000	0.58(M)
	90	1,2,4-Trichlorobenzene	180	11.364	11.364	(1.176)	3187	0.50000	0.51(M)
	91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	1477	0.50000	0.49(M)
	92	Naphthalene	128	11.581	11.581	(1.199)	7025	0.50000	0.50
	93	1,2,3-Trichlorobenzene	180	11.765	11.765	(1.218)	3572	0.50000	0.60(M)
M	94	1,2-Dichloroethylene (total)	96				5070	1.00000	
M	95	Xylenes (total)	106				13428	1.50000	
	141	Cyclohexane	56	4.114	4.114	(0.985)	2803	0.50000	1.84(M)
	138	Freon TF	101	1.917	1.917	(0.459)	1851	0.50000	0.54(M)
	147	Methylcyclohexane	55	5.415	5.415	(1.091)	4781	0.50000	0.56(M)
	146	Methyl Acetate	43	2.240	2.240	(0.536)	1269	0.50000	0.61(M)

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

01179263

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D

Page 1

Date : 16-DEC-2022 12:20

Client ID: VSTD000.5

Instrument: voa6.i

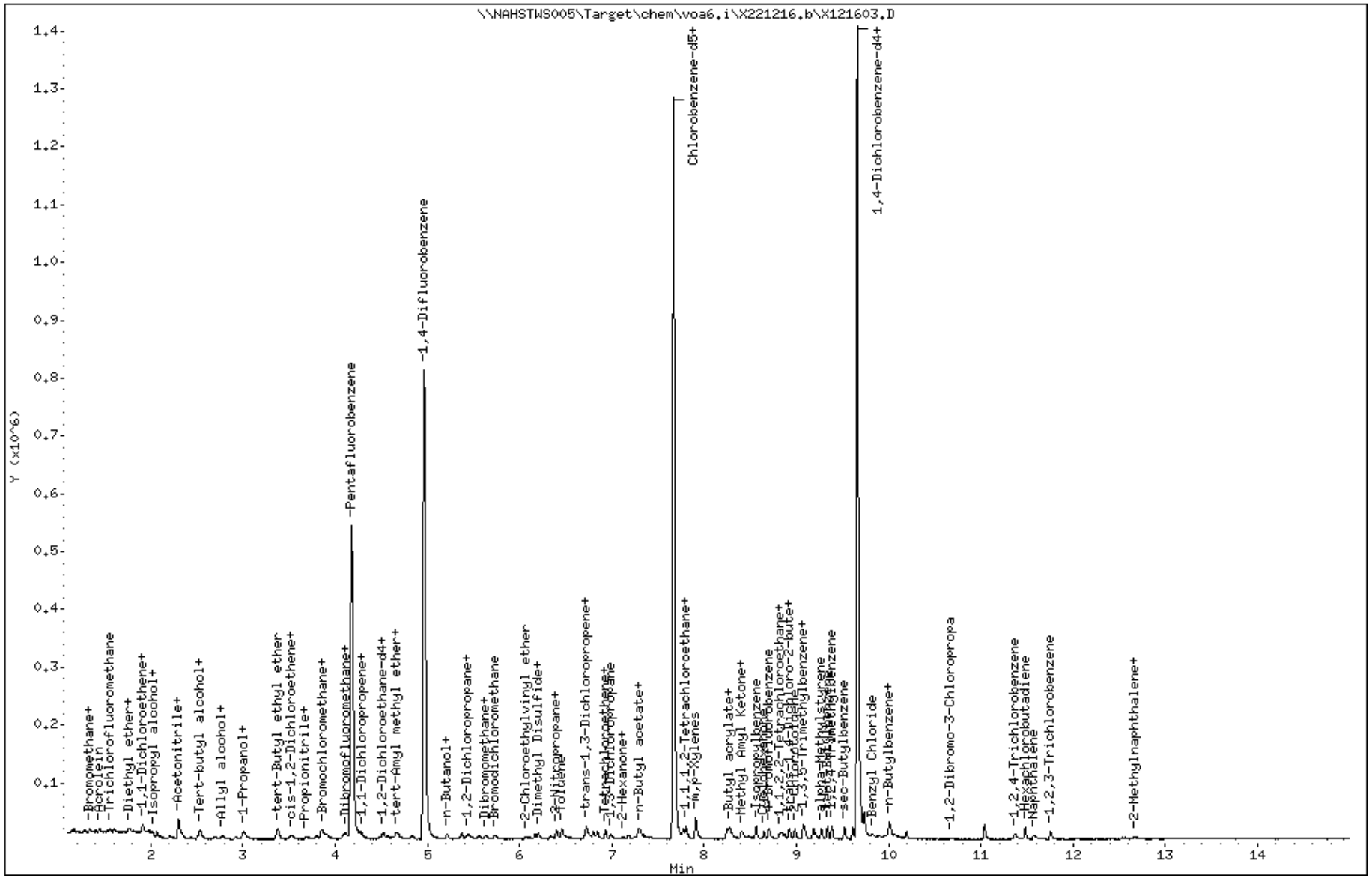
Sample Info: VSTD000.5;VSTD000.5;1;2;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



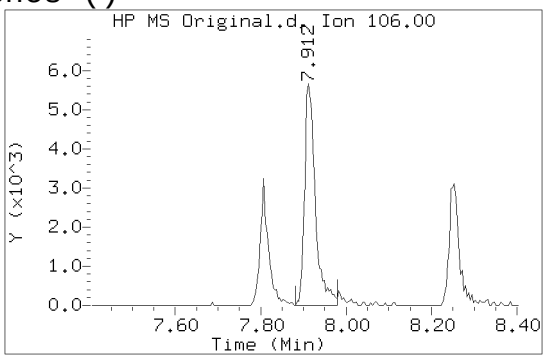
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

m,p-Xylenes ()

Reason Code:

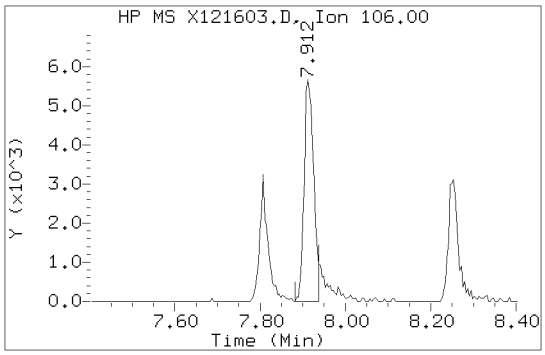
BEFORE

MASS
106
AREA
10070
HEIGHT
5666
27-Dec-2022
16:03
linh
pham



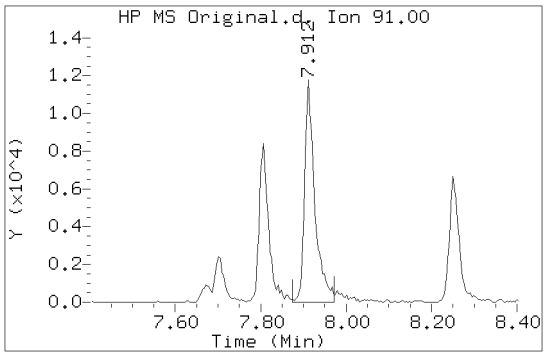
AFTER

MASS
106
AREA
9016
HEIGHT
5666
27-Dec-2022
16:07
linh
pham



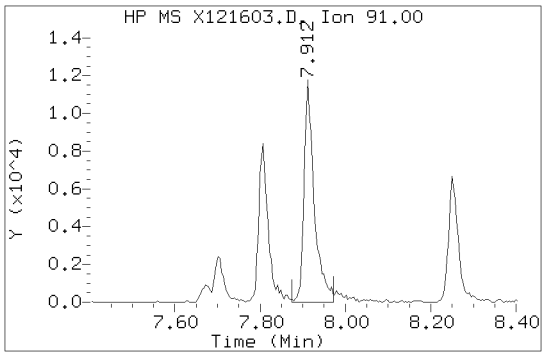
BEFORE

MASS
91
AREA
19887
HEIGHT
11768
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
19887
HEIGHT
11768
27-Dec-2022
16:07
linh
pham

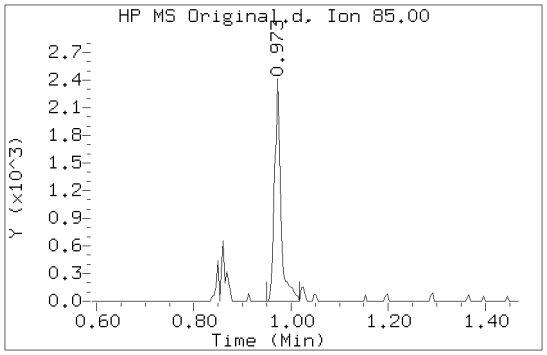


Dichlorodifluoromethane (75-71-8)

Reason Code:

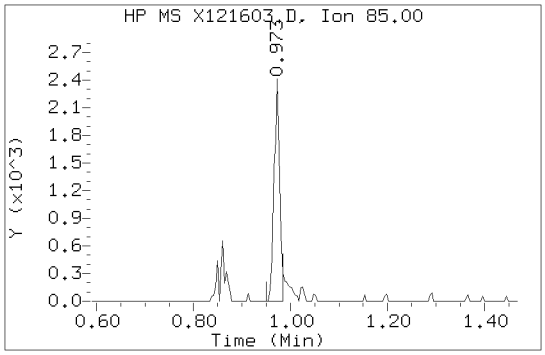
BEFORE

MASS
85
AREA
2242
HEIGHT
2413
27-Dec-2022
16:03
linh
pham



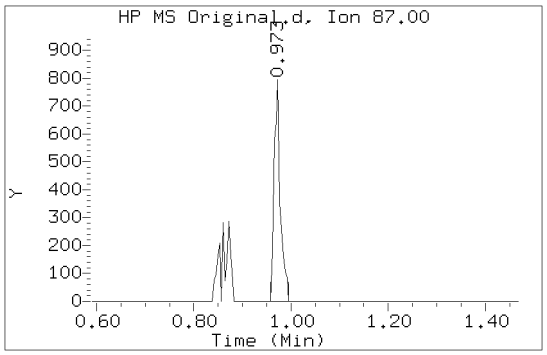
AFTER

MASS
85
AREA
1990
HEIGHT
2413
27-Dec-2022
16:07
linh
pham



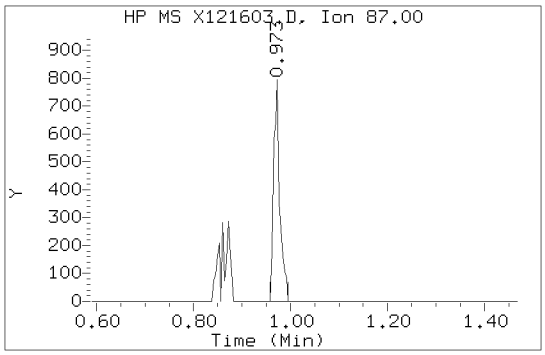
BEFORE

MASS
87
AREA
713
HEIGHT
795
27-Dec-2022
16:03
linh
pham



AFTER

MASS
87
AREA
713
HEIGHT
795
27-Dec-2022
16:07
linh
pham

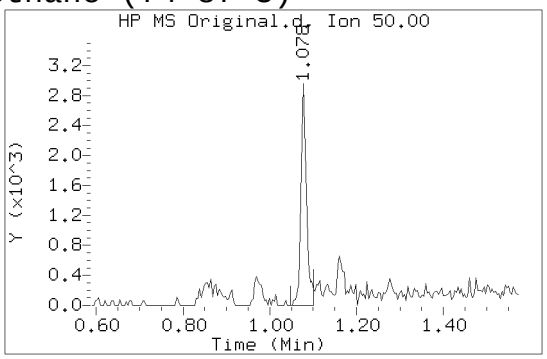


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Chloromethane (74-87-3)

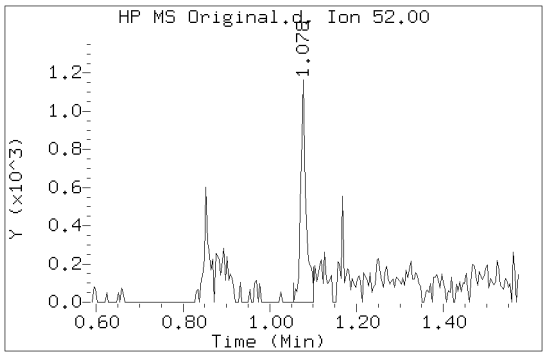
BEFORE

MASS
50
AREA
2589
HEIGHT
2959
27-Dec-2022
16:03
linh
pham



BEFORE

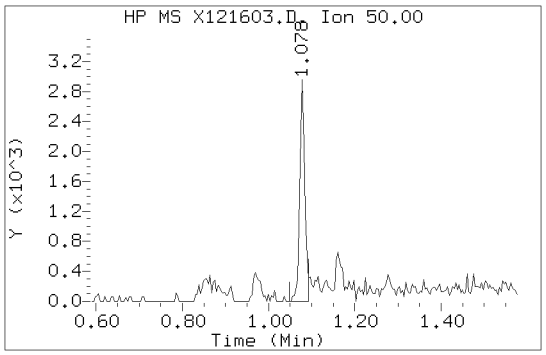
MASS
52
AREA
985
HEIGHT
1164
27-Dec-2022
16:03
linh
pham



Reason Code:

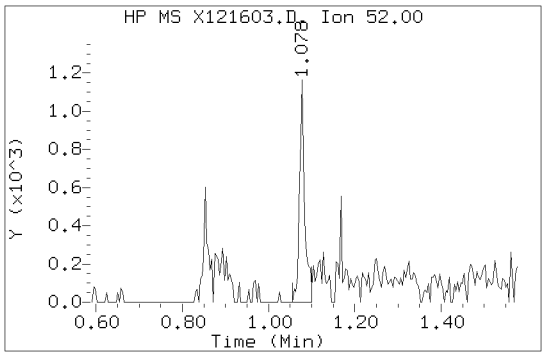
AFTER

MASS
50
AREA
2466
HEIGHT
2959
27-Dec-2022
16:07
linh
pham



AFTER

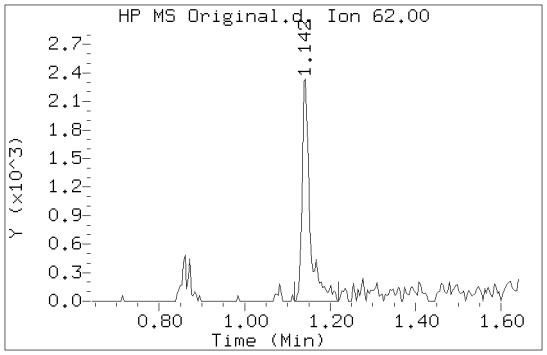
MASS
52
AREA
985
HEIGHT
1164
27-Dec-2022
16:07
linh
pham



Vinyl Chloride (75-01-4)

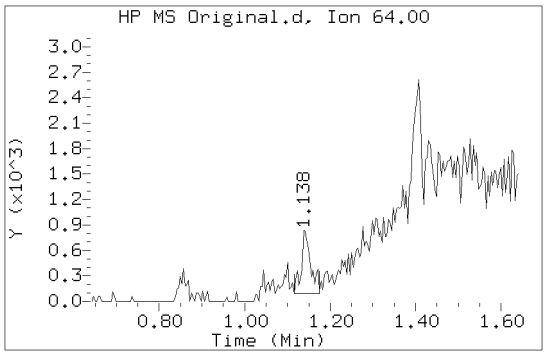
BEFORE

MASS
62
AREA
3132
HEIGHT
2337
27-Dec-2022
16:03
linh
pham



BEFORE

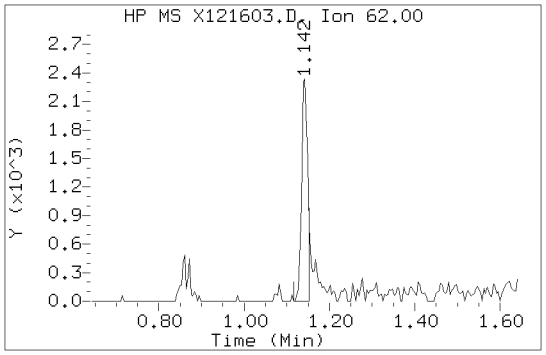
MASS
64
AREA
1174
HEIGHT
750
27-Dec-2022
16:03
linh
pham



Reason Code:

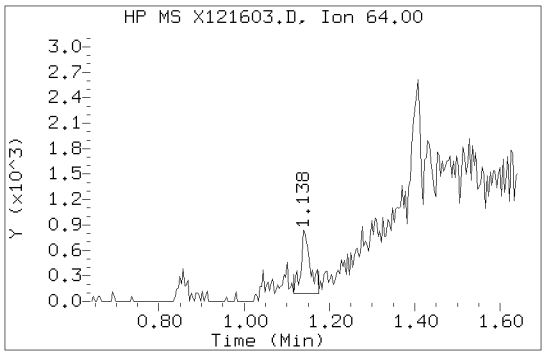
AFTER

MASS
62
AREA
2412
HEIGHT
2337
27-Dec-2022
16:07
linh
pham



AFTER

MASS
64
AREA
1174
HEIGHT
750
27-Dec-2022
16:07
linh
pham



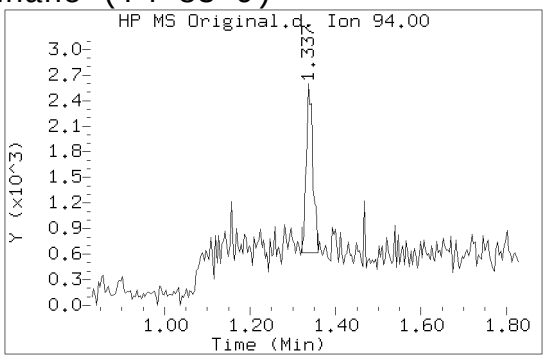
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Bromomethane (74-83-9)

Reason Code:

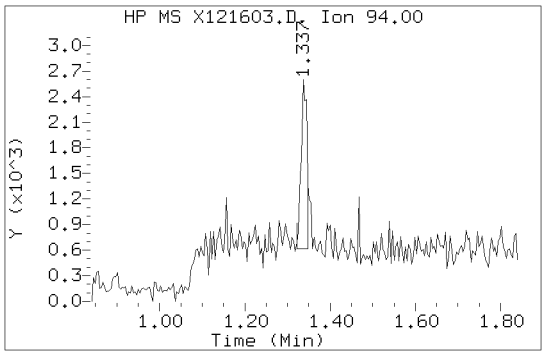
BEFORE

MASS
94
AREA
2146
HEIGHT
1983
27-Dec-2022
16:03
linh
pham



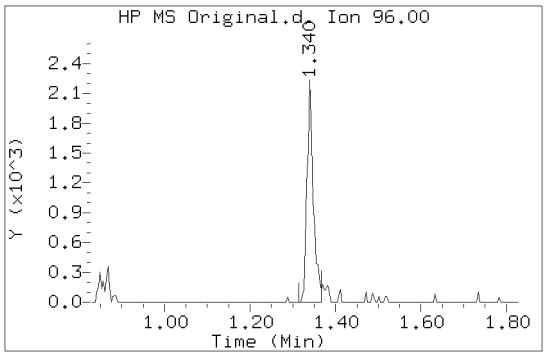
AFTER

MASS
94
AREA
1893
HEIGHT
1983
27-Dec-2022
16:07
linh
pham



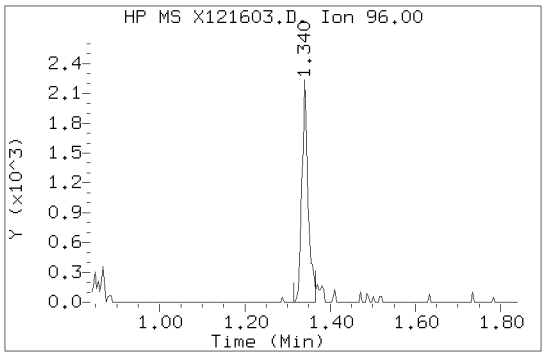
BEFORE

MASS
96
AREA
2304
HEIGHT
2236
27-Dec-2022
16:03
linh
pham



AFTER

MASS
96
AREA
2304
HEIGHT
2236
27-Dec-2022
16:07
linh
pham

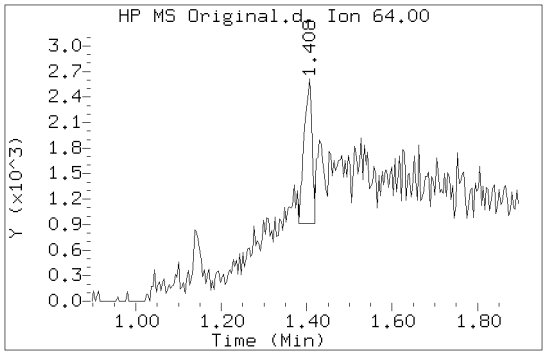


Chloroethane (75-00-3)

Reason Code:

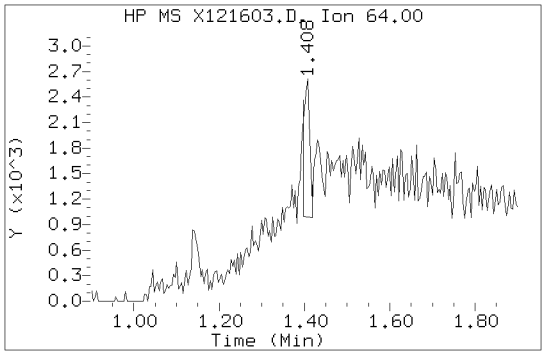
BEFORE

MASS
64
AREA
2196
HEIGHT
1702
27-Dec-2022
16:03
linh
pham



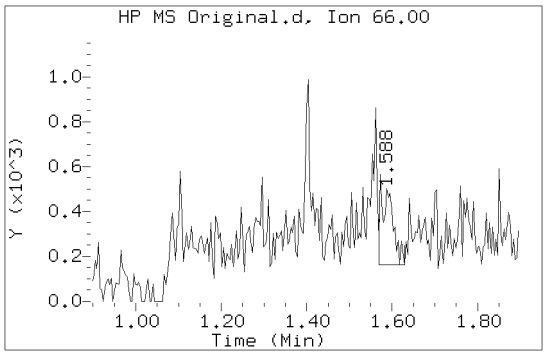
AFTER

MASS
64
AREA
1653
HEIGHT
1624
27-Dec-2022
16:07
linh
pham



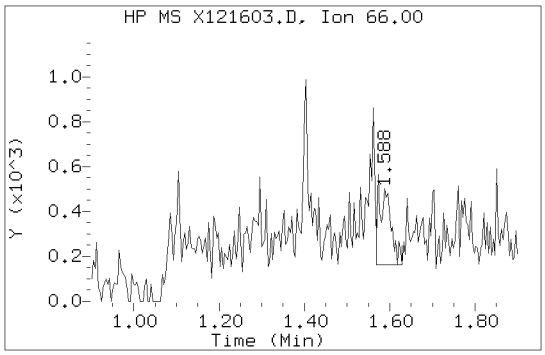
BEFORE

MASS
66
AREA
677
HEIGHT
340
27-Dec-2022
16:03
linh
pham



AFTER

MASS
66
AREA
677
HEIGHT
340
27-Dec-2022
16:07
linh
pham



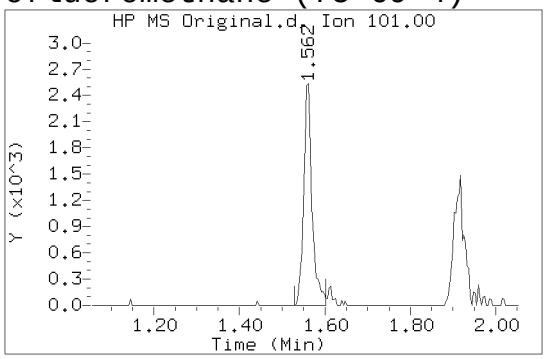
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Trichlorofluoromethane (75-69-4)

Reason Code:

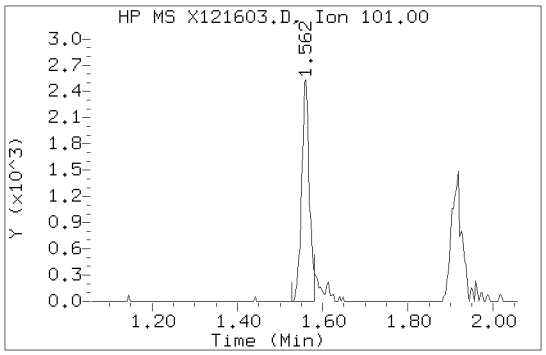
BEFORE

MASS
101
AREA
3530
HEIGHT
2534
27-Dec-2022
16:03
linh
pham



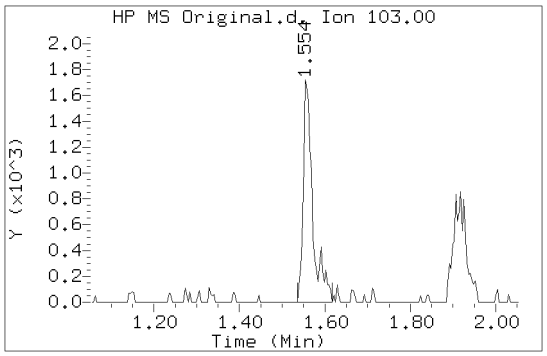
AFTER

MASS
101
AREA
3286
HEIGHT
2534
27-Dec-2022
16:07
linh
pham



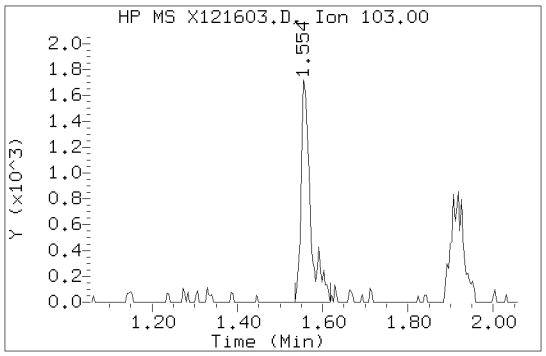
BEFORE

MASS
103
AREA
2708
HEIGHT
1720
27-Dec-2022
16:03
linh
pham



AFTER

MASS
103
AREA
2708
HEIGHT
1720
27-Dec-2022
16:07
linh
pham

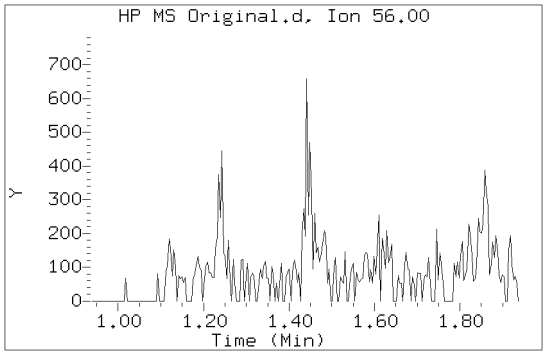


Acrolein (107-02-8)

Reason Code:

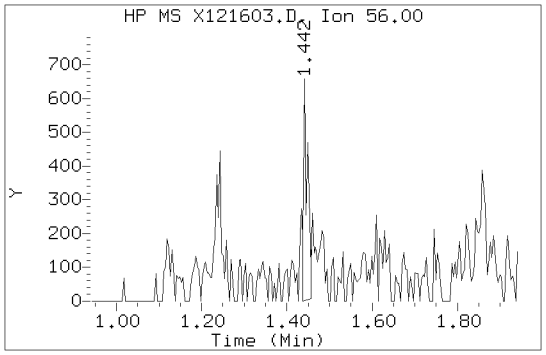
BEFORE

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



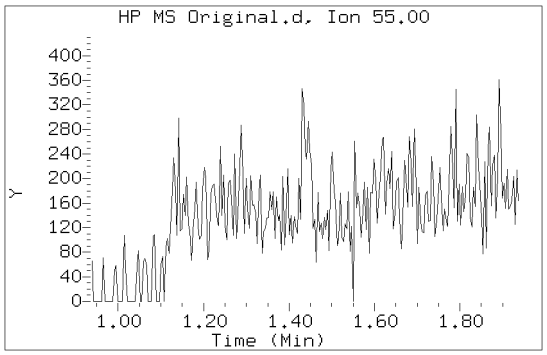
AFTER

MASS
56
AREA
440
HEIGHT
656
27-Dec-2022
16:07
linh
pham



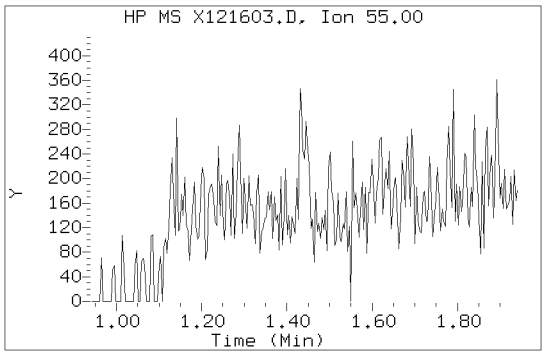
BEFORE

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

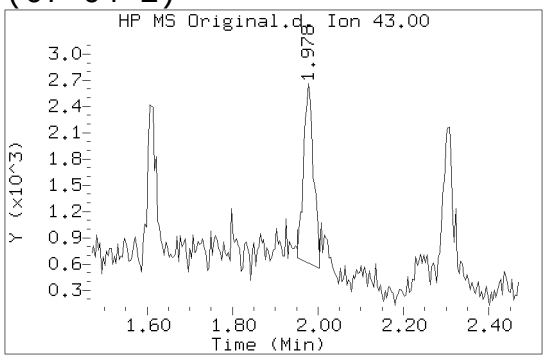


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

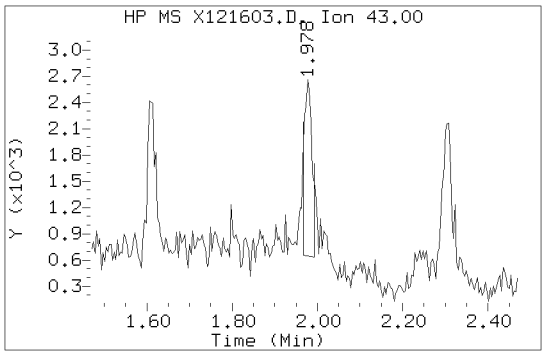
Acetone (67-64-1)

Reason Code:

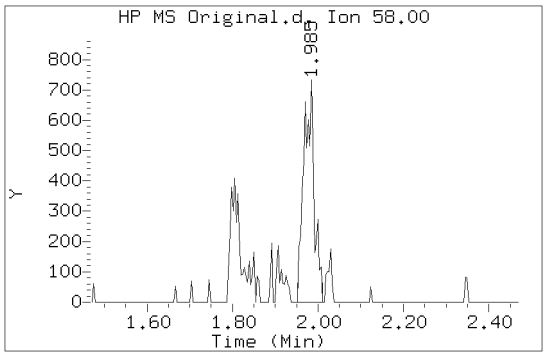
BEFORE
MASS
43
AREA
3388
HEIGHT
2046
27-Dec-2022
16:03
linh
pham



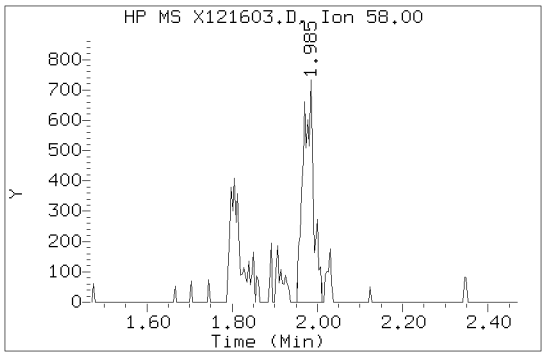
AFTER
MASS
43
AREA
2669
HEIGHT
2015
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
58
AREA
1264
HEIGHT
733
27-Dec-2022
16:03
linh
pham



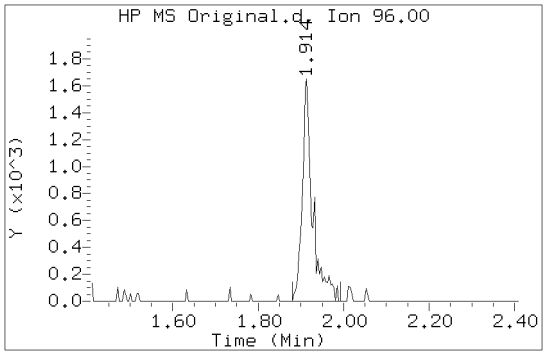
AFTER
MASS
58
AREA
1264
HEIGHT
733
27-Dec-2022
16:07
linh
pham



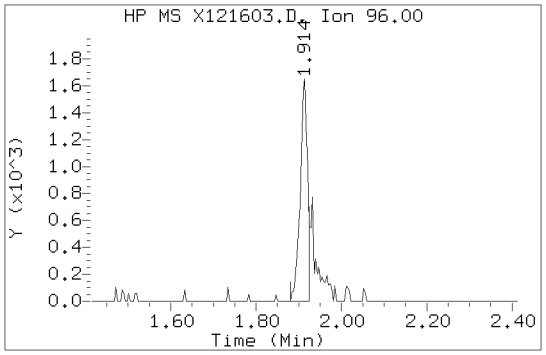
1,1-Dichloroethene (75-35-4)

Reason Code:

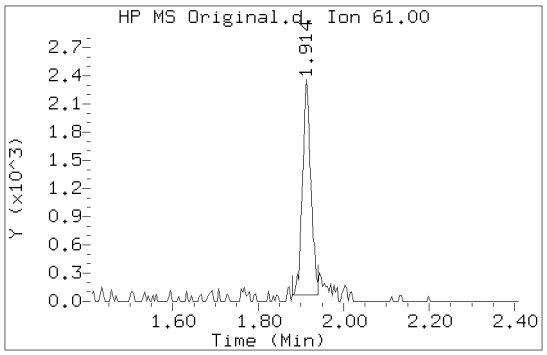
BEFORE
MASS
96
AREA
2836
HEIGHT
1651
27-Dec-2022
16:03
linh
pham



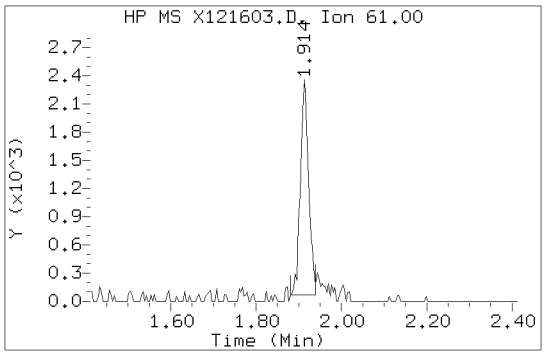
AFTER
MASS
96
AREA
2037
HEIGHT
1651
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
61
AREA
3197
HEIGHT
2293
27-Dec-2022
16:03
linh
pham



AFTER
MASS
61
AREA
3197
HEIGHT
2293
27-Dec-2022
16:07
linh
pham



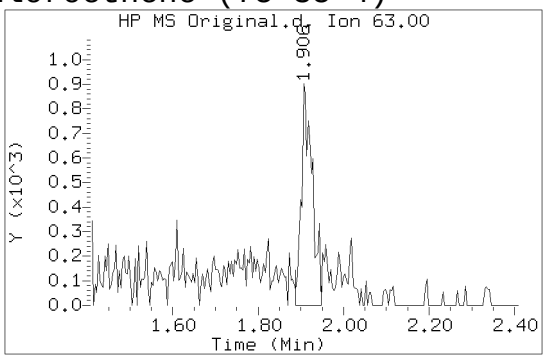
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1-Dichloroethene (75-35-4)

Reason Code:

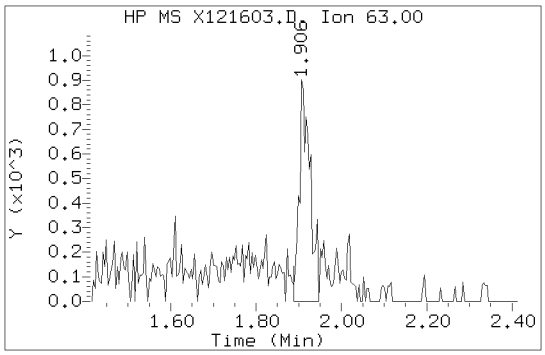
BEFORE

MASS
63
AREA
1607
HEIGHT
902
27-Dec-2022
16:03
linh
pham



AFTER

MASS
63
AREA
1607
HEIGHT
902
27-Dec-2022
16:07
linh
pham

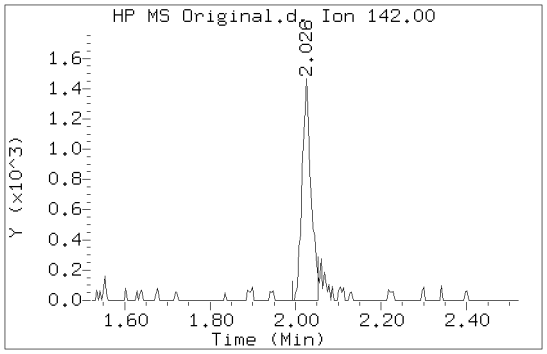


Iodomethane (74-88-4)

Reason Code:

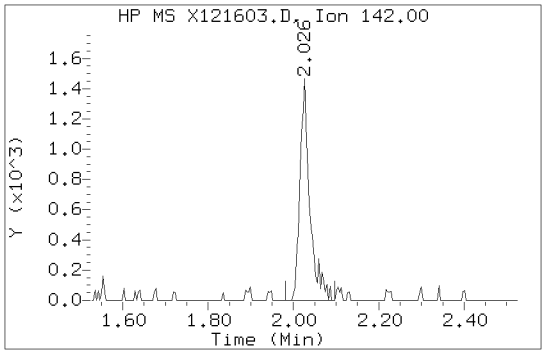
BEFORE

MASS
142
AREA
2166
HEIGHT
1466
27-Dec-2022
16:03
linh
pham



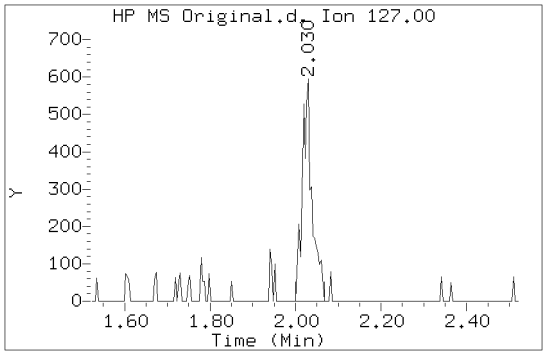
AFTER

MASS
142
AREA
2397
HEIGHT
1466
27-Dec-2022
16:07
linh
pham



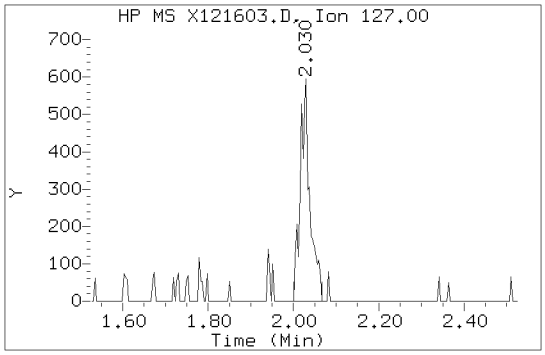
BEFORE

MASS
127
AREA
958
HEIGHT
595
27-Dec-2022
16:03
linh
pham



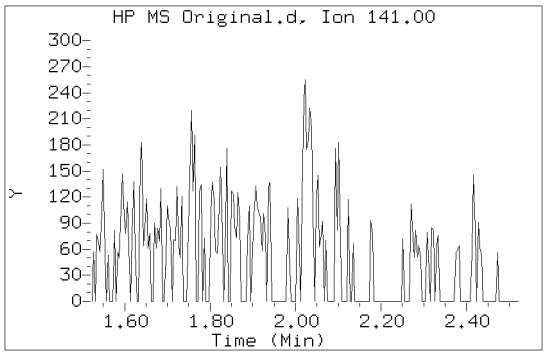
AFTER

MASS
127
AREA
958
HEIGHT
595
27-Dec-2022
16:07
linh
pham



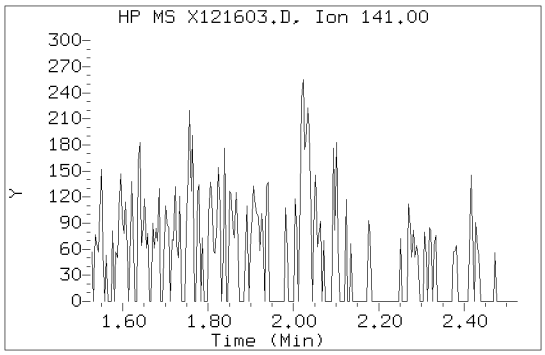
BEFORE

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

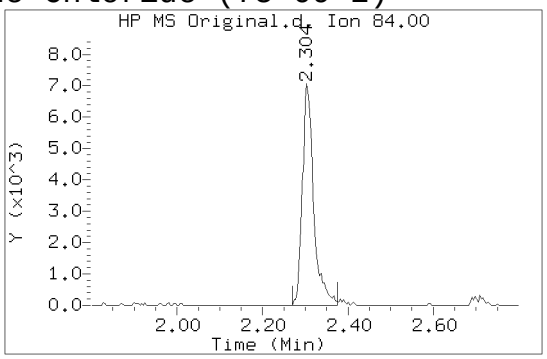


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

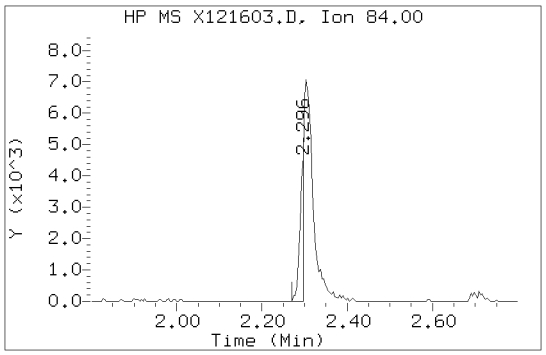
Methylene Chloride (75-09-2)

Reason Code:

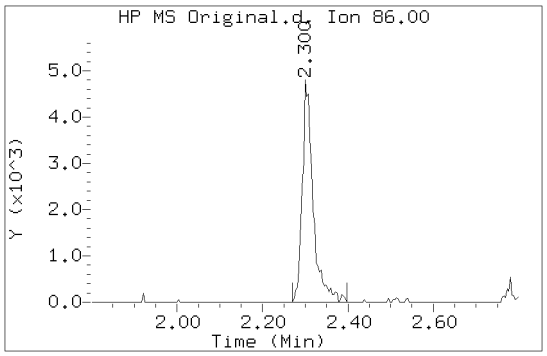
BEFORE
MASS
84
AREA
13307
HEIGHT
7067
27-Dec-2022
16:03
linh
pham



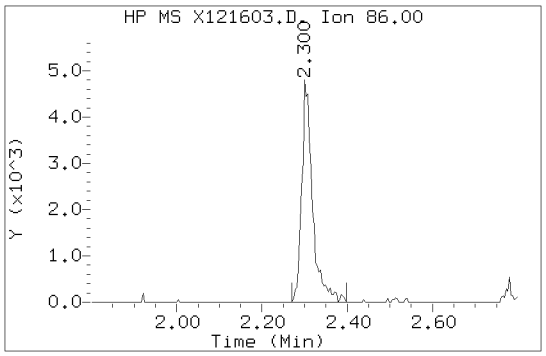
AFTER
MASS
84
AREA
2938
HEIGHT
4595
27-Dec-2022
16:07
linh
pham



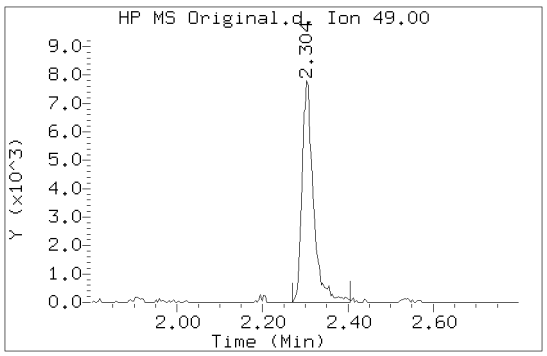
BEFORE
MASS
86
AREA
8692
HEIGHT
4802
27-Dec-2022
16:03
linh
pham



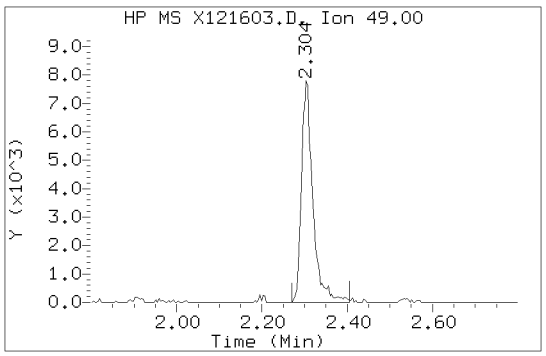
AFTER
MASS
86
AREA
8692
HEIGHT
4802
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
49
AREA
14733
HEIGHT
7803
27-Dec-2022
16:03
linh
pham



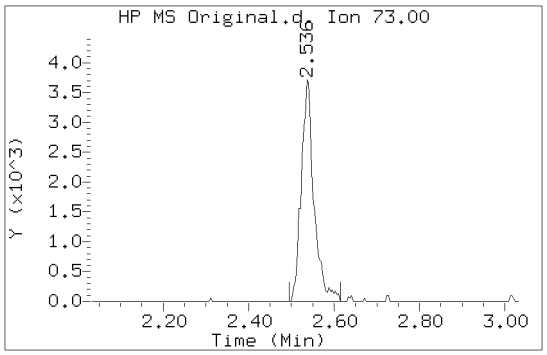
AFTER
MASS
49
AREA
14733
HEIGHT
7803
27-Dec-2022
16:07
linh
pham



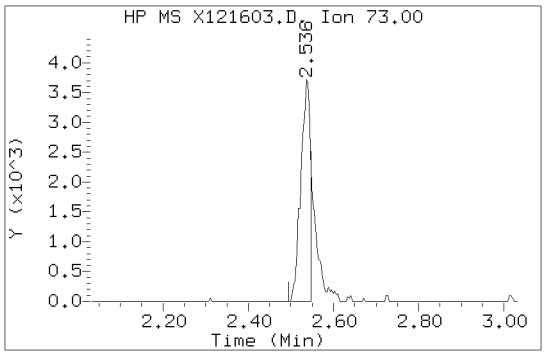
Methyl tert-butyl ether (1634-04-4)

Reason Code:

BEFORE
MASS
73
AREA
7826
HEIGHT
3716
27-Dec-2022
16:03
linh
pham



AFTER
MASS
73
AREA
5841
HEIGHT
3716
27-Dec-2022
16:07
linh
pham

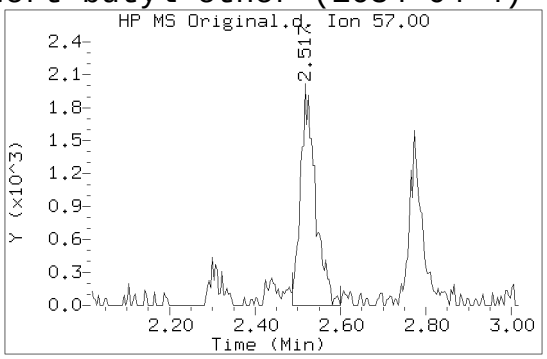


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Methyl tert-butyl ether (1634-04-4)

BEFORE

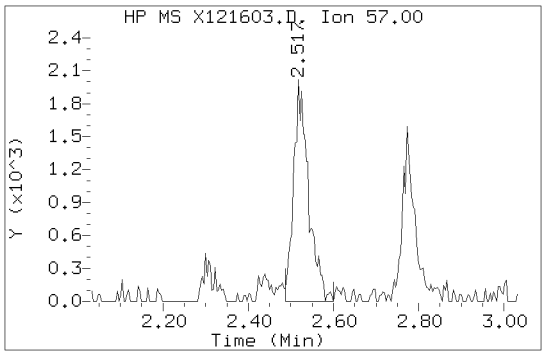
MASS
57
AREA
4915
HEIGHT
2019
27-Dec-2022
16:03
linh
pham



Reason Code:

AFTER

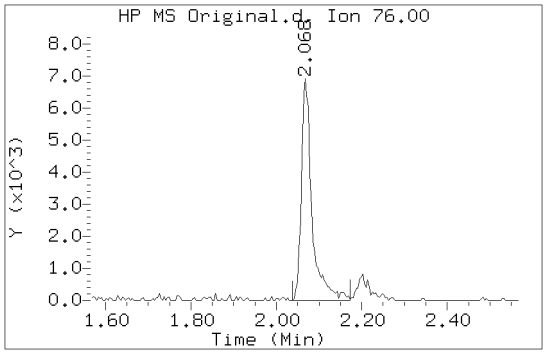
MASS
57
AREA
4915
HEIGHT
2019
27-Dec-2022
16:07
linh
pham



Carbon Disulfide (75-15-0)

BEFORE

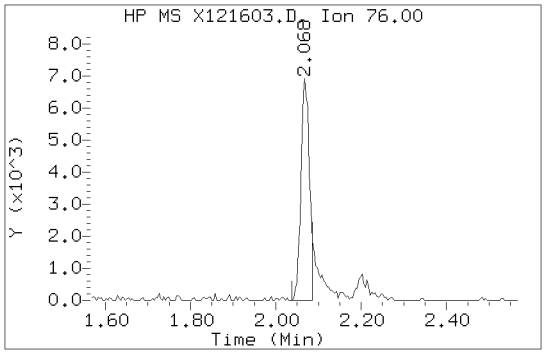
MASS
76
AREA
12313
HEIGHT
6923
27-Dec-2022
16:03
linh
pham



Reason Code:

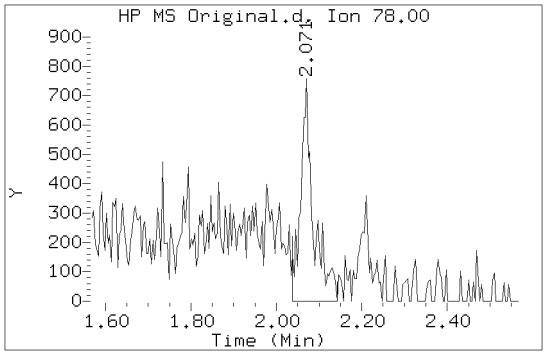
AFTER

MASS
76
AREA
9921
HEIGHT
6923
27-Dec-2022
16:07
linh
pham



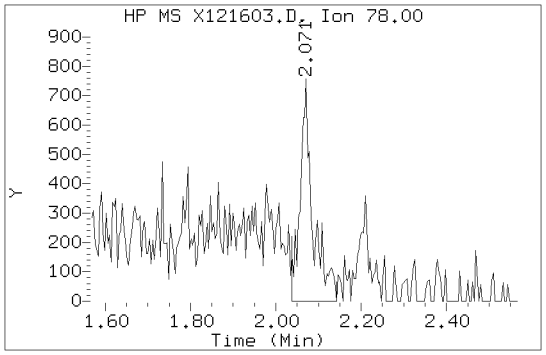
BEFORE

MASS
78
AREA
1586
HEIGHT
757
27-Dec-2022
16:03
linh
pham



AFTER

MASS
78
AREA
1586
HEIGHT
757
27-Dec-2022
16:07
linh
pham

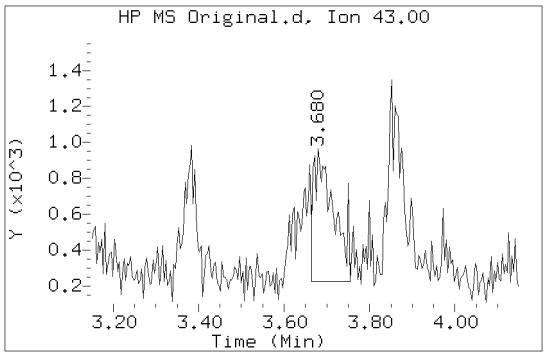


2-Butanone (78-93-3)

Reason Code:

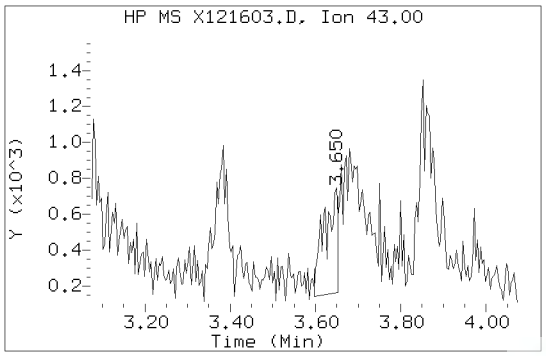
BEFORE

MASS
43
AREA
2415
HEIGHT
742
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
1292
HEIGHT
587
27-Dec-2022
16:07
linh
pham



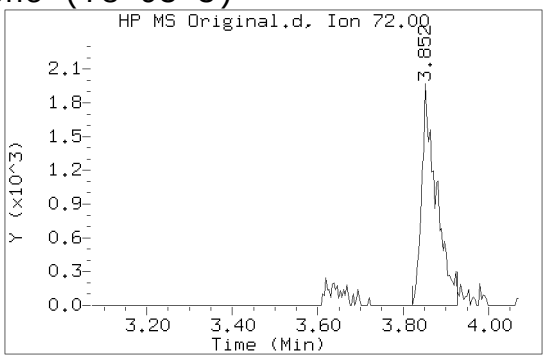
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

2-Butanone (78-93-3)

Reason Code:

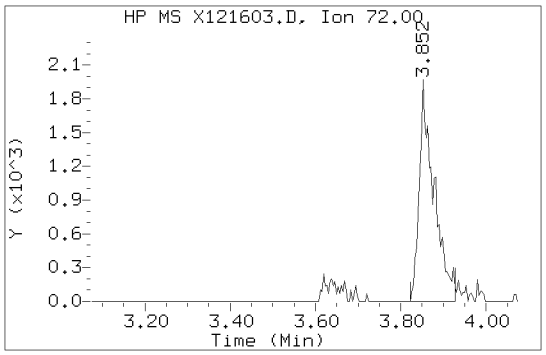
BEFORE

MASS
72
AREA
4698
HEIGHT
1970
27-Dec-2022
16:03
linh
pham



AFTER

MASS
72
AREA
4698
HEIGHT
1970
27-Dec-2022
16:07
linh
pham

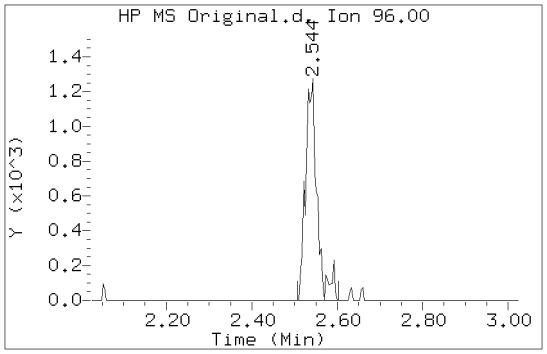


trans-1,2-Dichloroethene (156-60-5)

Reason Code:

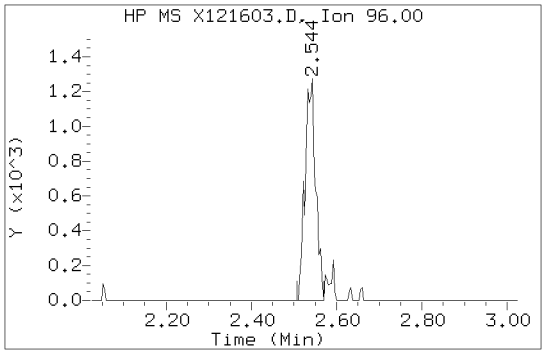
BEFORE

MASS
96
AREA
2404
HEIGHT
1274
27-Dec-2022
16:03
linh
pham



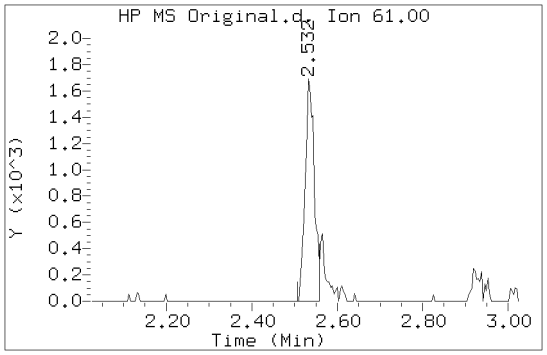
AFTER

MASS
96
AREA
2218
HEIGHT
1274
27-Dec-2022
16:07
linh
pham



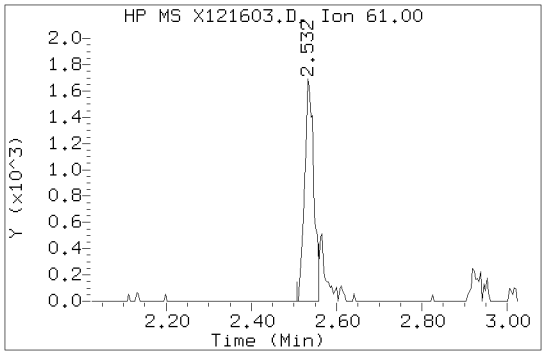
BEFORE

MASS
61
AREA
2571
HEIGHT
1692
27-Dec-2022
16:03
linh
pham



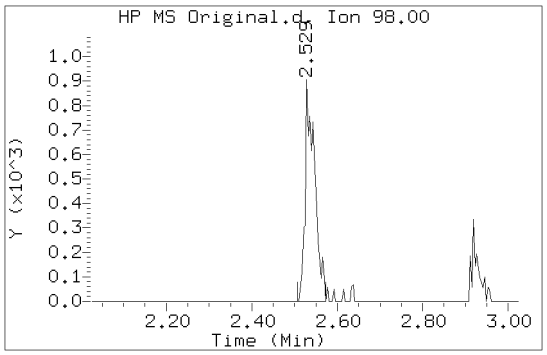
AFTER

MASS
61
AREA
2571
HEIGHT
1692
27-Dec-2022
16:07
linh
pham



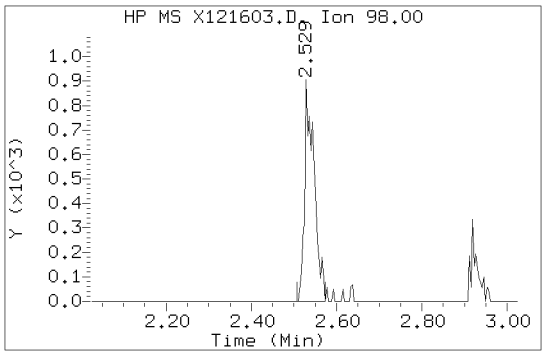
BEFORE

MASS
98
AREA
1412
HEIGHT
906
27-Dec-2022
16:03
linh
pham



AFTER

MASS
98
AREA
1412
HEIGHT
906
27-Dec-2022
16:07
linh
pham



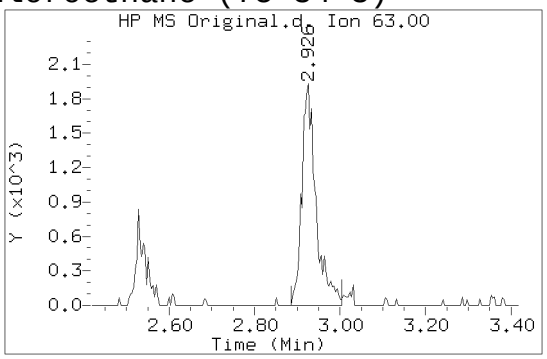
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1-Dichloroethane (75-34-3)

Reason Code:

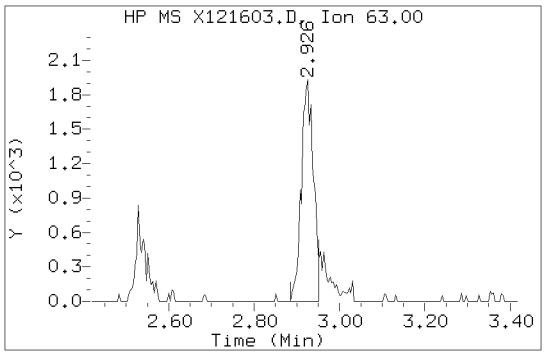
BEFORE

MASS
63
AREA
4504
HEIGHT
1931
27-Dec-2022
16:03
linh
pham



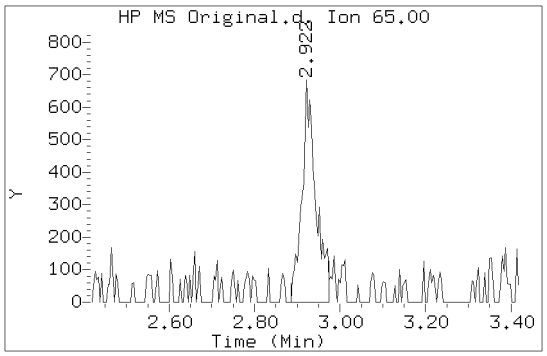
AFTER

MASS
63
AREA
3874
HEIGHT
1931
27-Dec-2022
16:07
linh
pham



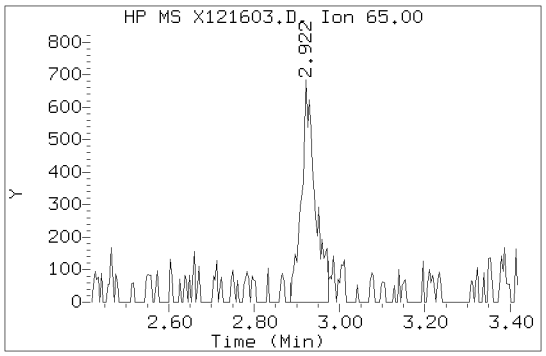
BEFORE

MASS
65
AREA
1548
HEIGHT
684
27-Dec-2022
16:03
linh
pham



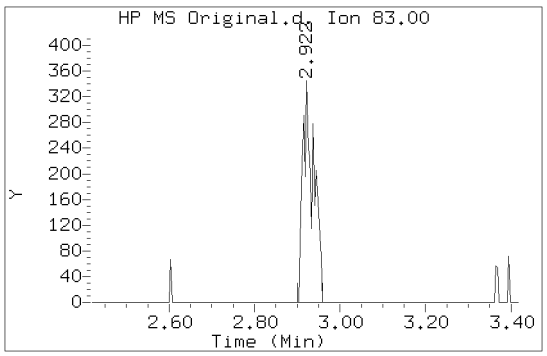
AFTER

MASS
65
AREA
1548
HEIGHT
684
27-Dec-2022
16:07
linh
pham



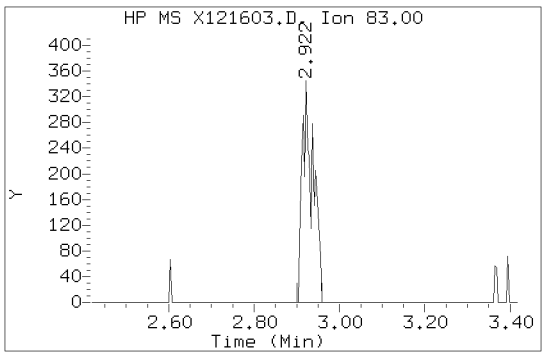
BEFORE

MASS
83
AREA
618
HEIGHT
345
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
618
HEIGHT
345
27-Dec-2022
16:07
linh
pham

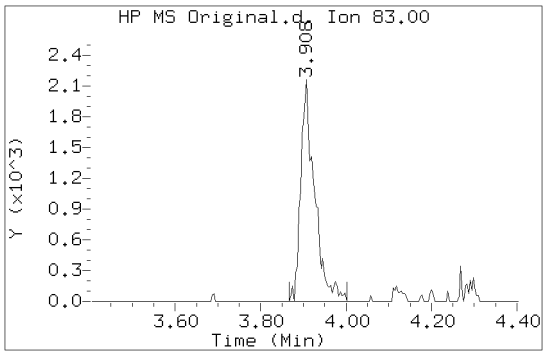


Chloroform (67-66-3)

Reason Code:

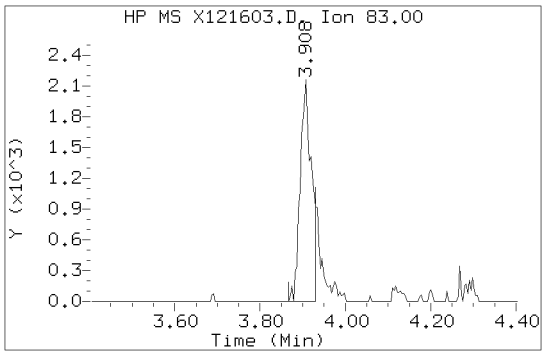
BEFORE

MASS
83
AREA
4949
HEIGHT
2160
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
4040
HEIGHT
2160
27-Dec-2022
16:07
linh
pham



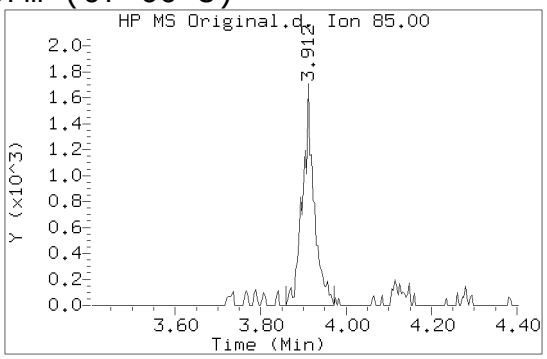
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Chloroform (67-66-3)

Reason Code:

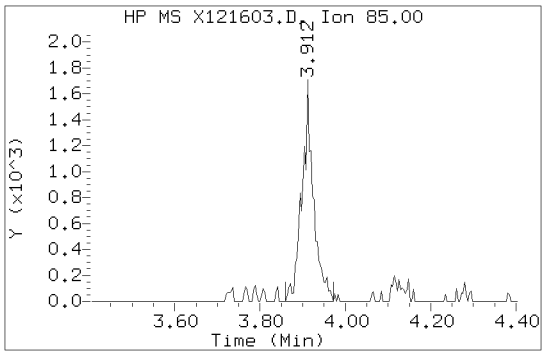
BEFORE

MASS
85
AREA
3222
HEIGHT
1709
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
3222
HEIGHT
1709
27-Dec-2022
16:07
linh
pham

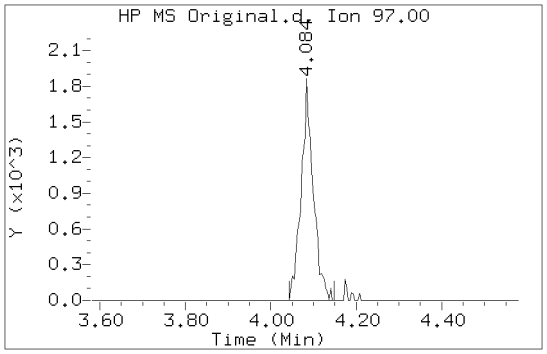


1,1,1-Trichloroethane (71-55-6)

Reason Code:

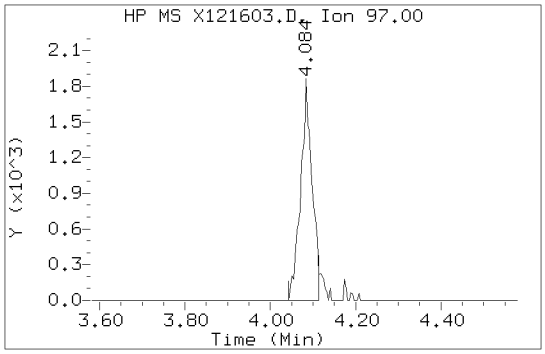
BEFORE

MASS
97
AREA
3710
HEIGHT
1863
27-Dec-2022
16:03
linh
pham



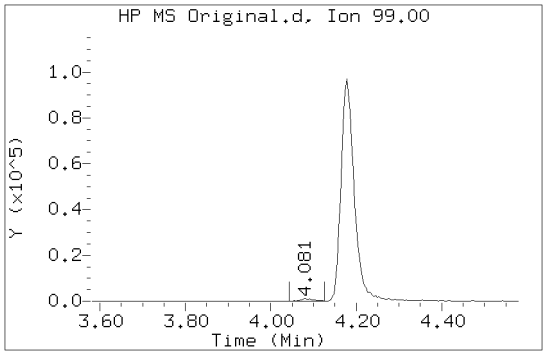
AFTER

MASS
97
AREA
3512
HEIGHT
1863
27-Dec-2022
16:07
linh
pham



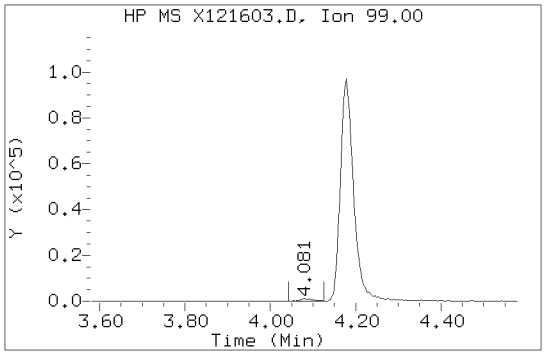
BEFORE

MASS
99
AREA
2299
HEIGHT
1029
27-Dec-2022
16:03
linh
pham



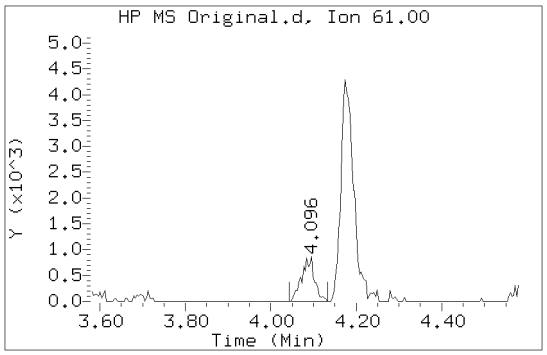
AFTER

MASS
99
AREA
2299
HEIGHT
1029
27-Dec-2022
16:07
linh
pham



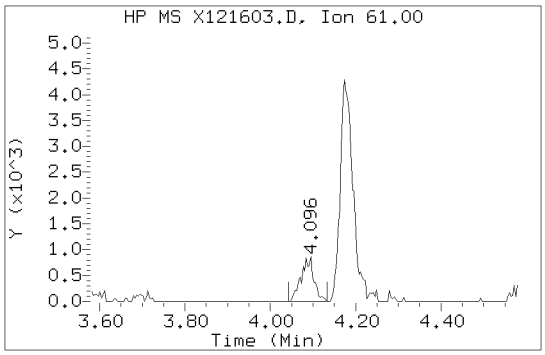
BEFORE

MASS
61
AREA
1801
HEIGHT
872
27-Dec-2022
16:03
linh
pham



AFTER

MASS
61
AREA
1801
HEIGHT
872
27-Dec-2022
16:07
linh
pham



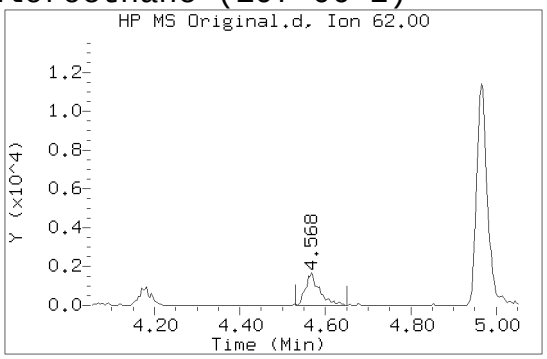
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,2-Dichloroethane (107-06-2)

Reason Code:

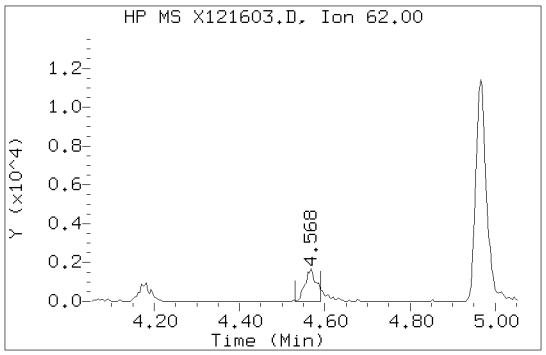
BEFORE

MASS
62
AREA
3822
HEIGHT
1678
27-Dec-2022
16:03
linh
pham



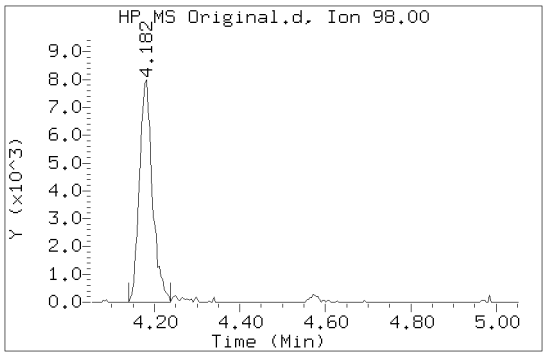
AFTER

MASS
62
AREA
3129
HEIGHT
1678
27-Dec-2022
16:07
linh
pham



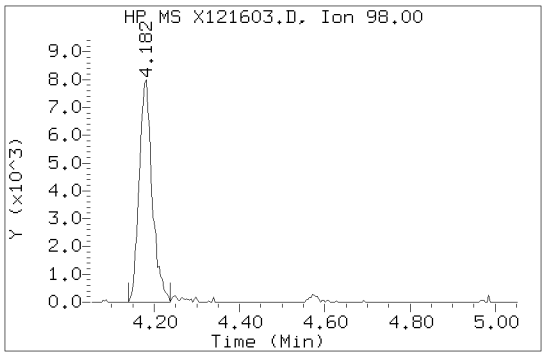
BEFORE

MASS
98
AREA
16918
HEIGHT
7987
27-Dec-2022
16:03
linh
pham



AFTER

MASS
98
AREA
16918
HEIGHT
7987
27-Dec-2022
16:07
linh
pham

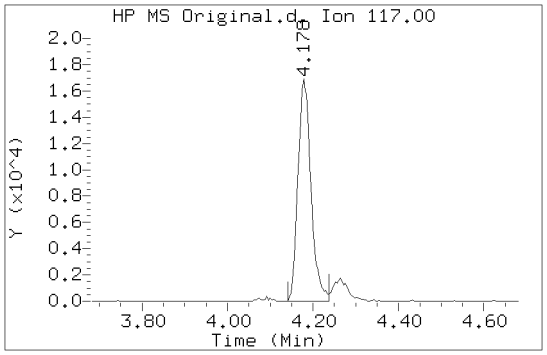


Carbon Tetrachloride (56-23-5)

Reason Code:

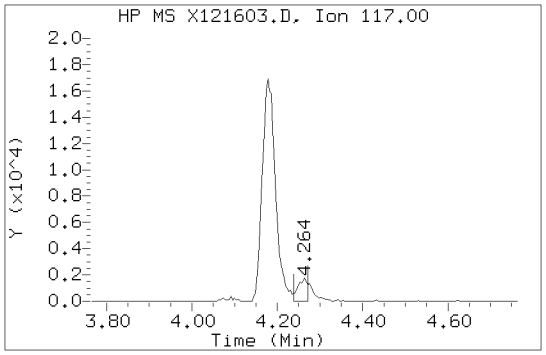
BEFORE

MASS
117
AREA
36559
HEIGHT
16920
27-Dec-2022
16:03
linh
pham



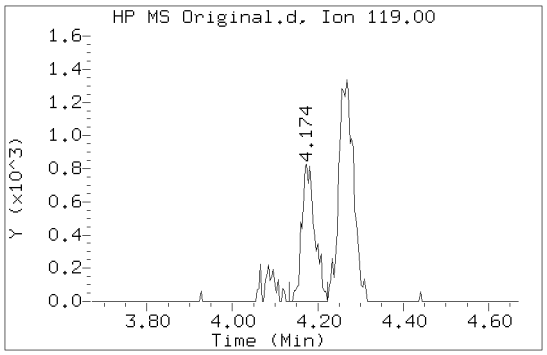
AFTER

MASS
117
AREA
2763
HEIGHT
1744
27-Dec-2022
16:07
linh
pham



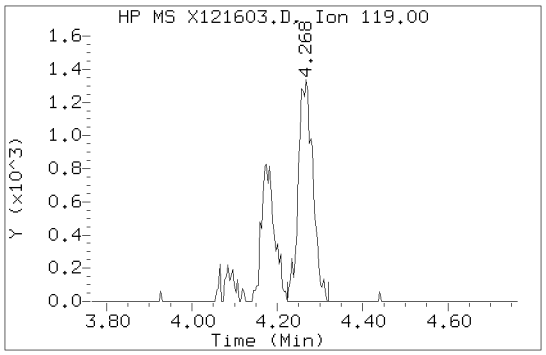
BEFORE

MASS
119
AREA
1780
HEIGHT
826
27-Dec-2022
16:03
linh
pham



AFTER

MASS
119
AREA
3227
HEIGHT
1337
27-Dec-2022
16:07
linh
pham

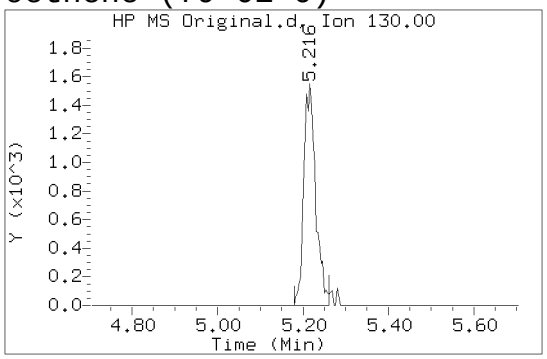


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

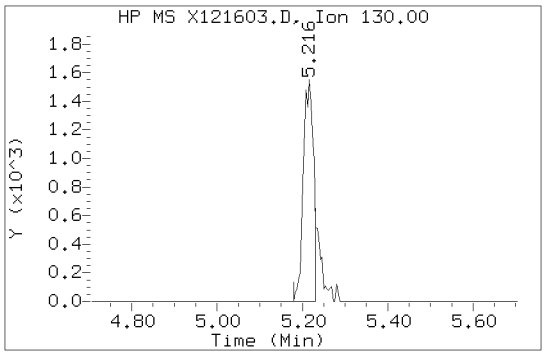
Trichloroethene (79-01-6)

Reason Code:

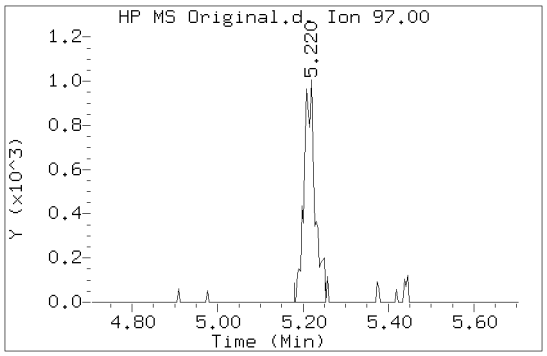
BEFORE
MASS
130
AREA
3011
HEIGHT
1551
27-Dec-2022
16:03
linh
pham



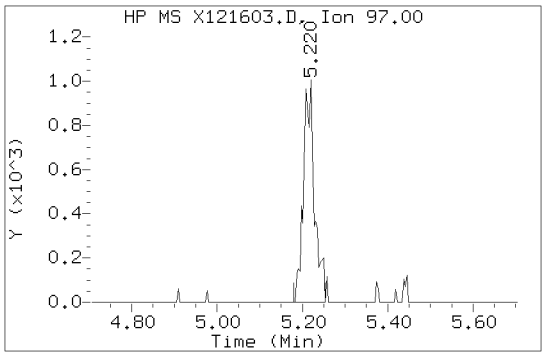
AFTER
MASS
130
AREA
2583
HEIGHT
1551
27-Dec-2022
16:07
linh
pham



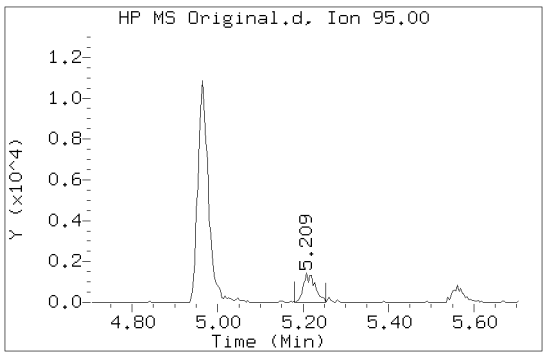
BEFORE
MASS
97
AREA
1808
HEIGHT
1006
27-Dec-2022
16:03
linh
pham



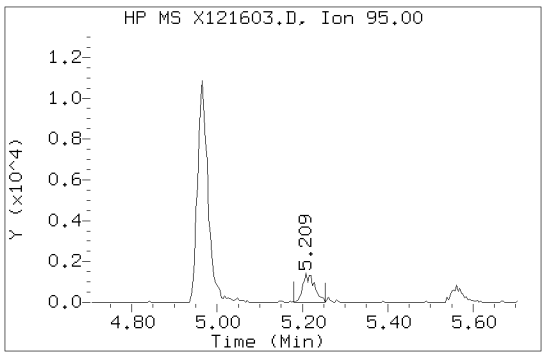
AFTER
MASS
97
AREA
1808
HEIGHT
1006
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
95
AREA
2693
HEIGHT
1431
27-Dec-2022
16:03
linh
pham



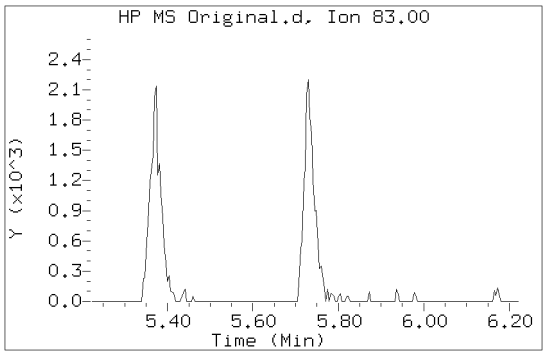
AFTER
MASS
95
AREA
2693
HEIGHT
1431
27-Dec-2022
16:07
linh
pham



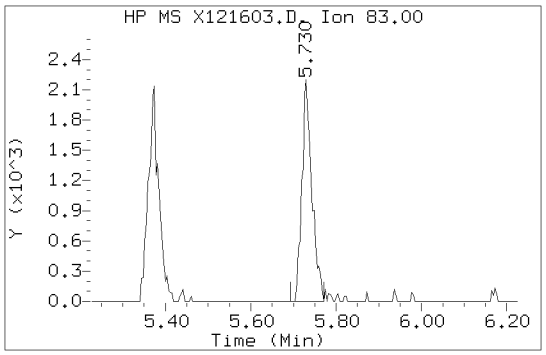
Bromodichloromethane (75-27-4)

Reason Code:

BEFORE
MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
83
AREA
3650
HEIGHT
2201
27-Dec-2022
16:07
linh
pham

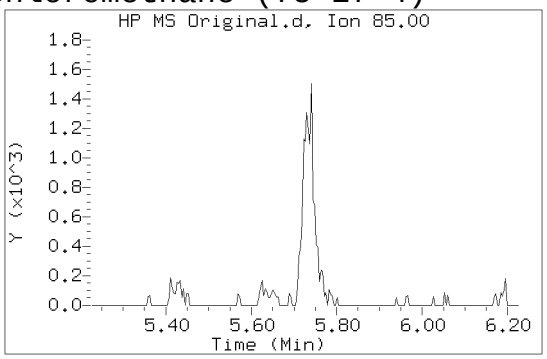


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Bromodichloromethane (75-27-4)

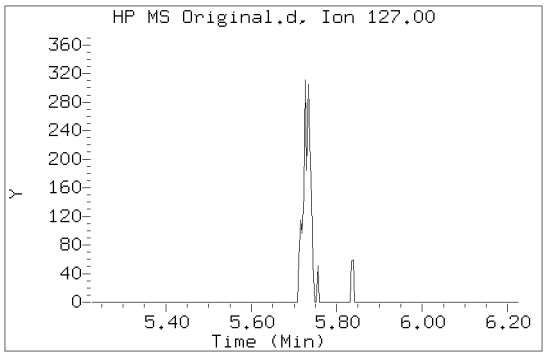
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

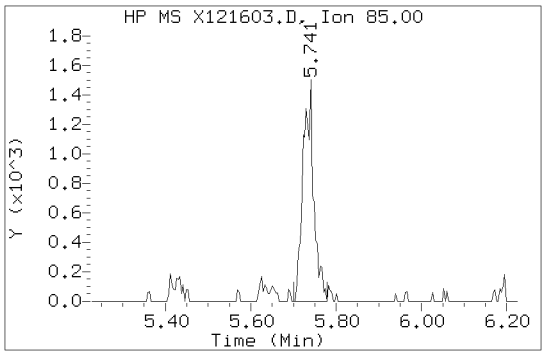
MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

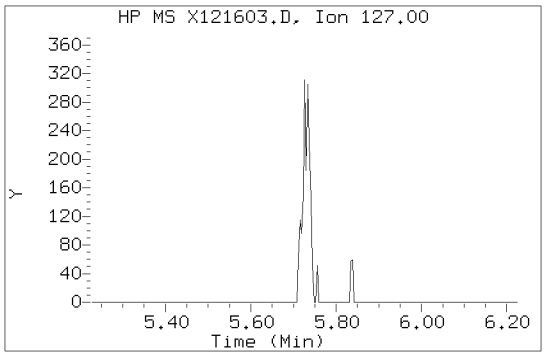
AFTER

MASS
85
AREA
2639
HEIGHT
1503
27-Dec-2022
16:07
linh
pham



AFTER

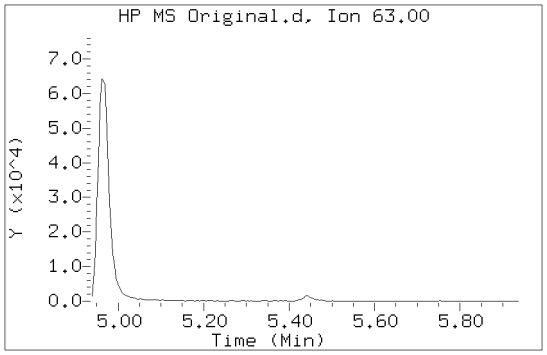
MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



1,2-Dichloropropane (78-87-5)

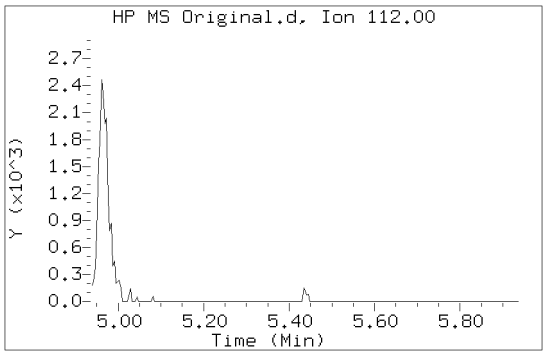
BEFORE

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

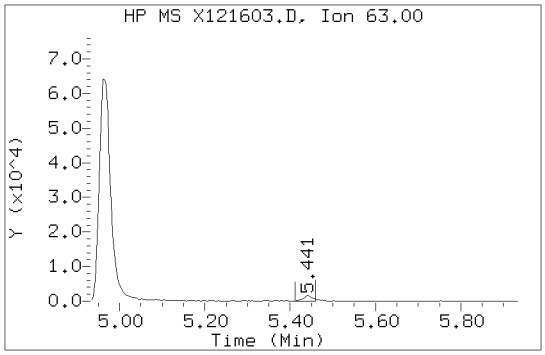
MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

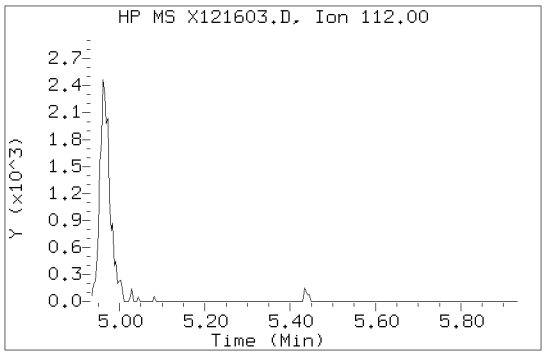
AFTER

MASS
63
AREA
2449
HEIGHT
1587
27-Dec-2022
16:07
linh
pham



AFTER

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



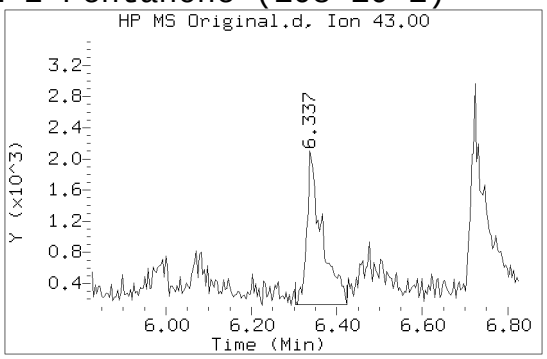
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

4-Methyl-2-Pentanone (108-10-1)

Reason Code:

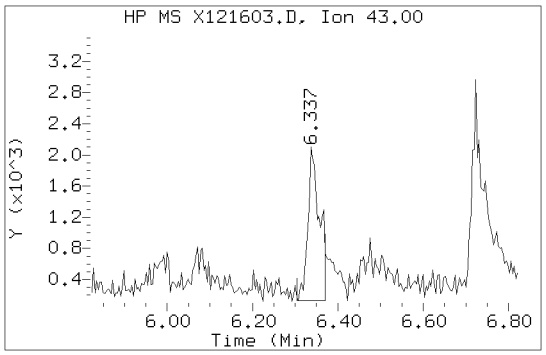
BEFORE

MASS
43
AREA
4873
HEIGHT
1970
27-Dec-2022
16:03
linh
pham



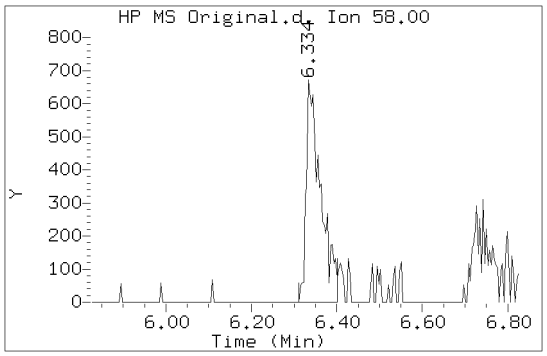
AFTER

MASS
43
AREA
3741
HEIGHT
1970
27-Dec-2022
16:07
linh
pham



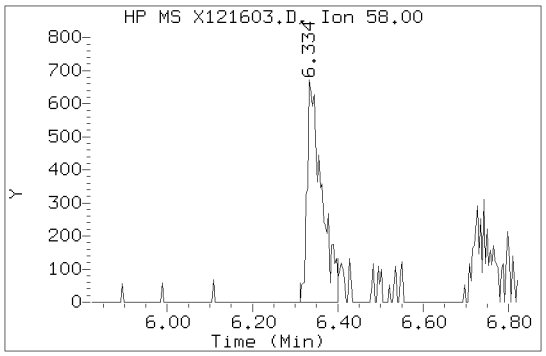
BEFORE

MASS
58
AREA
1585
HEIGHT
672
27-Dec-2022
16:03
linh
pham



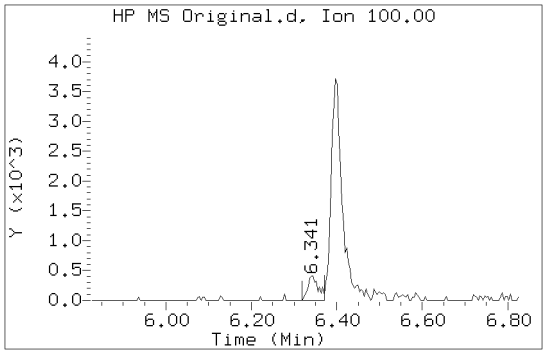
AFTER

MASS
58
AREA
1585
HEIGHT
672
27-Dec-2022
16:07
linh
pham



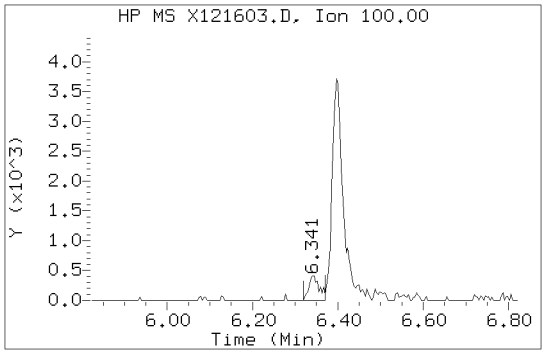
BEFORE

MASS
100
AREA
714
HEIGHT
412
27-Dec-2022
16:03
linh
pham



AFTER

MASS
100
AREA
714
HEIGHT
412
27-Dec-2022
16:07
linh
pham

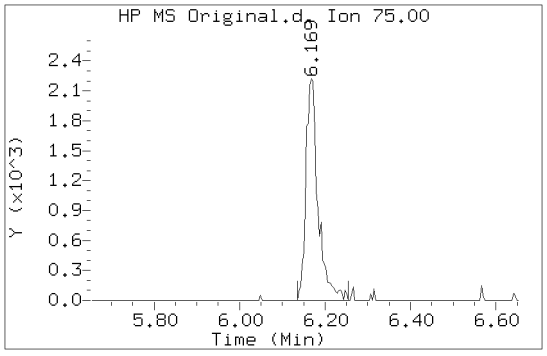


cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

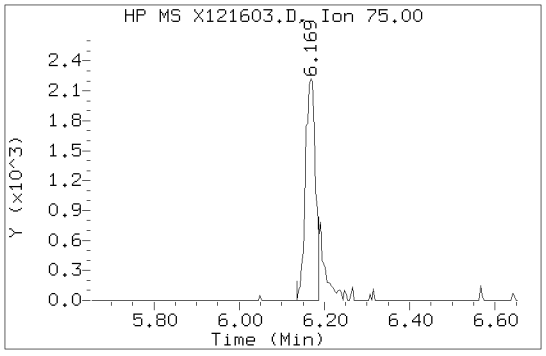
BEFORE

MASS
75
AREA
4432
HEIGHT
2222
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
3695
HEIGHT
2222
27-Dec-2022
16:07
linh
pham



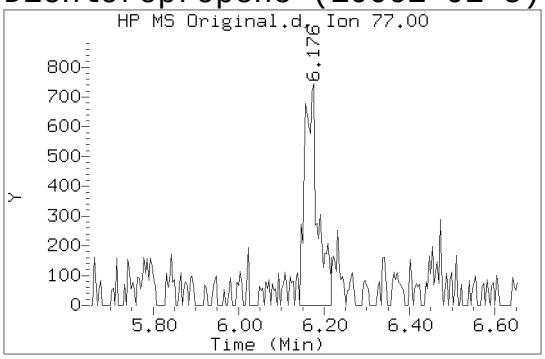
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

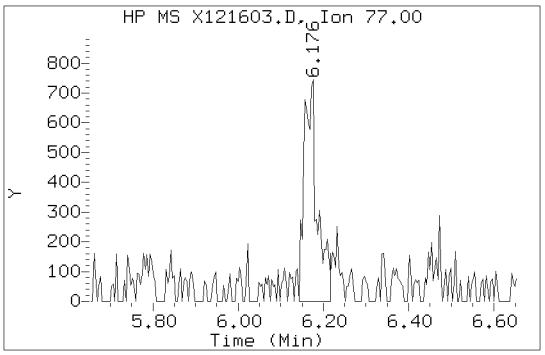
BEFORE

MASS
77
AREA
1607
HEIGHT
745
27-Dec-2022
16:03
linh
pham



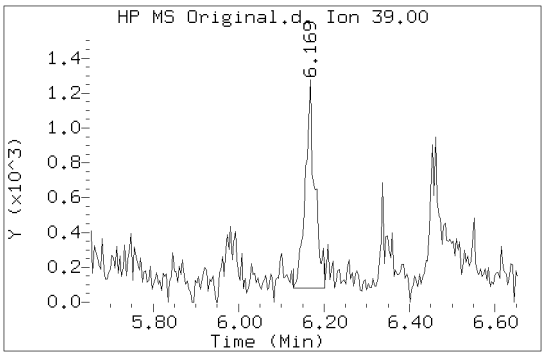
AFTER

MASS
77
AREA
1607
HEIGHT
745
27-Dec-2022
16:07
linh
pham



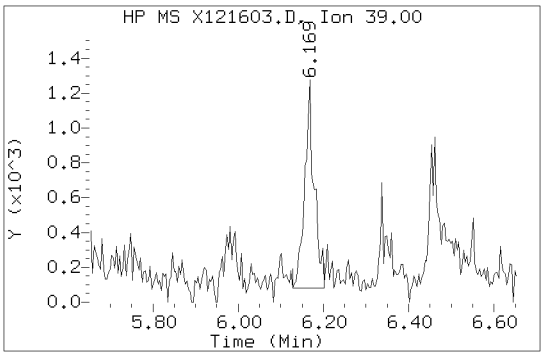
BEFORE

MASS
39
AREA
1836
HEIGHT
1193
27-Dec-2022
16:03
linh
pham



AFTER

MASS
39
AREA
1836
HEIGHT
1193
27-Dec-2022
16:07
linh
pham

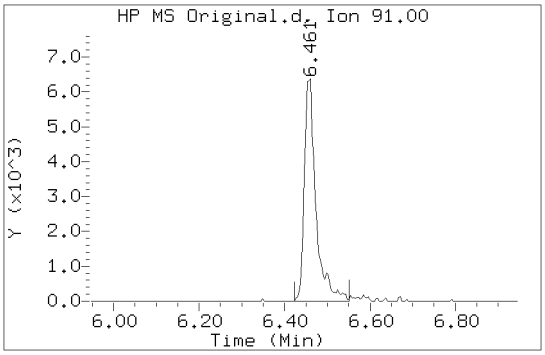


Toluene (108-88-3)

Reason Code:

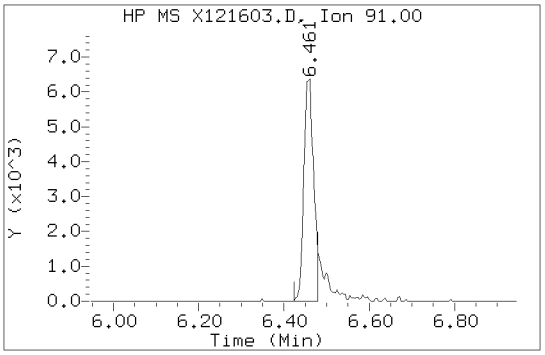
BEFORE

MASS
91
AREA
12225
HEIGHT
6374
27-Dec-2022
16:03
linh
pham



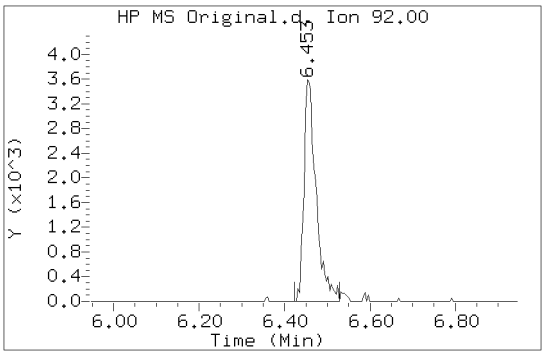
AFTER

MASS
91
AREA
10374
HEIGHT
6374
27-Dec-2022
16:07
linh
pham



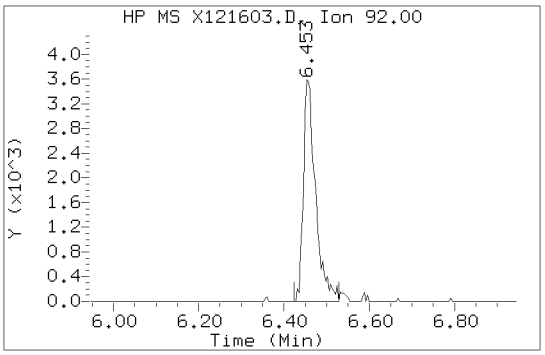
BEFORE

MASS
92
AREA
7180
HEIGHT
3591
27-Dec-2022
16:03
linh
pham



AFTER

MASS
92
AREA
7180
HEIGHT
3591
27-Dec-2022
16:07
linh
pham

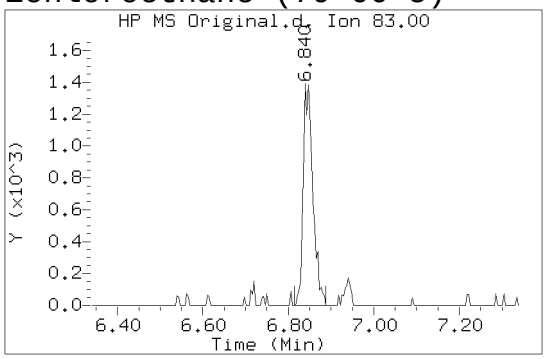


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

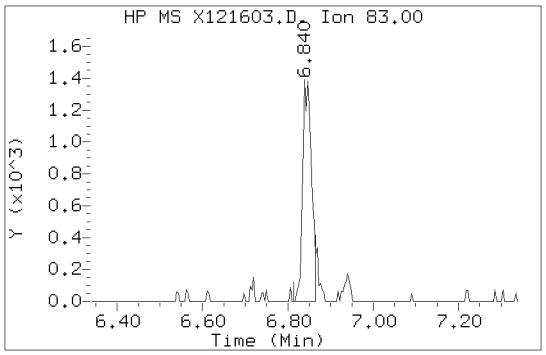
1,1,2-Trichloroethane (79-00-5)

Reason Code:

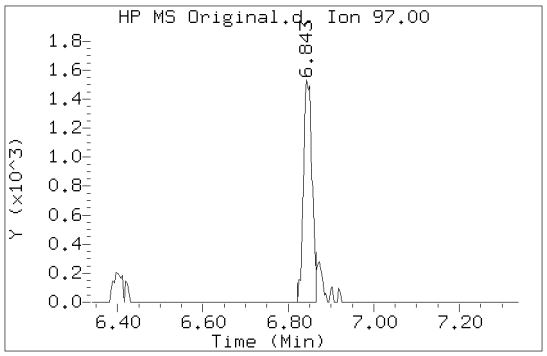
BEFORE
MASS
83
AREA
2247
HEIGHT
1391
27-Dec-2022
16:03
linh
pham



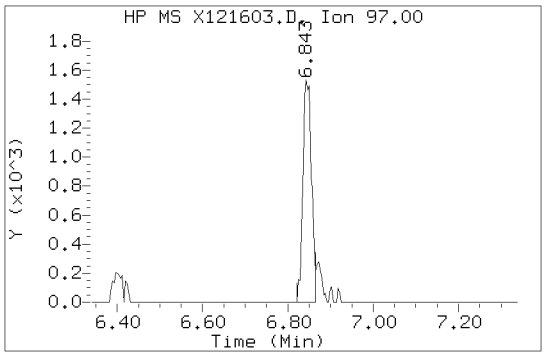
AFTER
MASS
83
AREA
2092
HEIGHT
1391
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
97
AREA
2224
HEIGHT
1532
27-Dec-2022
16:03
linh
pham



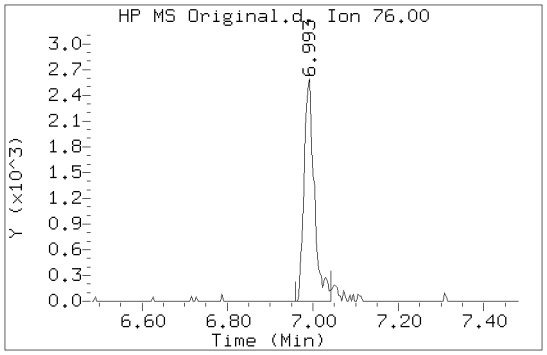
AFTER
MASS
97
AREA
2224
HEIGHT
1532
27-Dec-2022
16:07
linh
pham



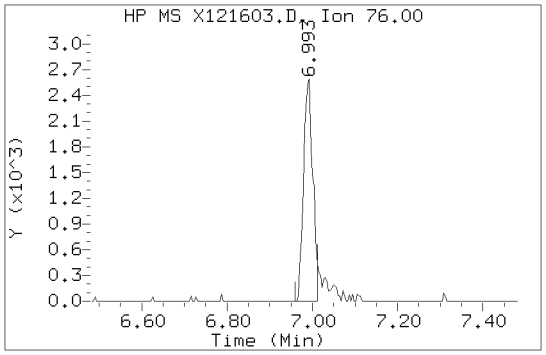
1,3-Dichloropropane (142-28-9)

Reason Code:

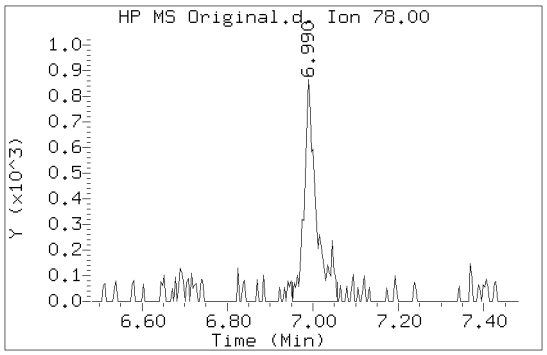
BEFORE
MASS
76
AREA
4415
HEIGHT
2592
27-Dec-2022
16:03
linh
pham



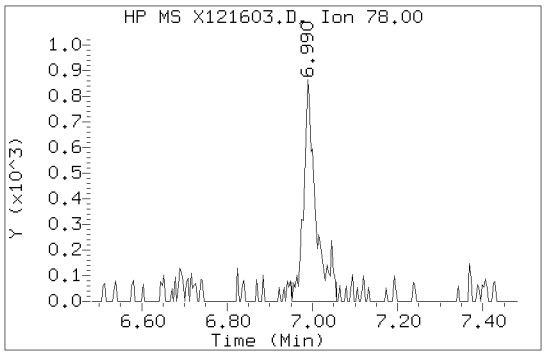
AFTER
MASS
76
AREA
4005
HEIGHT
2592
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
78
AREA
1727
HEIGHT
864
27-Dec-2022
16:03
linh
pham



AFTER
MASS
78
AREA
1727
HEIGHT
864
27-Dec-2022
16:07
linh
pham



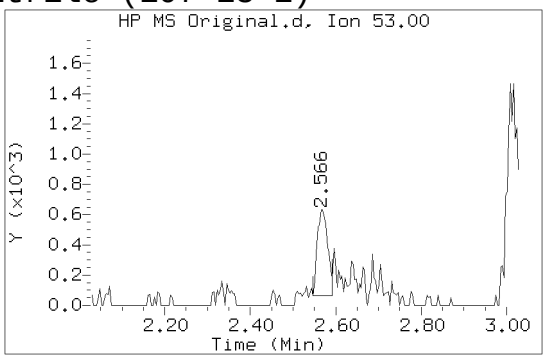
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Acrylonitrile (107-13-1)

Reason Code:

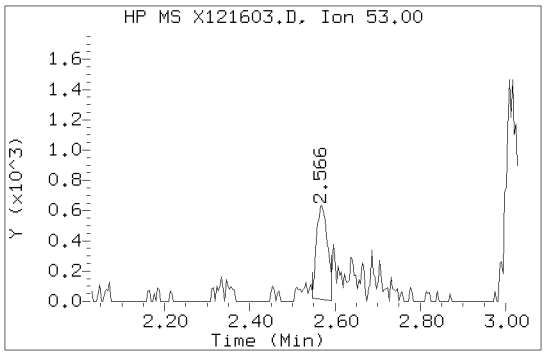
BEFORE

MASS
53
AREA
975
HEIGHT
571
27-Dec-2022
16:03
linh
pham



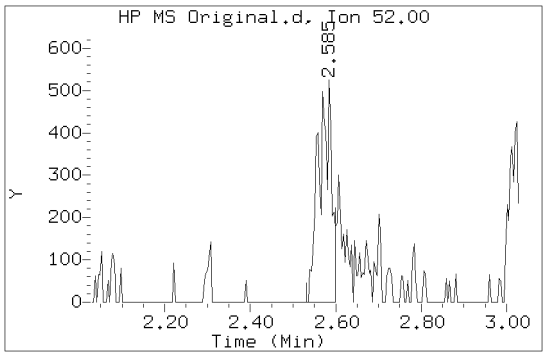
AFTER

MASS
53
AREA
1118
HEIGHT
618
27-Dec-2022
16:07
linh
pham



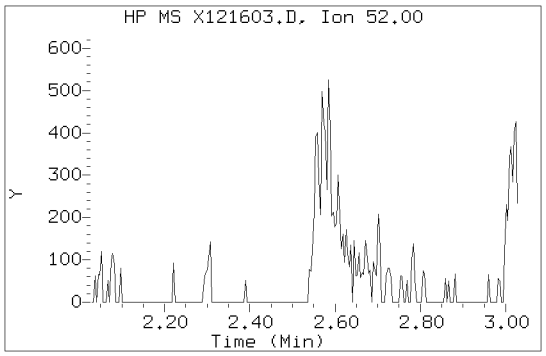
BEFORE

MASS
52
AREA
1100
HEIGHT
525
27-Dec-2022
16:03
linh
pham



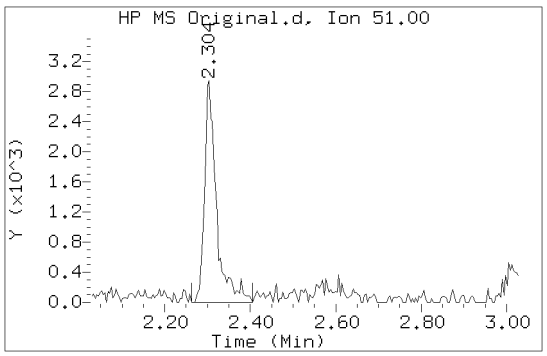
AFTER

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



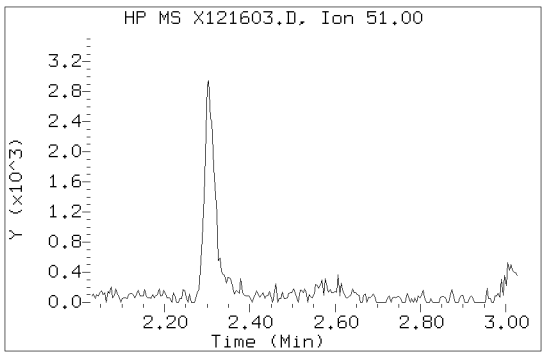
BEFORE

MASS
51
AREA
5708
HEIGHT
2946
27-Dec-2022
16:03
linh
pham



AFTER

MASS
51
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

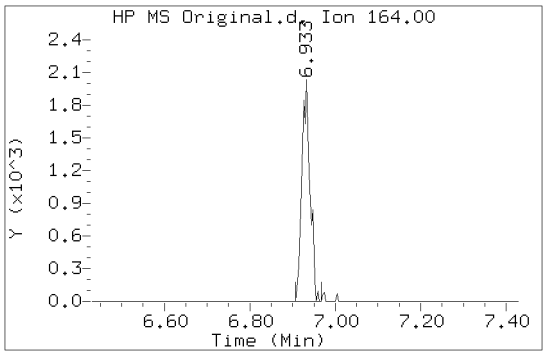


Tetrachloroethene (127-18-4)

Reason Code:

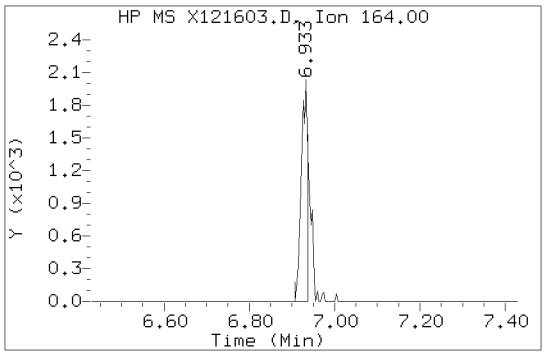
BEFORE

MASS
164
AREA
2777
HEIGHT
2036
27-Dec-2022
16:03
linh
pham



AFTER

MASS
164
AREA
2131
HEIGHT
2036
27-Dec-2022
16:07
linh
pham



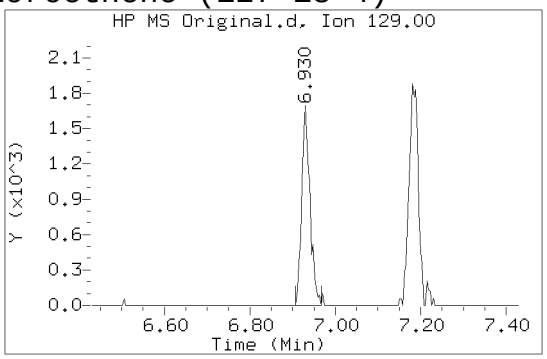
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Tetrachloroethene (127-18-4)

Reason Code:

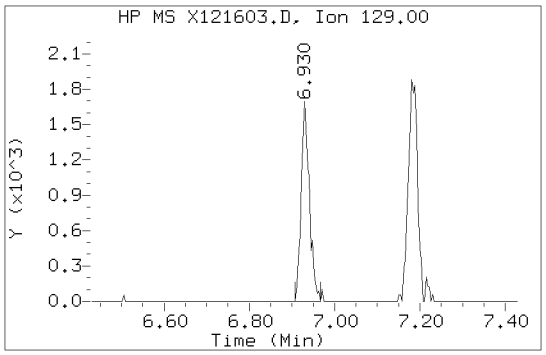
BEFORE

MASS
129
AREA
2342
HEIGHT
1697
27-Dec-2022
16:03
linh
pham



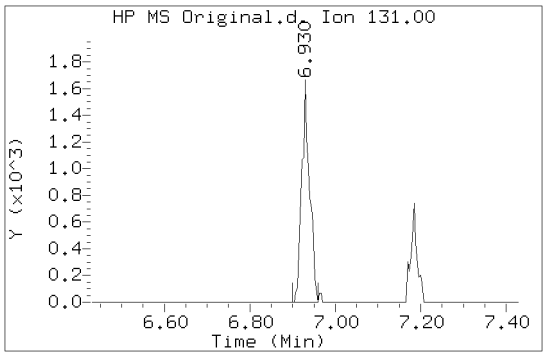
AFTER

MASS
129
AREA
2342
HEIGHT
1697
27-Dec-2022
16:07
linh
pham



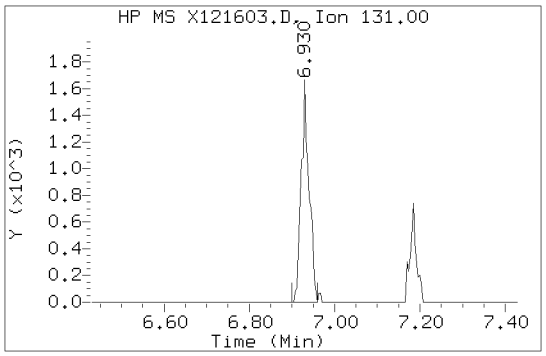
BEFORE

MASS
131
AREA
2193
HEIGHT
1665
27-Dec-2022
16:03
linh
pham



AFTER

MASS
131
AREA
2193
HEIGHT
1665
27-Dec-2022
16:07
linh
pham

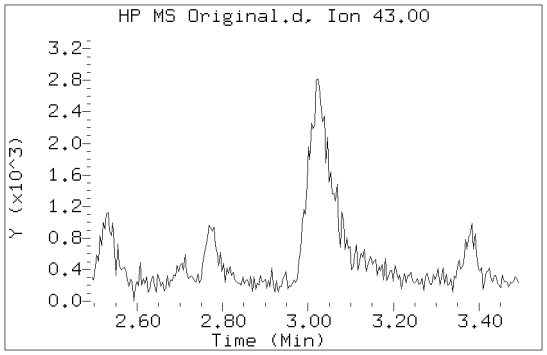


Vinyl Acetate (108-05-4)

Reason Code:

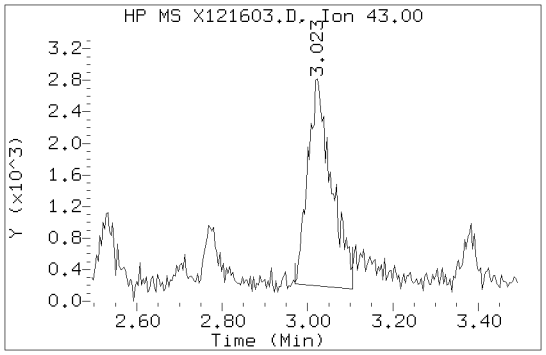
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



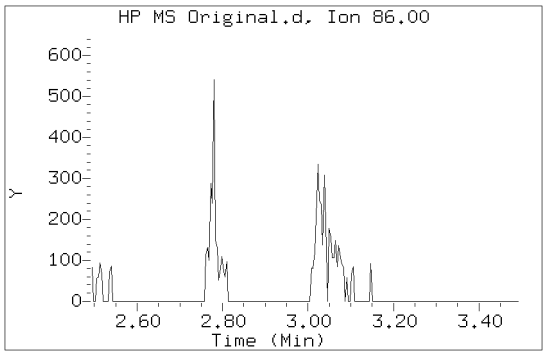
AFTER

MASS
43
AREA
10138
HEIGHT
2622
27-Dec-2022
16:07
linh
pham



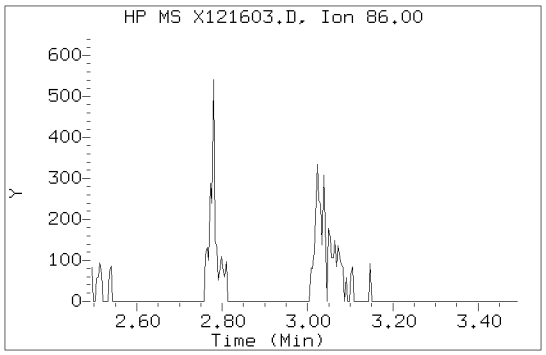
BEFORE

MASS
86
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
86
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



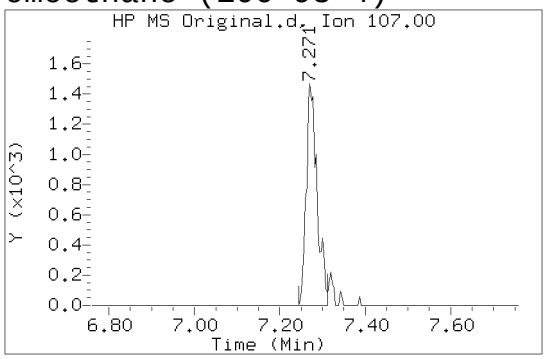
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,2-Dibromoethane (106-93-4)

Reason Code:

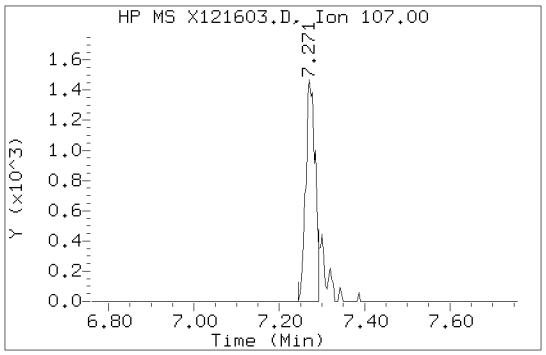
BEFORE

MASS
107
AREA
2627
HEIGHT
1469
27-Dec-2022
16:03
linh
pham



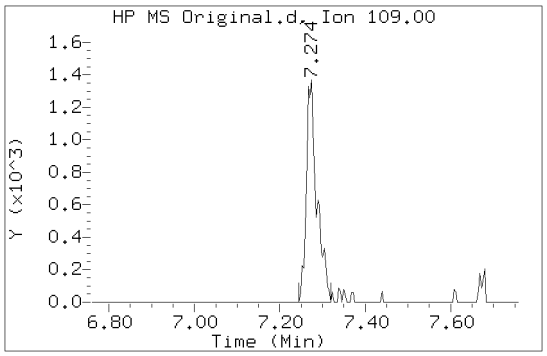
AFTER

MASS
107
AREA
2340
HEIGHT
1469
27-Dec-2022
16:07
linh
pham



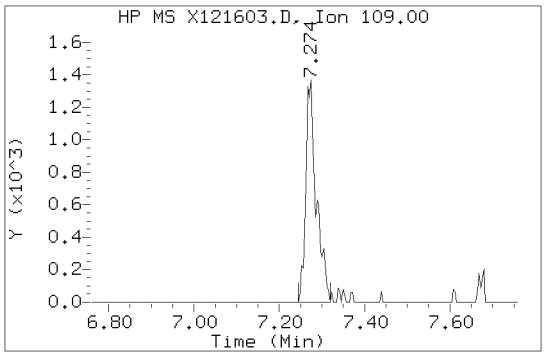
BEFORE

MASS
109
AREA
2396
HEIGHT
1369
27-Dec-2022
16:03
linh
pham



AFTER

MASS
109
AREA
2396
HEIGHT
1369
27-Dec-2022
16:07
linh
pham

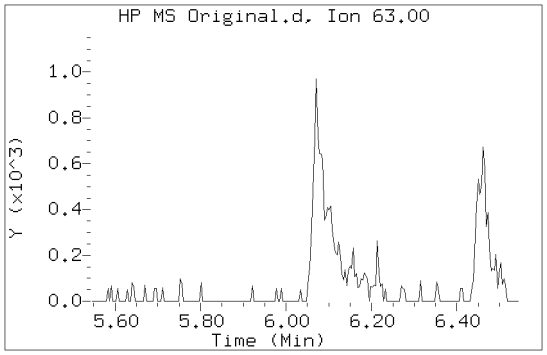


2-Chloroethylvinyl ether (110-75-8)

Reason Code:

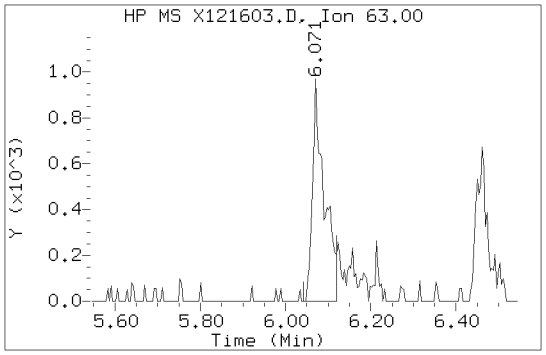
BEFORE

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



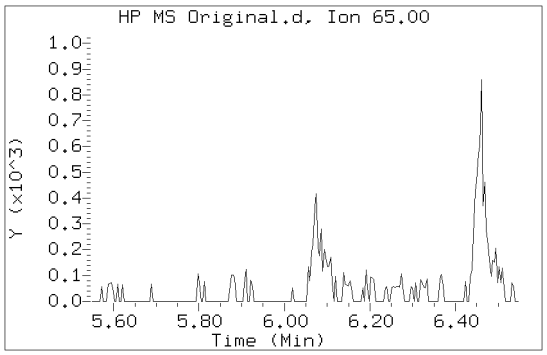
AFTER

MASS
63
AREA
1861
HEIGHT
970
27-Dec-2022
16:07
linh
pham



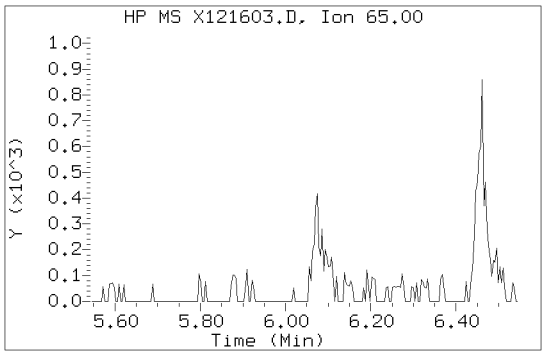
BEFORE

MASS
65
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
65
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



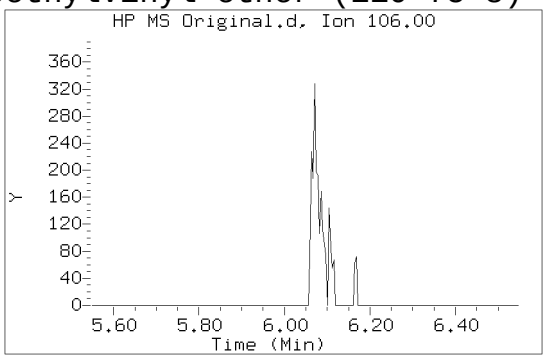
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

2-Chloroethylvinyl ether (110-75-8)

Reason Code:

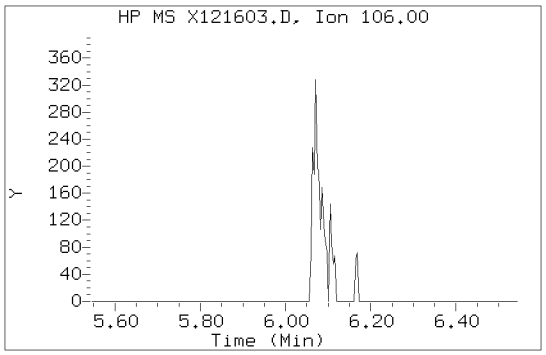
BEFORE

MASS
106
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
106
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

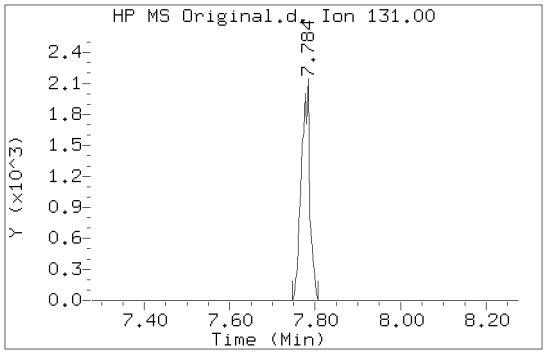


1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

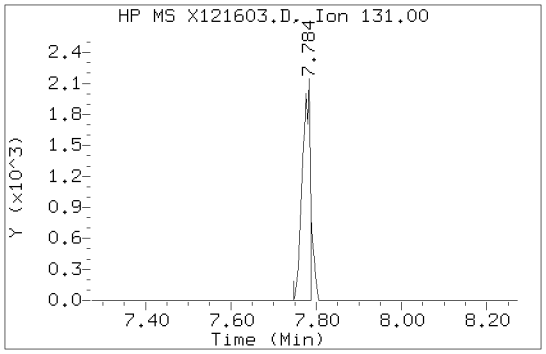
BEFORE

MASS
131
AREA
3036
HEIGHT
2146
27-Dec-2022
16:03
linh
pham



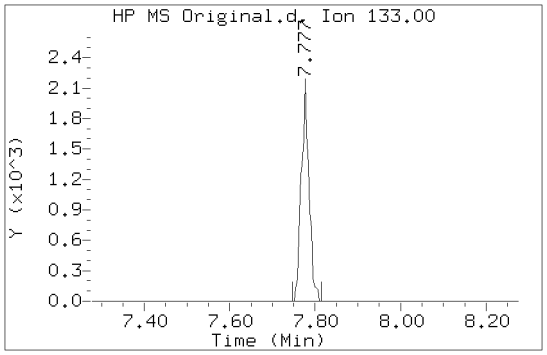
AFTER

MASS
131
AREA
2741
HEIGHT
2146
27-Dec-2022
16:07
linh
pham



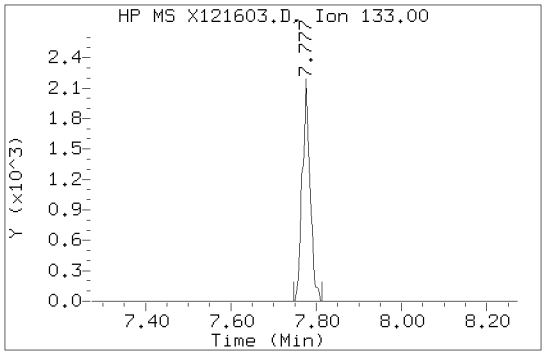
BEFORE

MASS
133
AREA
2829
HEIGHT
2191
27-Dec-2022
16:03
linh
pham



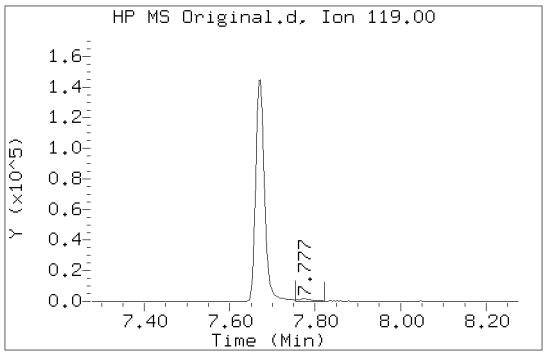
AFTER

MASS
133
AREA
2829
HEIGHT
2191
27-Dec-2022
16:07
linh
pham



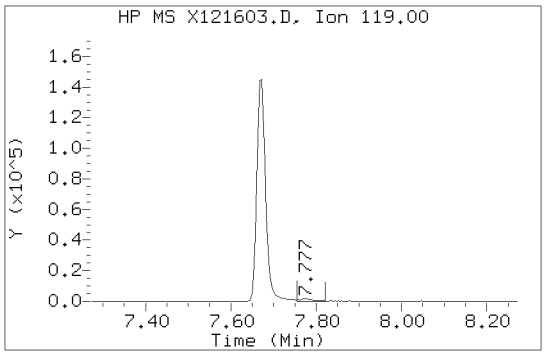
BEFORE

MASS
119
AREA
2971
HEIGHT
1971
27-Dec-2022
16:03
linh
pham



AFTER

MASS
119
AREA
2971
HEIGHT
1971
27-Dec-2022
16:07
linh
pham

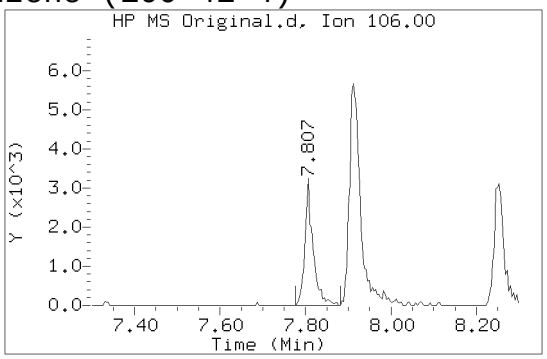


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Ethylbenzene (100-41-4)

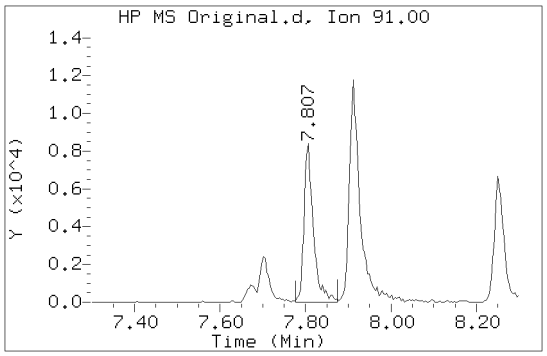
BEFORE

MASS
106
AREA
4331
HEIGHT
3242
27-Dec-2022
16:03
linh
pham



BEFORE

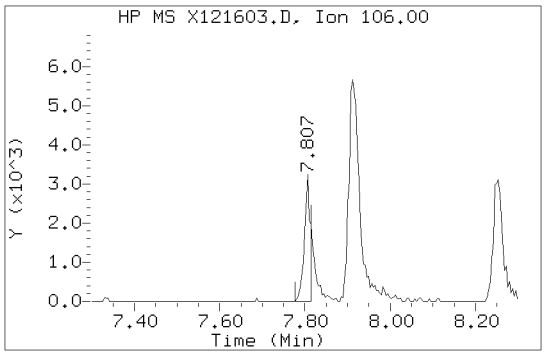
MASS
91
AREA
13136
HEIGHT
8410
27-Dec-2022
16:03
linh
pham



Reason Code:

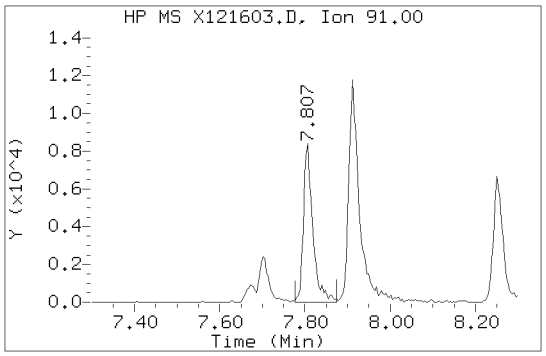
AFTER

MASS
106
AREA
3064
HEIGHT
3242
27-Dec-2022
16:07
linh
pham



AFTER

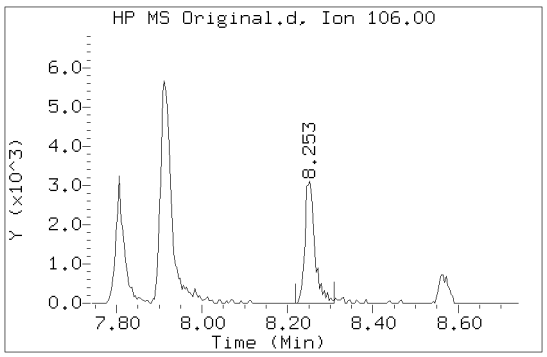
MASS
91
AREA
13136
HEIGHT
8410
27-Dec-2022
16:07
linh
pham



o-Xylene (95-47-6)

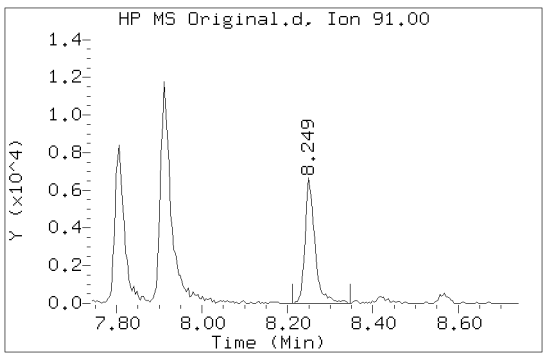
BEFORE

MASS
106
AREA
5100
HEIGHT
3111
27-Dec-2022
16:03
linh
pham



BEFORE

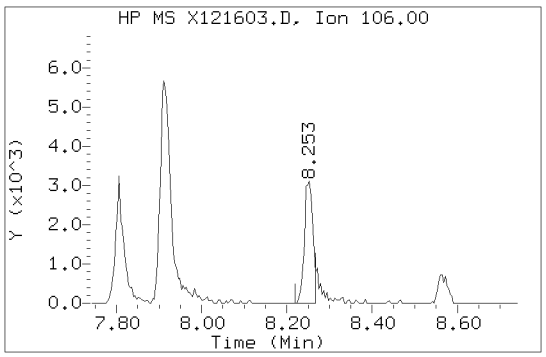
MASS
91
AREA
10808
HEIGHT
6665
27-Dec-2022
16:03
linh
pham



Reason Code:

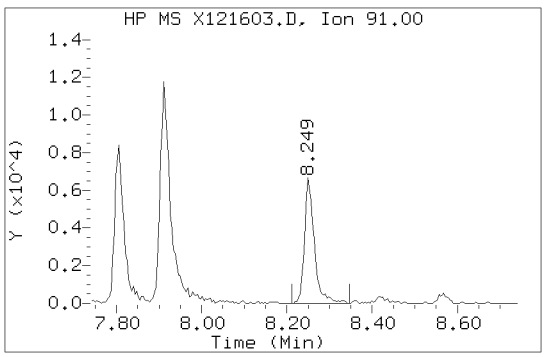
AFTER

MASS
106
AREA
4412
HEIGHT
3111
27-Dec-2022
16:07
linh
pham



AFTER

MASS
91
AREA
10808
HEIGHT
6665
27-Dec-2022
16:07
linh
pham

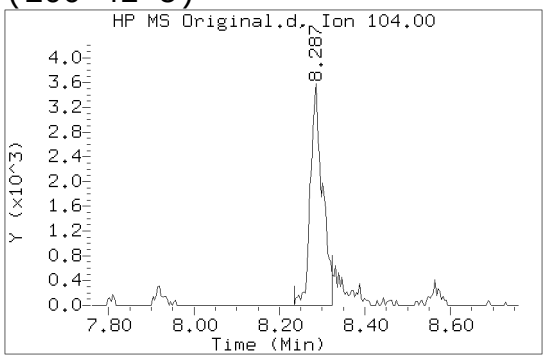


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Styrene (100-42-5)

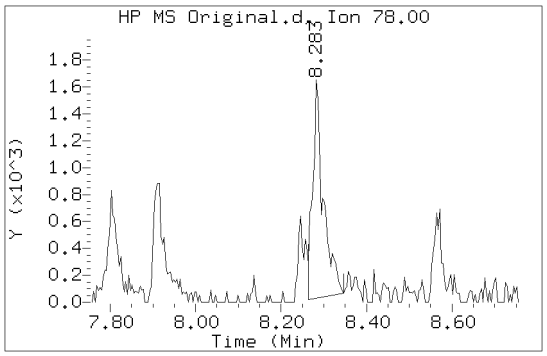
BEFORE

MASS
104
AREA
7074
HEIGHT
3581
27-Dec-2022
16:03
linh
pham



BEFORE

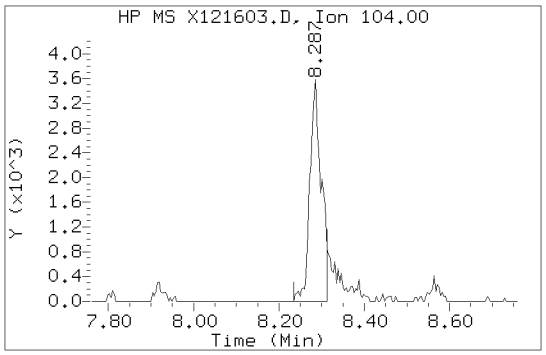
MASS
78
AREA
2827
HEIGHT
1622
27-Dec-2022
16:03
linh
pham



Reason Code:

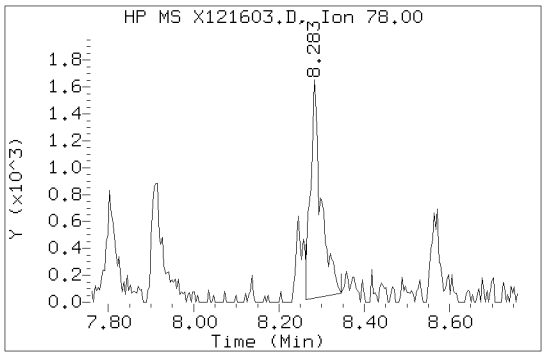
AFTER

MASS
104
AREA
6634
HEIGHT
3581
27-Dec-2022
16:07
linh
pham



AFTER

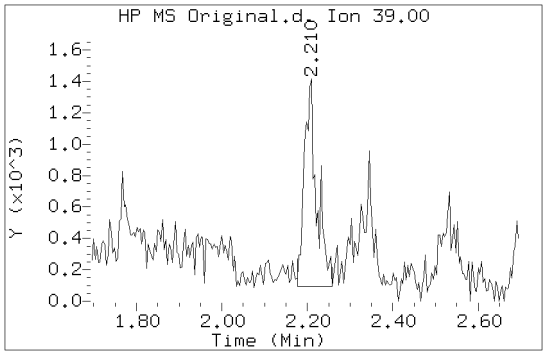
MASS
78
AREA
2827
HEIGHT
1622
27-Dec-2022
16:07
linh
pham



Acetonitrile (75-05-8)

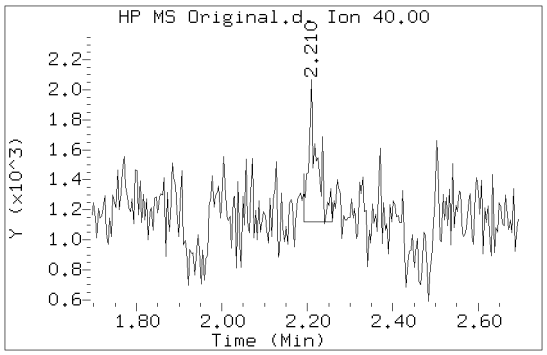
BEFORE

MASS
39
AREA
2674
HEIGHT
1321
27-Dec-2022
16:03
linh
pham



BEFORE

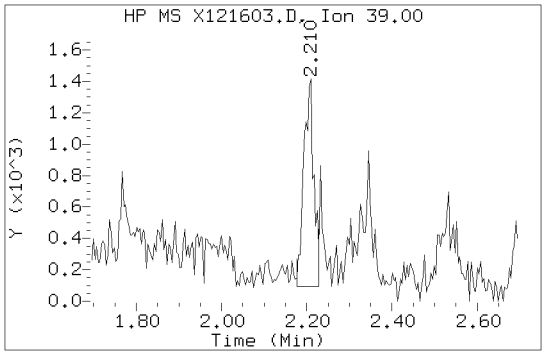
MASS
40
AREA
1296
HEIGHT
946
27-Dec-2022
16:03
linh
pham



Reason Code:

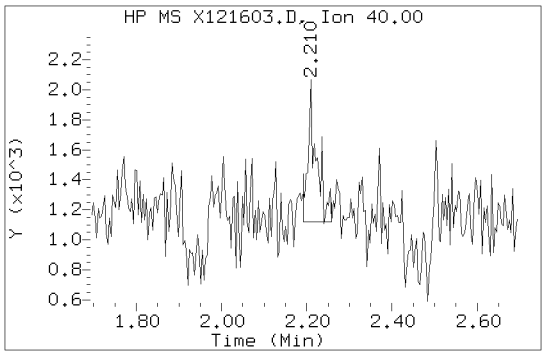
AFTER

MASS
39
AREA
2204
HEIGHT
1321
27-Dec-2022
16:07
linh
pham



AFTER

MASS
40
AREA
1296
HEIGHT
946
27-Dec-2022
16:07
linh
pham



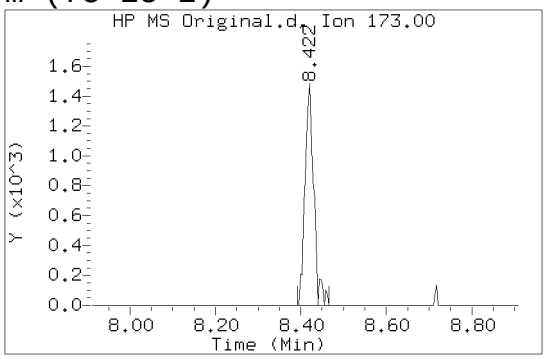
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Bromoform (75-25-2)

Reason Code:

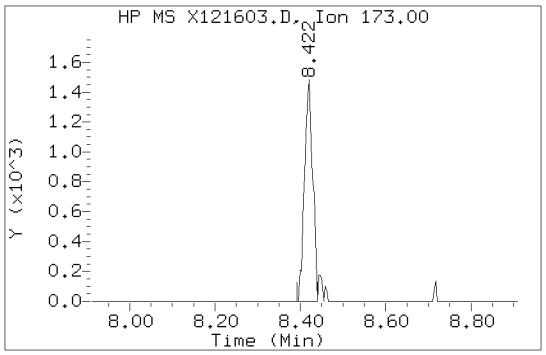
BEFORE

MASS
173
AREA
2158
HEIGHT
1483
27-Dec-2022
16:03
linh
pham



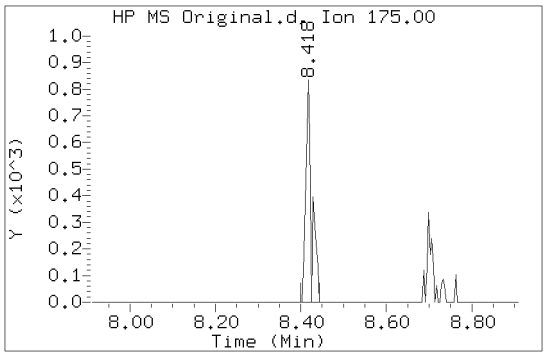
AFTER

MASS
173
AREA
2013
HEIGHT
1483
27-Dec-2022
16:07
linh
pham



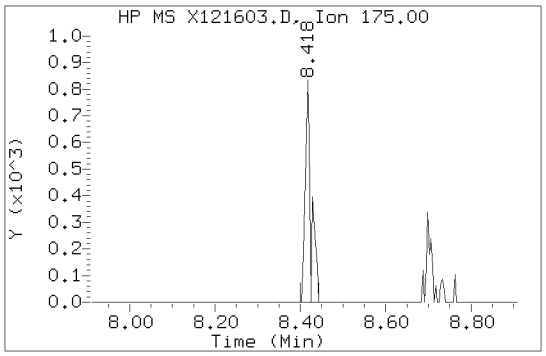
BEFORE

MASS
175
AREA
807
HEIGHT
835
27-Dec-2022
16:03
linh
pham



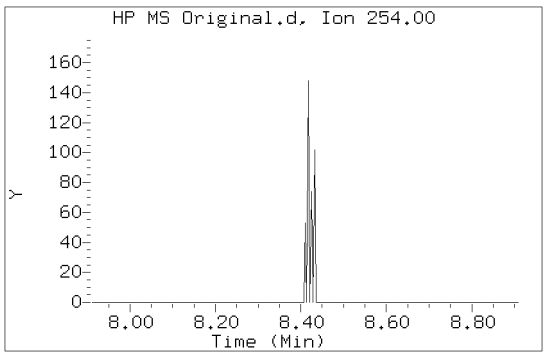
AFTER

MASS
175
AREA
807
HEIGHT
835
27-Dec-2022
16:07
linh
pham



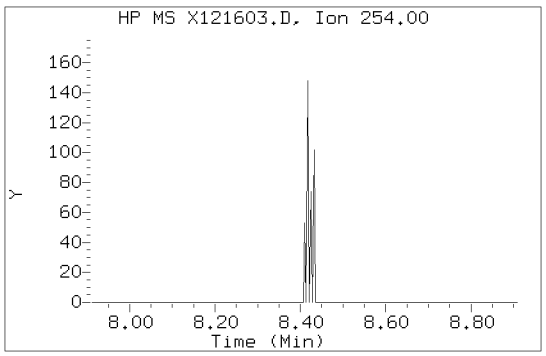
BEFORE

MASS
254
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
254
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

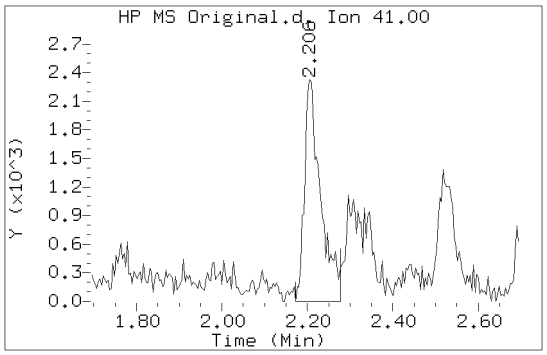


Allyl Chloride (107-05-1)

Reason Code:

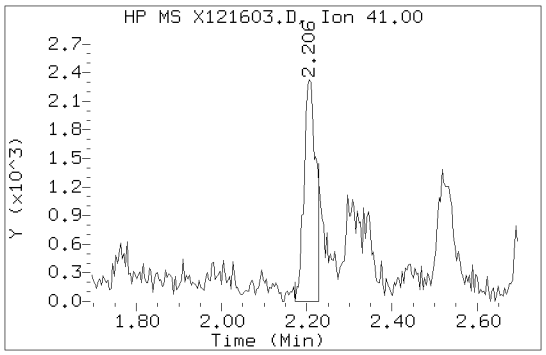
BEFORE

MASS
41
AREA
6169
HEIGHT
2326
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
4574
HEIGHT
2326
27-Dec-2022
16:07
linh
pham



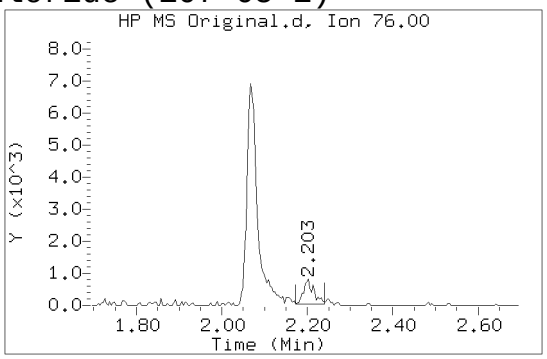
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Allyl Chloride (107-05-1)

Reason Code:

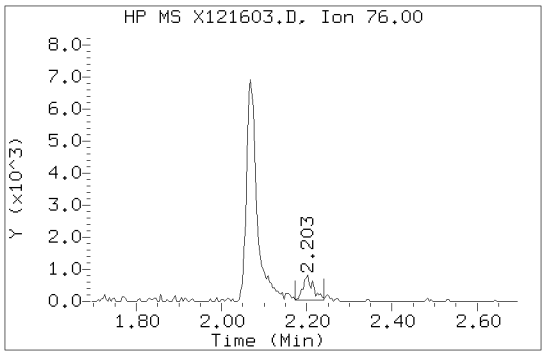
BEFORE

MASS
76
AREA
1254
HEIGHT
763
27-Dec-2022
16:03
linh
pham



AFTER

MASS
76
AREA
1254
HEIGHT
763
27-Dec-2022
16:07
linh
pham

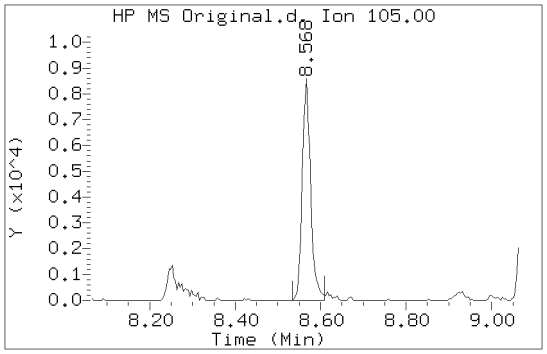


Isopropylbenzene (98-82-8)

Reason Code:

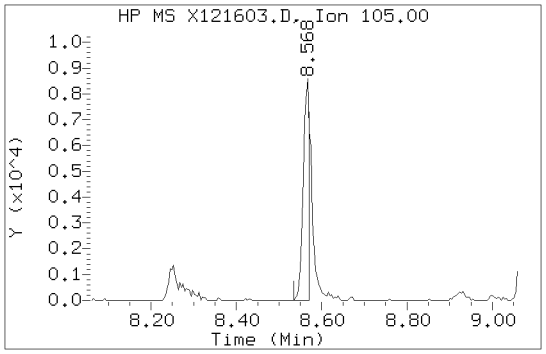
BEFORE

MASS
105
AREA
12091
HEIGHT
8588
27-Dec-2022
16:03
linh
pham



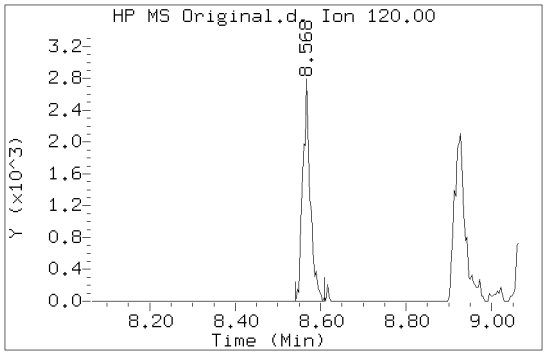
AFTER

MASS
105
AREA
8757
HEIGHT
8588
27-Dec-2022
16:07
linh
pham



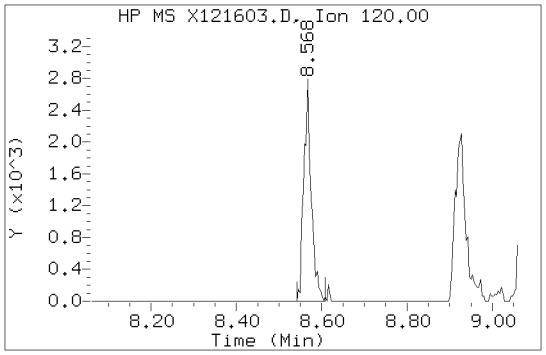
BEFORE

MASS
120
AREA
3462
HEIGHT
2793
27-Dec-2022
16:03
linh
pham



AFTER

MASS
120
AREA
3462
HEIGHT
2793
27-Dec-2022
16:07
linh
pham

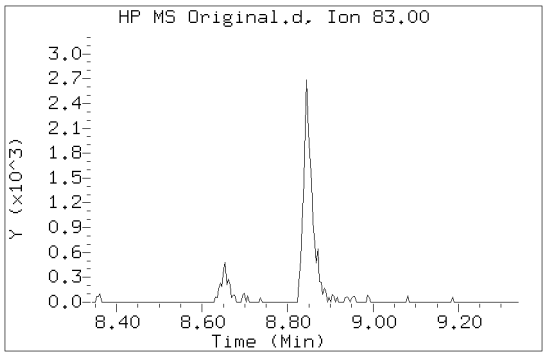


1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

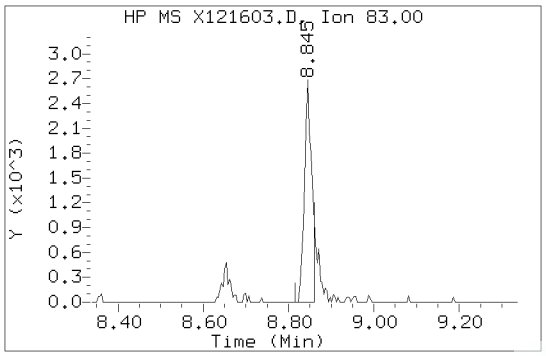
BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
83
AREA
3194
HEIGHT
2685
27-Dec-2022
16:07
linh
pham



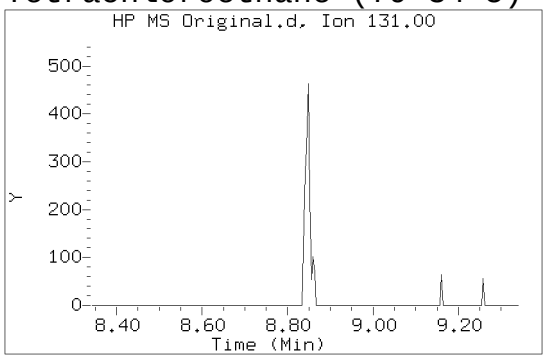
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

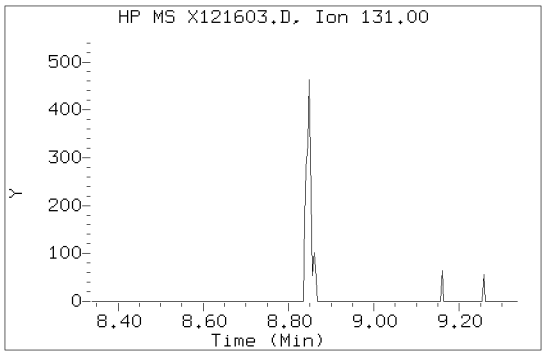
BEFORE

MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



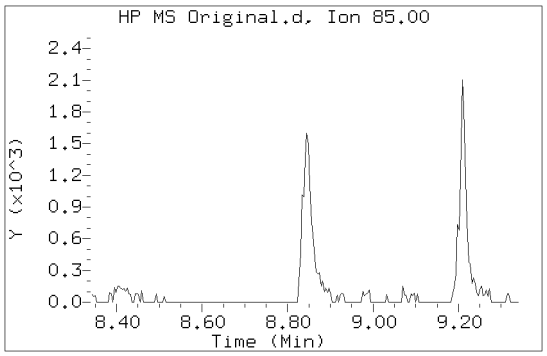
AFTER

MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



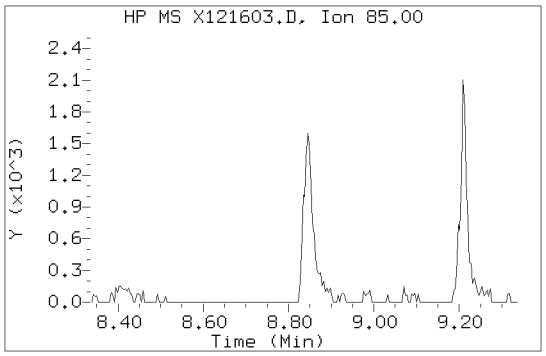
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

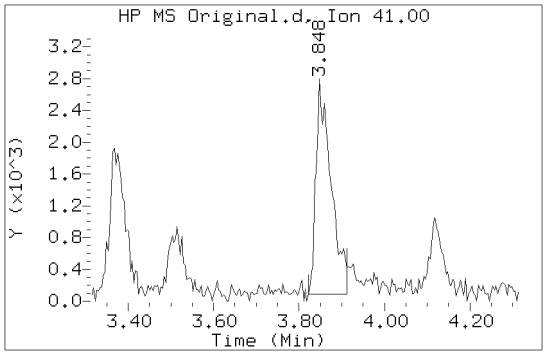


Methacrylonitrile (126-98-7)

Reason Code:

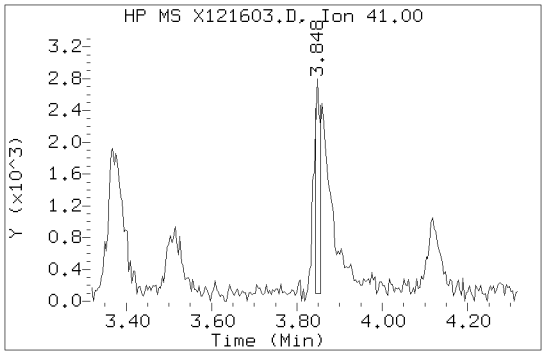
BEFORE

MASS
41
AREA
6587
HEIGHT
2708
27-Dec-2022
16:03
linh
pham



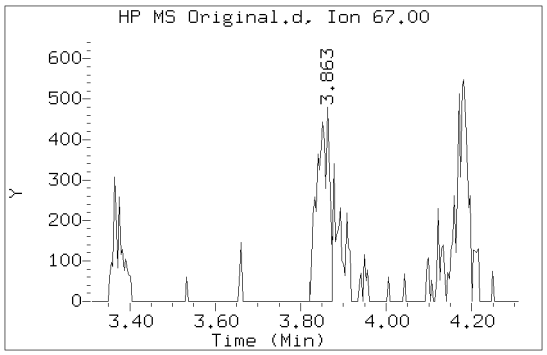
AFTER

MASS
41
AREA
2066
HEIGHT
2701
27-Dec-2022
16:07
linh
pham



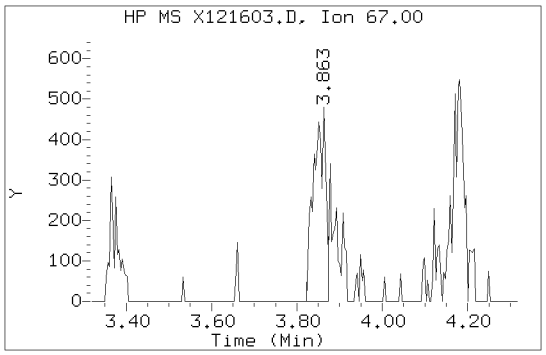
BEFORE

MASS
67
AREA
937
HEIGHT
480
27-Dec-2022
16:03
linh
pham



AFTER

MASS
67
AREA
937
HEIGHT
480
27-Dec-2022
16:07
linh
pham



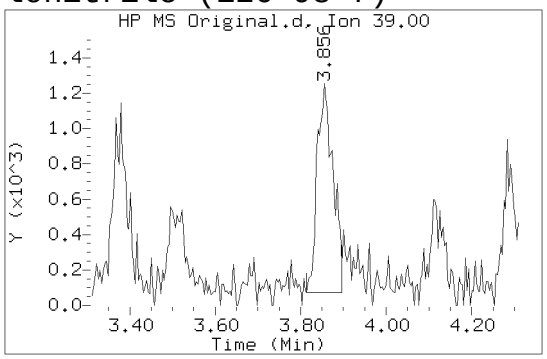
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Methacrylonitrile (126-98-7)

Reason Code:

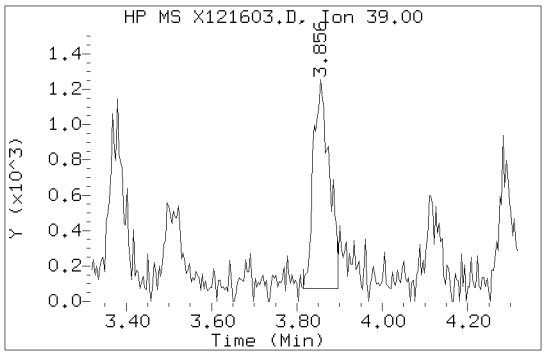
BEFORE

MASS
39
AREA
3048
HEIGHT
1181
27-Dec-2022
16:03
linh
pham



AFTER

MASS
39
AREA
3048
HEIGHT
1181
27-Dec-2022
16:07
linh
pham

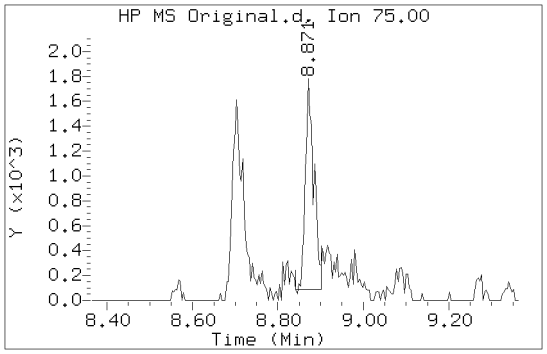


1,2,3-Trichloropropane (96-18-4)

Reason Code:

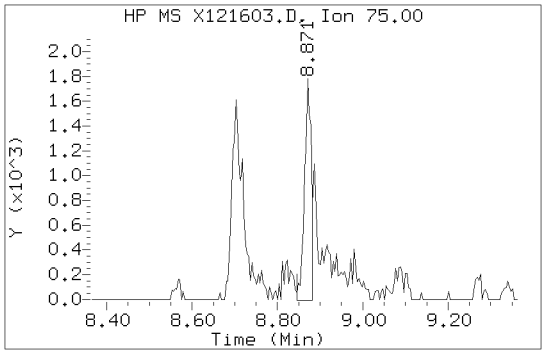
BEFORE

MASS
75
AREA
2351
HEIGHT
1693
27-Dec-2022
16:03
linh
pham



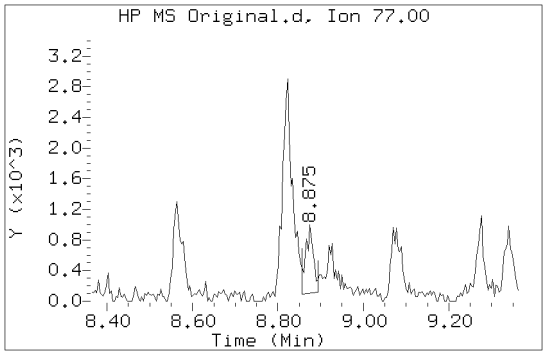
AFTER

MASS
75
AREA
2019
HEIGHT
1788
27-Dec-2022
16:07
linh
pham



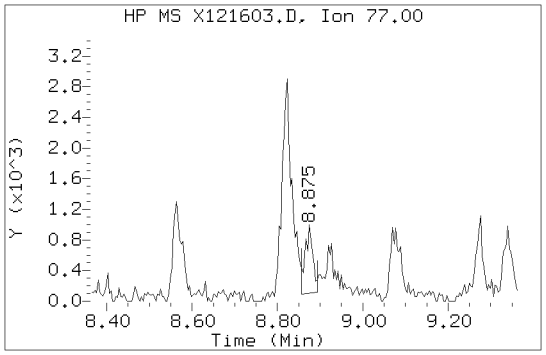
BEFORE

MASS
77
AREA
1161
HEIGHT
895
27-Dec-2022
16:03
linh
pham



AFTER

MASS
77
AREA
1161
HEIGHT
895
27-Dec-2022
16:07
linh
pham

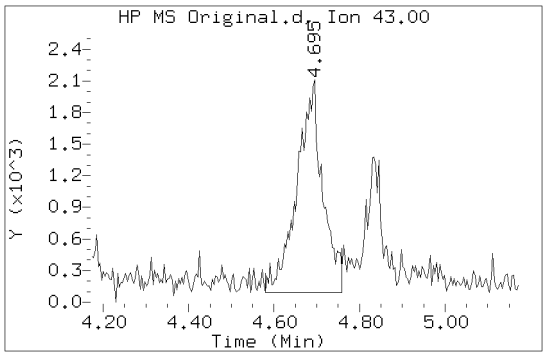


Isobutyl Alcohol (78-83-1)

Reason Code:

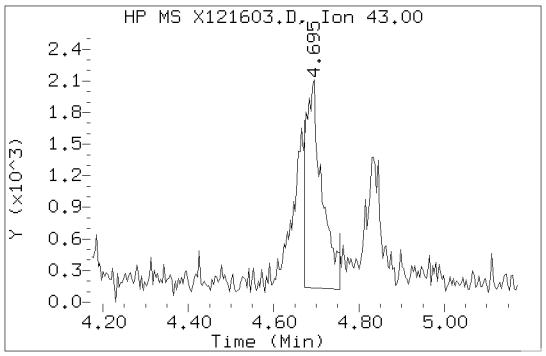
BEFORE

MASS
43
AREA
8478
HEIGHT
2018
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
5178
HEIGHT
1973
27-Dec-2022
16:07
linh
pham



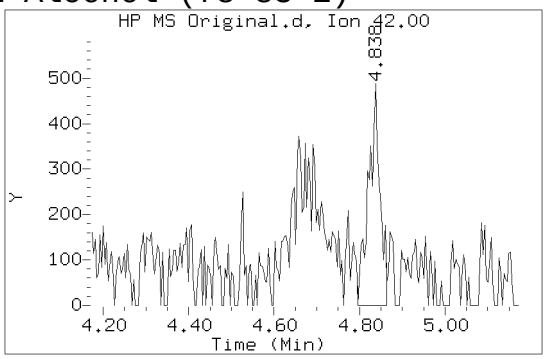
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Isobutyl Alcohol (78-83-1)

Reason Code:

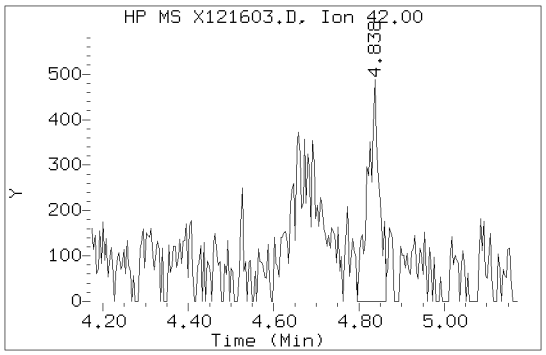
BEFORE

MASS
42
AREA
904
HEIGHT
488
27-Dec-2022
16:03
linh
pham



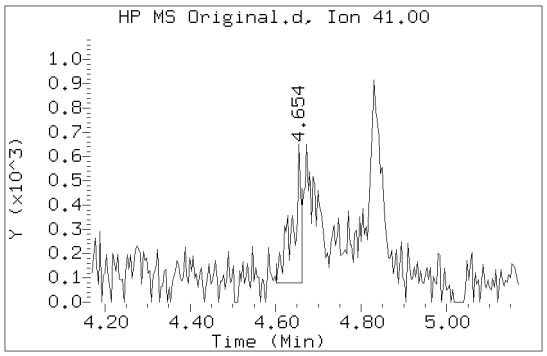
AFTER

MASS
42
AREA
904
HEIGHT
488
27-Dec-2022
16:07
linh
pham



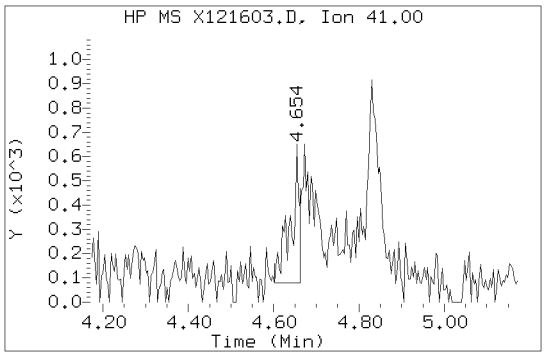
BEFORE

MASS
41
AREA
776
HEIGHT
572
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
776
HEIGHT
572
27-Dec-2022
16:07
linh
pham

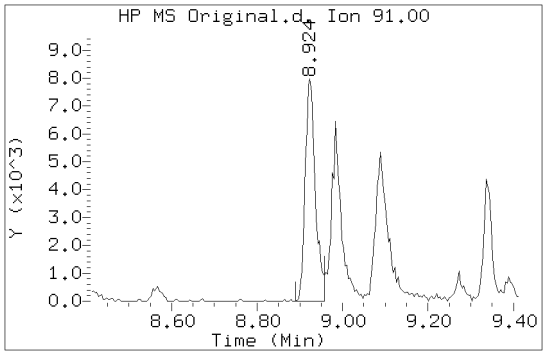


n-Propylbenzene (106-65-1)

Reason Code:

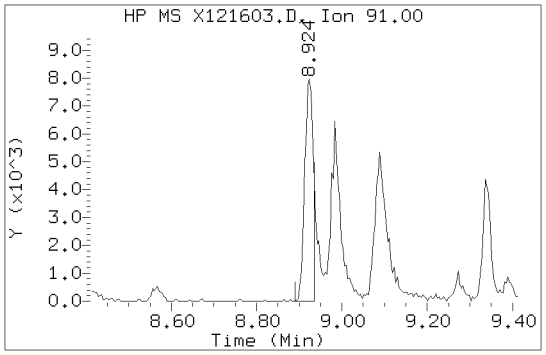
BEFORE

MASS
91
AREA
13496
HEIGHT
7972
27-Dec-2022
16:03
linh
pham



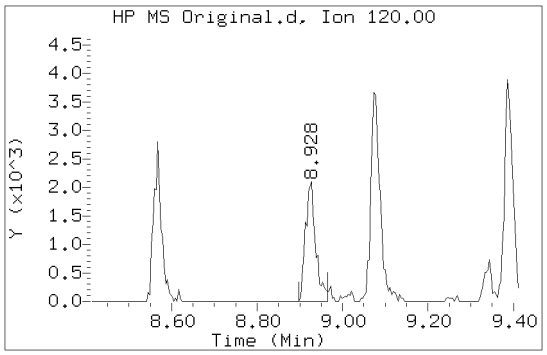
AFTER

MASS
91
AREA
11163
HEIGHT
7972
27-Dec-2022
16:07
linh
pham



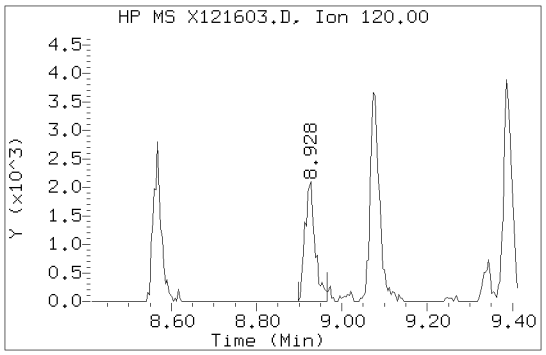
BEFORE

MASS
120
AREA
3559
HEIGHT
2104
27-Dec-2022
16:03
linh
pham



AFTER

MASS
120
AREA
3559
HEIGHT
2104
27-Dec-2022
16:07
linh
pham

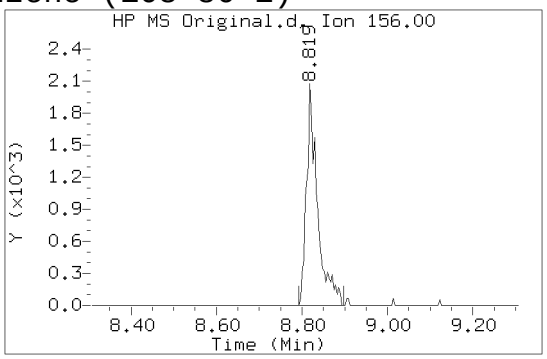


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

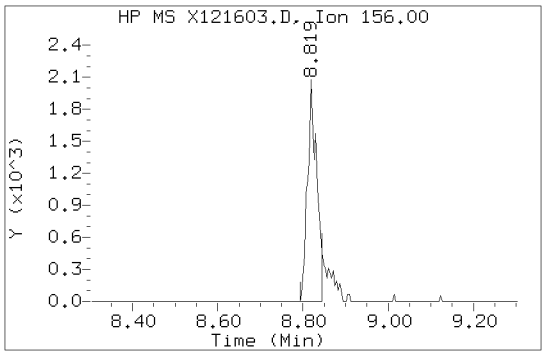
Bromobenzene (108-86-1)

Reason Code:

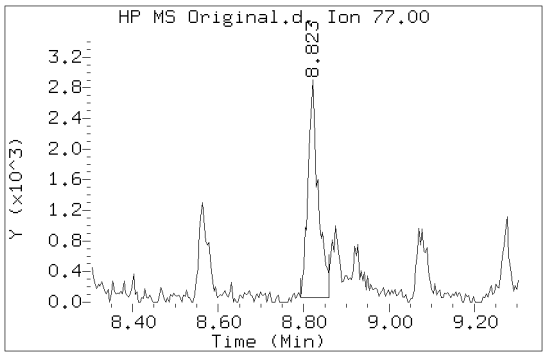
BEFORE
MASS
156
AREA
3747
HEIGHT
2077
27-Dec-2022
16:03
linh
pham



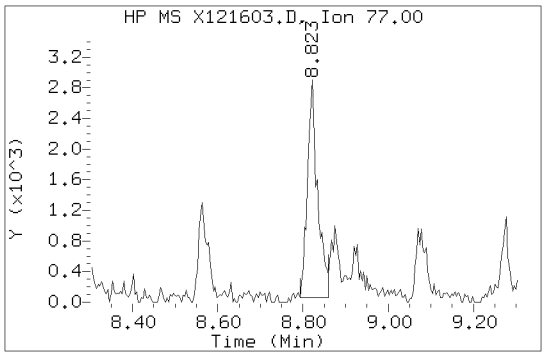
AFTER
MASS
156
AREA
3147
HEIGHT
2077
27-Dec-2022
16:07
linh
pham



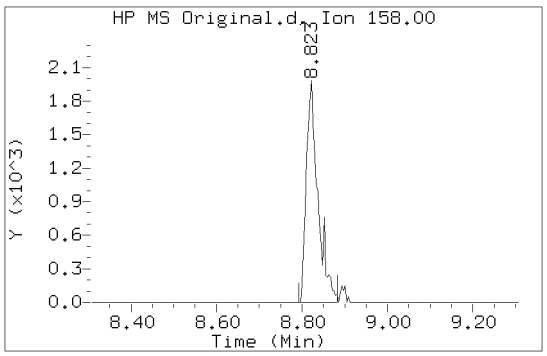
BEFORE
MASS
77
AREA
4719
HEIGHT
2841
27-Dec-2022
16:03
linh
pham



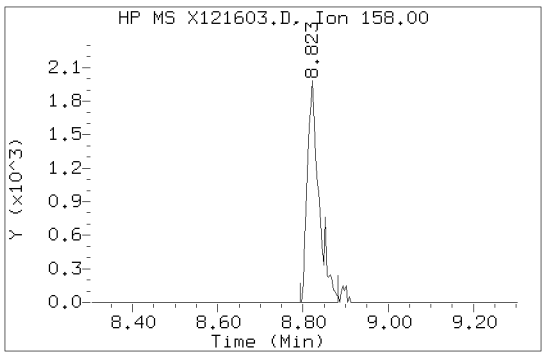
AFTER
MASS
77
AREA
4719
HEIGHT
2841
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
158
AREA
3772
HEIGHT
1983
27-Dec-2022
16:03
linh
pham



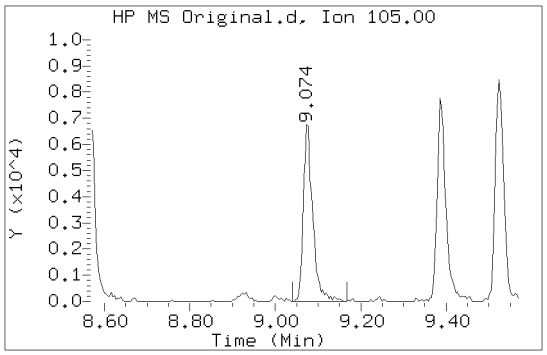
AFTER
MASS
158
AREA
3772
HEIGHT
1983
27-Dec-2022
16:07
linh
pham



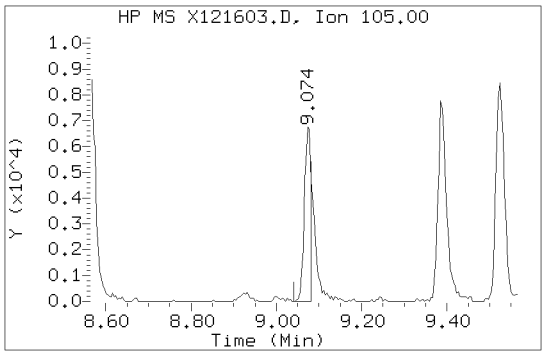
1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

BEFORE
MASS
105
AREA
10555
HEIGHT
6758
27-Dec-2022
16:03
linh
pham



AFTER
MASS
105
AREA
7182
HEIGHT
6758
27-Dec-2022
16:07
linh
pham



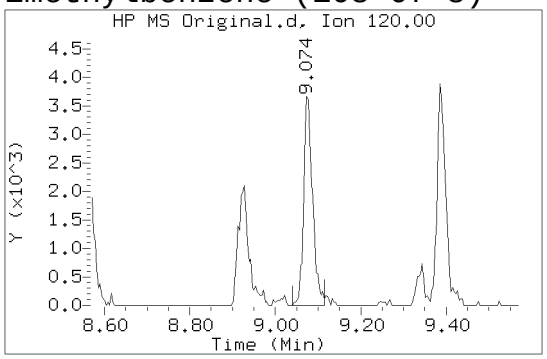
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

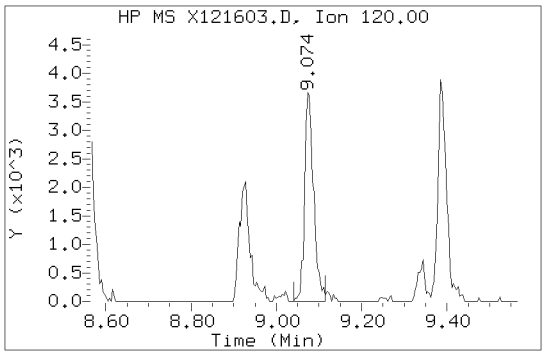
BEFORE

MASS
120
AREA
5450
HEIGHT
3663
27-Dec-2022
16:03
linh
pham



AFTER

MASS
120
AREA
5450
HEIGHT
3663
27-Dec-2022
16:07
linh
pham

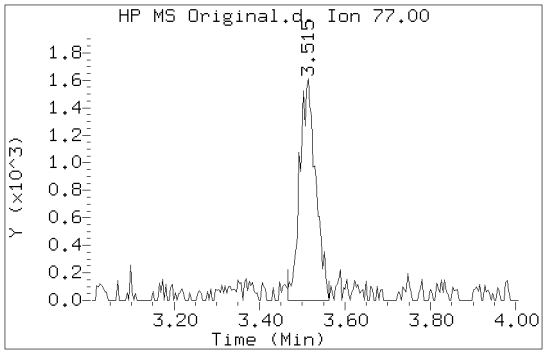


2,2-Dichloropropane (594-20-7)

Reason Code:

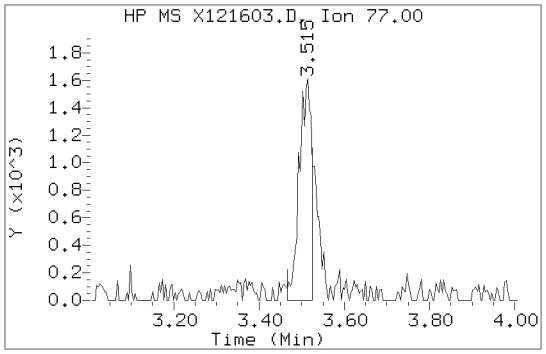
BEFORE

MASS
77
AREA
4217
HEIGHT
1612
27-Dec-2022
16:03
linh
pham



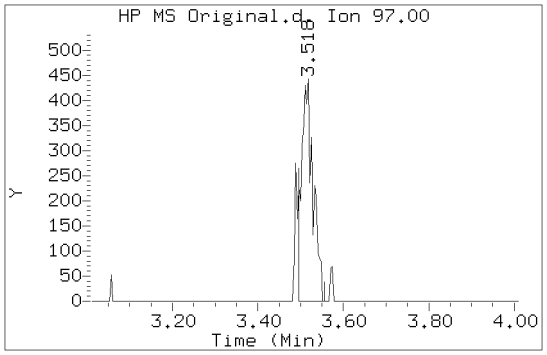
AFTER

MASS
77
AREA
3238
HEIGHT
1612
27-Dec-2022
16:07
linh
pham



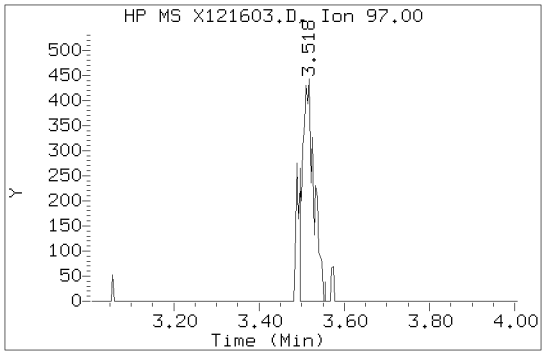
BEFORE

MASS
97
AREA
843
HEIGHT
443
27-Dec-2022
16:03
linh
pham



AFTER

MASS
97
AREA
843
HEIGHT
443
27-Dec-2022
16:07
linh
pham

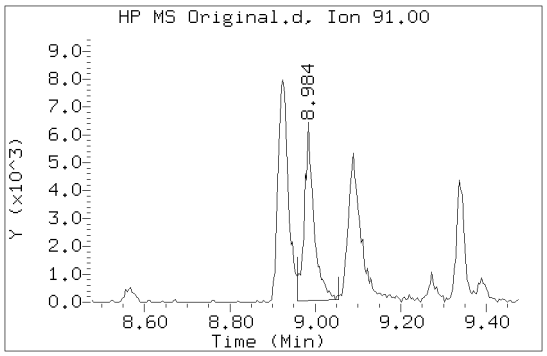


2-Chlorotoluene (95-49-8)

Reason Code:

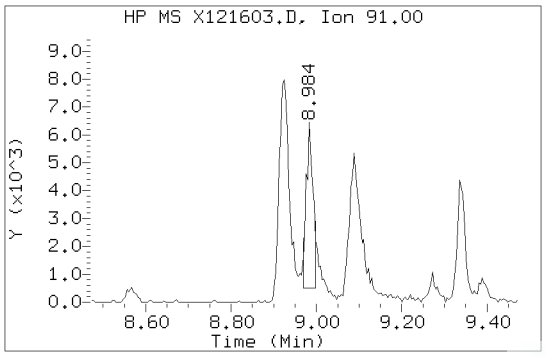
BEFORE

MASS
91
AREA
10128
HEIGHT
6401
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
6718
HEIGHT
5942
27-Dec-2022
16:07
linh
pham



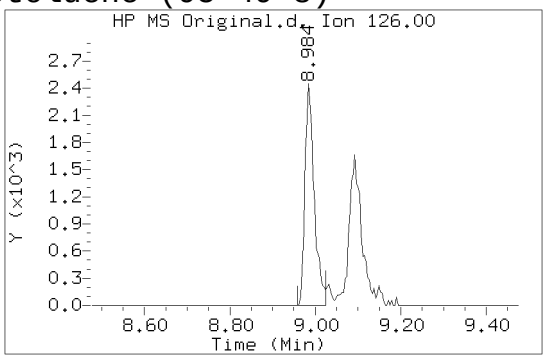
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

2-Chlorotoluene (95-49-8)

Reason Code:

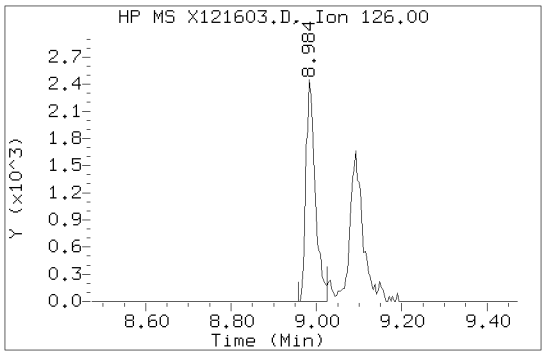
BEFORE

MASS
126
AREA
3761
HEIGHT
2450
27-Dec-2022
16:03
linh
pham



AFTER

MASS
126
AREA
3761
HEIGHT
2450
27-Dec-2022
16:07
linh
pham

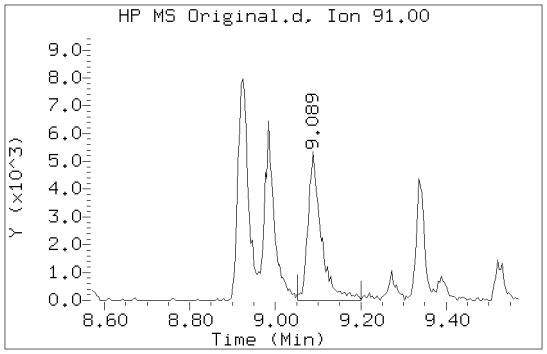


4-Chlorotoluene (106-43-4)

Reason Code:

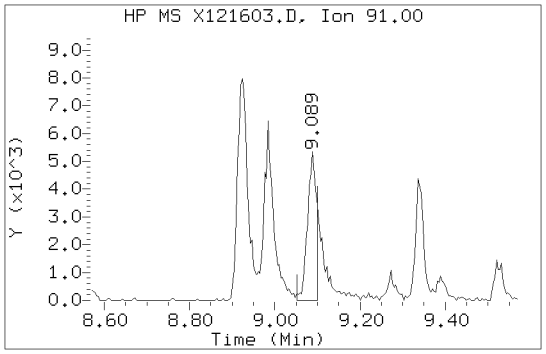
BEFORE

MASS
91
AREA
11481
HEIGHT
5337
27-Dec-2022
16:03
linh
pham



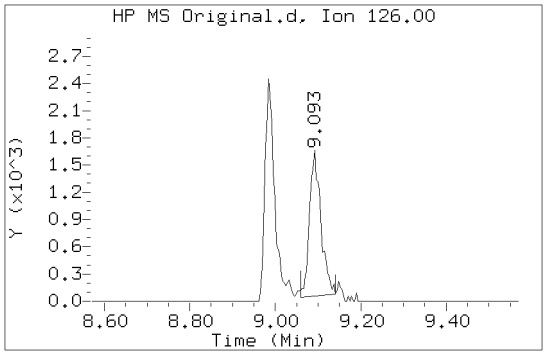
AFTER

MASS
91
AREA
7644
HEIGHT
5337
27-Dec-2022
16:07
linh
pham



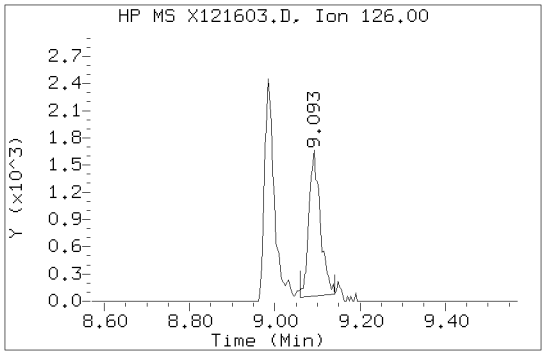
BEFORE

MASS
126
AREA
3008
HEIGHT
1612
27-Dec-2022
16:03
linh
pham



AFTER

MASS
126
AREA
3008
HEIGHT
1612
27-Dec-2022
16:07
linh
pham

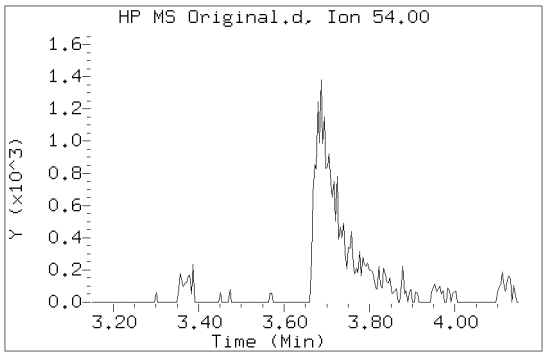


Propionitrile (107-12-0)

Reason Code:

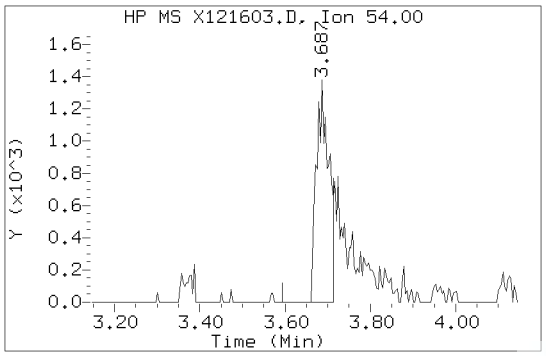
BEFORE

MASS
54
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
54
AREA
2777
HEIGHT
1380
27-Dec-2022
16:07
linh
pham



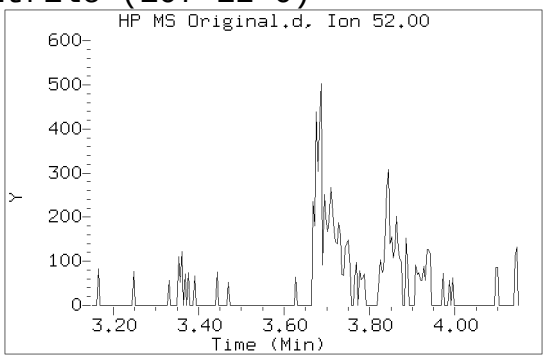
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Propionitrile (107-12-0)

Reason Code:

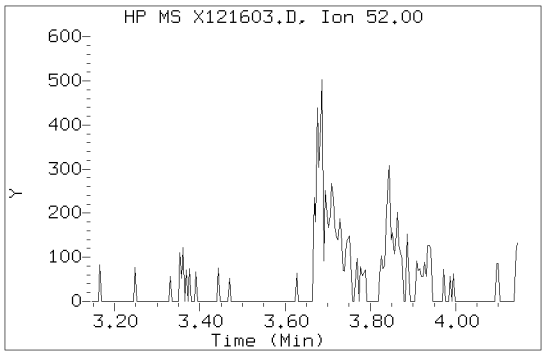
BEFORE

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



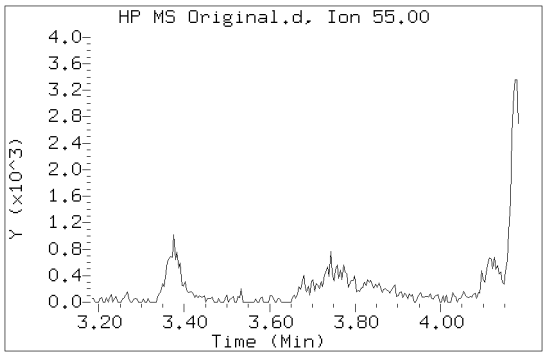
AFTER

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



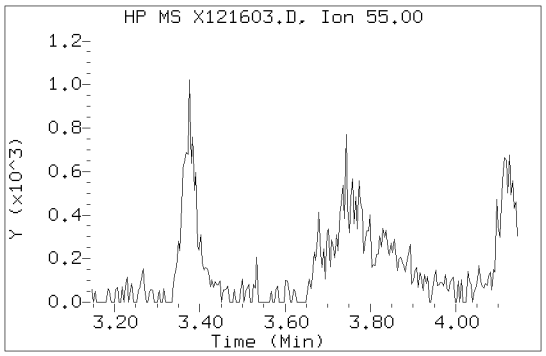
BEFORE

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

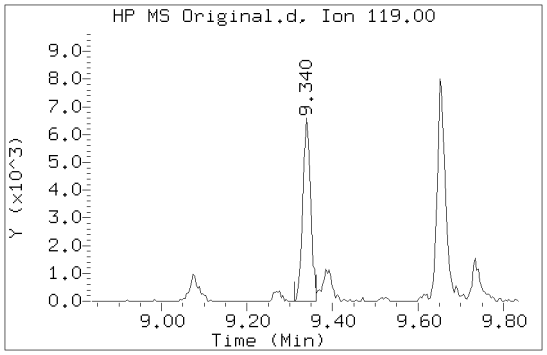


tert-Butylbenzene (98-06-6)

Reason Code:

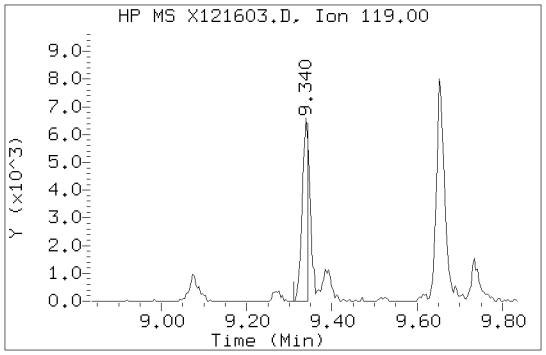
BEFORE

MASS
119
AREA
8660
HEIGHT
6598
27-Dec-2022
16:03
linh
pham



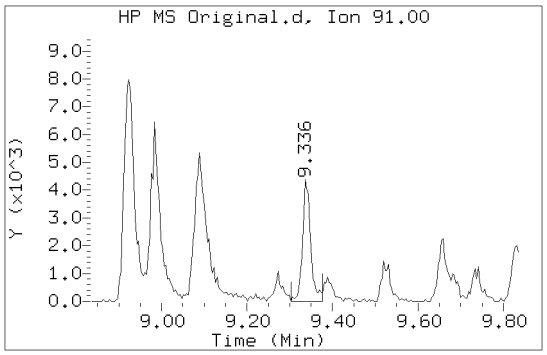
AFTER

MASS
119
AREA
6389
HEIGHT
6598
27-Dec-2022
16:07
linh
pham



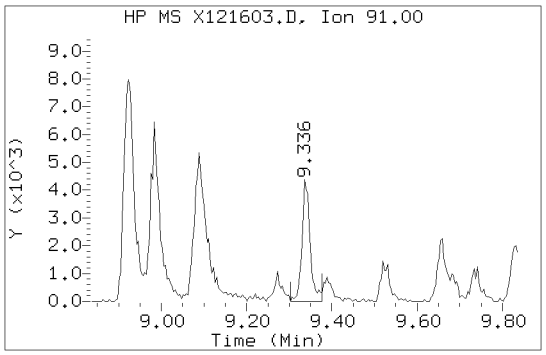
BEFORE

MASS
91
AREA
6013
HEIGHT
4378
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
6013
HEIGHT
4378
27-Dec-2022
16:07
linh
pham



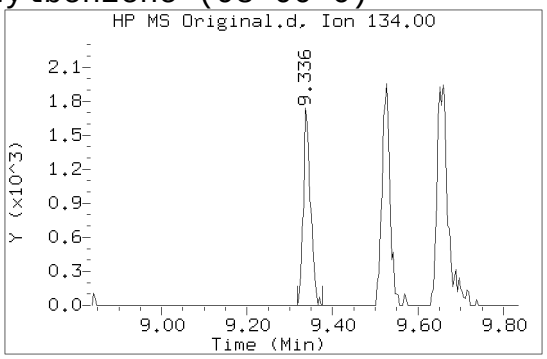
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

tert-Butylbenzene (98-06-6)

Reason Code:

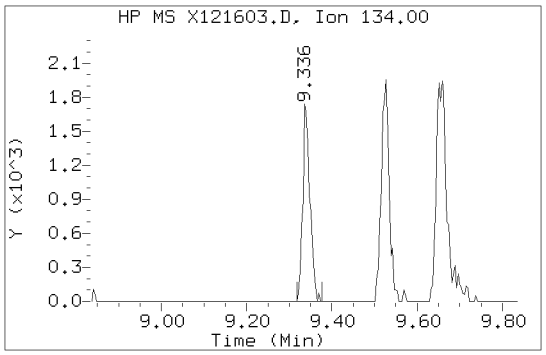
BEFORE

MASS
134
AREA
2112
HEIGHT
1740
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
2112
HEIGHT
1740
27-Dec-2022
16:07
linh
pham

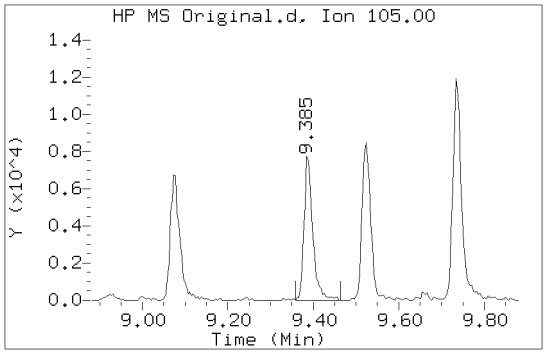


1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

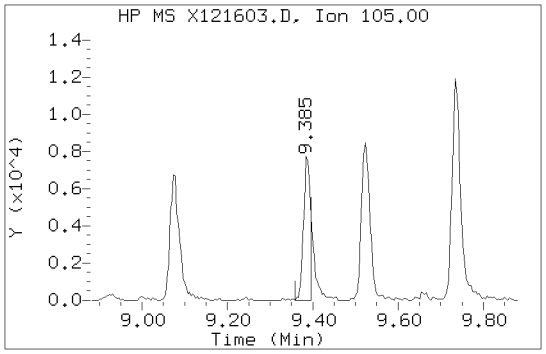
BEFORE

MASS
105
AREA
11065
HEIGHT
7775
27-Dec-2022
16:03
linh
pham



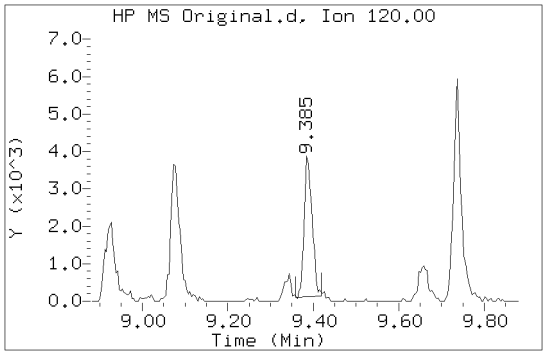
AFTER

MASS
105
AREA
8496
HEIGHT
7775
27-Dec-2022
16:07
linh
pham



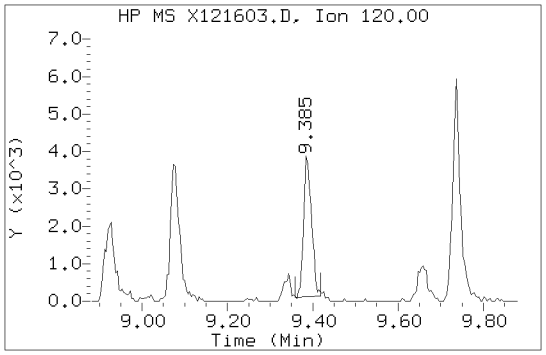
BEFORE

MASS
120
AREA
4898
HEIGHT
3773
27-Dec-2022
16:03
linh
pham



AFTER

MASS
120
AREA
4898
HEIGHT
3773
27-Dec-2022
16:07
linh
pham

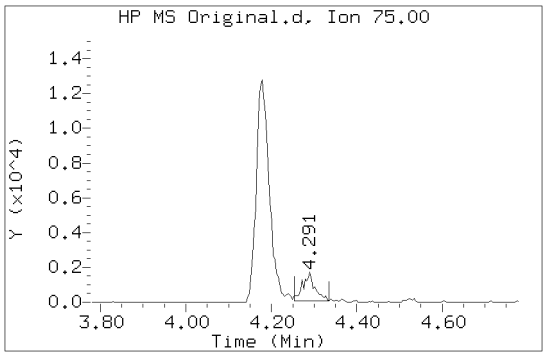


1,1-Dichloropropene (563-58-6)

Reason Code:

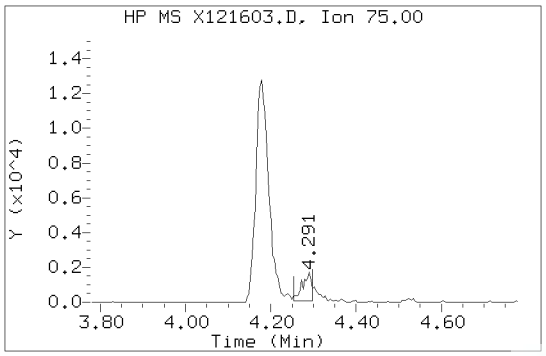
BEFORE

MASS
75
AREA
3235
HEIGHT
1674
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
2468
HEIGHT
1674
27-Dec-2022
16:07
linh
pham



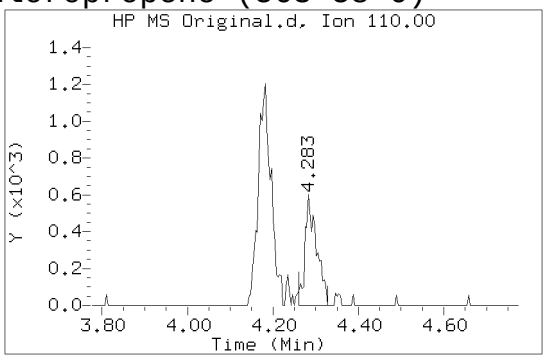
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,1-Dichloropropene (563-58-6)

Reason Code:

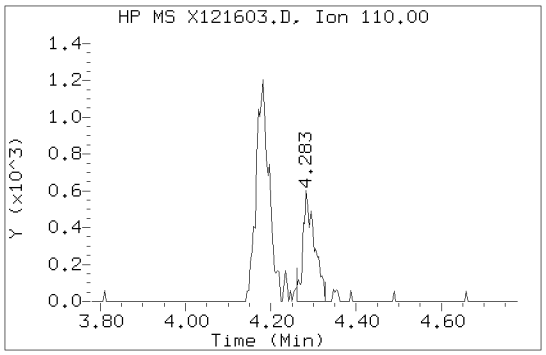
BEFORE

MASS
110
AREA
1143
HEIGHT
603
27-Dec-2022
16:03
linh
pham



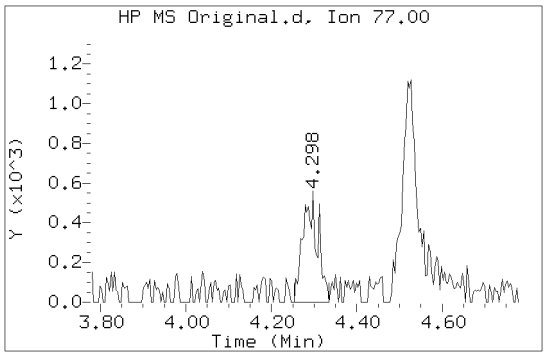
AFTER

MASS
110
AREA
1143
HEIGHT
603
27-Dec-2022
16:07
linh
pham



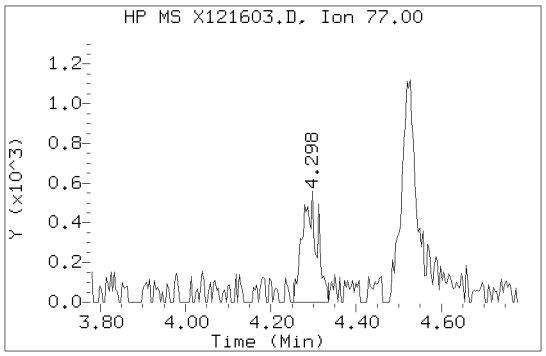
BEFORE

MASS
77
AREA
1342
HEIGHT
559
27-Dec-2022
16:03
linh
pham



AFTER

MASS
77
AREA
1342
HEIGHT
559
27-Dec-2022
16:07
linh
pham

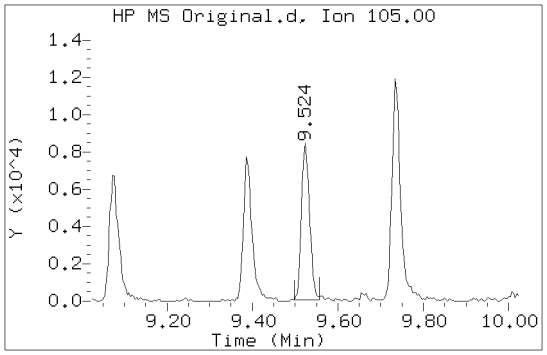


sec-Butylbenzene (135-98-8)

Reason Code:

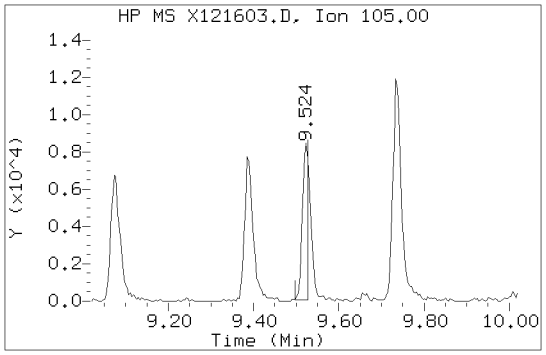
BEFORE

MASS
105
AREA
11512
HEIGHT
8394
27-Dec-2022
16:03
linh
pham



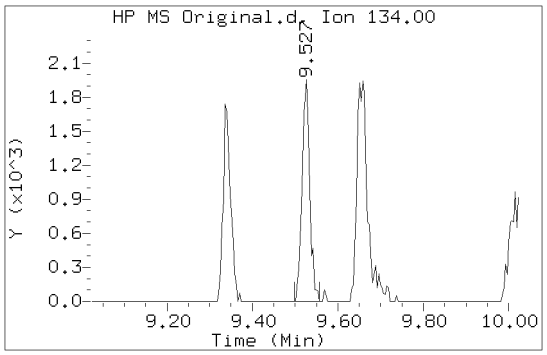
AFTER

MASS
105
AREA
7938
HEIGHT
8394
27-Dec-2022
16:07
linh
pham



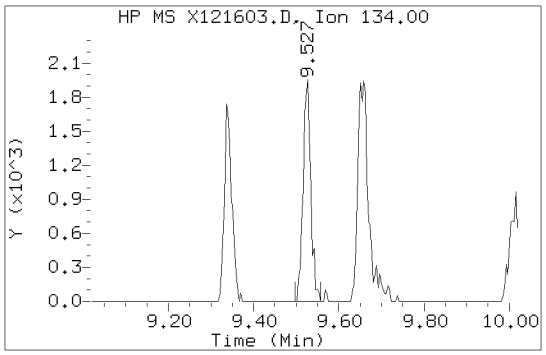
BEFORE

MASS
134
AREA
2519
HEIGHT
1955
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
2519
HEIGHT
1955
27-Dec-2022
16:07
linh
pham



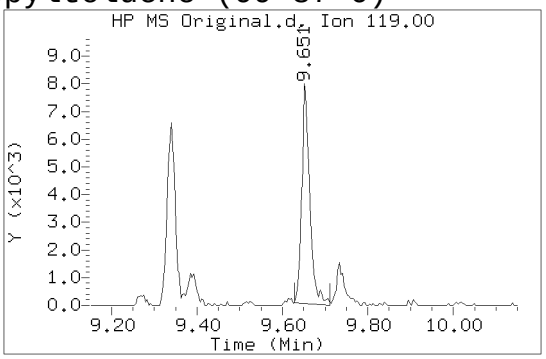
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

p-Isopropyltoluene (99-87-6)

Reason Code:

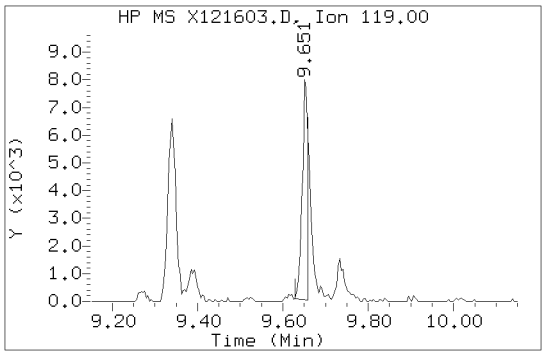
BEFORE

MASS
119
AREA
10660
HEIGHT
7944
27-Dec-2022
16:03
linh
pham



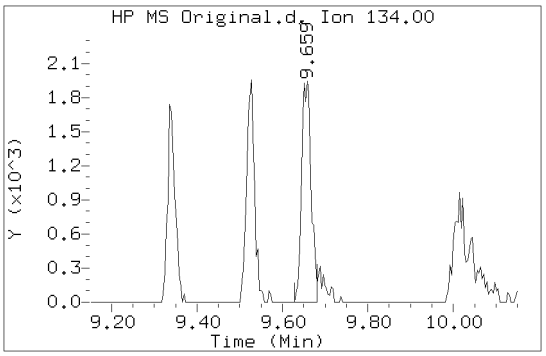
AFTER

MASS
119
AREA
7343
HEIGHT
7944
27-Dec-2022
16:07
linh
pham



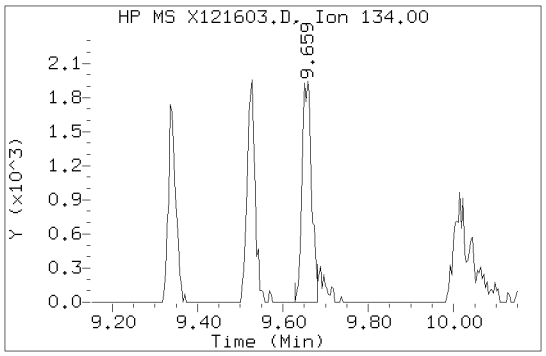
BEFORE

MASS
134
AREA
3102
HEIGHT
1946
27-Dec-2022
16:03
linh
pham



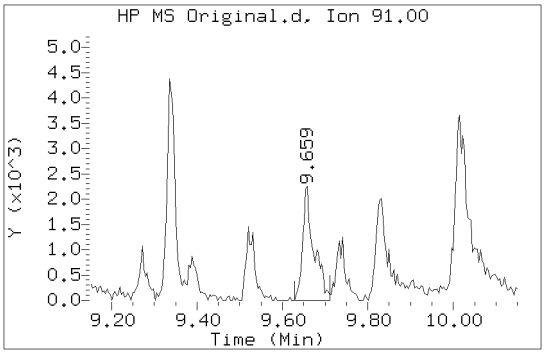
AFTER

MASS
134
AREA
3102
HEIGHT
1946
27-Dec-2022
16:07
linh
pham



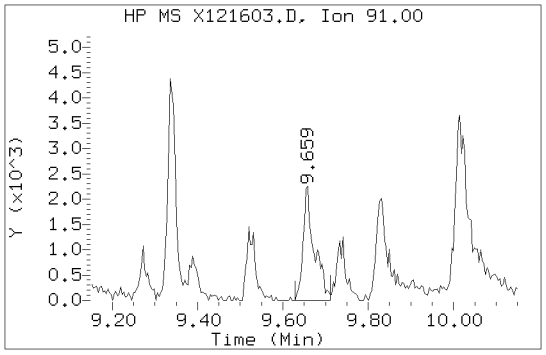
BEFORE

MASS
91
AREA
4191
HEIGHT
2256
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
4191
HEIGHT
2256
27-Dec-2022
16:07
linh
pham

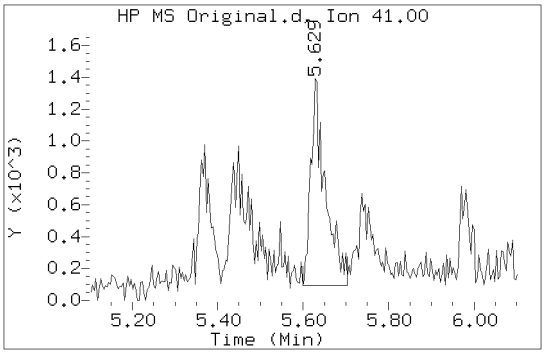


Methyl Methacrylate (80-62-6)

Reason Code:

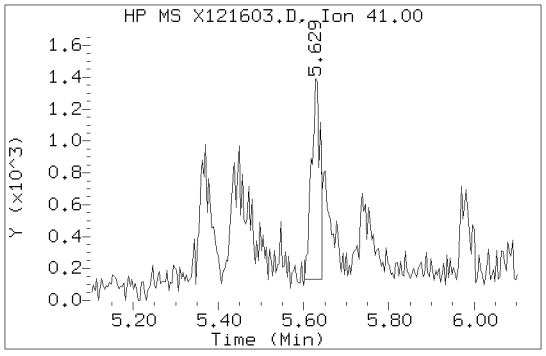
BEFORE

MASS
41
AREA
3067
HEIGHT
1299
27-Dec-2022
16:03
linh
pham



AFTER

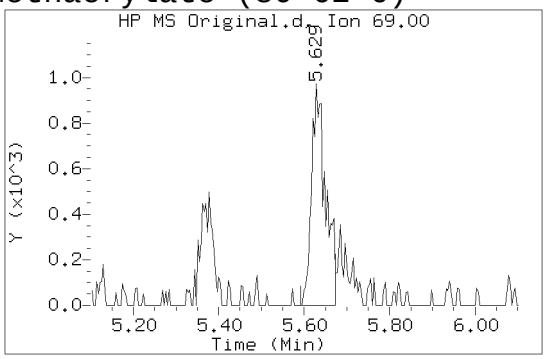
MASS
41
AREA
1788
HEIGHT
1257
27-Dec-2022
16:07
linh
pham



Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

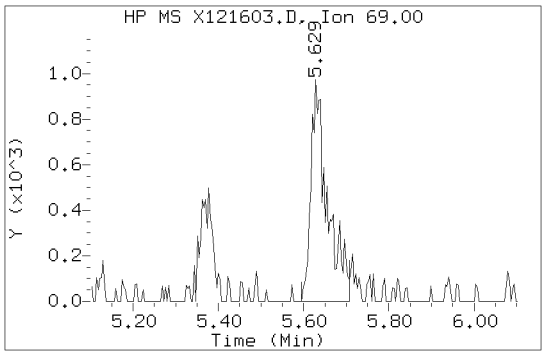
Methyl Methacrylate (80-62-6)

BEFORE
MASS
69
AREA
2216
HEIGHT
973
27-Dec-2022
16:03
linh
pham

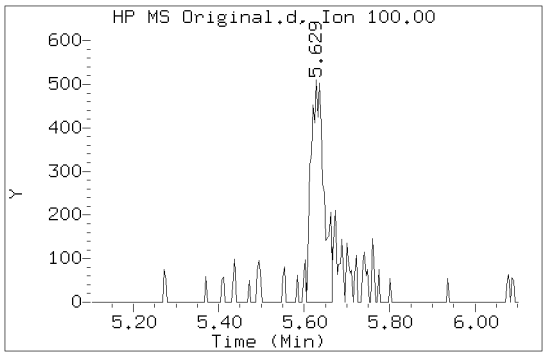


AFTER
MASS
69
AREA
2595
HEIGHT
973
27-Dec-2022
16:07
linh
pham

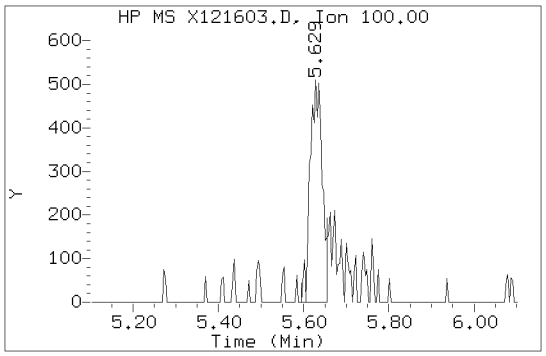
Reason Code:



BEFORE
MASS
100
AREA
1074
HEIGHT
510
27-Dec-2022
16:03
linh
pham

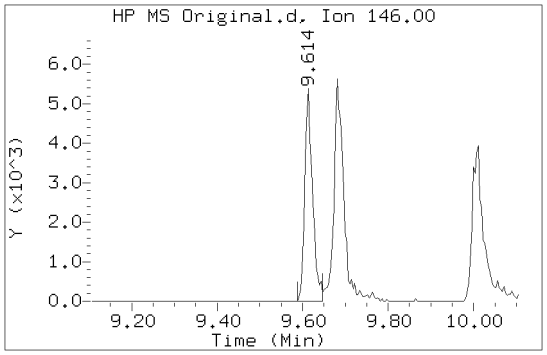


AFTER
MASS
100
AREA
1011
HEIGHT
510
27-Dec-2022
16:07
linh
pham



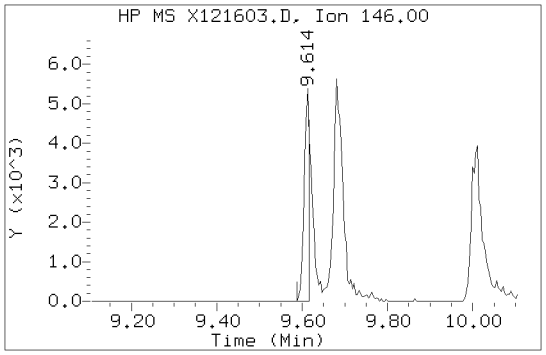
1,3-Dichlorobenzene (541-73-1)

BEFORE
MASS
146
AREA
6964
HEIGHT
5387
27-Dec-2022
16:03
linh
pham

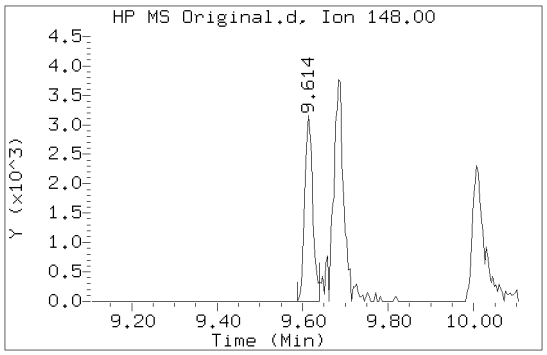


AFTER
MASS
146
AREA
4677
HEIGHT
5387
27-Dec-2022
16:07
linh
pham

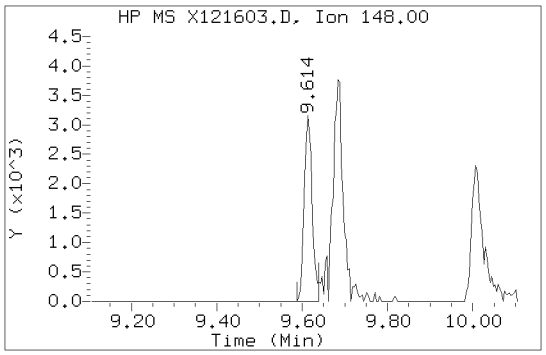
Reason Code:



BEFORE
MASS
148
AREA
4216
HEIGHT
3157
27-Dec-2022
16:03
linh
pham



AFTER
MASS
148
AREA
4216
HEIGHT
3157
27-Dec-2022
16:07
linh
pham



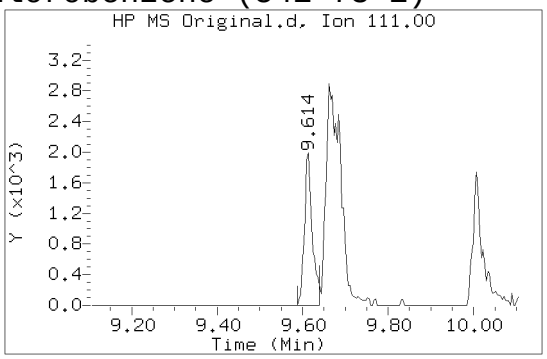
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,3-Dichlorobenzene (541-73-1)

Reason Code:

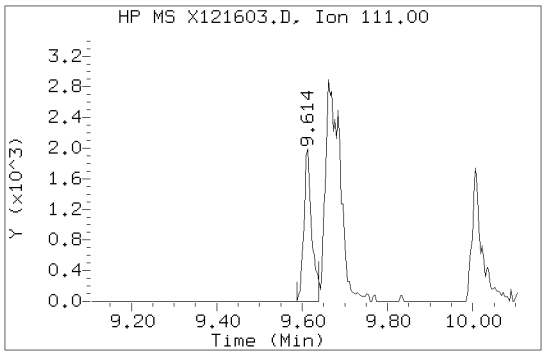
BEFORE

MASS
111
AREA
2596
HEIGHT
1995
27-Dec-2022
16:03
linh
pham



AFTER

MASS
111
AREA
2596
HEIGHT
1995
27-Dec-2022
16:07
linh
pham

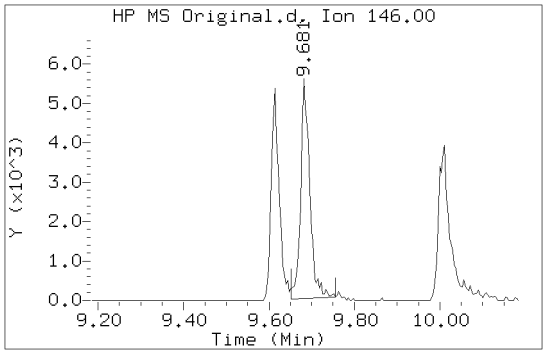


1,4-Dichlorobenzene (106-46-7)

Reason Code:

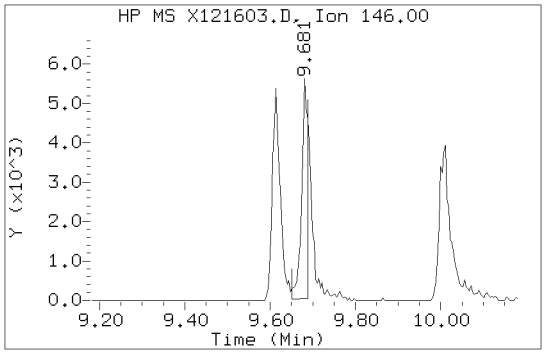
BEFORE

MASS
146
AREA
8510
HEIGHT
5586
27-Dec-2022
16:03
linh
pham



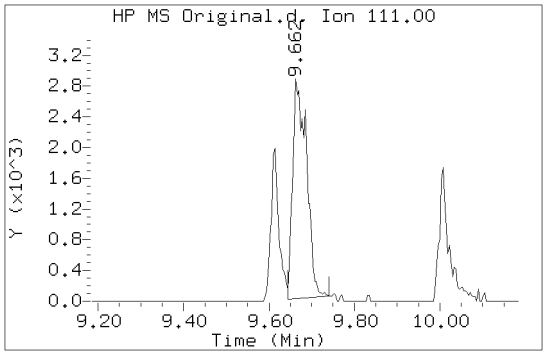
AFTER

MASS
146
AREA
5674
HEIGHT
5587
27-Dec-2022
16:07
linh
pham



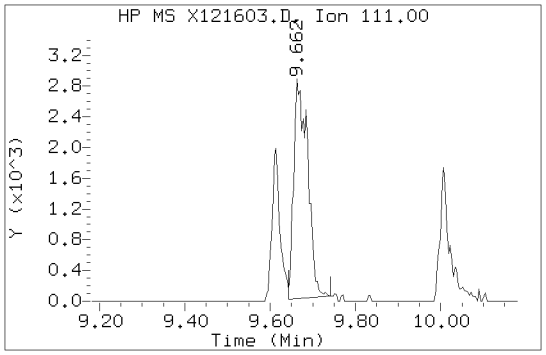
BEFORE

MASS
111
AREA
6571
HEIGHT
2862
27-Dec-2022
16:03
linh
pham



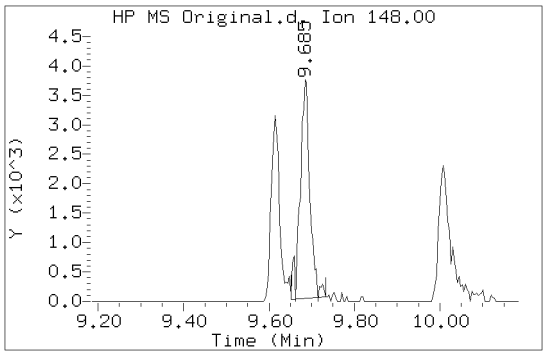
AFTER

MASS
111
AREA
6571
HEIGHT
2862
27-Dec-2022
16:07
linh
pham



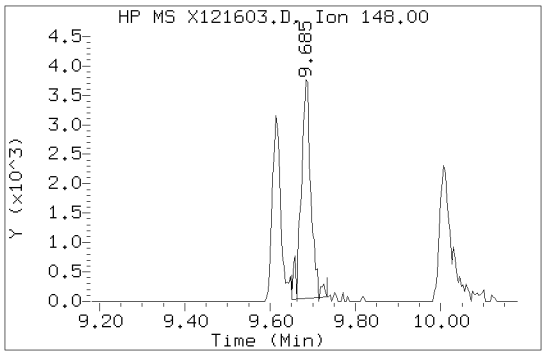
BEFORE

MASS
148
AREA
6083
HEIGHT
3714
27-Dec-2022
16:03
linh
pham



AFTER

MASS
148
AREA
6083
HEIGHT
3714
27-Dec-2022
16:07
linh
pham



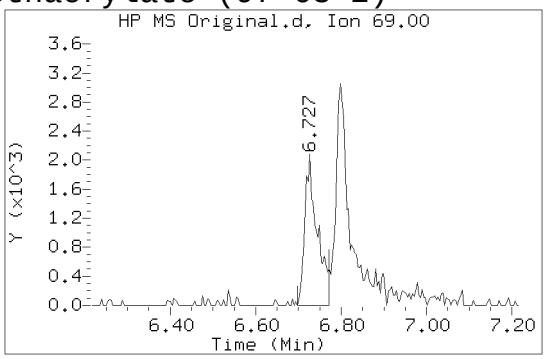
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Ethyl Methacrylate (97-63-2)

Reason Code:

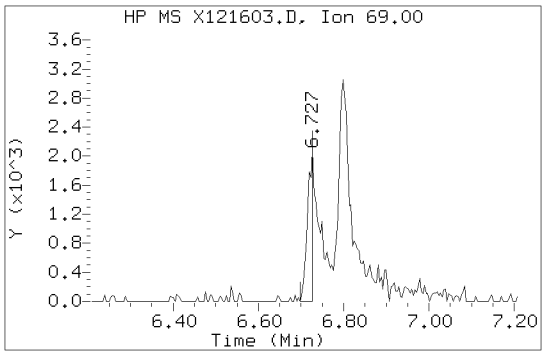
BEFORE

MASS
69
AREA
4283
HEIGHT
2083
27-Dec-2022
16:03
linh
pham



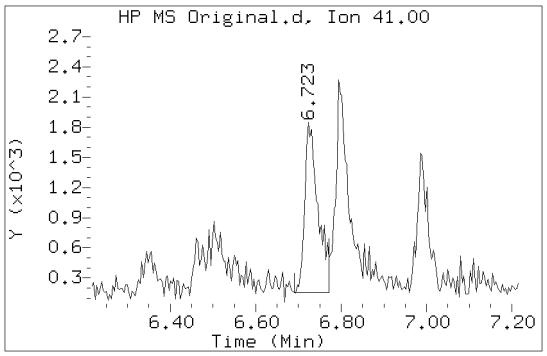
AFTER

MASS
69
AREA
1935
HEIGHT
2083
27-Dec-2022
16:07
linh
pham



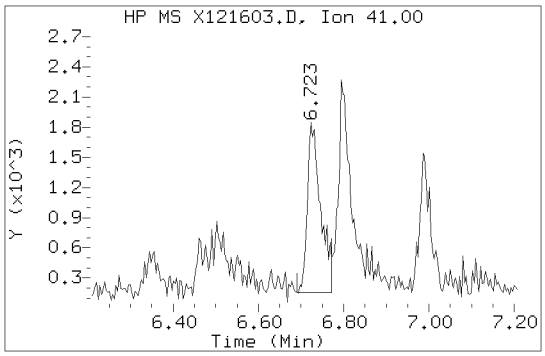
BEFORE

MASS
41
AREA
3701
HEIGHT
1688
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
3701
HEIGHT
1688
27-Dec-2022
16:07
linh
pham

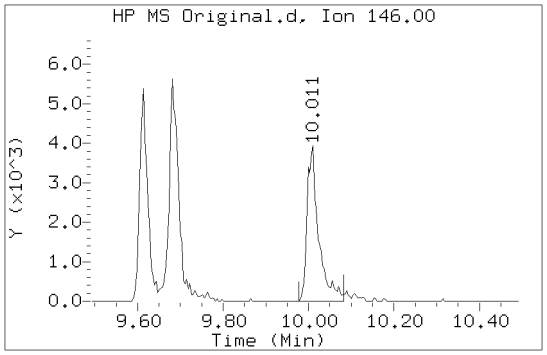


1,2-Dichlorobenzene (95-50-1)

Reason Code:

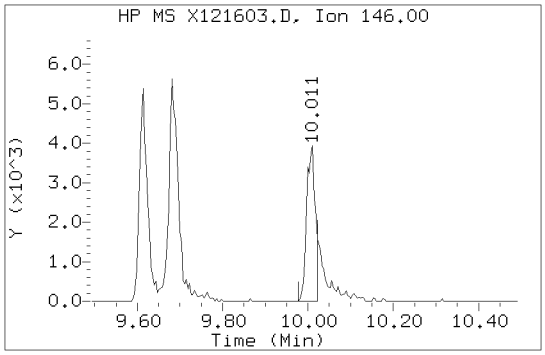
BEFORE

MASS
146
AREA
7400
HEIGHT
3934
27-Dec-2022
16:03
linh
pham



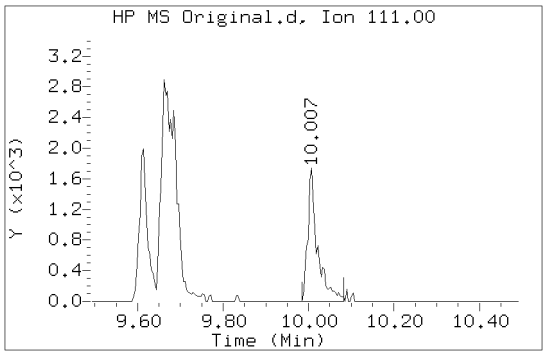
AFTER

MASS
146
AREA
5504
HEIGHT
3934
27-Dec-2022
16:07
linh
pham



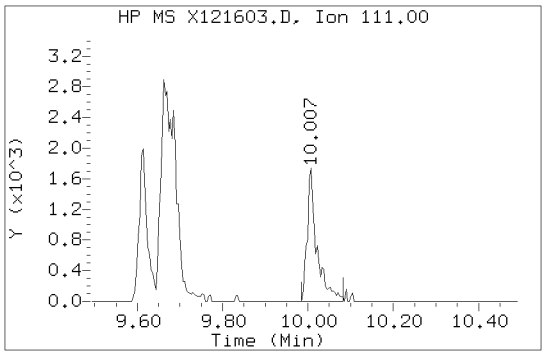
BEFORE

MASS
111
AREA
2768
HEIGHT
1741
27-Dec-2022
16:03
linh
pham



AFTER

MASS
111
AREA
2768
HEIGHT
1741
27-Dec-2022
16:07
linh
pham



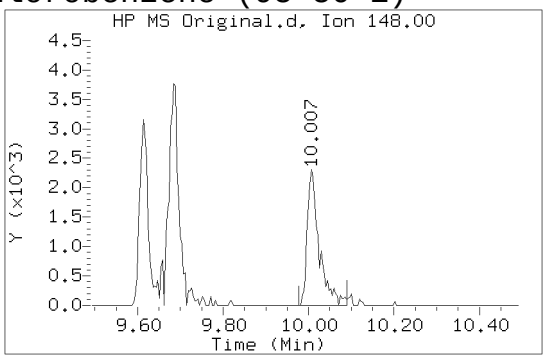
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,2-Dichlorobenzene (95-50-1)

Reason Code:

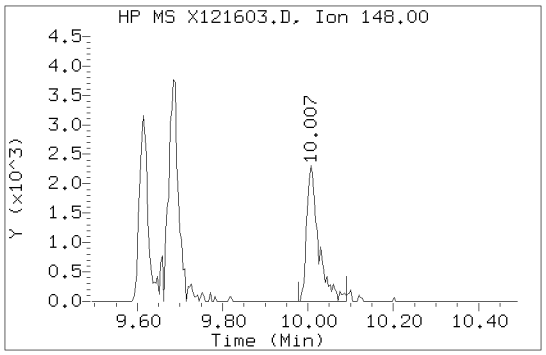
BEFORE

MASS
148
AREA
4515
HEIGHT
2306
27-Dec-2022
16:03
linh
pham



AFTER

MASS
148
AREA
4515
HEIGHT
2306
27-Dec-2022
16:07
linh
pham

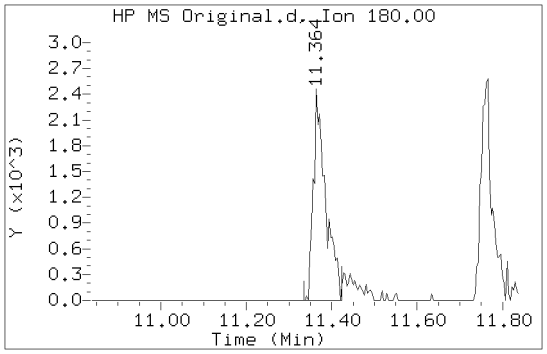


1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

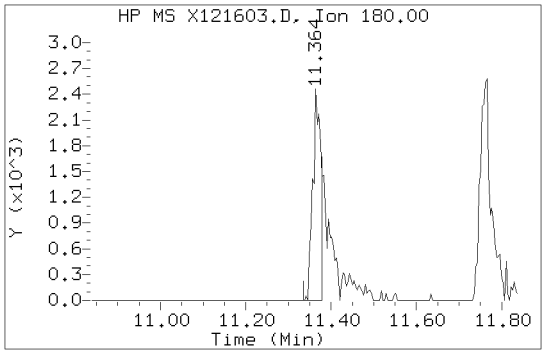
BEFORE

MASS
180
AREA
4912
HEIGHT
2459
27-Dec-2022
16:03
linh
pham



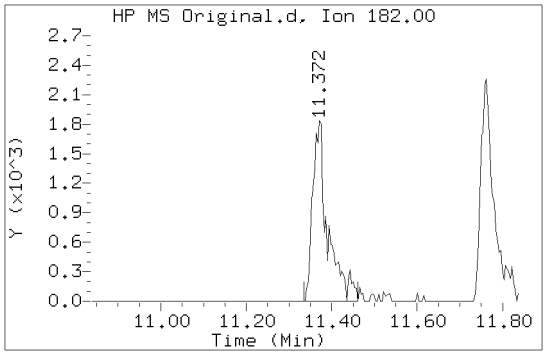
AFTER

MASS
180
AREA
3187
HEIGHT
2459
27-Dec-2022
16:07
linh
pham



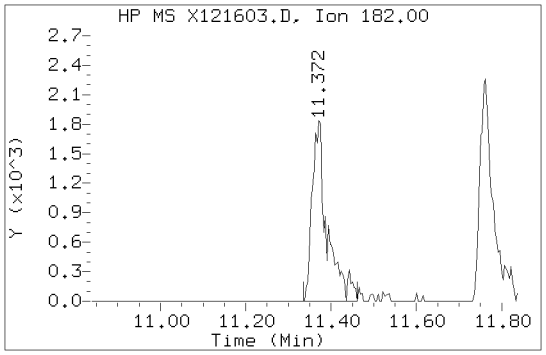
BEFORE

MASS
182
AREA
4514
HEIGHT
1835
27-Dec-2022
16:03
linh
pham



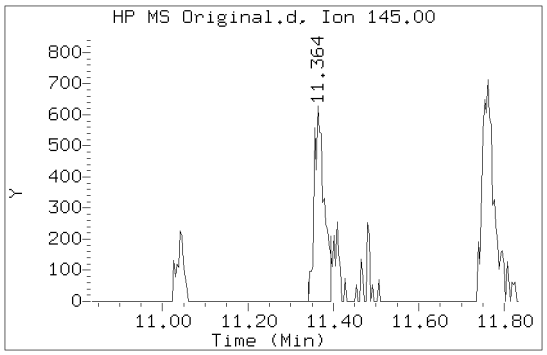
AFTER

MASS
182
AREA
4514
HEIGHT
1835
27-Dec-2022
16:07
linh
pham



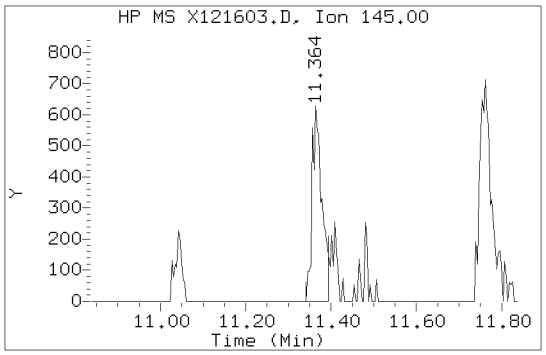
BEFORE

MASS
145
AREA
1003
HEIGHT
629
27-Dec-2022
16:03
linh
pham



AFTER

MASS
145
AREA
1003
HEIGHT
629
27-Dec-2022
16:07
linh
pham



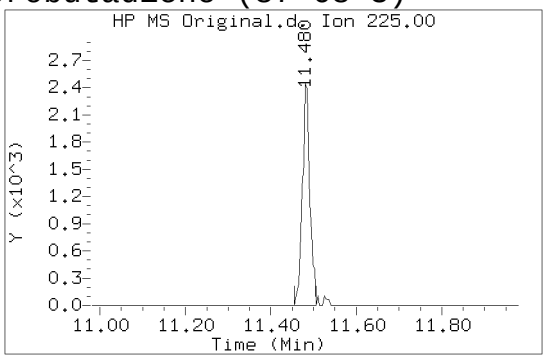
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Hexachlorobutadiene (87-68-3)

Reason Code:

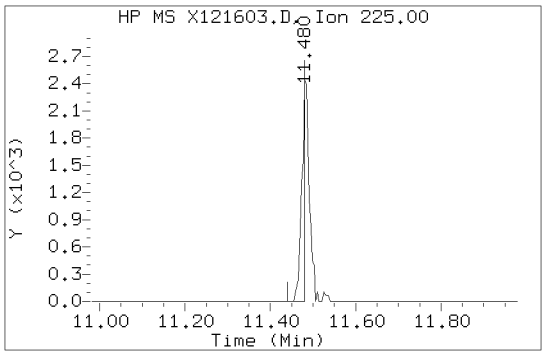
BEFORE

MASS
225
AREA
3038
HEIGHT
2444
27-Dec-2022
16:03
linh
pham



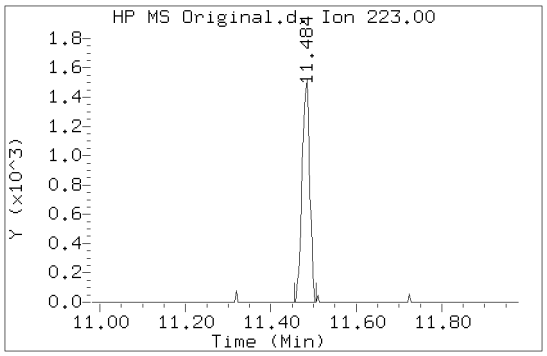
AFTER

MASS
225
AREA
1477
HEIGHT
2444
27-Dec-2022
16:07
linh
pham



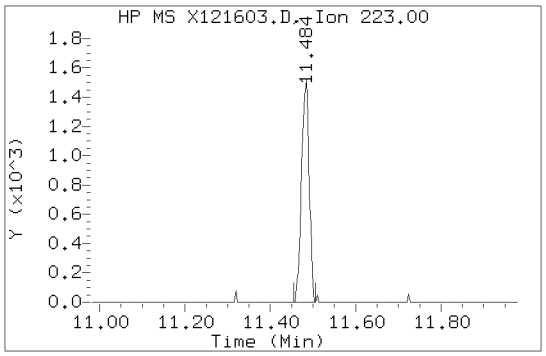
BEFORE

MASS
223
AREA
1952
HEIGHT
1518
27-Dec-2022
16:03
linh
pham



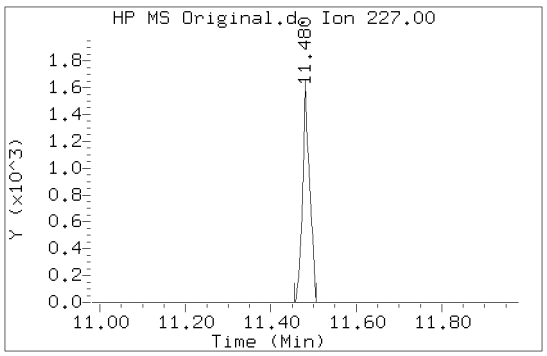
AFTER

MASS
223
AREA
1952
HEIGHT
1518
27-Dec-2022
16:07
linh
pham



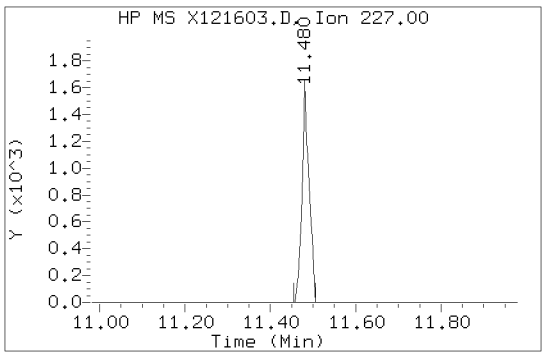
BEFORE

MASS
227
AREA
1938
HEIGHT
1652
27-Dec-2022
16:03
linh
pham



AFTER

MASS
227
AREA
1938
HEIGHT
1652
27-Dec-2022
16:07
linh
pham

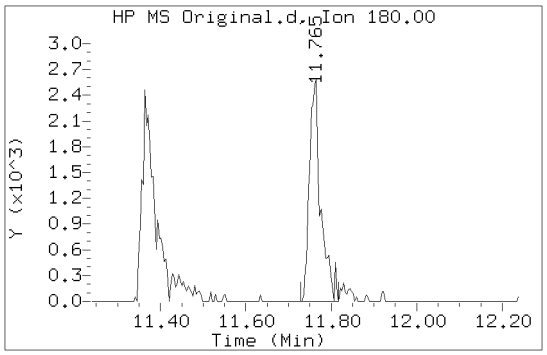


1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

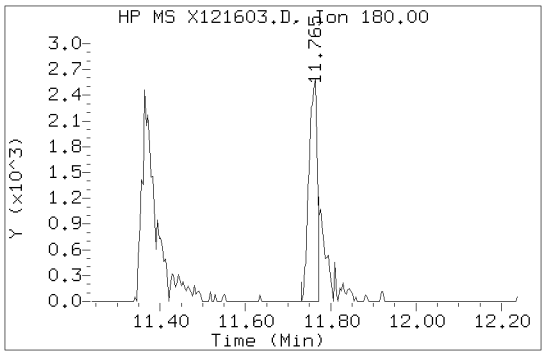
BEFORE

MASS
180
AREA
4741
HEIGHT
2580
27-Dec-2022
16:03
linh
pham



AFTER

MASS
180
AREA
3572
HEIGHT
2580
27-Dec-2022
16:07
linh
pham



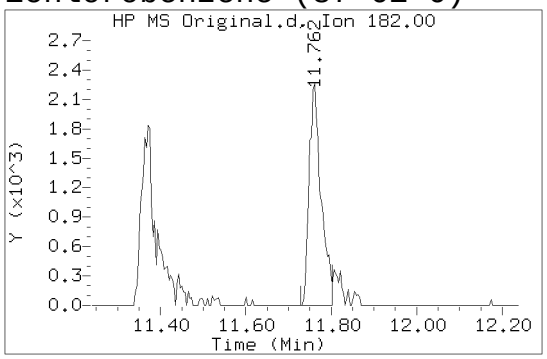
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

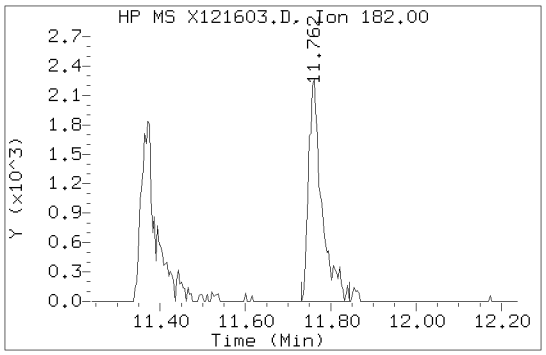
BEFORE

MASS
182
AREA
4404
HEIGHT
2261
27-Dec-2022
16:03
linh
pham



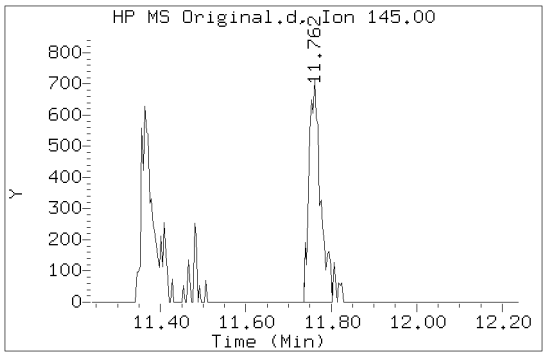
AFTER

MASS
182
AREA
4881
HEIGHT
2261
27-Dec-2022
16:07
linh
pham



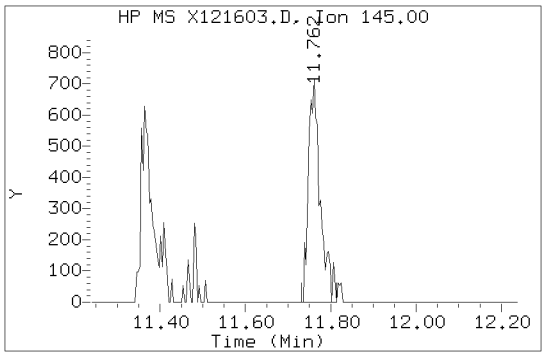
BEFORE

MASS
145
AREA
1338
HEIGHT
713
27-Dec-2022
16:03
linh
pham



AFTER

MASS
145
AREA
1384
HEIGHT
713
27-Dec-2022
16:07
linh
pham

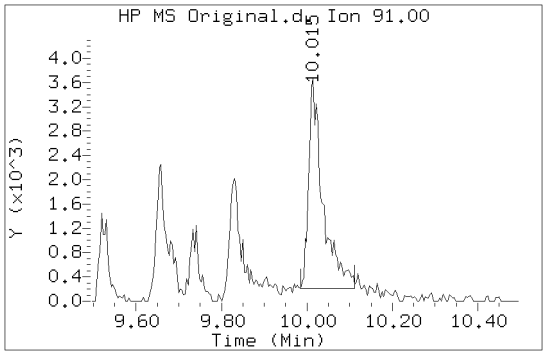


n-Butylbenzene (104-51-8)

Reason Code:

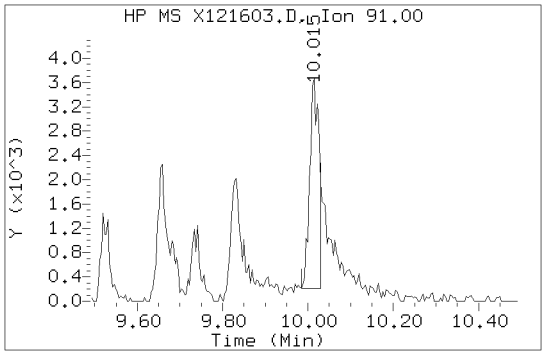
BEFORE

MASS
91
AREA
8005
HEIGHT
3451
27-Dec-2022
16:03
linh
pham



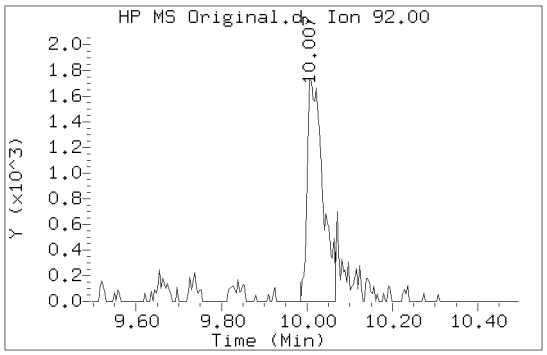
AFTER

MASS
91
AREA
5149
HEIGHT
3451
27-Dec-2022
16:07
linh
pham



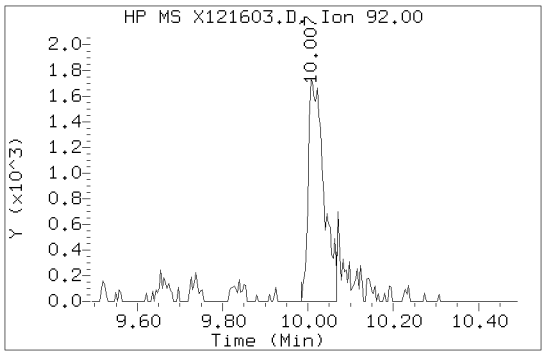
BEFORE

MASS
92
AREA
4404
HEIGHT
1727
27-Dec-2022
16:03
linh
pham



AFTER

MASS
92
AREA
4404
HEIGHT
1727
27-Dec-2022
16:07
linh
pham



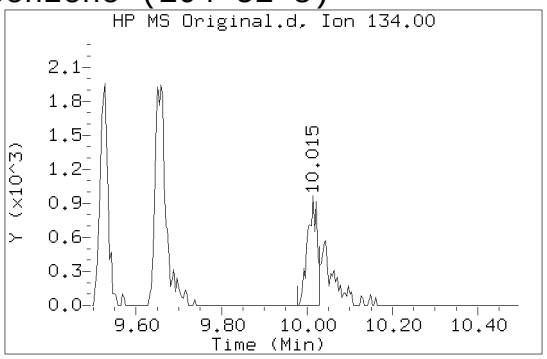
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

n-Butylbenzene (104-51-8)

Reason Code:

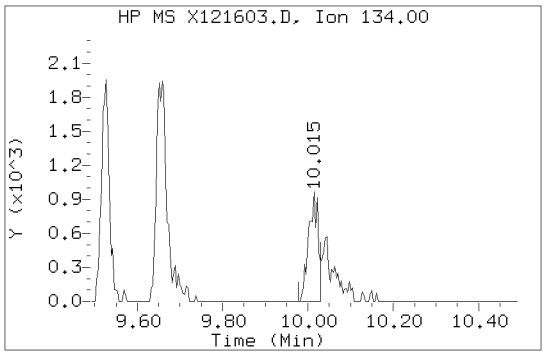
BEFORE

MASS
134
AREA
1502
HEIGHT
969
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
1502
HEIGHT
969
27-Dec-2022
16:07
linh
pham

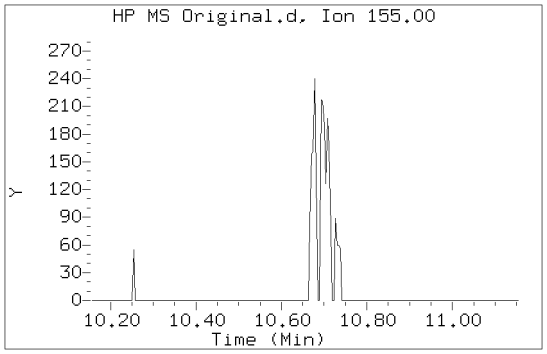


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

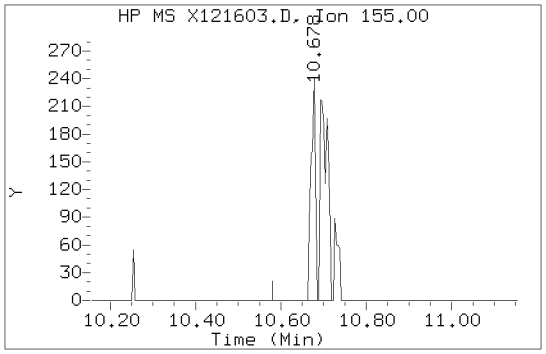
BEFORE

MASS
155
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



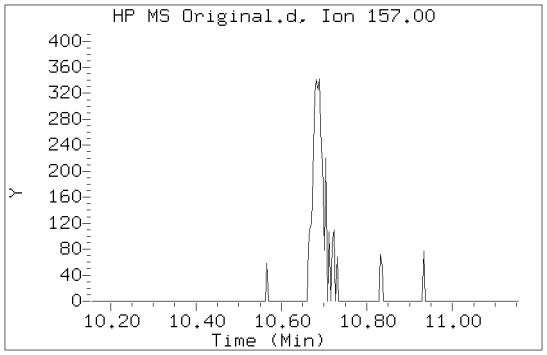
AFTER

MASS
155
AREA
441
HEIGHT
240
27-Dec-2022
16:07
linh
pham



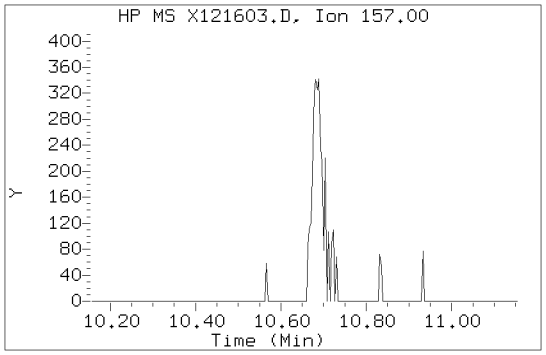
BEFORE

MASS
157
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



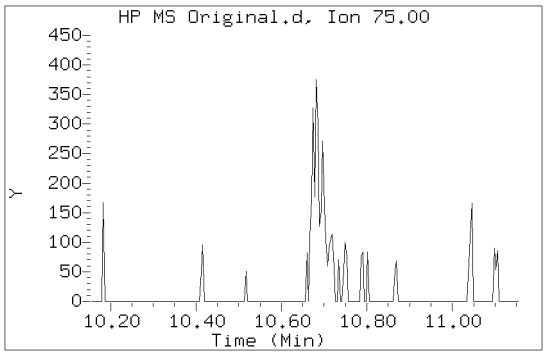
AFTER

MASS
157
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



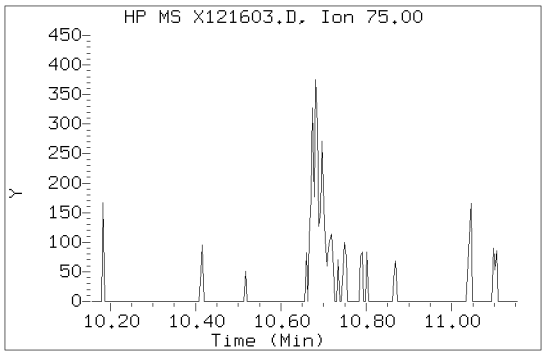
BEFORE

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



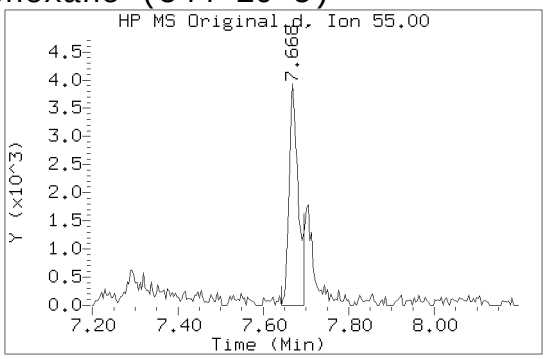
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

1-Chlorohexane (544-10-5)

Reason Code:

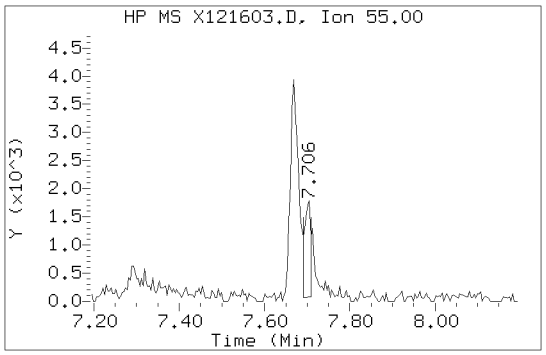
BEFORE

MASS
55
AREA
5785
HEIGHT
3936
27-Dec-2022
16:03
linh
pham



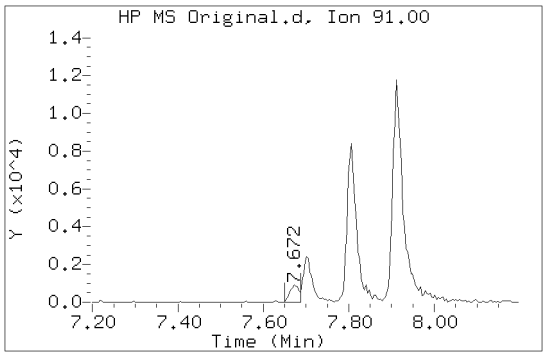
AFTER

MASS
55
AREA
1829
HEIGHT
1707
27-Dec-2022
16:07
linh
pham



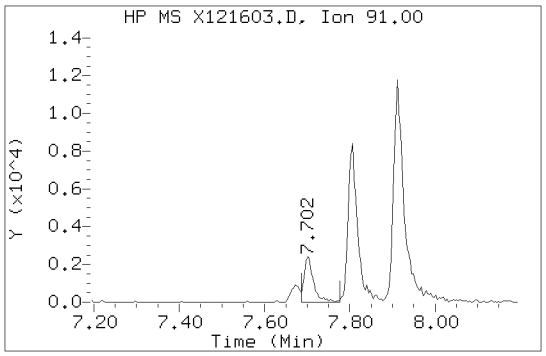
BEFORE

MASS
91
AREA
1355
HEIGHT
933
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
3802
HEIGHT
2430
27-Dec-2022
16:07
linh
pham

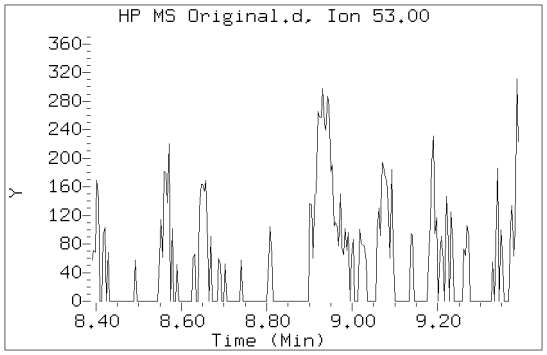


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

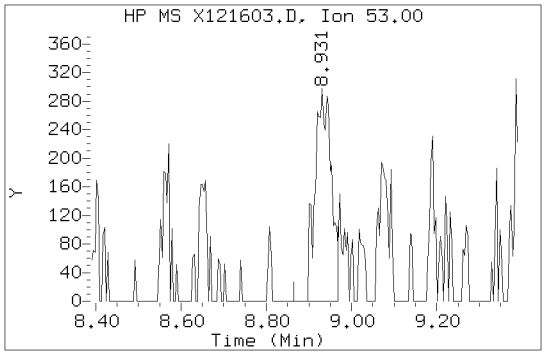
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



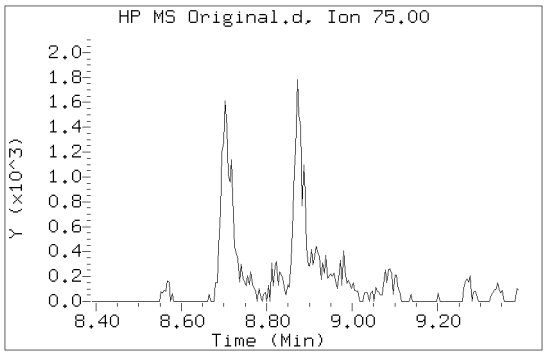
AFTER

MASS
53
AREA
792
HEIGHT
298
27-Dec-2022
16:07
linh
pham



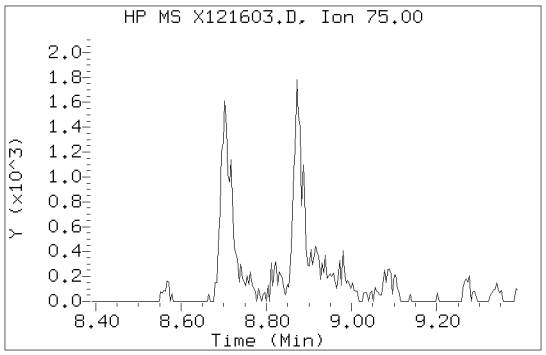
BEFORE

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

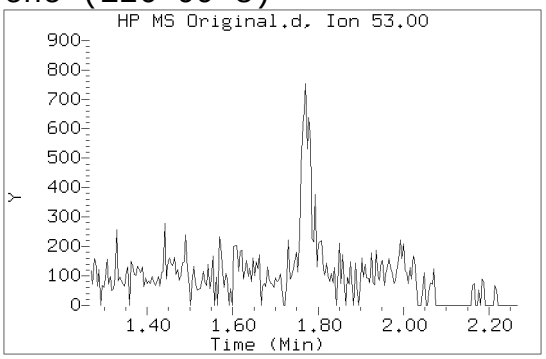


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

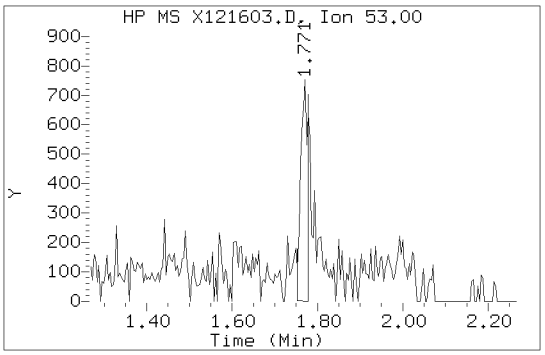
Chloroprene (126-99-8)

Reason Code:

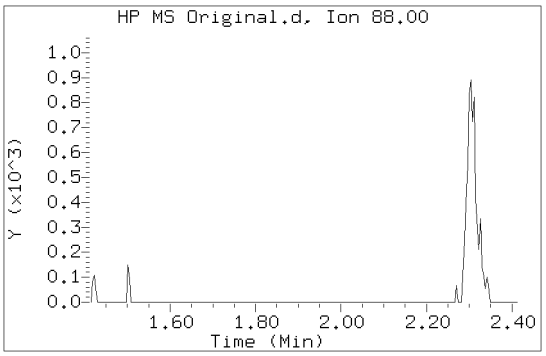
BEFORE
MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



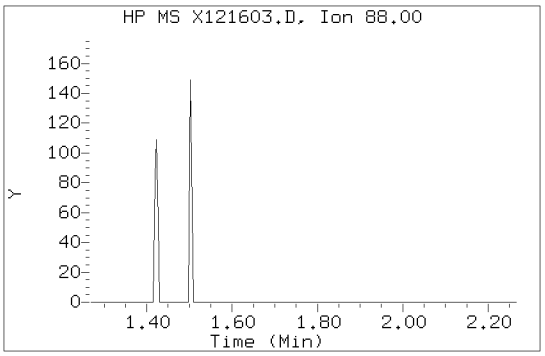
AFTER
MASS
53
AREA
900
HEIGHT
751
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



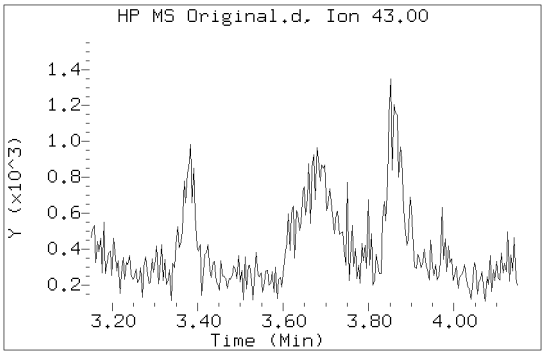
AFTER
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



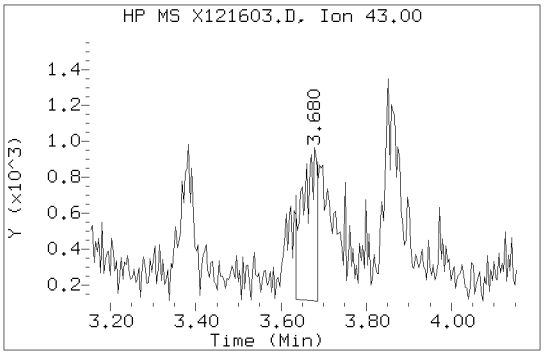
Ethyl Acetate (141-78-6)

Reason Code:

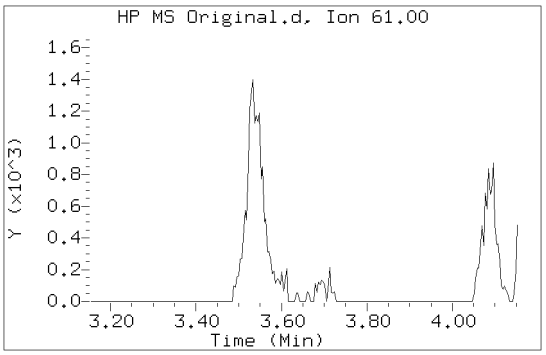
BEFORE
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



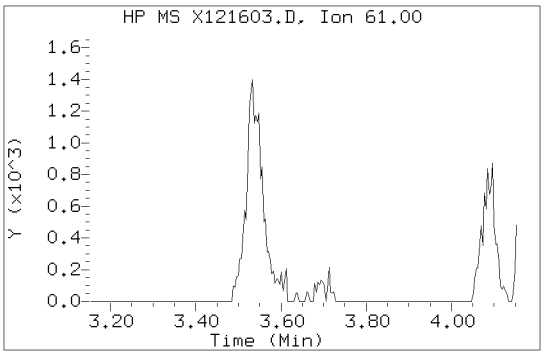
AFTER
MASS
43
AREA
2065
HEIGHT
853
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



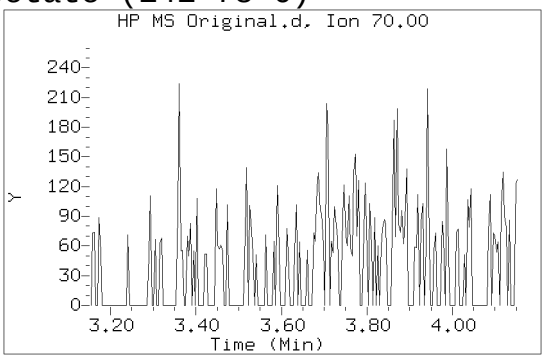
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Ethyl Acetate (141-78-6)

Reason Code:

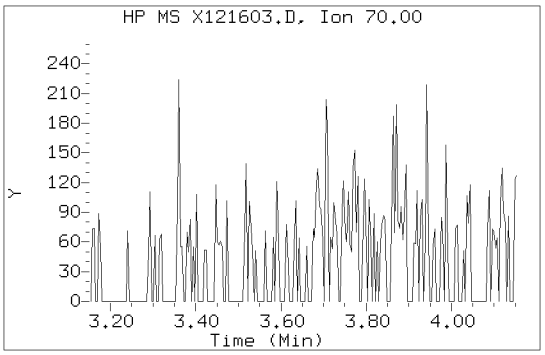
BEFORE

MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

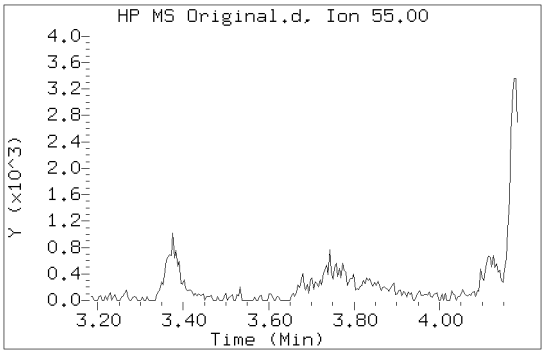


Methyl Acrylate (96-33-3)

Reason Code:

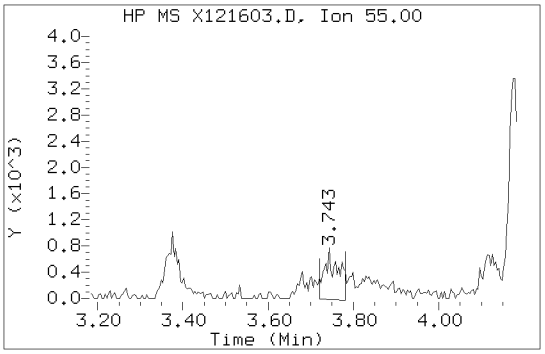
BEFORE

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



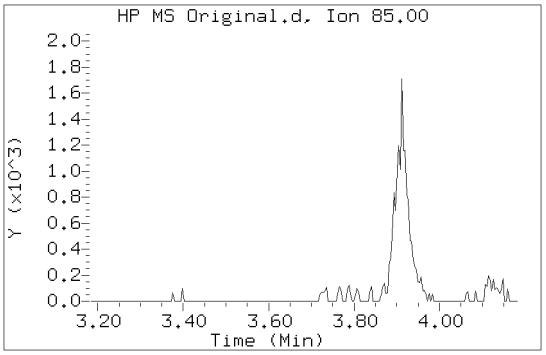
AFTER

MASS
55
AREA
1765
HEIGHT
787
27-Dec-2022
16:07
linh
pham



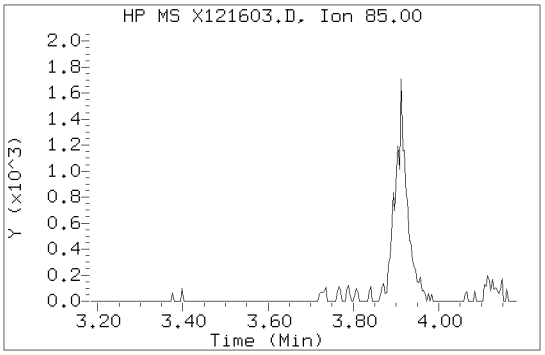
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

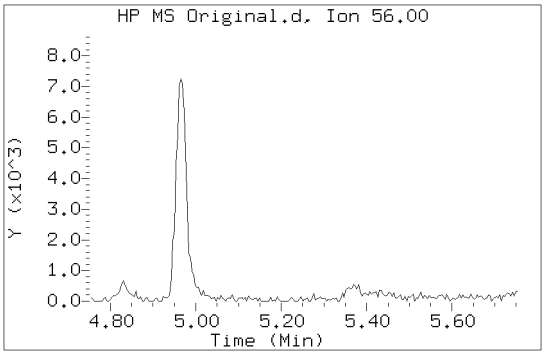


n-Butanol (71-36-3)

Reason Code:

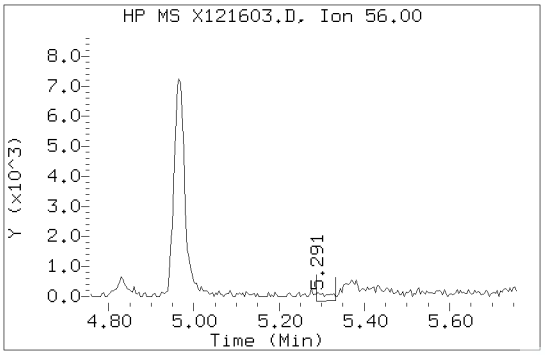
BEFORE

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
56
AREA
622
HEIGHT
300
27-Dec-2022
16:07
linh
pham



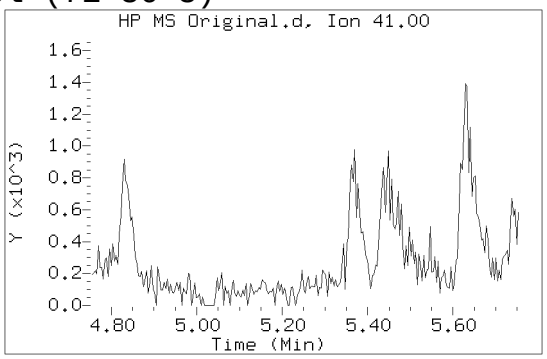
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

n-Butanol (71-36-3)

Reason Code:

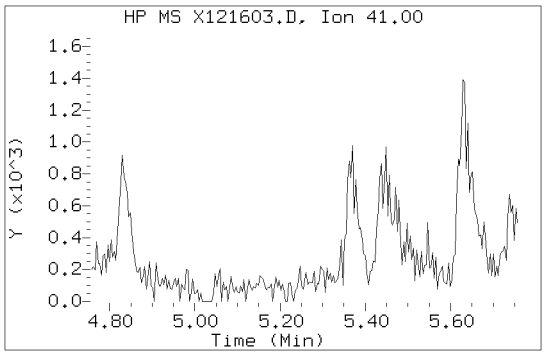
BEFORE

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

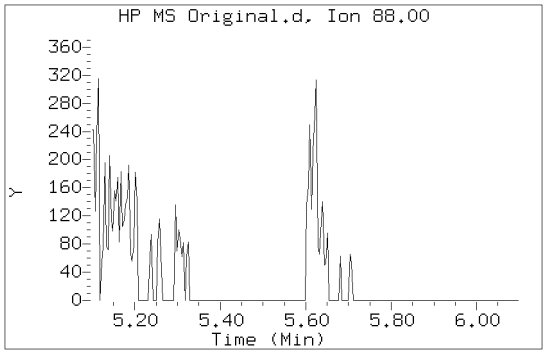


1,4-Dioxane ()

Reason Code:

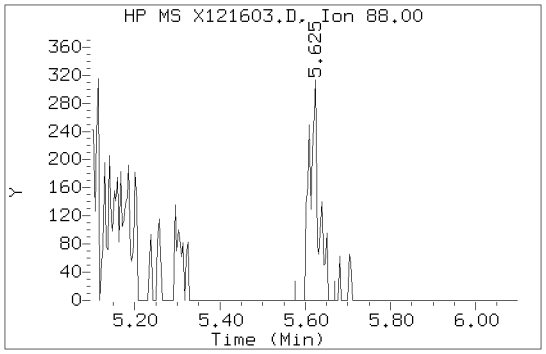
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



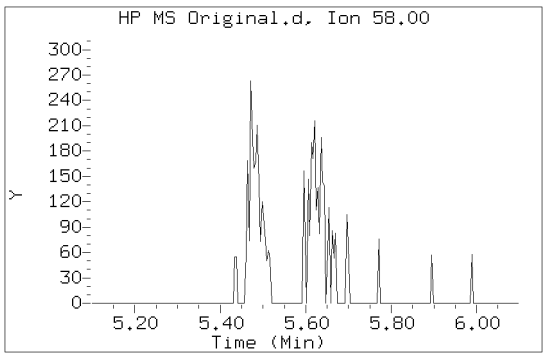
AFTER

MASS
88
AREA
462
HEIGHT
313
27-Dec-2022
16:07
linh
pham



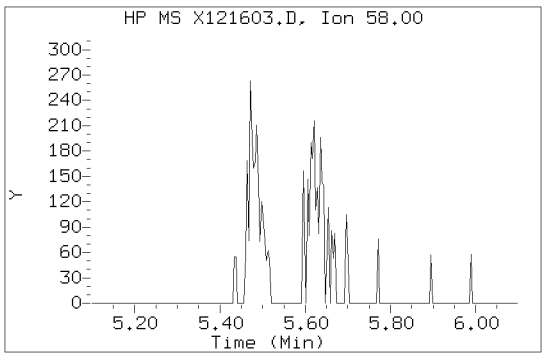
BEFORE

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

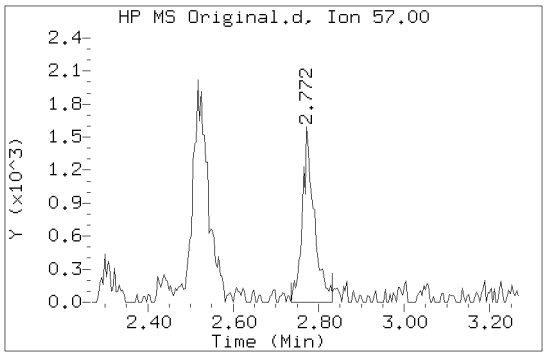


n-Hexane (110-54-3)

Reason Code:

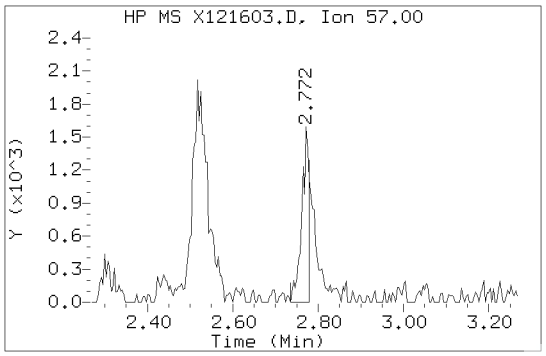
BEFORE

MASS
57
AREA
3089
HEIGHT
1591
27-Dec-2022
16:03
linh
pham



AFTER

MASS
57
AREA
1909
HEIGHT
1591
27-Dec-2022
16:07
linh
pham

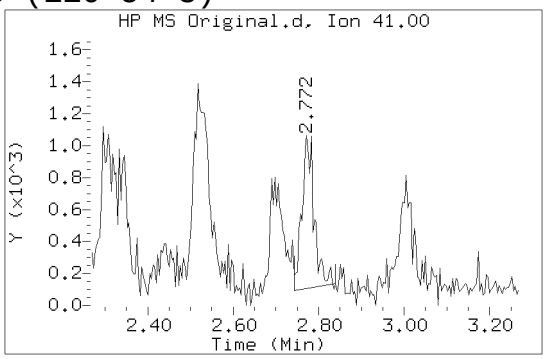


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

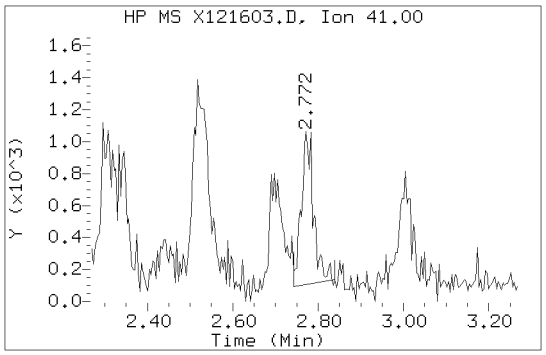
n-Hexane (110-54-3)

Reason Code:

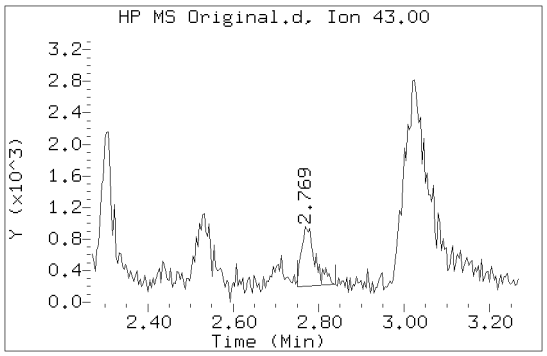
BEFORE
MASS
41
AREA
1918
HEIGHT
958
27-Dec-2022
16:03
linh
pham



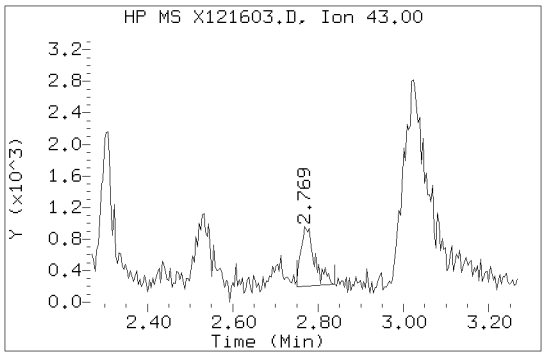
AFTER
MASS
41
AREA
1918
HEIGHT
958
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
43
AREA
1726
HEIGHT
759
27-Dec-2022
16:03
linh
pham



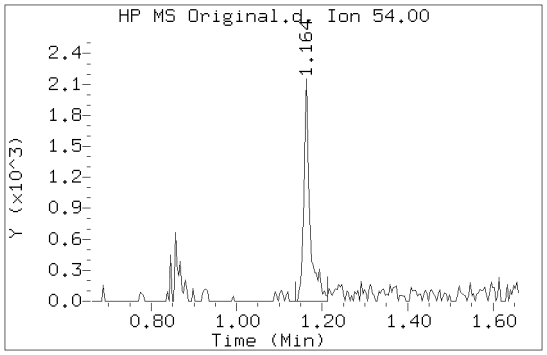
AFTER
MASS
43
AREA
1726
HEIGHT
759
27-Dec-2022
16:07
linh
pham



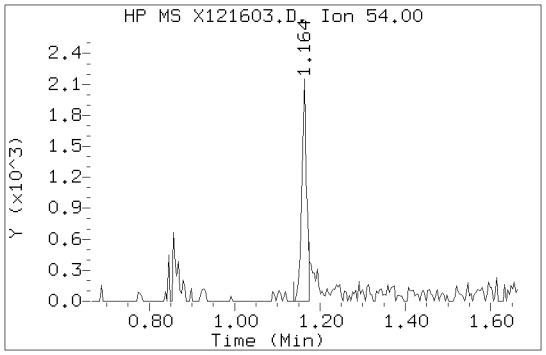
1,3-Butadiene (106-99-0)

Reason Code:

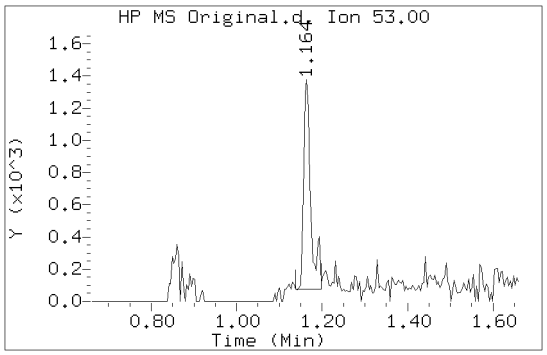
BEFORE
MASS
54
AREA
2206
HEIGHT
2153
27-Dec-2022
16:03
linh
pham



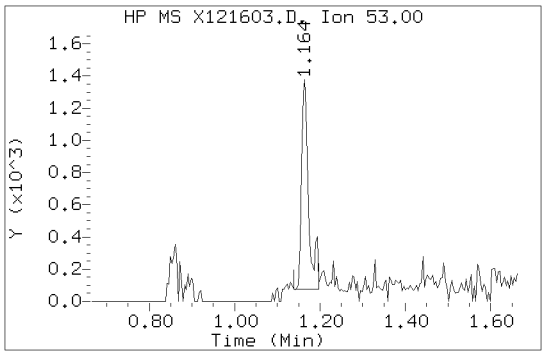
AFTER
MASS
54
AREA
1793
HEIGHT
2153
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
53
AREA
1535
HEIGHT
1301
27-Dec-2022
16:03
linh
pham



AFTER
MASS
53
AREA
1535
HEIGHT
1301
27-Dec-2022
16:07
linh
pham

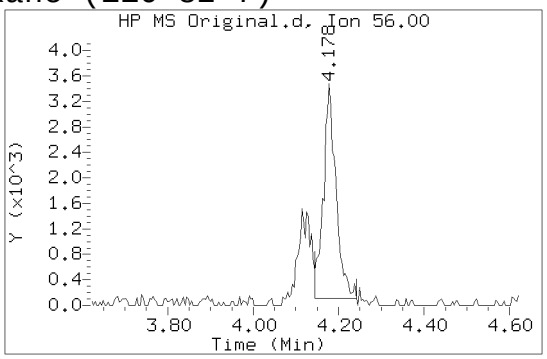


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

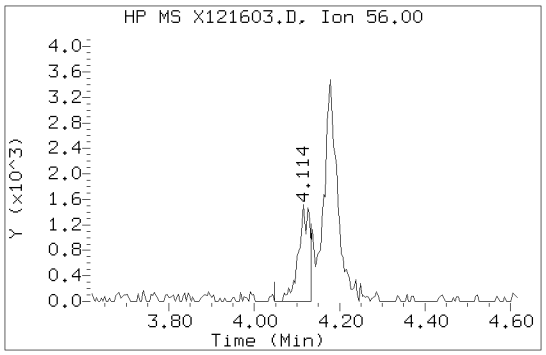
Cyclohexane (110-82-7)

Reason Code:

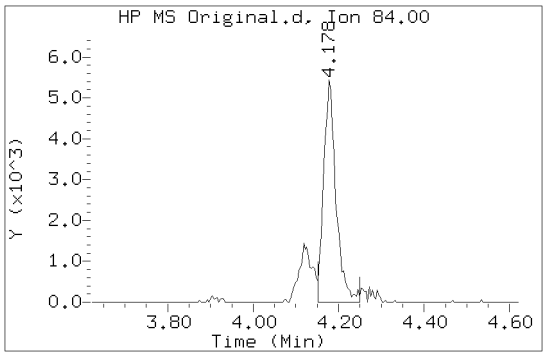
BEFORE
MASS
56
AREA
6884
HEIGHT
3363
27-Dec-2022
16:03
linh
pham



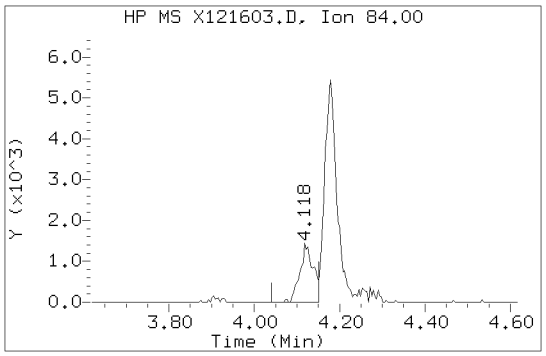
AFTER
MASS
56
AREA
2803
HEIGHT
1514
27-Dec-2022
16:07
linh
pham



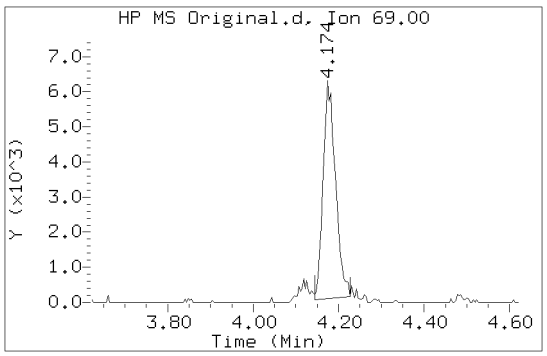
BEFORE
MASS
84
AREA
10951
HEIGHT
5440
27-Dec-2022
16:03
linh
pham



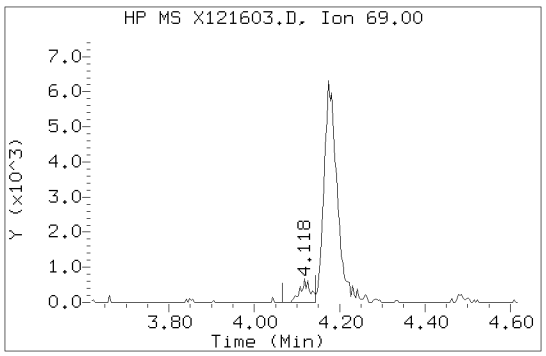
AFTER
MASS
84
AREA
3197
HEIGHT
1443
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
69
AREA
12449
HEIGHT
6206
27-Dec-2022
16:03
linh
pham



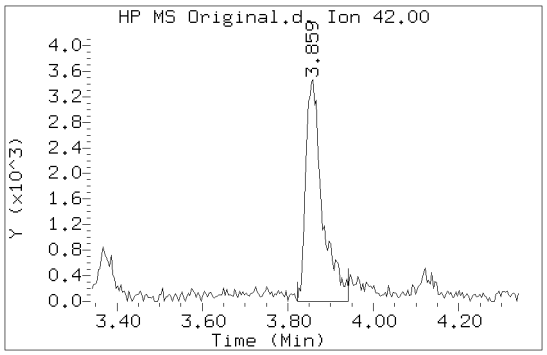
AFTER
MASS
69
AREA
1108
HEIGHT
681
27-Dec-2022
16:07
linh
pham



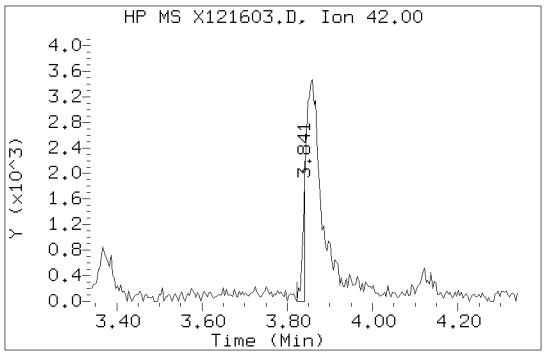
Tetrahydrofuran (109-99-9)

Reason Code:

BEFORE
MASS
42
AREA
9468
HEIGHT
3467
27-Dec-2022
16:03
linh
pham



AFTER
MASS
42
AREA
900
HEIGHT
1891
27-Dec-2022
16:07
linh
pham



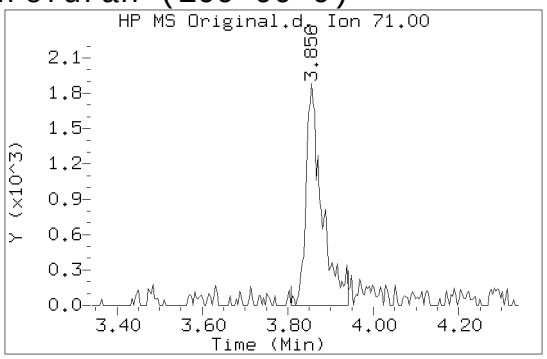
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Tetrahydrofuran (109-99-9)

Reason Code:

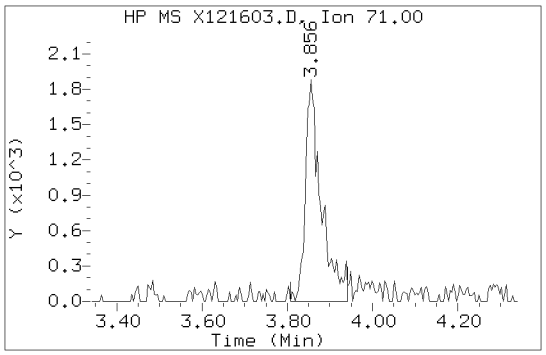
BEFORE

MASS
71
AREA
4885
HEIGHT
1881
27-Dec-2022
16:03
linh
pham



AFTER

MASS
71
AREA
4885
HEIGHT
1881
27-Dec-2022
16:07
linh
pham

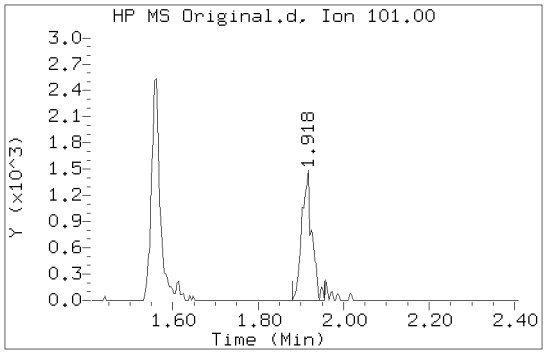


Freon TF (76-13-1)

Reason Code:

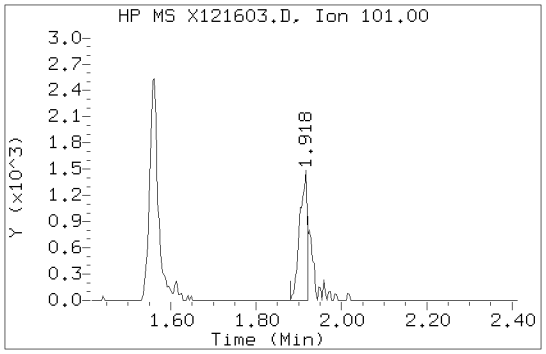
BEFORE

MASS
101
AREA
2478
HEIGHT
1484
27-Dec-2022
16:03
linh
pham



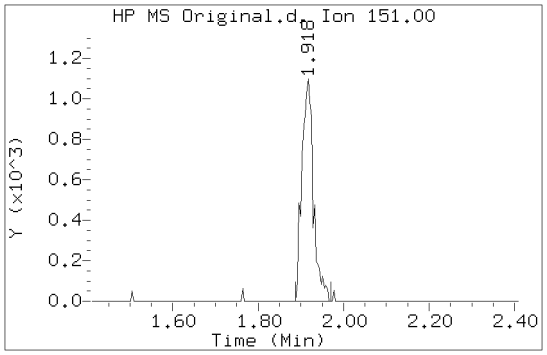
AFTER

MASS
101
AREA
1851
HEIGHT
1484
27-Dec-2022
16:07
linh
pham



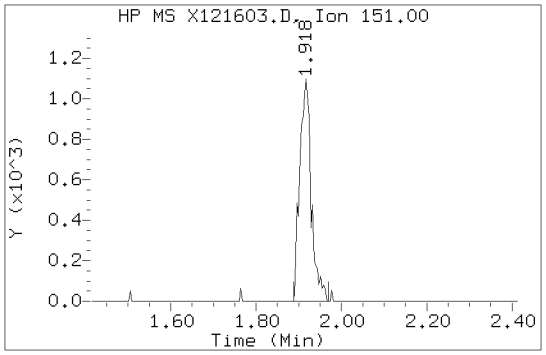
BEFORE

MASS
151
AREA
2095
HEIGHT
1098
27-Dec-2022
16:03
linh
pham



AFTER

MASS
151
AREA
2095
HEIGHT
1098
27-Dec-2022
16:07
linh
pham

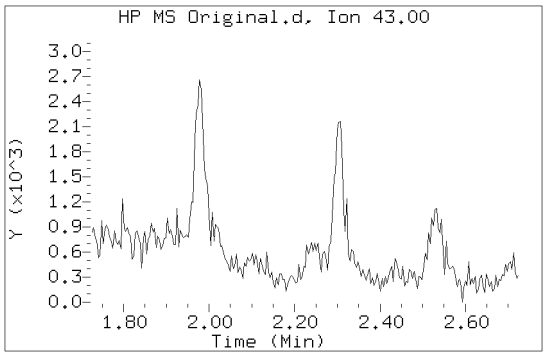


Methyl Acetate (79-20-9)

Reason Code:

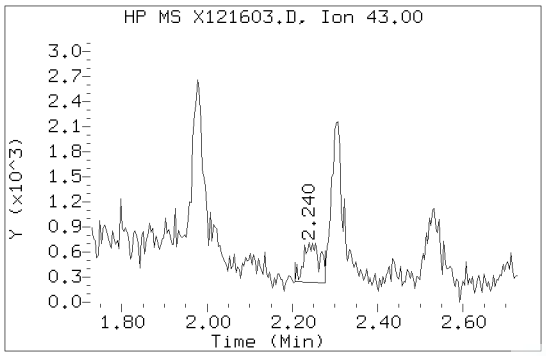
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
1269
HEIGHT
477
27-Dec-2022
16:07
linh
pham

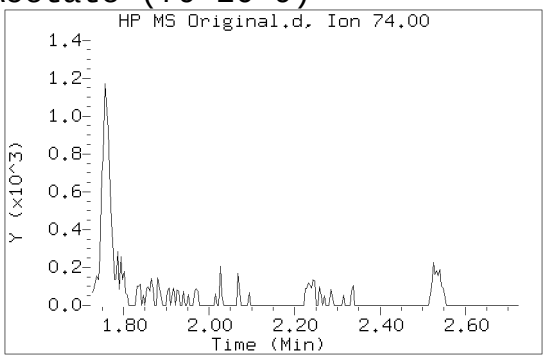


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Methyl Acetate (79-20-9)

BEFORE

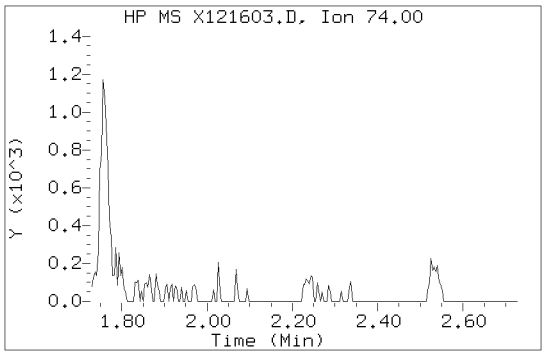
MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

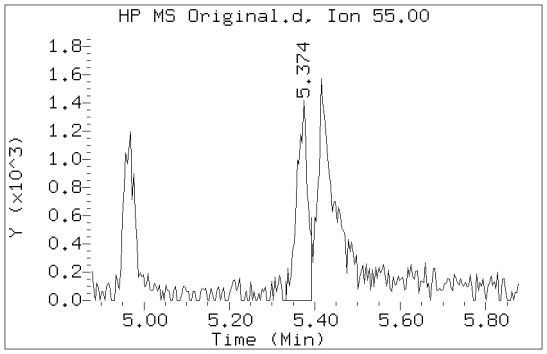
Reason Code:



Methylcyclohexane (108-87-2)

BEFORE

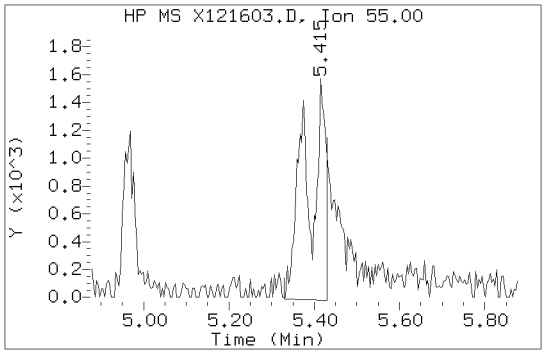
MASS
55
AREA
2505
HEIGHT
1416
27-Dec-2022
16:03
linh
pham



AFTER

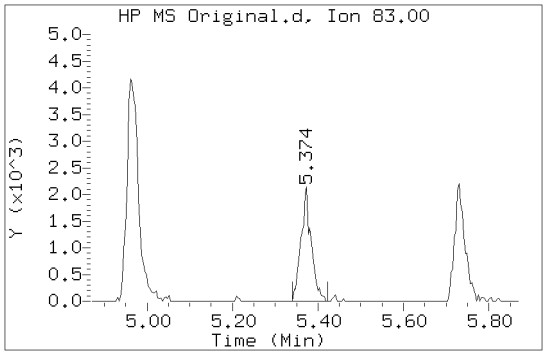
MASS
55
AREA
4781
HEIGHT
1590
27-Dec-2022
16:07
linh
pham

Reason Code:



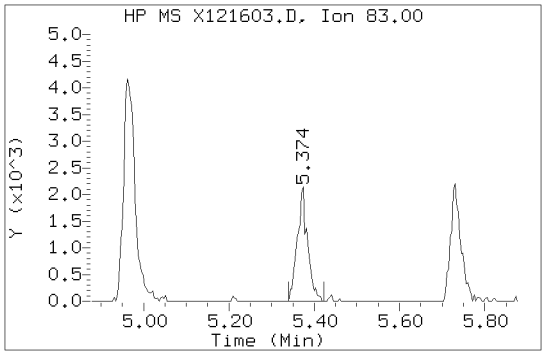
BEFORE

MASS
83
AREA
3627
HEIGHT
2141
27-Dec-2022
16:03
linh
pham



AFTER

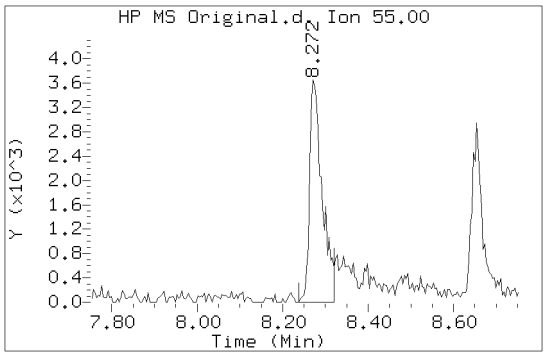
MASS
83
AREA
3627
HEIGHT
2141
27-Dec-2022
16:07
linh
pham



Butyl acrylate (141-32-2)

BEFORE

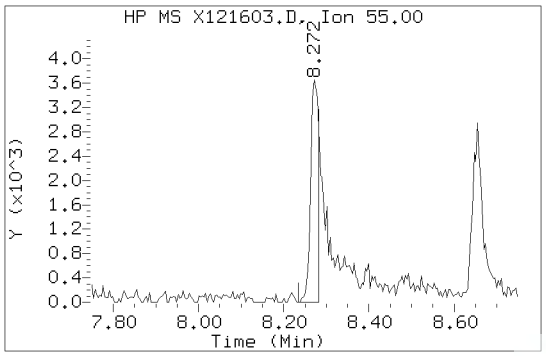
MASS
55
AREA
7480
HEIGHT
3653
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
4718
HEIGHT
3653
27-Dec-2022
16:07
linh
pham

Reason Code:



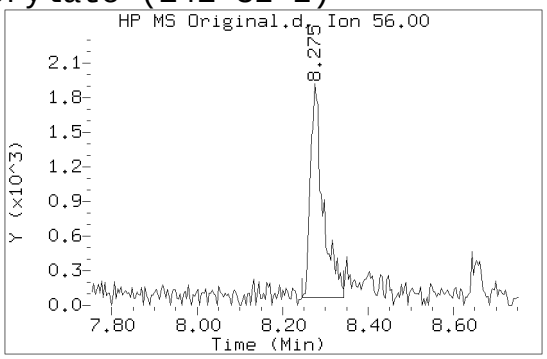
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Butyl acrylate (141-32-2)

Reason Code:

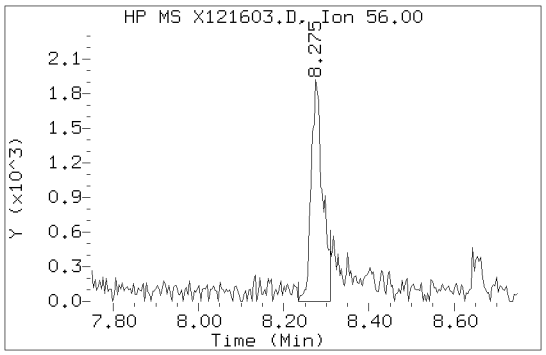
BEFORE

MASS
56
AREA
3795
HEIGHT
1858
27-Dec-2022
16:03
linh
pham



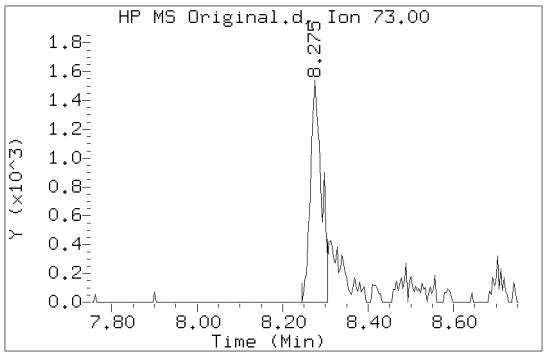
AFTER

MASS
56
AREA
3566
HEIGHT
1923
27-Dec-2022
16:07
linh
pham



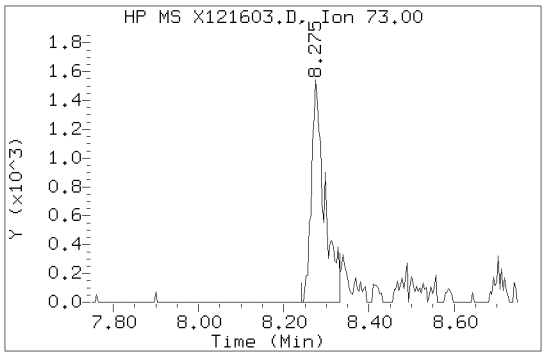
BEFORE

MASS
73
AREA
2742
HEIGHT
1542
27-Dec-2022
16:03
linh
pham



AFTER

MASS
73
AREA
3276
HEIGHT
1542
27-Dec-2022
16:07
linh
pham

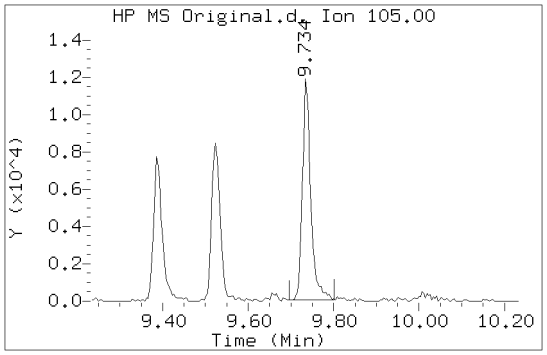


1,2,3-Trimethylbenzene (526-73-8)

Reason Code:

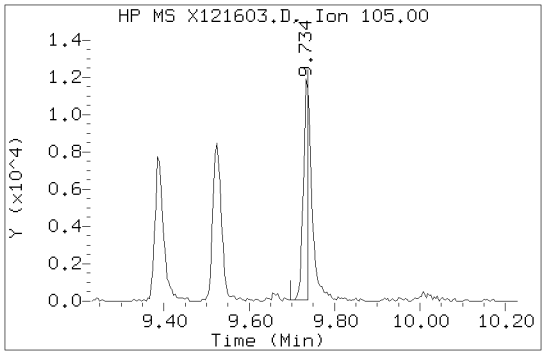
BEFORE

MASS
105
AREA
16642
HEIGHT
11860
27-Dec-2022
16:03
linh
pham



AFTER

MASS
105
AREA
9626
HEIGHT
11860
27-Dec-2022
16:07
linh
pham

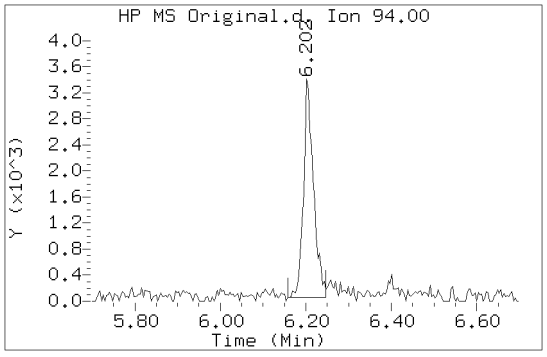


Dimethyl Disulfide (624-92-0)

Reason Code:

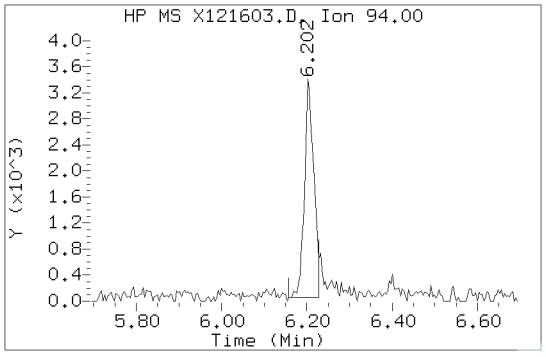
BEFORE

MASS
94
AREA
5523
HEIGHT
3352
27-Dec-2022
16:03
linh
pham



AFTER

MASS
94
AREA
5153
HEIGHT
3352
27-Dec-2022
16:07
linh
pham



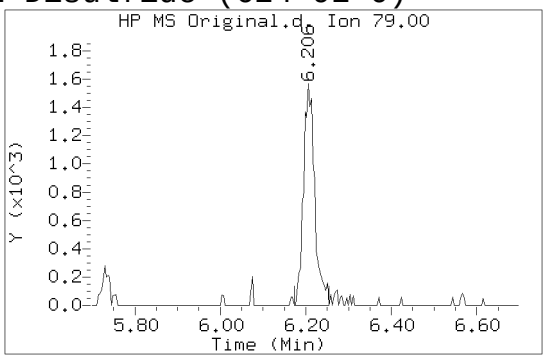
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

Dimethyl Disulfide (624-92-0)

Reason Code:

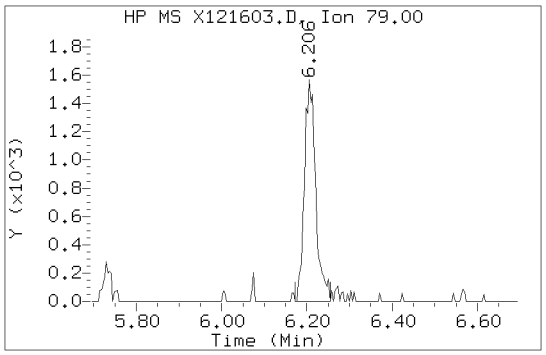
BEFORE

MASS
79
AREA
2905
HEIGHT
1568
27-Dec-2022
16:03
linh
pham



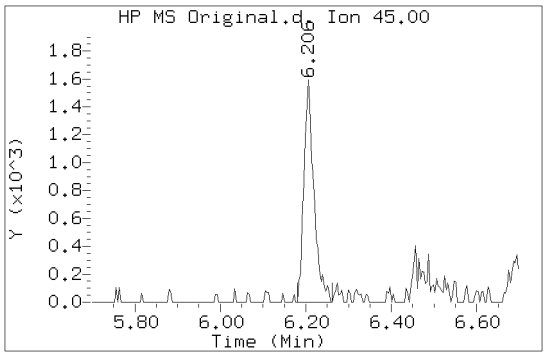
AFTER

MASS
79
AREA
2905
HEIGHT
1568
27-Dec-2022
16:07
linh
pham



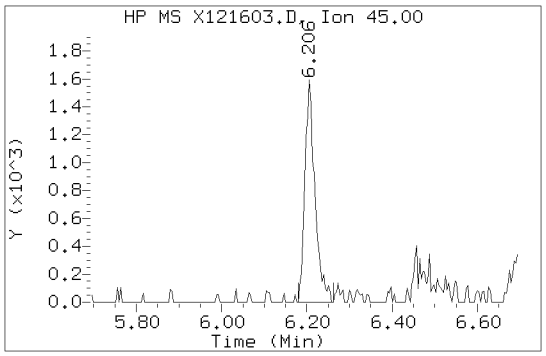
BEFORE

MASS
45
AREA
2647
HEIGHT
1593
27-Dec-2022
16:03
linh
pham



AFTER

MASS
45
AREA
2647
HEIGHT
1593
27-Dec-2022
16:07
linh
pham

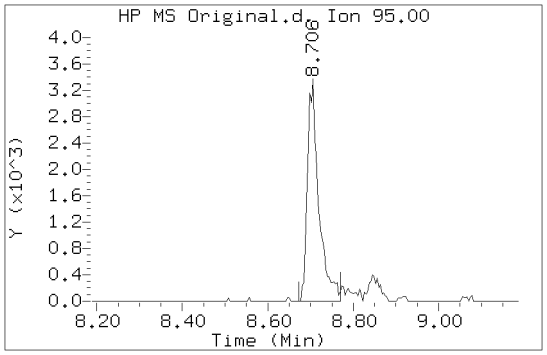


4-Bromofluorobenzene (460-00-4)

Reason Code:

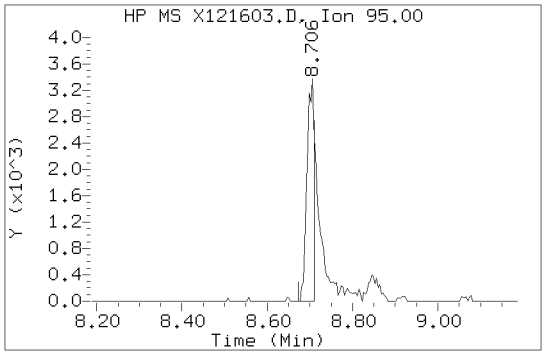
BEFORE

MASS
95
AREA
6240
HEIGHT
3372
27-Dec-2022
16:03
linh
pham



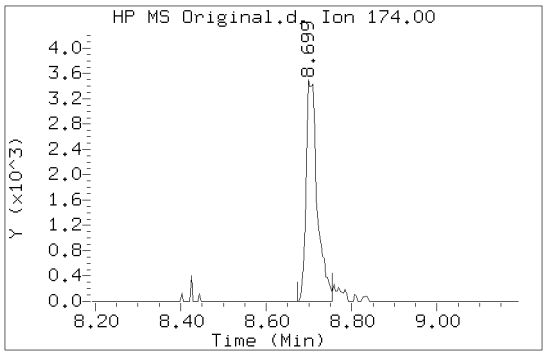
AFTER

MASS
95
AREA
3870
HEIGHT
3372
27-Dec-2022
16:07
linh
pham



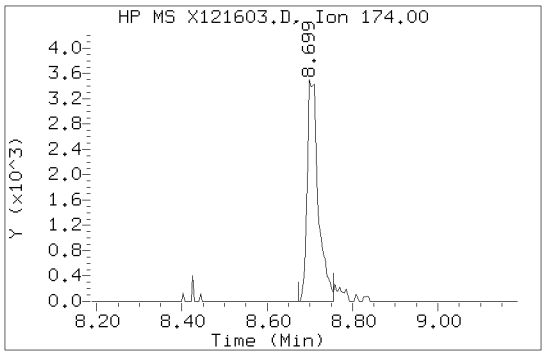
BEFORE

MASS
174
AREA
6370
HEIGHT
3502
27-Dec-2022
16:03
linh
pham



AFTER

MASS
174
AREA
6370
HEIGHT
3502
27-Dec-2022
16:07
linh
pham



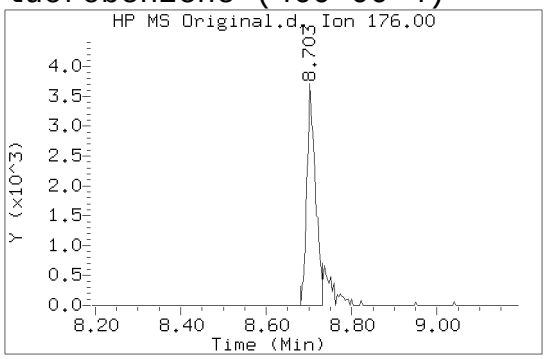
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121603.D
Inj Date : 16-DEC-2022 12:20
InstruID : voa6.i
LabSampID : VSTD000.5

4-Bromofluorobenzene (460-00-4)

Reason Code:

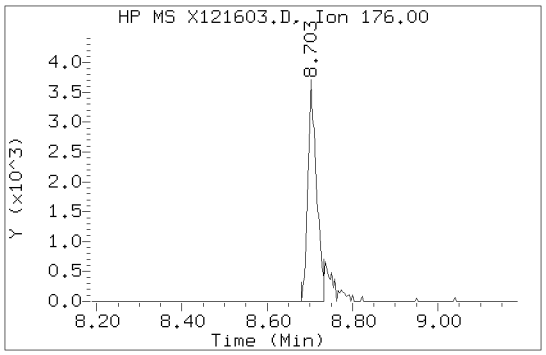
BEFORE

MASS
176
AREA
5204
HEIGHT
3711
27-Dec-2022
16:03
linh
pham



AFTER

MASS
176
AREA
5204
HEIGHT
3711
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 16-DEC-2022 12:41
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 12:20 Cal File: X121603.D
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	450308	50.0000	
135 1,4-Dioxane	88	5.610	5.610	(1.343)	820	20.0000	19.92(M)
140 1,3-Butadiene	54	1.160	1.160	(0.278)	3432	1.00000	1.11
25 Methacrylonitrile	41	3.852	3.852	(0.922)	3285	1.00000	1.03(M)
12 Isobutyl Alcohol	43	4.695	4.695	(1.124)	9436	20.0000	18.62(M)
13 Acetonitrile	39	2.198	2.198	(0.526)	4183	10.0000	10.20
14 Allyl Chloride	41	2.202	2.202	(0.527)	8574	1.00000	1.09
4 Propionitrile	54	3.687	3.687	(0.882)	4742	10.0000	10.32(M)
136 n-Hexane	57	2.776	2.776	(0.664)	2343	1.00000	0.72
72 trans-1,4-Dichloro-2-butene	53	8.920	8.920	(1.163)	1196	1.00000	0.85(M)
194 Acetaldehyde	44	1.212	1.212	(0.290)	3384	4.00000	(M)
23 Chloroprene	53	1.767	1.767	(0.423)	1686	1.00000	1.10(M)
145 alpha-Methylstyrene	118	9.272	9.272	(0.960)	6032	1.00000	0.77
200 Dimethyl Disulfide	94	6.206	6.206	(0.809)	8295	1.00000	0.94
139 Diethyl ether	59	1.760	1.760	(0.421)	2983	1.00000	0.99
130 Ethyl Acetate	43	3.675	3.675	(0.880)	3144	1.00000	0.89(M)
40 Methyl Methacrylate	41	5.628	5.628	(1.347)	3145	1.00000	1.02
49 Ethyl Methacrylate	69	6.727	6.727	(1.355)	3303	1.00000	1.02(M)
132 n-Butanol	56	5.239	5.239	(1.254)	1171	20.0000	60.69(M)
142 Tetrahydrofuran	42	3.844	3.844	(0.920)	1361	2.00000	(M)

150	Allyl alcohol	57	2.776	2.776 (0.664)	2343	20.0000	13.39
166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	18347	1.00000	1.08

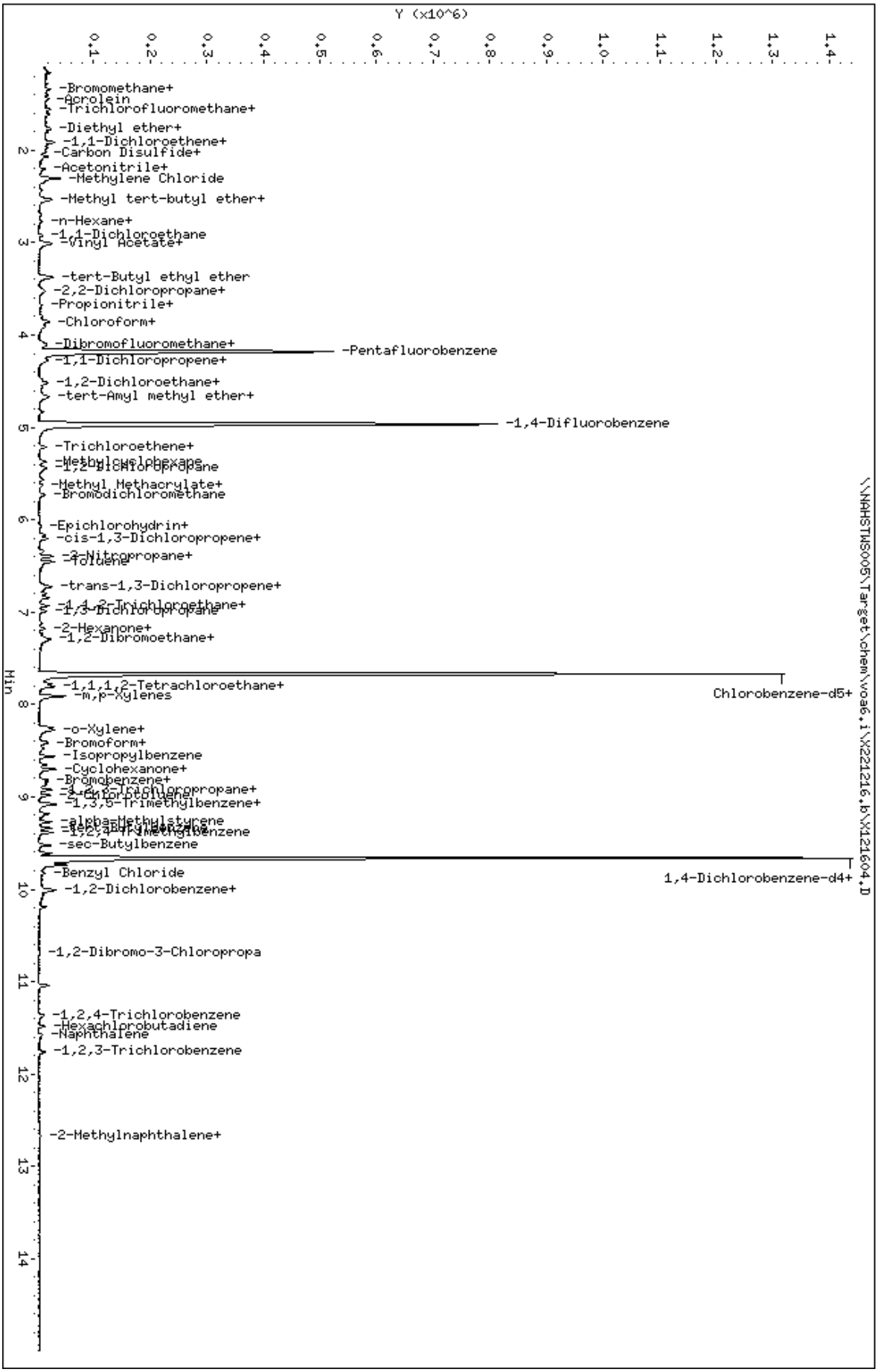
			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131	Methyl Acrylate	55	3.743	3.743	(0.896)	3084	1.00000	1.00(M)
	162	Butyl acrylate	55	8.271	8.271	(1.078)	7647	1.00000	0.90
	2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	2911	1.00000	1.30
	3	Chloromethane	50	1.078	1.078	(0.258)	3670	1.00000	3.07
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	3645	1.00000	0.92
	6	Bromomethane	94	1.340	1.340	(0.321)	3293	1.00000	2.83
	7	Chloroethane	64	1.400	1.400	(0.335)	2516	1.00000	0.91(M)
	8	Trichlorofluoromethane	101	1.554	1.554	(0.372)	4906	1.00000	0.89
	9	Acrolein	56	1.452	1.452	(0.348)	761	2.00000	5.22(M)
	10	Acetone	43	1.977	1.977	(0.473)	4787	2.00000	3.75(M)
	11	1,1-Dichloroethene	96	1.913	1.913	(0.458)	3238	1.00000	0.94
	15	Iodomethane	142	2.026	2.026	(0.485)	3865	2.00000	4.18(TM)
	16	Acrylonitrile	53	2.554	2.554	(0.612)	2258	2.00000	1.94(M)
	17	Methylene Chloride	84	2.300	2.300	(0.550)	5355	1.00000	1.14(M)
	18	Methyl tert-butyl ether	73	2.536	2.536	(0.607)	12521	1.00000	1.11
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	18122	2.00000	2.02
	20	trans-1,2-Dichloroethene	96	2.532	2.532	(0.606)	3821	1.00000	0.99
	21	Vinyl Acetate	43	3.012	3.012	(0.721)	17842	2.00000	1.81
	22	1,1-Dichloroethane	63	2.922	2.922	(0.699)	7218	1.00000	1.07
	24	2-Butanone	43	3.619	3.619	(0.866)	2498	2.00000	4.83(M)
	26	2,2-Dichloropropane	77	3.514	3.514	(0.841)	5896	1.00000	1.03
	27	cis-1,2-Dichloroethene	96	3.540	3.540	(0.847)	4469	1.00000	0.96
	28	Chloroform	83	3.908	3.908	(0.935)	7768	1.00000	1.03
	29	Bromochloromethane	128	3.803	3.803	(0.910)	2689	1.00000	1.05
$	30	Dibromofluoromethane	113	4.103	4.103	(0.982)	4769	1.00000	0.94
	31	1,1,1-Trichloroethane	97	4.088	4.088	(0.978)	5914	1.00000	0.99
	32	1,1-Dichloropropene	75	4.286	4.286	(0.863)	4698	1.00000	0.96
	33	1,2-Dichloroethane	62	4.564	4.564	(0.919)	5568	1.00000	0.99
	34	Carbon Tetrachloride	117	4.271	4.271	(0.860)	6221	1.00000	1.19
$	35	1,2-Dichloroethane-d4	65	4.485	4.485	(1.074)	5559	1.00000	1.48
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	685937	50.0000	
	37	Benzene	78	4.515	4.515	(0.909)	16367	1.00000	0.99
	38	Trichloroethene	130	5.216	5.216	(1.051)	4352	1.00000	0.93
	39	Bromodichloromethane	83	5.730	5.730	(1.154)	6296	1.00000	1.02(M)
	41	2-Chloroethylvinyl ether	63	6.071	6.071	(1.223)	3202	2.00000	1.83(M)
	42	1,2-Dichloropropane	63	5.445	5.445	(1.097)	4604	1.00000	1.05(M)
	44	Dibromomethane	93	5.557	5.557	(1.119)	2906	1.00000	0.98
	45	4-Methyl-2-Pentanone	43	6.341	6.341	(0.827)	6859	2.00000	1.97
	46	cis-1,3-Dichloropropene	75	6.168	6.168	(1.242)	6537	1.00000	0.90
*	47	Chlorobenzene-d5	117	7.671	7.671	(1.000)	649074	50.0000	
$	48	Toluene-d8	98	6.401	6.401	(0.834)	17067	1.00000	1.06
	50	Toluene	91	6.457	6.457	(0.842)	17914	1.00000	0.99
	51	trans-1,3-Dichloropropene	75	6.693	6.693	(1.348)	5418	1.00000	0.90
	52	2-Hexanone	43	7.109	7.109	(0.927)	4520	2.00000	1.91
	53	1,1,2-Trichloroethane	83	6.843	6.843	(0.892)	3499	1.00000	0.97
	54	1,3-Dichloropropane	76	6.989	6.989	(0.911)	7216	1.00000	1.01
	55	Dibromochloromethane	129	7.177	7.177	(0.936)	5024	1.00000	0.96
	56	Tetrachloroethene	164	6.933	6.933	(0.904)	3331	1.00000	0.89
	57	1,2-Dibromoethane	107	7.270	7.270	(0.948)	4350	1.00000	0.96
	58	1-Chlorohexane	55	7.705	7.705	(1.552)	3155	1.00000	0.95(MH)
	59	Chlorobenzene	112	7.698	7.698	(1.003)	12555	1.00000	0.98
	60	1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	4485	1.00000	0.94

61 Ethylbenzene	106	7.806	7.806 (1.018)	5698	1.00000	0.95
62 m,p-Xylenes	106	7.911	7.911 (1.031)	14464	2.00000	1.87

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.249	8.249	(1.075)	6670	1.00000	0.87
	64 Styrene	104	8.282	8.282	(1.080)	10384	1.00000	0.81
	66 Bromoform	173	8.417	8.417	(1.097)	3274	1.00000	0.90(T)
	67 Isopropylbenzene	105	8.564	8.564	(1.116)	15163	1.00000	0.87
	68 1,1,2,2-Tetrachloroethane	83	8.845	8.845	(0.915)	5934	1.00000	1.05(M)
$	69 4-Bromofluorobenzene	95	8.702	8.702	(1.134)	7790	1.00000	1.36(M)
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	351251	50.0000	
	71 1,2,3-Trichloropropane	75	8.871	8.871	(0.918)	3978	1.00000	1.01
	73 n-Propylbenzene	91	8.923	8.923	(0.924)	15006	1.00000	0.77
	74 Bromobenzene	156	8.818	8.818	(0.913)	5554	1.00000	0.96
	75 1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	11820	1.00000	0.82
	76 2-Chlorotoluene	91	8.980	8.980	(0.929)	12470	1.00000	0.97
	77 4-Chlorotoluene	91	9.085	9.085	(0.940)	12140	1.00000	0.83
	78 tert-Butylbenzene	119	9.340	9.340	(0.967)	9357	1.00000	0.79
	79 1,2,4-Trimethylbenzene	105	9.385	9.385	(0.971)	12988	1.00000	0.85
	81 sec-Butylbenzene	105	9.523	9.523	(0.986)	12395	1.00000	0.79
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	10009	1.00000	0.71
	83 1,3-Dichlorobenzene	146	9.609	9.609	(0.995)	8523	1.00000	0.89
	84 1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	9866	1.00000	0.94
	86 Benzyl Chloride	91	9.823	9.823	(1.280)	4632	1.00000	3.12
	87 n-Butylbenzene	91	10.014	10.014	(1.036)	8459	1.00000	2.37(M)
	88 1,2-Dichlorobenzene	146	10.007	10.007	(1.036)	8626	1.00000	0.87
	89 1,2-Dibromo-3-Chloropropane	155	10.689	10.689	(1.106)	778	1.00000	0.95(M)
	90 1,2,4-Trichlorobenzene	180	11.371	11.371	(1.177)	4609	1.00000	0.74
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	1928	1.00000	0.65
	92 Naphthalene	128	11.574	11.574	(1.198)	11288	1.00000	0.79(M)
	93 1,2,3-Trichlorobenzene	180	11.754	11.754	(1.216)	4801	1.00000	0.80
M	94 1,2-Dichloroethylene (total)	96				8290	2.00000	
M	95 Xylenes (total)	106				21134	3.00000	
	141 Cyclohexane	56	4.125	4.125	(0.987)	4003	1.00000	2.12(H)
	138 Freon TF	101	1.906	1.906	(0.456)	3356	1.00000	1.01
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	6848	1.00000	0.81(M)
	146 Methyl Acetate	43	2.236	2.236	(0.535)	2127	1.00000	1.04(M)
	148 Tert-Butyl alcohol	59	2.438	2.438	(0.584)	6051	20.0000	19.40(a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Date : 16-DEC-2022 12:41
Client ID: VSTD001
Sample Info: VSTD001;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

\\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D

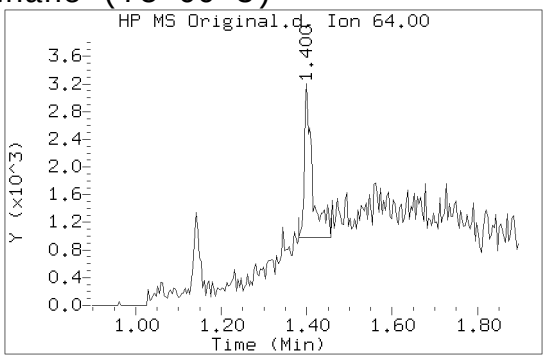
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

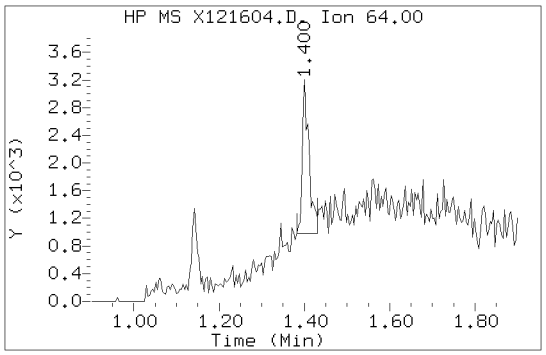
Chloroethane (75-00-3)

Reason Code:

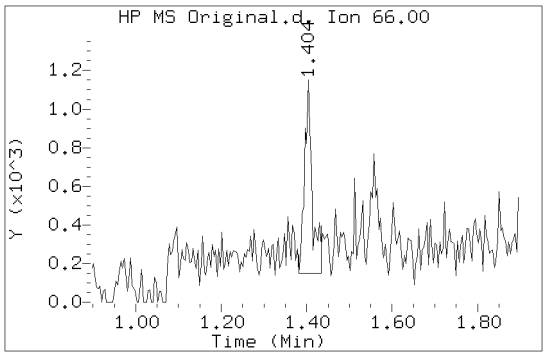
BEFORE
MASS
64
AREA
2984
HEIGHT
2221
27-Dec-2022
16:03
linh
pham



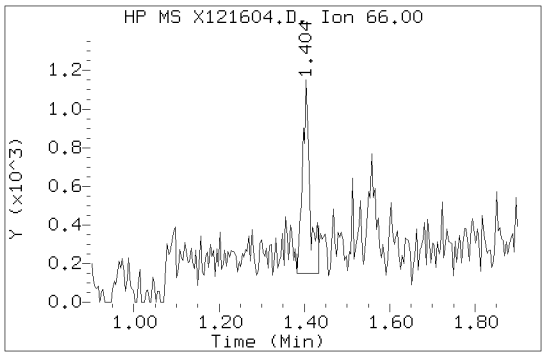
AFTER
MASS
64
AREA
2516
HEIGHT
2221
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
66
AREA
1262
HEIGHT
1002
27-Dec-2022
16:03
linh
pham



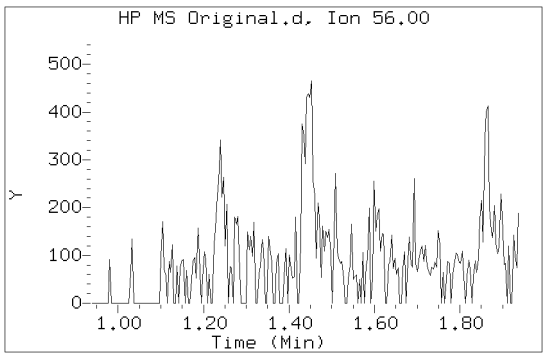
AFTER
MASS
66
AREA
1262
HEIGHT
1002
27-Dec-2022
16:07
linh
pham



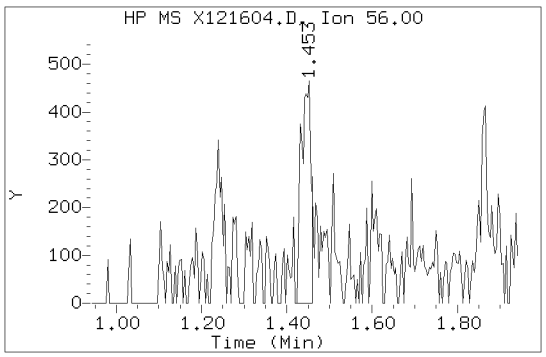
Acrolein (107-02-8)

Reason Code:

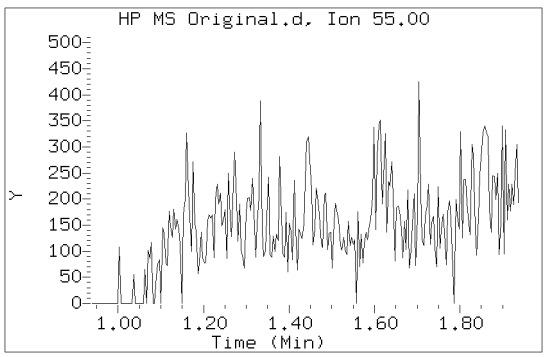
BEFORE
MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



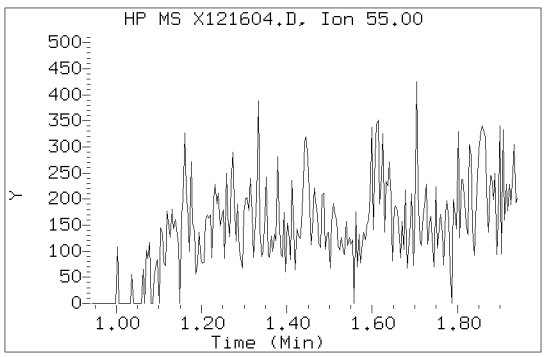
AFTER
MASS
56
AREA
761
HEIGHT
465
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



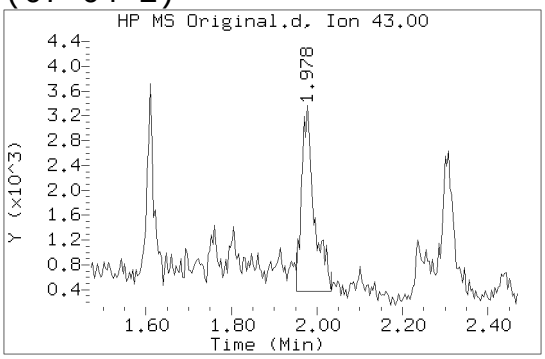
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Acetone (67-64-1)

Reason Code:

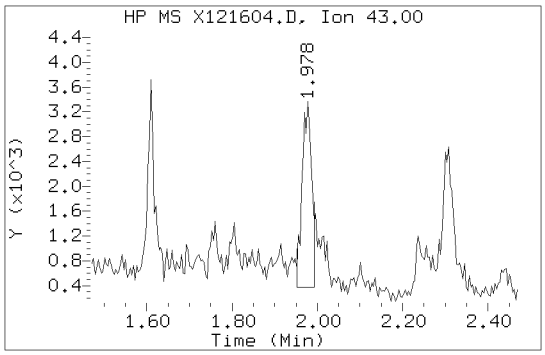
BEFORE

MASS
43
AREA
6265
HEIGHT
2993
27-Dec-2022
16:03
linh
pham



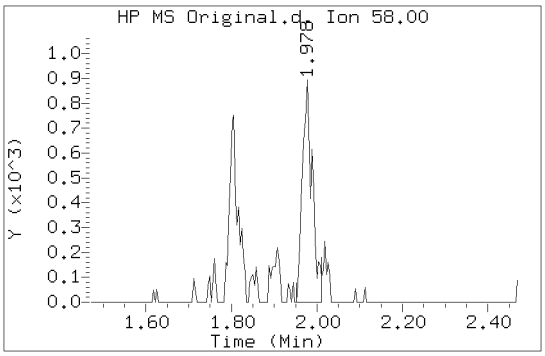
AFTER

MASS
43
AREA
4787
HEIGHT
2993
27-Dec-2022
16:07
linh
pham



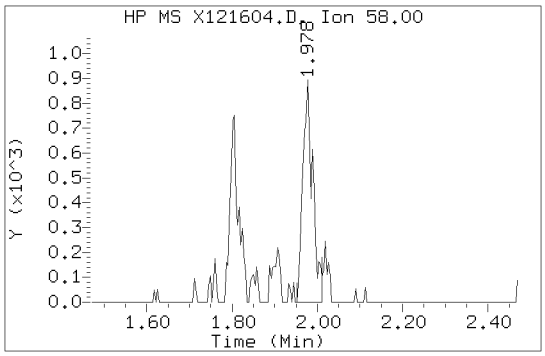
BEFORE

MASS
58
AREA
1474
HEIGHT
894
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
1474
HEIGHT
894
27-Dec-2022
16:07
linh
pham

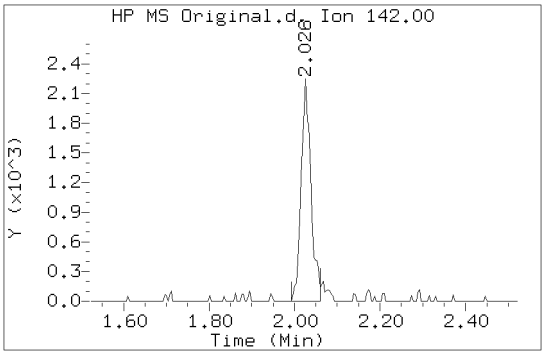


Iodomethane (74-88-4)

Reason Code:

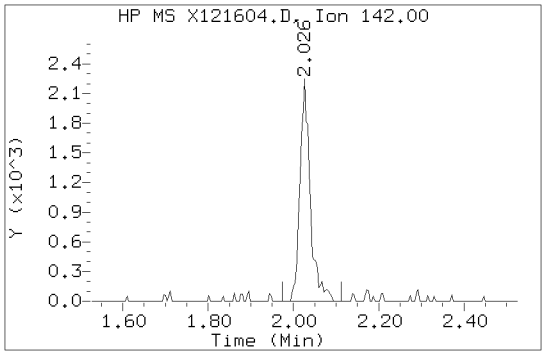
BEFORE

MASS
142
AREA
3661
HEIGHT
2248
27-Dec-2022
16:03
linh
pham



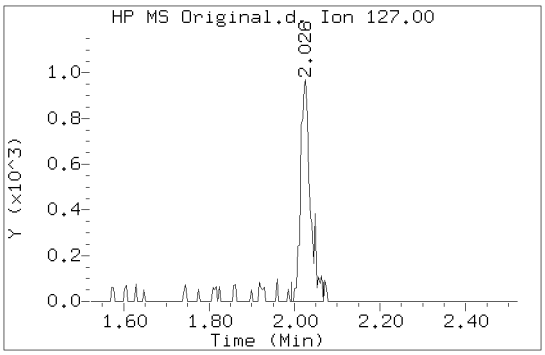
AFTER

MASS
142
AREA
3865
HEIGHT
2248
27-Dec-2022
16:07
linh
pham



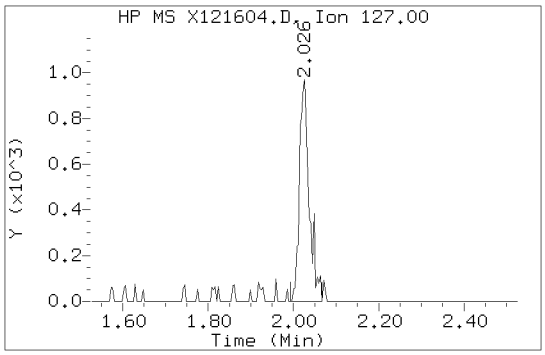
BEFORE

MASS
127
AREA
1585
HEIGHT
970
27-Dec-2022
16:03
linh
pham



AFTER

MASS
127
AREA
1585
HEIGHT
970
27-Dec-2022
16:07
linh
pham



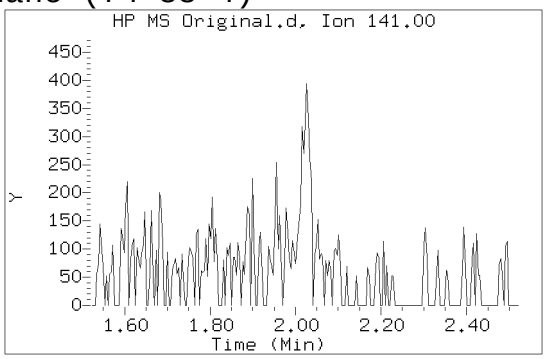
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Iodomethane (74-88-4)

Reason Code:

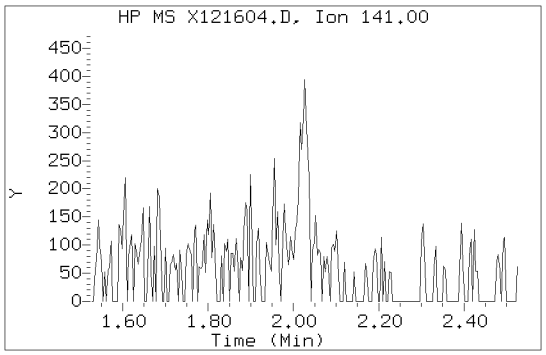
BEFORE

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
141
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

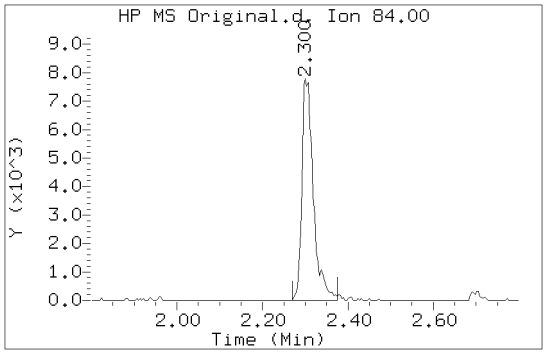


Methylene Chloride (75-09-2)

Reason Code:

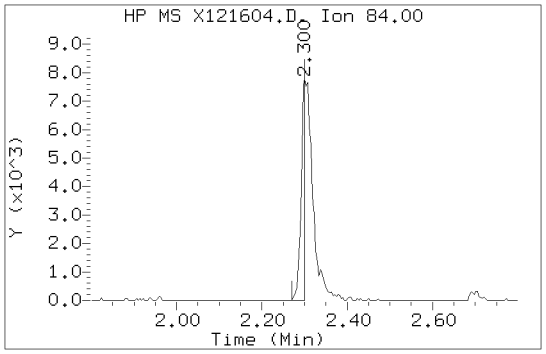
BEFORE

MASS
84
AREA
14864
HEIGHT
7788
27-Dec-2022
16:03
linh
pham



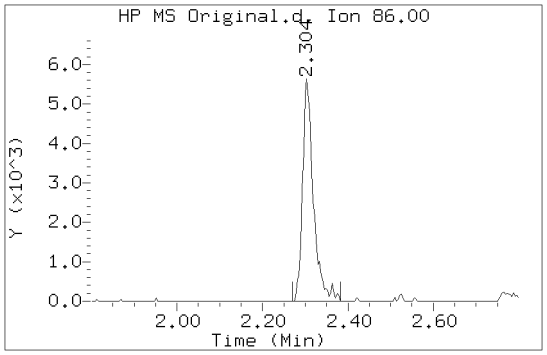
AFTER

MASS
84
AREA
5355
HEIGHT
7788
27-Dec-2022
16:07
linh
pham



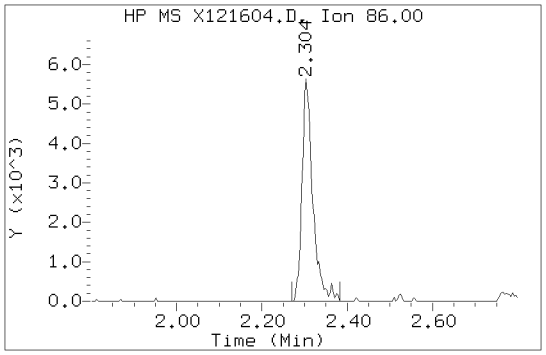
BEFORE

MASS
86
AREA
10161
HEIGHT
5637
27-Dec-2022
16:03
linh
pham



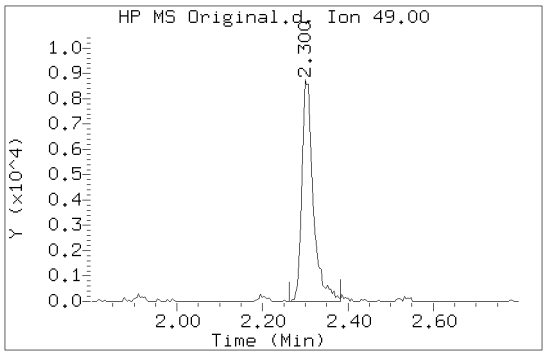
AFTER

MASS
86
AREA
10161
HEIGHT
5637
27-Dec-2022
16:07
linh
pham



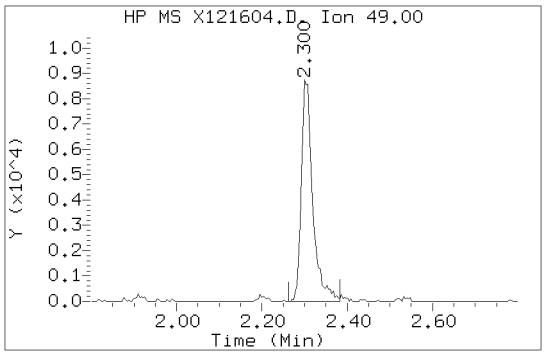
BEFORE

MASS
49
AREA
16641
HEIGHT
8752
27-Dec-2022
16:03
linh
pham



AFTER

MASS
49
AREA
16641
HEIGHT
8752
27-Dec-2022
16:07
linh
pham

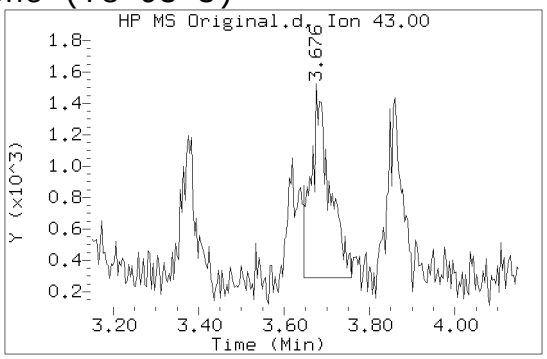


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

2-Butanone (78-93-3)

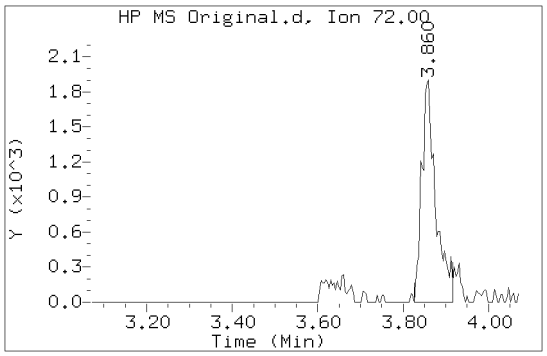
BEFORE

MASS
43
AREA
3758
HEIGHT
1236
27-Dec-2022
16:03
linh
pham



BEFORE

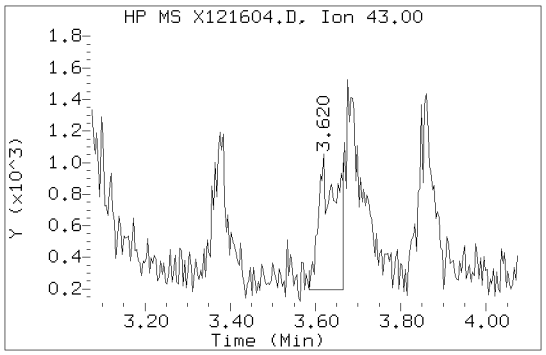
MASS
72
AREA
4320
HEIGHT
1902
27-Dec-2022
16:03
linh
pham



Reason Code:

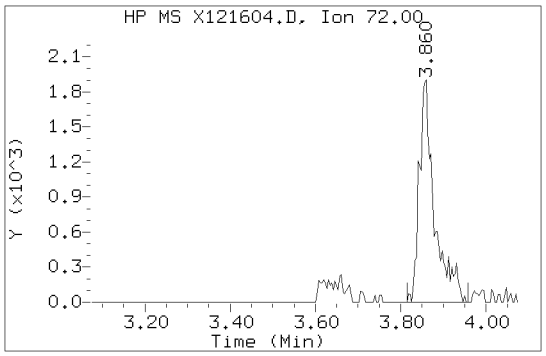
AFTER

MASS
43
AREA
2498
HEIGHT
859
27-Dec-2022
16:07
linh
pham



AFTER

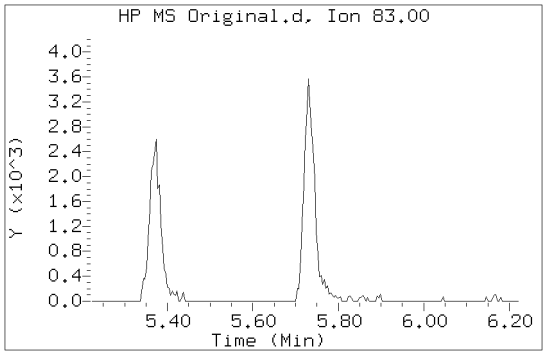
MASS
72
AREA
4690
HEIGHT
1902
27-Dec-2022
16:07
linh
pham



Bromodichloromethane (75-27-4)

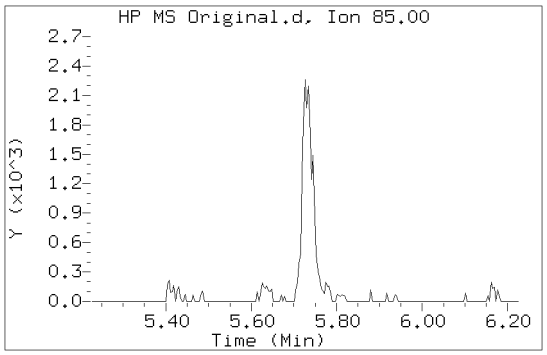
BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

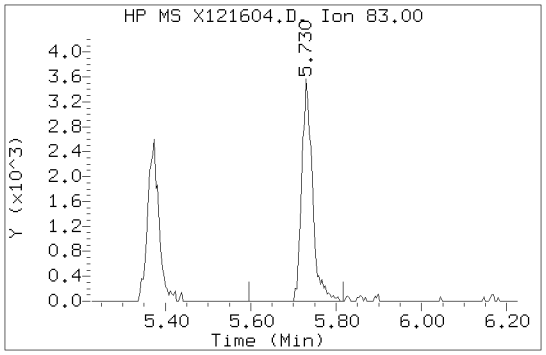
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

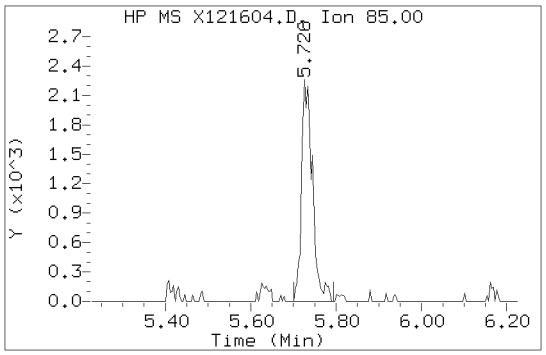
AFTER

MASS
83
AREA
6296
HEIGHT
3568
27-Dec-2022
16:07
linh
pham



AFTER

MASS
85
AREA
4084
HEIGHT
2261
27-Dec-2022
16:07
linh
pham



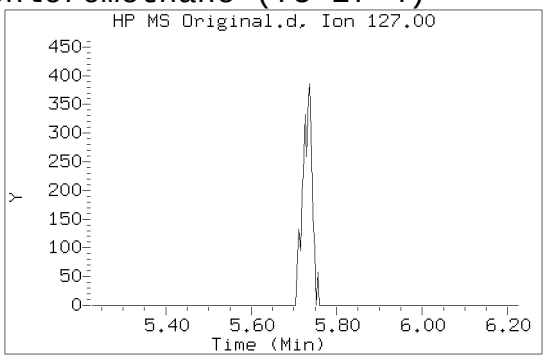
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Bromodichloromethane (75-27-4)

Reason Code:

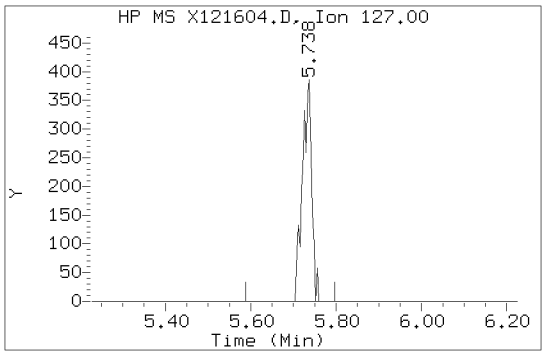
BEFORE

MASS
127
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
127
AREA
595
HEIGHT
386
27-Dec-2022
16:07
linh
pham

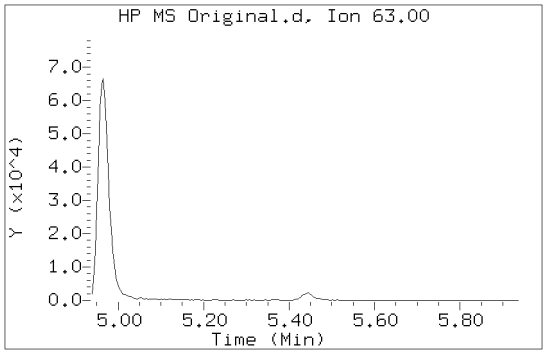


1,2-Dichloropropane (78-87-5)

Reason Code:

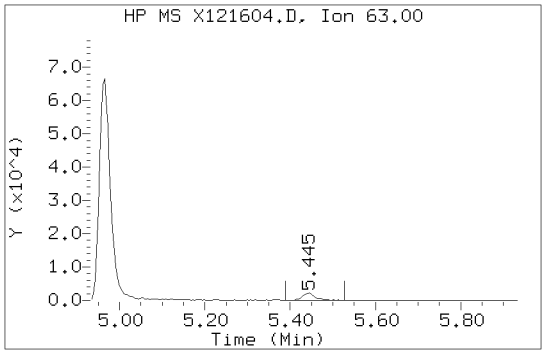
BEFORE

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



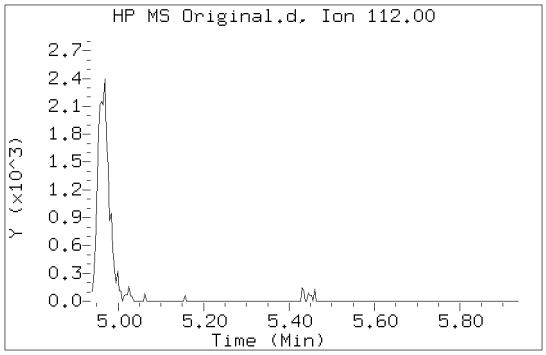
AFTER

MASS
63
AREA
4604
HEIGHT
2381
27-Dec-2022
16:07
linh
pham



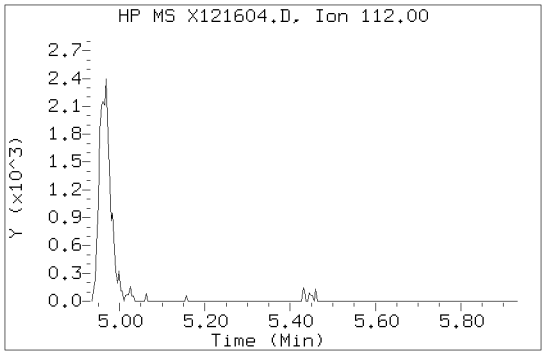
BEFORE

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

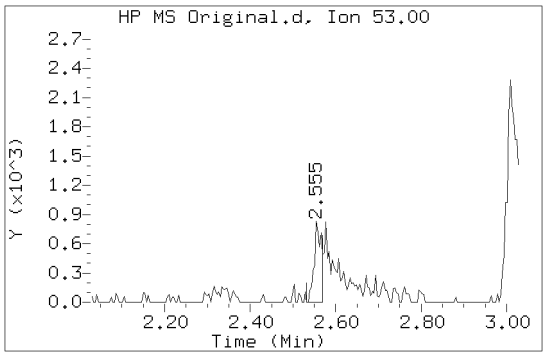


Acrylonitrile (107-13-1)

Reason Code:

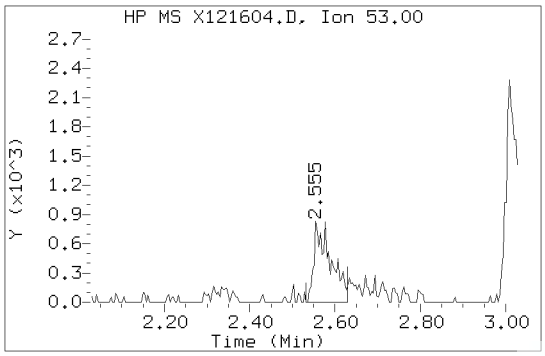
BEFORE

MASS
53
AREA
967
HEIGHT
834
27-Dec-2022
16:03
linh
pham



AFTER

MASS
53
AREA
2258
HEIGHT
834
27-Dec-2022
16:07
linh
pham

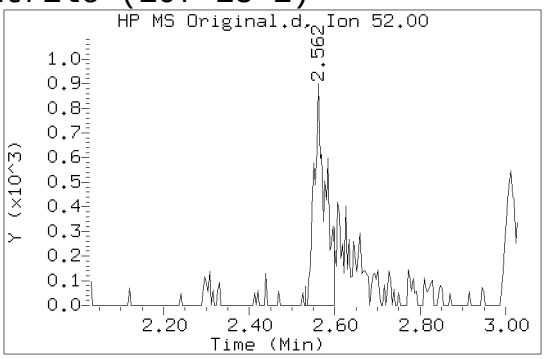


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Acrylonitrile (107-13-1)

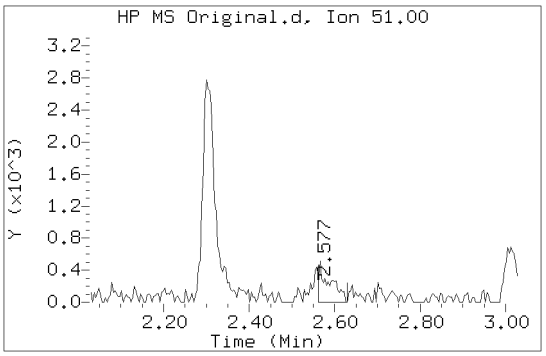
BEFORE

MASS
52
AREA
1657
HEIGHT
900
27-Dec-2022
16:03
linh
pham



BEFORE

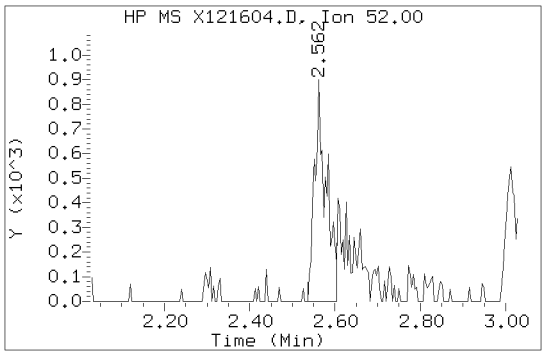
MASS
51
AREA
901
HEIGHT
301
27-Dec-2022
16:03
linh
pham



Reason Code:

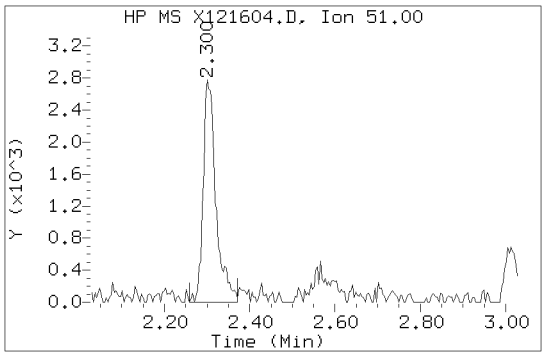
AFTER

MASS
52
AREA
1692
HEIGHT
900
27-Dec-2022
16:07
linh
pham



AFTER

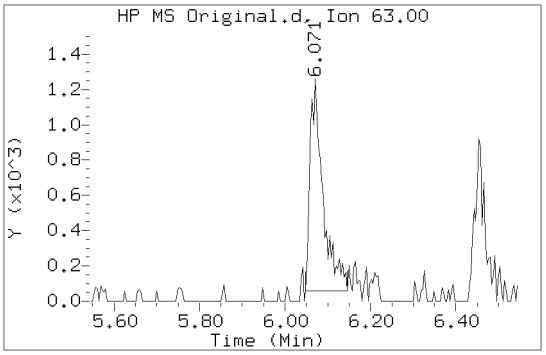
MASS
51
AREA
5757
HEIGHT
2777
27-Dec-2022
16:07
linh
pham



2-Chloroethylvinyl ether (110-75-8)

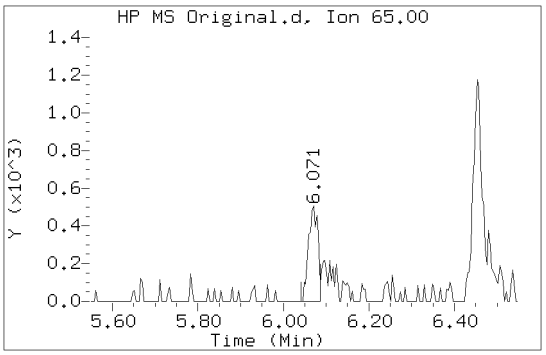
BEFORE

MASS
63
AREA
2513
HEIGHT
1202
27-Dec-2022
16:03
linh
pham



BEFORE

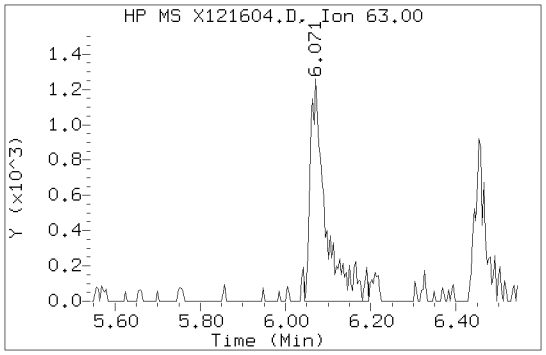
MASS
65
AREA
775
HEIGHT
507
27-Dec-2022
16:03
linh
pham



Reason Code:

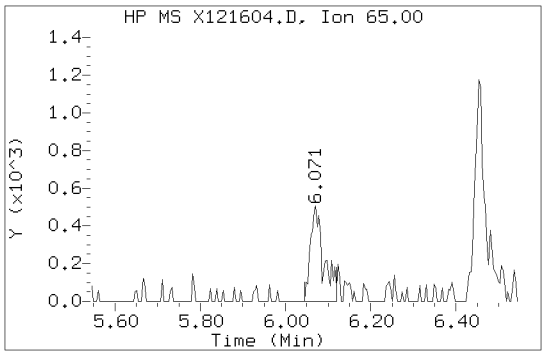
AFTER

MASS
63
AREA
3202
HEIGHT
1260
27-Dec-2022
16:07
linh
pham



AFTER

MASS
65
AREA
1093
HEIGHT
507
27-Dec-2022
16:07
linh
pham



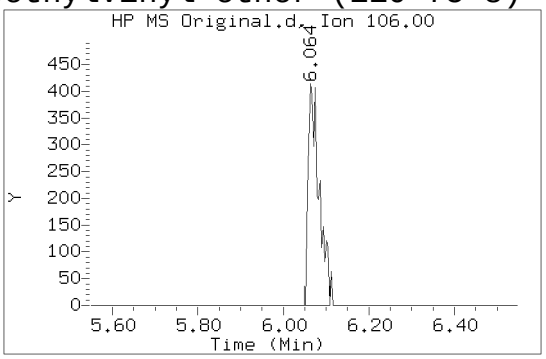
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

2-Chloroethylvinyl ether (110-75-8)

Reason Code:

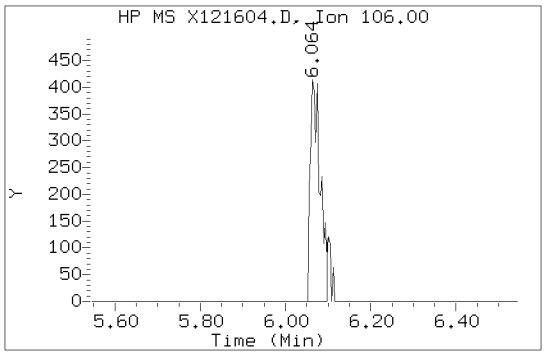
BEFORE

MASS
106
AREA
725
HEIGHT
414
27-Dec-2022
16:03
linh
pham



AFTER

MASS
106
AREA
673
HEIGHT
414
27-Dec-2022
16:07
linh
pham

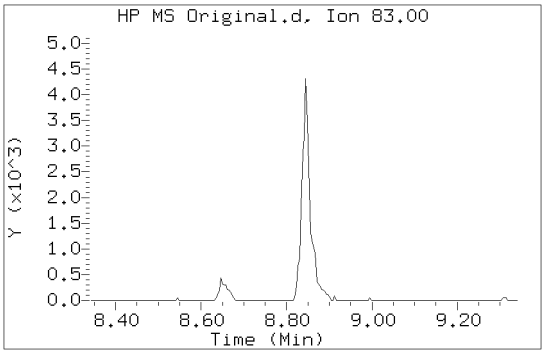


1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

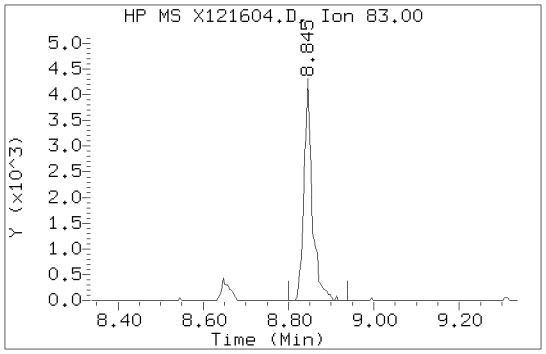
BEFORE

MASS
83
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



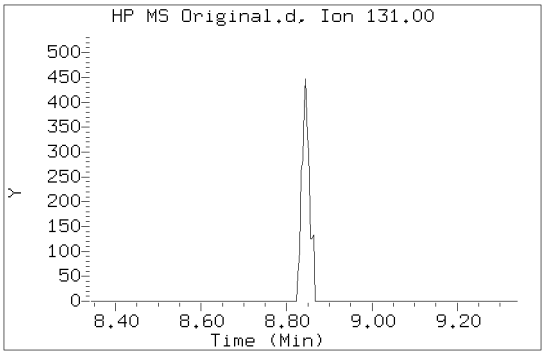
AFTER

MASS
83
AREA
5934
HEIGHT
4312
27-Dec-2022
16:07
linh
pham



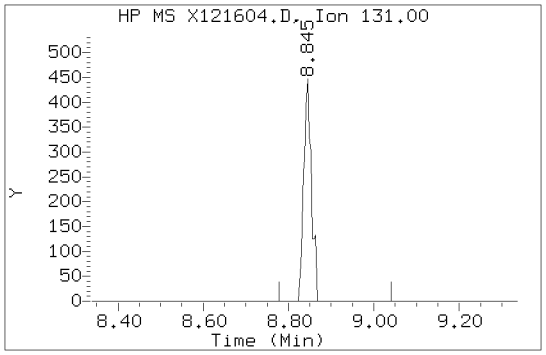
BEFORE

MASS
131
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



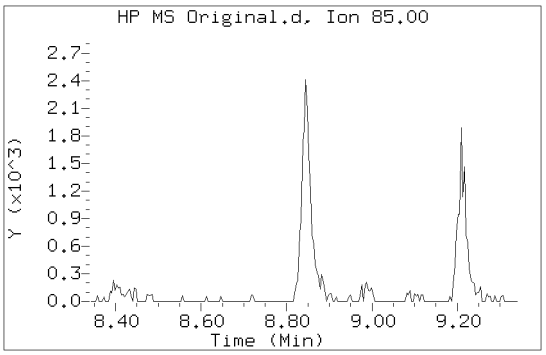
AFTER

MASS
131
AREA
574
HEIGHT
447
27-Dec-2022
16:07
linh
pham



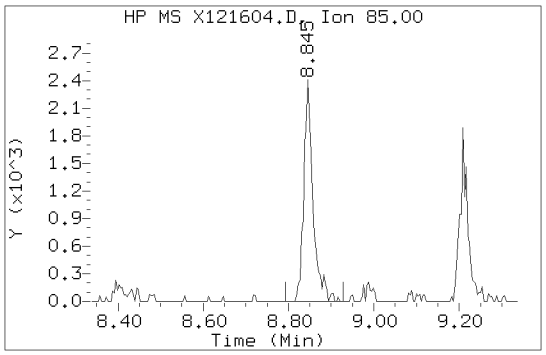
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
3682
HEIGHT
2411
27-Dec-2022
16:07
linh
pham

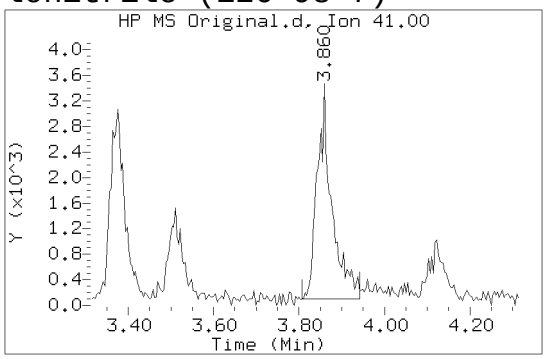


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

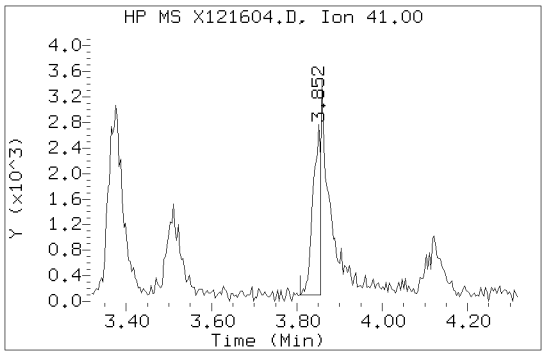
Methacrylonitrile (126-98-7)

Reason Code:

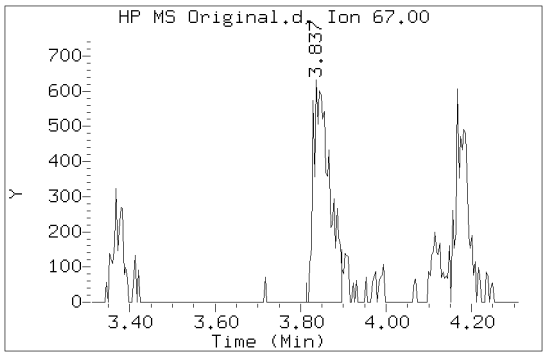
BEFORE
MASS
41
AREA
7966
HEIGHT
3370
27-Dec-2022
16:03
linh
pham



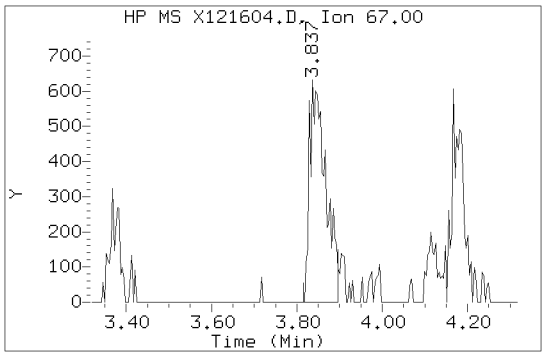
AFTER
MASS
41
AREA
3285
HEIGHT
2668
27-Dec-2022
16:07
linh
pham



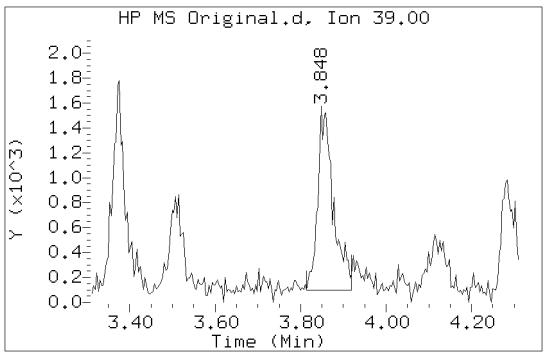
BEFORE
MASS
67
AREA
1649
HEIGHT
632
27-Dec-2022
16:03
linh
pham



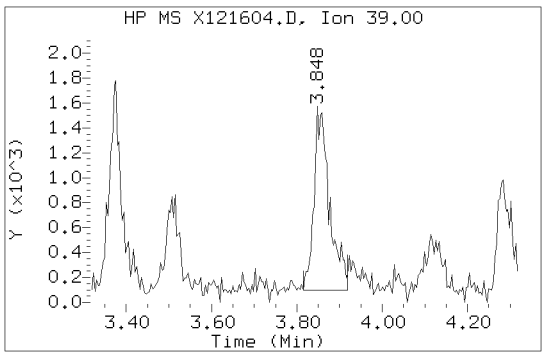
AFTER
MASS
67
AREA
1649
HEIGHT
632
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
39
AREA
3700
HEIGHT
1473
27-Dec-2022
16:03
linh
pham



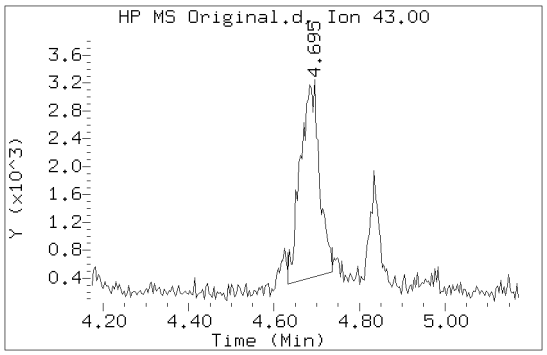
AFTER
MASS
39
AREA
3700
HEIGHT
1473
27-Dec-2022
16:07
linh
pham



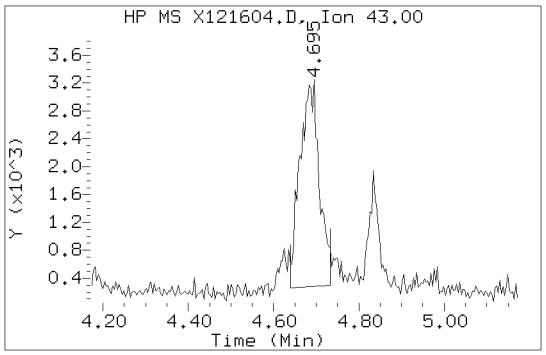
Isobutyl Alcohol (78-83-1)

Reason Code:

BEFORE
MASS
43
AREA
8847
HEIGHT
2826
27-Dec-2022
16:03
linh
pham



AFTER
MASS
43
AREA
9436
HEIGHT
2966
27-Dec-2022
16:07
linh
pham



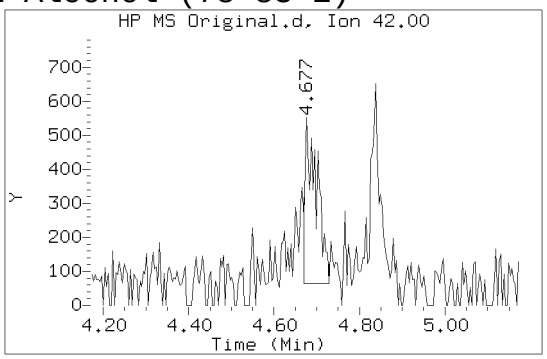
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Isobutyl Alcohol (78-83-1)

Reason Code:

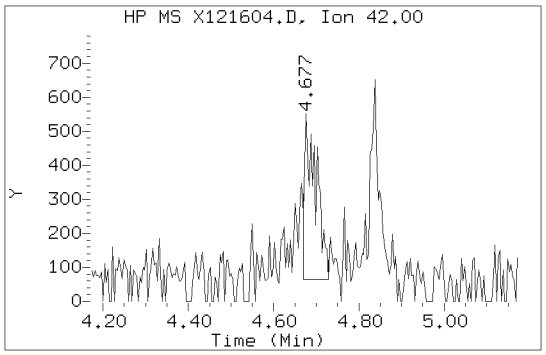
BEFORE

MASS
42
AREA
953
HEIGHT
488
27-Dec-2022
16:03
linh
pham



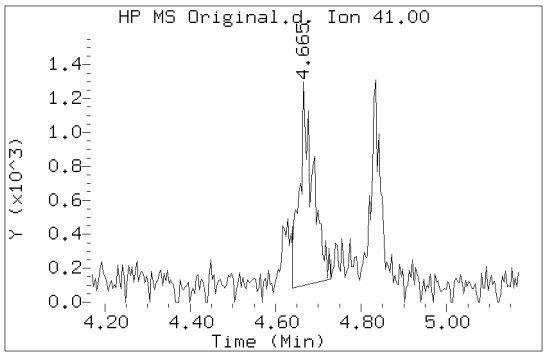
AFTER

MASS
42
AREA
953
HEIGHT
488
27-Dec-2022
16:07
linh
pham



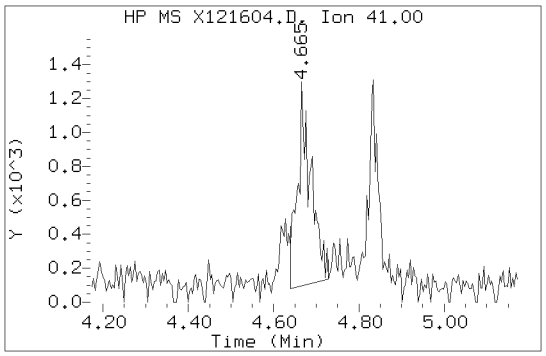
BEFORE

MASS
41
AREA
2650
HEIGHT
1200
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
2656
HEIGHT
1201
27-Dec-2022
16:07
linh
pham

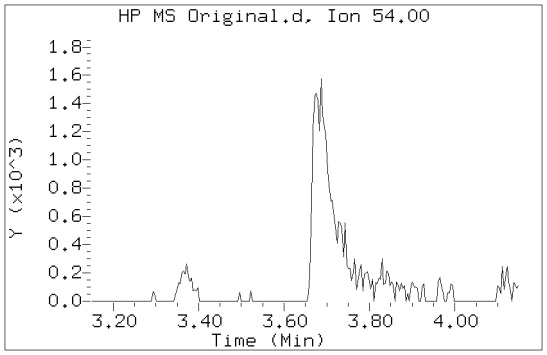


Propionitrile (107-12-0)

Reason Code:

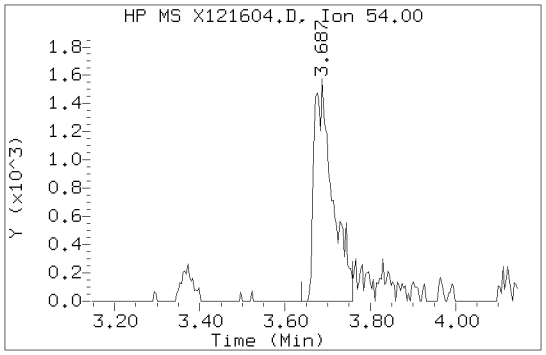
BEFORE

MASS
54
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



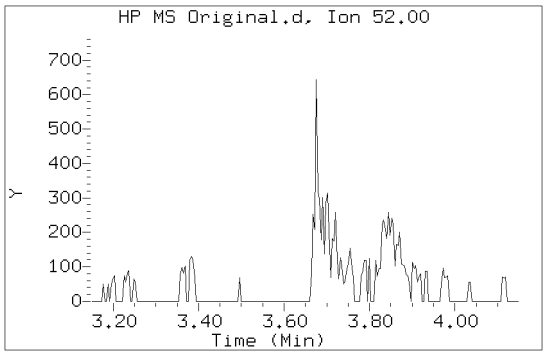
AFTER

MASS
54
AREA
4742
HEIGHT
1574
27-Dec-2022
16:07
linh
pham



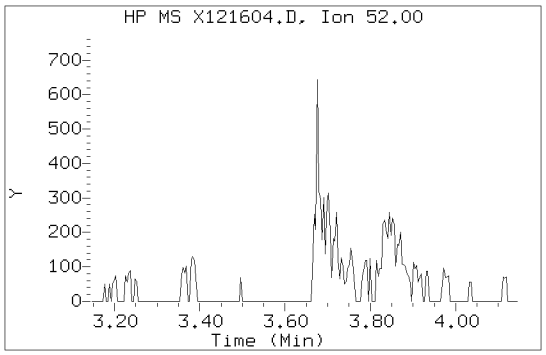
BEFORE

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
52
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



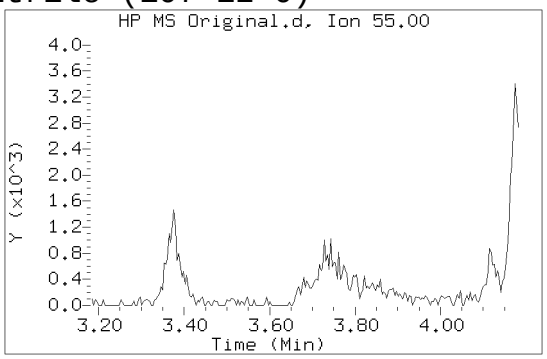
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Propionitrile (107-12-0)

Reason Code:

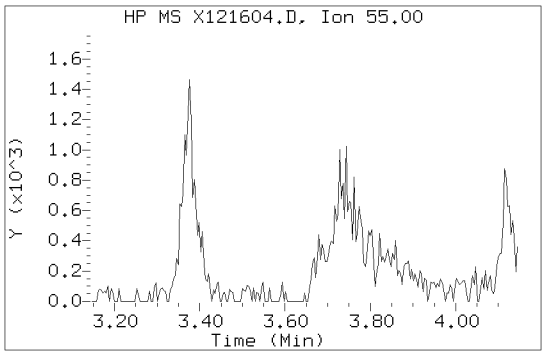
BEFORE

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

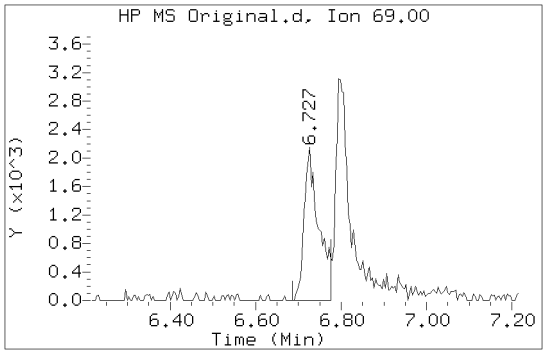


Ethyl Methacrylate (97-63-2)

Reason Code:

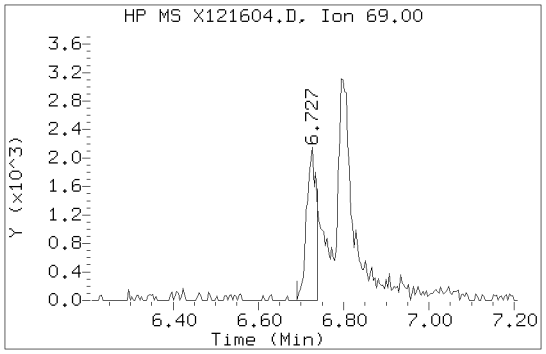
BEFORE

MASS
69
AREA
5177
HEIGHT
2156
27-Dec-2022
16:03
linh
pham



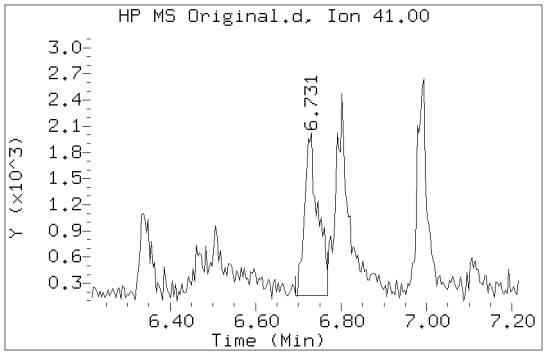
AFTER

MASS
69
AREA
3303
HEIGHT
2156
27-Dec-2022
16:07
linh
pham



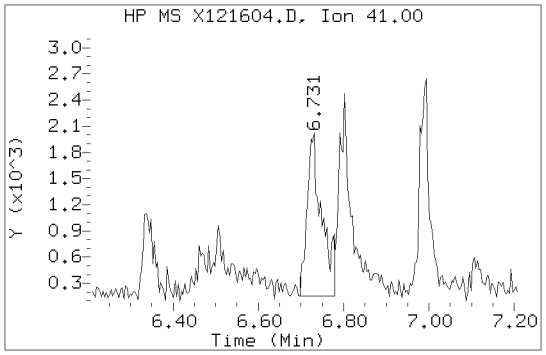
BEFORE

MASS
41
AREA
4059
HEIGHT
1867
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
4485
HEIGHT
1872
27-Dec-2022
16:07
linh
pham

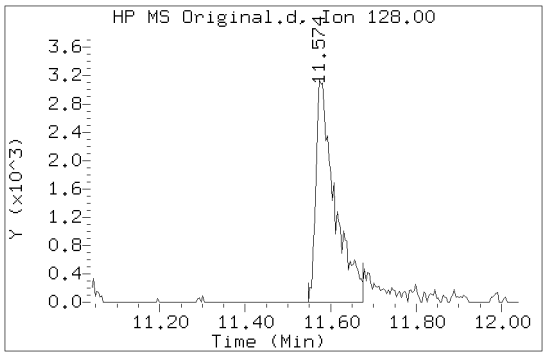


Naphthalene (91-20-3)

Reason Code:

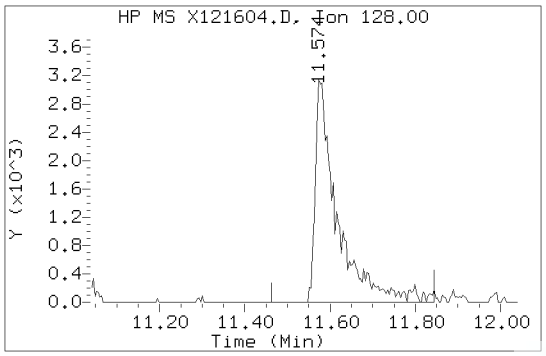
BEFORE

MASS
128
AREA
9627
HEIGHT
3139
27-Dec-2022
16:03
linh
pham



AFTER

MASS
128
AREA
11288
HEIGHT
3139
27-Dec-2022
16:07
linh
pham



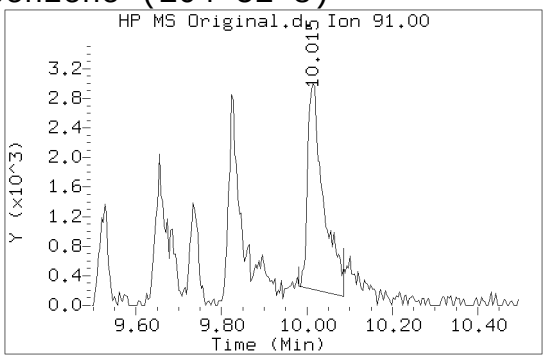
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

n-Butylbenzene (104-51-8)

Reason Code:

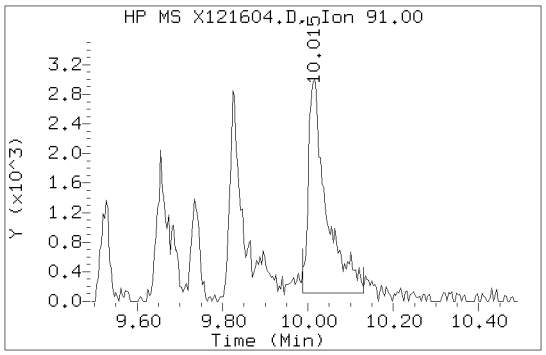
BEFORE

MASS
91
AREA
7194
HEIGHT
2783
27-Dec-2022
16:03
linh
pham



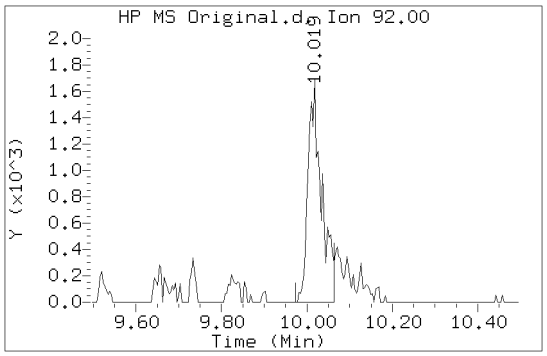
AFTER

MASS
91
AREA
8459
HEIGHT
2887
27-Dec-2022
16:07
linh
pham



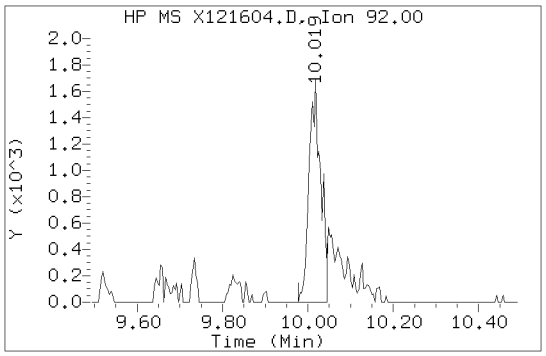
BEFORE

MASS
92
AREA
3696
HEIGHT
1686
27-Dec-2022
16:03
linh
pham



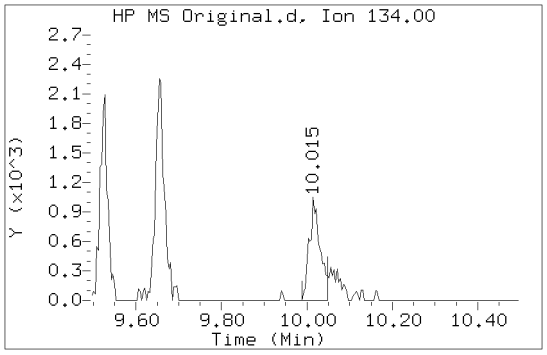
AFTER

MASS
92
AREA
3188
HEIGHT
1686
27-Dec-2022
16:07
linh
pham



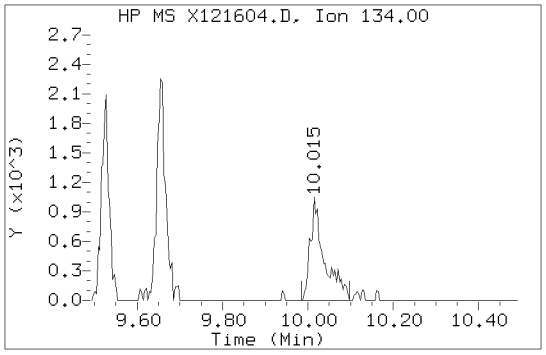
BEFORE

MASS
134
AREA
1829
HEIGHT
1051
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
2397
HEIGHT
1051
27-Dec-2022
16:07
linh
pham

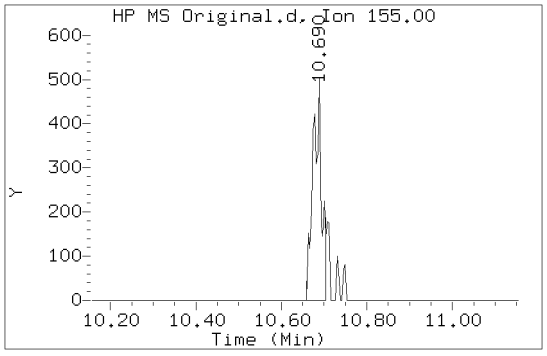


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

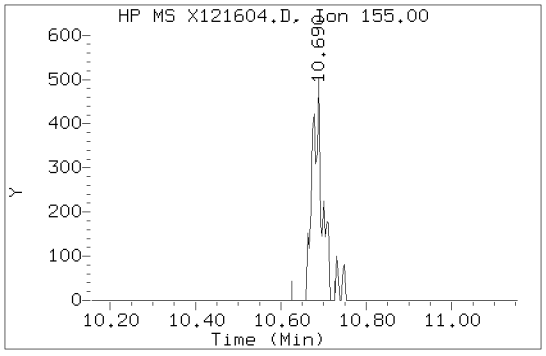
BEFORE

MASS
155
AREA
699
HEIGHT
502
27-Dec-2022
16:03
linh
pham



AFTER

MASS
155
AREA
778
HEIGHT
502
27-Dec-2022
16:07
linh
pham



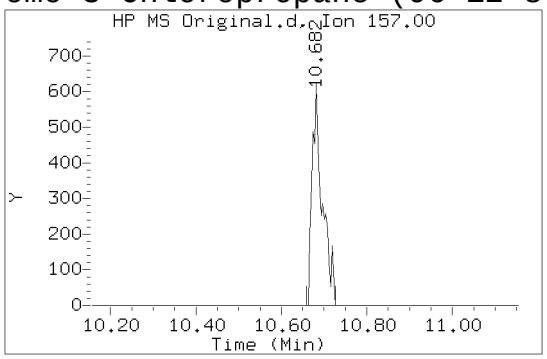
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

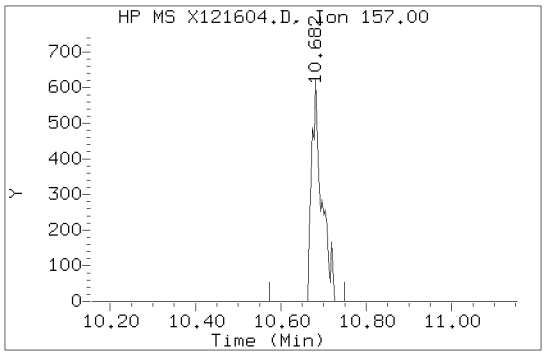
BEFORE

MASS
157
AREA
1023
HEIGHT
622
27-Dec-2022
16:03
linh
pham



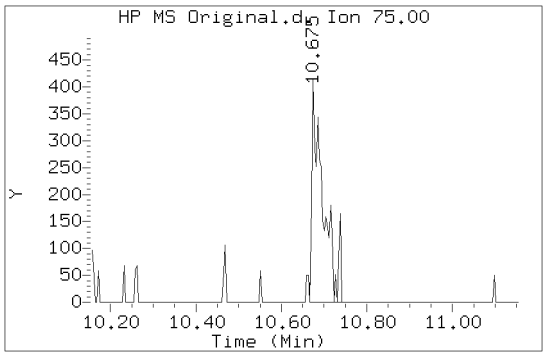
AFTER

MASS
157
AREA
1023
HEIGHT
622
27-Dec-2022
16:07
linh
pham



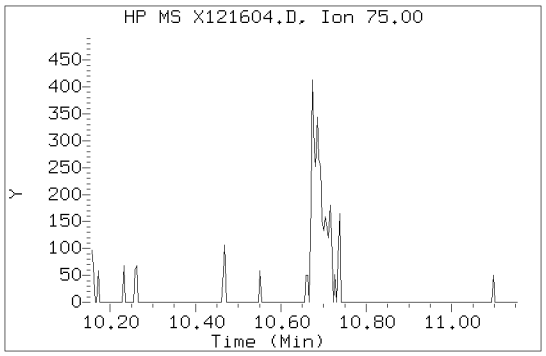
BEFORE

MASS
75
AREA
742
HEIGHT
413
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

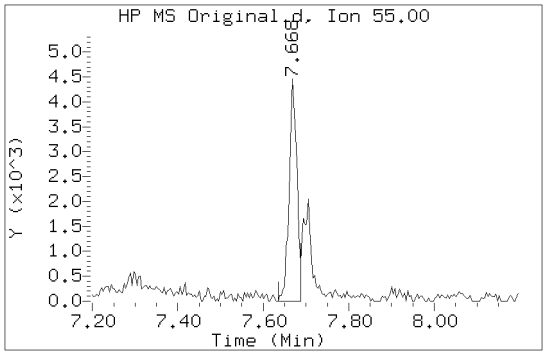


1-Chlorohexane (544-10-5)

Reason Code:

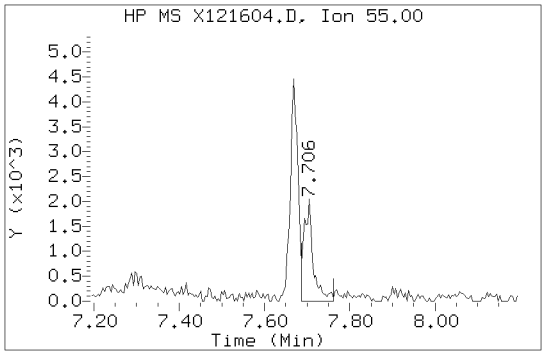
BEFORE

MASS
55
AREA
5660
HEIGHT
4460
27-Dec-2022
16:03
linh
pham



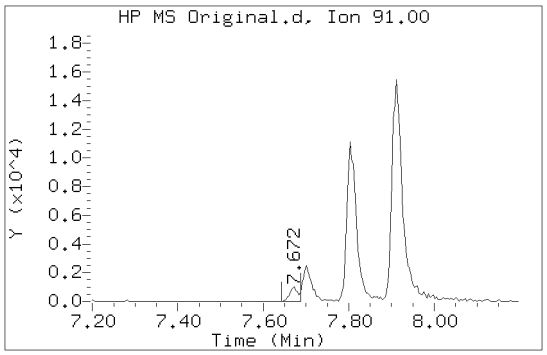
AFTER

MASS
55
AREA
3155
HEIGHT
2048
27-Dec-2022
16:07
linh
pham



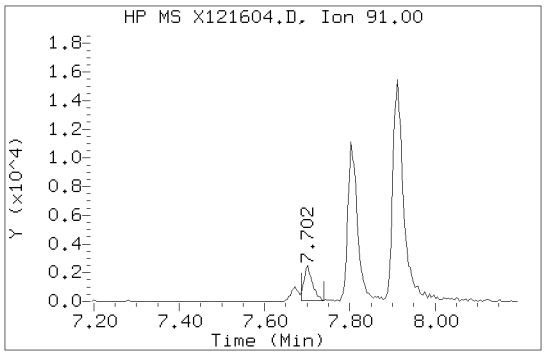
BEFORE

MASS
91
AREA
1392
HEIGHT
1029
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
3448
HEIGHT
2478
27-Dec-2022
16:07
linh
pham

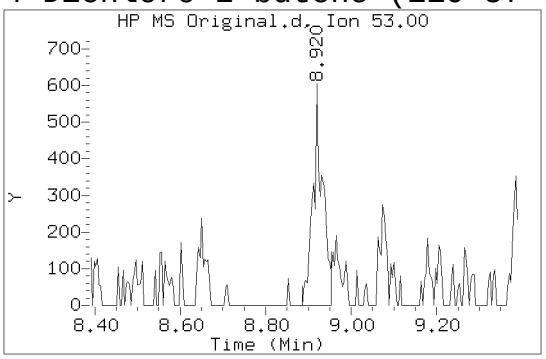


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

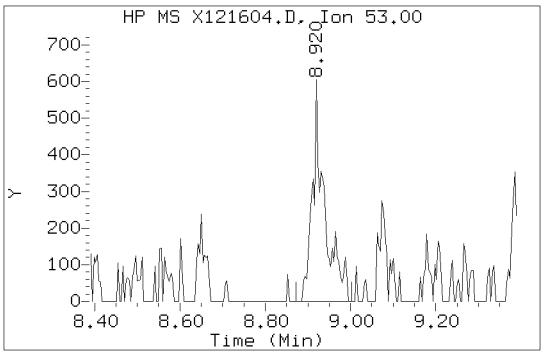
trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

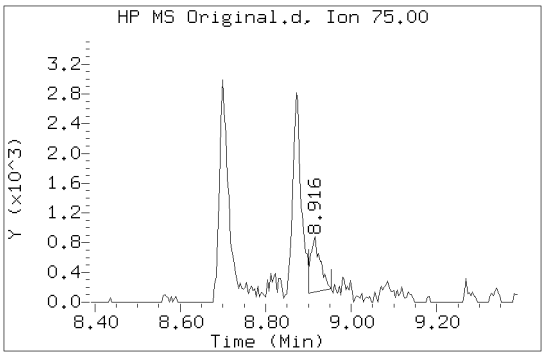
BEFORE
MASS
53
AREA
956
HEIGHT
605
27-Dec-2022
16:03
linh
pham



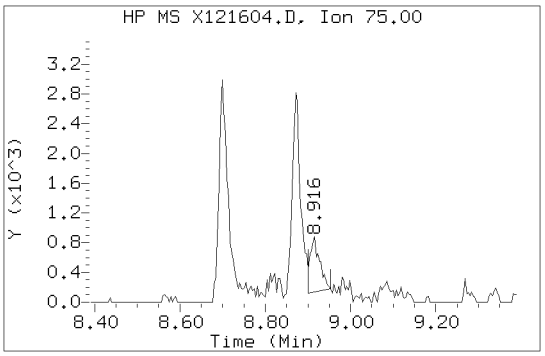
AFTER
MASS
53
AREA
1196
HEIGHT
605
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
75
AREA
1166
HEIGHT
745
27-Dec-2022
16:03
linh
pham



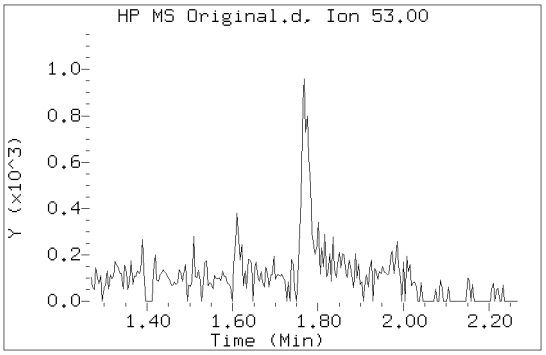
AFTER
MASS
75
AREA
1166
HEIGHT
745
27-Dec-2022
16:07
linh
pham



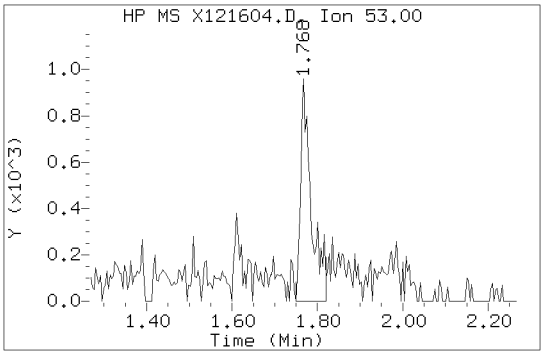
Chloroprene (126-99-8)

Reason Code:

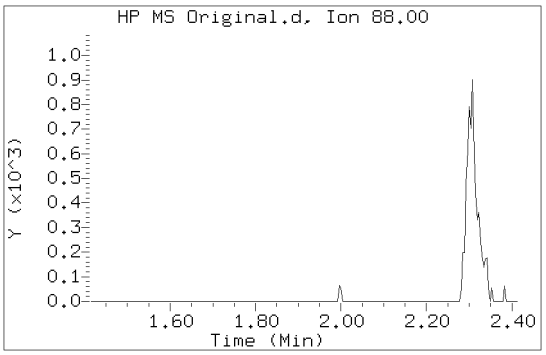
BEFORE
MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



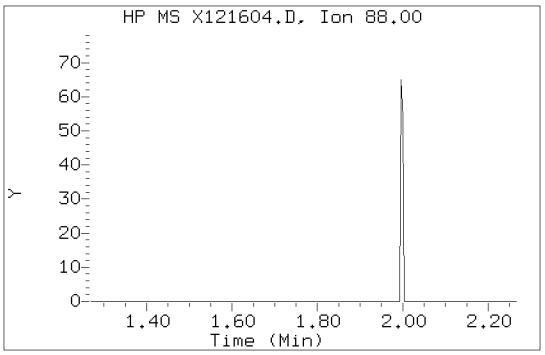
AFTER
MASS
53
AREA
1686
HEIGHT
959
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

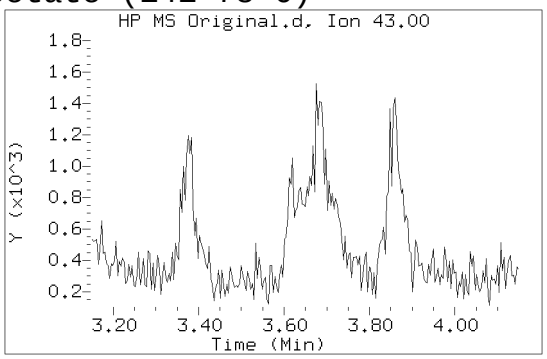


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

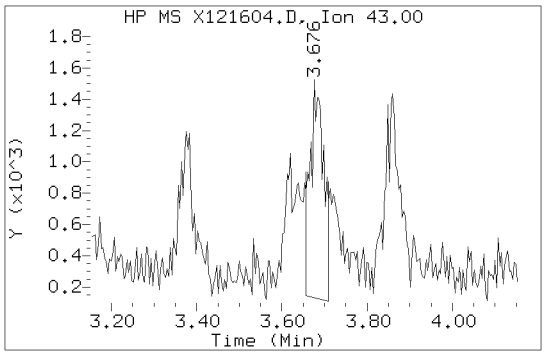
Ethyl Acetate (141-78-6)

Reason Code:

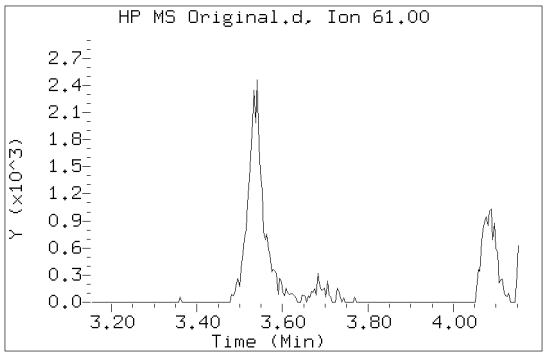
BEFORE
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



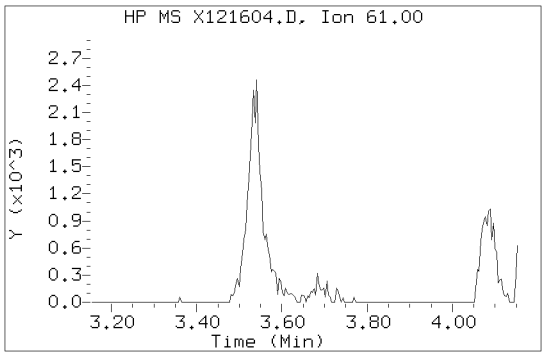
AFTER
MASS
43
AREA
3144
HEIGHT
1392
27-Dec-2022
16:07
linh
pham



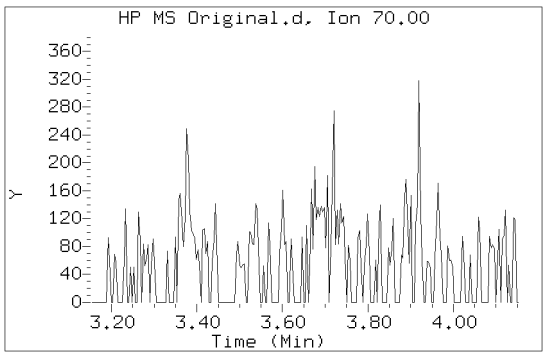
BEFORE
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



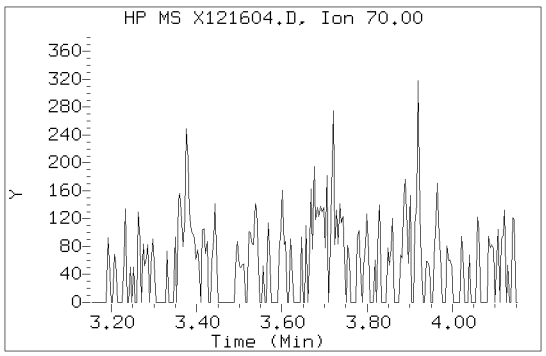
AFTER
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



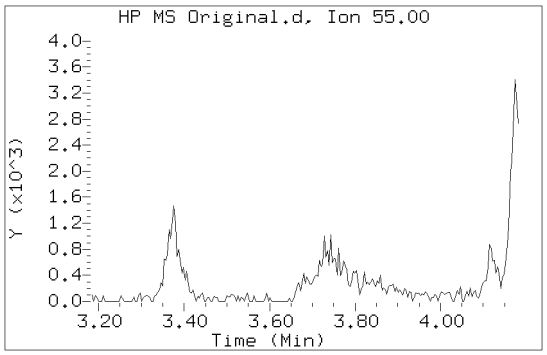
AFTER
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



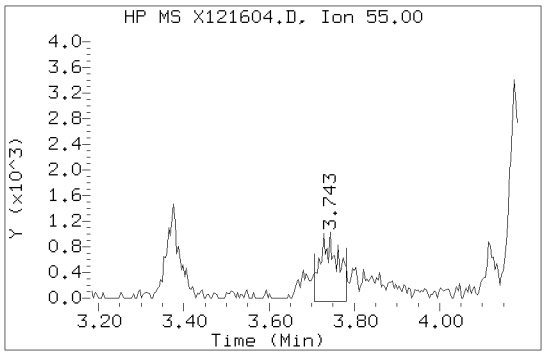
Methyl Acrylate (96-33-3)

Reason Code:

BEFORE
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
55
AREA
3084
HEIGHT
1078
27-Dec-2022
16:07
linh
pham



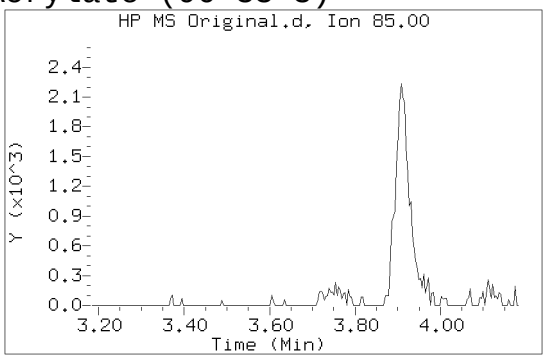
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Methyl Acrylate (96-33-3)

Reason Code:

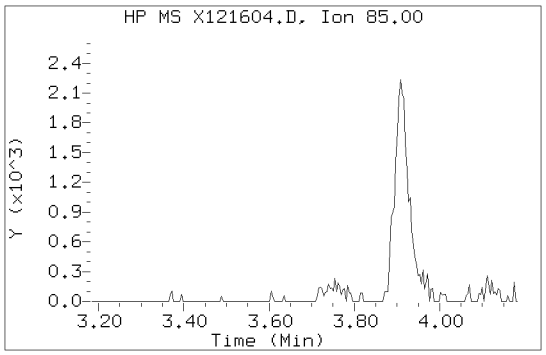
BEFORE

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

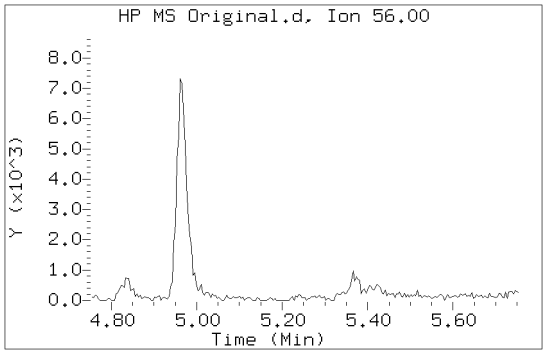


n-Butanol (71-36-3)

Reason Code:

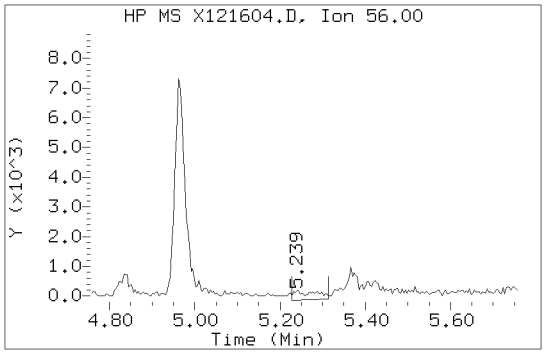
BEFORE

MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



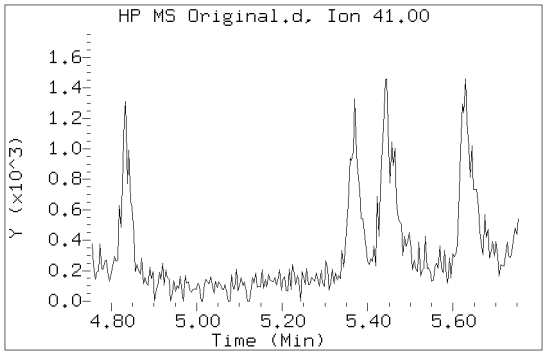
AFTER

MASS
56
AREA
1171
HEIGHT
317
27-Dec-2022
16:07
linh
pham



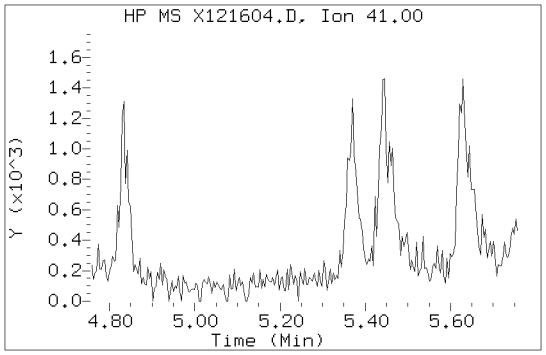
BEFORE

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

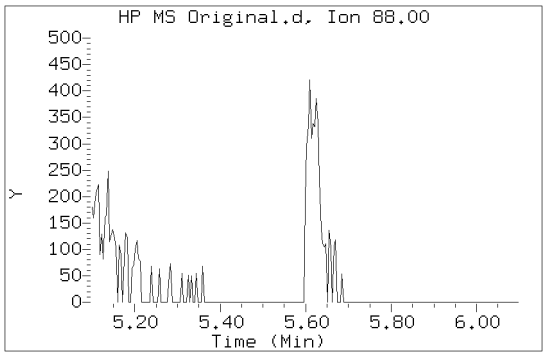


1,4-Dioxane ()

Reason Code:

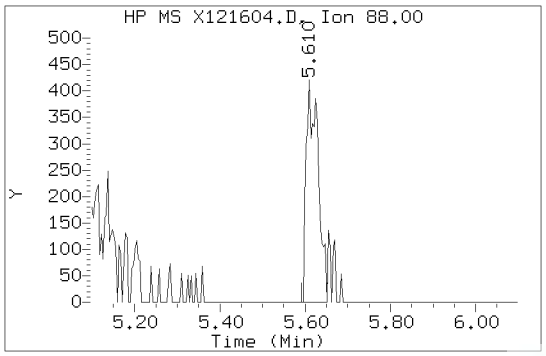
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
88
AREA
820
HEIGHT
421
27-Dec-2022
16:07
linh
pham



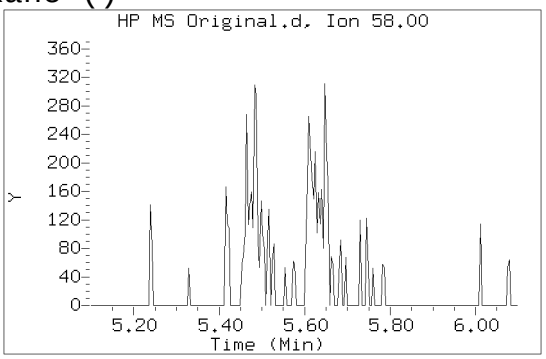
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

1,4-Dioxane ()

Reason Code:

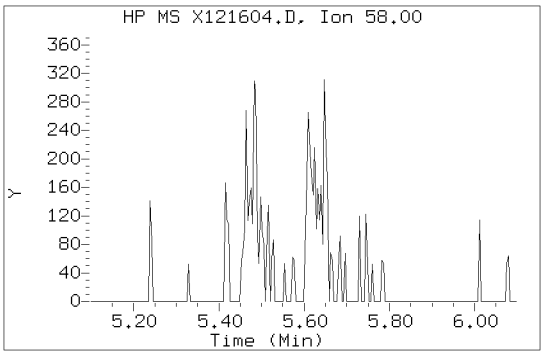
BEFORE

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

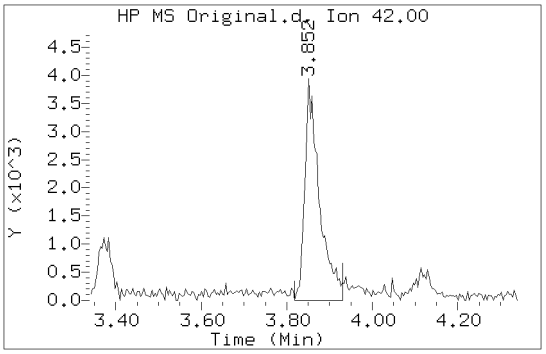


Tetrahydrofuran (109-99-9)

Reason Code:

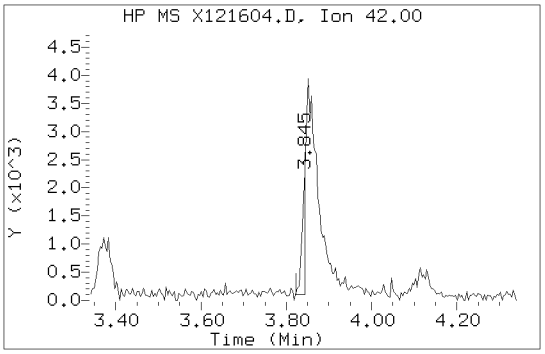
BEFORE

MASS
42
AREA
9396
HEIGHT
3939
27-Dec-2022
16:03
linh
pham



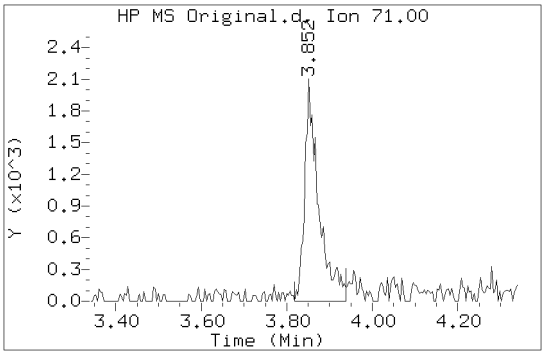
AFTER

MASS
42
AREA
1361
HEIGHT
2190
27-Dec-2022
16:07
linh
pham



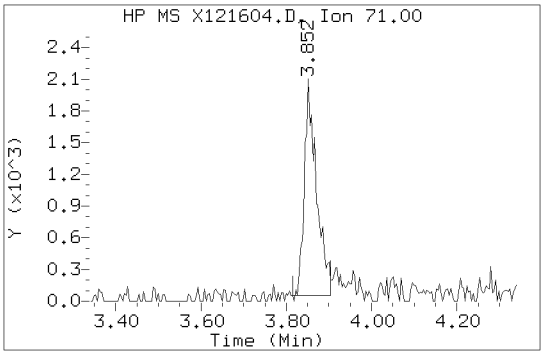
BEFORE

MASS
71
AREA
4781
HEIGHT
2103
27-Dec-2022
16:03
linh
pham



AFTER

MASS
71
AREA
4046
HEIGHT
2046
27-Dec-2022
16:07
linh
pham

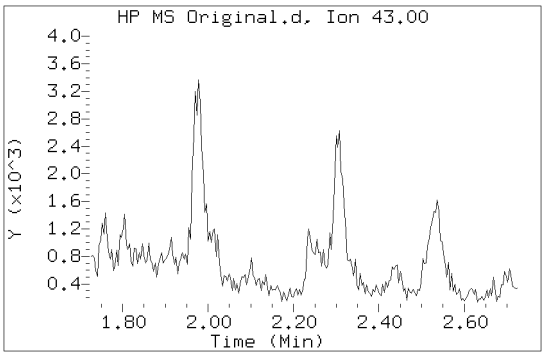


Methyl Acetate (79-20-9)

Reason Code:

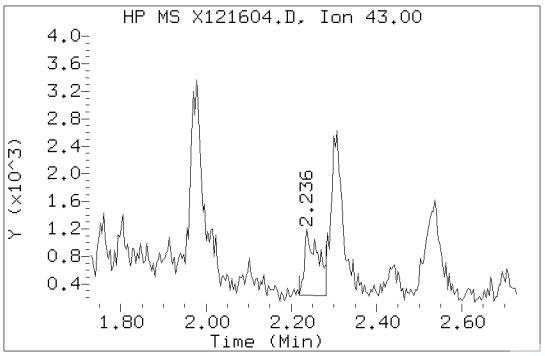
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
43
AREA
2127
HEIGHT
968
27-Dec-2022
16:07
linh
pham

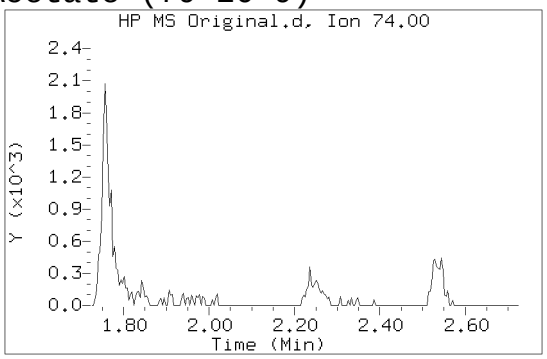


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

Methyl Acetate (79-20-9)

BEFORE

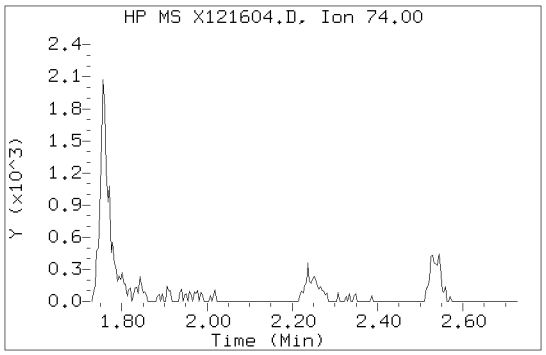
MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

AFTER

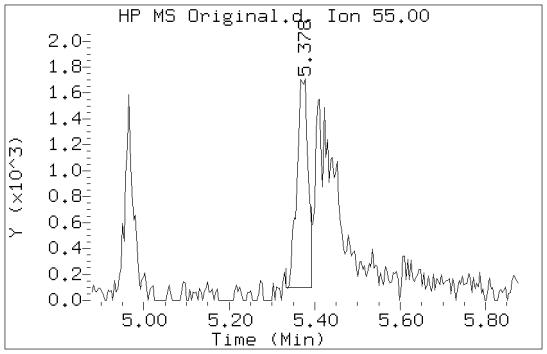
MASS
74
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



Methylcyclohexane (108-87-2)

BEFORE

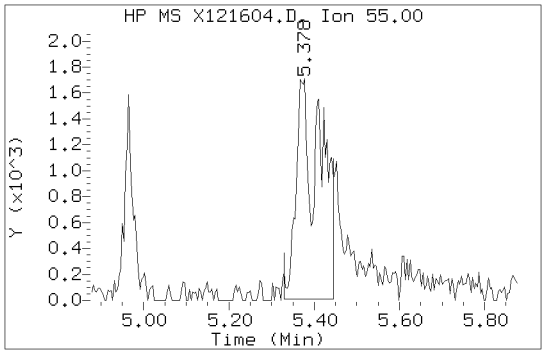
MASS
55
AREA
2998
HEIGHT
1612
27-Dec-2022
16:03
linh
pham



Reason Code:

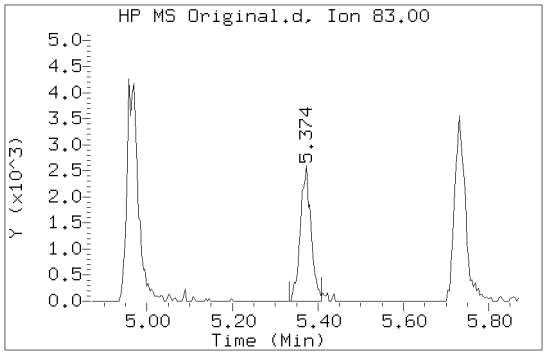
AFTER

MASS
55
AREA
6848
HEIGHT
1699
27-Dec-2022
16:07
linh
pham



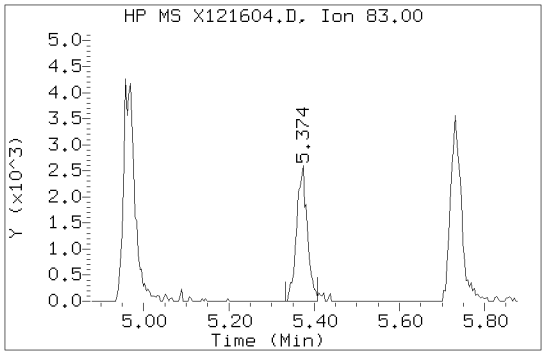
BEFORE

MASS
83
AREA
4577
HEIGHT
2601
27-Dec-2022
16:03
linh
pham



AFTER

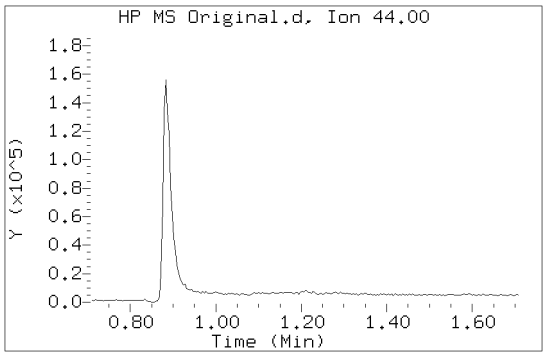
MASS
83
AREA
4577
HEIGHT
2601
27-Dec-2022
16:07
linh
pham



Acetaldehyde (75-07-0)

BEFORE

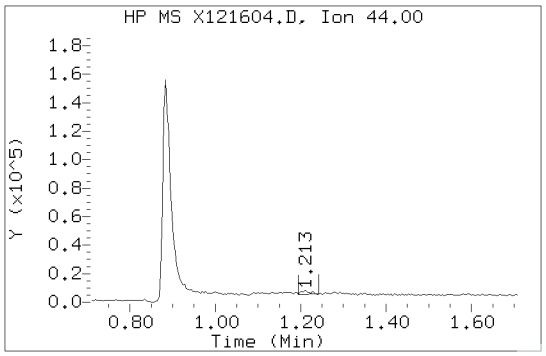
MASS
44
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

AFTER

MASS
44
AREA
3384
HEIGHT
2655
27-Dec-2022
16:07
linh
pham

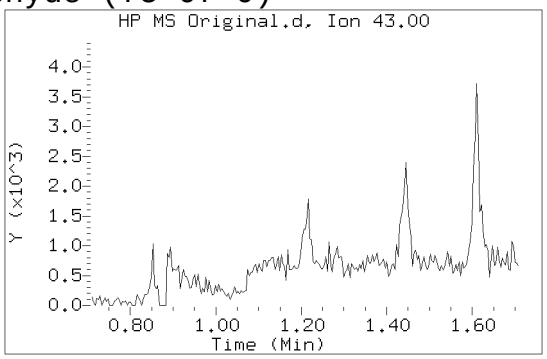


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

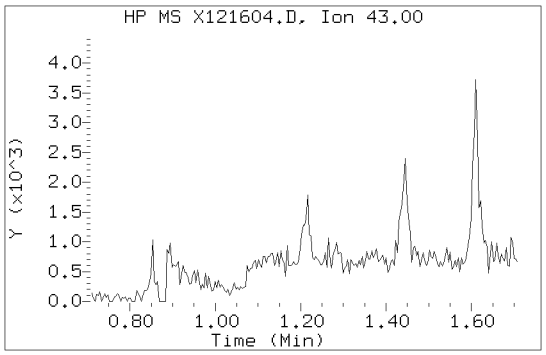
Acetaldehyde (75-07-0)

Reason Code:

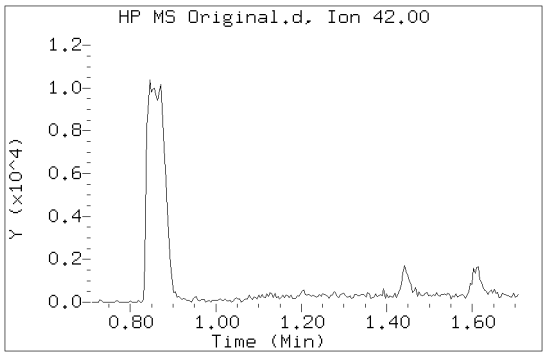
BEFORE
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



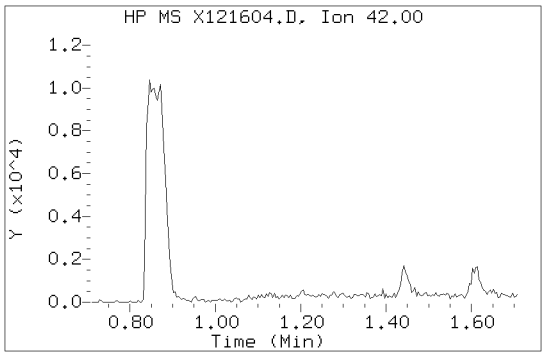
AFTER
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



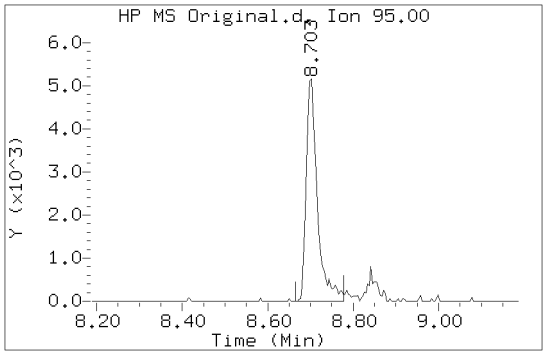
AFTER
MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



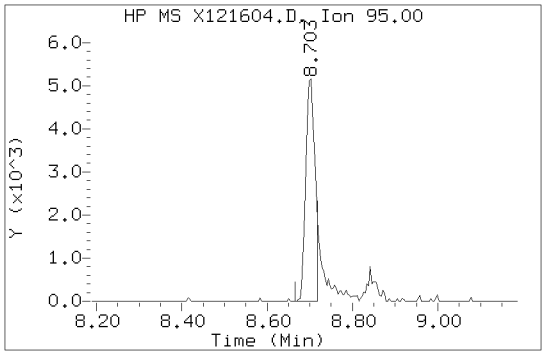
4-Bromofluorobenzene (460-00-4)

Reason Code:

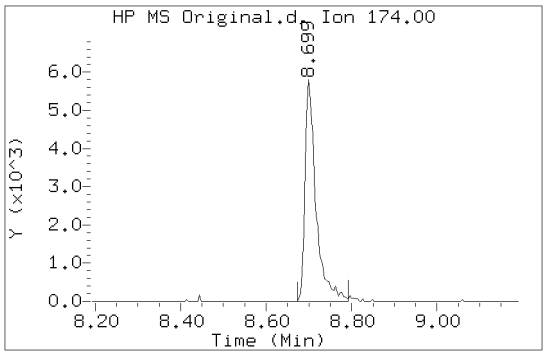
BEFORE
MASS
95
AREA
9514
HEIGHT
5159
27-Dec-2022
16:03
linh
pham



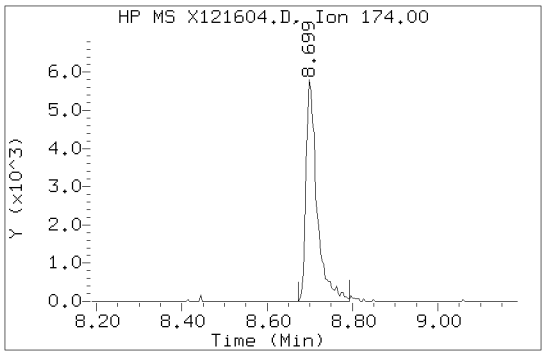
AFTER
MASS
95
AREA
7790
HEIGHT
5159
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
174
AREA
10505
HEIGHT
5802
27-Dec-2022
16:03
linh
pham



AFTER
MASS
174
AREA
10505
HEIGHT
5802
27-Dec-2022
16:07
linh
pham



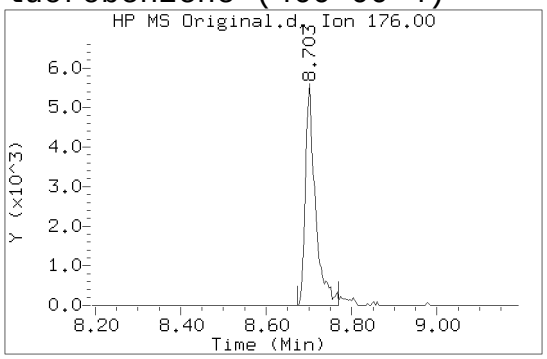
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121604.D
Inj Date : 16-DEC-2022 12:41
InstruID : voa6.i
LabSampID : VSTD001

4-Bromofluorobenzene (460-00-4)

Reason Code:

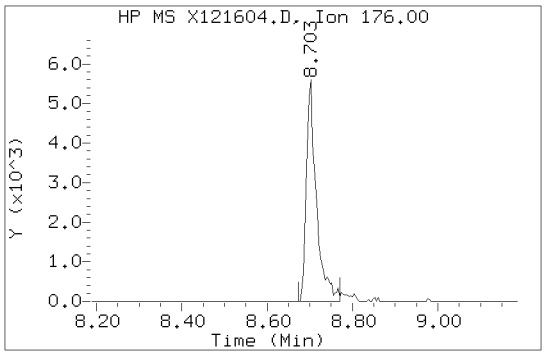
BEFORE

MASS
176
AREA
9226
HEIGHT
5603
27-Dec-2022
16:03
linh
pham



AFTER

MASS
176
AREA
9226
HEIGHT
5603
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 16-DEC-2022 13:02
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 12:41 Cal File: X121604.D
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	456374	50.0000	
135 1,4-Dioxane	88	5.610	5.610	(1.343)	1409	40.0000	33.77(M)
140 1,3-Butadiene	54	1.160	1.160	(0.278)	5733	2.00000	1.83
25 Methacrylonitrile	41	3.859	3.859	(0.924)	6388	2.00000	1.97(M)
12 Isobutyl Alcohol	43	4.684	4.684	(1.121)	20629	40.0000	40.18(M)
13 Acetonitrile	39	2.198	2.198	(0.526)	7764	20.0000	18.69
14 Allyl Chloride	41	2.206	2.206	(0.528)	14911	2.00000	1.88
4 Propionitrile	54	3.675	3.675	(0.880)	8651	20.0000	18.57
136 n-Hexane	57	2.768	2.768	(0.663)	5898	2.00000	1.79
72 trans-1,4-Dichloro-2-butene	53	8.920	8.920	(1.163)	2690	2.00000	1.92(M)
194 Acetaldehyde	44	1.212	1.212	(0.290)	5661	8.00000	(M)
23 Chloroprene	53	1.771	1.771	(0.424)	3126	2.00000	2.01(M)
145 alpha-Methylstyrene	118	9.268	9.268	(0.959)	14447	2.00000	1.84
200 Dimethyl Disulfide	94	6.202	6.202	(0.808)	15964	2.00000	1.82
139 Diethyl ether	59	1.756	1.756	(0.420)	6354	2.00000	2.08
130 Ethyl Acetate	43	3.675	3.675	(0.880)	7422	2.00000	2.08(M)
40 Methyl Methacrylate	41	5.617	5.617	(1.345)	6185	2.00000	1.98
49 Ethyl Methacrylate	69	6.715	6.715	(1.353)	6546	2.00000	2.03
132 n-Butanol	56	5.343	5.343	(1.279)	2004	40.0000	74.77(TM)
142 Tetrahydrofuran	42	3.848	3.848	(0.921)	2867	4.00000	2.04(M)

150	Allyl alcohol	57	2.768	2.768 (0.663)	5898	40.0000	33.27
166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	35687	2.00000	2.10

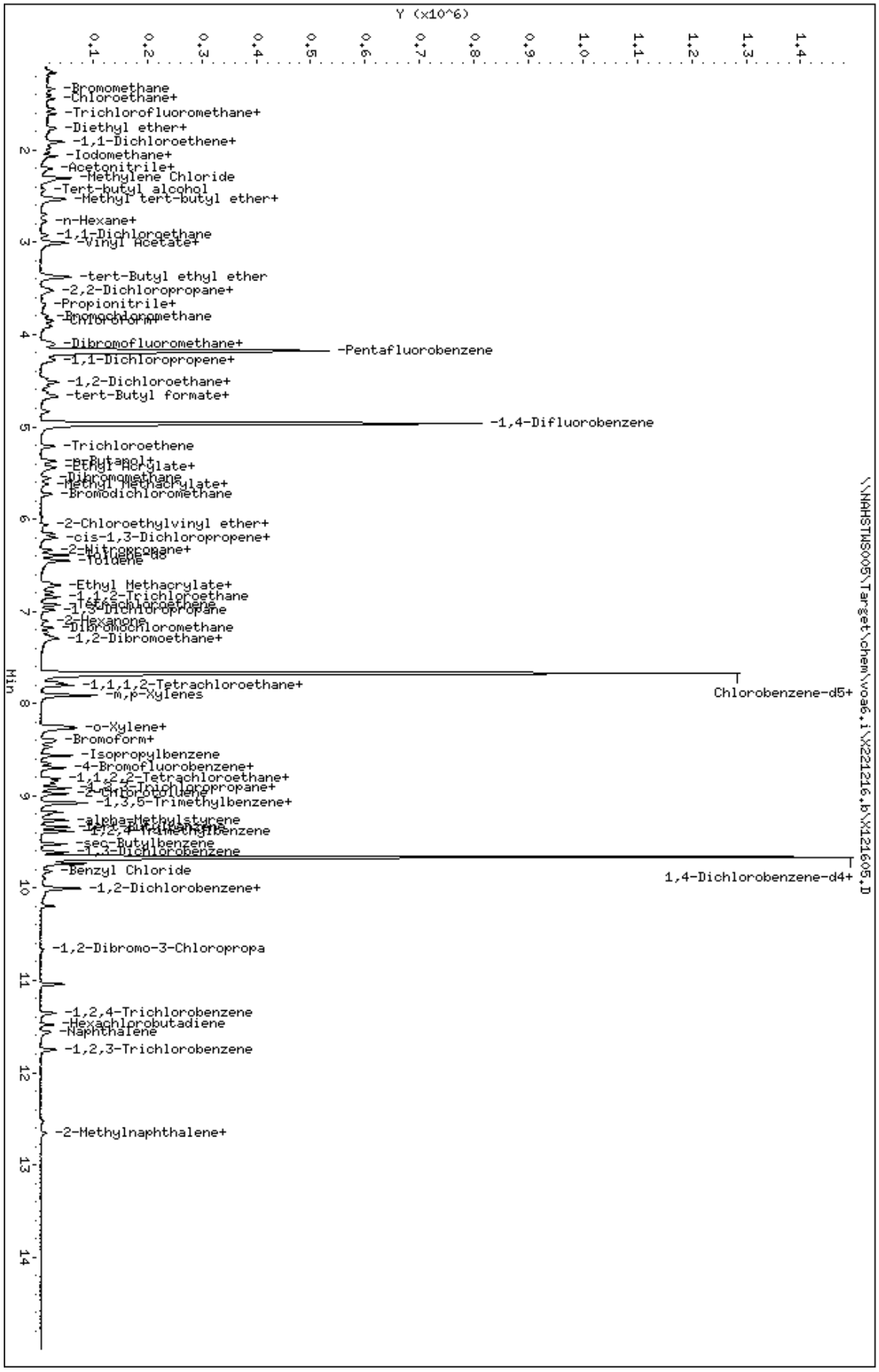
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	131 Methyl Acrylate	55	3.720	3.720	(0.891)	5443	2.00000	1.75(M)
	162 Butyl acrylate	55	8.267	8.267	(1.078)	15015	2.00000	1.77
	2 Dichlorodifluoromethane	85	0.969	0.969	(0.232)	6239	2.00000	2.33
	3 Chloromethane	50	1.077	1.077	(0.258)	8057	2.00000	4.07
	5 Vinyl Chloride	62	1.141	1.141	(0.273)	7263	2.00000	1.82
	6 Bromomethane	94	1.340	1.340	(0.321)	5996	2.00000	3.68(M)
	7 Chloroethane	64	1.400	1.400	(0.335)	5667	2.00000	2.04(M)
	8 Trichlorofluoromethane	101	1.561	1.561	(0.374)	10463	2.00000	1.87
	9 Acrolein	56	1.441	1.441	(0.345)	1317	4.00000	6.92(M)
	10 Acetone	43	1.973	1.973	(0.472)	7041	4.00000	5.46(M)
	11 1,1-Dichloroethene	96	1.910	1.910	(0.457)	6862	2.00000	1.98
	15 Iodomethane	142	2.022	2.022	(0.484)	8702	4.00000	5.23
	16 Acrylonitrile	53	2.554	2.554	(0.611)	4557	4.00000	3.87(M)
	17 Methylene Chloride	84	2.303	2.303	(0.551)	9194	2.00000	1.93(M)
	18 Methyl tert-butyl ether	73	2.536	2.536	(0.607)	23231	2.00000	2.04
	19 Carbon Disulfide	76	2.067	2.067	(0.495)	34948	4.00000	3.85
	20 trans-1,2-Dichloroethene	96	2.532	2.532	(0.606)	7113	2.00000	1.83
	21 Vinyl Acetate	43	3.008	3.008	(0.720)	38835	4.00000	3.90
	22 1,1-Dichloroethane	63	2.922	2.922	(0.699)	12778	2.00000	1.87
	24 2-Butanone	43	3.604	3.604	(0.863)	5418	4.00000	6.89(M)
	26 2,2-Dichloropropane	77	3.507	3.507	(0.839)	11048	2.00000	1.91
	27 cis-1,2-Dichloroethene	96	3.529	3.529	(0.845)	9675	2.00000	2.05
	28 Chloroform	83	3.908	3.908	(0.935)	15581	2.00000	2.04
	29 Bromochloromethane	128	3.803	3.803	(0.910)	5134	2.00000	1.98
$	30 Dibromofluoromethane	113	4.106	4.106	(0.983)	9050	2.00000	1.90
	31 1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	10962	2.00000	1.81
	32 1,1-Dichloropropene	75	4.286	4.286	(0.863)	9042	2.00000	1.86
	33 1,2-Dichloroethane	62	4.560	4.560	(0.918)	10812	2.00000	1.92
	34 Carbon Tetrachloride	117	4.264	4.264	(0.859)	11092	2.00000	2.13(M)
$	35 1,2-Dichloroethane-d4	65	4.477	4.477	(1.072)	9783	2.00000	2.37
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	684444	50.0000	
	37 Benzene	78	4.515	4.515	(0.909)	32394	2.00000	1.98
	38 Trichloroethene	130	5.216	5.216	(1.051)	9277	2.00000	2.00
	39 Bromodichloromethane	83	5.733	5.733	(1.155)	11961	2.00000	1.94
	41 2-Chloroethylvinyl ether	63	6.059	6.059	(1.220)	6648	4.00000	3.80
	42 1,2-Dichloropropane	63	5.441	5.441	(1.096)	8129	2.00000	1.86(M)
	44 Dibromomethane	93	5.553	5.553	(1.119)	6110	2.00000	2.06
	45 4-Methyl-2-Pentanone	43	6.337	6.337	(0.826)	14771	4.00000	4.26
	46 cis-1,3-Dichloropropene	75	6.161	6.161	(1.241)	13738	2.00000	1.90
*	47 Chlorobenzene-d5	117	7.671	7.671	(1.000)	647809	50.0000	
$	48 Toluene-d8	98	6.393	6.393	(0.833)	31289	2.00000	1.95
	50 Toluene	91	6.453	6.453	(0.841)	35620	2.00000	1.98
	51 trans-1,3-Dichloropropene	75	6.693	6.693	(1.348)	10969	2.00000	1.83
	52 2-Hexanone	43	7.105	7.105	(0.926)	9314	4.00000	3.95
	53 1,1,2-Trichloroethane	83	6.843	6.843	(0.892)	7537	2.00000	2.09
	54 1,3-Dichloropropane	76	6.989	6.989	(0.911)	14049	2.00000	1.98
	55 Dibromochloromethane	129	7.180	7.180	(0.936)	10210	2.00000	1.96
	56 Tetrachloroethene	164	6.929	6.929	(0.903)	7331	2.00000	1.97
	57 1,2-Dibromoethane	107	7.263	7.263	(0.947)	8477	2.00000	1.88
	58 1-Chlorohexane	55	7.697	7.697	(1.550)	5855	2.00000	1.77(MH)
	59 Chlorobenzene	112	7.694	7.694	(1.003)	24558	2.00000	1.93
	60 1,1,1,2-Tetrachloroethane	131	7.772	7.772	(1.013)	9378	2.00000	1.98

61 Ethylbenzene	106	7.802	7.802 (1.017)	11791	2.00000	1.97
62 m,p-Xylenes	106	7.911	7.911 (1.031)	29170	4.00000	3.78

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.249	8.249	(1.075)	14764	2.00000	1.93
	64 Styrene	104	8.271	8.271	(1.078)	22967	2.00000	1.80
	66 Bromoform	173	8.417	8.417	(1.097)	6949	2.00000	1.93(T)
	67 Isopropylbenzene	105	8.563	8.563	(1.116)	32641	2.00000	1.87
	68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	11741	2.00000	2.08
$	69 4-Bromofluorobenzene	95	8.698	8.698	(1.134)	13631	2.00000	2.33
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	352851	50.0000	
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.918)	7514	2.00000	1.91
	73 n-Propylbenzene	91	8.916	8.916	(0.923)	34981	2.00000	1.78
	74 Bromobenzene	156	8.815	8.815	(0.912)	11721	2.00000	2.02
	75 1,3,5-Trimethylbenzene	105	9.073	9.073	(0.939)	27917	2.00000	1.93
	76 2-Chlorotoluene	91	8.980	8.980	(0.929)	26853	2.00000	2.09
	77 4-Chlorotoluene	91	9.077	9.077	(0.939)	28173	2.00000	1.92
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	22104	2.00000	1.87
	79 1,2,4-Trimethylbenzene	105	9.384	9.384	(0.971)	28377	2.00000	1.86
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	27643	2.00000	1.75
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	24966	2.00000	1.77
	83 1,3-Dichlorobenzene	146	9.613	9.613	(0.995)	18708	2.00000	1.94
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	20552	2.00000	1.96
	86 Benzyl Chloride	91	9.819	9.819	(1.280)	12783	2.00000	3.88
	87 n-Butylbenzene	91	10.003	10.003	(1.035)	19853	2.00000	3.18(M)
	88 1,2-Dichlorobenzene	146	9.999	9.999	(1.035)	18921	2.00000	1.91
	89 1,2-Dibromo-3-Chloropropane	155	10.678	10.678	(1.105)	1619	2.00000	1.88(M)
	90 1,2,4-Trichlorobenzene	180	11.352	11.352	(1.175)	11764	2.00000	1.88(M)
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	3970	2.00000	1.39
	92 Naphthalene	128	11.559	11.559	(1.196)	26250	2.00000	1.84(M)
	93 1,2,3-Trichlorobenzene	180	11.750	11.750	(1.216)	11288	2.00000	1.88
M	94 1,2-Dichloroethylene (total)	96				16788	4.00000	
M	95 Xylenes (total)	106				43934	6.00000	
	141 Cyclohexane	56	4.125	4.125	(0.987)	7375	2.00000	2.82(H)
	138 Freon TF	101	1.917	1.917	(0.459)	6025	2.00000	1.79
	147 Methylcyclohexane	55	5.373	5.373	(1.082)	16016	2.00000	1.91(M)
	146 Methyl Acetate	43	2.247	2.247	(0.538)	4149	2.00000	2.02
	148 Tert-Butyl alcohol	59	2.434	2.434	(0.583)	12015	40.0000	38.02(a)
	149 Isopropyl Alcohol	45	2.101	2.101	(0.503)	5607	40.0000	33.97

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Date : 16-DEC-2022 13:02
Client ID: VSTD002
Sample Info: VSTD002;VSTD0021;4;
Purge Volume: 5.0
Column phase: DB624

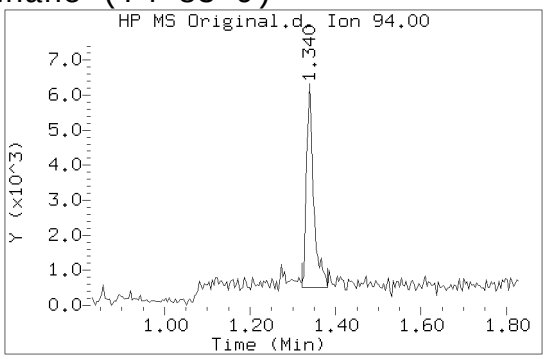
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

Bromomethane (74-83-9)

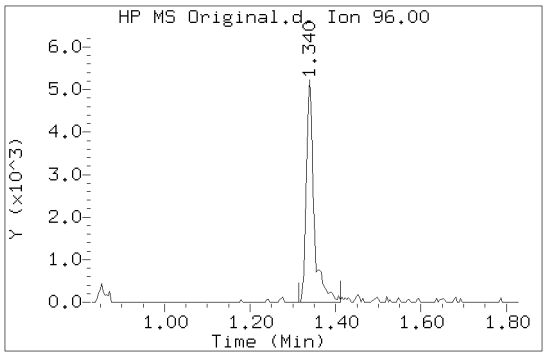
BEFORE

MASS
94
AREA
6762
HEIGHT
5808
27-Dec-2022
16:03
linh
pham



BEFORE

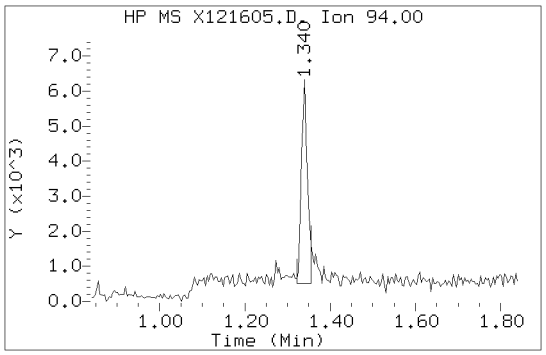
MASS
96
AREA
6661
HEIGHT
5227
27-Dec-2022
16:03
linh
pham



Reason Code:

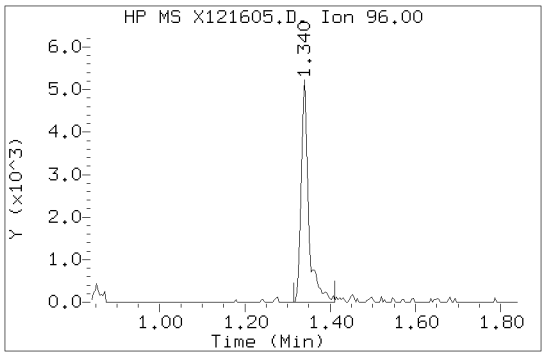
AFTER

MASS
94
AREA
5996
HEIGHT
5808
27-Dec-2022
16:07
linh
pham



AFTER

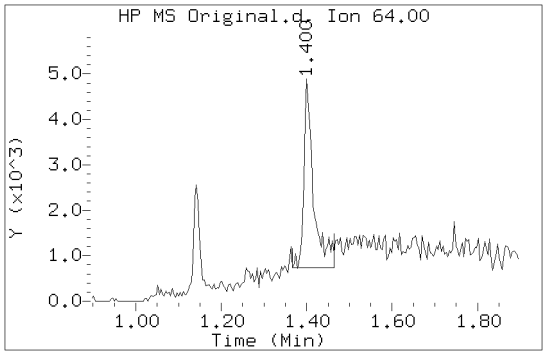
MASS
96
AREA
6661
HEIGHT
5227
27-Dec-2022
16:07
linh
pham



Chloroethane (75-00-3)

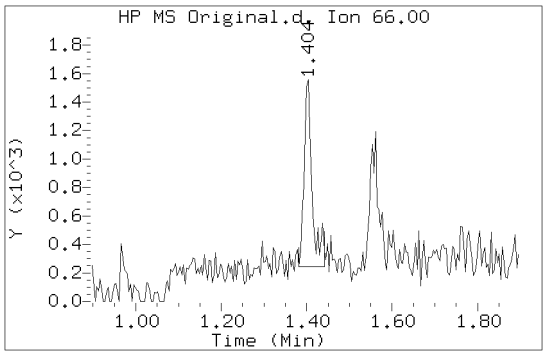
BEFORE

MASS
64
AREA
6641
HEIGHT
4162
27-Dec-2022
16:03
linh
pham



BEFORE

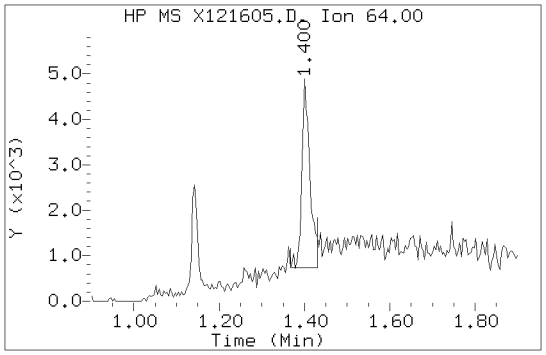
MASS
66
AREA
1745
HEIGHT
1315
27-Dec-2022
16:03
linh
pham



Reason Code:

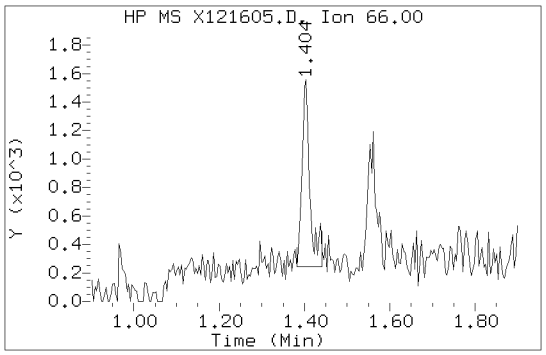
AFTER

MASS
64
AREA
5667
HEIGHT
4162
27-Dec-2022
16:07
linh
pham



AFTER

MASS
66
AREA
1745
HEIGHT
1315
27-Dec-2022
16:07
linh
pham

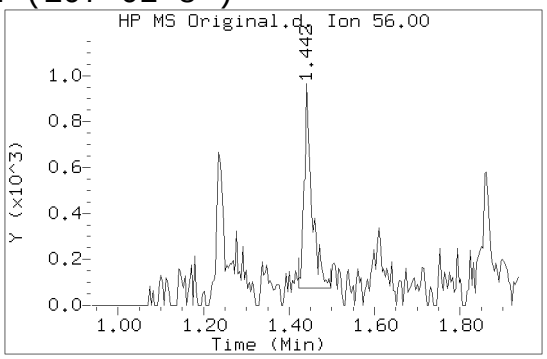


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

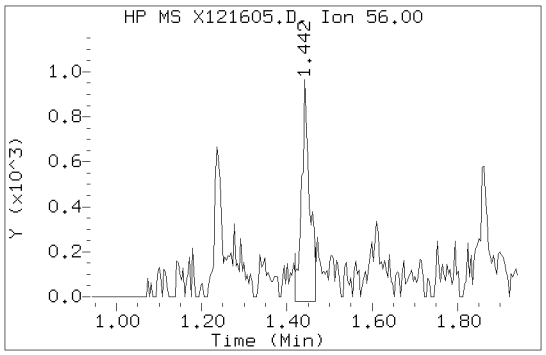
Acrolein (107-02-8)

Reason Code:

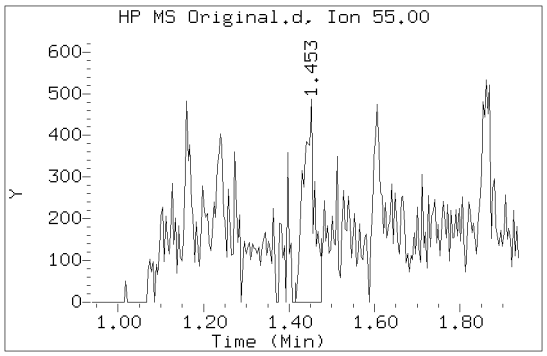
BEFORE
MASS
56
AREA
1122
HEIGHT
890
27-Dec-2022
16:03
linh
pham



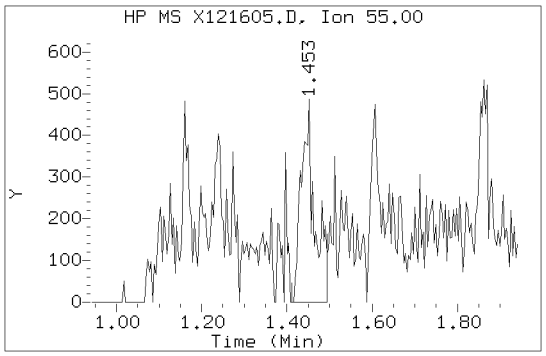
AFTER
MASS
56
AREA
1317
HEIGHT
985
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
55
AREA
885
HEIGHT
487
27-Dec-2022
16:03
linh
pham



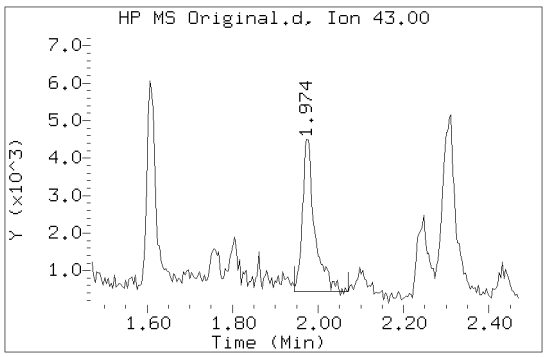
AFTER
MASS
55
AREA
1067
HEIGHT
487
27-Dec-2022
16:07
linh
pham



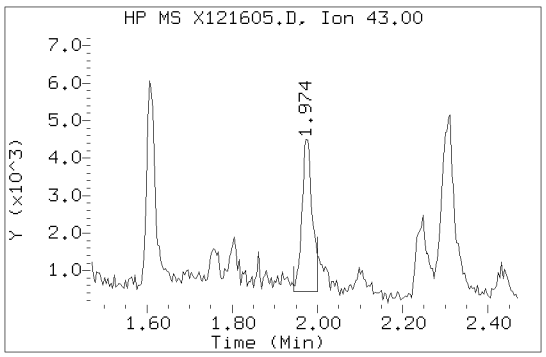
Acetone (67-64-1)

Reason Code:

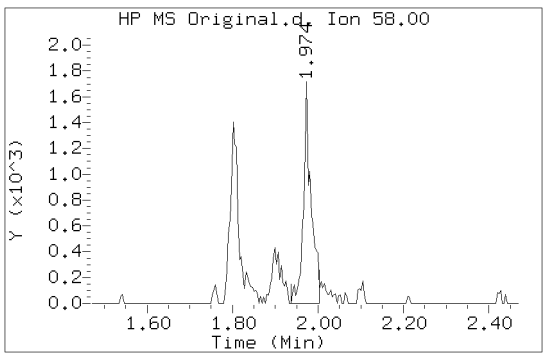
BEFORE
MASS
43
AREA
8369
HEIGHT
4066
27-Dec-2022
16:03
linh
pham



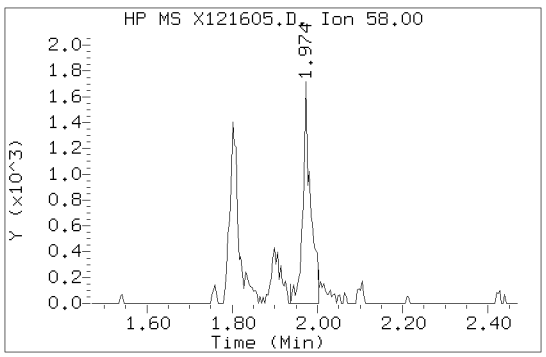
AFTER
MASS
43
AREA
7041
HEIGHT
4066
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
58
AREA
2165
HEIGHT
1717
27-Dec-2022
16:03
linh
pham



AFTER
MASS
58
AREA
2165
HEIGHT
1717
27-Dec-2022
16:07
linh
pham

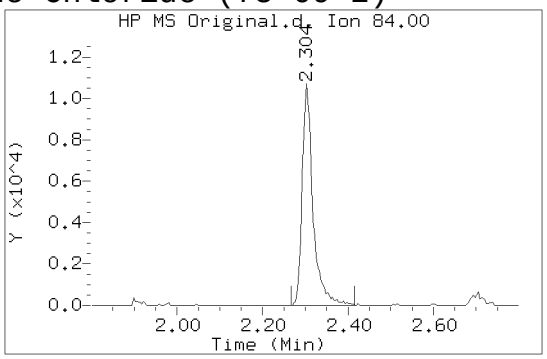


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

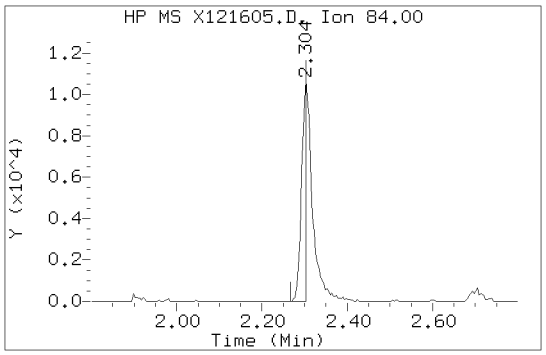
Methylene Chloride (75-09-2)

Reason Code:

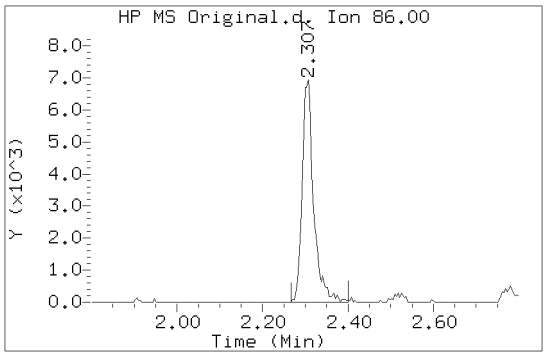
BEFORE
MASS
84
AREA
19299
HEIGHT
10710
27-Dec-2022
16:03
linh
pham



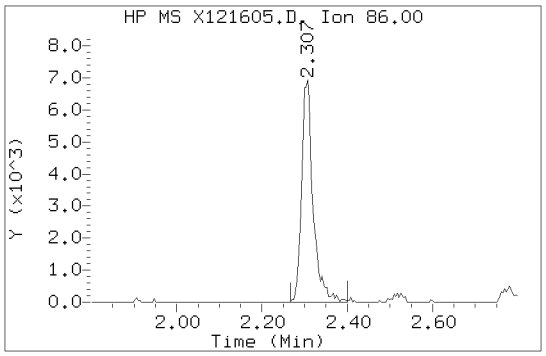
AFTER
MASS
84
AREA
9194
HEIGHT
10710
27-Dec-2022
16:07
linh
pham



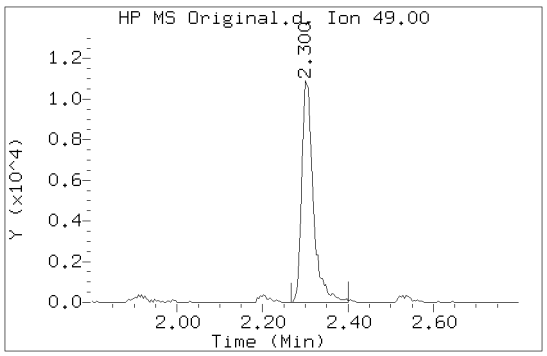
BEFORE
MASS
86
AREA
13231
HEIGHT
6936
27-Dec-2022
16:03
linh
pham



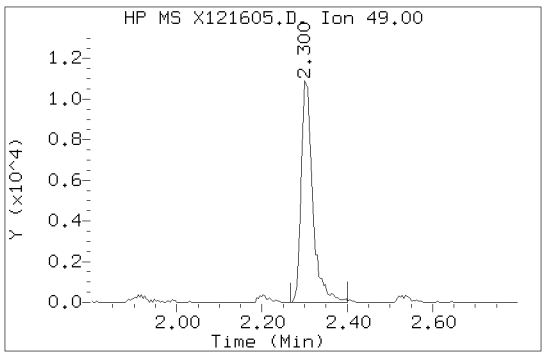
AFTER
MASS
86
AREA
13231
HEIGHT
6936
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
49
AREA
21067
HEIGHT
10905
27-Dec-2022
16:03
linh
pham



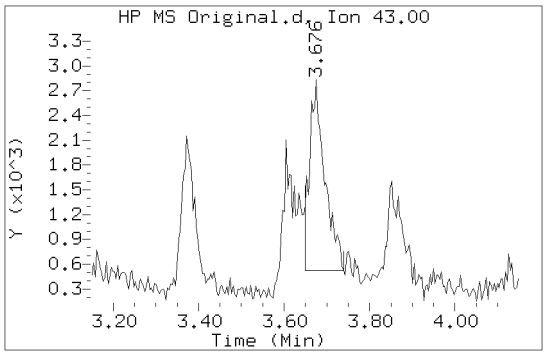
AFTER
MASS
49
AREA
21067
HEIGHT
10905
27-Dec-2022
16:07
linh
pham



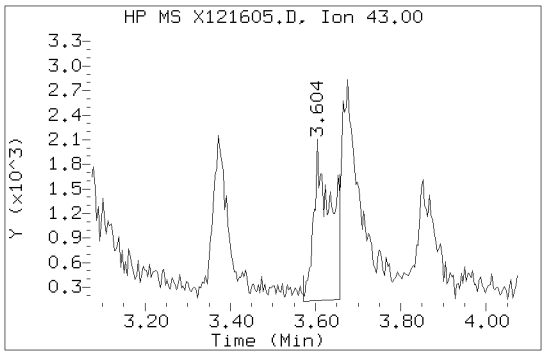
2-Butanone (78-93-3)

Reason Code:

BEFORE
MASS
43
AREA
5778
HEIGHT
2307
27-Dec-2022
16:03
linh
pham



AFTER
MASS
43
AREA
5418
HEIGHT
1969
27-Dec-2022
16:07
linh
pham



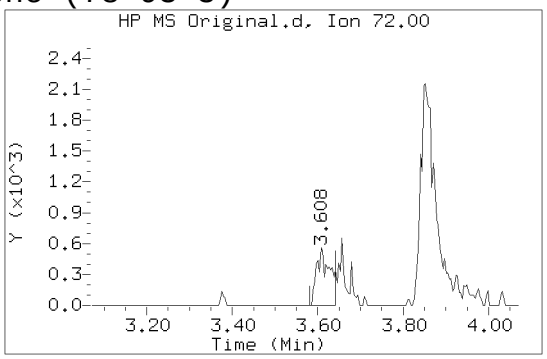
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

2-Butanone (78-93-3)

Reason Code:

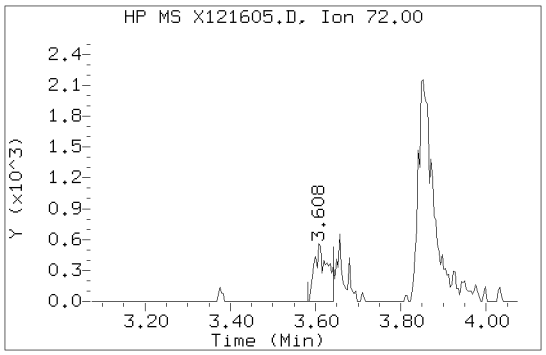
BEFORE

MASS
72
AREA
1209
HEIGHT
563
27-Dec-2022
16:03
linh
pham



AFTER

MASS
72
AREA
1209
HEIGHT
563
27-Dec-2022
16:07
linh
pham

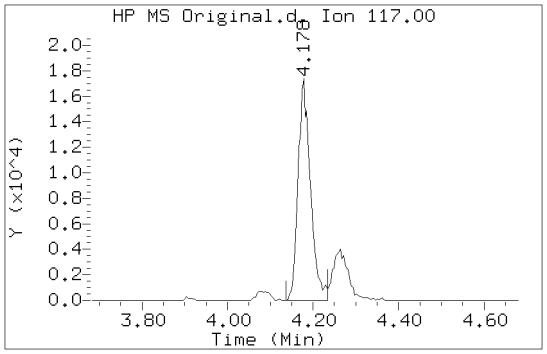


Carbon Tetrachloride (56-23-5)

Reason Code:

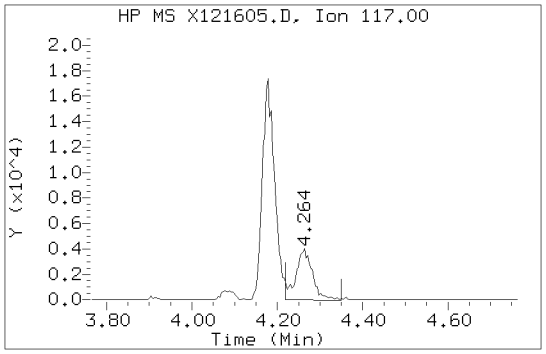
BEFORE

MASS
117
AREA
35555
HEIGHT
17376
27-Dec-2022
16:03
linh
pham



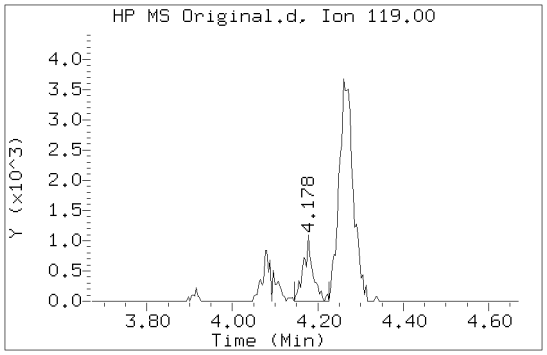
AFTER

MASS
117
AREA
11092
HEIGHT
4036
27-Dec-2022
16:07
linh
pham



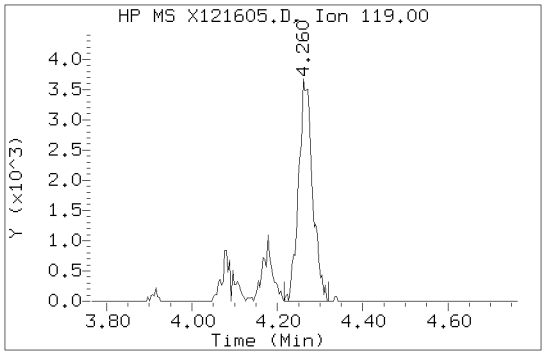
BEFORE

MASS
119
AREA
1692
HEIGHT
1100
27-Dec-2022
16:03
linh
pham



AFTER

MASS
119
AREA
8494
HEIGHT
3676
27-Dec-2022
16:07
linh
pham

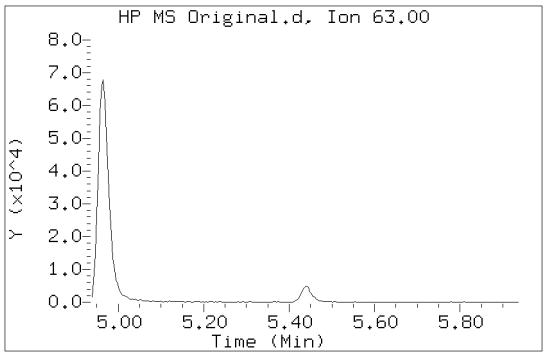


1,2-Dichloropropane (78-87-5)

Reason Code:

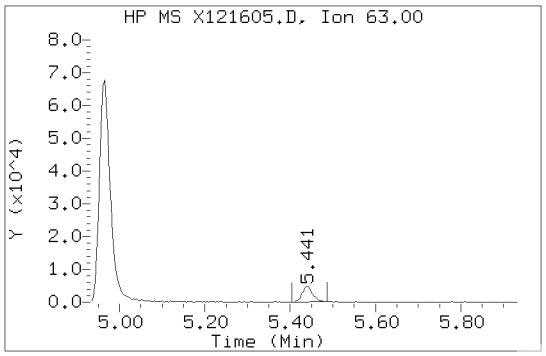
BEFORE

MASS
63
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
63
AREA
8129
HEIGHT
4705
27-Dec-2022
16:07
linh
pham



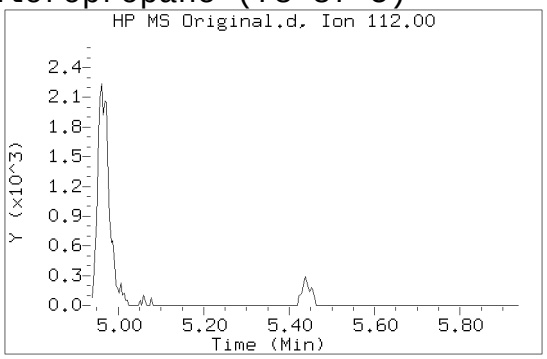
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

1,2-Dichloropropane (78-87-5)

Reason Code:

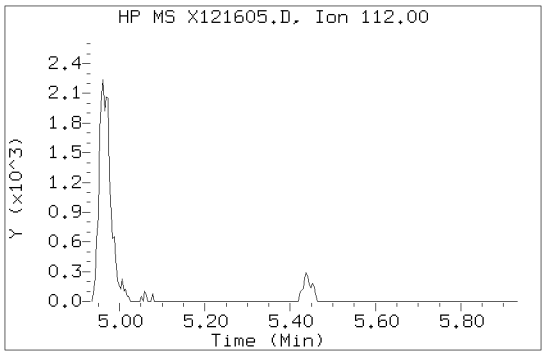
BEFORE

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
112
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

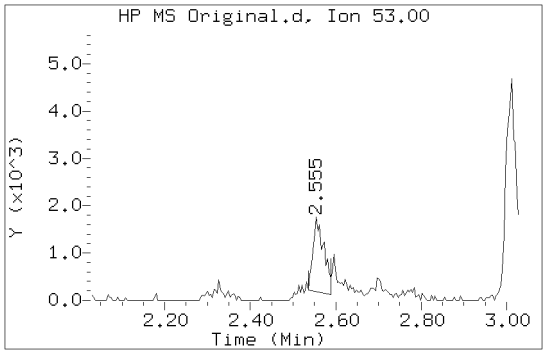


Acrylonitrile (107-13-1)

Reason Code:

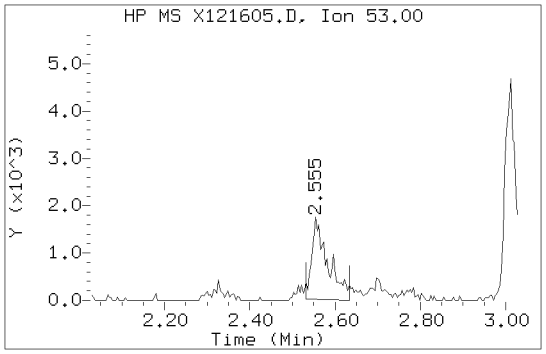
BEFORE

MASS
53
AREA
2810
HEIGHT
1577
27-Dec-2022
16:03
linh
pham



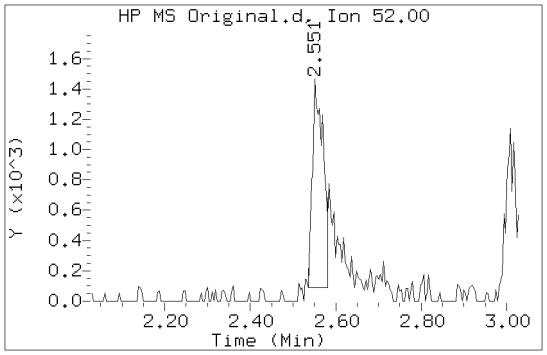
AFTER

MASS
53
AREA
4557
HEIGHT
1735
27-Dec-2022
16:07
linh
pham



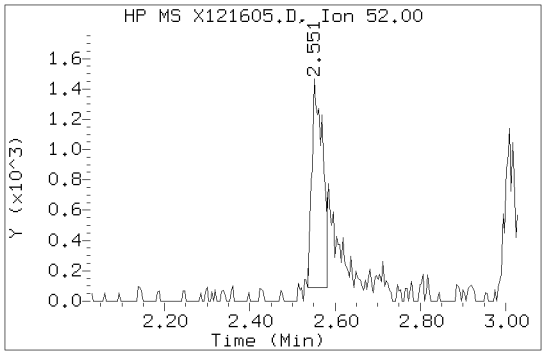
BEFORE

MASS
52
AREA
2408
HEIGHT
1379
27-Dec-2022
16:03
linh
pham



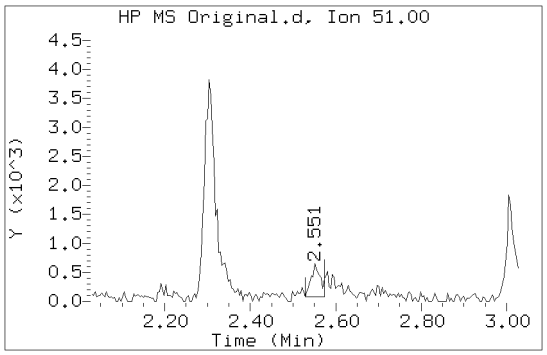
AFTER

MASS
52
AREA
2408
HEIGHT
1379
27-Dec-2022
16:07
linh
pham



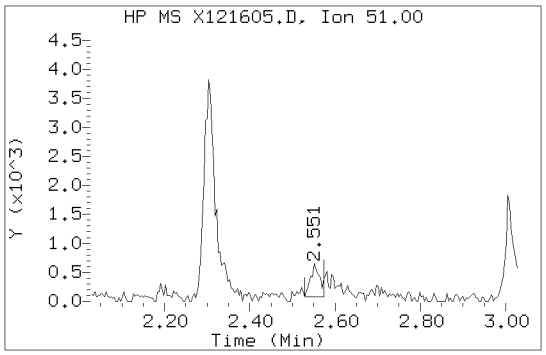
BEFORE

MASS
51
AREA
876
HEIGHT
575
27-Dec-2022
16:03
linh
pham



AFTER

MASS
51
AREA
876
HEIGHT
575
27-Dec-2022
16:07
linh
pham

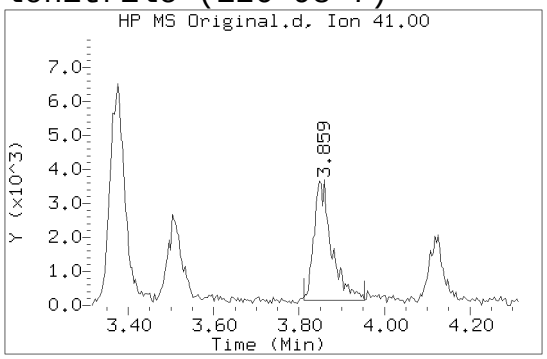


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

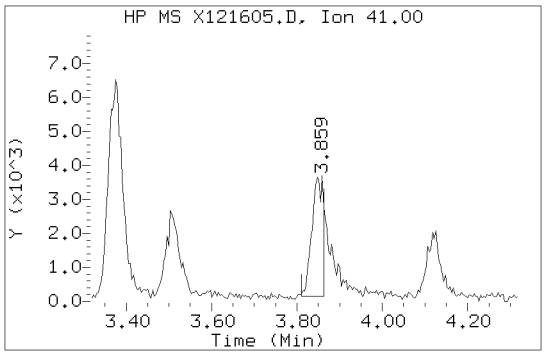
Methacrylonitrile (126-98-7)

Reason Code:

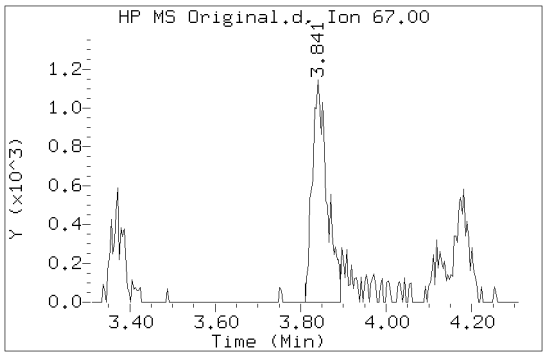
BEFORE
MASS
41
AREA
10013
HEIGHT
3544
27-Dec-2022
16:03
linh
pham



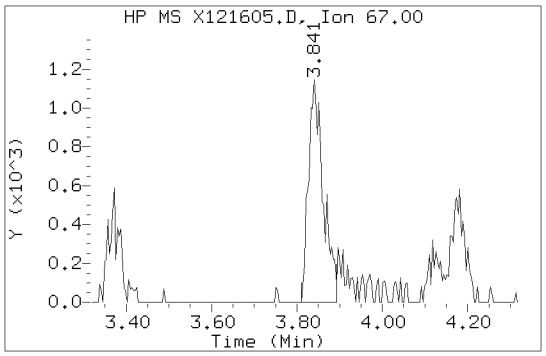
AFTER
MASS
41
AREA
6388
HEIGHT
3544
27-Dec-2022
16:07
linh
pham



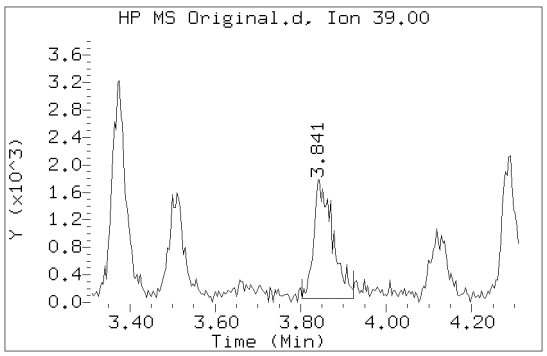
BEFORE
MASS
67
AREA
2751
HEIGHT
1145
27-Dec-2022
16:03
linh
pham



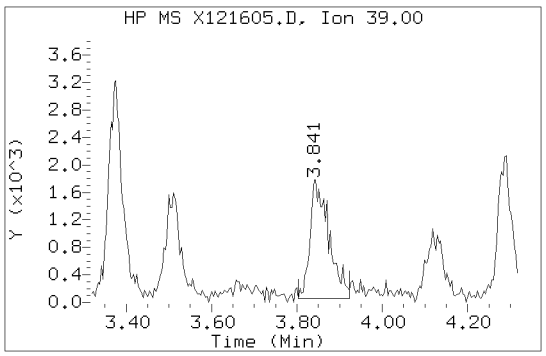
AFTER
MASS
67
AREA
2751
HEIGHT
1145
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
39
AREA
5310
HEIGHT
1724
27-Dec-2022
16:03
linh
pham



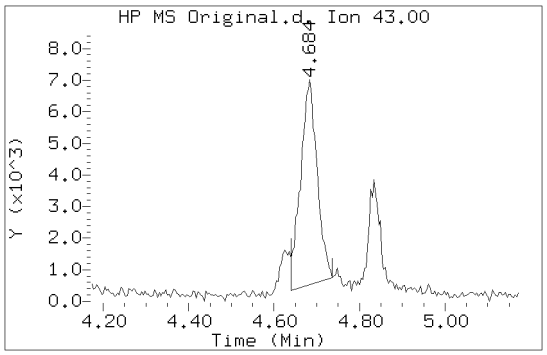
AFTER
MASS
39
AREA
5310
HEIGHT
1724
27-Dec-2022
16:07
linh
pham



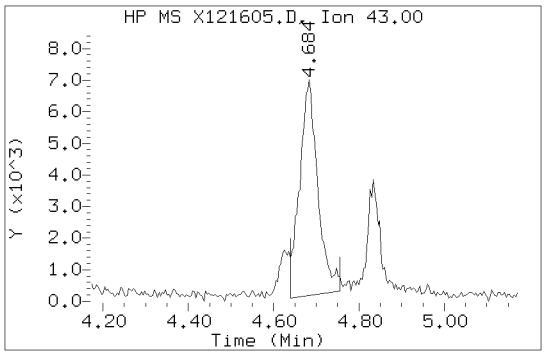
Isobutyl Alcohol (78-83-1)

Reason Code:

BEFORE
MASS
43
AREA
17811
HEIGHT
6479
27-Dec-2022
16:03
linh
pham



AFTER
MASS
43
AREA
20629
HEIGHT
6832
27-Dec-2022
16:07
linh
pham



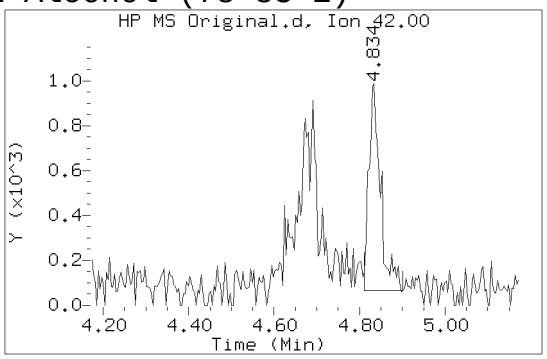
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

Isobutyl Alcohol (78-83-1)

Reason Code:

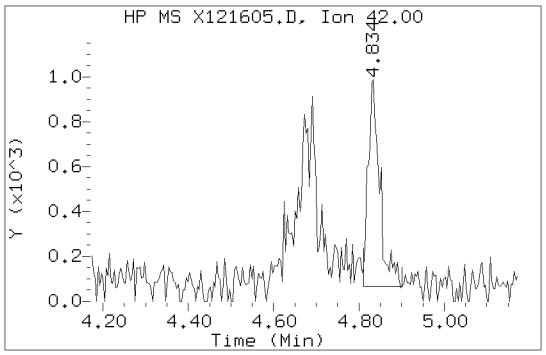
BEFORE

MASS
42
AREA
1728
HEIGHT
920
27-Dec-2022
16:03
linh
pham



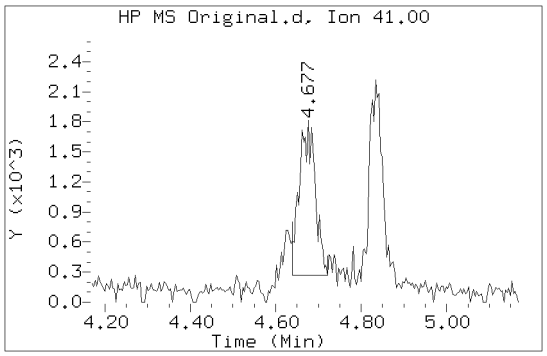
AFTER

MASS
42
AREA
1728
HEIGHT
920
27-Dec-2022
16:07
linh
pham



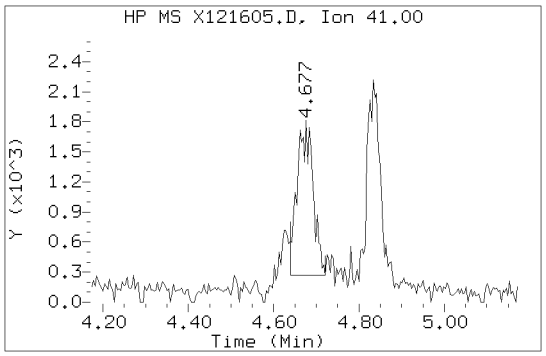
BEFORE

MASS
41
AREA
4067
HEIGHT
1547
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
4067
HEIGHT
1547
27-Dec-2022
16:07
linh
pham

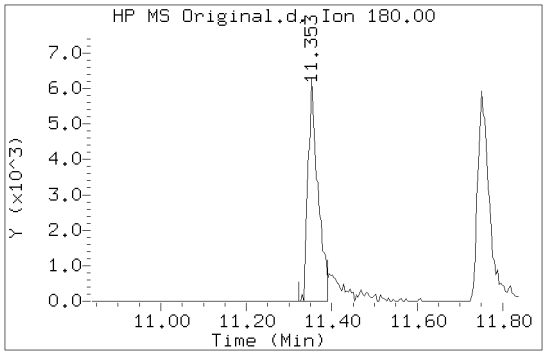


1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

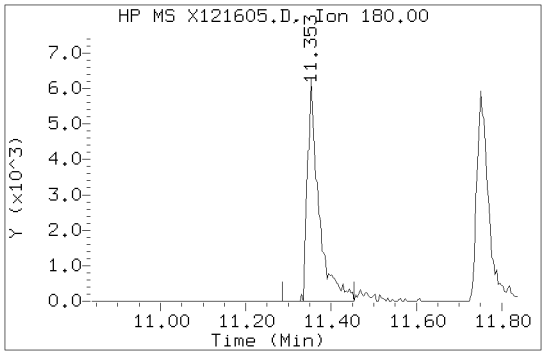
BEFORE

MASS
180
AREA
10131
HEIGHT
6269
27-Dec-2022
16:03
linh
pham



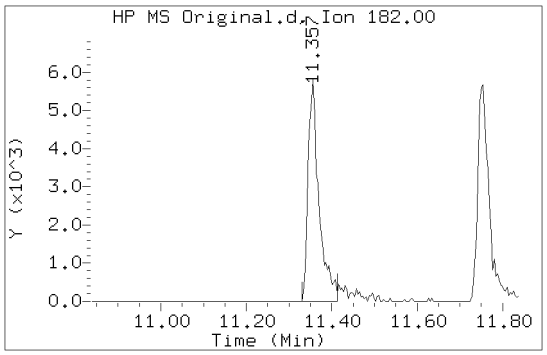
AFTER

MASS
180
AREA
11764
HEIGHT
6269
27-Dec-2022
16:07
linh
pham



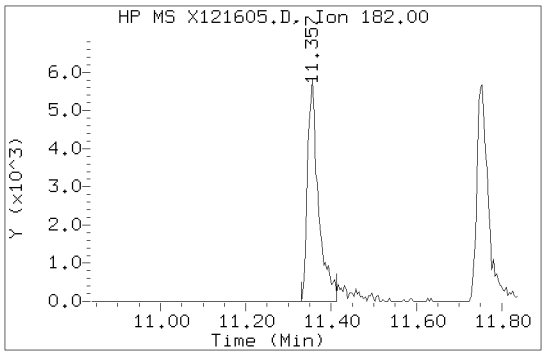
BEFORE

MASS
182
AREA
10317
HEIGHT
5807
27-Dec-2022
16:03
linh
pham



AFTER

MASS
182
AREA
10317
HEIGHT
5807
27-Dec-2022
16:07
linh
pham



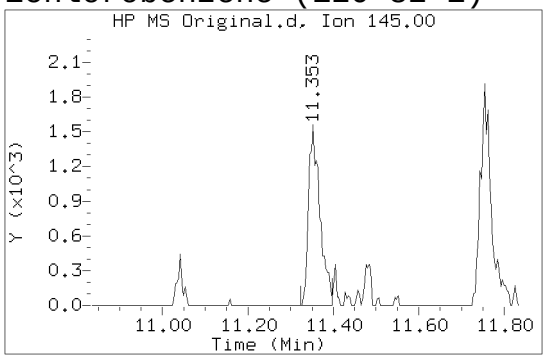
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

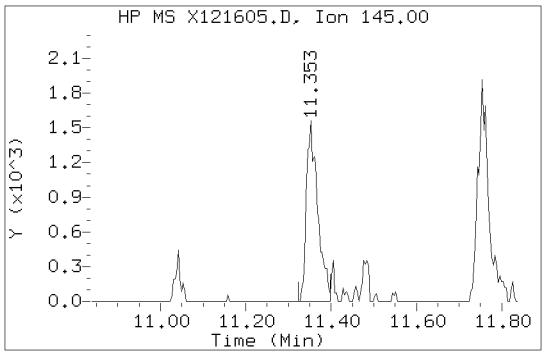
BEFORE

MASS
145
AREA
2887
HEIGHT
1565
27-Dec-2022
16:03
linh
pham



AFTER

MASS
145
AREA
2887
HEIGHT
1565
27-Dec-2022
16:07
linh
pham

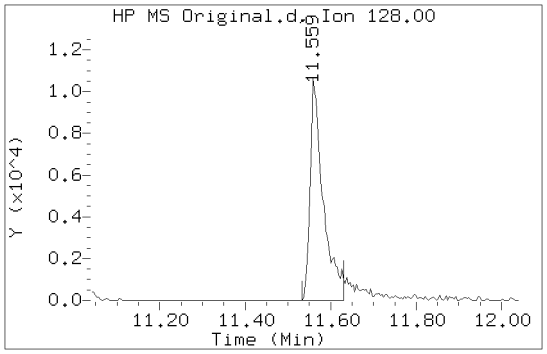


Naphthalene (91-20-3)

Reason Code:

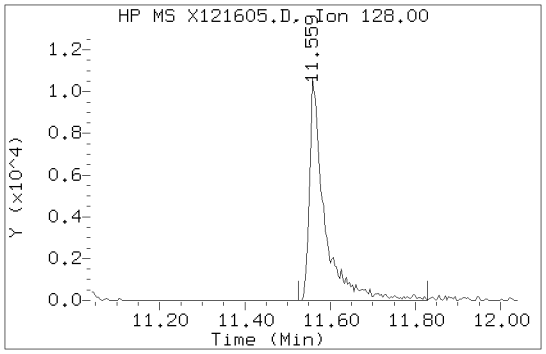
BEFORE

MASS
128
AREA
22581
HEIGHT
10616
27-Dec-2022
16:03
linh
pham



AFTER

MASS
128
AREA
26250
HEIGHT
10616
27-Dec-2022
16:07
linh
pham

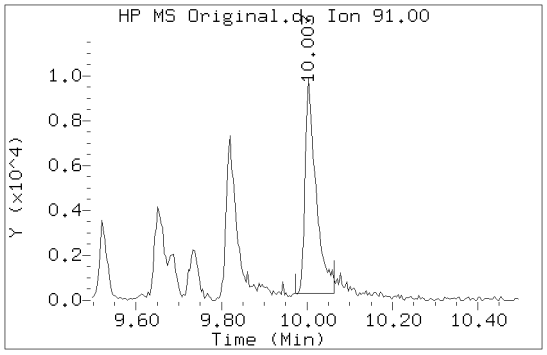


n-Butylbenzene (104-51-8)

Reason Code:

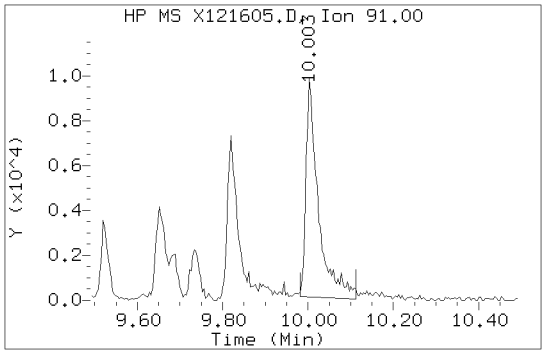
BEFORE

MASS
91
AREA
17181
HEIGHT
9558
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
19853
HEIGHT
9720
27-Dec-2022
16:07
linh
pham



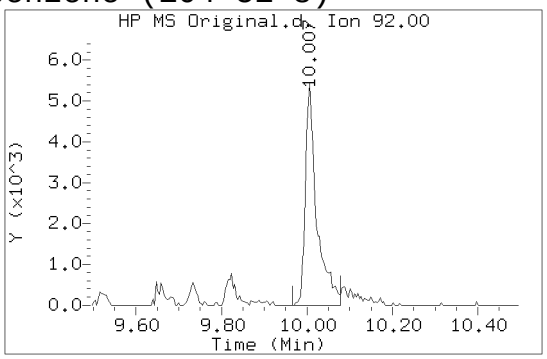
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

n-Butylbenzene (104-51-8)

Reason Code:

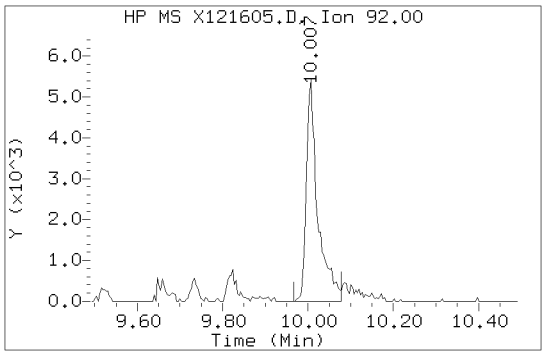
BEFORE

MASS
92
AREA
10185
HEIGHT
5422
27-Dec-2022
16:03
linh
pham



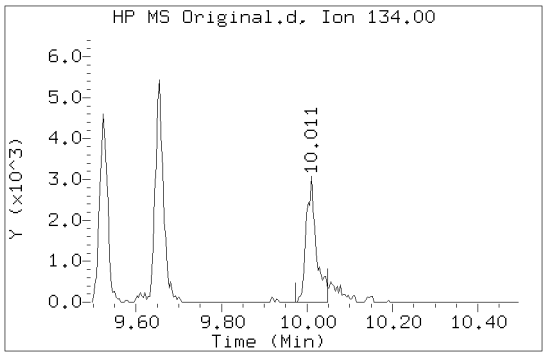
AFTER

MASS
92
AREA
10185
HEIGHT
5422
27-Dec-2022
16:07
linh
pham



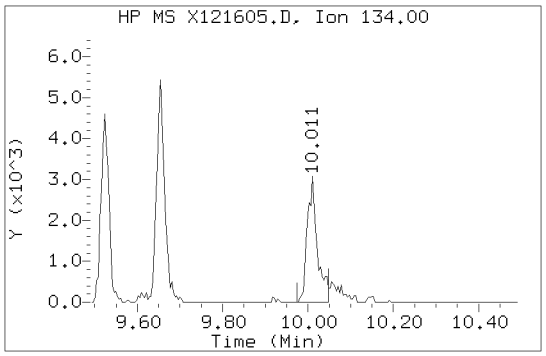
BEFORE

MASS
134
AREA
5059
HEIGHT
3076
27-Dec-2022
16:03
linh
pham



AFTER

MASS
134
AREA
5059
HEIGHT
3076
27-Dec-2022
16:07
linh
pham

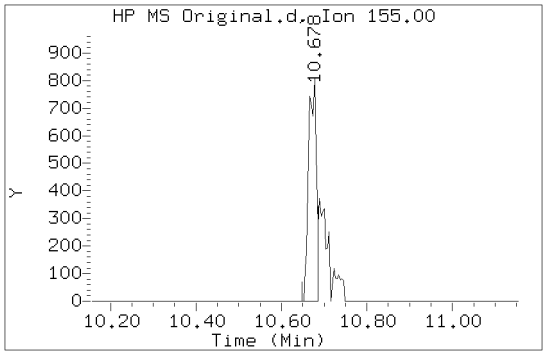


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

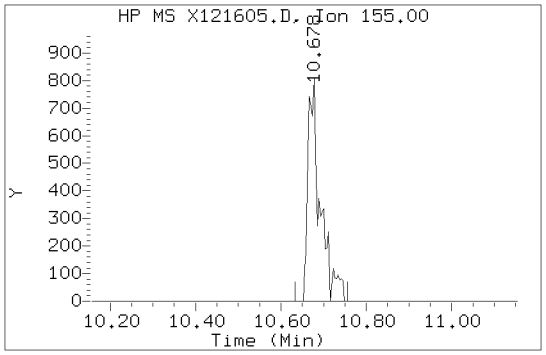
BEFORE

MASS
155
AREA
1026
HEIGHT
806
27-Dec-2022
16:03
linh
pham



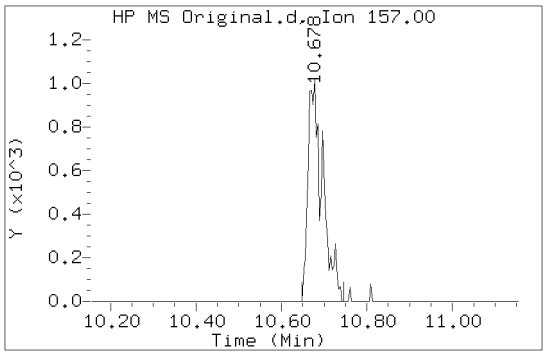
AFTER

MASS
155
AREA
1619
HEIGHT
806
27-Dec-2022
16:07
linh
pham



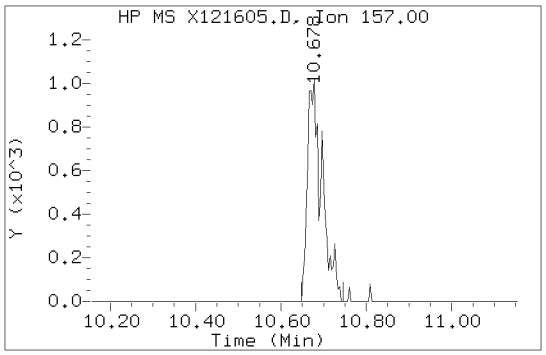
BEFORE

MASS
157
AREA
2422
HEIGHT
1016
27-Dec-2022
16:03
linh
pham



AFTER

MASS
157
AREA
2422
HEIGHT
1016
27-Dec-2022
16:07
linh
pham



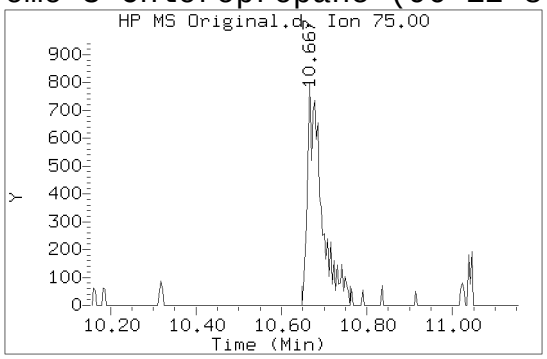
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

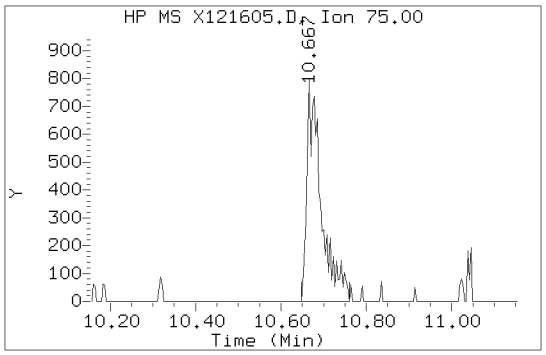
BEFORE

MASS
75
AREA
1843
HEIGHT
796
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
1843
HEIGHT
796
27-Dec-2022
16:07
linh
pham

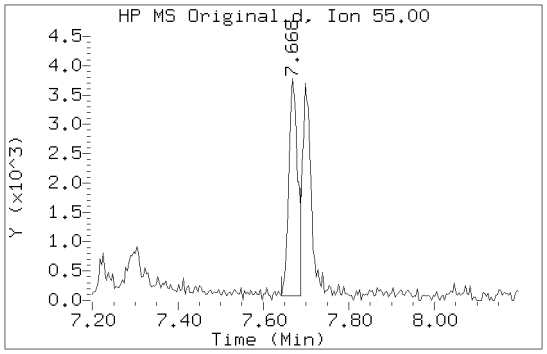


1-Chlorohexane (544-10-5)

Reason Code:

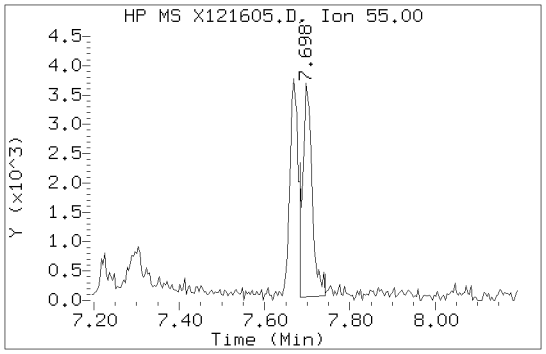
BEFORE

MASS
55
AREA
5357
HEIGHT
3703
27-Dec-2022
16:03
linh
pham



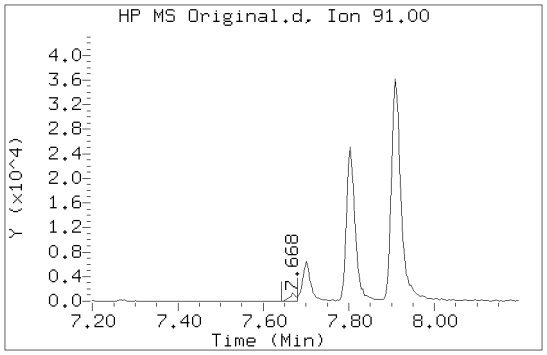
AFTER

MASS
55
AREA
5855
HEIGHT
3647
27-Dec-2022
16:07
linh
pham



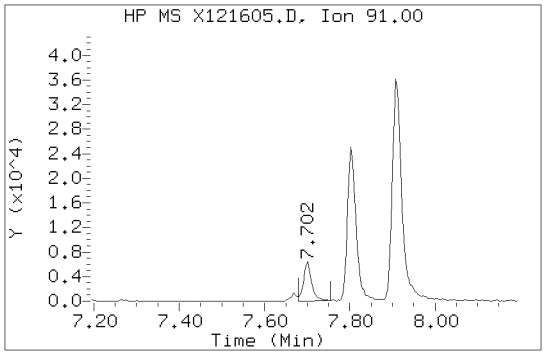
BEFORE

MASS
91
AREA
1356
HEIGHT
1324
27-Dec-2022
16:03
linh
pham



AFTER

MASS
91
AREA
8682
HEIGHT
6440
27-Dec-2022
16:07
linh
pham

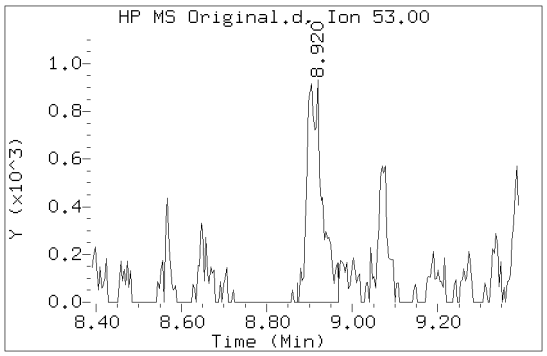


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

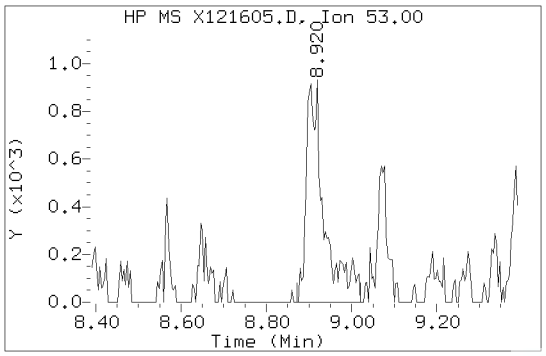
BEFORE

MASS
53
AREA
2313
HEIGHT
932
27-Dec-2022
16:03
linh
pham



AFTER

MASS
53
AREA
2690
HEIGHT
932
27-Dec-2022
16:07
linh
pham



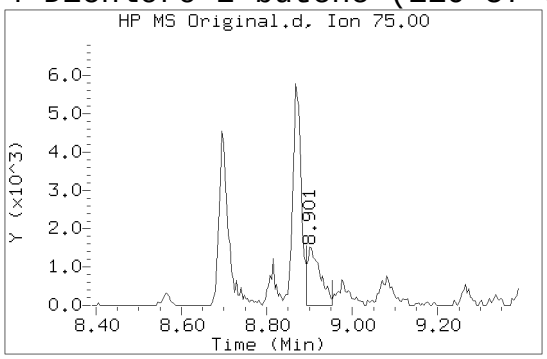
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

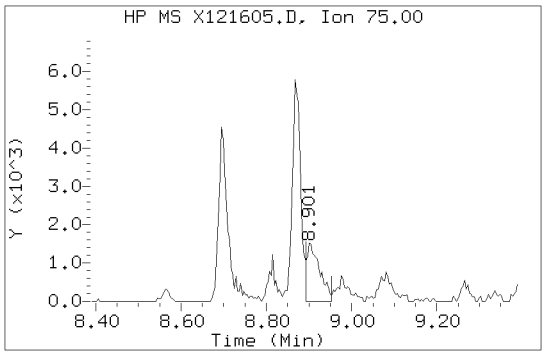
BEFORE

MASS
75
AREA
3228
HEIGHT
1526
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
3228
HEIGHT
1526
27-Dec-2022
16:07
linh
pham

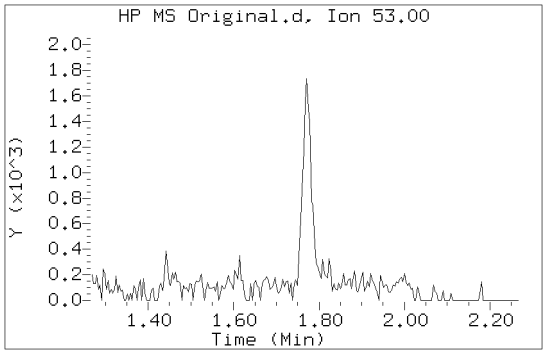


Chloroprene (126-99-8)

Reason Code:

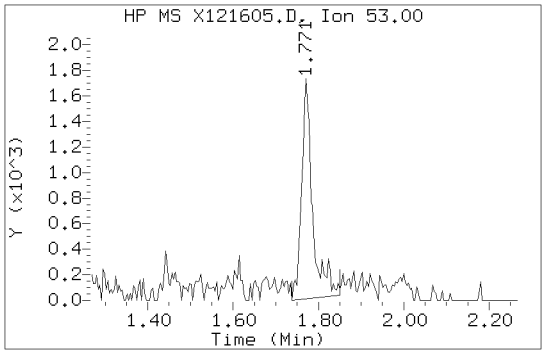
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



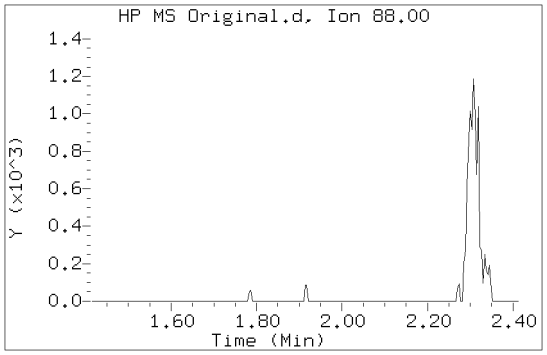
AFTER

MASS
53
AREA
3126
HEIGHT
1722
27-Dec-2022
16:07
linh
pham



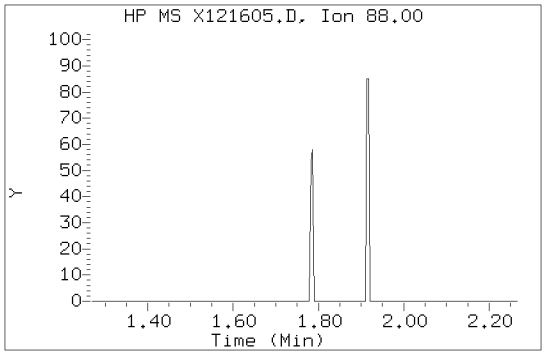
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

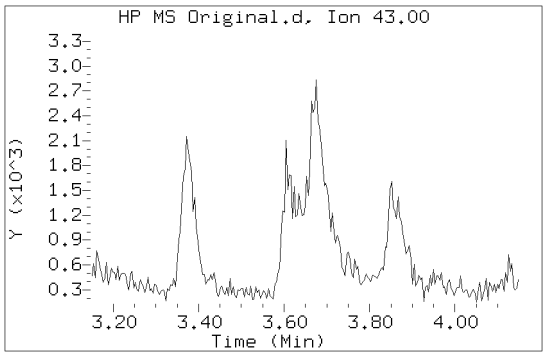


Ethyl Acetate (141-78-6)

Reason Code:

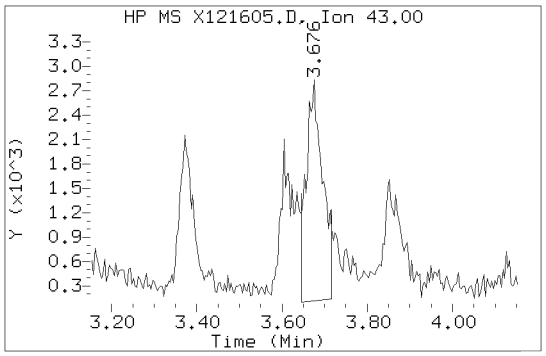
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

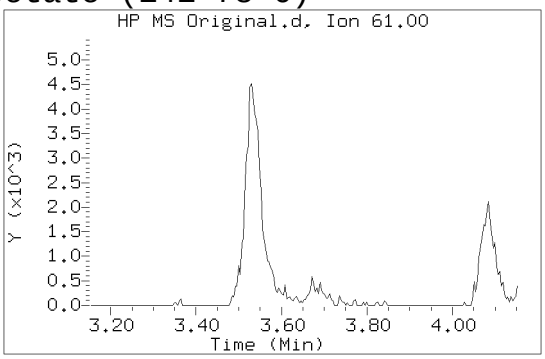
MASS
43
AREA
7422
HEIGHT
2716
27-Dec-2022
16:07
linh
pham



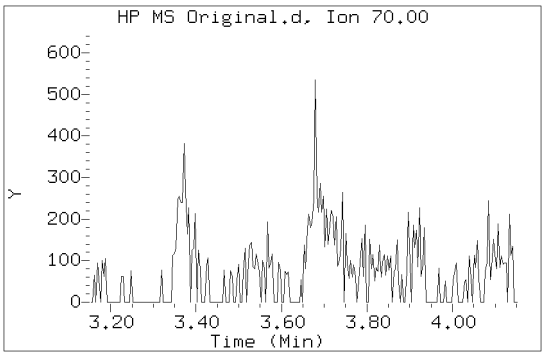
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

Ethyl Acetate (141-78-6)

BEFORE
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

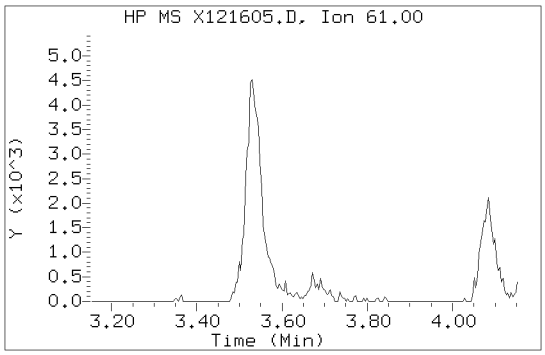


BEFORE
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

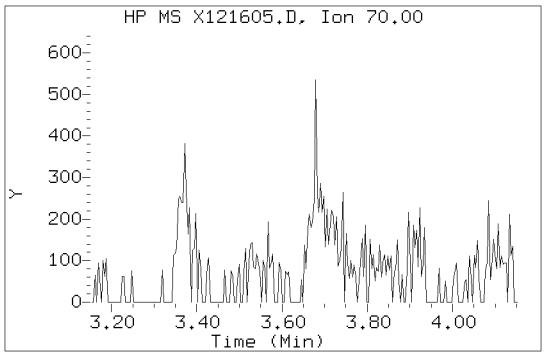


Reason Code:

AFTER
MASS
61
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

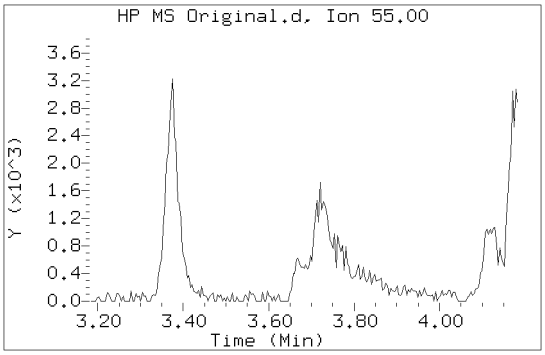


AFTER
MASS
70
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

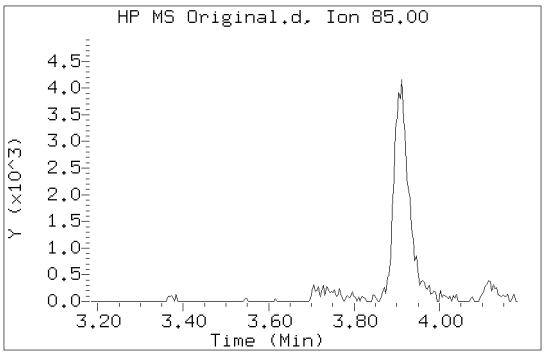


Methyl Acrylate (96-33-3)

BEFORE
MASS
55
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

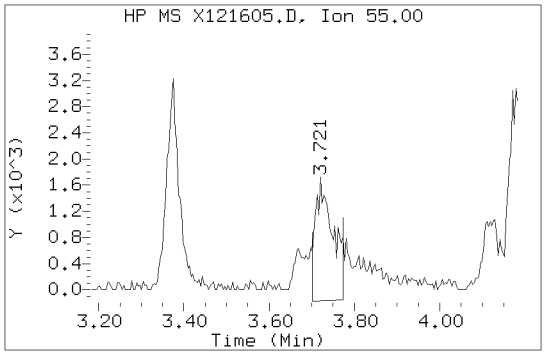


BEFORE
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

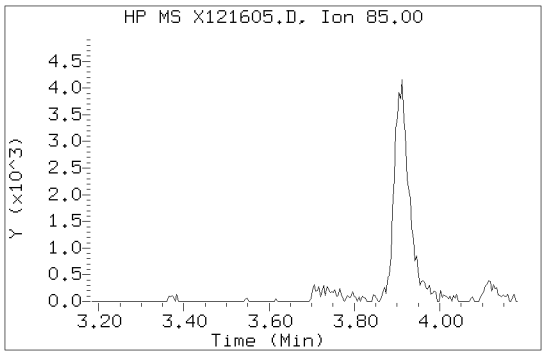


Reason Code:

AFTER
MASS
55
AREA
5443
HEIGHT
1892
27-Dec-2022
16:07
linh
pham



AFTER
MASS
85
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham

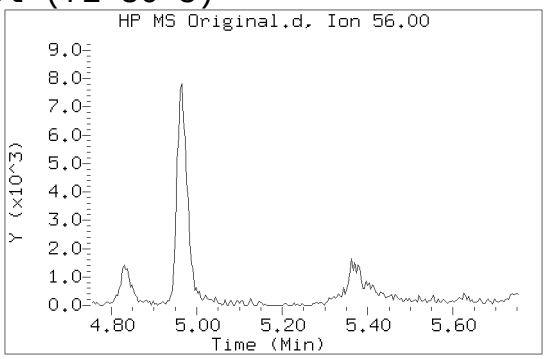


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

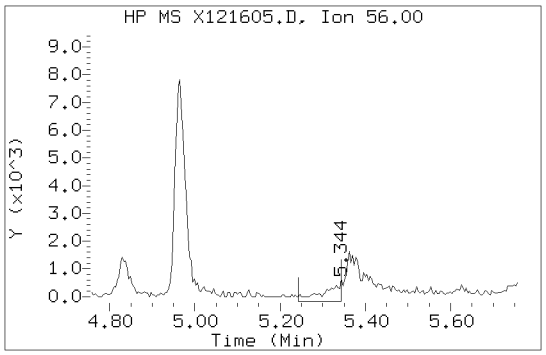
n-Butanol (71-36-3)

Reason Code:

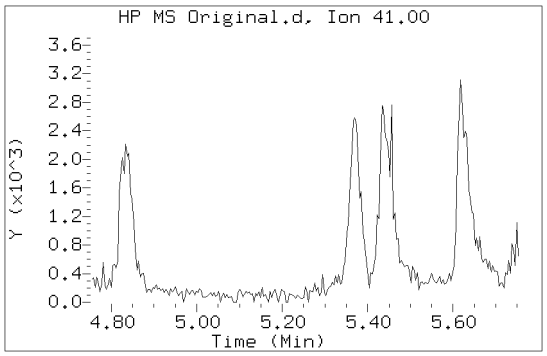
BEFORE
MASS
56
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



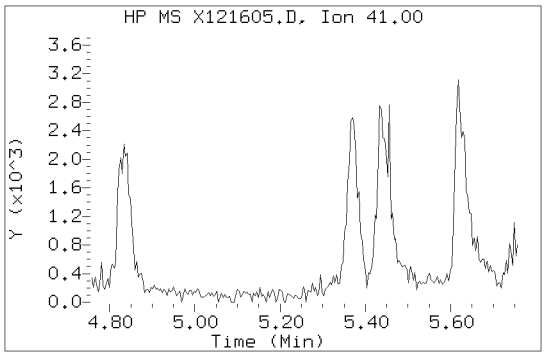
AFTER
MASS
56
AREA
2004
HEIGHT
808
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



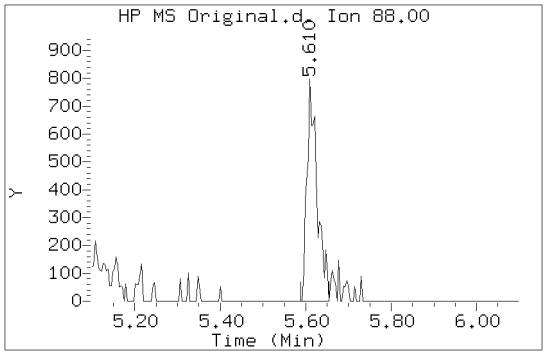
AFTER
MASS
41
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



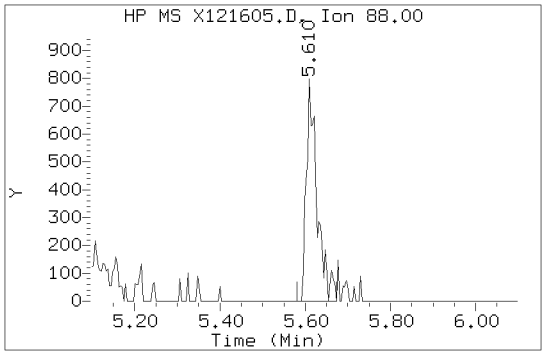
1,4-Dioxane ()

Reason Code:

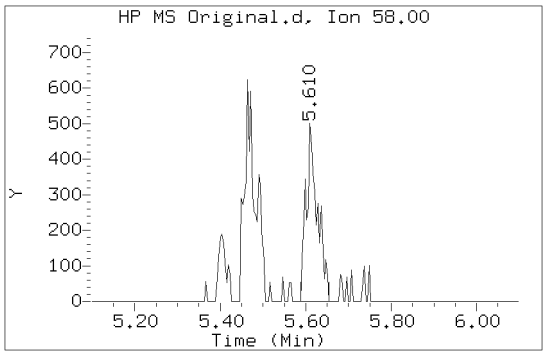
BEFORE
MASS
88
AREA
1335
HEIGHT
798
27-Dec-2022
16:03
linh
pham



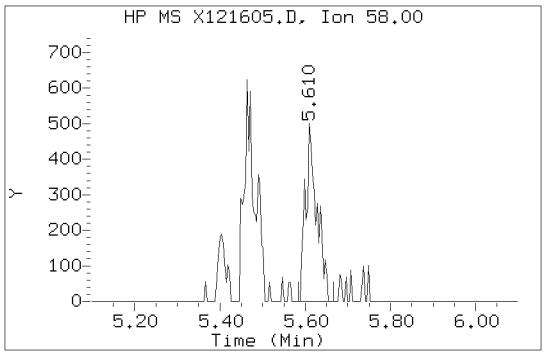
AFTER
MASS
88
AREA
1409
HEIGHT
798
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
58
AREA
934
HEIGHT
501
27-Dec-2022
16:03
linh
pham



AFTER
MASS
58
AREA
934
HEIGHT
501
27-Dec-2022
16:07
linh
pham

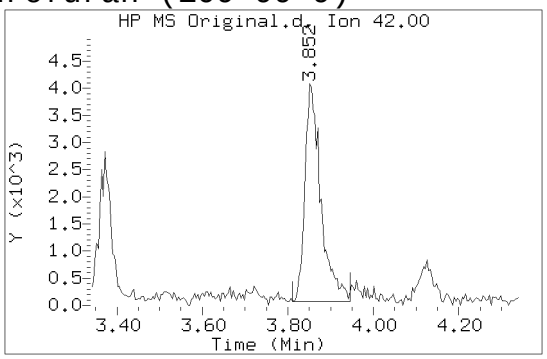


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

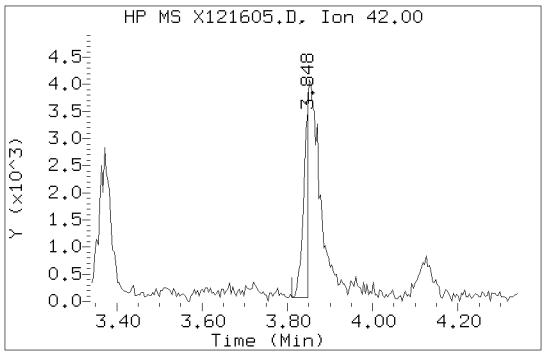
Tetrahydrofuran (109-99-9)

Reason Code:

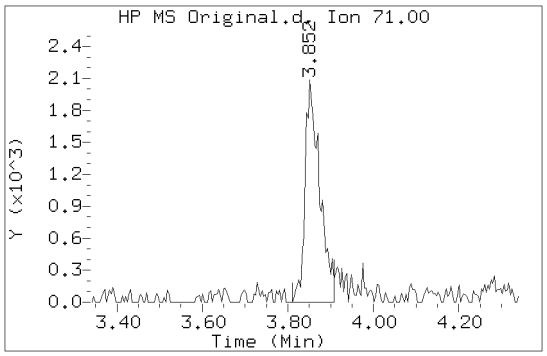
BEFORE
MASS
42
AREA
10469
HEIGHT
4012
27-Dec-2022
16:03
linh
pham



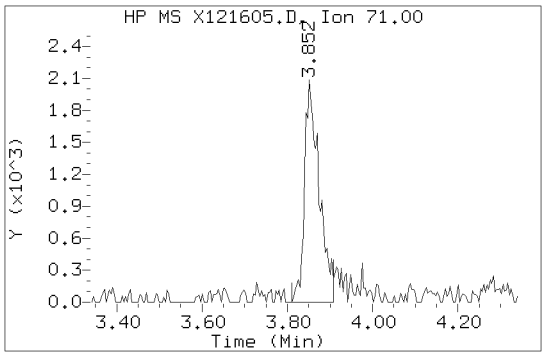
AFTER
MASS
42
AREA
2867
HEIGHT
3419
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
71
AREA
5020
HEIGHT
2086
27-Dec-2022
16:03
linh
pham



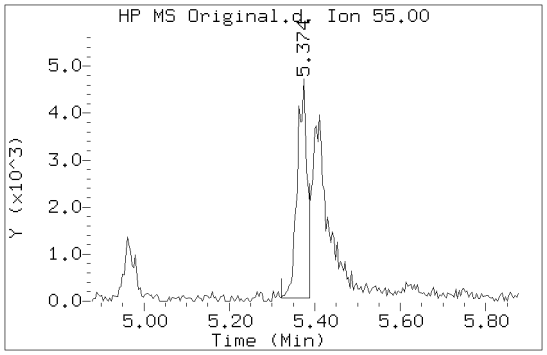
AFTER
MASS
71
AREA
5020
HEIGHT
2086
27-Dec-2022
16:07
linh
pham



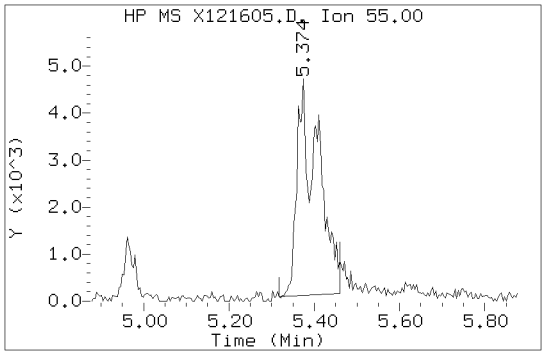
Methylcyclohexane (108-87-2)

Reason Code:

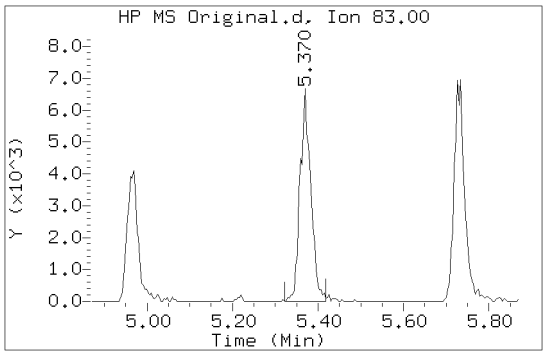
BEFORE
MASS
55
AREA
7676
HEIGHT
4656
27-Dec-2022
16:03
linh
pham



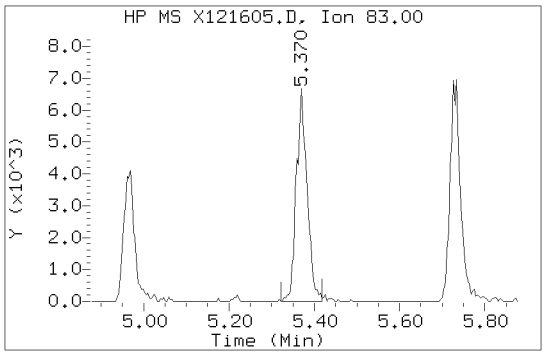
AFTER
MASS
55
AREA
16016
HEIGHT
4611
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
83
AREA
11881
HEIGHT
6672
27-Dec-2022
16:03
linh
pham



AFTER
MASS
83
AREA
11881
HEIGHT
6672
27-Dec-2022
16:07
linh
pham

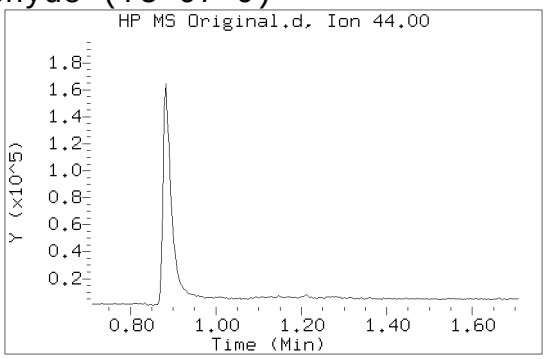


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121605.D
Inj Date : 16-DEC-2022 13:02
InstruID : voa6.i
LabSampID : VSTD002

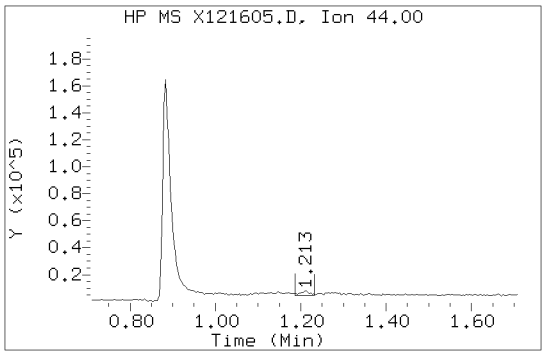
Acetaldehyde (75-07-0)

Reason Code:

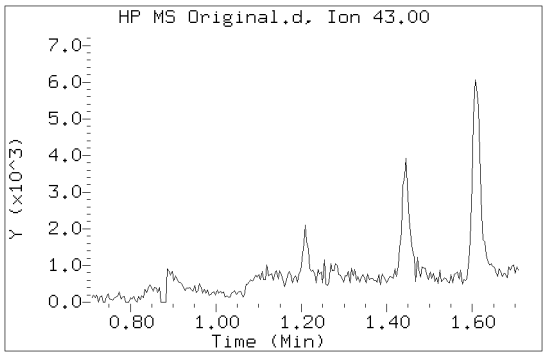
BEFORE
MASS
44
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



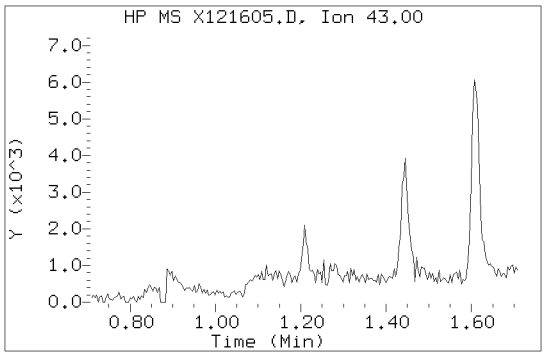
AFTER
MASS
44
AREA
5661
HEIGHT
3463
27-Dec-2022
16:07
linh
pham



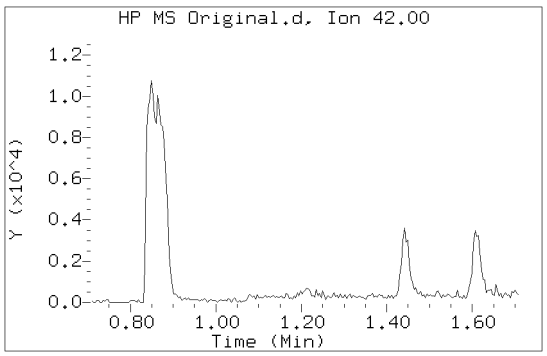
BEFORE
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



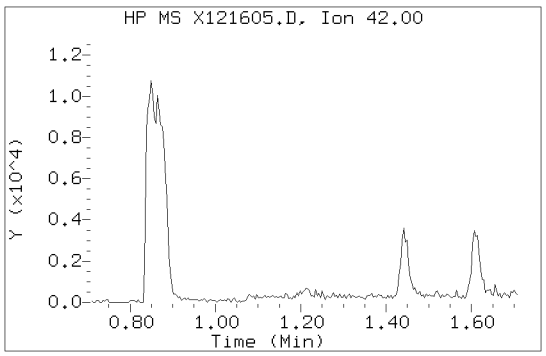
AFTER
MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER
MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 16-DEC-2022 13:23
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 13:02 Cal File: X121605.D
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	450664	50.0000	
135 1,4-Dioxane	88	5.602	5.602	(1.341)	4197	100.000	101.88(M)
140 1,3-Butadiene	54	1.164	1.164	(0.279)	14283	5.00000	4.61
25 Methacrylonitrile	41	3.840	3.840	(0.919)	15701	5.00000	4.92(M)
12 Isobutyl Alcohol	43	4.680	4.680	(1.120)	51624	100.000	101.84
13 Acetonitrile	39	2.198	2.198	(0.526)	19635	50.0000	47.87
14 Allyl Chloride	41	2.198	2.198	(0.526)	37993	5.00000	4.86
4 Propionitrile	54	3.660	3.660	(0.876)	23049	50.0000	50.12
136 n-Hexane	57	2.772	2.772	(0.664)	14618	5.00000	4.50
72 trans-1,4-Dichloro-2-butene	53	8.901	8.901	(1.161)	6648	5.00000	4.70(M)
194 Acetaldehyde	44	1.209	1.209	(0.289)	6161	20.0000	0.80(M)
23 Chloroprene	53	1.771	1.771	(0.424)	7154	5.00000	4.66(M)
145 alpha-Methylstyrene	118	9.261	9.261	(0.958)	37831	5.00000	4.79
200 Dimethyl Disulfide	94	6.198	6.198	(0.808)	40144	5.00000	4.53
139 Diethyl ether	59	1.756	1.756	(0.420)	15119	5.00000	5.02
130 Ethyl Acetate	43	3.660	3.660	(0.876)	18020	5.00000	5.12(M)
40 Methyl Methacrylate	41	5.617	5.617	(1.345)	15119	5.00000	4.92
49 Ethyl Methacrylate	69	6.715	6.715	(1.353)	13801	5.00000	4.27
132 n-Butanol	56	5.287	5.287	(1.266)	4891	100.000	125.41(M)
142 Tetrahydrofuran	42	3.848	3.848	(0.921)	7598	10.0000	10.82(M)

150	Allyl alcohol	57	2.772	2.772 (0.664)	14618	100.000	83.50
166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	80329	5.00000	4.68

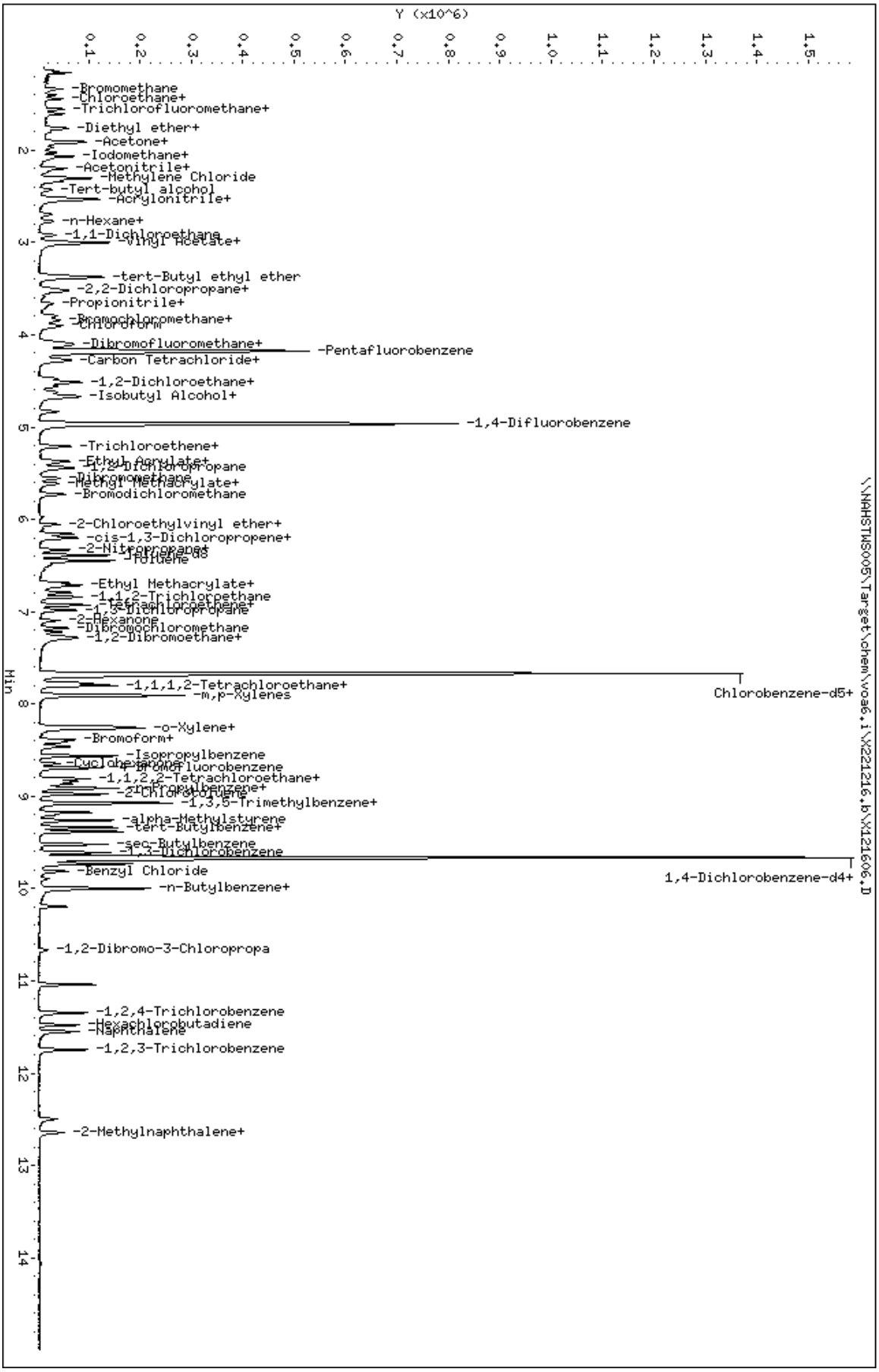
			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131	Methyl Acrylate	55	3.705	3.705	(0.887)	14950	5.00000	4.88(M)
	162	Butyl acrylate	55	8.260	8.260	(1.077)	38320	5.00000	4.48
	2	Dichlorodifluoromethane	85	0.972	0.972	(0.233)	15008	5.00000	5.11
	3	Chloromethane	50	1.077	1.077	(0.258)	19623	5.00000	6.81
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	19002	5.00000	4.82
	6	Bromomethane	94	1.336	1.336	(0.320)	15112	5.00000	6.66
	7	Chloroethane	64	1.400	1.400	(0.335)	14167	5.00000	5.17
	8	Trichlorofluoromethane	101	1.557	1.557	(0.373)	26620	5.00000	4.83
	9	Acrolein	56	1.441	1.441	(0.345)	2699	10.0000	11.33
	10	Acetone	43	1.973	1.973	(0.472)	17632	10.0000	13.91
	11	1,1-Dichloroethene	96	1.910	1.910	(0.457)	16850	5.00000	4.92
	15	Iodomethane	142	2.026	2.026	(0.485)	26708	10.0000	9.27
	16	Acrylonitrile	53	2.551	2.551	(0.611)	11047	10.0000	9.52
	17	Methylene Chloride	84	2.303	2.303	(0.551)	22932	5.00000	4.88(M)
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	56330	5.00000	5.03
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	85418	10.0000	9.54
	20	trans-1,2-Dichloroethene	96	2.532	2.532	(0.606)	19006	5.00000	4.96
	21	Vinyl Acetate	43	3.000	3.000	(0.718)	101238	10.0000	10.30
	22	1,1-Dichloroethane	63	2.922	2.922	(0.699)	33810	5.00000	5.03
	24	2-Butanone	43	3.600	3.600	(0.862)	11771	10.0000	11.53(H)
	26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	27881	5.00000	4.88
	27	cis-1,2-Dichloroethene	96	3.533	3.533	(0.846)	22734	5.00000	4.88
	28	Chloroform	83	3.904	3.904	(0.935)	38156	5.00000	5.06
	29	Bromochloromethane	128	3.799	3.799	(0.909)	13213	5.00000	5.18
$	30	Dibromofluoromethane	113	4.103	4.103	(0.982)	24255	5.00000	5.45
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	29017	5.00000	4.85
	32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	23845	5.00000	4.90(M)
	33	1,2-Dichloroethane	62	4.556	4.556	(0.918)	28173	5.00000	5.01
	34	Carbon Tetrachloride	117	4.264	4.264	(0.859)	24171	5.00000	4.65
$	35	1,2-Dichloroethane-d4	65	4.477	4.477	(1.072)	24938	5.00000	5.70(M)
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	685413	50.0000	
	37	Benzene	78	4.511	4.511	(0.909)	81981	5.00000	5.00
	38	Trichloroethene	130	5.208	5.208	(1.049)	22693	5.00000	4.88
	39	Bromodichloromethane	83	5.729	5.729	(1.154)	29358	5.00000	4.77
	41	2-Chloroethylvinyl ether	63	6.056	6.056	(1.220)	17700	10.0000	10.12
	42	1,2-Dichloropropane	63	5.437	5.437	(1.095)	21679	5.00000	4.97
	44	Dibromomethane	93	5.557	5.557	(1.119)	14449	5.00000	4.88
	45	4-Methyl-2-Pentanone	43	6.329	6.329	(0.825)	34912	10.0000	9.98
	46	cis-1,3-Dichloropropene	75	6.161	6.161	(1.241)	35507	5.00000	4.92
*	47	Chlorobenzene-d5	117	7.668	7.668	(1.000)	654176	50.0000	
$	48	Toluene-d8	98	6.389	6.389	(0.833)	81640	5.00000	5.05
	50	Toluene	91	6.449	6.449	(0.841)	89594	5.00000	4.95
	51	trans-1,3-Dichloropropene	75	6.689	6.689	(1.347)	28399	5.00000	4.74(M)
	52	2-Hexanone	43	7.094	7.094	(0.925)	24056	10.0000	10.11
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	18638	5.00000	5.13
	54	1,3-Dichloropropane	76	6.985	6.985	(0.911)	35759	5.00000	5.00
	55	Dibromochloromethane	129	7.176	7.176	(0.936)	25357	5.00000	4.84
	56	Tetrachloroethene	164	6.929	6.929	(0.904)	17219	5.00000	4.60
	57	1,2-Dibromoethane	107	7.263	7.263	(0.947)	23172	5.00000	5.10
	58	1-Chlorohexane	55	7.698	7.698	(1.550)	15210	5.00000	4.59(MH)
	59	Chlorobenzene	112	7.694	7.694	(1.003)	62744	5.00000	4.89
	60	1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	22632	5.00000	4.74

61 Ethylbenzene	106	7.802	7.802 (1.018)	29550	5.00000	4.89
62 m,p-Xylenes	106	7.907	7.907 (1.031)	73283	10.0000	9.40

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.245	8.245	(1.075)	37189	5.00000	4.83
	64 Styrene	104	8.267	8.267	(1.078)	62411	5.00000	4.84
	66 Bromoform	173	8.414	8.414	(1.097)	16801	5.00000	4.63
	67 Isopropylbenzene	105	8.563	8.563	(1.117)	85440	5.00000	4.86
	68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	29807	5.00000	5.24
$	69 4-Bromofluorobenzene	95	8.695	8.695	(1.134)	32501	5.00000	5.43
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	356340	50.0000	
	71 1,2,3-Trichloropropane	75	8.867	8.867	(0.918)	20685	5.00000	5.21(M)
	73 n-Propylbenzene	91	8.916	8.916	(0.923)	97603	5.00000	4.94
	74 Bromobenzene	156	8.811	8.811	(0.912)	28887	5.00000	4.94
	75 1,3,5-Trimethylbenzene	105	9.070	9.070	(0.939)	72501	5.00000	4.97
	76 2-Chlorotoluene	91	8.976	8.976	(0.929)	65973	5.00000	5.09
	77 4-Chlorotoluene	91	9.077	9.077	(0.939)	75073	5.00000	5.08
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	59375	5.00000	4.97
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	75723	5.00000	4.93
	81 sec-Butylbenzene	105	9.523	9.523	(0.986)	77577	5.00000	4.88
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	69666	5.00000	4.89
	83 1,3-Dichlorobenzene	146	9.609	9.609	(0.995)	49954	5.00000	5.14
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	52655	5.00000	4.97
	86 Benzyl Chloride	91	9.816	9.816	(1.280)	35254	5.00000	5.95
	87 n-Butylbenzene	91	9.999	9.999	(1.035)	54831	5.00000	5.63
	88 1,2-Dichlorobenzene	146	9.995	9.995	(1.035)	50895	5.00000	5.09
	89 1,2-Dibromo-3-Chloropropane	155	10.670	10.670	(1.104)	4911	5.00000	5.49
	90 1,2,4-Trichlorobenzene	180	11.345	11.345	(1.174)	31873	5.00000	5.05
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	13454	5.00000	4.81
	92 Naphthalene	128	11.551	11.551	(1.196)	72748	5.00000	5.06
	93 1,2,3-Trichlorobenzene	180	11.746	11.746	(1.216)	30274	5.00000	5.01
M	94 1,2-Dichloroethylene (total)	96				41740	10.0000	
M	95 Xylenes (total)	106				110472	15.0000	
	141 Cyclohexane	56	4.118	4.118	(0.986)	19859	5.00000	5.52(H)
	138 Freon TF	101	1.913	1.913	(0.458)	14845	5.00000	4.48
	147 Methylcyclohexane	55	5.388	5.388	(1.085)	38650	5.00000	4.60(M)
	146 Methyl Acetate	43	2.236	2.236	(0.535)	8968	5.00000	4.42
	148 Tert-Butyl alcohol	59	2.431	2.431	(0.582)	30525	100.000	97.81
	149 Isopropyl Alcohol	45	2.097	2.097	(0.502)	16518	100.000	101.35(T)

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Date : 16-DEC-2022 13:23
Client ID: VSTD005
Sample Info: VSTD005;VSTD005;1;5;
Purge Volume: 5.0
Column phase: DB624

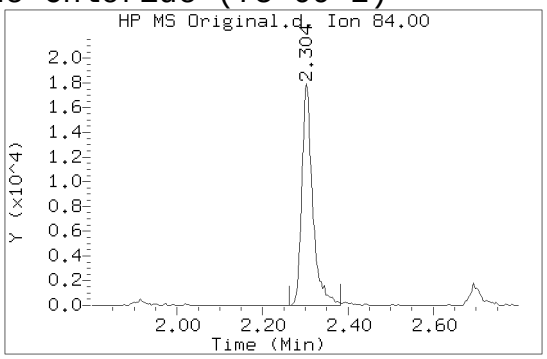
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

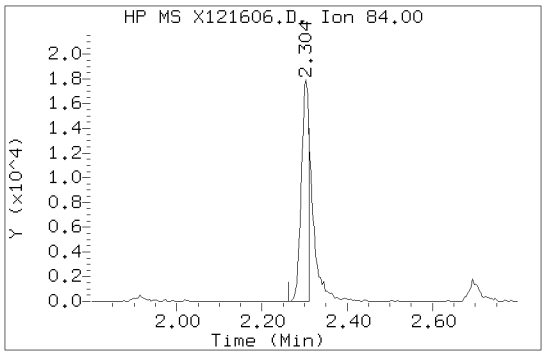
Methylene Chloride (75-09-2)

Reason Code:

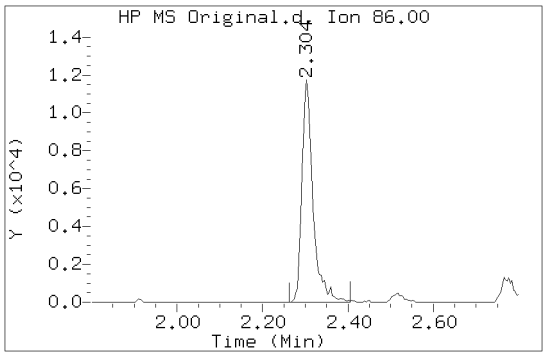
BEFORE
MASS
84
AREA
32325
HEIGHT
17936
27-Dec-2022
16:03
linh
pham



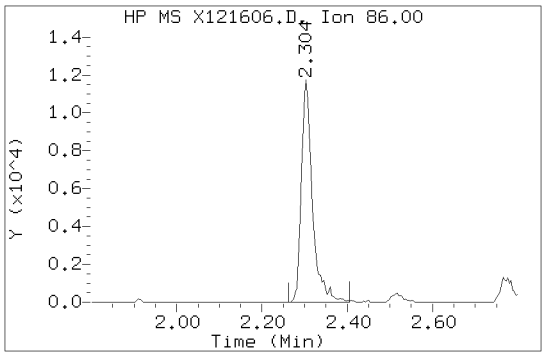
AFTER
MASS
84
AREA
22932
HEIGHT
17936
27-Dec-2022
16:07
linh
pham



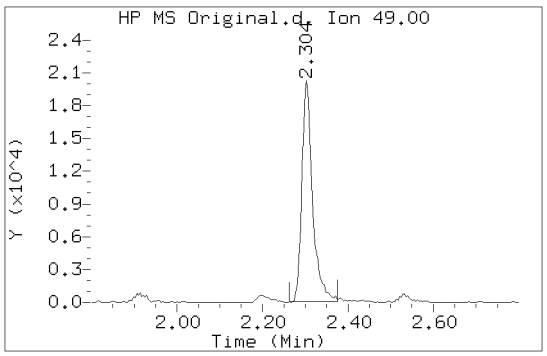
BEFORE
MASS
86
AREA
21691
HEIGHT
11740
27-Dec-2022
16:03
linh
pham



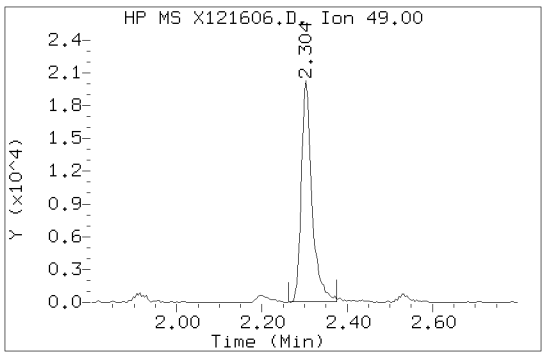
AFTER
MASS
86
AREA
21691
HEIGHT
11740
27-Dec-2022
16:07
linh
pham



BEFORE
MASS
49
AREA
35909
HEIGHT
20222
27-Dec-2022
16:03
linh
pham



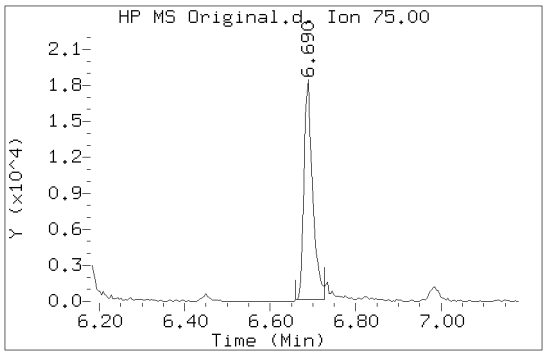
AFTER
MASS
49
AREA
35909
HEIGHT
20222
27-Dec-2022
16:07
linh
pham



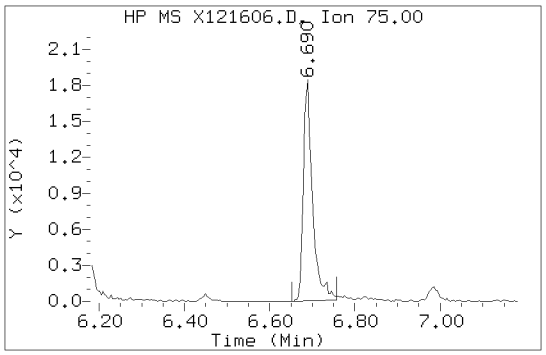
trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

BEFORE
MASS
75
AREA
26483
HEIGHT
18306
27-Dec-2022
16:03
linh
pham



AFTER
MASS
75
AREA
28399
HEIGHT
18443
27-Dec-2022
16:07
linh
pham



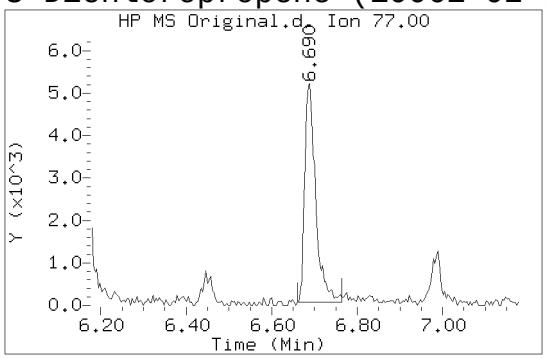
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

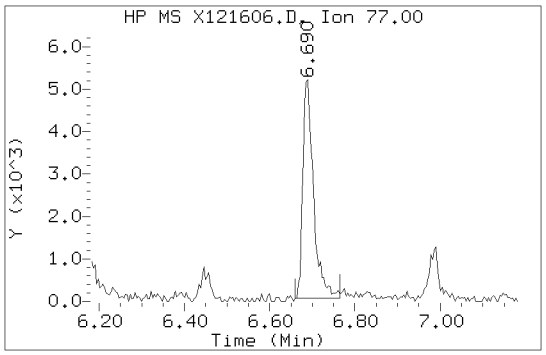
BEFORE

MASS
77
AREA
9244
HEIGHT
5154
27-Dec-2022
16:03
linh
pham



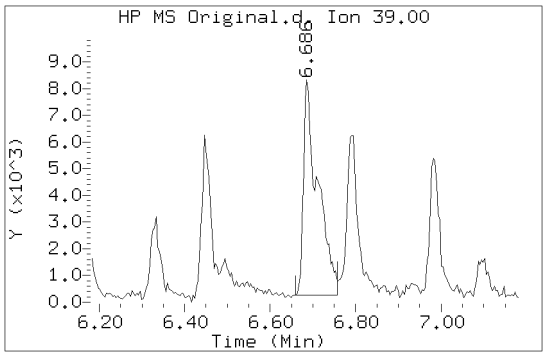
AFTER

MASS
77
AREA
9244
HEIGHT
5154
27-Dec-2022
16:07
linh
pham



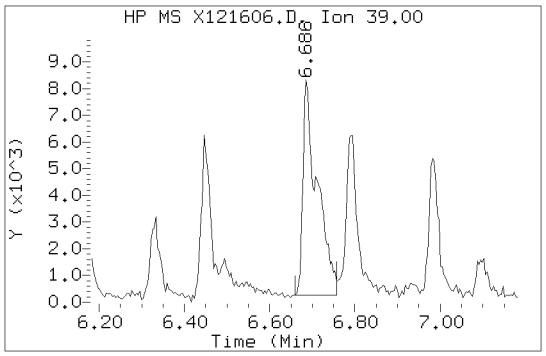
BEFORE

MASS
39
AREA
19092
HEIGHT
8065
27-Dec-2022
16:03
linh
pham



AFTER

MASS
39
AREA
19092
HEIGHT
8065
27-Dec-2022
16:07
linh
pham

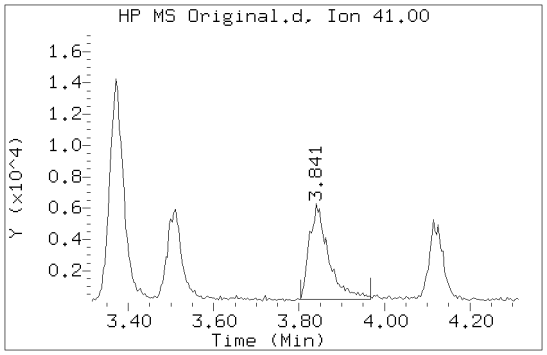


Methacrylonitrile (126-98-7)

Reason Code:

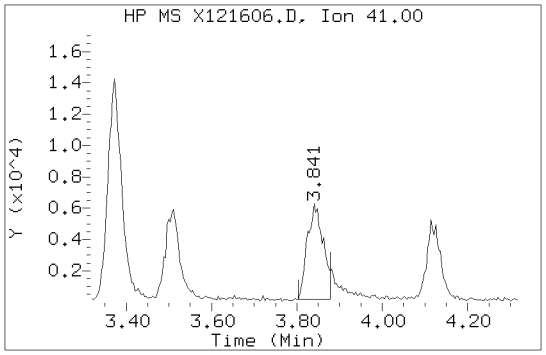
BEFORE

MASS
41
AREA
18790
HEIGHT
6109
27-Dec-2022
16:03
linh
pham



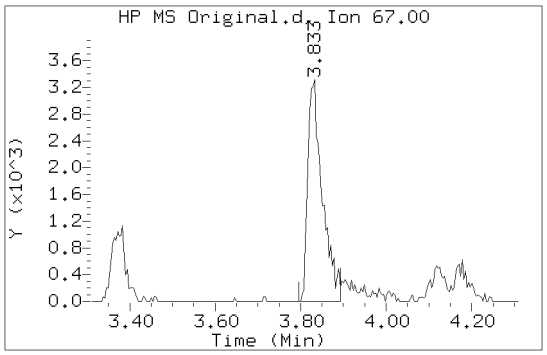
AFTER

MASS
41
AREA
15701
HEIGHT
6109
27-Dec-2022
16:07
linh
pham



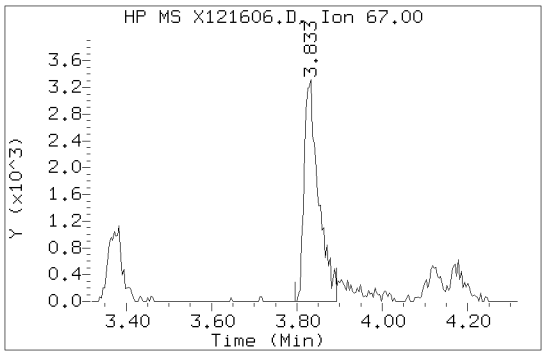
BEFORE

MASS
67
AREA
7866
HEIGHT
3315
27-Dec-2022
16:03
linh
pham



AFTER

MASS
67
AREA
7866
HEIGHT
3315
27-Dec-2022
16:07
linh
pham



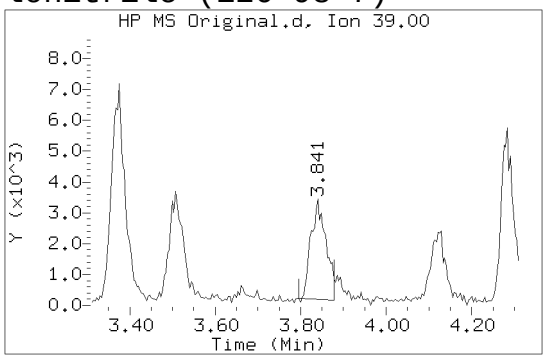
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

Methacrylonitrile (126-98-7)

Reason Code:

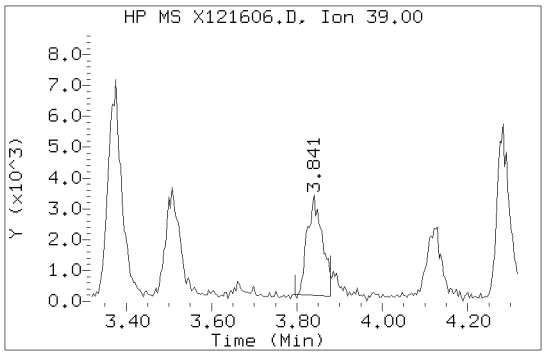
BEFORE

MASS
39
AREA
7951
HEIGHT
3252
27-Dec-2022
16:03
linh
pham



AFTER

MASS
39
AREA
7951
HEIGHT
3252
27-Dec-2022
16:07
linh
pham

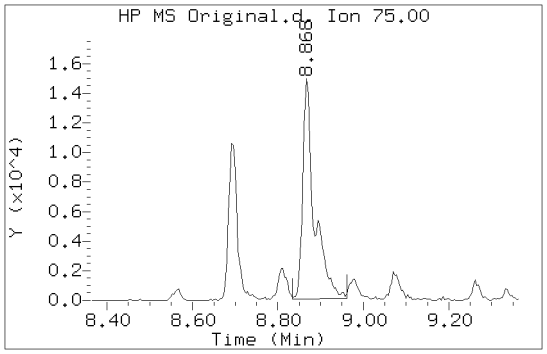


1,2,3-Trichloropropane (96-18-4)

Reason Code:

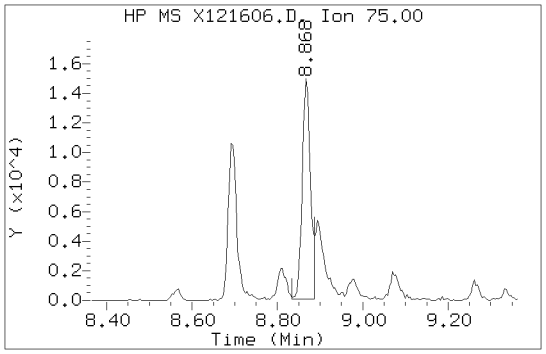
BEFORE

MASS
75
AREA
28905
HEIGHT
14911
27-Dec-2022
16:03
linh
pham



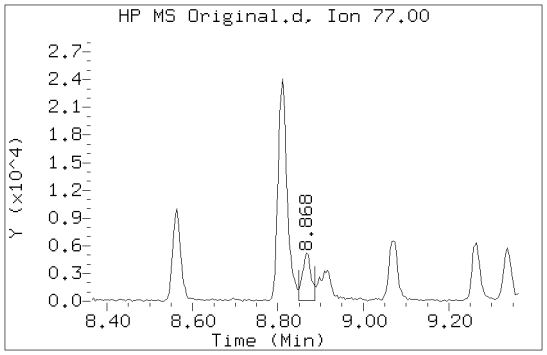
AFTER

MASS
75
AREA
20685
HEIGHT
14911
27-Dec-2022
16:07
linh
pham



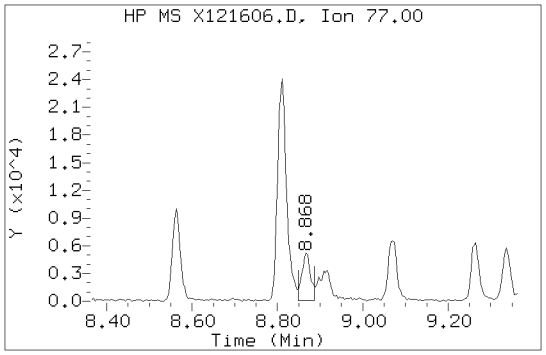
BEFORE

MASS
77
AREA
7524
HEIGHT
5143
27-Dec-2022
16:03
linh
pham



AFTER

MASS
77
AREA
7524
HEIGHT
5143
27-Dec-2022
16:07
linh
pham

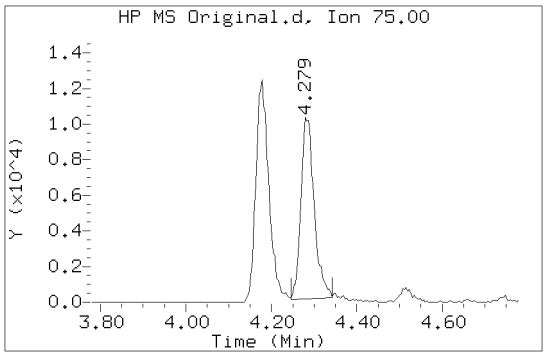


1,1-Dichloropropene (563-58-6)

Reason Code:

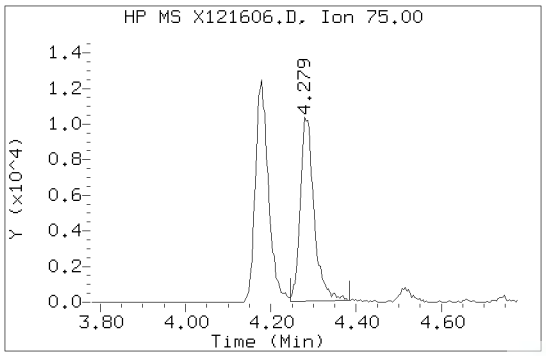
BEFORE

MASS
75
AREA
22411
HEIGHT
10201
27-Dec-2022
16:03
linh
pham



AFTER

MASS
75
AREA
23845
HEIGHT
10354
27-Dec-2022
16:07
linh
pham



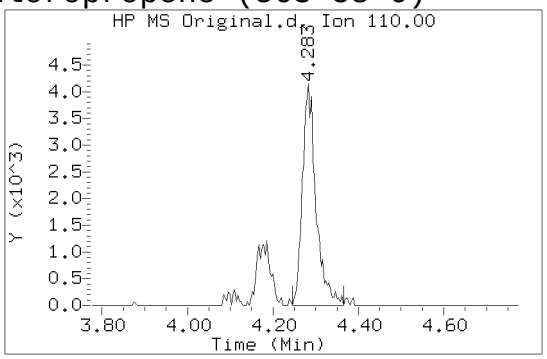
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

1,1-Dichloropropene (563-58-6)

Reason Code:

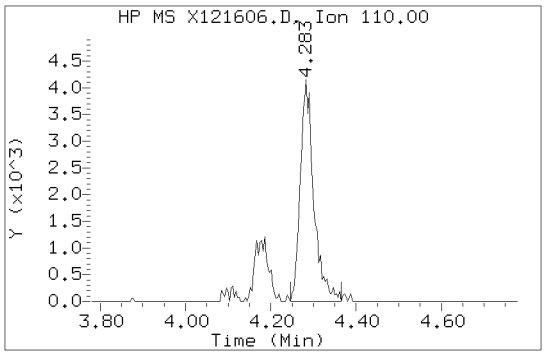
BEFORE

MASS
110
AREA
9244
HEIGHT
4151
27-Dec-2022
16:03
linh
pham



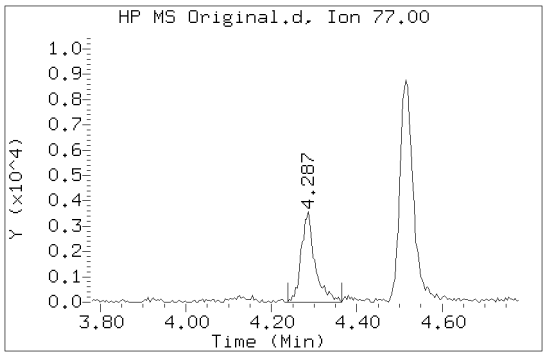
AFTER

MASS
110
AREA
9244
HEIGHT
4151
27-Dec-2022
16:07
linh
pham



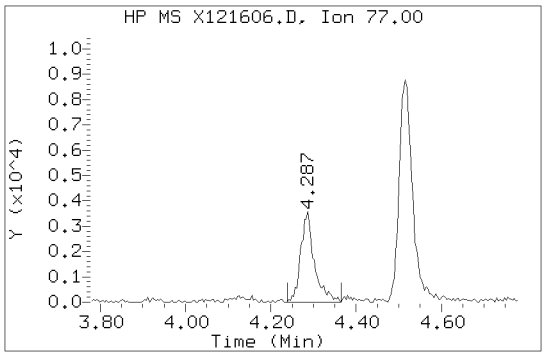
BEFORE

MASS
77
AREA
8083
HEIGHT
3567
27-Dec-2022
16:03
linh
pham



AFTER

MASS
77
AREA
8083
HEIGHT
3567
27-Dec-2022
16:07
linh
pham

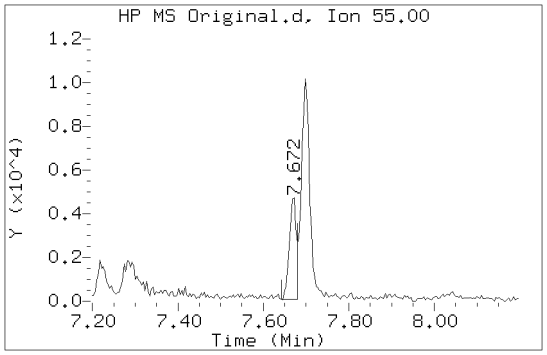


1-Chlorohexane (544-10-5)

Reason Code:

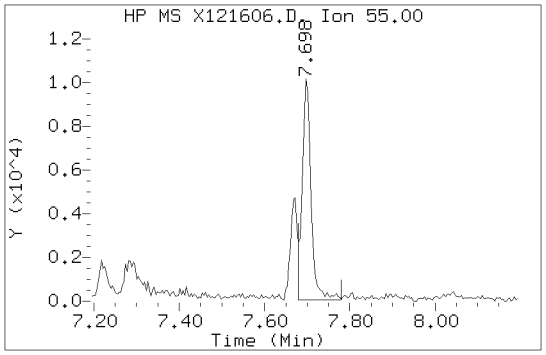
BEFORE

MASS
55
AREA
5371
HEIGHT
4660
27-Dec-2022
16:03
linh
pham



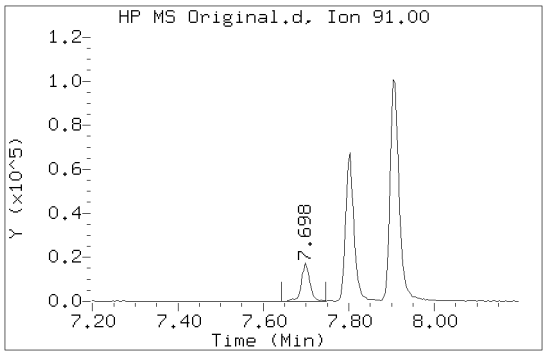
AFTER

MASS
55
AREA
15210
HEIGHT
10126
27-Dec-2022
16:07
linh
pham



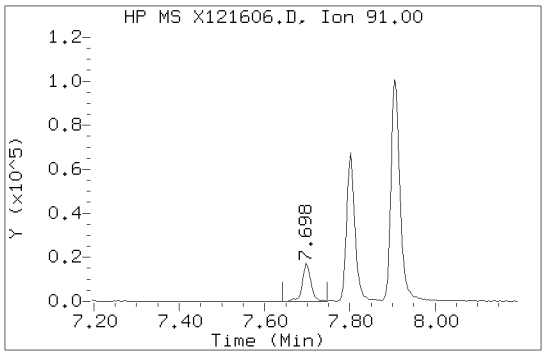
BEFORE

MASS
91
AREA
24578
HEIGHT
17336
27-Dec-2022
16:03
linh
pham



AFTER

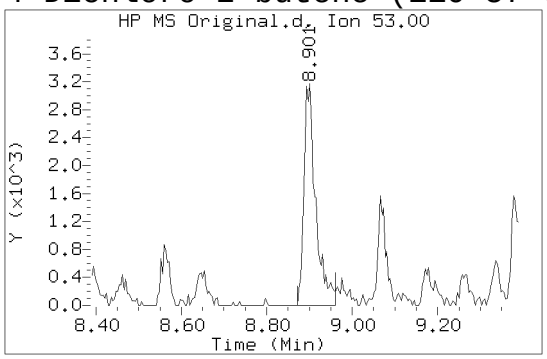
MASS
91
AREA
24578
HEIGHT
17336
27-Dec-2022
16:07
linh
pham



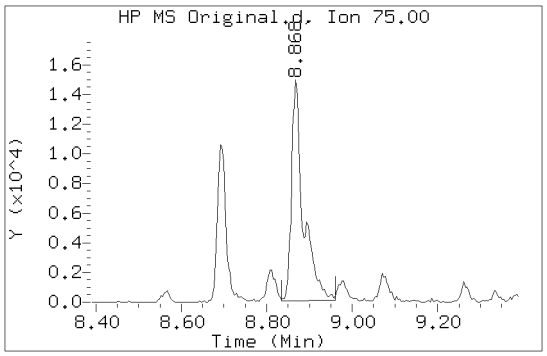
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

trans-1,4-Dichloro-2-butene (110-57-6)

BEFORE
MASS
53
AREA
6122
HEIGHT
3172
27-Dec-2022
16:03
linh
pham

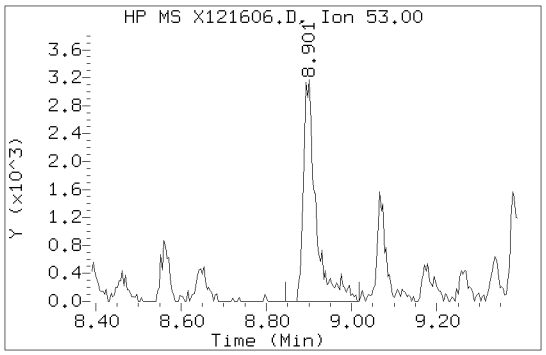


BEFORE
MASS
75
AREA
28905
HEIGHT
14911
27-Dec-2022
16:03
linh
pham

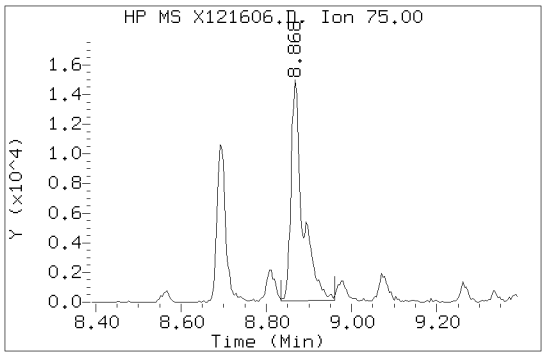


Reason Code:

AFTER
MASS
53
AREA
6648
HEIGHT
3172
27-Dec-2022
16:07
linh
pham

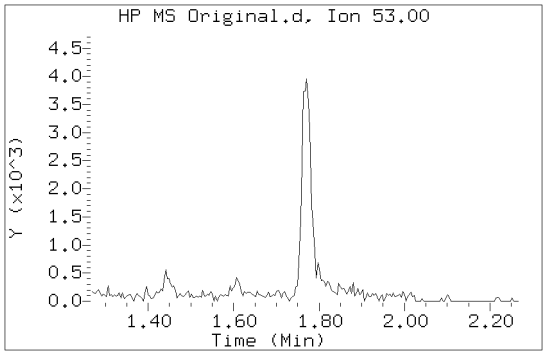


AFTER
MASS
75
AREA
28905
HEIGHT
14911
27-Dec-2022
16:07
linh
pham

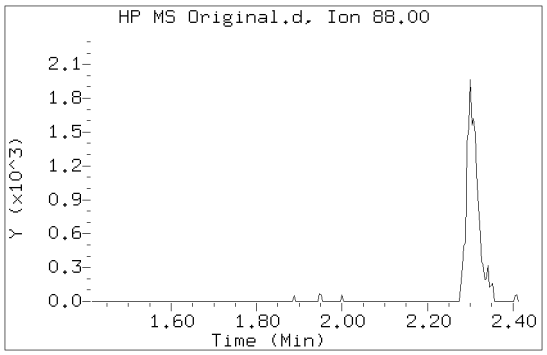


Chloroprene (126-99-8)

BEFORE
MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

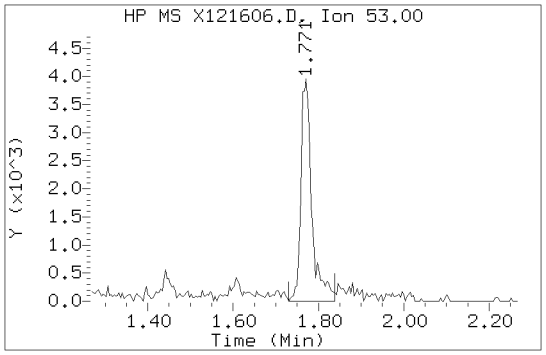


BEFORE
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

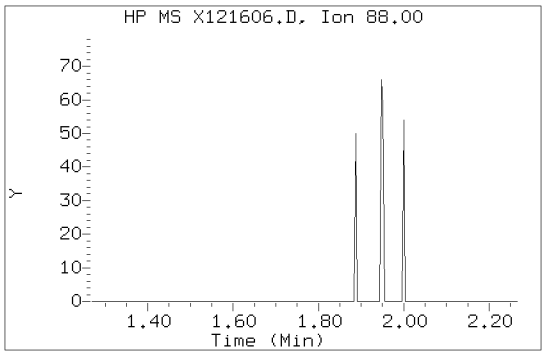


Reason Code:

AFTER
MASS
53
AREA
7154
HEIGHT
3955
27-Dec-2022
16:07
linh
pham



AFTER
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



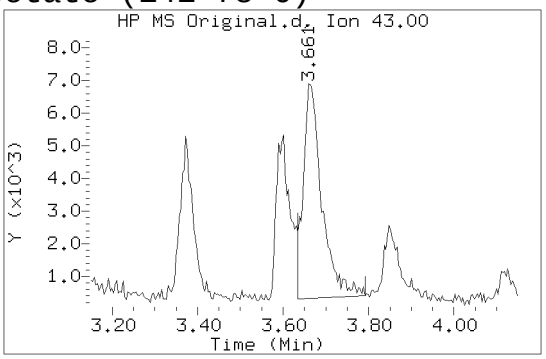
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

Ethyl Acetate (141-78-6)

Reason Code:

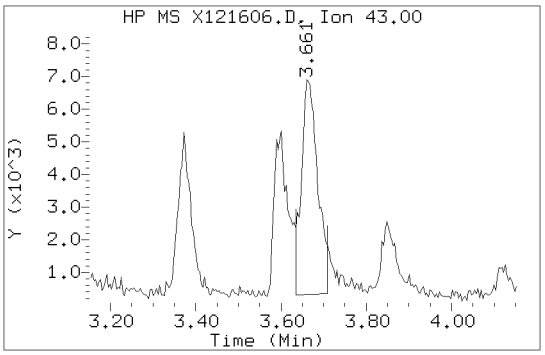
BEFORE

MASS
43
AREA
20113
HEIGHT
6576
27-Dec-2022
16:03
linh
pham



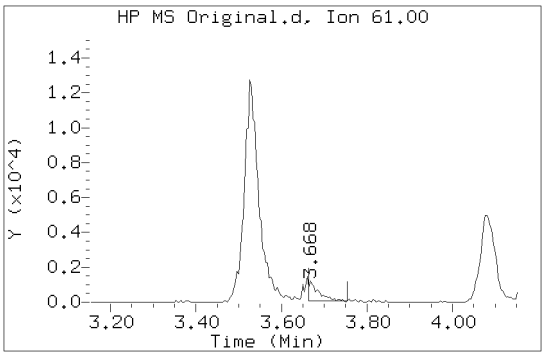
AFTER

MASS
43
AREA
18020
HEIGHT
6576
27-Dec-2022
16:07
linh
pham



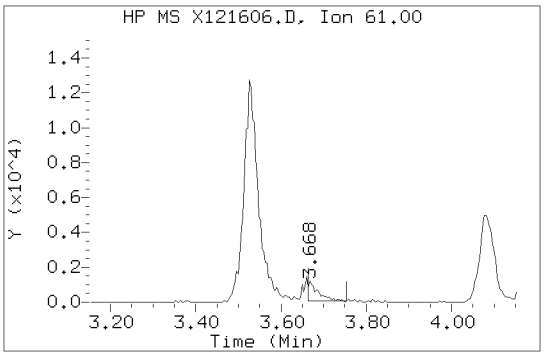
BEFORE

MASS
61
AREA
1766
HEIGHT
1155
27-Dec-2022
16:03
linh
pham



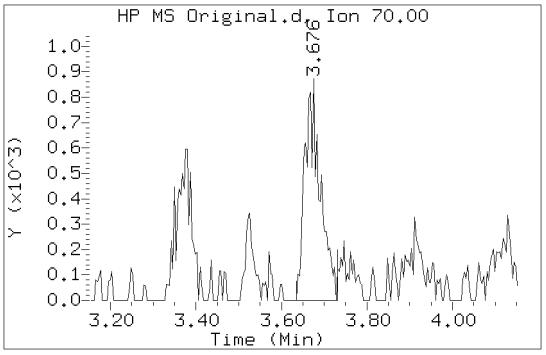
AFTER

MASS
61
AREA
1766
HEIGHT
1155
27-Dec-2022
16:07
linh
pham



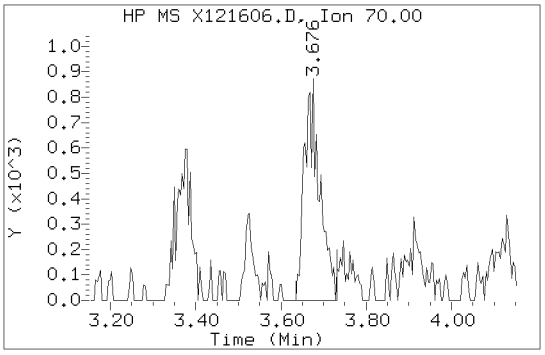
BEFORE

MASS
70
AREA
2205
HEIGHT
873
27-Dec-2022
16:03
linh
pham



AFTER

MASS
70
AREA
2205
HEIGHT
873
27-Dec-2022
16:07
linh
pham

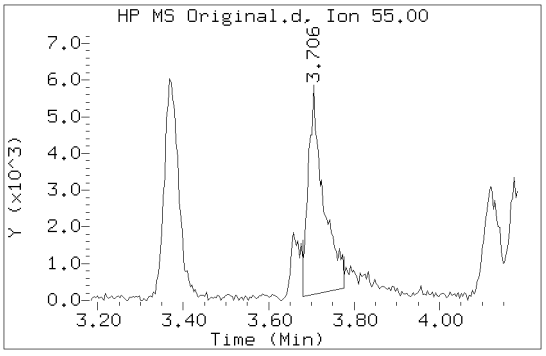


Methyl Acrylate (96-33-3)

Reason Code:

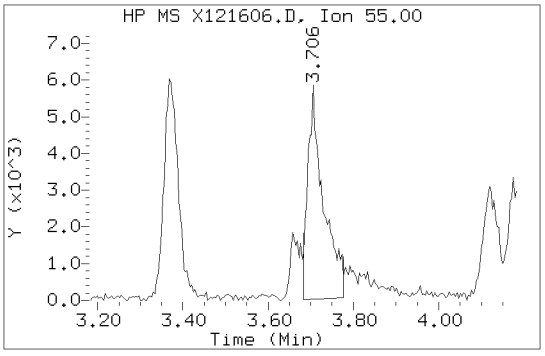
BEFORE

MASS
55
AREA
14157
HEIGHT
5696
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
14950
HEIGHT
5831
27-Dec-2022
16:07
linh
pham



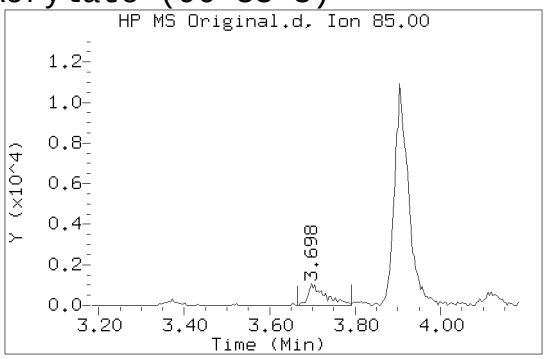
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

Methyl Acrylate (96-33-3)

Reason Code:

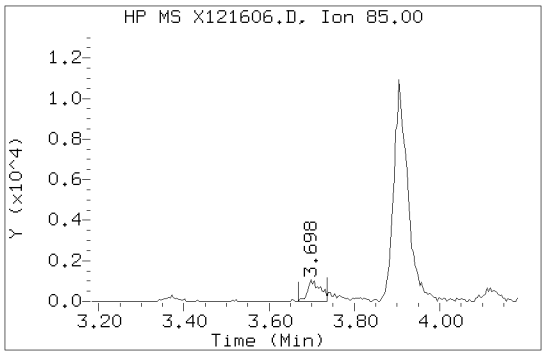
BEFORE

MASS
85
AREA
2934
HEIGHT
1073
27-Dec-2022
16:03
linh
pham



AFTER

MASS
85
AREA
2159
HEIGHT
1073
27-Dec-2022
16:07
linh
pham

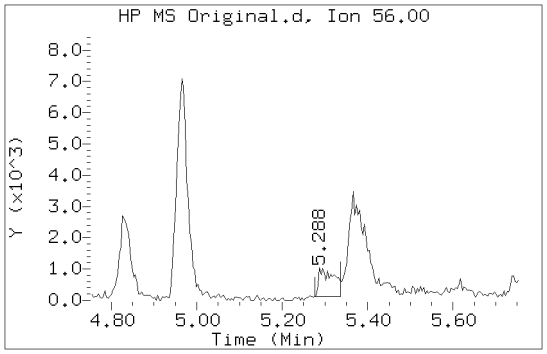


n-Butanol (71-36-3)

Reason Code:

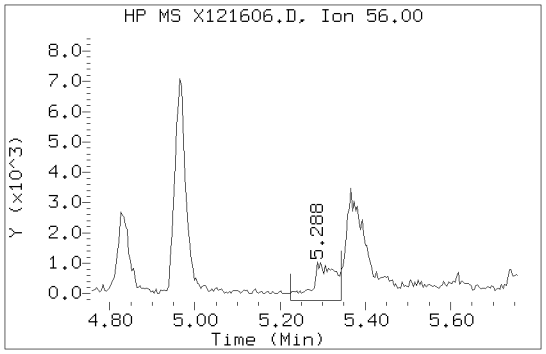
BEFORE

MASS
56
AREA
2243
HEIGHT
922
27-Dec-2022
16:03
linh
pham



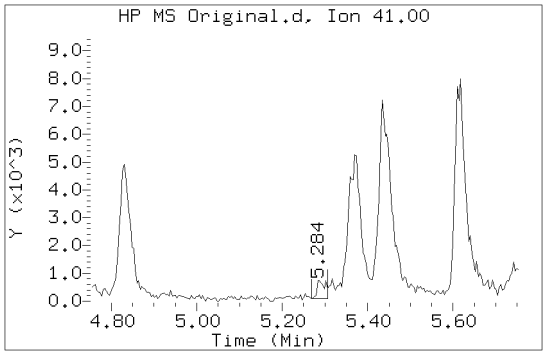
AFTER

MASS
56
AREA
4891
HEIGHT
1266
27-Dec-2022
16:07
linh
pham



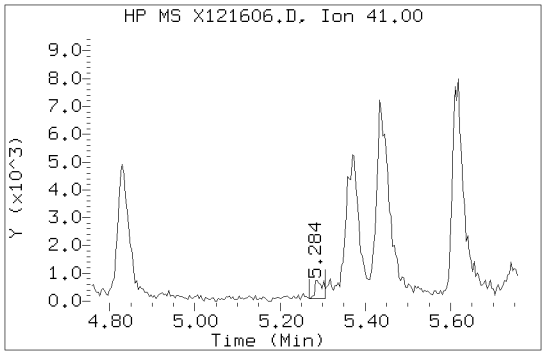
BEFORE

MASS
41
AREA
876
HEIGHT
641
27-Dec-2022
16:03
linh
pham



AFTER

MASS
41
AREA
876
HEIGHT
641
27-Dec-2022
16:07
linh
pham

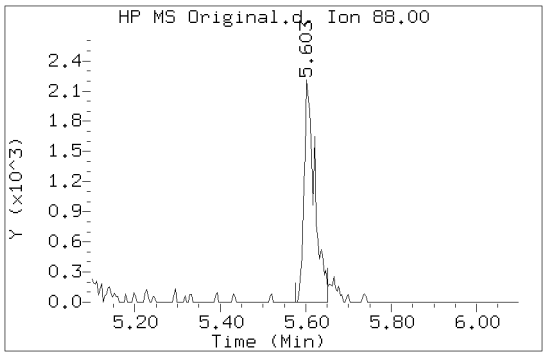


1,4-Dioxane ()

Reason Code:

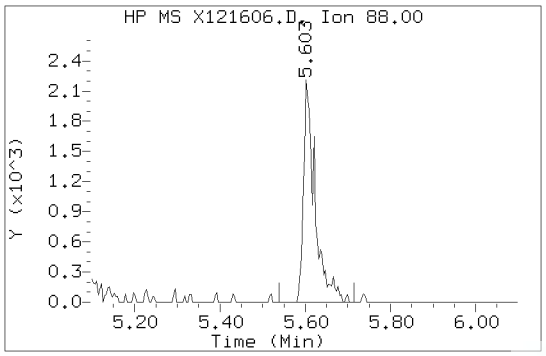
BEFORE

MASS
88
AREA
3873
HEIGHT
2211
27-Dec-2022
16:03
linh
pham



AFTER

MASS
88
AREA
4197
HEIGHT
2211
27-Dec-2022
16:07
linh
pham



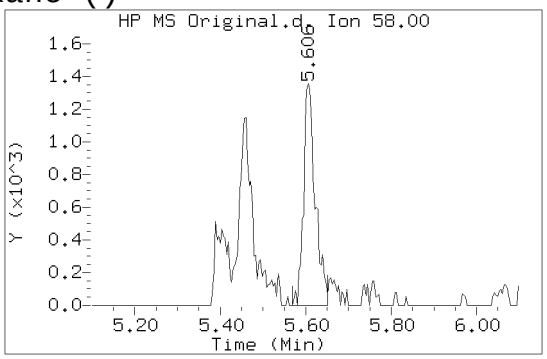
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

1,4-Dioxane ()

Reason Code:

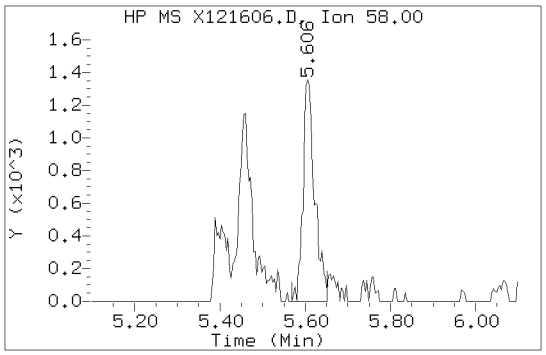
BEFORE

MASS
58
AREA
2625
HEIGHT
1356
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
2625
HEIGHT
1356
27-Dec-2022
16:07
linh
pham

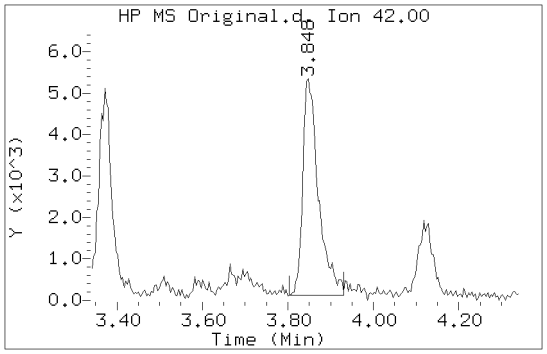


Tetrahydrofuran (109-99-9)

Reason Code:

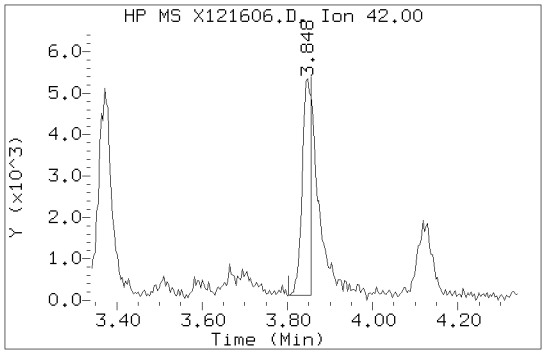
BEFORE

MASS
42
AREA
13557
HEIGHT
5225
27-Dec-2022
16:03
linh
pham



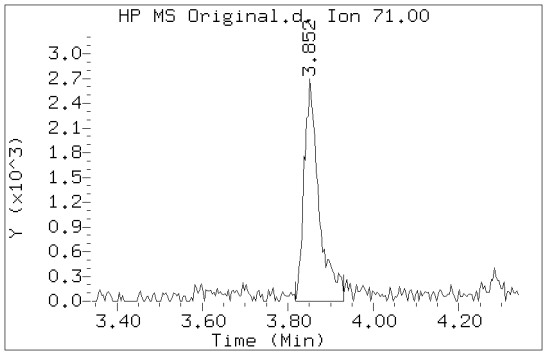
AFTER

MASS
42
AREA
7598
HEIGHT
5225
27-Dec-2022
16:07
linh
pham



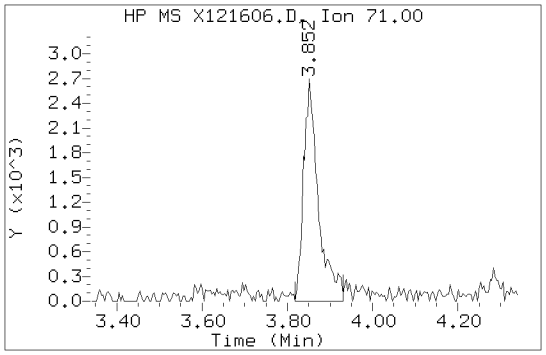
BEFORE

MASS
71
AREA
6572
HEIGHT
2695
27-Dec-2022
16:03
linh
pham



AFTER

MASS
71
AREA
6572
HEIGHT
2695
27-Dec-2022
16:07
linh
pham

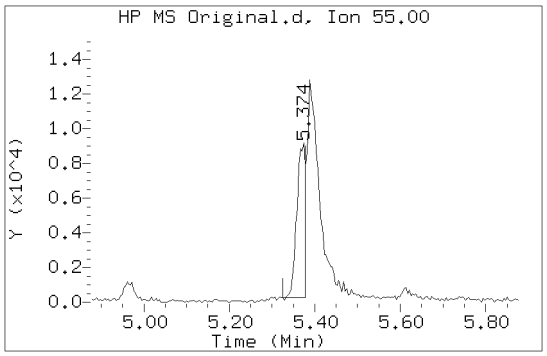


Methylcyclohexane (108-87-2)

Reason Code:

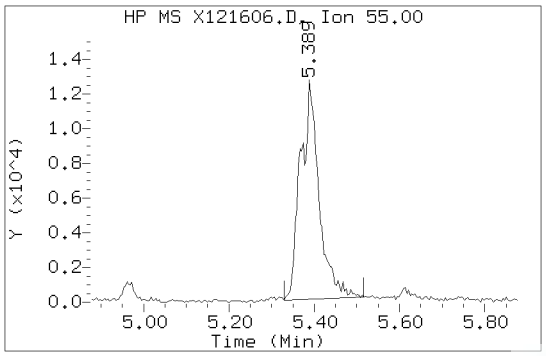
BEFORE

MASS
55
AREA
12381
HEIGHT
8941
27-Dec-2022
16:03
linh
pham



AFTER

MASS
55
AREA
38650
HEIGHT
12647
27-Dec-2022
16:07
linh
pham

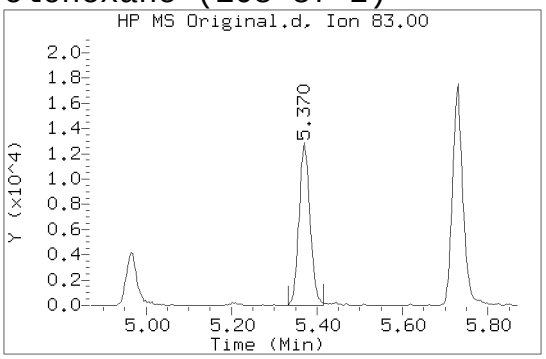


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

Methylcyclohexane (108-87-2)

BEFORE

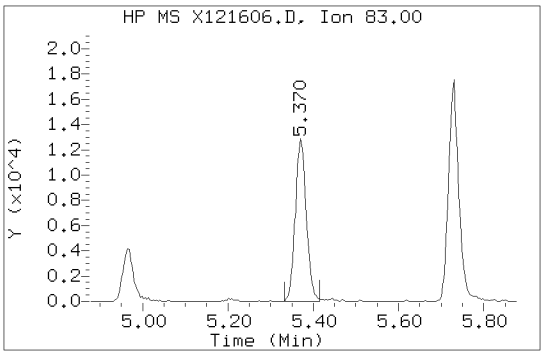
MASS
83
AREA
23564
HEIGHT
12870
27-Dec-2022
16:03
linh
pham



Reason Code:

AFTER

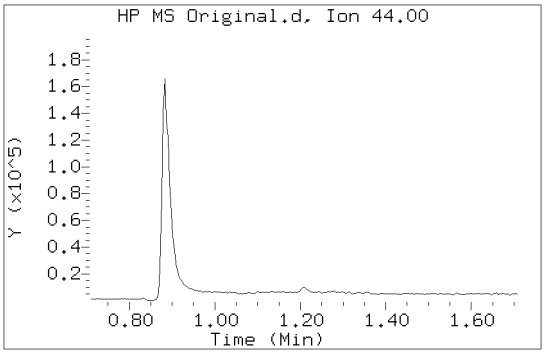
MASS
83
AREA
23564
HEIGHT
12870
27-Dec-2022
16:07
linh
pham



Acetaldehyde (75-07-0)

BEFORE

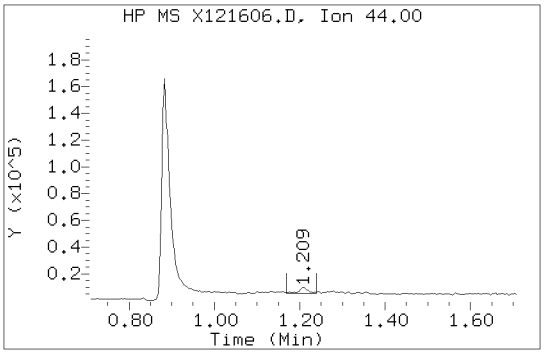
MASS
44
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

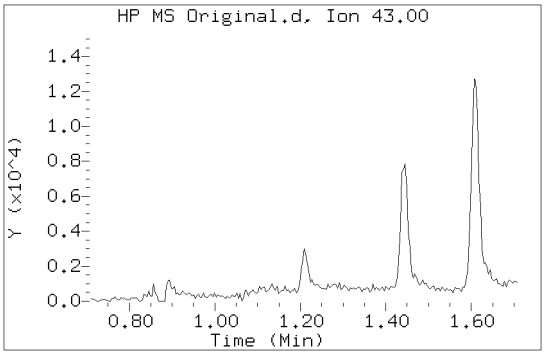
AFTER

MASS
44
AREA
6161
HEIGHT
4314
27-Dec-2022
16:07
linh
pham



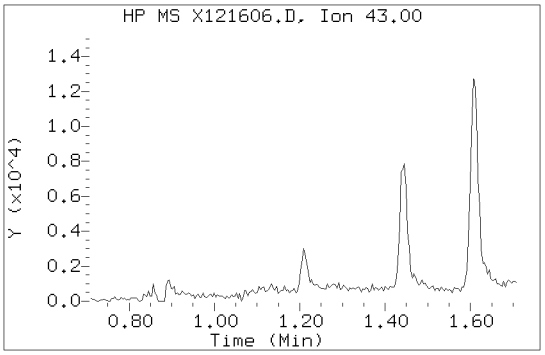
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



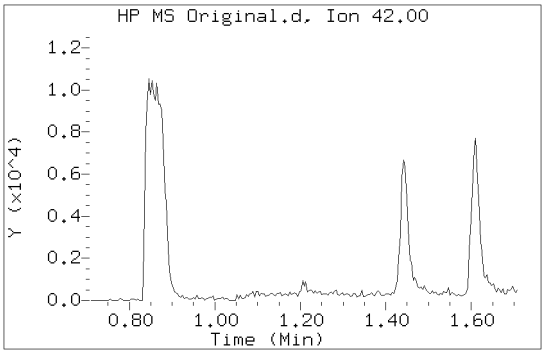
AFTER

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



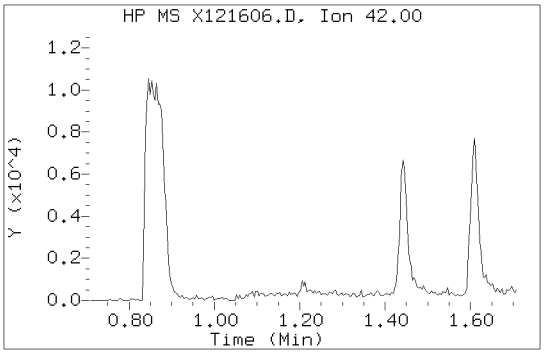
BEFORE

MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:07
linh
pham



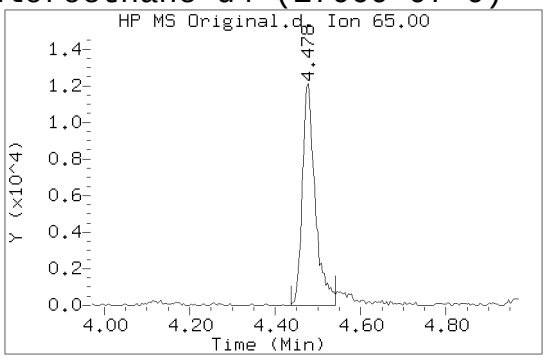
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121606.D
Inj Date : 16-DEC-2022 13:23
InstruID : voa6.i
LabSampID : VSTD005

1,2-Dichloroethane-d4 (17060-07-0)

Reason Code:

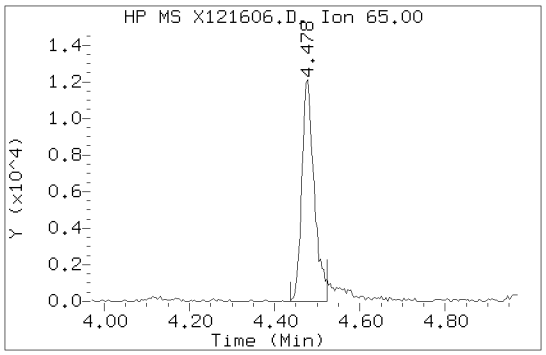
BEFORE

MASS
65
AREA
25815
HEIGHT
12121
27-Dec-2022
16:03
linh
pham



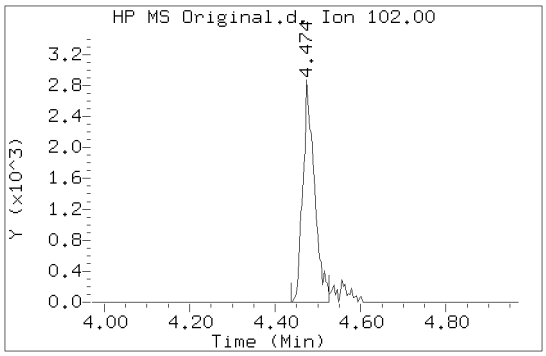
AFTER

MASS
65
AREA
24938
HEIGHT
12121
27-Dec-2022
16:07
linh
pham



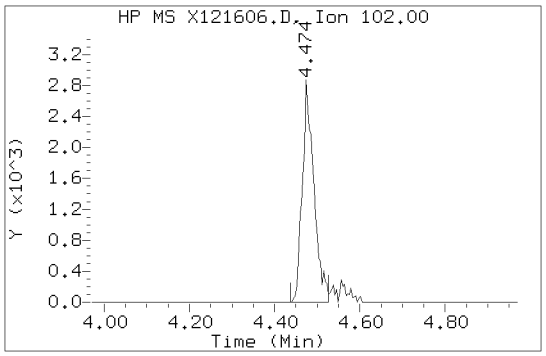
BEFORE

MASS
102
AREA
5492
HEIGHT
2873
27-Dec-2022
16:03
linh
pham



AFTER

MASS
102
AREA
5492
HEIGHT
2873
27-Dec-2022
16:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D
Lab Smp Id: VSTD020 Client Smp ID: VSTD020
Inj Date : 16-DEC-2022 13:43
Operator : PC Inst ID: voa6.i
Smp Info : VSTD020;VSTD020;1;6;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 13:23 Cal File: X121606.D
Als bottle: 8 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1	Pentafluorobenzene	168	4.178	4.178	(1.000)	459407	50.0000	
135	1,4-Dioxane	88	5.598	5.598	(1.340)	16105	400.000	383.50(M)
140	1,3-Butadiene	54	1.164	1.164	(0.279)	58280	20.0000	18.48
25	Methacrylonitrile	41	3.821	3.821	(0.915)	62911	20.0000	19.33
12	Isobutyl Alcohol	43	4.672	4.672	(1.118)	201008	400.000	388.99
13	Acetonitrile	39	2.195	2.195	(0.525)	81163	200.000	194.11
14	Allyl Chloride	41	2.195	2.195	(0.525)	150748	20.0000	18.93
4	Propionitrile	54	3.653	3.653	(0.874)	85562	200.000	182.52
136	n-Hexane	57	2.768	2.768	(0.663)	65476	20.0000	19.79
72	trans-1,4-Dichloro-2-butene	53	8.893	8.893	(1.160)	26140	20.0000	18.70
194	Acetaldehyde	44	1.209	1.209	(0.289)	32393	80.0000	100.98(M)
23	Chloroprene	53	1.767	1.767	(0.423)	27967	20.0000	17.90(M)
145	alpha-Methylstyrene	118	9.261	9.261	(0.958)	155968	20.0000	19.76
200	Dimethyl Disulfide	94	6.198	6.198	(0.808)	171978	20.0000	19.62
139	Diethyl ether	59	1.756	1.756	(0.420)	55275	20.0000	18.00
130	Ethyl Acetate	43	3.660	3.660	(0.876)	75163	20.0000	20.96
40	Methyl Methacrylate	41	5.606	5.606	(1.342)	56242	20.0000	17.95
49	Ethyl Methacrylate	69	6.712	6.712	(1.352)	58073	20.0000	18.07
132	n-Butanol	56	5.268	5.268	(1.261)	15012	400.000	294.62
142	Tetrahydrofuran	42	3.848	3.848	(0.921)	28221	40.0000	47.81

150	Allyl alcohol	57	2.768	2.768 (0.663)	65476	400.000	366.93
166	1,2,3-Trimethylbenzene	105	9.729	9.729 (1.007)	331546	20.0000	19.32

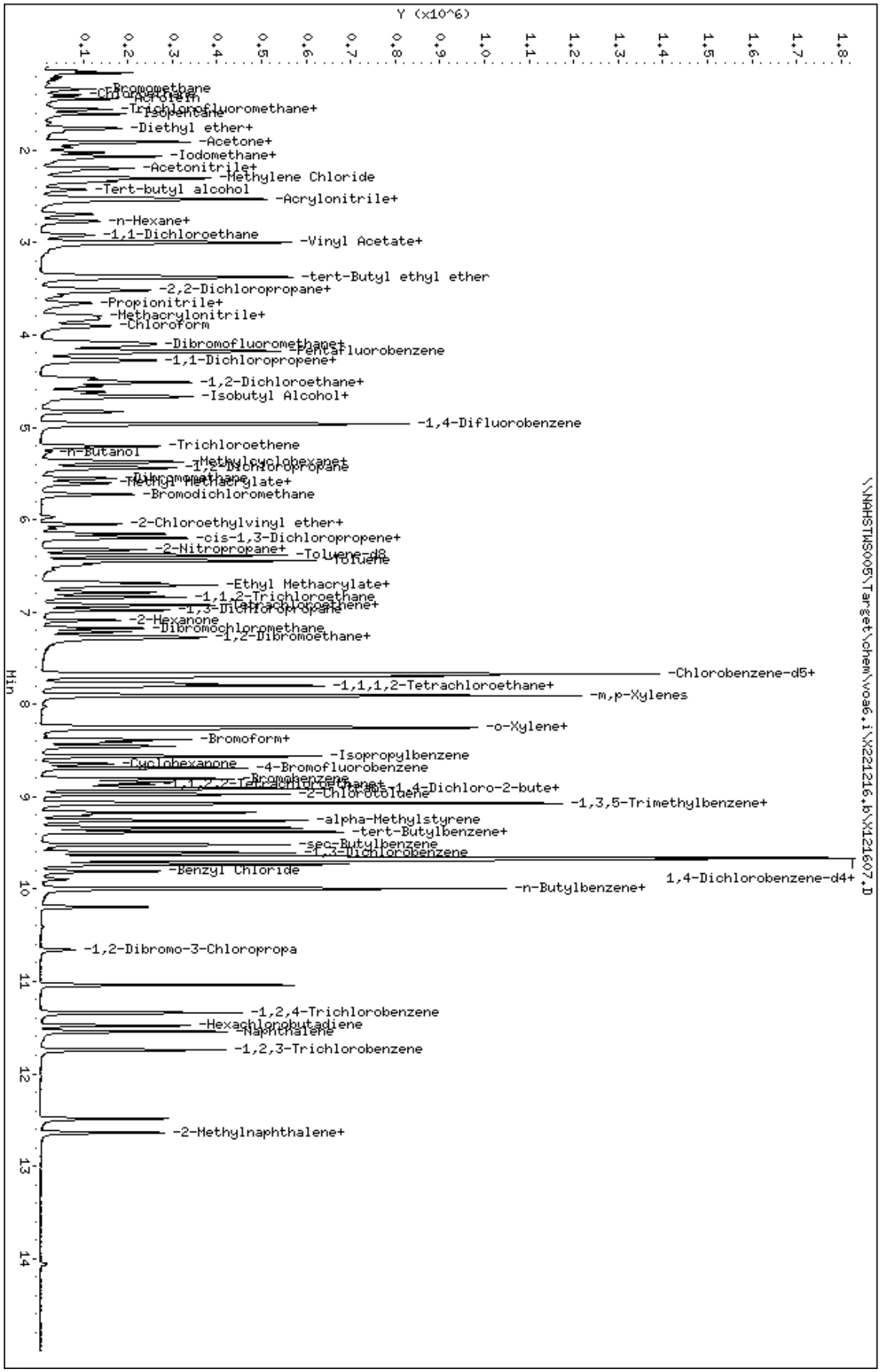
							AMOUNTS	
		QUANT SIG					CAL-AMT	ON-COL
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131 Methyl Acrylate	55	3.690	3.690	(0.883)	57874	20.0000	18.55(M)
	162 Butyl acrylate	55	8.252	8.252	(1.076)	156518	20.0000	18.50
	2 Dichlorodifluoromethane	85	0.972	0.972	(0.233)	63382	20.0000	19.96
	3 Chloromethane	50	1.077	1.077	(0.258)	72324	20.0000	18.84
	5 Vinyl Chloride	62	1.141	1.141	(0.273)	74461	20.0000	18.55
	6 Bromomethane	94	1.340	1.340	(0.321)	52034	20.0000	18.30
	7 Chloroethane	64	1.400	1.400	(0.335)	52021	20.0000	18.62
	8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	106188	20.0000	18.90
	9 Acrolein	56	1.441	1.441	(0.345)	12279	40.0000	40.80
	10 Acetone	43	1.973	1.973	(0.472)	50987	40.0000	39.53
	11 1,1-Dichloroethene	96	1.913	1.913	(0.458)	65650	20.0000	18.82
	15 Iodomethane	142	2.026	2.026	(0.485)	143457	40.0000	34.36
	16 Acrylonitrile	53	2.532	2.532	(0.606)	46552	40.0000	39.36
	17 Methylene Chloride	84	2.303	2.303	(0.551)	94402	20.0000	19.73
	18 Methyl tert-butyl ether	73	2.532	2.532	(0.606)	214504	20.0000	18.79
	19 Carbon Disulfide	76	2.067	2.067	(0.495)	337289	40.0000	36.97
	20 trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	74471	20.0000	19.08
	21 Vinyl Acetate	43	2.997	2.997	(0.717)	387538	40.0000	38.68
	22 1,1-Dichloroethane	63	2.918	2.918	(0.699)	129644	20.0000	18.93
	24 2-Butanone	43	3.578	3.578	(0.856)	47830	40.0000	36.94(H)
	26 2,2-Dichloropropane	77	3.507	3.507	(0.839)	108952	20.0000	18.73
	27 cis-1,2-Dichloroethene	96	3.525	3.525	(0.844)	88894	20.0000	18.71
	28 Chloroform	83	3.904	3.904	(0.935)	145610	20.0000	18.96
	29 Bromochloromethane	128	3.795	3.795	(0.908)	47919	20.0000	18.42
$	30 Dibromofluoromethane	113	4.099	4.099	(0.981)	90108	20.0000	20.32
	31 1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	116049	20.0000	19.05
	32 1,1-Dichloropropene	75	4.279	4.279	(0.862)	93914	20.0000	19.38
	33 1,2-Dichloroethane	62	4.556	4.556	(0.918)	108750	20.0000	19.45
	34 Carbon Tetrachloride	117	4.260	4.260	(0.858)	93815	20.0000	18.13
$	35 1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	92990	20.0000	20.13
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	682389	50.0000	
	37 Benzene	78	4.511	4.511	(0.909)	313141	20.0000	19.21
	38 Trichloroethene	130	5.205	5.205	(1.048)	90292	20.0000	19.53
	39 Bromodichloromethane	83	5.726	5.726	(1.153)	116178	20.0000	18.99
	41 2-Chloroethylvinyl ether	63	6.048	6.048	(1.218)	71559	40.0000	41.12
	42 1,2-Dichloropropane	63	5.437	5.437	(1.095)	82954	20.0000	19.13
	44 Dibromomethane	93	5.553	5.553	(1.119)	57196	20.0000	19.41
	45 4-Methyl-2-Pentanone	43	6.326	6.326	(0.825)	138209	40.0000	39.93
	46 cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	142141	20.0000	19.79
*	47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	647445	50.0000	
$	48 Toluene-d8	98	6.385	6.385	(0.833)	315179	20.0000	19.70
	50 Toluene	91	6.445	6.445	(0.841)	339968	20.0000	18.99
	51 trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	116330	20.0000	19.51
	52 2-Hexanone	43	7.086	7.086	(0.924)	93119	40.0000	39.54
	53 1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	69855	20.0000	19.45
	54 1,3-Dichloropropane	76	6.982	6.982	(0.911)	137967	20.0000	19.52
	55 Dibromochloromethane	129	7.176	7.176	(0.936)	100749	20.0000	19.44
	56 Tetrachloroethene	164	6.925	6.925	(0.903)	74611	20.0000	20.15
	57 1,2-Dibromoethane	107	7.263	7.263	(0.947)	88886	20.0000	19.80
	58 1-Chlorohexane	55	7.694	7.694	(1.550)	66757	20.0000	20.24
	59 Chlorobenzene	112	7.694	7.694	(1.003)	240885	20.0000	18.97
	60 1,1,1,2-Tetrachloroethane	131	7.772	7.772	(1.014)	90283	20.0000	19.11

61 Ethylbenzene	106	7.799	7.799 (1.017)	117560	20.0000	19.66
62 m,p-Xylenes	106	7.904	7.904 (1.031)	299082	40.0000	38.80

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.241	8.241	(1.075)	147602	20.0000	19.40
	64 Styrene	104	8.260	8.260	(1.077)	253280	20.0000	19.86
	66 Bromoform	173	8.410	8.410	(1.097)	69137	20.0000	19.25
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	344283	20.0000	19.80
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	112594	20.0000	19.83
$	69 4-Bromofluorobenzene	95	8.691	8.691	(1.133)	116878	20.0000	19.58
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	356229	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	76967	20.0000	19.41
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	404399	20.0000	20.49
	74 Bromobenzene	156	8.803	8.803	(0.911)	117586	20.0000	20.11
	75 1,3,5-Trimethylbenzene	105	9.070	9.070	(0.939)	295026	20.0000	20.23
	76 2-Chlorotoluene	91	8.976	8.976	(0.929)	256591	20.0000	19.81
	77 4-Chlorotoluene	91	9.070	9.070	(0.939)	294244	20.0000	19.93
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	242174	20.0000	20.29
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	305461	20.0000	19.91
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	326826	20.0000	20.58
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	294187	20.0000	20.67
	83 1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	197278	20.0000	20.33
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	207572	20.0000	19.60
	86 Benzyl Chloride	91	9.808	9.808	(1.279)	163895	20.0000	17.99
	87 n-Butylbenzene	91	9.995	9.995	(1.035)	248190	20.0000	19.23
	88 1,2-Dichlorobenzene	146	9.995	9.995	(1.035)	201166	20.0000	20.13
	89 1,2-Dibromo-3-Chloropropane	155	10.663	10.663	(1.104)	18635	20.0000	20.58
	90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	130463	20.0000	20.69
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	55912	20.0000	20.12
	92 Naphthalene	128	11.544	11.544	(1.195)	300432	20.0000	20.94
	93 1,2,3-Trichlorobenzene	180	11.742	11.742	(1.215)	124401	20.0000	20.60
M	94 1,2-Dichloroethylene (total)	96				163365	40.0000	
M	95 Xylenes (total)	106				446684	60.0000	
	141 Cyclohexane	56	4.118	4.118	(0.986)	84355	20.0000	19.01(M)
	138 Freon TF	101	1.910	1.910	(0.457)	64657	20.0000	19.17
	147 Methylcyclohexane	55	5.381	5.381	(1.084)	172044	20.0000	20.59
	146 Methyl Acetate	43	2.228	2.228	(0.533)	38475	20.0000	18.61
	148 Tert-Butyl alcohol	59	2.423	2.423	(0.580)	117583	400.000	369.63
	149 Isopropyl Alcohol	45	2.090	2.090	(0.500)	61646	400.000	371.06

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6,i\X221216,b\X121607.D
Date : 16-DEC-2022 13:43
Client ID: VSTD020
Sample Info: VSTD20;VSTD20;1;6;
Purge Volume: 5.0
Column phase: DB624

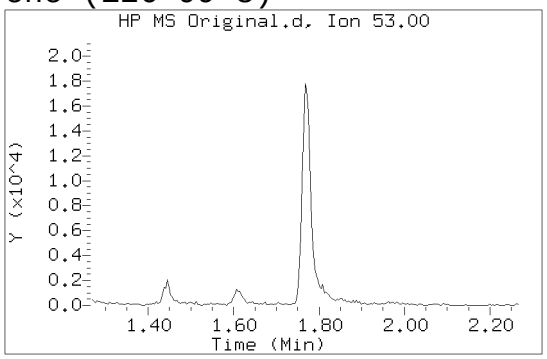
Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D
Inj Date : 16-DEC-2022 13:43
InstruID : voa6.i
LabSampID : VSTD020

Chloroprene (126-99-8)

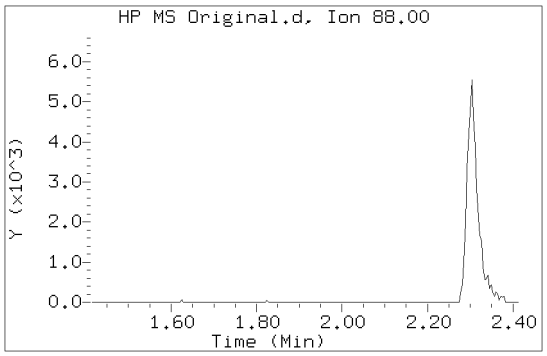
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

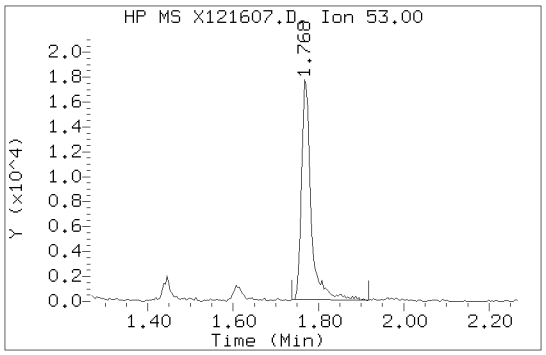
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

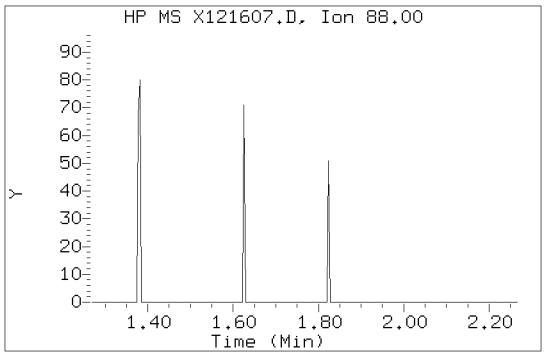
AFTER

MASS
53
AREA
27967
HEIGHT
17627
27-Dec-2022
16:06
linh
pham



AFTER

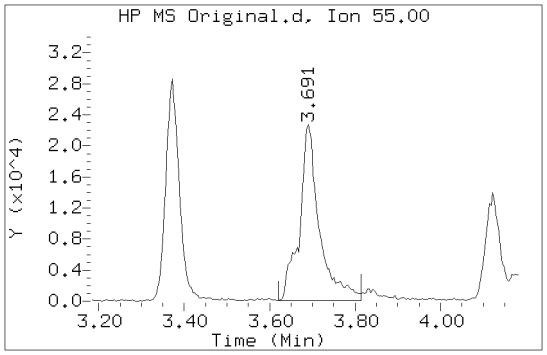
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham



Methyl Acrylate (96-33-3)

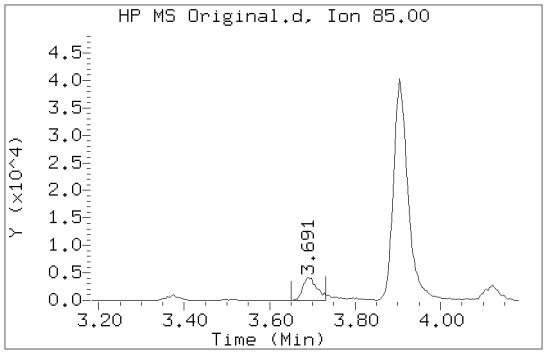
BEFORE

MASS
55
AREA
74503
HEIGHT
22672
27-Dec-2022
16:03
linh
pham



BEFORE

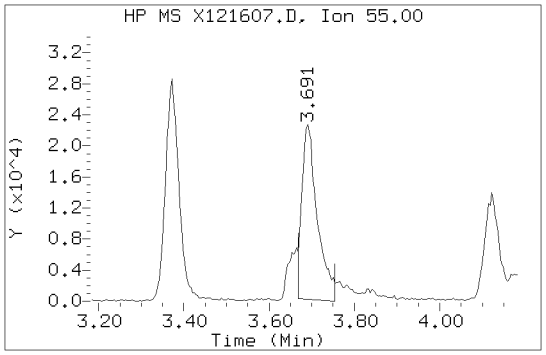
MASS
85
AREA
9792
HEIGHT
4239
27-Dec-2022
16:03
linh
pham



Reason Code:

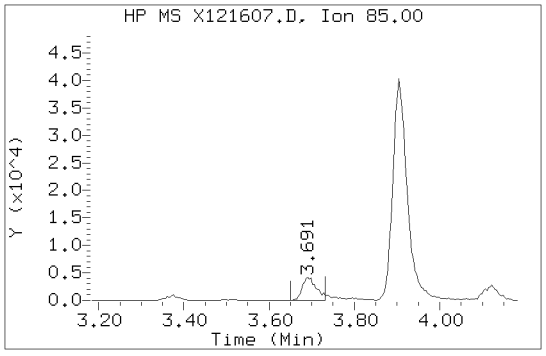
AFTER

MASS
55
AREA
57874
HEIGHT
22490
27-Dec-2022
16:06
linh
pham



AFTER

MASS
85
AREA
9792
HEIGHT
4239
27-Dec-2022
16:06
linh
pham



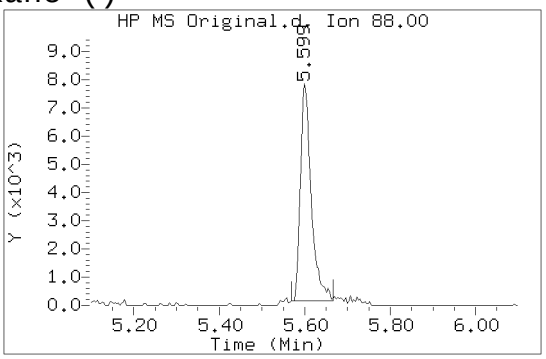
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D
Inj Date : 16-DEC-2022 13:43
InstruID : voa6.i
LabSampID : VSTD020

1,4-Dioxane ()

Reason Code:

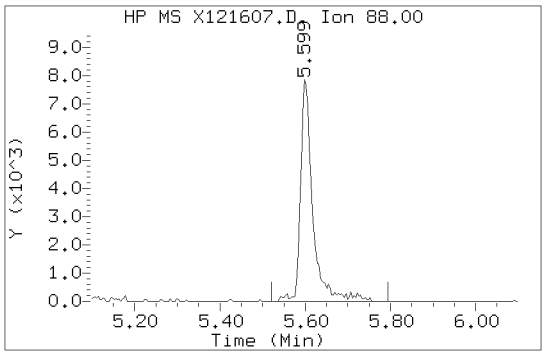
BEFORE

MASS
88
AREA
13920
HEIGHT
7701
27-Dec-2022
16:03
linh
pham



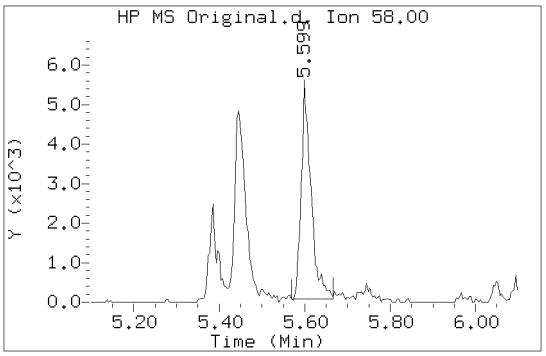
AFTER

MASS
88
AREA
16105
HEIGHT
7857
27-Dec-2022
16:06
linh
pham



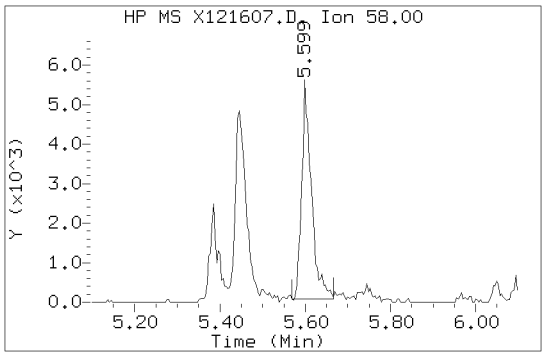
BEFORE

MASS
58
AREA
8930
HEIGHT
5535
27-Dec-2022
16:03
linh
pham



AFTER

MASS
58
AREA
8930
HEIGHT
5535
27-Dec-2022
16:06
linh
pham

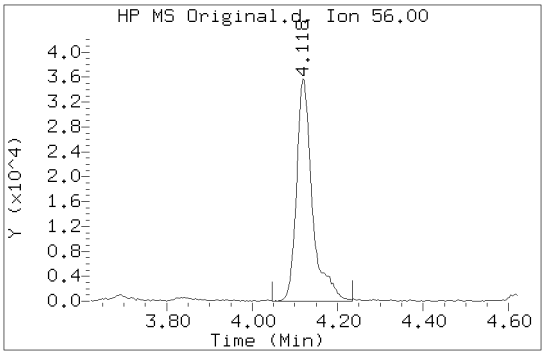


Cyclohexane (110-82-7)

Reason Code:

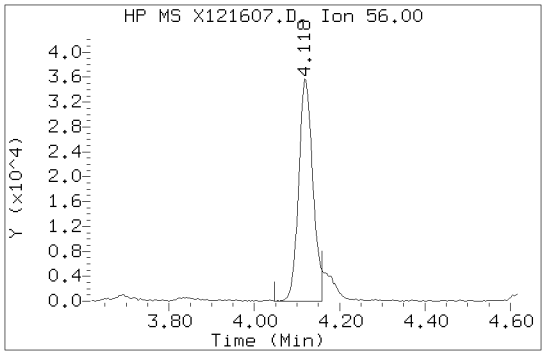
BEFORE

MASS
56
AREA
93540
HEIGHT
35720
27-Dec-2022
16:03
linh
pham



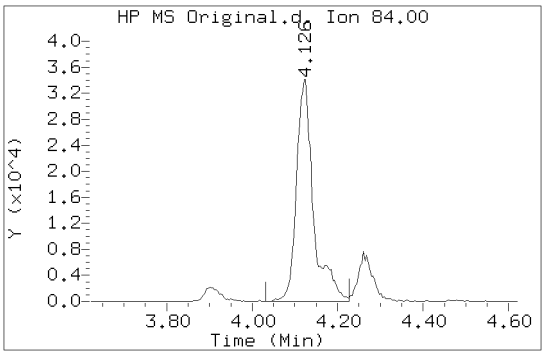
AFTER

MASS
56
AREA
84355
HEIGHT
35720
27-Dec-2022
16:06
linh
pham



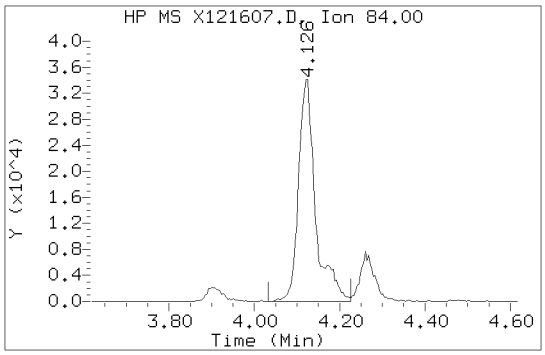
BEFORE

MASS
84
AREA
95724
HEIGHT
34088
27-Dec-2022
16:03
linh
pham



AFTER

MASS
84
AREA
95724
HEIGHT
34088
27-Dec-2022
16:06
linh
pham

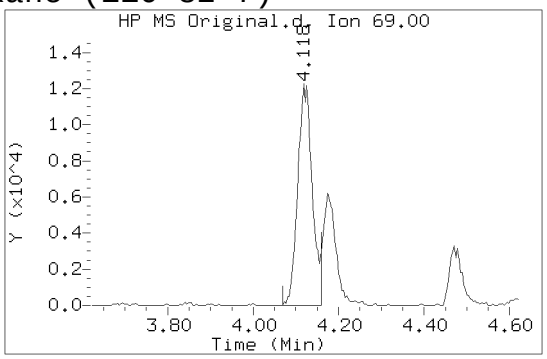


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121607.D
Inj Date : 16-DEC-2022 13:43
InstruID : voa6.i
LabSampID : VSTD020

Cyclohexane (110-82-7)

BEFORE

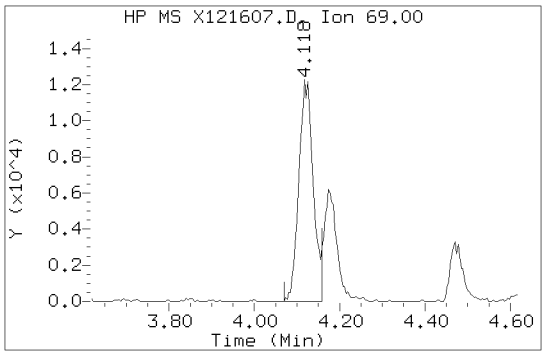
MASS
69
AREA
29515
HEIGHT
12273
27-Dec-2022
16:03
linh
pham



Reason Code:

AFTER

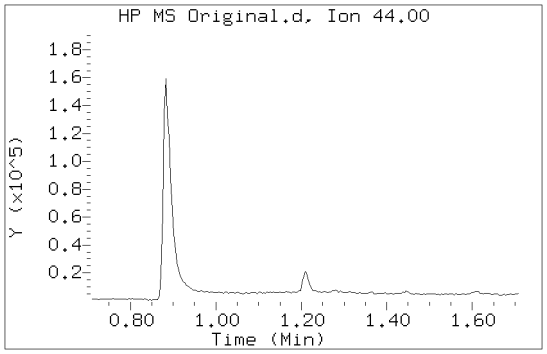
MASS
69
AREA
29515
HEIGHT
12273
27-Dec-2022
16:06
linh
pham



Acetaldehyde (75-07-0)

BEFORE

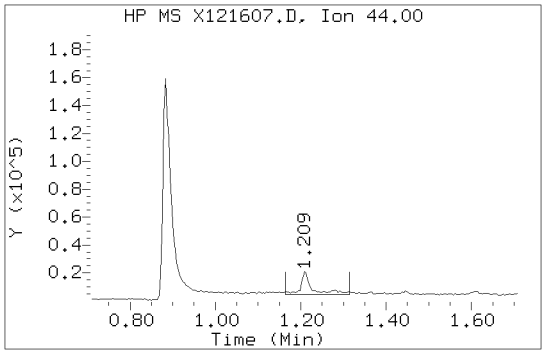
MASS
44
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

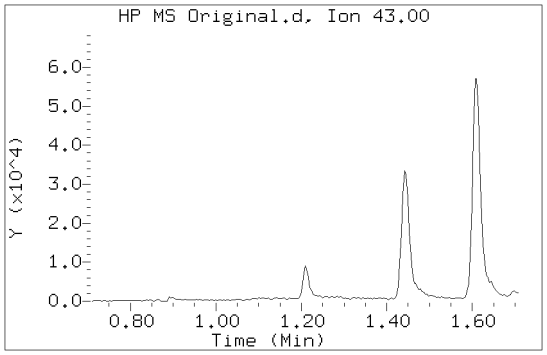
AFTER

MASS
44
AREA
32393
HEIGHT
16632
27-Dec-2022
16:06
linh
pham



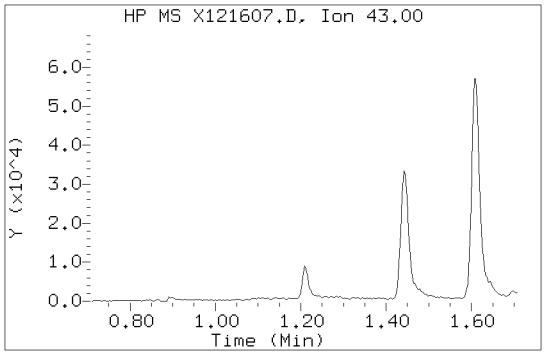
BEFORE

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



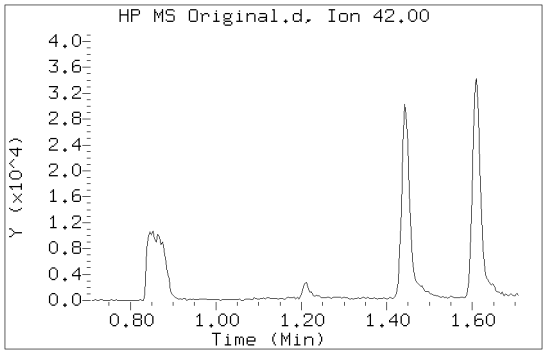
AFTER

MASS
43
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham



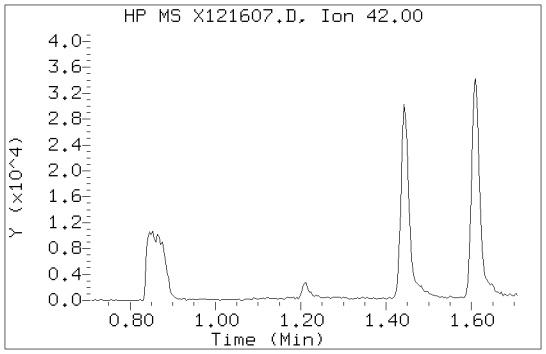
BEFORE

MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



AFTER

MASS
42
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 16-DEC-2022 14:04
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;1;7;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 13:43 Cal File: X121607.D
Als bottle: 9 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	457591	50.0000	
135 1,4-Dioxane	88	5.595	5.595	(1.339)	40509	1000.00	968.45
140 1,3-Butadiene	54	1.160	1.160	(0.278)	152324	50.0000	48.50
25 Methacrylonitrile	41	3.821	3.821	(0.915)	147931	50.0000	45.65
12 Isobutyl Alcohol	43	4.672	4.672	(1.118)	499872	1000.00	971.21
13 Acetonitrile	39	2.195	2.195	(0.525)	202696	500.000	486.70
14 Allyl Chloride	41	2.195	2.195	(0.525)	372130	50.0000	46.91
4 Propionitrile	54	3.645	3.645	(0.873)	221995	500.000	475.45
136 n-Hexane	57	2.768	2.768	(0.663)	182358	50.0000	55.34
72 trans-1,4-Dichloro-2-butene	53	8.890	8.890	(1.159)	70497	50.0000	50.03
194 Acetaldehyde	44	1.209	1.209	(0.289)	67188	200.000	235.49(M)
23 Chloroprene	53	1.767	1.767	(0.423)	73877	50.0000	47.48(M)
145 alpha-Methylstyrene	118	9.257	9.257	(0.958)	423646	50.0000	51.17
200 Dimethyl Disulfide	94	6.194	6.194	(0.808)	438695	50.0000	49.65
139 Diethyl ether	59	1.756	1.756	(0.420)	141705	50.0000	46.34
130 Ethyl Acetate	43	3.649	3.649	(0.873)	170590	50.0000	47.77
40 Methyl Methacrylate	41	5.606	5.606	(1.342)	147516	50.0000	47.27
49 Ethyl Methacrylate	69	6.712	6.712	(1.352)	144135	50.0000	44.17
132 n-Butanol	56	5.253	5.253	(1.257)	54418	1000.00	935.85
142 Tetrahydrofuran	42	3.844	3.844	(0.920)	58181	100.000	102.34

150	Allyl alcohol	57	2.768	2.768 (0.663)	182358	1000.00	1026.00
166	1,2,3-Trimethylbenzene	105	9.729	9.729 (1.007)	826758	50.0000	45.95

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D Page 2
Report Date: 27-Dec-2022 16:07

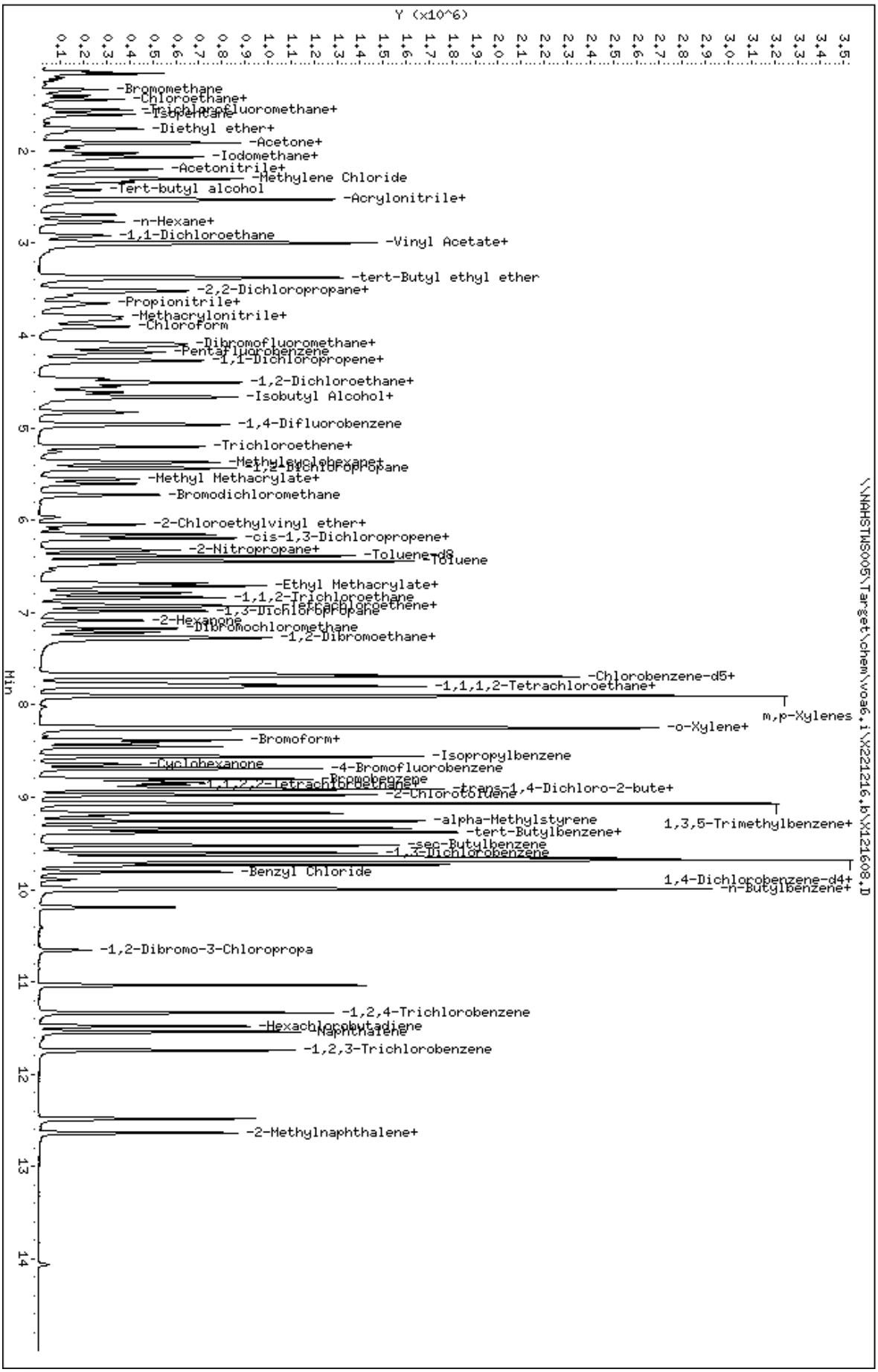
			QUANT SIG					AMOUNTS	
								CAL-AMT	ON-COL
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131	Methyl Acrylate	55	3.683	3.683	(0.882)	151068	50.0000	48.62(M)
	162	Butyl acrylate	55	8.252	8.252	(1.076)	415774	50.0000	48.76
	2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	160392	50.0000	50.11
	3	Chloromethane	50	1.077	1.077	(0.258)	192710	50.0000	46.69
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	201812	50.0000	50.48
	6	Bromomethane	94	1.336	1.336	(0.320)	139689	50.0000	46.33
	7	Chloroethane	64	1.400	1.400	(0.335)	134745	50.0000	48.43
	8	Trichlorofluoromethane	101	1.557	1.557	(0.373)	278013	50.0000	49.70
	9	Acrolein	56	1.441	1.441	(0.345)	27445	100.000	88.04
	10	Acetone	43	1.970	1.970	(0.472)	124798	100.000	97.19
	11	1,1-Dichloroethene	96	1.910	1.910	(0.457)	168905	50.0000	48.63
	15	Iodomethane	142	2.022	2.022	(0.484)	455792	100.000	99.60
	16	Acrylonitrile	53	2.528	2.528	(0.605)	118697	100.000	100.77
	17	Methylene Chloride	84	2.300	2.300	(0.550)	225642	50.0000	47.36
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	534667	50.0000	47.03
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	892690	100.000	98.24
	20	trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	191505	50.0000	49.27
	21	Vinyl Acetate	43	2.993	2.993	(0.716)	983875	100.000	98.59
	22	1,1-Dichloroethane	63	2.918	2.918	(0.699)	330037	50.0000	48.38
	24	2-Butanone	43	3.574	3.574	(0.856)	130179	100.000	95.71(H)
	26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	283996	50.0000	49.03
	27	cis-1,2-Dichloroethene	96	3.525	3.525	(0.844)	228729	50.0000	48.35
	28	Chloroform	83	3.904	3.904	(0.935)	370755	50.0000	48.49
	29	Bromochloromethane	128	3.788	3.788	(0.907)	120638	50.0000	46.58
$	30	Dibromofluoromethane	113	4.095	4.095	(0.980)	211939	50.0000	48.23
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	300650	50.0000	49.56
	32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	256928	50.0000	52.23
	33	1,2-Dichloroethane	62	4.552	4.552	(0.917)	276500	50.0000	48.70
	34	Carbon Tetrachloride	117	4.260	4.260	(0.858)	251833	50.0000	47.94
$	35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	222293	50.0000	47.94
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	692830	50.0000	
	37	Benzene	78	4.507	4.507	(0.908)	812279	50.0000	49.09
	38	Trichloroethene	130	5.205	5.205	(1.048)	233833	50.0000	49.83
	39	Bromodichloromethane	83	5.722	5.722	(1.153)	297315	50.0000	47.88
	41	2-Chloroethylvinyl ether	63	6.048	6.048	(1.218)	180920	100.000	102.42
	42	1,2-Dichloropropane	63	5.433	5.433	(1.094)	215079	50.0000	48.87
	44	Dibromomethane	93	5.553	5.553	(1.119)	143223	50.0000	47.87
	45	4-Methyl-2-Pentanone	43	6.322	6.322	(0.824)	336990	100.000	96.59
	46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	366231	50.0000	50.22
*	47	Chlorobenzene-d5	117	7.668	7.668	(1.000)	652727	50.0000	
$	48	Toluene-d8	98	6.386	6.386	(0.833)	772486	50.0000	47.89
	50	Toluene	91	6.446	6.446	(0.841)	889029	50.0000	49.27
	51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	309568	50.0000	51.15
	52	2-Hexanone	43	7.087	7.087	(0.924)	232879	100.000	98.10
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	172833	50.0000	47.75
	54	1,3-Dichloropropane	76	6.982	6.982	(0.911)	345991	50.0000	48.56
	55	Dibromochloromethane	129	7.176	7.176	(0.936)	260477	50.0000	49.86
	56	Tetrachloroethene	164	6.925	6.925	(0.903)	194749	50.0000	52.17
	57	1,2-Dibromoethane	107	7.259	7.259	(0.947)	229442	50.0000	50.70
	58	1-Chlorohexane	55	7.694	7.694	(1.550)	170128	50.0000	50.81
	59	Chlorobenzene	112	7.694	7.694	(1.003)	624151	50.0000	48.77
	60	1,1,1,2-Tetrachloroethane	131	7.773	7.773	(1.014)	235373	50.0000	49.42

61 Ethylbenzene	106	7.799	7.799 (1.017)	311983	50.0000	51.75
62 m,p-Xylenes	106	7.904	7.904 (1.031)	785955	100.000	101.14

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.241	8.241	(1.075)	385427	50.0000	50.25
	64 Styrene	104	8.260	8.260	(1.077)	673066	50.0000	52.35
	66 Bromoform	173	8.410	8.410	(1.097)	181492	50.0000	50.14
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	920845	50.0000	52.55
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	276483	50.0000	46.43
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	292753	50.0000	48.55
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	373588	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	199888	50.0000	48.08(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	1085689	50.0000	52.46
	74 Bromobenzene	156	8.803	8.803	(0.911)	299078	50.0000	48.79
	75 1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	793494	50.0000	51.90
	76 2-Chlorotoluene	91	8.972	8.972	(0.929)	670422	50.0000	49.37
	77 4-Chlorotoluene	91	9.070	9.070	(0.939)	782927	50.0000	50.57
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	652461	50.0000	52.14
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	815460	50.0000	50.69
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	889679	50.0000	53.43
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	810483	50.0000	54.32
	83 1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	520329	50.0000	51.14
	84 1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	544362	50.0000	49.03
	86 Benzyl Chloride	91	9.808	9.808	(1.279)	472387	50.0000	46.44
	87 n-Butylbenzene	91	9.995	9.995	(1.035)	696355	50.0000	48.48
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	519532	50.0000	49.58
	89 1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.103)	48660	50.0000	51.11
	90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	355455	50.0000	53.75
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	155390	50.0000	52.99
	92 Naphthalene	128	11.540	11.540	(1.194)	799829	50.0000	53.16
	93 1,2,3-Trichlorobenzene	180	11.742	11.742	(1.215)	320836	50.0000	50.66
M	94 1,2-Dichloroethylene (total)	96				420234	100.000	
M	95 Xylenes (total)	106				1171382	150.000	
	141 Cyclohexane	56	4.121	4.121	(0.987)	237699	50.0000	51.49
	138 Freon TF	101	1.913	1.913	(0.458)	172155	50.0000	51.25
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	420886	50.0000	49.62
	146 Methyl Acetate	43	2.228	2.228	(0.533)	96420	50.0000	46.82
	148 Tert-Butyl alcohol	59	2.423	2.423	(0.580)	302677	1000.00	955.26
	149 Isopropyl Alcohol	45	2.090	2.090	(0.500)	157082	1000.00	949.28

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



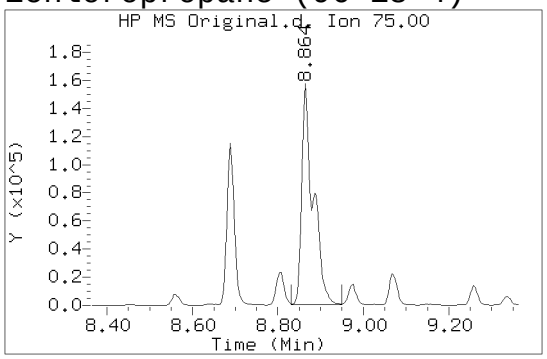
Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D
Date : 16-DEC-2022 14:04
Client ID: VSTD050
Sample Info: VSTD050;VSTD050;1;7;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

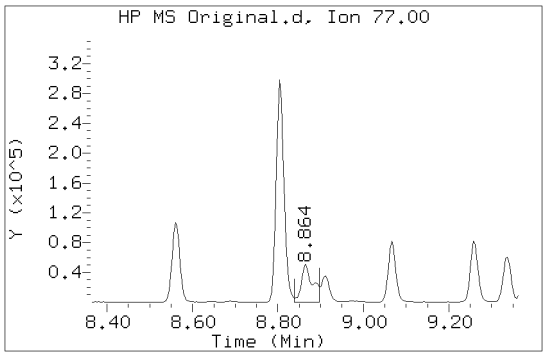
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D
Inj Date : 16-DEC-2022 14:04
InstruID : voa6.i
LabSampID : VSTD050

1,2,3-Trichloropropane (96-18-4)

BEFORE
MASS
75
AREA
298610
HEIGHT
157256
27-Dec-2022
16:03
linh
pham

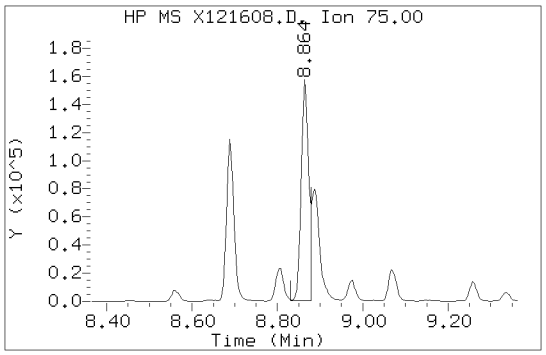


BEFORE
MASS
77
AREA
96560
HEIGHT
50650
27-Dec-2022
16:03
linh
pham

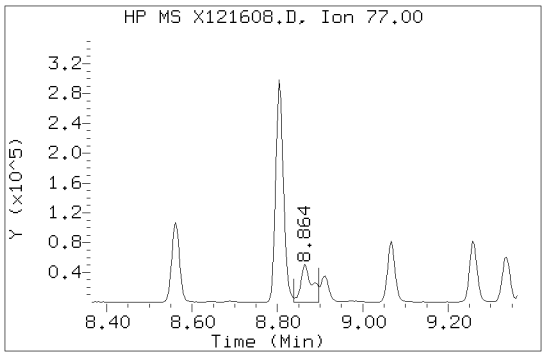


Reason Code:

AFTER
MASS
75
AREA
199888
HEIGHT
157257
27-Dec-2022
16:06
linh
pham

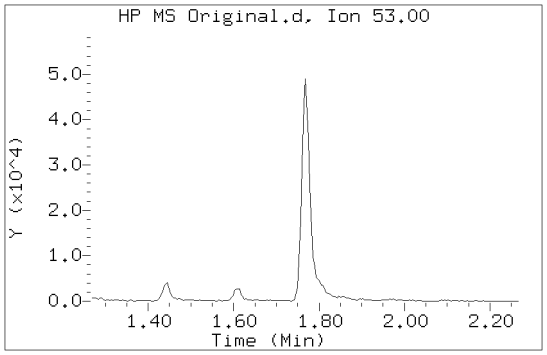


AFTER
MASS
77
AREA
96560
HEIGHT
50650
27-Dec-2022
16:06
linh
pham

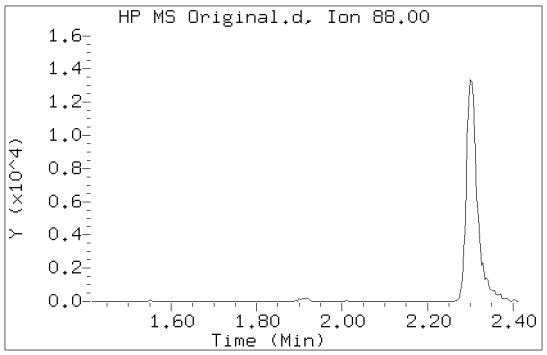


Chloroprene (126-99-8)

BEFORE
MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

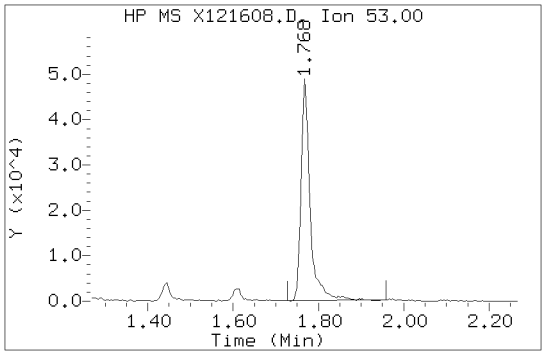


BEFORE
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham

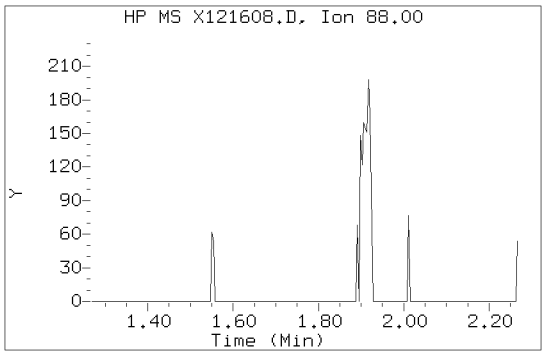


Reason Code:

AFTER
MASS
53
AREA
73877
HEIGHT
48802
27-Dec-2022
16:06
linh
pham



AFTER
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham

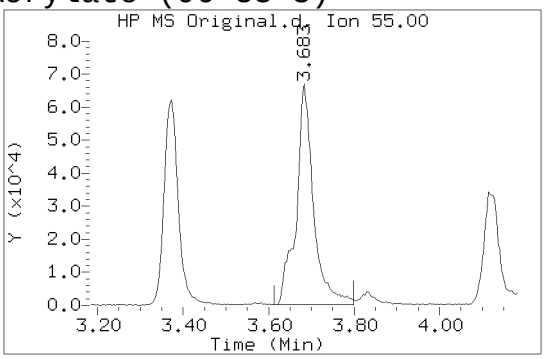


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D
Inj Date : 16-DEC-2022 14:04
InstruID : voa6.i
LabSampID : VSTD050

Methyl Acrylate (96-33-3)

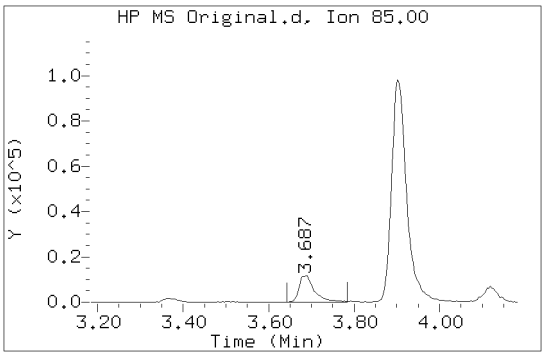
BEFORE

MASS
55
AREA
188598
HEIGHT
66813
27-Dec-2022
16:03
linh
pham



BEFORE

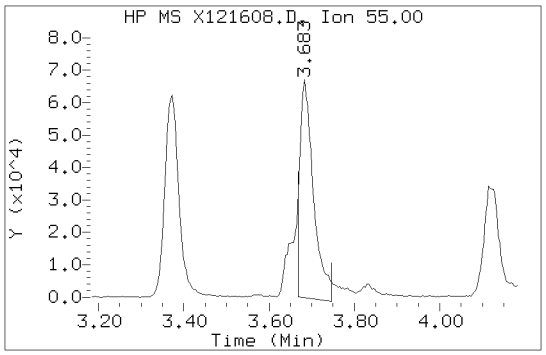
MASS
85
AREA
29996
HEIGHT
11707
27-Dec-2022
16:03
linh
pham



Reason Code:

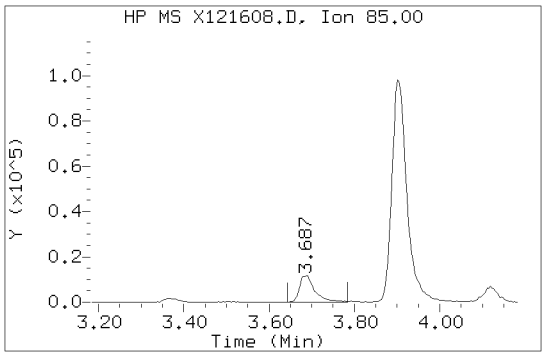
AFTER

MASS
55
AREA
151068
HEIGHT
67146
27-Dec-2022
16:06
linh
pham



AFTER

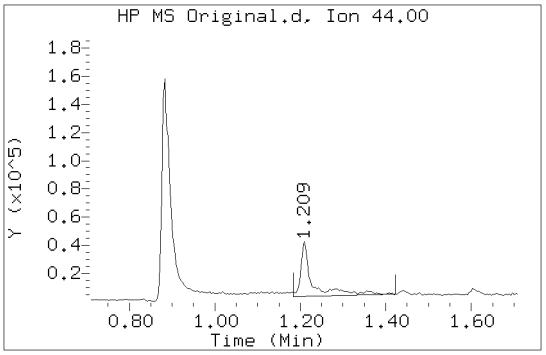
MASS
85
AREA
29996
HEIGHT
11707
27-Dec-2022
16:06
linh
pham



Acetaldehyde (75-07-0)

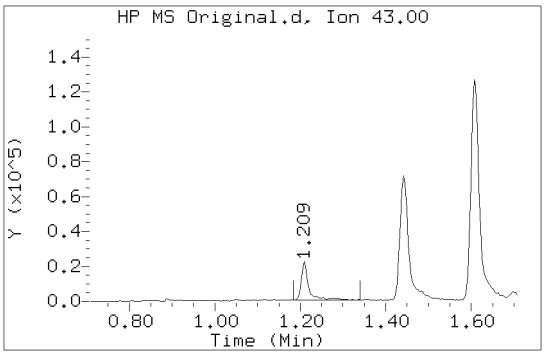
BEFORE

MASS
44
AREA
71920
HEIGHT
38656
27-Dec-2022
16:03
linh
pham



BEFORE

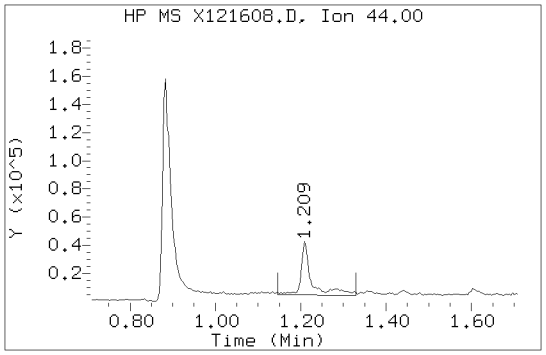
MASS
43
AREA
28032
HEIGHT
22022
27-Dec-2022
16:03
linh
pham



Reason Code:

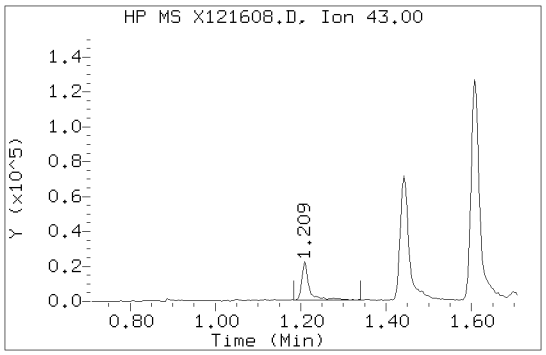
AFTER

MASS
44
AREA
67188
HEIGHT
37862
27-Dec-2022
16:06
linh
pham



AFTER

MASS
43
AREA
28032
HEIGHT
22022
27-Dec-2022
16:06
linh
pham



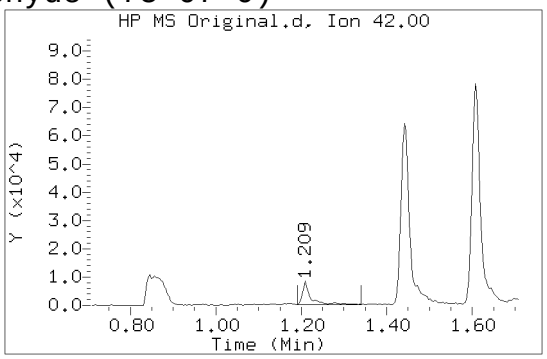
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121608.D
Inj Date : 16-DEC-2022 14:04
InstruID : voa6.i
LabSampID : VSTD050

Acetaldehyde (75-07-0)

Reason Code:

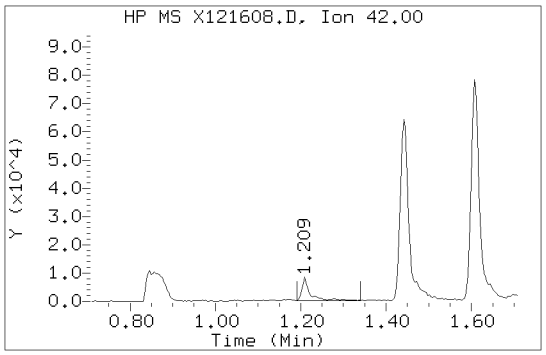
BEFORE

MASS
42
AREA
11352
HEIGHT
8504
27-Dec-2022
16:03
linh
pham



AFTER

MASS
42
AREA
11352
HEIGHT
8504
27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 16-DEC-2022 14:25
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 10 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	454640	50.0000	
135 1,4-Dioxane	88	5.598	5.598	(1.340)	80329	2000.00	1932.89
140 1,3-Butadiene	54	1.160	1.160	(0.278)	300004	100.000	96.14
25 Methacrylonitrile	41	3.822	3.822	(0.915)	296105	100.000	91.97
12 Isobutyl Alcohol	43	4.672	4.672	(1.118)	1010956	2000.00	1976.95
13 Acetonitrile	39	2.195	2.195	(0.525)	413876	1000.00	1000.23
14 Allyl Chloride	41	2.195	2.195	(0.525)	756242	100.000	95.96
4 Propionitrile	54	3.645	3.645	(0.873)	447087	1000.00	963.76
136 n-Hexane	57	2.768	2.768	(0.663)	330416	100.000	100.93
72 trans-1,4-Dichloro-2-butene	53	8.890	8.890	(1.159)	144667	100.000	100.47
194 Acetaldehyde	44	1.209	1.209	(0.289)	107798	400.000	394.60(M)
23 Chloroprene	53	1.767	1.767	(0.423)	146540	100.000	94.79(M)
145 alpha-Methylstyrene	118	9.257	9.257	(0.958)	857105	100.000	100.18
200 Dimethyl Disulfide	94	6.194	6.194	(0.808)	912573	100.000	101.09
139 Diethyl ether	59	1.752	1.752	(0.420)	288002	100.000	94.80
130 Ethyl Acetate	43	3.649	3.649	(0.873)	318062	100.000	89.65
40 Methyl Methacrylate	41	5.606	5.606	(1.342)	295199	100.000	95.22
49 Ethyl Methacrylate	69	6.712	6.712	(1.352)	311883	100.000	96.06
132 n-Butanol	56	5.253	5.253	(1.258)	124057	2000.00	1971.40
142 Tetrahydrofuran	42	3.840	3.840	(0.919)	109518	200.000	196.74

150	Allyl alcohol	57	2.768	2.768 (0.663)	330416	2000.00	1871.09
166	1,2,3-Trimethylbenzene	105	9.729	9.729 (1.007)	1772216	100.000	95.31

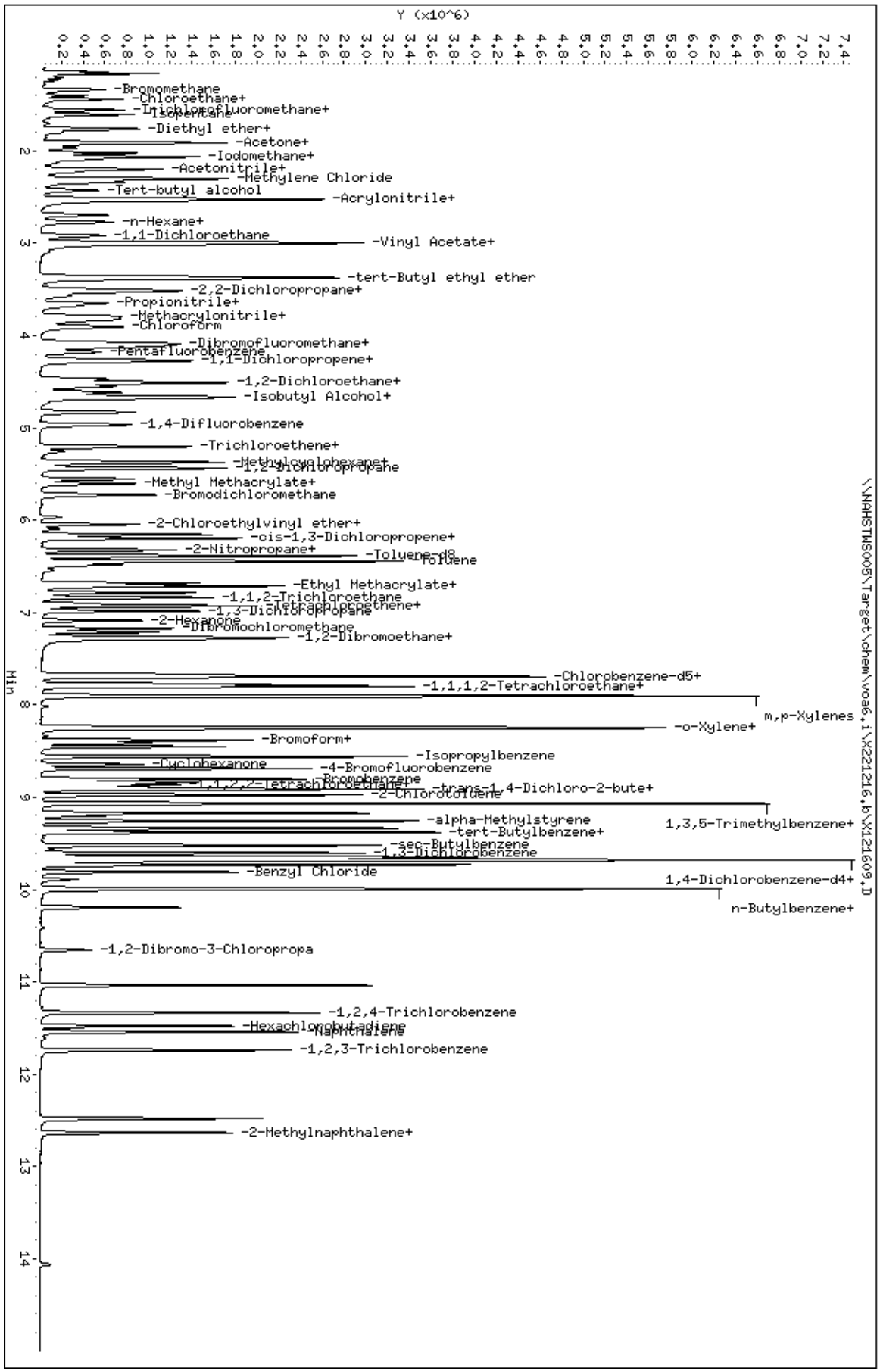
							AMOUNTS	
		QUANT SIG					CAL-AMT	ON-COL
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ug/l)	(ug/l)
	131 Methyl Acrylate	55	3.683	3.683	(0.882)	308372	100.000	99.90(M)
	162 Butyl acrylate	55	8.249	8.249	(1.076)	901265	100.000	103.44
	2 Dichlorodifluoromethane	85	0.969	0.969	(0.232)	309019	100.000	96.81
	3 Chloromethane	50	1.078	1.078	(0.258)	388163	100.000	92.40
	5 Vinyl Chloride	62	1.141	1.141	(0.273)	390567	100.000	98.34
	6 Bromomethane	94	1.336	1.336	(0.320)	284165	100.000	93.02
	7 Chloroethane	64	1.400	1.400	(0.335)	261091	100.000	94.45
	8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	543907	100.000	97.86
	9 Acrolein	56	1.441	1.441	(0.345)	60756	200.000	192.70
	10 Acetone	43	1.970	1.970	(0.472)	243517	200.000	190.92
	11 1,1-Dichloroethene	96	1.910	1.910	(0.457)	329394	100.000	95.46
	15 Iodomethane	142	2.026	2.026	(0.485)	958603	200.000	197.72
	16 Acrylonitrile	53	2.528	2.528	(0.605)	235604	200.000	201.32
	17 Methylene Chloride	84	2.300	2.300	(0.550)	423827	100.000	89.54
	18 Methyl tert-butyl ether	73	2.532	2.532	(0.606)	1078258	100.000	95.46
	19 Carbon Disulfide	76	2.063	2.063	(0.494)	1765599	200.000	195.57
	20 trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	376933	100.000	97.60
	21 Vinyl Acetate	43	2.993	2.993	(0.716)	1955305	200.000	197.21
	22 1,1-Dichloroethane	63	2.918	2.918	(0.699)	641083	100.000	94.59
	24 2-Butanone	43	3.570	3.570	(0.855)	264221	200.000	192.38(H)
	26 2,2-Dichloropropane	77	3.507	3.507	(0.839)	554902	100.000	96.43
	27 cis-1,2-Dichloroethene	96	3.522	3.522	(0.843)	443532	100.000	94.37
	28 Chloroform	83	3.904	3.904	(0.935)	715830	100.000	94.23
	29 Bromochloromethane	128	3.792	3.792	(0.908)	239022	100.000	92.88
$	30 Dibromofluoromethane	113	4.095	4.095	(0.980)	438954	100.000	100.72
	31 1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	583361	100.000	96.79
	32 1,1-Dichloropropene	75	4.275	4.275	(0.861)	496096	100.000	101.35
	33 1,2-Dichloroethane	62	4.552	4.552	(0.917)	553661	100.000	98.01
	34 Carbon Tetrachloride	117	4.260	4.260	(0.858)	487488	100.000	93.26
$	35 1,2-Dichloroethane-d4	65	4.466	4.466	(1.069)	455890	100.000	98.67
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	689427	50.0000	
	37 Benzene	78	4.508	4.508	(0.908)	1590142	100.000	96.58
	38 Trichloroethene	130	5.205	5.205	(1.048)	456948	100.000	97.85
	39 Bromodichloromethane	83	5.722	5.722	(1.153)	587419	100.000	95.07
	41 2-Chloroethylvinyl ether	63	6.044	6.044	(1.217)	345852	200.000	196.75
	42 1,2-Dichloropropane	63	5.433	5.433	(1.094)	420835	100.000	96.09
	44 Dibromomethane	93	5.550	5.550	(1.118)	280146	100.000	94.11
	45 4-Methyl-2-Pentanone	43	6.322	6.322	(0.824)	671115	200.000	188.25
	46 cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	735867	100.000	101.41
*	47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	666948	50.0000	
$	48 Toluene-d8	98	6.386	6.386	(0.833)	1602890	100.000	97.25
	50 Toluene	91	6.446	6.446	(0.841)	1761917	100.000	95.57
	51 trans-1,3-Dichloropropene	75	6.678	6.678	(1.345)	618784	100.000	102.75
	52 2-Hexanone	43	7.087	7.087	(0.924)	458639	200.000	189.09
	53 1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	342194	100.000	92.52
	54 1,3-Dichloropropane	76	6.982	6.982	(0.911)	682500	100.000	93.75
	55 Dibromochloromethane	129	7.173	7.173	(0.935)	521219	100.000	97.64
	56 Tetrachloroethene	164	6.925	6.925	(0.903)	373651	100.000	97.96
	57 1,2-Dibromoethane	107	7.259	7.259	(0.947)	453499	100.000	98.07
	58 1-Chlorohexane	55	7.694	7.694	(1.550)	326538	100.000	98.00
	59 Chlorobenzene	112	7.694	7.694	(1.003)	1229287	100.000	94.01
	60 1,1,1,2-Tetrachloroethane	131	7.773	7.773	(1.014)	472962	100.000	97.19

61 Ethylbenzene	106	7.799	7.799 (1.017)	612289	100.000	99.40
62 m,p-Xylenes	106	7.904	7.904 (1.031)	1556563	200.000	196.03

		QUANT SIG					AMOUNTS	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.241	8.241	(1.075)	767814	100.000	97.97
	64 Styrene	104	8.260	8.260	(1.077)	1350780	100.000	102.83
	66 Bromoform	173	8.410	8.410	(1.097)	367943	100.000	99.50
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	1818857	100.000	101.58
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	554091	100.000	90.03
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	615584	100.000	99.86
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	386107	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	407425	100.000	94.83(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	2152414	100.000	100.64
	74 Bromobenzene	156	8.803	8.803	(0.911)	602819	100.000	95.16
	75 1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	1603520	100.000	101.49
	76 2-Chlorotoluene	91	8.972	8.972	(0.929)	1326500	100.000	94.51
	77 4-Chlorotoluene	91	9.070	9.070	(0.939)	1587855	100.000	99.24
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	1287608	100.000	99.56
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	1640529	100.000	98.68
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	1778581	100.000	103.36
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	1606121	100.000	104.16
	83 1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	1039293	100.000	98.84
	84 1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	1114780	100.000	97.16
	86 Benzyl Chloride	91	9.808	9.808	(1.279)	1009234	100.000	94.18
	87 n-Butylbenzene	91	9.992	9.992	(1.034)	1425779	100.000	94.31
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	1054319	100.000	97.36
	89 1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.103)	94321	100.000	95.78
	90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	697257	100.000	102.03
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	299042	100.000	97.63
	92 Naphthalene	128	11.540	11.540	(1.194)	1592534	100.000	102.42
	93 1,2,3-Trichlorobenzene	180	11.739	11.739	(1.215)	642199	100.000	98.12
M	94 1,2-Dichloroethylene (total)	96				820465	200.000	
M	95 Xylenes (total)	106				2324377	300.000	
	141 Cyclohexane	56	4.118	4.118	(0.986)	432198	100.000	93.19
	138 Freon TF	101	1.913	1.913	(0.458)	327614	100.000	98.16
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	862071	100.000	102.15(A)
	146 Methyl Acetate	43	2.228	2.228	(0.533)	196542	100.000	96.07
	148 Tert-Butyl alcohol	59	2.427	2.427	(0.581)	592215	2000.00	1881.19
	149 Isopropyl Alcohol	45	2.093	2.093	(0.501)	321288	2000.00	1954.21

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6,i\X221216,b\X121609,D
Date : 16-DEC-2022 14:25
Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

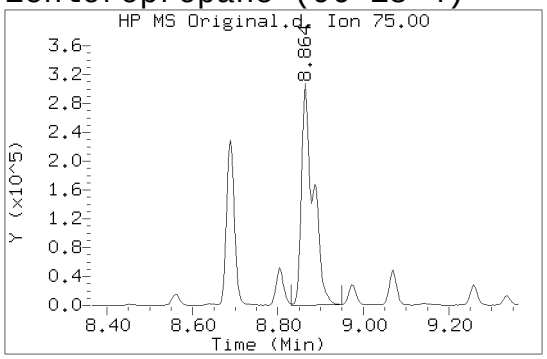
Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D
Inj Date : 16-DEC-2022 14:25
InstruID : voa6.i
LabSampID : VSTD100

1,2,3-Trichloropropane (96-18-4)

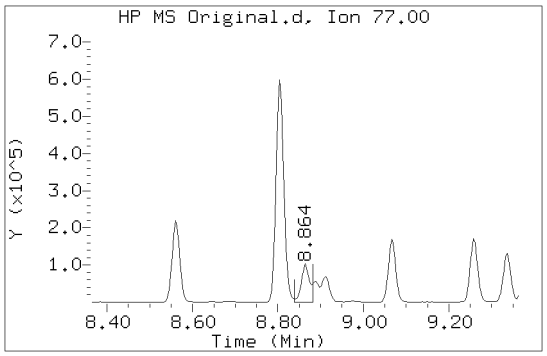
BEFORE

MASS
75
AREA
602953
HEIGHT
307037
27-Dec-2022
16:03
linh
pham



BEFORE

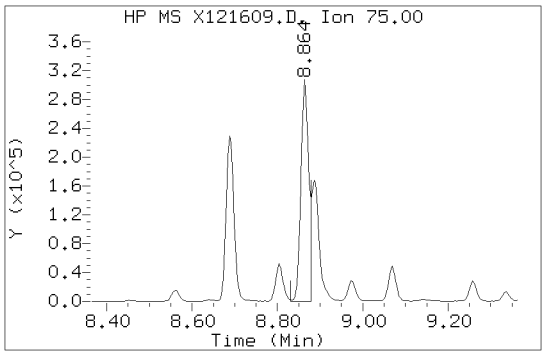
MASS
77
AREA
149362
HEIGHT
103354
27-Dec-2022
16:03
linh
pham



Reason Code:

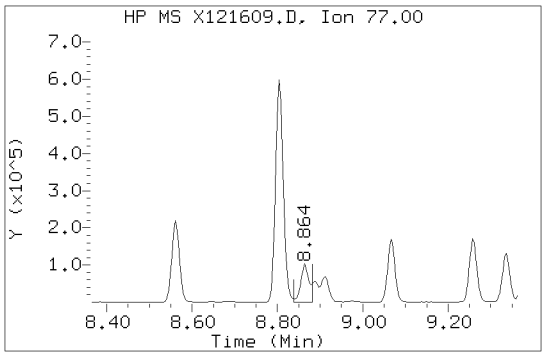
AFTER

MASS
75
AREA
407425
HEIGHT
307037
27-Dec-2022
16:06
linh
pham



AFTER

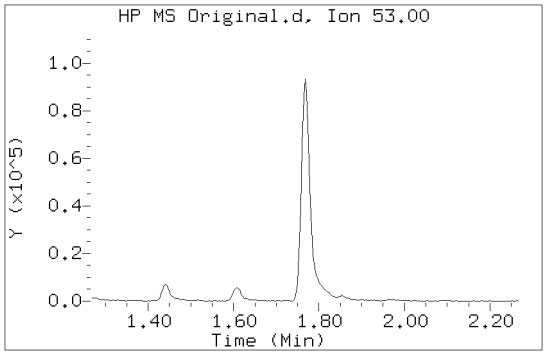
MASS
77
AREA
149362
HEIGHT
103354
27-Dec-2022
16:06
linh
pham



Chloroprene (126-99-8)

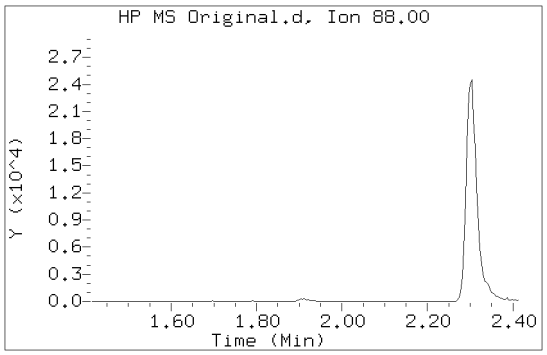
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



BEFORE

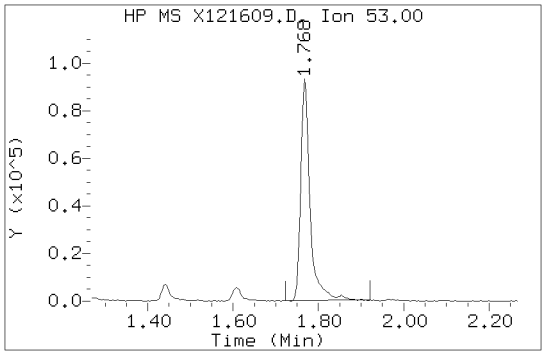
MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:03
linh
pham



Reason Code:

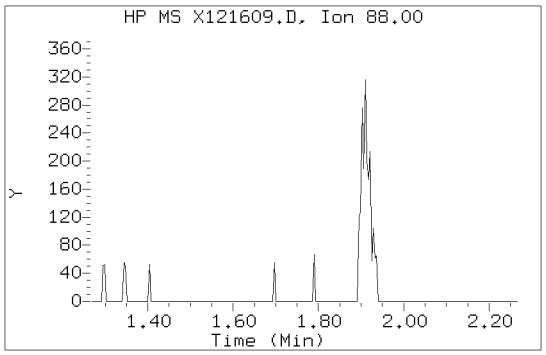
AFTER

MASS
53
AREA
146540
HEIGHT
93219
27-Dec-2022
16:06
linh
pham



AFTER

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham

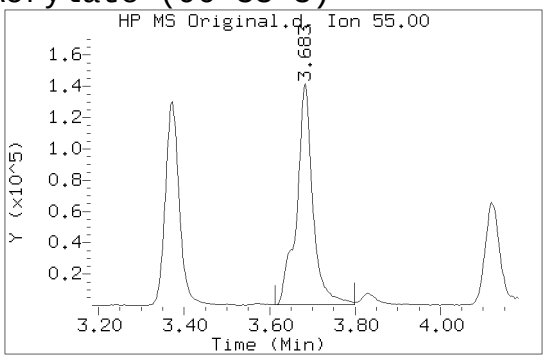


Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D
Inj Date : 16-DEC-2022 14:25
InstruID : voa6.i
LabSampID : VSTD100

Methyl Acrylate (96-33-3)

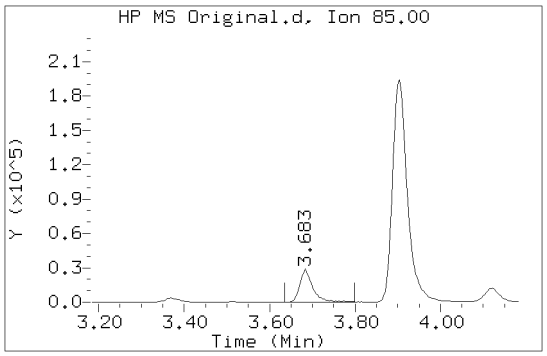
BEFORE

MASS
55
AREA
380041
HEIGHT
141345
27-Dec-2022
16:03
linh
pham



BEFORE

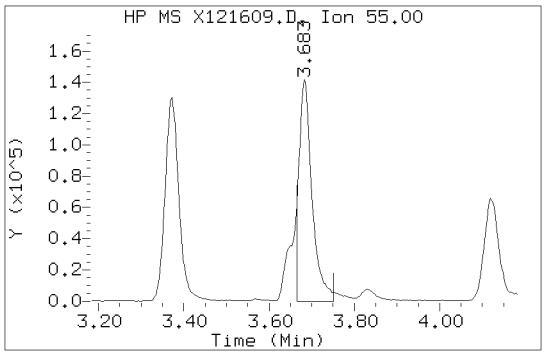
MASS
85
AREA
62241
HEIGHT
29192
27-Dec-2022
16:03
linh
pham



Reason Code:

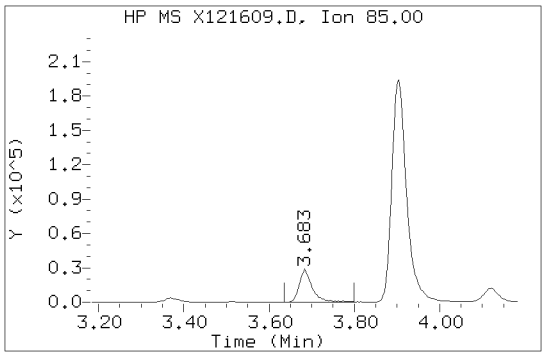
AFTER

MASS
55
AREA
308372
HEIGHT
141781
27-Dec-2022
16:06
linh
pham



AFTER

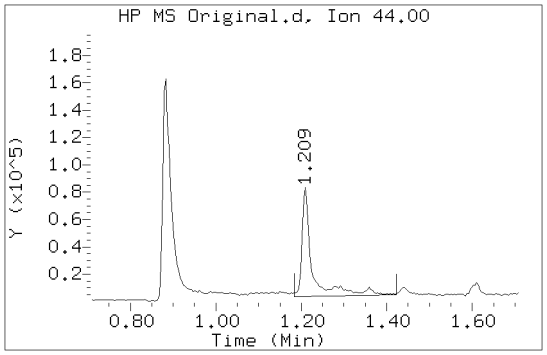
MASS
85
AREA
62241
HEIGHT
29192
27-Dec-2022
16:06
linh
pham



Acetaldehyde (75-07-0)

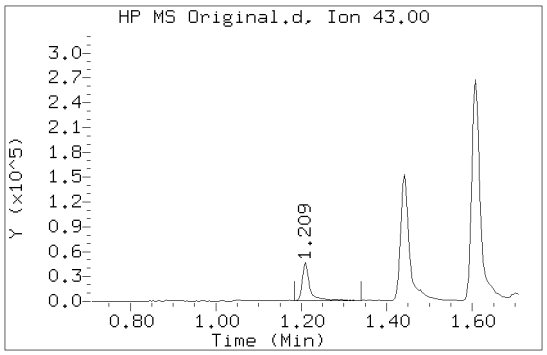
BEFORE

MASS
44
AREA
137215
HEIGHT
79995
27-Dec-2022
16:03
linh
pham



BEFORE

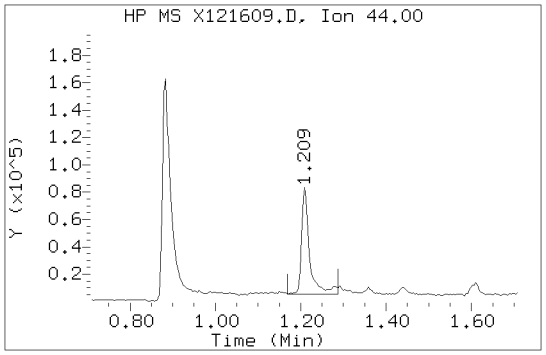
MASS
43
AREA
58307
HEIGHT
46134
27-Dec-2022
16:03
linh
pham



Reason Code:

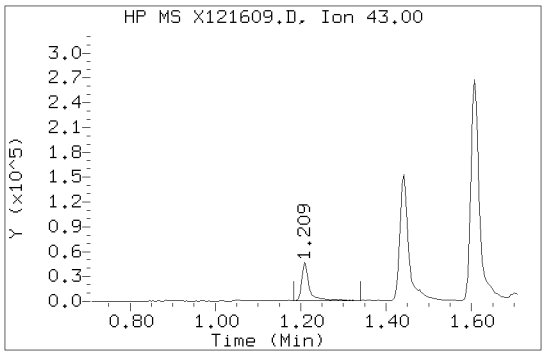
AFTER

MASS
44
AREA
107798
HEIGHT
78310
27-Dec-2022
16:06
linh
pham



AFTER

MASS
43
AREA
58307
HEIGHT
46134
27-Dec-2022
16:06
linh
pham



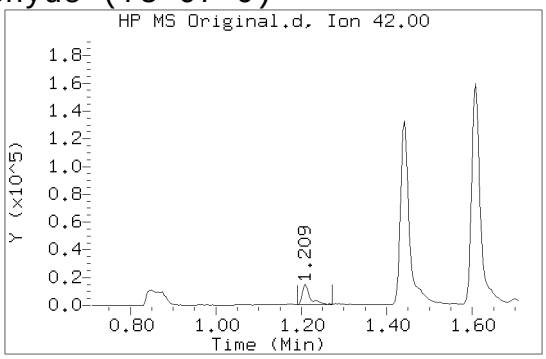
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121609.D
Inj Date : 16-DEC-2022 14:25
InstruID : voa6.i
LabSampID : VSTD100

Acetaldehyde (75-07-0)

Reason Code:

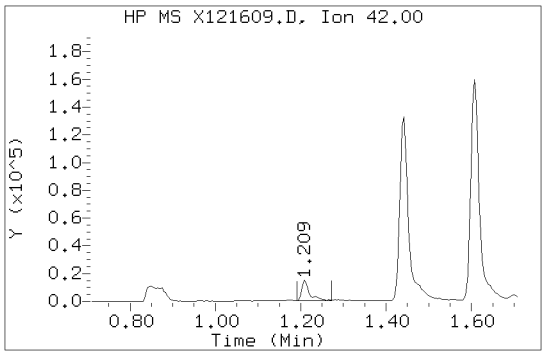
BEFORE

MASS
42
AREA
19613
HEIGHT
14674
27-Dec-2022
16:03
linh
pham



AFTER

MASS
42
AREA
19613
HEIGHT
14674
27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 16-DEC-2022 14:46
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:25 Cal File: X121609.D
Als bottle: 11 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.177	4.177	(1.000)	447266	50.0000	
135 1,4-Dioxane	88	5.598	5.598	(1.340)	128845	3000.00	3151.41
140 1,3-Butadiene	54	1.160	1.160	(0.278)	468966	150.000	152.77
25 Methacrylonitrile	41	3.818	3.818	(0.914)	457301	150.000	144.39
12 Isobutyl Alcohol	43	4.672	4.672	(1.118)	1595753	3000.00	3171.99
13 Acetonitrile	39	2.194	2.194	(0.525)	642798	1500.00	1579.09
14 Allyl Chloride	41	2.194	2.194	(0.525)	1164663	150.000	150.22
4 Propionitrile	54	3.649	3.649	(0.873)	694740	1500.00	1522.31
136 n-Hexane	57	2.768	2.768	(0.663)	533876	150.000	165.78
72 trans-1,4-Dichloro-2-butene	53	8.889	8.889	(1.159)	234252	150.000	161.53
194 Acetaldehyde	44	1.209	1.209	(0.289)	161053	600.000	611.34(M)
23 Chloroprene	53	1.767	1.767	(0.423)	225733	150.000	148.43
145 alpha-Methylstyrene	118	9.257	9.257	(0.958)	1351001	150.000	157.73
200 Dimethyl Disulfide	94	6.198	6.198	(0.808)	1420820	150.000	156.27
139 Diethyl ether	59	1.752	1.752	(0.419)	443624	150.000	148.44
130 Ethyl Acetate	43	3.649	3.649	(0.873)	516433	150.000	147.97
40 Methyl Methacrylate	41	5.602	5.602	(1.341)	465959	150.000	152.78
49 Ethyl Methacrylate	69	6.712	6.712	(1.352)	517063	150.000	157.90
132 n-Butanol	56	5.253	5.253	(1.258)	210842	3000.00	3100.52
142 Tetrahydrofuran	42	3.840	3.840	(0.919)	162133	300.000	297.65

150	Allyl alcohol	57	2.768	2.768 (0.663)	533876	3000.00	3073.09
166	1,2,3-Trimethylbenzene	105	9.729	9.729 (1.007)	2744011	150.000	147.41

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D Page 2
Report Date: 27-Dec-2022 16:07

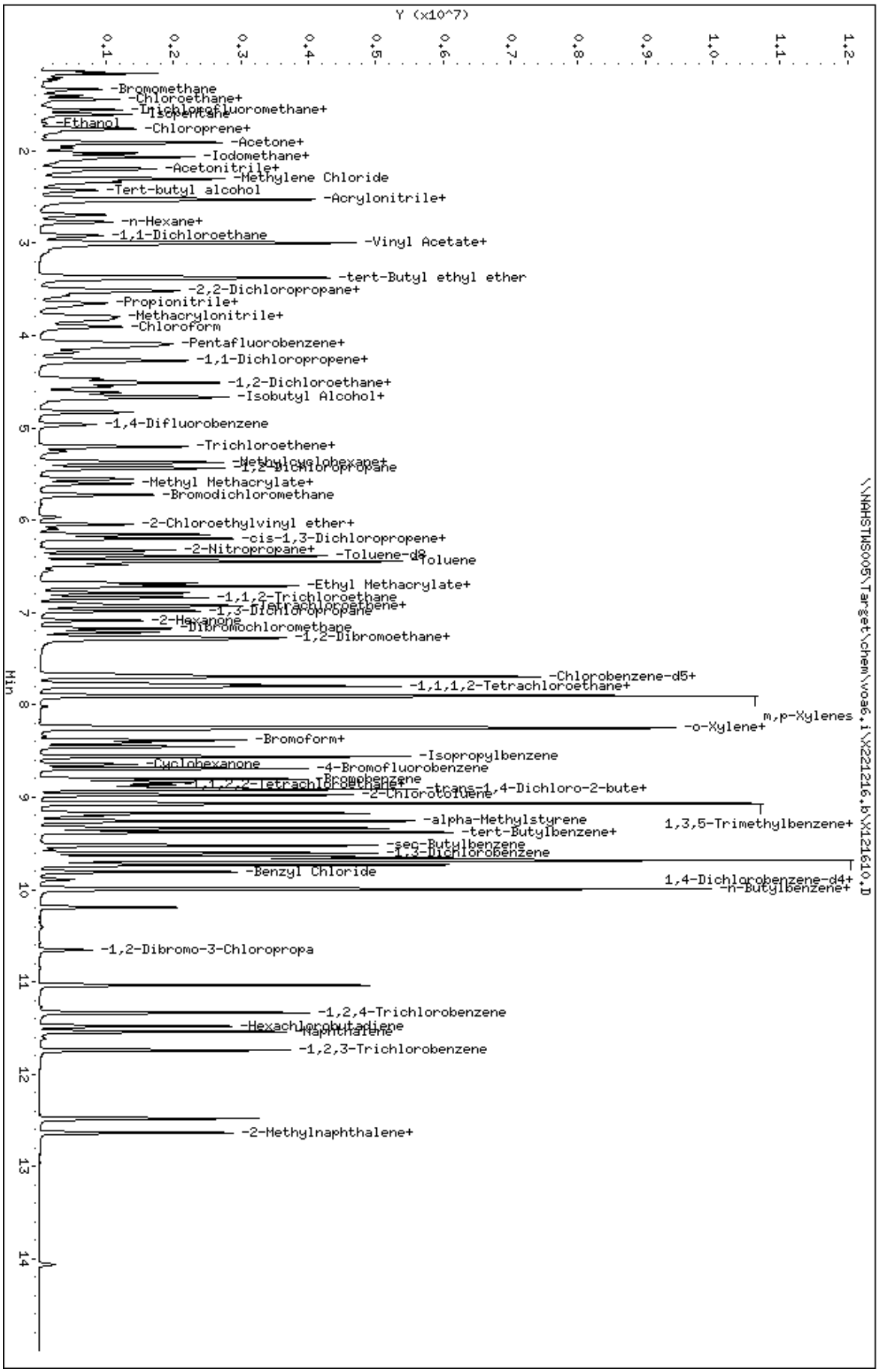
			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	131	Methyl Acrylate	55	3.683	3.683	(0.882)	479571	150.000	157.93(M)
	162	Butyl acrylate	55	8.248	8.248	(1.076)	1470193	150.000	167.53
	2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	476130	150.000	151.40
	3	Chloromethane	50	1.077	1.077	(0.258)	621048	150.000	148.89
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	602774	150.000	154.27
	6	Bromomethane	94	1.332	1.332	(0.319)	470318	150.000	155.29
	7	Chloroethane	64	1.400	1.400	(0.335)	409168	150.000	150.45
	8	Trichlorofluoromethane	101	1.557	1.557	(0.373)	866865	150.000	158.54
	9	Acrolein	56	1.441	1.441	(0.345)	96139	300.000	308.25
	10	Acetone	43	1.969	1.969	(0.472)	373504	300.000	297.68
	11	1,1-Dichloroethene	96	1.910	1.910	(0.457)	516820	150.000	152.24
	15	Iodomethane	142	2.022	2.022	(0.484)	1554547	300.000	304.69
	16	Acrylonitrile	53	2.528	2.528	(0.605)	371872	300.000	323.00
	17	Methylene Chloride	84	2.299	2.299	(0.550)	656037	150.000	140.89
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	1661314	150.000	149.51
	19	Carbon Disulfide	76	2.063	2.063	(0.494)	2747788	300.000	309.38
	20	trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	579939	150.000	152.65
	21	Vinyl Acetate	43	2.993	2.993	(0.716)	3127175	300.000	320.61
	22	1,1-Dichloroethane	63	2.918	2.918	(0.699)	993924	150.000	149.06
	24	2-Butanone	43	3.570	3.570	(0.855)	407629	300.000	299.97(H)
	26	2,2-Dichloropropane	77	3.506	3.506	(0.839)	858853	150.000	151.71
	27	cis-1,2-Dichloroethene	96	3.521	3.521	(0.843)	693846	150.000	150.07
	28	Chloroform	83	3.904	3.904	(0.935)	1135322	150.000	151.92
	29	Bromochloromethane	128	3.791	3.791	(0.908)	379595	150.000	149.95
$	30	Dibromofluoromethane	113	4.095	4.095	(0.980)	652724	150.000	152.32
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	907111	150.000	152.99
	32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	766313	150.000	155.22
	33	1,2-Dichloroethane	62	4.552	4.552	(0.917)	857022	150.000	150.42
	34	Carbon Tetrachloride	117	4.264	4.264	(0.859)	758288	150.000	143.83
$	35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	686218	150.000	150.83
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	695375	50.0000	
	37	Benzene	78	4.511	4.511	(0.909)	2450385	150.000	147.56
	38	Trichloroethene	130	5.205	5.205	(1.048)	707016	150.000	150.11
	39	Bromodichloromethane	83	5.722	5.722	(1.153)	932632	150.000	149.65
	41	2-Chloroethylvinyl ether	63	6.044	6.044	(1.217)	534005	300.000	301.19
	42	1,2-Dichloropropane	63	5.433	5.433	(1.094)	658007	150.000	148.96
	44	Dibromomethane	93	5.549	5.549	(1.118)	444851	150.000	148.16
	45	4-Methyl-2-Pentanone	43	6.325	6.325	(0.825)	1052577	300.000	293.14
	46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	1159982	150.000	158.49
*	47	Chlorobenzene-d5	117	7.667	7.667	(1.000)	671780	50.0000	
$	48	Toluene-d8	98	6.385	6.385	(0.833)	2346444	150.000	141.35
	50	Toluene	91	6.445	6.445	(0.841)	2724692	150.000	146.73
	51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	982044	150.000	161.68
	52	2-Hexanone	43	7.086	7.086	(0.924)	738082	300.000	302.12
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	540625	150.000	145.13
	54	1,3-Dichloropropane	76	6.981	6.981	(0.911)	1079961	150.000	147.29
	55	Dibromochloromethane	129	7.176	7.176	(0.936)	822094	150.000	152.90
	56	Tetrachloroethene	164	6.929	6.929	(0.904)	574499	150.000	149.53
	57	1,2-Dibromoethane	107	7.259	7.259	(0.947)	715678	150.000	153.66
	58	1-Chlorohexane	55	7.697	7.697	(1.550)	522502	150.000	155.48
	59	Chlorobenzene	112	7.694	7.694	(1.003)	1944205	150.000	147.62
	60	1,1,1,2-Tetrachloroethane	131	7.772	7.772	(1.014)	744470	150.000	151.89

61 Ethylbenzene	106	7.799	7.799 (1.017)	946928	150.000	152.63
62 m,p-Xylenes	106	7.904	7.904 (1.031)	2421267	300.000	302.75

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
63	o-Xylene	106	8.241	8.241	(1.075)	1210374	150.000	153.33
64	Styrene	104	8.260	8.260	(1.077)	2169528	150.000	163.97
66	Bromoform	173	8.410	8.410	(1.097)	588916	150.000	158.11
67	Isopropylbenzene	105	8.560	8.560	(1.116)	2877359	150.000	159.55
68	1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	873933	150.000	141.84
$ 69	4-Bromofluorobenzene	95	8.687	8.687	(1.133)	936681	150.000	150.82
* 70	1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	386546	50.0000	
71	1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	702545	150.000	163.33
73	n-Propylbenzene	91	8.912	8.912	(0.922)	3370402	150.000	157.41
74	Bromobenzene	156	8.803	8.803	(0.911)	952608	150.000	150.20
75	1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	2529726	150.000	159.93
76	2-Chlorotoluene	91	8.976	8.976	(0.929)	2083510	150.000	148.28
77	4-Chlorotoluene	91	9.069	9.069	(0.939)	2540753	150.000	158.62
78	tert-Butylbenzene	119	9.336	9.336	(0.966)	2055293	150.000	158.74
79	1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	2613455	150.000	157.03
81	sec-Butylbenzene	105	9.523	9.523	(0.986)	2819238	150.000	163.65
82	p-Isopropyltoluene	119	9.650	9.650	(0.999)	2542764	150.000	164.71
83	1,3-Dichlorobenzene	146	9.605	9.605	(0.994)	1650440	150.000	156.79
84	1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	1766146	150.000	153.76
86	Benzyl Chloride	91	9.808	9.808	(1.279)	1650494	150.000	151.23
87	n-Butylbenzene	91	9.992	9.992	(1.034)	2293126	150.000	150.43
88	1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	1672283	150.000	154.25
89	1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.103)	149691	150.000	151.78
90	1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	1094701	150.000	160.01
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	466452	150.000	150.10
92	Naphthalene	128	11.540	11.540	(1.194)	2498440	150.000	160.50
93	1,2,3-Trichlorobenzene	180	11.738	11.738	(1.215)	991236	150.000	151.28
M 94	1,2-Dichloroethylene (total)	96				1273785	300.000	
M 95	Xylenes (total)	106				3631641	450.000	
141	Cyclohexane	56	4.117	4.117	(0.986)	682728	150.000	148.87
138	Freon TF	101	1.910	1.910	(0.457)	517229	150.000	157.53
147	Methylcyclohexane	55	5.377	5.377	(1.083)	1358300	150.000	159.57(A)
146	Methyl Acetate	43	2.224	2.224	(0.533)	301298	150.000	149.70
148	Tert-Butyl alcohol	59	2.427	2.427	(0.581)	962267	3000.00	3107.07
149	Isopropyl Alcohol	45	2.093	2.093	(0.501)	514966	3000.00	3183.89

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D
Date : 16-DEC-2022 14:46
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;
Purge Volume: 5.0
Column phase: DB624

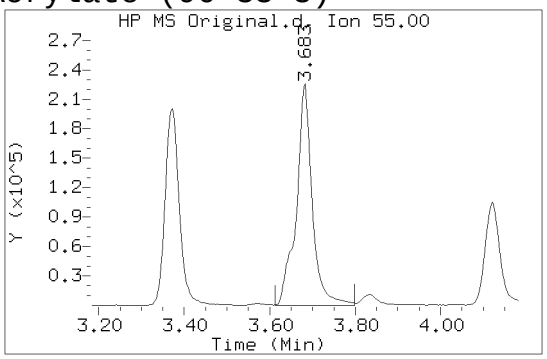
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D
Inj Date : 16-DEC-2022 14:46
InstruID : voa6.i
LabSampID : VSTD150

Methyl Acrylate (96-33-3)

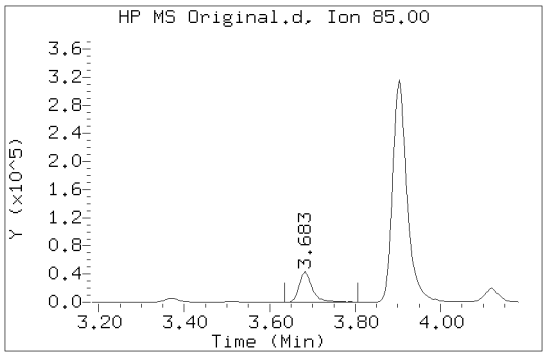
BEFORE

MASS
55
AREA
589884
HEIGHT
225588
27-Dec-2022
16:04
linh
pham



BEFORE

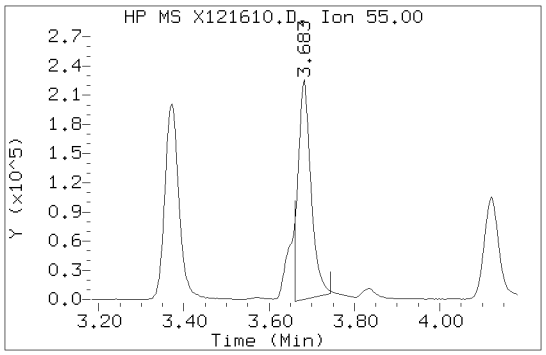
MASS
85
AREA
94462
HEIGHT
43984
27-Dec-2022
16:04
linh
pham



Reason Code:

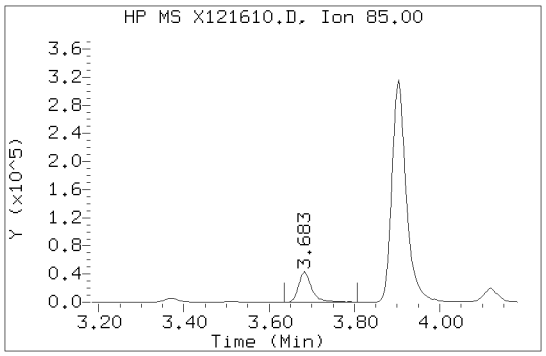
AFTER

MASS
55
AREA
479571
HEIGHT
225684
27-Dec-2022
16:06
linh
pham



AFTER

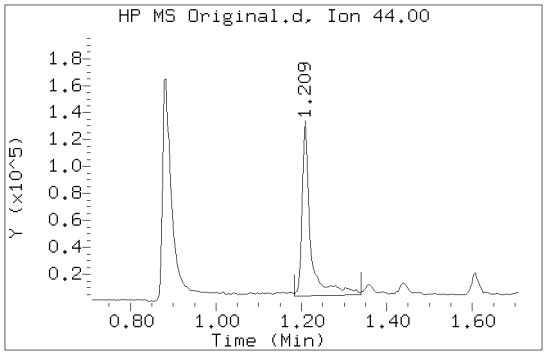
MASS
85
AREA
94462
HEIGHT
43984
27-Dec-2022
16:06
linh
pham



Acetaldehyde (75-07-0)

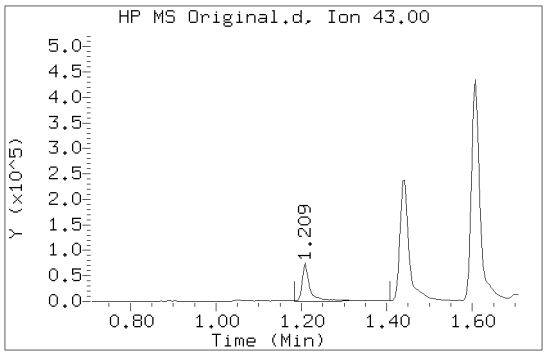
BEFORE

MASS
44
AREA
184291
HEIGHT
129645
27-Dec-2022
16:04
linh
pham



BEFORE

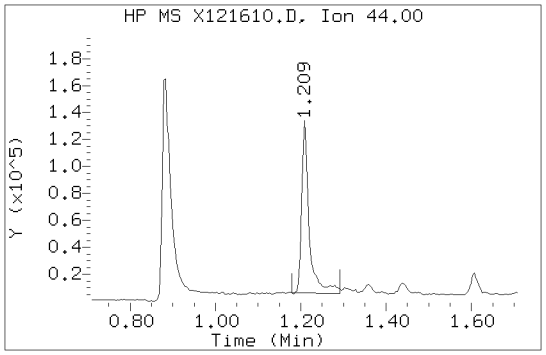
MASS
43
AREA
95359
HEIGHT
74827
27-Dec-2022
16:04
linh
pham



Reason Code:

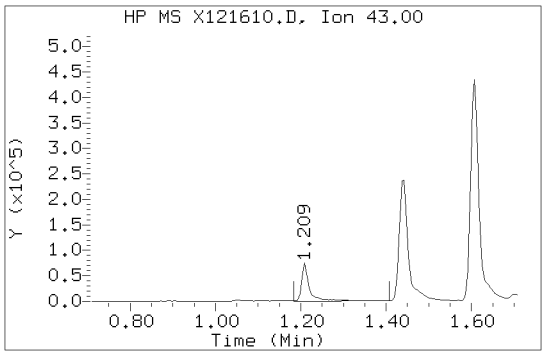
AFTER

MASS
44
AREA
161053
HEIGHT
127430
27-Dec-2022
16:06
linh
pham



AFTER

MASS
43
AREA
95359
HEIGHT
74827
27-Dec-2022
16:06
linh
pham



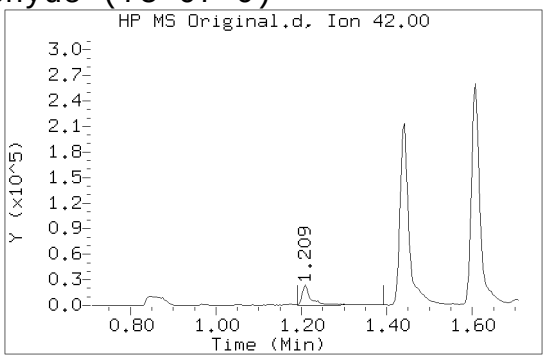
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121610.D
Inj Date : 16-DEC-2022 14:46
InstruID : voa6.i
LabSampID : VSTD150

Acetaldehyde (75-07-0)

Reason Code:

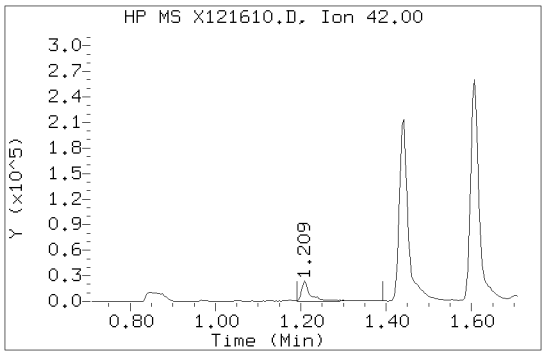
BEFORE

MASS
42
AREA
36089
HEIGHT
23932
27-Dec-2022
16:04
linh
pham



AFTER

MASS
42
AREA
36089
HEIGHT
23932
27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 16-DEC-2022 15:07
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:46 Cal File: X121610.D
Als bottle: 12 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	450847	50.0000	
135 1,4-Dioxane	88	5.598	5.598	(1.340)	179280	4000.00	4350.17(A)
140 1,3-Butadiene	54	1.160	1.160	(0.278)	646265	200.000	208.86(A)
25 Methacrylonitrile	41	3.814	3.814	(0.913)	619479	200.000	194.04
12 Isobutyl Alcohol	43	4.672	4.672	(1.118)	2146631	4000.00	4233.12(A)
13 Acetonitrile	39	2.195	2.195	(0.525)	854153	2000.00	2081.63(A)
14 Allyl Chloride	41	2.195	2.195	(0.525)	1558053	200.000	199.36
4 Propionitrile	54	3.649	3.649	(0.873)	933721	2000.00	2029.71(A)
136 n-Hexane	57	2.768	2.768	(0.663)	726173	200.000	223.70(A)
72 trans-1,4-Dichloro-2-butene	53	8.890	8.890	(1.159)	324976	200.000	217.73(A)
194 Acetaldehyde	44	1.209	1.209	(0.289)	205547	800.000	780.23(M)
23 Chloroprene	53	1.767	1.767	(0.423)	315248	200.000	205.64(A)
145 alpha-Methylstyrene	118	9.261	9.261	(0.958)	1880547	200.000	211.54(A)
200 Dimethyl Disulfide	94	6.198	6.198	(0.808)	1929723	200.000	206.22(A)
139 Diethyl ether	59	1.752	1.752	(0.419)	595638	200.000	197.72
130 Ethyl Acetate	43	3.649	3.649	(0.873)	706790	200.000	200.90(A)
40 Methyl Methacrylate	41	5.602	5.602	(1.341)	643877	200.000	209.45(A)
49 Ethyl Methacrylate	69	6.715	6.715	(1.353)	735246	200.000	222.23(A)
132 n-Butanol	56	5.253	5.253	(1.258)	297334	4000.00	3955.86
142 Tetrahydrofuran	42	3.840	3.840	(0.919)	219995	400.000	401.77(A)

150	Allyl alcohol	57	2.768	2.768 (0.663)	726173	4000.00	4146.79(A)
166	1,2,3-Trimethylbenzene	105	9.733	9.733 (1.007)	3701988	200.000	191.61

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D Page 2
Report Date: 27-Dec-2022 16:07

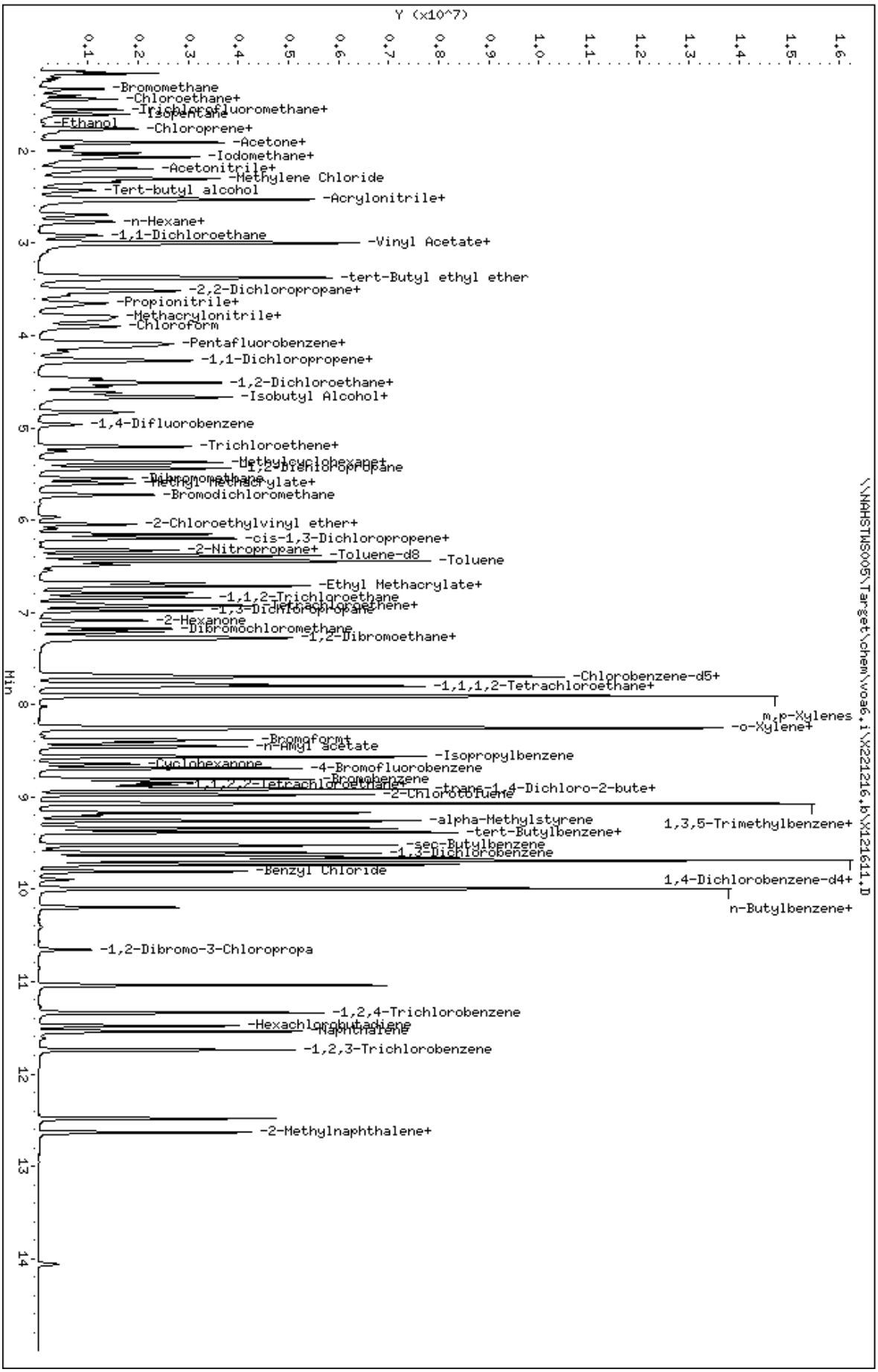
			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	131	Methyl Acrylate	55	3.683	3.683	(0.882)	646827	200.000	211.32(AM)
	162	Butyl acrylate	55	8.252	8.252	(1.076)	2063916	200.000	228.52(A)
	2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	635808	200.000	200.44(A)
	3	Chloromethane	50	1.074	1.074	(0.257)	865151	200.000	204.92(A)
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	827926	200.000	210.21(A)
	6	Bromomethane	94	1.329	1.329	(0.318)	666705	200.000	217.67(A)
	7	Chloroethane	64	1.396	1.396	(0.334)	548415	200.000	200.06(A)
	8	Trichlorofluoromethane	101	1.553	1.553	(0.372)	1173529	200.000	212.92(A)
	9	Acrolein	56	1.437	1.437	(0.344)	125874	400.000	399.54
	10	Acetone	43	1.970	1.970	(0.472)	514105	400.000	406.50(A)
	11	1,1-Dichloroethene	96	1.910	1.910	(0.457)	704695	200.000	205.94(A)
	15	Iodomethane	142	2.022	2.022	(0.484)	2193685	400.000	398.07
	16	Acrylonitrile	53	2.528	2.528	(0.605)	504850	400.000	435.02(A)
	17	Methylene Chloride	84	2.299	2.299	(0.550)	863945	200.000	184.07
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	2237559	200.000	199.78
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	3829593	400.000	427.76(A)
	20	trans-1,2-Dichloroethene	96	2.524	2.524	(0.604)	785444	200.000	205.10(A)
	21	Vinyl Acetate	43	2.993	2.993	(0.716)	4210603	400.000	428.26(A)
	22	1,1-Dichloroethane	63	2.918	2.918	(0.699)	1342786	200.000	199.79
	24	2-Butanone	43	3.570	3.570	(0.855)	555896	400.000	404.77(AH)
	26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	1175128	200.000	205.93(A)
	27	cis-1,2-Dichloroethene	96	3.522	3.522	(0.843)	927934	200.000	199.10
	28	Chloroform	83	3.904	3.904	(0.935)	1523082	200.000	202.19(A)
	29	Bromochloromethane	128	3.791	3.791	(0.908)	510028	200.000	199.87
$	30	Dibromofluoromethane	113	4.095	4.095	(0.980)	856027	200.000	198.23
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	1257327	200.000	210.37(A)
	32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	1048877	200.000	210.29(A)
	33	1,2-Dichloroethane	62	4.552	4.552	(0.917)	1153034	200.000	200.31(A)
	34	Carbon Tetrachloride	117	4.260	4.260	(0.858)	1051824	200.000	197.48
$	35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	919752	200.000	200.47(A)
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	702551	50.0000	
	37	Benzene	78	4.511	4.511	(0.909)	3321582	200.000	197.98
	38	Trichloroethene	130	5.205	5.205	(1.048)	973709	200.000	204.62(A)
	39	Bromodichloromethane	83	5.722	5.722	(1.153)	1264834	200.000	200.88(A)
	41	2-Chloroethylvinyl ether	63	6.044	6.044	(1.217)	729151	400.000	407.06(A)
	42	1,2-Dichloropropane	63	5.437	5.437	(1.095)	895211	200.000	200.59(A)
	44	Dibromomethane	93	5.550	5.550	(1.118)	600170	200.000	197.85
	45	4-Methyl-2-Pentanone	43	6.326	6.326	(0.825)	1447268	400.000	391.63
	46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	1583645	200.000	214.16(A)
*	47	Chlorobenzene-d5	117	7.671	7.671	(1.000)	691386	50.0000	
$	48	Toluene-d8	98	6.385	6.385	(0.832)	3061758	200.000	179.21
	50	Toluene	91	6.445	6.445	(0.840)	3757557	200.000	196.62
	51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	1365007	200.000	222.44(A)
	52	2-Hexanone	43	7.086	7.086	(0.924)	1026898	400.000	408.42(A)
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	736981	200.000	192.23
	54	1,3-Dichloropropane	76	6.982	6.982	(0.910)	1482067	200.000	196.39
	55	Dibromochloromethane	129	7.176	7.176	(0.936)	1128140	200.000	203.88(A)
	56	Tetrachloroethene	164	6.929	6.929	(0.903)	798932	200.000	202.05(A)
	57	1,2-Dibromoethane	107	7.259	7.259	(0.946)	970608	200.000	202.48(A)
	58	1-Chlorohexane	55	7.698	7.698	(1.550)	746326	200.000	219.81(A)
	59	Chlorobenzene	112	7.694	7.694	(1.003)	2696715	200.000	198.95
	60	1,1,1,2-Tetrachloroethane	131	7.776	7.776	(1.014)	1028448	200.000	203.88(A)

61 Ethylbenzene	106	7.799	7.799 (1.017)	1312165	200.000	205.50(A)
62 m,p-Xylenes	106	7.904	7.904 (1.030)	3401207	400.000	413.22(A)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	63 o-Xylene	106	8.241	8.241	(1.074)	1701245	200.000	209.41(A)
	64 Styrene	104	8.260	8.260	(1.077)	3030858	200.000	222.58(A)
	66 Bromoform	173	8.410	8.410	(1.096)	809693	200.000	211.22(A)
	67 Isopropylbenzene	105	8.563	8.563	(1.116)	4031708	200.000	217.22(A)
	68 1,1,2,2-Tetrachloroethane	83	8.841	8.841	(0.915)	1186926	200.000	185.61
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.132)	1277239	200.000	199.81
*	70 1,4-Dichlorobenzene-d4	152	9.666	9.666	(1.000)	401196	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	864931	200.000	193.75(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	4694239	200.000	211.23(A)
	74 Bromobenzene	156	8.807	8.807	(0.911)	1313631	200.000	199.57
	75 1,3,5-Trimethylbenzene	105	9.070	9.070	(0.938)	3532485	200.000	215.17(A)
	76 2-Chlorotoluene	91	8.976	8.976	(0.929)	2866849	200.000	196.59
	77 4-Chlorotoluene	91	9.070	9.070	(0.938)	3546402	200.000	213.32(A)
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	2865820	200.000	213.26(A)
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	3599947	200.000	208.40(A)
	81 sec-Butylbenzene	105	9.523	9.523	(0.985)	3952917	200.000	221.08(A)
	82 p-Isopropyltoluene	119	9.651	9.651	(0.998)	3537904	200.000	220.81(A)
	83 1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	2282597	200.000	208.93(A)
	84 1,4-Dichlorobenzene	146	9.684	9.684	(1.002)	2442324	200.000	204.86(A)
	86 Benzyl Chloride	91	9.808	9.808	(1.279)	2286488	200.000	202.63(A)
	87 n-Butylbenzene	91	9.995	9.995	(1.034)	3216534	200.000	202.68(A)
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	2296902	200.000	204.14(A)
	89 1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.102)	205063	200.000	200.30(A)
	90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	1524896	200.000	214.75(A)
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	654615	200.000	200.27(A)
	92 Naphthalene	128	11.540	11.540	(1.194)	3413593	200.000	211.29(A)
	93 1,2,3-Trichlorobenzene	180	11.739	11.739	(1.214)	1363987	200.000	200.56(A)
M	94 1,2-Dichloroethylene (total)	96				1713378	400.000	
M	95 Xylenes (total)	106				5102452	600.000	
	141 Cyclohexane	56	4.121	4.121	(0.987)	943314	200.000	203.60(A)
	138 Freon TF	101	1.910	1.910	(0.457)	714577	200.000	215.91(A)
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	1829310	200.000	212.71(A)
	146 Methyl Acetate	43	2.224	2.224	(0.533)	408781	200.000	201.49(A)
	148 Tert-Butyl alcohol	59	2.431	2.431	(0.582)	1308623	4000.00	4191.87(A)
	149 Isopropyl Alcohol	45	2.093	2.093	(0.501)	697543	4000.00	4278.45(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D
Date : 16-DEC-2022 15:07
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;
Purge Volume: 5.0
Column phase: DB624

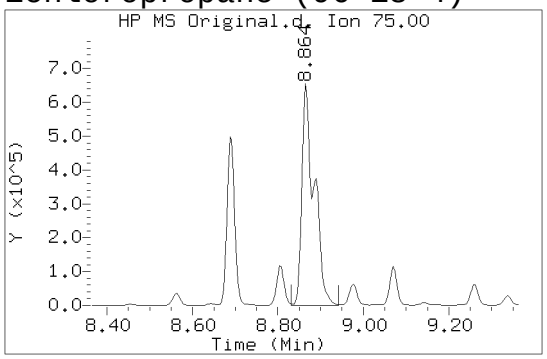
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D
Inj Date : 16-DEC-2022 15:07
InstruID : voa6.i
LabSampID : VSTD200

1,2,3-Trichloropropane (96-18-4)

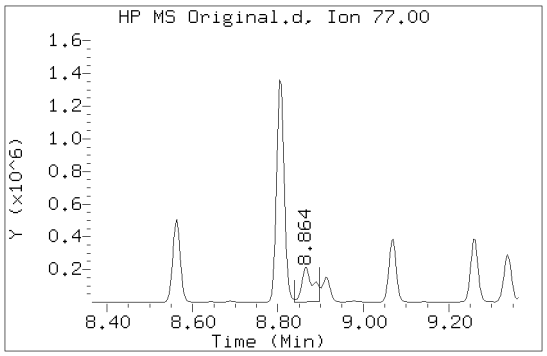
BEFORE

MASS
75
AREA
1323962
HEIGHT
654512
27-Dec-2022
16:04
linh
pham



BEFORE

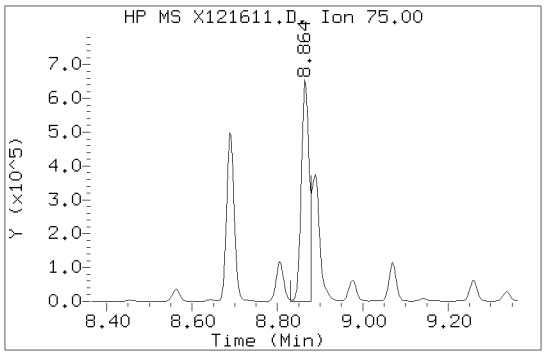
MASS
77
AREA
412197
HEIGHT
211060
27-Dec-2022
16:04
linh
pham



Reason Code:

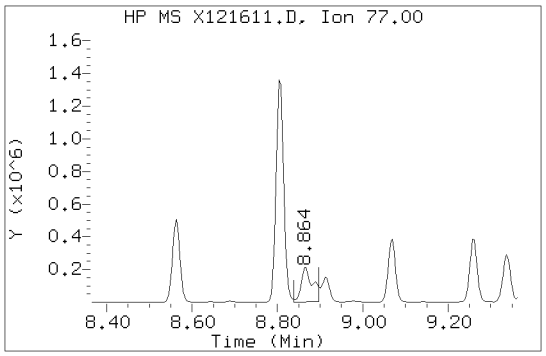
AFTER

MASS
75
AREA
864931
HEIGHT
654512
27-Dec-2022
16:06
linh
pham



AFTER

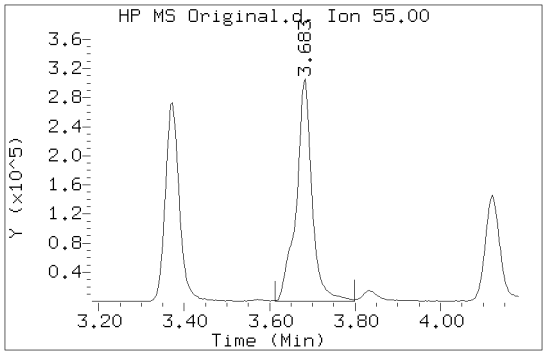
MASS
77
AREA
412197
HEIGHT
211060
27-Dec-2022
16:06
linh
pham



Methyl Acrylate (96-33-3)

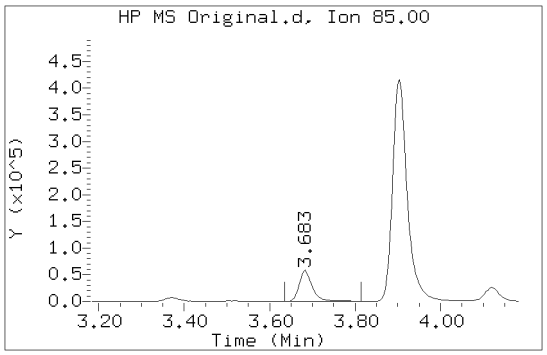
BEFORE

MASS
55
AREA
795765
HEIGHT
305336
27-Dec-2022
16:04
linh
pham



BEFORE

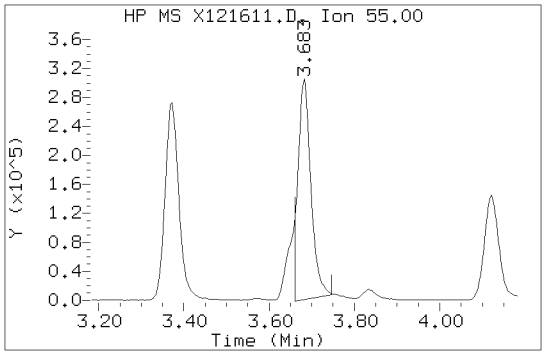
MASS
85
AREA
126210
HEIGHT
59160
27-Dec-2022
16:04
linh
pham



Reason Code:

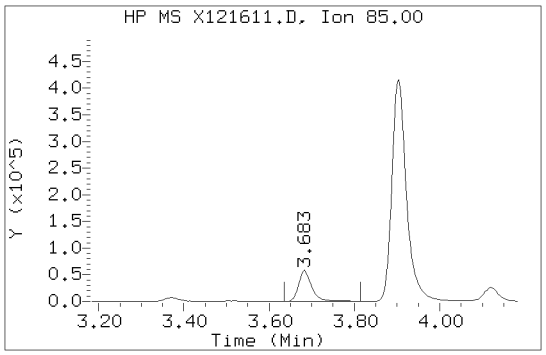
AFTER

MASS
55
AREA
646827
HEIGHT
304558
27-Dec-2022
16:06
linh
pham



AFTER

MASS
85
AREA
126210
HEIGHT
59160
27-Dec-2022
16:06
linh
pham



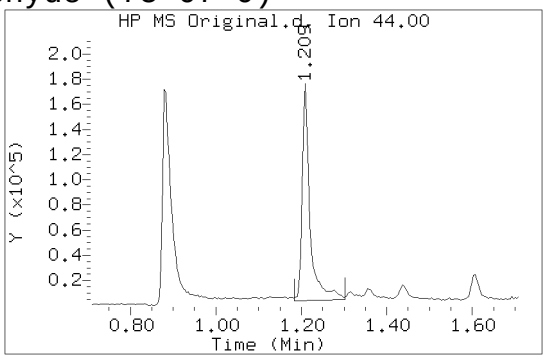
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121611.D
Inj Date : 16-DEC-2022 15:07
InstruID : voa6.i
LabSampID : VSTD200

Acetaldehyde (75-07-0)

Reason Code:

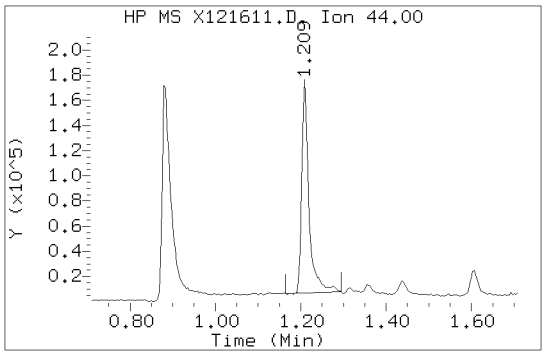
BEFORE

MASS
44
AREA
226389
HEIGHT
172187
27-Dec-2022
16:04
linh
pham



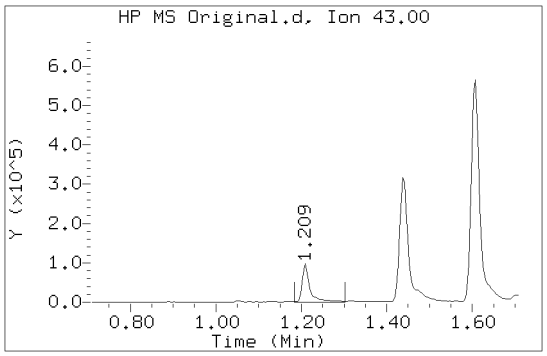
AFTER

MASS
44
AREA
205547
HEIGHT
169403
27-Dec-2022
16:06
linh
pham



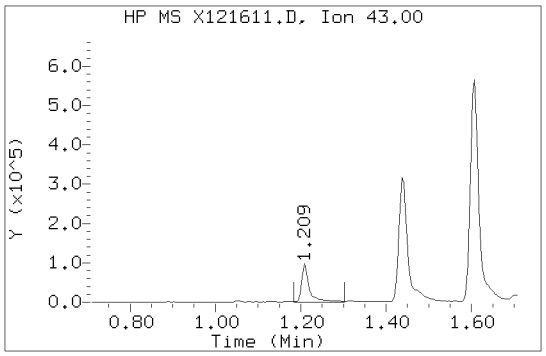
BEFORE

MASS
43
AREA
123674
HEIGHT
97657
27-Dec-2022
16:04
linh
pham



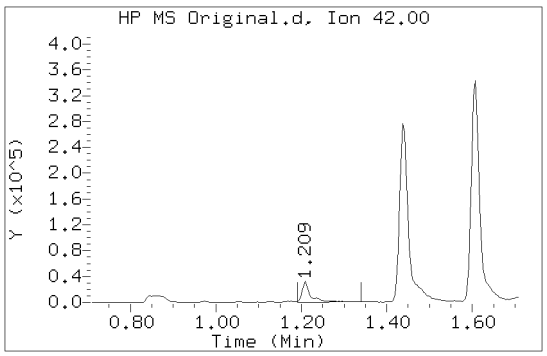
AFTER

MASS
43
AREA
123674
HEIGHT
97657
27-Dec-2022
16:06
linh
pham



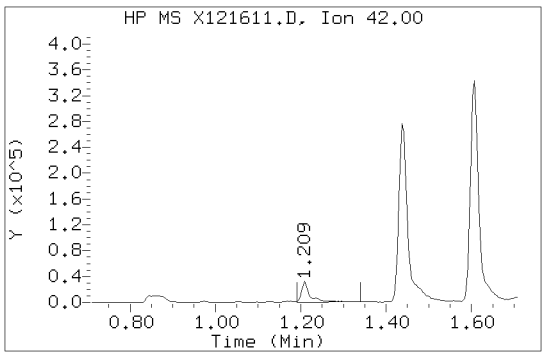
BEFORE

MASS
42
AREA
43931
HEIGHT
31915
27-Dec-2022
16:04
linh
pham



AFTER

MASS
42
AREA
43931
HEIGHT
31915
27-Dec-2022
16:06
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D Page 1
Report Date: 27-Dec-2022 16:07

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 16-DEC-2022 15:49
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;ICV
Misc Info : V6;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\8260W.m
Meth Date : 27-Dec-2022 16:07 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 15:07 Cal File: X121611.D
Als bottle: 14 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 08260V6.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	457291	50.0000	
135 1,4-Dioxane	88	5.598	5.598	(1.340)	42711	1021.77	1021.76
140 1,3-Butadiene	54	1.164	1.160	(0.279)	155959	49.6927	49.69
25 Methacrylonitrile	41	3.818	3.814	(0.914)	151341	46.7389	46.73
12 Isobutyl Alcohol	43	4.672	4.672	(1.118)	505171	982.151	982.15
13 Acetonitrile	39	2.194	2.195	(0.525)	197937	475.590	475.59
14 Allyl Chloride	41	2.194	2.195	(0.525)	375064	47.3168	47.31
4 Propionitrile	54	3.649	3.649	(0.873)	227186	486.896	486.89
136 n-Hexane	57	2.768	2.768	(0.663)	183599	55.7620	55.76
72 trans-1,4-Dichloro-2-butene	53	8.890	8.890	(1.159)	71513	49.7372	49.73
194 Acetaldehyde	44	1.209	1.209	(0.289)	52697	179.814	179.81(M)
23 Chloroprene	53	1.767	1.767	(0.423)	74243	47.7493	47.74(M)
145 alpha-Methylstyrene	118	9.257	9.261	(0.958)	428317	51.3094	51.30
200 Dimethyl Disulfide	94	6.198	6.198	(0.808)	437905	48.5791	48.57
139 Diethyl ether	59	1.752	1.752	(0.419)	142672	46.6930	46.69
130 Ethyl Acetate	43	3.653	3.649	(0.874)	171211	47.9808	47.98
40 Methyl Methacrylate	41	5.602	5.602	(1.341)	148777	47.7146	47.71
49 Ethyl Methacrylate	69	6.712	6.715	(1.352)	142471	44.0730	44.07
132 n-Butanol	56	5.257	5.253	(1.258)	56842	974.397	974.39
142 Tetrahydrofuran	42	3.840	3.840	(0.919)	61534	108.502	108.50

166	1,2,3-Trimethylbenzene	105	9.729	9.733 (1.007)	846843	46.6777	46.67
131	Methyl Acrylate	55	3.683	3.683 (0.882)	162555	52.3594	52.35

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D Page 2
Report Date: 27-Dec-2022 16:07

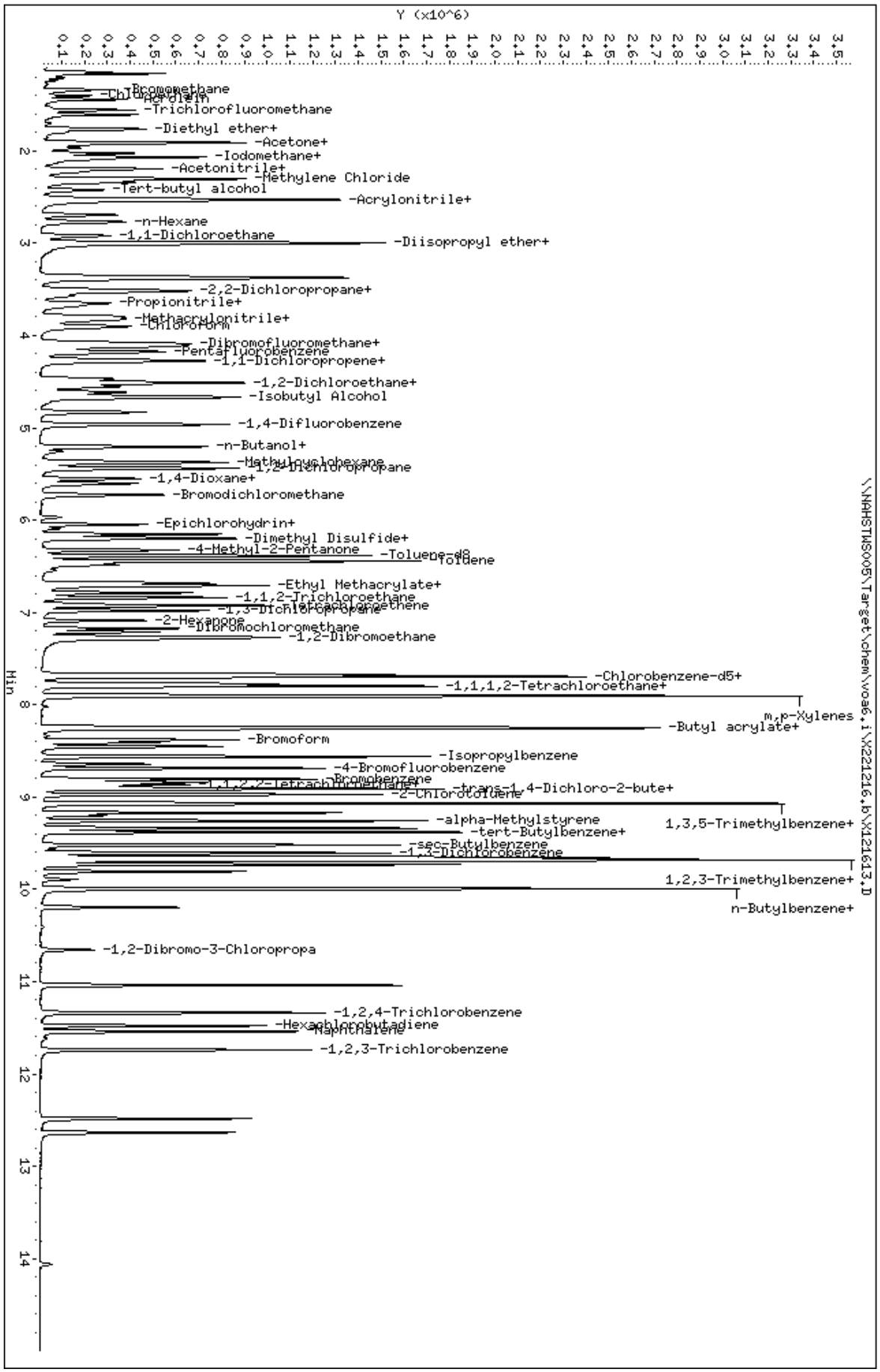
			QUANT SIG					CONCENTRATIONS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)
	162	Butyl acrylate	55	8.249	8.252	(1.076)	417137	47.9449	47.94
	2	Dichlorodifluoromethane	85	0.972	0.969	(0.233)	166984	52.1924	52.19
	3	Chloromethane	50	1.077	1.074	(0.258)	207623	50.1741	50.17
	5	Vinyl Chloride	62	1.141	1.141	(0.273)	202038	50.5766	50.57
	6	Bromomethane	94	1.336	1.329	(0.320)	153541	50.7886	50.78
	7	Chloroethane	64	1.400	1.396	(0.335)	134354	48.3213	48.32
	8	Trichlorofluoromethane	101	1.557	1.553	(0.373)	285144	51.0083	51.00
	9	Acrolein	56	1.441	1.437	(0.345)	29687	95.0682	95.06
	10	Acetone	43	1.970	1.970	(0.472)	130747	101.899	101.89
	11	1,1-Dichloroethene	96	1.913	1.910	(0.458)	171246	49.3414	49.34
	15	Iodomethane	142	2.026	2.022	(0.485)	440111	96.4856	96.48
	16	Acrylonitrile	53	2.532	2.528	(0.606)	119393	101.430	101.42
	17	Methylene Chloride	84	2.299	2.299	(0.550)	226449	47.5675	47.56
	18	Methyl tert-butyl ether	73	2.532	2.532	(0.606)	546711	48.1256	48.12
	19	Carbon Disulfide	76	2.067	2.067	(0.495)	894433	98.5011	98.50
	20	trans-1,2-Dichloroethene	96	2.528	2.524	(0.605)	194181	49.9917	49.99
	21	Vinyl Acetate	43	2.997	2.993	(0.717)	1044658	104.756	104.75
	22	1,1-Dichloroethane	63	2.918	2.918	(0.699)	328530	48.1931	48.19
	24	2-Butanone	43	3.574	3.570	(0.856)	132931	97.7407	97.74(H)
	26	2,2-Dichloropropane	77	3.507	3.507	(0.839)	295126	50.9895	50.98
	27	cis-1,2-Dichloroethene	96	3.525	3.522	(0.844)	228100	48.2538	48.25
	28	Chloroform	83	3.904	3.904	(0.935)	370227	48.4556	48.45
	29	Bromochloromethane	128	3.795	3.791	(0.908)	122310	47.2570	47.25
$	30	Dibromofluoromethane	113	4.095	4.095	(0.980)	223563	50.9182	50.91
	31	1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	304118	50.1673	50.16
	32	1,1-Dichloropropene	75	4.279	4.279	(0.862)	254008	52.1195	52.11
	33	1,2-Dichloroethane	62	4.552	4.552	(0.917)	278558	49.5262	49.52
	34	Carbon Tetrachloride	117	4.264	4.260	(0.859)	255322	49.0600	49.06
$	35	1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	233432	50.3661	50.36
*	36	1,4-Difluorobenzene	114	4.965	4.965	(1.000)	686467	50.0000	
	37	Benzene	78	4.511	4.511	(0.909)	824422	50.2921	50.29
	38	Trichloroethene	130	5.205	5.205	(1.048)	238429	51.2807	51.28
	39	Bromodichloromethane	83	5.726	5.722	(1.153)	302844	49.2265	49.22
	41	2-Chloroethylvinyl ether	63	6.048	6.044	(1.218)	182363	104.194	104.19
	42	1,2-Dichloropropane	63	5.433	5.437	(1.094)	216322	49.6089	49.60
	44	Dibromomethane	93	5.550	5.550	(1.118)	145797	49.1915	49.19
	45	4-Methyl-2-Pentanone	43	6.325	6.326	(0.825)	334751	94.0316	94.03
	46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	376514	52.1120	52.11
*	47	Chlorobenzene-d5	117	7.667	7.671	(1.000)	666040	50.0000	
$	48	Toluene-d8	98	6.385	6.385	(0.833)	814721	49.5021	49.50
	50	Toluene	91	6.445	6.445	(0.841)	905906	49.2085	49.20
	51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	314805	52.5028	52.50
	52	2-Hexanone	43	7.086	7.086	(0.924)	234303	96.7356	96.73
	53	1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	176962	47.9147	47.91
	54	1,3-Dichloropropane	76	6.981	6.982	(0.911)	347689	47.8282	47.82
	55	Dibromochloromethane	129	7.176	7.176	(0.936)	263907	49.5095	49.50
	56	Tetrachloroethene	164	6.929	6.929	(0.904)	194246	50.9965	50.99
	57	1,2-Dibromoethane	107	7.259	7.259	(0.947)	232024	50.2468	50.24
	58	1-Chlorohexane	55	7.694	7.698	(1.550)	172462	51.9860	51.98
	59	Chlorobenzene	112	7.694	7.694	(1.003)	631235	48.3416	48.34
	60	1,1,1,2-Tetrachloroethane	131	7.772	7.776	(1.014)	236254	48.6176	48.61
	61	Ethylbenzene	106	7.799	7.799	(1.017)	315635	51.3153	51.31

62 m,p-Xylenes	106	7.904	7.904 (1.031)	794307	100.175	100.17
63 o-Xylene	106	8.241	8.241 (1.075)	389371	49.7531	49.75

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
	64 Styrene	104	8.260	8.260	(1.077)	683415	52.0997	52.09
	66 Bromoform	173	8.410	8.410	(1.097)	182169	49.3304	49.33
	67 Isopropylbenzene	105	8.560	8.563	(1.116)	931467	52.0964	52.09
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.841	(0.915)	280729	46.7506	46.75
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	307493	49.9836	49.98
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.666	(1.000)	376748	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	201551	48.0786	48.07(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	1099273	52.6761	52.67
	74 Bromobenzene	156	8.803	8.807	(0.911)	306751	49.6271	49.62
	75 1,3,5-Trimethylbenzene	105	9.066	9.070	(0.938)	806374	52.3068	52.30
	76 2-Chlorotoluene	91	8.972	8.976	(0.929)	683941	49.9441	49.94
	77 4-Chlorotoluene	91	9.069	9.070	(0.939)	800114	51.2527	51.25
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	666730	52.8346	52.83
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	832541	51.3249	51.32
	81 sec-Butylbenzene	105	9.519	9.523	(0.985)	909529	54.1700	54.16
	82 p-Isopropyltoluene	119	9.651	9.651	(0.999)	823827	54.7550	54.75
	83 1,3-Dichlorobenzene	146	9.606	9.606	(0.994)	525438	51.2160	51.21
	84 1,4-Dichlorobenzene	146	9.681	9.684	(1.002)	556610	49.7188	49.71
	87 n-Butylbenzene	91	9.995	9.995	(1.035)	735043	50.6672	50.66
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	523296	49.5268	49.52
	89 1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.103)	48516	50.5353	50.53
	90 1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	364475	54.6601	54.66
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	170927	57.7383	57.73
	92 Naphthalene	128	11.544	11.540	(1.195)	799121	52.6729	52.67
	93 1,2,3-Trichlorobenzene	180	11.739	11.739	(1.215)	337140	52.7917	52.79
M	94 1,2-Dichloroethylene (total)	96				422281	98.2454	98.24
M	95 Xylenes (total)	106				1183678	149.928	149.92
	141 Cyclohexane	56	4.121	4.121	(0.987)	238664	51.7326	51.73
	138 Freon TF	101	1.913	1.910	(0.458)	177599	52.9072	52.90
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	427649	50.8929	50.89
	146 Methyl Acetate	43	2.228	2.224	(0.533)	99131	48.1755	48.17
	148 Tert-Butyl alcohol	59	2.423	2.431	(0.580)	311463	983.641	983.64
	149 Isopropyl Alcohol	45	2.090	2.093	(0.500)	170003	1028.04	1028.03

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTMS005\Target\chem\voa6.i\X221216.b\X121613.D
Date : 16-DEC-2022 15:49
Client ID: ICV
Sample Info: CCV;CCV;2;;ICV
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

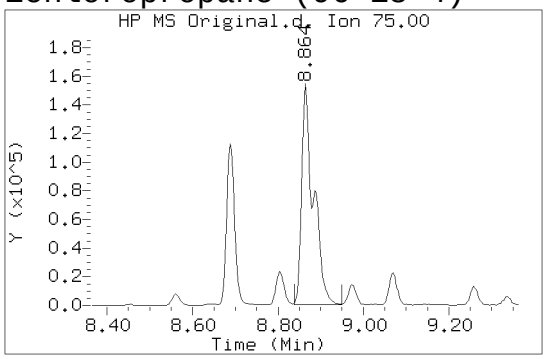
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D
Inj Date : 16-DEC-2022 15:49
InstruID : voa6.i
LabSampID : ICV

1,2,3-Trichloropropane (96-18-4)

Reason Code:

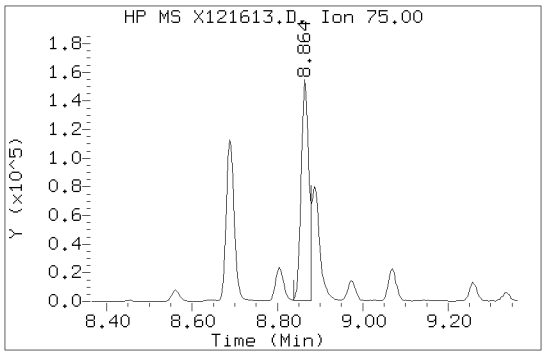
BEFORE

MASS
75
AREA
301229
HEIGHT
154590
27-Dec-2022
16:04
linh
pham



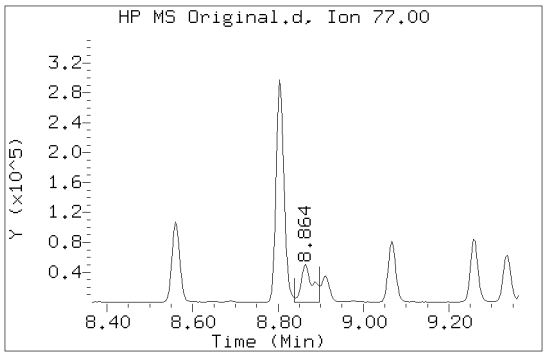
AFTER

MASS
75
AREA
201551
HEIGHT
154590
27-Dec-2022
16:06
linh
pham



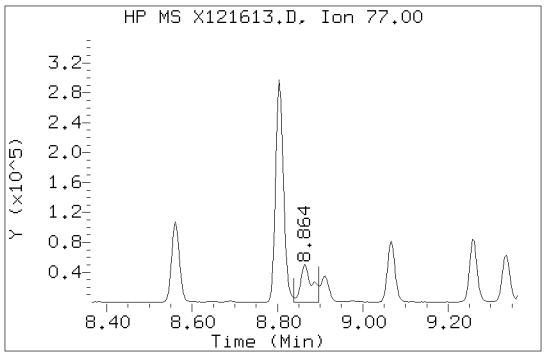
BEFORE

MASS
77
AREA
98445
HEIGHT
50627
27-Dec-2022
16:04
linh
pham



AFTER

MASS
77
AREA
98445
HEIGHT
50627
27-Dec-2022
16:06
linh
pham

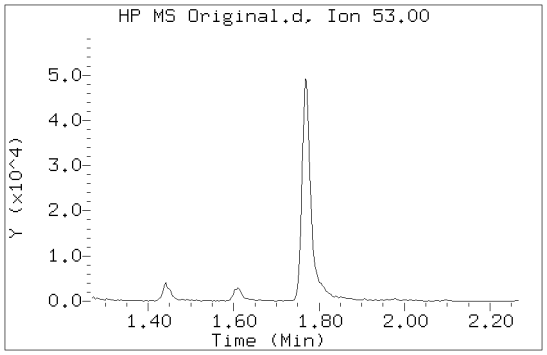


Chloroprene (126-99-8)

Reason Code:

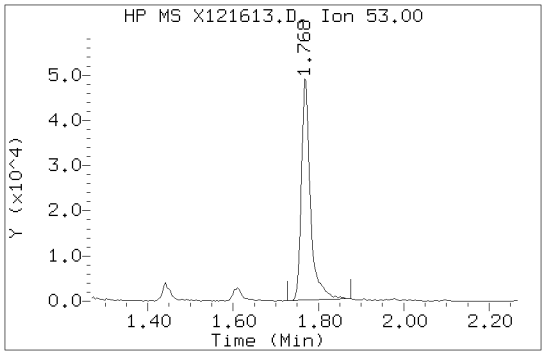
BEFORE

MASS
53
AREA
0
HEIGHT
0
27-Dec-2022
16:04
linh
pham



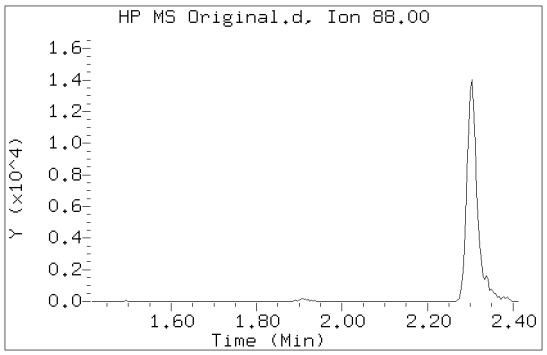
AFTER

MASS
53
AREA
74243
HEIGHT
48931
27-Dec-2022
16:06
linh
pham



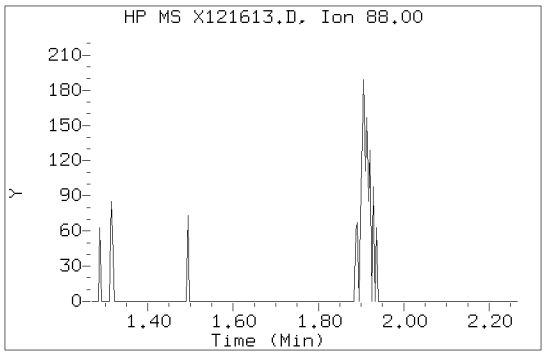
BEFORE

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:04
linh
pham



AFTER

MASS
88
AREA
0
HEIGHT
0
27-Dec-2022
16:06
linh
pham



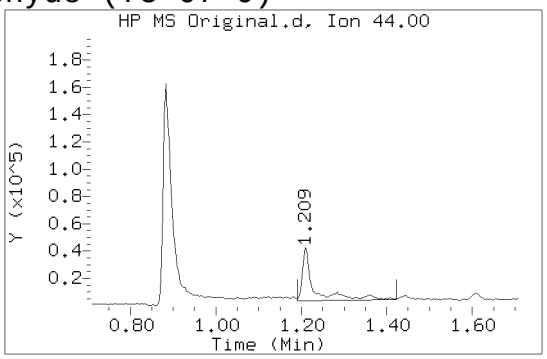
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221216.b\X121613.D
Inj Date : 16-DEC-2022 15:49
InstruID : voa6.i
LabSampID : ICV

Acetaldehyde (75-07-0)

Reason Code:

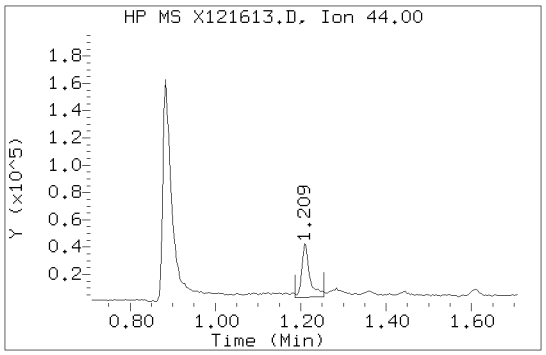
BEFORE

MASS
44
AREA
75387
HEIGHT
39303
27-Dec-2022
16:04
linh
pham



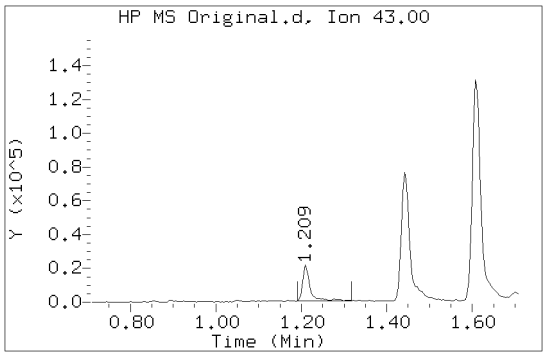
AFTER

MASS
44
AREA
52697
HEIGHT
39303
27-Dec-2022
16:06
linh
pham



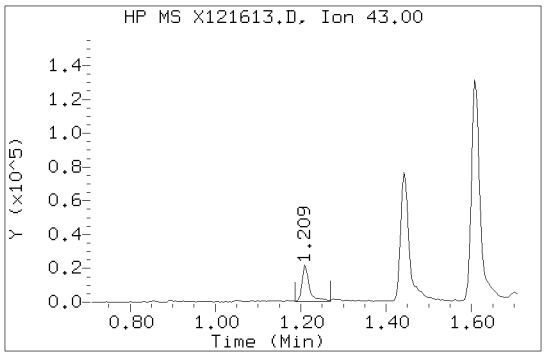
BEFORE

MASS
43
AREA
27778
HEIGHT
21502
27-Dec-2022
16:04
linh
pham



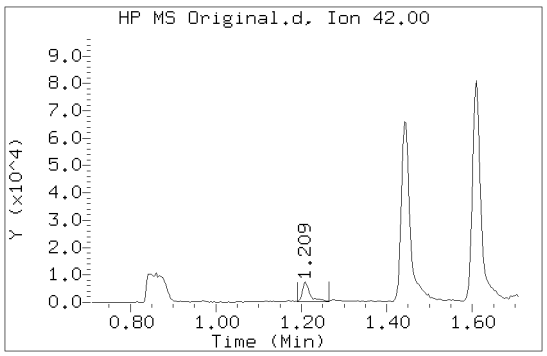
AFTER

MASS
43
AREA
26760
HEIGHT
21664
27-Dec-2022
16:06
linh
pham



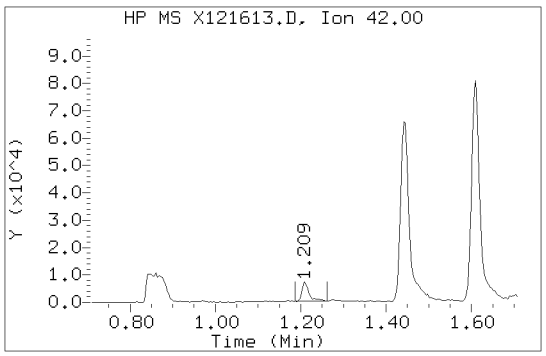
BEFORE

MASS
42
AREA
8969
HEIGHT
7131
27-Dec-2022
16:04
linh
pham



AFTER

MASS
42
AREA
8550
HEIGHT
7027
27-Dec-2022
16:06
linh
pham



01179430

right solutions.
right partner.

Raw Data VOA6 425095

Volatiles by by EPA 8260

Workorder

HS22121478

Client

Bhate Environmental Associates, Inc.

Project

LHAAP 18 24

01/03/2023

ALS Environmental–Houston Laboratory

10450 Stancliff Road, Suite 210, Houston, TX 77099

Phone (281) 530-5656 Fax (281) 530-5887

www.alsglobal.com

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123001.D Page 1
Report Date: 30-Dec-2022 19:26

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123001.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 30-DEC-2022 11:27
Operator : PC Inst ID: voa6.i
Smp Info : BFB;BFB;3;;BFB
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\bfb.m
Meth Date : 01-Dec-2022 12:59 Linh.Pham Quant Type: ISTD
Cal Date : Cal File:
Als bottle: 1 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * Uf * Vf * Vi * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vf	1.000	Volumetric correction factor
Vi	2.000	Injection Volume
Cpnd Variable		Local Compound Variable

RT	EXP RT	REL RT	MASS	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/l)	TARGET RANGE	RATIO
1 bfb						CAS #: 460-00-4		
8.687	8.889	(0.000)	95	122080			0.00- 100.00	100.00
8.687	8.889	(0.000)	50	25288			15.00- 40.00	20.71
8.687	8.889	(0.000)	75	59400			30.00- 60.00	48.66
8.687	8.889	(0.000)	96	9265			5.00- 9.00	7.59
8.687	8.889	(0.000)	173	943			0.00- 2.00	0.88
8.687	8.889	(0.000)	174	107512			50.00- 0.00	88.07
8.687	8.889	(0.000)	175	8839			5.00- 9.00	8.22
8.687	8.889	(0.000)	176	106064			95.00- 101.00	98.65
8.687	8.889	(0.000)	177	7437			5.00- 9.00	7.01

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.71
75	30.00 - 60.00% of mass 95	48.66
96	5.00 - 9.00% of mass 95	7.59
173	Less than 2.00% of mass 174	0.77 (0.88)
174	Greater than 50.00% of mass 95	88.07
175	5.00 - 9.00% of mass 174	7.24 (8.22)
176	95.00 - 101.00% of mass 174	86.88 (98.65)
177	5.00 - 9.00% of mass 176	6.09 (7.01)

Data File: X123001.D
Spectrum: Scan 2159 (8.68)
Location of Maximum: 95.00
Number of points: 106

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	1038	64.00	396	95.00	122080	136.80	312
37.00	7284	64.80	53	96.00	9265	140.80	1200
38.00	5997	67.00	316	96.90	429	141.90	205
39.10	2983	68.00	12186	98.10	992	142.80	1273
40.00	1658	69.00	13440	99.10	126	143.80	101
40.90	918	70.00	1579	102.80	66	144.80	145
42.10	1194	71.00	144	103.80	650	145.70	246
42.90	671	72.10	589	104.80	296	147.70	270
44.00	1595	73.00	5533	106.00	620	148.70	100
45.00	1355	74.00	21256	106.90	148	149.80	117
46.20	115	75.00	59400	108.90	64	152.70	82
47.10	1354	76.00	5582	109.90	80	153.90	75
48.00	754	77.00	1162	110.90	141	154.80	351
49.00	5344	78.00	671	112.90	122	156.70	282
50.00	25288	78.90	4756	115.00	152	158.60	250
51.00	7587	80.00	1145	115.70	461	160.80	123
51.80	412	80.90	4671	116.90	692	171.50	85
53.10	238	81.90	1054	117.80	526	172.70	943
53.90	297	82.90	474	118.80	756	173.90	107512
55.00	2322	85.00	77	122.70	63	174.90	8839
56.00	2460	86.10	54	123.80	72	175.90	106064
57.10	3672	86.90	4328	127.80	330	176.90	7437
57.90	449	87.90	4917	128.60	171	177.80	202
59.90	1046	90.90	750	129.10	125	185.80	76
61.00	6058	92.00	3665	129.80	428	261.80	67
62.00	5526	93.00	5281	130.60	157		
63.00	4701	94.00	15648	134.80	281		

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123001.D Page 1

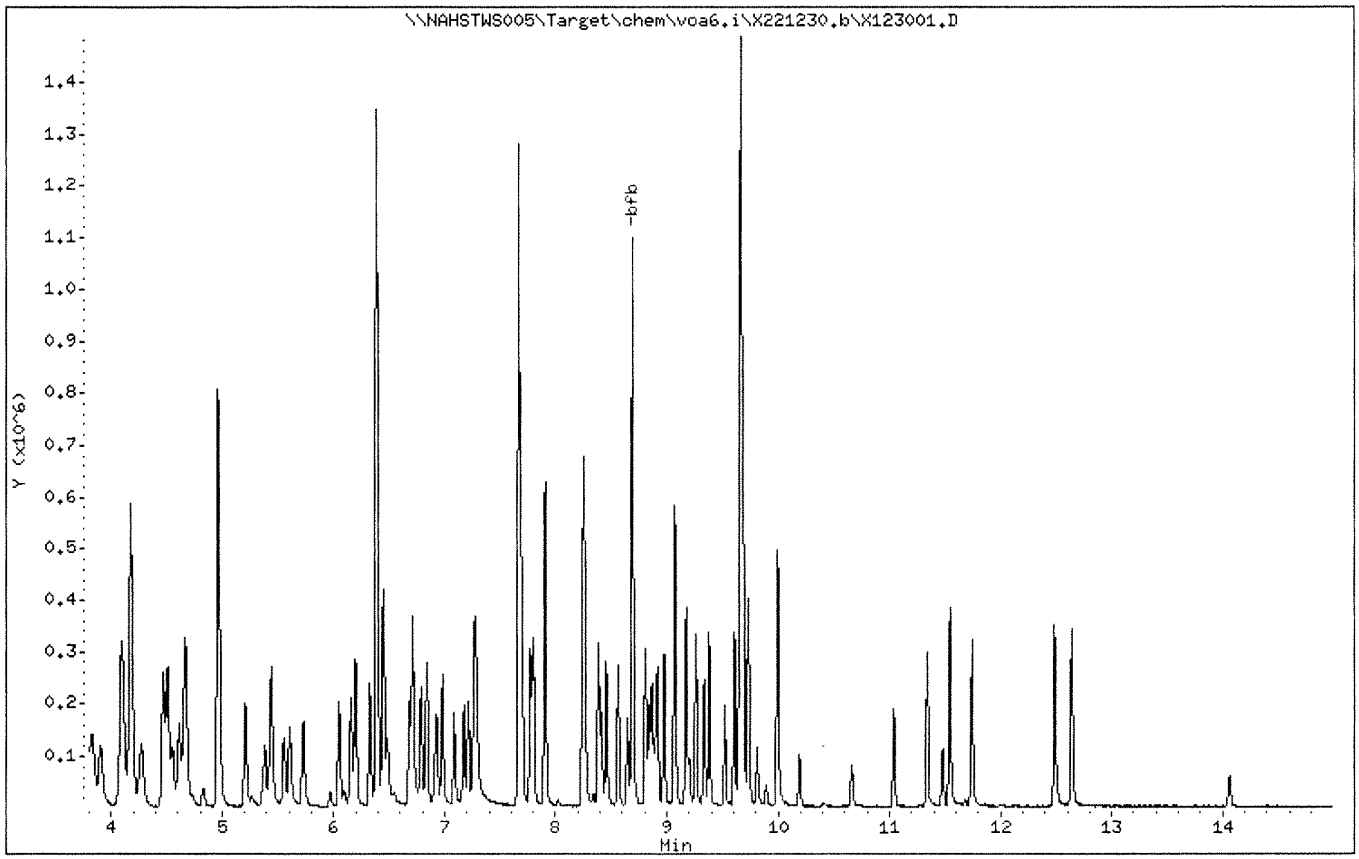
Date : 30-DEC-2022 11:27

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123001.D

Date : 30-DEC-2022 11:27

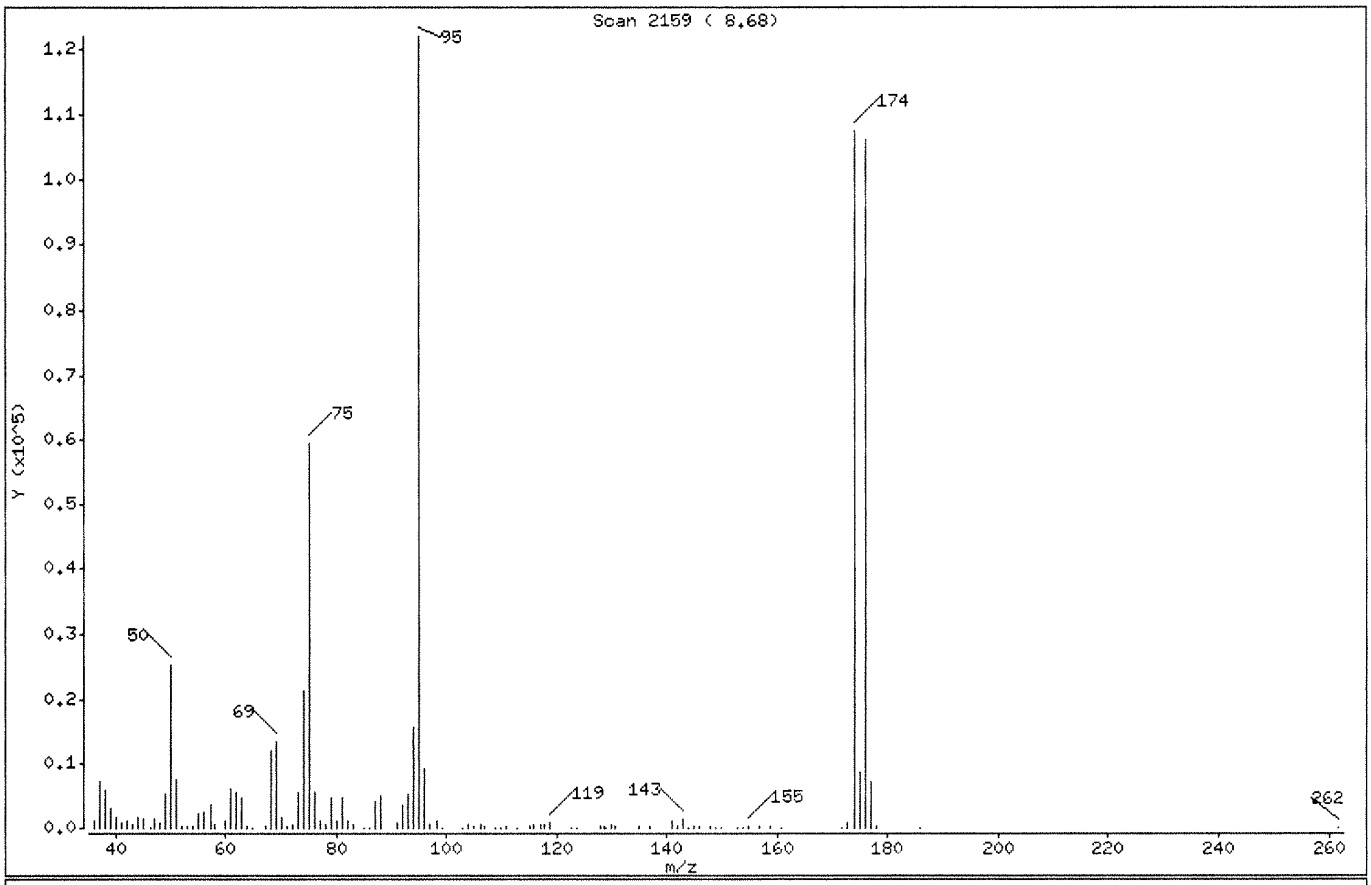
Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.71
75	30.00 - 60.00% of mass 95	48.66
96	5.00 - 9.00% of mass 95	7.59
173	Less than 2.00% of mass 174	0.77 (0.88)
174	Greater than 50.00% of mass 95	88.07
175	5.00 - 9.00% of mass 174	7.24 (8.22)
176	95.00 - 101.00% of mass 174	86.88 (98.65)
177	5.00 - 9.00% of mass 176	6.09 (7.01)

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123001.D

Date : 30-DEC-2022 11:27

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25

Data File: X123001.D
Spectrum: Scan 2159 (8.68)
Location of Maximum: 95.00
Number of points: 106

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	1038	64.00	396	95.00	122080	136.80	312
37.00	7284	64.80	53	96.00	9265	140.80	1200
38.00	5997	67.00	316	96.90	429	141.90	205
39.10	2983	68.00	12186	98.10	992	142.80	1273
40.00	1658	69.00	13440	99.10	126	143.80	101
40.90	918	70.00	1579	102.80	66	144.80	145
42.10	1194	71.00	144	103.80	650	145.70	246
42.90	671	72.10	589	104.80	296	147.70	270
44.00	1595	73.00	5533	106.00	620	148.70	100
45.00	1355	74.00	21256	106.90	148	149.80	117
46.20	115	75.00	59400	108.90	64	152.70	82
47.10	1354	76.00	5582	109.90	80	153.90	75
48.00	754	77.00	1162	110.90	141	154.80	351
49.00	5344	78.00	671	112.90	122	156.70	282
50.00	25288	78.90	4756	115.00	152	158.60	250
51.00	7587	80.00	1145	115.70	461	160.80	123
51.80	412	80.90	4671	116.90	692	171.50	85
53.10	238	81.90	1054	117.80	526	172.70	943
53.90	297	82.90	474	118.80	756	173.90	107512
55.00	2322	85.00	77	122.70	63	174.90	8839
56.00	2460	86.10	54	123.80	72	175.90	106064
57.10	3672	86.90	4328	127.80	330	176.90	7437
57.90	449	87.90	4917	128.60	171	177.80	202
59.90	1046	90.90	750	129.10	125	185.80	76
61.00	6058	92.00	3665	129.80	428	261.80	67
62.00	5526	93.00	5281	130.60	157		
63.00	4701	94.00	15648	134.80	281		

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123001.D
Inj Date : 30-DEC-2022 11:27
InstruID : voa6.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123002.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123002.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 30-DEC-2022 11:47
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	444605	50.0000	
135 1,4-Dioxane	88	5.595	5.595	(1.339)	40383	1000.00	993.63
140 1,3-Butadiene	54	1.164	1.164	(0.279)	140471	50.0000	46.03
25 Methacrylonitrile	41	3.818	3.818	(0.914)	152307	50.0000	48.37
12 Isobutyl Alcohol	43	4.672	4.672	(1.118)	520752	1000.00	1041.33
13 Acetonitrile	39	2.195	2.195	(0.525)	180729	500.000	446.63
2 Dichlorodifluoromethane	85	0.969	0.969	(0.232)	164371	50.0000	52.83
3 Chloromethane	50	1.078	1.078	(0.258)	218596	50.0000	54.14
5 Vinyl Chloride	62	1.141	1.141	(0.273)	185171	50.0000	47.67
6 Bromomethane	94	1.336	1.336	(0.320)	119816	50.0000	41.11
7 Chloroethane	64	1.400	1.400	(0.335)	117619	50.0000	43.50
8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	253414	50.0000	46.62
9 Acrolein	56	1.441	1.441	(0.345)	24842	100.000	82.21
10 Acetone	43	1.966	1.966	(0.471)	125497	100.000	100.59
11 1,1-Dichloroethene	96	1.913	1.913	(0.458)	147017	50.0000	43.56
15 Iodomethane	142	2.026	2.026	(0.485)	357981	100.000	81.77
16 Acrylonitrile	53	2.528	2.528	(0.605)	116366	100.000	101.67
17 Methylene Chloride	84	2.303	2.303	(0.551)	197638	50.0000	42.70
18 Methyl tert-butyl ether	73	2.532	2.532	(0.606)	498806	50.0000	45.16
19 Carbon Disulfide	76	2.067	2.067	(0.495)	787158	100.000	89.16

20 trans-1,2-Dichloroethene	96	2.524	2.524 (0.604)	162935	50.0000	43.14
21 Vinyl Acetate	43	2.993	2.993 (0.716)	1004055	100.000	103.55

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123002.D Page 2
Report Date: 03-Jan-2023 15:36

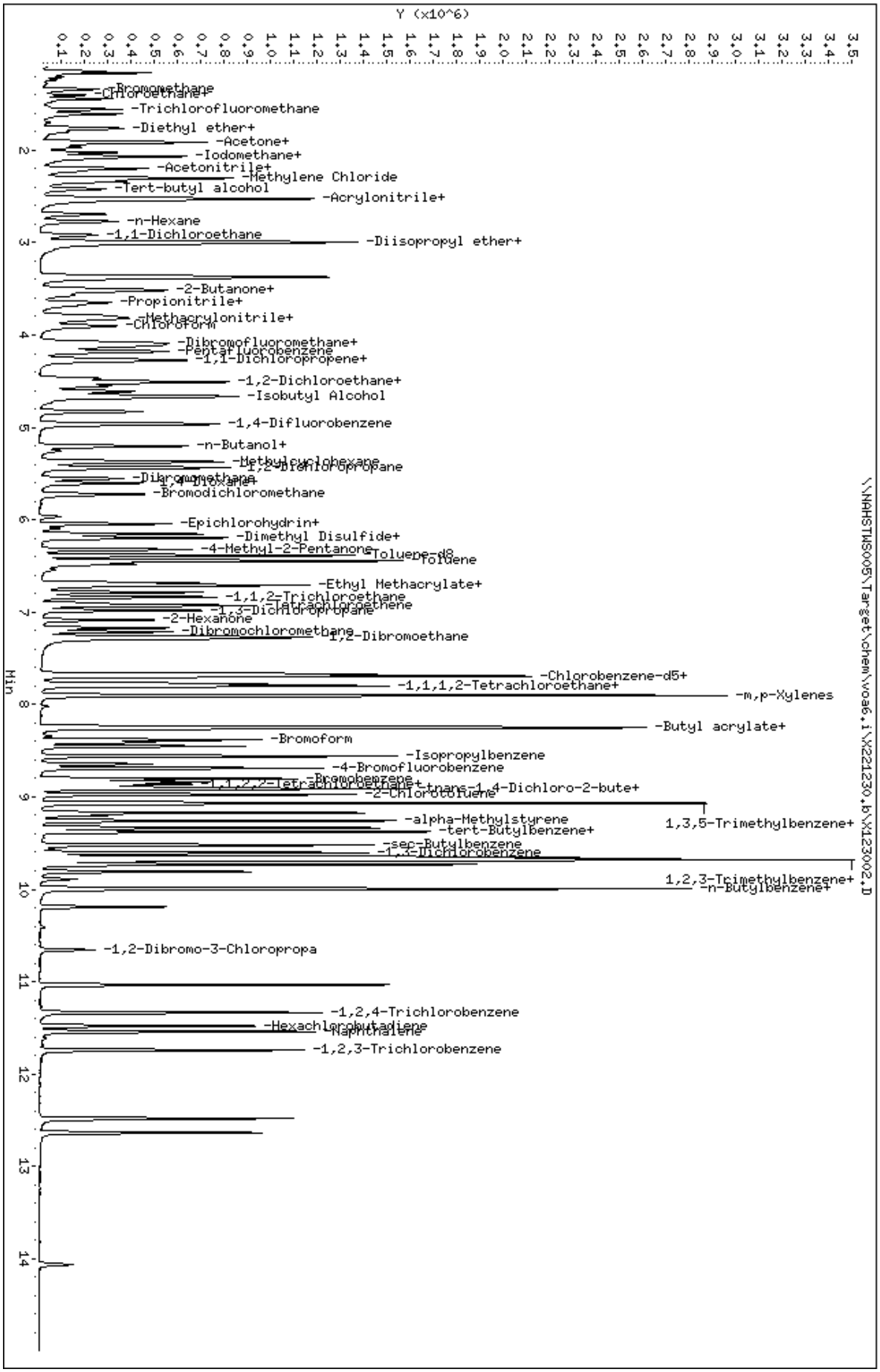
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	22 1,1-Dichloroethane	63	2.918	2.918	(0.699)	283479	50.0000	42.77
	24 2-Butanone	43	3.574	3.574	(0.856)	132036	100.000	99.78
	26 2,2-Dichloropropane	77	3.507	3.507	(0.839)	252540	50.0000	44.87
	27 cis-1,2-Dichloroethene	96	3.522	3.522	(0.843)	191854	50.0000	41.74
	28 Chloroform	83	3.900	3.900	(0.934)	314809	50.0000	42.37
	29 Bromochloromethane	128	3.792	3.792	(0.908)	102144	50.0000	40.59
$	30 Dibromofluoromethane	113	4.095	4.095	(0.980)	191735	50.0000	44.89
	31 1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	263691	50.0000	44.73
	32 1,1-Dichloropropene	75	4.275	4.275	(0.861)	235165	50.0000	51.91
	33 1,2-Dichloroethane	62	4.553	4.553	(0.917)	248127	50.0000	47.46
	34 Carbon Tetrachloride	117	4.264	4.264	(0.859)	221948	50.0000	45.88
$	35 1,2-Dichloroethane-d4	65	4.466	4.466	(1.069)	206213	50.0000	45.78
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	638022	50.0000	
	37 Benzene	78	4.508	4.508	(0.908)	747467	50.0000	49.05
	38 Trichloroethene	130	5.205	5.205	(1.048)	207985	50.0000	48.12
	39 Bromodichloromethane	83	5.722	5.722	(1.153)	259924	50.0000	45.45
	41 2-Chloroethylvinyl ether	63	6.044	6.044	(1.217)	213776	100.000	131.41
	42 1,2-Dichloropropane	63	5.433	5.433	(1.094)	195515	50.0000	48.24
	44 Dibromomethane	93	5.553	5.553	(1.119)	124196	50.0000	45.08
	45 4-Methyl-2-Pentanone	43	6.322	6.322	(0.825)	358441	100.000	109.88
	46 cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	335680	50.0000	49.98
*	47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	610260	50.0000	
$	48 Toluene-d8	98	6.386	6.386	(0.833)	761043	50.0000	50.46
	50 Toluene	91	6.446	6.446	(0.841)	817831	50.0000	48.48
	51 trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	288149	50.0000	51.70
	52 2-Hexanone	43	7.083	7.083	(0.924)	257016	100.000	115.81
	53 1,1,2-Trichloroethane	83	6.835	6.835	(0.891)	164060	50.0000	48.48
	54 1,3-Dichloropropane	76	6.982	6.982	(0.911)	330136	50.0000	49.56
	55 Dibromochloromethane	129	7.173	7.173	(0.935)	234174	50.0000	47.94
	56 Tetrachloroethene	164	6.925	6.925	(0.903)	169995	50.0000	48.70
	57 1,2-Dibromoethane	107	7.259	7.259	(0.947)	213185	50.0000	50.38
	58 1-Chlorohexane	55	7.694	7.694	(1.550)	152759	50.0000	49.54
	59 Chlorobenzene	112	7.694	7.694	(1.003)	567395	50.0000	47.42
	60 1,1,1,2-Tetrachloroethane	131	7.773	7.773	(1.014)	213569	50.0000	47.96
	61 Ethylbenzene	106	7.799	7.799	(1.017)	276985	50.0000	49.14
	62 m,p-Xylenes	106	7.904	7.904	(1.031)	701155	100.000	96.50
	63 o-Xylene	106	8.241	8.241	(1.075)	343465	50.0000	47.89
	64 Styrene	104	8.256	8.256	(1.077)	612539	50.0000	50.96
	66 Bromoform	173	8.406	8.406	(1.096)	170717	50.0000	50.45
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	815972	50.0000	49.80
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	280068	50.0000	49.64
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	290096	50.0000	51.46
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	353938	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	221764	50.0000	56.30
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	975932	50.0000	49.77
	74 Bromobenzene	156	8.803	8.803	(0.911)	273573	50.0000	47.11
	75 1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	712238	50.0000	49.17
	76 2-Chlorotoluene	91	8.972	8.972	(0.929)	618973	50.0000	48.11
	77 4-Chlorotoluene	91	9.070	9.070	(0.939)	724379	50.0000	49.39
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	578774	50.0000	48.82
	79 1,2,4-Trimethylbenzene	105	9.377	9.377	(0.971)	740477	50.0000	48.59
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	802947	50.0000	50.90

82 p-Isopropyltoluene	119	9.647	9.647 (0.998)	728835	50.0000	51.56
83 1,3-Dichlorobenzene	146	9.606	9.606 (0.994)	467698	50.0000	48.52

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	
	84 1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	498982	50.0000	47.44	
	87 n-Butylbenzene	91	9.992	9.992	(1.034)	665971	50.0000	48.92	
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	479424	50.0000	48.29	
	89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	48660	50.0000	53.94	
	90 1,2,4-Trichlorobenzene	180	11.338	11.338	(1.173)	335358	50.0000	53.53	
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	152263	50.0000	54.78	
	92 Naphthalene	128	11.540	11.540	(1.194)	782144	50.0000	54.87	
	93 1,2,3-Trichlorobenzene	180	11.739	11.739	(1.215)	317378	50.0000	52.90	
M	94 1,2-Dichloroethylene (total)	96				354789	100.000		(a)
	141 Cyclohexane	56	4.121	4.121	(0.987)	208310	50.0000	46.57	
	138 Freon TF	101	1.913	1.913	(0.458)	146660	50.0000	44.93	
	147 Methylcyclohexane	55	5.377	5.377	(1.083)	430587	50.0000	55.13	
	146 Methyl Acetate	43	2.225	2.225	(0.533)	99688	50.0000	49.82	
	148 Tert-Butyl alcohol	59	2.420	2.420	(0.579)	329613	1000.00	1070.66	
	149 Isopropyl Alcohol	45	2.086	2.086	(0.499)	178277	1000.00	1108.83	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123002.D
Date : 30-DEC-2022 11:47
Client ID: CCV
Sample Info: CCV;CCV;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123002.D
Inj Date : 30-DEC-2022 11:47
InstruID : voa6.i
LabSampID : CCV

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123004.D Page 1
Report Date: 30-Dec-2022 19:26

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123004.D
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 30-DEC-2022 12:30
Operator : PC Inst ID: voa6.i
Smp Info : CCB;CCB;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 30-Dec-2022 19:24 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTWS005

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	500652	50.0000	
$ 30 Dibromofluoromethane	113	4.095	4.095	(0.980)	208829	43.4186	43.41
$ 35 1,2-Dichloroethane-d4	65	4.466	4.466	(1.069)	225283	44.4301	44.43
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	688644	50.0000	
* 47 Chlorobenzene-d5	117	7.671	7.668	(1.000)	604517	50.0000	
$ 48 Toluene-d8	98	6.386	6.386	(0.832)	799443	53.5172	53.51
$ 69 4-Bromofluorobenzene	95	8.687	8.687	(1.132)	269792	48.3206	48.32
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	309752	50.0000	

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123005.D
Lab Smp Id: VLCSW-221230 Client Smp ID: VLCSW-221230
Inj Date : 30-DEC-2022 12:50
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-221230;VLCSW-221230;3;;LCS
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	453928	50.0000	
135 1,4-Dioxane	88	5.602	5.595	(1.341)	16618	400.494	400.49(a)
140 1,3-Butadiene	54	1.164	1.164	(0.279)	54376	17.4540	17.45
25 Methacrylonitrile	41	3.821	3.818	(0.915)	66071	20.5560	20.55
12 Isobutyl Alcohol	43	4.672	4.672	(1.118)	210343	411.978	411.97
13 Acetonitrile	39	2.195	2.195	(0.525)	69730	168.784	168.78
2 Dichlorodifluoromethane	85	0.969	0.969	(0.232)	59806	19.0825	19.08
3 Chloromethane	50	1.077	1.078	(0.258)	84040	21.7693	21.76
5 Vinyl Chloride	62	1.141	1.141	(0.273)	70225	17.7098	17.70
6 Bromomethane	94	1.340	1.336	(0.321)	51019	18.1749	18.17
7 Chloroethane	64	1.400	1.400	(0.335)	47951	17.3737	17.37
8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	94941	17.1094	17.10
9 Acrolein	56	1.441	1.441	(0.345)	8767	30.2653	30.26
10 Acetone	43	1.970	1.966	(0.472)	53953	42.3401	42.34
11 1,1-Dichloroethene	96	1.913	1.913	(0.458)	55928	16.2340	16.23
15 Iodomethane	142	2.026	2.026	(0.485)	131130	32.0657	32.06
16 Acrylonitrile	53	2.528	2.528	(0.605)	47281	40.4649	40.46
17 Methylene Chloride	84	2.300	2.303	(0.550)	86357	18.2744	18.27
18 Methyl tert-butyl ether	73	2.532	2.532	(0.606)	202712	17.9764	17.97
19 Carbon Disulfide	76	2.067	2.067	(0.495)	302664	33.5784	33.57

20 trans-1,2-Dichloroethene	96	2.528	2.524 (0.605)	64786	16.8027	16.80
21 Vinyl Acetate	43	2.997	2.993 (0.717)	405809	40.9951	40.99

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123005.D Page 2
Report Date: 03-Jan-2023 15:36

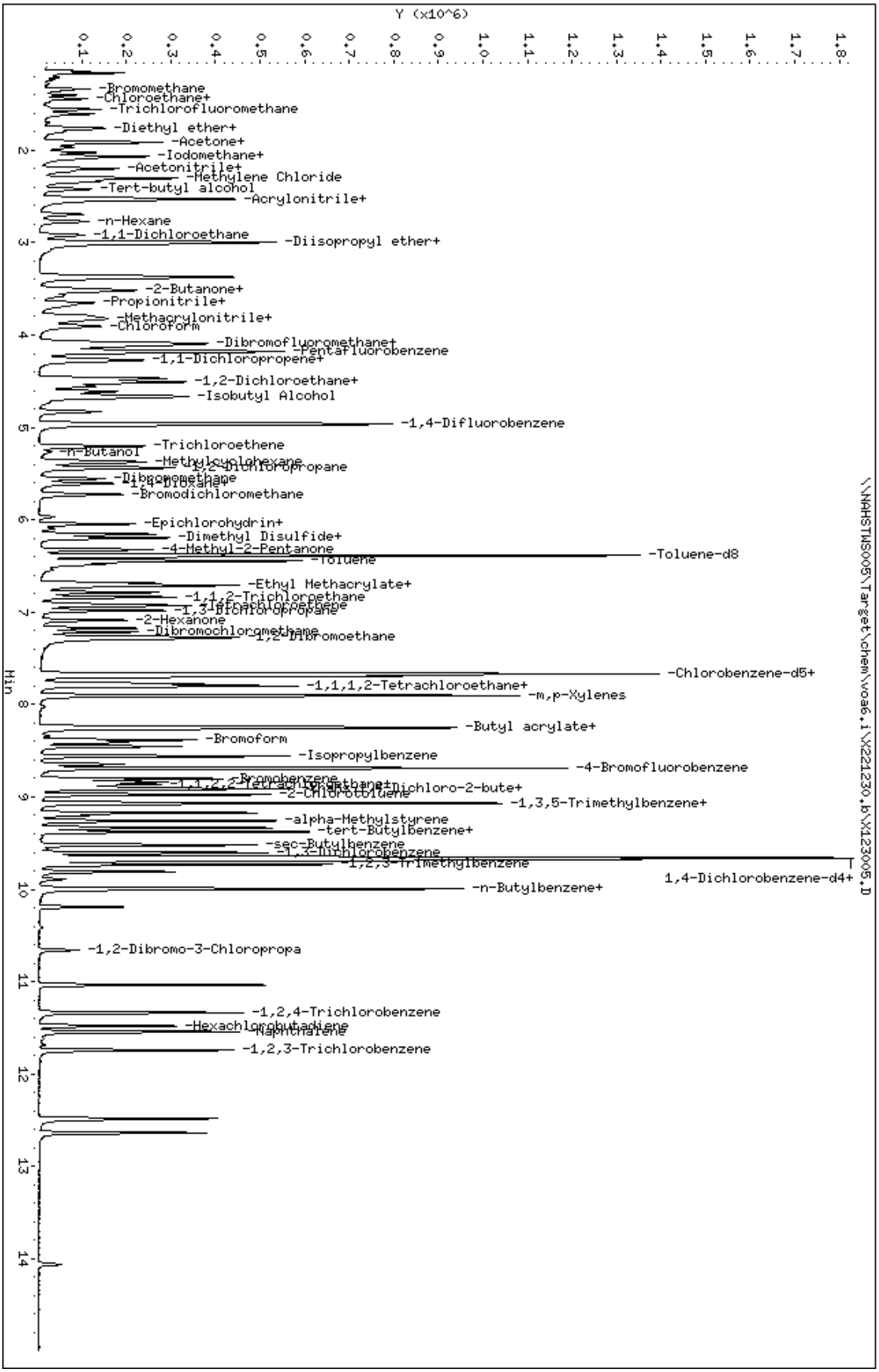
		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
	22 1,1-Dichloroethane	63	2.922	2.918	(0.699)	113773	16.8134	16.81
	24 2-Butanone	43	3.578	3.574	(0.856)	52363	40.6111	40.61
	26 2,2-Dichloropropane	77	3.507	3.507	(0.839)	98538	17.1507	17.15
	27 cis-1,2-Dichloroethene	96	3.525	3.522	(0.844)	78154	16.6557	16.65
	28 Chloroform	83	3.904	3.900	(0.935)	128346	16.9225	16.92
	29 Bromochloromethane	128	3.795	3.792	(0.908)	42356	16.4864	16.48
$	30 Dibromofluoromethane	113	4.095	4.095	(0.980)	197968	45.4048	45.40
	31 1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	100833	16.7566	16.75
	32 1,1-Dichloropropene	75	4.279	4.275	(0.862)	85564	18.4289	18.42
	33 1,2-Dichloroethane	62	4.556	4.553	(0.918)	103167	19.2538	19.25
	34 Carbon Tetrachloride	117	4.260	4.264	(0.859)	81006	16.3385	16.33
$	35 1,2-Dichloroethane-d4	65	4.466	4.466	(1.069)	226914	49.3281	49.32
*	36 1,4-Difluorobenzene	114	4.961	4.965	(1.000)	653980	50.0000	
	37 Benzene	78	4.511	4.508	(0.909)	290866	18.6251	18.62
	38 Trichloroethene	130	5.208	5.205	(1.050)	78757	17.7803	17.78
	39 Bromodichloromethane	83	5.726	5.722	(1.154)	104295	17.7950	17.79
	41 2-Chloroethylvinyl ether	63	6.048	6.044	(1.219)	85836	51.4790	51.47
	42 1,2-Dichloropropane	63	5.433	5.433	(1.095)	77297	18.6070	18.60
	44 Dibromomethane	93	5.553	5.553	(1.119)	51420	18.2108	18.21
	45 4-Methyl-2-Pentanone	43	6.326	6.322	(0.825)	147341	44.2437	44.24
	46 cis-1,3-Dichloropropene	75	6.153	6.153	(1.240)	129974	18.8829	18.88
*	47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	623052	50.0000	
$	48 Toluene-d8	98	6.386	6.386	(0.833)	763960	49.6205	49.62
	50 Toluene	91	6.446	6.446	(0.841)	310896	18.0530	18.05
	51 trans-1,3-Dichloropropene	75	6.682	6.682	(1.347)	112502	19.6950	19.69
	52 2-Hexanone	43	7.087	7.083	(0.924)	105442	46.5370	46.53
	53 1,1,2-Trichloroethane	83	6.839	6.835	(0.892)	65370	18.9210	18.92
	54 1,3-Dichloropropane	76	6.982	6.982	(0.911)	132704	19.5143	19.51
	55 Dibromochloromethane	129	7.177	7.173	(0.936)	96315	19.3156	19.31
	56 Tetrachloroethene	164	6.925	6.925	(0.903)	62932	17.6618	17.66
	57 1,2-Dibromoethane	107	7.259	7.259	(0.947)	86128	19.9387	19.93
	58 1-Chlorohexane	55	7.694	7.694	(1.551)	56572	17.8998	17.89
	59 Chlorobenzene	112	7.694	7.694	(1.003)	218028	17.8492	17.84
	60 1,1,1,2-Tetrachloroethane	131	7.773	7.773	(1.014)	82561	18.1621	18.16
	61 Ethylbenzene	106	7.799	7.799	(1.017)	104394	18.1432	18.14
	62 m,p-Xylenes	106	7.904	7.904	(1.031)	263436	35.5157	35.51
	63 o-Xylene	106	8.241	8.241	(1.075)	131063	17.9024	17.90
	64 Styrene	104	8.260	8.256	(1.077)	234466	19.1076	19.10
	66 Bromoform	173	8.410	8.406	(1.097)	66170	19.1548	19.15
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	298760	17.8624	17.86
	68 1,1,2,2-Tetrachloroethane	83	8.841	8.837	(0.915)	112064	19.9636	19.96
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	290125	50.4137	50.41
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	352191	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	85334	21.7752	21.77(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	350990	17.9919	17.99
	74 Bromobenzene	156	8.803	8.803	(0.911)	106490	18.4295	18.42
	75 1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	261206	18.1250	18.12
	76 2-Chlorotoluene	91	8.976	8.972	(0.929)	236017	18.4366	18.43
	77 4-Chlorotoluene	91	9.070	9.070	(0.939)	273383	18.7331	18.73
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	206479	17.5032	17.50
	79 1,2,4-Trimethylbenzene	105	9.377	9.377	(0.971)	277188	18.2797	18.27
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	278561	17.7474	17.74

82 p-Isopropyltoluene	119	9.647	9.647 (0.998)	256623	18.2455	18.24
83 1,3-Dichlorobenzene	146	9.606	9.606 (0.994)	181896	18.9662	18.96

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	84 1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	193520	18.4913	18.49
	87 n-Butylbenzene	91	9.995	9.992	(1.035)	220856	17.4901	17.49
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	184290	18.6581	18.65
	89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	18778	20.9774	20.97
	90 1,2,4-Trichlorobenzene	180	11.337	11.338	(1.173)	134345	21.5525	21.55
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	51918	18.9009	18.90
	92 Naphthalene	128	11.544	11.540	(1.195)	316598	22.3231	22.32
	93 1,2,3-Trichlorobenzene	180	11.742	11.739	(1.215)	124290	20.8192	20.81
M	94 1,2-Dichloroethylene (total)	96				142940	33.4583	33.45
M	95 Xylenes (total)	106				394499	53.4182	53.41
	141 Cyclohexane	56	4.121	4.121	(0.987)	78414	17.9665	17.96
	138 Freon TF	101	1.910	1.913	(0.457)	52678	15.8092	15.80
	147 Methylcyclohexane	55	5.381	5.377	(1.085)	154805	19.3379	19.33
	146 Methyl Acetate	43	2.228	2.225	(0.533)	41677	20.4042	20.40
	148 Tert-Butyl alcohol	59	2.419	2.420	(0.579)	140277	446.295	446.29
	149 Isopropyl Alcohol	45	2.090	2.086	(0.500)	75822	461.906	461.90

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123005.D
Date : 30-DEC-2022 12:50
Client ID: VLCSW-221230
Sample Info: VLCSW-221230;VLCSW-221230;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

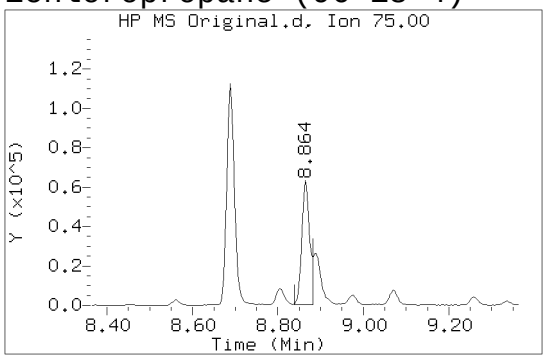
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123005.D
Inj Date : 30-DEC-2022 12:50
InstruID : voa6.i
LabSampID : VLCSW-221230

1,2,3-Trichloropropane (96-18-4)

Reason Code:

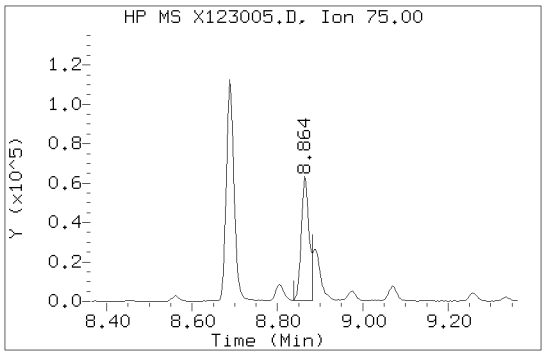
BEFORE

MASS
75
AREA
85334
HEIGHT
63271
03-Jan-2023
15:35
linh
pham



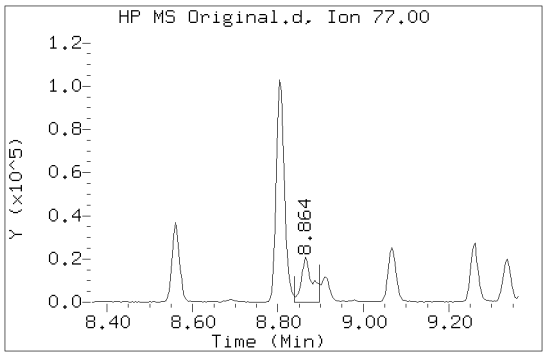
AFTER

MASS
75
AREA
85334
HEIGHT
63271
03-Jan-2023
15:35
linh
pham



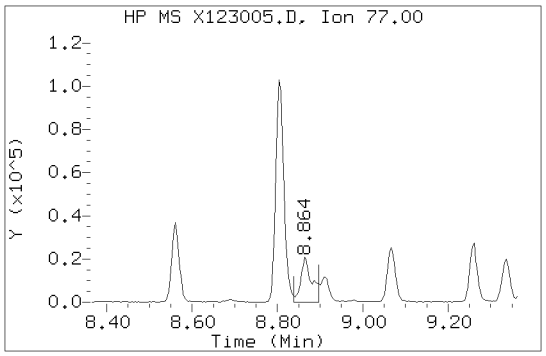
BEFORE

MASS
77
AREA
38565
HEIGHT
20725
03-Jan-2023
15:35
linh
pham



AFTER

MASS
77
AREA
38565
HEIGHT
20725
03-Jan-2023
15:35
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123007.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123007.D
Lab Smp Id: VBLKW-221230 Client Smp ID: VBLKW-221230
Inj Date : 30-DEC-2022 13:33
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-221230;VBLKW-221230;3;;BLANK
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 7 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.177	4.178	(1.000)	493462	50.0000	
$ 30 Dibromofluoromethane	113	4.095	4.095	(0.980)	204900	43.2217	43.22
$ 35 1,2-Dichloroethane-d4	65	4.470	4.466	(1.070)	220560	44.1343	44.13
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	676536	50.0000	
* 47 Chlorobenzene-d5	117	7.667	7.668	(1.000)	594832	50.0000	
$ 48 Toluene-d8	98	6.385	6.386	(0.833)	786235	53.4900	53.49
$ 69 4-Bromofluorobenzene	95	8.691	8.687	(1.133)	270346	49.2070	49.20
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	318874	50.0000	

01179454

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123007.D

Date : 30-DEC-2022 13:33

Client ID: VBLKW-221230

Instrument: voa6.i

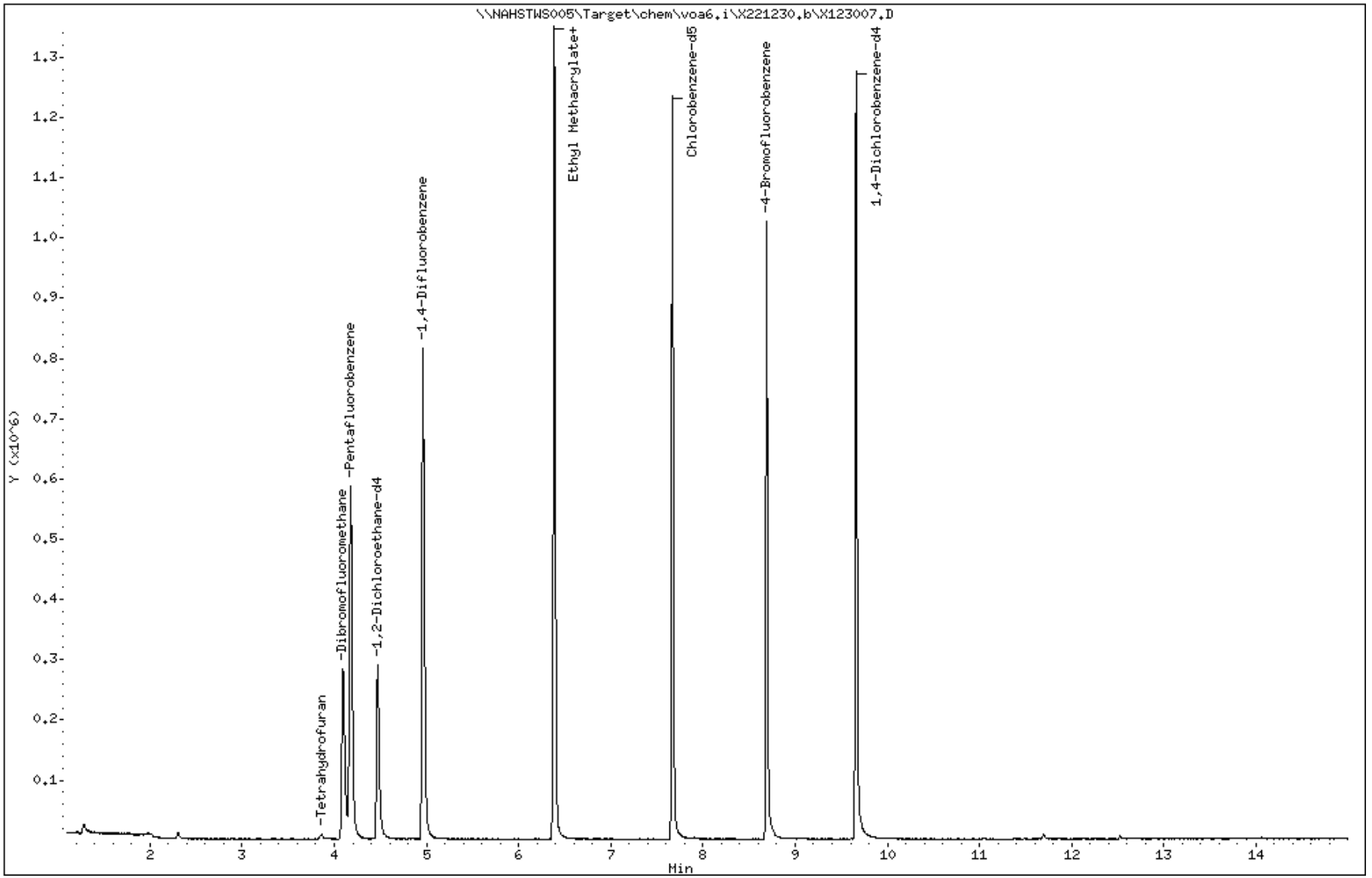
Sample Info: VBLKW-221230;VBLKW-221230;3;;BLANK

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123007.D
Inj Date : 30-DEC-2022 13:33
InstruID : voa6.i
LabSampID : VBLKW-221230

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123014.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123014.D
Lab Smp Id: HS22121494-05MS Client Smp ID: HS22121494-05MS
Inj Date : 30-DEC-2022 16:00
Operator : PC Inst ID: voa6.i
Smp Info : HS22121494-05MS;HS22121494-05MS;3;;MS
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 14 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.174	4.178	(1.000)	494469	50.0000	
135 1,4-Dioxane	88	5.598	5.595	(1.341)	17307	382.901	382.90(a)
140 1,3-Butadiene	54	1.160	1.164	(0.278)	73522	21.6647	21.66
25 Methacrylonitrile	41	3.818	3.818	(0.915)	58138	16.6049	16.60
12 Isobutyl Alcohol	43	4.672	4.672	(1.119)	196685	353.643	353.64
13 Acetonitrile	39	2.195	2.195	(0.526)	82254	182.775	182.77
2 Dichlorodifluoromethane	85	0.969	0.969	(0.232)	78599	22.9415	22.94
3 Chloromethane	50	1.074	1.078	(0.257)	99026	23.3674	23.36
5 Vinyl Chloride	62	1.141	1.141	(0.273)	92000	21.2989	21.29
6 Bromomethane	94	1.336	1.336	(0.320)	58547	19.0523	19.05
7 Chloroethane	64	1.400	1.400	(0.335)	57445	19.1071	19.10
8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	134629	22.2725	22.27
9 Acrolein	56	1.441	1.441	(0.345)	13868	42.6738	42.67
10 Acetone	43	1.970	1.966	(0.472)	41211	29.6789	29.67
11 1,1-Dichloroethene	96	1.910	1.913	(0.458)	75066	20.0027	20.00
15 Iodomethane	142	2.026	2.026	(0.485)	137135	30.9302	30.93
16 Acrylonitrile	53	2.536	2.528	(0.608)	46530	36.5572	36.55
17 Methylene Chloride	84	2.299	2.303	(0.551)	87696	17.0362	17.03
18 Methyl tert-butyl ether	73	2.528	2.532	(0.606)	206189	16.7856	16.78
19 Carbon Disulfide	76	2.067	2.067	(0.495)	379793	38.6806	38.68

20 trans-1,2-Dichloroethene	96	2.524	2.524 (0.605)	77243	18.3909	18.39
21 Vinyl Acetate	43	2.993	2.993 (0.717)	387109	35.8998	35.89

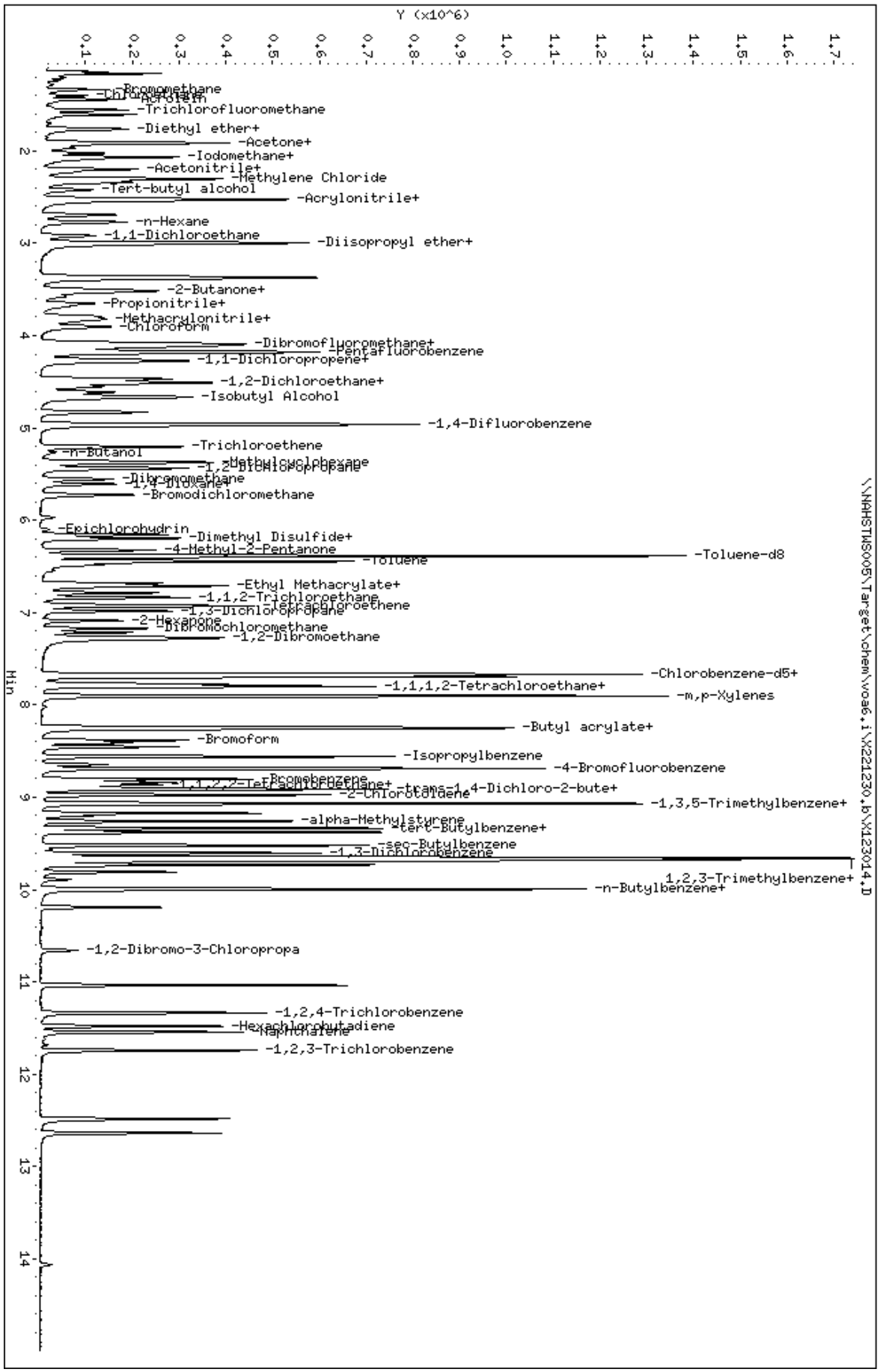
		QUANT SIG					CONCENTRATIONS	
	Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	ON-COLUMN (ug/l)	FINAL (ug/l)
	22 1,1-Dichloroethane	63	2.918	2.918	(0.699)	129844	17.6151	17.61
	24 2-Butanone	43	3.578	3.574	(0.857)	48855	35.2179	35.21
	26 2,2-Dichloropropane	77	3.507	3.507	(0.840)	119749	19.1337	19.13
	27 cis-1,2-Dichloroethene	96	3.522	3.522	(0.844)	87105	17.0413	17.04
	28 Chloroform	83	3.900	3.900	(0.934)	141719	17.1537	17.15
	29 Bromochloromethane	128	3.791	3.792	(0.908)	44568	15.9251	15.92
$	30 Dibromofluoromethane	113	4.095	4.095	(0.981)	197886	41.6511	41.65
	31 1,1,1-Trichloroethane	97	4.076	4.080	(0.977)	132252	20.1760	20.17
	32 1,1-Dichloropropene	75	4.279	4.275	(0.862)	114954	24.2381	24.23
	33 1,2-Dichloroethane	62	4.556	4.553	(0.918)	105895	19.3471	19.34
	34 Carbon Tetrachloride	117	4.264	4.264	(0.859)	112551	22.2234	22.22
$	35 1,2-Dichloroethane-d4	65	4.470	4.466	(1.071)	219717	43.8777	43.87
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	668033	50.0000	
	37 Benzene	78	4.511	4.508	(0.909)	329917	20.6812	20.68
	38 Trichloroethene	130	5.205	5.205	(1.048)	102522	22.6586	22.65
	39 Bromodichloromethane	83	5.722	5.722	(1.153)	113177	18.9043	18.90
	42 1,2-Dichloropropane	63	5.433	5.433	(1.094)	82566	19.4573	19.45
	44 Dibromomethane	93	5.553	5.553	(1.119)	54051	18.7399	18.73
	45 4-Methyl-2-Pentanone	43	6.326	6.322	(0.825)	138910	43.2371	43.23
	46 cis-1,3-Dichloropropene	75	6.153	6.153	(1.239)	135216	19.2312	19.23
*	47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	601076	50.0000	
$	48 Toluene-d8	98	6.385	6.386	(0.833)	779452	52.4777	52.47
	50 Toluene	91	6.445	6.446	(0.841)	365544	22.0023	22.00
	51 trans-1,3-Dichloropropene	75	6.682	6.682	(1.346)	113630	19.4740	19.47
	52 2-Hexanone	43	7.086	7.083	(0.924)	91754	41.9763	41.97
	53 1,1,2-Trichloroethane	83	6.839	6.835	(0.892)	66907	20.0739	20.07
	54 1,3-Dichloropropane	76	6.982	6.982	(0.911)	134856	20.5558	20.55
	55 Dibromochloromethane	129	7.173	7.173	(0.935)	95186	19.7871	19.78
	56 Tetrachloroethene	164	6.925	6.925	(0.903)	85367	24.8342	24.83
	57 1,2-Dibromoethane	107	7.259	7.259	(0.947)	86664	20.7963	20.79
	58 1-Chlorohexane	55	7.698	7.694	(1.550)	84094	26.0483	26.04
	59 Chlorobenzene	112	7.694	7.694	(1.003)	243847	20.6928	20.69
	60 1,1,1,2-Tetrachloroethane	131	7.772	7.773	(1.014)	88170	20.1051	20.10
	61 Ethylbenzene	106	7.799	7.799	(1.017)	127176	22.9107	22.91
	62 m,p-Xylenes	106	7.904	7.904	(1.031)	321275	44.8970	44.89
	63 o-Xylene	106	8.241	8.241	(1.075)	153911	21.7920	21.79
	64 Styrene	104	8.260	8.256	(1.077)	255550	21.5873	21.58
	66 Bromoform	173	8.410	8.406	(1.097)	64988	19.5004	19.50
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	403253	24.9913	24.99
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	109621	20.8977	20.89
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	271942	48.9836	48.98
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	329114	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	83038	22.6750	22.67(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	470831	25.8272	25.82
	74 Bromobenzene	156	8.803	8.803	(0.911)	114215	21.1525	21.15
	75 1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	334226	24.8180	24.81
	76 2-Chlorotoluene	91	8.972	8.972	(0.929)	276448	23.1091	23.10
	77 4-Chlorotoluene	91	9.070	9.070	(0.939)	314090	23.0316	23.03
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	285279	25.8787	25.87
	79 1,2,4-Trimethylbenzene	105	9.381	9.377	(0.971)	330702	23.3380	23.33
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	398200	27.1486	27.14
	82 p-Isopropyltoluene	119	9.647	9.647	(0.998)	354451	26.9680	26.96

83 1,3-Dichlorobenzene	146	9.606	9.606 (0.994)	204403	22.8074	22.80
84 1,4-Dichlorobenzene	146	9.681	9.681 (1.002)	215568	22.0424	22.04

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	87 n-Butylbenzene	91	9.995	9.992	(1.035)	310384	25.4089	25.40
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	198385	21.4935	21.49
	89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	17862	21.3516	21.35
	90 1,2,4-Trichlorobenzene	180	11.337	11.338	(1.173)	142253	24.4213	24.42
	91 Hexachlorobutadiene	225	11.480	11.480	(1.188)	66672	25.9503	25.95
	92 Naphthalene	128	11.544	11.540	(1.195)	309967	23.3881	23.38
	93 1,2,3-Trichlorobenzene	180	11.742	11.739	(1.215)	131613	23.5917	23.59
M	94 1,2-Dichloroethylene (total)	96				164348	35.4322	35.43
M	95 Xylenes (total)	106				475186	66.6890	66.68
	141 Cyclohexane	56	4.118	4.121	(0.987)	124347	25.5802	25.58
	138 Freon TF	101	1.910	1.913	(0.458)	86080	23.7154	23.71
	147 Methylcyclohexane	55	5.381	5.377	(1.084)	188895	23.1000	23.09
	146 Methyl Acetate	43	2.228	2.225	(0.534)	36180	16.2607	16.26
	148 Tert-Butyl alcohol	59	2.423	2.420	(0.581)	128207	374.451	374.45
	149 Isopropyl Alcohol	45	2.090	2.086	(0.501)	67378	376.812	376.81

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTMS005\Target\chem\voa6.i\X221230.b\X123014.D
Date : 30-DEC-2022 16:00
Client ID: HS221214494-05MS
Sample Info: HS221214494-05MS;HS221214494-05MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

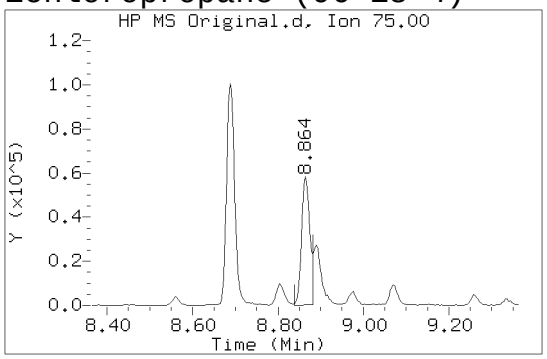
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123014.D
Inj Date : 30-DEC-2022 16:00
InstruID : voa6.i
LabSampID : HS22121494-05MS

1,2,3-Trichloropropane (96-18-4)

Reason Code:

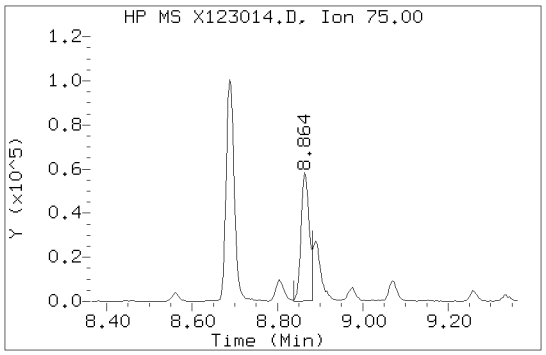
BEFORE

MASS
75
AREA
83038
HEIGHT
58420
03-Jan-2023
15:35
linh
pham



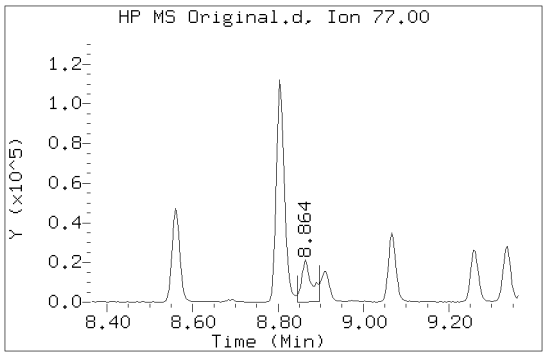
AFTER

MASS
75
AREA
83038
HEIGHT
58420
03-Jan-2023
15:35
linh
pham



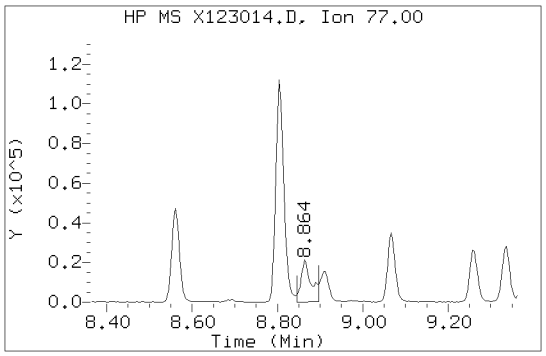
BEFORE

MASS
77
AREA
37339
HEIGHT
21236
03-Jan-2023
15:35
linh
pham



AFTER

MASS
77
AREA
37339
HEIGHT
21236
03-Jan-2023
15:35
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123015.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123015.D
Lab Smp Id: HS22121494-05MSD Client Smp ID: HS22121494-05MSD
Inj Date : 30-DEC-2022 16:21
Operator : PC Inst ID: voa6.i
Smp Info : HS22121494-05MSD;HS22121494-05MSD;3;;MSD
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 14 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.174	4.178	(1.000)	504045	50.0000	
135 1,4-Dioxane	88	5.602	5.595	(1.342)	14406	312.664	312.66(a)
140 1,3-Butadiene	54	1.164	1.164	(0.279)	70891	20.4926	20.49
25 Methacrylonitrile	41	3.825	3.818	(0.916)	56676	15.8798	15.87
12 Isobutyl Alcohol	43	4.676	4.672	(1.120)	198654	350.397	350.39
13 Acetonitrile	39	2.194	2.195	(0.526)	81360	177.354	177.35
2 Dichlorodifluoromethane	85	0.969	0.969	(0.232)	73811	21.1656	21.16
3 Chloromethane	50	1.074	1.078	(0.257)	94345	21.9845	21.98
5 Vinyl Chloride	62	1.141	1.141	(0.273)	86862	19.7274	19.72
6 Bromomethane	94	1.336	1.336	(0.320)	57045	18.2888	18.28
7 Chloroethane	64	1.400	1.400	(0.335)	54555	17.8011	17.80
8 Trichlorofluoromethane	101	1.557	1.557	(0.373)	128024	20.7774	20.77
9 Acrolein	56	1.441	1.441	(0.345)	13882	41.9562	41.95
10 Acetone	43	1.970	1.966	(0.472)	40379	28.5259	28.52
11 1,1-Dichloroethene	96	1.913	1.913	(0.458)	72328	18.9069	18.90
15 Iodomethane	142	2.026	2.026	(0.485)	143499	31.6542	31.65
16 Acrylonitrile	53	2.532	2.528	(0.607)	47496	36.6072	36.60
17 Methylene Chloride	84	2.299	2.303	(0.551)	84912	16.1820	16.18
18 Methyl tert-butyl ether	73	2.532	2.532	(0.607)	206571	16.4972	16.49
19 Carbon Disulfide	76	2.067	2.067	(0.495)	362385	36.2065	36.20

20 trans-1,2-Dichloroethene	96	2.524	2.524 (0.605)	75439	17.6202	17.62
21 Vinyl Acetate	43	2.993	2.993 (0.717)	388206	35.3175	35.31

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123015.D Page 2
Report Date: 03-Jan-2023 15:36

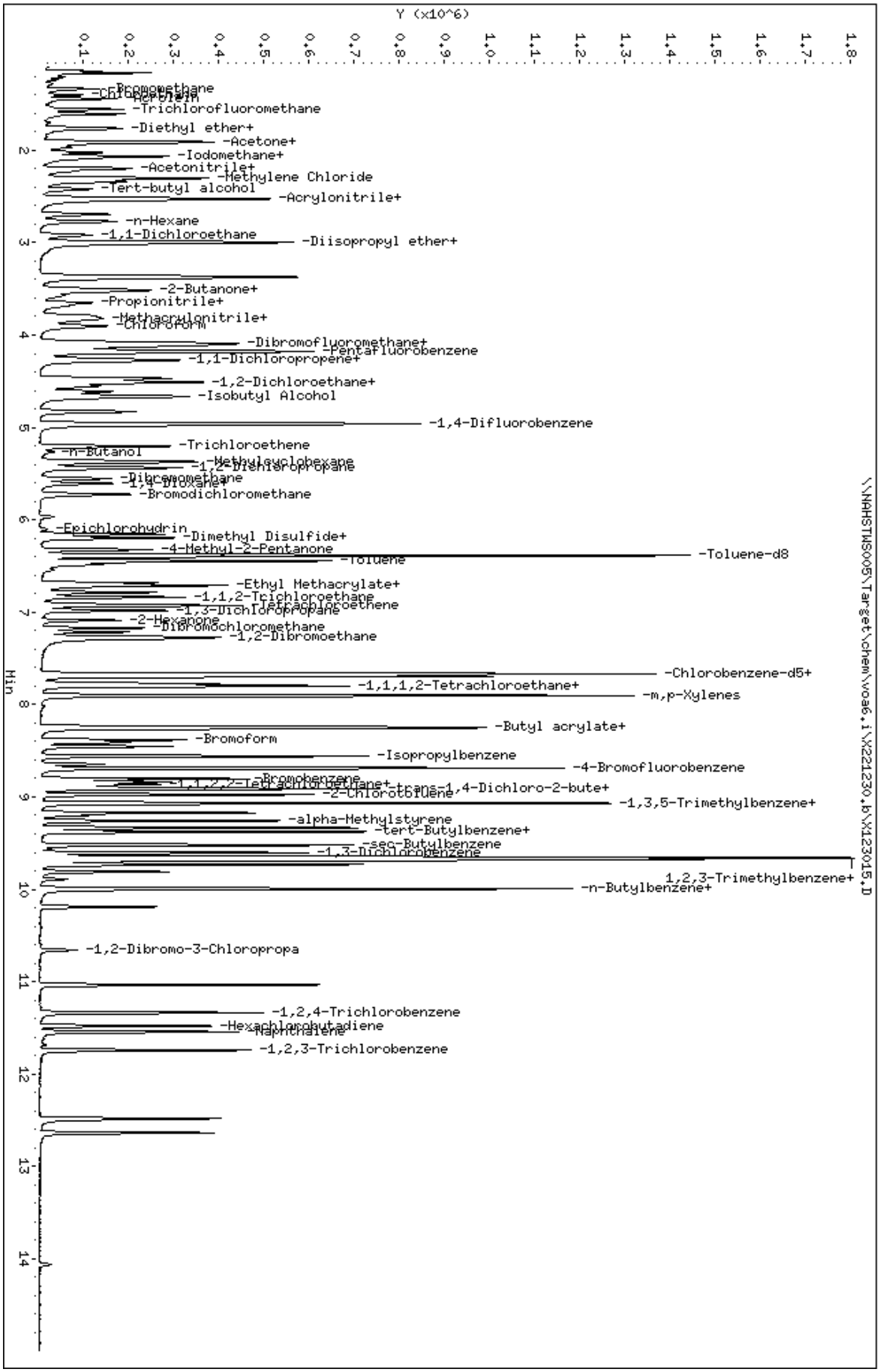
			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
	22	1,1-Dichloroethane	63	2.918	2.918	(0.699)	128734	17.1327	17.13
	24	2-Butanone	43	3.574	3.574	(0.856)	46432	33.0400	33.04
	26	2,2-Dichloropropane	77	3.506	3.507	(0.840)	114680	17.9756	17.97
	27	cis-1,2-Dichloroethene	96	3.521	3.522	(0.844)	85419	16.3940	16.39
	28	Chloroform	83	3.900	3.900	(0.934)	140977	16.7397	16.73
	29	Bromochloromethane	128	3.795	3.792	(0.909)	43947	15.4048	15.40
$	30	Dibromofluoromethane	113	4.095	4.095	(0.981)	205750	42.4869	42.48
	31	1,1,1-Trichloroethane	97	4.076	4.080	(0.977)	128160	19.1802	19.18
	32	1,1-Dichloropropene	75	4.275	4.275	(0.862)	110155	22.3150	22.31
	33	1,2-Dichloroethane	62	4.556	4.553	(0.918)	106167	18.6359	18.63
	34	Carbon Tetrachloride	117	4.264	4.264	(0.859)	112675	21.3751	21.37
$	35	1,2-Dichloroethane-d4	65	4.470	4.466	(1.071)	226526	44.3749	44.37
*	36	1,4-Difluorobenzene	114	4.961	4.965	(1.000)	695311	50.0000	
	37	Benzene	78	4.511	4.508	(0.909)	323847	19.5043	19.50
	38	Trichloroethene	130	5.205	5.205	(1.049)	97738	20.7539	20.75
	39	Bromodichloromethane	83	5.722	5.722	(1.153)	113380	18.1952	18.19
	42	1,2-Dichloropropane	63	5.433	5.433	(1.095)	82262	18.6251	18.62
	44	Dibromomethane	93	5.549	5.553	(1.119)	52901	17.6216	17.62
	45	4-Methyl-2-Pentanone	43	6.325	6.322	(0.825)	138561	41.2692	41.26
	46	cis-1,3-Dichloropropene	75	6.153	6.153	(1.240)	135703	18.5433	18.54
*	47	Chlorobenzene-d5	117	7.667	7.668	(1.000)	628155	50.0000	
$	48	Toluene-d8	98	6.385	6.386	(0.833)	806466	51.9558	51.95
	50	Toluene	91	6.445	6.446	(0.841)	353703	20.3718	20.37
	51	trans-1,3-Dichloropropene	75	6.682	6.682	(1.347)	113478	18.6850	18.68
	52	2-Hexanone	43	7.086	7.083	(0.924)	94274	41.2700	41.26
	53	1,1,2-Trichloroethane	83	6.839	6.835	(0.892)	66305	19.0357	19.03
	54	1,3-Dichloropropane	76	6.981	6.982	(0.911)	133868	19.5255	19.52
	55	Dibromochloromethane	129	7.173	7.173	(0.935)	97228	19.3403	19.34
	56	Tetrachloroethene	164	6.929	6.925	(0.904)	81950	22.8124	22.81
	57	1,2-Dibromoethane	107	7.259	7.259	(0.947)	86190	19.7909	19.79
	58	1-Chlorohexane	55	7.694	7.694	(1.551)	81554	24.2705	24.27
	59	Chlorobenzene	112	7.694	7.694	(1.003)	238940	19.4023	19.40
	60	1,1,1,2-Tetrachloroethane	131	7.772	7.773	(1.014)	88505	19.3115	19.31
	61	Ethylbenzene	106	7.799	7.799	(1.017)	125093	21.5639	21.56
	62	m,p-Xylenes	106	7.904	7.904	(1.031)	318217	42.5526	42.55
	63	o-Xylene	106	8.241	8.241	(1.075)	151966	20.5890	20.58
	64	Styrene	104	8.260	8.256	(1.077)	252179	20.3842	20.38
	66	Bromoform	173	8.410	8.406	(1.097)	66333	19.0460	19.04
	67	Isopropylbenzene	105	8.560	8.560	(1.116)	392008	23.2471	23.24
	68	1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	109338	20.0998	20.09
$	69	4-Bromofluorobenzene	95	8.687	8.687	(1.133)	284089	48.9656	48.96
*	70	1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	341296	50.0000	
	71	1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	83969	22.1109	22.11(M)
	73	n-Propylbenzene	91	8.912	8.912	(0.922)	461383	24.4056	24.40
	74	Bromobenzene	156	8.807	8.803	(0.912)	114860	20.5126	20.51
	75	1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	328410	23.5157	23.51
	76	2-Chlorotoluene	91	8.976	8.972	(0.929)	267104	21.5311	21.53
	77	4-Chlorotoluene	91	9.069	9.070	(0.939)	312850	22.1218	22.12
	78	tert-Butylbenzene	119	9.336	9.336	(0.966)	281086	24.5882	24.58
	79	1,2,4-Trimethylbenzene	105	9.377	9.377	(0.971)	328391	22.3477	22.34
	81	sec-Butylbenzene	105	9.519	9.519	(0.985)	395294	25.9885	25.98
	82	p-Isopropyltoluene	119	9.647	9.647	(0.998)	345185	25.3256	25.32

83 1,3-Dichlorobenzene	146	9.606	9.606 (0.994)	200605	21.5847	21.58
84 1,4-Dichlorobenzene	146	9.680	9.681 (1.002)	210765	20.7820	20.78

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	87 n-Butylbenzene	91	9.992	9.992	(1.034)	299050	23.7332	23.73
	88 1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	195971	20.4741	20.47
	89 1,2-Dibromo-3-Chloropropane	155	10.659	10.659	(1.103)	18340	21.1414	21.14
	90 1,2,4-Trichlorobenzene	180	11.337	11.338	(1.173)	140262	23.2200	23.22
	91 Hexachlorobutadiene	225	11.476	11.480	(1.188)	65036	24.4158	24.41
	92 Naphthalene	128	11.544	11.540	(1.195)	316884	23.0566	23.05
	93 1,2,3-Trichlorobenzene	180	11.742	11.739	(1.215)	130154	22.4974	22.49
M	94 1,2-Dichloroethylene (total)	96				160858	34.0141	34.01
M	95 Xylenes (total)	106				470183	63.1417	63.14
	141 Cyclohexane	56	4.117	4.121	(0.987)	120851	24.4474	24.44
	138 Freon TF	101	1.913	1.913	(0.458)	82624	22.3308	22.33
	147 Methylcyclohexane	55	5.381	5.377	(1.085)	184160	21.6374	21.63
	146 Methyl Acetate	43	2.228	2.225	(0.534)	36129	15.9293	15.92
	148 Tert-Butyl alcohol	59	2.423	2.420	(0.581)	129795	371.887	371.88
	149 Isopropyl Alcohol	45	2.089	2.086	(0.501)	70299	385.679	385.67

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTMS005\Target\chem\voa6.i\X221230.b\X123015.D
Date : 30-DEC-2022 16:21
Client ID: HS221214494-05HSD
Sample Info: HS221214494-05HSD;HS221214494-05HSD;3;;HSD
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

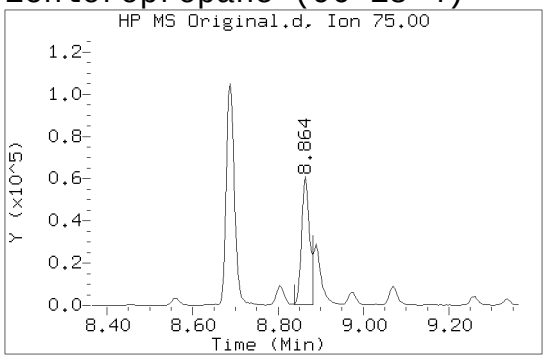
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123015.D
Inj Date : 30-DEC-2022 16:21
InstruID : voa6.i
LabSampID : HS22121494-05MSD

1,2,3-Trichloropropane (96-18-4)

Reason Code:

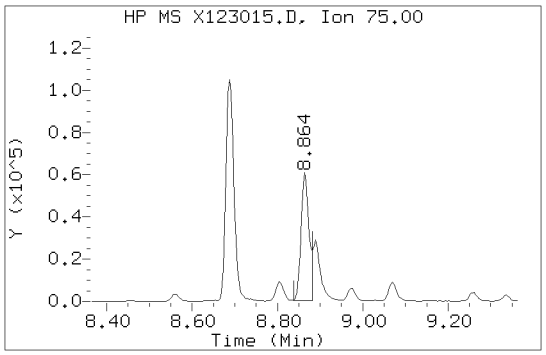
BEFORE

MASS
75
AREA
83969
HEIGHT
60971
03-Jan-2023
15:35
linh
pham



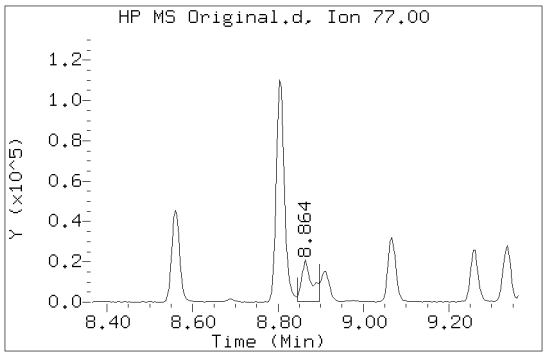
AFTER

MASS
75
AREA
83969
HEIGHT
60971
03-Jan-2023
15:35
linh
pham



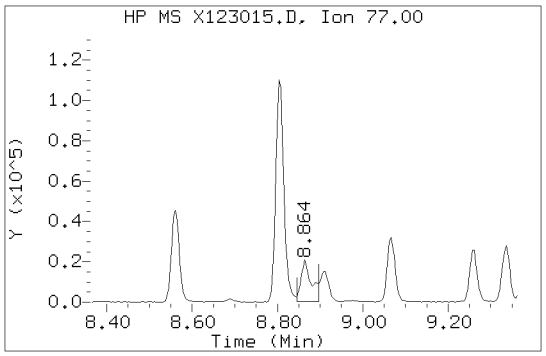
BEFORE

MASS
77
AREA
36310
HEIGHT
20600
03-Jan-2023
15:35
linh
pham



AFTER

MASS
77
AREA
36310
HEIGHT
20600
03-Jan-2023
15:35
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123018.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123018.D
Lab Smp Id: HS22121478-09 Client Smp ID: HS22121478-09
Inj Date : 30-DEC-2022 17:24
Operator : PC Inst ID: voa6.i
Smp Info : HS22121478-09;HS22121478-09;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.177	4.178	(1.000)	506642	50.0000	
$ 30 Dibromofluoromethane	113	4.095	4.095	(0.980)	213970	43.9636	43.96
$ 35 1,2-Dichloroethane-d4	65	4.466	4.466	(1.069)	227260	44.2910	44.29
* 36 1,4-Difluorobenzene	114	4.961	4.965	(1.000)	695659	50.0000	
* 47 Chlorobenzene-d5	117	7.667	7.668	(1.000)	617342	50.0000	
$ 48 Toluene-d8	98	6.385	6.386	(0.833)	800026	52.4437	52.44
$ 69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	273368	47.9444	47.94
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	326954	50.0000	

01179471

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123018.D

Date : 30-DEC-2022 17:24

Client ID: HS22121478-09

Instrument: voa6.i

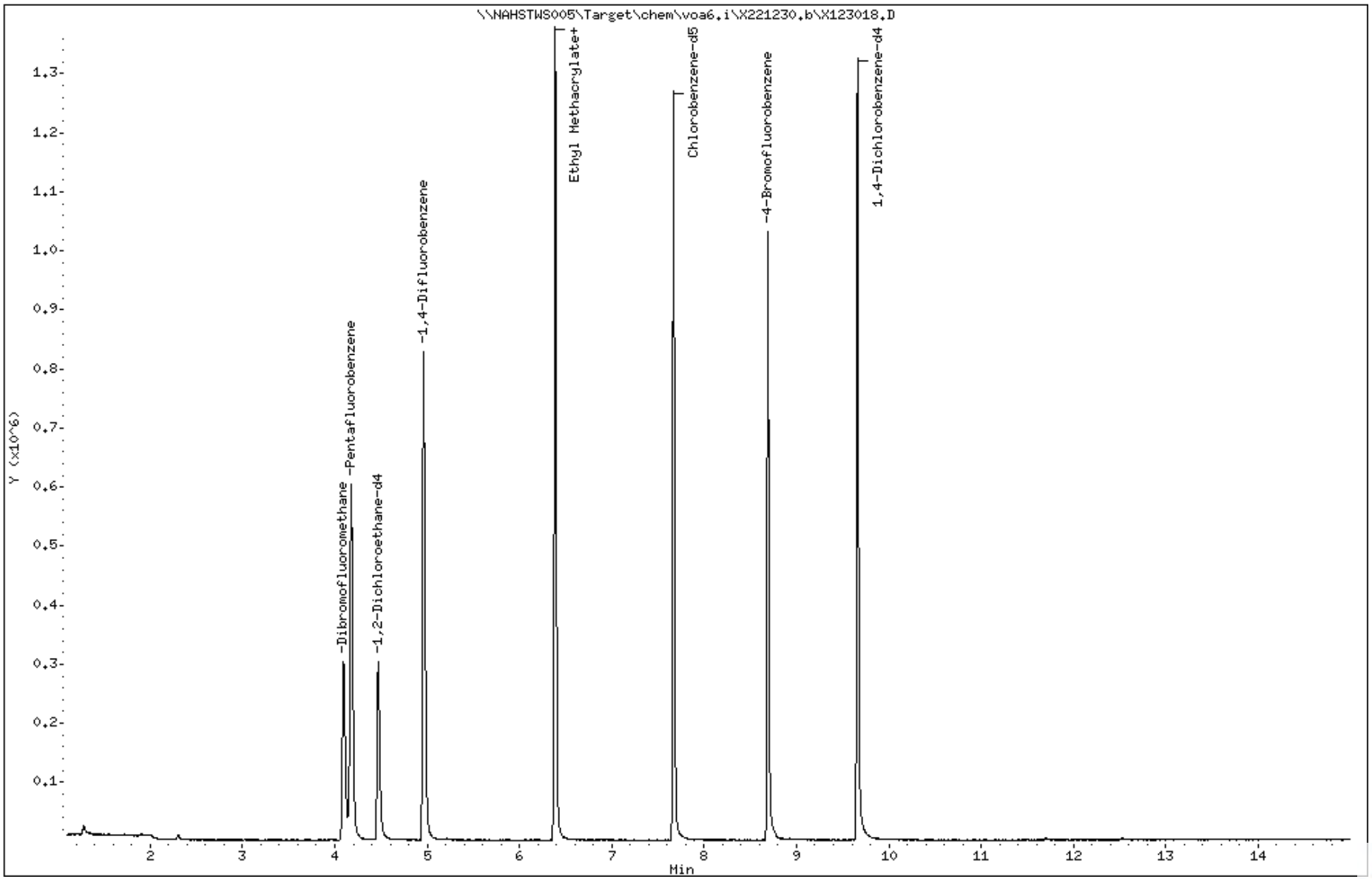
Sample Info: HS22121478-09;HS22121478-09;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123018.D
Inj Date : 30-DEC-2022 17:24
InstruID : voa6.i
LabSampID : HS22121478-09

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123022.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123022.D
Lab Smp Id: HS22121478-01 Client Smp ID: HS22121478-01
Inj Date : 30-DEC-2022 18:48
Operator : PC Inst ID: voa6.i
Smp Info : HS22121478-01;HS22121478-01;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 21
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.177	4.178	(1.000)	499926	50.0000	
	20 trans-1,2-Dichloroethene	96	2.532	2.524	(0.606)	4350	1.02439	1.02(a)
	27 cis-1,2-Dichloroethene	96	3.521	3.522	(0.843)	159484	30.8610	30.86
$	30 Dibromofluoromethane	113	4.095	4.095	(0.980)	205838	42.8568	42.85
$	35 1,2-Dichloroethane-d4	65	4.470	4.466	(1.070)	225175	44.4731	44.47
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	682668	50.0000	
	37 Benzene	78	4.519	4.508	(0.910)	22245	1.36456	1.36(a)
	38 Trichloroethene	130	5.208	5.205	(1.049)	32721	7.07671	7.07
*	47 Chlorobenzene-d5	117	7.667	7.668	(1.000)	601889	50.0000	
$	48 Toluene-d8	98	6.385	6.386	(0.833)	787333	52.9367	52.93
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	269100	48.4069	48.40
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	328485	50.0000	
M	94 1,2-Dichloroethylene (total)	96				163834	31.8854	31.88

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

01179474

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123022.D

Date : 30-DEC-2022 18:48

Client ID: HS22121478-01

Instrument: voa6.i

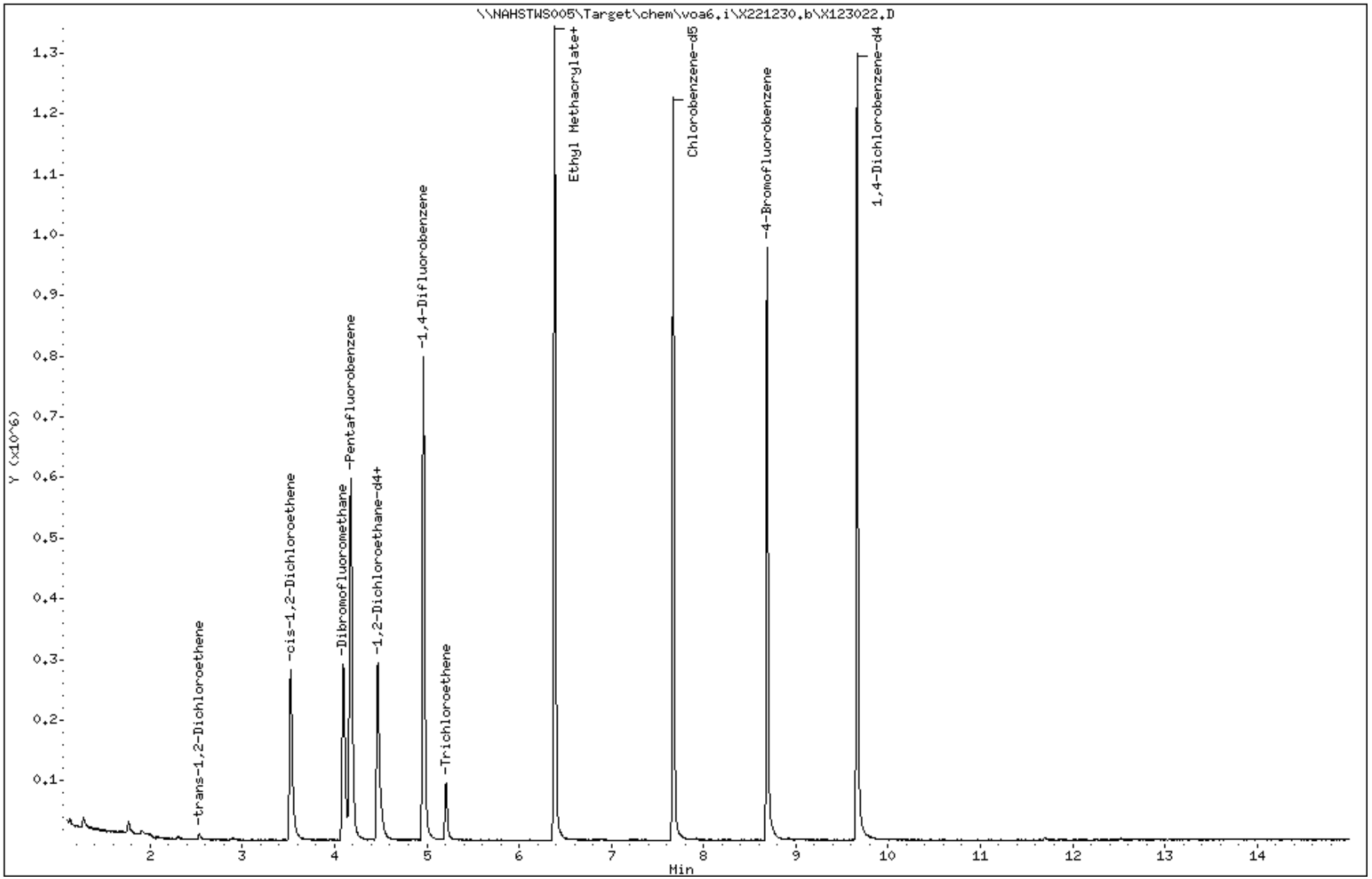
Sample Info: HS22121478-01;HS22121478-01;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123022.D

Date : 30-DEC-2022 18:48

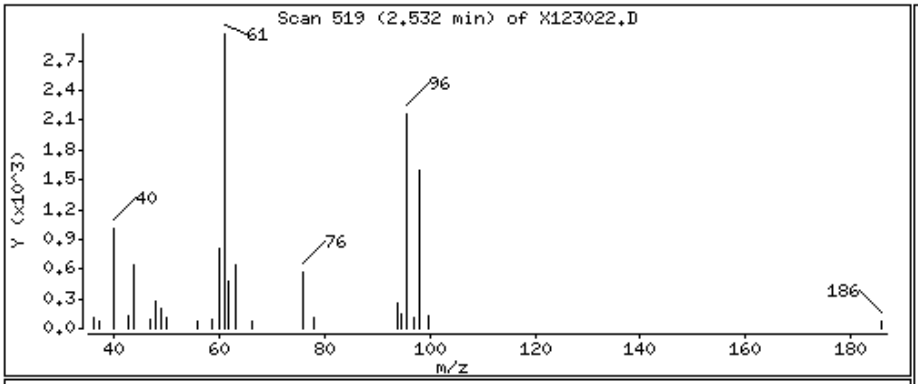
Client ID: HS22121478-01 Instrument: voa6.i

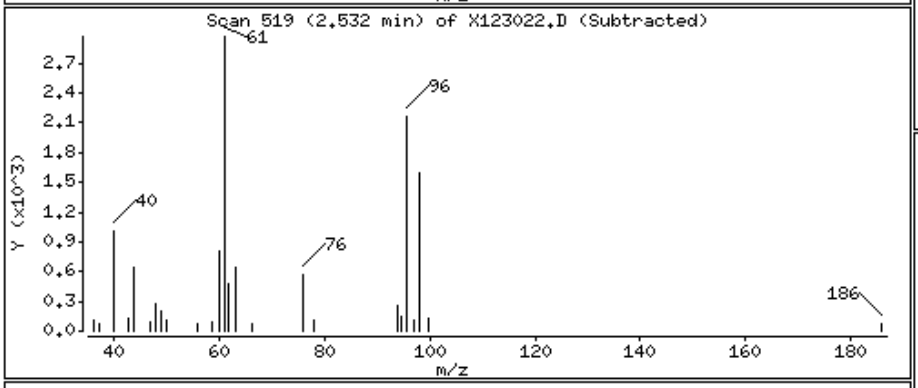
Sample Info: HS22121478-01;HS22121478-01;;;

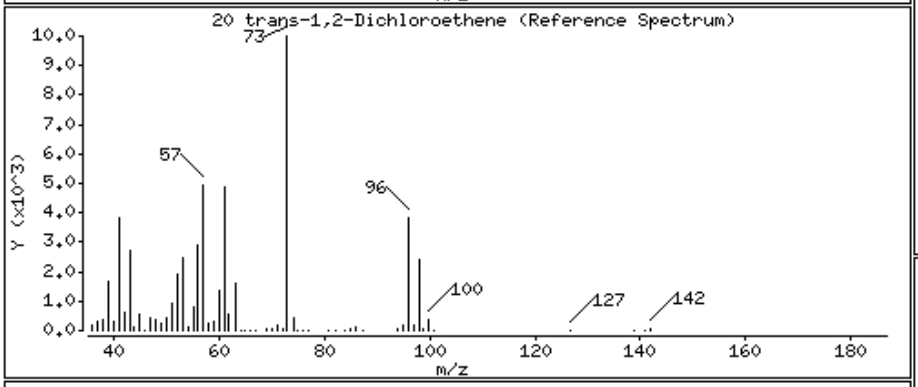
Purge Volume: 5.0 Operator: PC

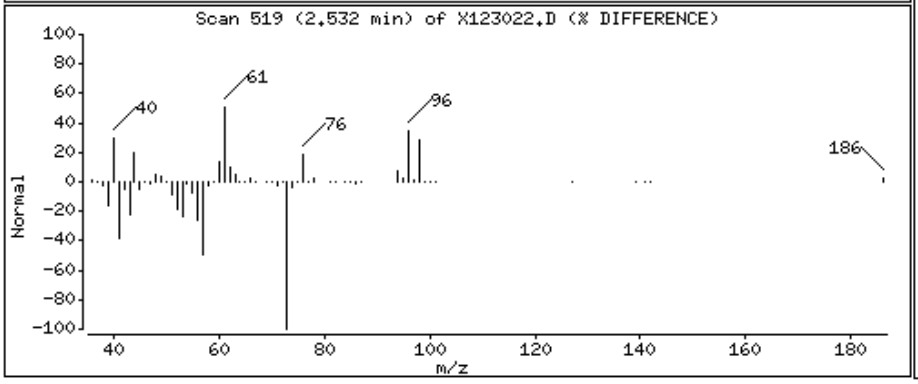
Column phase: DB624 Column diameter: 0.18

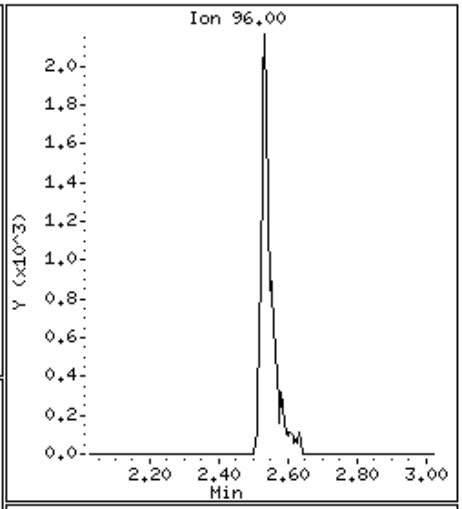
20 trans-1,2-Dichloroethene Concentration: 1.02 ug/l

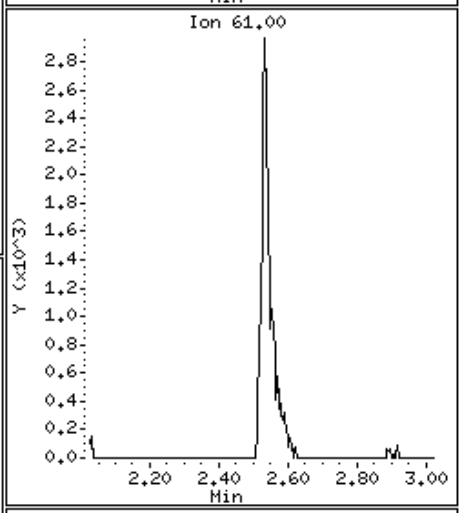


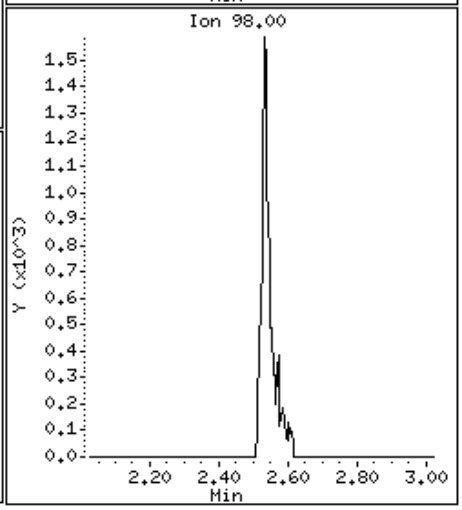












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123022.D Page 3

Date : 30-DEC-2022 18:48

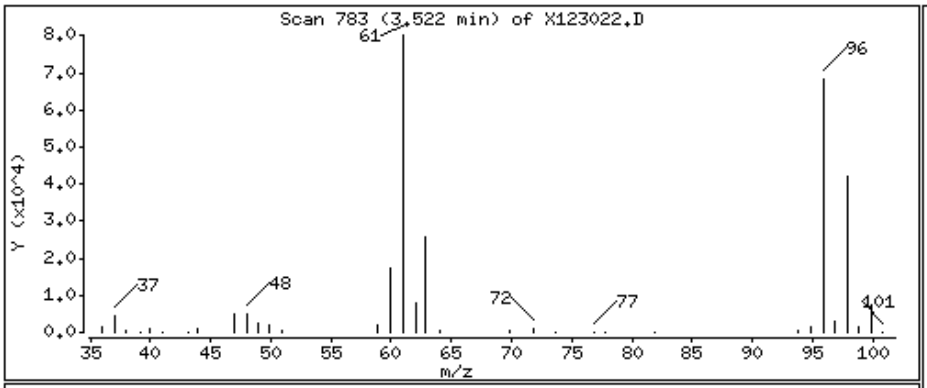
Client ID: HS22121478-01 Instrument: voa6.i

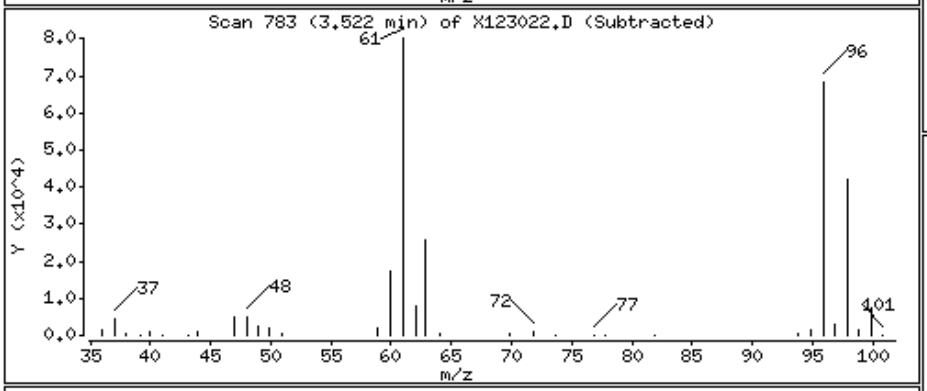
Sample Info: HS22121478-01;HS22121478-01;;;

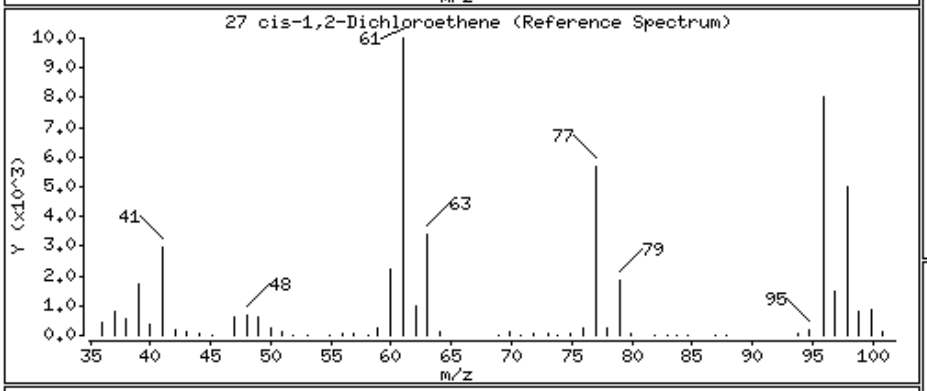
Purge Volume: 5.0 Operator: PC

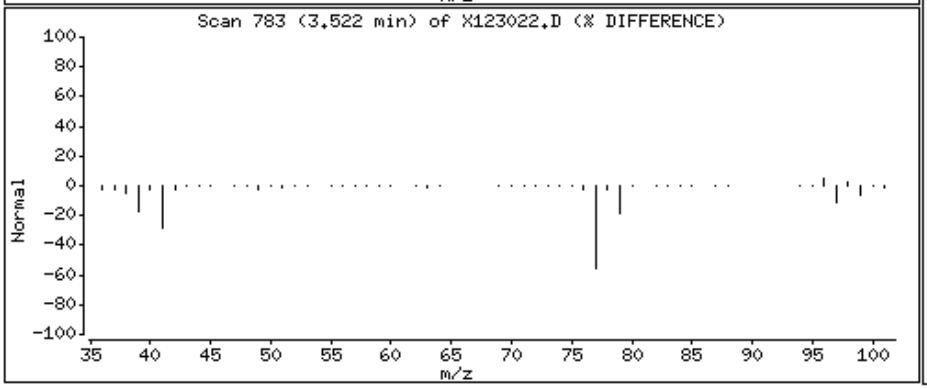
Column phase: DB624 Column diameter: 0.18

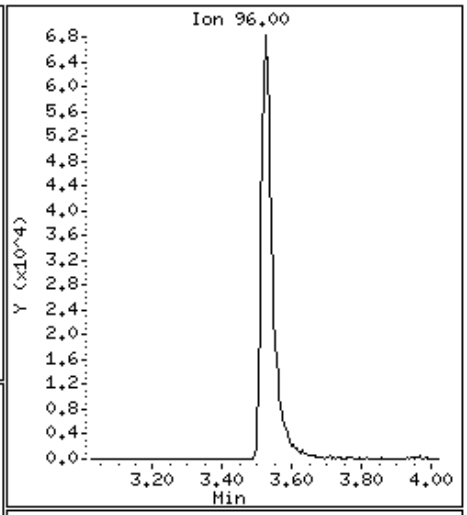
27 cis-1,2-Dichloroethene Concentration: 30.86 ug/l

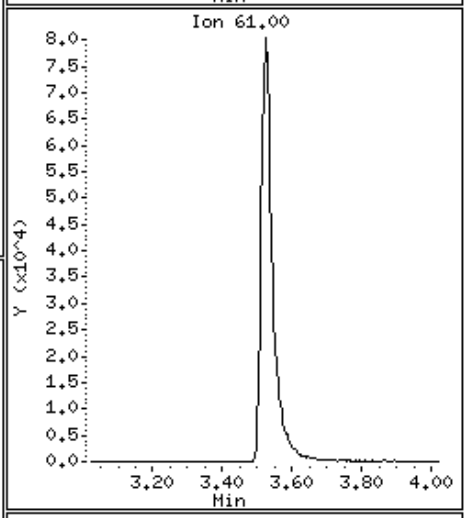


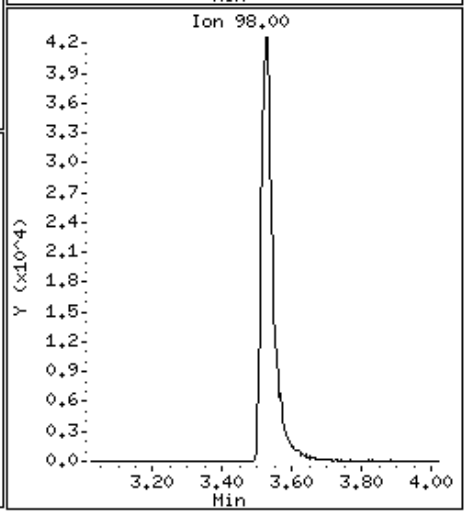












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123022.D

Date : 30-DEC-2022 18:48

Client ID: HS22121478-01

Instrument: voa6.i

Sample Info: HS22121478-01;HS22121478-01;;;

Purge Volume: 5.0

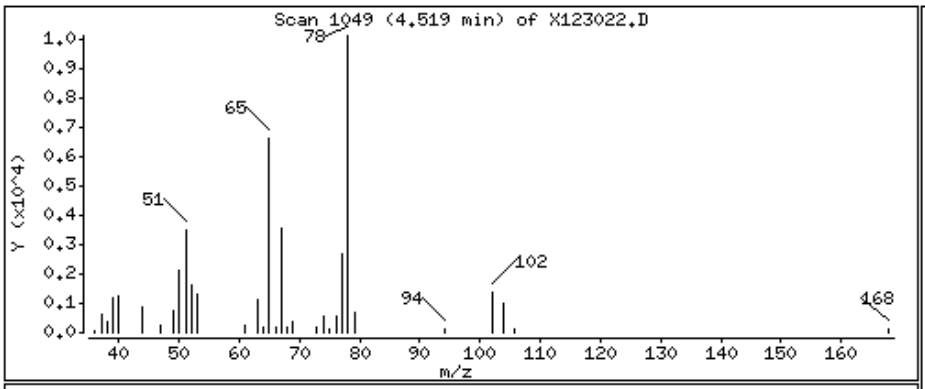
Operator: PC

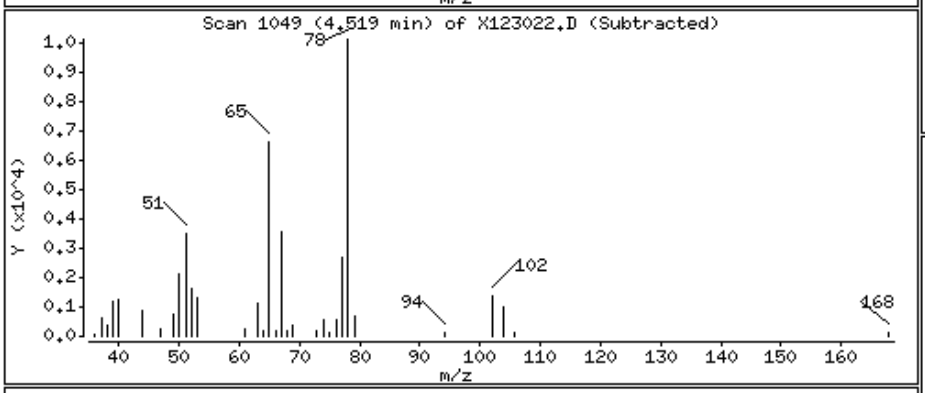
Column phase: DB624

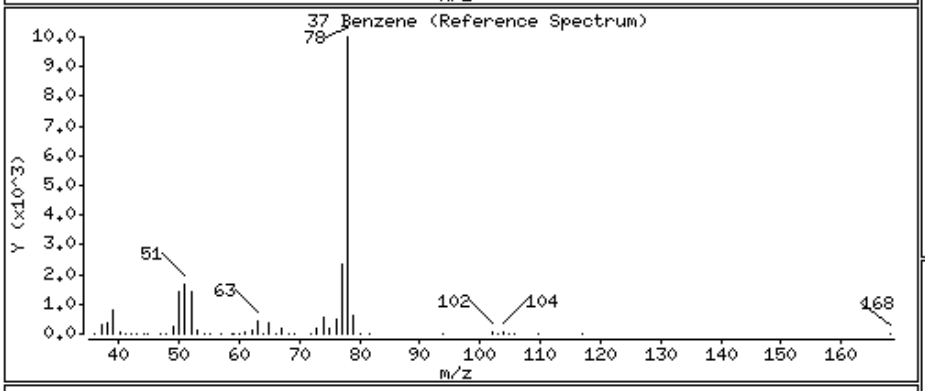
Column diameter: 0.18

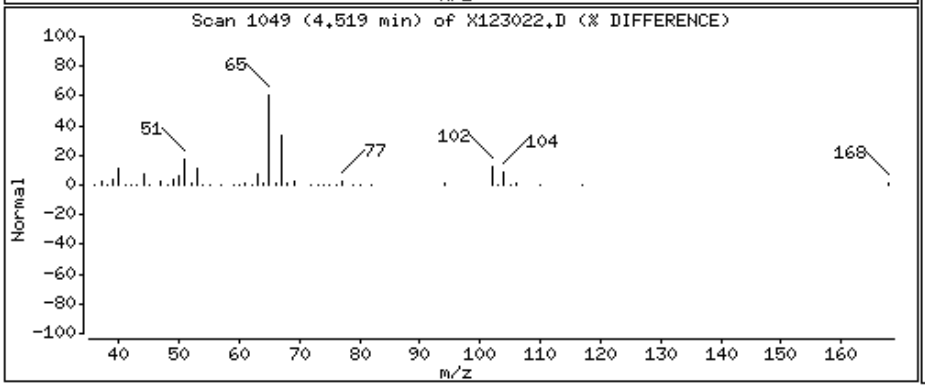
37 Benzene

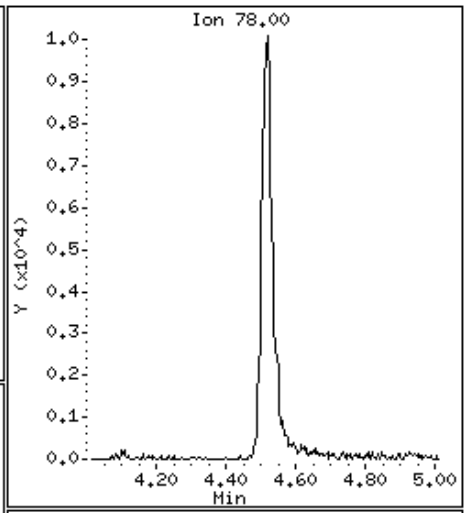
Concentration: 1.36 ug/l

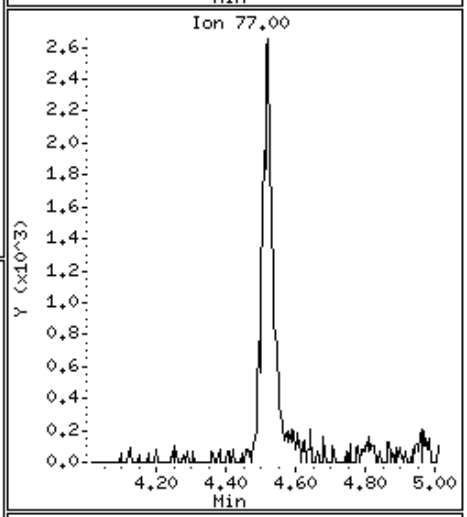


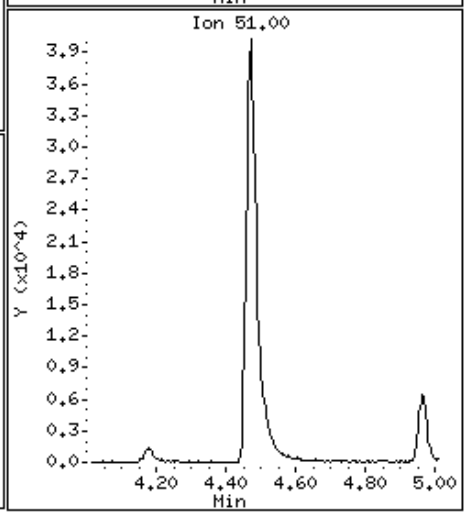












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123022.D Page 5

Date : 30-DEC-2022 18:48

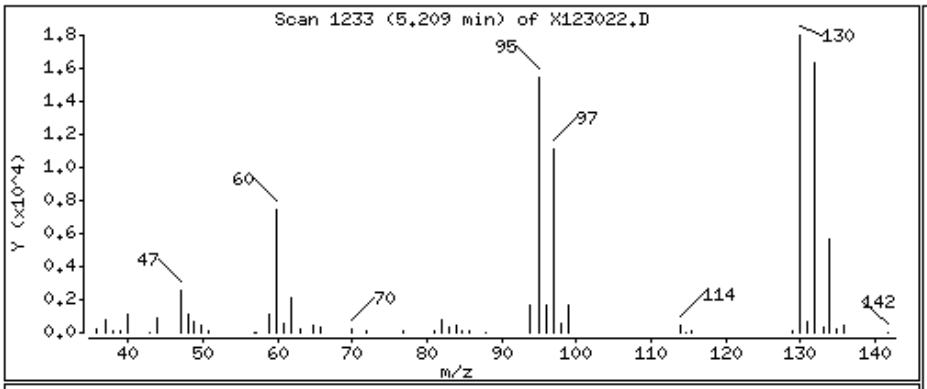
Client ID: HS22121478-01 Instrument: voa6.i

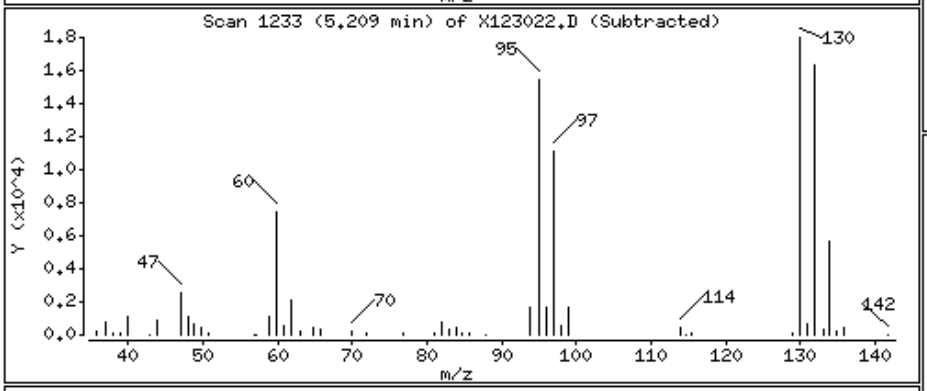
Sample Info: HS22121478-01;HS22121478-01;;;

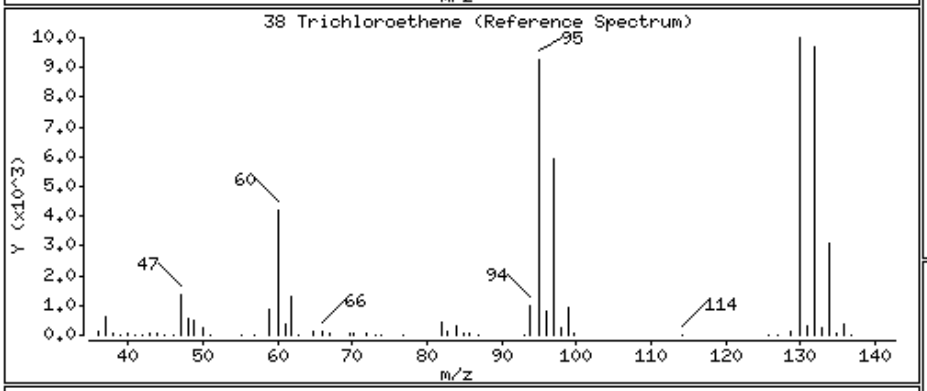
Purge Volume: 5.0 Operator: PC

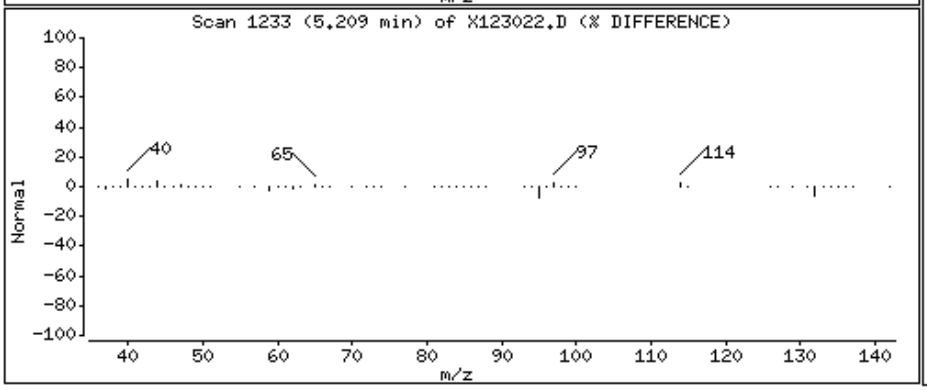
Column phase: DB624 Column diameter: 0.18

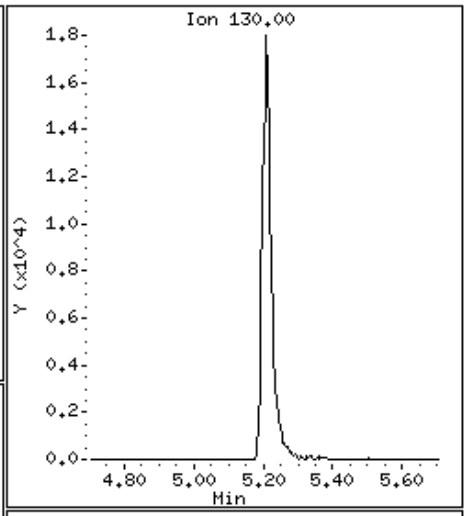
38 Trichloroethene Concentration: 7.07 ug/l

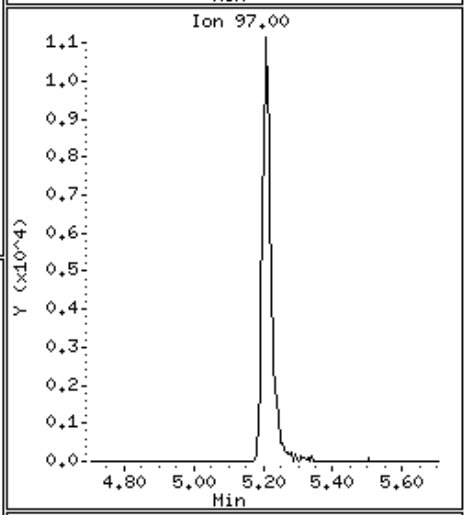


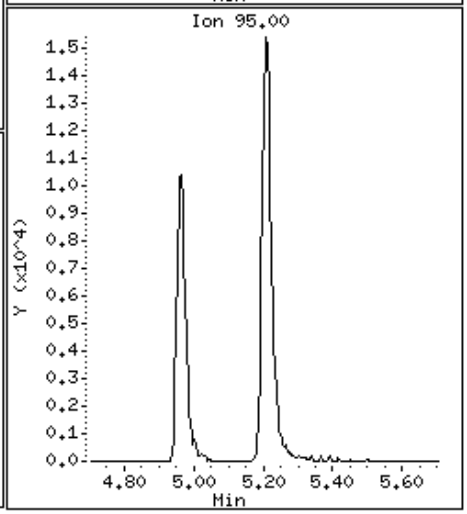












Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123022.D
Inj Date : 30-DEC-2022 18:48
InstruID : voa6.i
LabSampID : HS22121478-01

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123023.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123023.D
Lab Smp Id: HS22121478-03 Client Smp ID: HS22121478-03
Inj Date : 30-DEC-2022 19:09
Operator : PC Inst ID: voa6.i
Smp Info : HS22121478-03;HS22121478-03;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 22
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.177	4.178	(1.000)	498051	50.0000	
$ 30 Dibromofluoromethane	113	4.099	4.095	(0.981)	211024	44.1068	44.10
$ 35 1,2-Dichloroethane-d4	65	4.466	4.466	(1.069)	226511	44.9027	44.90
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	681126	50.0000	
* 47 Chlorobenzene-d5	117	7.667	7.668	(1.000)	598929	50.0000	
$ 48 Toluene-d8	98	6.385	6.386	(0.833)	783307	52.9263	52.92
$ 69 4-Bromofluorobenzene	95	8.691	8.687	(1.133)	266572	48.1895	48.18
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	315419	50.0000	

01179481

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123023.D

Date : 30-DEC-2022 19:09

Client ID: HS22121478-03

Instrument: voa6.i

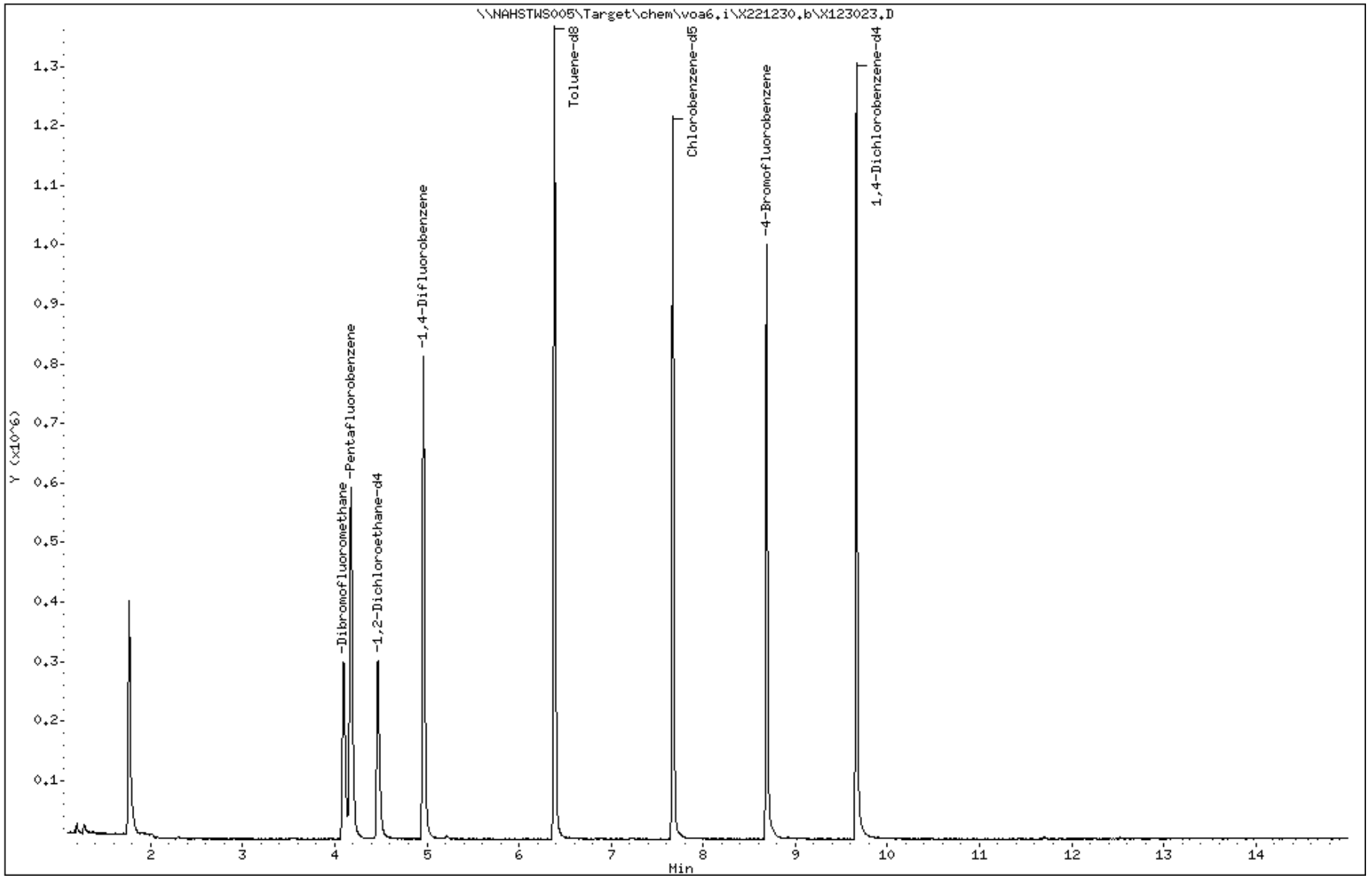
Sample Info: HS22121478-03;HS22121478-03;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123023.D
Inj Date : 30-DEC-2022 19:09
InstruID : voa6.i
LabSampID : HS22121478-03

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123024.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123024.D
Lab Smp Id: HS22121478-04 Client Smp ID: HS22121478-04
Inj Date : 30-DEC-2022 19:30
Operator : PC Inst ID: voa6.i
Smp Info : HS22121478-04;HS22121478-04;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 23
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	487132	50.0000	
$ 30 Dibromofluoromethane	113	4.095	4.095	(0.980)	206463	44.1208	44.12
$ 35 1,2-Dichloroethane-d4	65	4.470	4.466	(1.070)	221597	44.9132	44.91
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	667884	50.0000	
* 47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	590724	50.0000	
$ 48 Toluene-d8	98	6.385	6.386	(0.833)	772150	52.8971	52.89
$ 69 4-Bromofluorobenzene	95	8.691	8.687	(1.133)	262691	48.1475	48.14
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	309751	50.0000	

01179484

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123024.D

Date : 30-DEC-2022 19:30

Client ID: HS22121478-04

Instrument: voa6.i

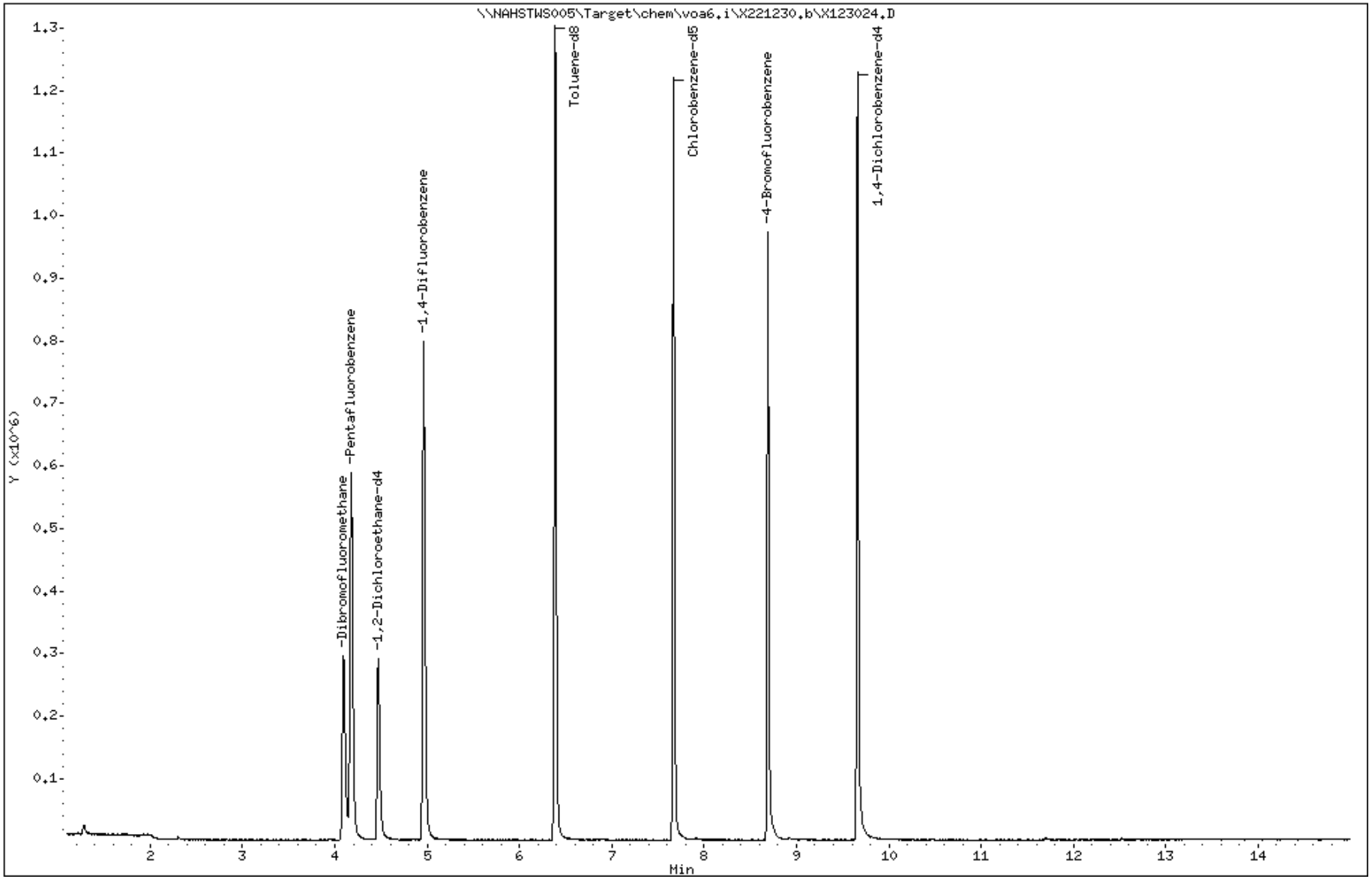
Sample Info: HS22121478-04;HS22121478-04;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123024.D
Inj Date : 30-DEC-2022 19:30
InstruID : voa6.i
LabSampID : HS22121478-04

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123025.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123025.D
Lab Smp Id: HS22121478-05 Client Smp ID: HS22121478-05
Inj Date : 30-DEC-2022 19:51
Operator : PC Inst ID: voa6.i
Smp Info : HS22121478-05;HS22121478-05;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 24
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	496855	50.0000	
$ 30 Dibromofluoromethane	113	4.095	4.095	(0.980)	205019	42.9504	42.95
$ 35 1,2-Dichloroethane-d4	65	4.466	4.466	(1.069)	221182	43.9576	43.95
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	666896	50.0000	
* 47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	586252	50.0000	
$ 48 Toluene-d8	98	6.386	6.386	(0.833)	774002	53.4284	53.42
$ 69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	262881	48.5494	48.54
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	300830	50.0000	

01179487

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123025.D

Date : 30-DEC-2022 19:51

Client ID: HS22121478-05

Instrument: voa6.i

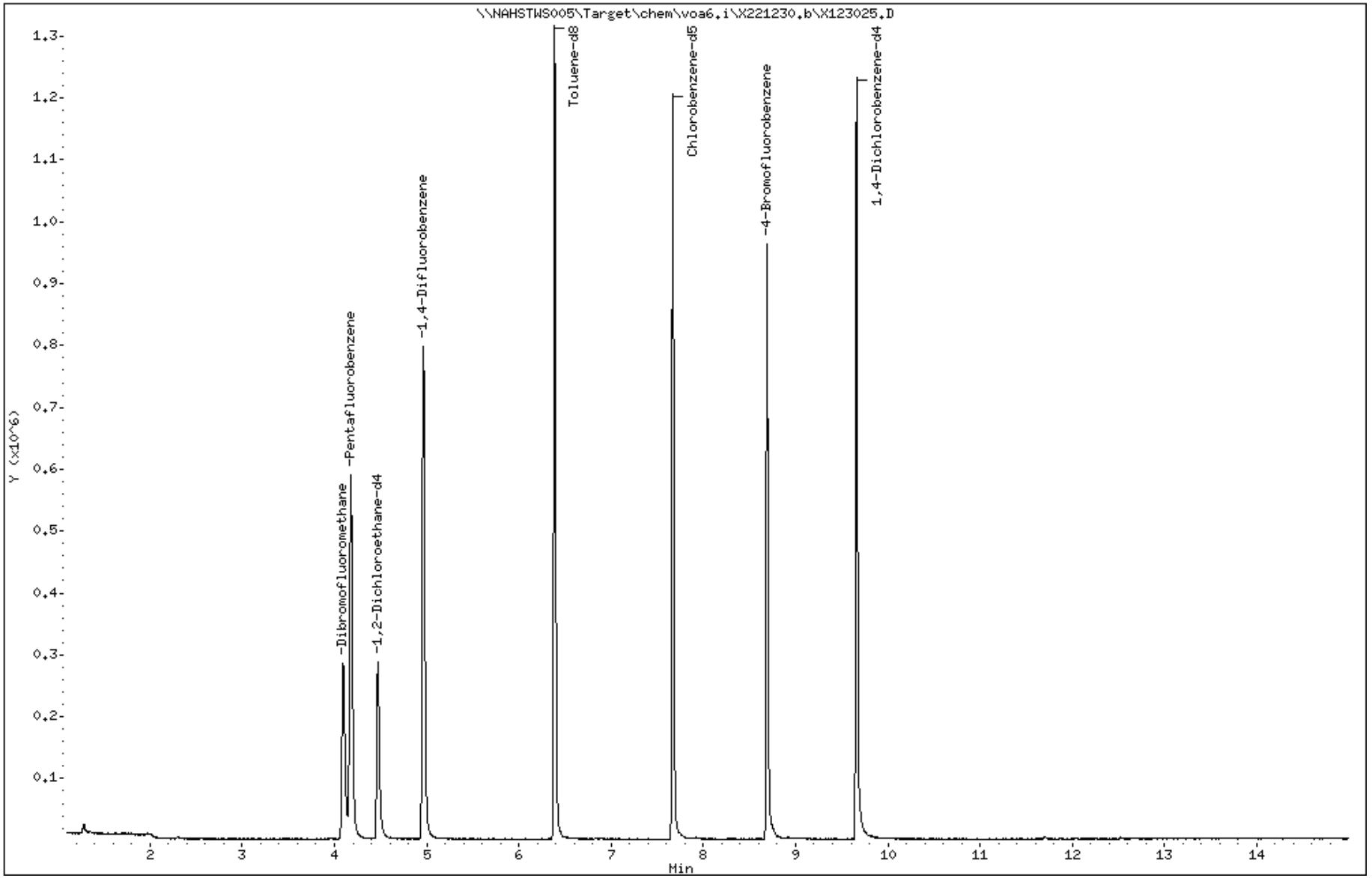
Sample Info: HS22121478-05;HS22121478-05;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123025.D
Inj Date : 30-DEC-2022 19:51
InstruID : voa6.i
LabSampID : HS22121478-05

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123026.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123026.D
Lab Smp Id: HS22121478-06 Client Smp ID: HS22121478-06
Inj Date : 30-DEC-2022 20:12
Operator : PC Inst ID: voa6.i
Smp Info : HS22121478-06;HS22121478-06;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 25
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	503613	50.0000	
$ 30 Dibromofluoromethane	113	4.095	4.095	(0.980)	209909	43.3864	43.38
$ 35 1,2-Dichloroethane-d4	65	4.466	4.466	(1.069)	224429	44.0041	44.00
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	688160	50.0000	
* 47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	602101	50.0000	
$ 48 Toluene-d8	98	6.386	6.386	(0.833)	791009	53.1651	53.16
$ 69 4-Bromofluorobenzene	95	8.691	8.687	(1.133)	268441	48.2716	48.27
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	316291	50.0000	

01179490

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123026.D

Page 1

Date : 30-DEC-2022 20:12

Client ID: HS22121478-06

Instrument: voa6.i

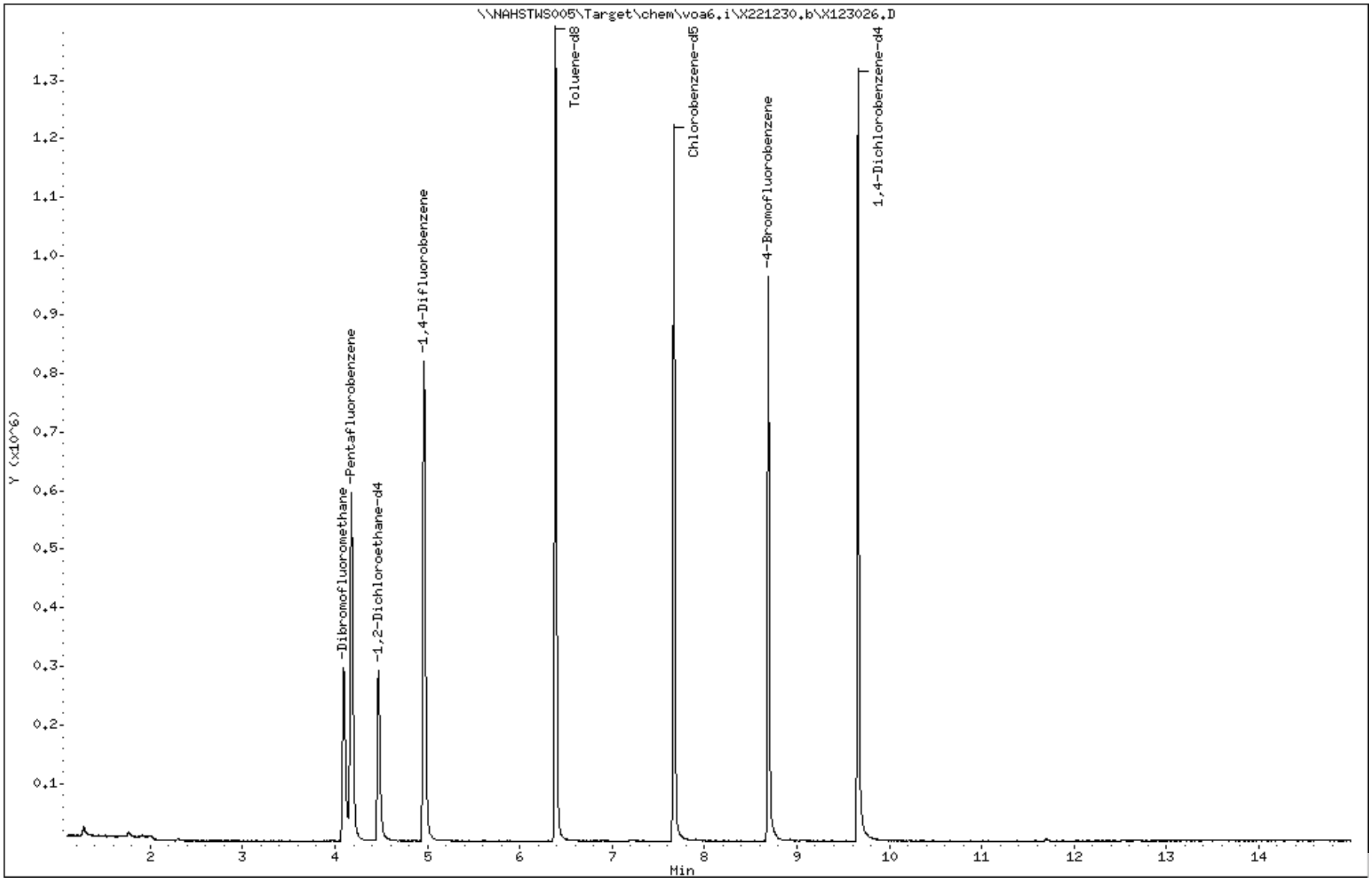
Sample Info: HS22121478-06;HS22121478-06;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123026.D
Inj Date : 30-DEC-2022 20:12
InstruID : voa6.i
LabSampID : HS22121478-06

NO MANUAL INTEGRATIONS

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123027.D
Lab Smp Id: HS22121478-07 Client Smp ID: HS22121478-07
Inj Date : 30-DEC-2022 20:33
Operator : PC Inst ID: voa6.i
Smp Info : HS22121478-07;HS22121478-07;;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 26
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.177	4.178	(1.000)	498559	50.0000	
	5 Vinyl Chloride	62	1.141	1.141	(0.273)	29592	6.79465	6.79
	27 cis-1,2-Dichloroethene	96	3.525	3.522	(0.844)	83787	16.2577	16.25
$	30 Dibromofluoromethane	113	4.095	4.095	(0.980)	203496	42.4839	42.48
$	35 1,2-Dichloroethane-d4	65	4.470	4.466	(1.070)	221143	43.8006	43.80
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	671766	50.0000	
	38 Trichloroethene	130	5.204	5.205	(1.048)	334356	73.4862	73.48
*	47 Chlorobenzene-d5	117	7.667	7.668	(1.000)	593191	50.0000	
$	48 Toluene-d8	98	6.385	6.386	(0.833)	772219	52.6818	52.68
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	265913	48.5349	48.53
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	318395	50.0000	
M	94 1,2-Dichloroethylene (total)	96				83787	16.2577	16.25
	138 Freon TF	101	1.913	1.913	(0.458)	1683078	459.891	459.89(A)

QC Flag Legend

A - Target compound detected but, quantitated amount
    exceeded maximum amount.

01179493

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123027.D

Date : 30-DEC-2022 20:33

Client ID: HS22121478-07

Instrument: voa6.i

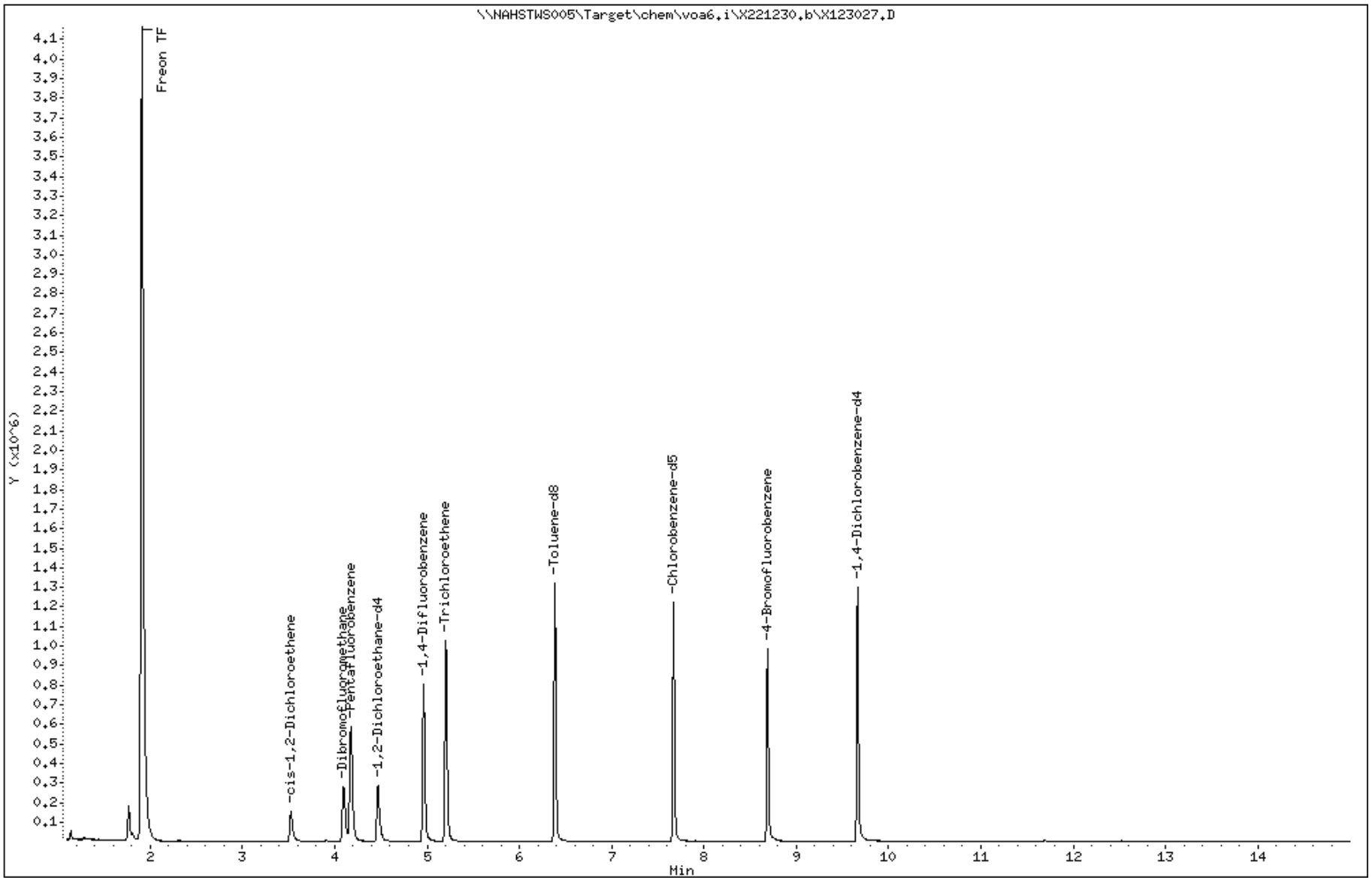
Sample Info: HS22121478-07;HS22121478-07;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123027.D

Date : 30-DEC-2022 20:33

Client ID: HS22121478-07

Instrument: voa6.i

Sample Info: HS22121478-07;HS22121478-07;;;

Purge Volume: 5.0

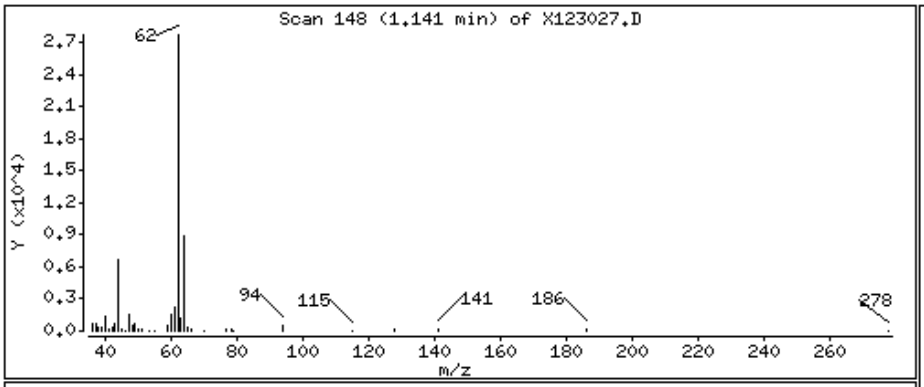
Operator: PC

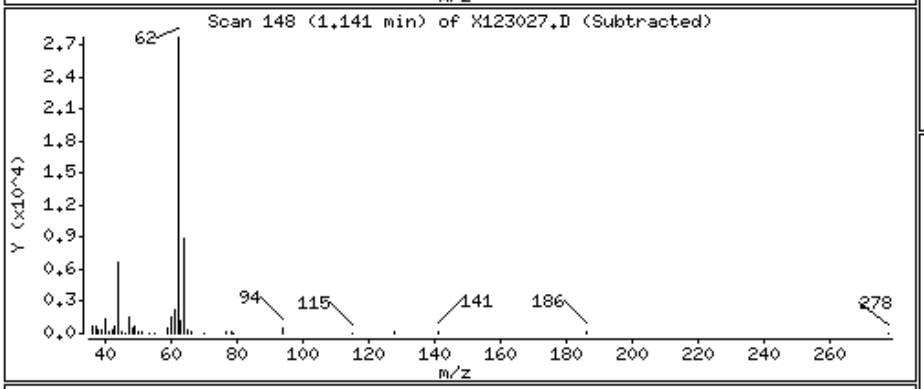
Column phase: DB624

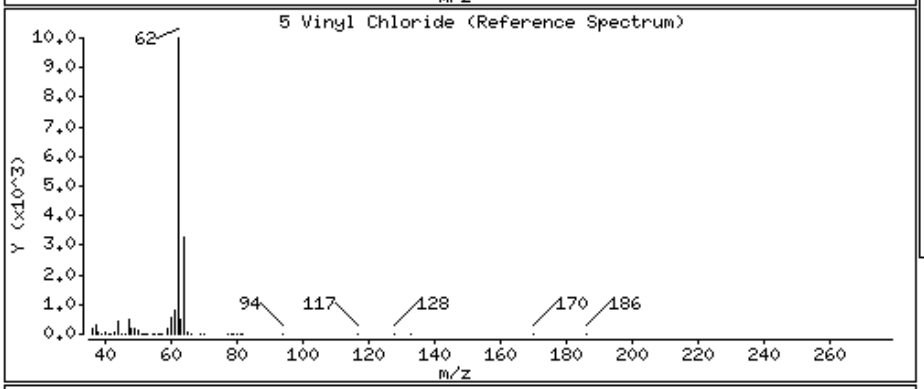
Column diameter: 0.18

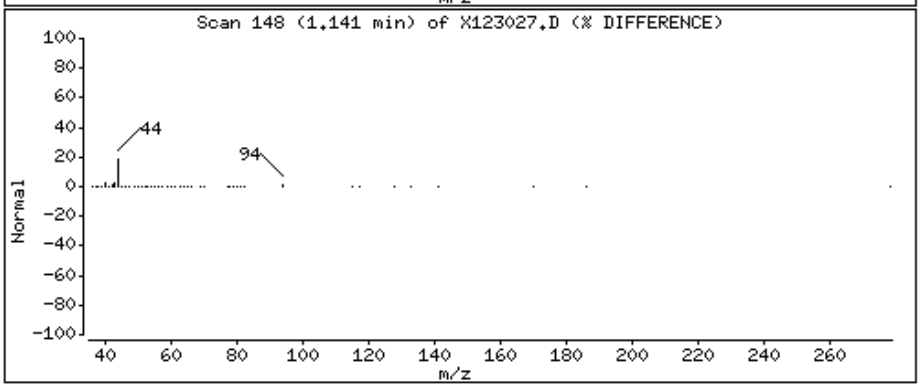
5 Vinyl Chloride

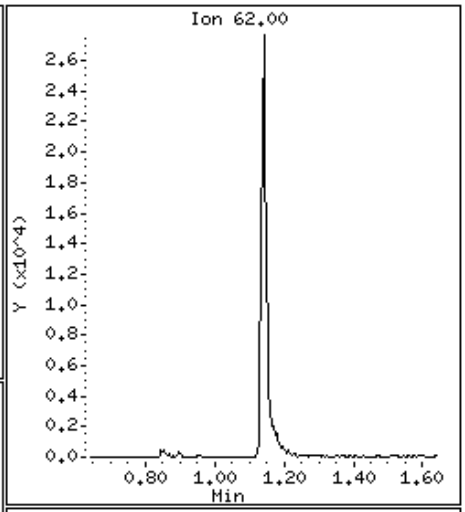
Concentration: 6.79 ug/l

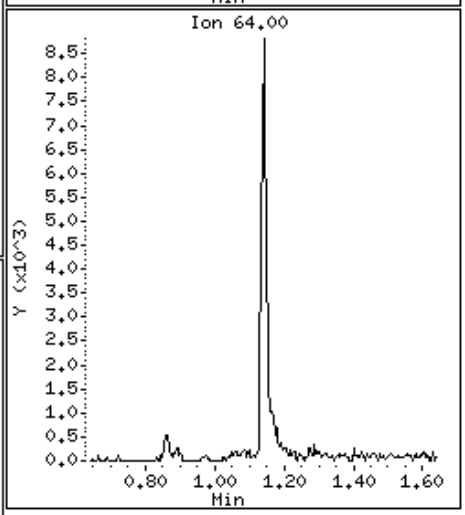












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123027.D

Date : 30-DEC-2022 20:33

Client ID: HS22121478-07

Instrument: voa6.i

Sample Info: HS22121478-07;HS22121478-07;;;

Purge Volume: 5.0

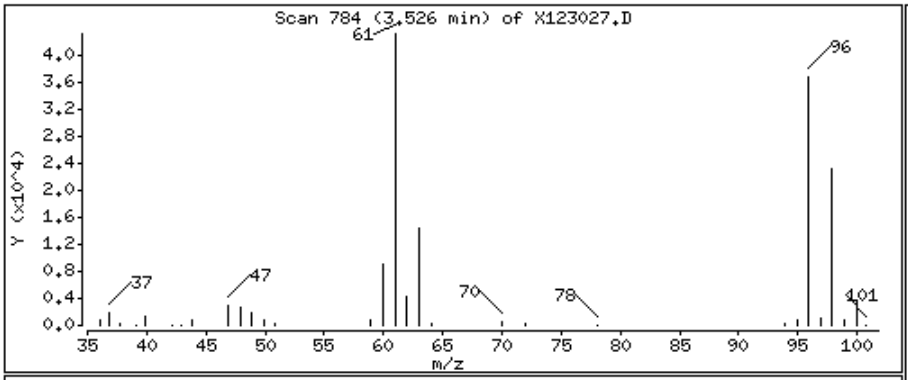
Operator: PC

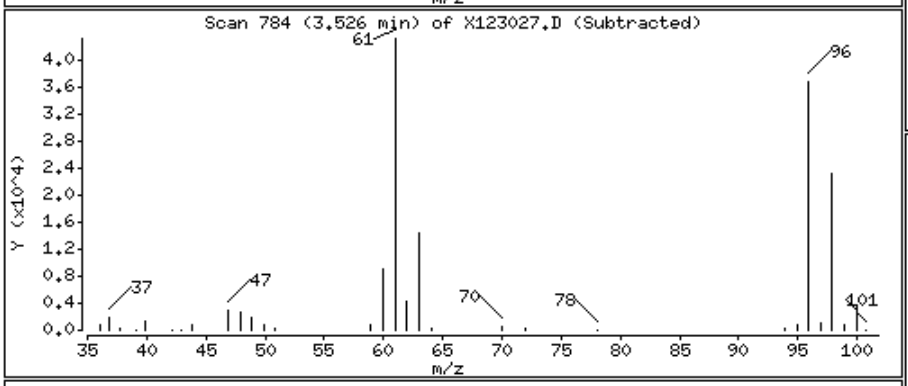
Column phase: DB624

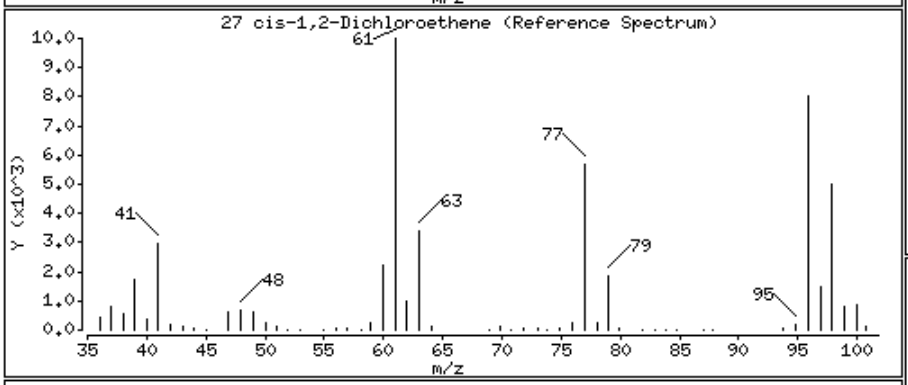
Column diameter: 0.18

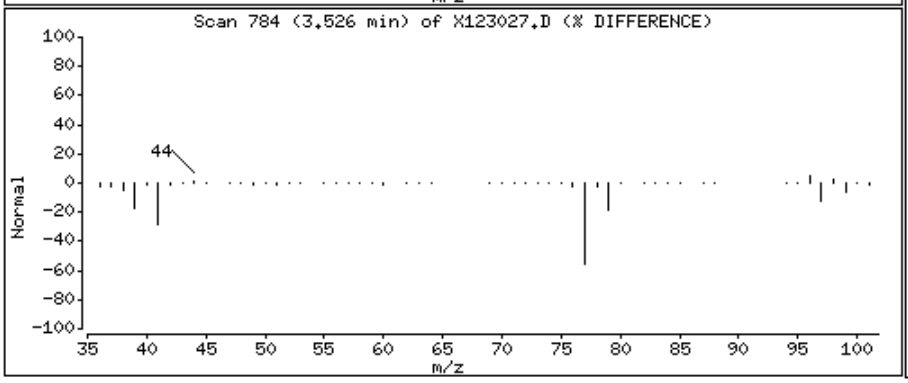
27 cis-1,2-Dichloroethene

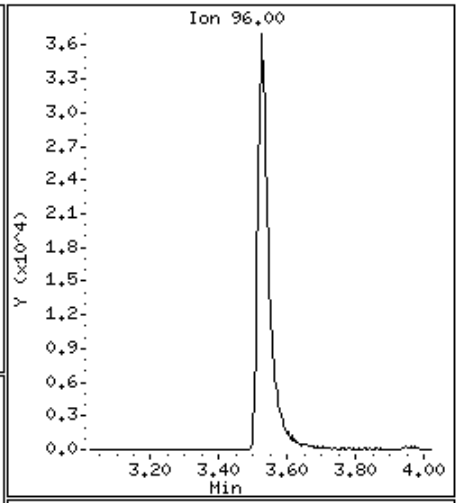
Concentration: 16.25 ug/l

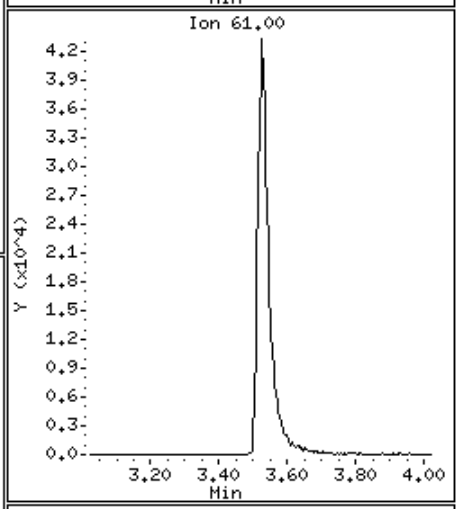


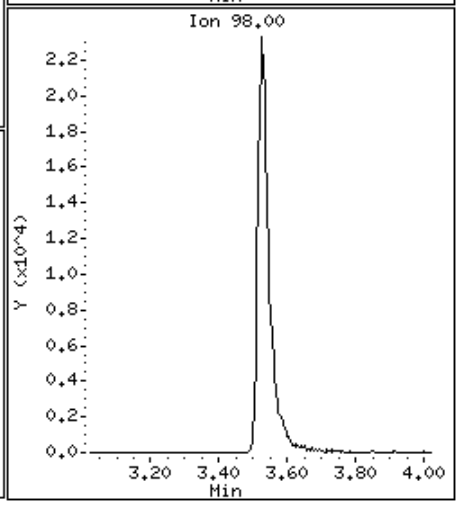












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123027.D Page 4

Date : 30-DEC-2022 20:33

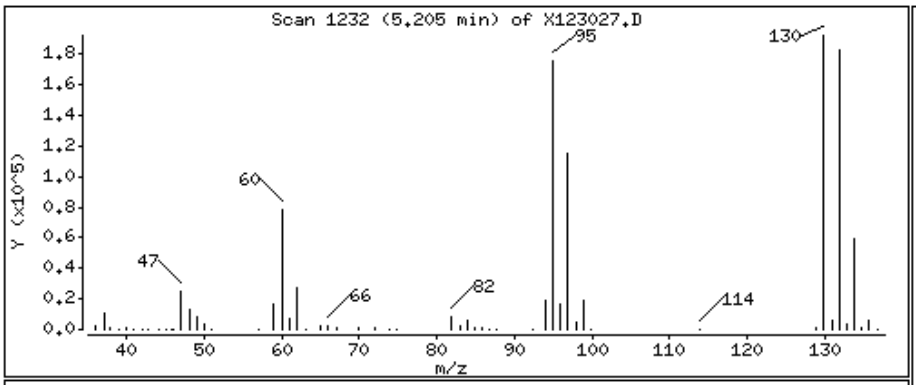
Client ID: HS22121478-07 Instrument: voa6.i

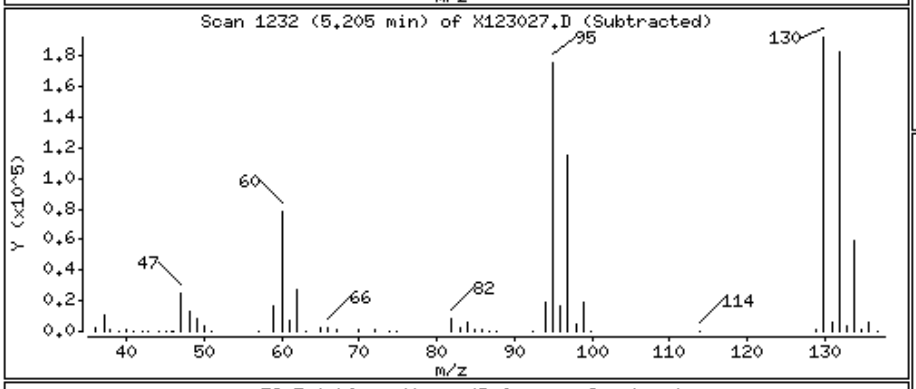
Sample Info: HS22121478-07;HS22121478-07;;;

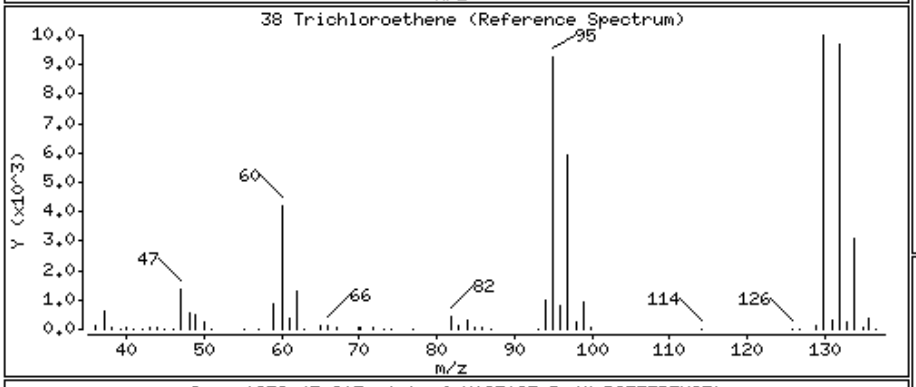
Purge Volume: 5.0 Operator: PC

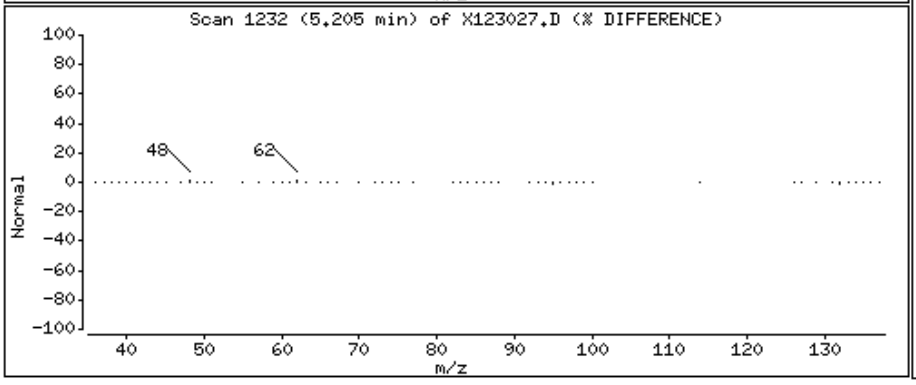
Column phase: DB624 Column diameter: 0.18

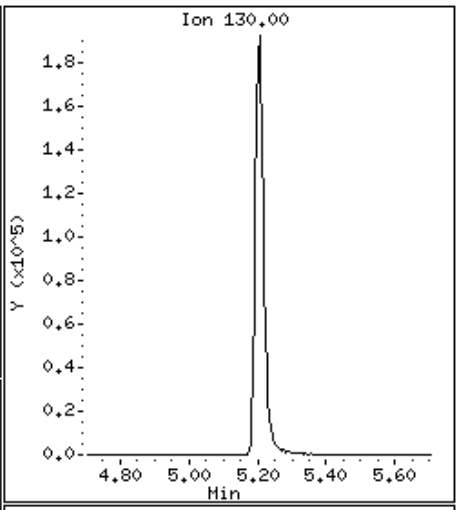
38 Trichloroethene Concentration: 73.48 ug/l

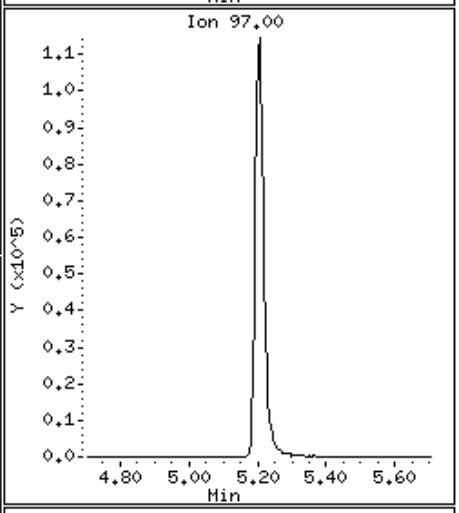


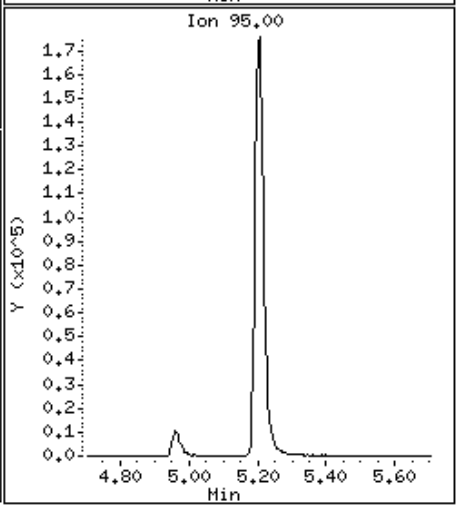












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123027.D Page 5

Date : 30-DEC-2022 20:33

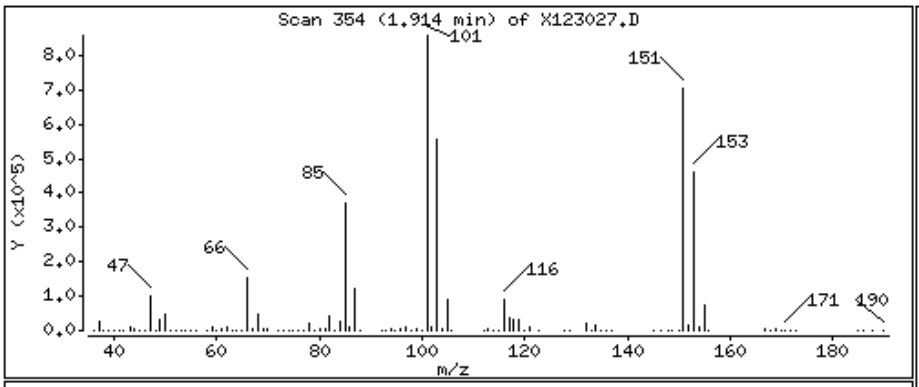
Client ID: HS22121478-07 Instrument: voa6.i

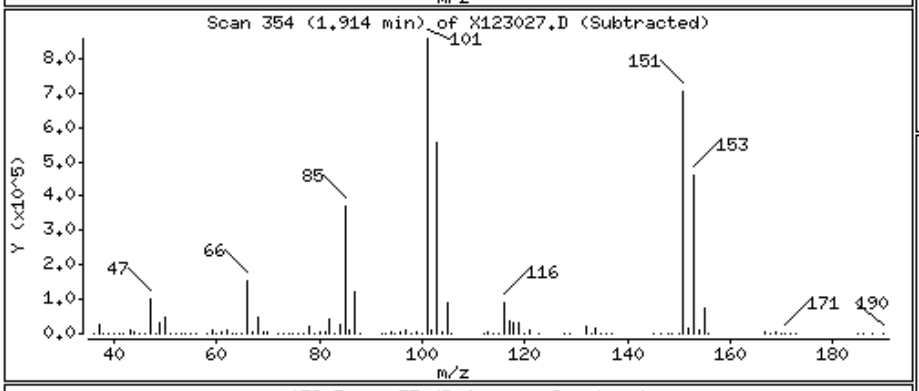
Sample Info: HS22121478-07;HS22121478-07;;;

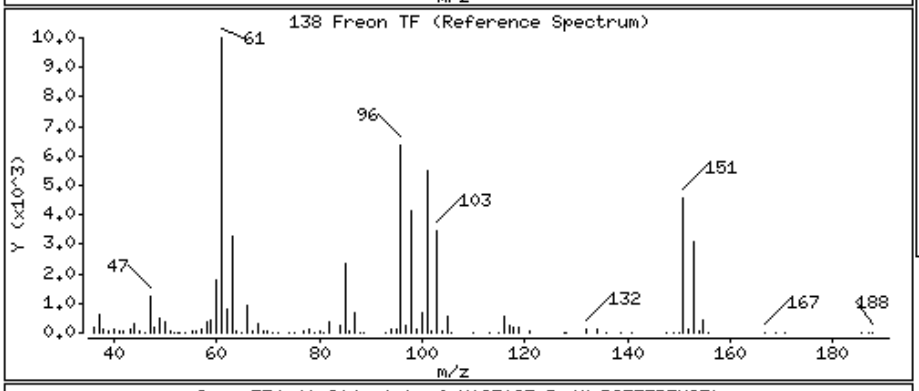
Purge Volume: 5.0 Operator: PC

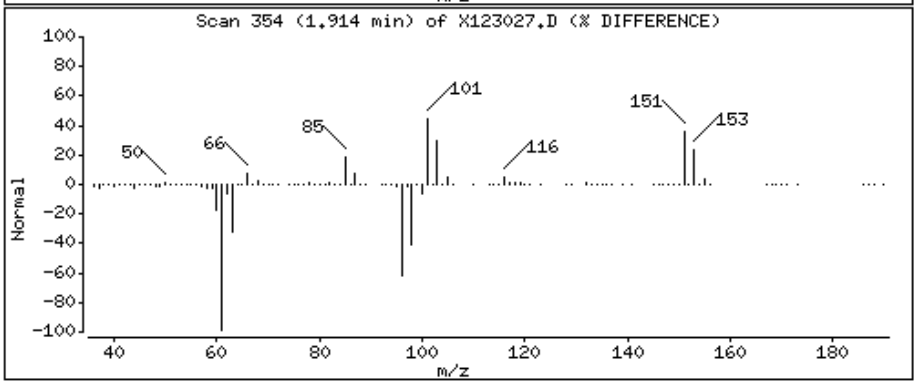
Column phase: DB624 Column diameter: 0.18

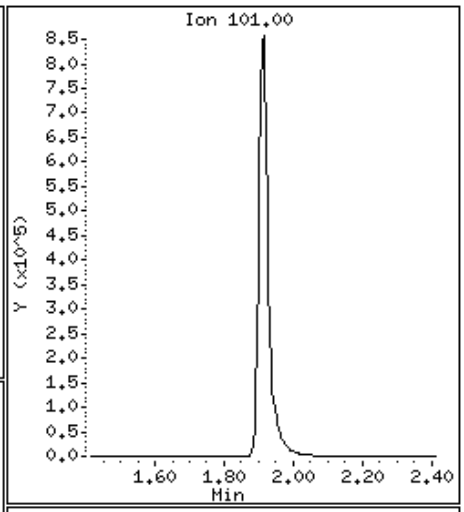
138 Freon TF Concentration: 459.89 ug/l

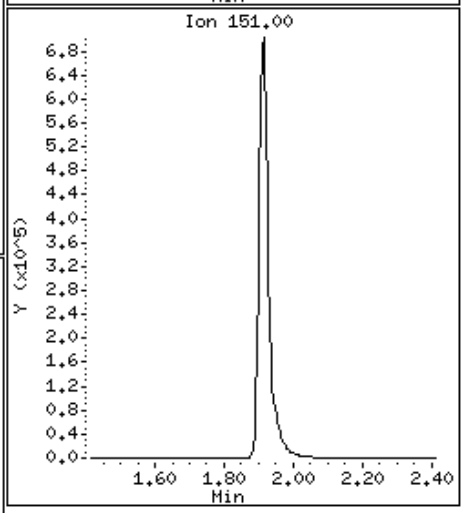












Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123027.D
Inj Date : 30-DEC-2022 20:33
InstruID : voa6.i
LabSampID : HS22121478-07

NO MANUAL INTEGRATIONS

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123028.D
Lab Smp Id: HS22121478-02 Client Smp ID: HS22121478-02
Inj Date : 30-DEC-2022 20:54
Operator : PC Inst ID: voa6.i
Smp Info : HS22121478-02;HS22121478-02;;;
Misc Info : V6;WATER;0;5;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 27
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.178	4.178	(1.000)	504033	50.0000	
	5 Vinyl Chloride	62	1.141	1.141	(0.273)	30988	7.03791	35.18
	17 Methylene Chloride	84	2.303	2.303	(0.551)	9283	1.76914	8.84(a)
	27 cis-1,2-Dichloroethene	96	3.529	3.522	(0.845)	11389	2.18587	10.92(a)
$	30 Dibromofluoromethane	113	4.095	4.095	(0.980)	206305	42.6030	42.60
$	35 1,2-Dichloroethane-d4	65	4.470	4.466	(1.070)	223048	43.6988	43.69
*	36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	681564	50.0000	
	38 Trichloroethene	130	5.208	5.205	(1.049)	20504	4.44167	22.20(a)
*	47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	599780	50.0000	
$	48 Toluene-d8	98	6.385	6.386	(0.833)	784463	52.9292	52.92
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	266031	48.0237	48.02
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	315196	50.0000	
M	94 1,2-Dichloroethylene (total)	96				11389	2.18587	10.92(a)
	138 Freon TF	101	1.913	1.913	(0.458)	402077	108.672	543.35

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

01179500

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123028.D

Date : 30-DEC-2022 20:54

Client ID: HS22121478-02

Instrument: voa6.i

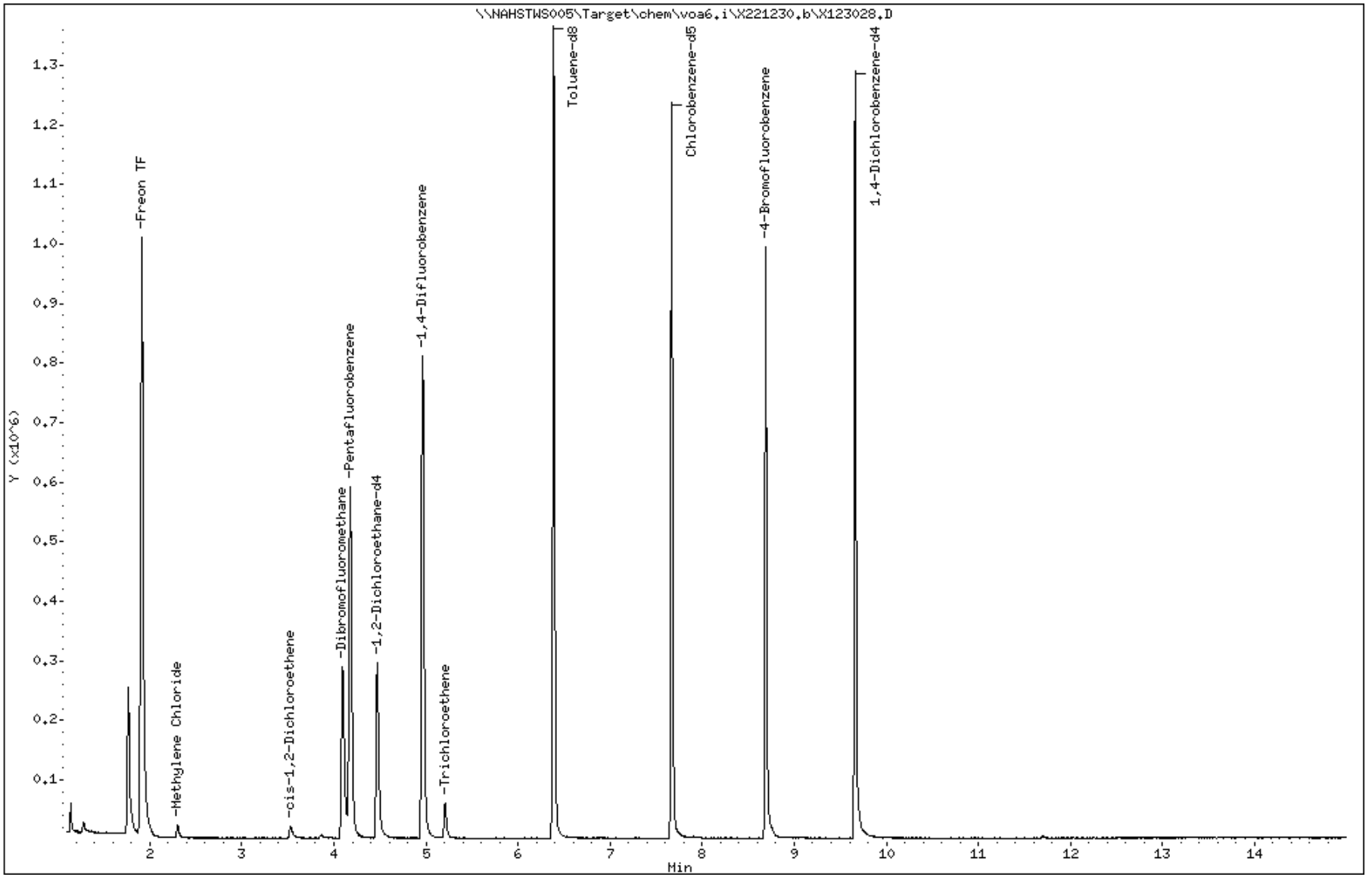
Sample Info: HS22121478-02;HS22121478-02;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123028.D

Date : 30-DEC-2022 20:54

Client ID: HS22121478-02

Instrument: voa6.i

Sample Info: HS22121478-02;HS22121478-02;;;

Purge Volume: 5.0

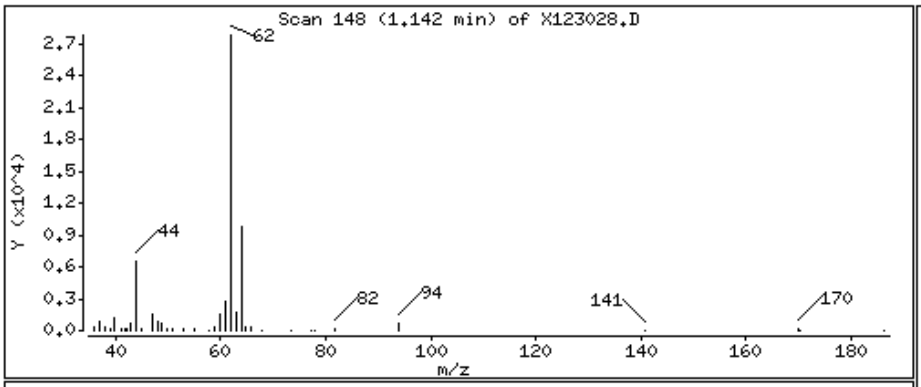
Operator: PC

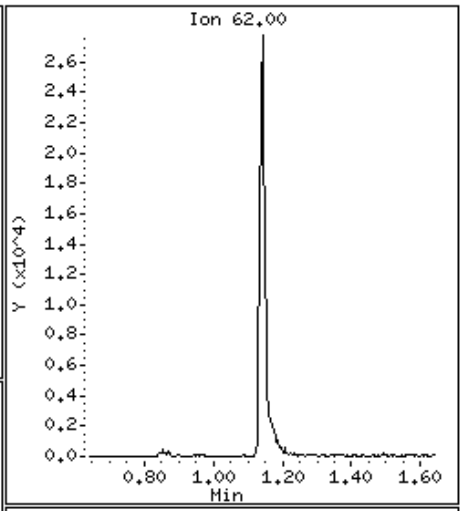
Column phase: DB624

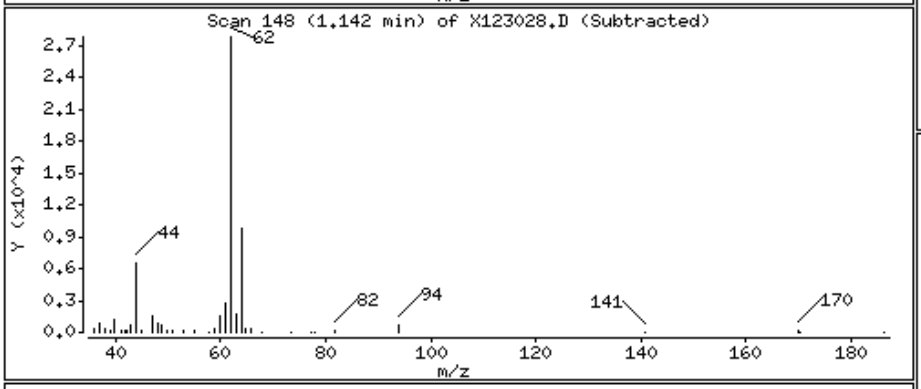
Column diameter: 0.18

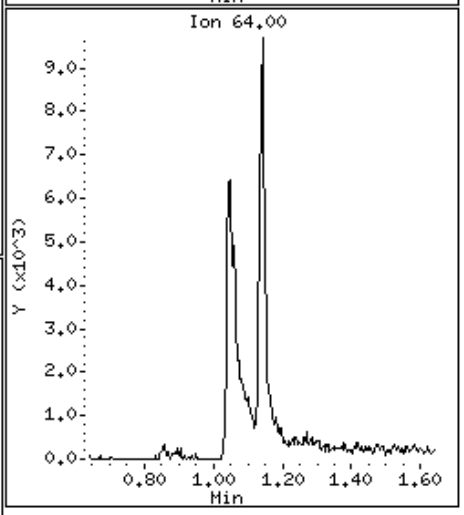
5 Vinyl Chloride

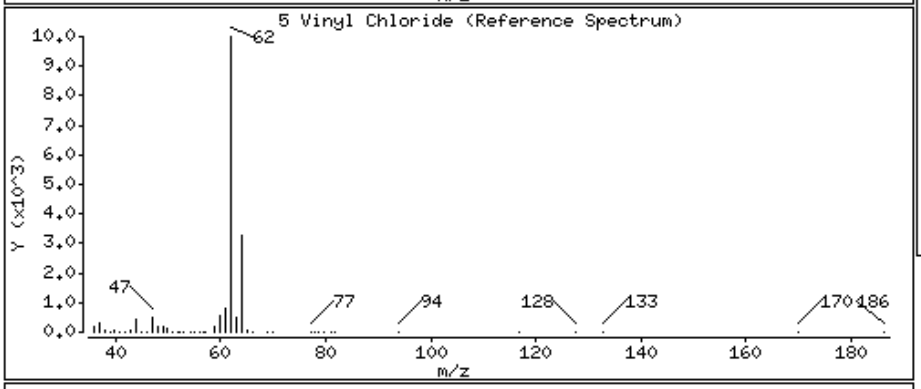
Concentration: 35.18 ug/l

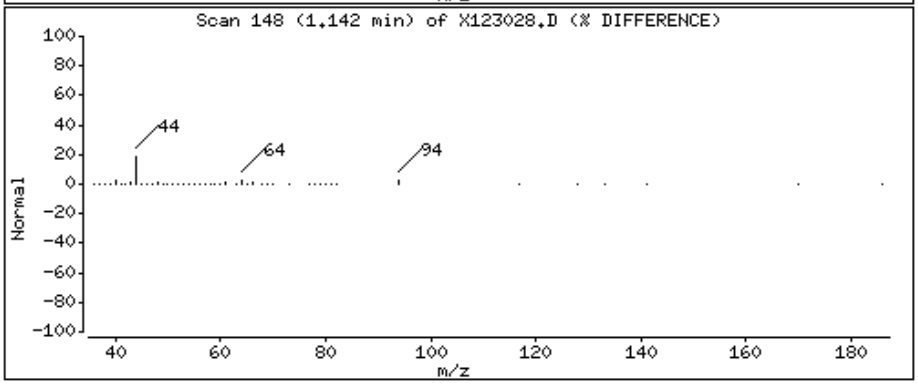












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123028.D

Date : 30-DEC-2022 20:54

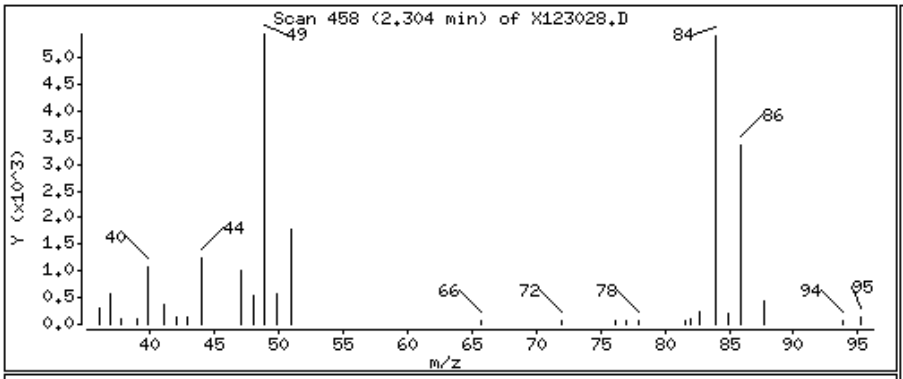
Client ID: HS22121478-02 Instrument: voa6.i

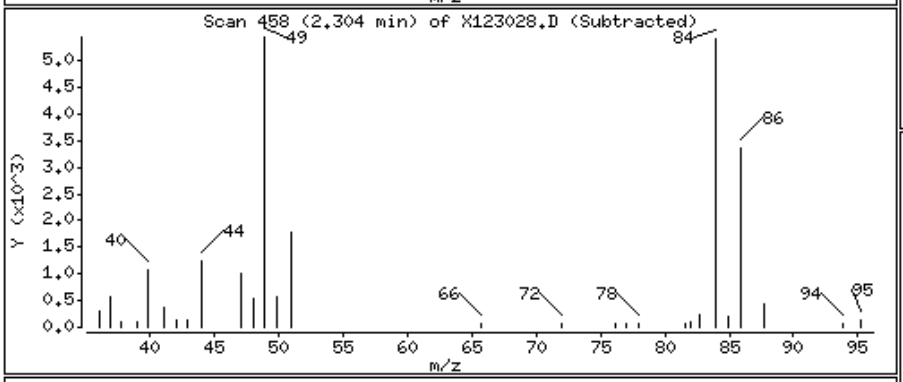
Sample Info: HS22121478-02;HS22121478-02;;;

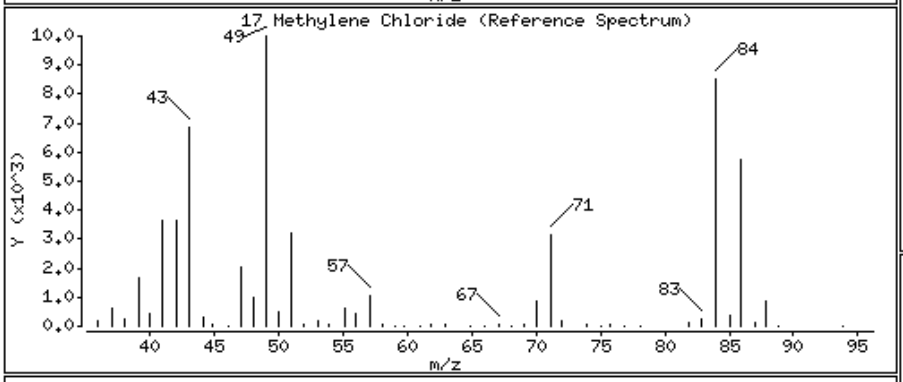
Purge Volume: 5.0 Operator: PC

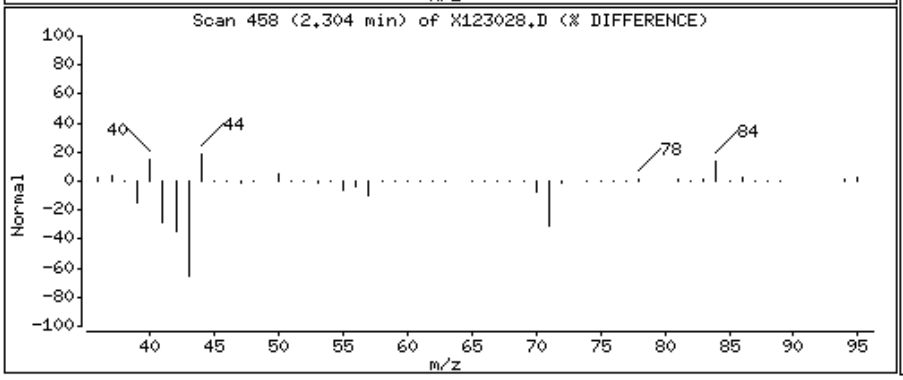
Column phase: DB624 Column diameter: 0.18

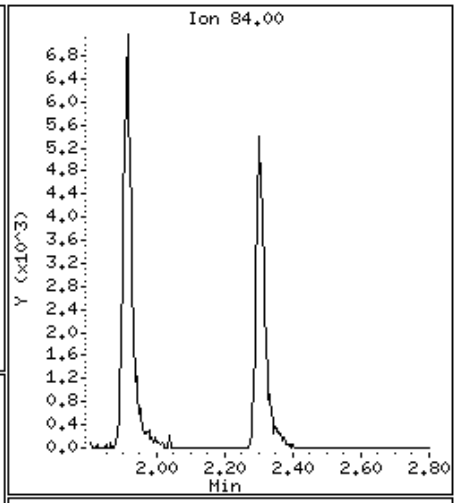
17 Methylene Chloride Concentration: 8.84 ug/l

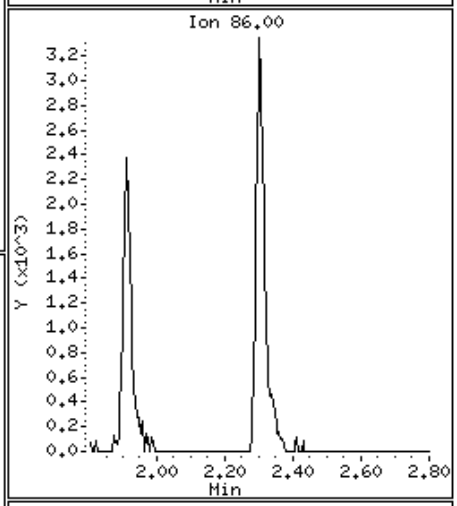


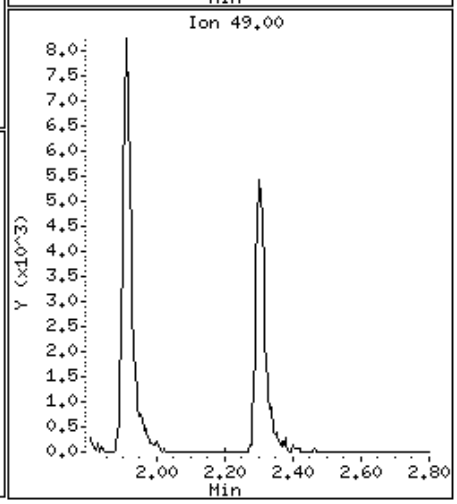












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123028.D

Date : 30-DEC-2022 20:54

Client ID: HS22121478-02

Instrument: voa6.i

Sample Info: HS22121478-02;HS22121478-02;;;

Purge Volume: 5.0

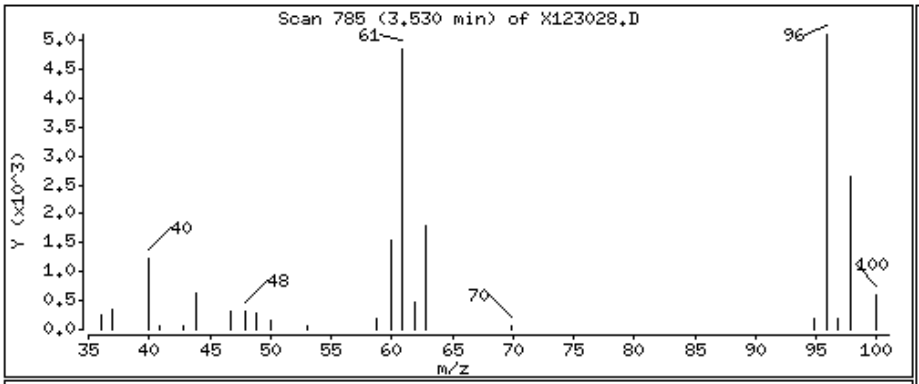
Operator: PC

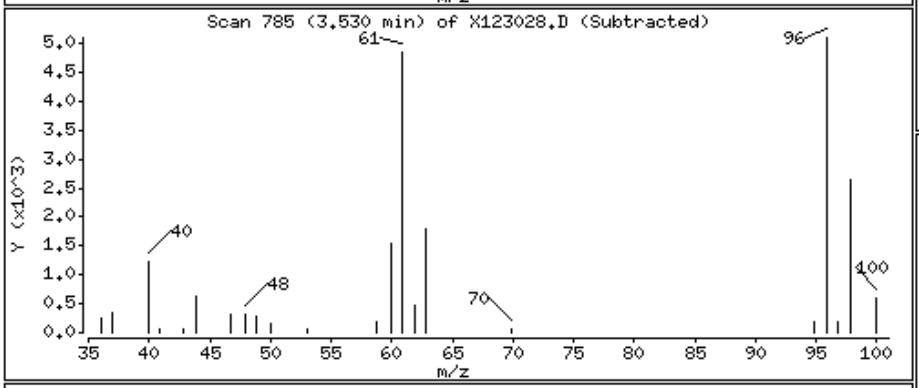
Column phase: DB624

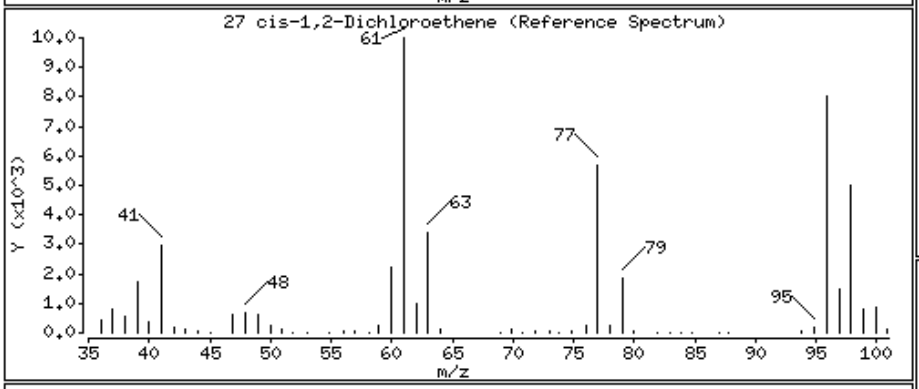
Column diameter: 0.18

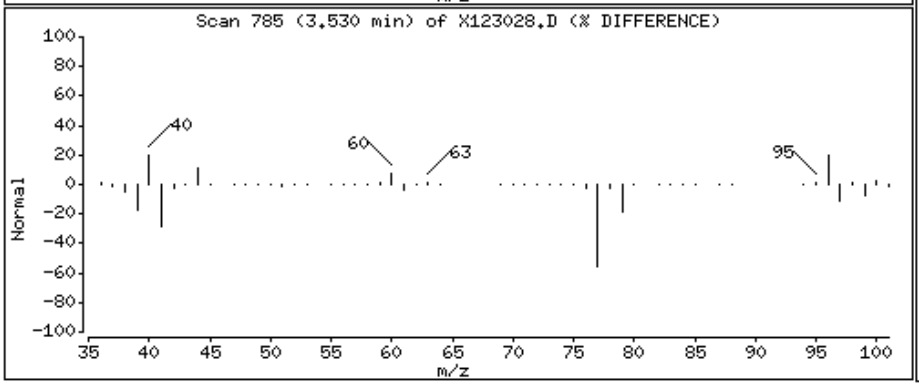
27 cis-1,2-Dichloroethene

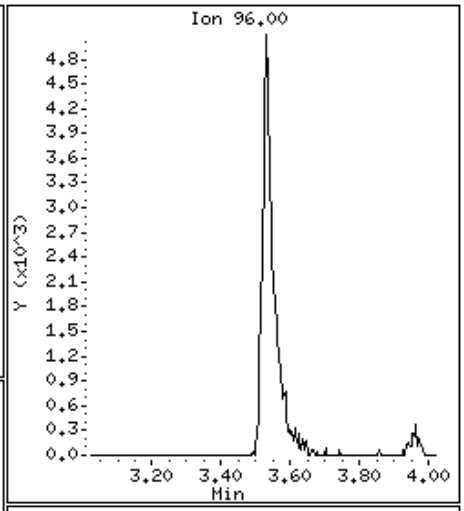
Concentration: 10.92 ug/l

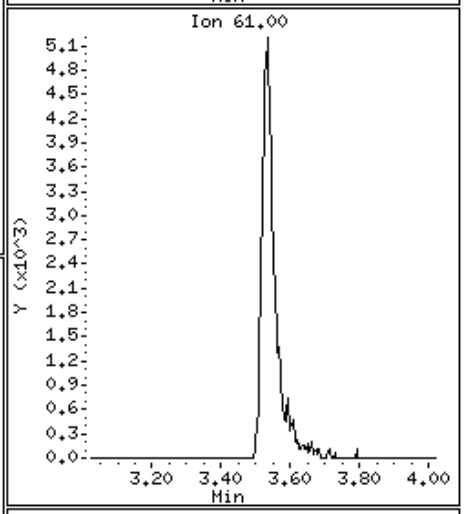


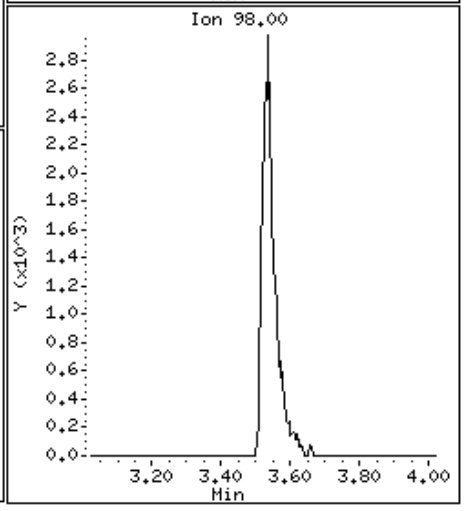












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123028.D Page 5

Date : 30-DEC-2022 20:54

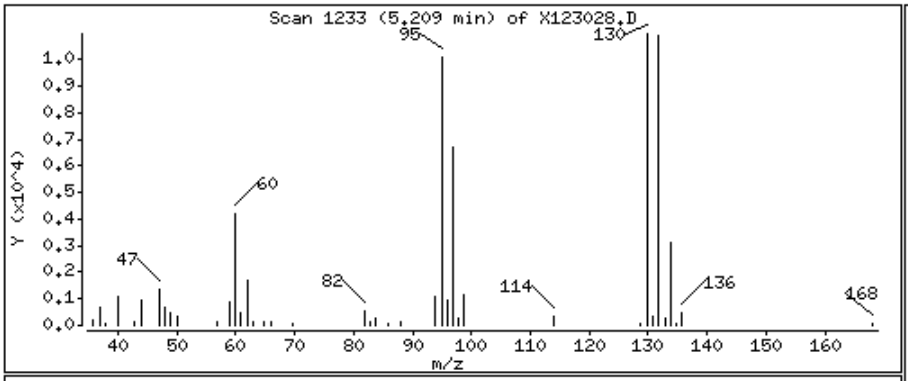
Client ID: HS22121478-02 Instrument: voa6.i

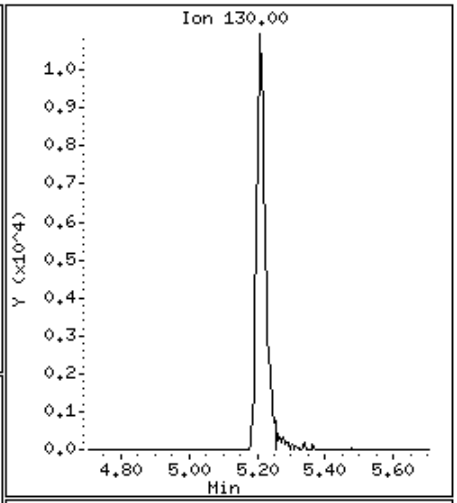
Sample Info: HS22121478-02;HS22121478-02;;;

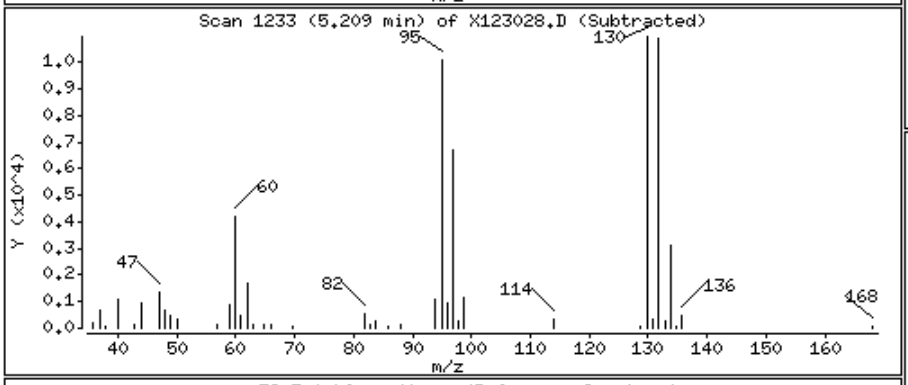
Purge Volume: 5.0 Operator: PC

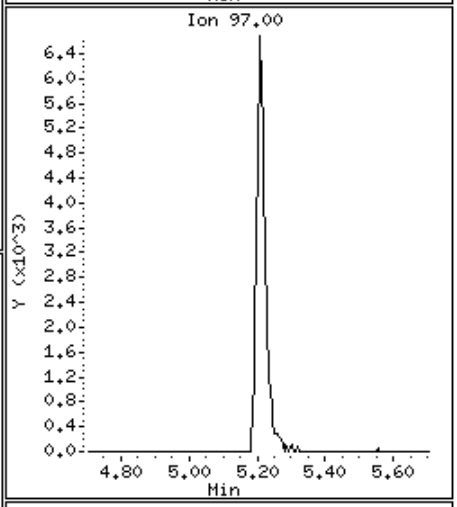
Column phase: DB624 Column diameter: 0.18

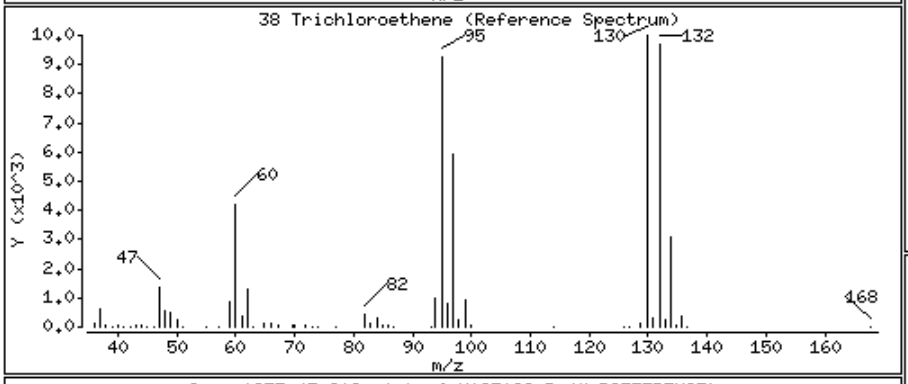
38 Trichloroethene Concentration: 22.20 ug/l

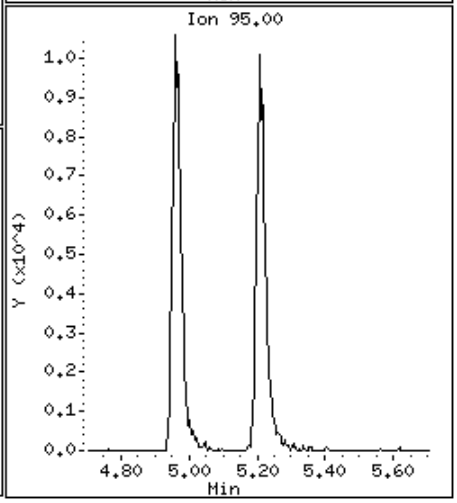


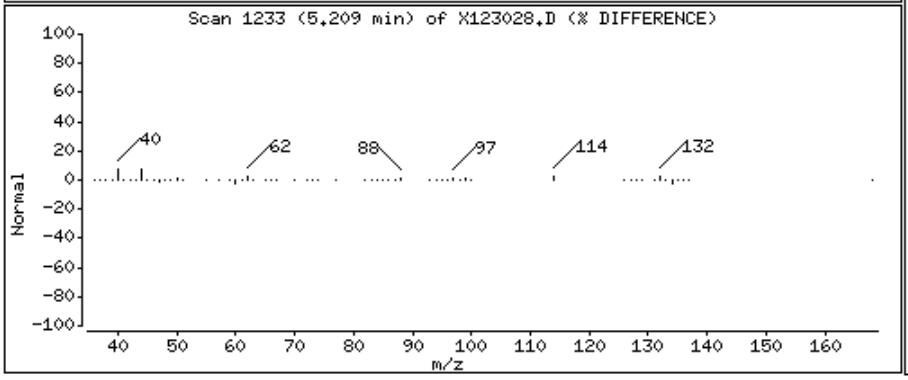












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123028.D

Date : 30-DEC-2022 20:54

Client ID: HS22121478-02

Instrument: voa6.i

Sample Info: HS22121478-02;HS22121478-02;;;

Purge Volume: 5.0

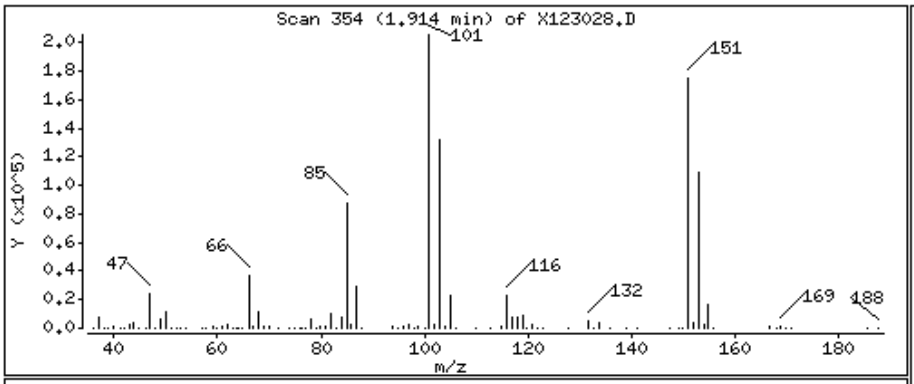
Operator: PC

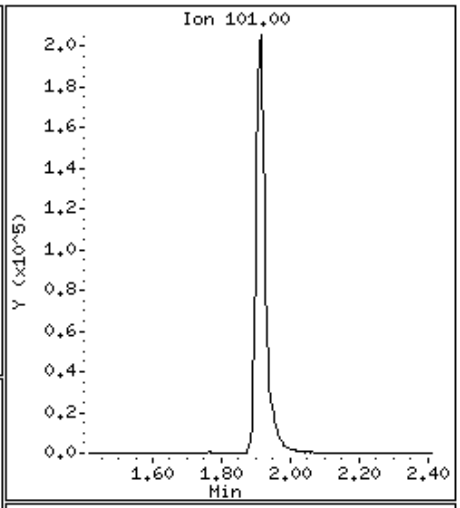
Column phase: DB624

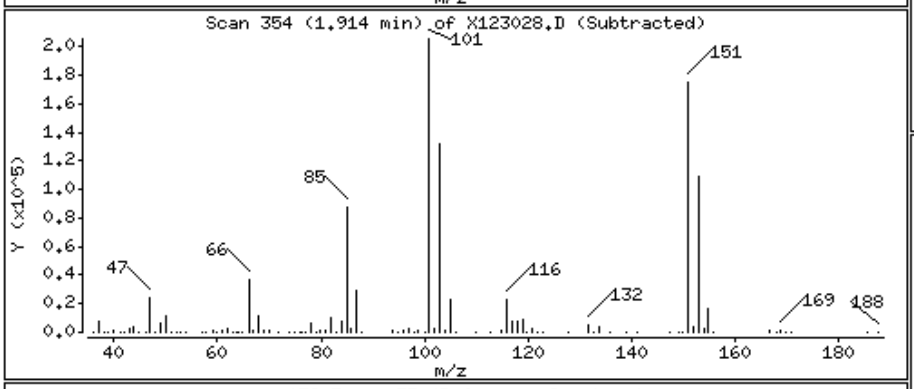
Column diameter: 0.18

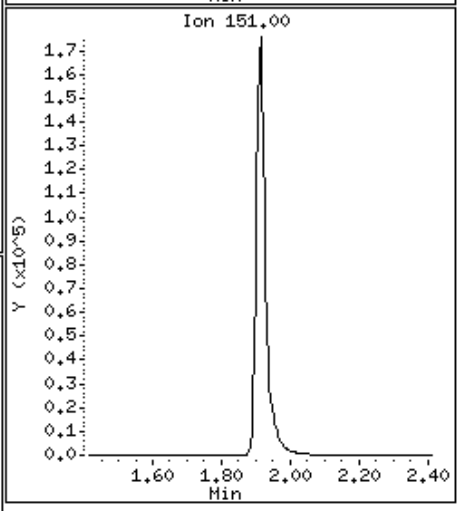
138 Freon TF

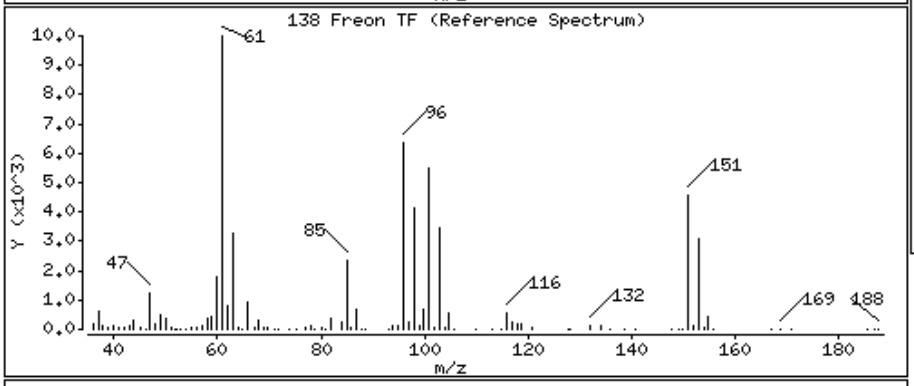
Concentration: 543.35 ug/l

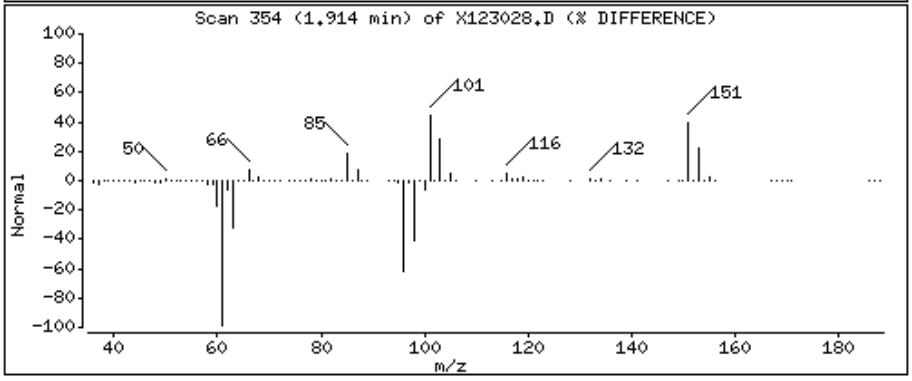












Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123028.D
Inj Date : 30-DEC-2022 20:54
InstruID : voa6.i
LabSampID : HS22121478-02

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123029.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123029.D
Lab Smp Id: HS22121478-08 Client Smp ID: HS22121478-08
Inj Date : 30-DEC-2022 21:16
Operator : PC Inst ID: voa6.i
Smp Info : HS22121478-08;HS22121478-08;;;
Misc Info : V6;WATER;0;5;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 28
Dil Factor: 5.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	5.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.178	4.178	(1.000)	493929	50.0000	
17 Methylene Chloride	84	2.303	2.303	(0.551)	8781	1.70770	8.53(a)
$ 30 Dibromofluoromethane	113	4.095	4.095	(0.980)	206356	43.4887	43.48
$ 35 1,2-Dichloroethane-d4	65	4.470	4.466	(1.070)	220128	44.0070	44.00
* 36 1,4-Difluorobenzene	114	4.965	4.965	(1.000)	676076	50.0000	
* 47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	584589	50.0000	
$ 48 Toluene-d8	98	6.385	6.386	(0.833)	769750	53.2861	53.28
$ 69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	263001	48.7095	48.70
* 70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	302870	50.0000	
138 Freon TF	101	1.910	1.913	(0.457)	1353364	373.265	1866.32(A)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
    exceeded maximum amount.

01179508

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123029.D

Date : 30-DEC-2022 21:16

Client ID: HS22121478-08

Instrument: voa6.i

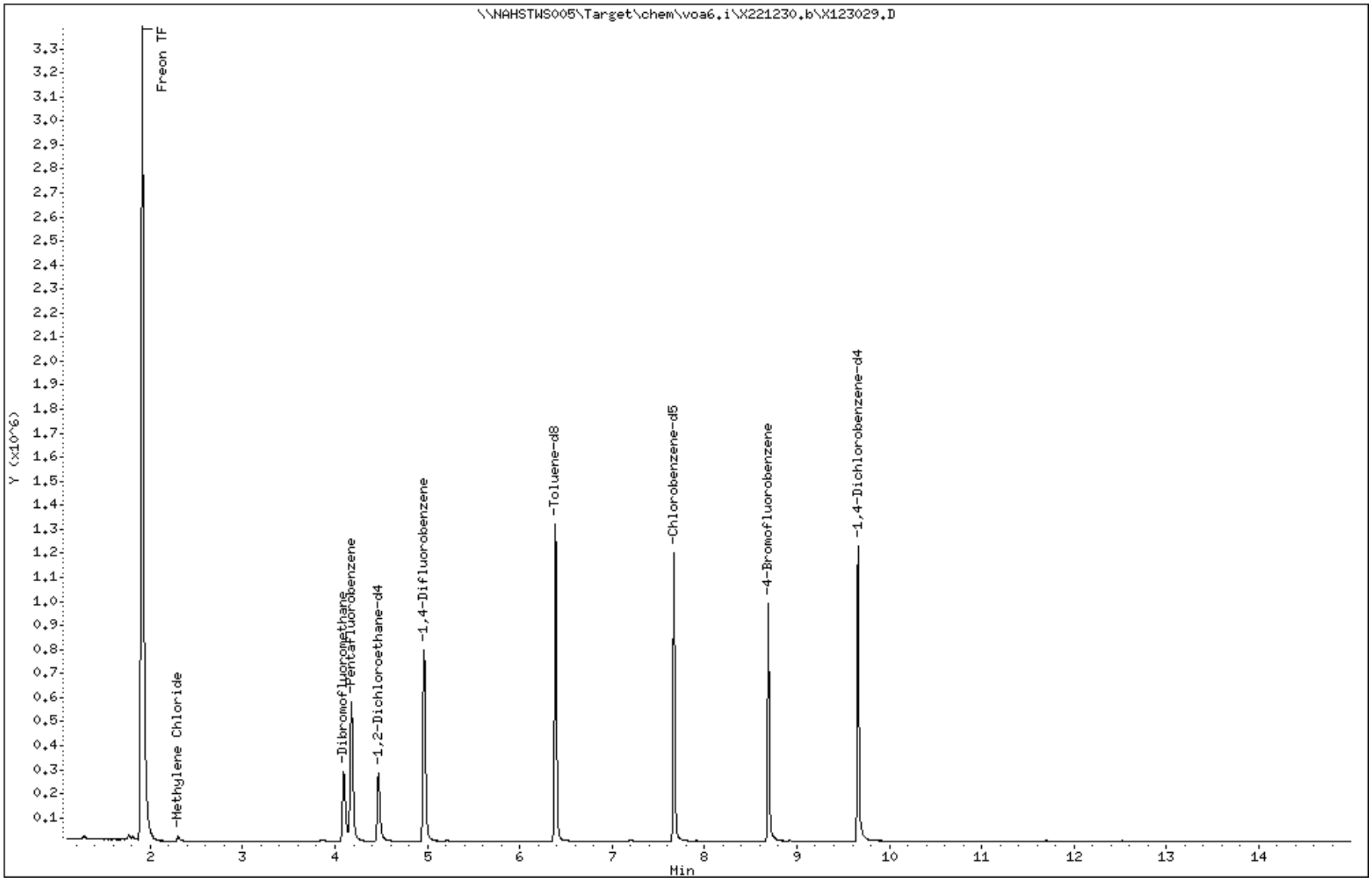
Sample Info: HS22121478-08;HS22121478-08;;;

Purge Volume: 5.0

Operator: PC

Column phase: DB624

Column diameter: 0.18



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123029.D

Date : 30-DEC-2022 21:16

Client ID: HS22121478-08

Instrument: voa6.i

Sample Info: HS22121478-08;HS22121478-08;;;

Purge Volume: 5.0

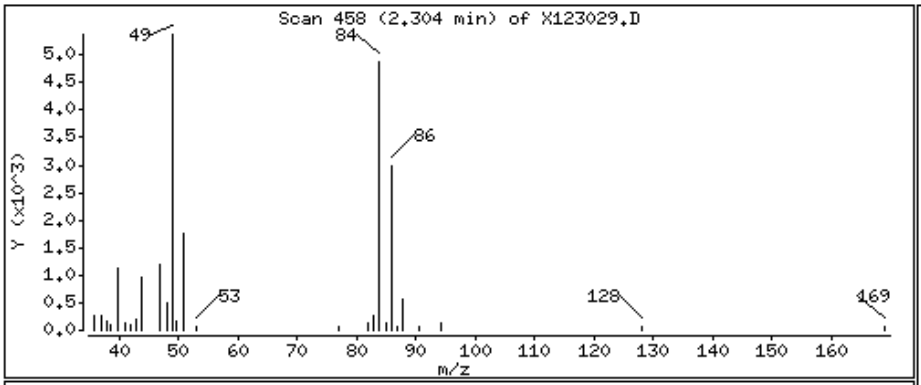
Operator: PC

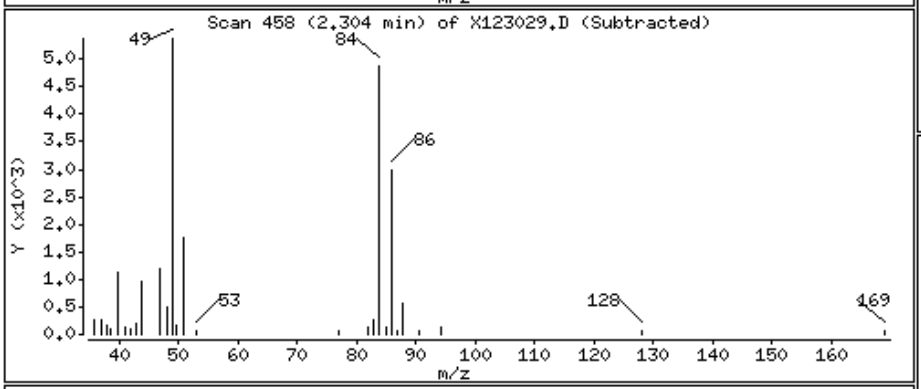
Column phase: DB624

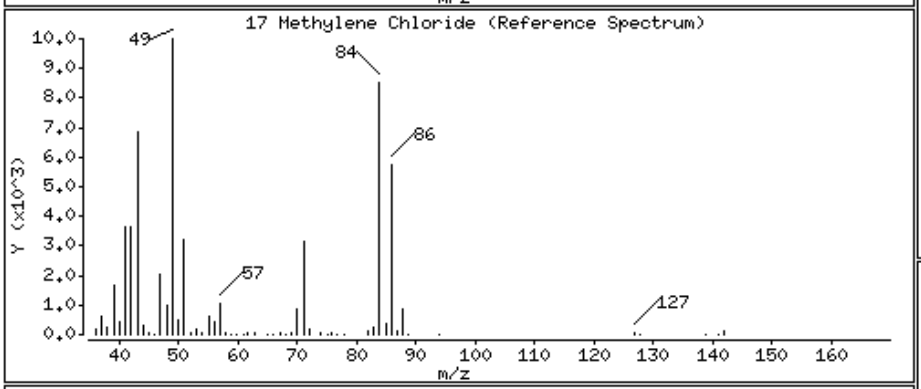
Column diameter: 0.18

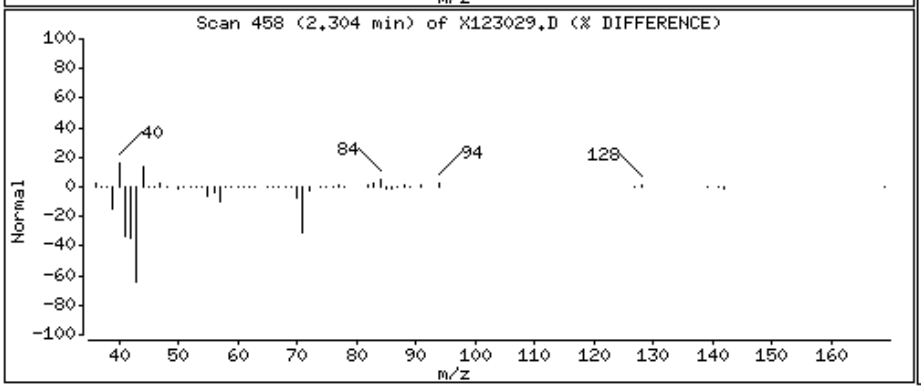
17 Methylene Chloride

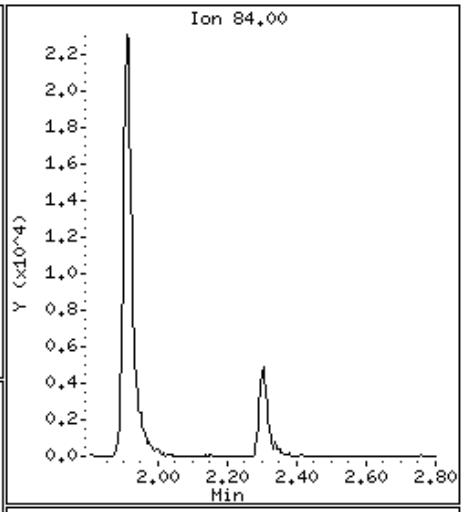
Concentration: 8.53 ug/l

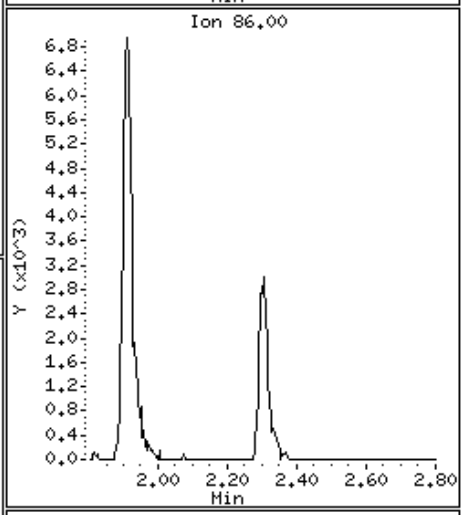


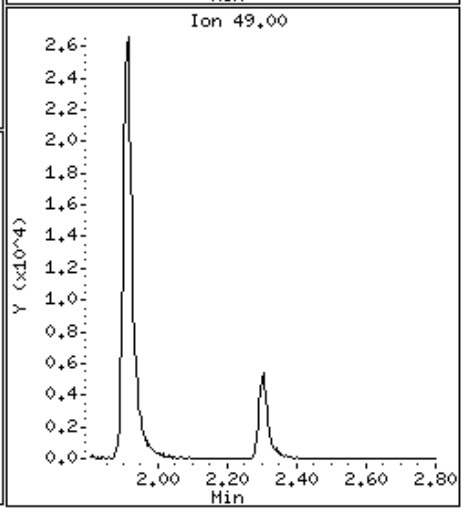












Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123029.D

Date : 30-DEC-2022 21:16

Client ID: HS22121478-08

Instrument: voa6.i

Sample Info: HS22121478-08;HS22121478-08;;;

Purge Volume: 5.0

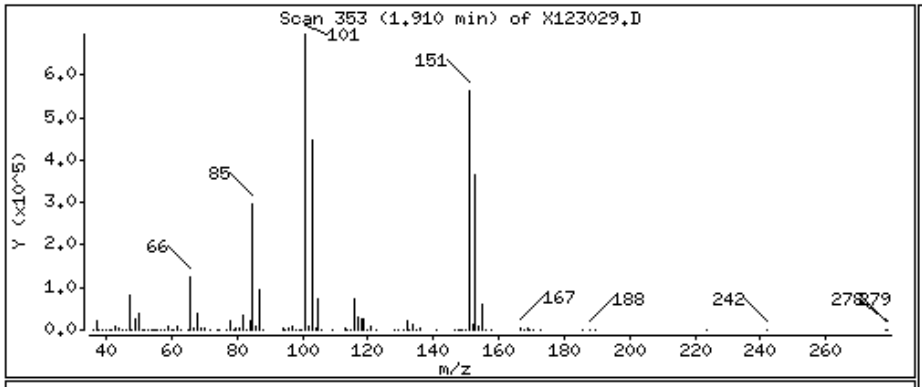
Operator: PC

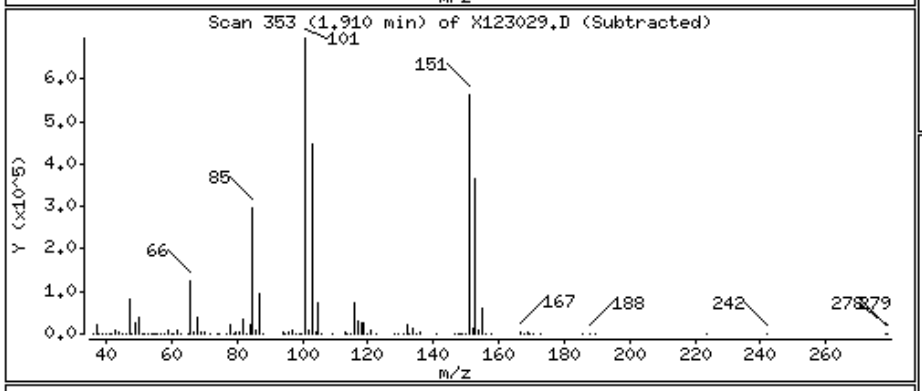
Column phase: DB624

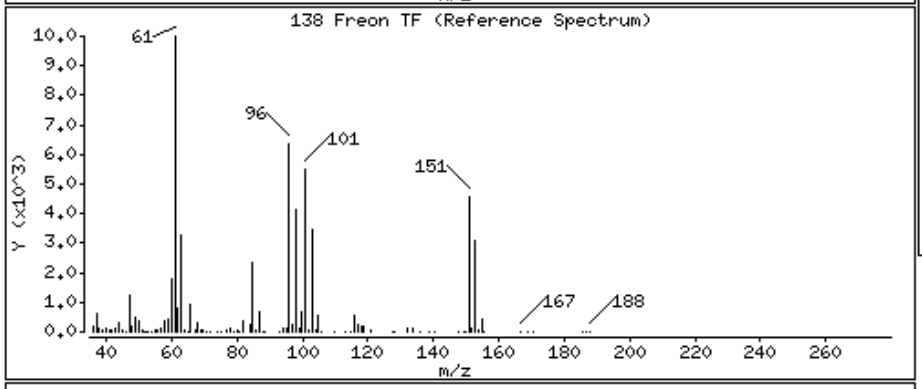
Column diameter: 0.18

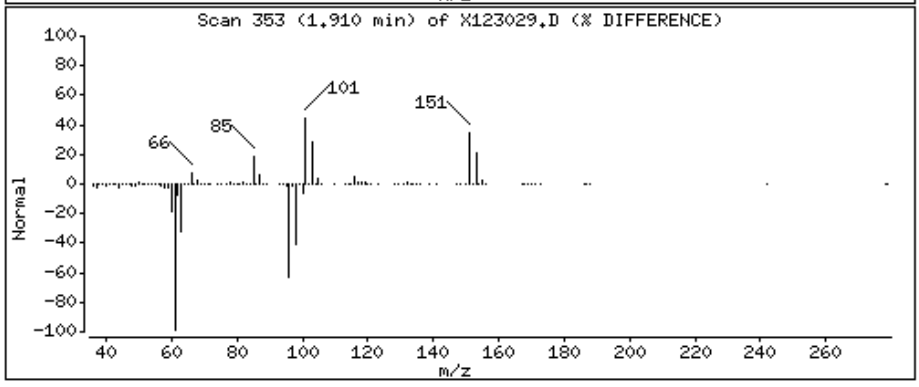
138 Freon TF

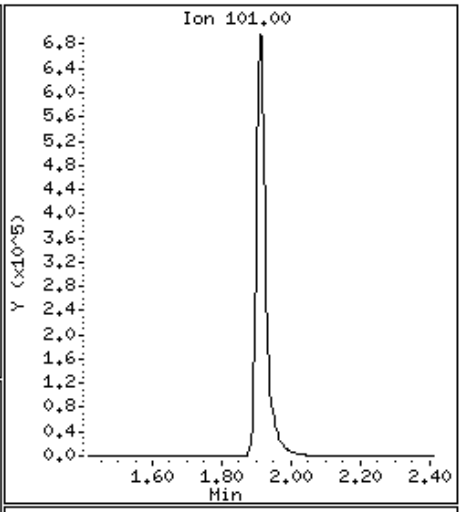
Concentration: 1866.32 ug/l

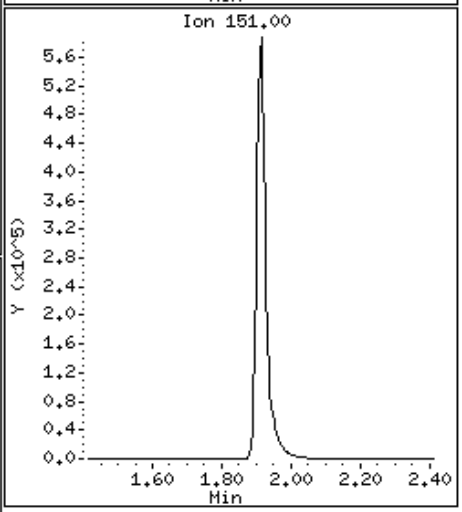












Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123029.D
Inj Date : 30-DEC-2022 21:16
InstruID : voa6.i
LabSampID : HS22121478-08

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123030.D Page 1
Report Date: 03-Jan-2023 15:36

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123030.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 30-DEC-2022 21:36
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;
Misc Info : V6;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\8260W.m
Meth Date : 03-Jan-2023 15:36 voa6.i Quant Type: ISTD
Cal Date : 16-DEC-2022 14:04 Cal File: X121608.D
Als bottle: 29 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14
Processing Host: NAHSTW7056

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1	Pentafluorobenzene	168	4.178	4.178	(1.000)	430743	50.0000	
135	1,4-Dioxane	88	5.595	5.595	(1.339)	36712	1000.00	932.38
140	1,3-Butadiene	54	1.160	1.160	(0.278)	146308	50.0000	49.49
25	Methacrylonitrile	41	3.818	3.818	(0.914)	142566	50.0000	46.74
12	Isobutyl Alcohol	43	4.672	4.672	(1.118)	476259	1000.00	983.00
13	Acetonitrile	39	2.195	2.195	(0.525)	171445	500.000	437.32
2	Dichlorodifluoromethane	85	0.969	0.969	(0.232)	166667	50.0000	55.28
3	Chloromethane	50	1.074	1.074	(0.257)	198198	50.0000	50.81
5	Vinyl Chloride	62	1.141	1.141	(0.273)	187266	50.0000	49.76
6	Bromomethane	94	1.336	1.336	(0.320)	120369	50.0000	42.56
7	Chloroethane	64	1.400	1.400	(0.335)	119587	50.0000	45.66
8	Trichlorofluoromethane	101	1.557	1.557	(0.373)	263222	50.0000	49.98
9	Acrolein	56	1.441	1.441	(0.345)	24537	100.000	83.76
10	Acetone	43	1.966	1.966	(0.471)	103223	100.000	85.40
11	1,1-Dichloroethene	96	1.910	1.910	(0.457)	150365	50.0000	45.99
15	Iodomethane	142	2.022	2.022	(0.484)	361343	100.000	84.94
16	Acrylonitrile	53	2.528	2.528	(0.605)	109430	100.000	98.69
17	Methylene Chloride	84	2.300	2.300	(0.550)	197056	50.0000	43.94
18	Methyl tert-butyl ether	73	2.528	2.528	(0.605)	475301	50.0000	44.41
19	Carbon Disulfide	76	2.067	2.067	(0.495)	801511	100.000	93.70

20 trans-1,2-Dichloroethene	96	2.524	2.524 (0.604)	164433	50.0000	44.94
21 Vinyl Acetate	43	2.993	2.993 (0.716)	747035	100.000	79.52

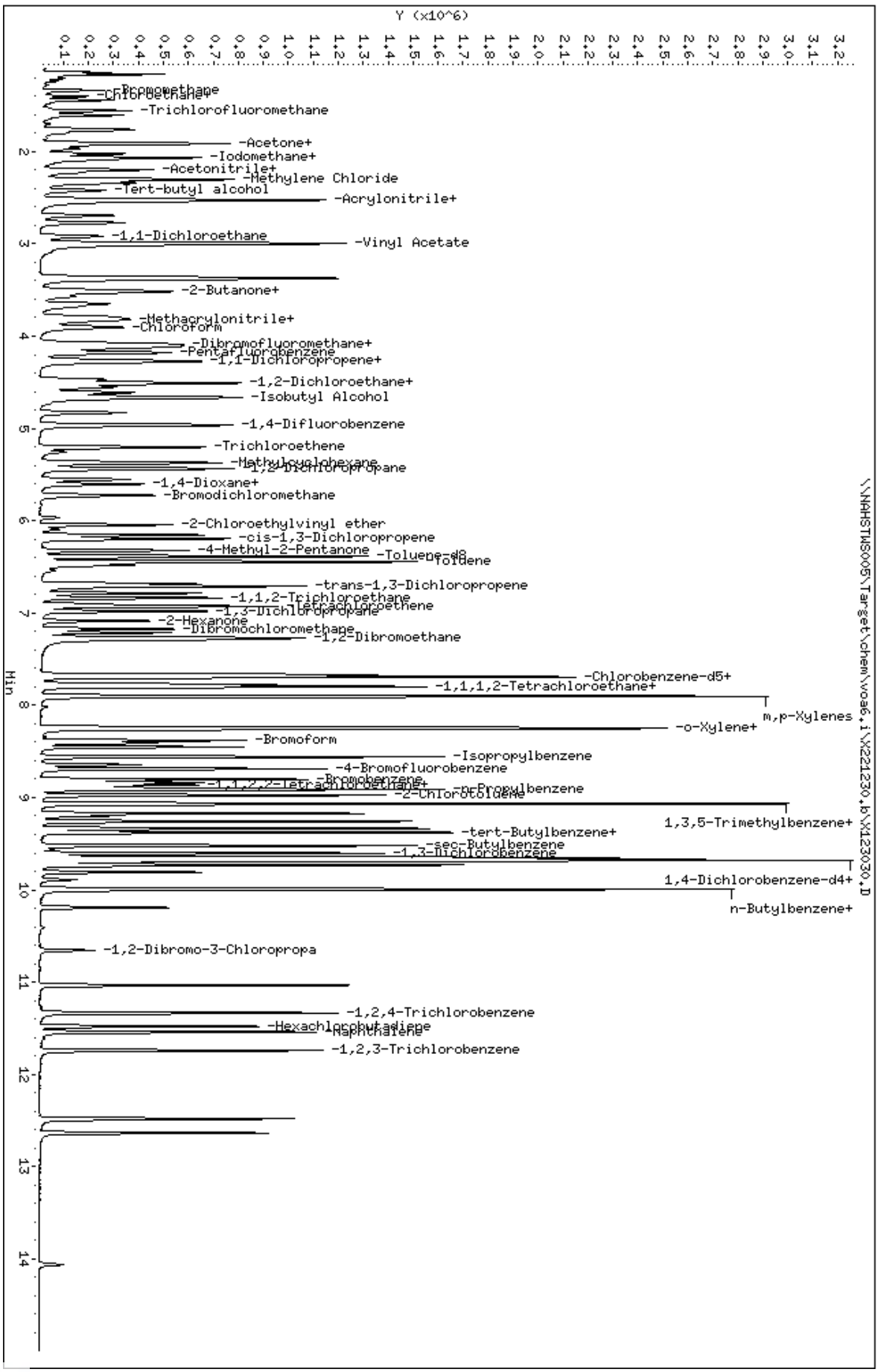
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	22 1,1-Dichloroethane	63	2.918	2.918	(0.699)	285867	50.0000	44.51
	24 2-Butanone	43	3.574	3.574	(0.856)	118431	100.000	92.61
	26 2,2-Dichloropropane	77	3.503	3.503	(0.839)	229854	50.0000	42.15
	27 cis-1,2-Dichloroethene	96	3.522	3.522	(0.843)	192444	50.0000	43.21
	28 Chloroform	83	3.904	3.904	(0.935)	318881	50.0000	44.30
	29 Bromochloromethane	128	3.788	3.788	(0.907)	101823	50.0000	41.76
$	30 Dibromofluoromethane	113	4.095	4.095	(0.980)	189039	50.0000	45.69
	31 1,1,1-Trichloroethane	97	4.080	4.080	(0.977)	271742	50.0000	47.58
	32 1,1-Dichloropropene	75	4.279	4.279	(0.862)	234697	50.0000	52.39
	33 1,2-Dichloroethane	62	4.552	4.552	(0.918)	248267	50.0000	48.02
	34 Carbon Tetrachloride	117	4.260	4.260	(0.859)	229884	50.0000	48.05
$	35 1,2-Dichloroethane-d4	65	4.470	4.470	(1.070)	204599	50.0000	46.88
*	36 1,4-Difluorobenzene	114	4.961	4.961	(1.000)	630943	50.0000	
	37 Benzene	78	4.507	4.507	(0.909)	730702	50.0000	48.49
	38 Trichloroethene	130	5.205	5.205	(1.049)	217916	50.0000	50.99
	39 Bromodichloromethane	83	5.726	5.726	(1.154)	259333	50.0000	45.86
	41 2-Chloroethylvinyl ether	63	6.044	6.044	(1.218)	202839	100.000	126.09
	42 1,2-Dichloropropane	63	5.433	5.433	(1.095)	193089	50.0000	48.17
	44 Dibromomethane	93	5.550	5.550	(1.119)	123073	50.0000	45.17
	45 4-Methyl-2-Pentanone	43	6.322	6.322	(0.824)	333440	100.000	104.27
	46 cis-1,3-Dichloropropene	75	6.153	6.153	(1.240)	316595	50.0000	47.67
*	47 Chlorobenzene-d5	117	7.668	7.668	(1.000)	598262	50.0000	
$	48 Toluene-d8	98	6.386	6.386	(0.833)	738163	50.0000	49.93
	50 Toluene	91	6.445	6.445	(0.841)	806023	50.0000	48.74
	51 trans-1,3-Dichloropropene	75	6.678	6.678	(1.346)	270224	50.0000	49.03
	52 2-Hexanone	43	7.087	7.087	(0.924)	225355	100.000	103.58
	53 1,1,2-Trichloroethane	83	6.839	6.839	(0.892)	158721	50.0000	47.84
	54 1,3-Dichloropropane	76	6.982	6.982	(0.911)	316002	50.0000	48.39
	55 Dibromochloromethane	129	7.176	7.176	(0.936)	229512	50.0000	47.93
	56 Tetrachloroethene	164	6.925	6.925	(0.903)	176056	50.0000	51.45
	57 1,2-Dibromoethane	107	7.259	7.259	(0.947)	204934	50.0000	49.40
	58 1-Chlorohexane	55	7.694	7.694	(1.551)	155915	50.0000	51.13
	59 Chlorobenzene	112	7.694	7.694	(1.003)	552244	50.0000	47.08
	60 1,1,1,2-Tetrachloroethane	131	7.773	7.773	(1.014)	207453	50.0000	47.52
	61 Ethylbenzene	106	7.799	7.799	(1.017)	280061	50.0000	50.69
	62 m,p-Xylenes	106	7.904	7.904	(1.031)	707145	100.000	99.28
	63 o-Xylene	106	8.241	8.241	(1.075)	345773	50.0000	49.18
	64 Styrene	104	8.256	8.256	(1.077)	602251	50.0000	51.11
	66 Bromoform	173	8.410	8.410	(1.097)	162083	50.0000	48.86
	67 Isopropylbenzene	105	8.560	8.560	(1.116)	851815	50.0000	53.03
	68 1,1,2,2-Tetrachloroethane	83	8.837	8.837	(0.915)	249107	50.0000	45.39
$	69 4-Bromofluorobenzene	95	8.687	8.687	(1.133)	277583	50.0000	50.23
*	70 1,4-Dichlorobenzene-d4	152	9.662	9.662	(1.000)	344270	50.0000	
	71 1,2,3-Trichloropropane	75	8.863	8.863	(0.917)	194892	50.0000	50.87(M)
	73 n-Propylbenzene	91	8.912	8.912	(0.922)	1002445	50.0000	52.56
	74 Bromobenzene	156	8.803	8.803	(0.911)	267133	50.0000	47.29
	75 1,3,5-Trimethylbenzene	105	9.066	9.066	(0.938)	730711	50.0000	51.87
	76 2-Chlorotoluene	91	8.972	8.972	(0.929)	613277	50.0000	49.00
	77 4-Chlorotoluene	91	9.070	9.070	(0.939)	717071	50.0000	50.26
	78 tert-Butylbenzene	119	9.336	9.336	(0.966)	610115	50.0000	52.90
	79 1,2,4-Trimethylbenzene	105	9.381	9.381	(0.971)	750059	50.0000	50.60
	81 sec-Butylbenzene	105	9.519	9.519	(0.985)	855959	50.0000	55.78

82 p-Isopropyltoluene	119	9.647	9.647 (0.998)	756925	50.0000	55.05
83 1,3-Dichlorobenzene	146	9.606	9.606 (0.994)	465139	50.0000	49.61

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	
84	1,4-Dichlorobenzene	146	9.681	9.681	(1.002)	492212	50.0000	48.11	
87	n-Butylbenzene	91	9.992	9.992	(1.034)	672700	50.0000	50.74	
88	1,2-Dichlorobenzene	146	9.992	9.992	(1.034)	468161	50.0000	48.48	
89	1,2-Dibromo-3-Chloropropane	155	10.655	10.655	(1.103)	43860	50.0000	49.99	
90	1,2,4-Trichlorobenzene	180	11.337	11.337	(1.173)	336074	50.0000	55.15	
91	Hexachlorobutadiene	225	11.480	11.480	(1.188)	143628	50.0000	53.14	
92	Naphthalene	128	11.540	11.540	(1.194)	761283	50.0000	54.91	
93	1,2,3-Trichlorobenzene	180	11.739	11.739	(1.215)	311728	50.0000	53.41	
M 94	1,2-Dichloroethylene (total)	96				356877	100.000		(a)
141	Cyclohexane	56	4.121	4.121	(0.987)	226744	50.0000	52.16	
138	Freon TF	101	1.913	1.913	(0.458)	156620	50.0000	49.53	
147	Methylcyclohexane	55	5.377	5.377	(1.084)	387449	50.0000	50.16	
146	Methyl Acetate	43	2.228	2.228	(0.533)	92921	50.0000	47.94	
148	Tert-Butyl alcohol	59	2.419	2.419	(0.579)	300170	1000.00	1006.40	
149	Isopropyl Alcohol	45	2.086	2.086	(0.499)	163785	1000.00	1051.48	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123030.D
Date : 30-DEC-2022 21:36
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

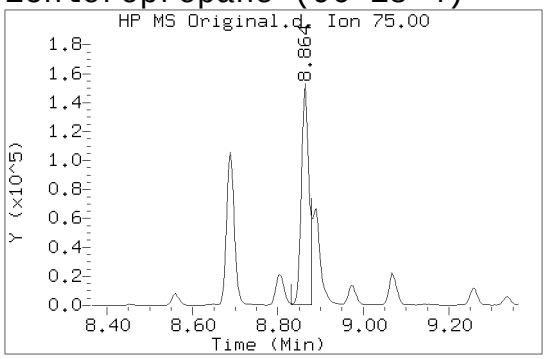
Data File : \\NAHSTWS005\Target\chem\voa6.i\X221230.b\X123030.D
Inj Date : 30-DEC-2022 21:36
InstruID : voa6.i
LabSampID : CCV-END

1,2,3-Trichloropropane (96-18-4)

Reason Code:

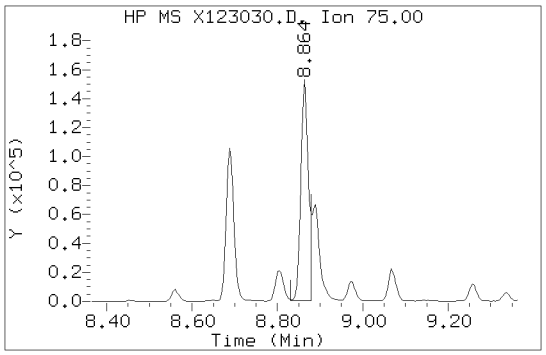
BEFORE

MASS
75
AREA
194892
HEIGHT
152811
03-Jan-2023
15:35
linh
pham



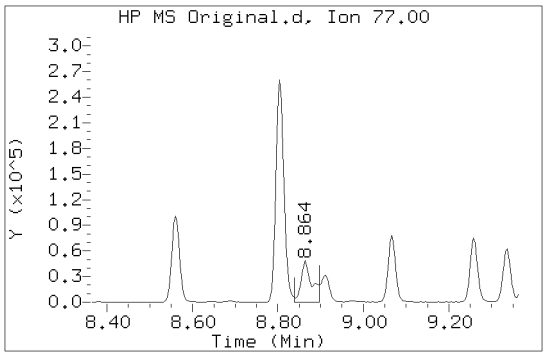
AFTER

MASS
75
AREA
194892
HEIGHT
152811
03-Jan-2023
15:35
linh
pham



BEFORE

MASS
77
AREA
88513
HEIGHT
48391
03-Jan-2023
15:35
linh
pham



AFTER

MASS
77
AREA
88513
HEIGHT
48391
03-Jan-2023
15:35
linh
pham