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KARNACK, TEXAS
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A. Title: Report – Draft Final Fourth Annual Remedial Action Operation Report, LHAAP-46, (Plant 2 Area), Longhorn Army Ammunition Plant, Karnack, Texas, March 2019
Author(s): Department of the Army
Recipient: Environmental Protection Agency
Date: March 19, 2019
Bate Stamp: 00916345 – 00917760

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

March 19, 2019

DAIM-ODB-LO

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

Re: Draft Final Fourth Annual Remedial Action Operation Report, LHAAP-46 (Plant 2 Area), Longhorn Army Ammunition Plant, Karnack, Texas, March 2019

Dear Mr. Mayer,

One hard copy and one compact disc (CD) of the above-referenced document are being transmitted to you for your records. The document includes revisions based upon the Environmental Protection Agency's (EPA) comments on the Draft version received on February 22, 2019, and Texas Commission on Environmental Quality's (TCEQ) comments received on February 22, 2019. In accordance with Federal Facility Agreement, this Draft Final will be considered Final after 30 days without further comment. Response to comments on the Draft version of the document are included with this Draft Final.

The document was prepared by Bhate Environmental Associates, Inc., (Bhate) team, on behalf of the Army as part of Bhate's Performance Based Remediation contract for the facility. I ask that Kim Nemmers, Bhate'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 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

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

Copies furnished:
A. Palmie, TCEQ, Austin, TX (letter)
P. Bruckwicki, Caddo Lake NWR, TX (1 hard copy and 1 CD)
A. Williams, USACE, Tulsa District, OK (1 CD)
R. Smith, USACE, Tulsa District, OK (electronic only)
A. Maly, USAEC, San Antonio, TX (1 CD)
K. Nemmers, Bhate, Lakewood, CO (1 CD)
P. Srivastav, APTIM, Houston, TX (letter)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
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March 19, 2019

DAIM-ODB-LO

Ms. April Palmie
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12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Draft Final Fourth Annual Remedial Action Operation Report, LHAAP-46 (Plant 2 Area), Longhorn Army Ammunition Plant, Karnack, Texas, March 2019

Dear Ms. Palmie,

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P. Srivastav, APTIM, Houston, TX (letter)

Response to Comments on
Draft Fourth Annual Remedial Action Operation Report
LHAAP-46 (Plant 2 Area),
Longhorn Army Ammunition Plant, Karnack, Texas

Document Date: 28 January 2019
Comment Date: 22 February 2019

Reviewer: Mr. Richard Mayer, USEPA
Respondent: Dr. Rose Zeiler

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

Comment No.	Section, Page ref.	USEPA Comment	C, D, E, or X[1]	Response	A or D[2]
1.	Page 2-5, Section 2.5	EPA agrees with adding monitoring well LHSM21 in place of LHSM20 to the groundwater monitoring program. EPA also agrees with the redevelopment of monitoring well 46WW09 due to siltation.	C	Noted.	
2.	Page 3-3, Section 3.1.2, Well 46WW02	EPA agrees with the Army's assessment of limited natural attenuation at this well. What is interesting is that the TCE concentration in 1998 was 24 ug/L and in 2018 it was 24 ug/L (twenty years later).	C	Noted and agreed.	
3.	Page 4-3, Last Paragraph	EPA has already approved the reduction in MNA parameters in a previous document submitted in January 2019.	C	The text has been revised to reference the approved Technical Memorandum with the reduced list of MNA parameters. Note that the February 2019 sampling took place prior to receipt of the approval and samples were analyzed for the larger MNA parameter list for that event. The August 2019 sampling will use the new MNA parameter list. The MNA parameter list in the notes of Table 2-6 has been revised to match the Technical Memorandum.	

Comment No.	Section, Page ref.	USEPA Comment	C, D, E, or X[1]	Response	A or D[2]
4.	Appendix D, 46WW05, Page 2 of 2	In the third row down, the ORP number for that column is probably wrong when compared to the other ORP values.	C	The 4.03 value shown is incorrect and a revised SCL form for 46WW05 showing the correct 403 value has been placed in Appendix D.	
5.	Appendix D, 46WW16, Page 2 of 2	In the fourth row down, the pH value for that column is wrong (16.07) when compared to the other pH values.	C	The 16.07 value shown is incorrect and a revised SCL form for 46WW16 showing the correct 6.07 value has been placed in Appendix D.	
6.	General	As an FYI, there are three monitoring wells (46WW02, 46WW05, 46WW11) that have pH's in the 4 to 3 level readings.	C	Noted. The low pH is discussed as a potentially inhibiting factor for reductive dechlorination in Section 3.2.	

Response to Comments on
Draft Fourth Annual Remedial Action Operation Report
LHAAP-46 (Plant 2 Area),
Longhorn Army Ammunition Plant, Karnack, Texas

Document Date: 28 January 2019
Comment Date: 22 February 2019

Reviewer: Ms. April Palmie, TCEQ
Respondent: Dr. Rose Zeiler

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

Comment No.	Section, Page ref.	TCEQ Comment	C, D, E, or X[1]	Response	A or D[2]
1.	General	I agree with the conclusions and recommendations.	C	Noted and appreciated.	
2.	Table 2-3	Revise 3rd column heading from GW-IND to PCL. Also, Manganese and Phosphorous have incorrect PCLs	E	For clarity and because phosphorous and manganese are MNA parameters, not COCs, the table header will be revised to "Cleanup Level" and cleanup values will be displayed for the COCs only. It is noted that neither phosphorus nor manganese will appear in future RAO reports in accordance with the February 2019 MNA Tech Memo.	

Comment No.	Section, Page ref.	TCEQ Comment	C, D, E, or X[1]	Response	A or D[2]
3.	Table 2-4	Has a few duplicated columns (see 44WW08 in 2018)	C	The duplicated columns are for field duplicate samples. The PDF version of the table truncated the end of the sample ID so that the FD did not show. The table has been revised to show the full sample ID.	
4.	Table 2-5	In the RTCs, please note the status of the LHSMW23 well obstruction investigation	C	LHSMW23 was inspected using a downhole camera on February 5, 2019. The obstruction was identified as a large mass of what appears to be plant roots growing in the well and out through the screen slots into the filter pack. The Army is developing an approach to attempt to address the blockage without damaging the well screen and will include it for discussion in a future monthly managers' meeting.	
5.	Figures (General)	In the map legends, change "Buildings" to "Former Buildings". This change could wait for next year's report.	C	The figure legends have been revised as requested.	
6.	Figure 3-1	Why is there no groundwater elevation data for the early years of LHSMW19?	C	We have searched the available databases for groundwater elevation data prior to 2013, and have found elevations from 1994, 1996, 2007, and 2011. However, groundwater elevation data is not available for the samples from August 1996 or May 1998. Figure 3-1 has been updated with the available groundwater elevation data and the right-hand axis scale for the groundwater elevations has been revised accordingly. A note has been added to the figure regarding the unavailable data.	

Draft Final
Fourth Annual Remedial Action Operation Report, LHAAP-46 (Plant 2 Area)

Longhorn Army Ammunition Plant
Karnack, Texas

Prepared for

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Contract No. W9128F-13-D-0012
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March 2019

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Acronyms and Abbreviations

µg/L	micrograms per liter
J	estimated value
U	Not detected; The analyte was analyzed for but not detected above the associated method detection limit.
amsl	above mean sea level
AECOM	AECOM Technical Services, Inc.
Bhate	Bhate Environmental, Inc.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
COC	contaminant of concern
DCE	dichloroethene
DO	dissolved oxygen
LHAAP	Longhorn Army Ammunition Plant
LTM	long-term monitoring
LUC	land-use control
MCL	maximum contaminant level
mg/L	milligram(s) per liter
MNA	monitored natural attenuation
mV	millivolts
ORP	oxidation-reduction potential
RA-O	remedial action operation
RACR	Remedial Action Completion Report
RD	Remedial Design
Shaw	Shaw Environmental, Inc.
SU	standard unit
TCE	trichloroethene
TNT	trinitrotoluene
TOC	total organic carbon
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VC	vinyl chloride
VOC	volatile organic compound

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1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Tulsa District, contracted with Bhate Environmental, Inc. (Bhate) under the Omaha Multiple Environmental Government Acquisition National Small Business Multiple Award Task Order Contract, Environmental Remediation Services with Military Munitions Response Program, Task Order No. W9128BV17F0150, to conduct environmental restoration at multiple sites at the former Longhorn Army Ammunition Plant (LHAAP). The Bhate Team is comprised of Bhate and Aptim Federal Services, LLC.

LHAAP is located in east Texas, in the northeastern corner of Harrison County between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake, as shown on **Figure 1-1**. The nearest cities are Marshall, Texas, approximately 14 miles to the southwest, and Shreveport, Louisiana, approximately 40 miles to the east. Caddo Lake is a large freshwater lake that bounds LHAAP to the north and east. The eastern fence of the LHAAP installation is 3.5 miles from the Texas-Louisiana state border.

LHAAP was established in December 1941 with the primary mission of manufacturing trinitrotoluene (TNT). Production of TNT began at Plant 1 in October 1942 through 1945, then placed on standby status until February 1952. In 1952, the facility was reactivated, and production of pyrotechnic ammunition, such as photoflash bombs, simulators, hand signals, and tracers for 40-millimeter ammunition, continued at Plant 2, northeast of Plant 1, through 1956. In December 1954, a third facility, Plant 3, began production of solid-fuel rocket motors for tactical missiles until 1965, when Plant 2 was reactivated for the production of pyrotechnic and illuminating ammunition. In the years following the Vietnam conflict, LHAAP continued to produce flares and other basic pyrotechnic or illuminating items for the U.S. Department of Defense inventory. From September 1988 to May 1991, LHAAP was also used for the static firing and elimination of Pershing I and II rocket motors.

Remedial action operation (RA-O) activities are required at LHAAP-46 under the Record of Decision issued for the site in September 2010 (USACE 2010). The Remedial Action Completion Report (RACR) (AECOM Technical Services, Inc [AECOM] 2015) outlines the implementation of RA-O to address risks associated with contaminated groundwater at the LHAAP-46 site. The RACR was developed using the basis and details of the Remedial Design (RD) (Shaw Environmental, Inc. [Shaw] 2011) and the Remedial Action Work Plan for LHAAP-46 (AECOM 2013).

Groundwater monitoring at LHAAP-46 is ongoing, as described in the RACR. This report represents the fourth year of RA-O implementation and summarizes the results of site

inspections and sampling activities. Beginning in 2013, RA-O groundwater sampling was performed at LHAAP-46 and identified that 8 of the 12 shallow wells had been dry during every, or nearly every sampling event between May 2013 and February 2018. Due to contractual reasons, sampling was not performed in 2017. Five of the dry shallow monitoring wells are located within the historic trichloroethene (TCE) plume area or to the east (downgradient) of the current shallow zone TCE plume areas. The inability to sample these shallow wells in key locations has prevented the full evaluation of the plume extent and the progress of the monitored natural attenuation (MNA) remedy at the site (AECOM 2017). A Technical Memorandum–Remedial Action Operation was submitted in March 2018 (**Appendix A**) which concluded that the groundwater elevations declining in the area of LHAAP-46 were not likely to be a temporary rain-dependent issue, but were part of a long term trend of declining groundwater elevations. The memorandum recommended that MNA evaluation at LHAAP-46 should proceed without waiting for data from the dry wells and the regulators concurred with the recommendation. The fourth year RA-O sampling events were conducted in February and August 2018 and an evaluation of the MNA remedy is included in **Section 3.0** of this report

1.1 Remedial Action Objectives

The remedial action objectives for the LHAAP-46 site are to protect human health and meet applicable or relevant and appropriate requirements. There are no unacceptable ecological risks posed by the LHAAP-46 site (USACE 2010). The remedial action objectives for LHAAP-46, consistent with the reasonably anticipated future use of the site as a national wildlife refuge, are:

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

1.2 Performance Objectives

The remedy selected for LHAAP-46 is land-use controls (LUC) and MNA. The performance objectives at LHAAP-46 consist of two components: physical inspections and groundwater/surface water monitoring. As a component of the LUC implementation, the civil survey of the LUC boundary was conducted in November 2014 and recorded in the Harrison County Courthouse in December 2014. Physical inspections are conducted annually to confirm compliance with the LUC objectives, which consist of preventing human exposure to

groundwater contamination at levels that pose an unacceptable risk to a future maintenance worker and ensuring that there is no withdrawal or use of groundwater from the site for anything other than environmental monitoring and testing until the cleanup levels – maximum contaminant levels (MCL) – are attained. Groundwater monitoring has been conducted at the site since May 2013, and LHAAP-46 is included in the facility-wide Longhorn Five-Year Review. Groundwater and surface water monitoring are being performed to:

- Detect changes in environmental conditions that may reduce the efficacy of natural attenuation processes
- Identify potentially toxic and/or mobile transformation products
- Verify that the plume is not expanding
- Verify no unacceptable impact to downgradient receptors, such as discharge to surface water
- Detect new releases of contaminants to the environment that could impact effectiveness of the natural attenuation remedy
- Verify attainment of the remediation objectives.

LHAAP-46 RA-O monitoring began in 2013. Monitoring during the first two years was performed on a quarterly basis and documented in annual reports (AECOM 2016a; AECOM 2016b). In accordance with the RD (Shaw 2011), the Year 3 and Year 4 RA-O monitoring events have been conducted semiannually (AECOM 2017).

Groundwater monitoring completed as part of the Year 4 RA-O consisted of groundwater sampling events at 11 wells in the shallow zone, 9 wells in the intermediate zone, 1 well in the deep zone, and 1 surface water sample location adjacent to LHAAP-46. This report summarizes the LUC compliance inspection, monitoring well inspection, and results of groundwater and surface water sampling.

1.3 Site Description

The LHAAP-46 site (Plant 2 Area) is located in the north-central portion of LHAAP, in a formerly industrial area where pyrotechnic and illumination devices were produced until 1997 (**Figure 1-2**). The LHAAP-46 site occupies approximately 190 acres within a triangular area bounded by Avenue ”P” to the southwest, the LHAAP property boundary fence to the north, and the LHAAP-47 site to the southeast. The surface features at LHAAP-46 include asphalt paved roads, parking areas, building foundation remnants, abandoned buildings, areas that are wooded, and overgrown grasses and other vegetation. The topography is relatively flat, sloping slightly to the east, with the surface water drainage flowing to the east into tributaries of Goose

Prairie Creek, which eventually discharge into Caddo Lake. LHAAP-46 has no known areas of archaeological or historical importance.

1.4 Conceptual Site Model

A detailed Conceptual Site Model for LHAAP-46 was previously developed and is presented in the Record of Decision (USACE 2010). Based on additional data collected as part of final remedy implementation and presented in the LHAAP-46 Draft Final RACR (AECOM 2015), the lithologic units at the site have been characterized. Three water-bearing zones, identified as the shallow, intermediate, and deep zones, are present beneath LHAAP-46. The shallow groundwater zone is encountered at approximately 10 to 28 feet below ground surface (bgs) and extends to approximately 30 feet beneath LHAAP-46. The lithology of the shallow zone consists mostly of clay with relatively thin discontinuous sand layers. Groundwater tends to occur preferentially in the more permeable thin sand layers. The groundwater is typically unconfined. The intermediate groundwater zone is generally sandier than the shallow groundwater zone. A relatively thick sand layer was identified in the intermediate groundwater zone in three of the five monitoring wells installed during remedy implementation, but it was not present in the boreholes for monitoring wells 46WW08 and 46WW16, in the northern part of the site. Clay that overlies the sand acts as a leaky aquitard to the shallow groundwater zone. The difference in groundwater elevations seen in shallow and intermediate groundwater zone wells supports some degree of hydraulic separation of those zones, although contaminants of concern (COC) in the shallow groundwater zone are also present in groundwater in the intermediate zone. Depth-to-groundwater was observed to range from approximately 19 to 37 feet bgs in the intermediate zone wells. The sand interval representing the intermediate zone is at a depth between 36 and 43 feet bgs. Only one groundwater monitoring well (46WW03) is completed in the deep groundwater zone. Based on previous investigations, the deep groundwater-bearing zone consists primarily of clay, with occasional fine sand and silt layers. However, a thick fine-grained sand bed occurs approximately 88 feet bgs and extends to approximately 101.5 feet bgs. The upper surface of the sand is gradational, with an increase in the proportion of sand beginning at about 80 feet bgs.

The basal contact of the deep zone sand unit with the underlying shale and clay units is sharp. Monitoring well 46WW03 is screened in this deep sand bed between 90 and 100 feet bgs. The clayey section above the deep sand layer is interpreted as an aquitard separating the intermediate groundwater zone from the deep groundwater zone. A very hard layer identified at 82 feet bgs may represent the upper boundary of the deep groundwater zone where possible mineralization (cementation) has occurred. Based on the depth to groundwater in well 46WW03, it appears that the water-bearing sand in the deep zone is under confined to semiconfined conditions. Communication between the intermediate groundwater zone and the deep groundwater zone is limited because the difference in groundwater elevations in

collocated wells 46WW02 and 46WW03 have stayed near 3.0 feet during the second, third, and fourth year RA-O periods. Additionally, the groundwater analytical results corroborate the lack of communication between the intermediate and deep zones as the COCs in the intermediate zone have not migrated downward in this vicinity.

Groundwater elevations in shallow and intermediate wells at the site have been declining since at least 2000 as documented in the Final Technical Memorandum – Remedial Action Operation Monitoring at LHAAP-46 (**Appendix A**). The average decline in wells evaluated in the memorandum was greater than 10 feet since 2000, and several of the wells at the site have run dry and have remained that way in most cases even after large rainfall events, as documented in previous RA-O reports. The conclusion of the memorandum was that the decline in groundwater elevations was not attributable to changes in rainfall.

The groundwater COCs in the shallow and intermediate zones at LHAAP-46 are TCE and its daughter products cis-1,2-dichloroethene (DCE) and vinyl chloride (VC). Human health risks associated with these COCs are the primary driver for remedial action, as the site poses no unacceptable ecological risks (USACE 2010). Previous investigations conducted at the Plant 2 Area between 1991 and 2008 determined the nature and extent of contamination in the soil, groundwater, surface water, and sediments at LHAAP-46. The most likely sources of contamination were spills resulting from a variety of support services that occurred in the area (USACE 2009; USACE 2010). The spills resulted in soil contamination and the COCs released to the surface soil subsequently migrated, either entrained in surface runoff or through leaching, to the groundwater. The previous investigations and the risk assessments concluded that the soil, sediment, and surface water at LHAAP-46 do not pose a risk to the environment or to human health under an industrial exposure scenario for a future maintenance worker (USACE 2010).

The nearest significant surface water body to LHAAP-46 is Goose Prairie Creek, which is located approximately 1,500 feet east of the site. Minor drainages are located north of the site and within the south-central portion of the site where they feed into Goose Prairie Creek. The potentially complete exposure pathways are groundwater used as drinking water and migration of impacted groundwater into surface water. Shallow groundwater is not used as drinking water at the refuge, and this potential exposure pathway is eliminated from any hypothetical future receptor because LUCs are in place that prohibit the use of groundwater for any purpose other than for environmental monitoring and testing.

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2.0 SITE ACTIVITIES AT LHAAP-46

This chapter describes the results of the fourth annual RA-O activities including the annual LUC compliance inspection, semiannual groundwater monitoring, and monitoring system repairs and/or maintenance performed at LHAAP-46.

2.1 Annual Land Use Control Compliance Inspection

The annual LUC compliance inspection for LHAAP-46 was performed on 19 Oct 2018. The LUC for LHAAP-46 is groundwater restriction. Groundwater use at LHAAP-46 is restricted to environmental monitoring and testing until levels of COCs in groundwater and soil allow unrestricted use and unlimited exposure. The restriction applies to groundwater underlying a 63.772-acre tract defined by the surveyed LUC boundary (AECOM 2015). The Annual LUC Compliance Certification Documentation Form for the fourth year RA-O period is included in **Appendix B**. No noncompliance issues or concerns were noted during the annual inspection. No damage to bollards, well pads, or protective casings was observed during the fourth year inspection and minimal encroachment of weeds or brush on the well pads was observed. A photo log of each well is included in **Appendix C**. Area mowing and clearing around the wells is conducted on an as-needed basis, but typically is done before sampling events. Maintenance activities that were performed at LHAAP-46 during the fourth annual RA-O period are presented in **Section 2.5**.

2.2 Groundwater Monitoring

All LHAAP-46 monitoring wells are depicted on **Figure 2-1**. During the February and August 2018 events, 10 of the 21 of the wells were dry or had insufficient water for a sample to be collected, as shown in **Table 2-1**. Before attempting to collect groundwater samples, the wells were gauged using a water level probe and the depth to water (or bottom of the well) was recorded to the nearest 0.01 foot from the top of casing. Groundwater samples were collected using the low-flow sampling procedures described in the groundwater sampling procedures found in the Installation-Wide Work Plan (Bhate 2018). The low flow method allows representative samples of groundwater in the formation adjacent to the well screen to be collected, eliminating mixing of stagnant water above and below the well screen. After water quality parameters stabilized and were within acceptable ranges, samples were collected at the same low flow rate. All groundwater samples were analyzed for volatile organic compounds (VOC) according to SW-846 Method 8260b. Samples from a subset of wells were also analyzed for MNA parameters, which is further discussed in **Chapter 3.0**. Sample collection field forms are provided in **Appendix D**.

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2.3 Surface Water Monitoring

The surface monitoring location is located north of LHAAP in a tributary of Goose Prairie creek, as shown on **Figure 2-1**. Surface water sample 16SW10 was collected using a bailer in February 2018; however, the creek was dry in August 2018. The surface water collected at 16SW10 was analyzed for VOCs according to SW-846 Method 8260b. Sample collection field forms are provided in **Appendix D**.

2.3.1 Groundwater Elevations and Flow Direction

Synoptic water level measurements were attempted at 21 wells in February and August 2018. Ten of the wells were dry in February and August 2018, so they could not be gauged. Groundwater elevations are summarized in **Table 2-2**. Wells that were dry during the February sampling event were gauged again on 24 Apr 2018 after a 2.38-inch rainfall was recorded on 21 Apr 2018. All of the wells that were dry in February remained dry when gauged after the rainfall event in April. As discussed in the March 2018 Technical Memorandum (**Appendix A**), the decline in groundwater elevations does not appear to be linked to changes in rainfall, and repeated attempts to gauge and sample wells after rainfall events have been mostly unsuccessful.

2.3.1.1 Shallow Groundwater Zone

During the February and August 2018 monitoring events, shallow wells 46WW01, 46WW04, 46WW10, 46WW12, 46WW13, 46WW15, LHSMW17, LHSMW18, and LHSMW22 were dry. Only wells 46WW11 and LHSMW19 could be gauged for groundwater in the shallow zone. **Figures 2-2** and **2-3** represent the groundwater potentiometric surface for the shallow groundwater zone, as interpreted during the February 2018 and August 2018 monitoring events, respectively. Based on the gauging data collected during this event and from historical water levels from currently dry wells, the groundwater flow direction is interpreted to be to the east. The interpretation of shallow groundwater flow direction is consistent with what was presented previously in the RD document and the three years of RA-O sampling. Groundwater elevations between February and August 2018 have also decreased. At monitoring wells 46WW11 and LHSMW19, the groundwater level decreased 1.35 and 0.7 feet between February and August 2018.

2.3.1.2 Intermediate Groundwater Zone

The intermediate zone wells contained water during the two gauging events, except for well LHSMW23. Monitoring well LHSMW23 is considered dry; however, the total depth was measured approximately 9 feet less than the reported total depth of the well. Previous RA-O reports reported this finding and recommended that the well be checked for an obstruction prior to the next scheduled sampling event. This recommendation was not completed in 2018 but will be completed during the next sampling event in February 2019. **Figures 2-4** and **2-5**

represent the groundwater potentiometric surface for the intermediate groundwater zone, as interpreted during the February 2018 and August 2018 monitoring events, respectively. The groundwater elevation data in 46WW08 were not used in developing the contour maps as was done in the third year RA-O report. The groundwater elevation in 46WW08 continues to be similar to the shallow zone elevations, despite the well being screened in the intermediate zone. It is possible that there is leakage from the shallow zone to the intermediate zone in this area of the site such that the well reflects shallow zone conditions. The groundwater flow direction in the intermediate groundwater zone is generally interpreted to be to the north, consistent with the flow direction presented in previous RA-O reports.

2.3.1.3 Deep Groundwater Zone

Well 46WW03 is the only well screened in the deep groundwater zone, and therefore a potentiometric surface map for the deep zone was not constructed.

2.3.1.4 Vertical Gradients

In the shallow and intermediate zone, monitoring wells 46WW04 and 46WW06 are gauged and have been used to evaluate vertical gradients. During the fourth year RA-O sampling events, shallow well 46WW04 was dry and therefore a gradient is not currently present in the vicinity of these wells. Previously, the groundwater elevation difference between these wells ranged between 15.6 feet to 16.7 feet with a downward vertical gradient, indicating that there is hydraulic separation between the shallow and intermediate zones. The perpendicular direction of horizontal groundwater gradients between these two zones also indicates that these zones are discrete water-bearing units. However, as discussed in Section 1.4, it is believed that the clay that overlies the intermediate zone sand acts as a leaky aquitard to the shallow groundwater zone.

A similar evaluation was conducted between collocated intermediate and deep zone wells 46WW02 and 46WW03, respectively. The groundwater elevations in August 2018 indicate a difference of approximately 3.0 feet between these two zones with a downward vertical gradient. The vertical gradient indicates that there is hydraulic separation between these two units.

2.3.2 Groundwater Analytical Results

VOC analytical results for the 2018 semiannual samples are presented in **Table 2-3**. **Table 2-4** provides historical results for COCs. Laboratory reports are provided in **Appendix E**. During the fourth year RA-O monitoring events, only TCE was detected in the groundwater at concentrations above the MCL (5 micrograms per liter [µg/L]).

Figures 2-6 and **2-7** depict the shallow zone COC results for wells sampled during the fourth year RA-O sampling events. TCE was detected above the MCL in the two shallow wells where

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a sufficient amount of water was present to sample. At 46WW11, TCE was detected at 18 µg/L and 13 µg/L, in February and August 2018, respectively. TCE concentrations at LHSMW19 were observed at 2.4 µg/L in February and 8.8 µg/L in August 2018.

Figures 2-8 and **2-9** depict the intermediate zone COC data for wells sampled in February 2018 and August 2018. TCE was detected above the MCL in intermediate wells 46WW02 and 46WW05 in 2018. At 46WW02, TCE was detected at 21 µg/L and 24 µg/L in February and August 2018, respectively. At 46WW05, TCE was detected at 14 µg/L in both February and August 2018.

No COCs were detected above the laboratory reporting limit in the deep zone well 46WW03.

2.4 Surface Water Sampling

Figure 2-1 shows the surface water location associated with site LHAAP-46. Surface water sample location 46SW10 is located in the tributary to Goose Prairie Creek. The location is downgradient of the intermediate zone groundwater plume but is cross-gradient from the shallow zone groundwater plume. Water was present in the creek at 46SW10 during the February sampling event; however, during the August sampling event the location was dry. In February a sample was collected, and no VOCs were observed above the MCL.

To determine if groundwater can potentially influence surface water, groundwater elevations are compared to the elevation at the bottom of the surface water ditch. The bottom of the ditch at surface water sampling location 46SW10 is 197.27 feet above mean sea level (amsl). Wells 46WW11 and LHSMW19 are the nearest cross-gradient shallow zone wells and 46WW16 is the nearest upgradient intermediate zone well to the surface water sampling location. During the fourth year RA-O sampling period, the groundwater elevations were gauged in February and August 2018. In shallow zone well 46WW11, groundwater elevations measured at 186.27 and 184.92 feet amsl. Groundwater elevations at 46WW19 were 187.05 and 186.35 feet amsl. Groundwater elevations at the intermediate zone well 46WW16 were 169.90 and 169.61 feet amsl. Therefore, during the fourth RA-O sampling period, the groundwater elevations were much lower (by more than 10 feet) than the bottom of the ditch, and there was no potential for groundwater to discharge to surface water.

2.5 Groundwater Monitoring System Maintenance

Inspections of the conditions/integrity of monitoring wells are conducted during each sampling event and the information was recorded on the field sampling forms. **Table 2-5** provides a summary of the maintenance activities that were performed at the site during the fourth annual RA-O period. **Appendix C** includes a photo log, which shows the condition of the wells each quarter. During the fourth annual reporting period, no damage to well bollards, pads, or

protective well casings was observed. At monitoring well LHSMW23, the total depth was measured approximately 9 feet above the reported total depth of the well, and the well needs to be checked for an obstruction. Also, only minimal encroachment of weeds or brush on the well pads was observed. Mowing the area to control brush and weeds was conducted at LHAAP-46 on 16 Feb 2018 and 20 Aug 2018. Siltation of 1.18 and 1.13 feet above the bottom of the well was noted in well 46WW09 in the February 2018 and August 2018 sampling events. The level of siltation observed was below the bottom of the screened interval. Well 46WW09 will be redeveloped prior to the February 2019 sampling event to remove the silt. Due to the persistently dry conditions at LHSMW20, in order to delineate the northeastern extent of the shallow plume, it is recommended to add LHSMW21 to the monitoring network in place of LHSMW20. The wells to be sampled during the fifth year RA-O are provided in **Table 2-6** and on **Figure 2-10**.

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3.0 NATURAL ATTENUATION EVALUATION

The following sections present the results of the natural attenuation evaluation as described in the Draft Final RD (Shaw 2011) for LHAAP-46 groundwater COCs. Twenty-one wells were sampled for field parameters and two shallow zone wells and four intermediate zone wells were sampled and analyzed for additional parameters used to evaluate MNA. The analytical results are summarized in **Table 2-3**. The three lines of evidence to evaluate MNA are presented below.

3.1 First Line of Evidence: Change in COC Concentrations

Natural attenuation is the combination of multiple mechanisms, including biodegradation, volatilization, dilution, advection, and absorption that reduce contaminant concentrations. The first line of evidence evaluates the decrease in COC concentrations over time and distance. COC concentrations for the fourth year of RA-O sampling events are provided on **Figures 2-6** through **2-9** as well as in **Tables 2-3** and **2-4**.

During the fourth annual RA-O sampling, TCE was the only COC detected above the MCL of 5 ug/L at 46WW11 (shallow), LHSMW19 (shallow), 46WW02 (intermediate), and 46WW05 (intermediate).

Mann-Kendall analysis for the fourth annual RA-O monitoring period was completed for TCE. The results are presented in **Appendix F** in graphical format with statistical results presented on the bottom of the page. The GSI Mann-Kendall Tool Kit was used for this analysis. The concentrations of COCs are presented in µg/L. Half the reporting limit was used for non-detects. For duplicate samples, the normal sample was used. The level of significance is calculated for each analysis and is provided on the trend analysis sheet. A summary table of the Mann-Kendall results is provided in **Table 3-1**. Historical COC results for all wells are presented in **Table 2-5**.

3.1.1 Shallow Zone

In the shallow zone, two wells had sufficient amount of water to sample and TCE was the only VOC above the MCL of 5 µg/L. These two wells (46WW11 and LHSMW19) are the focus of this section.

Well 46WW11

VOC groundwater results are available for this well since August 2013 (**Table 2-4**). TCE concentrations in this well have decreased over time from a high of 90.6 µg/L in July 2014 to 13 µg/L in August 2018 (**Figure 3-1).** Since 2015, cis-1,2-DCE and VC have remained below

laboratory reporting limits of 1.0 µg/L. The Mann-Kendall trend analysis in 46WW11 indicates a statistically significant decrease in TCE concentrations over time with a confidence factor greater than 99.9 percent. The decrease in TCE concentrations and the lack of cis-1,2-DCE and VC indicates that biodegradation is not occurring, and other natural attenuation processes are the primary mechanism for decreases in COCs.

During the fourth year RA-O sampling, the groundwater elevation at 46WW11 has continued to decrease and was at the lowest level in August 2018 at 184.92 feet amsl. Although the groundwater elevation is decreasing, the level is 4.95 feet above the bottom of the screen and well is expected to continue to have a sufficient amount of groundwater during future sampling events.

Well LHSMW19

VOC groundwater results are available since December 1994 (**Table 2-4**). TCE levels in this well increased from December 1994 to a high of 85.5 µg/L in February 2007. Since 2007, TCE levels have decreased to 2.4 µg/L in February 2018 and then increased to 8.8 µg/L in August 2018 (**Table 2-2**). The TCE degradation product cis-1,2-DCE has remained below 3 µg/L and VC has remained below laboratory reporting limits of 1.0 µg/L since 1994. The decrease in TCE concentrations over time and the presence of cis-1,2-DCE during the fourth year RA-O period indicate limited biodegradation is occurring; however, other MNA processes, including dilution and dispersion, are the primary mechanisms for the decrease in COCs. **Figure 3-1** includes a graph of TCE concentrations over time. The Mann-Kendall trend analysis in LHSMW19 indicates a statistically significant decrease in TCE concentrations over time with a confidence factor greater than 99.9 percent. The decrease in TCE is likely due to dilution rather than biodegradation.

During the fourth year RA-O sampling, the groundwater elevation at LHSMW19 has continued to decrease as it has since 2015 and was at the lowest level in August 2018 at 186.35 feet amsl. Although the groundwater elevation is decreasing, the level is 3.0 feet above the bottom of the screen and is expected to continue to have a sufficient amount of groundwater during future sampling events.

Other Shallow Zone Wells

Historically, COCs have been below their respective MCLs at the other shallow zone wells, except for 46WW01 and LHSMW18. During the third year RA-O period, groundwater was present at 46WW01 and LHSMW18 and COCs concentrations decreased to below their respective MCLs. During the fourth year RA-O, these monitoring wells were dry and were not sampled.

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Shallow Zone COCs and Distance

Based on the direction of groundwater flow, which is generally to the east in the shallow zone, monitoring well 46WW10 was considered a background well for the shallow zone; however, it was dry in 2018. During the fourth annual sampling event, LHSMW19 was used as the most upgradient well in the shallow zone. TCE at LHSMW19 has fluctuated and was observed below the MCL for the first time in February 2018. Monitoring wells down gradient of LHSMW19 and 46WW11 were dry in 2018 and an evaluation of COCs over distance could not be conducted. When groundwater elevations were high enough to allow for sampling in the past, COCs were not present above the MCLs in the downgradient wells, 46WW01, LHSMW22, and LHSMW24, indicating that historically, concentrations decreased with distance downgradient from LHSMW19

3.1.2 Intermediate Zone

In the intermediate zone, eight of the nine wells had a sufficient amount of water to sample during the fourth year RA-O. Only two wells, 46WW02 and 46WW05, had a VOC, TCE above the MCL, and are the focus of this section.

Well 46WW02

At 46WW02, COCs have been observed since November 1998 and were detected during the fourth year RA-O monitoring period. The TCE concentrations in this well were 21 and 24 µg/L in February and August 2018, respectively. During the RA-O sampling events, the TCE degradation product cis-1,2-DCE has remained below 3 µg/L and VC has remained below laboratory reporting limits of 1.0 µg/L. **Figure 3-1** includes a graph of TCE, cis-1,2-DCE, and VC concentrations over time. Mann-Kendall trend analysis was conducted for TCE, the only COC above the MCL. The results are presented in **Appendix F**. The trend analysis determined that the trend is stable and suggests limited natural attenuation may be occurring in the vicinity of well 46WW02.

Well 46WW05

VOC groundwater results are available for 46WW05 from October 2008 through the fourth year RA-O monitoring period in 2018. TCE, cis- 1,2-DCE, VC, and 1,1-DCE have historically been detected in 46WW05; however, only TCE was detected during the fourth year RA-O period. The highest level of TCE was detected at 144 µg/L in May 2013. In 2015, TCE concentrations began reducing and during the fourth year RA-O sampling, levels were detected at 14 and 6.4 µg/L. **Figure 3-1** includes a graph of concentrations of 1,1-DCE, TCE, cis-1,2-DCE, and VC in monitoring well 46WW05 over time. Mann-Kendall trend analysis was conducted for TCE, the only COC currently above the MCL in 2018. The results are

presented in **Appendix F**. The trend analysis for TCE in 46WW05 indicates that there is a statistically significant decrease in TCE concentrations over time with a 99.9 percent confidence factor. The decreasing concentrations of TCE and the presence of daughter products over time indicate that limited biological degradation is occurring. Other natural attenuation processes, including dilution and dispersion are occurring to reduce COC concentrations in the vicinity of well 46WW05.

Other Intermediate Zone Wells

Historically, all COCs have been below their respective MCLs at the other intermediate zone groundwater monitoring wells.

Intermediate Zone COCs and Distance

The direction of groundwater flow is to the north in the intermediate zone. Monitoring well LHSMW23 was used as the background well for the intermediate zone however it has also been dry throughout the monitoring period and 46WW06 is used as the background well in 2018. Two independent plumes exist in the intermediate zone at 46WW02 and 46WW05, separated by 46WW09, which indicate that no COCs are present between the two areas. At both 46WW02 and 46WW05, COCs are not present in the next downgradient wells, 46WW09 and 46WW16, respectively. As groundwater moves downgradient from 46WW02 to 46WW05, TCE levels have also decreased from 21 to 14 ug/L in February 2018 and 24 to 6.4 ug/L in August 2018. The data from wells in the intermediate zone indicate that TCE is degrading over distance.

3.1.3 Deep Zone

No COCs were detected at deep zone monitoring well, 46WW03, during the fourth year RA-O sampling events. COCs have not been observed at this well since the well was installed and first sampled in 1998.

3.1.4 Plume Stability

Plume maps completed for each sampling event are presented for the shallow zone on **Figures 2-6** and **2-7** and for the intermediate zone on **Figures 2-8** and **2-9**. The COC data over the monitoring period indicate that the shallow zone plume is generally stable with decreasing trends. Although groundwater levels could only be measured from two wells during the fourth year RA-O sampling events, shallow groundwater flow is determined using historical data and the direction is considered towards the east. The following wells are considered to be along the groundwater flowpath: 46WW10, LHSMW19, 46WW11, 46WW12, and LHSMW24. Based on the eastward direction of groundwater flow in the shallow zone, the dry wells in the shallow zone, which include upgradient well 46WW10 and downgradient wells 46WW12 and

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LHSMW24, demonstrate that dry conditions limit the potential for plume migration. Where water is present at in-plume wells LHSMW19 and 46WW11, the decreasing TCE trend indicates that the plume is stable and decreasing.

In the intermediate zone, only two wells, 46WW02 and 46WW05, have COCs above the MCLs. Based on the general direction of intermediate groundwater flow (generally to the north), the following wells are considered to be along the groundwater flowpath: 46WW02, 46WW09, 46WW05, and 46WW16. Additionally, well LHSMW23 is considered a background well for the intermediate zone, although it was dry during the fourth year RA-O monitoring period. Contaminated groundwater in the vicinity of wells 46WW02 and 46WW05 occurs in two separate, isolated plumes. During the monitoring period, no COCs have been detected above MCLs at well 46WW09, which is located between impacted wells 46WW02 and 46WW05. In addition, no COCs above the MCL have been detected in downgradient well 46WW16. Therefore, based on the inferred flowpath, COC levels are not increasing with distance from the source area, as evidenced by lack of COCs detected in the downgradient well. Concentrations of COCs in wells surrounding the most impacted wells (46WW02 and 46WW05) have not increased and no new COCs have been detected at boundary area wells, indicating the plume is not migrating.

3.2 Second Line of Evidence: Geochemical Indicators

To aid in determining if the groundwater is favorable for MNA processes, geochemical indicators are evaluated. During groundwater sampling, field parameters were collected and include dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, conductivity, turbidity, and temperature. Select monitoring wells were sampled for additional MNA parameters and are shown in **Table 2-1**. **Table 2-3** provides the geochemical data used to determine if the site groundwater is favorable for MNA biological degradation processes. The MNA parameters analyzed include ferrous iron, anions (chloride, nitrate, and sulfate), and gases (ethene, ethane, and methane).

Dissolved Oxygen

DO is the most thermodynamically favored electron acceptor used by microbes for biodegradation of organic carbon, whether natural or anthropogenic (U.S. Environmental Protection Agency [USEPA] 1998). Anaerobic bacteria, which are the primary microbes able to degrade the site COCs, may be inhibited at DO concentrations greater than 0.5 milligram per liter (mg/L). In monitoring wells where COCs are above the MCL, the DO concentrations ranged from 0.22 mg/L to 1.61 mg/L, with an average of 0.72 mg/L during the fourth year RA-O. The low DO levels (<0.5 mg/L) observed in some of the impacted wells are favorable for reductive chlorination.

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Oxidation-Reduction Potential

The ORP levels indicate the oxidative or reductive potential in the aquifer and aid in determining if conditions are conducive for biodegradation. ORP values less than 50 millivolts (mV) indicate that the aquifer is favorable for biological reductive dechlorination of chlorinated ethenes and ethanes. During the fourth year RA-O monitoring, the ORP measurements ranged from -93 mV at 46WW16 (only value below 50 mV, observed in February 2018) to 408 mV at 46WW05, with an average of 240 mV. These measurements indicate oxidative conditions are prevalent which are not favorable for reductive dechlorination.

Nitrate

After DO has been depleted by microbes in the treatment zone, nitrate may be used as an electron acceptor and is reduced to nitrite. Nitrate levels above 1.0 mg/L may compete with reductive dechlorination (USEPA 1998). The nitrate concentrations ranged from 0.22 mg/L to 2.58 mg/L, with an average of 1.01 mg/L during the fourth year RA-O. Nitrite levels were observed above the detection limit, which suggest that nitrate reducing conditions are present at LHAAP-46. The nitrate levels, although just above 1.0 mg/L, are not expected to inhibit the anaerobic degradation of site COCs.

Iron Reduction

After nitrate is utilized, iron (III) (ferric iron) is used as an electron acceptor during anaerobic biodegradation of organic carbon. During this process, iron (III) is reduced to iron (II) (ferrous iron), which is soluble in water, and an increase in ferrous iron can indicate reducing groundwater conditions. During the fourth year RA-O, ferrous iron ranged from below the detection limit to 1.46 mg/L, indicating that iron-reducing conditions exist in limited areas in the site groundwater.

Sulfate

After DO, nitrate, and iron have been depleted in the groundwater, sulfate is used as an electron acceptor and is reduced to sulfide. Concentrations of sulfate greater than 20 mg/L may compete with reductive dechlorination of the site COCs. However, in many plumes with high concentrations of sulfate, reductive dechlorination still occurs (USEPA 1998). Sulfate was sampled in monitoring wells designated for MNA analysis during the fourth year RA-O and ranged from 150 mg/L to 4,320 mg/L. Sulfide concentrations were also observed, which suggest that sulfate reduction is occurring in limited areas. Although sulfate is being reduced, the elevated concentrations observed at the site may compete as an electron acceptor with site COCs.

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Methane

Methanogenesis occurs in highly reducing conditions and generally occurs after oxygen, nitrate, iron, and sulfate have been depleted. Methane levels above 500 µg/L are considered indicative of methanogenic conditions (USEPA 1998). Methane concentrations were less than 40 µg/L during the fourth year RA-O and suggest that methanogenic conditions are not present in the groundwater.

Total Organic Carbon

Regardless of the electron acceptor being used, organic carbon is a required source of reduced carbon and energy to sustain microbial activity. Total organic carbon (TOC) is utilized as an energy and hydrogen source to support reductive dechlorination of the chlorinated COCs. TOC concentrations greater than 20 mg/L are considered adequate to support microbial activity (USEPA 1998). TOC concentrations ranged from 1.90 mg/L to 10.30 mg/L, with an average of 6.12 mg/L during the fourth year RA-O sampling. The data indicate that carbon concentrations in the groundwater are not supportive of reductive dechlorination.

pH

The pH of the groundwater has an effect on the activity of microbial populations. Microbes capable of degrading chlorinated aliphatic hydrocarbons generally prefer pH values from 6 to 8 standard units (SU) (USEPA 1998). The pH levels ranged from 3.88 SU to 6.05 SU, with an average of 4.95 SU during the fourth year RA-O sampling. The pH levels in these wells are low and may inhibit degradation rates of dechlorinating bacteria.

Ethene and Ethane

Ethane and ethene are two end products of the reductive dechlorination pathways for chlorinated ethanes and ethenes. During the fourth year RA-O, ethene and ethane concentrations were below the laboratory reporting limits of 0.55 µg/L and 0.47 µg/L, respectively. The data indicate that complete reductive dechlorination is not occurring at this time.

Geochemical Indicator MNA Parameter Summary

The qualitative assessment of groundwater geochemical indicators during the fourth year RA-O period suggest that current groundwater conditions are not completely favorable for MNA processes via biological reduction. Nonetheless, certain parameters observed in a few locations may indicate that conditions could favor biological natural attenuation, such as the low DO and nitrate concentrations and the presence of ferrous iron. The presence of the

degradation product cis-1,2-DCE suggests that limited biological degradation is occurring; however, the primary MNA processes reducing concentrations are abiotic.

3.3 Third Line of Evidence: Predictive Analysis and Microbial Analysis

If the first two lines of evidence for MNA are deemed inadequate or inconclusive and/or if the need for a contingency remedy is evaluated, data from field or microcosm studies will be necessary to establish the third line of evidence for MNA. Dechlorinating bacteria such as *Dehalococcoides ethenogenes* and associated functional genes have not been measured at this site and therefore could not be used to assess whether they exist naturally at the site.

Also, predictive analysis using degradation rates can be used as a third line of evidence to estimate the time required to reach the MCL. Using Mann-Kendall trend analysis, TCE concentrations showed a significant decrease over time in shallow zone wells 46WW11 and LHSMW19 and intermediate zone well 46WW05. The first order rate constants were calculated and the time to achieve the MCL of 5 µg/L are included in **Appendix G**. Although TCE was observed at 46WW02, a significant decrease was not observed, and a first order rate constant was not calculated for this well.

At shallow groundwater well 46WW11, the first order rate constant was calculated at 0.001 day^{-1} and the time to achieve the MCL of 5 µg/L from the August 2018 concentration of 13 µg/L is estimated at 2.6 years. For LHSMW19, the first order rate constant is 0.001 day^{-1} and the time to achieve MCL of 5 µg/L from the August 2018 concentration of 8.8 µg/L is estimated at 1.5 years. At intermediate zone well 46WW05, the first order rate constant is 0.002 day-^{1} and the time to achieve MCL of 5 µg/L from the August 2018 concentration of 6.4 µg/L is estimated at 0.3 years.

These determinations assume that the decrease in concentrations will continue at the same rate as calculated from recent data. The predictive analysis estimates that TCE may reduce to below the MCL at LHAAP-46 in 2.6 years; however, given lithologic variability at the site, the time to MCL may vary by an order of magnitude. Additionally, the rate of reduction could diminish over time as the residual concentrations decrease and the time frames to achieve the MCL might be longer than estimated.

4.0 CONCLUSIONS AND RECOMENDATIONS

4.1 Summary

During the fourth year RA-O monitoring at LHAAP-46, samples were collected from shallow, intermediate, and deep zone wells during February 2018 and August 2018. Samples were analyzed for VOCs and geochemical parameters to evaluate effectiveness of MNA as a site remedy. Reductions in COC concentrations over time and with distance were evaluated. The results of the evaluation and the conclusions are summarized below.

- Consistent with previous years, groundwater flow direction is to the east in the shallow zone and generally to the north in the intermediate zone.
- TCE is the only COC detected in the groundwater at concentrations exceeding the MCL.
- In the shallow groundwater zone wells, 46WW11 and LHSMW19 are the only wells where a sufficient amount of water was present to collect samples. TCE concentrations demonstrate a decreasing trend based on Mann-Kendall trend analysis.
- In the intermediate zone, concentrations of COCs have not increased with distance from the most impacted wells, 46WW02 and 46WW05, and no new detection of COCs at boundary area wells have been reported, indicating no plume migration.
- No VOCs were detected in the one deep well, 46WW03.
- Review of concentration trends indicates that plumes in the shallow and intermediate zones are stable or decreasing, and the plumes are not expanding or migrating.
- The assessment of geochemical parameters indicate that groundwater conditions are not entirely favorable for reductive dechlorination and the MNA processes primarily responsible for reducing concentrations are abiotic.
- The predictive analysis estimates that TCE may reduce to below the MCL at LHAAP-46 in 2.6 years; however, given lithologic variability at the site, the time to MCL may vary by an order of magnitude. Additionally, the rate of reduction could diminish over time as the residual concentrations decrease and the time frames to achieve the MCL might be longer than estimated.

A surface water sample was collected at location 46SW10, which is located in the tributary to Goose Prairie Creek, in February 2018 and analyzed for VOCs. No VOCs were detected in the

surface water sample. During the August 2018 sampling event, surface water was not present at 46SW10 and no sample was collected.

After the February RA-O sampling, 2.38 inches of rainfall was recorded on 21 Apr 2018 and the wells were gauged again on 24 Apr 2018. All of the wells that were dry in February 2018 remained dry when gauged after the rainfall event in April 2018. Similarly, after a prolonged period of above normal rainfall and a rainfall event of 2.36" on November 12, 2018, the previously dry wells were gauged on November 15, 2018. Six of the twelve wells that were previously dry contained measurable water, ranging from 1.5" to 9" deep. Given that several of the wells have sumps up to 6" long, it was not possible to collect a representative sample.

The EPA approval for the Final Technical Memorandum – Remedial Action Operation Monitoring at LHAAP-46 (**Appendix A**) included a comment stating "in the future, there needs to be a revised process for the shallow wells (5 of the dry wells are in the historic plume) so that they are checked more frequently and are sampled on an irregular basis (when water is found in the wells after very wet periods) and not wait on the prescribed semiannual sampling date. There may need to be other solutions besides the one suggested." The Army recommends discontinuing efforts to gauge wells and sample on an irregular basis, as the previous efforts to gauge wells after 2+" rainfall events have not shown significant aquifer response to such events. Gauging wells and collecting samples after major rainfall events outside of the normally scheduled sampling events will not provide sample results that are representative of the actual aquifer conditions. The transient recharge represented in such groundwater has not had an opportunity to reach equilibrium with any contamination remaining in the aquifer. Given that the goal of the monitoring program is to demonstrate long-term compliance with risk-based cleanup levels that assume long-term continuous water use scenarios, the conditions represented by transient slugs of groundwater present only when significant rainfall events occur are not comparable to the cleanup levels established for the site. Thus, sampling in between regular events to collect a sample from groundwater that is only present temporarily does not address the RAO. Additionally, the short duration of the groundwater presence from such recharge does not allow for development of conditions that would be reflective of the various MNA processes being monitored as part of the remedy. Therefore, it is recommended that the off-schedule efforts to collect samples from short-term recharge of the aquifer by rainfall events, that are unlikely to be representative of the longer term aquifer conditions, should be discontinued. The dry locations will continue to be gauged during the semi-annual events and the wells will be sampled if groundwater is present in recoverable quantities within the screened interval of the well. If the groundwater elevations unexpectedly recover over time to allow for sampling in the previously dry wells, the results will be included as part of the MNA remedy evaluation in subsequent reports once it has been established that the groundwater is consistently present in the well or wells for more than one sampling event.

No compliance issues or concerns were noted during the annual LUC inspection for LHAAP-46 conducted on 19 Oct 2018. LHSMW23 contains an obstruction at approximately 11 feet above the total depth of the well, and a camera survey will be performed prior to the next sampling event to determine the cause of the obstruction. Siltation was noted in the bottom of well 46WW09 and the well will be redeveloped prior to the February 2019 sampling event to remove the silt. Given the persistent dry conditions in LHSMW20, in order to delineate the northeastern extent of the plume in the shallow zone, it is recommended to add LHSMW21 to the monitoring network in place of LHSMW20. The pump intake for sampling at 46WW05 was 1.0 to 1.5 feet deeper in the most recent sampling events than in previous sampling efforts. To verify that the pump intake level change has not impacted the detected concentrations, the intake will be raised back to 40 feet below top of casing for the Year 5 sampling events.

Because the COC plumes at LHAAP-46 are stable or decreasing and are not migrating, MNA with LUCs is still considered an appropriate remedy. It is recommended that MNA monitoring continue with an optimized list of analytical parameters. The optimized list includes eliminating MNA parameters that are redundant or nonessential, including total iron, total phosphorus, alkalinity, total inorganic carbon, and the lab analysis for dissolved iron, and dissolved manganese. The revised parameter list was proposed in a Technical Memorandum submitted in January 2019 and approved by EPA and TCEQ in February 2019 (APTIM 2019). The revisions are reflected in the MNA parameter list shown in the notes on **Table 2-6**. The wells to be sampled have not changed and are provided in **Table 2-6** and on **Figure 2-10**.

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Tables

Table 2-1
Groundwater RA-O Sampling – 2018

Well ID	Groundwater Unit	Year 4 Semiannual 1 February 2018			Year 4 Semiannual 2 August 2018		
		VOC	Field Parameters	MNA	VOC	Field Parameters	MNA
46WW01	Shallow		Dry			Dry	
46WW04	Shallow		Dry			Dry	
46WW10	Shallow		Dry			Dry	
46WW11	Shallow	X	X	X	X	X	X
46WW12	Shallow		Dry			Dry	
46WW13	Shallow		Dry			Dry	
46WW15	Shallow		Dry			Dry	
LHSMW17	Shallow		Dry			Dry	
LHSMW18 [a]	Shallow		Dry			Dry	
LHSMW19	Shallow	X	X	X	X	X	X
LHSMW22	Shallow		Dry			Dry	
46WW02	Intermediate	X	X	X	X	X	X
46WW05	Intermediate	X	X	X	X	X	X
46WW06	Intermediate	X	X		X	X	
46WW07	Intermediate	X	X		X	X	
46WW08	Intermediate	X	X		X	X	
46WW09	Intermediate	X	X	X	X	X	X
46WW16	Intermediate	X	X	X	X	X	X
LHSMW23	Intermediate		Dry			Dry	
LHSMW25	Intermediate	X	X		X	X	
46WW03	Deep	X	X		X	X	
46SW10 [b]	Surface Water	X				Dry	

Notes:

Field parameters to be monitored for all wells: pH, temperature, conductivity, turbidity, oxidation-reduction potential (ORP), dissolved oxygen (DO), and ferric iron.

MNA parameters include alkalinity, sulfate, sulfide, chloride, TOC, dissolved iron and manganese, total phosphorus, carbon dioxide, dissolved gases (methane, ethane, ethene) and total iron.

[a] LHSMW18 only sampled if LHSMW17 is dry

[b] 46SW10 is only sampled if surface water is present and the GW elevation at either LHSMW21 or 46WW16 exceeds 197 feet.

GW - groundwater

ID - identification

MNA - monitored natural attenuation

RA-O - remedial action operation

TOC - total organic carbon

VOC - volatile organic compounds

X - well was analyzed for that parameter

Table 2-2
Groundwater Elevation Data

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from Ground Surface)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)	Constructed Depth to Bottom of Screen (ft from TOC)
						Top	Bottom	Top	Bottom		
46WW01	S	05/02/13	212.82	209.75	26	14.00	24.00	195.75	185.75	186.82	27.07
		05/28/13	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
		08/10/13	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
		09/20/13	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
		01/25/14	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
		07/15/14	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
		11/18/14	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
		02/03/15	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
		05/05/15	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
		08/05/15	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
		02/01/16	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
		03/28/16	212.82	209.75	24.85	14.00	24.00	195.75	185.75	187.97	27.07
		08/03/16	212.82	209.75	25.45	14.00	24.00	195.75	185.75	187.37	27.07
		02/20/18	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
		08/27/18	212.82	209.75	Dry	14.00	24.00	195.75	185.75	Dry	27.07
46WW02	I	05/02/13	212.21	209.16	35.9	37.00	47.00	172.16	162.16	176.31	50.05
		05/28/13	212.21	209.16	35.85	37.00	47.00	172.16	162.16	176.36	50.05
		08/14/13	212.21	209.16	36.15	37.00	47.00	172.16	162.16	176.06	50.05
		08/17/13	212.21	209.16	36.2	37.00	47.00	172.16	162.16	176.01	50.05
		09/19/13	212.21	209.16	36.33	37.00	47.00	172.16	162.16	175.88	50.05
		01/27/14	212.21	209.16	36.52	37.00	47.00	172.16	162.16	175.69	50.05
		07/15/14	212.21	209.16	36.63	37.00	47.00	172.16	162.16	175.58	50.05
		11/18/14	212.21	209.16	37.37	37.00	47.00	172.16	162.16	174.84	50.05
		02/05/15	212.21	209.16	37.3	37.00	47.00	172.16	162.16	174.91	50.05
		05/06/15	212.21	209.16	37	37.00	47.00	172.16	162.16	175.21	50.05
		08/05/15	212.21	209.16	37.03	37.00	47.00	172.16	162.16	175.18	50.05
		02/01/16	212.21	209.16	37.11	37.00	47.00	172.16	162.16	175.10	50.05
		08/04/16	212.21	209.16	37.25	37.00	47.00	172.16	162.16	174.96	50.05
		02/20/18	212.21	209.16	37.76	37.00	47.00	172.16	162.16	174.45	50.05
		08/29/18	212.21	209.16	38.25	37.00	47.00	172.16	162.16	173.96	50.05
46WW03	D	05/30/13	212.47	209.8	39.81	92.67	102.67	117.13	107.13	172.66	105.34
		08/17/13	212.47	209.8	40.34	92.67	102.67	117.13	107.13	172.13	105.34
		09/26/13	212.47	209.8	46.48	92.67	102.67	117.13	107.13	165.99	105.34
		01/25/14	212.47	209.8	40.61	92.67	102.67	117.13	107.13	171.86	105.34
		07/17/14	212.47	209.8	40.47	92.67	102.67	117.13	107.13	172	105.34
		11/20/14	212.47	209.8	41	92.67	102.67	117.13	107.13	171.47	105.34
		02/05/15	212.47	209.8	40.6	92.67	102.67	117.13	107.13	171.87	105.34
		05/06/15	212.47	209.8	40.32	92.67	102.67	117.13	107.13	172.15	105.34
		08/05/15	212.47	209.8	40.71	92.67	102.67	117.13	107.13	171.76	105.34
		02/03/16	212.47	209.8	40.69	92.67	102.67	117.13	107.13	171.78	105.34
		08/04/16	212.47	209.8	40.77	92.67	102.67	117.13	107.13	171.70	105.34
		02/26/18	212.47	209.8	41.47	92.67	102.67	117.13	107.13	171.00	105.34
		08/27/18	212.47	209.8	42.05	92.67	102.67	117.13	107.13	170.42	105.34
46WW04	S	05/02/13	215.39	212.47	24.86	17.00	27.00	195.47	185.47	190.53	29.92
		05/24/13	215.39	212.47	24.9	17.00	27.00	195.47	185.47	190.49	29.92
		08/09/13	215.39	212.47	25.48	17.00	27.00	195.47	185.47	189.91	29.92
		09/20/13	215.39	212.47	26	17.00	27.00	195.47	185.47	189.39	29.92
		01/25/14	215.39	212.47	25.9	17.00	27.00	195.47	185.47	189.49	29.92
		07/17/14	215.39	212.47	24.68	17.00	27.00	195.47	185.47	190.71	29.92
		11/19/14	215.39	212.47	26	17.00	27.00	195.47	185.47	189.39	29.92
		02/03/15	215.39	212.47	Dry	17.00	27.00	195.47	185.47	Dry	29.92
		05/05/15	215.39	212.47	24.48	17.00	27.00	195.47	185.47	190.91	29.92
		08/04/15	215.39	212.47	24.13	17.00	27.00	195.47	185.47	191.26	29.92
		02/02/16	215.39	212.47	25.67	17.00	27.00	195.47	185.47	189.72	29.92
		08/03/16	215.39	212.47	25.04	17.00	27.00	195.47	185.47	190.35	29.92
		02/22/18	215.39	212.47	Dry	17.00	27.00	195.47	185.47	Dry	29.92
		08/29/18	215.39	212.47	Dry	17.00	27.00	195.47	185.47	Dry	29.92
46WW05	I	05/30/13	208.24	205.59	37.25	36.65	46.35	168.94	159.24	170.99	49.00
		08/14/13	208.24	205.59	37.65	36.65	46.35	168.94	159.24	170.59	49.00
		08/17/13	208.24	205.59	37.73	36.65	46.35	168.94	159.24	170.51	49.00
		09/24/13	208.24	205.59	37.75	36.65	46.35	168.94	159.24	170.49	49.00
		01/28/14	208.24	205.59	38.2	36.65	46.35	168.94	159.24	170.04	49.00
		07/16/14	208.24	205.59	37.83	36.65	46.35	168.94	159.24	170.41	49.00
		11/19/14	208.24	205.59	38.48	36.65	46.35	168.94	159.24	169.76	49.00
		02/05/15	208.24	205.59	37.45	36.65	46.35	168.94	159.24	170.79	49.00
		05/05/15	208.24	205.59	38.03	36.65	46.35	168.94	159.24	170.21	49.00
		08/06/15	208.24	205.59	37.05	36.65	46.35	168.94	159.24	171.19	49.00
		02/01/16	208.24	205.59	38.08	36.65	46.35	168.94	159.24	170.16	49.00
		08/03/16	208.24	205.59	38.35	36.65	46.35	168.94	159.24	169.89	49.00
		02/26/18	208.24	205.59	39.03	36.65	46.35	168.94	159.24	169.21	49.00
		08/28/18	208.24	205.59	39.25	36.65	46.35	168.94	159.24	168.99	49.00

Table 2-2
Groundwater Elevation Data

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from Ground Surface)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)	Constructed Depth to Bottom of Screen (ft from TOC)
						Top	Bottom	Top	Bottom		
46WW06	I	05/24/13	213.84	211.24	38.98	40.60	50.6	170.64	160.64	174.86	53.20
		08/16/13	213.84	211.24	39.12	40.60	50.6	170.64	160.64	174.72	53.20
		09/25/13	213.84	211.24	39.1	40.60	50.6	170.64	160.64	174.74	53.20
		01/25/14	213.84	211.24	39.28	40.60	50.6	170.64	160.64	174.56	53.20
		07/17/14	213.84	211.24	39.55	40.60	50.6	170.64	160.64	174.29	53.20
		11/19/14	213.84	211.24	39.91	40.60	50.6	170.64	160.64	173.93	53.20
		02/06/15	213.84	211.24	39.93	40.60	50.6	170.64	160.64	173.91	53.20
		05/01/15	213.84	211.24	39.91	40.60	50.6	170.64	160.64	173.93	53.20
		08/04/15	213.84	211.24	39.9	40.60	50.6	170.64	160.64	173.94	53.20
		02/02/16	213.84	211.24	39.76	40.60	50.6	170.64	160.64	174.08	53.20
		08/04/16	213.84	211.24	40.23	40.60	50.6	170.64	160.64	173.61	53.20
		02/26/18	213.84	211.24	39.91	40.60	50.6	170.64	160.64	173.93	53.20
		08/27/18	213.84	211.24	41.1	40.60	50.6	170.64	160.64	172.74	53.20
46WW07	I	05/25/13	207.87	205.37	35.28	41.50	51	163.87	154.37	172.59	53.50
		08/16/13	207.87	205.37	35.6	41.50	51	163.87	154.37	172.27	53.50
		09/19/13	207.87	205.37	35.7	41.50	51	163.87	154.37	172.17	53.50
		01/27/14	207.87	205.37	36.72	41.50	51	163.87	154.37	171.15	53.50
		07/18/14	207.87	205.37	35.47	41.50	51	163.87	154.37	172.4	53.50
		11/19/14	207.87	205.37	36.25	41.50	51	163.87	154.37	171.62	53.50
		02/03/15	207.87	205.37	35.95	41.50	51	163.87	154.37	171.92	53.50
		05/01/15	207.87	205.37	35.62	41.50	51	163.87	154.37	172.25	53.50
		08/04/15	207.87	205.37	35.68	41.50	51	163.87	154.37	172.19	53.50
		02/02/16	207.87	205.37	35.70	41.50	51	163.87	154.37	172.17	53.50
		08/02/16	207.87	205.37	35.96	41.50	51	163.87	154.37	171.91	53.50
		03/23/18	207.87	205.37	36.77	41.50	51	163.87	154.37	171.10	53.50
		08/27/18	207.87	205.37	31.15	41.50	51	163.87	154.37	176.72	53.50
46WW08	I	05/25/13	211.73	209.51	21.35	35.72	45.22	173.79	164.29	190.38	47.44
		08/16/13	211.73	209.51	21.55	35.72	45.22	173.79	164.29	190.18	47.44
		09/21/13	211.73	209.51	21.75	35.72	45.22	173.79	164.29	189.98	47.44
		01/28/14	211.73	209.51	21.85	35.72	45.22	173.79	164.29	189.88	47.44
		07/18/14	211.73	209.51	21.3	35.72	45.22	173.79	164.29	190.43	47.44
		11/20/14	211.73	209.51	22.06	35.72	45.22	173.79	164.29	189.67	47.44
		02/03/15	211.73	209.51	21.85	35.72	45.22	173.79	164.29	189.88	47.44
		05/01/15	211.73	209.51	20.94	35.72	45.22	173.79	164.29	190.79	47.44
		08/04/15	211.73	209.51	21.02	35.72	45.22	173.79	164.29	190.71	47.44
		02/03/16	211.73	209.51	21.75	35.72	45.22	173.79	164.29	189.98	47.44
		08/02/16	211.73	209.51	21.37	35.72	45.22	173.79	164.29	190.36	47.44
		02/23/18	211.73	209.51	22.43	35.72	45.22	173.79	164.29	189.30	47.44
		08/27/18	211.73	209.51	22.76	35.72	45.22	173.79	164.29	188.97	47.44
46WW09	I	05/30/13	210.19	207.71	34.5	31.48	40.98	176.23	166.73	175.69	43.46
		08/13/13	210.19	207.71	36.95	31.48	40.98	176.23	166.73	173.24	43.46
		08/17/13	210.19	207.71	36.03	31.48	40.98	176.23	166.73	174.16	43.46
		09/24/13	210.19	207.71	32.5	31.48	40.98	176.23	166.73	177.69	43.46
		01/27/14	210.19	207.71	33.05	31.48	40.98	176.23	166.73	177.14	43.46
		07/15/14	210.19	207.71	38.18	31.48	40.98	176.23	166.73	172.01	43.46
		11/19/14	210.19	207.71	36.99	31.48	40.98	176.23	166.73	173.2	43.46
		02/05/15	210.19	207.71	35.9	31.48	40.98	176.23	166.73	174.29	43.46
		05/05/15	210.19	207.71	36.55	31.48	40.98	176.23	166.73	173.64	43.46
		08/06/15	210.19	207.71	37.47	31.48	40.98	176.23	166.73	172.72	43.46
		02/02/16	210.19	207.71	37.35	31.48	40.98	176.23	166.73	172.84	43.46
		08/03/16	210.19	207.71	37.83	31.48	40.98	176.23	166.73	172.36	43.46
		02/22/18	210.19	207.71	38.65	31.48	40.98	176.23	166.73	171.54	43.46
		08/28/18	210.19	207.71	38.81	31.48	40.98	176.23	166.73	171.38	43.46
46WW10	S	05/24/13	213.69	211.40	23.2	14.19	23.69	197.21	187.71	190.49	25.98
		08/09/13	213.69	211.40	22	14.19	23.69	197.21	187.71	191.69	25.98
		09/20/13	213.69	211.40	23.42	14.19	23.69	197.21	187.71	190.27	25.98
		01/25/14	213.69	211.40	23.61	14.19	23.69	197.21	187.71	190.08	25.98
		07/17/14	213.69	211.4	23.57	14.19	23.69	197.21	187.71	190.12	25.98
		11/19/14	213.69	211.4	23.83	14.19	23.69	197.21	187.71	189.86	25.98
		02/03/15	213.69	211.40	23.95	14.19	23.69	197.21	187.71	189.74	25.98
		05/05/15	213.69	211.40	23.8	14.19	23.69	197.21	187.71	189.89	25.98
		08/04/15	213.69	211.40	23.57	14.19	23.69	197.21	187.71	190.12	25.98
		02/02/16	213.69	211.40	24.08	14.19	23.69	197.21	187.71	189.61	25.98
		08/03/16	213.69	211.40	24.17	14.19	23.69	197.21	187.71	189.52	25.98
		02/22/18	213.69	211.40	Dry	14.19	23.69	197.21	187.71	Dry	25.98
		08/29/18	213.69	211.40	Dry	14.19	23.69	197.21	187.71	Dry	25.98
46WW11	S	05/25/13	212.22	209.97	Dry	23.00	33	186.97	176.97	Dry	35.25
		08/14/13	212.22	209.97	25.63	23.00	33	186.97	176.97	186.59	35.25
		09/19/13	212.22	209.97	25.98	23.00	33	186.97	176.97	186.24	35.25
		01/28/14	212.22	209.97	25.35	23.00	33	186.97	176.97	186.87	35.25
		07/16/14	212.22	209.97	24.76	23.00	33	186.97	176.97	187.46	35.25
		11/18/14	212.22	209.97	25.8	23.00	33	186.97	176.97	186.42	35.25
		02/04/15	212.22	209.97	25.37	23.00	33	186.97	176.97	186.85	35.25
		05/06/15	212.22	209.97	24.48	23.00	33	186.97	176.97	187.74	35.25
		08/05/15	212.22	209.97	24.37	23.00	33	186.97	176.97	187.85	35.25
		02/01/16	212.22	209.97	25.25	23.00	33	186.97	176.97	186.97	35.25
		08/03/16	212.22	209.97	25.02	23.00	33	186.97	176.97	187.20	35.25
		02/20/18	212.22	209.97	26.0	23.00	33	186.97	176.97	186.27	35.25
		08/29/18	212.22	209.97	27.30	23.00	33	186.97	176.97	184.92	35.25

Table 2-2
Groundwater Elevation Data

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from Ground Surface)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)	Constructed Depth to Bottom of Screen (ft from TOC)
						Top	Bottom	Top	Bottom		
46WW12	S	05/28/13	209.57	207.10	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		08/10/13	209.57	207.10	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		09/20/13	209.57	207.10	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		01/25/14	209.57	207.10	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		07/15/14	209.57	207.1	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		11/19/14	209.57	207.1	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		02/03/15	209.57	207.10	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		05/05/15	209.57	207.10	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		08/04/15	209.57	207.10	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		02/01/16	209.57	207.10	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		08/04/16	209.57	207.10	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		02/20/18	209.57	207.1	Dry	18.97	28.47	188.13	178.63	Dry	30.94
		08/27/18	209.57	207.10	Dry	18.97	28.47	188.13	178.63	Dry	30.94
46WW13	S	05/28/13	208.38	205.96	30.05	21.42	30.92	184.54	175.04	178.33	33.34
		08/13/13	208.38	205.96	30.2	21.42	30.92	184.54	175.04	178.18	33.34
		09/23/13	208.38	205.96	30.35	21.42	30.92	184.54	175.04	178.03	33.34
		01/27/14	208.38	205.96	Dry	21.42	30.92	184.54	175.04	Dry	33.34
		07/15/14	208.38	205.96	Dry	21.42	30.92	184.54	175.04	Dry	33.34
		11/19/14	208.38	205.96	Dry	21.42	30.92	184.54	175.04	Dry	33.34
		02/03/15	208.38	205.96	Dry	21.42	30.92	184.54	175.04	Dry	33.34
		05/05/15	208.38	205.96	Dry	21.42	30.92	184.54	175.04	Dry	33.34
		08/05/15	208.38	205.96	Dry	21.42	30.92	184.54	175.04	Dry	33.34
		02/01/16	208.38	205.96	Dry	21.42	30.92	184.54	175.04	Dry	33.34
		08/04/16	208.38	205.96	Dry	21.42	30.92	184.54	175.04	Dry	33.34
		02/20/18	208.38	205.96	Dry	21.42	30.92	184.54	175.04	Dry	33.34
		08/27/18	208.38	205.96	Dry	21.42	30.92	184.54	175.04	Dry	33.34
46WW15	S	05/29/13	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
		08/10/13	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
		09/24/13	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
		01/25/14	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
		07/15/14	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
		11/19/14	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
		02/03/15	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
		05/05/15	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
		08/04/15	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
		02/01/16	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
		08/04/16	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
46WW16	I	07/01/14	208.23	205.57	37.00	40.66	50.56	164.91	155.01	171.23	53.22
		07/16/14	208.23	205.57	37.15	40.66	50.56	164.91	155.01	171.08	53.22
		11/18/14	208.23	205.57	38.00	40.66	50.56	164.91	155.01	170.23	53.22
		02/04/15	208.23	205.57	37.31	40.66	50.56	164.91	155.01	170.92	53.22
		05/05/15	208.23	205.57	37.31	40.66	50.56	164.91	155.01	170.92	53.22
		08/06/15	208.23	205.57	37.35	40.66	50.56	164.91	155.01	170.88	53.22
		2/22/2018	208.23	205.57	38.33	40.66	50.56	164.91	155.01	169.9	53.22
		8/28/2018	208.23	205.57	38.62	40.66	50.56	164.91	155.01	169.61	53.22
LHSMW08	I	05/29/13	207.85	205.57	30.48	40.66	50.56	164.91	155.01	177.37	52.84
		08/09/13	207.85	205.57	32.50	40.66	50.56	164.91	155.01	175.35	52.84
		09/21/13	207.85	205.57	31.70	40.66	50.56	164.91	155.01	176.15	52.84
LHSMW11	S	05/24/13	212.91	209.89	Dry	16.50	26.5	193.39	183.39	Dry	29.52
		08/10/13	212.91	209.89	Dry	16.50	26.5	193.39	183.39	Dry	29.52
		09/20/13	212.91	209.89	Dry	16.50	26.5	193.39	183.39	Dry	29.52
		01/25/14	212.91	209.89	Dry	16.50	26.5	193.39	183.39	Dry	29.52
		02/03/16	212.91	209.89	Dry	16.50	26.5	193.39	183.39	Dry	29.52
		08/05/16	212.91	209.89	26.46	16.50	26.5	193.39	183.39	186.45	29.52
LHSMW12	S	05/24/13	209.02	205.98	Dry	6.50	16.5	199.48	189.48	Dry	19.54
		08/10/13	209.02	205.98	Dry	6.50	16.5	199.48	189.48	Dry	19.54
		09/20/13	209.02	205.98	Dry	6.50	16.5	199.48	189.48	Dry	19.54
		01/25/14	209.02	205.98	Dry	6.50	16.5	199.48	189.48	Dry	19.54
		02/03/16	209.02	205.98	Dry	6.50	16.5	199.48	189.48	Dry	19.54
		08/05/16	209.02	205.98	Dry	6.50	16.5	199.48	189.48	Dry	19.54
LHSMW14	S	05/24/13	244.78	241.67	12.81	10.39	20.39	231.28	221.28	231.97	23.50
		08/09/13	244.78	241.67	14.92	10.39	20.39	231.28	221.28	229.86	23.50
		09/24/13	244.78	241.67	15.5	10.39	20.39	231.28	221.28	229.28	23.50
		02/03/16	244.78	241.67	9.55	10.39	20.39	231.28	221.28	235.23	23.50
		08/05/16	244.78	241.67	11.00	10.39	20.39	231.28	221.28	233.78	23.50
LHSMW15	S	05/25/13	226.65	223.68	Dry	14.50	24.5	209.18	199.18	Dry	27.47
		08/10/13	226.65	223.68	Dry	14.50	24.5	209.18	199.18	Dry	27.47
		09/20/13	226.65	223.68	Dry	14.50	24.5	209.18	199.18	Dry	27.47
		01/25/14	226.65	223.68	Dry	14.50	24.5	209.18	199.18	Dry	27.47
		02/03/16	226.65	223.68	Dry	14.50	24.5	209.18	199.18	Dry	27.47
		08/05/16	226.65	223.68	Dry	14.50	24.5	209.18	199.18	Dry	27.47

Table 2-2
Groundwater Elevation Data

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from Ground Surface)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)	Constructed Depth to Bottom of Screen (ft from TOC)
						Top	Bottom	Top	Bottom		
LHSMW16	S	05/29/13	232.19	229.3	16.7	14.49	24.49	214.81	204.81	215.49	27.38
		08/10/13	232.19	229.3	18.8	14.49	24.49	214.81	204.81	213.39	27.38
		09/25/13	232.19	229.3	20.95	14.49	24.49	214.81	204.81	211.24	27.38
		01/29/14	232.19	229.3	20.54	14.49	24.49	214.81	204.81	211.65	27.38
		11/19/14	232.19	229.3	21.26	14.49	24.49	214.81	204.81	210.93	27.38
		02/04/15	232.19	229.3	NM	14.49	24.49	214.81	204.81	NM	27.38
		05/05/15	232.19	229.3	NM	14.49	24.49	214.81	204.81	NM	27.38
		08/05/15	232.19	229.3	NM	14.49	24.49	214.81	204.81	NM	27.38
		02/03/16	232.19	229.3	14.22	14.49	24.49	214.81	204.81	217.97	27.38
		08/05/16	232.19	229.3	11.25	14.49	24.49	214.81	204.81	220.94	27.38
		02/22/18	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
		08/28/18	206.96	205.01	Dry	20.45	29.95	184.56	175.06	Dry	31.90
LHSMW17	S	11/18/14	214.58	NA	Dry	NA	NA	NA	NA	Dry	#VALUE!
		02/03/15	214.58	NA	Dry	NA	NA	NA	NA	Dry	#VALUE!
		05/05/15	214.58	NA	NM	NA	NA	NA	NA	NM	#VALUE!
		08/05/15	214.58	NA	Dry	NA	NA	NA	NA	Dry	#VALUE!
		02/02/16	214.58	NA	Dry	NA	NA	NA	NA	Dry	#VALUE!
		08/03/16	214.58	NA	Dry	NA	NA	NA	NA	Dry	#VALUE!
		02/22/18	214.58	NA	Dry	NA	NA	NA	NA	Dry	#VALUE!
		08/29/18	214.58	NA	Dry	NA	NA	NA	NA	Dry	#VALUE!
LHSMW18	S	05/28/13	215.35	212.38	25.62	14.85	27.85	197.53	184.53	189.73	30.82
		08/10/13	215.35	212.38	Dry	14.85	27.85	197.53	184.53	Dry	30.82
		09/20/13	215.35	212.38	Dry	14.85	27.85	197.53	184.53	Dry	30.82
		01/25/14	215.35	212.38	Dry	14.85	27.85	197.53	184.53	Dry	30.82
		07/17/14	215.35	212.38	Dry	14.85	27.85	197.53	184.53	Dry	30.82
		11/20/14	215.35	212.38	NM	14.85	27.85	197.53	184.53	NM	30.82
		02/03/15	215.35	212.38	Dry	14.85	27.85	197.53	184.53	Dry	30.82
		05/05/15	215.35	212.38	Dry	14.85	27.85	197.53	184.53	Dry	30.82
		08/05/15	215.35	212.38	Dry	14.85	27.85	197.53	184.53	Dry	30.82
		02/02/16	215.35	212.38	Dry	14.85	27.85	197.53	184.53	Dry	30.82
		03/28/16	215.35	212.38	25.15	14.85	27.85	197.53	184.53	190.2	30.82
		08/03/16	215.35	212.38	24.66	14.85	27.85	197.53	184.53	190.69	30.82
		02/22/18	215.35	212.38	Dry	14.85	27.85	197.53	184.53	Dry	30.82
		08/29/18	215.35	212.38	Dry	14.85	27.85	197.53	184.53	Dry	30.82
LHSMW19	S	05/28/13	212.96	209.8	24.5	20.00	30	189.80	179.80	188.46	33.16
		08/13/13	212.96	209.8	25.13	20.00	30	189.80	179.80	187.83	33.16
		09/23/13	212.96	209.8	26.38	20.00	30	189.80	179.80	186.58	33.16
		01/28/14	212.96	209.8	24.9	20.00	30	189.80	179.80	188.06	33.16
		07/16/14	212.96	209.8	24.55	20.00	30	189.80	179.80	188.41	33.16
		11/18/14	212.96	209.8	25.33	20.00	30	189.80	179.80	187.63	33.16
		02/04/15	212.96	209.8	24.9	20.00	30	189.80	179.80	188.06	33.16
		05/06/15	212.96	209.8	24.25	20.00	30	189.80	179.80	188.71	33.16
		08/05/15	212.96	209.8	24.36	20.00	30	189.80	179.80	188.60	33.16
		02/01/16	212.96	209.8	24.91	20.00	30	189.80	179.80	188.05	33.16
		08/03/16	212.96	209.8	24.84	20.00	30	189.80	179.80	188.12	33.16
		02/20/18	212.96	209.8	25.91	20.00	30	189.80	179.80	187.05	33.16
		08/28/18	212.96	209.8	26.61	20.00	30	189.80	179.80	186.35	33.16
LHSMW20	S	05/28/13	209.29	206.21	24.2	14.50	24.5	191.71	181.71	185.09	27.58
		08/10/13	209.29	206.21	Dry	14.50	24.5	191.71	181.71	Dry	27.58
		09/20/13	209.29	206.21	Dry	14.50	24.5	191.71	181.71	Dry	27.58
		01/25/14	209.29	206.21	Dry	14.50	24.5	191.71	181.71	Dry	27.58
		07/17/14	209.29	206.21	Dry	14.50	24.5	191.71	181.71	Dry	27.58
		11/20/14	209.29	206.21	Dry	14.50	24.5	191.71	181.71	Dry	27.58
		02/03/15	209.29	206.21	Dry	14.50	24.5	191.71	181.71	Dry	27.58
		05/05/15	209.29	206.21	Dry	14.50	24.5	191.71	181.71	Dry	27.58
		08/04/15	209.29	206.21	Dry	14.50	24.5	191.71	181.71	Dry	27.58
		02/01/16	209.29	206.21	Dry	14.50	24.5	191.71	181.71	Dry	27.58
		08/04/16	209.29	206.21	Dry	14.50	24.5	191.71	181.71	Dry	27.58
LHSMW21	S	05/28/13	207.67	204.66	19.87	19.61	29.61	185.05	175.05	187.8	32.62
		08/10/13	207.67	204.66	22.4	19.61	29.61	185.05	175.05	185.27	32.62
		09/25/13	207.67	204.66	23.6	19.61	29.61	185.05	175.05	184.07	32.62
		02/02/16	207.67	204.66	22.15	19.61	29.61	185.05	175.05	185.52	32.62
		08/05/16	207.67	204.66	21.12	19.61	29.61	185.05	175.05	186.55	32.62
LHSMW22	S	05/28/13	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		08/10/13	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		09/20/13	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		01/25/14	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		07/17/14	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		11/20/14	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		02/03/15	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		05/05/15	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		08/04/15	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		02/01/16	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		08/04/16	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		02/20/18	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88
		08/28/18	209.6	206.41	Dry	18.94	28.69	187.47	177.72	Dry	31.88

Table 2-2
Groundwater Elevation Data

Well ID	Shallow (S) Intermediate (I) Deep (D)	Sampling Date	Top of Casing Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Depth to Water (ft from TOC)	Screen Interval (ft from Ground Surface)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)	Constructed Depth to Bottom of Screen (ft from TOC)
						Top	Bottom	Top	Bottom		
LHSMW23	I	05/25/13	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		08/10/13	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		09/20/13	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		01/25/14	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		07/17/14	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		11/20/14	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		02/03/15	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		05/05/15	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		08/04/15	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		02/01/16	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		03/28/16	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		08/04/16	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		02/20/18	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
		8/288/18	208.82	205.8	Dry	22.18	42.18	183.62	163.62	Dry	45.20
LHSMW24	S	05/28/13	203.84	200.52	Dry	19.00	29	181.52	171.52	Dry	32.32
		08/10/13	203.84	200.52	Dry	19.00	29	181.52	171.52	Dry	32.32
		09/20/13	203.84	200.52	Dry	19.00	29	181.52	171.52	Dry	32.32
		01/25/14	203.84	200.52	Dry	19.00	29	181.52	171.52	Dry	32.32
		07/17/14	203.84	200.52	Dry	19.00	29	181.52	171.52	Dry	32.32
		02/02/16	203.84	200.52	27.88	19.00	29	181.52	171.52	175.96	32.32
		08/05/16	203.84	200.52	Dry	19.00	29	181.52	171.52	Dry	32.32
LHSMW25	I	02/22/18	201.97	199.07	30.9	19.20	39.2	179.87	159.87	171.07	42.10
		08/27/18	201.97	199.07	31.33	19.20	39	179.87	159.87	170.64	42.10
LHSMW27	S	05/28/13	202.1	199.2	Dry	10.50	20.5	188.70	178.70	Dry	23.40
		08/10/13	202.1	199.2	Dry	10.50	20.5	188.70	178.70	Dry	23.40
		09/20/13	202.1	199.2	Dry	10.50	20.5	188.70	178.70	Dry	23.40
		01/25/14	202.1	199.2	Dry	10.50	20.5	188.70	178.70	Dry	23.40
		07/18/14	202.1	199.2	Dry	10.50	20.5	188.70	178.70	Dry	23.40
		02/02/16	202.1	199.2	17.82	10.50	20.5	188.70	178.70	184.28	23.40
		08/05/16	202.1	199.2	Dry	10.50	20.5	188.70	178.70	Dry	23.40

Notes:
ft - feet
NM - not measured
TOC - top of casing
msl - mean seal level

Table 2-3
Groundwater and Surfacewater RA-O Results - 2018

		Location Code	46SW10			46WW02						46WW03					
		Sample ID	46SW10-022218			46WW02-022018			46WW02-180829			46WW03-022618			46WW03-180827		
		Sample Date	2/22/2018			2/20/2018			8/29/2018			2/26/2018			8/27/2018		
		Depth	0 - 0			37 - 47			38.25 - 38.39			93 - 103			42.05 - 42.24		
		Sample Purpose	REG			REG			REG			REG			REG		
Parameter	Units	Cleanup Level [1]	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALKALINITY																	
Alkalinity	mg/L	NV				6			5	U	U						
ANIONS																	
Chloride	mg/L	NV				21.4			35.9								
Nitrate	mg/L	NV				0.248			0.216								
Nitrite	mg/L	NV				0.05	U	U	0.1	U	U						
Sulfate	mg/L	NV				150			182								
Sulfide	mg/L	NV				1.44			16.1		J						
FIELD TESTS																	
Conductivity	mS/cm	NV				0.303			0.515			0.604			0.808		
Dissolved oxygen	mg/L	NV				0.65			0.56			0.4			0.54		
Oxidation-Reduction Potential	mV	NV				359			367			64			233		
pH	STD UNIT	NV				4.13			4.1			7.41			5.6		
Temperature	°C	NV				21.41			21.88			19.63			25.56		
Turbidity	NTU	NV				3.6			0			1.5			0		
Water Level at Reading Time	Ft BTOC	NV				37.94			38.49			41.62			42.24		
GASES																	
Carbon dioxide	µg/L	NV				420,000			740,000	!	J						
Ethane	µg/L	NV				0.47	U	U	0.47	U	UJ						
Ethene	µg/L	NV				0.55	U	U	0.55	U	UJ						
Methane	µg/L	NV				1	U	U	1	U	U						
METALS																	
Iron	mg/L	NV				0.579			0.743								
Manganese	mg/L	NV				0.167			0.298								
Ferrous Iron		NV							0.0						0.0		
PHOSPHORUS																	
Phosphorus	mg/L	NV				0.027	J	J	0.084								
TOTAL ORGANIC CARBON																	
Total organic carbon	mg/L	NV				8.81			10.3								
VOC																	
cis-1,2-Dichloroethene	µg/L	70	0.5	U	U	0.52	J	J	1.4			0.5	U	U	0.5	U	U
Trichloroethene	µg/L	5	0.5	U	U	21			24			0.5	U	U	0.5	U	U
Vinyl chloride	µg/L	2	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U

Table 2-3
Groundwater and Surfacewater RA-O Results - 2018

		Location Code	46WW05									46WW06					
		Sample ID	46WW05-022618			46WW05-022618-FD			46WW05-180828			46WW06-022618			46WW06-180827		
		Sample Date	2/26/2018			2/26/2018			8/28/2018			2/26/2018			8/27/2018		
		Depth	35.68 - 45.38			35.68 - 45.38			39.25 - 39.47			42.68 - 52.38			44.1 - 44.37		
		Sample Purpose	REG			FD			REG			REG			REG		
Parameter	Units	Cleanup Level [1]	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALKALINITY																	
Alkalinity	mg/L	NV	5	U	U	5	U	U	5	U	U						
ANIONS																	
Chloride	mg/L	NV	193			228			174								
Nitrate	mg/L	NV	2.58		J	0.05	U	UJ	0.1	U	U						
Nitrite	mg/L	NV	0.629			0.56			0.1	U	U						
Sulfate	mg/L	NV	4320			4220			4110								
Sulfide	mg/L	NV	1	U	U	1	U	U	1.52								
FIELD TESTS																	
Conductivity	mS/cm	NV	6.59						6.44			1.86			1.95		
Dissolved oxygen	mg/L	NV	0.23						0.55			0.71			0.32		
Oxidation-Reduction Potential	mV	NV	392						408			79			127		
pH	STD UNIT	NV	3.88						3.88			5.97			5.78		
Temperature	°C	NV	19.75						22.22			19.61			24.23		
Turbidity	NTU	NV	87.1						214			50.6			88.2		
Water Level at Reading Time	Ft BTOC	NV	39.25						39.47			40.14			41.37		
GASES																	
Carbon dioxide	µg/L	NV	560,000	E	J	590,000	E	J	1,200,000	E	J						
Ethane	µg/L	NV	0.47	U	U	0.47	U	U	0.47	U	U						
Ethene	µg/L	NV	0.55	U	U	0.55	U	U	0.55	U	U						
Methane	µg/L	NV	1	J	J	0.96	J	J	2.1								
METALS																	
Iron	mg/L	NV	7.62			7.16			11.2								
Manganese	mg/L	NV	14.1			14.2			12.9								
Ferrous Iron		NV							0.35						1.46		
PHOSPHORUS																	
Phosphorus	mg/L	NV	0.145			0.142			0.172								
TOTAL ORGANIC CARBON																	
Total organic carbon	mg/L	NV	9.26			9.4			9.1								
VOC																	
cis-1,2-Dichloroethene	µg/L	70	0.5	U	U	0.62	J	J	0.5	U	U	0.5	U	U	0.5	U	U
Trichloroethene	µg/L	5	14			14			6.4			0.5	U	U	0.5	U	U
Vinyl chloride	µg/L	2	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U

Table 2-3
Groundwater and Surfacewater RA-O Results - 2018

		Location Code	46WW07						46WW08								
		Sample ID	46WW07-022318			46WW07-180827			46WW08-022318			46WW08-022318-FD			46WW08-180827		
		Sample Date	2/23/2018			8/27/2018			2/23/2018			2/23/2018			8/27/2018		
		Depth	41.5 - 51			31.15 - 31.37			35.72 - 45.22			35.72 - 45.22			22.76 - 22.99		
		Sample Purpose	REG			REG			REG			FD			REG		
Parameter	Units	Cleanup Level [1]	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALKALINITY																	
Alkalinity	mg/L	NV															
ANIONS																	
Chloride	mg/L	NV															
Nitrate	mg/L	NV															
Nitrite	mg/L	NV															
Sulfate	mg/L	NV															
Sulfide	mg/L	NV															
FIELD TESTS																	
Conductivity	mS/cm	NV	0.926			1.23			3.82						3.63		
Dissolved oxygen	mg/L	NV	0.32			0.88			1.05						0.61		
Oxidation-Reduction Potential	mV	NV	81			118			31						111		
pH	STD UNIT	NV	5.72			5.58			5.97						5.83		
Temperature	°C	NV	19.1			20.46			20.57						23.88		
Turbidity	NTU	NV	10.2			143			1.1						0		
Water Level at Reading Time	Ft BTOC	NV	36.96			31.37			22.65						22.99		
GASES																	
Carbon dioxide	µg/L	NV															
Ethane	µg/L	NV															
Ethene	µg/L	NV															
Methane	µg/L	NV															
METALS																	
Iron	mg/L	NV															
Manganese	mg/L	NV															
Ferrous Iron		NV				0.86									0.23		
PHOSPHORUS																	
Phosphorus	mg/L	NV															
TOTAL ORGANIC CARBON																	
Total organic carbon	mg/L	NV															
VOC																	
cis-1,2-Dichloroethene	µg/L	70	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U
Trichloroethene	µg/L	5	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U
Vinyl chloride	µg/L	2	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U

Table 2-3
Groundwater and Surfacewater RA-O Results - 2018

		Location Code	46WW08			46WW09						46WW11					
		Sample ID	46WW08-180827FD			46WW09-022218			46WW09-180828			46WW11-022018			46WW11-180829		
		Sample Date	8/27/2018			2/22/2018			8/28/2018			2/20/2018			8/29/2018		
		Depth	22.76 - 22.99			42 - 48			38.81 - 39.05			23 - 33			27.3 - 27.55		
		Sample Purpose	FD			REG			REG			REG			REG		
Parameter	Units	Cleanup Level [1]	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALKALINITY																	
Alkalinity	mg/L	NV				210			204			32.9			32.4		
ANIONS																	
Chloride	mg/L	NV				514			469			213			201		
Nitrate	mg/L	NV				0.05	U	U	0.1	U	U	0.05	U	U	0.1	U	U
Nitrite	mg/L	NV				0.05	U	U	0.1	U	U	0.595			0.1	U	U
Sulfate	mg/L	NV				2460			2230			301			274		
Sulfide	mg/L	NV				1	U	U	2.52			1	U	U	15.3		J
FIELD TESTS																	
Conductivity	mS/cm	NV				4.77			4.8			0.983			1.37		
Dissolved oxygen	mg/L	NV				1.61			1.44			1.61			0.34		
Oxidation-Reduction Potential	mV	NV				261			210			266			279		
pH	STD UNIT	NV				5.48			5.68			4.62			4.62		
Temperature	°C	NV				18.31			25.65			21.96			21.9		
Turbidity	NTU	NV				17.1			38.3			0			0.7		
Water Level at Reading Time	Ft BTOC	NV				38.87			39.05			26.2			27.55		
GASES																	
Carbon dioxide	µg/L	NV				570,000	E	J	900,000			220,000			790,000		
Ethane	µg/L	NV				0.47	U	U	0.47	U	U	0.47	U	U	0.47	U	U
Ethene	µg/L	NV				0.55	U	U	0.55	U	U	0.55	U	U	0.55	U	U
Methane	µg/L	NV				1	U	U	1	U	U	6.9			39		
METALS																	
Iron	mg/L	NV				0.0797	J	J	2.36			0.222			0.544		
Manganese	mg/L	NV				2.58			3.21			0.052			0.124		
Ferrous Iron		NV							0.76						0.35		
PHOSPHORUS																	
Phosphorus	mg/L	NV				0.021	J	J	0.105			0.093			0.11		
TOTAL ORGANIC CARBON																	
Total organic carbon	mg/L	NV				4.53			6.2			1.9			4.07		J
VOC																	
cis-1,2-Dichloroethene	µg/L	70	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U
Trichloroethene	µg/L	5	0.5	U	U	0.5	U	U	0.5	U	U	18			13		
Vinyl chloride	µg/L	2	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U

Table 2-3
Groundwater and Surfacewater RA-O Results - 2018

		Location Code	46WW11			46WW16						LHSMW19					
		Sample ID	46WW11-180829FD			46WW16-022218			46WW16-180828			LHSMW19-022018			LHSMW19-180828		
		Sample Date	8/29/2018			2/22/2018			8/28/2018			2/20/2018			8/28/2018		
		Depth	27.3 - 27.55			42 - 51.5			38.62 - 38.82			20 - 30					
		Sample Purpose	FD			REG			REG			REG			REG		
Parameter	Units	Cleanup Level [1]	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALKALINITY																	
Alkalinity	mg/L	NV	34.9			529			322			422			508		
ANIONS																	
Chloride	mg/L	NV	205			301			290			280			263		
Nitrate	mg/L	NV	0.1	U	U	0.05	U	U	0.1	U	U	0.05	U	U	0.1	U	U
Nitrite	mg/L	NV	0.1	U	U	0.191			0.1	U	U	1.07					
Sulfate	mg/L	NV	282			696			702			562			525		
Sulfide	mg/L	NV	19.5		J	1	U	U	7.72			1.04			4.52		
FIELD TESTS																	
Conductivity	mS/cm	NV				2.73			2.64			2.25			2.43		
Dissolved oxygen	mg/L	NV				0.22			0.32			0.77			0.32		
Oxidation-Reduction Potential	mV	NV				-93			81			117			227		
pH	STD UNIT	NV				6.05			5.62			5.62			5.73		
Temperature	°C	NV				19.01			22.14			21.47			24.91		
Turbidity	NTU	NV				16.8			10.8			5.2			0		
Water Level at Reading Time	Ft BTOC	NV				38.52			38.82			26.16			26.88		
GASES																	
Carbon dioxide	µg/L	NV	730,000			420,000		J	840,000			580,000	E	J	890,000		
Ethane	µg/L	NV	0.47	U	U	0.47	U	U	0.47	U	U	0.47	U	U	0.47	U	U
Ethene	µg/L	NV	0.55	U	U	0.55	U	U	0.55	U	U	0.55	U	U	0.55	U	U
Methane	µg/L	NV	36			1	U	U	1	U	U	1	U	U	1	U	U
METALS																	
Iron	mg/L	NV	0.505			24			25.5			0.91			0.529		
Manganese	mg/L	NV	0.122			1.44			1.67			0.153			0.0719		
Ferrous Iron		NV							2.29						0.0		
PHOSPHORUS																	
Phosphorus	mg/L	NV	0.094			0.162			0.124			0.091			0.262		
TOTAL ORGANIC CARBON																	
Total organic carbon	mg/L	NV	5.69		J	3.89			5.99			2.82			3.65		
VOC																	
cis-1,2-Dichloroethene	µg/L	70	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U	1.7		
Trichloroethene	µg/L	5	12			0.5	U	U	0.5	U	U	2.4			8.8		
Vinyl chloride	µg/L	2	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U	0.5	U	U

Table 2-3
Groundwater and Surfacewater RA-O Results - 2018

		Location Code	LHSMW25					
		Sample ID	LHSMW25-022218			LHSMW25-180827		
		Sample Date	2/22/2018			8/27/2018		
		Depth	32 - 42			31.33 - 31.55		
		Sample Purpose	REG			REG		
Parameter	Units	Cleanup Level [1]	Result	Lab Qual	Val Qual	Result	Lab Qual	Val Qual
ALKALINITY								
Alkalinity	mg/L	NV						
ANIONS								
Chloride	mg/L	NV						
Nitrate	mg/L	NV						
Nitrite	mg/L	NV						
Sulfate	mg/L	NV						
Sulfide	mg/L	NV						
FIELD TESTS								
Conductivity	mS/cm	NV	2.18			2.17		
Dissolved oxygen	mg/L	NV	0.17			0.77		
Oxidation-Reduction Potential	mV	NV	144			159		
pH	STD UNIT	NV	5.80			5.62		
Temperature	°C	NV	18.87			23.07		
Turbidity	NTU	NV	24.3			14.2		
Water Level at Reading Time	Ft BTOC	NV	31.15			31.55		
GASES								
Carbon dioxide	µg/L	NV						
Ethane	µg/L	NV						
Ethene	µg/L	NV						
Methane	µg/L	NV						
METALS								
Iron	mg/L	NV						
Manganese	mg/L	NV						
Ferrous Iron		NV				0.75		
PHOSPHORUS								
Phosphorus	mg/L	NV						
TOTAL ORGANIC CARBON								
Total organic carbon	mg/L	NV						
VOC								
cis-1,2-Dichloroethene	µg/L	70	0.5	U	U	0.5	U	U
Trichloroethene	µg/L	5	0.5	U	U	0.5	U	U
Vinyl chloride	µg/L	2	0.5	U	U	0.5	U	U

Table 2-3
Groundwater and Surfacewater RA-O Results - 2018

Notes:

[1] The cleanup levels are shown for LHAAP-46 chemicals of concern and are equal to the maximum contaminant levels

Bold values indicate result exceeds the cleanup level

µg/L - micrograms per liter

C - degrees Celsius

cells/mL - cells per milliliter

DHC - Dehalococcoides

FD - field duplicate sample

Ft BTOC - feet below top of casing

ID - identification

J - The analyte was positively identified; the reported value is the estimated concentration of the constituent detected.

mg/L - milligrams per Liter

mS/cm - millisiemens per centimeter

mV - millivolts

NTU - nephelometric turbidity unit

NV - No value; the parameter is not a chemical of concern and is monitored for evaluation of MNA

REG - regular sample

SU - standard unit

SVOC - semivolatile organic compound

U - Not detected. The analyte was analyzed for, but not detected above the associated reporting limit.

UJ - The analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data have indicated that the "non-detect" may be inaccurate or imprecise. The non-detect result should be estimated.

ValQual - validation qualifier

VOC - volatile organic compound

Table 2-4
COC Concentrations

Location Code			46WW01												46WW02							
Sample ID			46WW01-981001		46WW01-981107		46WW01-981107FD		46WW01-FEB2007		46WW01-032916		46WW01-080416		46WW02-981106		46WW02-FEB2007		46WW02-102808		46WW02-052813	
Sample Date			10/1/1998		11/7/1998		11/7/1998		2/19/2007		3/29/2016		8/4/2016		11/6/1998		2/20/2007		10/28/2008		5/28/2013	
Location Description			Shallow												Site 46 - Central, inside site boundary. Intermediate Zone.							
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	1.2		1	U	1	U	2	U	0.5	U	0.5	U	1		1.4	J	1.45		1.76	
Trichloroethene	µg/L	5	6.6		1	U	1	U	2	U	0.5	U	0.5	U	24		28.9		31.2		30	
Vinyl chloride	µg/L	2	1	U	1	U	1	U	2	U	0.5	U	0.5	U	1	U	2	U	1	U	0.495	J

Table 2-4
COC Concentrations

Location Code			46WW02																				
Sample ID			46WW02-091913		46WW02-012714		46WW02-071514		46WW02-111814		46WW02-020515		46WW02-050615		46WW02-080515		46WW02-020116		46WW02-080416		46WW02-022018		46WW02-180829	
Sample Date			9/19/2013		1/27/2014		7/15/2014		11/18/2014		2/5/2015		5/6/2015		8/5/2015		2/1/2016		8/4/2016		2/20/2018		8/29/2018	
Location Description			Site 46 - Central, inside site boundary. Intermediate Zone.																				
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	1.91		2.09		1.72		1.97		2.08		1.44		1.37		1.28		1.31		0.52	J	1.4	
Trichloroethene	µg/L	5	37.4		35.2		32.8		38.2		37.6		24		20.3		16.6		20.7		21		24	
Vinyl chloride	µg/L	2	0.465	J	0.556	J	0.493	J	0.501	J	0.432	J	0.5	U	0.5	U	0.5	U	0.259	J	0.5	U	0.5	U

Table 2-4
COC Concentrations

Location Code			46WW03																		
Sample ID			46WW03-981106		46WW03-053013-FD		46WW03-053013		46WW03-092613		46WW03FD-012514		46WW03-012514		46WW03-071714		46WW03-112014		46WW03FD-112014		46WW03-020515	
Sample Date			11/6/1998		5/30/2013		5/30/2013		9/26/2013		1/25/2014		1/25/2014		7/17/2014		11/20/2014		11/20/2014		2/5/2015	
Location Description			Site 46 - Central, inside site boundary. Deep Zone																			
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	1	U	0.25	U	0.25	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	µg/L	5	1	U	0.25	U	0.25	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	µg/L	2	1	U	0.25	U	0.25	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

Location Code			46WW03														46WW04							
Sample ID			46WW03-050615		46WW03-080515		46WW03FD-080515		46WW03-020316		46WW03-080416		46WW03-022618		46WW03-180827		46WW04-981107		46WW04-FEB2007		46WW04F-052413		46WW04-092113	
Sample Date			5/6/2015		8/5/2015		8/5/2015		2/3/2016		8/4/2016		2/26/2018		8/27/2018		11/7/1998		2/19/2007		5/24/2013		9/21/2013	
Location Description			Site 46 - Central, inside site boundary. Deep Zone														Shallow							
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1	U	2	U	0.5	U	0.5	U
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.71		2	U	0.5	U	0.5	U
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1	U	2	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

Location Code			46WW04										46WW05									
Sample ID			46WW04-012514		46WW04-071814		46WW04-050615		46WW04-080515		46WW04-020316		46WW05-100908		46WW05-053013		46WW05-092413		46WW05-012814		46WW05-071614	
Sample Date			1/25/2014		7/18/2014		5/6/2015		8/5/2015		2/3/2016		10/9/2008		5/30/2013		9/24/2013		1/28/2014		7/16/2014	
Location Description			Shallow										Site 46 - N, inside site boundary. Intermediate Zone.									
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.72		10.2		8.12		10.3		9.74	
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	5.9		144		112		131		130	
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1	U	2.14		1.79		2.53		2.09	

Table 2-4
COC Concentrations

	Location Code	46WW05																		46WW06			
	Sample ID	46WW05-111914		46WW05-020515		46WW05-050515		46WW05-080615		46WW05-020116		46WW05-080316		46WW05-022618		46WW05-022618-FD		46WW05-180828		46WW06-100908		46WW06-052413	
	Sample Date	11/19/2014		2/5/2015		5/5/2015		8/6/2015		2/1/2016		8/3/2016		2/26/2018		2/26/2018		8/28/2018		10/9/2008		5/24/2013	
	Location Description	Site 46 - N, inside site boundary. Intermediate Zone.																		Site 46 - W, inside site boundary. Intermediate Zone.			
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	9.55		10.9		7		3.87		3.12		1.86		0.5	U	0.62	J	0.5	U	1	U	0.5	U
Trichloroethene	µg/L	5	128		143		80.5		34		46.4		23.6		14		14		6.4		1	U	0.5	U
Vinyl chloride	µg/L	2	1.59		1.72		0.956	J	0.274	J	0.832	J	0.522	J	0.5	U	0.5	U	0.5	U	1	U	0.5	U

Table 2-4
COC Concentrations

Location Code			46WW06																				
Sample ID			46WW06-092513		46WW06-012514		46WW06-071714		46WW06FD-071714		46WW06FD-111914		46WW06-111914		46WW06-020615		46WW06-050115		46WW06-080415		46WW06-020216		46WW06-080416	
Sample Date			9/25/2013		1/25/2014		7/17/2014		7/17/2014		11/19/2014		11/19/2014		2/6/2015		5/1/2015		8/4/2015		2/2/2016		8/4/2016	
Location Description			Site 46 - W, inside site boundary. Intermediate Zone.																				
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

	Location Code		46WW06						46WW07															
	Sample ID		46WW06FD-080416		46WW06-022618		46WW06-180827		46WW07-052513-FD		46WW07-052513		46WW07-091913		46WW07-012714		46WW07-071814		46WW07FD-071814		46WW07-112014		46WW07-020315	
	Sample Date		8/4/2016		2/26/2018		8/27/2018		5/25/2013		5/25/2013		9/21/2013		1/27/2014		7/18/2014		7/18/2014		11/20/2014		2/3/2015	
	Location Description		Site 46 - W, inside site boundary. Intermediate Zone.						Inside site boundary. Intermediate Zone.															
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

	Location Code		46WW07												46WW08						46WW08			
	Sample ID		46WW07-050115		46WW07-080415		46WW07-020216		46WW07-080216		46WW07-022318		46WW07-180827		46WW08-052513		46WW08-092113		46WW08-092113-FD		46WW08-012814		46WW08FD-012814	
	Sample Date		5/1/2015		8/4/2015		2/2/2016		8/2/2016		2/23/2018		8/27/2018		5/25/2013		9/21/2013		9/21/2013		1/28/2014		1/28/2014	
	Location Description		Inside site boundary. Intermediate Zone.												North North/West. Inside site boundary. Intermediate Zone.						North North/West. Inside site boundary. Intermediate Zone.			
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

Location Code			46WW08																		
Sample ID			46WW08-071814		46WW08-112014		46WW08-020315		46WW08FD-020315		46WW08FD-050115		46WW08-050115		46WW08-080415		46WW08-020316		46WW08-080216		46WW08-022318-FD	
Sample Date			7/18/2014		11/20/2014		2/3/2015		2/3/2015		5/1/2015		5/1/2015		8/4/2015		2/3/2016		8/2/2016		2/23/2018	
Location Description			North North/West. Inside site boundary. Intermediate Zone.																			
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

Location Code			46WW08						46WW09												
Sample ID			46WW08-022318		46WW08-180827		46WW08-180827FD		46WW09-053013		46WW09-092413		46WW09-012714		46WW09-071514		46WW09-111914		46WW09-020515		46WW09-050515	
Sample Date			2/23/2018		8/27/2018		8/27/2018		5/30/2013		9/24/2013		1/27/2014		7/15/2014		11/19/2014		2/5/2015		5/5/2015	
Location Description			North North/West. Inside site boundary. Intermediate Zone.						Central. Inside site boundary. Intermediate Zone.												
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	1	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	1	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	1	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

Location Code			46WW09										46WW10											
Sample ID			46WW09-080615		46WW09-020216		46WW09-080316		46WW09-022218		46WW09-180828		46WW10-052513		46WW10-092113		46WW10-012514		46WW10-071714		46WW10-112014		46WW10-020415	
Sample Date			8/6/2015		2/2/2016		8/3/2016		2/22/2018		8/28/2018		5/25/2013		9/21/2013		1/25/2014		7/17/2014		11/20/2014		2/4/2015	
Location Description			Central. Inside site boundary. Intermediate Zone.										Shallow											
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

	Location Code		46WW10										46WW11											
	Sample ID		46WW10FD-050615		46WW10-050615		46WW10-080515		46WW10-020316		46WW10-080416		46WW11-081413		46WW11-091913		46WW11-012814		46WW11-071614		46WW11-111814		46WW11-020415	
	Sample Date		5/6/2015		5/6/2015		8/5/2015		2/3/2016		8/4/2016		8/14/2013		9/19/2013		1/28/2014		7/16/2014		11/18/2014		2/4/2015	
	Location Description		Shallow										Central. Inside in site boundary.											
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1.56		1.11		2.04		2.12		1.28		1.99	
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	85.9		79.8		87.5		90.6		70.7		63.6	
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

			Location Code	46WW11														46WW13				46WW14			
			Sample ID	46WW11-050615		46WW11-080515		46WW11-020116		46WW11-080316		46WW11-022018		46WW11-180829FD		46WW11-180829		46WW13-052913		46WW13-092413		46WW14-052913		46WW14-091913	
			Sample Date	5/6/2015		8/5/2015		2/1/2016		8/3/2016		2/20/2018		8/29/2018		8/29/2018		5/29/2013		9/24/2013		5/29/2013		9/19/2013	
			Location Description	Central. Inside in site boundary.														Shallow				Intermediate			
Parameter	Units	MCL		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70		1.4		0.749	J	0.578	J	0.325	J	0.5	U	0.5	U	0.5	U	37.3		35.5		1	U	0.5	U
Trichloroethene	µg/L	5		45.3		26.3		20.5		21.2		18		12		13		107		103		1	U	0.5	U
Vinyl chloride	µg/L	2		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	13.1		9.83		1	U	0.5	U

Table 2-4
COC Concentrations

Location Code			46WW14																		
Sample ID			46WW14-012714		46WW14-071514		46WW14-111914		46WW14FD-020615		46WW14-020615		46WW14-050515		46WW14FD-020216		46WW14-020216		46WW14-080216		46WW14FD-080216	
Sample Date			1/27/2014		7/15/2014		11/19/2014		2/6/2015		2/6/2015		5/5/2015		2/2/2016		2/2/2016		8/2/2016		8/2/2016	
Location Description			Intermediate																		
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

Location Code			46WW16																		LHSMW08			
Sample ID			46WW16-070114		46WW16-071614		46WW16-111814		46WW16-050515		46WW16-080615		46WW16-020116		46WW16-080316		46WW16-022218		46WW16-180828		LHSMW08-092113		LHSMW08-092113	
Sample Date			7/1/2014		7/16/2014		11/18/2014		5/5/2015		8/6/2015		2/1/2016		8/3/2016		2/22/2018		8/28/2018		8/13/1996		8/13/1996	
Location Description			North. Inside site boundary. Intermediate Zone.																		Intermediate			
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.2	U	0.2	U
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.25	U	0.25	U
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.24	U	0.24	U

Table 2-4
COC Concentrations

	Location Code		LHSMW08				LHSMW11								LHSMW12				LHSMW14					
	Sample ID		LHSMW08-092113		LHSMW08-092113		LHSMW11-960813		LHSMW11-980514		LHSMW11-980514FD		LHSMW11-031508		LHSMW12-960813		LHSMW12-980514		LHSMW14-941129		LHSMW14-960814		LHSMW14-960814FD	
	Sample Date		5/13/1998		9/21/2013		8/13/1996		5/14/1998		5/14/1998		3/15/2008		8/13/1996		5/14/1998		11/29/1994		8/14/1996		8/14/1996	
	Location Description		Intermediate				Shallow								Shallow				Shallow					
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	1	U	0.5	U	0.2	U	1	U	1	U	1	U	0.2	U	1	U	NA	U	0.2	U	0.2	U
Trichloroethene	µg/L	5	1	U	0.5	U	0.25	U	1	U	1	U	1	U	0.25	U	1	U	5		0.25	U	0.25	U
Vinyl chloride	µg/L	2	1	U	0.5	U	0.24	U	1	U	1	U	1	U	0.24	U	1	U	NA	U	0.24	U	0.24	U

Table 2-4
COC Concentrations

			Location Code	LHSMW14				LHSMW15						LHSMW16						LHSMW17					
			Sample ID	LHSMW14-980514		LHSMW14-092413		LHSMW15-960815		LHSMW15-980514		LHSMW15-102708		LHSMW16-941129		LHSMW16-960815		LHSMW16-980514		LHSMW17-960815		LHSMW17-980514		LHSMW17-000524	
			Sample Date	5/14/1998		9/24/2013		8/15/1996		5/14/1998		10/27/2008		11/29/1994		8/15/1996		5/14/1998		8/15/1996		5/14/1998		5/24/2000	
			Location Description	Shallow				Shallow						Shallow						Shallow					
Parameter	Units	MCL		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70		1	U	0.5	U	0.2	U	1	U	1	U	NA	U	0.2	U	0.2	U	0.2	U	1	U	1	U
Trichloroethene	µg/L	5		1	U	0.5	U	0.25	U	1	U	1	U	5		0.25	U	0.25	U	0.25	U	1	U	1	U
Vinyl chloride	µg/L	2		1	U	0.5	U	0.24	U	1	U	1	U	NA	U	0.24	U	0.24	U	0.24	U	1	U	1	U

Table 2-4
COC Concentrations

	Location Code		LHSMW17						LHSMW18												LHSMW19			
	Sample ID		LHSMW17-000524FD		LHSMW17-001002FD		LHSMW17-001003		LHSMW18-941202		LHSMW18-960212		LHSMW18-960815		LHSMW18-980514		LHSMW18-FEB2007		LHSMW18-032916		LHSMW19-941202		LHSMW19-960206	
	Sample Date		5/24/2000		10/2/2000		10/2/2000		12/2/1994		2/12/1996		8/15/1996		5/14/1998		FEB2007		3/29/2016		12/2/1994		2/6/1996	
	Location Description		Shallow						Shallow												Central. Inside site boundary.			
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	9.6		1	U	1	U	NA		4.5		6.1		9.8		1.5	J	1.28		NA		NA	
Trichloroethene	µg/L	5	4		1	U	1	U	14		21		27.5		38		4.8		3.35		26		77	
Vinyl chloride	µg/L	2	100	U	1	U	1	U	NA		1	U	0.68		0.71		2	U	0.5	U	NA		NA	

Table 2-4
COC Concentrations

Location Code			LHSMW19																					
Sample ID			LHSMW19-960815		LHSMW19-980515		LHSMW19-FEB2007		LHSMW19-110620		LHSMW19-052813		LHSMW19-092413		LHSMW19-012814		LHSMW19-071614		LHSMW19-111814		LHSMW19-020415		LHSMW19-050615	
Sample Date			8/15/1996		5/15/1998		2/20/2007		6/20/2011		5/28/2013		9/24/2013		1/28/2014		7/16/2014		11/18/2014		2/4/2015		5/6/2015	
Location Description			Central. Inside site boundary.																					
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.2	U	1	U	2	U	2.98		1.45		2.44		2.15		1.52		1.59		1.9		0.944	J
Trichloroethene	µg/L	5	47.1		70		85.5		66.4		32.3		40.9		33.5		28.6		31.2		31.3		13.4	
Vinyl chloride	µg/L	2	0.24	U	1	U	2	U	1	U	0.25	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

Location Code			LHSMW19										LHSMW20						LHSMW21					
Sample ID			LHSMW19-080515		LHSMW19-020116		LHSMW19-080316		LHSMW19-022018		LHSMW19-180828		LHSMW20-960815		LHSMW20-980515		LHSMW20-102708		LHSMW21-960815		LHSMW21-980515		LHSMW21-092513	
Sample Date			8/5/2015		2/1/2016		8/3/2016		2/20/2018		8/28/2018		8/15/1996		5/15/1998		10/27/1998		8/15/1996		5/15/1998		9/25/2013	
Location Description			Central. Inside site boundary.										Shallow						Shallow					
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	2.3		1.92		0.967	J	0.5	U	1.7		0.2	U	1	U	1	U	0.2	U	1	U	30.6	
Trichloroethene	µg/L	5	26.2		24.2		8.53		2.4		8.8		0.25	U	1	U	1	U	0.25	U	1	U	1.64	
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.24	U	1	U	1	U	0.24	U	1	U	1.44	

Table 2-4
COC Concentrations

Location Code			LHSMW22								LHSMW23											
Sample ID			LHSMW22-960207		LHSMW22-960815		LHSMW22-980515		LHSMW22-FEB2007		LHSMW23-941204		LHSMW23-941204FD		LHSMW23-960815		LHSMW23-980515		LHSMW23-FEB2007		LHSMW23-102808	
Sample Date			2/7/1996		5/15/1996		5/15/1998		2/19/2007		12/4/1994		12/4/1994		8/15/1996		5/15/1998		9/25/2013		9/25/2013	
Location Description			Shallow								Intermediate											
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	NA		0.54		1.1		2	U	NA		NA		0.2	U	1	U	2	U	0.614	J
Trichloroethene	µg/L	5	1		1.7		3.1		2	U	5	U	5	U	0.25	U	1.3		1.4	J	2.51	
Vinyl chloride	µg/L	2	NA		0.24	U	1	U	2	U	NA		NA		0.24	U	1	U	2	U	0.412	J

Table 2-4
COC Concentrations

Location Code			LHSMW24						LHSMW25															
Sample ID			LHSMW24-941204		LHSMW24-980820		LHSMW24-980515		LHSMW25-941204		LHSMW25-960820		LHSMW25-980515		LHSMW25-102808		LHSMW25-102808-QA		LHSMW25-052513		LHSMW25-092513		LHSMW25-092513-FD	
Sample Date			12/4/1994		8/20/1994		5/15/1998		12/4/1994		8/20/1996		5/15/1998		10/28/2008		10/28/2008		5/25/2013		9/25/2013		9/25/2013	
Location Description			Shallow						East. Inside site boundary. Intermediate zone.															
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	NA		0.2	U	1	U	NA		0.2	U	1	U	1	U	1	U	0.5	U	0.5	U	0.5	U
Trichloroethene	µg/L	5	5	U	0.25	U	1	U	5	U	0.25	U	1	U	1	U	1	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	µg/L	2	NA		0.24	U	1	U	NA		0.24	U	1	U	1	U	1	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

Location Code			LHSMW25																		
Sample ID			LHSMW25-012514		LHSMW25-071814		LHSMW25-112014		LHSMW25-020615		LHSMW25-050115		LHSMW25-080415		LHSMW25FD-080415		LHSMW25-020216		LHSMW25FD-020216		LHSMW25-080416	
Sample Date			1/25/2014		7/18/2014		11/20/2014		2/6/2015		5/1/2015		8/4/2015		8/4/2015		2/2/2016		2/2/2016		8/4/2016	
Location Description			East. Inside site boundary. Intermediate zone.																			
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table 2-4
COC Concentrations

Location Code			LHSMW25				LHSMW27			
Sample ID			LHSMW25-022218		LHSMW25-180827		LHSMW27-980820		LHSMW27-980515	
Sample Date			2/22/2018		8/27/2018		8/20/1998		8/27/2018	
Location Description			East. Inside site boundary. Intermediate zone.				Shallow			
Parameter	Units	MCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	0.2	U	1	U
Trichloroethene	µg/L	5	0.5	U	0.5	U	0.25	U	1	U
Vinyl chloride	µg/L	2	0.5	U	0.5	U	0.24	U	1	U

Table 2-4
COC Concentrations

Notes:

Blue Highlighting Indicates concentrations above the MCL.

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

µg/L - micrograms per liter

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.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

ppb - parts per billion

1 ppb - 1 µg/L

Table 2-5
Well Maintenance Activities Year 4 RA-O

Well ID	Date Inspected	Pads	Bollards	Protective Casings	Locks	Date Mowed	Photos	Comments
46WW01	8/27/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW02	8/29/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW03	8/27/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW04	8/29/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW05	8/28/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW06	8/27/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW07	8/27/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW08	8/27/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW09	8/28/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW10	8/29/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW11	8/29/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW12	8/27/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW13	8/27/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW15	8/28/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
46WW16	8/28/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
LHSMW17	8/29/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
LHSMW18	8/29/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
LHSMW19	8/28/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
LHSMW22	8/28/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	
LHSMW23	8/28/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	May have an obstruction
LHSMW25	8/27/2018	Good	Good	Good	In Place	2/16/2018 and 8/20/2018	Yes	

Notes:

ID - identification

RA-O - remedial action operation

Table 2-6
Proposed Groundwater RA-O Semiannual Sampling

Well ID	Groundwater Zone	VOC	Field Parameters	MNA
46WW01	Shallow	X	X	
46WW04	Shallow	X	X	
46WW10	Shallow	X	X	
46WW11	Shallow	X	X	X
46WW12	Shallow	X	X	
46WW13	Shallow	X	X	
46WW15	Shallow	X	X	
LHSMW17	Shallow	X	X	
LHSMW18 [a]	Shallow	X	X	
LHSMW19	Shallow	X	X	
LHSMW21 [b]	Shallow	X	X	X
LHSMW22	Shallow	X	X	
46WW02	Intermediate	X	X	X
46WW05	Intermediate	X	X	X
46WW06	Intermediate	X	X	
46WW07	Intermediate	X	X	
46WW08	Intermediate	X	X	
46WW09	Intermediate	X	X	X
46WW16	Intermediate	X	X	X
LHSMW23	Intermediate	X	X	
LHSMW25	Intermediate	X	X	
46WW03	Deep	X	X	
46SW10 [c]	Surface Water	X	X	

Notes:

Field parameters to be monitored for all wells: pH, temperature, conductivity, turbidity, oxidation-reduction potential (ORP), dissolved oxygen (DO), and ferrous iron.

MNA parameters include nitrate, sulfate, chloride, TOC, and dissolved gases (methane, ethane, ethene, carbon dioxide).

[a] LHSMW18 only sampled if LHSMW17 is dry

[b] LHSMW21 is proposed to replace LHSMW20 which has been persistently dry

[c] 46SW10 is only sampled if surface water is present and the GW elevation at either LHSMW21 or 46WW16 exceeds 197 feet.

ID - identification

MNA - monitored natural attenuation

RA-O - remedial action operation

TOC - total organic carbon

VOC - volatile organic compounds

X - well will be analyzed for that parameter

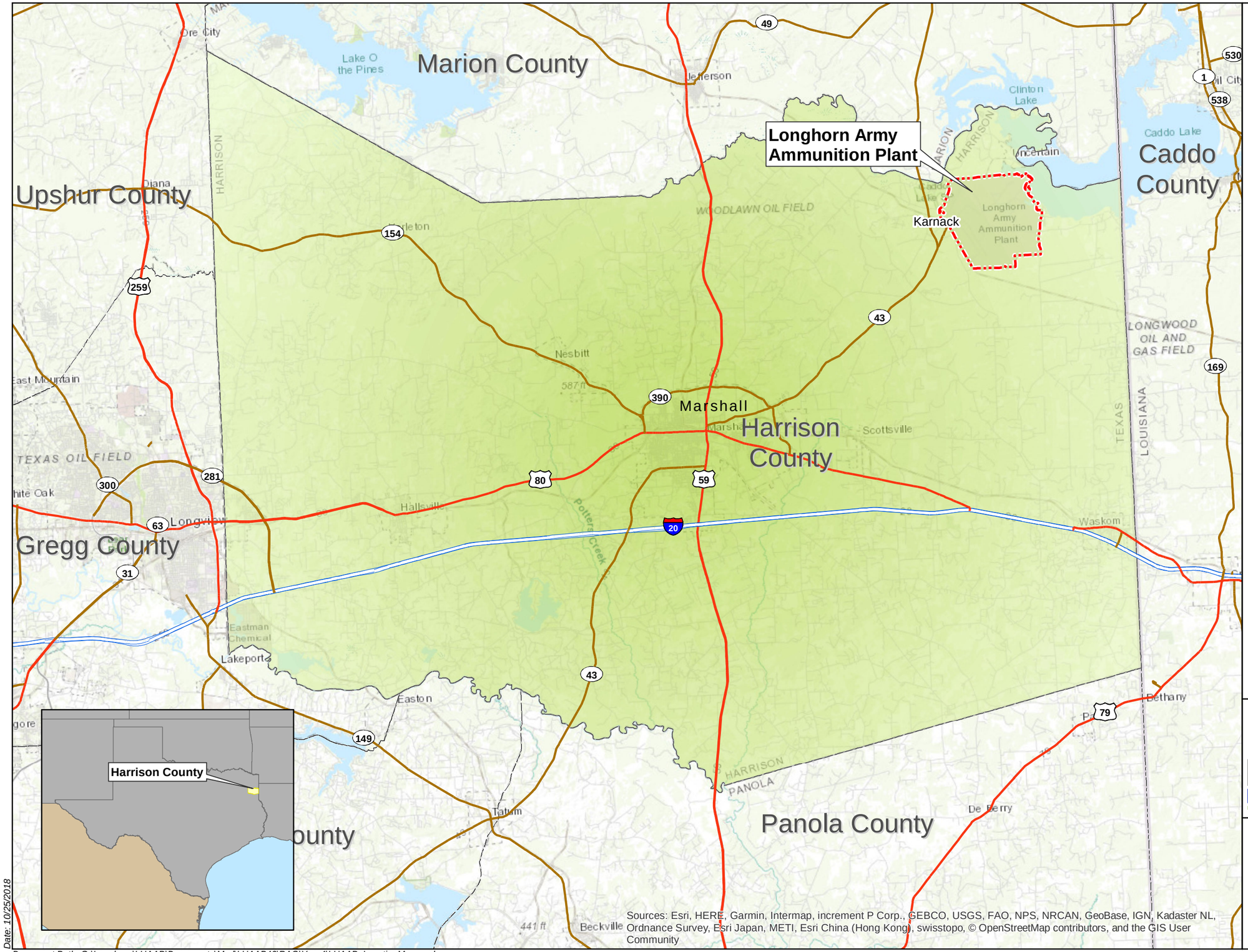
Table 3-1
Mann-Kendall Trend Summary

Monitoring Well	Groundwater Zone	TCE
46WW11	Shallow	**Significant Decrease**
LHSMW19	Shallow	**Significant Decrease**
46WW02	Intermediate	Not trend
46WW05	Intermediate	**Significant Decrease**

Notes:

TCE - trichloroethene

Figures



Note:
1. RA-O = Remedial Action Operations

N

0 2 4 Miles

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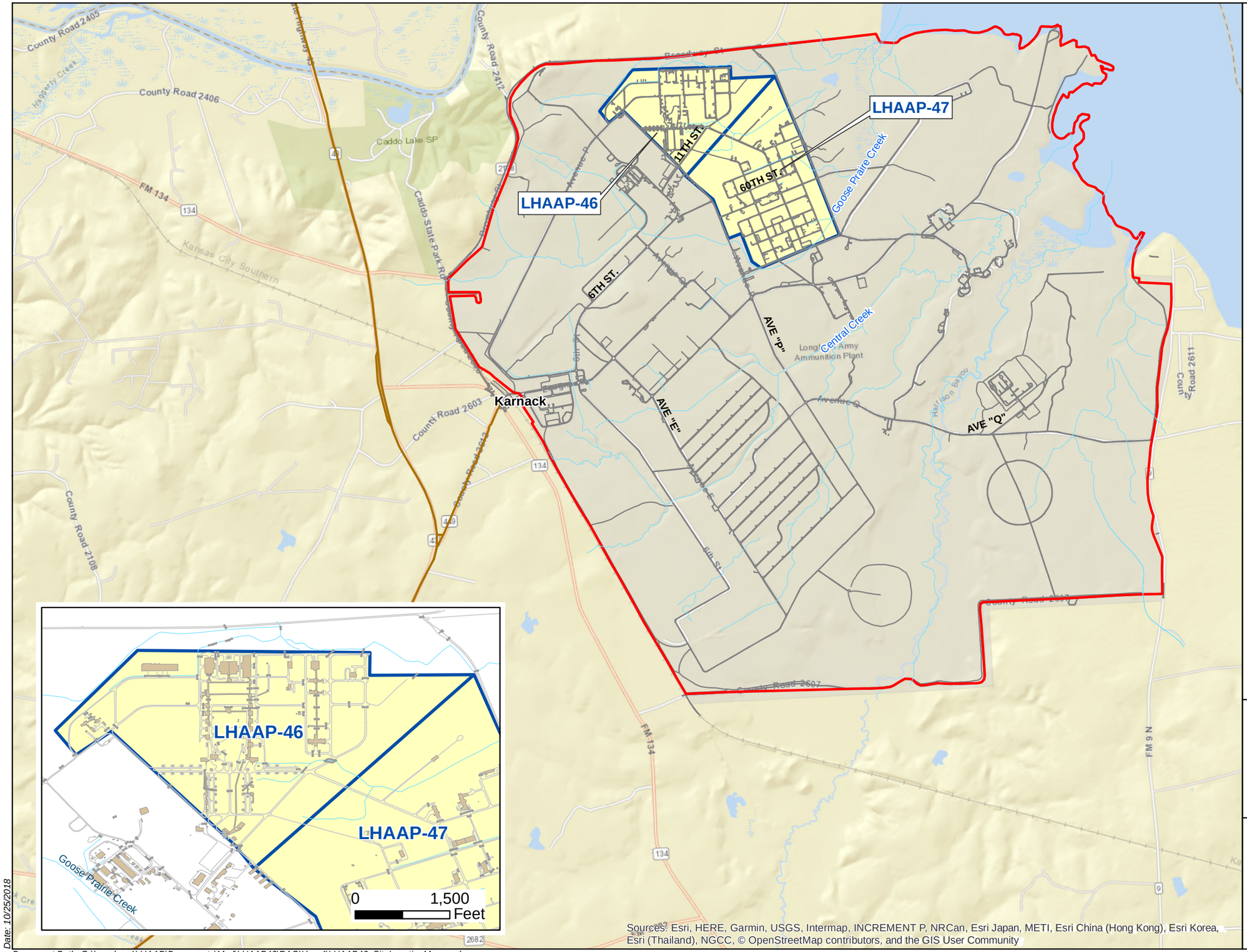
Figure 1-1

LHAAP Location Map
Fourth Annual RA-O Report
LHAAP-46

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 10/25/2018

Document Path: G:\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year4\LHAAP_LocationMap.mxd



Stream
Road
LHAAP Boundary
LHAAP-46 and LHAAP-47 Site Boundaries

Note:
1. RA-O = Remedial Action Operations

N

0 1,500 3,000 Feet

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

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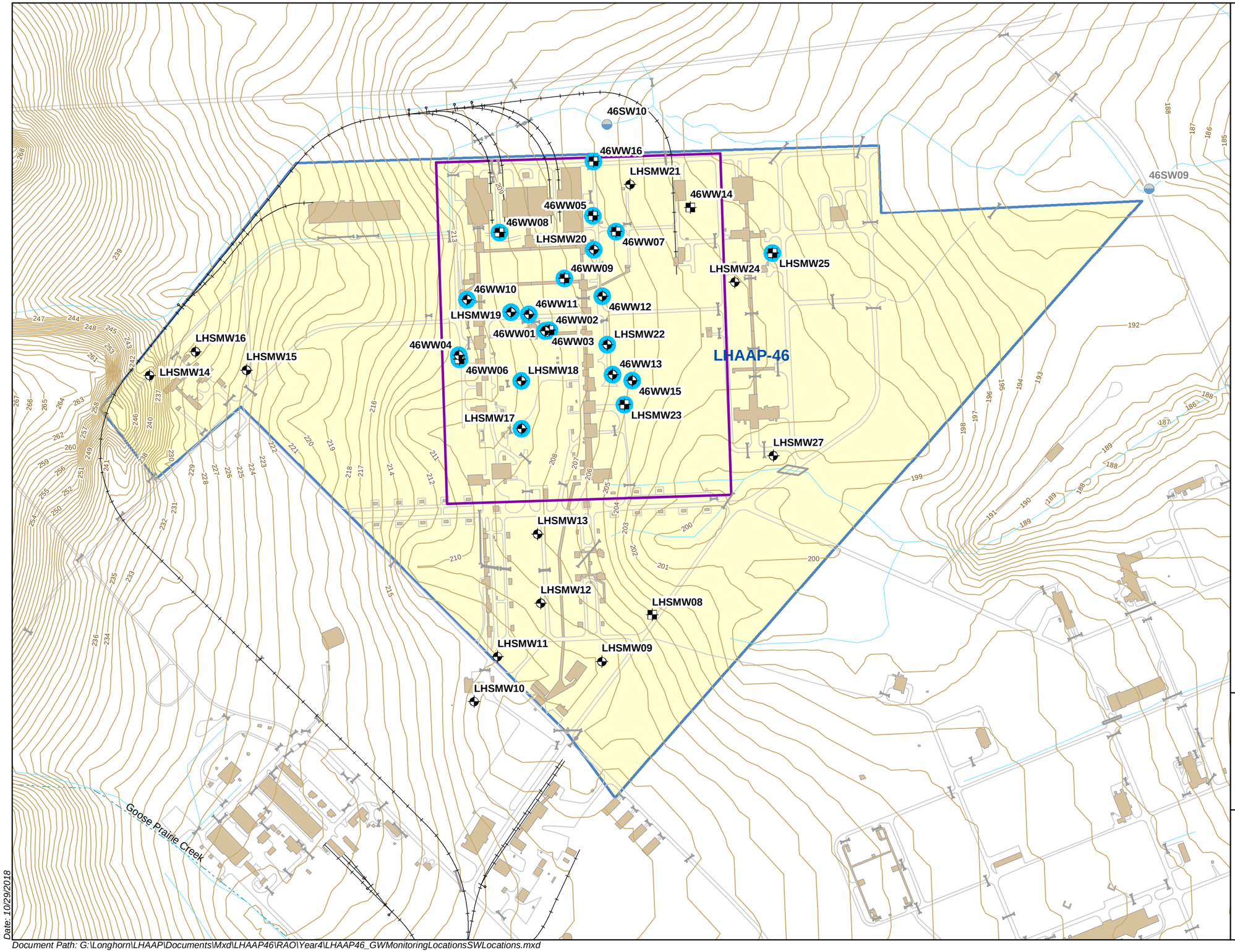
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Figure 1-2

LHAAP Site Vicinity Map
Fourth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 10/25/2018

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- Shallow Monitoring Well
- Intermediate Monitoring Well
- Deep Monitoring Well
- RA-O Monitoring Well
- Surface Water Sample Location
- Former Railroad Location
- Culvert
- Surveyed Land Use Control Boundary
- Stream
- Surface Elevation Lines (in feet above mean sea level)
- Goose Prairie Creek
- Roads
- Former Buildings
- LHAAP-67 Site Boundary

Note:
1. RA-O = Remedial Action Operations
2. Surface water sample location 46SW10 is the only surface water sampling location used for LHAAP-46. Location 46SW09 is shown for clarity, but is not part of the current monitoring network

N

0 250 500 Feet

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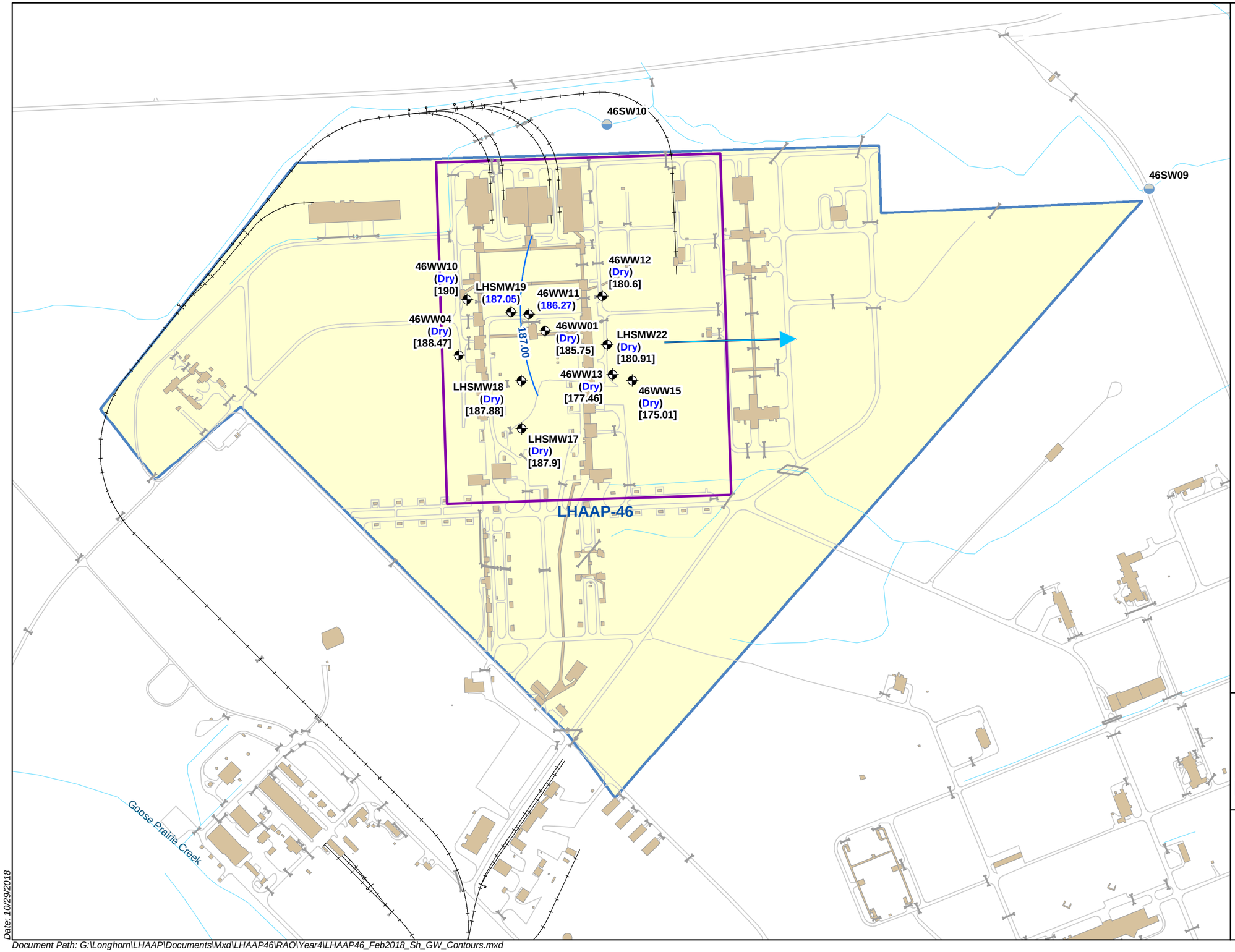
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Figure 2-1
Groundwater Monitoring Wells and Surface Water Locations
Fourth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 10/29/2018

Document Path: G:\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year4\LHAAP46_GWMonitoringLocationsSWLocations.mxd



- Shallow Monitoring Well
- Surface Water Sample Location
- Former Railroad Location
- Historical Groundwater Flow Direction
- Groundwater Contour
- Culvert
- Surveyed Land Use Control Boundary
- Stream
- Roads
- Former Buildings
- LHAAP-67 Site Boundary

186.27 Groundwater Elevation (ft msl)
[177.46] Elevation of Well Screen Bottom for Dry Well

Note:
1. RA-O = Remedial Action Operations

N

0 250 500 Feet

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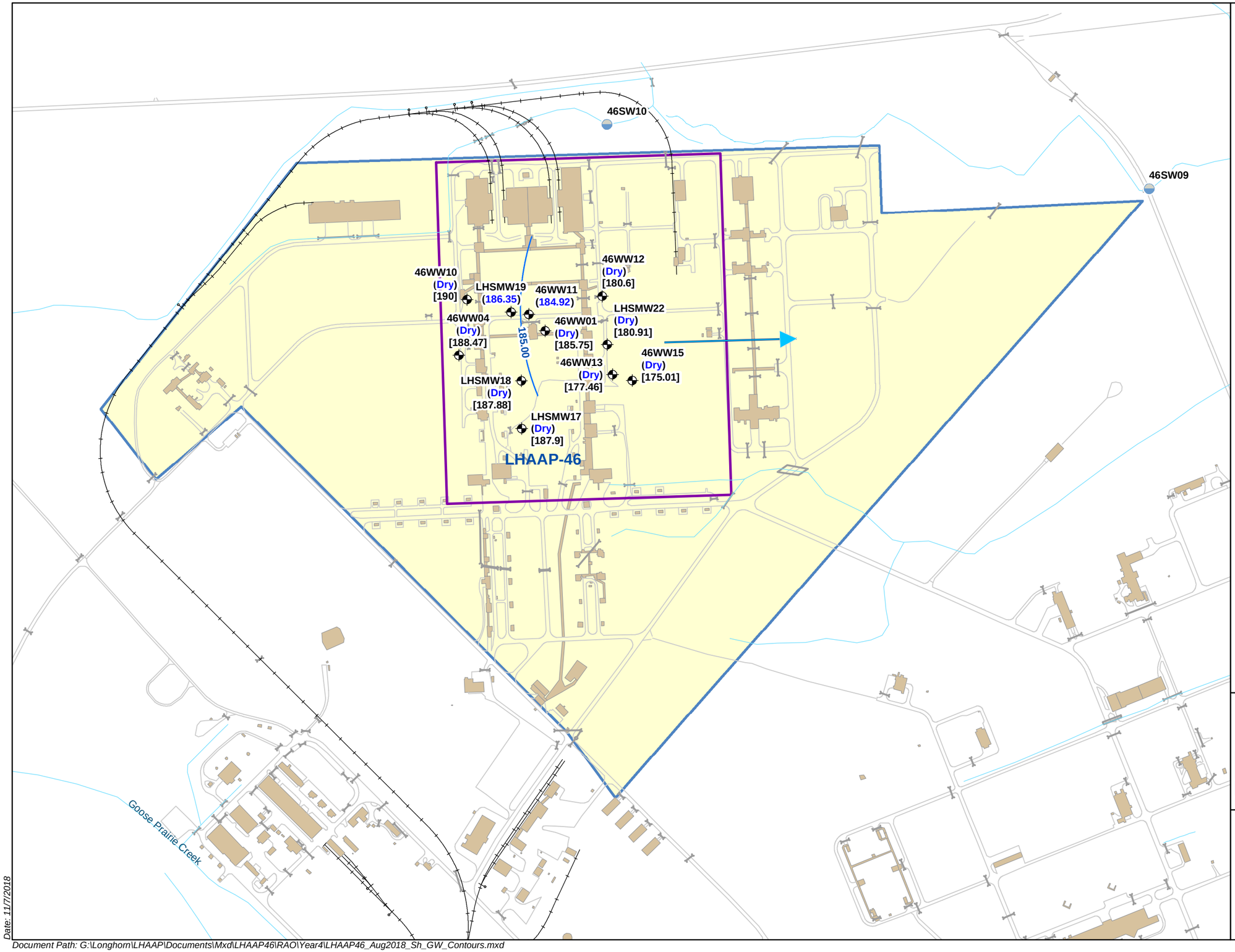
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Figure 2-2
Shallow Zone Potentiometric Map – February 2018
Fourth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 10/29/2018

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- Shallow Monitoring Well
- Surface Water Sample Location
- Former Railroad Location
- Historical Groundwater Flow Direction
- Groundwater Contour
- Stream
- Culvert
- Surveyed Land Use Control Boundary
- Roads
- Former Buildings
- LHAAP-67 Site Boundary

186.27 Groundwater Elevation (ft msl)
[177.46] Elevation of Well Screen Bottom for Dry Well

Note:
1. RA-O = Remedial Action Operations

N

0 250 500 Feet

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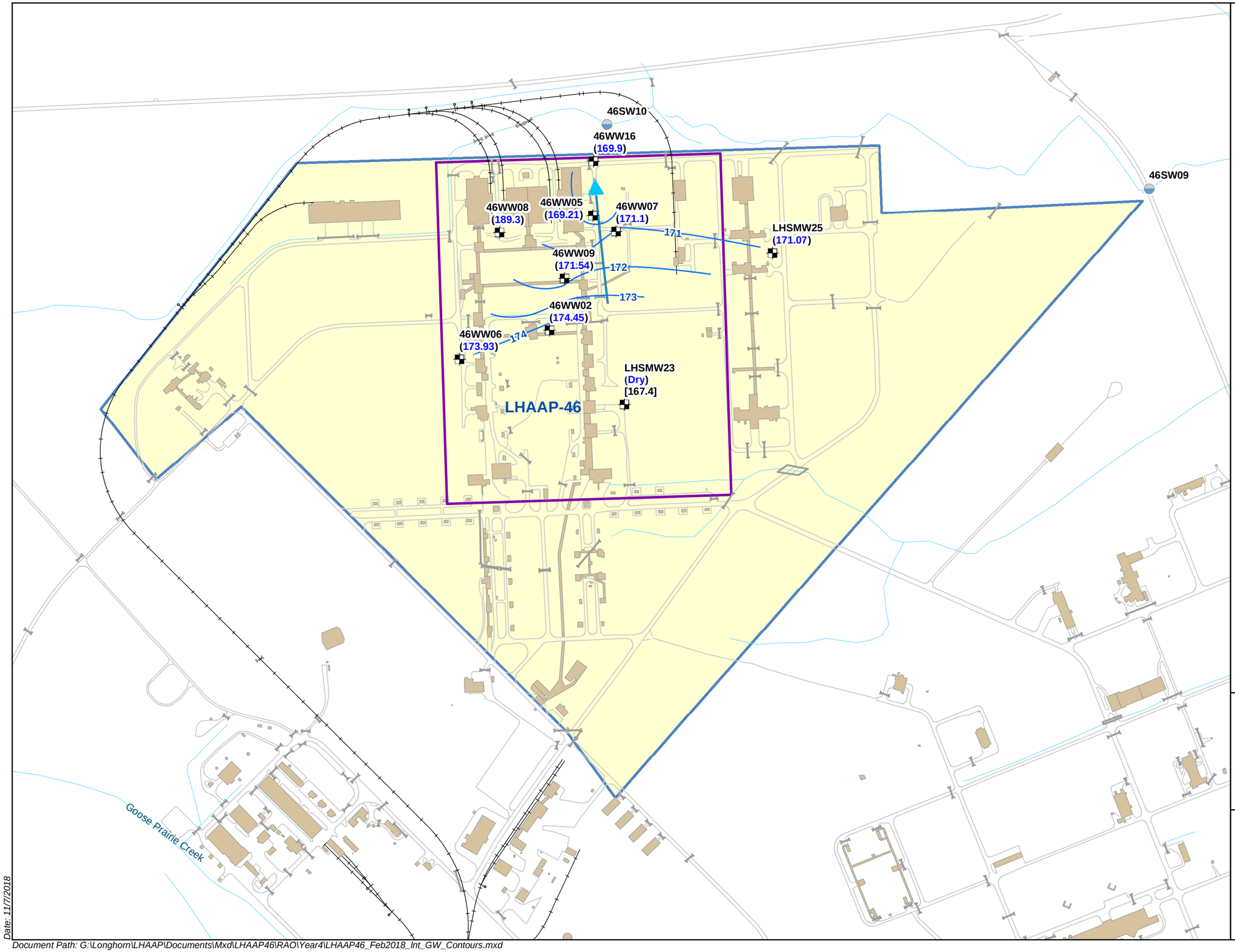
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Figure 2-3
Shallow Zone Potentiometric Map – August 2018
Fourth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 11/7/2018

Document Path: G:\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year4\LHAAP46_Aug2018_Sh_GW_Contours.mxd



Intermediate Monitoring Well
Surface Water Sample Location
Groundwater Contour
Former Railroad Location
Groundwater Flow Direction
Culvert
Surveyed Land Use Control Boundary
Stream
Roads
Former Buildings
LHAAP-46 Site Boundary

186.27 Groundwater Elevation (ft msl)
[177.46] Elevation of Well Screen Bottom for Dry Well

Note:
1. RA-O = Remedial Action Operations
2. The groundwater elevation in 46WW08 continues to be similar to the shallow zone elevations, despite the well being screened in the intermediate zone. It is possible that there is leakage from the shallow zone to the intermediate zone in this area of the site such that the well reflects shallow zone conditions.

N

0 250 500 Feet

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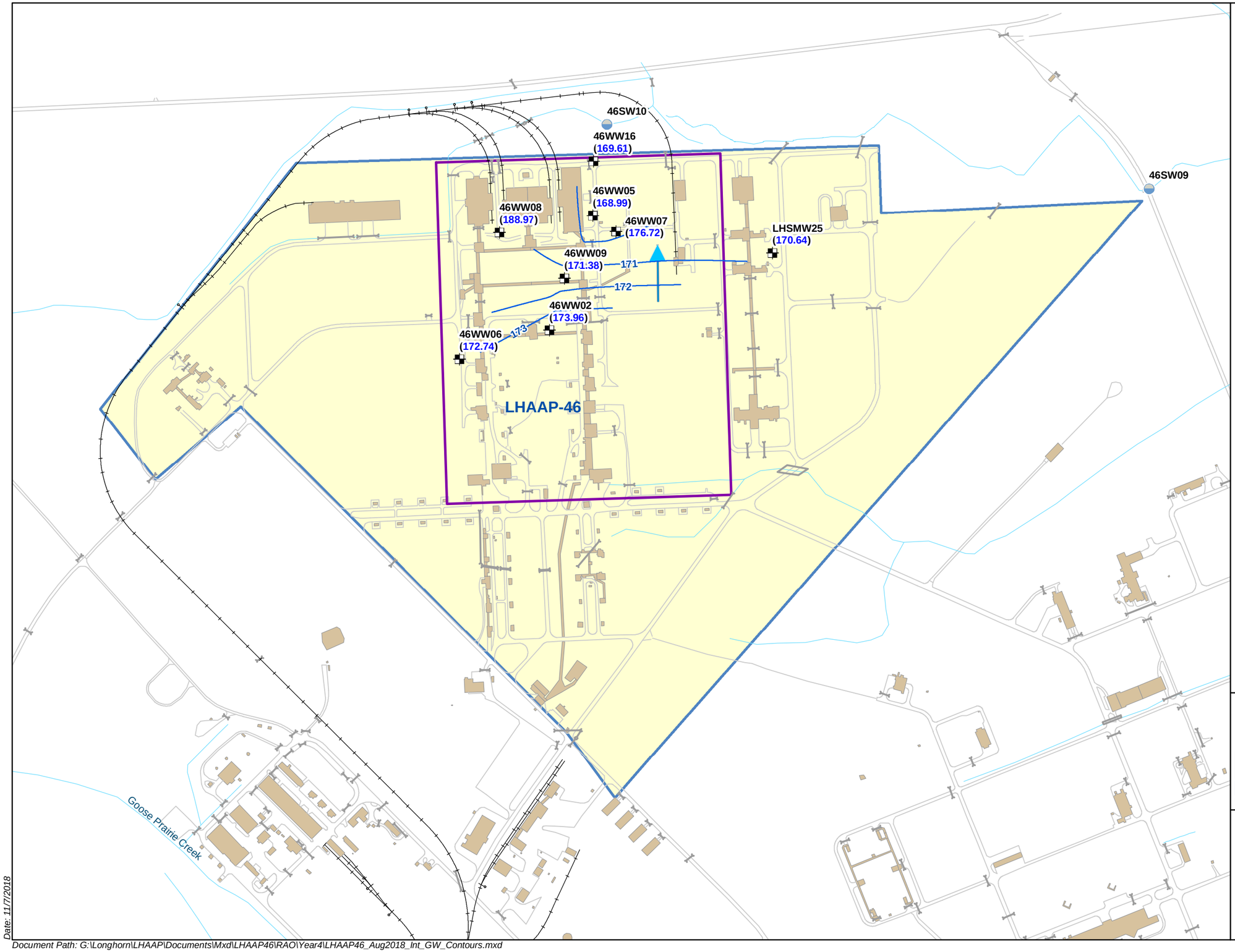
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Figure 2-4
Intermediate Zone Potentiometric Map – February 2018
Fourth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 11/7/2018

Document Path: G:\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year4\LHAAP46_Feb2018_Int_GW_Contours.mxd



Surface Water Sample Location
Intermediate Monitoring Well
Groundwater Contour
Former Railroad Location
Groundwater Flow Direction
Culvert
Surveyed Land Use Control Boundary
Stream
Roads
Former Buildings
LHAAP-46 Site Boundary

186.27 Groundwater Elevation (ft msl)
[177.46] Elevation of Well Screen Bottom for Dry Well

Note:
1. RA-O = Remedial Action Operations
2. The groundwater elevation in 46WW08 continues to be similar to the shallow zone elevations, despite the well being screened in the intermediate zone. It is possible that there is leakage from the shallow zone to the intermediate zone in this area of the site such that the well reflects shallow zone conditions.
3. The groundwater elevation measurement in LHSMW07 was approximately 5 feet higher than than observed in historical data, only during this sampling event. The elevated level is an anomaly and was not used to create the groundwater contour for map.

N

0 250 500 Feet

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Figure 2-5

Intermediate Zone Potentiometric Map – August 2018
Fourth Annual RA(O) Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 11/7/2018

Document Path: G:\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year4\LHAAP46_Aug2018_Int_GW_Contours.mxd

LHSMW19		
Analyte	MCL	Feb-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	2.4
Vinyl chloride	2	1 U

46WW11		
Analyte	MCL	Feb-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	18
Vinyl chloride	2	1 U

46SW10
46SW09
LHSMW21
LHSMW20 Dry
46WW12 Dry
LHSMW24
46WW10 Dry
5 µg/L
46WW01 Dry
LHSMW22 Dry
46WW04 Dry
46WW13 Dry
LHSMW18 Dry
46WW15 Dry
LHSMW16
LHSMW14
LHSMW15
LHSMW17 Dry
LHAAP-46
LHSMW27
LHSMW13
LHSMW12
LHSMW11
LHSMW09
LHSMW10
Goose Prairie Creek

- Shallow Monitoring Well
- Surface Water Sample Location
- Shallow Zone TCE Plume (5 µg/L, *Dashed where inferred*)
- Former Railroad Location
- Culvert
- Surveyed Land Use Control Boundary
- Stream
- Roads
- Former Buildings
- LHAAP-46 Site Boundary

Note:
1. RA-O = Remedial Action Operations

N
0 250 500 Feet

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Figure 2-6
Shallow Groundwater Results, February 2018
Fourth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 11/7/2018

Document Path: G:\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year4\LHAAP46_Feb2018_Sh_GW_Analytical.mxd

LHSMW19		
Analyte	MCL	Aug-18
cis-1,2-Dichloroethene	70	1.7
Trichloroethene	5	**8.8**
Vinyl chloride	2	1 U

46WW11		
Analyte	MCL	Aug-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	**13**
Vinyl chloride	2	1 U

46SW10
46SW09
LHSMW21
LHSMW20 Dry
46WW12 Dry
LHSMW24
46WW10 Dry
5 µg/L
46WW01 Dry
LHSMW22 Dry
46WW04 Dry
46WW13 Dry
LHSMW16
LHSMW15
LHSMW14
LHSMW18 Dry
46WW15 Dry
LHSMW17 Dry
LHAAP-46
LHSMW27
LHSMW13
LHSMW12
LHSMW11
LHSMW09
LHSMW10
Goose Prairie Creek

- Shallow Monitoring Well
- Surface Water Sample Location
- Shallow Zone TCE Plume (5 µg/L, *Dashed where inferred*)
- Former Railroad Location
- Culvert
- Surveyed Land Use Control Boundary
- Stream
- Roads
- Former Buildings
- LHAAP-46 Site Boundary

Note:
1. RA-O = Remedial Action Operations
2. Surface water sample location 46SW10 is the only surface water sampling location used for LHAAP-46. Location 46SW09 is shown for clarity, but is not part of the current monitoring network

N

0 250 500 Feet

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Figure 2-7
Shallow Groundwater Results, August 2018
Fourth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 11/7/2018

Document Path: G:\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year4\LHAAP46_Aug2018_Sh_GW_Analytical.mxd

46WW05		
Analyte	MCL	Feb-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	14
Vinyl chloride	2	1 U

46WW16		
Analyte	MCL	Feb-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

46WW08		
Analyte	MCL	Feb-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

LHSMW25		
Analyte	MCL	Feb-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

46WW02		
Analyte	MCL	Feb-18
cis-1,2-Dichloroethene	70	0.5 J
Trichloroethene	5	21
Vinyl chloride	2	1 U

46WW07		
Analyte	MCL	Feb-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

46WW06		
Analyte	MCL	Feb-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

46WW09		
Analyte	MCL	Feb-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

46SW10
46SW09
46WW14
LHSMW23
Dry
LHSMW08
LHAAP-46
5 µg/L
5 µg/L
Goose Prairie Creek

- Intermediate Monitoring Well
- Surface Water Sample Location
- Intermediate Zone TCE Plume (5 µg/L, *Dashed where inferred*)
- Former Railroad Location
- Culvert
- Surveyed Land Use Control Boundary
- Stream
- Roads
- Former Buildings
- LHAAP-46 Site Boundary

Note:
1. RA-O = Remedial Action Operations

N
0 250 500 Feet

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Figure 2-8
Intermediate Groundwater Results,
February 2018
Fourth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 10/31/2018

Document Path: G:\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year4\LHAAP46_Feb2018_Int_GW_Analytical.mxd

46WW05		
Analyte	MCL	Aug-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	**6.4**
Vinyl chloride	2	1 U

46WW08		
Analyte	MCL	Aug-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

46WW16		
Analyte	MCL	Aug-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

LHSMW25		
Analyte	MCL	Aug-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

46WW02		
Analyte	MCL	Aug-18
cis-1,2-Dichloroethene	70	1.4
Trichloroethene	5	**24**
Vinyl chloride	2	1 U

46WW07		
Analyte	MCL	Aug-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

46WW06		
Analyte	MCL	Aug-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

46WW09		
Analyte	MCL	Aug-18
cis-1,2-Dichloroethene	70	1 U
Trichloroethene	5	1 U
Vinyl chloride	2	1 U

46WW14

46SW09

5 µg/L

5 µg/L

LHSMW23
Dry

LHAAP-46

LHSMW08

Goose Prairie Creek

Intermediate Monitoring Well
Surface Water Sample Location
Intermediate Zone TCE Plume (5 µg/L, *Dashed where inferred*)
Former Railroad Location
Stream
Culvert
Surveyed Land Use Control Boundary
Roads
Former Buildings
LHAAP-67 Site Boundary

Note:
1. RA-O = Remedial Action Operations

N

0 250 500 Feet

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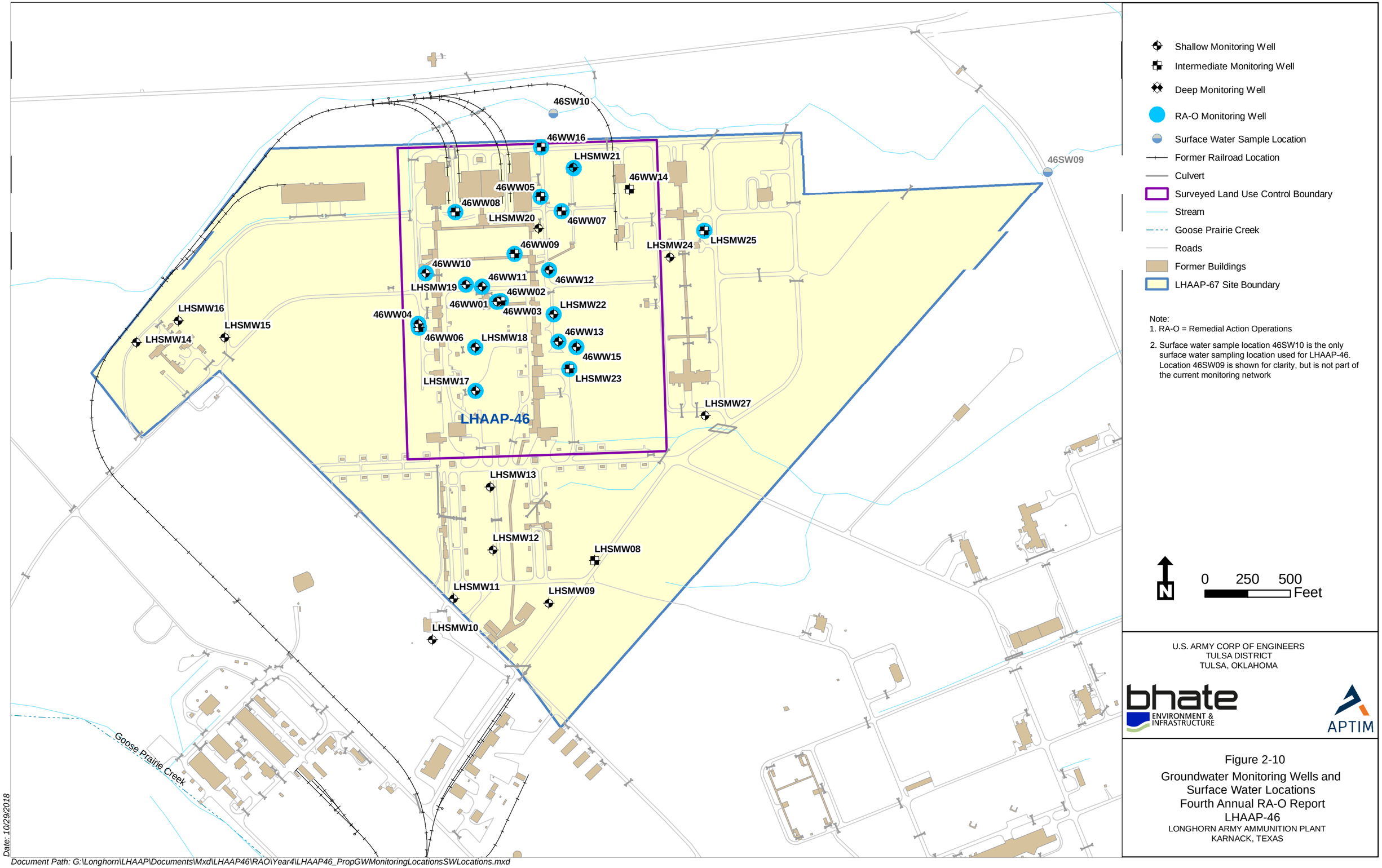
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Figure 2-9
Intermediate Groundwater Results, August 2018
Fourth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 10/31/2018

Document Path: G:\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year4\LHAAP46_Aug2018_Int_GW_Analytical.mxd



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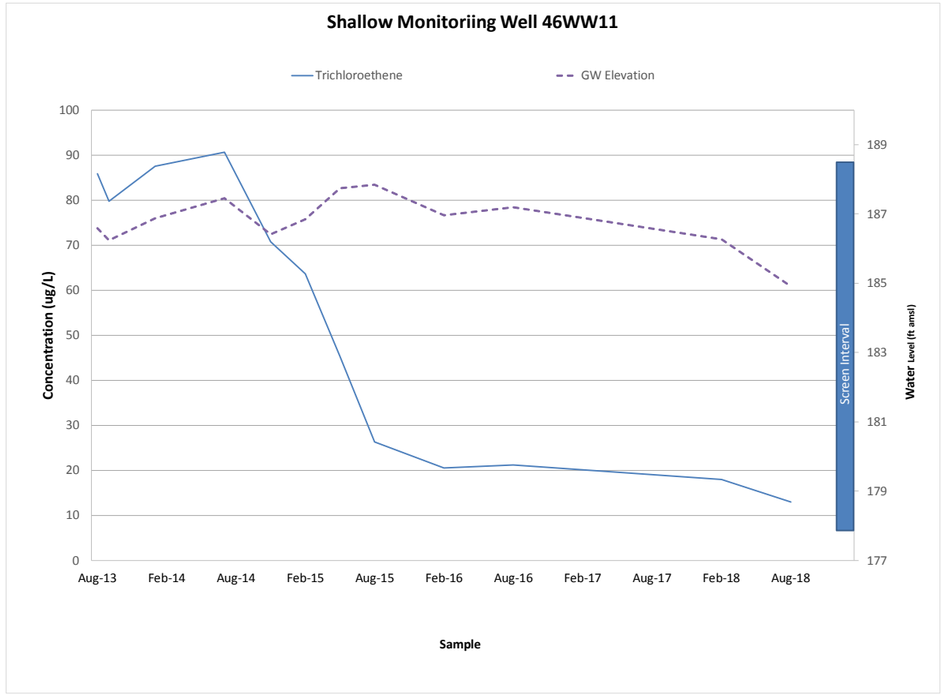
APTIM

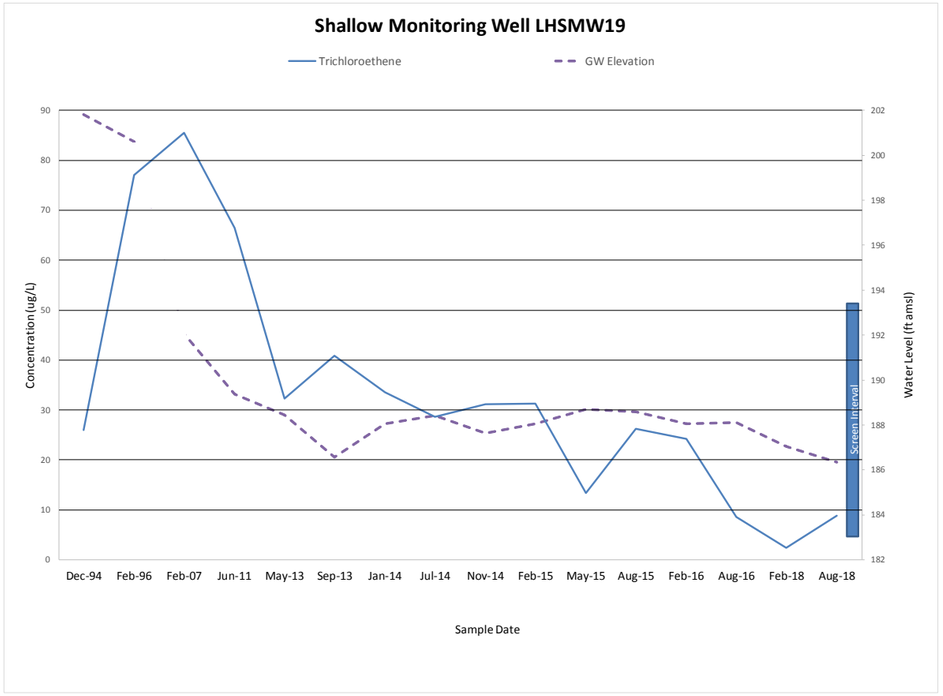
Figure 2-10

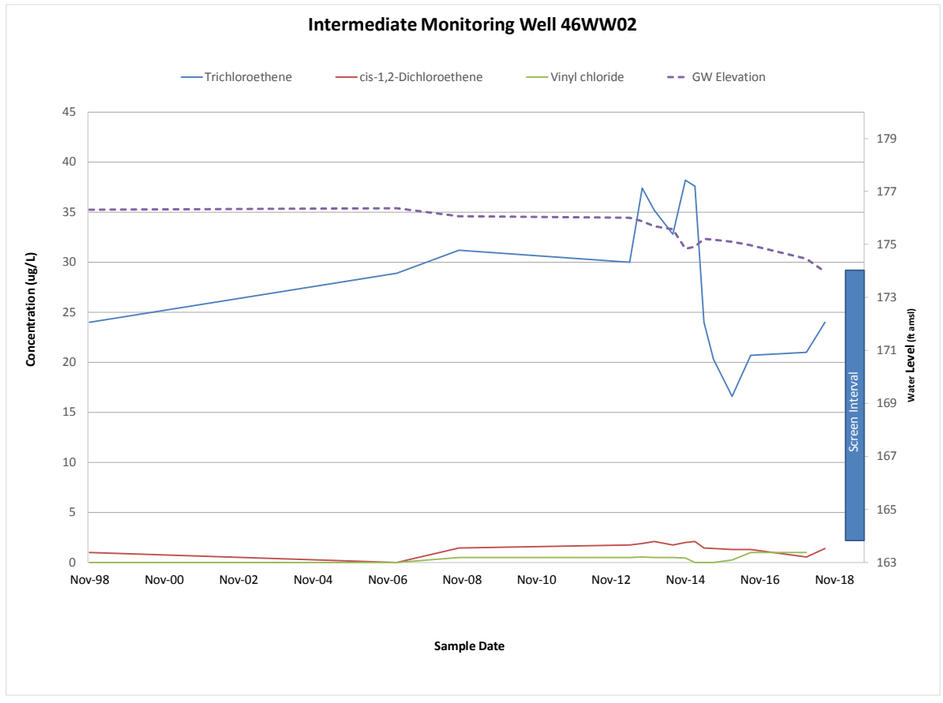
Groundwater Monitoring Wells and Surface Water Locations
Fourth Annual RA-O Report
LHAAP-46
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

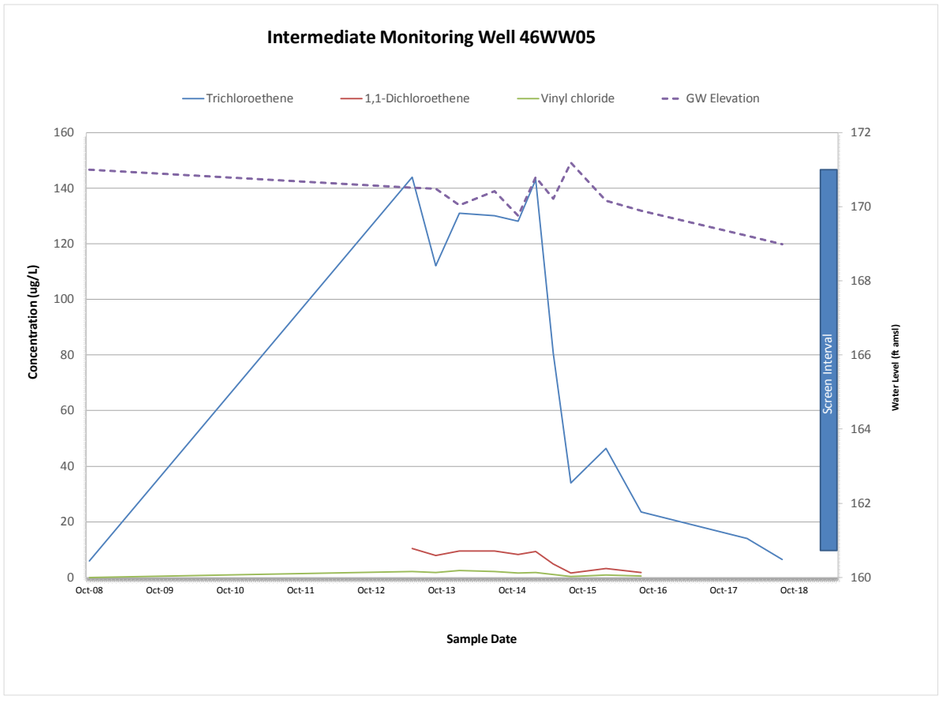
Date: 10/29/2018

Document Path: G:\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year4\LHAAP46_PropGWMonitoringLocationsSWLocations.mxd









Cleanup Levels:
1,1-Dichlorothene = 7 µg/L
cis-1,2-Dichloroethene = 70 µg/L
Trichloroethene = 5 µg/L
Vinyl Chloride = 2 µg/L

Notes:
1. RA-O = Remedial Action Operations
2. GW Elevation Data for the August 1996 and May 1998 sampling events in LHSMW19 is not available.

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TULSA, OKLAHOMA

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Figure 3-1

COC Concentration Trends
Fourth Annual RA(O) Report
LHAAP-46

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Date: 3/11/2019

Document Path: G:\Longhorn\LHAAP\Documents\Mxd\LHAAP46\RAO\Year4\LHAAP46_COC_Concentrations.mxd

Contract No. W9128F-13-D-0012, Task Order No. W9128BV17F0150 • Draft Final • Rev 0 • March 2019

Appendix A

Draft Technical Memorandum, Remedial Action-Monitoring at LHAAP-46

Foss, William A.

From: Mayer, Richard <mayer.richard@epa.gov>
Sent: Friday, April 06, 2018 4:35 PM
To: Srivastav, Praveen
Cc: Harrison, Dorelle; paul_bruckwicki@fws.gov; zeiler Rose (rose.m.zeiler.civ@mail.mil); Smith, Richard P CIV USARMY CESWF (US); nicholas.b.smith56.civ@mail.mil; Williams, Aaron K CIV USARMY CESWF (US); Watson, Susan; Foss, William A.; Kim Nemmers; April Palmie; Becher, Kent; Burton, Terry; Tzhone, Stephen
Subject: RE: Draft LHAAP-46 Tech Memo - RA-O Monitoring

Good Afternoon Praveen, After revewing the memo, I concur with APTIMs recommendation to move forward with MNA evaluation based on data from the current wells that have water. However, in the future, there needs to be a revised process for the shallow wells (5 of the dry wells are in the historic plume) so that they are checked more frequently and are sampled on an irregular basis (when water is found in the wells after very wet periods) and not wait on the prescribed semiannual sampling date. There may need to be other solutions besides the one suggested. Any questions, please contact me.

From: Srivastav, Praveen [mailto:Praveen.Srivastav@aptim.com]
Sent: Thursday, April 05, 2018 1:49 PM
To: Mayer, Richard <mayer.richard@epa.gov>; April Palmie <april.palmie@tceq.texas.gov>
Cc: Harrison, Dorelle <harrison.dorelle@epa.gov>; paul_bruckwicki@fws.gov; zeiler Rose (rose.m.zeiler.civ@mail.mil) <rose.m.zeiler.civ@mail.mil>; Smith, Richard P CIV USARMY CESWF (US) <Richard.P.Smith@usace.army.mil>; nicholas.b.smith56.civ@mail.mil; Williams, Aaron K CIV USARMY CESWF (US) <Aaron.K.Williams@usace.army.mil>; Watson, Susan <Susan.Watson@aptim.com>; Foss, William A. <William.Foss@aptim.com>; Kim Nemmers <knemmers@bhate.com>
Subject: RE: Draft LHAAP-46 Tech Memo - RA-O Monitoring

Rich/April:

We discussed this tech memo at the last MMM. We were wondering if you have any comments or do you concur with our recommendation to move forward with MNA evaluation based on data from wells that have water.

Thank You,

APTIM

Praveen Srivastav, PhD, PG, PMP
Project Manager
Tel: +1 713-243-7264
Cell: 281-639-8743
Praveen.Srivastav@aptim.com

APTIM
2500 CityWest Blvd, Suite 1700
Houston, Texas 77042

Foss, William A.

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Tuesday, April 10, 2018 11:57 AM
To: Srivastav, Praveen; 'Mayer, Richard'
Cc: Harrison, Dorelle; paul_bruckwicki@fws.gov; zeiler Rose (rose.m.zeiler.civ@mail.mil); Smith, Richard P CIV USARMY CESWF (US); nicholas.b.smith56.civ@mail.mil; Williams, Aaron K CIV USARMY CESWF (US); Watson, Susan; Foss, William A.; Kim Nemmers
Subject: RE: Draft LHAAP-46 Tech Memo - RA-O Monitoring

Good morning. I've reviewed the memo and concur with the conclusions and recommendation to proceed with MNA evaluation.

Sincerely,

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

From: Srivastav, Praveen [mailto:Praveen.Srivastav@aptim.com]
Sent: Thursday, April 5, 2018 1:49 PM
To: 'Mayer, Richard' <mayer.richard@epa.gov>; April Palmie <april.palmie@tceq.texas.gov>
Cc: Harrison, Dorelle <harrison.dorelle@epa.gov>; paul_bruckwicki@fws.gov; zeiler Rose (rose.m.zeiler.civ@mail.mil) <rose.m.zeiler.civ@mail.mil>; Smith, Richard P CIV USARMY CESWF (US) <Richard.P.Smith@usace.army.mil>; nicholas.b.smith56.civ@mail.mil; Williams, Aaron K CIV USARMY CESWF (US) <Aaron.K.Williams@usace.army.mil>; Watson, Susan <Susan.Watson@aptim.com>; Foss, William A. <William.Foss@aptim.com>; Kim Nemmers <knemmers@bhate.com>
Subject: RE: Draft LHAAP-46 Tech Memo - RA-O Monitoring

Rich/April:

We discussed this tech memo at the last MMM. We were wondering if you have any comments or do you concur with our recommendation to move forward with MNA evaluation based on data from wells that have water.

Thank You,

Praveen Srivastav, PhD, PG, PMP
Project Manager
Tel: +1 713-243-7264
Cell: 281-639-8743
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Final
Technical Memorandum – Remedial Action-Operation Monitoring at LHAAP-46
Longhorn Army Ammunition Plant
Karnack, Texas

Prepared for U.S. Army Corps of Engineers, Tulsa District
Contracting Division
2488 East 81st Street
Tulsa, Oklahoma 74137-4290

Prepared by

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Prepared by

APTIM

Aptim Federal Services, LLC
2500 CityWest, Suite 1700
Houston, Texas 77042

Contract No. W9128F-13-D-0012, Task Order No. W9128BV17F0150
Project No. 501032
Rev 0
November 2018

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Acronyms and Abbreviations.....iii
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2.0 Current RA-O Monitoring.....1
3.0 Groundwater Elevation Trends.....1
4.0 Proposed Path Forward.....2

List of Figures

Figure 1-1 TCE in Shallow Zone Groundwater – August 2016

Figure 3-1 Historical Groundwater Elevation Trends in Select Shallow and Intermediate Wells at LHAAP-46

Contract No. W9128F-13-D-0012, Task Order No. W9128BV17F0150 • Final • Rev 0 • November 2018

Acronyms and Abbreviations

APTIM	Aptim Federal Services, LLC
ft amsl	feet above mean sea level
LHAAP	Longhorn Army Ammunition Plant
LUC	Land Use Controls
MNA	Monitored Natural Attenuation
RACR	Response Action Completion Report
RA-O	Remedial Action-Operation
RAWP	Remedial Action Work Plan
RD	Remedial Design
ROD	Record of Decision
Shaw	Shaw Environmental, Inc.
TCE	trichloroethylene
USACE	U.S. Army Corps of Engineers

Contract No. W9128F-13-D-0012, Task Order No. W9128BV17F0150 • Final • Rev 0 • November 2018

Contract No. W9128F-13-D-0012, Task Order No. W9128BV17F0150 • Final • Rev 0 • November 2018

1.0 Introduction

The purpose of this Technical Memorandum is to discuss the Remedial Action – Operation (RA-O) groundwater monitoring currently being performed for LHAAP-46 (Plant 2 Area) and to propose a new path-forward for evaluation of the Monitored Natural Attenuation (MNA) remedy for the site. MNA with Land Use Controls (LUCs) was selected as the remedy for the trichloroethene (TCE) plume in shallow groundwater at LHAAP-46 in the Final Record of Decision (ROD) in September 2010 (USACE, 2010). The Final Remedial Design (RD) (Shaw, 2011) and Final Remedial Action Work Plan (RAWP) (AECOM, 2013) established a monitoring program to evaluate the MNA remedy and verify plume stability. Beginning in 2013, several dry wells were observed during multiple RA-O groundwater sampling events. An additional intermediate well was added to the monitoring network in the Draft Final Remedial Action Completion Report (RACR) (AECOM, May 2015) and one shallow well (LHSMW17) was added to replace LHSMW18, with LHSMW18 to be sampled only if LHSMW17 is dry (**Figure 1-1**). A previously designated shallow/intermediate well (LHSMW23) is now being evaluated as an intermediate well. Based on the Final 3rd Annual RA-O Report (AECOM, 2017), the current monitoring well network for sampling and evaluation of MNA consists of 12 shallow, 9 intermediate and 1 deep well. Both the shallow and intermediate groundwater have TCE concentrations above the cleanup level (AECOM, 2017).

2.0 Current RA-O Monitoring

Beginning in 2013, the Army has performed RA-O groundwater sampling at LHAAP-46 and has identified that eight of the 12 shallow wells (includes both LHSMW17 and LHSMW18) have been dry during every, or nearly every sampling event between May 2013 and February 2018. Five of the dry shallow monitoring wells are located within the historic TCE plume area or to the east (downgradient) of the current shallow zone TCE plume areas (LHSMW20, LHSMW22, 46WW12, 46WW13, and 46WW15) (**Figure 1-1**). The inability to sample these shallow wells in key locations has prevented the full evaluation of the plume extent and the progress of the MNA remedy at the site. The *Final 3rd Annual RA-O Report* (AECOM, 2017) noted that increased rain events may change plume characteristics and recommended that semi-annual long-term monitoring be continued until conditions allow for a complete MNA performance evaluation.

3.0 Groundwater Elevation Trends

It is apparent from review of historical groundwater elevation data for the site that the decline of the water table does not appear to be linked to rainfall. While large-scale rainfall events such as those experienced in March 2016 and described in the *Final 3rd Annual RA-O Report* (AECOM, 2017) may result in the intermittent temporary return of measurable water in some wells, the long-term trend in groundwater elevations is downward and does not appear to be linked to changes in rainfall or the elevation of Caddo Lake, as indicated on the attached graph.

The attached graph (**Figure 3-1**) shows:

- Historical groundwater elevations for select shallow and intermediate wells, including shallow wells 46WW01, LHSMW13, and LHSMW19 located near the center of the site plume; LHSMW23, which was identified in the RAWP as a

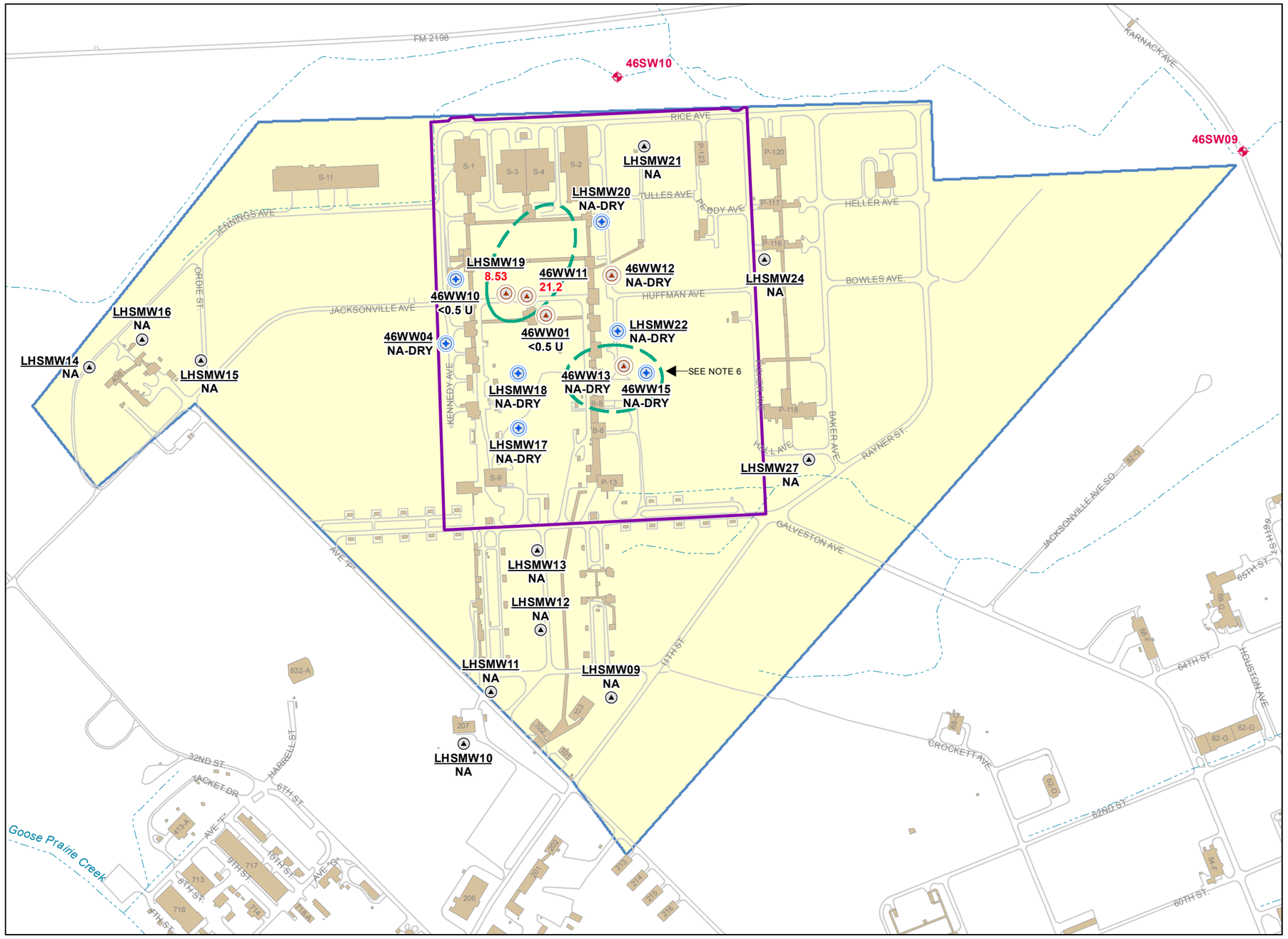
"shallow/intermediate" well and is currently evaluated as part of the "intermediate wells"; and 46WW02, which is an intermediate well located near the center of the site)

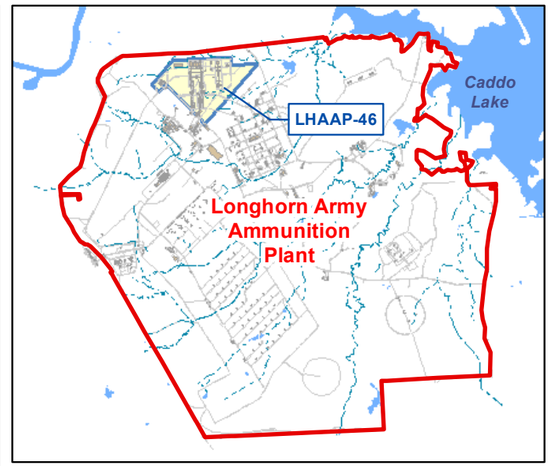
- Monthly precipitation, and
- Caddo Lake elevations from 2000 to 2018.

The groundwater elevations on the graph reflect a steady downward trend in the potentiometric surface elevation of the shallow and intermediate groundwater aquifers. The trends do not show undulations upward or downward around periods of significantly increased rainfall or drought, and there is no corresponding trend in the elevation of Caddo Lake that would confirm a linkage to rainfall patterns. For example, in March 2016 after heavy rainfall (greater than 9 inches over a 2-day period), the groundwater elevation in a few of the dry wells rose to a measurable elevation but had already declined in August 2016 (see 46WW01). In fact, the elevations measured in 46WW01 in March 2016 and August 2016 were below the bottom of the screened interval in the well, indicating that the water measured in the well was not connected to the aquifer at the time of sampling. The same wells remained dry at the time of the February 2018 sampling event. Based on the long-term decline in groundwater elevations spanning nearly 20 years at LHAAP-46, the water levels in the dry shallow wells within and east of the plumes are not expected to recover to measurable elevations for any appreciable duration in response to changes in rainfall patterns, and the wells are unlikely to remain saturated for long given the long term declining trends.

4.0 Proposed Path Forward

There are a number of potential explanations for the long-term downward trend, including reduction in surface input from leaking water lines and septic systems due to the closing of LHAAP facilities. Whatever the cause of the decline may be, it does not appear to be related to changes in rainfall patterns; therefore, the evaluation of the MNA remedy at LHAAP-46 should proceed.





Legend

- Surface Water Sample Location
- Shallow Monitoring Well Location
- MNA Well Location
- MNA Parameter Analysis Well Location
- 21.2 — Indicates TCE concentration exceeding its maximum contaminant level (5 micrograms per liter)
- Shallow Zone TCE Plume (5 µg/L) (Dashed Where Inferred)
- Streams
- Roads
- Surveyed Land Use Control Boundary
- Buildings or Concrete Slab
- LHAAP-46 Site Boundary

Notes:
1. Sampling results reported in micrograms per liter (µg/L).
2. TCE - Trichloroethylene.
3. U - Result below laboratory reporting limit.
4. NA - No Sample Collected for Analysis.
5. NA-DRY - Well not sampled because well was dry.
6. 46WW13 has been dry since the last time it was sampled in September 2013. The September 2013 TCE result was 103 (µg/L).

(Source: AECOM, Final 3rd Annual RA-O Report, LHAAP-46 [Plant 2 Area], Longhorn Army Ammunition Plant, Karnack, Texas. March 2017)

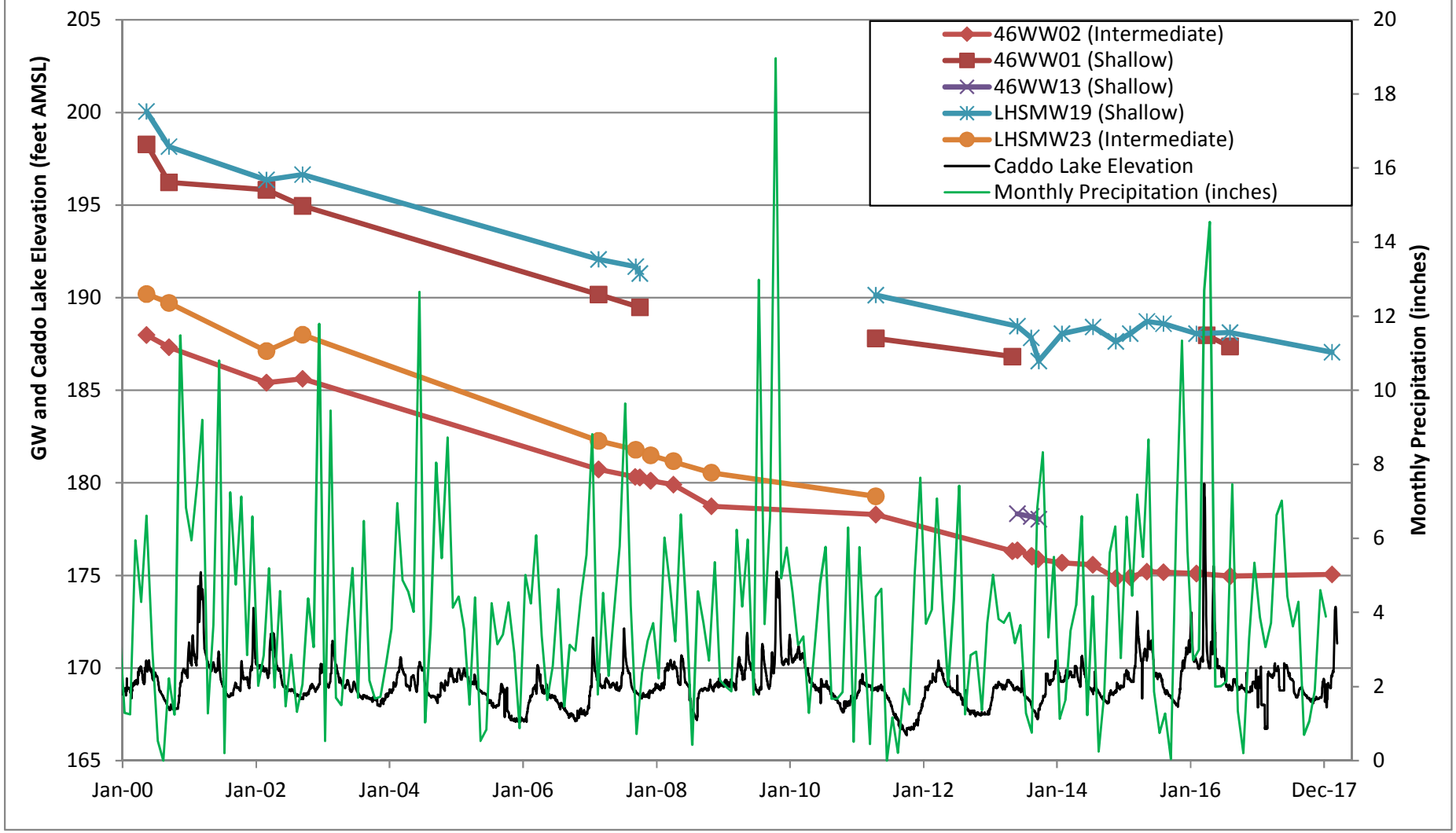
U.S. ARMY CORP OF ENGINEERS
TULSA DISTRICT
TULSA, OKLAHOMA

bhate ENVIRONMENT & INFRASTRUCTURE

APTIM

Figure 1-1
TCE in Shallow Zone Groundwater
August 2016
LHAAP-46
Longhorn Army Ammunition Plant Karnack, Texas

Figure 3-1
Historic Groundwater Elevation Trends
in Select Shallow and Intermediate Wells at LHAAP-46



Appendix B

Annual Land Use Control Compliance Certification and Documentation

Sample Annual Land Use Control Compliance Certification Documentation

In accordance with the Remedial Design dated _____ for LHAAP-46 a certification of site was conducted by APTim [indicate transferee] on 10/19/18.

A summary of land use control mechanisms is as follows:

Groundwater restriction – restriction of the use of groundwater to environmental monitoring and testing until cleanup levels are met [Indicate whether groundwater restrictions are still required at LHAAP-46]

A summary of compliance with land use and restriction covenants is as follows:

No use of groundwater, installation of new groundwater wells, or tampering with existing wells at LHAAP-46.

I, the undersigned, do document that the certification was performed as indicated above, and that the above information is true and correct to the best of my knowledge, information, and belief.

Date: OCTOBER 19, 2018

Name/Title: Scott Beesinger/Senior Field Tech

Signature: Scott Beesinger

Annual compliance certification forms shall be completed no later than March 1 of each year for the previous calendar year.

Appendix C

Photographic Log

PHOTO LOG

Photo No.	Date	Task and Description
1	8/27/18	Well Inspection at 46WW01
2	8/29/18	Well Inspection at 46WW02
3	8/27/18	Well Inspection at 46WW03
4	8/29/18	Well Inspection at 46WW04
5	8/28/18	Well Inspection at 46WW05
6	8/27/18	Well Inspection at 46WW06
7	8/27/18	Well Inspection at 46WW07
8	8/27/18	Well Inspection at 46WW08
9	8/28/18	Well Inspection at 46WW09
10	8/29/18	Well Inspection at 46WW10
11	8/29/18	Well Inspection at 46WW11
12	8/27/18	Well Inspection at 46WW12
13	8/27/18	Well Inspection at 46WW13
14	8/28/18	Well Inspection at 46WW15
15	8/28/18	Well Inspection at 46WW16
16	8/29/18	Well Inspection at LHSMW17
17	8/29/18	Well Inspection at LHSMW18
18	8/28/18	Well Inspection at LHSMW19
19	8/28/18	Well Inspection at LHSMW22
20	8/28/18	Well Inspection at LHSMW23
21	8/27/18	Well Inspection at LHSMW25
22	8/29/18	Sample Location 46SW10



PHOTO 1: Well Inspection at 46WW01
DATE: August 27, 2018



PHOTO 2: Well Inspection at 46WW02
DATE: August 29, 2018



PHOTO 3: Well Inspection at 46WW03
DATE: August 27, 2018



PHOTO 4: Well Inspection at 46WW04
DATE: August 29, 2018



PHOTO 5: Well Inspection at 46WW05
DATE: August 28, 2018



PHOTO 6: Well Inspection at 46WW06
DATE: August 27, 2018



PHOTO 7: Well Inspection at 46WW07
DATE: August 27, 2018



PHOTO 8: Well Inspection at 46WW08
DATE: August 27, 2018



PHOTO 9: Well Inspection at 46WW09
DATE: August 28, 2018



PHOTO 10: Well Inspection at 46WW10
DATE: August 29, 2018



PHOTO 11: Well Inspection at 46WW11
DATE: August 29, 2018



PHOTO 12: Well Inspection at 46WW12
DATE: August 27, 2018



PHOTO 13: Well Inspection at 46WW13
DATE: August 27, 2018



PHOTO 14: Well Inspection at 46WW15
DATE: August 28, 2018



PHOTO 15: Well Inspection at 46WW16
DATE: August 28, 2018



PHOTO 16: Well Inspection at LHSMW17
DATE: August 29, 2018



PHOTO 17: Well Inspection at LHSMW18
DATE: August 29, 2018



PHOTO 18: Well Inspection at LHSMW19
DATE: August 28, 2018



PHOTO 19: Well Inspection at LHSMW22
DATE: August 28, 2018



PHOTO 20: Well Inspection at LHSMW23
DATE: August 28, 2018



PHOTO 21: Well Inspection at LHSMW25
DATE: August 27, 2018



PHOTO 22: Sample Location 46SW10
DATE: August 29, 2018

Appendix D

Groundwater Sampling Forms

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46SW10**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

SAMPLING INFORMATION

Sample No: 46SW10-022218

DATE/TIME: 2/22/2018 / 12:30

Pump Inlet Depth (ft):

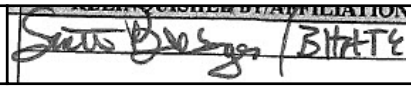
Sampling Method: GRAB

Sample Purpose: REG

Sample Matrix: SW

Sample Notes: Surface Water Sample collected with Disposable Bailer

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-02	None	VOCs in Water by 8260B	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : N/A

Casing ID (in.):

Depth to Water - Initial (DTWi) (ft)

Constructed Depth to Well Bottom (ft)

Measured Depth of Well (ft): N/A

Screen Interval (ft): -

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: 2/22/2018 / 12:30

PID Reading: N/A

Location ID: 46SW10 Sample No: 46SW10-022218										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46SW10**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear

SAMPLING INFORMATION

Sample No: **N/A**

DATE/TIME: **8/29/2018 / 10:51**

Pump Inlet Depth (ft):

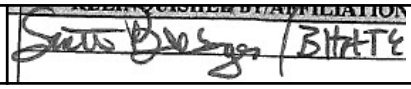
Sampling Method:

Sample Purpose: **REG**

Sample Matrix: **SW**

Sample Notes: Dry, No Surface Water Present

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : N/A

Casing ID (in.):

Depth to Water - Initial (DTWi) (ft)

Constructed Depth to Well Bottom (ft)

Measured Depth of Well (ft): N/A

Screen Interval (ft): -

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: 46SW10 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW01**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Cloudy

SAMPLING INFORMATION

Sample No:

DATE/TIME: 2/20/2018 / 14:05

Pump Inlet Depth (ft):

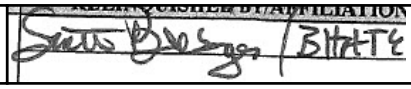
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry Well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 27.07

Measured Depth of Well (ft): 27

Screen Interval (ft): 17.00 - 27.00

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: 46WW01 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

NOTE: When DO and ORP show "-99" when a bailer was used to sample. "-99" denotes Not Applicable (N/A).

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW01**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

SAMPLING INFORMATION

Sample No:

DATE/TIME: 8/27/2018 / 13:28

Pump Inlet Depth (ft):

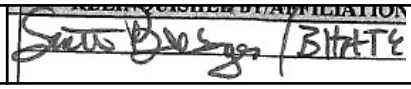
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry Well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft)

27.07 Measured Depth of Well (ft): 27.10

Screen Interval (ft): 17.00 - 27.00

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: 46WW01 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

NOTE: When DO and ORP show "-99" when a bailer was used to sample. "-99" denotes Not Applicable (N/A).

APTIM

Sample Collection Log

Project Name: **Longhorn AAP**

Location ID: **46WW02**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Cloudy, Windy

SAMPLING INFORMATION

Sample No: 46WW02-022018

DATE/TIME: 2/20/2018 / 13:35

Pump Inlet Depth (ft): 42

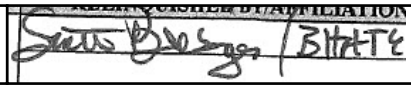
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-01	None	Carbon Dioxide in Water by RSK175	RSK-175
		MEE in Water by RSK175	RSK-175
		Dissolved Fe and Mn in Water by 6020A	SW6020A
		Phosphorous in Water by E365.2	E365.2
		TOTAL ORGANIC CARBON	E415.1
		VOCs in Water by 8260B	SW8260B
		Sulfide in Water by E376.1	E376.1
		Anions/Alkalinity in Water by E310.1	E310.1

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/20/2018 / 13:00

Depth to Water - Initial (DTWi) (ft) 37.76

Purge End Date/Time: 2/20/2018 / 13:35

Constructed Depth to Well Bottom (ft) 50.05

PID Reading: N/A

Measured Depth of Well (ft): 47.54

Screen Interval (ft): 37.00 - 47.00

Pump Start Time: 2/20/2018 13:00

APTIM

Sample Collection Log

Location ID: 46WW02				Sample No: 46WW02-022018						
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
2/20/2018	13:05	100	0.5	37.84	0.28	22.46	4.73	5.8	267	1.97
2/20/2018	13:10	100	1	37.89	0.282	21.79	4.44	6	323	1.23
2/20/2018	13:15	100	1.5	37.92	0.298	21.62	4.21	5.6	354	0.87
2/20/2018	13:20	100	2	37.93	0.302	21.5	4.15	5	355	0.67
2/20/2018	13:25	100	2.5	37.94	0.302	21.47	4.14	4.5	357	0.66
2/20/2018	13:30	100	3	37.94	0.302	21.43	4.14	4.1	358	0.65
2/20/2018	13:35	100	3.5	37.94	0.303	21.41	4.13	3.6	359	0.65

APTIM

Sample Collection Log

Project Name: **Longhorn AAP**

Location ID: **46WW02**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear/Sunny

SAMPLING INFORMATION

Sample No: **46WW02-180829**

DATE/TIME: 8/29/2018 / 08:35

Pump Inlet Depth (ft): 42

Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: 46WW02-180829MS/MSD

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-AUG2018-GW-ALSHT-180829	None	ANIONS	E300.0
		VOCs in Water by 8260B	SW8260B
		VOLATILES	SW8260B
		Sulfide in Water by E376.1	E376.1
		GENERAL CHEMISTRY	E376.1
		GENERAL CHEMISTRY	E300.0
		GENERAL CHEMISTRY	E415.1
		ALKALINITY	E310.1
		GENERAL CHEMISTRY	A4500PE
		GASES	RSK-175
		Phosphorous in Water by E365.2	E365.2
		METALS	SW6020
		GENERAL CHEMISTRY	A2320B
		Dissolved Fe and Mn in Water by 6020A	SW6020A
		MEE in Water by RSK175	RSK-175
		Iron, total, in Water by 6020A	SW6020A
		TOTAL ORGANIC CARBON	E415.1
		METALS	SW6020A
		Carbon Dioxide in Water by RSK175	RSK-175

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

APTIM

Sample Collection Log

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 8/29/2018 / 08:00

Depth to Water - Initial (DTWi) (ft) 38.25

Purge End Date/Time: 8/29/2018 / 08:35

Constructed Depth to Well Bottom (ft) 50.05

PID Reading: N/A

Measured Depth of Well (ft): 47.68

Screen Interval (ft): 37.00 - 47.00

Pump Start Time: 8/29/2018 / 08:00

Location ID: 46WW02 Sample No: 46WW02-180829

Date of Reading	Time of Reading	Purge Rate	Total Purge	DTW	Cond.	Temp.	pH	Turbidity	ORP	DO
		(ml/min)	(L)	(ft)	(mS/cm)	(°C)		(NTU)	(mV)	(mg/L)
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
8/29/2018	08:05	100	0.5	38.32	0.600	24.16	4.68	0.0	321	1.12
8/29/2018	08:10	100	1.0	38.37	0.527	23.07	4.46	0.0	343	0.89
8/29/2018	08:15	100	1.5	38.41	0.510	22.41	4.25	1.0	356	0.65
8/29/2018	08:20	100	2.0	38.44	0.514	22.03	4.11	0.0	365	0.57
8/29/2018	08:25	100	2.5	38.46	0.515	21.95	4.10	0.0	366	0.57
8/29/2018	08:30	100	3.0	38.48	0.515	21.91	4.10	0.0	367	0.56
8/29/2018	08:35	100	3.5	38.49	0.515	21.88	4.10	0.0	367	0.56

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW03**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear/Sunny

SAMPLING INFORMATION

Sample No: 46WW03-022618

DATE/TIME: 2/26/2018 / 11:50

Pump Inlet Depth (ft): 98

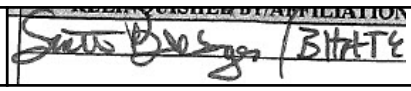
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-03	None	VOCs in Water by 8260B	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 41.47

Constructed Depth to Well Bottom (ft) 105.34

Measured Depth of Well (ft): 103.34

Screen Interval (ft): 92.67 - 102.67

Pump Start Time: 2/26/2018 11:15

Purging Method/Equipment: Bladder Pump

Purge Start Date/Time: 2/26/2018 / 11:15

Purge End Date/Time: 2/26/2018 / 11:50

PID Reading: N/A

APTIM

Sample Collection Log

Location ID: 46WW03				Sample No: 46WW03-022618						
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
2/26/2018	11:20	100	0.5	41.51	0.623	18.93	7.11	5.7	116	1.38
2/26/2018	11:25	100	1.0	44.55	0.610	19.14	7.26	1.7	88	0.95
2/26/2018	11:30	100	1.5	41.58	0.602	19.46	7.35	1.4	65	0.59
2/26/2018	11:35	100	2.0	41.60	0.603	19.52	7.40	1.2	65	0.43
2/26/2018	11:40	100	2.5	41.61	0.604	19.57	7.40	1.7	64	0.42
2/26/2018	11:45	100	3.0	41.62	0.604	19.60	7.41	1.3	64	0.41
2/26/2018	11:50	100	3.5	41.62	0.604	19.63	7.41	1.5	64	0.40

APTIM

Sample Collection Log

Project Name: **Longhorn AAP**

Location ID: **46WW03**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear

SAMPLING INFORMATION

Sample No: 46WW03-180827

DATE/TIME: 8/27/2018 / 13:10

Pump Inlet Depth (ft): 98

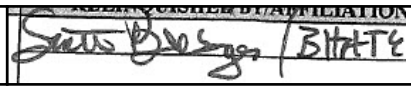
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-AUG2018-GW-ALSHT-180827	None	VOCs in Water by 8260B	SW8260B
		VOLATILES	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 8/27/2018 / 12:40

Depth to Water - Initial (DTWi) (ft) 42.05

Purge End Date/Time: 8/27/2018 / 13:10

Constructed Depth to Well Bottom (ft) 105.34

PID Reading: N/A

Measured Depth of Well (ft): 103.55

Screen Interval (ft): 92.67 - 102.67

Pump Start Time: 8/27/2018 / 12:40

APTIM

Sample Collection Log

Location ID: 46WW03				Sample No: 46WW03-180827						
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
8/27/2018	12:45	100	0.5	42.10	0.886	26.70	7.31	12.2	123	0.89
8/27/2018	12:50	100	1.0	42.15	0.840	25.88	6.18	4.3	180	0.65
8/27/2018	12:55	100	1.5	42.18	0.810	25.71	5.63	1.1	230	0.56
8/27/2018	13:00	100	2.0	42.21	0.809	25.65	5.62	0.0	231	0.55
8/27/2018	13:05	100	2.5	42.23	0.808	25.60	5.61	0.0	232	0.54
8/27/2018	13:10	100	3.0	42.24	0.808	25.56	5.60	0.0	233	0.54

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Location ID: **46WW04**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Overcast / Light Rain

SAMPLING INFORMATION

Sample No:

DATE/TIME: 2/22/2018 / 12:55

Pump Inlet Depth (ft):

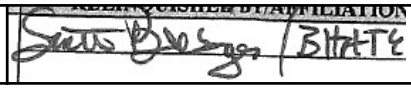
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry Well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment:

Casing ID (in.): 4

Purge Start Date/Time: - / -

Depth to Water - Initial (DTWi) (ft) Dry

Purge End Date/Time: - / -

Constructed Depth to Well Bottom (ft) 29.92

PID Reading: N/A

Measured Depth of Well (ft): 27

Screen Interval (ft): 17.00 - 27.00

Pump Start Time:

Location ID: 46WW04 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

NOTE: When DO and ORP show "-99" when a bailer was used to sample. "-99" denotes Not Applicable (N/A).

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW04**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No:

DATE/TIME: 8/29/2018 / 10:40

Pump Inlet Depth (ft):

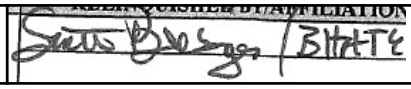
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 29.92

Measured Depth of Well (ft): 27

Screen Interval (ft): 17.00 - 27.00

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time:

PID Reading: N/A

Location ID: 46WW04 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

APTIM

Sample Collection Log

Project Name: **Longhorn AAP**

Location ID: **46WW05**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Cloudy / Cool

SAMPLING INFORMATION

Sample No: **46WW05-022618**

DATE/TIME: 2/26/2018 / 09:00

Pump Inlet Depth (ft): 41.5

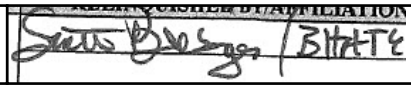
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: 46WW05-022618-FD

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-03	None	Sulfide in Water by E376.1	E376.1
		MEE in Water by RSK175	RSK-175
		Dissolved Fe and Mn in Water by 6020A	SW6020A
		Phosphorous in Water by E365.2	E365.2
		TOTAL ORGANIC CARBON	E415.1
		Carbon Dioxide in Water by RSK175	RSK-175
		VOCs in Water by 8260B	SW8260B
		Anions/Alkalinity in Water by E310.1	E310.1

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/26/2018 / 08:25

Depth to Water - Initial (DTWi) (ft) 39.03

Purge End Date/Time: 2/26/2018 / 09:00

Constructed Depth to Well Bottom (ft) 49

PID Reading: N/A

Measured Depth of Well (ft): 45.46

Screen Interval (ft): 36.65 - 46.35

Pump Start Time: 2/26/2018 08:25

APTIM

Sample Collection Log

Location ID: 46WW05				Sample No: 46WW05-022618						
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
2/26/2018	08:30	100	0.5	39.10	6.58	18.65	4.12	108	374	1.47
2/26/2018	08:35	100	1.0	39.15	6.58	19.12	3.95	98.3	391	0.88
2/26/2018	08:40	100	1.5	39.19	6.59	19.38	3.88	89.2	403	0.39
2/26/2018	08:45	100	2.0	39.22	6.59	19.60	3.88	88.6	395	0.24
2/26/2018	08:50	100	2.5	39.24	6.59	19.66	3.88	88.1	394	0.24
2/26/2018	08:55	100	3.0	39.25	6.59	19.71	3.88	87.8	393	0.23
2/26/2018	09:00	100	3.5	39.25	6.59	19.75	3.88	87.1	392	0.23

APTIM

Sample Collection Log

Project Name: **Longhorn AAP**

Location ID: **46WW05**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No: 46WW05-180828

DATE/TIME: 8/28/2018 / 08:50

Pump Inlet Depth (ft): 41.5

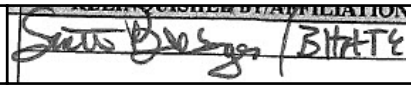
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-AUG2018-GW-ALSHT-180827	None	Phosphorous in Water by E365.2	E365.2
		TOTAL ORGANIC CARBON	E415.1
		ANIONS	E300.0
		GENERAL CHEMISTRY	E376.1
		GENERAL CHEMISTRY	E415.1
		GENERAL CHEMISTRY	A4500PE
		VOLATILES	SW8260B
		METALS	SW6020
		Carbon Dioxide in Water by RSK175	RSK-175
		MEE in Water by RSK175	RSK-175
		GENERAL CHEMISTRY	A2320B
		GENERAL CHEMISTRY	E300.0
		METALS	SW6020A
		ALKALINITY	E310.1
		GASES	RSK-175
		VOCs in Water by 8260B	SW8260B
		Sulfide in Water by E376.1	E376.1
		Iron, total, in Water by 6020A	SW6020A
		Dissolved Fe and Mn in Water by 6020A	SW6020A

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

APTIM

Sample Collection Log

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 8/28/2018 / 08:20

Depth to Water - Initial (DTWi) (ft) 39.25

Purge End Date/Time: 8/28/2018 / 08:50

Constructed Depth to Well Bottom (ft) 49

PID Reading: N/A

Measured Depth of Well (ft): 45.6

Screen Interval (ft): 36.65 - 46.35

Pump Start Time: 8/28/2018 / 08:20

Location ID: 46WW05 Sample No: 46WW05-180828

Date of Reading	Time of Reading	Purge Rate	Total Purge	DTW	Cond.	Temp.	pH	Turbidity	ORP	DO
		(ml/min)	(L)	(ft)	(mS/cm)	(°C)		(NTU)	(mV)	(mg/L)
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
8/28/2018	08:25	100	0.5	39.32	6.32	23.84	4.17	136	400	1.05
8/28/2018	08:30	100	1.0	39.37	6.41	22.42	3.96	176	420	0.69
8/28/2018	08:35	100	1.5	39.41	6.43	22.37	3.90	212	411	0.51
8/28/2018	08:40	100	2.0	39.44	6.44	22.30	3.89	213	410	0.56
8/28/2018	08:45	100	2.5	39.46	6.44	22.25	3.88	214	409	0.56
8/28/2018	08:50	100	3.0	39.47	6.44	22.22	3.88	214	408	0.55

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW06**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Cloudy / Cool

SAMPLING INFORMATION

Sample No: 46WW06-022618

DATE/TIME: 2/26/2018 / 10:20

Pump Inlet Depth (ft): 45.5

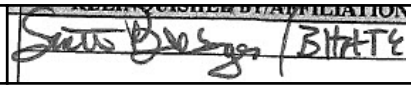
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-03	None	VOCs in Water by 8260B	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 39.91

Constructed Depth to Well Bottom (ft) 53.2

Measured Depth of Well (ft): 52.38

Screen Interval (ft): 40.60 - 50.60

Pump Start Time: 2/26/2018 09:45

Purging Method/Equipment: Bladder Pump

Purge Start Date/Time: 2/26/2018 09:45

Purge End Date/Time: 2/26/2018 / 10:20

PID Reading: N/A

APTIM

Sample Collection Log

Location ID: 46WW06		Sample No: 46WW06-022618								
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
2/26/2018	09:50	100	0.5	39.97	2.11	17.70	5.95	62.0	72	1.55
2/26/2018	09:55	100	1.0	40.02	1.94	18.22	6.21	62.4	53	1.02
2/26/2018	10:00	100	1.5	40.06	1.80	19.12	6.13	58.0	67	0.85
2/26/2018	10:05	100	2.0	40.10	1.85	19.49	6.0	52.3	77	0.73
2/26/2018	10:10	100	2.5	40.12	1.85	19.53	5.99	51.8	78	0.72
2/26/2018	10:15	100	3.0	40.13	1.85	19.57	5.98	51.2	79	0.72
2/26/2018	10:20	100	3.5	40.14	1.86	19.61	5.97	50.6	79	0.71

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW06**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear

SAMPLING INFORMATION

Sample No: 46WW06-180827

DATE/TIME: 8/27/2018 / 12:00

Pump Inlet Depth (ft): 45.5

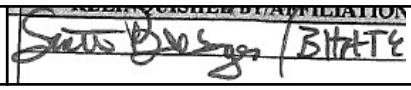
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-AUG2018-GW-ALSHT-180827	None	VOLATILES	SW8260B
		VOCs in Water by 8260B	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 41.1

Constructed Depth to Well Bottom (ft) 53.2

Measured Depth of Well (ft): 52.38

Screen Interval (ft): 40.60 - 50.60

Pump Start Time: 8/27/2018 / 11:25

Purging Method/Equipment: Bladder Pump

Purge Start Date/Time: 8/27/2018 / 11:25

Purge End Date/Time: 8/27/2018 / 12:00

PID Reading: N/A

APTIM

Sample Collection Log

Location ID: 46WW06				Sample No: 46WW06-180827						
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
8/27/2018	11:30	100	0.5	41.17	1.94	27.17	6.38	119	79	0.98
8/27/2018	11:35	100	1.0	41.23	1.91	25.24	6.18	109	101	0.72
8/27/2018	11:40	100	1.5	41.28	1.93	23.98	5.97	103	120	0.53
8/27/2018	11:45	100	2.0	41.31	1.95	24.08	5.80	89.9	126	0.33
8/27/2018	11:50	100	2.5	44.33	1.95	24.15	5.8	89.3	126	0.33
8/27/2018	12:00	100	3.5	41.37	1.95	24.23	5.78	88.2	127	0.32

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW07**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Overcast / Drizzle

SAMPLING INFORMATION

Sample No: 46WW07-022318

DATE/TIME: 2/23/2018 / 09:30

Pump Inlet Depth (ft): 46.25

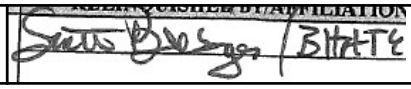
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-03	None	VOCs in Water by 8260B	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 36.77

Constructed Depth to Well Bottom (ft) 53.5

Measured Depth of Well (ft): 51.68

Screen Interval (ft): 41.50 - 51.00

Pump Start Time: 2/23/2018 0855

Purging Method/Equipment: Bladder Pump

Purge Start Date/Time: 2/23/2018 / 08:55

Purge End Date/Time: 2/23/2018 / 09:30

PID Reading: N/A

APTIM

Sample Collection Log

Location ID: 46WW07		Sample No: 46WW07-022318								
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
2/22/2018	09:25	100	3.0	36.95	0.926	19.05	5.73	10.9	80	0.32
2/23/2018	09:00	100	0.50	36.80	0.985	17.08	6.14	19.6	46	1.60
2/23/2018	09:05	100	1.0	36.83	0.945	18.17	6.07	18.0	40	0.82
2/23/2018	09:10	100	1.5	36.87	0.933	18.58	5.89	16.1	60	0.47
2/23/2018	09:15	100	2.0	36.91	0.927	18.95	5.75	12.3	78	0.33
2/23/2018	09:20	100	2.5	36.93	0.926	19.0	5.74	11.5	79	0.33
2/23/2018	09:30	100	3.5	36.96	0.926	19.10	5.72	10.2	81	0.32

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW07**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No: 46WW07-180827

DATE/TIME: 8/27/2018 / 10:00

Pump Inlet Depth (ft): 46.25

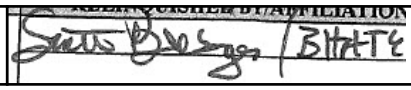
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-AUG2018-GW-ALSHT-180827	None	VOLATILES	SW8260B
		VOCs in Water by 8260B	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 31.15

Constructed Depth to Well Bottom (ft) 53.5

Measured Depth of Well (ft): 51.75

Screen Interval (ft): 41.50 - 51.00

Pump Start Time: 8/27/2018 / 09:30

Purging Method/Equipment: Bladder Pump

Purge Start Date/Time: 8/27/2018 / 09:30

Purge End Date/Time: 8/27/2018 / 10:00

PID Reading: N/A

APTIM

Sample Collection Log

Location ID: 46WW07				Sample No: 46WW07-180827						
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
8/27/2018	09:35	100	0.5	31.22	1.26	24.62	6.13	66.4	144	1.65
8/27/2018	09:40	100	1.0	31.28	1.21	22.44	5.70	129	134	1.19
8/27/2018	09:45	100	1.5	31.32	1.23	20.70	5.59	140	120	0.90
8/27/2018	09:50	100	2.0	31.34	1.23	20.63	5.58	141	120	0.89
8/27/2018	09:55	100	2.5	31.36	1.23	20.55	5.58	142	119	0.88
8/27/2018	10:00	100	3.0	31.37	1.23	20.46	5.58	143	118	0.88

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW08**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Overcast / Drizzle

SAMPLING INFORMATION

Sample No: **46WW08-022318**

DATE/TIME: 2/23/2018 / 10:30

Pump Inlet Depth (ft): 40.5

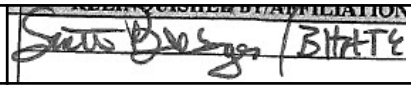
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: 46WW08-022318-FD

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-03	None	VOCs in Water by 8260B	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 22.43

Constructed Depth to Well Bottom (ft) 47.44

Measured Depth of Well (ft): 45.3

Screen Interval (ft): 35.72 - 45.22

Pump Start Time: 2/23/2018 / 09:55

Purging Method/Equipment: Bladder Pump

Purge Start Date/Time: 2/23/2018 / 09:55

Purge End Date/Time: 2/23/2018 / 10:30

PID Reading: N/A

APTIM

Sample Collection Log

Location ID: 46WW08				Sample No: 46WW08-022318						
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
2/23/2018	10:00	100	0.5	22.49	4.98	19.41	6.34	2.7	-1	2.28
2/23/2018	10:05	100	1.0	22.55	4.78	19.90	6.20	1.9	-2	2.00
2/23/2018	10:10	100	1.5	22.60	3.95	20.31	6.11	2.0	20	1.41
2/23/2018	10:15	100	2.0	22.62	3.84	20.40	6.0	1.9	30	1.10
2/23/2018	10:20	100	2.5	22.63	3.83	20.47	5.98	1.6	30	1.07
2/23/2018	10:25	100	3.0	22.64	3.83	20.51	5.97	1.3	31	1.06
2/23/2018	10:30	100	3.5	22.65	3.82	20.57	5.97	1.1	31	1.05

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Location ID: **46WW08**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No: 46WW08-180827

DATE/TIME: 8/27/2018 / 10:55

Pump Inlet Depth (ft): 40.5

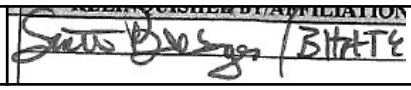
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: 46WW08-180827FD

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-AUG2018-GW-ALSHT-180827	None	VOLATILES	SW8260B
		VOCs in Water by 8260B	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 8/27/2018 / 10:25

Depth to Water - Initial (DTWi) (ft) 22.76

Purge End Date/Time: 8/27/2018 / 10:55

Constructed Depth to Well Bottom (ft) 47.44

PID Reading: N/A

Measured Depth of Well (ft): 45.4

Screen Interval (ft): 35.72 - 45.22

Pump Start Time: 8/27/2018 / 10:25

APTIM

Sample Collection Log

Location ID: 46WW08				Sample No: 46WW08-180827						
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
8/27/2018	10:30	100	0.5	22.83	4.26	25.22	6.30	28.7	61	1.11
8/27/2018	10:35	100	1.0	22.88	4.04	23.90	6.01	7.3	98	0.77
8/27/2018	10:40	100	1.5	22.93	3.65	23.85	5.85	2.1	109	0.63
8/27/2018	10:45	100	2.0	22.96	3.64	23.91	5.84	0.0	110	0.62
8/27/2018	10:50	100	2.5	22.98	3.64	23.90	5.83	0.0	110	0.61
8/27/2018	10:55	100	3.0	22.99	3.63	23.88	5.83	0.0	111	0.61

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW09**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Mostly Cloudy

SAMPLING INFORMATION

Sample No: 46WW09-022218

DATE/TIME: 2/22/2018 / 09:05

Pump Inlet Depth (ft): 40

Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-02	None	VOCs in Water by 8260B	SW8260B
		TOTAL ORGANIC CARBON	E415.1
		Dissolved Fe and Mn in Water by 6020A	SW6020A
		Anions/Alkalinity in Water by E310.1	E310.1
		Sulfide in Water by E376.1	E376.1
		Carbon Dioxide in Water by RSK175	RSK-175
		Phosphorous in Water by E365.2	E365.2
		MEE in Water by RSK175	RSK-175

Sampler:	Scott Beesinger	Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 38.65

Constructed Depth to Well Bottom (ft) 43.46

Measured Depth of Well (ft): 42.28

Screen Interval (ft): 32.98 - 42.48

Pump Start Time: 2/22/2018 08:30

Purging Method/Equipment: Bladder Pump

Purge Start Date/Time: 2/22/2018 / 08:30

Purge End Date/Time: 2/22/2018 / 09:05

PID Reading: N/A

APTIM

Sample Collection Log

Location ID: 46WW09		Sample No: 46WW09-022218								
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
2/22/2018	08:35	100	0.5	38.72	4.78	17.06	6.07	21.1	226	2.28
2/22/2018	08:40	100	1.0	38.77	4.80	17.67	5.83	22.6	228	1.97
2/22/2018	08:45	100	1.5	38.81	4.72	17.86	5.55	20.7	244	1.63
2/22/2018	08:50	100	2.0	38.83	4.75	18.20	5.50	18.5	259	1.63
2/22/2018	08:55	100	2.5	38.85	4.76	18.24	5.49	18.0	259	1.62
2/22/2018	09:00	100	3.0	38.86	4.76	18.28	5.48	17.6	260	1.61
2/22/2018	09:05	100	3.5	38.87	4.77	18.31	5.48	17.1	261	1.61

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW09**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No: 46WW09-180828

DATE/TIME: 8/28/2018 / 11:35

Pump Inlet Depth (ft): 39.5

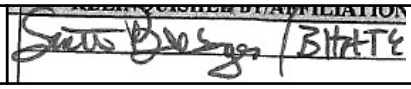
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-AUG2018-GW-ALSHT-180827	None	ANIONS	E300.0
		Iron, total, in Water by 6020A	SW6020A
		VOCs in Water by 8260B	SW8260B
		GENERAL CHEMISTRY	A4500PE
		GENERAL CHEMISTRY	A2320B
		GENERAL CHEMISTRY	E300.0
		GENERAL CHEMISTRY	E415.1
		ALKALINITY	E310.1
		Phosphorous in Water by E365.2	E365.2
		METALS	SW6020A
		MEE in Water by RSK175	RSK-175
		Sulfide in Water by E376.1	E376.1
		VOLATILES	SW8260B
		GASES	RSK-175
		TOTAL ORGANIC CARBON	E415.1
		GENERAL CHEMISTRY	E376.1
		Carbon Dioxide in Water by RSK175	RSK-175
		METALS	SW6020
		Dissolved Fe and Mn in Water by 6020A	SW6020A

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

APTIM

Sample Collection Log

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 8/28/2018 / 11:05

Depth to Water - Initial (DTWi) (ft) 38.81

Purge End Date/Time: 8/28/2018 / 11:35

Constructed Depth to Well Bottom (ft) 43.46

PID Reading: N/A

Measured Depth of Well (ft): 42.33

Screen Interval (ft): 33.48 - 42.98

Pump Start Time: 8/28/2018 / 11:05

Location ID: 46WW09 Sample No: 46WW09-180828

Date of Reading	Time of Reading	Purge Rate	Total Purge	DTW	Cond.	Temp.	pH	Turbidity	ORP	DO
		(ml/min)	(L)	(ft)	(mS/cm)	(°C)		(NTU)	(mV)	(mg/L)
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
8/28/2018	11:10	100	0.5	38.88	4.75	28.37	6.19	39.4	132	1.88
8/28/2018	11:15	100	1.0	38.94	4.89	26.29	5.95	36.7	171	1.59
8/28/2018	11:20	100	1.5	38.98	4.82	25.80	5.70	37.0	208	1.47
8/28/2018	11:25	100	2.0	39.01	4.81	25.73	5.70	37.6	209	1.46
8/28/2018	11:30	100	2.5	39.03	4.80	25.69	5.69	38.0	210	1.45
8/28/2018	11:35	100	3.0	39.05	4.80	25.65	5.68	38.3	210	1.44

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW10**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Overcast / Light Rain

SAMPLING INFORMATION

Sample No:

DATE/TIME: 2/22/2018 / 13:02

Pump Inlet Depth (ft):

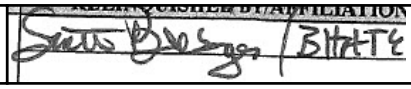
Sampling Method: Bailer

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: DRY WELL

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 25.98

Measured Depth of Well (ft): 25.3

Screen Interval (ft): 14.19 - 23.69

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: 46WW10 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

NOTE: When DO and ORP show "-99" when a bailer was used to sample. "-99" denotes Not Applicable (N/A).

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW10**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No:

DATE/TIME: 8/29/2018 / 10:45

Pump Inlet Depth (ft):

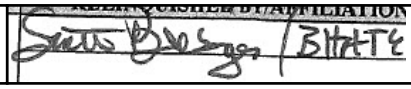
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 25.98

Measured Depth of Well (ft): 25.38

Screen Interval (ft): 14.19 - 23.69

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: 46WW10 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

APTIM

Sample Collection Log

Project Name: **Longhorn AAP**

Location ID: **46WW11**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear, Windy

SAMPLING INFORMATION

Sample No: 46WW11-022018

DATE/TIME: 2/20/2018 / 10:40

Pump Inlet Depth (ft): 28

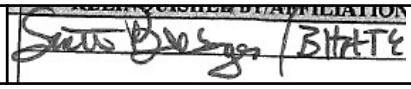
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-01	None	TOTAL ORGANIC CARBON	E415.1
		Carbon Dioxide in Water by RSK175	RSK-175
		Anions/Alkalinity in Water by E310.1	E310.1
		Sulfide in Water by E376.1	E376.1
		Phosphorous in Water by E365.2	E365.2
		MEE in Water by RSK175	RSK-175
		VOCs in Water by 8260B	SW8260B
		Dissolved Fe and Mn in Water by 6020A	SW6020A

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 2

Purge Start Date/Time: 2/20/2018 / 10:05

Depth to Water - Initial (DTWi) (ft) 25.95

Purge End Date/Time: 2/20/2018 / 10:40

Constructed Depth to Well Bottom (ft) 35.25

PID Reading: N/A

Measured Depth of Well (ft): 32.92

Screen Interval (ft): 23.00 - 33.00

Pump Start Time: 2/20/2018 10:05

APTIM

Sample Collection Log

Location ID: 46WW11		Sample No: 46WW11-022018								
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
2/20/2018	10:10	100	0.5	26.03	1.18	22.16	5.11	17	190	2.25
2/20/2018	10:15	100	1	26.1	1	21.96	4.63	7.9	260	2.13
2/20/2018	10:20	100	1.5	26.13	0.99	21.9	4.64	4.2	270	1.75
2/20/2018	10:25	100	2	26.15	0.984	21.91	4.63	2	268	1.65
2/20/2018	10:30	100	2.5	26.17	0.984	21.94	4.62	0.9	268	1.63
2/20/2018	10:35	100	3	26.19	0.984	21.95	4.62	0	267	1.62
2/20/2018	10:40	100	3.5	26.2	0.983	21.96	4.62	0	266	1.61

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW11**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No: **46WW11-180829**

DATE/TIME: **8/29/2018 / 09:55**

Pump Inlet Depth (ft): **28**

Sampling Method: **Bladder Pump**

Sample Purpose: **REG**

Sample Matrix: **GW**

Sample Notes: 46WW11-180829FD

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-AUG2018-GW-ALSHT-180829	None	GENERAL CHEMISTRY	E415.1
		GENERAL CHEMISTRY	A2320B
		MEE in Water by RSK175	RSK-175
		Sulfide in Water by E376.1	E376.1
		VOLATILES	SW8260B
		Carbon Dioxide in Water by RSK175	RSK-175
		METALS	SW6020A
		ALKALINITY	E310.1
		GENERAL CHEMISTRY	A4500PE
		ANIONS	E300.0
		GENERAL CHEMISTRY	E376.1
		GENERAL CHEMISTRY	E300.0
		TOTAL ORGANIC CARBON	E415.1
		Phosphorous in Water by E365.2	E365.2
		Iron, total, in Water by 6020A	SW6020A
		GASES	RSK-175
		Dissolved Fe and Mn in Water by 6020A	SW6020A
		METALS	SW6020
		VOCs in Water by 8260B	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

APTIM

Sample Collection Log

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 2

Purge Start Date/Time: 8/29/2018 / 09:20

Depth to Water - Initial (DTWi) (ft) 27.3

Purge End Date/Time: 8/29/2018 / 09:55

Constructed Depth to Well Bottom (ft) 35.25

PID Reading: N/A

Measured Depth of Well (ft): 32.91

Screen Interval (ft): 23.00 - 33.00

Pump Start Time: 8/29/2018 / 09:20

Location ID: 46WW11 Sample No: 46WW11-180829

Date of Reading	Time of Reading	Purge Rate	Total Purge	DTW	Cond.	Temp.	pH	Turbidity	ORP	DO
		(ml/min)	(L)	(ft)	(mS/cm)	(°C)		(NTU)	(mV)	(mg/L)
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
8/29/2018	09:25	100	0.5	27.37	1.36	22.93	4.98	37.1	215	1.21
8/29/2018	09:30	100	1.0	27.43	1.37	22.15	4.82	30.2	239	0.87
8/29/2018	09:35	100	1.5	27.47	1.37	21.70	4.70	17.5	264	0.44
8/29/2018	09:40	100	2.0	27.49	1.37	21.79	4.64	7.3	276	0.35
8/29/2018	09:45	100	2.5	27.51	1.36	21.88	4.63	2.3	277	0.35
8/29/2018	09:50	100	3.0	27.53	1.36	21.97	4.63	1.1	278	0.34
8/29/2018	09:55	100	3.5	27.55	1.37	21.90	4.62	0.7	279	0.34

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW12**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Cloudy / Windy

SAMPLING INFORMATION

Sample No:

DATE/TIME: 2/20/2018 / 14:10

Pump Inlet Depth (ft):

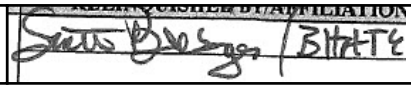
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry Well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 30.94

Measured Depth of Well (ft): 29.46

Screen Interval (ft): 18.97 - 28.47

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: 46WW12 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

NOTE: When DO and ORP show "-99" when a bailer was used to sample. "-99" denotes Not Applicable (N/A).

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW12**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear

SAMPLING INFORMATION

Sample No:

DATE/TIME: 8/27/2018 / 13:37

Pump Inlet Depth (ft):

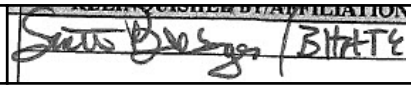
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 30.94

Measured Depth of Well (ft): 28.79

Screen Interval (ft): 18.97 - 28.47

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: 46WW12 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW13**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Cloudy, Windy

SAMPLING INFORMATION

Sample No:

DATE/TIME: 2/20/2018 / 14:25

Pump Inlet Depth (ft):

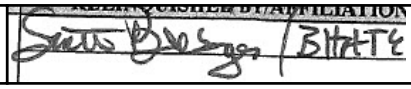
Sampling Method: Bailer

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry Well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 33.34

Measured Depth of Well (ft): 31.63

Screen Interval (ft): 21.42 - 30.92

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: 46WW13 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

NOTE: When DO and ORP show "-99" when a bailer was used to sample. "-99" denotes Not Applicable (N/A).

APTIM

Sample Collection Log

Project Name: **Longhorn AAP**

Location ID: **46WW13**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

SAMPLING INFORMATION

Sample No:

DATE/TIME: 8/27/2018 / 13:44

Pump Inlet Depth (ft):

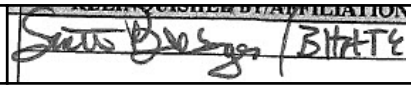
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment:

Casing ID (in.): 4

Purge Start Date/Time: - / -

Depth to Water - Initial (DTWi) (ft)

Purge End Date/Time: - / -

Constructed Depth to Well Bottom (ft) 33.34

PID Reading: N/A

Measured Depth of Well (ft): 31.12

Screen Interval (ft): 21.42 - 30.92

Pump Start Time:

Location ID: 46WW13 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW15**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Cloudy, Windy

SAMPLING INFORMATION

Sample No:

DATE/TIME: 2/20/2018 / 14:35

Pump Inlet Depth (ft):

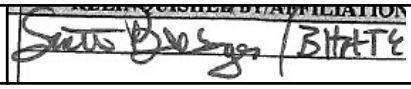
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry Well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 31.9

Measured Depth of Well (ft): 30.26

Screen Interval (ft): 20.45 - 29.95

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: 46WW15 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

NOTE: When DO and ORP show "-99" when a bailer was used to sample. "-99" denotes Not Applicable (N/A).

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Location ID: **46WW15**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No:

DATE/TIME: 8/28/2018 / 13:38

Pump Inlet Depth (ft):

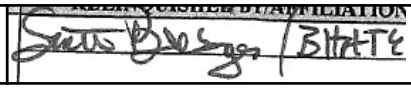
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 31.9

Measured Depth of Well (ft): 30.08

Screen Interval (ft): 20.45 - 29.95

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: 46WW15 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **46WW16**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Overcast / Drizzle

SAMPLING INFORMATION

Sample No: 46WW16-022218

DATE/TIME: 2/22/2018 / 10:55

Pump Inlet Depth (ft): 46.75

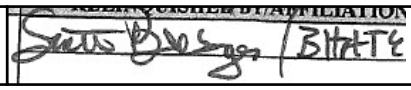
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-02	None	Anions/Alkalinity in Water by E310.1	E310.1
		VOCs in Water by 8260B	SW8260B
		MEE in Water by RSK175	RSK-175
		TOTAL ORGANIC CARBON	E415.1
		Sulfide in Water by E376.1	E376.1
		Dissolved Fe and Mn in Water by 6020A	SW6020A
		Carbon Dioxide in Water by RSK175	RSK-175
		Phosphorous in Water by E365.2	E365.2

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 38.33

Constructed Depth to Well Bottom (ft) 53.22

Measured Depth of Well (ft): 51.53

Screen Interval (ft): 42 - 51.5

Pump Start Time: 2/22/2018 / 10:20

Purging Method/Equipment: Bladder Pump

Purge Start Date/Time: 2/22/2018 / 10:20

Purge End Date/Time: 2/22/2018 / 10:55

PID Reading: N/A

APTIM

Sample Collection Log

Location ID: 46WW16				Sample No: 46WW16-022218						
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
2/22/2018	10:25	100	0.5	38.39	2.77	16.74	6.42	30.8	-39	1.78
2/22/2018	10:30	100	1.0	38.45	2.69	18.18	6.39	28.5	-82	0.92
2/22/2018	10:35	100	1.5	38.48	2.68	18.71	6.12	23.9	-90	0.41
2/22/2018	10:40	100	2.0	38.50	2.72	18.90	6.07	18.1	-91	0.24
2/22/2018	10:45	100	2.5	38.51	2.72	18.93	6.07	17.5	-92	0.23
2/22/2018	10:50	100	3.0	38.52	2.73	18.97	6.06	17.0	-93	0.22
2/22/2018	10:55	100	3.5	38.52	2.73	19.01	6.05	16.8	-93	0.22

APTIM

Sample Collection Log

Project Name: **Longhorn AAP**

Location ID: **46WW16**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No: 46WW16-180828

DATE/TIME: 8/28/2018 / 10:30

Pump Inlet Depth (ft): 46.75

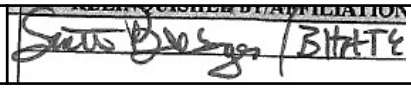
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-AUG2018-GW-ALSHT-180827	None	Dissolved Fe and Mn in Water by 6020A	SW6020A
		VOCs in Water by 8260B	SW8260B
		GASES	RSK-175
		ANIONS	E300.0
		GENERAL CHEMISTRY	A4500PE
		GENERAL CHEMISTRY	A2320B
		Iron, total, in Water by 6020A	SW6020A
		METALS	SW6020A
		ALKALINITY	E310.1
		Sulfide in Water by E376.1	E376.1
		GENERAL CHEMISTRY	E300.0
		Phosphorous in Water by E365.2	E365.2
		TOTAL ORGANIC CARBON	E415.1
		GENERAL CHEMISTRY	E376.1
		Carbon Dioxide in Water by RSK175	RSK-175
		VOLATILES	SW8260B
		METALS	SW6020
		GENERAL CHEMISTRY	E415.1
		MEE in Water by RSK175	RSK-175

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

APTIM

Sample Collection Log

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 8/28/2018 / 10:00

Depth to Water - Initial (DTWi) (ft) 38.62

Purge End Date/Time: 8/28/2018 / 10:30

Constructed Depth to Well Bottom (ft) 53.22

PID Reading: N/A

Measured Depth of Well (ft): 51.52

Screen Interval (ft): 42 - 51.5

Pump Start Time: 8/28/2018 / 10:00

Location ID: 46WW16 Sample No: 46WW16-180828

Date of Reading	Time of Reading	Purge Rate	Total Purge	DTW	Cond.	Temp.	pH	Turbidity	ORP	DO
		(ml/min)	(L)	(ft)	(mS/cm)	(°C)		(NTU)	(mV)	(mg/L)
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
8/28/2018	10:05	100	0.5	38.70	2.74	25.02	6.12	17.1	20	0.89
8/28/2018	10:10	100	1.0	38.75	2.57	22.66	5.79	11.8	67	0.45
8/28/2018	10:15	100	1.5	38.78	2.63	22.35	5.64	11.4	80	0.34
8/28/2018	10:20	100	2.0	38.80	2.63	22.26	5.63	11.2	80	0.33
8/28/2018	10:25	100	2.5	38.81	2.63	22.19	5.63	11.0	81	0.32
8/28/2018	10:30	100	3.0	38.82	2.64	22.14	5.62	10.8	81	0.32

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW17**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Overcast / Light Rain

SAMPLING INFORMATION

Sample No:

DATE/TIME: 2/22/2018 / 12:40

Pump Inlet Depth (ft):

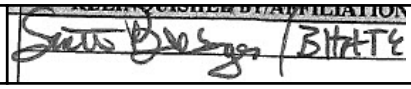
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry Well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 27

Measured Depth of Well (ft): 27

Screen Interval (ft): 17 - 27

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: LHSMW17 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

NOTE: When DO and ORP show "-99" when a bailer was used to sample. "-99" denotes Not Applicable (N/A).

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW17**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No:

DATE/TIME: 8/29/2018 / 10:25

Pump Inlet Depth (ft):

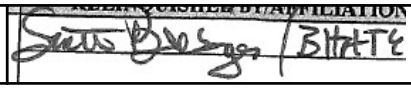
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft)

Constructed Depth to Well Bottom (ft)

27 Measured Depth of Well (ft): 27

Screen Interval (ft): 17 - 27

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: LHSMW17 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Location ID: **LHSMW18**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Overcast / Light Rain

SAMPLING INFORMATION

Sample No:

DATE/TIME: 2/22/2018 / 12:47

Pump Inlet Depth (ft):

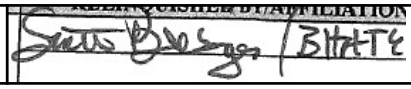
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry Well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment:

Casing ID (in.): 4

Purge Start Date/Time: - / -

Depth to Water - Initial (DTWi) (ft) Dry

Purge End Date/Time: - / -

Constructed Depth to Well Bottom (ft) 30.82

PID Reading: N/A

Measured Depth of Well (ft): 27.85

Screen Interval (ft): 14.85 - 27.85

Pump Start Time:

Location ID: LHSMW18 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

NOTE: When DO and ORP show "-99" when a bailer was used to sample. "-99" denotes Not Applicable (N/A).

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW18**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No:

DATE/TIME: 8/29/2018 / 10:31

Pump Inlet Depth (ft):

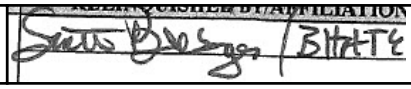
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 30.82

Measured Depth of Well (ft): 27.91

Screen Interval (ft): 14.85 - 27.85

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: LHSMW18 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Location ID: **LHSMW19**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

SAMPLING INFORMATION

Sample No: LHSMW19-022018

DATE/TIME: 2/20/2018 / 09:35

Pump Inlet Depth (ft): 28

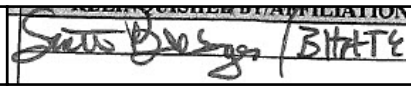
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-01	None	VOCs in Water by 8260B	SW8260B
		Carbon Dioxide in Water by RSK175	RSK-175
		Anions/Alkalinity in Water by E310.1	E310.1
		Sulfide in Water by E376.1	E376.1
		Dissolved Fe and Mn in Water by 6020A	SW6020A
		Phosphorous in Water by E365.2	E365.2
		TOTAL ORGANIC CARBON	E415.1
		MEE in Water by RSK175	RSK-175

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/20/2018 / 09:00

Depth to Water - Initial (DTWi) (ft) 25.91

Purge End Date/Time: 2/20/2018 / 09:35

Constructed Depth to Well Bottom (ft) 33.16

PID Reading: N/A

Measured Depth of Well (ft): 30

Screen Interval (ft): 20.00 - 30.00

Pump Start Time: 2/20/2018 / 09:00

APTIM

Sample Collection Log

Location ID: LHSMW19		Sample No: LHSMW19-022018								
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
2/20/2018	09:05	100	0.5	26	2.29	21.69	5.89	0.9	116	1.90
2/20/2018	09:10	100	1	26.08	2.29	21.49	5.73	2.5	107	0.91
2/20/2018	09:15	100	1.5	26.11	2.27	21.61	5.63	3	108	0.87
2/20/2018	09:20	100	2	26.13	2.26	21.52	5.63	4.8	115	0.79
2/20/2018	09:25	100	2.5	26.14	2.25	21.5	5.63	5	116	0.78
2/20/2018	09:30	100	3	26.15	2.25	21.49	5.62	5.1	116	0.77
2/20/2018	09:35	100	3.5	26.16	2.25	21.47	5.62	5.2	117	0.77

APTIM

Sample Collection Log

Project Name: **Longhorn AAP**

Location ID: **LHSMW19**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No: LHSMW19-180828

DATE/TIME: 8/28/2018 / 13:05

Pump Inlet Depth (ft): 28

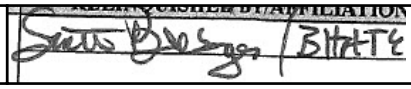
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-AUG2018-GW-ALSHT-180827	None	ALKALINITY	E310.1
		ANIONS	E300.0
		GENERAL CHEMISTRY	A4500PE
		GENERAL CHEMISTRY	E300.0
		GENERAL CHEMISTRY	E415.1
		METALS	SW6020A
		GENERAL CHEMISTRY	E376.1
		Phosphorous in Water by E365.2	E365.2
		TOTAL ORGANIC CARBON	E415.1
		METALS	SW6020
		VOCs in Water by 8260B	SW8260B
		Sulfide in Water by E376.1	E376.1
		GENERAL CHEMISTRY	A2320B
		Iron, total, in Water by 6020A	SW6020A
		MEE in Water by RSK175	RSK-175
		Carbon Dioxide in Water by RSK175	RSK-175
		GASES	RSK-175
		VOLATILES	SW8260B
		Dissolved Fe and Mn in Water by 6020A	SW6020A

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

APTIM

Sample Collection Log

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 8/28/2018 / 12:30

Depth to Water - Initial (DTWi) (ft) 26.61

Purge End Date/Time: 8/28/2018 / 13:05

Constructed Depth to Well Bottom (ft) 33.16

PID Reading: N/A

Measured Depth of Well (ft): 30

Screen Interval (ft): 20.00 - 30.00

Pump Start Time: 8/28/2018 / 12:30

Location ID: LHSMW19 Sample No: LHSMW19-180828

Date of Reading	Time of Reading	Purge Rate	Total Purge	DTW	Cond.	Temp.	pH	Turbidity	ORP	DO
		(ml/min)	(L)	(ft)	(mS/cm)	(°C)		(NTU)	(mV)	(mg/L)
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
8/28/2018	12:35	100	0.5	26.68	2.53	26.87	6.60	0.0	144	1.09
8/28/2018	12:40	100	1.0	26.75	2.50	26.01	6.19	0.0	181	0.65
8/28/2018	12:45	100	1.5	26.79	2.49	25.30	5.95	0.0	205	0.41
8/28/2018	12:50	100	2.0	26.82	2.44	25.11	5.74	0.0	225	0.34
8/28/2018	12:55	100	2.5	26.84	2.44	25.01	5.73	0.0	226	0.33
8/28/2018	13:00	100	3.0	26.86	2.43	24.95	5.73	0.0	226	0.32
8/28/2018	13:05	100	3.5	26.88	2.43	24.91	5.73	0.0	227	0.32

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Location ID: **LHSMW22**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Cloudy, Windy

SAMPLING INFORMATION

Sample No:

DATE/TIME: 2/20/2018 / 14:20

Pump Inlet Depth (ft):

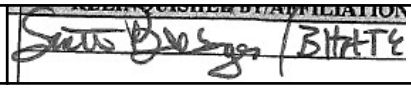
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry Well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment:

Casing ID (in.): 4

Purge Start Date/Time: - / -

Depth to Water - Initial (DTWi) (ft) Dry

Purge End Date/Time: - / -

Constructed Depth to Well Bottom (ft) 31.88

PID Reading: N/A

Measured Depth of Well (ft): 28.84

Screen Interval (ft): 18.94 - 28.69

Pump Start Time:

Location ID: LHSMW22 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

NOTE: When DO and ORP show "-99" when a bailer was used to sample. "-99" denotes Not Applicable (N/A).

APTIM

Sample Collection Log

Project Name: **Longhorn AAP**

Location ID: **LHSMW22**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No:

DATE/TIME: 8/28/2018 / 13:30

Pump Inlet Depth (ft):

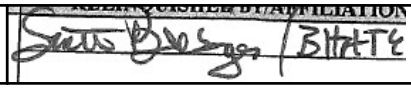
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry well.

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment:

Casing ID (in.): 4

Purge Start Date/Time: - / -

Depth to Water - Initial (DTWi) (ft) Dry

Purge End Date/Time: - / -

Constructed Depth to Well Bottom (ft) 31.88

PID Reading: N/A

Measured Depth of Well (ft): 29.1

Screen Interval (ft): 18.94 - 28.69

Pump Start Time:

Location ID: LHSMW22 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Location ID: **LHSMW23**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Cloudy, Windy

SAMPLING INFORMATION

Sample No:

DATE/TIME: 2/20/2018 / 14:40

Pump Inlet Depth (ft):

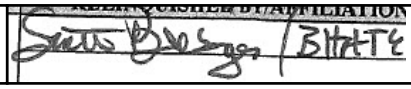
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry Well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment:

Casing ID (in.): 4

Purge Start Date/Time: - / -

Depth to Water - Initial (DTWi) (ft) Dry

Purge End Date/Time: - / -

Constructed Depth to Well Bottom (ft) 45.2

PID Reading: N/A

Measured Depth of Well (ft): 31.76

Screen Interval (ft): 21 - 31

Pump Start Time:

Location ID: LHSMW23 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

NOTE: When DO and ORP show "-99" when a bailer was used to sample. "-99" denotes Not Applicable (N/A).

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW23**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No:

DATE/TIME: 8/28/2018 / 13:44

Pump Inlet Depth (ft):

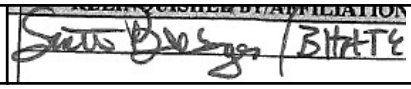
Sampling Method:

Sample Purpose: REG

Sample Matrix: GW

Sample Notes: Dry well

Chain of Custody	COC Notes	Analysis Group	Analytic Method
No COC Specified	None		

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) Dry

Constructed Depth to Well Bottom (ft) 45.2

Measured Depth of Well (ft): 31.05

Screen Interval (ft): 21 - 31

Pump Start Time:

Purging Method/Equipment:

Purge Start Date/Time: - / -

Purge End Date/Time: - / -

PID Reading: N/A

Location ID: LHSMW23 Sample No:										
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Location ID: **LHSMW25**

Project No: **501032**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Overcast / Light Rain

SAMPLING INFORMATION

Sample No: LHSMW25-022218

DATE/TIME: 2/22/2018 / 13:50

Pump Inlet Depth (ft): 37

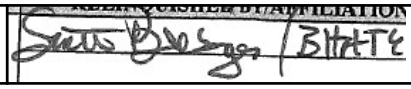
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-FEB2018-GW-ALSHT-02	None	VOCs in Water by 8260B	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Purging Method/Equipment: Bladder Pump

Casing ID (in.): 4

Purge Start Date/Time: 2/22/2018 / 13:20

Depth to Water - Initial (DTWi) (ft) 30.9

Purge End Date/Time: 2/22/2018 / 13:50

Constructed Depth to Well Bottom (ft) 42.1

PID Reading: N/A

Measured Depth of Well (ft): 42.63 Screen Interval (ft): 32 - 42

Pump Start Time: 2/22/2018 / 13:20

APTIM

Sample Collection Log

Location ID: LHSMW25		Sample No: LHSMW25-022218								
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
2/22/2018	13:20	100	0.5	30.97	2.23	18.54	6.29	41.6	82	1.47
2/22/2018	13:25	100	1.0	31.03	2.18	19.0	6.05	39.5	120	0.76
2/22/2018	13:30	100	1.5	31.08	2.16	19.10	5.85	34.5	147	0.38
2/22/2018	13:35	100	2.0	31.11	2.17	18.95	5.81	26.0	146	0.18
2/22/2018	13:40	100	2.5	31.13	2.18	18.92	5.80	25.5	145	0.18
2/22/2018	13:45	100	3.0	31.14	2.18	18.89	5.80	24.9	144	0.17
2/22/2018	13:50	100	3.5	31.15	2.18	18.87	5.80	24.3	144	0.17

Sample Collection Log

APTIM

Project Name: **Longhorn AAP**

Project No: **501032**

Location ID: **LHSMW25**

Sampler(s): **Scott Beesinger**

FIELD CONDITIONS

Clear / Sunny

SAMPLING INFORMATION

Sample No: LHSMW25-180827

DATE/TIME: 8/27/2018 / 09:05

Pump Inlet Depth (ft): 37

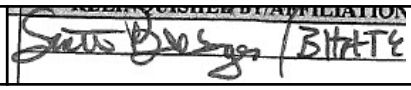
Sampling Method: Bladder Pump

Sample Purpose: REG

Sample Matrix: GW

Sample Notes:

Chain of Custody	COC Notes	Analysis Group	Analytic Method
46-AUG2018-GW-ALSHT-180827	None	VOCs in Water by 8260B	SW8260B
		VOLATILES	SW8260B

Sampler:		Scott Beesinger	
QC'ed By:		Robert Mayer	10/22/2018

WELL AND PURGING INFORMATION

Measuring Point : Top of Casing

Casing ID (in.): 4

Depth to Water - Initial (DTWi) (ft) 31.33

Constructed Depth to Well Bottom (ft) 42.1

Measured Depth of Well (ft): 42.65

Screen Interval (ft): 32 - 42

Pump Start Time: 8/27/2018 / 08:35

Purging Method/Equipment: Bladder Pump

Purge Start Date/Time: 8/27/2018 / 08:35

Purge End Date/Time: 8/27/2018 / 09:05

PID Reading: N/A

APTIM

Sample Collection Log

Location ID: LHSMW25		Sample No: LHSMW25-180827								
Date of Reading	**Time of Reading**	**Purge Rate**	**Total Purge**	**DTW**	**Cond.**	**Temp.**	**pH**	**Turbidity**	**ORP**	**DO**
		(ml/min)	**(L)**	**(ft)**	**(mS/cm)**	**(°C)**		**(NTU)**	**(mV)**	**(mg/L)**
	Purge Stabilization Criteria	-	-	Drawdown limit 0.3 ft	±10%		±0.1 units	No criteria		± 10% or 0.2 mg/L
8/27/2018	08:40	100	0.5	31.40	2.15	24.71	6.09	34.7	151	1.33
8/27/2018	08:45	100	1.0	31.46	2.12	23.55	5.79	18.3	155	0.90
8/27/2018	08:50	100	1.5	31.50	2.15	23.29	5.64	15.8	158	0.80
8/27/2018	08:55	100	2.0	31.52	2.16	23.20	5.63	15.1	158	0.79
8/27/2018	09:00	100	2.5	31.54	2.17	23.15	5.63	14.7	159	0.78
8/27/2018	09:05	100	3.0	31.55	2.17	23.07	5.62	14.2	159	0.77

Appendix E

Laboratory Analytical Data Package

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

March 08, 2018

Sharon Pennington
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS18021075**

Laboratory Results for: **LHAAP-46 501032**

Dear Sharon,

ALS Environmental received 4 sample(s) on Feb 21, 2018 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: Jumoke.Lawal
RJ Modashia
Project Manager

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Work Order: HS18021075

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18021075-01	LHSMW19-022018	Water		20-Feb-2018 09:35	21-Feb-2018 09:30	☐
HS18021075-02	46WW11-022018	Water		20-Feb-2018 10:40	21-Feb-2018 09:30	☐
HS18021075-03	46WW02-022018	Water		20-Feb-2018 13:35	21-Feb-2018 09:30	☐
HS18021075-04	46TB01-022018	Water	ALS 112117-35	20-Feb-2018 00:00	21-Feb-2018 09:30	☐

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP-46 501032
Work Order:

Work Order Comments

• The analysis for Methane, Methene, Ethane and CO2 by RSK175 was subcontracted to ALS Simi Valley, CA. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R311740

Sample ID: HS18021062-03

• MS and MSD are for an unrelated sample.

Batch ID: R311744

Sample ID: HS18021074-01

• MS and MSD are for an unrelated sample.

Metals by Method SW6020

Batch ID: 125750,125751

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9060

Batch ID: R312059

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E376.1

Batch ID: R311690

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM2320B

Batch ID: R312018

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R311368

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM4500P E

Batch ID: 125576

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: LHSMW19-022018
Collection Date: 20-Feb-2018 09:35

ANALYTICAL REPORT
WorkOrder:HS18021075
Lab ID:HS18021075-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:10
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 03:10
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 03:10
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:10
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 03:10
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 03:10
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 03:10
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: LHSMW19-022018
Collection Date: 20-Feb-2018 09:35

ANALYTICAL REPORT
WorkOrder:HS18021075
Lab ID:HS18021075-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 03:10
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 03:10
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:10
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Trichloroethene	**2.4**		**0.20**	**0.50**	**1.0**	**ug/L**	1	01-Mar-2018 03:10
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:10
Surr: 1,2-Dichloroethane-d4	*83.2*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 03:10*
Surr: 4-Bromofluorobenzene	*97.0*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 03:10*
Surr: Dibromofluoromethane	*87.5*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 03:10*
Surr: Toluene-d8	*107*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 03:10*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**0.924**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 22:24
DISSOLVED METALS BY SW6020A		**Method:SW6020 (dissolved)**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**0.910**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 23:00
Manganese	**0.153**		**0.000700**	**0.00100**	**0.00500**	**mg/L**	1	01-Mar-2018 23:00
SULFIDE BY E376.1		**Method:E376.1**						Analyst: JHD
Sulfide	**1.04**		**1.00**	**1.00**	**1.00**	**mg/L**	1	27-Feb-2018 16:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: LHSMW19-022018
Collection Date: 20-Feb-2018 09:35

ANALYTICAL REPORT
WorkOrder:HS18021075
Lab ID:HS18021075-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ALKALINITY BY SM2320B			**Method:SM2320B**					Analyst: AJH
Alkalinity, Total (As CaCO3)	**422**		**5.00**	**5.00**	**5.00**	**mg/L**	1	06-Mar-2018 13:41
PHOSPHORUS BY SM4500P E			**Method:SM4500P E**			Prep:SM4500P E / 23-Feb-2018		Analyst: MZD
Phosphorus, Total (As P)	**0.0910**		**0.0200**	**0**	**0.0500**	**mg/L**	1	23-Feb-2018 14:20
ANIONS BY SW9056A			**Method:SW9056**					Analyst: KMU
Chloride	**280**		**4.00**	**5.00**	**10.0**	**mg/L**	20	21-Feb-2018 21:55
Nitrogen, Nitrate (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	21-Feb-2018 21:41
Nitrogen, Nitrite (As N)	**1.07**		**0.0300**	**0.0500**	**0.100**	**mg/L**	1	21-Feb-2018 21:41
Sulfate	**562**		**4.00**	**5.00**	**10.0**	**mg/L**	20	21-Feb-2018 21:55
TOTAL ORGANIC CARBON BY SW9060A			**Method:SW9060**					Analyst: KMU
Organic Carbon, Total	**2.82**		**0.500**	**0.500**	**1.00**	**mg/L**	1	06-Mar-2018 20:01
SUBCONTRACT ANALYSIS - RSK			**Method:NA**					Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	08-Mar-2018 09:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021075
Sample ID: 46WW11-022018 Lab ID:HS18021075-02
Collection Date: 20-Feb-2018 10:40 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:34
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 03:34
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 03:34
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:34
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 03:34
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 03:34
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 03:34
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021075
Sample ID: 46WW11-022018 Lab ID:HS18021075-02
Collection Date: 20-Feb-2018 10:40 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 03:34
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 03:34
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:34
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Trichloroethene	**18**		**0.20**	**0.50**	**1.0**	**ug/L**	1	01-Mar-2018 03:34
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:34
Surr: 1,2-Dichloroethane-d4	*84.1*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 03:34*
Surr: 4-Bromofluorobenzene	*96.8*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 03:34*
Surr: Dibromofluoromethane	*87.6*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 03:34*
Surr: Toluene-d8	*107*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 03:34*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**0.222**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 22:38
DISSOLVED METALS BY SW6020A		**Method:SW6020 (dissolved)**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**0.225**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 23:11
Manganese	**0.0520**		**0.000700**	**0.00100**	**0.00500**	**mg/L**	1	01-Mar-2018 23:11
SULFIDE BY E376.1		**Method:E376.1**						Analyst: JHD
Sulfide	1.00	U	1.00	1.00	1.00	mg/L	1	27-Feb-2018 16:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW11-022018
Collection Date: 20-Feb-2018 10:40

ANALYTICAL REPORT
WorkOrder:HS18021075
Lab ID:HS18021075-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: AJH
Alkalinity, Total (As CaCO3)	**32.9**		**5.00**	**5.00**	**5.00**	**mg/L**	1	06-Mar-2018 13:46
PHOSPHORUS BY SM4500P E		**Method:SM4500P E**				Prep:SM4500P E / 23-Feb-2018		Analyst: MZD
Phosphorus, Total (As P)	**0.0930**		**0.0200**	**0**	**0.0500**	**mg/L**	1	23-Feb-2018 14:20
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**213**		**4.00**	**5.00**	**10.0**	**mg/L**	20	21-Feb-2018 23:08
Nitrogen, Nitrate (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	21-Feb-2018 22:53
Nitrogen, Nitrite (As N)	**0.595**		**0.0300**	**0.0500**	**0.100**	**mg/L**	1	21-Feb-2018 22:53
Sulfate	**301**		**4.00**	**5.00**	**10.0**	**mg/L**	20	21-Feb-2018 23:08
TOTAL ORGANIC CARBON BY SW9060A		**Method:SW9060**						Analyst: KMU
Organic Carbon, Total	**1.90**		**0.500**	**0.500**	**1.00**	**mg/L**	1	06-Mar-2018 20:36
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	08-Mar-2018 09:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021075
Sample ID: 46WW02-022018 Lab ID:HS18021075-03
Collection Date: 20-Feb-2018 13:35 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:59
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 03:59
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 03:59
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:59
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 03:59
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 03:59
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 03:59
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021075
Sample ID: 46WW02-022018 Lab ID:HS18021075-03
Collection Date: 20-Feb-2018 13:35 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
cis-1,2-Dichloroethene	**0.52**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	01-Mar-2018 03:59
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 03:59
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 03:59
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 03:59
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Trichloroethene	**21**		**0.20**	**0.50**	**1.0**	**ug/L**	1	01-Mar-2018 03:59
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 03:59
Surr: 1,2-Dichloroethane-d4	*82.6*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 03:59*
Surr: 4-Bromofluorobenzene	*96.3*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 03:59*
Surr: Dibromofluoromethane	*86.1*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 03:59*
Surr: Toluene-d8	*106*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 03:59*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**0.612**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 22:40
DISSOLVED METALS BY SW6020A		**Method:SW6020 (dissolved)**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**0.579**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 23:13
Manganese	**0.167**		**0.000700**	**0.00100**	**0.00500**	**mg/L**	1	01-Mar-2018 23:13
SULFIDE BY E376.1		**Method:E376.1**						Analyst: JHD
Sulfide	**1.44**		**1.00**	**1.00**	**1.00**	**mg/L**	1	27-Feb-2018 16:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW02-022018
Collection Date: 20-Feb-2018 13:35

ANALYTICAL REPORT
WorkOrder:HS18021075
Lab ID:HS18021075-03
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: AJH
Alkalinity, Total (As CaCO3)	**6.00**		**5.00**	**5.00**	**5.00**	**mg/L**	1	06-Mar-2018 13:56
PHOSPHORUS BY SM4500P E		**Method:SM4500P E**				Prep:SM4500P E / 23-Feb-2018		Analyst: MZD
Phosphorus, Total (As P)	**0.0270**	J	**0.0200**	**0**	**0.0500**	**mg/L**	1	23-Feb-2018 14:20
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**21.4**		**0.200**	**0.250**	**0.500**	**mg/L**	1	22-Feb-2018 00:06
Nitrogen, Nitrate (As N)	**0.248**		**0.0300**	**0.0500**	**0.100**	**mg/L**	1	22-Feb-2018 00:06
Nitrogen, Nitrite (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	22-Feb-2018 00:06
Sulfate	**150**		**4.00**	**5.00**	**10.0**	**mg/L**	20	22-Feb-2018 00:21
TOTAL ORGANIC CARBON BY SW9060A		**Method:SW9060**						Analyst: KMU
Organic Carbon, Total	**8.81**		**0.500**	**0.500**	**1.00**	**mg/L**	1	06-Mar-2018 20:53
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	08-Mar-2018 09:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021075
Sample ID: 46TB01-022018 Lab ID:HS18021075-04
Collection Date: 20-Feb-2018 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	28-Feb-2018 13:34
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	28-Feb-2018 13:34
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	28-Feb-2018 13:34
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	28-Feb-2018 13:34
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	28-Feb-2018 13:34
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	28-Feb-2018 13:34
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	28-Feb-2018 13:34
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021075
Sample ID: 46TB01-022018 Lab ID:HS18021075-04
Collection Date: 20-Feb-2018 00:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	28-Feb-2018 13:34
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	28-Feb-2018 13:34
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	28-Feb-2018 13:34
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	28-Feb-2018 13:34
Surr: 1,2-Dichloroethane-d4	*84.7*			**0**	*70-126*	*%REC*	*1*	*28-Feb-2018 13:34*
Surr: 4-Bromofluorobenzene	*95.8*			**0**	*81-113*	*%REC*	*1*	*28-Feb-2018 13:34*
Surr: Dibromofluoromethane	*87.2*			**0**	*77-123*	*%REC*	*1*	*28-Feb-2018 13:34*
Surr: Toluene-d8	*106*			**0**	*82-127*	*%REC*	*1*	*28-Feb-2018 13:34*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

WEIGHT LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

Batch ID: 125576 **Method:** PHOSPHORUS BY SM4500P E **Prep:** P_TW_PR4500

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18021075-01	1	50	50 (mL)	1
HS18021075-02	1	50	50 (mL)	1
HS18021075-03	1	50	50 (mL)	1

Batch ID: 125750 **Method:** ICP-MS METALS BY SW6020A **Prep:** 3010A

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18021075-01	1	10	10 (mL)	1
HS18021075-02	1	10	10 (mL)	1
HS18021075-03	1	10	10 (mL)	1

Batch ID: 125751 **Method:** DISSOLVED METALS BY SW6020A **Prep:** 3010A DISS

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18021075-01	1	10	10 (mL)	1
HS18021075-02	1	10	10 (mL)	1
HS18021075-03	1	10	10 (mL)	1

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 125576	**Test Name :** PHOSPHORUS BY SM4500P E			**Matrix:** Water		
HS18021075-01	LHSMW19-022018	20 Feb 2018 09:35		23 Feb 2018 10:30	23 Feb 2018 14:20	1
HS18021075-02	46WW11-022018	20 Feb 2018 10:40		23 Feb 2018 10:30	23 Feb 2018 14:20	1
HS18021075-03	46WW02-022018	20 Feb 2018 13:35		23 Feb 2018 10:30	23 Feb 2018 14:20	1
Batch ID 125750	**Test Name :** ICP-MS METALS BY SW6020A			**Matrix:** Water		
HS18021075-01	LHSMW19-022018	20 Feb 2018 09:35		01 Mar 2018 11:24	01 Mar 2018 22:24	1
HS18021075-02	46WW11-022018	20 Feb 2018 10:40		01 Mar 2018 11:24	01 Mar 2018 22:38	1
HS18021075-03	46WW02-022018	20 Feb 2018 13:35		01 Mar 2018 11:24	01 Mar 2018 22:40	1
Batch ID 125751	**Test Name :** DISSOLVED METALS BY SW6020A			**Matrix:** Water		
HS18021075-01	LHSMW19-022018	20 Feb 2018 09:35		01 Mar 2018 11:25	01 Mar 2018 23:00	1
HS18021075-02	46WW11-022018	20 Feb 2018 10:40		01 Mar 2018 11:25	01 Mar 2018 23:11	1
HS18021075-03	46WW02-022018	20 Feb 2018 13:35		01 Mar 2018 11:25	01 Mar 2018 23:13	1
Batch ID R311368	**Test Name :** ANIONS BY SW9056A			**Matrix:** Water		
HS18021075-01	LHSMW19-022018	20 Feb 2018 09:35			21 Feb 2018 21:55	20
HS18021075-01	LHSMW19-022018	20 Feb 2018 09:35			21 Feb 2018 21:41	1
HS18021075-02	46WW11-022018	20 Feb 2018 10:40			21 Feb 2018 23:08	20
HS18021075-02	46WW11-022018	20 Feb 2018 10:40			21 Feb 2018 22:53	1
HS18021075-03	46WW02-022018	20 Feb 2018 13:35			22 Feb 2018 00:21	20
HS18021075-03	46WW02-022018	20 Feb 2018 13:35			22 Feb 2018 00:06	1
Batch ID R311690	**Test Name :** SULFIDE BY E376.1			**Matrix:** Water		
HS18021075-01	LHSMW19-022018	20 Feb 2018 09:35			27 Feb 2018 16:26	1
HS18021075-02	46WW11-022018	20 Feb 2018 10:40			27 Feb 2018 16:26	1
HS18021075-03	46WW02-022018	20 Feb 2018 13:35			27 Feb 2018 16:26	1
Batch ID R311740	**Test Name :** LOW LEVEL VOLATILES BY SW8260C			**Matrix:** Water		
HS18021075-04	46TB01-022018	20 Feb 2018 00:00			28 Feb 2018 13:34	1
Batch ID R311744	**Test Name :** LOW LEVEL VOLATILES BY SW8260C			**Matrix:** Water		
HS18021075-01	LHSMW19-022018	20 Feb 2018 09:35			01 Mar 2018 03:10	1
HS18021075-02	46WW11-022018	20 Feb 2018 10:40			01 Mar 2018 03:34	1
HS18021075-03	46WW02-022018	20 Feb 2018 13:35			01 Mar 2018 03:59	1
Batch ID R312018	**Test Name :** ALKALINITY BY SM2320B			**Matrix:** Water		
HS18021075-01	LHSMW19-022018	20 Feb 2018 09:35			06 Mar 2018 13:41	1
HS18021075-02	46WW11-022018	20 Feb 2018 10:40			06 Mar 2018 13:46	1
HS18021075-03	46WW02-022018	20 Feb 2018 13:35			06 Mar 2018 13:56	1
Batch ID R312059	**Test Name :** TOTAL ORGANIC CARBON BY SW9060A			**Matrix:** Water		
HS18021075-01	LHSMW19-022018	20 Feb 2018 09:35			06 Mar 2018 20:01	1
HS18021075-02	46WW11-022018	20 Feb 2018 10:40			06 Mar 2018 20:36	1
HS18021075-03	46WW02-022018	20 Feb 2018 13:35			06 Mar 2018 20:53	1

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R312129	**Test Name :** SUBCONTRACT ANALYSIS - RSK			**Matrix:** Water		
HS18021075-01	LHSMW19-022018	20 Feb 2018 09:35			08 Mar 2018 09:34	1
HS18021075-02	46WW11-022018	20 Feb 2018 10:40			08 Mar 2018 09:34	1
HS18021075-03	46WW02-022018	20 Feb 2018 13:35			08 Mar 2018 09:34	1

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: 125750 **Instrument: ICPMS05** **Method: SW6020**

MBLK Sample ID: **MBLK-125750** Units: **mg/L** Analysis Date: **01-Mar-2018 22:20**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458354** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	0.100	0.200								U

LCS Sample ID: **LCS-125750** Units: **mg/L** Analysis Date: **01-Mar-2018 22:22**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458355** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	4.601	0.200	5	0	92.0	80 - 120				

MS Sample ID: **HS18021075-01MS** Units: **mg/L** Analysis Date: **01-Mar-2018 22:28**
Client ID: **LHSMW19-022018** Run ID: **ICPMS05_311754** SeqNo: **4458358** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.609	0.200	5	0.9236	93.7	80 - 120				

MSD Sample ID: **HS18021075-01MSD** Units: **mg/L** Analysis Date: **01-Mar-2018 22:30**
Client ID: **LHSMW19-022018** Run ID: **ICPMS05_311754** SeqNo: **4458359** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.854	0.200	5	0.9236	98.6	80 - 120	5.609	4.26	20	

PDS Sample ID: **HS18021075-01PDS** Units: **mg/L** Analysis Date: **01-Mar-2018 22:36**
Client ID: **LHSMW19-022018** Run ID: **ICPMS05_311754** SeqNo: **4458362** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	12.28	0.200	10	0.9236	114	75 - 125				

SD Sample ID: **HS18021075-01SD** Units: **mg/L** Analysis Date: **01-Mar-2018 22:26**
Client ID: **LHSMW19-022018** Run ID: **ICPMS05_311754** SeqNo: **4458357** PrepDate: **01-Mar-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Iron	0.9119	1.00					0.9236	0	10	J

The following samples were analyzed in this batch: HS18021075-01 HS18021075-02 HS18021075-03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: 125751 **Instrument: ICPMS05** **Method: SW6020 (dissolved) (DISSOLVED)**

MBLK Sample ID: **MBLK-125751** Units: **mg/L** Analysis Date: **01-Mar-2018 22:52**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458370** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	0.100	0.200								U
Manganese	0.000951	0.00500								J

LCS Sample ID: **LCS-125751** Units: **mg/L** Analysis Date: **01-Mar-2018 22:54**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458371** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	4.915	0.200	5	0	98.3	80 - 120				
Manganese	0.05	0.00500	0.05	0	100	80 - 120				

MS Sample ID: **HS18021075-01MS** Units: **mg/L** Analysis Date: **01-Mar-2018 23:04**
Client ID: **LHSMW19-022018** Run ID: **ICPMS05_311754** SeqNo: **4458376** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.418	0.200	5	0.9096	90.2	75 - 125				
Manganese	0.1912	0.00500	0.05	0.153	76.4	75 - 125				

MSD Sample ID: **HS18021075-01MSD** Units: **mg/L** Analysis Date: **01-Mar-2018 23:06**
Client ID: **LHSMW19-022018** Run ID: **ICPMS05_311754** SeqNo: **4458377** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.66	0.200	5	0.9096	95.0	75 - 125	5.418	4.39	20	
Manganese	0.2009	0.00500	0.05	0.153	95.7	75 - 125	0.1912	4.91	20	

PDS Sample ID: **HS18021075-01PDS** Units: **mg/L** Analysis Date: **01-Mar-2018 23:09**
Client ID: **LHSMW19-022018** Run ID: **ICPMS05_311754** SeqNo: **4458378** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	10.12	0.200	10	0.9096	92.1	75 - 125				
Manganese	0.2468	0.00500	0.1	0.153	93.8	75 - 125				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: 125751 **Instrument: ICPMS05** **Method: SW6020 (dissolved) (DISSOLVED)**

SD Sample ID: **HS18021075-01SD** Units: **mg/L** Analysis Date: **01-Mar-2018 23:02**
Client ID: **LHSMW19-022018** Run ID: **ICPMS05_311754** SeqNo: **4458375** PrepDate: **01-Mar-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Iron	0.9512	1.00					0.9096	0	10	J
Manganese	0.1614	0.0250					0.153	5.46	10	

The following samples were analyzed in this batch: HS18021075-01 HS18021075-02 HS18021075-03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180228** Units: **ug/L** Analysis Date: **28-Feb-2018 12:43**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456895** 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	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180228** Units: **ug/L** Analysis Date: **28-Feb-2018 12:43**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456895** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	0.50	1.0								U
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	0.50	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*41.3*	*1.0*	*50*	*0*	*82.6*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*48.48*	*1.0*	*50*	*0*	*97.0*	*82 - 115*				
Surr: Dibromofluoromethane	*42.46*	*1.0*	*50*	*0*	*84.9*	*73 - 126*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180228** Units: **ug/L** Analysis Date: **28-Feb-2018 12:43**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456895** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*52.73*	*1.0*	*50*	*0*	*105*	*81 - 120*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180228** Units: **ug/L** Analysis Date: **28-Feb-2018 11:54**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456893** 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	43.96	1.0	50	0	87.9	77 - 118				
1,1,1-Trichloroethane	43.53	1.0	50	0	87.1	70 - 130				
1,1,2,2-Tetrachloroethane	42.89	1.0	50	0	85.8	70 - 120				
1,1,2-Trichlor-1,2,2-trifluoroethane	44.31	1.0	50	0	88.6	70 - 130				
1,1,2-Trichloroethane	44.67	1.0	50	0	89.3	77 - 113				
1,1-Dichloroethane	44.16	1.0	50	0	88.3	71 - 122				
1,1-Dichloroethene	45.71	1.0	50	0	91.4	70 - 130				
1,1-Dichloropropene	47.41	1.0	50	0	94.8	78 - 118				
1,2,3-Trichlorobenzene	44.67	1.0	50	0	89.3	70 - 130				
1,2,3-Trichloropropane	44.01	1.0	50	0	88.0	70 - 127				
1,2,4-Trichlorobenzene	45.06	1.0	50	0	90.1	77 - 126				
1,2,4-Trimethylbenzene	44.54	1.0	50	0	89.1	73 - 121				
1,2-Dibromo-3-chloropropane	45.63	1.0	50	0	91.3	70 - 130				
1,2-Dibromoethane	47.17	1.0	50	0	94.3	76 - 123				
1,2-Dichlorobenzene	41.11	1.0	50	0	82.2	77 - 113				
1,2-Dichloroethane	45.05	1.0	50	0	90.1	70 - 124				
1,2-Dichloropropane	44.55	1.0	50	0	89.1	72 - 119				
1,3,5-Trimethylbenzene	44.54	1.0	50	0	89.1	75 - 118				
1,3-Dichlorobenzene	41.07	1.0	50	0	82.1	78 - 118				
1,3-Dichloropropane	43.67	1.0	50	0	87.3	75 - 116				
1,4-Dichlorobenzene	40.38	1.0	50	0	80.8	79 - 113				
2,2-Dichloropropane	43.83	1.0	50	0	87.7	70 - 130				
2-Butanone	103.7	2.0	100	0	104	70 - 130				
2-Chlorotoluene	44.42	1.0	50	0	88.8	70 - 128				
2-Hexanone	103.1	2.0	100	0	103	70 - 130				
4-Chlorotoluene	45.41	1.0	50	0	90.8	74 - 126				
4-Isopropyltoluene	39.19	1.0	50	0	78.4	74 - 126				
4-Methyl-2-pentanone	92.16	2.0	100	0	92.2	70 - 130				
Acetone	96.55	2.0	100	0	96.6	70 - 130				
Benzene	45.68	1.0	50	0	91.4	74 - 120				
Bromobenzene	40.32	1.0	50	0	80.6	78 - 113				
Bromochloromethane	48.75	1.0	50	0	97.5	76 - 124				
Bromodichloromethane	46.79	1.0	50	0	93.6	74 - 122				
Bromoform	49.13	1.0	50	0	98.3	73 - 128				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180228** Units: **ug/L** Analysis Date: **28-Feb-2018 11:54**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456893** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	48.8	1.0	50	0	97.6	70 - 130				
Carbon disulfide	91.41	2.0	100	0	91.4	70 - 130				
Carbon tetrachloride	41.11	1.0	50	0	82.2	71 - 125				
Chlorobenzene	42.96	1.0	50	0	85.9	76 - 113				
Chloroethane	42.53	1.0	50	0	85.1	70 - 130				
Chloroform	42.56	1.0	50	0	85.1	71 - 121				
Chloromethane	45.85	1.0	50	0	91.7	70 - 129				
cis-1,2-Dichloroethene	47.33	1.0	50	0	94.7	75 - 122				
cis-1,3-Dichloropropene	49.91	1.0	50	0	99.8	73 - 127				
Dibromochloromethane	46.05	1.0	50	0	92.1	77 - 122				
Dibromomethane	49.59	1.0	50	0	99.2	78 - 121				
Dichlorodifluoromethane	40.05	1.0	50	0	80.1	70 - 130				
Ethylbenzene	47.91	1.0	50	0	95.8	77 - 117				
Hexachlorobutadiene	40.44	1.0	50	0	80.9	70 - 130				
Isopropylbenzene	42.41	1.0	50	0	84.8	73 - 127				
m,p-Xylene	85.22	2.0	100	0	85.2	77 - 122				
Methylene chloride	44.37	2.0	50	0	88.7	70 - 127				
Naphthalene	51.94	1.0	50	0	104	70 - 130				
n-Butylbenzene	40.65	1.0	50	0	81.3	72 - 130				
n-Propylbenzene	39.33	1.0	50	0	78.7	73 - 124				
o-Xylene	43.36	1.0	50	0	86.7	75 - 119				
sec-Butylbenzene	40.16	1.0	50	0	80.3	73 - 128				
Styrene	44.22	1.0	50	0	88.4	72 - 126				
tert-Butylbenzene	39.03	1.0	50	0	78.1	73 - 124				
Tetrachloroethene	42.66	1.0	50	0	85.3	76 - 119				
Toluene	42.01	1.0	50	0	84.0	77 - 118				
trans-1,2-Dichloroethene	47.97	1.0	50	0	95.9	72 - 127				
trans-1,3-Dichloropropene	50.44	1.0	50	0	101	77 - 119				
Trichloroethene	46.7	1.0	50	0	93.4	77 - 121				
Trichlorofluoromethane	41.91	1.0	50	0	83.8	70 - 130				
Vinyl chloride	45.39	1.0	50	0	90.8	70 - 130				
Surr: 1,2-Dichloroethane-d4	*43.4*	*1.0*	*50*	*0*	*86.8*	*70 - 130*				
Surr: 4-Bromofluorobenzene	*50.32*	*1.0*	*50*	*0*	*101*	*82 - 115*				
Surr: Dibromofluoromethane	*41.81*	*1.0*	*50*	*0*	*83.6*	*73 - 126*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180228** Units: **ug/L** Analysis Date: **28-Feb-2018 11:54**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456893** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*51.17*	*1.0*	*50*	*0*	*102*	*81 - 120*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021062-03MS** Units: **ug/L** Analysis Date: **28-Feb-2018 14:23**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456899** 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	43.43	1.0	50	0	86.9	70 - 120				
1,1,1-Trichloroethane	45.82	1.0	50	0	91.6	70 - 130				
1,1,2,2-Tetrachloroethane	40.86	1.0	50	0	81.7	70 - 123				
1,1,2-Trichlor-1,2,2-trifluoroethane	49.64	1.0	50	0	99.3	70 - 130				
1,1,2-Trichloroethane	42.38	1.0	50	0	84.8	70 - 117				
1,1-Dichloroethane	42.89	1.0	50	0	85.8	70 - 127				
1,1-Dichloroethene	47.9	1.0	50	0	95.8	70 - 130				
1,1-Dichloropropene	49.67	1.0	50	0	99.3	70 - 129				
1,2,3-Trichlorobenzene	44.28	1.0	50	0	88.6	70 - 130				
1,2,3-Trichloropropane	42.06	1.0	50	0	84.1	70 - 130				
1,2,4-Trichlorobenzene	43.45	1.0	50	0	86.9	70 - 125				
1,2,4-Trimethylbenzene	45.13	1.0	50	0	90.3	70 - 125				
1,2-Dibromo-3-chloropropane	43.83	1.0	50	0	87.7	70 - 130				
1,2-Dibromoethane	44.46	1.0	50	0	88.9	70 - 124				
1,2-Dichlorobenzene	39.46	1.0	50	0	78.9	70 - 115				
1,2-Dichloroethane	41.61	1.0	50	0	83.2	70 - 127				
1,2-Dichloropropane	42.78	1.0	50	0	85.6	70 - 122				
1,3,5-Trimethylbenzene	46.38	1.0	50	0	92.8	70 - 126				
1,3-Dichlorobenzene	40.43	1.0	50	0	80.9	70 - 119				
1,3-Dichloropropane	41.4	1.0	50	0	82.8	70 - 121				
1,4-Dichlorobenzene	39.43	1.0	50	0	78.9	70 - 114				
2,2-Dichloropropane	45.08	1.0	50	0	90.2	70 - 130				
2-Butanone	94.88	2.0	100	0	94.9	70 - 130				
2-Chlorotoluene	44.94	1.0	50	0	89.9	70 - 130				
2-Hexanone	97.49	2.0	100	0	97.5	70 - 130				
4-Chlorotoluene	44.97	1.0	50	0	89.9	70 - 130				
4-Isopropyltoluene	41.67	1.0	50	0	83.3	70 - 130				
4-Methyl-2-pentanone	88.58	2.0	100	0	88.6	70 - 130				
Acetone	96.64	2.0	100	0	96.6	70 - 130				
Benzene	44.85	1.0	50	0.5473	88.6	70 - 127				
Bromobenzene	38.51	1.0	50	0	77.0	70 - 115				
Bromochloromethane	47.51	1.0	50	0	95.0	70 - 127				
Bromodichloromethane	44.03	1.0	50	0	88.1	70 - 124				
Bromoform	47.2	1.0	50	0	94.4	70 - 129				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021062-03MS** Units: **ug/L** Analysis Date: **28-Feb-2018 14:23**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456899** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	43.93	1.0	50	0	87.9	70 - 130				
Carbon disulfide	92.81	2.0	100	0	92.8	70 - 130				
Carbon tetrachloride	47.58	1.0	50	0	95.2	70 - 130				
Chlorobenzene	42.25	1.0	50	0	84.5	70 - 114				
Chloroethane	52.6	1.0	50	0	105	70 - 130				
Chloroform	40.72	1.0	50	0	81.4	70 - 125				
Chloromethane	43.48	1.0	50	0	87.0	70 - 130				
cis-1,2-Dichloroethene	45.44	1.0	50	0	90.9	70 - 128				
cis-1,3-Dichloropropene	44.99	1.0	50	0	90.0	70 - 125				
Dibromochloromethane	43.9	1.0	50	0	87.8	70 - 124				
Dibromomethane	46.53	1.0	50	0	93.1	70 - 124				
Dichlorodifluoromethane	37.74	1.0	50	0	75.5	70 - 130				
Ethylbenzene	49.2	1.0	50	0	98.4	70 - 124				
Hexachlorobutadiene	45.89	1.0	50	0	91.8	70 - 130				
Isopropylbenzene	44.6	1.0	50	0	89.2	70 - 130				
m,p-Xylene	86.14	2.0	100	0	86.1	70 - 130				
Methylene chloride	40.46	2.0	50	0	80.9	70 - 128				
Naphthalene	50.34	1.0	50	0	101	70 - 130				
n-Butylbenzene	43.34	1.0	50	0	86.7	70 - 130				
n-Propylbenzene	41.21	1.0	50	0	82.4	70 - 130				
o-Xylene	43.68	1.0	50	0	87.4	70 - 124				
sec-Butylbenzene	43.32	1.0	50	0	86.6	70 - 130				
Styrene	42.85	1.0	50	0	85.7	70 - 130				
tert-Butylbenzene	41.46	1.0	50	0	82.9	70 - 130				
Tetrachloroethene	45.68	1.0	50	0	91.4	70 - 130				
Toluene	41.84	1.0	50	0	83.7	70 - 123				
trans-1,2-Dichloroethene	45.93	1.0	50	0	91.9	70 - 130				
trans-1,3-Dichloropropene	46.64	1.0	50	0	93.3	70 - 121				
Trichloroethene	47.3	1.0	50	0	94.6	70 - 129				
Trichlorofluoromethane	45.71	1.0	50	0	91.4	70 - 130				
Vinyl chloride	45.43	1.0	50	0	90.9	70 - 130				
Surr: 1,2-Dichloroethane-d4	*42.35*	*1.0*	*50*	*0*	*84.7*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*49.94*	*1.0*	*50*	*0*	*99.9*	*81 - 113*				
Surr: Dibromofluoromethane	*40.96*	*1.0*	*50*	*0*	*81.9*	*77 - 123*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021062-03MS** Units: **ug/L** Analysis Date: **28-Feb-2018 14:23**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456899** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*51.49*	*1.0*	*50*	*0*	*103*	*82 - 127*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021062-03MSD** Units: **ug/L** Analysis Date: **28-Feb-2018 14:48**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456900** 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	42.48	1.0	50	0	85.0	70 - 120	43.43	2.22	20	
1,1,1-Trichloroethane	44.75	1.0	50	0	89.5	70 - 130	45.82	2.36	20	
1,1,2,2-Tetrachloroethane	40.81	1.0	50	0	81.6	70 - 123	40.86	0.107	20	
1,1,2-Trichlor-1,2,2-trifluoroethane	47.07	1.0	50	0	94.1	70 - 130	49.64	5.3	20	
1,1,2-Trichloroethane	41.99	1.0	50	0	84.0	70 - 117	42.38	0.918	20	
1,1-Dichloroethane	42.4	1.0	50	0	84.8	70 - 127	42.89	1.15	20	
1,1-Dichloroethene	44.65	1.0	50	0	89.3	70 - 130	47.9	7.02	20	
1,1-Dichloropropene	47.58	1.0	50	0	95.2	70 - 129	49.67	4.31	20	
1,2,3-Trichlorobenzene	43.99	1.0	50	0	88.0	70 - 130	44.28	0.654	20	
1,2,3-Trichloropropane	42.38	1.0	50	0	84.8	70 - 130	42.06	0.746	20	
1,2,4-Trichlorobenzene	43.24	1.0	50	0	86.5	70 - 125	43.45	0.495	20	
1,2,4-Trimethylbenzene	44.9	1.0	50	0	89.8	70 - 125	45.13	0.51	20	
1,2-Dibromo-3-chloropropane	42.23	1.0	50	0	84.5	70 - 130	43.83	3.72	20	
1,2-Dibromoethane	44.25	1.0	50	0	88.5	70 - 124	44.46	0.465	20	
1,2-Dichlorobenzene	38.8	1.0	50	0	77.6	70 - 115	39.46	1.69	20	
1,2-Dichloroethane	40.72	1.0	50	0	81.4	70 - 127	41.61	2.17	20	
1,2-Dichloropropane	42.21	1.0	50	0	84.4	70 - 122	42.78	1.35	20	
1,3,5-Trimethylbenzene	45.41	1.0	50	0	90.8	70 - 126	46.38	2.1	20	
1,3-Dichlorobenzene	40.15	1.0	50	0	80.3	70 - 119	40.43	0.678	20	
1,3-Dichloropropane	41.02	1.0	50	0	82.0	70 - 121	41.4	0.934	20	
1,4-Dichlorobenzene	38.55	1.0	50	0	77.1	70 - 114	39.43	2.25	20	
2,2-Dichloropropane	44.64	1.0	50	0	89.3	70 - 130	45.08	0.978	20	
2-Butanone	97.09	2.0	100	0	97.1	70 - 130	94.88	2.3	20	
2-Chlorotoluene	44.29	1.0	50	0	88.6	70 - 130	44.94	1.45	20	
2-Hexanone	97.86	2.0	100	0	97.9	70 - 130	97.49	0.385	20	
4-Chlorotoluene	44.15	1.0	50	0	88.3	70 - 130	44.97	1.83	20	
4-Isopropyltoluene	40.98	1.0	50	0	82.0	70 - 130	41.67	1.65	20	
4-Methyl-2-pentanone	87.03	2.0	100	0	87.0	70 - 130	88.58	1.77	20	
Acetone	92.93	2.0	100	0	92.9	70 - 130	96.64	3.92	20	
Benzene	43.28	1.0	50	0.5473	85.5	70 - 127	44.85	3.56	20	
Bromobenzene	38.07	1.0	50	0	76.1	70 - 115	38.51	1.15	20	
Bromochloromethane	45.33	1.0	50	0	90.7	70 - 127	47.51	4.69	20	
Bromodichloromethane	43.04	1.0	50	0	86.1	70 - 124	44.03	2.28	20	
Bromoform	46.2	1.0	50	0	92.4	70 - 129	47.2	2.12	20	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021062-03MSD** Units: **ug/L** Analysis Date: **28-Feb-2018 14:48**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456900** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Bromomethane	43.05	1.0	50	0	86.1	70 - 130	43.93	2.03	20	
Carbon disulfide	90.64	2.0	100	0	90.6	70 - 130	92.81	2.36	20	
Carbon tetrachloride	45.04	1.0	50	0	90.1	70 - 130	47.58	5.48	20	
Chlorobenzene	41.52	1.0	50	0	83.0	70 - 114	42.25	1.75	20	
Chloroethane	68.51	1.0	50	0	137	70 - 130	52.6	26.3	20	SR
Chloroform	39.87	1.0	50	0	79.7	70 - 125	40.72	2.12	20	
Chloromethane	40.67	1.0	50	0	81.3	70 - 130	43.48	6.68	20	
cis-1,2-Dichloroethene	44.18	1.0	50	0	88.4	70 - 128	45.44	2.81	20	
cis-1,3-Dichloropropene	45.09	1.0	50	0	90.2	70 - 125	44.99	0.209	20	
Dibromochloromethane	44.25	1.0	50	0	88.5	70 - 124	43.9	0.8	20	
Dibromomethane	45.79	1.0	50	0	91.6	70 - 124	46.53	1.6	20	
Dichlorodifluoromethane	36.85	1.0	50	0	73.7	70 - 130	37.74	2.4	20	
Ethylbenzene	47.75	1.0	50	0	95.5	70 - 124	49.2	2.99	20	
Hexachlorobutadiene	45.35	1.0	50	0	90.7	70 - 130	45.89	1.18	20	
Isopropylbenzene	43.6	1.0	50	0	87.2	70 - 130	44.6	2.27	20	
m,p-Xylene	84.37	2.0	100	0	84.4	70 - 130	86.14	2.08	20	
Methylene chloride	39.19	2.0	50	0	78.4	70 - 128	40.46	3.19	20	
Naphthalene	50.25	1.0	50	0	100	70 - 130	50.34	0.182	20	
n-Butylbenzene	43.04	1.0	50	0	86.1	70 - 130	43.34	0.706	20	
n-Propylbenzene	40.4	1.0	50	0	80.8	70 - 130	41.21	1.99	20	
o-Xylene	42.56	1.0	50	0	85.1	70 - 124	43.68	2.59	20	
sec-Butylbenzene	42.55	1.0	50	0	85.1	70 - 130	43.32	1.8	20	
Styrene	42.22	1.0	50	0	84.4	70 - 130	42.85	1.47	20	
tert-Butylbenzene	41.07	1.0	50	0	82.1	70 - 130	41.46	0.965	20	
Tetrachloroethene	44.98	1.0	50	0	90.0	70 - 130	45.68	1.53	20	
Toluene	41.32	1.0	50	0	82.6	70 - 123	41.84	1.25	20	
trans-1,2-Dichloroethene	46.25	1.0	50	0	92.5	70 - 130	45.93	0.696	20	
trans-1,3-Dichloropropene	45.88	1.0	50	0	91.8	70 - 121	46.64	1.63	20	
Trichloroethene	46.14	1.0	50	0	92.3	70 - 129	47.3	2.5	20	
Trichlorofluoromethane	45.23	1.0	50	0	90.5	70 - 130	45.71	1.07	20	
Vinyl chloride	44.03	1.0	50	0	88.1	70 - 130	45.43	3.13	20	
Surr: 1,2-Dichloroethane-d4	*43.35*	*1.0*	*50*	*0*	*86.7*	*70 - 126*	*42.35*	*2.32*	*20*	
Surr: 4-Bromofluorobenzene	*49.85*	*1.0*	*50*	*0*	*99.7*	*81 - 113*	*49.94*	*0.175*	*20*	
Surr: Dibromofluoromethane	*41.27*	*1.0*	*50*	*0*	*82.5*	*77 - 123*	*40.96*	*0.741*	*20*	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311740 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021062-03MSD** Units: **ug/L** Analysis Date: **28-Feb-2018 14:48**
Client ID: Run ID: **VOA2_311740** SeqNo: **4456900** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*51.9*	*1.0*	*50*	*0*	*104*	*82 - 127*	*51.49*	*0.792*	*20*	

The following samples were analyzed in this batch: HS18021075-04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180228** Units: **ug/L** Analysis Date: **01-Mar-2018 00:42**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457028** 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	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180228** Units: **ug/L** Analysis Date: **01-Mar-2018 00:42**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457028** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	0.50	1.0								U
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	0.50	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*41.11*	*1.0*	*50*	*0*	*82.2*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*48.19*	*1.0*	*50*	*0*	*96.4*	*82 - 115*				
Surr: Dibromofluoromethane	*43.17*	*1.0*	*50*	*0*	*86.3*	*73 - 126*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180228** Units: **ug/L** Analysis Date: **01-Mar-2018 00:42**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457028** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*53.11*	*1.0*	*50*	*0*	*106*	*81 - 120*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180228** Units: **ug/L** Analysis Date: **28-Feb-2018 23:53**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457026** 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	44.28	1.0	50	0	88.6	77 - 118				
1,1,1-Trichloroethane	43.36	1.0	50	0	86.7	70 - 130				
1,1,2,2-Tetrachloroethane	41.24	1.0	50	0	82.5	70 - 120				
1,1,2-Trichlor-1,2,2-trifluoroethane	43.09	1.0	50	0	86.2	70 - 130				
1,1,2-Trichloroethane	44.92	1.0	50	0	89.8	77 - 113				
1,1-Dichloroethane	43.8	1.0	50	0	87.6	71 - 122				
1,1-Dichloroethene	46.11	1.0	50	0	92.2	70 - 130				
1,1-Dichloropropene	46.35	1.0	50	0	92.7	78 - 118				
1,2,3-Trichlorobenzene	44.11	1.0	50	0	88.2	70 - 130				
1,2,3-Trichloropropane	41.79	1.0	50	0	83.6	70 - 127				
1,2,4-Trichlorobenzene	44.71	1.0	50	0	89.4	77 - 126				
1,2,4-Trimethylbenzene	43.84	1.0	50	0	87.7	73 - 121				
1,2-Dibromo-3-chloropropane	42.53	1.0	50	0	85.1	70 - 130				
1,2-Dibromoethane	47.16	1.0	50	0	94.3	76 - 123				
1,2-Dichlorobenzene	40.41	1.0	50	0	80.8	77 - 113				
1,2-Dichloroethane	44.48	1.0	50	0	89.0	70 - 124				
1,2-Dichloropropane	45.47	1.0	50	0	90.9	72 - 119				
1,3,5-Trimethylbenzene	43.56	1.0	50	0	87.1	75 - 118				
1,3-Dichlorobenzene	40.7	1.0	50	0	81.4	78 - 118				
1,3-Dichloropropane	43.51	1.0	50	0	87.0	75 - 116				
1,4-Dichlorobenzene	40.11	1.0	50	0	80.2	79 - 113				
2,2-Dichloropropane	40.14	1.0	50	0	80.3	70 - 130				
2-Butanone	97.69	2.0	100	0	97.7	70 - 130				
2-Chlorotoluene	43.63	1.0	50	0	87.3	70 - 128				
2-Hexanone	97.38	2.0	100	0	97.4	70 - 130				
4-Chlorotoluene	44.49	1.0	50	0	89.0	74 - 126				
4-Isopropyltoluene	38.44	1.0	50	0	76.9	74 - 126				
4-Methyl-2-pentanone	89.87	2.0	100	0	89.9	70 - 130				
Acetone	97.12	2.0	100	0	97.1	70 - 130				
Benzene	45.68	1.0	50	0	91.4	74 - 120				
Bromobenzene	39.93	1.0	50	0	79.9	78 - 113				
Bromochloromethane	48.55	1.0	50	0	97.1	76 - 124				
Bromodichloromethane	46.81	1.0	50	0	93.6	74 - 122				
Bromoform	48.98	1.0	50	0	98.0	73 - 128				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180228** Units: **ug/L** Analysis Date: **28-Feb-2018 23:53**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457026** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	47.15	1.0	50	0	94.3	70 - 130				
Carbon disulfide	91.13	2.0	100	0	91.1	70 - 130				
Carbon tetrachloride	40.88	1.0	50	0	81.8	71 - 125				
Chlorobenzene	42.77	1.0	50	0	85.5	76 - 113				
Chloroethane	42.76	1.0	50	0	85.5	70 - 130				
Chloroform	42.68	1.0	50	0	85.4	71 - 121				
Chloromethane	45.59	1.0	50	0	91.2	70 - 129				
cis-1,2-Dichloroethene	47.17	1.0	50	0	94.3	75 - 122				
cis-1,3-Dichloropropene	48.33	1.0	50	0	96.7	73 - 127				
Dibromochloromethane	47.27	1.0	50	0	94.5	77 - 122				
Dibromomethane	50.63	1.0	50	0	101	78 - 121				
Dichlorodifluoromethane	40.91	1.0	50	0	81.8	70 - 130				
Ethylbenzene	47.61	1.0	50	0	95.2	77 - 117				
Hexachlorobutadiene	40.01	1.0	50	0	80.0	70 - 130				
Isopropylbenzene	41.9	1.0	50	0	83.8	73 - 127				
m,p-Xylene	84.21	2.0	100	0	84.2	77 - 122				
Methylene chloride	42.6	2.0	50	0	85.2	70 - 127				
Naphthalene	49.62	1.0	50	0	99.2	70 - 130				
n-Butylbenzene	39.39	1.0	50	0	78.8	72 - 130				
n-Propylbenzene	38.39	1.0	50	0	76.8	73 - 124				
o-Xylene	42.98	1.0	50	0	86.0	75 - 119				
sec-Butylbenzene	39.04	1.0	50	0	78.1	73 - 128				
Styrene	43.97	1.0	50	0	87.9	72 - 126				
tert-Butylbenzene	38.23	1.0	50	0	76.5	73 - 124				
Tetrachloroethene	41.41	1.0	50	0	82.8	76 - 119				
Toluene	41.32	1.0	50	0	82.6	77 - 118				
trans-1,2-Dichloroethene	45.28	1.0	50	0	90.6	72 - 127				
trans-1,3-Dichloropropene	50.37	1.0	50	0	101	77 - 119				
Trichloroethene	47.83	1.0	50	0	95.7	77 - 121				
Trichlorofluoromethane	42.18	1.0	50	0	84.4	70 - 130				
Vinyl chloride	45.21	1.0	50	0	90.4	70 - 130				
Surr: 1,2-Dichloroethane-d4	*41.86*	*1.0*	*50*	*0*	*83.7*	*70 - 130*				
Surr: 4-Bromofluorobenzene	*49.99*	*1.0*	*50*	*0*	*100.0*	*82 - 115*				
Surr: Dibromofluoromethane	*41.14*	*1.0*	*50*	*0*	*82.3*	*73 - 126*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180228** Units: **ug/L** Analysis Date: **28-Feb-2018 23:53**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457026** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*50.97*	*1.0*	*50*	*0*	*102*	*81 - 120*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021074-01MS** Units: **ug/L** Analysis Date: **01-Mar-2018 01:56**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457031** 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	42.84	1.0	50	0	85.7	70 - 120				
1,1,1-Trichloroethane	46.6	1.0	50	0	93.2	70 - 130				
1,1,2,2-Tetrachloroethane	38.97	1.0	50	0	77.9	70 - 123				
1,1,2-Trichlor-1,2,2-trifluoroethane	46.59	1.0	50	0	93.2	70 - 130				
1,1,2-Trichloroethane	42.48	1.0	50	0	85.0	70 - 117				
1,1-Dichloroethane	43.46	1.0	50	0	86.9	70 - 127				
1,1-Dichloroethene	50.67	1.0	50	0	101	70 - 130				
1,1-Dichloropropene	48.6	1.0	50	0	97.2	70 - 129				
1,2,3-Trichlorobenzene	42.41	1.0	50	0	84.8	70 - 130				
1,2,3-Trichloropropane	39.1	1.0	50	0	78.2	70 - 130				
1,2,4-Trichlorobenzene	42.82	1.0	50	0	85.6	70 - 125				
1,2,4-Trimethylbenzene	44.79	1.0	50	0	89.6	70 - 125				
1,2-Dibromo-3-chloropropane	40.66	1.0	50	0	81.3	70 - 130				
1,2-Dibromoethane	44.56	1.0	50	0	89.1	70 - 124				
1,2-Dichlorobenzene	39.39	1.0	50	0	78.8	70 - 115				
1,2-Dichloroethane	40.86	1.0	50	0	81.7	70 - 127				
1,2-Dichloropropane	43.48	1.0	50	0	87.0	70 - 122				
1,3,5-Trimethylbenzene	45.73	1.0	50	0	91.5	70 - 126				
1,3-Dichlorobenzene	40.35	1.0	50	0	80.7	70 - 119				
1,3-Dichloropropane	41.52	1.0	50	0	83.0	70 - 121				
1,4-Dichlorobenzene	39.61	1.0	50	0	79.2	70 - 114				
2,2-Dichloropropane	41.07	1.0	50	0	82.1	70 - 130				
2-Butanone	89.72	2.0	100	0	89.7	70 - 130				
2-Chlorotoluene	44.74	1.0	50	0	89.5	70 - 130				
2-Hexanone	88.18	2.0	100	0	88.2	70 - 130				
4-Chlorotoluene	44.75	1.0	50	0	89.5	70 - 130				
4-Isopropyltoluene	41.15	1.0	50	0	82.3	70 - 130				
4-Methyl-2-pentanone	81.82	2.0	100	0	81.8	70 - 130				
Acetone	87.15	2.0	100	0	87.1	70 - 130				
Benzene	44.19	1.0	50	0	88.4	70 - 127				
Bromobenzene	39.59	1.0	50	0	79.2	70 - 115				
Bromochloromethane	46.49	1.0	50	0	93.0	70 - 127				
Bromodichloromethane	44.25	1.0	50	0	88.5	70 - 124				
Bromoform	47.15	1.0	50	0	94.3	70 - 129				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021074-01MS** Units: **ug/L** Analysis Date: **01-Mar-2018 01:56**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457031** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	49.08	1.0	50	0	98.2	70 - 130				
Carbon disulfide	96.5	2.0	100	0	96.5	70 - 130				
Carbon tetrachloride	44.62	1.0	50	0	89.2	70 - 130				
Chlorobenzene	42.26	1.0	50	0	84.5	70 - 114				
Chloroethane	39.23	1.0	50	0	78.5	70 - 130				
Chloroform	41.75	1.0	50	0	83.5	70 - 125				
Chloromethane	41.47	1.0	50	0	82.9	70 - 130				
cis-1,2-Dichloroethene	46.3	1.0	50	0	92.6	70 - 128				
cis-1,3-Dichloropropene	45.05	1.0	50	0	90.1	70 - 125				
Dibromochloromethane	44.48	1.0	50	0	89.0	70 - 124				
Dibromomethane	46.38	1.0	50	0	92.8	70 - 124				
Dichlorodifluoromethane	40.79	1.0	50	0	81.6	70 - 130				
Ethylbenzene	49.62	1.0	50	0	99.2	70 - 124				
Hexachlorobutadiene	43.08	1.0	50	0	86.2	70 - 130				
Isopropylbenzene	44.81	1.0	50	0	89.6	70 - 130				
m,p-Xylene	86.51	2.0	100	0	86.5	70 - 130				
Methylene chloride	41.86	2.0	50	0	83.7	70 - 128				
Naphthalene	47.2	1.0	50	0	94.4	70 - 130				
n-Butylbenzene	42.6	1.0	50	0	85.2	70 - 130				
n-Propylbenzene	40.58	1.0	50	0	81.2	70 - 130				
o-Xylene	44.25	1.0	50	0	88.5	70 - 124				
sec-Butylbenzene	43.15	1.0	50	0	86.3	70 - 130				
Styrene	1.328	1.0	50	0	2.66	70 - 130				S
tert-Butylbenzene	41.43	1.0	50	0	82.9	70 - 130				
Tetrachloroethene	45.86	1.0	50	0	91.7	70 - 130				
Toluene	42.52	1.0	50	0	85.0	70 - 123				
trans-1,2-Dichloroethene	48.8	1.0	50	0	97.6	70 - 130				
trans-1,3-Dichloropropene	45.55	1.0	50	0	91.1	70 - 121				
Trichloroethene	47.19	1.0	50	0	94.4	70 - 129				
Trichlorofluoromethane	46.28	1.0	50	0	92.6	70 - 130				
Vinyl chloride	48.88	1.0	50	0	97.8	70 - 130				
Surr: 1,2-Dichloroethane-d4	*42.44*	*1.0*	*50*	*0*	*84.9*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*50.92*	*1.0*	*50*	*0*	*102*	*81 - 113*				
Surr: Dibromofluoromethane	*41.45*	*1.0*	*50*	*0*	*82.9*	*77 - 123*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021074-01MS** Units: **ug/L** Analysis Date: **01-Mar-2018 01:56**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457031** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*51.48*	*1.0*	*50*	*0*	*103*	*82 - 127*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021074-01MSD** Units: **ug/L** Analysis Date: **01-Mar-2018 02:21**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457032** 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	42.7	1.0	50	0	85.4	70 - 120	42.84	0.321	20	
1,1,1-Trichloroethane	44.69	1.0	50	0	89.4	70 - 130	46.6	4.17	20	
1,1,2,2-Tetrachloroethane	39.1	1.0	50	0	78.2	70 - 123	38.97	0.355	20	
1,1,2-Trichlor-1,2,2-trifluoroethane	45.89	1.0	50	0	91.8	70 - 130	46.59	1.51	20	
1,1,2-Trichloroethane	41.72	1.0	50	0	83.4	70 - 117	42.48	1.81	20	
1,1-Dichloroethane	42.49	1.0	50	0	85.0	70 - 127	43.46	2.25	20	
1,1-Dichloroethene	46.49	1.0	50	0	93.0	70 - 130	50.67	8.62	20	
1,1-Dichloropropene	46.92	1.0	50	0	93.8	70 - 129	48.6	3.52	20	
1,2,3-Trichlorobenzene	44.03	1.0	50	0	88.1	70 - 130	42.41	3.75	20	
1,2,3-Trichloropropane	38.71	1.0	50	0	77.4	70 - 130	39.1	0.987	20	
1,2,4-Trichlorobenzene	43.26	1.0	50	0	86.5	70 - 125	42.82	1.03	20	
1,2,4-Trimethylbenzene	44.42	1.0	50	0	88.8	70 - 125	44.79	0.821	20	
1,2-Dibromo-3-chloropropane	39.68	1.0	50	0	79.4	70 - 130	40.66	2.43	20	
1,2-Dibromoethane	43.68	1.0	50	0	87.4	70 - 124	44.56	1.98	20	
1,2-Dichlorobenzene	39.37	1.0	50	0	78.7	70 - 115	39.39	0.0569	20	
1,2-Dichloroethane	41.18	1.0	50	0	82.4	70 - 127	40.86	0.768	20	
1,2-Dichloropropane	43.25	1.0	50	0	86.5	70 - 122	43.48	0.542	20	
1,3,5-Trimethylbenzene	45.11	1.0	50	0	90.2	70 - 126	45.73	1.37	20	
1,3-Dichlorobenzene	40.17	1.0	50	0	80.3	70 - 119	40.35	0.456	20	
1,3-Dichloropropane	40.82	1.0	50	0	81.6	70 - 121	41.52	1.69	20	
1,4-Dichlorobenzene	39.62	1.0	50	0	79.2	70 - 114	39.61	0.0249	20	
2,2-Dichloropropane	38.67	1.0	50	0	77.3	70 - 130	41.07	6.02	20	
2-Butanone	85.11	2.0	100	0	85.1	70 - 130	89.72	5.27	20	
2-Chlorotoluene	44.06	1.0	50	0	88.1	70 - 130	44.74	1.53	20	
2-Hexanone	86.46	2.0	100	0	86.5	70 - 130	88.18	1.97	20	
4-Chlorotoluene	44.65	1.0	50	0	89.3	70 - 130	44.75	0.227	20	
4-Isopropyltoluene	40.3	1.0	50	0	80.6	70 - 130	41.15	2.09	20	
4-Methyl-2-pentanone	80.56	2.0	100	0	80.6	70 - 130	81.82	1.55	20	
Acetone	79.05	2.0	100	0	79.0	70 - 130	87.15	9.75	20	
Benzene	43.99	1.0	50	0	88.0	70 - 127	44.19	0.438	20	
Bromobenzene	39.15	1.0	50	0	78.3	70 - 115	39.59	1.12	20	
Bromochloromethane	46.86	1.0	50	0	93.7	70 - 127	46.49	0.788	20	
Bromodichloromethane	43.59	1.0	50	0	87.2	70 - 124	44.25	1.5	20	
Bromoform	45.25	1.0	50	0	90.5	70 - 129	47.15	4.11	20	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021074-01MSD** Units: **ug/L** Analysis Date: **01-Mar-2018 02:21**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457032** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Bromomethane	44.8	1.0	50	0	89.6	70 - 130	49.08	9.12	20	
Carbon disulfide	91.84	2.0	100	0	91.8	70 - 130	96.5	4.95	20	
Carbon tetrachloride	43.71	1.0	50	0	87.4	70 - 130	44.62	2.05	20	
Chlorobenzene	42.13	1.0	50	0	84.3	70 - 114	42.26	0.317	20	
Chloroethane	38.72	1.0	50	0	77.4	70 - 130	39.23	1.31	20	
Chloroform	40.6	1.0	50	0	81.2	70 - 125	41.75	2.8	20	
Chloromethane	39.75	1.0	50	0	79.5	70 - 130	41.47	4.22	20	
cis-1,2-Dichloroethene	45.5	1.0	50	0	91.0	70 - 128	46.3	1.74	20	
cis-1,3-Dichloropropene	43.91	1.0	50	0	87.8	70 - 125	45.05	2.58	20	
Dibromochloromethane	43.9	1.0	50	0	87.8	70 - 124	44.48	1.3	20	
Dibromomethane	46.13	1.0	50	0	92.3	70 - 124	46.38	0.543	20	
Dichlorodifluoromethane	38.21	1.0	50	0	76.4	70 - 130	40.79	6.53	20	
Ethylbenzene	48.08	1.0	50	0	96.2	70 - 124	49.62	3.15	20	
Hexachlorobutadiene	44.1	1.0	50	0	88.2	70 - 130	43.08	2.35	20	
Isopropylbenzene	43.6	1.0	50	0	87.2	70 - 130	44.81	2.75	20	
m,p-Xylene	85.02	2.0	100	0	85.0	70 - 130	86.51	1.74	20	
Methylene chloride	41.1	2.0	50	0	82.2	70 - 128	41.86	1.83	20	
Naphthalene	47.45	1.0	50	0	94.9	70 - 130	47.2	0.534	20	
n-Butylbenzene	42.22	1.0	50	0	84.4	70 - 130	42.6	0.899	20	
n-Propylbenzene	40.51	1.0	50	0	81.0	70 - 130	40.58	0.171	20	
o-Xylene	43.41	1.0	50	0	86.8	70 - 124	44.25	1.93	20	
sec-Butylbenzene	42.76	1.0	50	0	85.5	70 - 130	43.15	0.898	20	
Styrene	1.251	1.0	50	0	2.50	70 - 130	1.328	5.97	20	S
tert-Butylbenzene	40.88	1.0	50	0	81.8	70 - 130	41.43	1.34	20	
Tetrachloroethene	43.93	1.0	50	0	87.9	70 - 130	45.86	4.29	20	
Toluene	41.61	1.0	50	0	83.2	70 - 123	42.52	2.17	20	
trans-1,2-Dichloroethene	45.46	1.0	50	0	90.9	70 - 130	48.8	7.07	20	
trans-1,3-Dichloropropene	44.52	1.0	50	0	89.0	70 - 121	45.55	2.29	20	
Trichloroethene	46.26	1.0	50	0	92.5	70 - 129	47.19	1.98	20	
Trichlorofluoromethane	44.45	1.0	50	0	88.9	70 - 130	46.28	4.03	20	
Vinyl chloride	45.79	1.0	50	0	91.6	70 - 130	48.88	6.53	20	
Surr: 1,2-Dichloroethane-d4	*42.61*	*1.0*	*50*	*0*	*85.2*	*70 - 126*	*42.44*	*0.409*	*20*	
Surr: 4-Bromofluorobenzene	*49.96*	*1.0*	*50*	*0*	*99.9*	*81 - 113*	*50.92*	*1.9*	*20*	
Surr: Dibromofluoromethane	*40.8*	*1.0*	*50*	*0*	*81.6*	*77 - 123*	*41.45*	*1.58*	*20*	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311744 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021074-01MSD** Units: **ug/L** Analysis Date: **01-Mar-2018 02:21**
Client ID: Run ID: **VOA2_311744** SeqNo: **4457032** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*51.8*	*1.0*	*50*	*0*	*104*	*82 - 127*	*51.48*	*0.631*	*20*	

The following samples were analyzed in this batch: HS18021075-01 HS18021075-02 HS18021075-03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: 125576 **Instrument: UV-2450** **Method: SM4500P E**

MBLK Sample ID: **MBLK-125576** Units: **mg/L** Analysis Date: **23-Feb-2018 14:20**
Client ID: Run ID: **UV-2450_311436** SeqNo: **4449725** PrepDate: **23-Feb-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0	0.0500								U

LCS Sample ID: **LCS-125576** Units: **mg/L** Analysis Date: **23-Feb-2018 14:20**
Client ID: Run ID: **UV-2450_311436** SeqNo: **4449724** PrepDate: **23-Feb-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.254	0.0500	0.25	0	102	80 - 120				

MS Sample ID: **HS18021082-01MS** Units: **mg/L** Analysis Date: **23-Feb-2018 14:20**
Client ID: Run ID: **UV-2450_311436** SeqNo: **4449722** PrepDate: **23-Feb-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.395	0.0500	0.25	0.147	99.2	80 - 120				

MSD Sample ID: **HS18021082-01MSD** Units: **mg/L** Analysis Date: **23-Feb-2018 14:20**
Client ID: Run ID: **UV-2450_311436** SeqNo: **4449723** PrepDate: **23-Feb-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.392	0.0500	0.25	0.147	98.0	80 - 120	0.395	0.762	20	

The following samples were analyzed in this batch: HS18021075-01 HS18021075-02 HS18021075-03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311368 **Instrument: ICS2100** **Method: SW9056**

MBLK Sample ID: **WBLKW1-022118** Units: **mg/L** Analysis Date: **21-Feb-2018 12:19**
Client ID: Run ID: **ICS2100_311368** SeqNo: **4448028** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.250	0.500								U
Nitrogen, Nitrate (As N)	0.0500	0.100								U
Nitrogen, Nitrite (As N)	0.0500	0.100								U
Sulfate	0.250	0.500								U

LCS Sample ID: **WLCSW1-022118** Units: **mg/L** Analysis Date: **21-Feb-2018 12:33**
Client ID: Run ID: **ICS2100_311368** SeqNo: **4448029** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.43	0.500	20	0	102	80 - 120				
Nitrogen, Nitrate (As N)	4.148	0.100	4	0	104	80 - 120				
Nitrogen, Nitrite (As N)	4.174	0.100	4	0	104	80 - 120				
Sulfate	20.62	0.500	20	0	103	80 - 120				

LCSD Sample ID: **WLCSDW1-022118** Units: **mg/L** Analysis Date: **21-Feb-2018 12:48**
Client ID: Run ID: **ICS2100_311368** SeqNo: **4448030** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.51	0.500	20	0	103	80 - 120	20.43	0.425	20	
Nitrogen, Nitrate (As N)	4.204	0.100	4	0	105	80 - 120	4.148	1.34	20	
Nitrogen, Nitrite (As N)	4.233	0.100	4	0	106	80 - 120	4.174	1.4	20	
Sulfate	20.73	0.500	20	0	104	80 - 120	20.62	0.517	20	

MS Sample ID: **HS18021075-01MS** Units: **mg/L** Analysis Date: **21-Feb-2018 22:10**
Client ID: **LHSMW19-022018** Run ID: **ICS2100_311368** SeqNo: **4448039** PrepDate: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	475.3	10.0	200	279.5	97.9	80 - 120				
Nitrogen, Nitrate (As N)	41.55	2.00	40	0	104	80 - 120				
Nitrogen, Nitrite (As N)	42.49	2.00	40	0	106	80 - 120				
Sulfate	750.8	10.0	200	561.8	94.5	80 - 120				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311368 **Instrument: ICS2100** **Method: SW9056**

MSD Sample ID: **HS18021075-01MSD** Units: **mg/L** Analysis Date: **21-Feb-2018 22:24**
Client ID: **LHSMW19-022018** Run ID: **ICS2100_311368** SeqNo: **4448040** PrepDate: DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	467	10.0	200	279.5	93.7	80 - 120	475.3	1.76	20	
Nitrogen, Nitrate (As N)	41.08	2.00	40	0	103	80 - 120	41.55	1.12	20	
Nitrogen, Nitrite (As N)	40.91	2.00	40	0	102	80 - 120	42.49	3.8	20	
Sulfate	741.9	10.0	200	561.8	90.1	80 - 120	750.8	1.19	20	

The following samples were analyzed in this batch: HS18021075-01 HS18021075-02 HS18021075-03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R311690 **Instrument: WetChem_HS** **Method: E376.1**

MBLK Sample ID: **MBLK-311690** Units: **mg/L** Analysis Date: **27-Feb-2018 16:26**
Client ID: Run ID: **WetChem_HS_311690** SeqNo: **4455652** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	1.00	1.00								U

LCS Sample ID: **LCS-311690** Units: **mg/L** Analysis Date: **27-Feb-2018 16:26**
Client ID: Run ID: **WetChem_HS_311690** SeqNo: **4455653** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	22.84	1.00	25	0	91.4	80 - 120				

LCSD Sample ID: **LCSD-311690** Units: **mg/L** Analysis Date: **27-Feb-2018 16:26**
Client ID: Run ID: **WetChem_HS_311690** SeqNo: **4455654** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	22.64	1.00	25	0	90.6	80 - 120	22.84	0.88	20	

MS Sample ID: **HS18021075-03MS** Units: **mg/L** Analysis Date: **27-Feb-2018 16:26**
Client ID: **46WW02-022018** Run ID: **WetChem_HS_311690** SeqNo: **4455655** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	24.24	1.00	25	1.44	91.2	80 - 120				

The following samples were analyzed in this batch: HS18021075-01 HS18021075-02 HS18021075-03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R312018 **Instrument: ManTech01** **Method: SM2320B**

MBLK Sample ID: **WBLKW1-180306** Units: **mg/L** Analysis Date: **06-Mar-2018 13:00**
Client ID: Run ID: **ManTech01_312018** SeqNo: **4462755** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **LCS-ALK1-180306** Units: **mg/L** Analysis Date: **06-Mar-2018 13:09**
Client ID: Run ID: **ManTech01_312018** SeqNo: **4462756** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1104	5.00	1000	0	110	85 - 115				

LCSD Sample ID: **LCSD-ALK1-180306** Units: **mg/L** Analysis Date: **06-Mar-2018 13:18**
Client ID: Run ID: **ManTech01_312018** SeqNo: **4462757** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1098	5.00	1000	0	110	85 - 115	1104	0.497	20	

DUP Sample ID: **HS18021075-02DUP** Units: **mg/L** Analysis Date: **06-Mar-2018 13:51**
Client ID: **46WW11-022018** Run ID: **ManTech01_312018** SeqNo: **4462762** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	32.57	5.00					32.92	1.07	20	

The following samples were analyzed in this batch: HS18021075-01 HS18021075-02 HS18021075-03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021075

QC BATCH REPORT

Batch ID: R312059 **Instrument: TOC_02** **Method: SW9060**

MBLK Sample ID: **WBLKW1-030618** Units: **mg/L** Analysis Date: **06-Mar-2018 19:15**
Client ID: Run ID: **TOC_02_312059** SeqNo: **4463834** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	0.500	1.00								U

LCS Sample ID: **WLCSW1-030618** Units: **mg/L** Analysis Date: **06-Mar-2018 19:30**
Client ID: Run ID: **TOC_02_312059** SeqNo: **4463835** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.42	1.00	10	0	104	80 - 120				

LCSD Sample ID: **WLCSDW1-030618** Units: **mg/L** Analysis Date: **06-Mar-2018 19:45**
Client ID: Run ID: **TOC_02_312059** SeqNo: **4463836** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.45	1.00	10	0	104	80 - 120	10.42	0.287	20	

MS Sample ID: **HS18021075-01MS** Units: **mg/L** Analysis Date: **06-Mar-2018 20:18**
Client ID: **LHSMW19-022018** Run ID: **TOC_02_312059** SeqNo: **4463838** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	13.02	1.00	10	2.817	102	80 - 120				

The following samples were analyzed in this batch: HS18021075-01 HS18021075-02 HS18021075-03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 08-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: **HS18021075**

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	17-027-0	27-Mar-2018
California	2919 2016-2018	31-Jul-2018
Illinois	004112	09-May-2018
Kentucky	123043	30-Apr-2018
Louisiana	03087 2017-2017	30-Jun-2018
North Dakota	R193 2017-2017	30-Apr-2018
Oklahoma	2017-088	31-Aug-2018
Texas	T104704231-17-19	30-Apr-2018
North Carolina	624-2018	31-Dec-2018

ALS Group USA, Corp Date: 08-Mar-18

Sample Receipt Checklist

Client Name: CBI-Houston
Work Order: HS18021075
Date/Time Received: **21-Feb-2018 09:30**
Received by: **JRM**

Checklist completed by: *Jared R. Makan* eSignature 21-Feb-2018 Date
Reviewed by: *RJ Modashia* eSignature 21-Feb-2018 Date

Matrices: **Water**
Carrier name: **UPS**

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 ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
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):	3.0c/3.4c UC/C	IR30	
Cooler(s)/Kit(s):	24303		
Date/Time sample(s) sent to storage:	02/21/2018 13:15		
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:

APTIM

Page 1 of 1

COC ID: 46-FEB2018-GW-ALSHT- | TURNAROUND TIME: normal | RUSH:

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	Longhorn AAP			Lab Name	ALS Laboratories			Email Invoice To	FedInvoices@CBIFederalServices.com		
Project Number	501032			Lab Contact	RJ Modashia						
	LHAAP-46			Email	RJ.Modashia@alsglobal.com			Email Report To	Sharon.Pennington@CBIFederalServices.com		
Address	1203-B East Grand Avenue			Address	10450 Stancliff Rd., Suite 210			Mail Reports To	Sharon Pennington		
	PMB 202							Address	2410 Cherahala Blvd.		
City	Marshall	State	TX	City	Houston	State	TX	City	Knoxville	State	TN
Postal Code	75670	Country	USA	Postal Code	77099	Country	USA	Postal Code	37932	Country	USA
Phone Number	713.243.7264			Phone Number	281.575.2132 or 281.530.5656						
Project Manager	Praveen Srivastav							Shipping Company			

SAMPLE DETAILS / ANALYSIS REQUESTED

Sample ID	Location	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	# Of Cont.	ANALYSIS: VOCs in Water by 8260B	TOC E415.1	CARBONATE/BICARBONATE RSK175	DEG RSK175	Anions, Acetate, Nitrate, Nitrite E300.1	Sulfide E376.1	Phosphorous E365.2	Dissolved Fe M.S 6020A	TOTAL IRON 6020A
LHSMW19-022018	LHAAP-46	25.91	26.16		W	2/20/18	0935	15	X	X	X	X	X	X	X	X	X
46WW11-022018	LHAAP-46	25.45	26.20		W	2/20/18	1040	15	X	X	X	X	X	X	X	X	X
46WW02-022018	LHAAP-46	37.74	37.94		W	2/20/18	1335	15	X	X	X	X	X	X	X	X	X
TRIP BLANK	LHAAP-46				W	2/20/18		2	X								

HS18021075

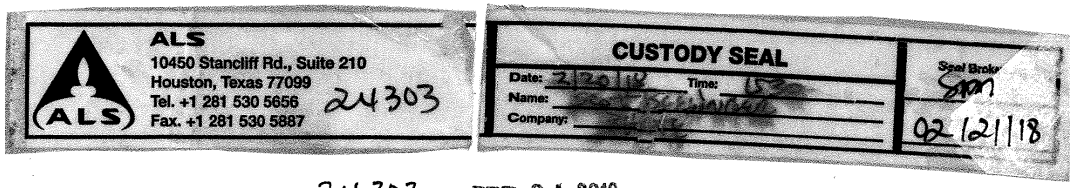
Aptim Environmental & Infrastucture, Inc.

LHAAP-46 501032

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Steven Baumgardner/BHATE	2/20/18 1530	Jim/ALS Houston	2/21/18 09:30
				w/L
				Temp 3.0 BAA 30

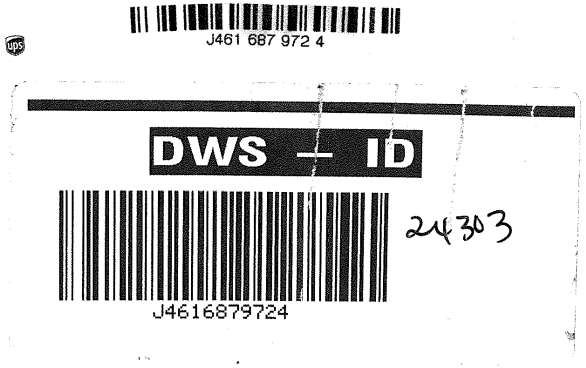
Order - 24303

CIFO-4



24303 FEB 21 2018





LABORATORY REPORT

March 7, 2018

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road Suite 210
Houston, TX 77099-4338

RE: HS18021075

Dear RJ:

Enclosed are the results of the samples submitted to our laboratory on February 22, 2018. For your reference, these analyses have been assigned our service request number P1800800.

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.

Respectfully submitted,

ALS | Environmental

By Kelly Horiuchi at 4:30 pm, Mar 07, 2018

Kelly Horiuchi
Laboratory Director

Client: ALS Laboratory Group Service Request No: P1800800
Project: HS18021075

CASE NARRATIVE

The samples were received intact under chain of custody on February 22, 2018 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.

Carbon Dioxide Analysis

Three of the samples were analyzed for carbon dioxide using a gas chromatograph equipped with a thermal conductivity detector (TCD). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least four hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (carbon dioxide) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175 as described in laboratory SOP VOA-DISGAS. This analyte is included on the laboratory's NELAP and DoD-ELAP scope of accreditation.

The result for carbon dioxide is estimated in sample LHSMW19-022018 (P1800800-001) because the concentration exceeded the instrument calibration range.

Methane, Ethene and Ethane Analysis

The other three samples were analyzed for methane, ethene and ethane using a gas chromatograph equipped with a flame ionization detector (FID). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least two hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (methane, ethene and ethane) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175. 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 laboratory's NELAP or DoD-ELAP accreditation.

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 – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-17-8
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272017-8
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: ALS Laboratory Group
Project ID: HS18021075

Service Request: P1800800

Date Received: 2/22/2018
Time Received: 09:30

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	RSK 175 - CO2	RSK 175 - Gases
LHSMW19-022018	P1800800-001	Water	2/20/2018	09:35	X	
LHSMW19-022018	P1800800-002	Water	2/20/2018	09:35		X
46WW11-022018	P1800800-003	Water	2/20/2018	10:40	X	
46WW11-022018	P1800800-004	Water	2/20/2018	10:40		X
46WW02-022018	P1800800-005	Water	2/20/2018	13:35	X	
46WW02-022018	P1800800-006	Water	2/20/2018	13:35		X

P1800800

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

COC ID: 8656

SUBCONTRACT TO:

ALS Environmental
2655 Park Center Drive, Suite A
Simi Valley, CA 93065

Phone: +1 805 526 7161

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@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:	HS18021075
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS18021075-01**	**LHSMW19-022018**	**Water**	**20 Feb 2018 09:35**
	SUB_RSK			07 Mar 2018
2.	**HS18021075-02**	**46WW11-022018**	**Water**	**20 Feb 2018 10:40**
	SUB_RSK			07 Mar 2018
3.	**HS18021075-03**	**46WW02-022018**	**Water**	**20 Feb 2018 13:35**
	SUB_RSK			07 Mar 2018

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

Neat vials for CO2 analysis
HCL vials for MEE analysis

QC Level: DOD IV (DoD Data Package)

Relinquished By: R Cline Date/Time: 2/21/18 18:00

Received By: Date/Time: 2-22-18 0930

Cooler ID(s): Temperature(s): 2°C WET ICE

ALS Environmental
Sample Acceptance Check Form

Client: ALS Laboratory Group Work order: P1800800

Project: HS18021075

Sample(s) received on: 2/22/18 Date opened: 2/22/18 by: ADAVID

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?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 2° C **Wet Ice**			
8	Were **custody seals** on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? Cooler lid. 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
P1800800-001.01	40mL VOA NP		7		A	MC 3/6/2018
P1800800-001.02	40mL VOA NP				A	
P1800800-002.01	40ml VOA HCL		1		A	MC 3/5/2018
P1800800-002.02	40ml VOA HCL				A	
P1800800-002.03	40ml VOA HCL				A	
P1800800-003.01	40mL VOA NP		7		A	MC 3/6/2018
P1800800-003.02	40mL VOA NP				A	
P1800800-004.01	40ml VOA HCL		1		A	MC 3/5/2018
P1800800-004.02	40ml VOA HCL				A	
P1800800-004.03	40ml VOA HCL				A	
P1800800-005.01	40mL VOA NP		7		A	MC 3/6/2018
P1800800-005.02	40mL VOA NP				A	
P1800800-006.01	40ml VOA HCL		1		A	MC 3/5/2018
P1800800-006.02	40ml VOA HCL				A	
P1800800-006.03	40ml VOA HCL				A	

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: **ALS Laboratory Group**
Client Project ID: **HS18021075** ALS Project ID: P1800800

Carbon Dioxide

Test Code: RSK 175
Instrument ID: HP5890A/GC10/TCD Date(s) Collected: 2/20/18
Analyst: Mike Conejo Date Received: 2/22/18
Matrix: Water Date Analyzed: 3/6/18
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
LHSMW19-022018	P1800800-001	0.10	**580,000**	1,000	760	370	**E**
46WW11-022018	P1800800-003	0.10	**220,000**	1,000	760	370	
46WW02-022018	P1800800-005	0.10	**420,000**	1,000	760	370	
Method Control Sample	P180306-MB	0.10	760	1,000	760	370	**U**

The Method Control Sample is laboratory water carried through the entire analytical process.
U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
E = Estimated; concentration exceeded calibration range.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1800800
Client Project ID: **HS18021075** ALS Sample ID: P180306-DLCS

Test Code: RSK 175 Date Collected: NA
Instrument ID: HP5890A/GC10/TCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 3/06/18
Matrix: Water Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result$_1$ LCS ug/L	Result$_1$ DLCS ug/L	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
124-38-9	Carbon Dioxide	22,900	21,100	20,300	**92**	**89**	80-122	3	15	

$_1$ = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **LHSMW19-022018**
Client Project ID: **HS18021075**

ALS Project ID: P1800800
ALS Sample ID: P1800800-002

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Mike Conejo
Matrix: Water
Test Notes:

Date Collected: 2/20/18
Date Received: 2/22/18
Date Analyzed: 3/5/18
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	1.0	1.3	1.0	0.51	**U**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = 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: **ALS Laboratory Group**
Client Sample ID: **46WW11-022018**
Client Project ID: **HS18021075**

ALS Project ID: P1800800
ALS Sample ID: P1800800-004

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Mike Conejo
Matrix: Water
Test Notes:

Date Collected: 2/20/18
Date Received: 2/22/18
Date Analyzed: 3/5/18
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**6.9**	1.3	1.0	0.51	
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = 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: **ALS Laboratory Group**
Client Sample ID: **46WW02-022018**
Client Project ID: **HS18021075**

ALS Project ID: P1800800
ALS Sample ID: P1800800-006

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Mike Conejo
Matrix: Water
Test Notes:

Date Collected: 2/20/18
Date Received: 2/22/18
Date Analyzed: 3/5/18
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	1.0	1.3	1.0	0.51	**U**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = 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: **ALS Laboratory Group**
Client Sample ID: **Method Control Sample** ALS Project ID: P1800800
Client Project ID: **HS18021075** ALS Sample ID: P180305-MB

Test Code: RSK 175 Date Collected: NA
Instrument ID: HP5890A/GC10/FID Date Received: NA
Analyst: Mike Conejo Date Analyzed: 3/05/18
Matrix: Water Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	1.0	1.3	1.0	0.51	**U**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

The Method Control Sample is laboratory water carried through the entire analytical process.
U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **HS18021075**

ALS Project ID: P1800800
ALS Sample ID: P180305-LCS
P180305-DLCS

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Mike Conejo
Matrix: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/05/18
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/L	Result$_1$ LCS µg/L	Result$_1$ DLCS µg/L	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
74-82-8	Methane	2.50	2.48	2.66	**99**	**106**	73-125	7	12	
74-85-1	Ethene	4.37	5.19	5.18	**119**	**119**	72-133	0	7	
74-84-0	Ethane	4.69	4.81	4.98	**103**	**106**	74-131	3	6	

$_1$ = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

ADR Data Validation Checklist
Inorganic Metals by SW846 6010/6020/7470/7471

Project Name:	LHAAP-37	SDG/Report No.:	HS18021075
Project No.:	501032	Lab ID:	ALS-Houston
No. of Samples:	3 Originals & 0 FD	Matrix:	GW
1st ADR / 2nd by	SP		

Automated Data Review (ADR) was performed for all areas except Calibration Blanks, ICP Check Standard Analysis, Serial Dilution Analysis, and areas where professional judgement is applicable. Review of these areas was performed manually and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports (Copies Attached):

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

SHAWVIEW Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and SW846 methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. ICAL			X
3. CCAL			X
4. LLICV-Low			X
5. Blanks (Method, Calibration and/or Field QC)			X
6. LCS			X
7. ICP Check Standards			X
8. MS/MSD			X
9. Field Duplicate			X
10. Serial Dilutions			X
11. Internal Standards (6020)			X
12. Form 1 vs Database/ADR			X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (3): LHSMW19-022018, 46WW11-022018, 46WW02-022018

ADR Data Validation Checklist
Inorganic Metals by SW846 6010/6020/7470/7471

Total Iron, Dissolved Iron, Dissolved Manganese
1. Hold Time/Preservation. (QAPP - Worksheet#19/SW846)
No Qualification Necessary
Received <6.0ºC; collected 2/20/2018; Prepped: 3/1/2018; analyzed: 3/1/2018
2. ICAL (DoD_5.0/SW846: R^2>0.990)
No Qualification Necessary
3. CCAL (DoD_5.0 and/or SW846: ±10%D)
No Qualification Necessary
4. LLICV-Low Level ICV - CRDL (DoD_5.0 <±20% / SW846<±30%) <±20% applicable
No Qualification Necessary
5. Blanks "UB" 5X(EPA Region#&4: Method and/or Field QC)
No Qualification Necessary
6020 (T) MBLK-125750 – Results were nondetect.
6020 (D) MBLK-125751 – Iron is nondetect. Manganese 0.000951 J mg/L (5X=0.004755); All manganese results greater than 5X concentration; Therefore, no qualification required.
6. LCS (QAPP - Worksheet#12/#28)
No Qualification Necessary
6020 (T) LCS-125750 – Criteria were met.
6020 (D) LCS-125751 – Criteria were met.
7. ICP Check Standards (DoD_5.0 and SW846/QAPP – worksheet#12/#28: ±20%)
No Qualification Necessary
8. MS/MSD (QAPP - Worksheet#12/#28 (75%-125%); parent sample only; *note lab limit are tighter*)
No Qualification Necessary
Batch LHSMW19-022018MS/MSD – Criteria were met.
9. Field Duplicate (QAPP – worksheet#35: 20% waters / 50% soils)
(non-detect & result <RL or both <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)
No Qualification Necessary
An FD pair was not included for these samples.
10. Serial Dilutions (DoD_5.0/SW846/QAAP: ±10%; SW6010/6020 >50X MDL; parent sample)
No Qualification Necessary

ADR Data Validation Checklist
Inorganic Metals by SW846 6010/6020/7470/7471

11. Internal Standard (6020 only: DoD5.0: 30-120% and/or NFG 60-125%) applicable by lab
12. Form 1 vs Database/ADR
Check laboratory's Form1 against Database; minimum one sample per SDG per fraction; list sample number:
11. Multiple Results
No Qualification Necessary

ADR Data Validation Checklist
Methane, Ethane, Ethene by RSK175

Project Name:	LHAAP-37	SDG/Report No.:	HS18021075 (P1800800)
Project No.:	501032	Lab ID:	ALS-Houston (Simi Valley)
No. of Samples:	3 Originals & 0 FD	Matrix:	GW
1st ADR / 2nds	SP		

Automated Data Review (ADR) was performed for all areas. Review of these areas was performed manually and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports (Copies Attached):

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

SHAWVIEW Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and/or SW846 methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. BFB Tune.			X
3. ICAL (RRF and/or %RSD)			X
4. CCAL (RRF and/or %D)			X
5. Blanks (Method and/or Field QC)			X
6. LCS			X
7. MS/MSD			X
8. Field Duplicate			X
10. Form1 vs Database/ADR		X	X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (3): LHSMW19-022018, 46WW11-022018, 46WW02-022018
MEE plus Carbon dioxide
1. Hold Time/Preservation (QAPP - Worksheet#19/SW846/ASTM methods).
No Qualification Necessary
Rec'd <6°C; collected: 2/20/2018; analyze: CO2: 3/6/2018 & MEE: 3/5/2018

ADR Data Validation Checklist
Methane, Ethane, Ethene by RSK175

2. BFB Tune (instr. performance criteria)
No Qualification Necessary
3. ICAL (EPA RSKSOP-175; 20%RSD or R>0.995)
No Qualification Necessary
GC10 RS082817_CO2.M (CO2 & MEE) 8/29/2017 – Criteria were met.
GC10 RS091217_R.M (CO2 & MEE) 9/12/2017 -
4. CCAL (EPA RSKSOP-175; 15%D)
No Qualification Necessary
5. Blanks "UB" (EPA Region 3&4: Method and/or Field QC)
No Qualification Necessary
P180306-MB (CO2) & P180305-MB (MEE) – Results were nondetect.
6. LCS (QAPP – Worksheet#12/#28)
No Qualification Necessary
P180306-LCS/LCSD (CO2) and P180205-LCS/LCSD (MEE) – Criteria were met.
7. MS/MSD (QAPP – Worksheet#12/#28)
Qualification Necessary
Batch QC MS/MSD – Carbon dioxide (ok/130%); No qualification required.
8. Field Duplicate (QAPP – Worksheet#35 - WATERS 20% / SOILS 50%)
(non-detect & result <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)
No Qualification Necessary
An FD pair was not included with this COC.
9. Form 1 vs Database/ADR
Check laboratory's Form1 against Database; one sample per SDG per fraction; list sample number:
10. Multiple Results
Qualification Necessary
NOTE: Results for CO2 were not diluted. J-19 applied.

ADR Data Validation Checklist
Volatile Organics by SW846 8260C

Project Name:	LHAAP-17	SDG/Report No.:	HS18021075
Project No.:		Lab ID:	ALS-Houston
No. of Samples:	3 Original & 0 FD	Matrix:	GW
1ST ADR / 2nd by	SP		

Automated Data Review (ADR) was performed for all areas evaluate except internal standards. 2ND Review of these areas was performed manually and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

EQUiS Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and/or SW846 8260 methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. BFB Tune.			X
3. ICAL (RRF and/or %RSD)			X
4. CCAL opening (RRF and/or 20% D)		X	
5. CCAL closing (%D<±50%)			X
6. Blanks (Method and/or Field QC)			X
7. LCS			X
8. Surrogates			X
9. MS/MSD			X
10. Field Duplicate			X
11. Internal Standards			X
12. Form1 vs Database/ADR			X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (3): LHSMW19-022018, 46WW11-022018, 46WW02-022018

ADR Data Validation Checklist
Volatile Organics by SW846 8260C

1. Hold Time/Preservation (QAPP - Worksheet#19/SW846/ASTM methods).
No Qualification Necessary
Rec'd <6ºC; collected 2/20/2018; analyzed 3/01/2018
2. BFB Tune (instr. performance criteria)
No Qualification Necessary
3. ICAL (DoD: RSD≤15% or linear R^2≥0.99 and Avg RRF's; 2-butanone & acetone >0.05; J/UJ < recommended criteria)
No Qualification Necessary
VOA2 D020902 2/09/18 @ 15:54 to 19:09 – Criteria met.
4. ICV (20%D only) /CCAL opening (DoD: %D≤20% and/or SW846 8260 Table 4 Avg RRF's: J/UJ < recommended criteria)
Qualification Necessary
VOA2 ICV D020912 2/09/18 @ 19:57 – Criteria met.
VOA2 CCV D022802 2/28/18 @ 10:40 – Criteria met.
VOA2 CCV E022802 2/28/18 @ 22:40 – Criteria not met; 1,1,2,2-Tetrachloroethane (-24.64%), Bromobenzene (-21.52%), 2,2-Dichloropropane (-26.48%), 1,4-Dichlorobenzene (-20.66%), 1,2,3-Trichloropropane (-21.97%), 1,2-Dibromo-3-chloropropane (-21.13%), and 1,2-Dichlorobenzene (-20.23%); All low bias; LHSMW19-022018, 46WW11-022018, 46WW02-022018; Qualify results estimated, J/UJ-05B.
5. Closing CCV (DoD_5.0: %D<±50%) (if applicable by lab)
No Qualification Necessary
VOA2 CCV_END D022829 2/28/18 @ 21:51 – Criteria met.
VOA2 CCV_END E022830 3/01/18 @ 10:06 – Criteria met.
6. Blanks "UB" 5X/10X (EPA Region 3&4: Method and/or Field QC)
No Qualification Necessary
TB 46TB01-022018 – Results are nondetect.
VBLKW-180228 (D022807) – Results are nondetect.
VBLKW-180228 (E022807) – Results are nondetect.
7. LCS (QAPP – Worksheet#12/#28)
No Qualification Necessary
VLCSW-180228 (D022805) – Criteria were met.
VLCSW-180228 (E022805) – Criteria were met.
8. Surrogates (QAPP - Worksheet#12/#28)
No Qualification Necessary – All recoveries were within acceptance criteria.

ADR Data Validation Checklist
Volatile Organics by SW846 8260C

9. MS/MSD (DoD/QAPP – Worksheet#12/#28; parent sample only)

No Qualification Necessary

Batch MS/MSD – No qualification for samples.

10. Field Duplicate (QAPP – Worksheet#12 - WATERS ≤20% / SOILS ≤50%)

(non-detect & result <RL or both <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)

No Qualification Necessary – Criteria were met.

An FD pair was not included with this COC.

VOCs	Method	Units		LQ		LQ	%RPD
	8260B	ug/L					0.00
	8260B	ug/L					0.00
	8260B						
	8260B						

11.Internal Standards (DoD/QAPP – Worksheet#12/#28; -50% to +100% and RT ±0.5sec)

No Qualification Necessary

12. Form 1 vs Database/ADR

Check laboratory's Form1 against Database; one sample per SDG per fraction; list sample number:

13. Multiple Results

No Qualification Necessary

ADR Data Validation Checklist
Wet Chemistry

Project Name:	LHAAP-37	SDG/Report No.:	HS18021075
Project No.:	501032	Lab ID:	ALS-Houston
No. of Samples:	3 Originals & 0 FD	Analysis:	Alkalinity, Anions, Phosphorous,
1st ADR / 2nd by:	SP		Sulfide, TOC,

Automated Data Review (ADR) was performed for all areas except where professional judgment is applicable. Review of these areas was performed manually by **DoD_5.0** and **SW846 methods** and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports (Copies Attached):

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and **SW846** methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. ICAL			X
3. CCAL			X
4. Limit of Detection Verification (LODV)			X
5. Blanks (Method, Calibration and/or Field QC)			X
6. LCS			X
7. Duplicate Analysis			X
8. MS/MSD			X
9. Field Duplicate			X
10. Form1 vs Database/ADR			X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (3): LHSMW19-022018, 46WW11-022018, 46WW02-022018

ADR Data Validation Checklist
Wet Chemistry

1. Hold Time/Preservation. (QAPP - Worksheet#19/SW846/ASTM methods)
No Qualification Necessary
Rec'd <6ºC; collected 2/20/2018; analyzed: alkalinity: 3/6/2018; anions – 2/21/2018; phosphorous: 2/23/2018; sulfide: 3/6/2018; TOC: 2/28/2018;
Professional judgment – no qualification for hold time.
2. ICAL (QAPP - Worksheet#19/SW846/ASTM methods: RSD≤20%/r≥0.995)
No Qualification Necessary
3. ICV/CCAL (QAPP - Worksheet#19/SW846/ASTM methods: ±15%D)
No Qualification Necessary
4. Limit of Detection Verification (LODV) (QAAP/DoD_4.2; ±30%D)
No Qualification Necessary
5. Blanks "UB" (EPA Region 3&4: Method and/or Field QC)
No Qualification Necessary
All MBs – Results were nondetect.
MBLKs are: MBLK-125576 (P), WBLKW1-022118 (Anions), MBLK-311690 (S), WBLKW1-180306 (Alk), WBLKW1-030618 (TOC)
6. LCS (QAPP – Worksheet#19/#28)
No Qualification Necessary
All LCS/LCSDs – Criteria were met.
LCS/LCSDs are: LCS-125576 (P), WLCSW1/WLCSDW1-022118 (Anions), LCS/LCSD-311690 (S), WLCSW1/WLCSDW1-180306 (Alk), WLCSW1/WLCSDW1-030618 (TOC)
7. Duplicate Analysis (QAPP - Worksheet#19/SW846/ASTM methods DoD-4.2<15%)
No Qualification Necessary
Alkalinity – Criteria met.
8. MS/MSD (QAPP - Worksheet#19/#28; DoD_4.2= ±20%MS/MSD / 15%RPD)
No Qualification Necessary
Batch QC MS/MSDs – All criteria were met.
9. Field Duplicate (QAPP – worksheet#35: 20% waters / 50% soils)
(non-detect & result <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)
No Qualification Necessary
An FD pair was not included on this COC.

ADR Data Validation Checklist
Wet Chemistry

10. Form 1 vs Database/ADR
Check laboratory's Form1 against Database; minimum one sample per SDG per fraction; list sample number:
11. Multiple Results
No Qualification Necessary

10450 Stancliff Rd. Suite 210
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F: +1 281 530 5887

March 12, 2018

Sharon Pennington
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS18021202**

Laboratory Results for: **LHAAP-46 501032**

Dear Sharon,

ALS Environmental received 5 sample(s) on Feb 23, 2018 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
RJ Modashia
Project Manager

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Work Order: HS18021202

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18021202-01	46WW09-022218	Water		22-Feb-2018 09:05	23-Feb-2018 09:10	☐
HS18021202-02	46WW16-022218	Water		22-Feb-2018 10:55	23-Feb-2018 09:10	☐
HS18021202-03	46SW10-022218	Water		22-Feb-2018 12:30	23-Feb-2018 09:10	☐
HS18021202-04	LHSMW25-022218	Water		22-Feb-2018 13:50	23-Feb-2018 09:10	☐
HS18021202-05	46TB02-022218	Water		22-Feb-2018 00:01	23-Feb-2018 09:10	☐

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP-46 501032
Work Order:

Work Order Comments

• The analysis for Methane, Methene, Ethane and CO2 by RSK175 was subcontracted to ALS Simi Valley, CA. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R311806

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW6020

Batch ID: 125750,125751

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R312269

Sample ID: CCB

• All reported samples bracketed by this CCB are 10 times greater than the Chloride content in this CCB.

WetChemistry by Method SM2320B

Batch ID: R312018

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9060

Batch ID: R312059

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E376.1

Batch ID: R311836

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM4500P E

Batch ID: 126002

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021202
Sample ID: 46WW09-022218 Lab ID:HS18021202-01
Collection Date: 22-Feb-2018 09:05 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:45
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 14:45
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 14:45
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:45
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 14:45
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 14:45
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 14:45
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW09-022218
Collection Date: 22-Feb-2018 09:05

ANALYTICAL REPORT
WorkOrder:HS18021202
Lab ID:HS18021202-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 14:45
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 14:45
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:45
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:45
Surr: 1,2-Dichloroethane-d4	*81.8*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 14:45*
Surr: 4-Bromofluorobenzene	*95.8*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 14:45*
Surr: Dibromofluoromethane	*87.6*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 14:45*
Surr: Toluene-d8	*107*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 14:45*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**0.0797**	J	**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 22:42
DISSOLVED METALS BY SW6020A		**Method:SW6020 (dissolved)**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**0.0749**	J	**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 23:15
Manganese	**2.58**		**0.00350**	**0.00500**	**0.0250**	**mg/L**	5	02-Mar-2018 13:57
SULFIDE BY E376.1		**Method:E376.1**						Analyst: SAP
Sulfide	1.00	U	1.00	1.00	1.00	mg/L	1	01-Mar-2018 12:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW09-022218
Collection Date: 22-Feb-2018 09:05

ANALYTICAL REPORT
WorkOrder:HS18021202
Lab ID:HS18021202-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: AJH
Alkalinity, Total (As CaCO3)	**210**		**5.00**	**5.00**	**5.00**	**mg/L**	1	06-Mar-2018 14:51
PHOSPHORUS BY SM4500P E		**Method:SM4500P E**				Prep:SM4500P E / 08-Mar-2018		Analyst: MZD
Phosphorus, Total (As P)	**0.0210**	J	**0.0200**	**0.0200**	**0.0500**	**mg/L**	1	08-Mar-2018 16:30
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**514**		**4.00**	**5.00**	**10.0**	**mg/L**	20	23-Feb-2018 21:10
Nitrogen, Nitrate (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	23-Feb-2018 20:55
Nitrogen, Nitrite (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	23-Feb-2018 20:55
Sulfate	**2,460**		**8.00**	**10.0**	**20.0**	**mg/L**	40	24-Feb-2018 21:06
TOTAL ORGANIC CARBON BY SW9060A		**Method:SW9060**						Analyst: KMU
Organic Carbon, Total	**4.53**		**0.500**	**0.500**	**1.00**	**mg/L**	1	06-Mar-2018 21:11
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	08-Mar-2018 09:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021202
Sample ID: 46WW16-022218 Lab ID:HS18021202-02
Collection Date: 22-Feb-2018 10:55 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 16:47
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 16:47
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 16:47
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 16:47
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 16:47
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 16:47
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 16:47
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021202
Sample ID: 46WW16-022218 Lab ID:HS18021202-02
Collection Date: 22-Feb-2018 10:55 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 16:47
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 16:47
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 16:47
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 16:47
Surr: 1,2-Dichloroethane-d4	*83.7*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 16:47*
Surr: 4-Bromofluorobenzene	*97.0*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 16:47*
Surr: Dibromofluoromethane	*88.8*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 16:47*
Surr: Toluene-d8	*107*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 16:47*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**24.0**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 22:44
DISSOLVED METALS BY SW6020A		**Method:SW6020 (dissolved)**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**23.3**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 23:17
Manganese	**1.44**		**0.000700**	**0.00100**	**0.00500**	**mg/L**	1	01-Mar-2018 23:17
SULFIDE BY E376.1		**Method:E376.1**						Analyst: SAP
Sulfide	1.00	U	1.00	1.00	1.00	mg/L	1	01-Mar-2018 12:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW16-022218
Collection Date: 22-Feb-2018 10:55

ANALYTICAL REPORT
WorkOrder:HS18021202
Lab ID:HS18021202-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: AJH
Alkalinity, Total (As CaCO3)	**529**		**5.00**	**5.00**	**5.00**	**mg/L**	1	06-Mar-2018 14:58
PHOSPHORUS BY SM4500P E		**Method:SM4500P E**				Prep:SM4500P E / 08-Mar-2018		Analyst: MZD
Phosphorus, Total (As P)	**0.162**		**0.0200**	**0.0200**	**0.0500**	**mg/L**	1	08-Mar-2018 16:30
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**301**		**4.00**	**5.00**	**10.0**	**mg/L**	20	23-Feb-2018 21:39
Nitrogen, Nitrate (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	23-Feb-2018 21:24
Nitrogen, Nitrite (As N)	**0.191**		**0.0300**	**0.0500**	**0.100**	**mg/L**	1	23-Feb-2018 21:24
Sulfate	**696**		**4.00**	**5.00**	**10.0**	**mg/L**	20	24-Feb-2018 20:51
TOTAL ORGANIC CARBON BY SW9060A		**Method:SW9060**						Analyst: KMU
Organic Carbon, Total	**3.89**		**0.500**	**0.500**	**1.00**	**mg/L**	1	06-Mar-2018 21:28
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	08-Mar-2018 09:34

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46SW10-022218
Collection Date: 22-Feb-2018 12:30

ANALYTICAL REPORT
WorkOrder:HS18021202
Lab ID:HS18021202-03
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:12
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 17:12
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 17:12
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:12
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 17:12
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 17:12
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 17:12
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46SW10-022218
Collection Date: 22-Feb-2018 12:30

ANALYTICAL REPORT
WorkOrder:HS18021202
Lab ID:HS18021202-03
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 17:12
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 17:12
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:12
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:12
Surr: 1,2-Dichloroethane-d4	*81.2*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 17:12*
Surr: 4-Bromofluorobenzene	*97.8*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 17:12*
Surr: Dibromofluoromethane	*87.2*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 17:12*
Surr: Toluene-d8	*107*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 17:12*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021202
Sample ID: LHSMW25-022218 Lab ID:HS18021202-04
Collection Date: 22-Feb-2018 13:50 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:36
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 17:36
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 17:36
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:36
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 17:36
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 17:36
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 17:36
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: LHSMW25-022218
Collection Date: 22-Feb-2018 13:50

ANALYTICAL REPORT
WorkOrder:HS18021202
Lab ID:HS18021202-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 17:36
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 17:36
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 17:36
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 17:36
Surr: 1,2-Dichloroethane-d4	*81.5*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 17:36*
Surr: 4-Bromofluorobenzene	*95.4*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 17:36*
Surr: Dibromofluoromethane	*86.5*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 17:36*
Surr: Toluene-d8	*107*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 17:36*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021202
Sample ID: 46TB02-022218 Lab ID:HS18021202-05
Collection Date: 22-Feb-2018 00:01 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 13:56
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 13:56
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 13:56
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 13:56
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 13:56
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 13:56
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 13:56
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46TB02-022218
Collection Date: 22-Feb-2018 00:01

ANALYTICAL REPORT
WorkOrder:HS18021202
Lab ID:HS18021202-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 13:56
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 13:56
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 13:56
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 13:56
Surr: 1,2-Dichloroethane-d4	*82.4*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 13:56*
Surr: 4-Bromofluorobenzene	*96.4*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 13:56*
Surr: Dibromofluoromethane	*87.9*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 13:56*
Surr: Toluene-d8	*107*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 13:56*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp

Date: 12-Mar-18

WEIGHT LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

Batch ID: 125750 **Method:** ICP-MS METALS BY SW6020A **Prep:** 3010A

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18021202-01	1	10	10 (mL)	1
HS18021202-02	1	10	10 (mL)	1

Batch ID: 125751 **Method:** DISSOLVED METALS BY SW6020A **Prep:** 3010A DISS

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18021202-01	1	10	10 (mL)	1
HS18021202-02	1	10	10 (mL)	1

Batch ID: 126002 **Method:** PHOSPHORUS BY SM4500P E **Prep:** P_TW_PR4500

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18021202-01	1	50	50 (mL)	1
HS18021202-02	1	50	50 (mL)	1

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 125750	**Test Name :** ICP-MS METALS BY SW6020A			**Matrix:** Water		
HS18021202-01	46WW09-022218	22 Feb 2018 09:05		01 Mar 2018 11:24	01 Mar 2018 22:42	1
HS18021202-02	46WW16-022218	22 Feb 2018 10:55		01 Mar 2018 11:24	01 Mar 2018 22:44	1
Batch ID 125751	**Test Name :** DISSOLVED METALS BY SW6020A			**Matrix:** Water		
HS18021202-01	46WW09-022218	22 Feb 2018 09:05		01 Mar 2018 11:25	02 Mar 2018 13:57	5
HS18021202-01	46WW09-022218	22 Feb 2018 09:05		01 Mar 2018 11:25	01 Mar 2018 23:15	1
HS18021202-02	46WW16-022218	22 Feb 2018 10:55		01 Mar 2018 11:25	01 Mar 2018 23:17	1
Batch ID 126002	**Test Name :** PHOSPHORUS BY SM4500P E			**Matrix:** Water		
HS18021202-01	46WW09-022218	22 Feb 2018 09:05		08 Mar 2018 11:30	08 Mar 2018 16:30	1
HS18021202-02	46WW16-022218	22 Feb 2018 10:55		08 Mar 2018 11:30	08 Mar 2018 16:30	1
Batch ID R311806	**Test Name :** LOW LEVEL VOLATILES BY SW8260C			**Matrix:** Water		
HS18021202-01	46WW09-022218	22 Feb 2018 09:05			01 Mar 2018 14:45	1
HS18021202-02	46WW16-022218	22 Feb 2018 10:55			01 Mar 2018 16:47	1
HS18021202-03	46SW10-022218	22 Feb 2018 12:30			01 Mar 2018 17:12	1
HS18021202-04	LHSMW25-022218	22 Feb 2018 13:50			01 Mar 2018 17:36	1
HS18021202-05	46TB02-022218	22 Feb 2018 00:01			01 Mar 2018 13:56	1
Batch ID R311836	**Test Name :** SULFIDE BY E376.1			**Matrix:** Water		
HS18021202-01	46WW09-022218	22 Feb 2018 09:05			01 Mar 2018 12:10	1
HS18021202-02	46WW16-022218	22 Feb 2018 10:55			01 Mar 2018 12:10	1
Batch ID R312018	**Test Name :** ALKALINITY BY SM2320B			**Matrix:** Water		
HS18021202-01	46WW09-022218	22 Feb 2018 09:05			06 Mar 2018 14:51	1
HS18021202-02	46WW16-022218	22 Feb 2018 10:55			06 Mar 2018 14:58	1
Batch ID R312059	**Test Name :** TOTAL ORGANIC CARBON BY SW9060A			**Matrix:** Water		
HS18021202-01	46WW09-022218	22 Feb 2018 09:05			06 Mar 2018 21:11	1
HS18021202-02	46WW16-022218	22 Feb 2018 10:55			06 Mar 2018 21:28	1
Batch ID R312129	**Test Name :** SUBCONTRACT ANALYSIS - RSK			**Matrix:** Water		
HS18021202-01	46WW09-022218	22 Feb 2018 09:05			08 Mar 2018 09:34	1
HS18021202-02	46WW16-022218	22 Feb 2018 10:55			08 Mar 2018 09:34	1
Batch ID R312269	**Test Name :** ANIONS BY SW9056A			**Matrix:** Water		
HS18021202-01	46WW09-022218	22 Feb 2018 09:05			24 Feb 2018 21:06	40
HS18021202-01	46WW09-022218	22 Feb 2018 09:05			23 Feb 2018 21:10	20
HS18021202-01	46WW09-022218	22 Feb 2018 09:05			23 Feb 2018 20:55	1
HS18021202-02	46WW16-022218	22 Feb 2018 10:55			24 Feb 2018 20:51	20
HS18021202-02	46WW16-022218	22 Feb 2018 10:55			23 Feb 2018 21:39	20
HS18021202-02	46WW16-022218	22 Feb 2018 10:55			23 Feb 2018 21:24	1

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: 125750 **Instrument: ICPMS05** **Method: SW6020**

MBLK Sample ID: **MBLK-125750** Units: **mg/L** Analysis Date: **01-Mar-2018 22:20**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458354** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	0.100	0.200								U

LCS Sample ID: **LCS-125750** Units: **mg/L** Analysis Date: **01-Mar-2018 22:22**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458355** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	4.601	0.200	5	0	92.0	80 - 120				

MS Sample ID: **HS18021075-01MS** Units: **mg/L** Analysis Date: **01-Mar-2018 22:28**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458358** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.609	0.200	5	0.9236	93.7	80 - 120				

MSD Sample ID: **HS18021075-01MSD** Units: **mg/L** Analysis Date: **01-Mar-2018 22:30**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458359** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.854	0.200	5	0.9236	98.6	80 - 120	5.609	4.26	20	

PDS Sample ID: **HS18021075-01PDS** Units: **mg/L** Analysis Date: **01-Mar-2018 22:36**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458362** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	12.28	0.200	10	0.9236	114	75 - 125				

SD Sample ID: **HS18021075-01SD** Units: **mg/L** Analysis Date: **01-Mar-2018 22:26**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458357** PrepDate: **01-Mar-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Iron	0.9119	1.00					0.9236	0	10	J

The following samples were analyzed in this batch: HS18021202-01 HS18021202-02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: 125751 **Instrument: ICPMS05** **Method: SW6020 (dissolved) (DISSOLVED)**

MBLK Sample ID: **MBLK-125751** Units: **mg/L** Analysis Date: **01-Mar-2018 22:52**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458370** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	0.100	0.200								U
Manganese	0.000951	0.00500								J

LCS Sample ID: **LCS-125751** Units: **mg/L** Analysis Date: **01-Mar-2018 22:54**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458371** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	4.915	0.200	5	0	98.3	80 - 120				
Manganese	0.05	0.00500	0.05	0	100	80 - 120				

MS Sample ID: **HS18021075-01MS** Units: **mg/L** Analysis Date: **01-Mar-2018 23:04**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458376** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.418	0.200	5	0.9096	90.2	75 - 125				
Manganese	0.1912	0.00500	0.05	0.153	76.4	75 - 125				

MSD Sample ID: **HS18021075-01MSD** Units: **mg/L** Analysis Date: **01-Mar-2018 23:06**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458377** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.66	0.200	5	0.9096	95.0	75 - 125	5.418	4.39	20	
Manganese	0.2009	0.00500	0.05	0.153	95.7	75 - 125	0.1912	4.91	20	

PDS Sample ID: **HS18021075-01PDS** Units: **mg/L** Analysis Date: **01-Mar-2018 23:09**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458378** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	10.12	0.200	10	0.9096	92.1	75 - 125				
Manganese	0.2468	0.00500	0.1	0.153	93.8	75 - 125				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: 125751 **Instrument: ICPMS05** **Method: SW6020 (dissolved) (DISSOLVED)**

SD Sample ID: **HS18021075-01SD** Units: **mg/L** Analysis Date: **01-Mar-2018 23:02**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458375** PrepDate: **01-Mar-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Iron	0.9512	1.00					0.9096	0	10	J
Manganese	0.1614	0.0250					0.153	5.46	10	

The following samples were analyzed in this batch: HS18021202-01 HS18021202-02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 13:32**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458276** 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	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 13:32**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458276** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	0.50	1.0								U
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	0.50	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*39.85*	*1.0*	*50*	*0*	*79.7*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*47.52*	*1.0*	*50*	*0*	*95.0*	*82 - 115*				
Surr: Dibromofluoromethane	*43.14*	*1.0*	*50*	*0*	*86.3*	*73 - 126*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 13:32**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458276** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*53.23*	*1.0*	*50*	*0*	*106*	*81 - 120*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 12:43**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458274** 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	45.96	1.0	50	0	91.9	77 - 118				
1,1,1-Trichloroethane	47.47	1.0	50	0	94.9	70 - 130				
1,1,2,2-Tetrachloroethane	41.92	1.0	50	0	83.8	70 - 120				
1,1,2-Trichlor-1,2,2-trifluoroethane	50.82	1.0	50	0	102	70 - 130				
1,1,2-Trichloroethane	45.47	1.0	50	0	90.9	77 - 113				
1,1-Dichloroethane	45.39	1.0	50	0	90.8	71 - 122				
1,1-Dichloroethene	49.89	1.0	50	0	99.8	70 - 130				
1,1-Dichloropropene	49.36	1.0	50	0	98.7	78 - 118				
1,2,3-Trichlorobenzene	44.88	1.0	50	0	89.8	70 - 130				
1,2,3-Trichloropropane	41.82	1.0	50	0	83.6	70 - 127				
1,2,4-Trichlorobenzene	46.17	1.0	50	0	92.3	77 - 126				
1,2,4-Trimethylbenzene	47.7	1.0	50	0	95.4	73 - 121				
1,2-Dibromo-3-chloropropane	42.16	1.0	50	0	84.3	70 - 130				
1,2-Dibromoethane	47.07	1.0	50	0	94.1	76 - 123				
1,2-Dichlorobenzene	42.67	1.0	50	0	85.3	77 - 113				
1,2-Dichloroethane	43.88	1.0	50	0	87.8	70 - 124				
1,2-Dichloropropane	45.65	1.0	50	0	91.3	72 - 119				
1,3,5-Trimethylbenzene	48.8	1.0	50	0	97.6	75 - 118				
1,3-Dichlorobenzene	43.39	1.0	50	0	86.8	78 - 118				
1,3-Dichloropropane	44.13	1.0	50	0	88.3	75 - 116				
1,4-Dichlorobenzene	42.72	1.0	50	0	85.4	79 - 113				
2,2-Dichloropropane	46.31	1.0	50	0	92.6	70 - 130				
2-Butanone	94.3	2.0	100	0	94.3	70 - 130				
2-Chlorotoluene	47.72	1.0	50	0	95.4	70 - 128				
2-Hexanone	92.08	2.0	100	0	92.1	70 - 130				
4-Chlorotoluene	47.92	1.0	50	0	95.8	74 - 126				
4-Isopropyltoluene	43.76	1.0	50	0	87.5	74 - 126				
4-Methyl-2-pentanone	85.74	2.0	100	0	85.7	70 - 130				
Acetone	90.98	2.0	100	0	91.0	70 - 130				
Benzene	46.15	1.0	50	0	92.3	74 - 120				
Bromobenzene	41.42	1.0	50	0	82.8	78 - 113				
Bromochloromethane	49.33	1.0	50	0	98.7	76 - 124				
Bromodichloromethane	47.23	1.0	50	0	94.5	74 - 122				
Bromoform	48.95	1.0	50	0	97.9	73 - 128				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 12:43**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458274** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	51.72	1.0	50	0	103	70 - 130				
Carbon disulfide	96.18	2.0	100	0	96.2	70 - 130				
Carbon tetrachloride	45.36	1.0	50	0	90.7	71 - 125				
Chlorobenzene	44.93	1.0	50	0	89.9	76 - 113				
Chloroethane	43	1.0	50	0	86.0	70 - 130				
Chloroform	43.82	1.0	50	0	87.6	71 - 121				
Chloromethane	47.81	1.0	50	0	95.6	70 - 129				
cis-1,2-Dichloroethene	48.42	1.0	50	0	96.8	75 - 122				
cis-1,3-Dichloropropene	49.34	1.0	50	0	98.7	73 - 127				
Dibromochloromethane	47.1	1.0	50	0	94.2	77 - 122				
Dibromomethane	49.87	1.0	50	0	99.7	78 - 121				
Dichlorodifluoromethane	44.65	1.0	50	0	89.3	70 - 130				
Ethylbenzene	51.67	1.0	50	0	103	77 - 117				
Hexachlorobutadiene	47.82	1.0	50	0	95.6	70 - 130				
Isopropylbenzene	46.04	1.0	50	0	92.1	73 - 127				
m,p-Xylene	90.22	2.0	100	0	90.2	77 - 122				
Methylene chloride	43.51	2.0	50	0	87.0	70 - 127				
Naphthalene	47.38	1.0	50	0	94.8	70 - 130				
n-Butylbenzene	46.03	1.0	50	0	92.1	72 - 130				
n-Propylbenzene	42.99	1.0	50	0	86.0	73 - 124				
o-Xylene	45.62	1.0	50	0	91.2	75 - 119				
sec-Butylbenzene	45.52	1.0	50	0	91.0	73 - 128				
Styrene	45.61	1.0	50	0	91.2	72 - 126				
tert-Butylbenzene	43.84	1.0	50	0	87.7	73 - 124				
Tetrachloroethene	46.45	1.0	50	0	92.9	76 - 119				
Toluene	44.13	1.0	50	0	88.3	77 - 118				
trans-1,2-Dichloroethene	48.24	1.0	50	0	96.5	72 - 127				
trans-1,3-Dichloropropene	50.52	1.0	50	0	101	77 - 119				
Trichloroethene	49.64	1.0	50	0	99.3	77 - 121				
Trichlorofluoromethane	47.67	1.0	50	0	95.3	70 - 130				
Vinyl chloride	47.62	1.0	50	0	95.2	70 - 130				
Surr: 1,2-Dichloroethane-d4	*42.37*	*1.0*	*50*	*0*	*84.7*	*70 - 130*				
Surr: 4-Bromofluorobenzene	*50.4*	*1.0*	*50*	*0*	*101*	*82 - 115*				
Surr: Dibromofluoromethane	*41.4*	*1.0*	*50*	*0*	*82.8*	*73 - 126*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 12:43**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458274** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*51.32*	*1.0*	*50*	*0*	*103*	*81 - 120*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021202-01MS** Units: **ug/L** Analysis Date: **01-Mar-2018 15:34**
Client ID: **46WW09-022218** Run ID: **VOA2_311806** SeqNo: **4458281** 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	42.44	1.0	50	0	84.9	70 - 120				
1,1,1-Trichloroethane	45.6	1.0	50	0	91.2	70 - 130				
1,1,2,2-Tetrachloroethane	37.5	1.0	50	0	75.0	70 - 123				
1,1,2-Trichlor-1,2,2-trifluoroethane	48.43	1.0	50	0	96.9	70 - 130				
1,1,2-Trichloroethane	41.03	1.0	50	0	82.1	70 - 117				
1,1-Dichloroethane	43.14	1.0	50	0	86.3	70 - 127				
1,1-Dichloroethene	49.65	1.0	50	0	99.3	70 - 130				
1,1-Dichloropropene	49.5	1.0	50	0	99.0	70 - 129				
1,2,3-Trichlorobenzene	39.39	1.0	50	0	78.8	70 - 130				
1,2,3-Trichloropropane	37.14	1.0	50	0	74.3	70 - 130				
1,2,4-Trichlorobenzene	41.43	1.0	50	0	82.9	70 - 125				
1,2,4-Trimethylbenzene	44.59	1.0	50	0	89.2	70 - 125				
1,2-Dibromo-3-chloropropane	36.32	1.0	50	0	72.6	70 - 130				
1,2-Dibromoethane	43.12	1.0	50	0	86.2	70 - 124				
1,2-Dichlorobenzene	39.17	1.0	50	0	78.3	70 - 115				
1,2-Dichloroethane	41.83	1.0	50	0	83.7	70 - 127				
1,2-Dichloropropane	43.57	1.0	50	0	87.1	70 - 122				
1,3,5-Trimethylbenzene	45.91	1.0	50	0	91.8	70 - 126				
1,3-Dichlorobenzene	39.93	1.0	50	0	79.9	70 - 119				
1,3-Dichloropropane	40.47	1.0	50	0	80.9	70 - 121				
1,4-Dichlorobenzene	38.61	1.0	50	0	77.2	70 - 114				
2,2-Dichloropropane	43.67	1.0	50	0	87.3	70 - 130				
2-Butanone	84.41	2.0	100	0	84.4	70 - 130				
2-Chlorotoluene	44.84	1.0	50	0	89.7	70 - 130				
2-Hexanone	82.92	2.0	100	0	82.9	70 - 130				
4-Chlorotoluene	44.74	1.0	50	0	89.5	70 - 130				
4-Isopropyltoluene	39.83	1.0	50	0	79.7	70 - 130				
4-Methyl-2-pentanone	77.83	2.0	100	0	77.8	70 - 130				
Acetone	75.3	2.0	100	0	75.3	70 - 130				
Benzene	45.11	1.0	50	0	90.2	70 - 127				
Bromobenzene	38.58	1.0	50	0	77.2	70 - 115				
Bromochloromethane	46.31	1.0	50	0	92.6	70 - 127				
Bromodichloromethane	44.63	1.0	50	0	89.3	70 - 124				
Bromoform	44.02	1.0	50	0	88.0	70 - 129				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021202-01MS** Units: **ug/L** Analysis Date: **01-Mar-2018 15:34**
Client ID: **46WW09-022218** Run ID: **VOA2_311806** SeqNo: **4458281** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	46.15	1.0	50	0	92.3	70 - 130				
Carbon disulfide	97.15	2.0	100	0	97.2	70 - 130				
Carbon tetrachloride	44.89	1.0	50	0	89.8	70 - 130				
Chlorobenzene	42.26	1.0	50	0	84.5	70 - 114				
Chloroethane	42.24	1.0	50	0	84.5	70 - 130				
Chloroform	41.58	1.0	50	0	83.2	70 - 125				
Chloromethane	50.74	1.0	50	0	101	70 - 130				
cis-1,2-Dichloroethene	45.93	1.0	50	0	91.9	70 - 128				
cis-1,3-Dichloropropene	45.96	1.0	50	0	91.9	70 - 125				
Dibromochloromethane	43.36	1.0	50	0	86.7	70 - 124				
Dibromomethane	46.67	1.0	50	0	93.3	70 - 124				
Dichlorodifluoromethane	42.56	1.0	50	0	85.1	70 - 130				
Ethylbenzene	49.09	1.0	50	0	98.2	70 - 124				
Hexachlorobutadiene	41.62	1.0	50	0	83.2	70 - 130				
Isopropylbenzene	43.38	1.0	50	0	86.8	70 - 130				
m,p-Xylene	85.95	2.0	100	0	86.0	70 - 130				
Methylene chloride	42.68	2.0	50	0	85.4	70 - 128				
Naphthalene	42.91	1.0	50	0	85.8	70 - 130				
n-Butylbenzene	41.35	1.0	50	0	82.7	70 - 130				
n-Propylbenzene	40.15	1.0	50	0	80.3	70 - 130				
o-Xylene	43.26	1.0	50	0	86.5	70 - 124				
sec-Butylbenzene	41.8	1.0	50	0	83.6	70 - 130				
Styrene	41.84	1.0	50	0	83.7	70 - 130				
tert-Butylbenzene	40.38	1.0	50	0	80.8	70 - 130				
Tetrachloroethene	49	1.0	50	0	98.0	70 - 130				
Toluene	41.91	1.0	50	0	83.8	70 - 123				
trans-1,2-Dichloroethene	47.24	1.0	50	0	94.5	70 - 130				
trans-1,3-Dichloropropene	46.16	1.0	50	0	92.3	70 - 121				
Trichloroethene	47.55	1.0	50	0	95.1	70 - 129				
Trichlorofluoromethane	56.95	1.0	50	0	114	70 - 130				
Vinyl chloride	47.84	1.0	50	0	95.7	70 - 130				
Surr: 1,2-Dichloroethane-d4	*42.03*	*1.0*	*50*	*0*	*84.1*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*49.6*	*1.0*	*50*	*0*	*99.2*	*81 - 113*				
Surr: Dibromofluoromethane	*41.82*	*1.0*	*50*	*0*	*83.6*	*77 - 123*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021202-01MS** Units: **ug/L** Analysis Date: **01-Mar-2018 15:34**
Client ID: **46WW09-022218** Run ID: **VOA2_311806** SeqNo: **4458281** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*51.18*	*1.0*	*50*	*0*	*102*	*82 - 127*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021202-01MSD** Units: **ug/L** Analysis Date: **01-Mar-2018 15:58**
Client ID: **46WW09-022218** Run ID: **VOA2_311806** SeqNo: **4458282** 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	41.36	1.0	50	0	82.7	70 - 120	42.44	2.57	20	
1,1,1-Trichloroethane	44.93	1.0	50	0	89.9	70 - 130	45.6	1.48	20	
1,1,2,2-Tetrachloroethane	37.5	1.0	50	0	75.0	70 - 123	37.5	0.0106	20	
1,1,2-Trichlor-1,2,2-trifluoroethane	46.3	1.0	50	0	92.6	70 - 130	48.43	4.5	20	
1,1,2-Trichloroethane	40.62	1.0	50	0	81.2	70 - 117	41.03	1	20	
1,1-Dichloroethane	42.79	1.0	50	0	85.6	70 - 127	43.14	0.834	20	
1,1-Dichloroethene	45.97	1.0	50	0	91.9	70 - 130	49.65	7.69	20	
1,1-Dichloropropene	47.73	1.0	50	0	95.5	70 - 129	49.5	3.65	20	
1,2,3-Trichlorobenzene	40.36	1.0	50	0	80.7	70 - 130	39.39	2.43	20	
1,2,3-Trichloropropane	36.73	1.0	50	0	73.5	70 - 130	37.14	1.11	20	
1,2,4-Trichlorobenzene	41.84	1.0	50	0	83.7	70 - 125	41.43	1	20	
1,2,4-Trimethylbenzene	43.79	1.0	50	0	87.6	70 - 125	44.59	1.83	20	
1,2-Dibromo-3-chloropropane	37.05	1.0	50	0	74.1	70 - 130	36.32	2	20	
1,2-Dibromoethane	42.13	1.0	50	0	84.3	70 - 124	43.12	2.32	20	
1,2-Dichlorobenzene	38.19	1.0	50	0	76.4	70 - 115	39.17	2.52	20	
1,2-Dichloroethane	39.91	1.0	50	0	79.8	70 - 127	41.83	4.69	20	
1,2-Dichloropropane	41.78	1.0	50	0	83.6	70 - 122	43.57	4.17	20	
1,3,5-Trimethylbenzene	45.01	1.0	50	0	90.0	70 - 126	45.91	1.99	20	
1,3-Dichlorobenzene	39.68	1.0	50	0	79.4	70 - 119	39.93	0.621	20	
1,3-Dichloropropane	39.36	1.0	50	0	78.7	70 - 121	40.47	2.77	20	
1,4-Dichlorobenzene	38.61	1.0	50	0	77.2	70 - 114	38.61	0.0141	20	
2,2-Dichloropropane	43.67	1.0	50	0	87.3	70 - 130	43.67	0.0056	20	
2-Butanone	81.92	2.0	100	0	81.9	70 - 130	84.41	2.99	20	
2-Chlorotoluene	43.91	1.0	50	0	87.8	70 - 130	44.84	2.1	20	
2-Hexanone	83.26	2.0	100	0	83.3	70 - 130	82.92	0.417	20	
4-Chlorotoluene	43.93	1.0	50	0	87.9	70 - 130	44.74	1.82	20	
4-Isopropyltoluene	39.62	1.0	50	0	79.2	70 - 130	39.83	0.525	20	
4-Methyl-2-pentanone	77.3	2.0	100	0	77.3	70 - 130	77.83	0.685	20	
Acetone	76.69	2.0	100	0	76.7	70 - 130	75.3	1.83	20	
Benzene	42.9	1.0	50	0	85.8	70 - 127	45.11	5.02	20	
Bromobenzene	38.2	1.0	50	0	76.4	70 - 115	38.58	0.971	20	
Bromochloromethane	46.48	1.0	50	0	93.0	70 - 127	46.31	0.382	20	
Bromodichloromethane	42.5	1.0	50	0	85.0	70 - 124	44.63	4.89	20	
Bromoform	43.44	1.0	50	0	86.9	70 - 129	44.02	1.31	20	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021202-01MSD** Units: **ug/L** Analysis Date: **01-Mar-2018 15:58**
Client ID: **46WW09-022218** Run ID: **VOA2_311806** SeqNo: **4458282** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Bromomethane	46.34	1.0	50	0	92.7	70 - 130	46.15	0.407	20	
Carbon disulfide	94.11	2.0	100	0	94.1	70 - 130	97.15	3.18	20	
Carbon tetrachloride	41.97	1.0	50	0	83.9	70 - 130	44.89	6.73	20	
Chlorobenzene	41.44	1.0	50	0	82.9	70 - 114	42.26	1.95	20	
Chloroethane	40.93	1.0	50	0	81.9	70 - 130	42.24	3.17	20	
Chloroform	41.24	1.0	50	0	82.5	70 - 125	41.58	0.808	20	
Chloromethane	44.67	1.0	50	0	89.3	70 - 130	50.74	12.7	20	
cis-1,2-Dichloroethene	43.88	1.0	50	0	87.8	70 - 128	45.93	4.56	20	
cis-1,3-Dichloropropene	43.79	1.0	50	0	87.6	70 - 125	45.96	4.84	20	
Dibromochloromethane	42.35	1.0	50	0	84.7	70 - 124	43.36	2.36	20	
Dibromomethane	44.04	1.0	50	0	88.1	70 - 124	46.67	5.81	20	
Dichlorodifluoromethane	41.36	1.0	50	0	82.7	70 - 130	42.56	2.85	20	
Ethylbenzene	47.83	1.0	50	0	95.7	70 - 124	49.09	2.6	20	
Hexachlorobutadiene	42.23	1.0	50	0	84.5	70 - 130	41.62	1.46	20	
Isopropylbenzene	42.64	1.0	50	0	85.3	70 - 130	43.38	1.74	20	
m,p-Xylene	83.62	2.0	100	0	83.6	70 - 130	85.95	2.75	20	
Methylene chloride	40.72	2.0	50	0	81.4	70 - 128	42.68	4.69	20	
Naphthalene	43.58	1.0	50	0	87.2	70 - 130	42.91	1.55	20	
n-Butylbenzene	41.2	1.0	50	0	82.4	70 - 130	41.35	0.356	20	
n-Propylbenzene	39.72	1.0	50	0	79.4	70 - 130	40.15	1.09	20	
o-Xylene	42.45	1.0	50	0	84.9	70 - 124	43.26	1.9	20	
sec-Butylbenzene	41.57	1.0	50	0	83.1	70 - 130	41.8	0.545	20	
Styrene	41.42	1.0	50	0	82.8	70 - 130	41.84	1.02	20	
tert-Butylbenzene	39.95	1.0	50	0	79.9	70 - 130	40.38	1.06	20	
Tetrachloroethene	44.83	1.0	50	0	89.7	70 - 130	49	8.88	20	
Toluene	40.68	1.0	50	0	81.4	70 - 123	41.91	2.98	20	
trans-1,2-Dichloroethene	46.97	1.0	50	0	93.9	70 - 130	47.24	0.564	20	
trans-1,3-Dichloropropene	44.26	1.0	50	0	88.5	70 - 121	46.16	4.21	20	
Trichloroethene	46.45	1.0	50	0	92.9	70 - 129	47.55	2.34	20	
Trichlorofluoromethane	47.77	1.0	50	0	95.5	70 - 130	56.95	17.5	20	
Vinyl chloride	46.58	1.0	50	0	93.2	70 - 130	47.84	2.68	20	
Surr: 1,2-Dichloroethane-d4	*42.36*	*1.0*	*50*	*0*	*84.7*	*70 - 126*	*42.03*	*0.79*	*20*	
Surr: 4-Bromofluorobenzene	*50.57*	*1.0*	*50*	*0*	*101*	*81 - 113*	*49.6*	*1.92*	*20*	
Surr: Dibromofluoromethane	*41.11*	*1.0*	*50*	*0*	*82.2*	*77 - 123*	*41.82*	*1.69*	*20*	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021202-01MSD** Units: **ug/L** Analysis Date: **01-Mar-2018 15:58**
Client ID: **46WW09-022218** Run ID: **VOA2_311806** SeqNo: **4458282** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*51.54*	*1.0*	*50*	*0*	*103*	*82 - 127*	*51.18*	*0.705*	*20*	

The following samples were analyzed in this batch: HS18021202-01 HS18021202-02 HS18021202-03 HS18021202-04 HS18021202-05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: 126002 **Instrument: UV-2450** **Method: SM4500P E**

MBLK Sample ID: **MBLK-126002** Units: **mg/L** Analysis Date: **08-Mar-2018 16:30**
Client ID: Run ID: **UV-2450_312228** SeqNo: **4467095** PrepDate: **08-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.0200	0.0500								U

LCS Sample ID: **LCS-126002** Units: **mg/L** Analysis Date: **08-Mar-2018 16:30**
Client ID: Run ID: **UV-2450_312228** SeqNo: **4467094** PrepDate: **08-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.246	0.0500	0.25	0	98.4	80 - 120				

MS Sample ID: **HS18030012-01MS** Units: **mg/L** Analysis Date: **08-Mar-2018 16:30**
Client ID: Run ID: **UV-2450_312228** SeqNo: **4467092** PrepDate: **08-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.24	0.0500	0.25	0.023	86.8	80 - 120				

MSD Sample ID: **HS18030012-01MSD** Units: **mg/L** Analysis Date: **08-Mar-2018 16:30**
Client ID: Run ID: **UV-2450_312228** SeqNo: **4467093** PrepDate: **08-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.25	0.0500	0.25	0.023	90.8	80 - 120	0.24	4.08	20	

The following samples were analyzed in this batch: HS18021202-01 HS18021202-02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R311836 **Instrument: WetChem_HS** **Method: E376.1**

MBLK Sample ID: **MBLK-R311836** Units: **mg/L** Analysis Date: **01-Mar-2018 12:10**
Client ID: Run ID: **WetChem_HS_311836** SeqNo: **4465911** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	1.00	1.00								U

LCS Sample ID: **LCS-R311836** Units: **mg/L** Analysis Date: **01-Mar-2018 12:10**
Client ID: Run ID: **WetChem_HS_311836** SeqNo: **4465910** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	23	1.00	25	0	92.0	80 - 120				

LCSD Sample ID: **LCSD-R311836** Units: **mg/L** Analysis Date: **01-Mar-2018 12:10**
Client ID: Run ID: **WetChem_HS_311836** SeqNo: **4465909** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	22.6	1.00	25	0	90.4	80 - 120	23	1.75	20	

MS Sample ID: **HS18021360-01MS** Units: **mg/L** Analysis Date: **01-Mar-2018 12:10**
Client ID: Run ID: **WetChem_HS_311836** SeqNo: **4465998** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	23.2	1.00	25	0.8	89.6	80 - 120				

The following samples were analyzed in this batch: HS18021202-01 HS18021202-02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R312018 **Instrument: ManTech01** **Method: SM2320B**

MBLK Sample ID: **WBLKW1-180306** Units: **mg/L** Analysis Date: **06-Mar-2018 13:00**
Client ID: Run ID: **ManTech01_312018** SeqNo: **4462755** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **LCS-ALK1-180306** Units: **mg/L** Analysis Date: **06-Mar-2018 13:09**
Client ID: Run ID: **ManTech01_312018** SeqNo: **4462756** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1104	5.00	1000	0	110	85 - 115				

LCSD Sample ID: **LCSD-ALK1-180306** Units: **mg/L** Analysis Date: **06-Mar-2018 13:18**
Client ID: Run ID: **ManTech01_312018** SeqNo: **4462757** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1098	5.00	1000	0	110	85 - 115	1104	0.497	20	

DUP Sample ID: **HS18021075-02DUP** Units: **mg/L** Analysis Date: **06-Mar-2018 13:51**
Client ID: Run ID: **ManTech01_312018** SeqNo: **4462762** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	32.57	5.00					32.92	1.07	20	

The following samples were analyzed in this batch: HS18021202-01 HS18021202-02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R312059 **Instrument: TOC_02** **Method: SW9060**

MBLK Sample ID: **WBLKW1-030618** Units: **mg/L** Analysis Date: **06-Mar-2018 19:15**
Client ID: Run ID: **TOC_02_312059** SeqNo: **4463834** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	0.500	1.00								U

LCS Sample ID: **WLCSW1-030618** Units: **mg/L** Analysis Date: **06-Mar-2018 19:30**
Client ID: Run ID: **TOC_02_312059** SeqNo: **4463835** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.42	1.00	10	0	104	80 - 120				

LCSD Sample ID: **WLCSDW1-030618** Units: **mg/L** Analysis Date: **06-Mar-2018 19:45**
Client ID: Run ID: **TOC_02_312059** SeqNo: **4463836** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.45	1.00	10	0	104	80 - 120	10.42	0.287	20	

MS Sample ID: **HS18021075-01MS** Units: **mg/L** Analysis Date: **06-Mar-2018 20:18**
Client ID: Run ID: **TOC_02_312059** SeqNo: **4463838** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	13.02	1.00	10	2.817	102	80 - 120				

The following samples were analyzed in this batch: HS18021202-01 HS18021202-02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R312269 **Instrument: ICS2100** **Method: SW9056**

MBLK Sample ID: **WBLKW1-022318** Units: **mg/L** Analysis Date: **23-Feb-2018 18:15**
Client ID: Run ID: **ICS2100_312269** SeqNo: **4468123** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.250	0.500								U
Nitrogen, Nitrate (As N)	0.0500	0.100								U
Nitrogen, Nitrite (As N)	0.0500	0.100								U
Sulfate	0.250	0.500								U

LCS Sample ID: **WLCSW1-022318** Units: **mg/L** Analysis Date: **23-Feb-2018 18:30**
Client ID: Run ID: **ICS2100_312269** SeqNo: **4468124** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.94	0.500	20	0	99.7	80 - 120				
Nitrogen, Nitrate (As N)	4.129	0.100	4	0	103	80 - 120				
Nitrogen, Nitrite (As N)	4.243	0.100	4	0	106	80 - 120				
Sulfate	20.44	0.500	20	0	102	80 - 120				

LCSD Sample ID: **WLCSDW1-022318** Units: **mg/L** Analysis Date: **23-Feb-2018 18:44**
Client ID: Run ID: **ICS2100_312269** SeqNo: **4468125** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.33	0.500	20	0	102	80 - 120	19.94	1.93	20	
Nitrogen, Nitrate (As N)	4.247	0.100	4	0	106	80 - 120	4.129	2.82	20	
Nitrogen, Nitrite (As N)	4.287	0.100	4	0	107	80 - 120	4.243	1.03	20	
Sulfate	21.11	0.500	20	0	106	80 - 120	20.44	3.22	20	

MS Sample ID: **HS18020922-02MS** Units: **mg/L** Analysis Date: **24-Feb-2018 22:04**
Client ID: Run ID: **ICS2100_312269** SeqNo: **4468137** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	89.4	0.500	10	79.22	102	80 - 120				O
Nitrogen, Nitrate (As N)	9.975	0.100	2	7.842	107	80 - 120				
Nitrogen, Nitrite (As N)	2.299	0.100	2	0.118	109	80 - 120				
Sulfate	25.02	0.500	10	13.91	111	80 - 120				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021202

QC BATCH REPORT

Batch ID: R312269 **Instrument: ICS2100** **Method: SW9056**

MSD Sample ID: **HS18020922-02MSD** Units: **mg/L** Analysis Date: **24-Feb-2018 22:19**
Client ID: Run ID: **ICS2100_312269** SeqNo: **4468138** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	89.07	0.500	10	79.22	98.5	80 - 120	89.4	0.369	20	O
Nitrogen, Nitrate (As N)	9.95	0.100	2	7.842	105	80 - 120	9.975	0.251	20	
Nitrogen, Nitrite (As N)	2.281	0.100	2	0.118	108	80 - 120	2.299	0.786	20	
Sulfate	25.34	0.500	10	13.91	114	80 - 120	25.02	1.26	20	

The following samples were analyzed in this batch: HS18021202-01 HS18021202-02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: **HS18021202**

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 Group USA, Corp Date: 12-Mar-18

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	17-027-0	27-Mar-2018
California	2919 2016-2018	31-Jul-2018
Illinois	004112	09-May-2018
Kentucky	123043	30-Apr-2018
Louisiana	03087 2017-2017	30-Jun-2018
North Dakota	R193 2017-2017	30-Apr-2018
Oklahoma	2017-088	31-Aug-2018
Texas	T104704231-17-19	30-Apr-2018
North Carolina	624-2018	31-Dec-2018

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Work Order: HS18021202

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS18021202-01	46WW09-022218	Login	2/23/2018 12:56:59 PM	PMG	WET185
HS18021202-01	46WW09-022218	Login	2/23/2018 12:56:59 PM	PMG	WET185
HS18021202-01	46WW09-022218	Login	2/23/2018 12:56:59 PM	PMG	WET185
HS18021202-01	46WW09-022218	Login	2/23/2018 12:56:59 PM	PMG	MET070
HS18021202-01	46WW09-022218	Login	2/23/2018 12:56:59 PM	PMG	MET070
HS18021202-01	46WW09-022218	Login	2/23/2018 12:56:59 PM	PMG	VOA120
HS18021202-01	46WW09-022218	Login	2/23/2018 12:56:59 PM	PMG	WET185
HS18021202-01	46WW09-022218	Login	2/23/2018 12:56:59 PM	PMG	Sub
HS18021202-02	46WW16-022218	Login	2/23/2018 12:56:59 PM	PMG	WET185
HS18021202-02	46WW16-022218	Login	2/23/2018 12:56:59 PM	PMG	WET185
HS18021202-02	46WW16-022218	Login	2/23/2018 12:56:59 PM	PMG	WET185
HS18021202-02	46WW16-022218	Login	2/23/2018 12:56:59 PM	PMG	MET070
HS18021202-02	46WW16-022218	Login	2/23/2018 12:56:59 PM	PMG	MET070
HS18021202-02	46WW16-022218	Login	2/23/2018 12:56:59 PM	PMG	VOA120
HS18021202-02	46WW16-022218	Login	2/23/2018 12:56:59 PM	PMG	WET185
HS18021202-02	46WW16-022218	Login	2/23/2018 12:56:59 PM	PMG	Sub

00916652

ALS Group USA, Corp Date: 12-Mar-18

Sample Receipt Checklist

Client Name: CBI-Houston
Work Order: HS18021202
Date/Time Received: **23-Feb-2018 09:10**
Received by: **PMG**

Checklist completed by: *Paresh M. Giga* eSignature 23-Feb-2018 Date
Reviewed by: *RJ Modashia* eSignature 23-Feb-2018 Date

Matrices: **Water**
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 ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
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):	2.4c/2.8c U/c	IR30	
Cooler(s)/Kit(s):	23478		
Date/Time sample(s) sent to storage:	2/23/18 13:40		
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: Total Metals bottles received not checked off for analysis on COC. Logged in with analysis per RJ

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

APTIM

Page 1 of _____

COC ID: 46-FEB2018-GW-ALSHT- **TURNAROUND TIME:** normal **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	Longhorn AAP			Lab Name	ALS Laboratories			Email Invoice To	FedInvoices@CBIFederalServices.com		
Project Number	501032			Lab Contact	RJ Modashia						
	LHAAP-46			Email	RJ.Modashia@alsglobal.com			Email Report To	Sharon.Pennington@CBIFederalServices.com		
Address	1203-B East Grand Avenue			Address	10450 Stancliff Rd., Suite 210			Mail Reports To	Sharon Pennington		
	PMB 202							Address	2410 Cherahala Blvd.		
City	Marshall	State	TX	City	Houston	State	TX	City	Knoxville	State	TN
Postal Code	75670	Country	USA	Postal Code	77099	Country	USA	Postal Code	37932	Country	USA
Phone Number	713.243.7264			Phone Number	281.575.2132 or 281.530.5656						
Project Manager	Praveen Srivastav							Shipping Company			

SAMPLE DETAILS									ANALYSIS REQUESTED										
Sample ID	Location	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	# Of Cont.	VOCs in Water by 8260B	CARBON DIOXIDE RSK175	MEE RSK175	TDC E415.1	ANIONS, ALKALINITY E310.1	Dissolved Fe Mn 6020A	Phosphorous E365.2	Soil: dry E376.1			
46WWD9-022218	LHAAP-46	38.65	38.87		W	2/22/18	0905	15	X	X	X	X	X	X	X	X			
46WW16-022218	LHAAP-46	38.33	38.52		W	2/22/18	1055	15	X	X	X	X	X	X	X	X			
46SW10-022218	LHAAP-46	—	—		W	2/22/18	1230	3	X										
LHSMW25-022218	LHAAP-46	30.90	31.15		W	2/22/18	1350	3	X										
TRIP BLANK	LHAAP-46	—	—		W	2/22/18		2	X										

HS18021202

Aptim Environmental & Infrastucture, Inc.

LHAAP-46 501032

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	[signature] / BHATE	2/22/18 1430	[signature]	2/23/18 09:10.
			23478	VIC. #30

Cf: 0.4°

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
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www.alsglobal.com

LABORATORY REPORT

March 8, 2018

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road Suite 210
Houston, TX 77099-4338

RE: HS18021202

Dear RJ:

Enclosed are the results of the samples submitted to our laboratory on February 24, 2018. For your reference, these analyses have been assigned our service request number P1800832.

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.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 1:16 pm, Mar 08, 2018

For Kelly Horiuchi
Laboratory Director

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: ALS Laboratory Group
Project: HS18021202

Service Request No: P1800832

CASE NARRATIVE

The samples were received intact under chain of custody on February 24, 2018 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.

Carbon Dioxide Analysis

Two samples were analyzed for carbon dioxide using a gas chromatograph equipped with a thermal conductivity detector (TCD). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least four hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (carbon dioxide) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175 as described in laboratory SOP VOA-DISGAS. This analyte is included on the laboratory's NELAP and DoD-ELAP scope of accreditation.

The result for carbon dioxide is estimated in sample 46WW09-022218 (P1800832-002) because the concentration exceeded the instrument calibration range.

Methane, Ethene and Ethane Analysis

The other two samples were analyzed for methane, ethene and ethane using a gas chromatograph equipped with a flame ionization detector (FID). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least two hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (methane, ethene and ethane) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175. 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 laboratory's NELAP or DoD-ELAP accreditation.

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.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-17-8
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272017-8
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: ALS Laboratory Group
Project ID: HS18021202

Service Request: P1800832

Date Received: 2/24/2018
Time Received: 10:10

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	RSK 175 - Gases	RSK 175 - CO2
46WW09-022218	P1800832-001	Water	2/22/2018	09:05	X	
46WW09-022218	P1800832-002	Water	2/22/2018	09:05		X
46WW16-022218	P1800832-003	Water	2/22/2018	10:55	X	
46WW16-022218	P1800832-004	Water	2/22/2018	10:55		X

P1800932

10450 Stancliff Rd, Ste 210
Houston, TX 77099
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www.alsglobal.com

Subcontract Chain of Custody

COC ID: 8669

SUBCONTRACT TO:

ALS Environmental
2655 Park Center Drive, Suite A
Simi Valley, CA 93065

Phone: +1 805 526 7161

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS18021202
TSR: Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS18021202-01**	**46WW09-022218**	**Water**	**22 Feb 2018 09:05**
	SUB_RSK			09 Mar 2018
2.	**HS18021202-02**	**46WW16-022218**	**Water**	**22 Feb 2018 10:55**
	SUB_RSK			09 Mar 2018

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above. Neat vials for CO2 analysis. HCL vials for MEE analysis

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 2/23/18 1800

Received By: Kelly Hone Date/Time: 2/24/18 1010 am 2°C

Cooler ID(s): _____ Temperature(s): _____

ALS Environmental
Sample Acceptance Check Form

Client: ALS Laboratory Group Work order: P1800832

Project: HS18021202

Sample(s) received on: 2/24/18 Date opened: 2/24/18 by: E.PEREZ

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?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 2° C **Wet Ice**			
8	Were **custody seals** on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? Sealing Lid 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
P1800832-001.01	40ml VOA HCL		1		A	MC 3/5/2018
P1800832-001.02	40ml VOA HCL				A	
P1800832-001.03	40ml VOA HCL				A	
P1800832-002.01	40mL VOA NP		7		A	MC 3/6/2018
P1800832-002.02	40mL VOA NP				A	
P1800832-003.01	40ml VOA HCL		1		A	MC 3/5/2018
P1800832-003.02	40ml VOA HCL				A	
P1800832-003.03	40ml VOA HCL				A	
P1800832-004.01	40mL VOA NP		7		A	MC 3/5/2018
P1800832-004.02	40mL VOA NP				A	

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: **ALS Laboratory Group**
Client Project ID: **HS18021202** ALS Project ID: P1800832

Carbon Dioxide

Test Code: RSK 175
Instrument ID: HP5890A/GC10/TCD Date(s) Collected: 2/22/18
Analyst: Mike Conejo Date Received: 2/24/18
Matrix: Water Date Analyzed: 3/6/18
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
46WW09-022218	P1800832-002	0.10	**570,000**	1,000	760	370	**E**
46WW16-022218	P1800832-004	0.10	**420,000**	1,000	760	370	
Method Control Sample	P180306-MB	0.10	760	1,000	760	370	**U**

The Method Control Sample is laboratory water carried through the entire analytical process.
U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
E = Estimated; concentration exceeded calibration range.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1800832
Client Project ID: **HS18021202** ALS Sample ID: P180306-DLCS

Test Code: RSK 175 Date Collected: NA
Instrument ID: HP5890A/GC10/TCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 3/06/18
Matrix: Water Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result$_1$ LCS ug/L	Result$_1$ DLCS ug/L	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
124-38-9	Carbon Dioxide	22,900	21,100	20,300	**92**	**89**	80-122	3	15	

$_1$ = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **46WW09-022218**
Client Project ID: **HS18021202**

ALS Project ID: P1800832
ALS Sample ID: P1800832-001

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Mike Conejo
Matrix: Water
Test Notes:

Date Collected: 2/22/18
Date Received: 2/24/18
Date Analyzed: 3/5/18
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	1.0	1.3	1.0	0.51	**U**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = 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: **ALS Laboratory Group**
Client Sample ID: **46WW16-022218**
Client Project ID: **HS18021202**

ALS Project ID: P1800832
ALS Sample ID: P1800832-003

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Mike Conejo
Matrix: Water
Test Notes:

Date Collected: 2/22/18
Date Received: 2/24/18
Date Analyzed: 3/5/18
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	1.0	1.3	1.0	0.51	**U**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = 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: **ALS Laboratory Group**
Client Sample ID: **Method Control Sample**
Client Project ID: **HS18021202**

ALS Project ID: P1800832
ALS Sample ID: P180305-MB

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Mike Conejo
Matrix: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/05/18
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	1.0	1.3	1.0	0.51	**U**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

The Method Control Sample is laboratory water carried through the entire analytical process.
U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample**
Client Project ID: **HS18021202**

ALS Project ID: P1800832
ALS Sample ID: P180305-LCS
P180305-DLCS

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Mike Conejo
Matrix: Water
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 3/05/18
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Spike Amount LCS / DLCS µg/L	Result$_1$ LCS µg/L	Result$_1$ DLCS µg/L	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
74-82-8	Methane	2.50	2.48	2.66	**99**	**106**	73-125	7	12	
74-85-1	Ethene	4.37	5.19	5.18	**119**	**119**	72-133	0	7	
74-84-0	Ethane	4.69	4.81	4.98	**103**	**106**	74-131	3	6	

$_1$ = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

ADR Data Validation Checklist
Inorganic Metals by SW846 6010/6020/7470/7471

Project Name:	LHAAP-46	SDG/Report No.:	HS18021202
Project No.:	501032	Lab ID:	ALS-Houston
No. of Samples:	2 Originals & 0 FD	Matrix:	GW
1st ADR / 2nd by	SP		

Automated Data Review (ADR) was performed for all areas except Calibration Blanks, ICP Check Standard Analysis, Serial Dilution Analysis, and areas where professional judgement is applicable. Review of these areas was performed manually and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports (Copies Attached):

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

SHAWVIEW Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and SW846 methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. ICAL			X
3. CCAL			X
4. LLICV-Low			X
5. Blanks (Method, Calibration and/or Field QC)			X
6. LCS			X
7. ICP Check Standards			X
8. MS/MSD			X
9. Field Duplicate			X
10. Serial Dilutions			X
11. Internal Standards (6020)			X
12. Form 1 vs Database/ADR			X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (2): 46WW09-022218, 46WW16-022218

ADR Data Validation Checklist
Inorganic Metals by SW846 6010/6020/7470/7471

Total Iron, Dissolved Iron, Dissolved Manganese
1. Hold Time/Preservation. (QAPP - Worksheet#19/SW846)
No Qualification Necessary
Received <6.0ºC; collected 2/22/2018; Prepped: 3/1/2018; analyzed: 3/1,2/2018
2. ICAL (DoD_5.0/SW846: R^2>0.990)
No Qualification Necessary
3. CCAL (DoD_5.0 and/or SW846: ±10%D)
No Qualification Necessary
4. LLICV-Low Level ICV - CRDL (DoD_5.0 <±20% / SW846<±30%) <±20% applicable
No Qualification Necessary
5. Blanks "UB" 5X(EPA Region#&4: Method and/or Field QC)
No Qualification Necessary
6020 (T) MBLK-125750 – Results were nondetect.
6020 (D) MBLK-125751 – Iron is nondetect. Manganese 0.000951 J mg/L (5X=0.004755); All manganese results greater than 5X concentration; Therefore, no qualification required.
6. LCS (QAPP - Worksheet#12/#28)
No Qualification Necessary
6020 (T) LCS-125750 – Criteria were met.
6020 (D) LCS-125751 – Criteria were met.
7. ICP Check Standards (DoD_5.0 and SW846/QAPP – worksheet#12/#28: ±20%)
No Qualification Necessary
8. MS/MSD (QAPP - Worksheet#12/#28 (75%-125%); parent sample only; *note lab limit are tighter*)
No Qualification Necessary
Batch LHSMW19-022018MS/MSD – Criteria were met.
9. Field Duplicate (QAPP – worksheet#35: 20% waters / 50% soils)
(non-detect & result <RL or both <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)
No Qualification Necessary
An FD pair was not included for these samples.
10. Serial Dilutions (DoD_5.0/SW846/QAAP: ±10%; SW6010/6020 >50X MDL; parent sample)
No Qualification Necessary

ADR Data Validation Checklist
Inorganic Metals by SW846 6010/6020/7470/7471

11. Internal Standard (6020 only: DoD5.0: 30-120% and/or NFG 60-125%) applicable by lab
12. Form 1 vs Database/ADR
Check laboratory's Form1 against Database; minimum one sample per SDG per fraction; list sample number:
11. Multiple Results
No Qualification Necessary

ADR Data Validation Checklist
Methane, Ethane, Ethene by RSK175

Project Name:	LHAAP-46	SDG/Report No.:	HS18021202 (P1800832)
Project No.:	501032	Lab ID:	ALS-Houston (Simi Valley)
No. of Samples:	2 Originals & 0 FD	Matrix:	GW
1st ADR / 2nds	SP		

Automated Data Review (ADR) was performed for all areas. Review of these areas was performed manually and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports (Copies Attached):

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

SHAWVIEW Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and/or SW846 methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. BFB Tune.			X
3. ICAL (RRF and/or %RSD)			X
4. CCAL (RRF and/or %D)			X
5. Blanks (Method and/or Field QC)			X
6. LCS			X
7. MS/MSD			X
8. Field Duplicate			X
10. Form1 vs Database/ADR		X	X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (2): 46WW09-022218, 46WW16-022218
MEE plus Carbon dioxide
1. Hold Time/Preservation (QAPP - Worksheet#19/SW846/ASTM methods).
No Qualification Necessary
Rec'd <6°C; collected: 2/22/2018; analyze: CO2: 3/6/2018 & MEE: 3/5/2018

ADR Data Validation Checklist
Methane, Ethane, Ethene by RSK175

2. BFB Tune (instr. performance criteria)
No Qualification Necessary
3. ICAL (EPA RSKSOP-175; 20%RSD or R>0.995)
No Qualification Necessary
GC10 RS082817_CO2.M (CO2 & MEE) 8/29/2017 – Criteria were met.
GC10 RS091217_R.M (CO2 & MEE) 9/12/2017 -
4. CCAL (EPA RSKSOP-175; 15%D)
No Qualification Necessary
5. Blanks "UB" (EPA Region 3&4: Method and/or Field QC)
No Qualification Necessary
P180306-MB (CO2) & P180305-MB (MEE) – Results were nondetect.
6. LCS (QAPP – Worksheet#12/#28)
No Qualification Necessary
P180306-LCS/LCSD (CO2) and P180205-LCS/LCSD (MEE) – Criteria were met.
7. MS/MSD (QAPP – Worksheet#12/#28)
Qualification Necessary
Batch QC MS/MSD – Carbon dioxide (ok/130%); No qualification required.
8. Field Duplicate (QAPP – Worksheet#35 - WATERS 20% / SOILS 50%)
(non-detect & result <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)
No Qualification Necessary
An FD pair was not included with this COC.
9. Form 1 vs Database/ADR
Check laboratory's Form1 against Database; one sample per SDG per fraction; list sample number:
10. Multiple Results
Qualification Necessary
NOTE: Results for CO2 were not diluted. J-19 applied.

ADR Data Validation Checklist
Volatile Organics by SW846 8260C

Project Name:	LHAAP-46	SDG/Report No.:	HS18021202
Project No.:		Lab ID:	ALS-Houston
No. of Samples:	4 Original & 0 FD	Matrix:	GW
1ST ADR / 2nd by	SP		

Automated Data Review (ADR) was performed for all areas evaluate except internal standards. 2ND Review of these areas was performed manually and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

EQUiS Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and/or SW846 8260 methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. BFB Tune.			X
3. ICAL (RRF and/or %RSD)			X
4. CCAL opening (RRF and/or 20% D)			X
5. CCAL closing (%D<±50%)			X
6. Blanks (Method and/or Field QC)			X
7. LCS			X
8. Surrogates			X
9. MS/MSD			X
10. Field Duplicate			X
11. Internal Standards			X
12. Form1 vs Database/ADR			X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (4): 46WW09-022218, 46WW16-022218, 46SW10-022218, LHSMW25-022218

ADR Data Validation Checklist
Volatile Organics by SW846 8260C

1. Hold Time/Preservation (QAPP - Worksheet#19/SW846/ASTM methods).
No Qualification Necessary
Rec'd <6ºC; collected 2/22/2018; analyzed 3/01/2018
2. BFB Tune (instr. performance criteria)
No Qualification Necessary
3. ICAL (DoD: RSD≤15% or linear R^2≥0.99 and Avg RRF's; 2-butanone & acetone >0.05; J/UJ < recommended criteria)
No Qualification Necessary
VOA2 D020902 2/09/18 @ 15:54 to 19:09 – Criteria met.
4. ICV (20%D only) /CCAL opening (DoD: %D≤20% and/or SW846 8260 Table 4 Avg RRF's: J/UJ < recommended criteria)
Qualification Necessary
VOA2 ICV D020912 2/09/18 @ 19:57 – Criteria met.
VOA2 CCV D030103 3/01/18 @ 11:54 – Criteria met.
5. Closing CCV (DoD_5.0: %D<±50%) (if applicable by lab)
No Qualification Necessary
VOA2 CCV_END D030129 3/01/18 @ 22:30 – Criteria met.
6. Blanks "UB" 5X/10X (EPA Region 3&4: Method and/or Field QC)
No Qualification Necessary
TB 46TB02-022218 – Results are nondetect.
VBLKW-180301 (D022807) – Results are nondetect.
7. LCS (QAPP – Worksheet#12/#28)
No Qualification Necessary
VLCSW-180301 (D022805) – Criteria were met.
8. Surrogates (QAPP - Worksheet#12/#28)
No Qualification Necessary – All recoveries were within acceptance criteria.
9. MS/MSD (DoD/QAPP – Worksheet#12/#28; parent sample only)
No Qualification Necessary
Batch 46WW09-022218-MS/MSD – No qualification for samples.

ADR Data Validation Checklist
Volatile Organics by SW846 8260C

10. Field Duplicate (QAPP – Worksheet#12 - WATERS ≤20% / SOILS ≤50%)

(non-detect & result <RL or both <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)

No Qualification Necessary – Criteria were met.

An FD pair was not included with this COC.

VOCs	Method	Units		LQ		LQ	%RPD
	8260B	ug/L					0.00
	8260B	ug/L					0.00
	8260B						
	8260B						

11.Internal Standards (DoD/QAPP – Worksheet#12/#28; -50% to +100% and RT ±0.5sec)

No Qualification Necessary

12. Form 1 vs Database/ADR

Check laboratory's Form1 against Database; one sample per SDG per fraction; list sample number:

13. Multiple Results

No Qualification Necessary

ADR Data Validation Checklist
Wet Chemistry

Project Name:	LHAAP-46	SDG/Report No.:	HS18021202
Project No.:	501032	Lab ID:	ALS-Houston
No. of Samples:	2 Originals & 0 FD	Analysis:	Alkalinity, Anions, Phosphorous,
1st ADR / 2nd by:	SP		Sulfide, TOC,

Automated Data Review (ADR) was performed for all areas except where professional judgment is applicable. Review of these areas was performed manually by **DoD_5.0** and **SW846 methods** and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports (Copies Attached):

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and **SW846** methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. ICAL			X
3. CCAL			X
4. Limit of Detection Verification (LODV)			X
5. Blanks (Method, Calibration and/or Field QC)			X
6. LCS			X
7. Duplicate Analysis			X
8. MS/MSD			X
9. Field Duplicate			X
10. Form1 vs Database/ADR			X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (2): 46WW09-022218, 46WW16-022218

ADR Data Validation Checklist
Wet Chemistry

1. Hold Time/Preservation. (QAPP - Worksheet#19/SW846/ASTM methods)
No Qualification Necessary
Rec'd <6ºC; collected 2/22/2018; analyzed: alkalinity: 3/6/2018; anions – 2/23,24/2018; phosphorous: 3/8/2018; sulfide: 3/1/2018; TOC: 3/6/2018;
Professional judgment – no qualification for hold time.
2. ICAL (QAPP - Worksheet#19/SW846/ASTM methods: RSD≤20%/r≥0.995)
No Qualification Necessary
3. ICV/CCAL (QAPP - Worksheet#19/SW846/ASTM methods: ±15%D)
No Qualification Necessary
4. Limit of Detection Verification (LODV) (QAAP/DoD_4.2; ±30%D)
No Qualification Necessary
5. Blanks "UB" (EPA Region 3&4: Method and/or Field QC)
No Qualification Necessary
All MBs – Results were nondetect.
MBLKs are: MBLK-126002 (P), WBLKW1-022318 (Anions), MBLK-R311836 (S), WBLKW1-180306 (Alk), WBLKW1-030618 (TOC)
6. LCS (QAPP – Worksheet#19/#28)
No Qualification Necessary
All LCS/LCSDs – Criteria were met.
LCS/LCSDs are: LCS-126002 (P), WLCSW1/WLCSDW1-022318 (Anions), LCS/LCSD-R311836 (S), WLCSW1/WLCSDW1-180306 (Alk), WLCSW1/WLCSDW1-030618 (TOC)
7. Duplicate Analysis (QAPP - Worksheet#19/SW846/ASTM methods DoD-4.2<15%)
No Qualification Necessary
Alkalinity – Criteria met.
8. MS/MSD (QAPP - Worksheet#19/#28; DoD_4.2= ±20%MS/MSD / 15%RPD)
No Qualification Necessary
Batch QC MS/MSDs – All criteria were met.
9. Field Duplicate (QAPP – worksheet#35: 20% waters / 50% soils)
(non-detect & result <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)
No Qualification Necessary
An FD pair was not included on this COC.

ADR Data Validation Checklist
Wet Chemistry

10. Form 1 vs Database/ADR
Check laboratory's Form1 against Database; minimum one sample per SDG per fraction; list sample number:
11. Multiple Results
No Qualification Necessary

10450 Stancliff Rd. Suite 210
Houston, TX 77099
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F: +1 281 530 5887

March 12, 2018

Sharon Pennington
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS18021330**

Laboratory Results for: **LHAAP-46 501032**

Dear Sharon,

ALS Environmental received 8 sample(s) on Feb 27, 2018 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
RJ Modashia
Project Manager

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Work Order: HS18021330

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18021330-01	46WW07-022318	Water		23-Feb-2018 09:30	27-Feb-2018 10:07	☐
HS18021330-02	46WW08-022318	Water		23-Feb-2018 09:30	27-Feb-2018 10:07	☐
HS18021330-03	46WW08-022318-FD	Water		23-Feb-2018 09:30	27-Feb-2018 10:07	☐
HS18021330-04	46WW05-022618	Water		26-Feb-2018 09:00	27-Feb-2018 10:07	☐
HS18021330-05	46WW05-022618-FD	Water		26-Feb-2018 09:00	27-Feb-2018 10:07	☐
HS18021330-06	46WW06-022618	Water		26-Feb-2018 10:20	27-Feb-2018 10:07	☐
HS18021330-07	46WW03-022618	Water		26-Feb-2018 11:50	27-Feb-2018 10:07	☐
HS18021330-08	46TB03-022618	Water	ALS-020218-5	26-Feb-2018 00:01	27-Feb-2018 10:07	☐

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP-46 501032
Work Order:

Work Order Comments

• The analysis for Methane, Methene, Ethane and CO2 by RSK175 was subcontracted to ALS Simi Valley, CA. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R311806

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Metals by Method SW6020

Batch ID: 125750,125751

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9060

Batch ID: R312059

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E376.1

Batch ID: R311836

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM2320B

Batch ID: R312018

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R311697

Sample ID: HS18021316-01MS

• MS and MSD are for an unrelated sample

WetChemistry by Method SM4500P E

Batch ID: 126002

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021330
Sample ID: 46WW07-022318 Lab ID:HS18021330-01
Collection Date: 23-Feb-2018 09:30 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:00
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 18:00
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 18:00
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:00
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 18:00
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 18:00
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 18:00
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW07-022318
Collection Date: 23-Feb-2018 09:30

ANALYTICAL REPORT
WorkOrder:HS18021330
Lab ID:HS18021330-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 18:00
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 18:00
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:00
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:00
Surr: 1,2-Dichloroethane-d4	*80.7*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 18:00*
Surr: 4-Bromofluorobenzene	*95.6*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 18:00*
Surr: Dibromofluoromethane	*86.3*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 18:00*
Surr: Toluene-d8	*107*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 18:00*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021330
Sample ID: 46WW08-022318 Lab ID:HS18021330-02
Collection Date: 23-Feb-2018 09:30 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:25
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 18:25
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 18:25
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:25
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 18:25
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 18:25
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 18:25
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW08-022318
Collection Date: 23-Feb-2018 09:30

ANALYTICAL REPORT
WorkOrder:HS18021330
Lab ID:HS18021330-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 18:25
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 18:25
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:25
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:25
Surr: 1,2-Dichloroethane-d4	*81.4*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 18:25*
Surr: 4-Bromofluorobenzene	*95.3*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 18:25*
Surr: Dibromofluoromethane	*86.2*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 18:25*
Surr: Toluene-d8	*108*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 18:25*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021330
Sample ID: 46WW08-022318-FD Lab ID:HS18021330-03
Collection Date: 23-Feb-2018 09:30 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:49
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 18:49
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 18:49
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:49
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 18:49
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 18:49
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 18:49
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW08-022318-FD
Collection Date: 23-Feb-2018 09:30

ANALYTICAL REPORT
WorkOrder:HS18021330
Lab ID:HS18021330-03
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 18:49
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 18:49
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 18:49
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 18:49
Surr: 1,2-Dichloroethane-d4	*83.3*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 18:49*
Surr: 4-Bromofluorobenzene	*95.4*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 18:49*
Surr: Dibromofluoromethane	*88.7*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 18:49*
Surr: Toluene-d8	*106*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 18:49*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021330
Sample ID: 46WW05-022618 Lab ID:HS18021330-04
Collection Date: 26-Feb-2018 09:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:14
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 19:14
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 19:14
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:14
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 19:14
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 19:14
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 19:14
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW05-022618
Collection Date: 26-Feb-2018 09:00

ANALYTICAL REPORT
WorkOrder:HS18021330
Lab ID:HS18021330-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 19:14
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 19:14
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:14
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Trichloroethene	**14**		**0.20**	**0.50**	**1.0**	**ug/L**	1	01-Mar-2018 19:14
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:14
Surr: 1,2-Dichloroethane-d4	*84.3*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 19:14*
Surr: 4-Bromofluorobenzene	*97.2*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 19:14*
Surr: Dibromofluoromethane	*89.2*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 19:14*
Surr: Toluene-d8	*106*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 19:14*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**7.62**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 22:46
DISSOLVED METALS BY SW6020A		**Method:SW6020 (dissolved)**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**7.22**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 23:19
Manganese	**14.1**		**0.0140**	**0.0200**	**0.100**	**mg/L**	20	02-Mar-2018 13:59
SULFIDE BY E376.1		**Method:E376.1**						Analyst: SAP
Sulfide	1.00	U	1.00	1.00	1.00	mg/L	1	01-Mar-2018 12:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW05-022618
Collection Date: 26-Feb-2018 09:00

ANALYTICAL REPORT
WorkOrder:HS18021330
Lab ID:HS18021330-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: AJH
Alkalinity, Total (As CaCO3)	5.00	U	5.00	5.00	5.00	mg/L	1	06-Mar-2018 15:09
PHOSPHORUS BY SM4500P E		**Method:SM4500P E**				Prep:SM4500P E / 08-Mar-2018		Analyst: MZD
Phosphorus, Total (As P)	**0.145**		**0.0200**	**0.0200**	**0.0500**	**mg/L**	1	08-Mar-2018 16:30
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**193**		**4.00**	**5.00**	**10.0**	**mg/L**	20	27-Feb-2018 22:47
Nitrogen, Nitrate (As N)	**2.58**		**0.0300**	**0.0500**	**0.100**	**mg/L**	1	27-Feb-2018 22:33
Nitrogen, Nitrite (As N)	**0.629**		**0.0300**	**0.0500**	**0.100**	**mg/L**	1	27-Feb-2018 22:33
Sulfate	**4,320**		**40.0**	**50.0**	**100**	**mg/L**	200	02-Mar-2018 22:57
TOTAL ORGANIC CARBON BY SW9060A		**Method:SW9060**						Analyst: KMU
Organic Carbon, Total	**9.26**		**0.500**	**0.500**	**1.00**	**mg/L**	1	06-Mar-2018 21:45
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	12-Mar-2018 17:38

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021330
Sample ID: 46WW05-022618-FD Lab ID:HS18021330-05
Collection Date: 26-Feb-2018 09:00 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:38
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 19:38
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 19:38
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:38
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 19:38
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 19:38
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 19:38
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW05-022618-FD
Collection Date: 26-Feb-2018 09:00

ANALYTICAL REPORT
WorkOrder:HS18021330
Lab ID:HS18021330-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
cis-1,2-Dichloroethene	**0.62**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	01-Mar-2018 19:38
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 19:38
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 19:38
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 19:38
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Trichloroethene	**14**		**0.20**	**0.50**	**1.0**	**ug/L**	1	01-Mar-2018 19:38
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 19:38
Surr: 1,2-Dichloroethane-d4	*81.6*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 19:38*
Surr: 4-Bromofluorobenzene	*95.5*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 19:38*
Surr: Dibromofluoromethane	*87.6*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 19:38*
Surr: Toluene-d8	*107*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 19:38*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**7.19**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 22:48
DISSOLVED METALS BY SW6020A		**Method:SW6020 (dissolved)**				Prep:SW3010A / 01-Mar-2018		Analyst: JDE
Iron	**7.16**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	01-Mar-2018 23:25
Manganese	**14.2**		**0.0140**	**0.0200**	**0.100**	**mg/L**	20	02-Mar-2018 14:01
SULFIDE BY E376.1		**Method:E376.1**						Analyst: SAP
Sulfide	1.00	U	1.00	1.00	1.00	mg/L	1	01-Mar-2018 12:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW05-022618-FD
Collection Date: 26-Feb-2018 09:00

ANALYTICAL REPORT
WorkOrder:HS18021330
Lab ID:HS18021330-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: AJH
Alkalinity, Total (As CaCO3)	5.00	U	5.00	5.00	5.00	mg/L	1	06-Mar-2018 15:28
PHOSPHORUS BY SM4500P E		**Method:SM4500P E**				Prep:SM4500P E / 08-Mar-2018		Analyst: MZD
Phosphorus, Total (As P)	**0.142**		**0.0200**	**0.0200**	**0.0500**	**mg/L**	1	08-Mar-2018 16:30
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**228**		**4.00**	**5.00**	**10.0**	**mg/L**	20	27-Feb-2018 23:17
Nitrogen, Nitrate (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	27-Feb-2018 23:02
Nitrogen, Nitrite (As N)	**0.560**		**0.0300**	**0.0500**	**0.100**	**mg/L**	1	27-Feb-2018 23:02
Sulfate	**4,220**		**40.0**	**50.0**	**100**	**mg/L**	200	02-Mar-2018 23:12
TOTAL ORGANIC CARBON BY SW9060A		**Method:SW9060**						Analyst: KMU
Organic Carbon, Total	**9.40**		**0.500**	**0.500**	**1.00**	**mg/L**	1	06-Mar-2018 22:35
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUBCA
Subcontract Analysis	See Attached		0	0		NA	1	12-Mar-2018 17:38

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021330
Sample ID: 46WW06-022618 Lab ID:HS18021330-06
Collection Date: 26-Feb-2018 10:20 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:03
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 20:03
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 20:03
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:03
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 20:03
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 20:03
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 20:03
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW06-022618
Collection Date: 26-Feb-2018 10:20

ANALYTICAL REPORT
WorkOrder:HS18021330
Lab ID:HS18021330-06
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 20:03
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 20:03
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:03
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:03
Surr: 1,2-Dichloroethane-d4	*83.8*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 20:03*
Surr: 4-Bromofluorobenzene	*95.1*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 20:03*
Surr: Dibromofluoromethane	*88.2*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 20:03*
Surr: Toluene-d8	*106*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 20:03*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021330
Sample ID: 46WW03-022618 Lab ID:HS18021330-07
Collection Date: 26-Feb-2018 11:50 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:27
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 20:27
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 20:27
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:27
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 20:27
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 20:27
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 20:27
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW03-022618
Collection Date: 26-Feb-2018 11:50

ANALYTICAL REPORT
WorkOrder:HS18021330
Lab ID:HS18021330-07
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 20:27
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 20:27
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 20:27
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 20:27
Surr: 1,2-Dichloroethane-d4	*82.1*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 20:27*
Surr: 4-Bromofluorobenzene	*94.7*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 20:27*
Surr: Dibromofluoromethane	*88.0*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 20:27*
Surr: Toluene-d8	*105*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 20:27*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc. **ANALYTICAL REPORT**
Project: LHAAP-46 501032 WorkOrder:HS18021330
Sample ID: 46TB03-022618 Lab ID:HS18021330-08
Collection Date: 26-Feb-2018 00:01 Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:20
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 14:20
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 14:20
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:20
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	01-Mar-2018 14:20
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	01-Mar-2018 14:20
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	01-Mar-2018 14:20
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastructure, Inc.
Project: LHAAP-46 501032
Sample ID: 46TB03-022618
Collection Date: 26-Feb-2018 00:01

ANALYTICAL REPORT
WorkOrder:HS18021330
Lab ID:HS18021330-08
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	01-Mar-2018 14:20
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	01-Mar-2018 14:20
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	01-Mar-2018 14:20
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	01-Mar-2018 14:20
Surr: 1,2-Dichloroethane-d4	*81.5*			**0**	*70-126*	*%REC*	*1*	*01-Mar-2018 14:20*
Surr: 4-Bromofluorobenzene	*95.0*			**0**	*81-113*	*%REC*	*1*	*01-Mar-2018 14:20*
Surr: Dibromofluoromethane	*86.8*			**0**	*77-123*	*%REC*	*1*	*01-Mar-2018 14:20*
Surr: Toluene-d8	*106*			**0**	*82-127*	*%REC*	*1*	*01-Mar-2018 14:20*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

WEIGHT LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

Batch ID: 125750 **Method:** ICP-MS METALS BY SW6020A **Prep:** 3010A

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18021330-04	1	10	10 (mL)	1
HS18021330-05	1	10	10 (mL)	1

Batch ID: 125751 **Method:** DISSOLVED METALS BY SW6020A **Prep:** 3010A DISS

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18021330-04	1	10	10 (mL)	1
HS18021330-05	1	10	10 (mL)	1

Batch ID: 126002 **Method:** PHOSPHORUS BY SM4500P E **Prep:** P_TW_PR4500

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18021330-04	1	50	50 (mL)	1
HS18021330-05	1	50	50 (mL)	1

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 125750	**Test Name :** ICP-MS METALS BY SW6020A			**Matrix:** Water		
HS18021330-04	46WW05-022618	26 Feb 2018 09:00		01 Mar 2018 11:24	01 Mar 2018 22:46	1
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00		01 Mar 2018 11:24	01 Mar 2018 22:48	1
Batch ID 125751	**Test Name :** DISSOLVED METALS BY SW6020A			**Matrix:** Water		
HS18021330-04	46WW05-022618	26 Feb 2018 09:00		01 Mar 2018 11:25	02 Mar 2018 13:59	20
HS18021330-04	46WW05-022618	26 Feb 2018 09:00		01 Mar 2018 11:25	01 Mar 2018 23:19	1
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00		01 Mar 2018 11:25	02 Mar 2018 14:01	20
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00		01 Mar 2018 11:25	01 Mar 2018 23:25	1
Batch ID 126002	**Test Name :** PHOSPHORUS BY SM4500P E			**Matrix:** Water		
HS18021330-04	46WW05-022618	26 Feb 2018 09:00		08 Mar 2018 11:30	08 Mar 2018 16:30	1
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00		08 Mar 2018 11:30	08 Mar 2018 16:30	1
Batch ID R311697	**Test Name :** ANIONS BY SW9056A			**Matrix:** Water		
HS18021330-04	46WW05-022618	26 Feb 2018 09:00			27 Feb 2018 22:47	20
HS18021330-04	46WW05-022618	26 Feb 2018 09:00			27 Feb 2018 22:33	1
HS18021330-04	46WW05-022618	26 Feb 2018 09:00			02 Mar 2018 22:57	200
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00			27 Feb 2018 23:17	20
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00			27 Feb 2018 23:02	1
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00			02 Mar 2018 23:12	200
Batch ID R311806	**Test Name :** LOW LEVEL VOLATILES BY SW8260C			**Matrix:** Water		
HS18021330-01	46WW07-022318	23 Feb 2018 09:30			01 Mar 2018 18:00	1
HS18021330-02	46WW08-022318	23 Feb 2018 09:30			01 Mar 2018 18:25	1
HS18021330-03	46WW08-022318-FD	23 Feb 2018 09:30			01 Mar 2018 18:49	1
HS18021330-04	46WW05-022618	26 Feb 2018 09:00			01 Mar 2018 19:14	1
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00			01 Mar 2018 19:38	1
HS18021330-06	46WW06-022618	26 Feb 2018 10:20			01 Mar 2018 20:03	1
HS18021330-07	46WW03-022618	26 Feb 2018 11:50			01 Mar 2018 20:27	1
HS18021330-08	46TB03-022618	26 Feb 2018 00:01			01 Mar 2018 14:20	1
Batch ID R311836	**Test Name :** SULFIDE BY E376.1			**Matrix:** Water		
HS18021330-04	46WW05-022618	26 Feb 2018 09:00			01 Mar 2018 12:10	1
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00			01 Mar 2018 12:10	1
Batch ID R312018	**Test Name :** ALKALINITY BY SM2320B			**Matrix:** Water		
HS18021330-04	46WW05-022618	26 Feb 2018 09:00			06 Mar 2018 15:09	1
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00			06 Mar 2018 15:28	1
Batch ID R312059	**Test Name :** TOTAL ORGANIC CARBON BY SW9060A			**Matrix:** Water		
HS18021330-04	46WW05-022618	26 Feb 2018 09:00			06 Mar 2018 21:45	1
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00			06 Mar 2018 22:35	1

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R312338	**Test Name :** SUBCONTRACT ANALYSIS - RSK			**Matrix:** Water		
HS18021330-04	46WW05-022618	26 Feb 2018 09:00			12 Mar 2018 17:38	1
HS18021330-05	46WW05-022618-FD	26 Feb 2018 09:00			12 Mar 2018 17:38	1

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: 125750 **Instrument: ICPMS05** **Method: SW6020**

MBLK Sample ID: **MBLK-125750** Units: **mg/L** Analysis Date: **01-Mar-2018 22:20**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458354** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	0.100	0.200								U

LCS Sample ID: **LCS-125750** Units: **mg/L** Analysis Date: **01-Mar-2018 22:22**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458355** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	4.601	0.200	5	0	92.0	80 - 120				

MS Sample ID: **HS18021075-01MS** Units: **mg/L** Analysis Date: **01-Mar-2018 22:28**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458358** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.609	0.200	5	0.9236	93.7	80 - 120				

MSD Sample ID: **HS18021075-01MSD** Units: **mg/L** Analysis Date: **01-Mar-2018 22:30**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458359** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.854	0.200	5	0.9236	98.6	80 - 120	5.609	4.26	20	

PDS Sample ID: **HS18021075-01PDS** Units: **mg/L** Analysis Date: **01-Mar-2018 22:36**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458362** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	12.28	0.200	10	0.9236	114	75 - 125				

SD Sample ID: **HS18021075-01SD** Units: **mg/L** Analysis Date: **01-Mar-2018 22:26**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458357** PrepDate: **01-Mar-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Iron	0.9119	1.00					0.9236	0	10	J

The following samples were analyzed in this batch: HS18021330-04 HS18021330-05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: 125751 **Instrument: ICPMS05** **Method: SW6020 (dissolved) (DISSOLVED)**

MBLK Sample ID: **MBLK-125751** Units: **mg/L** Analysis Date: **01-Mar-2018 22:52**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458370** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	0.100	0.200								U
Manganese	0.000951	0.00500								J

LCS Sample ID: **LCS-125751** Units: **mg/L** Analysis Date: **01-Mar-2018 22:54**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458371** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	4.915	0.200	5	0	98.3	80 - 120				
Manganese	0.05	0.00500	0.05	0	100	80 - 120				

MS Sample ID: **HS18021075-01MS** Units: **mg/L** Analysis Date: **01-Mar-2018 23:04**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458376** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.418	0.200	5	0.9096	90.2	75 - 125				
Manganese	0.1912	0.00500	0.05	0.153	76.4	75 - 125				

MSD Sample ID: **HS18021075-01MSD** Units: **mg/L** Analysis Date: **01-Mar-2018 23:06**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458377** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	5.66	0.200	5	0.9096	95.0	75 - 125	5.418	4.39	20	
Manganese	0.2009	0.00500	0.05	0.153	95.7	75 - 125	0.1912	4.91	20	

PDS Sample ID: **HS18021075-01PDS** Units: **mg/L** Analysis Date: **01-Mar-2018 23:09**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458378** PrepDate: **01-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	10.12	0.200	10	0.9096	92.1	75 - 125				
Manganese	0.2468	0.00500	0.1	0.153	93.8	75 - 125				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: 125751 **Instrument: ICPMS05** **Method: SW6020 (dissolved) (DISSOLVED)**

SD Sample ID: **HS18021075-01SD** Units: **mg/L** Analysis Date: **01-Mar-2018 23:02**
Client ID: Run ID: **ICPMS05_311754** SeqNo: **4458375** PrepDate: **01-Mar-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Iron	0.9512	1.00					0.9096	0	10	J
Manganese	0.1614	0.0250					0.153	5.46	10	

The following samples were analyzed in this batch: HS18021330-04 HS18021330-05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 13:32**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458276** 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	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 13:32**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458276** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	0.50	1.0								U
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	0.50	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*39.85*	*1.0*	*50*	*0*	*79.7*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*47.52*	*1.0*	*50*	*0*	*95.0*	*82 - 115*				
Surr: Dibromofluoromethane	*43.14*	*1.0*	*50*	*0*	*86.3*	*73 - 126*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 13:32**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458276** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*53.23*	*1.0*	*50*	*0*	*106*	*81 - 120*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 12:43**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458274** 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	45.96	1.0	50	0	91.9	77 - 118				
1,1,1-Trichloroethane	47.47	1.0	50	0	94.9	70 - 130				
1,1,2,2-Tetrachloroethane	41.92	1.0	50	0	83.8	70 - 120				
1,1,2-Trichlor-1,2,2-trifluoroethane	50.82	1.0	50	0	102	70 - 130				
1,1,2-Trichloroethane	45.47	1.0	50	0	90.9	77 - 113				
1,1-Dichloroethane	45.39	1.0	50	0	90.8	71 - 122				
1,1-Dichloroethene	49.89	1.0	50	0	99.8	70 - 130				
1,1-Dichloropropene	49.36	1.0	50	0	98.7	78 - 118				
1,2,3-Trichlorobenzene	44.88	1.0	50	0	89.8	70 - 130				
1,2,3-Trichloropropane	41.82	1.0	50	0	83.6	70 - 127				
1,2,4-Trichlorobenzene	46.17	1.0	50	0	92.3	77 - 126				
1,2,4-Trimethylbenzene	47.7	1.0	50	0	95.4	73 - 121				
1,2-Dibromo-3-chloropropane	42.16	1.0	50	0	84.3	70 - 130				
1,2-Dibromoethane	47.07	1.0	50	0	94.1	76 - 123				
1,2-Dichlorobenzene	42.67	1.0	50	0	85.3	77 - 113				
1,2-Dichloroethane	43.88	1.0	50	0	87.8	70 - 124				
1,2-Dichloropropane	45.65	1.0	50	0	91.3	72 - 119				
1,3,5-Trimethylbenzene	48.8	1.0	50	0	97.6	75 - 118				
1,3-Dichlorobenzene	43.39	1.0	50	0	86.8	78 - 118				
1,3-Dichloropropane	44.13	1.0	50	0	88.3	75 - 116				
1,4-Dichlorobenzene	42.72	1.0	50	0	85.4	79 - 113				
2,2-Dichloropropane	46.31	1.0	50	0	92.6	70 - 130				
2-Butanone	94.3	2.0	100	0	94.3	70 - 130				
2-Chlorotoluene	47.72	1.0	50	0	95.4	70 - 128				
2-Hexanone	92.08	2.0	100	0	92.1	70 - 130				
4-Chlorotoluene	47.92	1.0	50	0	95.8	74 - 126				
4-Isopropyltoluene	43.76	1.0	50	0	87.5	74 - 126				
4-Methyl-2-pentanone	85.74	2.0	100	0	85.7	70 - 130				
Acetone	90.98	2.0	100	0	91.0	70 - 130				
Benzene	46.15	1.0	50	0	92.3	74 - 120				
Bromobenzene	41.42	1.0	50	0	82.8	78 - 113				
Bromochloromethane	49.33	1.0	50	0	98.7	76 - 124				
Bromodichloromethane	47.23	1.0	50	0	94.5	74 - 122				
Bromoform	48.95	1.0	50	0	97.9	73 - 128				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 12:43**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458274** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	51.72	1.0	50	0	103	70 - 130				
Carbon disulfide	96.18	2.0	100	0	96.2	70 - 130				
Carbon tetrachloride	45.36	1.0	50	0	90.7	71 - 125				
Chlorobenzene	44.93	1.0	50	0	89.9	76 - 113				
Chloroethane	43	1.0	50	0	86.0	70 - 130				
Chloroform	43.82	1.0	50	0	87.6	71 - 121				
Chloromethane	47.81	1.0	50	0	95.6	70 - 129				
cis-1,2-Dichloroethene	48.42	1.0	50	0	96.8	75 - 122				
cis-1,3-Dichloropropene	49.34	1.0	50	0	98.7	73 - 127				
Dibromochloromethane	47.1	1.0	50	0	94.2	77 - 122				
Dibromomethane	49.87	1.0	50	0	99.7	78 - 121				
Dichlorodifluoromethane	44.65	1.0	50	0	89.3	70 - 130				
Ethylbenzene	51.67	1.0	50	0	103	77 - 117				
Hexachlorobutadiene	47.82	1.0	50	0	95.6	70 - 130				
Isopropylbenzene	46.04	1.0	50	0	92.1	73 - 127				
m,p-Xylene	90.22	2.0	100	0	90.2	77 - 122				
Methylene chloride	43.51	2.0	50	0	87.0	70 - 127				
Naphthalene	47.38	1.0	50	0	94.8	70 - 130				
n-Butylbenzene	46.03	1.0	50	0	92.1	72 - 130				
n-Propylbenzene	42.99	1.0	50	0	86.0	73 - 124				
o-Xylene	45.62	1.0	50	0	91.2	75 - 119				
sec-Butylbenzene	45.52	1.0	50	0	91.0	73 - 128				
Styrene	45.61	1.0	50	0	91.2	72 - 126				
tert-Butylbenzene	43.84	1.0	50	0	87.7	73 - 124				
Tetrachloroethene	46.45	1.0	50	0	92.9	76 - 119				
Toluene	44.13	1.0	50	0	88.3	77 - 118				
trans-1,2-Dichloroethene	48.24	1.0	50	0	96.5	72 - 127				
trans-1,3-Dichloropropene	50.52	1.0	50	0	101	77 - 119				
Trichloroethene	49.64	1.0	50	0	99.3	77 - 121				
Trichlorofluoromethane	47.67	1.0	50	0	95.3	70 - 130				
Vinyl chloride	47.62	1.0	50	0	95.2	70 - 130				
Surr: 1,2-Dichloroethane-d4	*42.37*	*1.0*	*50*	*0*	*84.7*	*70 - 130*				
Surr: 4-Bromofluorobenzene	*50.4*	*1.0*	*50*	*0*	*101*	*82 - 115*				
Surr: Dibromofluoromethane	*41.4*	*1.0*	*50*	*0*	*82.8*	*73 - 126*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180301** Units: **ug/L** Analysis Date: **01-Mar-2018 12:43**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458274** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*51.32*	*1.0*	*50*	*0*	*103*	*81 - 120*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021202-01MS** Units: **ug/L** Analysis Date: **01-Mar-2018 15:34**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458281** 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	42.44	1.0	50	0	84.9	70 - 120				
1,1,1-Trichloroethane	45.6	1.0	50	0	91.2	70 - 130				
1,1,2,2-Tetrachloroethane	37.5	1.0	50	0	75.0	70 - 123				
1,1,2-Trichlor-1,2,2-trifluoroethane	48.43	1.0	50	0	96.9	70 - 130				
1,1,2-Trichloroethane	41.03	1.0	50	0	82.1	70 - 117				
1,1-Dichloroethane	43.14	1.0	50	0	86.3	70 - 127				
1,1-Dichloroethene	49.65	1.0	50	0	99.3	70 - 130				
1,1-Dichloropropene	49.5	1.0	50	0	99.0	70 - 129				
1,2,3-Trichlorobenzene	39.39	1.0	50	0	78.8	70 - 130				
1,2,3-Trichloropropane	37.14	1.0	50	0	74.3	70 - 130				
1,2,4-Trichlorobenzene	41.43	1.0	50	0	82.9	70 - 125				
1,2,4-Trimethylbenzene	44.59	1.0	50	0	89.2	70 - 125				
1,2-Dibromo-3-chloropropane	36.32	1.0	50	0	72.6	70 - 130				
1,2-Dibromoethane	43.12	1.0	50	0	86.2	70 - 124				
1,2-Dichlorobenzene	39.17	1.0	50	0	78.3	70 - 115				
1,2-Dichloroethane	41.83	1.0	50	0	83.7	70 - 127				
1,2-Dichloropropane	43.57	1.0	50	0	87.1	70 - 122				
1,3,5-Trimethylbenzene	45.91	1.0	50	0	91.8	70 - 126				
1,3-Dichlorobenzene	39.93	1.0	50	0	79.9	70 - 119				
1,3-Dichloropropane	40.47	1.0	50	0	80.9	70 - 121				
1,4-Dichlorobenzene	38.61	1.0	50	0	77.2	70 - 114				
2,2-Dichloropropane	43.67	1.0	50	0	87.3	70 - 130				
2-Butanone	84.41	2.0	100	0	84.4	70 - 130				
2-Chlorotoluene	44.84	1.0	50	0	89.7	70 - 130				
2-Hexanone	82.92	2.0	100	0	82.9	70 - 130				
4-Chlorotoluene	44.74	1.0	50	0	89.5	70 - 130				
4-Isopropyltoluene	39.83	1.0	50	0	79.7	70 - 130				
4-Methyl-2-pentanone	77.83	2.0	100	0	77.8	70 - 130				
Acetone	75.3	2.0	100	0	75.3	70 - 130				
Benzene	45.11	1.0	50	0	90.2	70 - 127				
Bromobenzene	38.58	1.0	50	0	77.2	70 - 115				
Bromochloromethane	46.31	1.0	50	0	92.6	70 - 127				
Bromodichloromethane	44.63	1.0	50	0	89.3	70 - 124				
Bromoform	44.02	1.0	50	0	88.0	70 - 129				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021202-01MS** Units: **ug/L** Analysis Date: **01-Mar-2018 15:34**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458281** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	46.15	1.0	50	0	92.3	70 - 130				
Carbon disulfide	97.15	2.0	100	0	97.2	70 - 130				
Carbon tetrachloride	44.89	1.0	50	0	89.8	70 - 130				
Chlorobenzene	42.26	1.0	50	0	84.5	70 - 114				
Chloroethane	42.24	1.0	50	0	84.5	70 - 130				
Chloroform	41.58	1.0	50	0	83.2	70 - 125				
Chloromethane	50.74	1.0	50	0	101	70 - 130				
cis-1,2-Dichloroethene	45.93	1.0	50	0	91.9	70 - 128				
cis-1,3-Dichloropropene	45.96	1.0	50	0	91.9	70 - 125				
Dibromochloromethane	43.36	1.0	50	0	86.7	70 - 124				
Dibromomethane	46.67	1.0	50	0	93.3	70 - 124				
Dichlorodifluoromethane	42.56	1.0	50	0	85.1	70 - 130				
Ethylbenzene	49.09	1.0	50	0	98.2	70 - 124				
Hexachlorobutadiene	41.62	1.0	50	0	83.2	70 - 130				
Isopropylbenzene	43.38	1.0	50	0	86.8	70 - 130				
m,p-Xylene	85.95	2.0	100	0	86.0	70 - 130				
Methylene chloride	42.68	2.0	50	0	85.4	70 - 128				
Naphthalene	42.91	1.0	50	0	85.8	70 - 130				
n-Butylbenzene	41.35	1.0	50	0	82.7	70 - 130				
n-Propylbenzene	40.15	1.0	50	0	80.3	70 - 130				
o-Xylene	43.26	1.0	50	0	86.5	70 - 124				
sec-Butylbenzene	41.8	1.0	50	0	83.6	70 - 130				
Styrene	41.84	1.0	50	0	83.7	70 - 130				
tert-Butylbenzene	40.38	1.0	50	0	80.8	70 - 130				
Tetrachloroethene	49	1.0	50	0	98.0	70 - 130				
Toluene	41.91	1.0	50	0	83.8	70 - 123				
trans-1,2-Dichloroethene	47.24	1.0	50	0	94.5	70 - 130				
trans-1,3-Dichloropropene	46.16	1.0	50	0	92.3	70 - 121				
Trichloroethene	47.55	1.0	50	0	95.1	70 - 129				
Trichlorofluoromethane	56.95	1.0	50	0	114	70 - 130				
Vinyl chloride	47.84	1.0	50	0	95.7	70 - 130				
Surr: 1,2-Dichloroethane-d4	*42.03*	*1.0*	*50*	*0*	*84.1*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*49.6*	*1.0*	*50*	*0*	*99.2*	*81 - 113*				
Surr: Dibromofluoromethane	*41.82*	*1.0*	*50*	*0*	*83.6*	*77 - 123*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18021202-01MS** Units: **ug/L** Analysis Date: **01-Mar-2018 15:34**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458281** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*51.18*	*1.0*	*50*	*0*	*102*	*82 - 127*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021202-01MSD** Units: **ug/L** Analysis Date: **01-Mar-2018 15:58**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458282** 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	41.36	1.0	50	0	82.7	70 - 120	42.44	2.57	20	
1,1,1-Trichloroethane	44.93	1.0	50	0	89.9	70 - 130	45.6	1.48	20	
1,1,2,2-Tetrachloroethane	37.5	1.0	50	0	75.0	70 - 123	37.5	0.0106	20	
1,1,2-Trichlor-1,2,2-trifluoroethane	46.3	1.0	50	0	92.6	70 - 130	48.43	4.5	20	
1,1,2-Trichloroethane	40.62	1.0	50	0	81.2	70 - 117	41.03	1	20	
1,1-Dichloroethane	42.79	1.0	50	0	85.6	70 - 127	43.14	0.834	20	
1,1-Dichloroethene	45.97	1.0	50	0	91.9	70 - 130	49.65	7.69	20	
1,1-Dichloropropene	47.73	1.0	50	0	95.5	70 - 129	49.5	3.65	20	
1,2,3-Trichlorobenzene	40.36	1.0	50	0	80.7	70 - 130	39.39	2.43	20	
1,2,3-Trichloropropane	36.73	1.0	50	0	73.5	70 - 130	37.14	1.11	20	
1,2,4-Trichlorobenzene	41.84	1.0	50	0	83.7	70 - 125	41.43	1	20	
1,2,4-Trimethylbenzene	43.79	1.0	50	0	87.6	70 - 125	44.59	1.83	20	
1,2-Dibromo-3-chloropropane	37.05	1.0	50	0	74.1	70 - 130	36.32	2	20	
1,2-Dibromoethane	42.13	1.0	50	0	84.3	70 - 124	43.12	2.32	20	
1,2-Dichlorobenzene	38.19	1.0	50	0	76.4	70 - 115	39.17	2.52	20	
1,2-Dichloroethane	39.91	1.0	50	0	79.8	70 - 127	41.83	4.69	20	
1,2-Dichloropropane	41.78	1.0	50	0	83.6	70 - 122	43.57	4.17	20	
1,3,5-Trimethylbenzene	45.01	1.0	50	0	90.0	70 - 126	45.91	1.99	20	
1,3-Dichlorobenzene	39.68	1.0	50	0	79.4	70 - 119	39.93	0.621	20	
1,3-Dichloropropane	39.36	1.0	50	0	78.7	70 - 121	40.47	2.77	20	
1,4-Dichlorobenzene	38.61	1.0	50	0	77.2	70 - 114	38.61	0.0141	20	
2,2-Dichloropropane	43.67	1.0	50	0	87.3	70 - 130	43.67	0.0056	20	
2-Butanone	81.92	2.0	100	0	81.9	70 - 130	84.41	2.99	20	
2-Chlorotoluene	43.91	1.0	50	0	87.8	70 - 130	44.84	2.1	20	
2-Hexanone	83.26	2.0	100	0	83.3	70 - 130	82.92	0.417	20	
4-Chlorotoluene	43.93	1.0	50	0	87.9	70 - 130	44.74	1.82	20	
4-Isopropyltoluene	39.62	1.0	50	0	79.2	70 - 130	39.83	0.525	20	
4-Methyl-2-pentanone	77.3	2.0	100	0	77.3	70 - 130	77.83	0.685	20	
Acetone	76.69	2.0	100	0	76.7	70 - 130	75.3	1.83	20	
Benzene	42.9	1.0	50	0	85.8	70 - 127	45.11	5.02	20	
Bromobenzene	38.2	1.0	50	0	76.4	70 - 115	38.58	0.971	20	
Bromochloromethane	46.48	1.0	50	0	93.0	70 - 127	46.31	0.382	20	
Bromodichloromethane	42.5	1.0	50	0	85.0	70 - 124	44.63	4.89	20	
Bromoform	43.44	1.0	50	0	86.9	70 - 129	44.02	1.31	20	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021202-01MSD** Units: **ug/L** Analysis Date: **01-Mar-2018 15:58**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458282** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Bromomethane	46.34	1.0	50	0	92.7	70 - 130	46.15	0.407	20	
Carbon disulfide	94.11	2.0	100	0	94.1	70 - 130	97.15	3.18	20	
Carbon tetrachloride	41.97	1.0	50	0	83.9	70 - 130	44.89	6.73	20	
Chlorobenzene	41.44	1.0	50	0	82.9	70 - 114	42.26	1.95	20	
Chloroethane	40.93	1.0	50	0	81.9	70 - 130	42.24	3.17	20	
Chloroform	41.24	1.0	50	0	82.5	70 - 125	41.58	0.808	20	
Chloromethane	44.67	1.0	50	0	89.3	70 - 130	50.74	12.7	20	
cis-1,2-Dichloroethene	43.88	1.0	50	0	87.8	70 - 128	45.93	4.56	20	
cis-1,3-Dichloropropene	43.79	1.0	50	0	87.6	70 - 125	45.96	4.84	20	
Dibromochloromethane	42.35	1.0	50	0	84.7	70 - 124	43.36	2.36	20	
Dibromomethane	44.04	1.0	50	0	88.1	70 - 124	46.67	5.81	20	
Dichlorodifluoromethane	41.36	1.0	50	0	82.7	70 - 130	42.56	2.85	20	
Ethylbenzene	47.83	1.0	50	0	95.7	70 - 124	49.09	2.6	20	
Hexachlorobutadiene	42.23	1.0	50	0	84.5	70 - 130	41.62	1.46	20	
Isopropylbenzene	42.64	1.0	50	0	85.3	70 - 130	43.38	1.74	20	
m,p-Xylene	83.62	2.0	100	0	83.6	70 - 130	85.95	2.75	20	
Methylene chloride	40.72	2.0	50	0	81.4	70 - 128	42.68	4.69	20	
Naphthalene	43.58	1.0	50	0	87.2	70 - 130	42.91	1.55	20	
n-Butylbenzene	41.2	1.0	50	0	82.4	70 - 130	41.35	0.356	20	
n-Propylbenzene	39.72	1.0	50	0	79.4	70 - 130	40.15	1.09	20	
o-Xylene	42.45	1.0	50	0	84.9	70 - 124	43.26	1.9	20	
sec-Butylbenzene	41.57	1.0	50	0	83.1	70 - 130	41.8	0.545	20	
Styrene	41.42	1.0	50	0	82.8	70 - 130	41.84	1.02	20	
tert-Butylbenzene	39.95	1.0	50	0	79.9	70 - 130	40.38	1.06	20	
Tetrachloroethene	44.83	1.0	50	0	89.7	70 - 130	49	8.88	20	
Toluene	40.68	1.0	50	0	81.4	70 - 123	41.91	2.98	20	
trans-1,2-Dichloroethene	46.97	1.0	50	0	93.9	70 - 130	47.24	0.564	20	
trans-1,3-Dichloropropene	44.26	1.0	50	0	88.5	70 - 121	46.16	4.21	20	
Trichloroethene	46.45	1.0	50	0	92.9	70 - 129	47.55	2.34	20	
Trichlorofluoromethane	47.77	1.0	50	0	95.5	70 - 130	56.95	17.5	20	
Vinyl chloride	46.58	1.0	50	0	93.2	70 - 130	47.84	2.68	20	
Surr: 1,2-Dichloroethane-d4	*42.36*	*1.0*	*50*	*0*	*84.7*	*70 - 126*	*42.03*	*0.79*	*20*	
Surr: 4-Bromofluorobenzene	*50.57*	*1.0*	*50*	*0*	*101*	*81 - 113*	*49.6*	*1.92*	*20*	
Surr: Dibromofluoromethane	*41.11*	*1.0*	*50*	*0*	*82.2*	*77 - 123*	*41.82*	*1.69*	*20*	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311806 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18021202-01MSD** Units: **ug/L** Analysis Date: **01-Mar-2018 15:58**
Client ID: Run ID: **VOA2_311806** SeqNo: **4458282** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*51.54*	*1.0*	*50*	*0*	*103*	*82 - 127*	*51.18*	*0.705*	*20*	

The following samples were analyzed in this batch:

HS18021330-01	HS18021330-02	HS18021330-03	HS18021330-04
HS18021330-05	HS18021330-06	HS18021330-07	HS18021330-08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: 126002 **Instrument: UV-2450** **Method: SM4500P E**

MBLK Sample ID: **MBLK-126002** Units: **mg/L** Analysis Date: **08-Mar-2018 16:30**
Client ID: Run ID: **UV-2450_312228** SeqNo: **4467095** PrepDate: **08-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.0200	0.0500								U

LCS Sample ID: **LCS-126002** Units: **mg/L** Analysis Date: **08-Mar-2018 16:30**
Client ID: Run ID: **UV-2450_312228** SeqNo: **4467094** PrepDate: **08-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.246	0.0500	0.25	0	98.4	80 - 120				

MS Sample ID: **HS18030012-01MS** Units: **mg/L** Analysis Date: **08-Mar-2018 16:30**
Client ID: Run ID: **UV-2450_312228** SeqNo: **4467092** PrepDate: **08-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.24	0.0500	0.25	0.023	86.8	80 - 120				

MSD Sample ID: **HS18030012-01MSD** Units: **mg/L** Analysis Date: **08-Mar-2018 16:30**
Client ID: Run ID: **UV-2450_312228** SeqNo: **4467093** PrepDate: **08-Mar-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.25	0.0500	0.25	0.023	90.8	80 - 120	0.24	4.08	20	

The following samples were analyzed in this batch: HS18021330-04 HS18021330-05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311697 **Instrument: ICS2100** **Method: SW9056**

MBLK Sample ID: **WBLKW1-022718** Units: **mg/L** Analysis Date: **27-Feb-2018 12:58**
Client ID: Run ID: **ICS2100_311697** SeqNo: **4455777** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.250	0.500								U
Nitrogen, Nitrate (As N)	0.0500	0.100								U
Nitrogen, Nitrite (As N)	0.0500	0.100								U
Sulfate	0.250	0.500								U

LCS Sample ID: **WLCSW1-022718** Units: **mg/L** Analysis Date: **27-Feb-2018 13:21**
Client ID: Run ID: **ICS2100_311697** SeqNo: **4455778** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.19	0.500	20	0	101	80 - 120				
Nitrogen, Nitrate (As N)	4.23	0.100	4	0	106	80 - 120				
Nitrogen, Nitrite (As N)	4.21	0.100	4	0	105	80 - 120				
Sulfate	21	0.500	20	0	105	80 - 120				

LCSD Sample ID: **WLCSDW1-022718** Units: **mg/L** Analysis Date: **27-Feb-2018 13:35**
Client ID: Run ID: **ICS2100_311697** SeqNo: **4455779** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.14	0.500	20	0	101	80 - 120	20.19	0.273	20	
Nitrogen, Nitrate (As N)	4.029	0.100	4	0	101	80 - 120	4.23	4.87	20	
Nitrogen, Nitrite (As N)	4.261	0.100	4	0	107	80 - 120	4.21	1.2	20	
Sulfate	20.19	0.500	20	0	101	80 - 120	21	3.96	20	

MS Sample ID: **HS18021316-01MS** Units: **mg/L** Analysis Date: **01-Mar-2018 14:37**
Client ID: Run ID: **ICS2100_311697** SeqNo: **4458775** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	30.83	0.500	10	19.66	112	80 - 120				
Nitrogen, Nitrate (As N)	2.947	0.100	2	0.658	114	80 - 120				
Nitrogen, Nitrite (As N)	2.307	0.100	2	0.076	112	80 - 120				
Sulfate	176.7	0.500	10	162.5	142	80 - 120				SEO

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311697 **Instrument: ICS2100** **Method: SW9056**

MS Sample ID: **HS18021316-01MS** Units: **mg/L** Analysis Date: **27-Feb-2018 17:43**
Client ID: Run ID: **ICS2100_311697** SeqNo: **4455783** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	29.18	0.500	10	19.66	95.2	80 - 120				
Nitrogen, Nitrate (As N)	2.893	0.100	2	0.658	112	80 - 120				
Nitrogen, Nitrite (As N)	2.185	0.100	2	0.076	105	80 - 120				
Sulfate	167.2	0.500	10	162.5	47.3	80 - 120				SEO

MSD Sample ID: **HS18021316-01MSD** Units: **mg/L** Analysis Date: **27-Feb-2018 17:58**
Client ID: Run ID: **ICS2100_311697** SeqNo: **4455784** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	29.42	0.500	10	19.66	97.6	80 - 120	30.83	4.65	20	
Nitrogen, Nitrate (As N)	2.932	0.100	2	0.658	114	80 - 120	2.947	0.51	20	
Nitrogen, Nitrite (As N)	2.191	0.100	2	0.076	106	80 - 120	2.307	5.16	20	
Sulfate	168.2	0.500	10	162.5	57.2	80 - 120	176.7	4.91	20	SEO

MSD Sample ID: **HS18021316-01MSD** Units: **mg/L** Analysis Date: **01-Mar-2018 14:52**
Client ID: Run ID: **ICS2100_311697** SeqNo: **4458776** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	31.95	0.500	10	19.66	123	80 - 120	30.83	3.59	20	S
Nitrogen, Nitrate (As N)	2.873	0.100	2	0.658	111	80 - 120	2.947	2.54	20	
Nitrogen, Nitrite (As N)	2.367	0.100	2	0.076	115	80 - 120	2.307	2.57	20	
Sulfate	183.2	0.500	10	162.5	207	80 - 120	176.7	3.62	20	SEO

The following samples were analyzed in this batch: HS18021330-04 HS18021330-05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R311836 **Instrument: WetChem_HS** **Method: E376.1**

MBLK Sample ID: **MBLK-R311836** Units: **mg/L** Analysis Date: **01-Mar-2018 12:10**
Client ID: Run ID: **WetChem_HS_311836** SeqNo: **4465911** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	1.00	1.00								U

LCS Sample ID: **LCS-R311836** Units: **mg/L** Analysis Date: **01-Mar-2018 12:10**
Client ID: Run ID: **WetChem_HS_311836** SeqNo: **4465910** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	23	1.00	25	0	92.0	80 - 120				

LCSD Sample ID: **LCSD-R311836** Units: **mg/L** Analysis Date: **01-Mar-2018 12:10**
Client ID: Run ID: **WetChem_HS_311836** SeqNo: **4465909** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	22.6	1.00	25	0	90.4	80 - 120	23	1.75	20	

MS Sample ID: **HS18021360-01MS** Units: **mg/L** Analysis Date: **01-Mar-2018 12:10**
Client ID: Run ID: **WetChem_HS_311836** SeqNo: **4465998** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	23.2	1.00	25	0.8	89.6	80 - 120				

The following samples were analyzed in this batch: HS18021330-04 HS18021330-05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R312018 **Instrument: ManTech01** **Method: SM2320B**

MBLK Sample ID: **WBLKW1-180306** Units: **mg/L** Analysis Date: **06-Mar-2018 13:00**
Client ID: Run ID: **ManTech01_312018** SeqNo: **4462755** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **LCS-ALK1-180306** Units: **mg/L** Analysis Date: **06-Mar-2018 13:09**
Client ID: Run ID: **ManTech01_312018** SeqNo: **4462756** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1104	5.00	1000	0	110	85 - 115				

LCSD Sample ID: **LCSD-ALK1-180306** Units: **mg/L** Analysis Date: **06-Mar-2018 13:18**
Client ID: Run ID: **ManTech01_312018** SeqNo: **4462757** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1098	5.00	1000	0	110	85 - 115	1104	0.497	20	

DUP Sample ID: **HS18021075-02DUP** Units: **mg/L** Analysis Date: **06-Mar-2018 13:51**
Client ID: Run ID: **ManTech01_312018** SeqNo: **4462762** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	32.57	5.00					32.92	1.07	20	

The following samples were analyzed in this batch: HS18021330-04 HS18021330-05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18021330

QC BATCH REPORT

Batch ID: R312059 **Instrument: TOC_02** **Method: SW9060**

MBLK Sample ID: **WBLKW1-030618** Units: **mg/L** Analysis Date: **06-Mar-2018 19:15**
Client ID: Run ID: **TOC_02_312059** SeqNo: **4463834** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	0.500	1.00								U

LCS Sample ID: **WLCSW1-030618** Units: **mg/L** Analysis Date: **06-Mar-2018 19:30**
Client ID: Run ID: **TOC_02_312059** SeqNo: **4463835** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.42	1.00	10	0	104	80 - 120				

LCSD Sample ID: **WLCSDW1-030618** Units: **mg/L** Analysis Date: **06-Mar-2018 19:45**
Client ID: Run ID: **TOC_02_312059** SeqNo: **4463836** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.45	1.00	10	0	104	80 - 120	10.42	0.287	20	

MS Sample ID: **HS18021075-01MS** Units: **mg/L** Analysis Date: **06-Mar-2018 20:18**
Client ID: Run ID: **TOC_02_312059** SeqNo: **4463838** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	13.02	1.00	10	2.817	102	80 - 120				

The following samples were analyzed in this batch: HS18021330-04 HS18021330-05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: **HS18021330**

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 Group USA, Corp Date: 12-Mar-18

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	17-027-0	27-Mar-2018
California	2919 2016-2018	31-Jul-2018
Illinois	004112	09-May-2018
Kentucky	123043	30-Apr-2018
Louisiana	03087 2017-2017	30-Jun-2018
North Dakota	R193 2017-2017	30-Apr-2018
Oklahoma	2017-088	31-Aug-2018
Texas	T104704231-17-19	30-Apr-2018
North Carolina	624-2018	31-Dec-2018

ALS Group USA, Corp Date: 12-Mar-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Work Order: HS18021330

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS18021330-04	46WW05-022618	Login	2/27/2018 4:09:23 PM	PMG	WET217
HS18021330-04	46WW05-022618	Login	2/27/2018 4:09:23 PM	PMG	WET217
HS18021330-04	46WW05-022618	Login	2/27/2018 4:09:23 PM	PMG	WET217
HS18021330-04	46WW05-022618	Login	2/27/2018 4:09:23 PM	PMG	MET072
HS18021330-04	46WW05-022618	Login	2/27/2018 4:09:23 PM	PMG	MET072
HS18021330-04	46WW05-022618	Login	2/27/2018 4:09:23 PM	PMG	VOA139
HS18021330-04	46WW05-022618	Login	2/27/2018 4:09:23 PM	PMG	WET217
HS18021330-04	46WW05-022618	Login	2/27/2018 4:09:23 PM	PMG	Sub

ALS Group USA, Corp Date: 12-Mar-18

Sample Receipt Checklist

Client Name: CBI-Houston
Work Order: HS18021330
Date/Time Received: **27-Feb-2018 10:07**
Received by: **PMG**

Checklist completed by: *Paresh M. Giga* eSignature — 27-Feb-2018 Date
Reviewed by: *RJ Modashia* eSignature — 27-Feb-2018 Date

Matrices: **Water**
Carrier name: **UPS**

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 ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
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):	1.5c/1.0c U/c	IR11	
Cooler(s)/Kit(s):	43569		
Date/Time sample(s) sent to storage:	2/27/18 16:40		
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:

APTIM

Page 1 of _____

COC ID: 46-FEB2018-GW-ALSHT- **TURNAROUND TIME:** normal **RUSH:**

PROJECT/CLIENT INFO				LABORATORY				OTHER INFO			
Facility Name	Longhorn AAP			Lab Name	ALS Laboratories			Email Invoice To	FedInvoices@CBIFederalServices.com		
Project Number	501032			Lab Contact	RJ Modashia						
	LHAAP-46			Email	RJ.Modashia@alsglobal.com			Email Report To	Sharon.Pennington@CBIFederalServices.com		
Address	1203-B East Grand Avenue			Address	10450 Stancliff Rd., Suite 210			Mail Reports To	Sharon Pennington		
	PMB 202							Address	2410 Cherahala Blvd.		
City	Marshall	State	TX	City	Houston	State	TX	City	Knoxville	State	TN
Postal Code	75670	Country	USA	Postal Code	77099	Country	USA	Postal Code	37932	Country	USA
Phone Number	713.243.7264			Phone Number	281.575.2132 or 281.530.5656						
Project Manager	Praveen Srivastav							Shipping Company			

SAMPLE DETAILS

Sample ID	Location	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	# Of Cont.
46WW07-022318	LHAAP-46	36.77	36.96	-	W	2/23/18	0930	3
46WW08-022318	LHAAP-46	22.43	22.65	-	W	2/23/18	1030	3
46WW08-022318-FD	LHAAP-46	22.43	22.65	-	W	2/23/18	1030	3
46WW05-022618	LHAAP-46	39.03	39.25	-	W	2/26/18	0900	15
46WW05-022618-FD	LHAAP-46	39.03	39.25	-	W	2/26/18	0900	15
46WW06-022618	LHAAP-46	39.91	40.14	-	W	2/26/18	1020	3
46WW03-022618	LHAAP-46	41.47	41.62	-	W	2/26/18	1150	3
TRIP BLANK	LHAAP-46	-	-	-	W	2/26/18		2

ANALYSIS REQUESTED

ANALYSIS	VOCs in Water by 8260B	Carbon Dioxide RSK 175	MEE RSK 175	TOC E415.1	Anions, Alkalinity E310.1	Dissolved Fe and Mn 6020A	Total Iron 6020A	Phosphorous E365.2	Soil Fineness E376.1
	X								
	X								
	X								
	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X	X	X	X
	X								
	X								
	X								

HS18021330

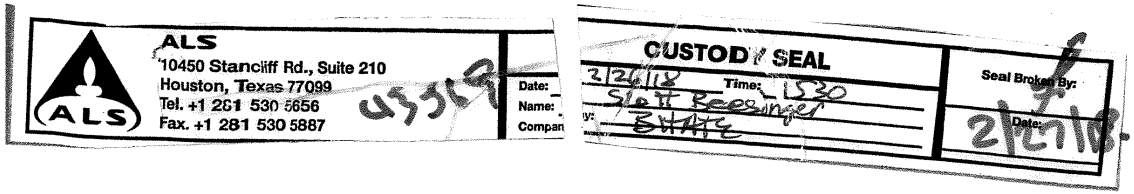
Aptim Environmental & Infrastucture, Inc.

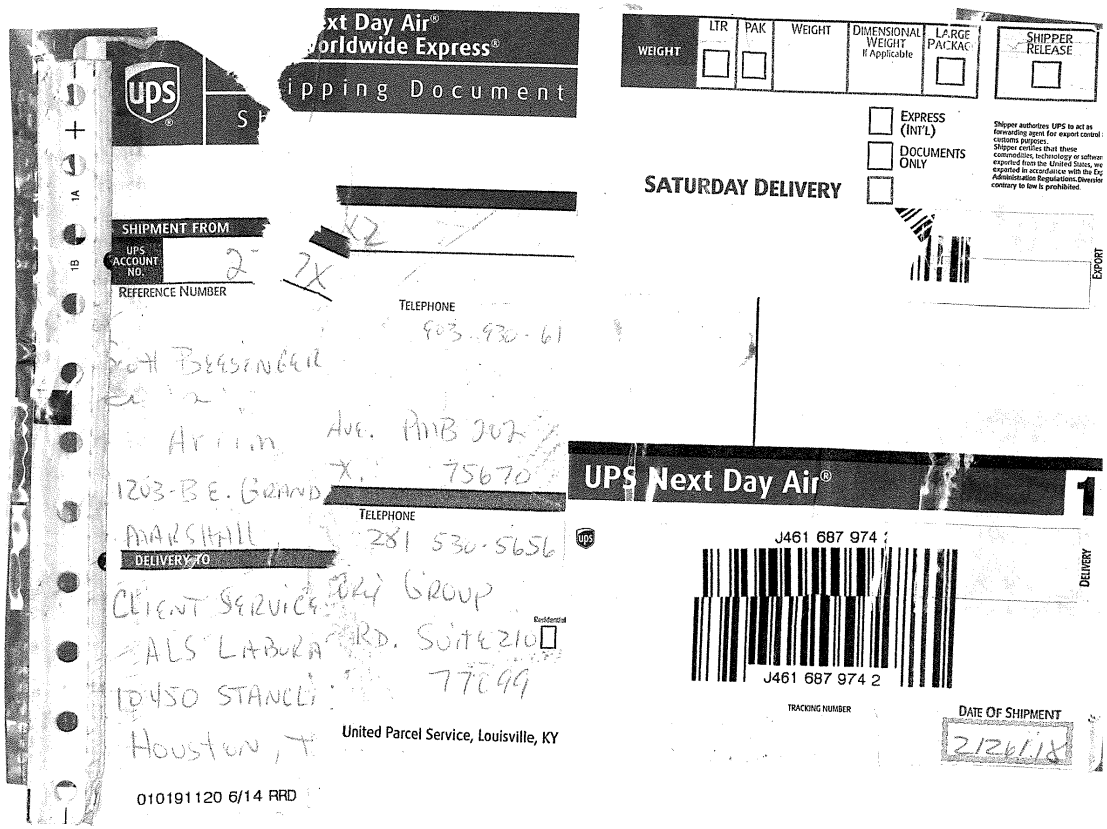
LHAAP-46 501032

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
	Shawn Peasley / BHATE	2/26/18 1530		2/27/18 10:07
			4356	0/C 1.5
				$11

C/F - 0.50

00916727


ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
Date:
Name:
Compan
CUSTODY SEAL
2/26/18
Time: 1530
Seal Broken By:
Date:
2/27/18


xt Day Air®
orldwide Express®
ipping Document
WEIGHT
LTR
PAK
WEIGHT
DIMENSIONAL WEIGHT If Applicable
LARGE PACKAG
SHIPPER RELEASE
EXPRESS (INT'L)
DOCUMENTS ONLY
SATURDAY DELIVERY
Shipper authorizes UPS to act as forwarding agent for export control customs purposes.
Shipper certifies that these commodities, technology or softwar exported from the United States, we exported in accordance with the Ex Administration Regulations. Diversion contrary to law is prohibited.
EXPORT
SHIPMENT FROM
UPS ACCOUNT NO.
REFERENCE NUMBER
TELEPHONE
903-930-61
Scott Beesinger
Arrim Anc. Amb 202
1203-B E. Grand
Marshall
TX 75670
TELEPHONE
281 530-5656
DELIVERY TO
Client Services ARA Group
ALS Laboratory Rd. Suite 210
10450 Stancliff
Houston, TX 77099
Residential
United Parcel Service, Louisville, KY
010191120 6/14 RRD
UPS Next Day Air®
1
J461 687 974 2
DELIVERY
TRACKING NUMBER
DATE OF SHIPMENT
2/26/18

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www.alsglobal.com

LABORATORY REPORT

March 12, 2018

RJ Modashia
ALS Laboratory Group
10450 Stancliff Road Suite 210
Houston, TX 77099-4338

RE: HS18021330

Dear RJ:

Enclosed are the results of the samples submitted to our laboratory on February 28, 2018. For your reference, these analyses have been assigned our service request number P1800901.

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.

Respectfully submitted,

ALS | Environmental

By Kelly Horiuchi at 2:43 pm, Mar 12, 2018

Kelly Horiuchi
Laboratory Director

2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: ALS Laboratory Group
Project: HS18021330

Service Request No: P1800901

CASE NARRATIVE

The samples were received intact under chain of custody on February 28, 2018 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.

Carbon Dioxide Analysis

The samples were analyzed for carbon dioxide using a gas chromatograph equipped with a thermal conductivity detector (TCD). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least four hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (carbon dioxide) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175 as described in laboratory SOP VOA-DISGAS. This analyte is included on the laboratory's NELAP and DoD-ELAP scope of accreditation.

The results for carbon dioxide are estimated in samples 46WW05-022618 and 46WW05-022618-FD because the concentrations exceeded the instrument calibration range.

Methane, Ethene and Ethane Analysis

The samples were analyzed for methane, ethene and ethane using a gas chromatograph equipped with a flame ionization detector (FID). A known amount of liquid was displaced by injecting 8.0 milliliters of helium creating a headspace in the sample vial. Each sample vial was agitated using a sonic disrupter for fifteen minutes and then allowed to equilibrate for at least two hours. A volume of the headspace was withdrawn using a gas-tight syringe and analyzed using a manual injection technique. The amount of dissolved gases (methane, ethene and ethane) in the original sample was calculated using Henry's Law. This method was performed with guidance from RSK 175. 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 laboratory's NELAP or DoD-ELAP accreditation.

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.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-17-8
Utah DOH (NELAP)	http://health.utah.gov/lab/environmental-lab-certification/	CA016272017-8
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: ALS Laboratory Group
Project ID: HS18021330

Service Request: P1800901

Date Received: 2/28/2018
Time Received: 09:15

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	RSK 175 - CO2	RSK 175 - Gases
46WW05-022618	P1800901-001	Water	2/26/2018	09:00	X	
46WW05-022618	P1800901-002	Water	2/26/2018	09:00		X
46WW05-022618-FD	P1800901-003	Water	2/26/2018	09:00	X	
46WW05-022618-FD	P1800901-004	Water	2/26/2018	09:00		X

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 P1800901

COC ID: 8681

SUBCONTRACT TO:

ALS Environmental
2655 Park Center Drive, Suite A
Simi Valley, CA 93065

Phone: +1 805 526 7161

CUSTOMER INFORMATION:

Company: ALS Houston
Contact: RJ Modashia
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Email: RJ.Modashia@alsglobal.com
Alternate Contact:
Email:

INVOICE INFORMATION:

Company: ALS Houston
Contact: Accounts Payable
Address: 10450 Stancliff Rd, Ste 210
Phone: +1 281 530 5656
Reference: HS18021330
TSR: Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS18021330-04**	**46WW05-022618**	**Water**	**26 Feb 2018 09:00**
	SUB_RSK			13 Mar 2018
2.	**HS18021330-05**	**46WW05-022618-FD**	**Water**	**26 Feb 2018 09:00**
	SUB_RSK			13 Mar 2018

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above. HCL Vials for MEE. Neat Vials for CO2

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 2/27/18 1800

Received By: _____ Date/Time: 2/28/18 0915

Cooler ID(s): _____ Temperature(s): 3°C WET ICE BLANK

ALS Environmental
Sample Acceptance Check Form

Client: ALS Laboratory Group Work order: P1800901

Project: Houston-RSK CO2

Sample(s) received on: 2/28/18 Date opened: 2/28/18 by: E.PEREZ

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?	☒	☐	☐
	Cooler Temperature: ° C Blank Temperature: 3° C **Wet Ice**			
8	Were **custody seals** on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? Sealing Lid 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
P1800901-001.01	40mL VOA NP		7		A	MC 3/6/2018
P1800901-001.02	40mL VOA NP				A	
P1800901-002.01	40ml VOA HCL		1		A	MC 3/5/2018
P1800901-002.02	40ml VOA HCL				A	
P1800901-002.03	40ml VOA HCL				A	
P1800901-003.01	40mL VOA NP		7		A	MC 3/6/2018
P1800901-003.02	40mL VOA NP				A	
P1800901-004.01	40ml VOA HCL		1		A	MC 3/5/2018
P1800901-004.02	40ml VOA HCL				A	
P1800901-004.03	40ml VOA HCL				A	

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: **ALS Laboratory Group**
Client Sample ID: **46WW05-022618**
Client Project ID: **HS18021330**

ALS Project ID: P1800901
ALS Sample ID: P1800901-002

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Mike Conejo
Matrix: Water
Test Notes:

Date Collected: 2/26/18
Date Received: 2/28/18
Date Analyzed: 3/5/18
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**1.0**	1.3	1.0	0.51	**J**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **46WW05-022618-FD**
Client Project ID: **HS18021330**

ALS Project ID: P1800901
ALS Sample ID: P1800901-004

Test Code: RSK 175
Instrument ID: HP5890A/GC10/FID
Analyst: Mike Conejo
Matrix: Water
Test Notes:

Date Collected: 2/26/18
Date Received: 2/28/18
Date Analyzed: 3/5/18
Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	**0.96**	1.3	1.0	0.51	**J**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Sample ID: **Method Control Sample** ALS Project ID: P1800901
Client Project ID: **HS18021330** ALS Sample ID: P180305-MB

Test Code: RSK 175 Date Collected: NA
Instrument ID: HP5890A/GC10/FID Date Received: NA
Analyst: Mike Conejo Date Analyzed: 3/05/18
Matrix: Water Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
74-82-8	Methane	1.0	1.3	1.0	0.51	**U**
74-85-1	Ethene	0.55	1.0	0.55	0.24	**U**
74-84-0	Ethane	0.47	0.60	0.47	0.16	**U**

The Method Control Sample is laboratory water carried through the entire analytical process.
U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1800901
Client Project ID: **HS18021330** ALS Sample ID: P180305-LCS

Test Code: RSK 175 Date Collected: NA
Instrument ID: HP5890A/GC10/FID Date Received: NA
Analyst: Mike Conejo Date Analyzed: 3/05/18
Matrix: Water Volume(s) Analyzed: 0.10 ml(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS µg/L	Result$_1$ LCS µg/L	Result$_1$ DLCS µg/L	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
74-82-8	Methane	2.50	2.48	2.66	**99**	**106**	73-125	7	12	
74-85-1	Ethene	4.37	5.19	5.18	**119**	**119**	72-133	0	7	
74-84-0	Ethane	4.69	4.81	4.98	**103**	**106**	74-131	3	6	

$_1$ = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **ALS Laboratory Group**
Client Project ID: **HS18021330** ALS Project ID: P1800901

Carbon Dioxide

Test Code: RSK 175
Instrument ID: HP5890A/GC10/TCD Date(s) Collected: 2/26/18
Analyst: Mike Conejo Date Received: 2/28/18
Matrix: Water Date Analyzed: 3/6/18
Test Notes:

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Result µg/L	LOQ µg/L	LOD µg/L	MDL µg/L	Data Qualifier
46WW05-022618	P1800901-001	0.10	**560,000**	1,000	760	370	**E**
46WW05-022618-FD	P1800901-003	0.10	**590,000**	1,000	760	370	**E**
Method Control Sample	P180306-MB	0.10	760	1,000	760	370	**U**

The Method Control Sample is laboratory water carried through the entire analytical process.
U = Compound was analyzed for, but not detected above the laboratory detection limit.
LOQ = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
E = Estimated; concentration exceeded calibration range.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE / DUPLICATE LABORATORY CONTROL SAMPLE SUMMARY

Client: **ALS Laboratory Group**
Client Sample ID: **Duplicate Lab Control Sample** ALS Project ID: P1800901
Client Project ID: **HS18021330** ALS Sample ID: P180306-DLCS

Test Code: RSK 175 Date Collected: NA
Instrument ID: HP5890A/GC10/TCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 3/06/18
Matrix: Water Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount LCS / DLCS ug/L	Result[1] LCS ug/L	Result[1] DLCS ug/L	% Recovery LCS	% Recovery DLCS	DOD Acceptance Limits	RPD	RPD Limit	Data Qualifier
124-38-9	Carbon Dioxide	22,900	21,100	20,300	**92**	**89**	80-122	3	15	

[1] = The concentration shown includes a subtraction of the Method Control Sample value, even if the result is less than the MRL.

ADR Data Validation Checklist
Inorganic Metals by SW846 6010/6020/7470/7471

Project Name:	LHAAP-46	SDG/Report No.:	HS18021330
Project No.:	501032	Lab ID:	ALS-Houston
No. of Samples:	1 Originals & 1 FD	Matrix:	GW
1st ADR / 2nd by	SP		

Automated Data Review (ADR) was performed for all areas except Calibration Blanks, ICP Check Standard Analysis, Serial Dilution Analysis, and areas where professional judgement is applicable. Review of these areas was performed manually and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports (Copies Attached):

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

SHAWVIEW Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and SW846 methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. ICAL			X
3. CCAL			X
4. LLICV-Low			X
5. Blanks (Method, Calibration and/or Field QC)			X
6. LCS			X
7. ICP Check Standards			X
8. MS/MSD			X
9. Field Duplicate			X
10. Serial Dilutions			X
11. Internal Standards (6020)			X
12. Form 1 vs Database/ADR			X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (2): 46WW05-022618, 46WW05-022618-FD

ADR Data Validation Checklist
Inorganic Metals by SW846 6010/6020/7470/7471

Total Iron, Dissolved Iron, Dissolved Manganese
1. Hold Time/Preservation. (QAPP - Worksheet#19/SW846)
No Qualification Necessary
Received <6.0ºC; collected 2/26/2018; Prepped: 3/1/2018; analyzed: 3/1,2/2018
2. ICAL (DoD_5.0/SW846: R^2>0.990)
No Qualification Necessary
3. CCAL (DoD_5.0 and/or SW846: ±10%D)
No Qualification Necessary
4. LLICV-Low Level ICV - CRDL (DoD_5.0 <±20% / SW846<±30%) <±20% applicable
No Qualification Necessary
5. Blanks "UB" 5X(EPA Region#&4: Method and/or Field QC)
No Qualification Necessary
6020 (T) MBLK-125750 – Results were nondetect.
6020 (D) MBLK-125751 – Iron is nondetect. Manganese 0.000951 J mg/L (5X=0.004755); All manganese results greater than 5X concentration; Therefore, no qualification required.
6. LCS (QAPP - Worksheet#12/#28)
No Qualification Necessary
6020 (T) LCS-125750 – Criteria were met.
6020 (D) LCS-125751 – Criteria were met.
7. ICP Check Standards (DoD_5.0 and SW846/QAPP – worksheet#12/#28: ±20%)
No Qualification Necessary
8. MS/MSD (QAPP - Worksheet#12/#28 (75%-125%); parent sample only; *note lab limit are tighter*)
No Qualification Necessary
Batch LHSMW19-022018MS/MSD – Criteria were met.
9. Field Duplicate (QAPP – worksheet#35: 20% waters / 50% soils)
(non-detect & result <RL or both <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)
No Qualification Necessary
46WW05-022618/46WW05-022618-FD

ADR Data Validation Checklist
Inorganic Metals by SW846 6010/6020/7470/7471

Metals	Method	Units	46WW05-022618	LQ	46WW05-022618-FD	LQ	%RPD
Total Iron	6020A	mg/L	7.62		7.19		5.81
Dissolved Iron	6020A	mg/L	7.22		7.16		0.83
Dissolved Manganese	6020A	mg/L	14.1		14.2		0.71
	6020A	mg/L					

10. Serial Dilutions (DoD_5.0/SW846/QAAP: ±10%; SW6010/6020 >50X MDL; parent sample)

No Qualification Necessary

Criteria were met.

11. Internal Standard (6020 only: DoD5.0: 30-120% and/or NFG 60-125%) applicable by lab

12. Form 1 vs Database/ADR

Check laboratory's Form1 against Database; minimum one sample per SDG per fraction; list sample number:

11. Multiple Results

No Qualification Necessary

ADR Data Validation Checklist
Methane, Ethane, Ethene by RSK175

Project Name:	LHAAP-46	SDG/Report No.:	HS18021330 (P1800901)
Project No.:	501032	Lab ID:	ALS-Houston (Simi Valley)
No. of Samples:	1 Originals & 1 FD	Matrix:	GW
1st ADR / 2nds	SP		

Automated Data Review (ADR) was performed for all areas. Review of these areas was performed manually and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports (Copies Attached):

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

SHAWVIEW Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and/or SW846 methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. BFB Tune.			X
3. ICAL (RRF and/or %RSD)			X
4. CCAL (RRF and/or %D)			X
5. Blanks (Method and/or Field QC)			X
6. LCS			X
7. MS/MSD			X
8. Field Duplicate			X
10. Form1 vs Database/ADR		X	X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (2): 46WW05-022618, 46WW05-022618-FD
MEE plus Carbon dioxide
1. Hold Time/Preservation (QAPP - Worksheet#19/SW846/ASTM methods).
No Qualification Necessary
Rec'd <6ºC; collected: 2/26/2018; analyze: CO2: 3/6/2018 & MEE: 3/5/2018

ADR Data Validation Checklist
Methane, Ethane, Ethene by RSK175

2. BFB Tune (instr. performance criteria)

No Qualification Necessary

3. ICAL (EPA RSKSOP-175; 20%RSD or R>0.995)

No Qualification Necessary

GC10 RS082817_CO2.M (CO2 & MEE) 8/29/2017 – Criteria were met.

GC10 RS091217_R.M (CO2 & MEE) 9/12/2017 – Criteria were met.

4. CCAL (EPA RSKSOP-175; 15%D)

No Qualification Necessary

5. Blanks "UB" (EPA Region 3&4: Method and/or Field QC)

No Qualification Necessary

P180306-MB (CO2) & P180305-MB (MEE) – Results were nondetect.

6. LCS (QAPP – Worksheet#12/#28)

No Qualification Necessary

P180306-LCS/LCSD (CO2) and P180205-LCS/LCSD (MEE) – Criteria were met.

7. MS/MSD (QAPP – Worksheet#12/#28)

Qualification Necessary

Batch QC MS/MSD – Carbon dioxide (ok/130%); No qualification required.

8. Field Duplicate (QAPP – Worksheet#35 - WATERS 20% / SOILS 50%)

(non-detect & result <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)

No Qualification Necessary

46WW05-022618 / 46WW05-022618-FD – All criteria were met.

Dissolved Gases	Method	Units	46WW05-022618	LQ	46WW05-022618-FD	LQ	%RPD
Carbon dioxide	RSK-175	ug/L	560000		590000		5.22
Methane	RSK-175	ug/L	1		0.96		4.08
	RSK-175	ug/L					#DIV/0!

9. Form 1 vs Database/ADR

Check laboratory's Form1 against Database; one sample per SDG per fraction; list sample number:

10. Multiple Results

Qualification Necessary

NOTE: Results for CO2 were not diluted. J-19 applied.

ADR Data Validation Checklist
Volatile Organics by SW846 8260C

Project Name:	LHAAP-46	SDG/Report No.:	HS18021330
Project No.:		Lab ID:	ALS-Houston
No. of Samples:	5 Original & 2 FD	Matrix:	GW
1ST ADR / 2nd by	SP		

Automated Data Review (ADR) was performed for all areas evaluate except internal standards. 2ND Review of these areas was performed manually and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

EQUiS Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and/or SW846 8260 methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. BFB Tune.			X
3. ICAL (RRF and/or %RSD)			X
4. CCAL opening (RRF and/or 20% D)			X
5. CCAL closing (%D<±50%)			X
6. Blanks (Method and/or Field QC)			X
7. LCS			X
8. Surrogates			X
9. MS/MSD			X
10. Field Duplicate			X
11. Internal Standards			X
12. Form1 vs Database/ADR			X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (7): 46WW07-022318, 46WW08-022318, 46WW08-022318-FD, 46WW05-022618, 46WW05-022618-FD, 46WW06-022618, 46WW03-022618

ADR Data Validation Checklist
Volatile Organics by SW846 8260C

1. Hold Time/Preservation (QAPP - Worksheet#19/SW846/ASTM methods).
No Qualification Necessary
Rec'd <6ºC; collected 2/23,26/2018; analyzed 3/01/2018
2. BFB Tune (instr. performance criteria)
No Qualification Necessary
3. ICAL (DoD: RSD≤15% or linear R^2≥0.99 and Avg RRF's; 2-butanone & acetone >0.05; J/UJ < recommended criteria)
No Qualification Necessary
VOA2 D020902 2/09/18 @ 15:54 to 19:09 – Criteria met.
4. ICV (20%D only) /CCAL opening (DoD: %D≤20% and/or SW846 8260 Table 4 Avg RRF's: J/UJ < recommended criteria)
Qualification Necessary
VOA2 ICV D020912 2/09/18 @ 19:57 – Criteria met.
VOA2 CCV D030103 3/01/18 @ 11:54 – Criteria met.
5. Closing CCV (DoD_5.0: %D<±50%) (if applicable by lab)
No Qualification Necessary
VOA2 CCV_END D030129 3/01/18 @ 22:30 – Criteria met.
6. Blanks "UB" 5X/10X (EPA Region 3&4: Method and/or Field QC)
No Qualification Necessary
TB 46TB03-022618 – Results are nondetect.
VBLKW-180301 () – Results are nondetect.
7. LCS (QAPP – Worksheet#12/#28)
No Qualification Necessary
VLCSW-180301 () – Criteria were met.
8. Surrogates (QAPP - Worksheet#12/#28)
No Qualification Necessary – All recoveries were within acceptance criteria.
9. MS/MSD (DoD/QAPP – Worksheet#12/#28; parent sample only)
No Qualification Necessary
Batch 46WW07-022318-MS/MSD – No qualification for samples.

ADR Data Validation Checklist
Volatile Organics by SW846 8260C

10. Field Duplicate (QAPP – Worksheet#12 - WATERS ≤20% / SOILS ≤50%)
(non-detect & result <RL or both <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)
No Qualification Necessary – Criteria were met.
46WW08-022318/46WW08-022318-FD & 46WW05-022618/46WW05-022618-FD

Results for 46WW08-022318/46WW08-022318-FD were all nondetects.

VOCs	Method	Units	46WW05-022618	LQ	46WW05-022618-FD	LQ	%RPD
Trichloroethene	8260B	ug/L	14		14		0.00
	8260B	ug/L					
	8260B	ug/L					
	8260B	ug/L					

11.Internal Standards (DoD/QAPP – Worksheet#12/#28; -50% to +100% and RT ±0.5sec)
No Qualification Necessary

12. Form 1 vs Database/ADR
Check laboratory's Form1 against Database; one sample per SDG per fraction; list sample number:

13. Multiple Results
No Qualification Necessary

ADR Data Validation Checklist
Wet Chemistry

Project Name:	LHAAP-46	SDG/Report No.:	HS18021330
Project No.:	501032	Lab ID:	ALS-Houston
No. of Samples:	1 Originals & 1 FD	Analysis:	Alkalinity, Anions, Phosphorous,
1st ADR / 2nd by:	SP		Sulfide, TOC,

Automated Data Review (ADR) was performed for all areas except where professional judgment is applicable. Review of these areas was performed manually by **DoD_5.0** and **SW846 methods** and the results of the validation findings are identified in this report. It should also be noted that the ADR produces "Outlier Reports" for areas where anomalies are noted. If all QC criterions are met, no "Outlier Reports" are generated.

ADR Generated Reports (Copies Attached):

EDD Nonconformance Report
Field QC and Associated Sample Report*
Outlier Reports
Sample Qualification Report with Reason Codes

Generated Reports (Copies Attached):

QC Checkprint (QCVALDNT) Report

* Note: If field QC samples (i.e. TB, ER, FB, etc.) are reported in another SDG, the SDG, blanks, detected contaminants, and associated samples are identified in the comment/discussion section provided below

All areas evaluated by **DoD_5.0** and **SW846** methods and the identification as to whether qualification is necessary are identified below:

Area Evaluated	ADR Outlier Reports	Qualification Necessary (ADR and Manual Validation)	
		YES	NO
1. Hold Time/Preservation.			X
2. ICAL			X
3. CCAL			X
4. Limit of Detection Verification (LODV)			X
5. Blanks (Method, Calibration and/or Field QC)			X
6. LCS			X
7. Duplicate Analysis			X
8. MS/MSD			X
9. Field Duplicate		X	
10. Form1 vs Database/ADR			X

The following section is intended to specify areas evaluated and to provide an explanation (as applicable) for those areas where changes in ADR qualifiers were identified during the manual review and to provide an explanation (as applicable) for the need of additional qualifiers identified during the manual review.

Comments/Discussion:

Associated samples (2): 46WW05-022618, 46WW05-022618-FD

ADR Data Validation Checklist
Wet Chemistry

1. Hold Time/Preservation. (QAPP - Worksheet#19/SW846/ASTM methods)
No Qualification Necessary
Rec'd <6ºC; collected 2/26/2018; analyzed: alkalinity: 3/6/2018; anions – 2/27/2018 & 3/2/2018 (SO4); phosphorous: 3/8/2018; sulfide: 3/1/2018; TOC: 3/6/2018;
Professional judgment – no qualification for hold time.
2. ICAL (QAPP - Worksheet#19/SW846/ASTM methods: RSD≤20%/r≥0.995)
No Qualification Necessary
3. ICV/CCAL (QAPP - Worksheet#19/SW846/ASTM methods: ±15%D)
No Qualification Necessary
4. Limit of Detection Verification (LODV) (QAAP/DoD_4.2; ±30%D)
No Qualification Necessary
5. Blanks "UB" (EPA Region 3&4: Method and/or Field QC)
No Qualification Necessary
All MBs – Results were nondetect.
MBLKs are: MBLK-126002 (P), WBLKW1-022718 (Anions), MBLK-R311836 (S), WBLKW1-180306 (Alk), WBLKW1-030618 (TOC)
6. LCS (QAPP – Worksheet#19/#28)
No Qualification Necessary
All LCS/LCSDs – Criteria were met.
LCS/LCSDs are: LCS-126002 (P), WLCSW1/WLCSDW1-022718 (Anions), LCS/LCSD-R311836 (S), WLCSW1/WLCSDW1-180306 (Alk), WLCSW1/WLCSDW1-030618 (TOC)
7. Duplicate Analysis (QAPP - Worksheet#19/SW846/ASTM methods DoD-4.2<15%)
No Qualification Necessary
Alkalinity – Criteria met.
8. MS/MSD (QAPP - Worksheet#19/#28; DoD_4.2= ±20%MS/MSD / 15%RPD)
No Qualification Necessary
Batch QC MS/MSDs – All criteria were met.
9. Field Duplicate (QAPP – worksheet#35: 20% waters / 50% soils)
(non-detect & result <RL no qualifiers / non-detect & result >RL "J/UJ" qualifiers)
Qualification Necessary
46WW05-022618 / 46WW05-022618-FD – Qualify Nitrate estimated, J/UJ-17,19

ADR Data Validation Checklist
Wet Chemistry

Wet Chemistry	Method	Units	46WW05-022618	LQ	46WW05-022618-FD	LQ	%RPD
Chloride	E300.0	mg/L	193		228		16.63
Nitrate	E300.0	mg/L	2.58		0	U	200.00
Nitrite	E300.0	mg/L	0.629		0.56		11.61
Sulfate	E300.0	mg/L	4320		4220		2.34
Alkalinity	SM2320B	mg/L	0	U	0	U	#DIV/0!
Phosphorous, Total	SM4500P E	mg/L	0.145		0.142		2.09
Sulfide	E376.1	mg/L	1	U	1	U	0.00
Total Organic Carbon (TOC)	SW9060	mg/L	9.26		9.4		1.50

10. Form 1 vs Database/ADR

Check laboratory's Form1 against Database; minimum one sample per SDG per fraction; list sample number:

11. Multiple Results

No Qualification Necessary

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WorkOrder: HS18081428

LHAAP-46 501032

Aptim Environmental & Infrastucture, Inc.

Sharon Pennington
2500 City West Blvd., Suite 1700
Houston TX 77042

13-Oct-2018

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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September 20, 2018

Sharon Pennington
Aptim Environmental & Infrastucture, Inc.
2500 City West Blvd., Suite 1700
Houston, TX 77042

Work Order: **HS18081428**

Laboratory Results for: **LHAAP-46 501032**

Dear Sharon,

ALS Environmental received 11 sample(s) on Aug 29, 2018 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: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Work Order: HS18081428

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18081428-01	LHSMW25-180827	Groundwater		27-Aug-2018 09:05	29-Aug-2018 09:07	☐
HS18081428-02	46WW07-180827	Groundwater		27-Aug-2018 10:00	29-Aug-2018 09:07	☐
HS18081428-03	46WW08-180827	Groundwater		27-Aug-2018 10:55	29-Aug-2018 09:07	☐
HS18081428-04	46WW08-180827-FD	Groundwater		27-Aug-2018 10:55	29-Aug-2018 09:07	☐
HS18081428-05	46WW06-180827	Groundwater		27-Aug-2018 12:00	29-Aug-2018 09:07	☐
HS18081428-06	46WW03-180827	Groundwater		27-Aug-2018 13:10	29-Aug-2018 09:07	☐
HS18081428-07	46WW05-180828	Groundwater		28-Aug-2018 08:50	29-Aug-2018 09:07	☐
HS18081428-08	46WW16-180828	Groundwater		28-Aug-2018 10:30	29-Aug-2018 09:07	☐
HS18081428-09	46WW09-180828	Groundwater		28-Aug-2018 11:35	29-Aug-2018 09:07	☐
HS18081428-10	LHSMW19--180828	Groundwater		28-Aug-2018 13:05	29-Aug-2018 09:07	☐
HS18081428-11	46TB01-180827	Groundwater		28-Aug-2018 00:00	29-Aug-2018 09:07	☐

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc. **CASE NARRATIVE**
Project: LHAAP-46 501032
Work Order:

Work Order Comments

- The analysis for Methane, Methene, Ethane and CO2 by RSK175 was subcontracted to ALS Simi Valley, CA. Final report attached.
- The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

Work Order Comments

- The analysis for TOC was subcontracted to ALS Kelso, WA. Final report attached.
- The analysis for Methane, Ethene and CO2 by RSK175 was subcontracted to ALS Simi Valley, CA. Final report attached.

GCMS Volatiles by Method SW8260

Batch ID: R322791

Sample ID: LHSMW25-180827(HS18081428-01MS)

- MS and or MSD recovered outside the control limits for some compounds due to suspect matrix effect.

Metals by Method SW6020

Batch ID: 132005,132023

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SM2320B

Batch ID: R322708,R322912

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E376.1

Batch ID: R322991

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R322682

Sample ID: HS18081252-01MS

- MS and MSD are for an unrelated sample (Sulfate)

WetChemistry by Method SM4500P E

Batch ID: 132252

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: LHSMW25-180827
Collection Date: 27-Aug-2018 09:05

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 15:53
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 15:53
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 15:53
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 15:53
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	02-Sep-2018 15:53
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	02-Sep-2018 15:53
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	02-Sep-2018 15:53
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: LHSMW25-180827
Collection Date: 27-Aug-2018 09:05

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 15:53
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 15:53
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 15:53
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 15:53
Surr: 1,2-Dichloroethane-d4	*88.2*			**0**	*70-126*	*%REC*	*1*	*02-Sep-2018 15:53*
Surr: 4-Bromofluorobenzene	*98.7*			**0**	*81-113*	*%REC*	*1*	*02-Sep-2018 15:53*
Surr: Dibromofluoromethane	*95.2*			**0**	*77-123*	*%REC*	*1*	*02-Sep-2018 15:53*
Surr: Toluene-d8	*91.2*			**0**	*82-127*	*%REC*	*1*	*02-Sep-2018 15:53*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW07-180827
Collection Date: 27-Aug-2018 10:00

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:06
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 17:06
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 17:06
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:06
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	02-Sep-2018 17:06
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	02-Sep-2018 17:06
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	02-Sep-2018 17:06
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW07-180827
Collection Date: 27-Aug-2018 10:00

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 17:06
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 17:06
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:06
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:06
Surr: 1,2-Dichloroethane-d4	*85.6*			**0**	*70-126*	*%REC*	*1*	*02-Sep-2018 17:06*
Surr: 4-Bromofluorobenzene	*97.5*			**0**	*81-113*	*%REC*	*1*	*02-Sep-2018 17:06*
Surr: Dibromofluoromethane	*96.3*			**0**	*77-123*	*%REC*	*1*	*02-Sep-2018 17:06*
Surr: Toluene-d8	*90.6*			**0**	*82-127*	*%REC*	*1*	*02-Sep-2018 17:06*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW08-180827
Collection Date: 27-Aug-2018 10:55

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:31
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 17:31
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 17:31
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:31
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	02-Sep-2018 17:31
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	02-Sep-2018 17:31
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	02-Sep-2018 17:31
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW08-180827
Collection Date: 27-Aug-2018 10:55

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 17:31
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 17:31
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:31
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:31
Surr: 1,2-Dichloroethane-d4	*88.9*			**0**	*70-126*	*%REC*	*1*	*02-Sep-2018 17:31*
Surr: 4-Bromofluorobenzene	*95.7*			**0**	*81-113*	*%REC*	*1*	*02-Sep-2018 17:31*
Surr: Dibromofluoromethane	*93.6*			**0**	*77-123*	*%REC*	*1*	*02-Sep-2018 17:31*
Surr: Toluene-d8	*90.7*			**0**	*82-127*	*%REC*	*1*	*02-Sep-2018 17:31*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW08-180827-FD
Collection Date: 27-Aug-2018 10:55

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:55
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 17:55
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 17:55
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:55
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	02-Sep-2018 17:55
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	02-Sep-2018 17:55
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	02-Sep-2018 17:55
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW08-180827-FD
Collection Date: 27-Aug-2018 10:55

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 17:55
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 17:55
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 17:55
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 17:55
Surr: 1,2-Dichloroethane-d4	*88.3*			**0**	*70-126*	*%REC*	*1*	*02-Sep-2018 17:55*
Surr: 4-Bromofluorobenzene	*97.5*			**0**	*81-113*	*%REC*	*1*	*02-Sep-2018 17:55*
Surr: Dibromofluoromethane	*93.8*			**0**	*77-123*	*%REC*	*1*	*02-Sep-2018 17:55*
Surr: Toluene-d8	*92.9*			**0**	*82-127*	*%REC*	*1*	*02-Sep-2018 17:55*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW06-180827
Collection Date: 27-Aug-2018 12:00

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:20
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 18:20
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 18:20
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:20
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	02-Sep-2018 18:20
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	02-Sep-2018 18:20
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	02-Sep-2018 18:20
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW06-180827
Collection Date: 27-Aug-2018 12:00

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 18:20
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 18:20
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:20
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:20
Surr: 1,2-Dichloroethane-d4	*89.9*			**0**	*70-126*	*%REC*	*1*	*02-Sep-2018 18:20*
Surr: 4-Bromofluorobenzene	*95.7*			**0**	*81-113*	*%REC*	*1*	*02-Sep-2018 18:20*
Surr: Dibromofluoromethane	*94.4*			**0**	*77-123*	*%REC*	*1*	*02-Sep-2018 18:20*
Surr: Toluene-d8	*91.8*			**0**	*82-127*	*%REC*	*1*	*02-Sep-2018 18:20*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW03-180827
Collection Date: 27-Aug-2018 13:10

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:44
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 18:44
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 18:44
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:44
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	02-Sep-2018 18:44
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	02-Sep-2018 18:44
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	02-Sep-2018 18:44
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW03-180827
Collection Date: 27-Aug-2018 13:10

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-06
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 18:44
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 18:44
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 18:44
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 18:44
Surr: 1,2-Dichloroethane-d4	*88.9*			**0**	*70-126*	*%REC*	*1*	*02-Sep-2018 18:44*
Surr: 4-Bromofluorobenzene	*96.8*			**0**	*81-113*	*%REC*	*1*	*02-Sep-2018 18:44*
Surr: Dibromofluoromethane	*96.8*			**0**	*77-123*	*%REC*	*1*	*02-Sep-2018 18:44*
Surr: Toluene-d8	*91.2*			**0**	*82-127*	*%REC*	*1*	*02-Sep-2018 18:44*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW05-180828
Collection Date: 28-Aug-2018 08:50

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:08
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 19:08
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 19:08
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:08
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	02-Sep-2018 19:08
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	02-Sep-2018 19:08
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	02-Sep-2018 19:08
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW05-180828
Collection Date: 28-Aug-2018 08:50

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 19:08
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 19:08
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:08
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Trichloroethene	**6.4**		**0.20**	**0.50**	**1.0**	**ug/L**	1	02-Sep-2018 19:08
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:08
Surr: 1,2-Dichloroethane-d4	*91.6*			**0**	*70-126*	*%REC*	*1*	*02-Sep-2018 19:08*
Surr: 4-Bromofluorobenzene	*98.5*			**0**	*81-113*	*%REC*	*1*	*02-Sep-2018 19:08*
Surr: Dibromofluoromethane	*95.4*			**0**	*77-123*	*%REC*	*1*	*02-Sep-2018 19:08*
Surr: Toluene-d8	*91.2*			**0**	*82-127*	*%REC*	*1*	*02-Sep-2018 19:08*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 30-Aug-2018		Analyst: JDE
Iron	**11.2**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	31-Aug-2018 00:02
DISSOLVED METALS BY SW6020A		**Method:SW6020 (dissolved)**				Prep:SW3010A / 30-Aug-2018		Analyst: JCJ
Iron	**10.7**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	31-Aug-2018 17:09
Manganese	**12.9**		**0.0700**	**0.100**	**0.500**	**mg/L**	100	31-Aug-2018 17:36
SULFIDE BY E376.1		**Method:E376.1**						Analyst: KVL
Sulfide	**1.52**		**1.00**	**1.00**	**1.00**	**mg/L**	1	04-Sep-2018 11:30
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: AJH
Alkalinity, Total (As CaCO3)	5.00	U	5.00	5.00	5.00	mg/L	1	31-Aug-2018 01:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW05-180828
Collection Date: 28-Aug-2018 08:50

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
PHOSPHORUS BY SM4500P E		**Method:SM4500P E**				Prep:SM4500P E / 07-Sep-2018		Analyst: MZD
Phosphorus, Total (As P)	**0.172**		**0.0200**	**0.0250**	**0.0500**	**mg/L**	1	07-Sep-2018 15:40
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**174**		**2.00**	**5.00**	**5.00**	**mg/L**	10	29-Aug-2018 23:19
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	29-Aug-2018 23:04
Nitrogen, Nitrite (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	29-Aug-2018 23:04
Sulfate	**4,110**		**20.0**	**50.0**	**50.0**	**mg/L**	100	29-Aug-2018 21:37
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	11-Sep-2018 09:18
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	20-Sep-2018 09:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW16-180828
Collection Date: 28-Aug-2018 10:30

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:33
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 19:33
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 19:33
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:33
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	02-Sep-2018 19:33
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	02-Sep-2018 19:33
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	02-Sep-2018 19:33
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW16-180828
Collection Date: 28-Aug-2018 10:30

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 19:33
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 19:33
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:33
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:33
Surr: 1,2-Dichloroethane-d4	*88.2*			**0**	*70-126*	*%REC*	*1*	*02-Sep-2018 19:33*
Surr: 4-Bromofluorobenzene	*98.0*			**0**	*81-113*	*%REC*	*1*	*02-Sep-2018 19:33*
Surr: Dibromofluoromethane	*93.4*			**0**	*77-123*	*%REC*	*1*	*02-Sep-2018 19:33*
Surr: Toluene-d8	*91.4*			**0**	*82-127*	*%REC*	*1*	*02-Sep-2018 19:33*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 30-Aug-2018		Analyst: JDE
Iron	**25.5**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	31-Aug-2018 00:04
DISSOLVED METALS BY SW6020A		**Method:SW6020 (dissolved)**				Prep:SW3010A / 30-Aug-2018		Analyst: JCJ
Iron	**24.4**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	31-Aug-2018 17:11
Manganese	**1.67**		**0.000700**	**0.00100**	**0.00500**	**mg/L**	1	31-Aug-2018 17:11
SULFIDE BY E376.1		**Method:E376.1**						Analyst: KVL
Sulfide	**7.72**		**1.00**	**1.00**	**1.00**	**mg/L**	1	04-Sep-2018 11:30
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: AJH
Alkalinity, Total (As CaCO3)	**322**		**5.00**	**5.00**	**5.00**	**mg/L**	1	04-Sep-2018 19:37

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW16-180828
Collection Date: 28-Aug-2018 10:30

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
PHOSPHORUS BY SM4500P E		**Method:SM4500P E**				Prep:SM4500P E / 07-Sep-2018		Analyst: MZD
Phosphorus, Total (As P)	**0.124**		**0.0200**	**0.0250**	**0.0500**	**mg/L**	1	07-Sep-2018 15:40
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**290**		**2.00**	**5.00**	**5.00**	**mg/L**	10	29-Aug-2018 23:48
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	29-Aug-2018 23:33
Nitrogen, Nitrite (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	29-Aug-2018 23:33
Sulfate	**702**		**2.00**	**5.00**	**5.00**	**mg/L**	10	29-Aug-2018 23:48
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	11-Sep-2018 09:18
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	20-Sep-2018 09:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW09-180828
Collection Date: 28-Aug-2018 11:35

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:57
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 19:57
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 19:57
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:57
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	02-Sep-2018 19:57
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	02-Sep-2018 19:57
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	02-Sep-2018 19:57
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW09-180828
Collection Date: 28-Aug-2018 11:35

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 19:57
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 19:57
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 19:57
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 19:57
Surr: 1,2-Dichloroethane-d4	*89.9*			**0**	*70-126*	*%REC*	*1*	*02-Sep-2018 19:57*
Surr: 4-Bromofluorobenzene	*101*			**0**	*81-113*	*%REC*	*1*	*02-Sep-2018 19:57*
Surr: Dibromofluoromethane	*96.0*			**0**	*77-123*	*%REC*	*1*	*02-Sep-2018 19:57*
Surr: Toluene-d8	*88.3*			**0**	*82-127*	*%REC*	*1*	*02-Sep-2018 19:57*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 30-Aug-2018		Analyst: JDE
Iron	**1.66**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	31-Aug-2018 00:06
DISSOLVED METALS BY SW6020A		**Method:SW6020 (dissolved)**				Prep:SW3010A / 30-Aug-2018		Analyst: JCJ
Iron	**2.36**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	31-Aug-2018 17:13
Manganese	**3.21**		**0.0140**	**0.0200**	**0.100**	**mg/L**	20	31-Aug-2018 17:38
SULFIDE BY E376.1		**Method:E376.1**						Analyst: KVL
Sulfide	**2.52**		**1.00**	**1.00**	**1.00**	**mg/L**	1	04-Sep-2018 11:30
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: AJH
Alkalinity, Total (As CaCO3)	**204**		**5.00**	**5.00**	**5.00**	**mg/L**	1	04-Sep-2018 17:47

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46WW09-180828
Collection Date: 28-Aug-2018 11:35

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
PHOSPHORUS BY SM4500P E		**Method:SM4500P E**				Prep:SM4500P E / 07-Sep-2018		Analyst: MZD
Phosphorus, Total (As P)	**0.105**		**0.0200**	**0.0250**	**0.0500**	**mg/L**	1	07-Sep-2018 15:40
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**469**		**2.00**	**5.00**	**5.00**	**mg/L**	10	30-Aug-2018 00:17
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	30-Aug-2018 00:02
Nitrogen, Nitrite (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	30-Aug-2018 00:02
Sulfate	**2,230**		**20.0**	**50.0**	**50.0**	**mg/L**	100	30-Aug-2018 00:31
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	11-Sep-2018 09:18
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	20-Sep-2018 09:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: LHSMW19--180828
Collection Date: 28-Aug-2018 13:05

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:22
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 20:22
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 20:22
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:22
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	02-Sep-2018 20:22
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	02-Sep-2018 20:22
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	02-Sep-2018 20:22
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: LHSMW19--180828
Collection Date: 28-Aug-2018 13:05

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
cis-1,2-Dichloroethene	**1.7**		**0.20**	**0.50**	**1.0**	**ug/L**	1	02-Sep-2018 20:22
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 20:22
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 20:22
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:22
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Trichloroethene	**8.8**		**0.20**	**0.50**	**1.0**	**ug/L**	1	02-Sep-2018 20:22
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:22
Surr: 1,2-Dichloroethane-d4	*88.8*			**0**	*70-126*	*%REC*	*1*	*02-Sep-2018 20:22*
Surr: 4-Bromofluorobenzene	*98.1*			**0**	*81-113*	*%REC*	*1*	*02-Sep-2018 20:22*
Surr: Dibromofluoromethane	*98.6*			**0**	*77-123*	*%REC*	*1*	*02-Sep-2018 20:22*
Surr: Toluene-d8	*92.3*			**0**	*82-127*	*%REC*	*1*	*02-Sep-2018 20:22*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 30-Aug-2018		Analyst: JDE
Iron	**0.511**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	31-Aug-2018 00:08
DISSOLVED METALS BY SW6020A		**Method:SW6020 (dissolved)**				Prep:SW3010A / 30-Aug-2018		Analyst: JCJ
Iron	**0.529**		**0.0120**	**0.100**	**0.200**	**mg/L**	1	31-Aug-2018 17:16
Manganese	**0.0719**		**0.000700**	**0.00100**	**0.00500**	**mg/L**	1	31-Aug-2018 17:16
SULFIDE BY E376.1		**Method:E376.1**						Analyst: KVL
Sulfide	**4.52**		**1.00**	**1.00**	**1.00**	**mg/L**	1	04-Sep-2018 11:30
ALKALINITY BY SM2320B		**Method:SM2320B**						Analyst: AJH
Alkalinity, Total (As CaCO3)	**508**		**5.00**	**5.00**	**5.00**	**mg/L**	1	04-Sep-2018 17:53

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: LHSMW19--180828
Collection Date: 28-Aug-2018 13:05

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-10
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
PHOSPHORUS BY SM4500P E		**Method:SM4500P E**				Prep:SM4500P E / 07-Sep-2018		Analyst: MZD
Phosphorus, Total (As P)	**0.262**		**0.0200**	**0.0250**	**0.0500**	**mg/L**	1	07-Sep-2018 15:40
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**263**		**2.00**	**5.00**	**5.00**	**mg/L**	10	30-Aug-2018 01:00
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	30-Aug-2018 00:46
Nitrogen, Nitrite (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	30-Aug-2018 00:46
Sulfate	**525**		**2.00**	**5.00**	**5.00**	**mg/L**	10	30-Aug-2018 01:00
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	11-Sep-2018 09:18
SUBCONTRACT ANALYSIS - TOC ANALYSIS		**Method:NA**						Analyst: SUBK
Subcontract Analysis	See Attached		0	0		NA	1	20-Sep-2018 09:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46TB01-180827
Collection Date: 28-Aug-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,2-Dibromo-3-chloropropane	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:46
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 20:46
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 20:46
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:46
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	02-Sep-2018 20:46
Acetone	1.0	U	2.0	1.0	2.0	ug/L	1	02-Sep-2018 20:46
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	02-Sep-2018 20:46
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
Sample ID: 46TB01-180827
Collection Date: 28-Aug-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18081428
Lab ID:HS18081428-11
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**						Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	02-Sep-2018 20:46
Methylene chloride	1.0	U	1.0	1.0	2.0	ug/L	1	02-Sep-2018 20:46
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	02-Sep-2018 20:46
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	02-Sep-2018 20:46
Surr: 1,2-Dichloroethane-d4	*89.8*			**0**	*70-126*	*%REC*	*1*	*02-Sep-2018 20:46*
Surr: 4-Bromofluorobenzene	*97.3*			**0**	*81-113*	*%REC*	*1*	*02-Sep-2018 20:46*
Surr: Dibromofluoromethane	*96.8*			**0**	*77-123*	*%REC*	*1*	*02-Sep-2018 20:46*
Surr: Toluene-d8	*90.6*			**0**	*82-127*	*%REC*	*1*	*02-Sep-2018 20:46*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

WEIGHT LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Batch ID: 132005 **Method:** ICP-MS METALS BY SW6020A **Prep:** 3010A

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18081428-07	1	10	10 (mL)	1
HS18081428-08	1	10	10 (mL)	1
HS18081428-09	1	10	10 (mL)	1
HS18081428-10	1	10	10 (mL)	1

Batch ID: 132023 **Method:** DISSOLVED METALS BY SW6020A **Prep:** 3010A DISS

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18081428-07	1	10	10 (mL)	1
HS18081428-08	1	10	10 (mL)	1
HS18081428-09	1	10	10 (mL)	1
HS18081428-10	1	10	10 (mL)	1

Batch ID: 132252 **Method:** PHOSPHORUS BY SM4500P E **Prep:** P_TW_PR4500

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18081428-07	1	50	50 (mL)	1
HS18081428-08	1	50	50 (mL)	1
HS18081428-09	1	50	50 (mL)	1
HS18081428-10	1	50	50 (mL)	1

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 132005	**Test Name :** ICP-MS METALS BY SW6020A			**Matrix:** Groundwater		
HS18081428-07	46WW05-180828	28 Aug 2018 08:50		30 Aug 2018 11:00	31 Aug 2018 00:02	1
HS18081428-08	46WW16-180828	28 Aug 2018 10:30		30 Aug 2018 11:00	31 Aug 2018 00:04	1
HS18081428-09	46WW09-180828	28 Aug 2018 11:35		30 Aug 2018 11:00	31 Aug 2018 00:06	1
HS18081428-10	LHSMW19--180828	28 Aug 2018 13:05		30 Aug 2018 11:00	31 Aug 2018 00:08	1
Batch ID 132023	**Test Name :** DISSOLVED METALS BY SW6020A			**Matrix:** Groundwater		
HS18081428-07	46WW05-180828	28 Aug 2018 08:50		30 Aug 2018 14:00	31 Aug 2018 17:36	100
HS18081428-07	46WW05-180828	28 Aug 2018 08:50		30 Aug 2018 14:00	31 Aug 2018 17:09	1
HS18081428-08	46WW16-180828	28 Aug 2018 10:30		30 Aug 2018 14:00	31 Aug 2018 17:11	1
HS18081428-09	46WW09-180828	28 Aug 2018 11:35		30 Aug 2018 14:00	31 Aug 2018 17:38	20
HS18081428-09	46WW09-180828	28 Aug 2018 11:35		30 Aug 2018 14:00	31 Aug 2018 17:13	1
HS18081428-10	LHSMW19--180828	28 Aug 2018 13:05		30 Aug 2018 14:00	31 Aug 2018 17:16	1
Batch ID 132252	**Test Name :** PHOSPHORUS BY SM4500P E			**Matrix:** Groundwater		
HS18081428-07	46WW05-180828	28 Aug 2018 08:50		07 Sep 2018 09:30	07 Sep 2018 15:40	1
HS18081428-08	46WW16-180828	28 Aug 2018 10:30		07 Sep 2018 09:30	07 Sep 2018 15:40	1
HS18081428-09	46WW09-180828	28 Aug 2018 11:35		07 Sep 2018 09:30	07 Sep 2018 15:40	1
HS18081428-10	LHSMW19--180828	28 Aug 2018 13:05		07 Sep 2018 09:30	07 Sep 2018 15:40	1
Batch ID R322682	**Test Name :** ANIONS BY SW9056A			**Matrix:** Groundwater		
HS18081428-07	46WW05-180828	28 Aug 2018 08:50			29 Aug 2018 23:19	10
HS18081428-07	46WW05-180828	28 Aug 2018 08:50			29 Aug 2018 23:04	1
HS18081428-07	46WW05-180828	28 Aug 2018 08:50			29 Aug 2018 21:37	100
HS18081428-08	46WW16-180828	28 Aug 2018 10:30			29 Aug 2018 23:48	10
HS18081428-08	46WW16-180828	28 Aug 2018 10:30			29 Aug 2018 23:33	1
HS18081428-09	46WW09-180828	28 Aug 2018 11:35			30 Aug 2018 00:31	100
HS18081428-09	46WW09-180828	28 Aug 2018 11:35			30 Aug 2018 00:17	10
HS18081428-09	46WW09-180828	28 Aug 2018 11:35			30 Aug 2018 00:02	1
HS18081428-10	LHSMW19--180828	28 Aug 2018 13:05			30 Aug 2018 01:00	10
HS18081428-10	LHSMW19--180828	28 Aug 2018 13:05			30 Aug 2018 00:46	1
Batch ID R322708	**Test Name :** ALKALINITY BY SM2320B			**Matrix:** Groundwater		
HS18081428-07	46WW05-180828	28 Aug 2018 08:50			31 Aug 2018 01:22	1

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032 **DATES REPORT**
WorkOrder: HS18081428

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R322791	**Test Name :** LOW LEVEL VOLATILES BY SW8260C			**Matrix:** Groundwater		
HS18081428-01	LHSMW25-180827	27 Aug 2018 09:05			02 Sep 2018 15:53	1
HS18081428-02	46WW07-180827	27 Aug 2018 10:00			02 Sep 2018 17:06	1
HS18081428-03	46WW08-180827	27 Aug 2018 10:55			02 Sep 2018 17:31	1
HS18081428-04	46WW08-180827-FD	27 Aug 2018 10:55			02 Sep 2018 17:55	1
HS18081428-05	46WW06-180827	27 Aug 2018 12:00			02 Sep 2018 18:20	1
HS18081428-06	46WW03-180827	27 Aug 2018 13:10			02 Sep 2018 18:44	1
HS18081428-07	46WW05-180828	28 Aug 2018 08:50			02 Sep 2018 19:08	1
HS18081428-08	46WW16-180828	28 Aug 2018 10:30			02 Sep 2018 19:33	1
HS18081428-09	46WW09-180828	28 Aug 2018 11:35			02 Sep 2018 19:57	1
HS18081428-10	LHSMW19--180828	28 Aug 2018 13:05			02 Sep 2018 20:22	1
HS18081428-11	46TB01-180827	28 Aug 2018 00:00			02 Sep 2018 20:46	1
Batch ID R322912	**Test Name :** ALKALINITY BY SM2320B			**Matrix:** Groundwater		
HS18081428-08	46WW16-180828	28 Aug 2018 10:30			04 Sep 2018 19:37	1
HS18081428-09	46WW09-180828	28 Aug 2018 11:35			04 Sep 2018 17:47	1
HS18081428-10	LHSMW19--180828	28 Aug 2018 13:05			04 Sep 2018 17:53	1
Batch ID R322991	**Test Name :** SULFIDE BY E376.1			**Matrix:** Groundwater		
HS18081428-07	46WW05-180828	28 Aug 2018 08:50			04 Sep 2018 11:30	1
HS18081428-08	46WW16-180828	28 Aug 2018 10:30			04 Sep 2018 11:30	1
HS18081428-09	46WW09-180828	28 Aug 2018 11:35			04 Sep 2018 11:30	1
HS18081428-10	LHSMW19--180828	28 Aug 2018 13:05			04 Sep 2018 11:30	1
Batch ID R323145	**Test Name :** SUBCONTRACT ANALYSIS - RSK			**Matrix:** Groundwater		
HS18081428-07	46WW05-180828	28 Aug 2018 08:50			11 Sep 2018 09:18	1
HS18081428-08	46WW16-180828	28 Aug 2018 10:30			11 Sep 2018 09:18	1
HS18081428-09	46WW09-180828	28 Aug 2018 11:35			11 Sep 2018 09:18	1
HS18081428-10	LHSMW19--180828	28 Aug 2018 13:05			11 Sep 2018 09:18	1
Batch ID R323764	**Test Name :** SUBCONTRACT ANALYSIS - TOC ANALYSIS			**Matrix:** Groundwater		
HS18081428-07	46WW05-180828	28 Aug 2018 08:50			20 Sep 2018 09:03	1
HS18081428-08	46WW16-180828	28 Aug 2018 10:30			20 Sep 2018 09:03	1
HS18081428-09	46WW09-180828	28 Aug 2018 11:35			20 Sep 2018 09:03	1
HS18081428-10	LHSMW19--180828	28 Aug 2018 13:05			20 Sep 2018 09:03	1

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: 132005 **Instrument: ICPMS05** **Method: SW6020**

MBLK Sample ID: **MBLK-132005** Units: **mg/L** Analysis Date: **30-Aug-2018 23:30**
Client ID: Run ID: **ICPMS05_322610** SeqNo: **4711478** PrepDate: **30-Aug-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	0.100	0.200								U

LCS Sample ID: **LCS-132005** Units: **mg/L** Analysis Date: **30-Aug-2018 23:32**
Client ID: Run ID: **ICPMS05_322610** SeqNo: **4711479** PrepDate: **30-Aug-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	4.769	0.200	5	0	95.4	80 - 120				

MS Sample ID: **HS18081423-01MS** Units: **mg/L** Analysis Date: **30-Aug-2018 23:50**
Client ID: Run ID: **ICPMS05_322610** SeqNo: **4711488** PrepDate: **30-Aug-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	12.63	0.200	5	7.584	101	80 - 120				

MSD Sample ID: **HS18081423-01MSD** Units: **mg/L** Analysis Date: **30-Aug-2018 23:52**
Client ID: Run ID: **ICPMS05_322610** SeqNo: **4711489** PrepDate: **30-Aug-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	13.23	0.200	5	7.584	113	80 - 120	12.63	4.65	20	

PDS Sample ID: **HS18081423-01PDS** Units: **mg/L** Analysis Date: **30-Aug-2018 23:54**
Client ID: Run ID: **ICPMS05_322610** SeqNo: **4711490** PrepDate: **30-Aug-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	16.91	0.200	10	7.584	93.3	75 - 125				

SD Sample ID: **HS18081423-01SD** Units: **mg/L** Analysis Date: **30-Aug-2018 23:48**
Client ID: Run ID: **ICPMS05_322610** SeqNo: **4711487** PrepDate: **30-Aug-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Iron	7.674	1.00					7.584	1.19	10	

The following samples were analyzed in this batch: HS18081428-07 HS18081428-08 HS18081428-09 HS18081428-10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: 132023 **Instrument: ICPMS04** **Method: SW6020 (dissolved) (DISSOLVED)**

MBLK Sample ID: **MBLKF1-132023** Units: **mg/L** Analysis Date: **31-Aug-2018 15:42**
Client ID: Run ID: **ICPMS04_322696** SeqNo: **4713209** PrepDate: **30-Aug-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	0.100	0.200								U
Manganese	0.00100	0.00500								U

MBLK Sample ID: **MBLK-132023** Units: **mg/L** Analysis Date: **31-Aug-2018 15:44**
Client ID: Run ID: **ICPMS04_322696** SeqNo: **4713210** PrepDate: **30-Aug-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	0.100	0.200								U
Manganese	0.00100	0.00500								U

LCS Sample ID: **LCS-132023** Units: **mg/L** Analysis Date: **31-Aug-2018 15:47**
Client ID: Run ID: **ICPMS04_322696** SeqNo: **4713211** PrepDate: **30-Aug-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	4.993	0.200	5	0	99.9	80 - 120				
Manganese	0.04765	0.00500	0.05	0	95.3	80 - 120				

MS Sample ID: **HS18081423-01MS** Units: **mg/L** Analysis Date: **31-Aug-2018 16:19**
Client ID: Run ID: **ICPMS04_322696** SeqNo: **4713402** PrepDate: **30-Aug-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	4.57	0.200	5	0.01504	91.1	75 - 125				
Manganese	0.05252	0.00500	0.05	0.007023	91.0	75 - 125				

MSD Sample ID: **HS18081423-01MSD** Units: **mg/L** Analysis Date: **31-Aug-2018 16:21**
Client ID: Run ID: **ICPMS04_322696** SeqNo: **4713403** PrepDate: **30-Aug-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	4.493	0.200	5	0.01504	89.5	75 - 125	4.57	1.7	20	
Manganese	0.05408	0.00500	0.05	0.007023	94.1	75 - 125	0.05252	2.92	20	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: 132023 **Instrument: ICPMS04** **Method: SW6020 (dissolved) (DISSOLVED)**

PDS Sample ID: **HS18081423-01PDS** Units: **mg/L** Analysis Date: **31-Aug-2018 16:23**
Client ID: Run ID: **ICPMS04_322696** SeqNo: **4713404** PrepDate: **30-Aug-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	8.905	0.200	10	0.01504	88.9	75 - 125				
Manganese	0.09419	0.00500	0.1	0.007023	87.2	75 - 125				

SD Sample ID: **HS18081423-01SD** Units: **mg/L** Analysis Date: **31-Aug-2018 16:16**
Client ID: Run ID: **ICPMS04_322696** SeqNo: **4713401** PrepDate: **30-Aug-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Iron	0.09109	1.00					0.01504	0	10	J
Manganese	0.006494	0.0250					0.007023	0	10	J

The following samples were analyzed in this batch: HS18081428-07 HS18081428-08 HS18081428-09 HS18081428-10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument:** VOA2 **Method:** SW8260

MBLK Sample ID: **VBLKW-180830** Units: **ug/L** Analysis Date: **02-Sep-2018 15:29**
Client ID: Run ID: **VOA2_322791** SeqNo: **4714087** 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	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichlor-1,2,2-trifluoroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **VBLKW-180830** Units: **ug/L** Analysis Date: **02-Sep-2018 15:29**
Client ID: Run ID: **VOA2_322791** SeqNo: **4714087** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	0.50	1.0								U
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	0.50	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*43.69*	*1.0*	*50*	*0*	*87.4*	*70 - 123*				
Surr: 4-Bromofluorobenzene	*48.04*	*1.0*	*50*	*0*	*96.1*	*82 - 115*				
Surr: Dibromofluoromethane	*47.44*	*1.0*	*50*	*0*	*94.9*	*73 - 126*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument:** VOA2 **Method:** SW8260

MBLK Sample ID: **VBLKW-180830** Units: **ug/L** Analysis Date: **02-Sep-2018 15:29**
Client ID: Run ID: **VOA2_322791** SeqNo: **4714087** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*45.48*	*1.0*	*50*	*0*	*91.0*	*81 - 120*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180830** Units: **ug/L** Analysis Date: **02-Sep-2018 15:04**
Client ID: Run ID: **VOA2_322791** SeqNo: **4714086** 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	21.08	1.0	20	0	105	77 - 118				
1,1,1-Trichloroethane	19.36	1.0	20	0	96.8	70 - 130				
1,1,2,2-Tetrachloroethane	17.95	1.0	20	0	89.8	70 - 120				
1,1,2-Trichlor-1,2,2-trifluoroethane	21.98	1.0	20	0	110	70 - 130				
1,1,2-Trichloroethane	19.88	1.0	20	0	99.4	77 - 113				
1,1-Dichloroethane	18.74	1.0	20	0	93.7	71 - 122				
1,1-Dichloroethene	19.51	1.0	20	0	97.6	70 - 130				
1,1-Dichloropropene	22.72	1.0	20	0	114	78 - 118				
1,2,3-Trichlorobenzene	20.09	1.0	20	0	100	70 - 130				
1,2,3-Trichloropropane	18.39	1.0	20	0	92.0	70 - 127				
1,2,4-Trichlorobenzene	21.01	1.0	20	0	105	77 - 126				
1,2,4-Trimethylbenzene	20.98	1.0	20	0	105	73 - 121				
1,2-Dibromo-3-chloropropane	17.35	1.0	20	0	86.8	70 - 130				
1,2-Dibromoethane	21.63	1.0	20	0	108	76 - 123				
1,2-Dichlorobenzene	19.79	1.0	20	0	98.9	77 - 113				
1,2-Dichloroethane	20.2	1.0	20	0	101	70 - 124				
1,2-Dichloropropane	21.04	1.0	20	0	105	72 - 119				
1,3,5-Trimethylbenzene	19.63	1.0	20	0	98.2	75 - 118				
1,3-Dichlorobenzene	20.29	1.0	20	0	101	78 - 118				
1,3-Dichloropropane	20.58	1.0	20	0	103	75 - 116				
1,4-Dichlorobenzene	20.41	1.0	20	0	102	79 - 113				
2,2-Dichloropropane	24.09	1.0	20	0	120	70 - 130				
2-Butanone	36.51	2.0	40	0	91.3	70 - 130				
2-Chlorotoluene	21.28	1.0	20	0	106	70 - 128				
2-Hexanone	38.33	2.0	40	0	95.8	70 - 130				
4-Chlorotoluene	21.4	1.0	20	0	107	74 - 126				
4-Isopropyltoluene	19.05	1.0	20	0	95.2	74 - 126				
4-Methyl-2-pentanone	37.95	2.0	40	0	94.9	70 - 130				
Acetone	32.26	2.0	40	0	80.7	70 - 130				
Benzene	20.48	1.0	20	0	102	74 - 120				
Bromobenzene	20.17	1.0	20	0	101	78 - 113				
Bromochloromethane	21.19	1.0	20	0	106	76 - 124				
Bromodichloromethane	21.44	1.0	20	0	107	74 - 122				
Bromoform	21.86	1.0	20	0	109	73 - 128				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180830** Units: **ug/L** Analysis Date: **02-Sep-2018 15:04**
Client ID: Run ID: **VOA2_322791** SeqNo: **4714086** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	24.41	1.0	20	0	122	70 - 130				
Carbon disulfide	40.09	2.0	40	0	100	70 - 130				
Carbon tetrachloride	21.74	1.0	20	0	109	71 - 125				
Chlorobenzene	21.02	1.0	20	0	105	76 - 113				
Chloroethane	18.29	1.0	20	0	91.5	70 - 130				
Chloroform	19.41	1.0	20	0	97.0	71 - 121				
Chloromethane	17.87	1.0	20	0	89.4	70 - 129				
cis-1,2-Dichloroethene	20.37	1.0	20	0	102	75 - 122				
cis-1,3-Dichloropropene	22.84	1.0	20	0	114	73 - 127				
Dibromochloromethane	21.11	1.0	20	0	106	77 - 122				
Dibromomethane	21.55	1.0	20	0	108	78 - 121				
Dichlorodifluoromethane	21.21	1.0	20	0	106	70 - 130				
Ethylbenzene	22.74	1.0	20	0	114	77 - 117				
Hexachlorobutadiene	21.88	1.0	20	0	109	70 - 130				
Isopropylbenzene	20.55	1.0	20	0	103	73 - 127				
m,p-Xylene	45.92	2.0	40	0	115	77 - 122				
Methylene chloride	19.43	2.0	20	0	97.2	70 - 127				
Naphthalene	18.73	1.0	20	0	93.6	70 - 130				
n-Butylbenzene	20.14	1.0	20	0	101	72 - 130				
n-Propylbenzene	21.59	1.0	20	0	108	73 - 124				
o-Xylene	22.26	1.0	20	0	111	75 - 119				
sec-Butylbenzene	19.09	1.0	20	0	95.4	73 - 128				
Styrene	21.46	1.0	20	0	107	72 - 126				
tert-Butylbenzene	21.87	1.0	20	0	109	73 - 124				
Tetrachloroethene	21.63	1.0	20	0	108	76 - 119				
Toluene	19.99	1.0	20	0	99.9	77 - 118				
trans-1,2-Dichloroethene	21.24	1.0	20	0	106	72 - 127				
trans-1,3-Dichloropropene	23.47	1.0	20	0	117	77 - 119				
Trichloroethene	21.18	1.0	20	0	106	77 - 121				
Trichlorofluoromethane	21.12	1.0	20	0	106	70 - 130				
Vinyl chloride	20.39	1.0	20	0	102	70 - 130				
Surr: 1,2-Dichloroethane-d4	*45.68*	*1.0*	*50*	*0*	*91.4*	*70 - 130*				
Surr: 4-Bromofluorobenzene	*50.57*	*1.0*	*50*	*0*	*101*	*82 - 115*				
Surr: Dibromofluoromethane	*47.07*	*1.0*	*50*	*0*	*94.1*	*73 - 126*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument:** VOA2 **Method:** SW8260

LCS Sample ID: **VLCSW-180830** Units: **ug/L** Analysis Date: **02-Sep-2018 15:04**
Client ID: Run ID: **VOA2_322791** SeqNo: **4714086** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*44.72*	*1.0*	*50*	*0*	*89.4*	*81 - 120*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument:** VOA2 **Method:** SW8260

MS Sample ID: **HS18081428-01MS** Units: **ug/L** Analysis Date: **02-Sep-2018 16:18**
Client ID: **LHSMW25-180827** Run ID: **VOA2_322791** SeqNo: **4714089** 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	17.79	1.0	20	0	89.0	70 - 120				
1,1,1-Trichloroethane	15.78	1.0	20	0	78.9	70 - 130				
1,1,2,2-Tetrachloroethane	15.11	1.0	20	0	75.6	70 - 123				
1,1,2-Trichlor-1,2,2-trifluoroethane	14.4	1.0	20	0	72.0	70 - 130				
1,1,2-Trichloroethane	16.98	1.0	20	0	84.9	70 - 117				
1,1-Dichloroethane	16.2	1.0	20	0	81.0	70 - 127				
1,1-Dichloroethene	15.71	1.0	20	0	78.5	70 - 130				
1,1-Dichloropropene	17.51	1.0	20	0	87.5	70 - 129				
1,2,3-Trichlorobenzene	15.36	1.0	20	0	76.8	70 - 130				
1,2,3-Trichloropropane	15.01	1.0	20	0	75.0	70 - 130				
1,2,4-Trichlorobenzene	16.17	1.0	20	0	80.9	70 - 125				
1,2,4-Trimethylbenzene	16.34	1.0	20	0	81.7	70 - 125				
1,2-Dibromo-3-chloropropane	14.27	1.0	20	0	71.3	70 - 130				
1,2-Dibromoethane	17.77	1.0	20	0	88.9	70 - 124				
1,2-Dichlorobenzene	16.47	1.0	20	0	82.4	70 - 115				
1,2-Dichloroethane	17.52	1.0	20	0	87.6	70 - 127				
1,2-Dichloropropane	18.32	1.0	20	0	91.6	70 - 122				
1,3,5-Trimethylbenzene	15.67	1.0	20	0	78.4	70 - 126				
1,3-Dichlorobenzene	16.84	1.0	20	0	84.2	70 - 119				
1,3-Dichloropropane	17.08	1.0	20	0	85.4	70 - 121				
1,4-Dichlorobenzene	16.51	1.0	20	0	82.6	70 - 114				
2,2-Dichloropropane	19.27	1.0	20	0	96.3	70 - 130				
2-Butanone	29.53	2.0	40	0	73.8	70 - 130				
2-Chlorotoluene	17.45	1.0	20	0	87.2	70 - 130				
2-Hexanone	30.99	2.0	40	0	77.5	70 - 130				
4-Chlorotoluene	17.05	1.0	20	0	85.2	70 - 130				
4-Isopropyltoluene	15.05	1.0	20	0	75.2	70 - 130				
4-Methyl-2-pentanone	31.68	2.0	40	0	79.2	70 - 130				
Acetone	27.6	2.0	40	0	69.0	70 - 130				S
Benzene	17.12	1.0	20	0	85.6	70 - 127				
Bromobenzene	16.82	1.0	20	0	84.1	70 - 115				
Bromochloromethane	17.76	1.0	20	0	88.8	70 - 127				
Bromodichloromethane	18.04	1.0	20	0	90.2	70 - 124				
Bromoform	18.1	1.0	20	0	90.5	70 - 129				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18081428-01MS** Units: **ug/L** Analysis Date: **02-Sep-2018 16:18**
Client ID: **LHSMW25-180827** Run ID: **VOA2_322791** SeqNo: **4714089** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromomethane	19.2	1.0	20	0	96.0	70 - 130				
Carbon disulfide	32.67	2.0	40	0	81.7	70 - 130				
Carbon tetrachloride	17.18	1.0	20	0	85.9	70 - 130				
Chlorobenzene	17.67	1.0	20	0	88.3	70 - 114				
Chloroethane	14.65	1.0	20	0	73.3	70 - 130				
Chloroform	16.44	1.0	20	0	82.2	70 - 125				
Chloromethane	13.62	1.0	20	0	68.1	70 - 130				S
cis-1,2-Dichloroethene	16.74	1.0	20	0	83.7	70 - 128				
cis-1,3-Dichloropropene	19.02	1.0	20	0	95.1	70 - 125				
Dibromochloromethane	18.13	1.0	20	0	90.6	70 - 124				
Dibromomethane	17.84	1.0	20	0	89.2	70 - 124				
Dichlorodifluoromethane	13.28	1.0	20	0	66.4	70 - 130				S
Ethylbenzene	18.54	1.0	20	0	92.7	70 - 124				
Hexachlorobutadiene	15.79	1.0	20	0	78.9	70 - 130				
Isopropylbenzene	16.89	1.0	20	0	84.4	70 - 130				
m,p-Xylene	37.64	2.0	40	0	94.1	70 - 130				
Methylene chloride	16.18	2.0	20	0	80.9	70 - 128				
Naphthalene	13.77	1.0	20	0	68.8	70 - 130				S
n-Butylbenzene	15.49	1.0	20	0	77.4	70 - 130				
n-Propylbenzene	17.01	1.0	20	0	85.1	70 - 130				
o-Xylene	18.35	1.0	20	0	91.7	70 - 124				
sec-Butylbenzene	15.38	1.0	20	0	76.9	70 - 130				
Styrene	17.55	1.0	20	0	87.8	70 - 130				
tert-Butylbenzene	17.19	1.0	20	0	86.0	70 - 130				
Tetrachloroethene	17.35	1.0	20	0	86.7	70 - 130				
Toluene	16.96	1.0	20	0	84.8	70 - 123				
trans-1,2-Dichloroethene	17.03	1.0	20	0	85.2	70 - 130				
trans-1,3-Dichloropropene	20.05	1.0	20	0	100	70 - 121				
Trichloroethene	17.93	1.0	20	0	89.6	70 - 129				
Trichlorofluoromethane	14.91	1.0	20	0	74.5	70 - 130				
Vinyl chloride	16.28	1.0	20	0	81.4	70 - 130				
Surr: 1,2-Dichloroethane-d4	*44.71*	*1.0*	*50*	*0*	*89.4*	*70 - 126*				
Surr: 4-Bromofluorobenzene	*50.72*	*1.0*	*50*	*0*	*101*	*81 - 113*				
Surr: Dibromofluoromethane	*47*	*1.0*	*50*	*0*	*94.0*	*77 - 123*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument:** VOA2 **Method:** SW8260

MS Sample ID: **HS18081428-01MS** Units: **ug/L** Analysis Date: **02-Sep-2018 16:18**
Client ID: **LHSMW25-180827** Run ID: **VOA2_322791** SeqNo: **4714089** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*44.57*	*1.0*	*50*	*0*	*89.1*	*82 - 127*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument:** VOA2 **Method:** SW8260

MSD Sample ID: **HS18081428-01MSD** Units: **ug/L** Analysis Date: **02-Sep-2018 16:42**
Client ID: **LHSMW25-180827** Run ID: **VOA2_322791** SeqNo: **4714090** 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	18.07	1.0	20	0	90.3	70 - 120	17.79	1.53	20	
1,1,1-Trichloroethane	15.99	1.0	20	0	80.0	70 - 130	15.78	1.34	20	
1,1,2,2-Tetrachloroethane	15.08	1.0	20	0	75.4	70 - 123	15.11	0.208	20	
1,1,2-Trichlor-1,2,2-trifluoroethane	13.86	1.0	20	0	69.3	70 - 130	14.4	3.85	20	S
1,1,2-Trichloroethane	17.28	1.0	20	0	86.4	70 - 117	16.98	1.72	20	
1,1-Dichloroethane	16.28	1.0	20	0	81.4	70 - 127	16.2	0.503	20	
1,1-Dichloroethene	15.18	1.0	20	0	75.9	70 - 130	15.71	3.4	20	
1,1-Dichloropropene	17.99	1.0	20	0	90.0	70 - 129	17.51	2.71	20	
1,2,3-Trichlorobenzene	15.45	1.0	20	0	77.2	70 - 130	15.36	0.574	20	
1,2,3-Trichloropropane	15.2	1.0	20	0	76.0	70 - 130	15.01	1.26	20	
1,2,4-Trichlorobenzene	16.32	1.0	20	0	81.6	70 - 125	16.17	0.907	20	
1,2,4-Trimethylbenzene	16.51	1.0	20	0	82.5	70 - 125	16.34	0.995	20	
1,2-Dibromo-3-chloropropane	13.9	1.0	20	0	69.5	70 - 130	14.27	2.6	20	S
1,2-Dibromoethane	18.17	1.0	20	0	90.9	70 - 124	17.77	2.24	20	
1,2-Dichlorobenzene	16.58	1.0	20	0	82.9	70 - 115	16.47	0.671	20	
1,2-Dichloroethane	17.83	1.0	20	0	89.1	70 - 127	17.52	1.75	20	
1,2-Dichloropropane	18.09	1.0	20	0	90.4	70 - 122	18.32	1.29	20	
1,3,5-Trimethylbenzene	15.79	1.0	20	0	78.9	70 - 126	15.67	0.723	20	
1,3-Dichlorobenzene	16.59	1.0	20	0	82.9	70 - 119	16.84	1.54	20	
1,3-Dichloropropane	17.6	1.0	20	0	88.0	70 - 121	17.08	3.05	20	
1,4-Dichlorobenzene	16.35	1.0	20	0	81.7	70 - 114	16.51	1.01	20	
2,2-Dichloropropane	18.82	1.0	20	0	94.1	70 - 130	19.27	2.37	20	
2-Butanone	29.09	2.0	40	0	72.7	70 - 130	29.53	1.48	20	
2-Chlorotoluene	17.3	1.0	20	0	86.5	70 - 130	17.45	0.863	20	
2-Hexanone	30.78	2.0	40	0	76.9	70 - 130	30.99	0.683	20	
4-Chlorotoluene	17.13	1.0	20	0	85.7	70 - 130	17.05	0.5	20	
4-Isopropyltoluene	15	1.0	20	0	75.0	70 - 130	15.05	0.33	20	
4-Methyl-2-pentanone	32.32	2.0	40	0	80.8	70 - 130	31.68	2.01	20	
Acetone	26.78	2.0	40	0	67.0	70 - 130	27.6	2.99	20	S
Benzene	17.14	1.0	20	0	85.7	70 - 127	17.12	0.125	20	
Bromobenzene	17.15	1.0	20	0	85.7	70 - 115	16.82	1.89	20	
Bromochloromethane	17.81	1.0	20	0	89.1	70 - 127	17.76	0.271	20	
Bromodichloromethane	18	1.0	20	0	90.0	70 - 124	18.04	0.224	20	
Bromoform	17.66	1.0	20	0	88.3	70 - 129	18.1	2.5	20	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18081428-01MSD** Units: **ug/L** Analysis Date: **02-Sep-2018 16:42**
Client ID: **LHSMW25-180827** Run ID: **VOA2_322791** SeqNo: **4714090** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Bromomethane	18.65	1.0	20	0	93.3	70 - 130	19.2	2.92	20	
Carbon disulfide	32.45	2.0	40	0	81.1	70 - 130	32.67	0.673	20	
Carbon tetrachloride	16.38	1.0	20	0	81.9	70 - 130	17.18	4.76	20	
Chlorobenzene	17.79	1.0	20	0	89.0	70 - 114	17.67	0.707	20	
Chloroethane	16.2	1.0	20	0	81.0	70 - 130	14.65	10	20	
Chloroform	16.49	1.0	20	0	82.4	70 - 125	16.44	0.281	20	
Chloromethane	13.41	1.0	20	0	67.0	70 - 130	13.62	1.57	20	S
cis-1,2-Dichloroethene	17.16	1.0	20	0	85.8	70 - 128	16.74	2.45	20	
cis-1,3-Dichloropropene	19.61	1.0	20	0	98.1	70 - 125	19.02	3.09	20	
Dibromochloromethane	17.65	1.0	20	0	88.2	70 - 124	18.13	2.68	20	
Dibromomethane	17.93	1.0	20	0	89.6	70 - 124	17.84	0.516	20	
Dichlorodifluoromethane	12.85	1.0	20	0	64.2	70 - 130	13.28	3.33	20	S
Ethylbenzene	18.57	1.0	20	0	92.8	70 - 124	18.54	0.158	20	
Hexachlorobutadiene	15.87	1.0	20	0	79.4	70 - 130	15.79	0.522	20	
Isopropylbenzene	16.87	1.0	20	0	84.3	70 - 130	16.89	0.136	20	
m,p-Xylene	37.47	2.0	40	0	93.7	70 - 130	37.64	0.453	20	
Methylene chloride	13.71	2.0	20	0	68.6	70 - 128	16.18	16.5	20	S
Naphthalene	14.82	1.0	20	0	74.1	70 - 130	13.77	7.38	20	
n-Butylbenzene	15.22	1.0	20	0	76.1	70 - 130	15.49	1.73	20	
n-Propylbenzene	16.88	1.0	20	0	84.4	70 - 130	17.01	0.813	20	
o-Xylene	18.51	1.0	20	0	92.6	70 - 124	18.35	0.909	20	
sec-Butylbenzene	15.26	1.0	20	0	76.3	70 - 130	15.38	0.789	20	
Styrene	17.73	1.0	20	0	88.6	70 - 130	17.55	0.991	20	
tert-Butylbenzene	17.2	1.0	20	0	86.0	70 - 130	17.19	0.0488	20	
Tetrachloroethene	17.63	1.0	20	0	88.1	70 - 130	17.35	1.58	20	
Toluene	16.78	1.0	20	0	83.9	70 - 123	16.96	1.05	20	
trans-1,2-Dichloroethene	17.44	1.0	20	0	87.2	70 - 130	17.03	2.38	20	
trans-1,3-Dichloropropene	19.43	1.0	20	0	97.1	70 - 121	20.05	3.18	20	
Trichloroethene	18.13	1.0	20	0	90.6	70 - 129	17.93	1.12	20	
Trichlorofluoromethane	14.19	1.0	20	0	70.9	70 - 130	14.91	4.95	20	
Vinyl chloride	15.4	1.0	20	0	77.0	70 - 130	16.28	5.58	20	
Surr: 1,2-Dichloroethane-d4	*46.29*	*1.0*	*50*	*0*	*92.6*	*70 - 126*	*44.71*	*3.47*	*20*	
Surr: 4-Bromofluorobenzene	*50.8*	*1.0*	*50*	*0*	*102*	*81 - 113*	*50.72*	*0.158*	*20*	
Surr: Dibromofluoromethane	*46.63*	*1.0*	*50*	*0*	*93.3*	*77 - 123*	*47*	*0.789*	*20*	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322791 **Instrument:** VOA2 **Method:** SW8260

MSD Sample ID: **HS18081428-01MSD** Units: **ug/L** Analysis Date: **02-Sep-2018 16:42**
Client ID: **LHSMW25-180827** Run ID: **VOA2_322791** SeqNo: **4714090** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Surr: Toluene-d8	*44.59*	*1.0*	*50*	*0*	*89.2*	*82 - 127*	*44.57*	*0.0382*	*20*	

The following samples were analyzed in this batch:

HS18081428-01	HS18081428-02	HS18081428-03	HS18081428-04
HS18081428-05	HS18081428-06	HS18081428-07	HS18081428-08
HS18081428-09	HS18081428-10	HS18081428-11	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: 132252 **Instrument: UV-2450** **Method: SM4500P E**

MBLK Sample ID: **MBLK-132252** Units: **mg/L** Analysis Date: **07-Sep-2018 15:40**
Client ID: Run ID: **UV-2450_323053** SeqNo: **4719314** PrepDate: **07-Sep-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.0250	0.0500								U

LCS Sample ID: **LCS-132252** Units: **mg/L** Analysis Date: **07-Sep-2018 15:40**
Client ID: Run ID: **UV-2450_323053** SeqNo: **4719313** PrepDate: **07-Sep-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.23	0.0500	0.25	0	92.0	80 - 120				

MS Sample ID: **HS18081504-01MS** Units: **mg/L** Analysis Date: **07-Sep-2018 15:40**
Client ID: Run ID: **UV-2450_323053** SeqNo: **4719311** PrepDate: **07-Sep-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.352	0.0500	0.25	0.084	107	80 - 120				

MSD Sample ID: **HS18081504-01MSD** Units: **mg/L** Analysis Date: **07-Sep-2018 15:40**
Client ID: Run ID: **UV-2450_323053** SeqNo: **4719312** PrepDate: **07-Sep-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total (As P)	0.353	0.0500	0.25	0.084	108	80 - 120	0.352	0.284	20	

The following samples were analyzed in this batch: HS18081428-07 HS18081428-08 HS18081428-09 HS18081428-10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322682 **Instrument: ICS2100** **Method: SW9056**

MBLK Sample ID: **WBLKW1-082918** Units: **mg/L** Analysis Date: **29-Aug-2018 13:11**
Client ID: Run ID: **ICS2100_322682** SeqNo: **4711838** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.500	0.500								U
Nitrogen, Nitrate (As N)	0.100	0.100								U
Nitrogen, Nitrite (As N)	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **WLCSW1-082918** Units: **mg/L** Analysis Date: **29-Aug-2018 13:26**
Client ID: Run ID: **ICS2100_322682** SeqNo: **4711839** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.25	0.500	20	0	101	80 - 120				
Nitrogen, Nitrate (As N)	3.992	0.100	4	0	99.8	80 - 120				
Nitrogen, Nitrite (As N)	4.227	0.100	4	0	106	80 - 120				
Sulfate	20.08	0.500	20	0	100	80 - 120				

LCSD Sample ID: **WLCSDW1-082918** Units: **mg/L** Analysis Date: **29-Aug-2018 13:40**
Client ID: Run ID: **ICS2100_322682** SeqNo: **4711840** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.75	0.500	20	0	98.8	80 - 120	20.25	2.47	20	
Nitrogen, Nitrate (As N)	3.883	0.100	4	0	97.1	80 - 120	3.992	2.77	20	
Nitrogen, Nitrite (As N)	4.134	0.100	4	0	103	80 - 120	4.227	2.22	20	
Sulfate	19.59	0.500	20	0	97.9	80 - 120	20.08	2.48	20	

MS Sample ID: **HS18081259-06MS** Units: **mg/L** Analysis Date: **29-Aug-2018 22:06**
Client ID: Run ID: **ICS2100_322682** SeqNo: **4711850** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	519.9	5.00	100	407.7	112	80 - 120				O
Nitrogen, Nitrate (As N)	19.35	1.00	20	0	96.8	80 - 120				
Nitrogen, Nitrite (As N)	20.21	1.00	20	0	101	80 - 120				
Sulfate	604.6	5.00	100	496.4	108	80 - 120				O

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322682 **Instrument: ICS2100** **Method: SW9056**

MS Sample ID: **HS18081252-01MS** Units: **mg/L** Analysis Date: **29-Aug-2018 14:53**
Client ID: Run ID: **ICS2100_322682** SeqNo: **4711842** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	39.28	0.500	10	30.37	89.1	80 - 120				
Nitrogen, Nitrate (As N)	8.746	0.100	2	6.941	90.2	80 - 120				
Nitrogen, Nitrite (As N)	2.007	0.100	2	-0.013	101	80 - 120				
Sulfate	219.6	0.500	10	217.9	17.5	80 - 120				SEO

MSD Sample ID: **HS18081259-06MSD** Units: **mg/L** Analysis Date: **29-Aug-2018 22:20**
Client ID: Run ID: **ICS2100_322682** SeqNo: **4711851** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	516.4	5.00	100	407.7	109	80 - 120	519.9	0.676	20	O
Nitrogen, Nitrate (As N)	19.03	1.00	20	0	95.1	80 - 120	19.35	1.69	20	
Nitrogen, Nitrite (As N)	20.1	1.00	20	0	101	80 - 120	20.21	0.531	20	
Sulfate	598.1	5.00	100	496.4	102	80 - 120	604.6	1.07	20	O

MSD Sample ID: **HS18081252-01MSD** Units: **mg/L** Analysis Date: **29-Aug-2018 15:07**
Client ID: Run ID: **ICS2100_322682** SeqNo: **4711843** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	40.16	0.500	10	30.37	97.9	80 - 120	39.28	2.21	20	
Nitrogen, Nitrate (As N)	8.92	0.100	2	6.941	99.0	80 - 120	8.746	1.97	20	
Nitrogen, Nitrite (As N)	2.055	0.100	2	-0.013	103	80 - 120	2.007	2.36	20	
Sulfate	223.9	0.500	10	217.9	60.5	80 - 120	219.6	1.94	20	SEO

The following samples were analyzed in this batch: HS18081428-07 HS18081428-08 HS18081428-09 HS18081428-10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322708 **Instrument: ManTech01** **Method: SM2320B**

MBLK Sample ID: **WBLKW1-180830** Units: **mg/L** Analysis Date: **30-Aug-2018 22:14**
Client ID: Run ID: **ManTech01_322708** SeqNo: **4712411** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **WLCS1-180830** Units: **mg/L** Analysis Date: **30-Aug-2018 22:22**
Client ID: Run ID: **ManTech01_322708** SeqNo: **4712412** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1062	5.00	1000	0	106	85 - 115				

LCSD Sample ID: **WLCSD1-180830** Units: **mg/L** Analysis Date: **30-Aug-2018 22:31**
Client ID: Run ID: **ManTech01_322708** SeqNo: **4712413** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1060	5.00	1000	0	106	85 - 115	1062	0.24	20	

DUP Sample ID: **HS18081249-08DUP** Units: **mg/L** Analysis Date: **30-Aug-2018 23:04**
Client ID: Run ID: **ManTech01_322708** SeqNo: **4712418** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	278	5.00					280	0.721	20	

The following samples were analyzed in this batch: HS18081428-07

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322912 **Instrument: ManTech01** **Method: SM2320B**

MBLK Sample ID: **WBLKW1-180904** Units: **mg/L** Analysis Date: **04-Sep-2018 17:08**
Client ID: Run ID: **ManTech01_322912** SeqNo: **4717516** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00								U

LCS Sample ID: **WLCS1-180904** Units: **mg/L** Analysis Date: **04-Sep-2018 17:17**
Client ID: Run ID: **ManTech01_322912** SeqNo: **4717517** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1072	5.00	1000	0	107	85 - 115				

LCSD Sample ID: **WLCSD1-180904** Units: **mg/L** Analysis Date: **04-Sep-2018 17:25**
Client ID: Run ID: **ManTech01_322912** SeqNo: **4717518** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1070	5.00	1000	0	107	85 - 115	1072	0.159	20	

DUP Sample ID: **HS18081504-01DUP** Units: **mg/L** Analysis Date: **04-Sep-2018 18:30**
Client ID: Run ID: **ManTech01_322912** SeqNo: **4717528** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	5.00	5.00					-4.71	0	20	U

The following samples were analyzed in this batch: HS18081428-08 HS18081428-09 HS18081428-10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

QC BATCH REPORT

Batch ID: R322991 **Instrument: WetChem_HS** **Method: E376.1**

MBLK Sample ID: **MBLK-322991** Units: **mg/L** Analysis Date: **04-Sep-2018 11:30**
Client ID: Run ID: **WetChem_HS_322991** SeqNo: **4718051** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	1.00	1.00								U

LCS Sample ID: **LCS-322991** Units: **mg/L** Analysis Date: **04-Sep-2018 11:30**
Client ID: Run ID: **WetChem_HS_322991** SeqNo: **4718052** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	21.72	1.00	25	0	86.9	80 - 120				

LCSD Sample ID: **LCSD-322991** Units: **mg/L** Analysis Date: **04-Sep-2018 11:30**
Client ID: Run ID: **WetChem_HS_322991** SeqNo: **4718053** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	21.92	1.00	25	0	87.7	80 - 120	21.72	0.917	20	

MS Sample ID: **HS18081473-03MS** Units: **mg/L** Analysis Date: **04-Sep-2018 11:30**
Client ID: Run ID: **WetChem_HS_322991** SeqNo: **4718055** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide	23.32	1.00	25	3.12	80.8	80 - 120				

The following samples were analyzed in this batch: HS18081428-07 HS18081428-08 HS18081428-09 HS18081428-10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US Date: 20-Sep-18

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: **HS18081428**

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
North Carolina	624-2018	31-Dec-2018
Arkansas	88-0356	27-Mar-2019
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193 2018-2019	30-Apr-2019
Illinois	004438	29-Jun-2019
Louisiana	03087	30-Jun-2019
Dept of Defense	L2231 Rev 3-30-2018	22-Dec-2018
Kentucky	123043 - 2018	30-Apr-2019
Kansas	E-10352 2018-2019	31-Jul-2019
Oklahoma	2018-156	31-Aug-2019

ALS Houston, US Date: 20-Sep-18

Sample Receipt Checklist

Client Name: CBI-Houston
Work Order: HS18081428
Date/Time Received: **29-Aug-2018 09:07**
Received by: **RPG**

Checklist completed by: *Raegen Giga* eSignature 29-Aug-2018 Date
Reviewed by: *RJ Modashia* eSignature 30-Aug-2018 Date

Matrices: **GW**
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 ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
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):	1.2c/0.9c uc/c	IR 25	
Cooler(s)/Kit(s):	3125		
Date/Time sample(s) sent to storage:	08/29/2018 18:01		
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: vial 3 of 3 for sample ID 46WW06-180827 = 1cm headspace

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

HS18081428

Aptim Environmental & Infrastucture, Inc.

LHAAP-37 501032

APTIM

COC ID: 46-AUG2018-GW-ALSHT-1808 27

TURNAROUND TIME: normal

PROJECT/CLIENT INFO			
Facility Name	Longhorn AAP		
Project Number	501032		
	LHAAP-37		
Address	1203-B East Grand Avenue		
	PMB 202		
City	Marshall	State	TX
Postal Code	75670	Country	USA
Phone Number	713.243.7264		
Project Manager	Praveen Srivastav		

LABORATORY			
Lab Name	ALS Laboratories		
Lab Contact	RJ Modashia		
Email	RJ.Modashia@alsglobal.com		
Address	10450 Stancliff Rd., Suite 210		
City	Houston	State	TX
Postal Code	77099	Country	USA
Phone Number	281.575.2279 or 281.530.5656		

Email Report To	Sharon.Pennington@CBIFederalServices.com		
Mail Reports To	Sharon Pennington		
Address	2410 Cherahala Blvd.		
City	Knoxville	State	TN
Postal Code	37932	Country	USA
Shipping Company			

SAMPLE DETAILS / ANALYSIS REQUESTED

Sample ID	Location	Start Depth	End Depth	Depth Unit	Field Matrix	Date	Time (24hr)	# Of Cont.	VOCs in Water by 8260B	Carbon Dioxide in Water by RSK175	Methane, Ethane, Ethene in Water by RSK175	Alkalinity in Water by E310.1 & Anions in Water by E300.0	TOC in Water by E415.1	Sulfide in Water by E376.1	Phosphorous, total in Water by 365.2	Iron, total, in Water by 6020A	Iron, dissolved, & Manganese, dissolved, in Water
LHSmw25-180827		31.33	31.55		WG	8/27/18	0905	3	X								
46ww07-180827		31.15	31.37		WG	8/27/18	1000	3	X								
46ww08-180827		22.76	22.99		WG	8/27/18	1055	3	X								
46ww08-180827-FD		22.76	22.99		WG	8/27/18	1055	3	X								
46ww06-180827		41.10	41.37		WG	8/27/18	1200	3	X								
46ww03-180827		42.05	42.24		WG	8/27/18	1310	3	X								
46ww05-180828		39.25	39.47		WG	8/28/18	0850	15	X	X	X	X	X	X	X	X	X
46ww16-180828		38.62	38.82		WG	8/28/18	1080	15	X	X	X	X	X	X	X	X	X
46ww09-180828		38.81	39.05		WG	8/28/18	1135	15	X	X	X	X	X	X	X	X	X
LHSmw19-180828		26.61	26.88		WG	8/28/18	1305	15	X	X	X	X	X	X	X	X	X
TRIP BLANK					W	8/28/18		2	X								

ADDITIONAL COMMENTS/SPECIAL INSTRUCTIONS	RELINQUISHED BY/AFFILIATION	DATE/TIME	ACCEPTED BY/AFFILIATION	DATE/TIME
Anions should include chloride, nitrate, nitrite, and sulfate.	Scott Beesinger / BHATE	8/28/18 1430	R Cuga 8/29/18	09-07 AM
			Cooler # 3125 TEMP.	1.2c IR#25 CF-0.3c.

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

3125

CUSTODY SEAL

Date: 8/28/18 Time: 1430
Name: Scott Beesinger
Company: SHAW

Seal Broken By: SM
Date: 08/29/18

3125 AUG 29 2018

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP 46 - RJ

3125

RMA:

546C1/3309/53

FedEx Express

J17101610200

TRK# 0221 4380 9531 7362

RETURNS MON-SAT
PRIORITY OVERNIGHT

FedEx
TRK# 0221 4380 9531 7362

WED - 29 AUG 10:30A
PRIORITY OVERNIGHT

77099
TX-US
IAH

AB SGRA

ID 162705 28AUG18 GGGA 546C1/3309/0C8A

Volatile Organics Data Package

Aptim Environmental & Infrastucture, Inc.

Project: LHAAP-46 501032

ALS WO#HS18081428

ALS Houston, US Date: 09-Oct-18

Form 2A - System Monitoring Compound Recovery

Client: Aptim Environmental & Infrastucture, Inc. Run ID: VOA2_322791
Project: LHAAP-46 501032 Instrument: VOA2
WorkOrder: HS18081428 Method: SW8260

	Result	Spike	Recovery	Low	High	Flag
Sample ID: HS18081428-01 (4714088)			%REC	DF:1	02-Sep-2018 15:53	
1,2-Dichloroethane-d4	44.09	50.00	88.2	70	126	
4-Bromofluorobenzene	49.33	50.00	98.7	81	113	
Dibromofluoromethane	47.59	50.00	95.2	77	123	
Toluene-d8	45.60	50.00	91.2	82	127	
Sample ID: HS18081428-01MSD (4714090)			%REC	DF:1	02-Sep-2018 16:42	
1,2-Dichloroethane-d4	46.29	50.00	92.6	70	126	
4-Bromofluorobenzene	50.80	50.00	102	81	113	
Dibromofluoromethane	46.63	50.00	93.3	77	123	
Toluene-d8	44.59	50.00	89.2	82	127	
Sample ID: HS18081428-03 (4714092)			%REC	DF:1	02-Sep-2018 17:31	
1,2-Dichloroethane-d4	44.44	50.00	88.9	70	126	
4-Bromofluorobenzene	47.83	50.00	95.7	81	113	
Dibromofluoromethane	46.82	50.00	93.6	77	123	
Toluene-d8	45.37	50.00	90.7	82	127	
Sample ID: HS18081428-05 (4714094)			%REC	DF:1	02-Sep-2018 18:20	
1,2-Dichloroethane-d4	44.97	50.00	89.9	70	126	
4-Bromofluorobenzene	47.84	50.00	95.7	81	113	
Dibromofluoromethane	47.21	50.00	94.4	77	123	
Toluene-d8	45.91	50.00	91.8	82	127	
Sample ID: HS18081428-07 (4714096)			%REC	DF:1	02-Sep-2018 19:08	
1,2-Dichloroethane-d4	45.81	50.00	91.6	70	126	
4-Bromofluorobenzene	49.23	50.00	98.5	81	113	
Dibromofluoromethane	47.72	50.00	95.4	77	123	
Toluene-d8	45.59	50.00	91.2	82	127	
Sample ID: HS18081428-09 (4714098)			%REC	DF:1	02-Sep-2018 19:57	
1,2-Dichloroethane-d4	44.96	50.00	89.9	70	126	
4-Bromofluorobenzene	50.59	50.00	101	81	113	
Dibromofluoromethane	47.98	50.00	96.0	77	123	
Toluene-d8	44.17	50.00	88.3	82	127	
Sample ID: HS18081428-11 (4714100)			%REC	DF:1	02-Sep-2018 20:46	
1,2-Dichloroethane-d4	44.89	50.00	89.8	70	126	
4-Bromofluorobenzene	48.64	50.00	97.3	81	113	
Dibromofluoromethane	48.42	50.00	96.8	77	123	
Toluene-d8	45.30	50.00	90.6	82	127	

ALS Houston, US Date: 09-Oct-18

Form 2A - System Monitoring Compound Recovery

Client: Aptim Environmental & Infrastucture, Inc. Run ID: VOA2_322791
Project: LHAAP-46 501032 Instrument: VOA2
WorkOrder: HS18081428 Method: SW8260

	Result	Spike	Recovery	Low	High	Flag
Sample ID: HS18081428-10 (4714099)			%REC	DF:1	02-Sep-2018 20:22	
1,2-Dichloroethane-d4	44.39	50.00	88.8	70	126	
4-Bromofluorobenzene	49.03	50.00	98.1	81	113	
Dibromofluoromethane	49.28	50.00	98.6	77	123	
Toluene-d8	46.14	50.00	92.3	82	127	
Sample ID: HS18081428-08 (4714097)			%REC	DF:1	02-Sep-2018 19:33	
1,2-Dichloroethane-d4	44.08	50.00	88.2	70	126	
4-Bromofluorobenzene	48.98	50.00	98.0	81	113	
Dibromofluoromethane	46.70	50.00	93.4	77	123	
Toluene-d8	45.70	50.00	91.4	82	127	
Sample ID: HS18081428-06 (4714095)			%REC	DF:1	02-Sep-2018 18:44	
1,2-Dichloroethane-d4	44.45	50.00	88.9	70	126	
4-Bromofluorobenzene	48.42	50.00	96.8	81	113	
Dibromofluoromethane	48.41	50.00	96.8	77	123	
Toluene-d8	45.62	50.00	91.2	82	127	
Sample ID: HS18081428-04 (4714093)			%REC	DF:1	02-Sep-2018 17:55	
1,2-Dichloroethane-d4	44.16	50.00	88.3	70	126	
4-Bromofluorobenzene	48.76	50.00	97.5	81	113	
Dibromofluoromethane	46.89	50.00	93.8	77	123	
Toluene-d8	46.44	50.00	92.9	82	127	
Sample ID: HS18081428-02 (4714091)			%REC	DF:1	02-Sep-2018 17:06	
1,2-Dichloroethane-d4	42.79	50.00	85.6	70	126	
4-Bromofluorobenzene	48.73	50.00	97.5	81	113	
Dibromofluoromethane	48.14	50.00	96.3	77	123	
Toluene-d8	45.30	50.00	90.6	82	127	
Sample ID: HS18081428-01MS (4714089)			%REC	DF:1	02-Sep-2018 16:18	
1,2-Dichloroethane-d4	44.71	50.00	89.4	70	126	
4-Bromofluorobenzene	50.72	50.00	101	81	113	
Dibromofluoromethane	47.00	50.00	94.0	77	123	
Toluene-d8	44.57	50.00	89.1	82	127	
Sample ID: VBLKW-180830 (4714087)			%REC	DF:1	02-Sep-2018 15:29	
1,2-Dichloroethane-d4	43.69	50.00	87.4	70	123	
4-Bromofluorobenzene	48.04	50.00	96.1	82	115	
Dibromofluoromethane	47.44	50.00	94.9	73	126	
Toluene-d8	45.48	50.00	91.0	81	120	

ALS Houston, US Date: 09-Oct-18

Form 2A - System Monitoring Compound Recovery

Client: Aptim Environmental & Infrastucture, Inc. Run ID: VOA2_322791
Project: LHAAP-46 501032 Instrument: VOA2
WorkOrder: HS18081428 Method: SW8260

	Result	Spike	Recovery	Low	High	Flag
Sample ID: VLCSW-180830 (4714086)			%REC	DF:1	02-Sep-2018 15:04	
1,2-Dichloroethane-d4	45.68	50.00	91.4	70	130	
4-Bromofluorobenzene	50.57	50.00	101	82	115	
Dibromofluoromethane	47.07	50.00	94.1	73	126	
Toluene-d8	44.72	50.00	89.4	81	120	

ALS Group USA, Corp Date: 09-Oct-18

Form 3 - Method Spike Recovery

Client: Aptim Environmental & Infrastucture, Inc. Dept: GCMS Volatiles
Project: LHAAP-46 501032 Date Analyzed: 03-Aug-2018 02:56
WorkOrder: HS18081428 Units: µg/L

Lab Sample ID: VSTD050 **Prep Date:** **Analysis Method:** SW8260
Instrument ID: VOA2

Analyte	Spike Added	Sample Amount	% Rec	QC Limits Rec.	Flag
1,1,1,2-Tetrachloroethane	50.00	45.87	91.7	80 - 120	
1,1,1-Trichloroethane	50.00	45.41	90.8	80 - 120	
1,1,2,2-Tetrachloroethane	50.00	44.71	89.4	80 - 120	
1,1,2-Trichlor-1,2,2-trifluoroethane	50.00	49.93	99.9	80 - 120	
1,1,2-Trichloroethane	50.00	46.39	92.8	80 - 120	
1,1-Dichloroethane	50.00	47.27	94.5	80 - 120	
1,1-Dichloroethene	50.00	46.98	94.0	80 - 120	
1,1-Dichloropropene	50.00	50.82	102	80 - 120	
1,2,3-Trichlorobenzene	50.00	49.05	98.1	80 - 120	
1,2,3-Trichloropropane	50.00	45.48	91.0	80 - 120	
1,2,4-Trichlorobenzene	50.00	48.81	97.6	80 - 120	
1,2,4-Trimethylbenzene	50.00	52.06	104	80 - 120	
1,2-Dibromo-3-chloropropane	50.00	47.74	95.5	80 - 120	
1,2-Dibromoethane	50.00	49.13	98.3	80 - 120	
1,2-Dichlorobenzene	50.00	45.29	90.6	80 - 120	
1,2-Dichloroethane	50.00	48.45	96.9	80 - 120	
1,2-Dichloropropane	50.00	47.42	94.8	80 - 120	
1,3,5-Trimethylbenzene	50.00	46.14	92.3	80 - 120	
1,3-Dichlorobenzene	50.00	45.90	91.8	80 - 120	
1,3-Dichloropropane	50.00	46.95	93.9	80 - 120	
1,4-Dichlorobenzene	50.00	47.38	94.8	80 - 120	
2,2-Dichloropropane	50.00	45.03	90.1	80 - 120	
2-Butanone	100.0	104.1	104	80 - 120	
2-Chlorotoluene	50.00	51.49	103	80 - 120	
2-Hexanone	100.0	98.60	98.6	80 - 120	
4-Chlorotoluene	50.00	52.01	104	80 - 120	
4-Isopropyltoluene	50.00	42.38	84.8	80 - 120	
4-Methyl-2-pentanone	100.0	94.43	94.4	80 - 120	
Acetone	100.0	103.9	104	80 - 120	
Benzene	50.00	44.96	89.9	80 - 120	
Bromobenzene	50.00	45.96	91.9	80 - 120	
Bromochloromethane	50.00	51.74	103	80 - 120	
Bromodichloromethane	50.00	47.85	95.7	80 - 120	
Bromoform	50.00	49.44	98.9	80 - 120	
Bromomethane	50.00	57.98	116	80 - 120	
Carbon disulfide	100.0	95.78	95.8	80 - 120	
Carbon tetrachloride	50.00	50.25	100	80 - 120	
Chlorobenzene	50.00	45.39	90.8	80 - 120	
Chloroethane	50.00	45.44	90.9	80 - 120	
Chloroform	50.00	46.52	93.0	80 - 120	

* = Outside regulatory limit

ALS Group USA, Corp Date: 09-Oct-18

Form 3 - Method Spike Recovery

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Dept: GCMS Volatiles
Date Analyzed: 03-Aug-2018 02:56
Units: µg/L

Lab Sample ID: VSTD050 **Prep Date:** **Analysis Method:** SW8260
Instrument ID: VOA2

Analyte	Spike Added	Sample Amount	% Rec	QC Limits Rec.	Flag
Chloromethane	50.00	46.41	92.8	80 - 120	
cis-1,2-Dichloroethene	50.00	48.79	97.6	80 - 120	
cis-1,3-Dichloropropene	50.00	51.06	102	80 - 120	
Dibromochloromethane	50.00	48.10	96.2	80 - 120	
Dibromomethane	50.00	51.22	102	80 - 120	
Dichlorodifluoromethane	50.00	46.65	93.3	80 - 120	
Ethylbenzene	50.00	51.06	102	80 - 120	
Hexachlorobutadiene	50.00	44.83	89.7	80 - 120	
Isopropylbenzene	50.00	42.96	85.9	80 - 120	
m,p-Xylene	100.0	105.3	105	80 - 120	
Methylene chloride	50.00	50.43	101	80 - 120	
n-Butylbenzene	50.00	44.30	88.6	80 - 120	
n-Propylbenzene	50.00	51.59	103	80 - 120	
Naphthalene	50.00	51.47	103	80 - 120	
o-Xylene	50.00	52.29	105	80 - 120	
sec-Butylbenzene	50.00	42.17	84.3	80 - 120	
Styrene	50.00	47.12	94.2	80 - 120	
tert-Butylbenzene	50.00	51.77	104	80 - 120	
Tetrachloroethene	50.00	43.09	86.2	80 - 120	
Toluene	50.00	43.58	87.2	80 - 120	
trans-1,2-Dichloroethene	50.00	49.48	99.0	80 - 120	
trans-1,3-Dichloropropene	50.00	52.88	106	80 - 120	
Trichloroethene	50.00	46.23	92.5	80 - 120	
Trichlorofluoromethane	50.00	45.52	91.0	80 - 120	
Vinyl chloride	50.00	45.84	91.7	80 - 120	

* = Outside regulatory limit

ALS Houston, US Date: 09-Oct-18

Form 4 - Method Blank Summary

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS14080841

Instrument: VOA2
Method: SW8260

Run ID: VOA2_322791

Client Samp ID	Samp ID	File ID	Date Analyzed
VBLKW-180830	VBLKW-180830	D090206.D	02-Sep-2018 15:29
VLCSW-180830	VLCSW-180830	D090205.D	02-Sep-2018 15:04
LHSMW25-180827	HS18081428-01	D090207.D	02-Sep-2018 15:53
HS18081428-01MS	HS18081428-01MS	D090208.D	02-Sep-2018 16:18
HS18081428-01MSD	HS18081428-01MSD	D090209.D	02-Sep-2018 16:42
46WW07-180827	HS18081428-02	D090210.D	02-Sep-2018 17:06
46WW08-180827	HS18081428-03	D090211.D	02-Sep-2018 17:31
46WW08-180827-FD	HS18081428-04	D090212.D	02-Sep-2018 17:55
46WW06-180827	HS18081428-05	D090213.D	02-Sep-2018 18:20
46WW03-180827	HS18081428-06	D090214.D	02-Sep-2018 18:44
46WW05-180828	HS18081428-07	D090215.D	02-Sep-2018 19:08
46WW16-180828	HS18081428-08	D090216.D	02-Sep-2018 19:33
46WW09-180828	HS18081428-09	D090217.D	02-Sep-2018 19:57
LHSMW19--180828	HS18081428-10	D090218.D	02-Sep-2018 20:22
46TB01-180827	HS18081428-11	D090219.D	02-Sep-2018 20:46
ZZZZZZ	HS18081453-01	D090220.D	02-Sep-2018 21:11
ZZZZZZ	HS18081453-02	D090221.D	02-Sep-2018 21:35
ZZZZZZ	HS18081453-04	D090222.D	02-Sep-2018 21:59
ZZZZZZ	HS18081453-05	D090223.D	02-Sep-2018 22:24
ZZZZZZ	HS18081453-03	D090224.D	02-Sep-2018 22:48
ZZZZZZ	HS18081453-03	D090225.D	02-Sep-2018 23:15
ZZZZZZ	HS18081453-06	D090226.D	02-Sep-2018 23:40
ZZZZZZ	HS18081453-06	D090227.D	03-Sep-2018 00:07

Form 5 - Volatile Instrument Performance Check
BROMOFLUOROBENZENE (BFB)

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Lab File ID: E080201.D
Instrument ID: VOA2
Injection Date: 02-Aug-2018
Injection Time: 9:45 PM

m/e	Ion Abundance Criterion	% Relative Abundance
50	15.0 - 40.0% of mass 95	18.7
75	30.0 - 60.0% of mass 95	46.1
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0 (0.0) 1
174	50.0 - 120.0% of mass 95	83.8
175	4.0 - 9.0% of mass 174	6.4 (7.6) 1
176	93.0 - 101.0% of mass 174	82.8 (98.9) 1
177	5.0 - 9.0% of mass 176	5.0 (6.1) 2

1-Value is % mass 174 2-Value is % mass 176

This check applies to following Samples, MS, MSD, Blanks and Standards

EPA Sample No.	Lab Sample ID	Lab File ID	Date Analyzed
VSTD0005	VSTD0005	E080203.D	02-Aug-2018 22:37
VSTD001	VSTD001	E080204.D	02-Aug-2018 23:03
VSTD002	VSTD002	E080205.D	02-Aug-2018 23:29
VSTD005	VSTD005	E080206.D	02-Aug-2018 23:55
VSTD010	VSTD010	E080207.D	03-Aug-2018 00:21
VSTD020	VSTD020	E080208.D	03-Aug-2018 00:47
VSTD050	VSTD050	E080209.D	03-Aug-2018 01:12
VSTD100	VSTD100	E080210.D	03-Aug-2018 01:38
VSTD200	VSTD200	E080211.D	03-Aug-2018 02:04
VSTD050	VSTD050	E080213.D	03-Aug-2018 02:56

ALS Houston, US Date: 09-Oct-18

Form 5 - Volatile Instrument Performance Check
BROMOFLUOROBENZENE (BFB)

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Lab File ID: D090201.D
Instrument ID: VOA2
Injection Date: 02-Sep-2018
Injection Time: 1:16 PM

m/e	Ion Abundance Criterion	% Relative Abundance
50	15.0 - 40.0% of mass 95	18.9
75	30.0 - 60.0% of mass 95	43.8
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.7
173	Less than 2.0% of mass 174	0.0 (0.0) 1
174	50.0 - 120.0% of mass 95	84.1
175	4.0 - 9.0% of mass 174	7.5 (8.9) 1
176	93.0 - 101.0% of mass 174	82.8 (98.4) 1
177	5.0 - 9.0% of mass 176	6.5 (7.8) 2

1-Value is % mass 174 2-Value is % mass 176

This check applies to following Samples, MS, MSD, Blanks and Standards

EPA Sample No.	Lab Sample ID	Lab File ID	Date Analyzed
CCV	CCV	D090203.D	02-Sep-2018 14:15
CCB	CCB	D090204.D	02-Sep-2018 14:40
VLCSW-180830	VLCSW-180830	D090205.D	02-Sep-2018 15:04
VBLKW-180830	VBLKW-180830	D090206.D	02-Sep-2018 15:29
HS18081428-01	HS18081428-01	D090207.D	02-Sep-2018 15:53
HS18081428-01MS	HS18081428-01MS	D090208.D	02-Sep-2018 16:18
HS18081428-01MSD	HS18081428-01MSD	D090209.D	02-Sep-2018 16:42
HS18081428-02	HS18081428-02	D090210.D	02-Sep-2018 17:06
HS18081428-03	HS18081428-03	D090211.D	02-Sep-2018 17:31
HS18081428-04	HS18081428-04	D090212.D	02-Sep-2018 17:55
HS18081428-05	HS18081428-05	D090213.D	02-Sep-2018 18:20
HS18081428-06	HS18081428-06	D090214.D	02-Sep-2018 18:44
HS18081428-07	HS18081428-07	D090215.D	02-Sep-2018 19:08
HS18081428-08	HS18081428-08	D090216.D	02-Sep-2018 19:33
HS18081428-09	HS18081428-09	D090217.D	02-Sep-2018 19:57
HS18081428-10	HS18081428-10	D090218.D	02-Sep-2018 20:22
HS18081428-11	HS18081428-11	D090219.D	02-Sep-2018 20:46
ZZZZZZZZZZ-01	ZZZZZZZZZZ-01	D090220.D	02-Sep-2018 21:11
ZZZZZZZZZZ-02	ZZZZZZZZZZ-02	D090221.D	02-Sep-2018 21:35
ZZZZZZZZZZ-04	ZZZZZZZZZZ-04	D090222.D	02-Sep-2018 21:59
ZZZZZZZZZZ-05	ZZZZZZZZZZ-05	D090223.D	02-Sep-2018 22:24
ZZZZZZZZZZ-03	ZZZZZZZZZZ-03	D090224.D	02-Sep-2018 22:48
ZZZZZZZZZZ-03	ZZZZZZZZZZ-03	D090225.D	02-Sep-2018 23:15
ZZZZZZZZZZ-06	ZZZZZZZZZZ-06	D090226.D	02-Sep-2018 23:40
ZZZZZZZZZZ-06	ZZZZZZZZZZ-06	D090227.D	03-Sep-2018 00:07
CCV_END	CCV_END	D090228.D	03-Sep-2018 00:31

Form 6 - Initial Calibration Data

Client: Aptim Environmental & Infrastucture, Inc. **Calibrationtion Date:** 8/2/2018 10:37:00 PM

Project: LHAAP-46 501032 **Run ID:** VOA2_322791 **CAL Run ID:** VOA2_321352

WorkOrder: HS18081428

Sample ID	File ID	Analysis Date
VSTD0005	E080203.D	02-Aug-2018 22:37
VSTD001	E080204.D	02-Aug-2018 23:03
VSTD002	E080205.D	02-Aug-2018 23:29
VSTD005	E080206.D	02-Aug-2018 23:55
VSTD010	E080207.D	03-Aug-2018 00:21
VSTD020	E080208.D	03-Aug-2018 00:47
VSTD050	E080209.D	03-Aug-2018 01:12
VSTD100	E080210.D	03-Aug-2018 01:38
VSTD200	E080211.D	03-Aug-2018 02:04

Form 6 - Initial Calibration Data

Client: Aptim Environmental & Infrastucture, Inc. **Calibrationtion Date:** 8/2/2018 10:37:00 PM
Project: LHAAP-46 501032 **Run ID:** VOA2_322791 **CAL Run ID:** VOA2_321352
WorkOrder: HS18081428

Compound

1,1,1,2-Tetrachloroethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.41035	2	0.42005	3	0.41648	4	0.4211
5		0.39487	6	0.40652	7	0.39222	8	0.38209
9		0.35562	10	0				

1,1,1-Trichloroethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.87501	2	0.83008	3	0.80967	4	0.88219
5		0.82194	6	0.8513	7	0.82966	8	0.78272
9		0.74612	10	0				

1,1,2,2-Tetrachloroethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		1.65604	2	1.49391	3	1.43905	4	1.45622
5		1.35893	6	1.34078	7	1.27833	8	1.23563
9		1.14599	10	0				

1,1,2-Trichlor-1,2,2-trifluoroethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.48834	2	0.42527	3	0.44132	4	0.49376
5		0.44252	6	0.45119	7	0.43718	8	0.41647
9		0.40538	10	0				

1,1,2-Trichloroethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.37706	2	0.35155	3	0.3294	4	0.34821
5		0.33232	6	0.33886	7	0.31866	8	0.31189
9		0.29213	10	0				

1,1-Dichloroethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		1.18416	2	1.22395	3	1.16654	4	1.21164
5		1.13945	6	1.22345	7	1.18441	8	1.13788
9		1.08615	10	0				

1,1-Dichloroethene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.49306	2	0.44836	3	0.4783	4	0.51377
5		0.4587	6	0.47423	7	0.48594	8	0.46474
9		0.44714	10	0				

1,1-Dichloropropene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.59629	2	0.55473	3	0.49342	4	0.43885
5		0.4456	6	0.44954	7	0.428	8	0.40499
9		0.38604	10	0				

1,2,3-Trichlorobenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		156	2	1033	3	3463	4	14360
5		31046	6	68289	7	174186	8	364804
9		733571	10	0				

Form 6 - Initial Calibration Data

Client: Aptim Environmental & Infrastucture, Inc. **Calibrationtion Date:** 8/2/2018 10:37:00 PM
Project: LHAAP-46 501032 **Run ID:** VOA2_322791 **CAL Run ID:** VOA2_321352
WorkOrder: HS18081428

Compound

1,2,3-Trichloropropane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		1.42585	2	1.41596	3	1.11539	4	1.36964
5		1.27703	6	1.27499	7	1.24811	8	1.23789
9		1.15785	10	0				

1,2,4-Trichlorobenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		324	2	1524	3	4507	4	15896
5		35394	6	79194	7	202102	8	419490
9		843176	10	0				

1,2,4-Trimethylbenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		4.29791	2	4.00516	3	3.60575	4	3.74774
5		3.38911	6	3.37741	7	3.21568	8	3.02044
9		2.76187	10	0				

1,2-Dibromo-3-chloropropane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		182	2	601	3	1223	4	3795
5		8218	6	17461	7	44045	8	89341
9		177752	10	0				

1,2-Dibromoethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.44212	2	0.37755	3	0.38073	4	0.40664
5		0.407	6	0.4122	7	0.40521	8	0.3948
9		0.37411	10	0				

1,2-Dichlorobenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		2.13679	2	1.9937	3	1.87778	4	1.98458
5		1.82896	6	1.88079	7	1.78448	8	1.69278
9		1.56076	10	0				

1,2-Dichloroethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.47841	2	0.48315	3	0.46596	4	0.48259
5		0.45022	6	0.4774	7	0.47078	8	0.45758
9		0.42537	10	0				

1,2-Dichloropropane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.48608	2	0.47448	3	0.44783	4	0.46805
5		0.4457	6	0.4438	7	0.41509	8	0.40191
9		0.37497	10	0				

1,3,5-Trimethylbenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		7639	2	13813	3	25926	4	68557
5		125497	6	251935	7	598561	8	1105601
9		2054572	10	0				

Form 6 - Initial Calibration Data

Client: Aptim Environmental & Infrastucture, Inc. **Calibrationtion Date:** 8/2/2018 10:37:00 PM
Project: LHAAP-46 501032 **Run ID:** VOA2_322791 **CAL Run ID:** VOA2_321352
WorkOrder: HS18081428

Compound

1,3-Dichlorobenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		2.18939	2	2.01891	3	1.94532	4	2.05911
5		1.84092	6	1.92709	7	1.86746	8	1.79037
9		1.67746	10	0				

1,3-Dichloropropane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.76087	2	0.6693	3	0.62889	4	0.68841
5		0.64826	6	0.65869	7	0.63298	8	0.61344
9		0.56752	10	0				

1,4-Dichlorobenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		2.13906	2	1.92492	3	1.76119	4	1.87502
5		1.70027	6	1.77434	7	1.77351	8	1.73726
9		1.6521	10	0				

2,2-Dichloropropane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.82697	2	0.79929	3	0.78642	4	0.79838
5		0.72117	6	0.78617	7	0.77347	8	0.72741
9		0.6979	10	0				

2-Butanone

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.31328	2	0.29706	3	0.32481	4	0.32992
5		0.32781	6	0.34504	7	0.35305	8	0.3414
9		0.32379	10	0				

2-Chlorotoluene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		6563	2	11918	3	24113	4	59309
5		110512	6	216695	7	525182	8	985891
9		1862121	10	0				

2-Hexanone

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.30189	2	0.29616	3	0.32581	4	0.30667
5		0.29679	6	0.32181	7	0.31723	8	0.28766
9		0.26552	10	0				

4-Chlorotoluene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		7201	2	12577	3	24680	4	63178
5		119427	6	236021	7	561756	8	1068381
9		2027600	10	0				

4-Isopropyltoluene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		3.87824	2	3.44118	3	3.3021	4	3.61599
5		3.1762	6	3.3042	7	3.1367	8	2.95072
9		2.74178	10	0				

Form 6 - Initial Calibration Data

Client: Aptim Environmental & Infrastucture, Inc. **Calibrationtion Date:** 8/2/2018 10:37:00 PM
Project: LHAAP-46 501032 **Run ID:** VOA2_322791 **CAL Run ID:** VOA2_321352
WorkOrder: HS18081428

Compound

4-Methyl-2-pentanone

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.58311	2	0.557	3	0.51702	4	0.55823
5		0.54382	6	0.55201	7	0.52405	8	0.49631
9		0.44482	10	0				

Acetone

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		6100	2	7044	3	10008	4	16285
5		30917	6	53329	7	130892	8	252143
9		496304	10	0				

Benzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		1.77911	2	1.57727	3	1.48212	4	1.55447
5		1.4481	6	1.47379	7	1.38705	8	1.31259
9		1.20003	10	0				

Bromobenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		1.33875	2	1.30305	3	1.18362	4	1.18033
5		1.09763	6	1.12424	7	1.07409	8	1.03862
9		0.9731	10	0				

Bromochloromethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.2679	2	0.27336	3	0.23476	4	0.30159
5		0.29433	6	0.30729	7	0.30497	8	0.2991
9		0.26862	10	0				

Bromodichloromethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.56313	2	0.50405	3	0.47473	4	0.49087
5		0.48672	6	0.49748	7	0.47994	8	0.46896
9		0.43104	10	0				

Bromoform

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.32375	2	0.3008	3	0.31213	4	0.3205
5		0.31342	6	0.32412	7	0.32607	8	0.3223
9		0.30068	10	0				

Bromomethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		2819	2	4268	3	8171	4	17293
5		28504	6	50810	7	116303	8	210508
9		407619	10	0				

Carbon disulfide

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		1.13583	2	1.02293	3	0.98027	4	1.07817
5		0.99623	6	1.04189	7	1.02909	8	0.97727
9		0.94304	10	0				

Form 6 - Initial Calibration Data

Client: Aptim Environmental & Infrastucture, Inc. **Calibrationtion Date:** 8/2/2018 10:37:00 PM
Project: LHAAP-46 501032 **Run ID:** VOA2_322791 **CAL Run ID:** VOA2_321352
WorkOrder: HS18081428

Compound

Carbon tetrachloride

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		3736	2	4799	3	9718	4	23166
5		43671	6	86686	7	207474	8	390913
9		801906	10	0				

Chlorobenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		1.24933	2	1.18374	3	1.08635	4	1.13216
5		1.01985	6	1.04658	7	1.01903	8	0.95626
9		0.87778	10	0				

Chloroethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		2123	2	3511	3	7002	4	15822
5		29696	6	57430	7	131496	8	252026
9		461334	10	0				

Chloroform

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		1.15116	2	0.99076	3	0.9377	4	1.04331
5		0.98025	6	0.98755	7	0.9625	8	0.92676
9		0.88053	10	0				

Chloromethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		1.34803	2	1.21502	3	1.11254	4	1.18992
5		1.09219	6	1.1287	7	1.04244	8	0.9682
9		0.93192	10	0				

cis-1,2-Dichloroethene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.64572	2	0.6069	3	0.62073	4	0.63986
5		0.63714	6	0.66901	7	0.6369	8	0.61188
9		0.59039	10	0				

cis-1,3-Dichloropropene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.57061	2	0.55562	3	0.56136	4	0.6089
5		0.58938	6	0.60489	7	0.59527	8	0.58397
9		0.53738	10	0				

Dibromochloromethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.47323	2	0.48064	3	0.46242	4	0.46239
5		0.44222	6	0.45436	7	0.45062	8	0.4373
9		0.40573	10	0				

Dibromomethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.19685	2	0.19174	3	0.19479	4	0.21383
5		0.2153	6	0.22128	7	0.21999	8	0.21724
9		0.20369	10	0				

Form 6 - Initial Calibration Data

Client: Aptim Environmental & Infrastucture, Inc. **Calibrationtion Date:** 8/2/2018 10:37:00 PM
Project: LHAAP-46 501032 **Run ID:** VOA2_322791 **CAL Run ID:** VOA2_321352
WorkOrder: HS18081428

Compound

Dichlorodifluoromethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.47036	2	0.44128	3	0.46848	4	0.49839
5		0.45066	6	0.45434	7	0.47226	8	0.44197
9		0.43157	10	0				

Ethylbenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.65948	2	0.64229	3	0.6054	4	0.62226
5		0.57878	6	0.58107	7	0.55647	8	0.52867
9		0.4888	10	0				

Hexachlorobutadiene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.47566	2	0.46167	3	0.42206	4	0.49193
5		0.44534	6	0.47404	7	0.46006	8	0.45197
9		0.44393	10	0				

Isopropylbenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		1.95885	2	1.89973	3	1.81659	4	1.90785
5		1.766	6	1.80201	7	1.71439	8	1.56208
9		1.39218	10	0				

m,p-Xylene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.90295	2	0.79811	3	0.75299	4	0.77604
5		0.70105	6	0.70717	7	0.67436	8	0.62436
9		0.56352	10	0				

Methylene chloride

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.77245	2	0.63275	3	0.65591	4	0.65463
5		0.58256	6	0.62001	7	0.59836	8	0.5787
9		0.56122	10	0				

Naphthalene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		734	2	1257	3	5867	4	33895
5		92315	6	211805	7	544152	8	1079112
9		2110998	10	0				

n-Butylbenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		2.45296	2	2.41525	3	2.43798	4	2.64295
5		2.45587	6	2.62349	7	2.54292	8	2.40389
9		2.26163	10	0				

n-Propylbenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		10234	2	18053	3	36434	4	91997
5		170914	6	344503	7	818597	8	1526167
9		2862527	10	0				

Form 6 - Initial Calibration Data

Client: Aptim Environmental & Infrastucture, Inc. **Calibrationtion Date:** 8/2/2018 10:37:00 PM
Project: LHAAP-46 501032 **Run ID:** VOA2_322791 **CAL Run ID:** VOA2_321352
WorkOrder: HS18081428

Compound

o-Xylene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.85899	2	0.83943	3	0.77482	4	0.79072
5		0.72985	6	0.7476	7	0.71287	8	0.67334
9		0.6213	10	0				

sec-Butylbenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		4.45853	2	4.27597	3	4.05422	4	4.39781
5		3.95974	6	4.00559	7	3.79598	8	3.52368
9		3.24512	10	0				

Styrene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		1.24389	2	1.19482	3	1.19402	4	1.2707
5		1.20033	6	1.21706	7	1.15161	8	1.09368
9		0.9918	10	0				

tert-Butylbenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		6277	2	11424	3	22047	4	55856
5		103931	6	215225	7	510402	8	941687
9		1815463	10	0				

Tetrachloroethene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.39882	2	0.36681	3	0.35539	4	0.35121
5		0.3262	6	0.32806	7	0.31901	8	0.30359
9		0.2897	10	0				

Toluene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		2.02695	2	1.91646	3	1.83397	4	1.89221
5		1.70241	6	1.70046	7	1.58782	8	1.47815
9		1.3411	10	0				

trans-1,2-Dichloroethene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.58501	2	0.50577	3	0.49728	4	0.55032
5		0.52002	6	0.55453	7	0.54558	8	0.52153
9		0.50644	10	0				

trans-1,3-Dichloropropene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.359	2	0.42082	3	0.42929	4	0.46085
5		0.44743	6	0.47973	7	0.49071	8	0.49562
9		0.4681	10	0				

Trichloroethene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.40884	2	0.38439	3	0.36491	4	0.38205
5		0.36673	6	0.37864	7	0.37184	8	0.35756
9		0.33364	10	0				

Form 6 - Initial Calibration Data

Client: Aptim Environmental & Infrastucture, Inc. **Calibrationtion Date:** 8/2/2018 10:37:00 PM
Project: LHAAP-46 501032 **Run ID:** VOA2_322791 **CAL Run ID:** VOA2_321352
WorkOrder: HS18081428

Compound

Trichlorofluoromethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.59591	2	0.68062	3	0.62943	4	0.69681
5		0.63334	6	0.6748	7	0.65246	8	0.60791
9		0.59074	10	0				

Vinyl chloride

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.81371	2	0.75204	3	0.74952	4	0.80726
5		0.74234	6	0.74224	7	0.74074	8	0.67274
9		0.65188	10	0				

1,2-Dichloroethane-d4

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		0.70732	2	0.70602	3	0.60138	4	0.59971
5		0.60855	6	0.62601	7	0.60644	8	0.58399
9		0.55248	10	0				

4-Bromofluorobenzene

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		4111	2	5610	3	9711	4	22946
5		45084	6	89799	7	216972	8	415116
9		801860	10	0				

Dibromofluoromethane

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		2127	2	3733	3	6847	4	16598
5		30972	6	62411	7	146156	8	277703
9		545353	10	0				

Toluene-d8

#	Amount	RRF	#	RRF	#	RRF	#	RRF
1		9426	2	14999	3	28398	4	65403
5		128333	6	242924	7	563679	8	1063775
9		2025382	10	0				

Form 6 - Initial Calibration Data

Client: Aptim Environmental & Infrastucture, Inc. **Calibrationtion Date:** 8/2/2018 10:37:00 PM
Project: LHAAP-46 501032 **Run ID:** VOA2_322791 **CAL Run ID:** VOA2_321352
WorkOrder: HS18081428

		Coefficients				
	Curve	A0	A1	A2	%RSD OR R^2	Max RSD OR R^2
1,1,1,2-Tetrachloroethane	AVRG	0	0.39992	0	5.33745	15
1,1,1-Trichloroethane	AVRG	0	0.82541	0	5.20424	15
1,1,2,2-Tetrachloroethane	AVRG	0	1.37832	0	11.07365	15
1,1,2-Trichlor-1,2,2-trifluoroethane	AVRG	0	0.4446	0	6.72251	
1,1,2-Trichloroethane	AVRG	0	0.33334	0	7.41304	15
1,1-Dichloroethane	AVRG	0	1.17307	0	3.91029	15
1,1-Dichloroethene	AVRG	0	0.4738	0	4.60261	15
1,1-Dichloropropene	AVRG	0	0.46639	0	14.89058	15
1,2,3-Trichlorobenzene	Linear	0.01343	1.05493	0	0.99974	0.99
1,2,3-Trichloropropane	AVRG	0	1.28029	0	8.40487	15
1,2,4-Trichlorobenzene	Linear	0.01183	0.917826	0	0.99974	0.99
1,2,4-Trimethylbenzene	AVRG	0	3.49122	0	13.76172	15
1,2-Dibromo-3-chloropropane	Linear	-0.00184	4.35729	0	0.99961	0.99
1,2-Dibromoethane	AVRG	0	0.40004	0	5.31412	15
1,2-Dichlorobenzene	AVRG	0	1.86006	0	9.21285	15
1,2-Dichloroethane	AVRG	0	0.46572	0	4.04992	15
1,2-Dichloropropane	AVRG	0	0.43977	0	8.24087	15
1,3,5-Trimethylbenzene	Linear	-0.06282	0.375097	0	0.99599	0.99
1,3-Dichlorobenzene	AVRG	0	1.924	0	7.9442	15
1,3-Dichloropropane	AVRG	0	0.65204	0	8.23308	15
1,4-Dichlorobenzene	AVRG	0	1.81529	0	8.09403	15
2,2-Dichloropropane	AVRG	0	0.76858	0	5.60198	15
2-Butanone	AVRG	0	0.32846	0	5.16345	15
2-Chlorotoluene	Linear	-0.05284	0.415066	0	0.99729	0.99
2-Hexanone	AVRG	0	0.30217	0	6.20247	
4-Chlorotoluene	Linear	-0.04929	0.381545	0	0.99768	0.99
4-Isopropyltoluene	AVRG	0	3.28301	0	10.36958	15
4-Methyl-2-pentanone	AVRG	0	0.53071	0	7.77246	15
Acetone	Linear	-0.09662	4.98429	0	0.99947	0.99
Benzene	AVRG	0	1.46828	0	11.27741	15
Bromobenzene	AVRG	0	1.12183	0	9.04015	15
Bromochloromethane	AVRG	0	0.28355	0	8.51022	15
Bromodichloromethane	AVRG	0	0.48855	0	7.18176	15
Bromoform	AVRG	0	0.31597	0	3.11427	15
Bromomethane	Linear	-0.0725	3.02984	0	0.99787	0.99
Carbon disulfide	AVRG	0	1.02275	0	5.70079	15
Carbon tetrachloride	Linear	-0.03003	2.59544	0	0.99948	0.99
Chlorobenzene	AVRG	0	1.06344	0	10.74148	15
Chloroethane	Linear	-0.06034	2.63289	0	0.9957	0.99
Chloroform	AVRG	0	0.9845	0	7.87754	15
Chloromethane	AVRG	0	1.11433	0	11.48196	15
cis-1,2-Dichloroethene	AVRG	0	0.62873	0	3.75838	15
cis-1,3-Dichloropropene	AVRG	0	0.5786	0	4.15338	15
Dibromochloromethane	AVRG	0	0.4521	0	4.91366	15
Dibromomethane	AVRG	0	0.2083	0	5.56193	15
Dichlorodifluoromethane	AVRG	0	0.45881	0	4.48942	15
Ethylbenzene	AVRG	0	0.5848	0	9.35217	15
Hexachlorobutadiene	AVRG	0	0.45852	0	4.51058	15

Form 6 - Initial Calibration Data

Client: Aptim Environmental & Infrastucture, Inc. **Calibrationtion Date:** 8/2/2018 10:37:00 PM
Project: LHAAP-46 501032 **Run ID:** VOA2_322791 **CAL Run ID:** VOA2_321352
WorkOrder: HS18081428

		Coefficients				
	Curve	A0	A1	A2	%RSD OR R^2	Max RSD OR R^2
Isopropylbenzene	AVRG	0	1.75774	0	10.30399	15
m,p-Xylene	AVRG	0	0.72228	0	13.84429	15
Methylene chloride	AVRG	0	0.62851	0	10.10524	15
Naphthalene	Linear	0.00225	0.36429	0	0.99891	0.99
n-Butylbenzene	AVRG	0	2.47076	0	4.76923	15
n-Propylbenzene	Linear	-0.05711	0.269651	0	0.99672	0.99
o-Xylene	AVRG	0	0.74988	0	10.15405	15
sec-Butylbenzene	AVRG	0	3.96851	0	10.07419	15
Styrene	AVRG	0	1.1731	0	7.24317	15
tert-Butylbenzene	Linear	-0.04976	0.427211	0	0.99785	0.99
Tetrachloroethene	AVRG	0	0.33764	0	10.00013	15
Toluene	AVRG	0	1.71995	0	12.93045	15
trans-1,2-Dichloroethene	AVRG	0	0.53183	0	5.41605	15
trans-1,3-Dichloropropene	AVRG	0	0.45017	0	9.50099	15
Trichloroethene	AVRG	0	0.37206	0	5.55222	15
Trichlorofluoromethane	AVRG	0	0.64023	0	5.99841	15
Vinyl chloride	AVRG	0	0.74138	0	7.14936	15
1,2-Dichloroethane-d4	AVRG	0	0.62132	0	8.43475	15
4-Bromofluorobenzene	Linear	-0.04262	2.29922	0	0.998	0.99
Dibromofluoromethane	Linear	-0.03492	2.25286	0	0.99891	0.99
Toluene-d8	Linear	-0.02685	0.835617	0	0.99866	0.99

Form 7 - Calibration Verification Summary

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Lab File ID: D090203.D
Instrument ID: VOA2
Injection Date: 02-Sep-2018
Injection Time: 14:15

Compound	RRF or Amount	RRF50.000 or Amount	CCAL RRF50.000	MIN RRF	% D or % DRIFT	MAX % D or % DRIFT	CURVE TYPE	Q
1,1,1,2-Tetrachloroethane	48.047493	50	0.47201		-3.91	15		
1,1,1-Trichloroethane	46.23743	50	0.91377	0.1	-7.53	15		
1,1,2,2-Tetrachloroethane	40.11126	50	1.2796	0.3	-19.78	15		
1,1,2-Trichlor-1,2,2-trifluoroethane	55.16715	50	0.52254	0	10.33	0		
1,1,2-Trichloroethane	45.436637	50	0.3488	0.1	-9.13	15		
1,1-Dichloroethane	45.817835	50	1.28068	0.2	-8.36	15		
1,1-Dichloroethene	47.221076	50	0.55807	0.1	-5.56	15		
1,1-Dichloropropene	54.775117	50	0.49676		9.55	15		
1,2,3-Trichlorobenzene	48.591509	50	1.09499		-2.82	15		
1,2,3-Trichloropropane	41.920099	50	1.25455		-16.16	15		
1,2,4-Trichlorobenzene	52.09354	50	1.32635		4.19	15		
1,2,4-Trimethylbenzene	52.791295	50	3.62285		5.58	15		
1,2-Dibromo-3-chloropropane	42.697855	50	0.21088		-14.6	15		
1,2-Dibromoethane	49.413735	50	0.45646		-1.17	15		
1,2-Dichlorobenzene	46.064065	50	2.11167		-7.87	15		
1,2-Dichloroethane	48.029689	50	0.52443	0.1	-3.94	15		
1,2-Dichloropropane	47.252444	50	0.46904		-5.5	15		
1,3,5-Trimethylbenzene	47.3057	50	3.57855		-5.39	15		
1,3-Dichlorobenzene	47.169667	50	2.19215		-5.66	15		
1,3-Dichloropropane	46.312443	50	0.70288		-7.38	15		
1,4-Dichlorobenzene	47.998354	50	2.08301		-4	15		
2,2-Dichloropropane	57.102061	50	0.86865		14.2	15		
2-Butanone	85.797496	100	0.29457		-14.2	15		
2-Chlorotoluene	51.525281	50	3.11341		3.05	15		
2-Hexanone	86.771585	100	0.3207	0	-13.23	0		
4-Chlorotoluene	52.095387	50	3.34106		4.19	15		
4-Isopropyltoluene	44.428566	50	3.66521		-11.14	15		
4-Methyl-2-pentanone	85.243168	100	0.48542		-14.76	15		
Acetone	80.25458	100	0.17833	0	-19.75	0		
Benzene	46.556127	50	1.59269	0.5	-6.89	15		
Bromobenzene	46.502642	50	1.25666		-6.99	15		
Bromochloromethane	50.22248	50	0.34402	0.2	0.44	15		
Bromodichloromethane	48.845773	50	0.56212		-2.31	15		
Bromoform	50.575294	50	0.37828	0.1	1.15	15		
Bromomethane	58.704388	50	0.48126	0.1	17.41	15		
Carbon disulfide	97.163998	100	1.08331		-2.84	15		
Carbon tetrachloride	54.352511	50	0.51693	0.1	8.71	15		
Chlorobenzene	47.807234	50	1.19616	0.5	-4.39	15		
Chloroethane	44.673969	50	0.47096		-10.65	15		
Chloroform	45.543954	50	1.06705	0.2	-8.91	15		
Chloromethane	40.55865	50	1.00078		-18.88	15		

Qualifier "Q" <-- : %Drift is > Max %D

Form 7 - Calibration Verification Summary

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Lab File ID: D090203.D
Instrument ID: VOA2
Injection Date: 02-Sep-2018
Injection Time: 14:15

Compound	RRF or Amount	RRF50.000 or Amount	CCAL RRF50.000	MIN RRF	% D or % DRIFT	MAX % D or % DRIFT	CURVE TYPE	Q
cis-1,2-Dichloroethene	47.834648	50	0.7033		-4.33	15		
cis-1,3-Dichloropropene	53.416773	50	0.68825	0.2	6.83	15		
Dibromochloromethane	49.156427	50	0.5268	0.1	-1.69	15		
Dibromomethane	51.408091	50	0.25251		2.82	15		
Dichlorodifluoromethane	51.419901	50	0.50621		2.84	15		
Ethylbenzene	54.510618	50	0.64468	0.1	9.02	15		
Hexachlorobutadiene	49.202694	50	0.59759		-1.59	15		
Isopropylbenzene	47.346166	50	2.03405		-5.31	15		
m,p-Xylene	113.249137	100	0.78174		13.25	15		
Methylene chloride	49.413494	50	0.66132		-1.17	15		
Naphthalene	47.729737	50	2.9224		-4.54	15		
n-Butylbenzene	47.287724	50	2.88606		-5.42	15		
n-Propylbenzene	53.744913	50	4.86085		7.49	15		
o-Xylene	54.930179	50	0.82951		9.86	15		
sec-Butylbenzene	44.025412	50	4.39001		-11.95	15		
Styrene	49.948472	50	1.33333	0.3	-0.1	15		
tert-Butylbenzene	54.082152	50	3.16855		8.16	15		
Tetrachloroethene	49.638949	50	0.40378	0.2	-0.72	15		
Toluene	45.182705	50	1.82276	0.4	-9.63	15		
trans-1,2-Dichloroethene	49.373091	50	0.60169		-1.25	15		
trans-1,3-Dichloropropene	55.991439	50	0.55918	0.1	11.98	15		
Trichloroethene	50.216607	50	0.45862	0.3	0.43	15		
Trichlorofluoromethane	49.783031	50	0.80267		-0.43	15		
Vinyl chloride	47.930403	50	0.79095	0.1	-4.14	15		
1,2-Dichloroethane-d4	46.429524	50	0.4736		-7.14	15		
4-Bromofluorobenzene	51.232297	50	0.4544	0.2	2.46	15		
Dibromofluoromethane	46.44735	50	0.41525		-7.11	15		
Toluene-d8	43.172871	50	1.19347		-13.65	15		

Qualifier "Q" <-- : %Drift is > Max %D

Form 7 - Calibration Verification Summary

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Lab File ID: D090228.D
Instrument ID: VOA2
Injection Date: 03-Sep-2018
Injection Time: 00:31

Compound	RRF or Amount	RRF50.000 or Amount	CCAL RRF50.000	MIN RRF	% D or % DRIFT	MAX % D or % DRIFT	CURVE TYPE	Q
1,1,1,2-Tetrachloroethane	48.512199	50	0.47658		-2.98	50		
1,1,1-Trichloroethane	48.263333	50	0.9538	0.1	-3.47	50		
1,1,2,2-Tetrachloroethane	37.951382	50	1.2107	0.3	-24.1	50		
1,1,2-Trichlor-1,2,2-trifluoroethane	53.721675	50	0.5092	0	7.44	50		
1,1,2-Trichloroethane	43.627867	50	0.33491	0.1	-12.74	50		
1,1-Dichloroethane	45.383621	50	1.26854	0.2	-9.23	50		
1,1-Dichloroethene	45.116149	50	0.53319	0.1	-9.77	50		
1,1-Dichloropropene	58.385642	50	0.52827		16.77	50		
1,2,3-Trichlorobenzene	44.50246	50	1.00324		-11	50		
1,2,3-Trichloropropane	39.268292	50	1.17519		-21.46	50		
1,2,4-Trichlorobenzene	47.622065	50	1.2129		-4.76	50		
1,2,4-Trimethylbenzene	52.752499	50	3.62035		5.5	50		
1,2-Dibromo-3-chloropropane	38.658737	50	0.1911		-22.68	50		
1,2-Dibromoethane	47.889309	50	0.44238		-4.22	50		
1,2-Dichlorobenzene	44.542248	50	2.04191		-10.92	50		
1,2-Dichloroethane	47.650298	50	0.52029	0.1	-4.7	50		
1,2-Dichloropropane	47.807055	50	0.47455		-4.39	50		
1,3,5-Trimethylbenzene	47.786422	50	3.6112		-4.43	50		
1,3-Dichlorobenzene	46.405844	50	2.15666		-7.19	50		
1,3-Dichloropropane	44.645759	50	0.67759		-10.71	50		
1,4-Dichlorobenzene	47.342609	50	2.05455		-5.31	50		
2,2-Dichloropropane	50.806245	50	0.77288		1.61	50		
2-Butanone	80.848432	100	0.27758		-19.15	50		
2-Chlorotoluene	51.541845	50	3.11436		3.08	50		
2-Hexanone	79.366047	100	0.29333	0	-20.63	50		
4-Chlorotoluene	52.239706	50	3.34978		4.48	50		
4-Isopropyltoluene	44.747311	50	3.6915		-10.51	50		
4-Methyl-2-pentanone	80.000031	100	0.45557		-20	50		
Acetone	70.292143	100	0.15714	0	-29.71	50		
Benzene	50.24768	50	1.71897	0.5	0.5	50		
Bromobenzene	46.20339	50	1.24857		-7.59	50		
Bromochloromethane	49.937743	50	0.34207	0.2	-0.12	50		
Bromodichloromethane	50.178425	50	0.57746		0.36	50		
Bromoform	48.871414	50	0.36554	0.1	-2.26	50		
Bromomethane	56.576342	50	0.46483	0.1	13.15	50		
Carbon disulfide	91.28337	100	1.01774		-8.72	50		
Carbon tetrachloride	57.680172	50	0.54753	0.1	15.36	50		
Chlorobenzene	48.224475	50	1.2066	0.5	-3.55	50		
Chloroethane	45.914169	50	0.48403		-8.17	50		
Chloroform	45.886777	50	1.07508	0.2	-8.23	50		
Chloromethane	41.322549	50	1.01963		-17.35	50		

Qualifier "Q" <-- : %Drift is > Max %D

Form 7 - Calibration Verification Summary

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Lab File ID: D090228.D
Instrument ID: VOA2
Injection Date: 03-Sep-2018
Injection Time: 00:31

Compound	RRF or Amount	RRF50.000 or Amount	CCAL RRF50.000	MIN RRF	% D or % DRIFT	MAX % D or % DRIFT	CURVE TYPE	Q
cis-1,2-Dichloroethene	47.142894	50	0.69313		-5.71	50		
cis-1,3-Dichloropropene	52.646578	50	0.67832	0.2	5.29	50		
Dibromochloromethane	47.048267	50	0.5042	0.1	-5.9	50		
Dibromomethane	50.262653	50	0.24689		0.53	50		
Dichlorodifluoromethane	56.082932	50	0.55211		12.17	50		
Ethylbenzene	56.445404	50	0.66661	0.1	12.89	50		
Hexachlorobutadiene	46.71747	50	0.56741		-6.57	50		
Isopropylbenzene	49.311818	50	2.11849		-1.38	50		
m,p-Xylene	116.934779	100	0.8057		16.93	50		
Methylene chloride	44.245308	50	0.59431		-11.51	50		
Naphthalene	45.062099	50	2.76267		-9.88	50		
n-Butylbenzene	46.590988	50	2.84354		-6.82	50		
n-Propylbenzene	56.744469	50	5.11509		13.49	50		
o-Xylene	56.244074	50	0.8484		12.49	50		
sec-Butylbenzene	45.022954	50	4.48948		-9.95	50		
Styrene	50.390362	50	1.34513	0.3	0.78	50		
tert-Butylbenzene	55.155902	50	3.22783		10.31	50		
Tetrachloroethene	50.698948	50	0.41241	0.2	1.4	50		
Toluene	45.824181	50	1.84863	0.4	-8.35	50		
trans-1,2-Dichloroethene	50.485413	50	0.61525		0.97	50		
trans-1,3-Dichloropropene	55.455826	50	0.55383	0.1	10.91	50		
Trichloroethene	53.00965	50	0.48413	0.3	6.02	50		
Trichlorofluoromethane	51.589137	50	0.83179		3.18	50		
Vinyl chloride	49.960558	50	0.82446	0.1	-0.08	50		
1,2-Dichloroethane-d4	45.809853	50	0.46728		-8.38	50		
4-Bromofluorobenzene	52.091105	50	0.46202	0.2	4.18	50		
Dibromofluoromethane	45.379943	50	0.40571		-9.24	50		
Toluene-d8	42.874869	50	1.18523		-14.25	50		

Qualifier "Q" <-- : %Drift is > Max %D

Form 8 - Volatile Internal Standard Area and RT Summary

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428
Contract: SAS No.:

Lab File ID: D090203.D
Instrument ID: VOA2
Run ID: VOA2_322791
Date Time: 2018-09-02 14:15

Sample ID	IS1 Area	IS1 RT	IS2 Area	IS2 RT	IS3 Area	IS3 RT	IS4 Area	IS4 RT
CCB	239624	5.78	341864	6.58	302725	9.53	122683	11.84
12 HOUR STD	221827	5.79	341140	6.58	312299	9.53	140018	11.84
UPPER LIMIT	443654	6.29	682280	7.08	624598	10.03	280036	12.34
LOWER LIMIT	110914	5.29	170570	6.08	156150	9.03	70009	11.34
CCV_END	212135	5.79	317665	6.57	298774	9.53	136656	11.84
VLCSW-180830	227467	5.79	340006	6.58	310843	9.53	137068	11.83
VBLKW-180830	239098	5.79	338751	6.58	303153	9.52	121282	11.84
HS18081428-01MS	224702	5.79	333154	6.57	302051	9.52	132453	11.84
HS18081428-01MSD	224889	5.78	333482	6.57	299849	9.53	132428	11.84
HS18081428-01	232695	5.78	329850	6.58	292353	9.53	119449	11.84
HS18081428-02	233873	5.79	332937	6.58	299334	9.53	119573	11.83
HS18081428-03	231831	5.78	326060	6.57	294850	9.52	113860	11.84
HS18081428-04	246722	5.78	354123	6.57	312874	9.53	123946	11.84
HS18081428-05	244876	5.79	352961	6.58	316441	9.53	120672	11.84
HS18081428-06	246098	5.78	353025	6.58	314323	9.52	120649	11.84
HS18081428-07	220196	5.78	326475	6.57	311444	9.53	124999	11.83
HS18081428-08	244962	5.79	349274	6.58	313044	9.53	125485	11.84
HS18081428-09	208175	5.79	297705	6.58	284671	9.52	121290	11.83
HS18081428-10	245144	5.78	349098	6.58	306802	9.53	119998	11.84
HS18081428-11	244712	5.78	346099	6.58	315013	9.53	125231	11.84

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5
IS4 (DCB) = 1,4-Dichlorobenzene-d4

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 values outside QC limits with an asterisk
* Values outside of QC limits

FORM 8 - ANALYSIS RUN LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428
Start Date: 02-Aug-2018 End Date: 03-Aug-2018

Run ID:VOA2_321352
Instrument:VOA2

Sample No.	D/F	Time	File ID
BFB	1	02-Aug-2018 21:45	E080201.D
VSTD0005	1	02-Aug-2018 22:37	E080203.D
VSTD001	1	02-Aug-2018 23:03	E080204.D
VSTD002	1	02-Aug-2018 23:29	E080205.D
VSTD005	1	02-Aug-2018 23:55	E080206.D
VSTD010	1	03-Aug-2018 00:21	E080207.D
VSTD020	1	03-Aug-2018 00:47	E080208.D
VSTD050	1	03-Aug-2018 01:12	E080209.D
VSTD100	1	03-Aug-2018 01:38	E080210.D
VSTD200	1	03-Aug-2018 02:04	E080211.D
VSTD050	1	03-Aug-2018 02:56	E080213.D

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080201.D Page 1
Report Date: 04-Sep-2018 17:00

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080201.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 02-AUG-2018 21:45
Operator : AP Inst ID: VOA2.i
Smp Info : BFB;BFB;3;;BFB
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\E180802.b\bfb.m
Meth Date : 04-Jun-2018 15:21 Cesar.Lira Quant Type: ISTD
Cal Date : Cal File:
Als bottle: 27 QC Sample: BFB
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.14 Sample Matrix: WATER

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	
10.695	10.696	(0.000)	95	94968			0.00- 100.00	100.00
10.695	10.696	(0.000)	50	17752			15.00- 40.00	18.69
10.695	10.696	(0.000)	75	43808			30.00- 60.00	46.13
10.695	10.696	(0.000)	96	6211			5.00- 9.00	6.54
10.695	10.696	(0.000)	173	0	0.0	0.0	0.00- 2.00	0.00
10.695	10.696	(0.000)	174	79536			50.00- 0.00	83.75
10.695	10.696	(0.000)	175	6049			5.00- 9.00	7.61
10.695	10.696	(0.000)	176	78648			95.00- 101.00	98.88
10.695	10.696	(0.000)	177	4780			5.00- 9.00	6.08

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080201.D Page 1

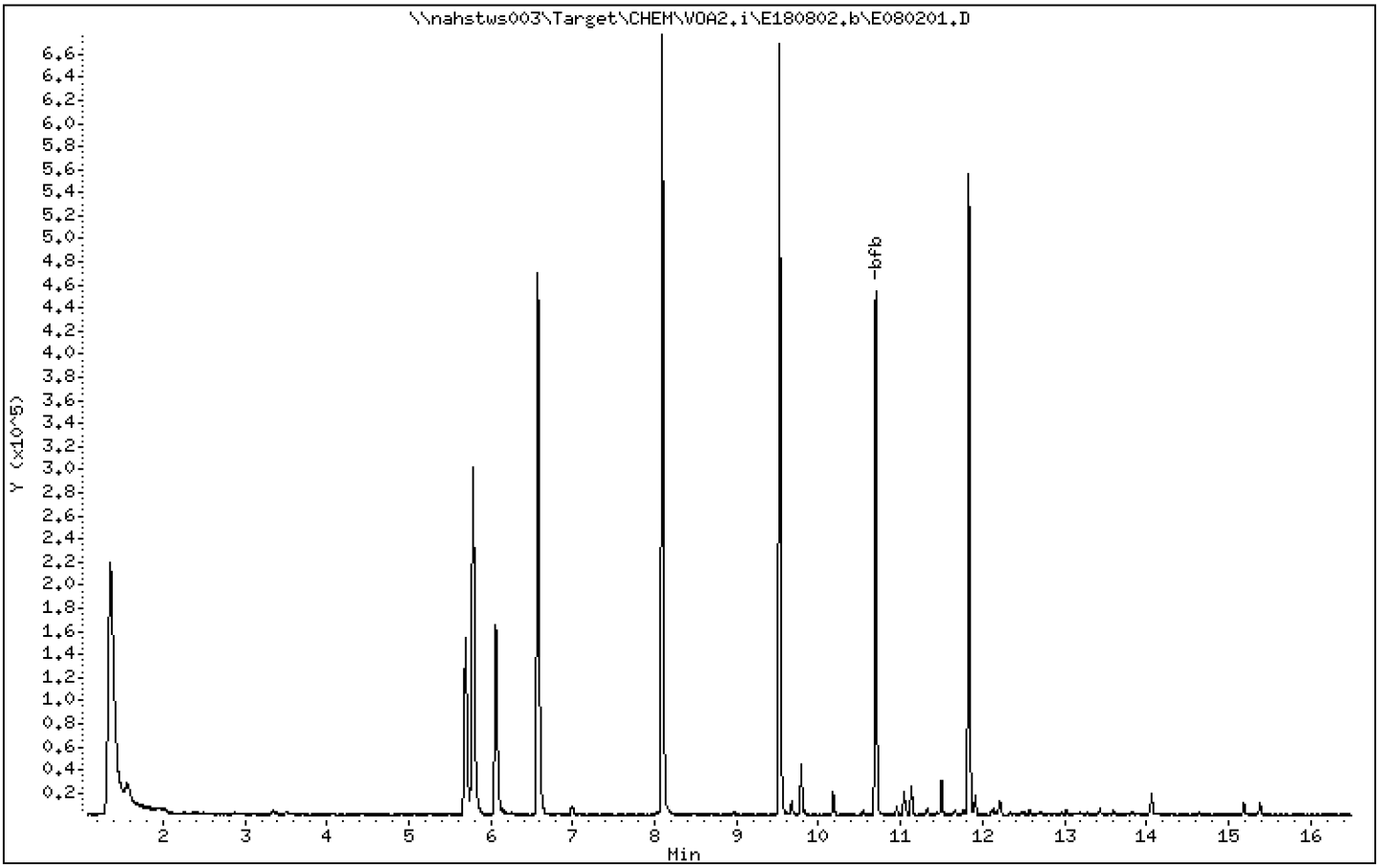
Date : 02-AUG-2018 21:45

Client ID: BFB Instrument: VOA2.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: AP

Column phase: DB624 Column diameter: 0.18



Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080201.D Page 2

Date : 02-AUG-2018 21:45

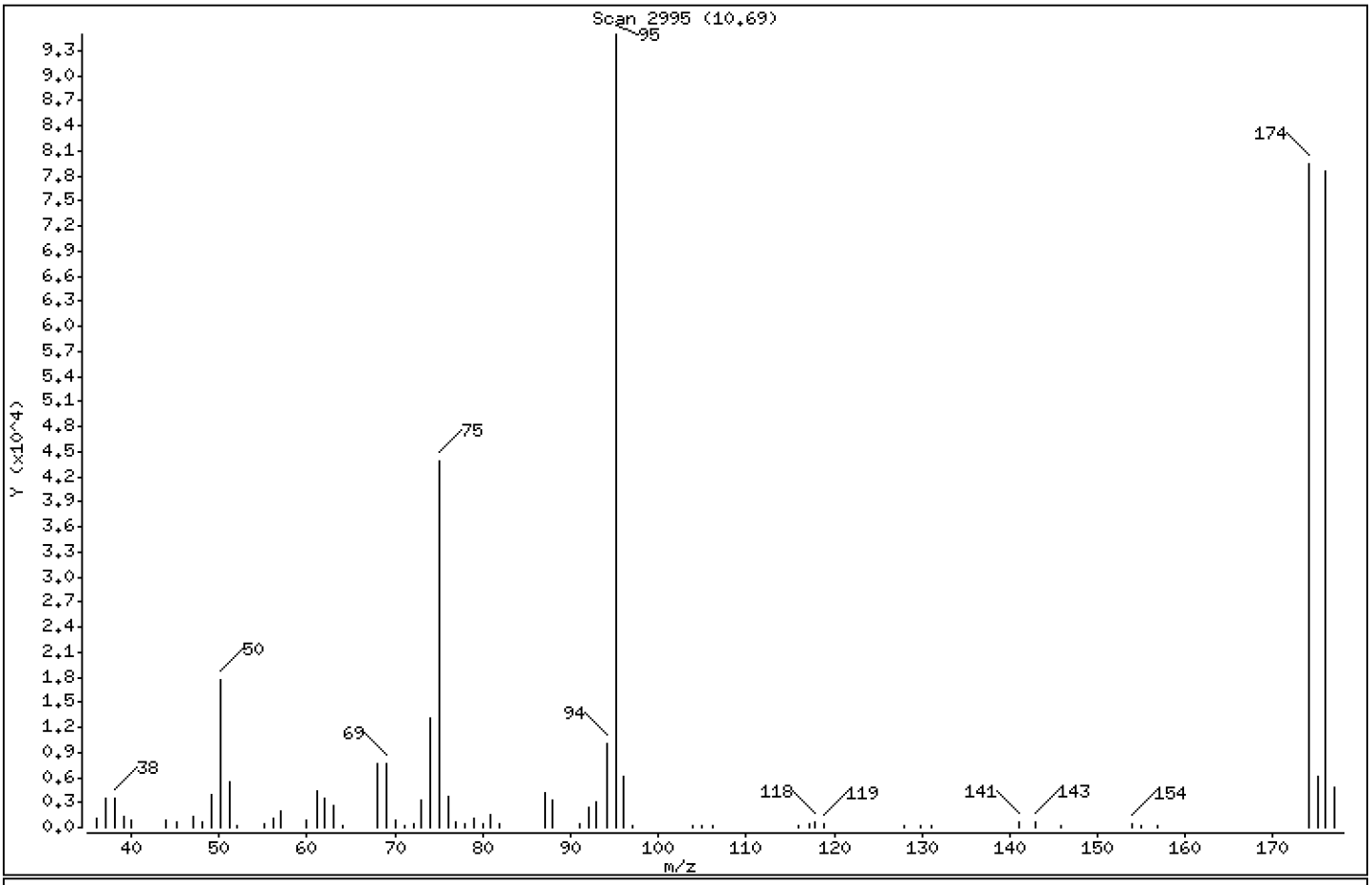
Client ID: BFB Instrument: VOA2.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: AP

Column phase: DB624 Column diameter: 0.18

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	18.69
75	30.00 - 60.00% of mass 95	46.13
96	5.00 - 9.00% of mass 95	6.54
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	83.75
175	5.00 - 9.00% of mass 174	6.37 (7.61)
176	95.00 - 101.00% of mass 174	82.82 (98.88)
177	5.00 - 9.00% of mass 176	5.03 (6.08)

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080201.D

Date : 02-AUG-2018 21:45

Client ID: BFB Instrument: VOA2.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: AP

Column phase: DB624 Column diameter: 0.18

Data File: E080201.D
Spectrum: Scan 2995 (10.69)
Location of Maximum: 95.10
Number of points: 65

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1076	61.10	4308	80.90	1568	118.90	333
37.10	3397	62.00	3502	82.00	414	127.90	252
38.10	3479	63.00	2658	87.00	4051	129.90	232
39.10	1357	64.10	303	88.00	3319	131.00	207
40.00	868	68.10	7544	91.10	354	141.00	632
44.00	972	69.10	7610	92.10	2303	142.90	740
45.20	569	70.00	813	93.00	3058	145.90	282
47.00	1417	71.20	190	94.10	10046	154.00	342
48.00	572	72.10	408	95.10	94968	155.00	245
49.10	3832	73.00	3193	96.10	6211	156.90	150
50.10	17752	74.10	13082	97.00	288	174.00	79536
51.10	5422	75.10	43808	104.00	283	175.00	6049
52.10	170	76.10	3805	104.90	174	176.00	78648
55.10	335	76.90	560	106.10	289	177.00	4780
56.10	1056	77.90	448	116.00	167		
57.00	1896	78.90	1159	117.10	390		
60.00	858	80.00	420	117.90	622		

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080203.D Page 1
Report Date: 04-Sep-2018 17:00

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080203.D
Lab Smp Id: VSTD0005
Inj Date : 02-AUG-2018 22:37
Operator : AP   Inst ID: VOA2.i
Smp Info : VSTD0005;VSTD0005;1;1;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\E180802.b\8260LL.m
Meth Date : 17-Aug-2018 12:13 Shiva.Targ Quant Type: ISTD
Cal Date : 09-JUN-2018 13:37   Cal File: D060910.D
Als bottle: 29   Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.782	5.783	(1.000)	276417	50.0000	
2	Dichlorodifluoromethane	85	1.444	1.454	(0.250)	1421	0.50000	0.52(aM)
186	Isobutylene	56	1.665	1.666	(0.288)	2119	0.50000	0.43(aAM)
3	Chloromethane	50	1.617	1.601	(0.280)	3847	0.50000	0.56(aM)
4	Propionitrile	54	5.253	5.276	(0.908)	5735	5.00000	4.58(aM)
5	Vinyl Chloride	62	1.691	1.688	(0.293)	2110	0.50000	0.46(aM)
159	Dichlorofluoromethane	67	2.253	2.227	(0.390)	3475	0.50000	0.51(aM)
8	Trichlorofluoromethane	101	2.269	2.253	(0.392)	2323	0.50000	0.52(aM)
12	Isobutyl Alcohol	74	6.251	6.184	(1.081)	75	10.0000	2.65(TaM)
13	Acetonitrile	39	3.177	3.174	(0.549)	1605	5.00000	8.83(aM)
14	Allyl Chloride	41	3.199	3.180	(0.553)	6134	0.50000	0.54(aM)
15	Iodomethane	142	2.926	2.914	(0.506)	425	1.00000	1.25(aM)
16	Acrylonitrile	53	3.748	3.710	(0.648)	1113	1.00000	1.14(aM)
18	Methyl tert-butyl ether	73	3.697	3.697	(0.639)	5039	0.50000	0.50(aM)
19	Carbon Disulfide	76	2.968	2.962	(0.513)	6063	1.00000	0.98(aM)
20	trans-1,2-Dichloroethene	96	3.700	3.668	(0.640)	1362	0.50000	0.40(aM)
21	Vinyl Acetate	43	5.263	5.256	(0.910)	4310	1.00000	0.94(aM)
22	1,1-Dichloroethane	63	4.293	4.281	(0.743)	3931	0.50000	0.50(aM)
24	2-Butanone	43	5.173	5.150	(0.895)	1608	1.00000	0.84(aM)
25	Methacrylonitrile	41	5.429	5.414	(0.939)	1772	0.50000	0.42(aM)
26	2,2-Dichloropropane	77	5.060	5.044	(0.875)	2021	0.50000	0.48(aM)
27	cis-1,2-Dichloroethene	96	5.073	5.073	(0.877)	1962	0.50000	0.48(aM)

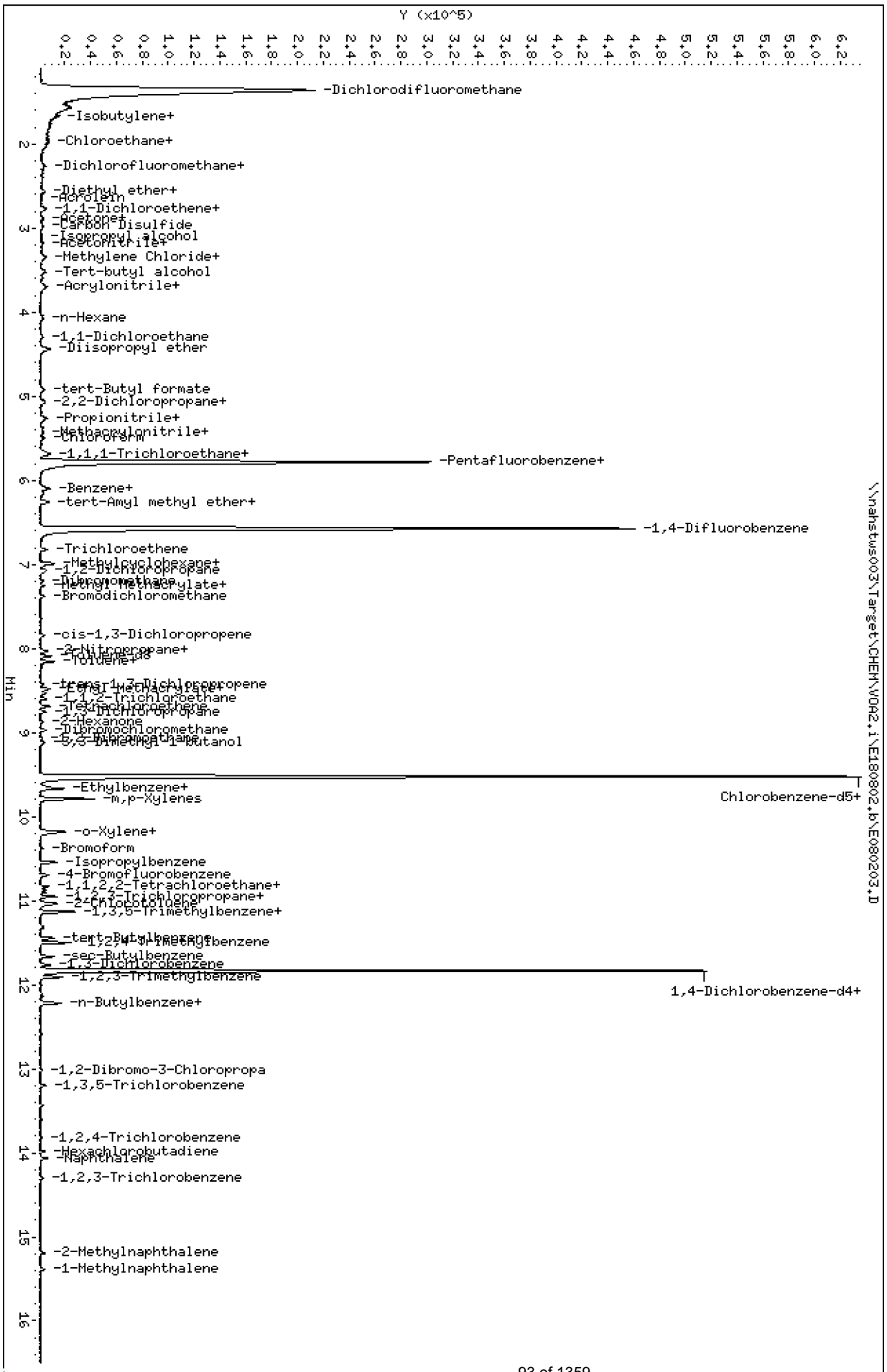
Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080203.D Page 2
Report Date: 04-Sep-2018 17:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	28 Chloroform	83	5.500	5.497	(0.951)	3588	0.50000	0.55(aM)
	29 Bromochloromethane	128	5.381	5.378	(0.931)	768	0.50000	0.40(aM)
$	30 Dibromofluoromethane	113	5.702	5.689	(0.986)	1255	0.50000	0.50(aM)
	31 1,1,1-Trichloroethane	97	5.657	5.657	(0.978)	2803	0.50000	0.51(a)
	33 1,2-Dichloroethane	62	6.155	6.148	(0.937)	2131	0.50000	0.46(aM)
$	35 1,2-Dichloroethane-d4	65	6.074	6.059	(1.050)	1330	0.50000	0.47(aM)
*	36 1,4-Difluorobenzene	114	6.572	6.575	(1.000)	416679	50.0000	
	37 Benzene	78	6.094	6.097	(0.927)	8213	0.50000	0.57(Ta)
	38 Trichloroethene	130	6.825	6.819	(1.039)	2018	0.50000	0.53(aM)
	39 Bromodichloromethane	83	7.387	7.381	(1.124)	2313	0.50000	0.48(aM)
	40 Methyl Methacrylate	41	7.252	7.252	(1.254)	2173	0.50000	0.51(aM)
	41 2-Chloroethylvinyl ether	63	8.160	8.164	(1.242)	629	1.00000	1.08(aM)
	42 1,2-Dichloropropane	63	7.069	7.069	(1.076)	1962	0.50000	0.47(aM)
	43 2-Nitropropane	43	8.029	8.038	(1.388)	4342	0.50000	0.49(aM)
	44 Dibromomethane	93	7.207	7.194	(1.097)	1017	0.50000	0.49(aM)
	45 4-Methyl-2-Pentanone	43	8.029	8.038	(0.843)	4299	1.00000	1.04(aM)
	46 cis-1,3-Dichloropropene	75	7.839	7.843	(1.193)	2319	0.50000	0.43(aM)
*	47 Chlorobenzene-d5	117	9.524	9.527	(1.000)	362887	50.0000	
$	48 Toluene-d8	98	8.086	8.093	(0.849)	6082	0.50000	(aM)
	49 Ethyl Methacrylate	69	8.539	8.539	(1.299)	2559	0.50000	0.49(aM)
	50 Toluene	91	8.157	8.164	(0.856)	8058	0.50000	0.55(Ta)
	52 2-Hexanone	43	8.876	8.873	(0.932)	2612	1.00000	0.97(aM)
	53 1,1,2-Trichloroethane	83	8.597	8.600	(0.903)	1387	0.50000	0.49(aM)
	54 1,3-Dichloropropane	76	8.757	8.760	(0.919)	2695	0.50000	0.48(aM)
	55 Dibromochloromethane	129	8.969	8.975	(0.942)	1938	0.50000	0.49(aM)
	56 Tetrachloroethene	164	8.683	8.693	(0.912)	1632	0.50000	0.55(aM)
	57 1,2-Dibromoethane	107	9.072	9.072	(0.952)	1501	0.50000	0.44(aM)
	59 Chlorobenzene	112	9.550	9.556	(1.003)	4751	0.50000	0.52(Ta)
	60 1,1,1,2-Tetrachloroethane	131	9.643	9.652	(1.012)	1717	0.50000	0.48(aM)
	64 Styrene	104	10.201	10.204	(1.071)	4925	0.50000	0.50(aM)
	66 Bromoform	173	10.381	10.378	(1.090)	1283	0.50000	0.47(aM)
	67 Isopropylbenzene	105	10.551	10.551	(1.108)	9258	0.50000	0.59(a)
	68 1,1,2,2-Tetrachloroethane	83	10.872	10.878	(0.919)	2214	0.50000	0.51(aM)
$	69 4-Bromofluorobenzene	95	10.695	10.699	(1.123)	2589	0.50000	(aM)
*	70 1,4-Dichlorobenzene-d4	152	11.834	11.838	(1.000)	135495	50.0000	
	71 1,2,3-Trichloropropane	75	10.901	10.907	(0.921)	2036	0.50000	0.50(aM)
	72 trans-1,4-Dichloro-2-butene	53	10.942	10.936	(1.149)	139	0.50000	1.61(M)
	74 Bromobenzene	156	10.830	10.837	(0.915)	2081	0.50000	0.56(aM)
	75 1,3,5-Trimethylbenzene	105	11.128	11.138	(0.940)	11256	0.50000	0.42(aM)
	81 sec-Butylbenzene	105	11.664	11.674	(0.986)	7738	0.50000	0.57(aM)
	82 p-Isopropyltoluene	119	11.812	11.825	(0.998)	6989	0.50000	0.62(aM)
	83 1,3-Dichlorobenzene	146	11.764	11.774	(0.994)	3233	0.50000	0.51(Ta)
	84 1,4-Dichlorobenzene	146	11.860	11.863	(1.002)	3178	0.50000	0.54(aM)
	87 n-Butylbenzene	91	12.226	12.226	(1.033)	4651	0.50000	0.56(Ta)
	88 1,2-Dichlorobenzene	146	12.226	12.229	(1.033)	3468	0.50000	0.55(aM)
	146 Methyl acetate	43	3.267	3.241	(0.565)	2305	0.50000	0.52(aM)
	139 Diethyl ether	59	2.567	2.545	(0.444)	3024	0.50000	0.45(aM)
	133 Ethyl Acrylate	55	6.992	7.018	(1.209)	6858	0.50000	0.57(aM)
	141 Cyclohexane	56	5.689	5.689	(0.984)	4072	0.50000	0.58(a)
	142 Tetrahydrofuran	42	5.452	5.423	(0.943)	1555	1.00000	1.02(aM)
	148 Tert-butyl alcohol	59	3.527	3.597	(0.610)	4246	10.0000	10.69(M)
	170 1,3,5-Trichlorobenzene	180	13.201	13.208	(1.116)	2081	0.50000	0.51(aM)
	175 tert-Butyl ethyl ether	59	6.248	6.254	(1.080)	2257	0.50000	0.44(aM)
	157 2-Methylnaphthalene	142	15.185	15.191	(1.283)	2578	0.50000	6.20(M)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	156 Diisopropyl ether	45	4.431	4.435	(0.766)	7511	0.50000	0.50(aM)
	171 1-Methylnaphthalene	142	15.377	15.387	(1.299)	2289	0.50000	5.50(M)
	130 Ethyl Acetate	43	5.263	5.256	(0.910)	4511	0.50000	0.49(aM)
M	94 1,2-Dichloroethylene (total)	96				3324	1.00000	0.88(a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\WOA2.i\E180802.b\E080203.D
Date : 02-AUG-2018 22:37
Client ID:
Sample Info: VSTD0005;VSTD0005;1;1;
Purge Volume: 5.0
Column phase: DB624

Instrument: WOA2.i
Operator: AP
Column diameter: 0.18

\\nahstws003\Target\CHEM\WOA2.i\E180802.b\E080203.D

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080204.D Page 1
Report Date: 04-Sep-2018 17:00

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080204.D
Lab Smp Id: VSTD001
Inj Date : 02-AUG-2018 23:03
Operator : AP   Inst ID: VOA2.i
Smp Info : VSTD001;VSTD001;1;2;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\E180802.b\8260LL.m
Meth Date : 17-Aug-2018 12:13 Shiva.Targ Quant Type: ISTD
Cal Date : 09-JUN-2018 13:37   Cal File: D060910.D
Als bottle: 30   Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.779	5.783	(1.000)	273991	50.0000	
2 Dichlorodifluoromethane	85	1.460	1.454	(0.253)	2672	1.00000	0.99(aM)
186 Isobutylene	56	1.656	1.666	(0.287)	5049	1.00000	1.03(aAM)
3 Chloromethane	50	1.601	1.601	(0.277)	7562	1.00000	1.11(aM)
4 Propionitrile	54	5.250	5.276	(0.908)	13233	10.0000	10.68(M)
5 Vinyl Chloride	62	1.691	1.688	(0.293)	5159	1.00000	1.14(M)
7 Chloroethane	64	2.041	2.031	(0.353)	3360	1.00000	1.16(M)
159 Dichlorofluoromethane	67	2.236	2.227	(0.387)	7158	1.00000	1.06(M)
8 Trichlorofluoromethane	101	2.262	2.253	(0.391)	4689	1.00000	1.06(T)
10 Acetone	43	2.872	2.869	(0.497)	5616	2.00000	1.22(aM)
11 1,1-Dichloroethene	96	2.756	2.750	(0.477)	3423	1.00000	1.05(M)
12 Isobutyl Alcohol	74	6.257	6.184	(1.083)	453	20.0000	23.51(TM)
13 Acetonitrile	39	3.170	3.174	(0.549)	3797	10.0000	14.22(M)
14 Allyl Chloride	41	3.170	3.180	(0.549)	12524	1.00000	1.12(TM)
15 Iodomethane	142	2.914	2.914	(0.504)	1514	2.00000	1.62(aM)
16 Acrylonitrile	53	3.713	3.710	(0.642)	3033	2.00000	2.27(M)
18 Methyl tert-butyl ether	73	3.684	3.697	(0.637)	10928	1.00000	1.10(M)
19 Carbon Disulfide	76	2.968	2.962	(0.514)	12132	2.00000	1.98(aM)
20 trans-1,2-Dichloroethene	96	3.664	3.668	(0.634)	3595	1.00000	1.07(M)
21 Vinyl Acetate	43	5.246	5.256	(0.908)	9691	2.00000	2.15(M)
22 1,1-Dichloroethane	63	4.287	4.281	(0.742)	8043	1.00000	1.05(M)
24 2-Butanone	43	5.163	5.150	(0.893)	4090	2.00000	2.17(M)

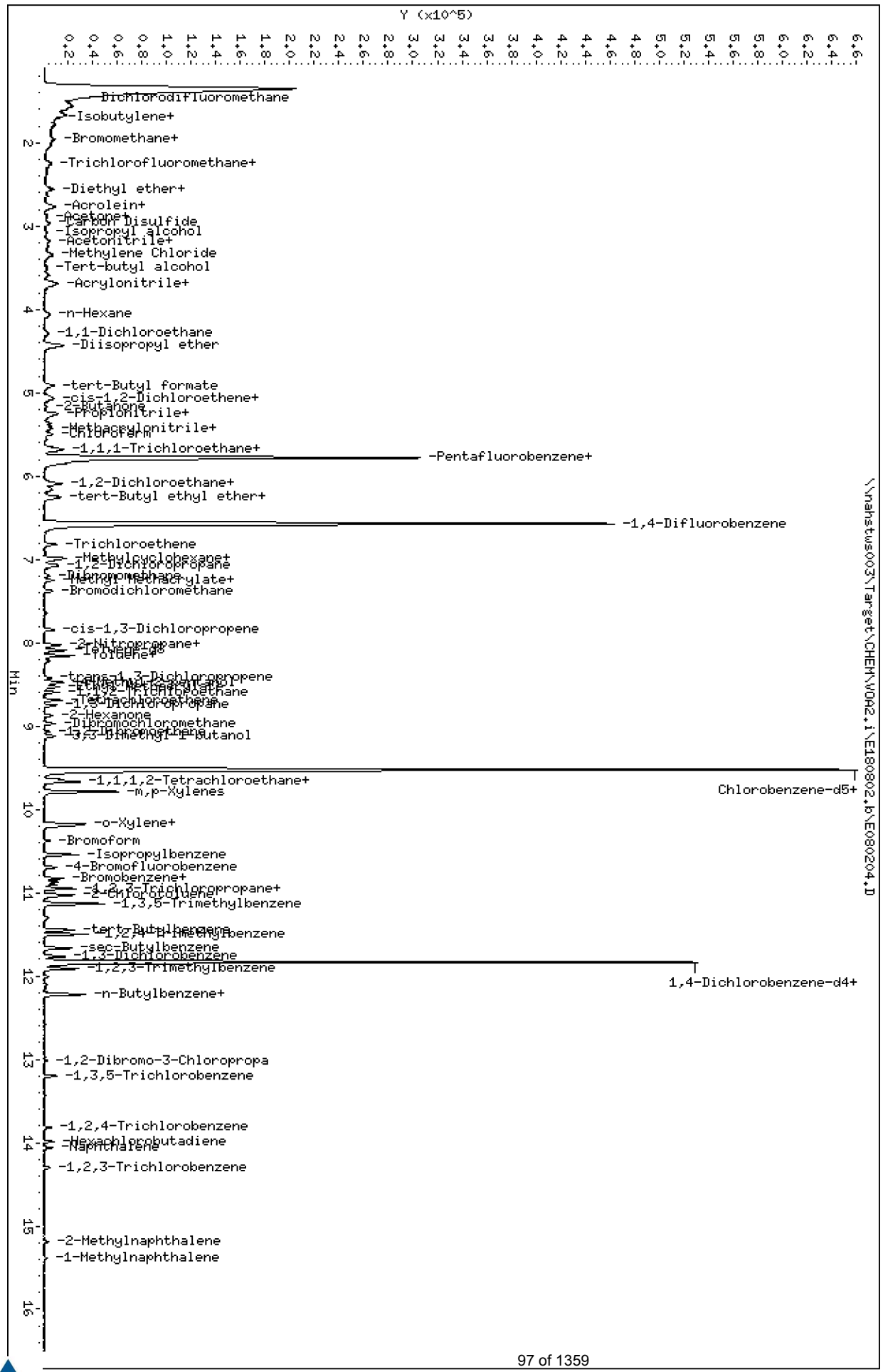
Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080204.D Page 2
Report Date: 04-Sep-2018 17:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	25 Methacrylonitrile	41	5.420	5.414	(0.938)	4112	1.00000	0.99(aM)
	26 2,2-Dichloropropane	77	5.044	5.044	(0.873)	4631	1.00000	1.11(M)
	27 cis-1,2-Dichloroethene	96	5.067	5.073	(0.877)	4183	1.00000	1.03(T)
	28 Chloroform	83	5.494	5.497	(0.951)	6863	1.00000	1.06(T)
	29 Bromochloromethane	128	5.375	5.378	(0.930)	1853	1.00000	0.98(aM)
$	30 Dibromofluoromethane	113	5.696	5.689	(0.986)	2748	1.00000	1.12(M)
	31 1,1,1-Trichloroethane	97	5.648	5.657	(0.977)	5825	1.00000	1.07
	33 1,2-Dichloroethane	62	6.148	6.148	(0.936)	5052	1.00000	1.09(T)
$	35 1,2-Dichloroethane-d4	65	6.065	6.059	(1.049)	2923	1.00000	1.04(M)
*	36 1,4-Difluorobenzene	114	6.572	6.575	(1.000)	421528	50.0000	
	37 Benzene	78	6.094	6.097	(0.927)	15832	1.00000	1.09
	38 Trichloroethene	130	6.822	6.819	(1.038)	4143	1.00000	1.07
	39 Bromodichloromethane	83	7.374	7.381	(1.122)	4811	1.00000	0.99(Ta)
	40 Methyl Methacrylate	41	7.252	7.252	(1.255)	4028	1.00000	0.96(Ta)
	41 2-Chloroethylvinyl ether	63	8.160	8.164	(1.242)	1294	2.00000	2.21(aM)
	42 1,2-Dichloropropane	63	7.066	7.069	(1.075)	4621	1.00000	1.10(M)
	43 2-Nitropropane	43	8.029	8.038	(1.389)	8918	1.00000	1.01(Ta)
	44 Dibromomethane	93	7.197	7.194	(1.095)	1990	1.00000	0.96(aM)
	45 4-Methyl-2-Pentanone	43	8.029	8.038	(0.843)	8918	2.00000	2.11
	46 cis-1,3-Dichloropropene	75	7.839	7.843	(1.193)	5368	1.00000	0.98(aM)
*	47 Chlorobenzene-d5	117	9.524	9.527	(1.000)	369694	50.0000	
$	48 Toluene-d8	98	8.093	8.093	(0.850)	11126	1.00000	(aM)
	49 Ethyl Methacrylate	69	8.532	8.539	(1.298)	5580	1.00000	1.06(T)
	50 Toluene	91	8.157	8.164	(0.856)	17667	1.00000	1.18(T)
	51 trans-1,3-Dichloropropene	75	8.417	8.420	(1.281)	3841	1.00000	0.91(aM)
	52 2-Hexanone	43	8.873	8.873	(0.932)	5809	2.00000	2.15(M)
	53 1,1,2-Trichloroethane	83	8.590	8.600	(0.902)	3155	1.00000	1.11(T)
	54 1,3-Dichloropropane	76	8.747	8.760	(0.918)	6213	1.00000	1.10(M)
	55 Dibromochloromethane	129	8.969	8.975	(0.942)	4195	1.00000	1.05(T)
	56 Tetrachloroethene	164	8.693	8.693	(0.913)	3160	1.00000	1.05
	57 1,2-Dibromoethane	107	9.071	9.072	(0.952)	3519	1.00000	1.03(T)
	59 Chlorobenzene	112	9.550	9.556	(1.003)	10312	1.00000	1.11
	60 1,1,1,2-Tetrachloroethane	131	9.649	9.652	(1.013)	3809	1.00000	1.04
	64 Styrene	104	10.201	10.204	(1.071)	10002	1.00000	1.01
	66 Bromoform	173	10.377	10.378	(1.090)	2801	1.00000	1.01(M)
	67 Isopropylbenzene	105	10.544	10.551	(1.107)	18031	1.00000	1.13
	68 1,1,2,2-Tetrachloroethane	83	10.868	10.878	(0.918)	5075	1.00000	1.14(M)
$	69 4-Bromofluorobenzene	95	10.702	10.699	(1.124)	3985	1.00000	(aM)
*	70 1,4-Dichlorobenzene-d4	152	11.834	11.838	(1.000)	139045	50.0000	
	71 1,2,3-Trichloropropane	75	10.904	10.907	(0.921)	4735	1.00000	1.13(T)
	72 trans-1,4-Dichloro-2-butene	53	10.939	10.936	(1.149)	579	1.00000	2.01(M)
	74 Bromobenzene	156	10.830	10.837	(0.915)	4077	1.00000	1.08
	75 1,3,5-Trimethylbenzene	105	11.132	11.138	(0.941)	17555	1.00000	0.94(aM)
	81 sec-Butylbenzene	105	11.664	11.674	(0.986)	16230	1.00000	1.17
	82 p-Isopropyltoluene	119	11.815	11.825	(0.998)	13433	1.00000	1.17
	83 1,3-Dichlorobenzene	146	11.767	11.774	(0.994)	7046	1.00000	1.09
	84 1,4-Dichlorobenzene	146	11.860	11.863	(1.002)	6547	1.00000	1.08
	87 n-Butylbenzene	91	12.223	12.226	(1.033)	9281	1.00000	1.09
	88 1,2-Dichlorobenzene	146	12.223	12.229	(1.033)	6975	1.00000	1.09
	91 Hexachlorobutadiene	225	13.991	13.988	(1.182)	1961	1.00000	1.16(M)
	146 Methyl acetate	43	3.241	3.241	(0.561)	4908	1.00000	1.12(aM)
	139 Diethyl ether	59	2.561	2.545	(0.443)	6755	1.00000	1.02
	133 Ethyl Acrylate	55	6.986	7.018	(1.209)	12977	1.00000	1.10(M)
	136 n-Hexane	57	4.075	4.063	(0.705)	4855	1.00000	1.09(M)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
141	Cyclohexane	56	5.680	5.689	(0.983)	7787	1.00000	1.12(a)
142	Tetrahydrofuran	42	5.429	5.423	(0.939)	3444	2.00000	2.29(M)
149	Isopropyl alcohol	45	3.090	3.093	(0.535)	5362	20.0000	20.10(M)
151	4-Methyl-2-pentanol	45	8.478	8.478	(0.890)	16254	20.0000	18.52(a)
167	Ethanol	45	2.551	2.545	(0.441)	7150	20.0000	21.22(M)
170	1,3,5-Trichlorobenzene	180	13.205	13.208	(1.116)	3996	1.00000	0.96(Ta)
172	tert-Butyl formate	59	4.916	4.919	(0.851)	10316	2.00000	2.14(T)
174	tert-Amyl methyl ether	73	6.260	6.261	(1.083)	10047	1.00000	1.07(M)
175	tert-Butyl ethyl ether	59	6.254	6.254	(1.082)	4764	1.00000	0.94(a)
157	2-Methylnaphthalene	142	15.188	15.191	(1.283)	2108	1.00000	6.04(M)
156	Diisopropyl ether	45	4.428	4.435	(0.766)	15655	1.00000	1.06(M)
171	1-Methylnaphthalene	142	15.393	15.387	(1.301)	1653	1.00000	5.30(M)
130	Ethyl Acetate	43	5.246	5.256	(0.908)	9531	1.00000	1.06(aM)
M 94	1,2-Dichloroethylene (total)	96				7778	2.00000	2.11(a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080204.D
Date : 02-AUG-2018 23:03
Client ID:
Sample Info: VSTD001;VSTD001;1;2;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

\\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080204.D

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080205.D Page 1
Report Date: 04-Sep-2018 17:00

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080205.D
Lab Smp Id: VSTD002
Inj Date : 02-AUG-2018 23:29
Operator : AP   Inst ID: VOA2.i
Smp Info : VSTD002;VSTD002;1;3;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\E180802.b\8260LL.m
Meth Date : 17-Aug-2018 12:13 Shiva.Targ Quant Type: ISTD
Cal Date : 09-JUN-2018 13:37   Cal File: D060910.D
Als bottle: 31   Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.786	5.783	(1.000)	271653	50.0000	
2	Dichlorodifluoromethane	85	1.463	1.454	(0.253)	5607	2.00000	2.09(M)
186	Isobutylene	56	1.668	1.666	(0.288)	10160	2.00000	2.10(aAM)
3	Chloromethane	50	1.608	1.601	(0.278)	14179	2.00000	2.11(aM)
4	Propionitrile	54	5.250	5.276	(0.907)	20732	20.0000	16.88
5	Vinyl Chloride	62	1.701	1.688	(0.294)	8869	2.00000	1.97
7	Chloroethane	64	2.063	2.031	(0.357)	6305	2.00000	2.20(M)
159	Dichlorofluoromethane	67	2.249	2.227	(0.389)	12766	2.00000	1.91(T)
8	Trichlorofluoromethane	101	2.269	2.253	(0.392)	8455	2.00000	1.93(T)
9	Acrolein	56	2.708	2.699	(0.468)	2930	4.00000	2.47(M)
10	Acetone	43	2.878	2.869	(0.498)	7793	4.00000	3.15(M)
11	1,1-Dichloroethene	96	2.772	2.750	(0.479)	6540	2.00000	2.03
12	Isobutyl Alcohol	74	6.180	6.184	(1.068)	536	40.0000	28.34(M)
13	Acetonitrile	39	3.180	3.174	(0.550)	8437	20.0000	25.74(M)
14	Allyl Chloride	41	3.196	3.180	(0.552)	17668	2.00000	1.60(T)
15	Iodomethane	142	2.920	2.914	(0.505)	4031	4.00000	2.48(M)
16	Acrylonitrile	53	3.735	3.710	(0.646)	3527	4.00000	2.57
18	Methyl tert-butyl ether	73	3.703	3.697	(0.640)	19411	2.00000	1.98(T)
19	Carbon Disulfide	76	2.968	2.962	(0.513)	24809	4.00000	4.09(M)
20	trans-1,2-Dichloroethene	96	3.684	3.668	(0.637)	6703	2.00000	2.02
21	Vinyl Acetate	43	5.253	5.256	(0.908)	18601	4.00000	4.16(M)
22	1,1-Dichloroethane	63	4.303	4.281	(0.744)	15546	2.00000	2.04(M)

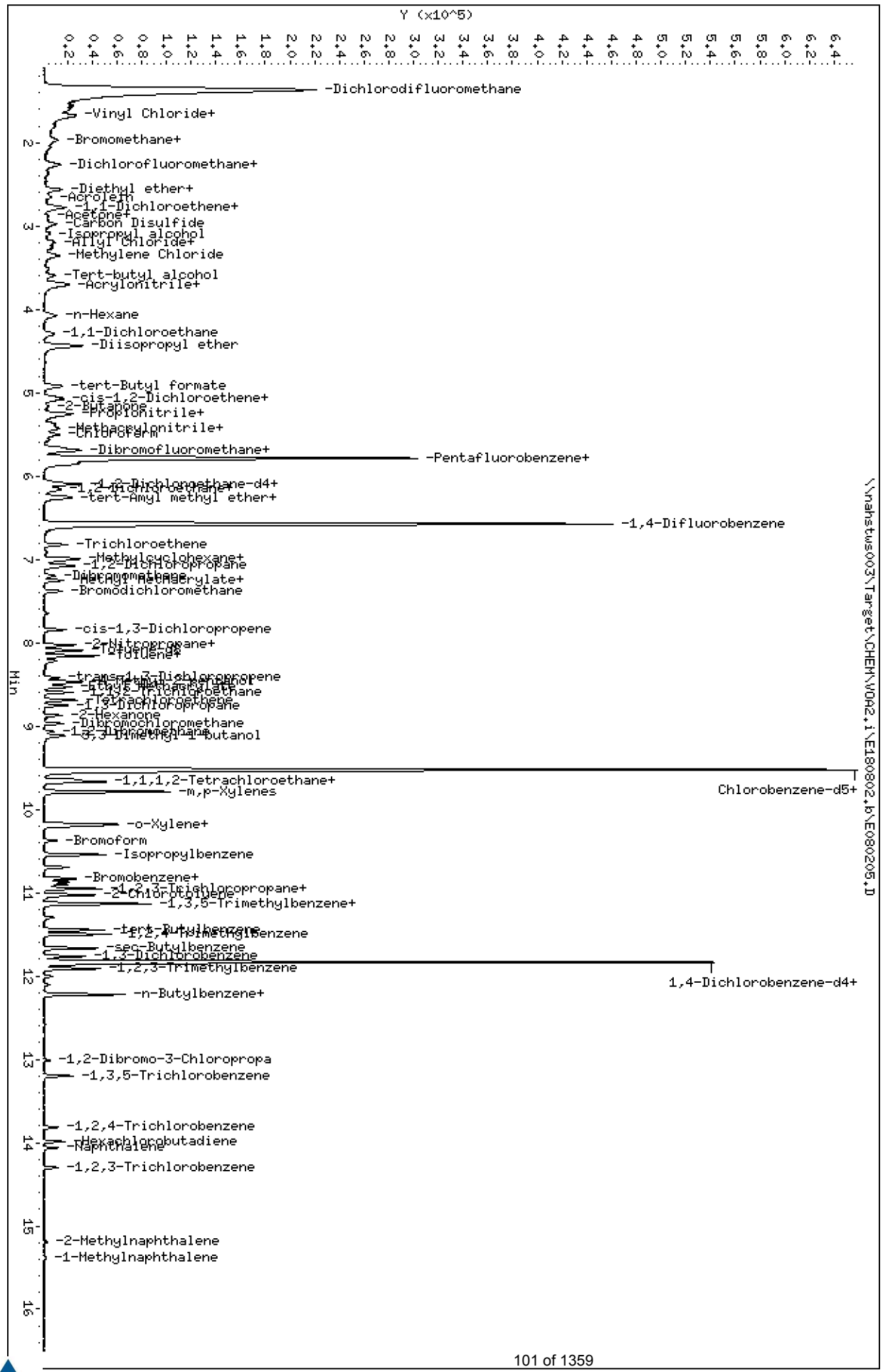
Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080205.D Page 2
Report Date: 04-Sep-2018 17:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
24	2-Butanone	43	5.163	5.150	(0.892)	7361	4.00000	3.94(M)
25	Methacrylonitrile	41	5.426	5.414	(0.938)	8234	2.00000	2.01
26	2,2-Dichloropropane	77	5.047	5.044	(0.872)	8758	2.00000	2.11(M)
27	cis-1,2-Dichloroethene	96	5.073	5.073	(0.877)	7546	2.00000	1.88
28	Chloroform	83	5.494	5.497	(0.950)	12430	2.00000	1.95
29	Bromochloromethane	128	5.368	5.378	(0.928)	3625	2.00000	1.94(M)
$ 30	Dibromofluoromethane	113	5.699	5.689	(0.985)	5344	2.00000	2.20
31	1,1,1-Trichloroethane	97	5.657	5.657	(0.978)	11469	2.00000	2.13
32	1,1-Dichloropropene	75	5.869	5.856	(0.893)	9958	2.00000	0.58(a)
33	1,2-Dichloroethane	62	6.155	6.148	(0.936)	9800	2.00000	2.14
34	Carbon Tetrachloride	117	5.837	5.837	(0.888)	9623	2.00000	0.65(Ta)
$ 35	1,2-Dichloroethane-d4	65	6.071	6.059	(1.049)	5882	2.00000	2.12(T)
* 36	1,4-Difluorobenzene	114	6.575	6.575	(1.000)	417699	50.0000	
37	Benzene	78	6.097	6.097	(0.927)	29178	2.00000	2.04
38	Trichloroethene	130	6.825	6.819	(1.038)	7757	2.00000	2.03
39	Bromodichloromethane	83	7.380	7.381	(1.122)	10305	2.00000	2.14(T)
40	Methyl Methacrylate	41	7.252	7.252	(1.253)	8260	2.00000	1.99(Ta)
41	2-Chloroethylvinyl ether	63	8.157	8.164	(1.241)	2211	4.00000	3.81(aM)
42	1,2-Dichloropropane	63	7.069	7.069	(1.075)	8728	2.00000	2.10(M)
43	2-Nitropropane	43	8.032	8.038	(1.388)	17673	2.00000	2.03(Ta)
44	Dibromomethane	93	7.197	7.194	(1.095)	3908	2.00000	1.90
45	4-Methyl-2-Pentanone	43	8.032	8.038	(0.843)	17673	4.00000	4.25
46	cis-1,3-Dichloropropene	75	7.842	7.843	(1.193)	10628	2.00000	1.97
* 47	Chlorobenzene-d5	117	9.524	9.527	(1.000)	364855	50.0000	
$ 48	Toluene-d8	98	8.093	8.093	(0.850)	20619	2.00000	0.93(Ta)
49	Ethyl Methacrylate	69	8.529	8.539	(1.297)	11204	2.00000	2.15(T)
50	Toluene	91	8.160	8.164	(0.857)	31354	2.00000	2.13
51	trans-1,3-Dichloropropene	75	8.420	8.420	(1.281)	8195	2.00000	1.96(M)
52	2-Hexanone	43	8.869	8.873	(0.931)	11116	4.00000	4.30(M)
53	1,1,2-Trichloroethane	83	8.597	8.600	(0.903)	5864	2.00000	2.09
54	1,3-Dichloropropane	76	8.747	8.760	(0.918)	11742	2.00000	2.12
55	Dibromochloromethane	129	8.972	8.975	(0.942)	7781	2.00000	1.99(T)
56	Tetrachloroethene	164	8.686	8.693	(0.912)	6293	2.00000	2.12
57	1,2-Dibromoethane	107	9.071	9.072	(0.952)	6385	2.00000	1.89(T)
59	Chlorobenzene	112	9.553	9.556	(1.003)	19081	2.00000	2.09
60	1,1,1,2-Tetrachloroethane	131	9.646	9.652	(1.013)	7754	2.00000	2.16
61	Ethylbenzene	106	9.668	9.678	(1.015)	11299	2.00000	0.37(a)
64	Styrene	104	10.198	10.204	(1.071)	19882	2.00000	2.04
66	Bromoform	173	10.371	10.378	(1.089)	5215	2.00000	1.91(T)
67	Isopropylbenzene	105	10.548	10.551	(1.107)	32668	2.00000	2.08
68	1,1,2,2-Tetrachloroethane	83	10.868	10.878	(0.918)	9995	2.00000	2.23(M)
* 70	1,4-Dichlorobenzene-d4	152	11.834	11.838	(1.000)	140271	50.0000	
71	1,2,3-Trichloropropane	75	10.904	10.907	(0.921)	9210	2.00000	2.19
72	trans-1,4-Dichloro-2-butene	53	10.926	10.936	(1.147)	1639	2.00000	3.00(M)
74	Bromobenzene	156	10.833	10.837	(0.915)	8034	2.00000	2.11
75	1,3,5-Trimethylbenzene	105	11.128	11.138	(0.940)	28270	2.00000	1.86
81	sec-Butylbenzene	105	11.667	11.674	(0.986)	30286	2.00000	2.16
82	p-Isopropyltoluene	119	11.818	11.825	(0.999)	23826	2.00000	2.05
83	1,3-Dichlorobenzene	146	11.767	11.774	(0.994)	13443	2.00000	2.06
84	1,4-Dichlorobenzene	146	11.857	11.863	(1.002)	12345	2.00000	2.02
87	n-Butylbenzene	91	12.219	12.226	(1.033)	17327	2.00000	2.02
88	1,2-Dichlorobenzene	146	12.223	12.229	(1.033)	13071	2.00000	2.03
89	1,2-Dibromo-3-Chloropropane	75	13.009	13.009	(1.099)	1249	2.00000	1.45(M)
90	1,2,4-Trichlorobenzene	180	13.821	13.821	(1.168)	4411	2.00000	1.05(T)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
91	Hexachlorobutadiene	225	13.984	13.988	(1.182)	3440	2.00000	2.01(M)
93	1,2,3-Trichlorobenzene	182	14.296	14.302	(1.208)	4040	2.00000	1.07(T)
146	Methyl acetate	43	3.257	3.241	(0.563)	8624	2.00000	1.99(aM)
139	Diethyl ether	59	2.554	2.545	(0.442)	12298	2.00000	1.88
147	Methylcyclohexane	83	6.989	6.992	(1.063)	12089	2.00000	0.41(a)
135	1,4-Dioxane	88	7.249	7.246	(1.253)	1370	40.0000	35.04(M)
132	n-Butanol	56	6.992	6.996	(1.209)	5725	40.0000	20.17
131	Methyl Acrylate	55	5.282	5.282	(0.913)	8116	2.00000	0.39(a)
133	Ethyl Acrylate	55	7.011	7.018	(1.212)	23903	2.00000	2.05(M)
136	n-Hexane	57	4.072	4.063	(0.704)	9085	2.00000	2.06
141	Cyclohexane	56	5.689	5.689	(0.983)	13956	2.00000	2.03(a)
142	Tetrahydrofuran	42	5.442	5.423	(0.941)	6428	4.00000	4.32(M)
148	Tert-butyl alcohol	59	3.594	3.597	(0.621)	13853	40.0000	33.91
149	Isopropyl alcohol	45	3.084	3.093	(0.533)	10546	40.0000	39.88(M)
151	4-Methyl-2-pentanol	45	8.471	8.478	(0.889)	33569	40.0000	38.77
167	Ethanol	45	2.557	2.545	(0.442)	14168	40.0000	42.41(M)
170	1,3,5-Trichlorobenzene	180	13.205	13.208	(1.116)	8459	2.00000	2.02(T)
172	tert-Butyl formate	59	4.919	4.919	(0.850)	18847	4.00000	3.94
173	3,3-Dimethyl-1-butanol	57	9.113	9.110	(0.957)	11060	40.0000	34.50
174	tert-Amyl methyl ether	73	6.260	6.261	(1.082)	17566	2.00000	1.90(T)
175	tert-Butyl ethyl ether	59	6.244	6.254	(1.079)	9590	2.00000	1.91
176	tert-Amyl alcohol	59	6.244	6.254	(1.079)	9590	40.0000	38.28
157	2-Methylnaphthalene	142	15.194	15.191	(1.284)	1755	2.00000	5.92(M)
156	Diisopropyl ether	45	4.435	4.435	(0.767)	28685	2.00000	1.97(T)
171	1-Methylnaphthalene	142	15.393	15.387	(1.301)	1500	2.00000	5.25(M)
130	Ethyl Acetate	43	5.253	5.256	(0.908)	20327	2.00000	2.29(aM)
M 94	1,2-Dichloroethylene (total)	96				14249	4.00000	3.91(a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080205.D
Date : 02-AUG-2018 23:29
Client ID:
Sample Info: VSTD002;VSTD0021;3;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080206.D Page 1
Report Date: 04-Sep-2018 17:00

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080206.D
Lab Smp Id: VSTD005
Inj Date : 02-AUG-2018 23:55
Operator : AP   Inst ID: VOA2.i
Smp Info : VSTD005;VSTD005;1;4;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\E180802.b\8260LL.m
Meth Date : 17-Aug-2018 12:13 Shiva.Targ Quant Type: ISTD
Cal Date : 09-JUN-2018 13:37   Cal File: D060910.D
Als bottle: 32   Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.783	5.783	(1.000)	253796	50.0000	
2 Dichlorodifluoromethane	85	1.467	1.454	(0.254)	13256	5.00000	5.30(T)
186 Isobutylene	56	1.672	1.666	(0.289)	24641	5.00000	5.46(AM)
3 Chloromethane	50	1.617	1.601	(0.280)	32514	5.00000	5.19
4 Propionitrile	54	5.243	5.276	(0.907)	57765	50.0000	50.35
5 Vinyl Chloride	62	1.698	1.688	(0.294)	22321	5.00000	5.32
6 Bromomethane	94	1.961	1.941	(0.339)	17001	5.00000	5.06(TM)
7 Chloroethane	64	2.051	2.031	(0.355)	14143	5.00000	5.28
159 Dichlorofluoromethane	67	2.243	2.227	(0.388)	33404	5.00000	5.37(T)
8 Trichlorofluoromethane	101	2.269	2.253	(0.392)	21379	5.00000	5.22(T)
9 Acrolein	56	2.702	2.699	(0.467)	3154	10.0000	3.00(T)
10 Acetone	43	2.882	2.869	(0.498)	14782	10.0000	10.09(M)
11 1,1-Dichloroethene	96	2.769	2.750	(0.479)	16201	5.00000	5.40
12 Isobutyl Alcohol	74	6.161	6.184	(1.065)	1685	100.000	98.77(M)
13 Acetonitrile	39	3.180	3.174	(0.550)	8459	50.0000	27.26
14 Allyl Chloride	41	3.193	3.180	(0.552)	47608	5.00000	4.62
15 Iodomethane	142	2.920	2.914	(0.505)	15445	10.0000	6.71(T)
16 Acrylonitrile	53	3.719	3.710	(0.643)	12477	10.0000	8.34
17 Methylene Chloride	84	3.350	3.334	(0.579)	19984	5.00000	4.48
18 Methyl tert-butyl ether	73	3.697	3.697	(0.639)	49506	5.00000	5.42(T)
19 Carbon Disulfide	76	2.968	2.962	(0.513)	59068	10.0000	10.43
20 trans-1,2-Dichloroethene	96	3.684	3.668	(0.637)	15996	5.00000	5.17

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080206.D Page 2
Report Date: 04-Sep-2018 17:00

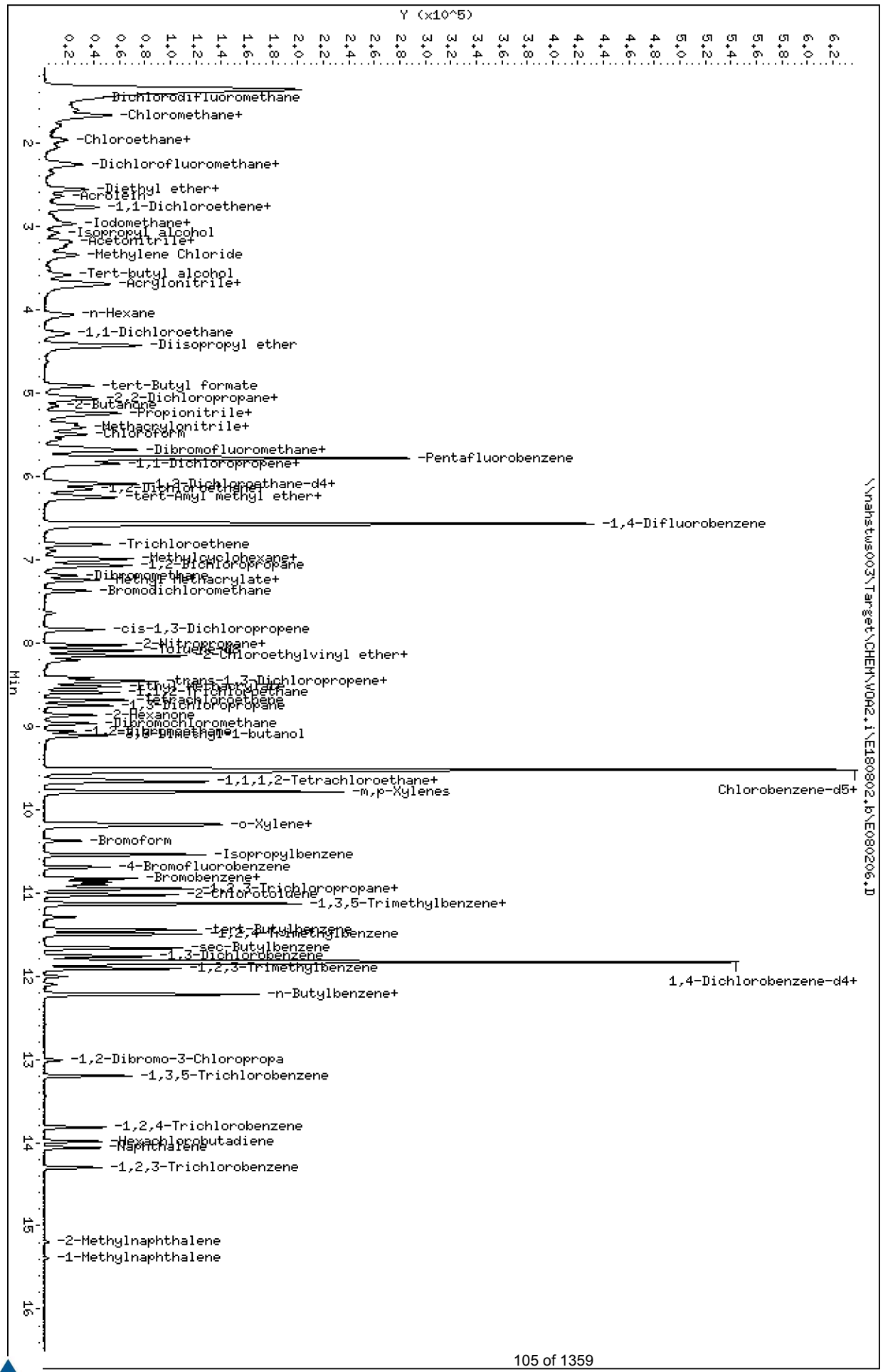
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
	21 Vinyl Acetate	43	5.250	5.256	(0.908)	46660	10.0000	11.18(M)
	22 1,1-Dichloroethane	63	4.284	4.281	(0.741)	37049	5.00000	5.22(T)
	24 2-Butanone	43	5.160	5.150	(0.892)	17114	10.0000	9.82
	25 Methacrylonitrile	41	5.417	5.414	(0.937)	20311	5.00000	5.32
	26 2,2-Dichloropropane	77	5.051	5.044	(0.873)	19461	5.00000	5.04
	27 cis-1,2-Dichloroethene	96	5.080	5.073	(0.878)	19860	5.00000	5.32
	28 Chloroform	83	5.500	5.497	(0.951)	31810	5.00000	5.34
	29 Bromochloromethane	128	5.378	5.378	(0.930)	9657	5.00000	5.55
$	30 Dibromofluoromethane	113	5.689	5.689	(0.984)	12457	5.00000	5.49
	31 1,1,1-Trichloroethane	97	5.654	5.657	(0.978)	26302	5.00000	5.24
	32 1,1-Dichloropropene	75	5.856	5.856	(0.891)	21413	5.00000	4.02
	33 1,2-Dichloroethane	62	6.145	6.148	(0.935)	23092	5.00000	5.32
	34 Carbon Tetrachloride	117	5.840	5.837	(0.888)	24656	5.00000	4.89(M)
$	35 1,2-Dichloroethane-d4	65	6.065	6.059	(1.049)	13785	5.00000	5.32
*	36 1,4-Difluorobenzene	114	6.575	6.575	(1.000)	397495	50.0000	
	37 Benzene	78	6.097	6.097	(0.927)	74577	5.00000	5.48
	38 Trichloroethene	130	6.825	6.819	(1.038)	19772	5.00000	5.44
	39 Bromodichloromethane	83	7.377	7.381	(1.122)	24672	5.00000	5.39(T)
	40 Methyl Methacrylate	41	7.249	7.252	(1.254)	20610	5.00000	5.33
	41 2-Chloroethylvinyl ether	63	8.157	8.164	(1.241)	6081	10.0000	11.02(T)
	42 1,2-Dichloropropane	63	7.073	7.069	(1.076)	21892	5.00000	5.54(M)
	43 2-Nitropropane	43	8.029	8.038	(1.388)	41947	5.00000	5.16(T)
	44 Dibromomethane	93	7.188	7.194	(1.093)	9731	5.00000	4.98
	45 4-Methyl-2-Pentanone	43	8.029	8.038	(0.843)	41947	10.0000	10.58
	46 cis-1,3-Dichloropropene	75	7.843	7.843	(1.193)	27121	5.00000	5.29
*	47 Chlorobenzene-d5	117	9.524	9.527	(1.000)	348068	50.0000	
$	48 Toluene-d8	98	8.090	8.093	(0.849)	49918	5.00000	5.17
	49 Ethyl Methacrylate	69	8.529	8.539	(1.297)	25823	5.00000	5.22
	50 Toluene	91	8.157	8.164	(0.856)	78323	5.00000	5.57
	51 trans-1,3-Dichloropropene	75	8.420	8.420	(1.281)	19557	5.00000	4.92
	52 2-Hexanone	43	8.866	8.873	(0.931)	27891	10.0000	11.63(M)
	53 1,1,2-Trichloroethane	83	8.594	8.600	(0.902)	14798	5.00000	5.53
	54 1,3-Dichloropropane	76	8.751	8.760	(0.919)	28604	5.00000	5.41
	55 Dibromochloromethane	129	8.969	8.975	(0.942)	20462	5.00000	5.48(T)
	56 Tetrachloroethene	164	8.690	8.693	(0.912)	15770	5.00000	5.56
	57 1,2-Dibromoethane	107	9.068	9.072	(0.952)	17544	5.00000	5.45(T)
	58 1-Chlorohexane	55	9.550	9.559	(1.452)	20511	5.00000	4.20
	59 Chlorobenzene	112	9.550	9.556	(1.003)	47868	5.00000	5.49
	60 1,1,1,2-Tetrachloroethane	131	9.643	9.652	(1.012)	18909	5.00000	5.52
	61 Ethylbenzene	106	9.669	9.678	(1.015)	27181	5.00000	4.53
	62 m,p-Xylenes	106	9.787	9.800	(1.028)	68774	10.0000	8.21
	63 o-Xylene	106	10.176	10.182	(1.068)	34473	5.00000	4.13
	64 Styrene	104	10.195	10.204	(1.070)	51262	5.00000	5.51
	66 Bromoform	173	10.378	10.378	(1.090)	14038	5.00000	5.39(T)
	67 Isopropylbenzene	105	10.545	10.551	(1.107)	81872	5.00000	5.47
	68 1,1,2,2-Tetrachloroethane	83	10.869	10.878	(0.918)	24724	5.00000	5.53(M)
$	69 4-Bromofluorobenzene	95	10.692	10.699	(1.123)	16698	5.00000	4.06
*	70 1,4-Dichlorobenzene-d4	152	11.835	11.838	(1.000)	140027	50.0000	
	71 1,2,3-Trichloropropane	75	10.901	10.907	(0.921)	22269	5.00000	5.31
	72 trans-1,4-Dichloro-2-butene	53	10.926	10.936	(1.147)	3925	5.00000	5.32(M)
	73 n-Propylbenzene	91	10.952	10.962	(0.925)	87800	5.00000	3.79
	74 Bromobenzene	156	10.830	10.837	(0.915)	20340	5.00000	5.37
	75 1,3,5-Trimethylbenzene	105	11.129	11.138	(0.940)	66428	5.00000	5.22
	76 2-Chlorotoluene	91	11.026	11.036	(0.932)	56944	5.00000	4.13

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080206.D Page 3
Report Date: 04-Sep-2018 17:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
77	4-Chlorotoluene	91	11.138	11.145	(0.941)	59905	5.00000	3.84
78	tert-Butylbenzene	119	11.449	11.456	(0.967)	55700	5.00000	3.89
79	1,2,4-Trimethylbenzene	105	11.498	11.507	(0.972)	64820	5.00000	3.80
81	sec-Butylbenzene	105	11.664	11.674	(0.986)	75987	5.00000	5.44
82	p-Isopropyltoluene	119	11.815	11.825	(0.998)	61403	5.00000	5.31
83	1,3-Dichlorobenzene	146	11.767	11.774	(0.994)	34922	5.00000	5.36
84	1,4-Dichlorobenzene	146	11.854	11.863	(1.002)	30480	5.00000	5.01
87	n-Butylbenzene	91	12.223	12.226	(1.033)	45367	5.00000	5.30
88	1,2-Dichlorobenzene	146	12.223	12.229	(1.033)	34656	5.00000	5.39
89	1,2-Dibromo-3-Chloropropane	75	13.009	13.009	(1.099)	3274	5.00000	4.40
90	1,2,4-Trichlorobenzene	180	13.818	13.821	(1.168)	15011	5.00000	4.04
91	Hexachlorobutadiene	225	13.988	13.988	(1.182)	9227	5.00000	5.42
92	Naphthalene	128	14.062	14.065	(1.188)	35263	5.00000	3.12
93	1,2,3-Trichlorobenzene	182	14.302	14.302	(1.209)	14249	5.00000	4.32
146	Methyl acetate	43	3.251	3.241	(0.562)	21428	5.00000	5.30(M)
138	Freon TF	101	2.785	2.763	(0.482)	15238	5.00000	5.02
139	Diethyl ether	59	2.554	2.545	(0.442)	33674	5.00000	5.51
147	Methylcyclohexane	83	6.986	6.992	(1.062)	28010	5.00000	4.49
135	1,4-Dioxane	88	7.249	7.246	(1.254)	4074	100.000	112.92
132	n-Butanol	56	6.992	6.996	(1.209)	14197	100.000	100.27
131	Methyl Acrylate	55	5.269	5.282	(0.911)	30172	5.00000	4.35
133	Ethyl Acrylate	55	7.008	7.018	(1.212)	55713	5.00000	5.11
136	n-Hexane	57	4.066	4.063	(0.703)	22171	5.00000	5.40
141	Cyclohexane	56	5.686	5.689	(0.983)	33906	5.00000	5.30
142	Tetrahydrofuran	42	5.436	5.423	(0.940)	13050	10.0000	9.38
148	Tert-butyl alcohol	59	3.575	3.597	(0.618)	34626	100.000	89.58
149	Isopropyl alcohol	45	3.081	3.093	(0.533)	26438	100.000	107.03(M)
151	4-Methyl-2-pentanol	45	8.459	8.478	(0.888)	84509	100.000	102.32
166	1,2,3-Trimethylbenzene	105	11.912	11.921	(1.007)	61020	5.00000	4.01
167	Ethanol	45	2.551	2.545	(0.441)	33679	100.000	107.91(T)
170	1,3,5-Trichlorobenzene	180	13.202	13.208	(1.116)	21868	5.00000	5.23
172	tert-Butyl formate	59	4.919	4.919	(0.851)	47230	10.0000	10.59
173	3,3-Dimethyl-1-butanol	57	9.110	9.110	(0.957)	29975	100.000	98.01
174	tert-Amyl methyl ether	73	6.261	6.261	(1.083)	47286	5.00000	5.47
175	tert-Butyl ethyl ether	59	6.241	6.254	(1.079)	23164	5.00000	4.94
176	tert-Amyl alcohol	59	6.241	6.254	(1.079)	23164	100.000	98.99
157	2-Methylnaphthalene	142	15.198	15.191	(1.284)	2327	5.00000	6.10(M)
156	Diisopropyl ether	45	4.428	4.435	(0.766)	72470	5.00000	5.34(T)
171	1-Methylnaphthalene	142	15.380	15.387	(1.300)	2166	5.00000	5.44(M)
130	Ethyl Acetate	43	5.250	5.256	(0.908)	42308	5.00000	5.10
M 94	1,2-Dichloroethylene (total)	96				35856	10.0000	10.49
M 95	Xylenes (total)	106				103247	15.0000	12.34

QC Flag Legend

T - Target compound detected outside RT window.
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\WOA2.i\E180802.b\E080206.D
Date : 02-AUG-2018 23:55
Client ID:
Sample Info: VSTD005;VSTD005;1;4;
Purge Volume: 5.0
Column phase: DB624

Instrument: WOA2.i
Operator: AP
Column diameter: 0.18

\\nahstws003\Target\CHEM\WOA2.i\E180802.b\E080206.D

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080207.D Page 1
Report Date: 04-Sep-2018 17:00

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080207.D
Lab Smp Id: VSTD010
Inj Date : 03-AUG-2018 00:21
Operator : AP   Inst ID: VOA2.i
Smp Info : VSTD010;VSTD010;1;5;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\E180802.b\8260LL.m
Meth Date : 17-Aug-2018 12:13 Shiva.Targ Quant Type: ISTD
Cal Date : 09-JUN-2018 13:37   Cal File: D060910.D
Als bottle: 33   Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.779	5.783	(1.000)	259438	50.0000	
2	Dichlorodifluoromethane	85	1.457	1.454	(0.252)	24910	10.0000	9.75(T)
186	Isobutylene	56	1.666	1.666	(0.288)	50118	10.0000	10.87(AM)
3	Chloromethane	50	1.605	1.601	(0.278)	65577	10.0000	10.24(T)
4	Propionitrile	54	5.240	5.276	(0.907)	115507	100.000	98.49
5	Vinyl Chloride	62	1.698	1.688	(0.294)	46176	10.0000	10.78
6	Bromomethane	94	1.961	1.941	(0.339)	27205	10.0000	9.96(T)
7	Chloroethane	64	2.054	2.031	(0.355)	28101	10.0000	10.27
159	Dichlorofluoromethane	67	2.246	2.227	(0.389)	64582	10.0000	10.16
8	Trichlorofluoromethane	101	2.262	2.253	(0.392)	43211	10.0000	10.33
9	Acrolein	56	2.696	2.699	(0.466)	12659	10.0000	14.67
10	Acetone	43	2.866	2.869	(0.496)	25014	20.0000	19.07
11	1,1-Dichloroethene	96	2.763	2.750	(0.478)	31839	10.0000	10.38
12	Isobutyl Alcohol	74	6.171	6.184	(1.068)	3016	200.000	174.04(AM)
13	Acetonitrile	39	3.190	3.174	(0.552)	36985	100.000	100.41
14	Allyl Chloride	41	3.193	3.180	(0.553)	96536	10.0000	9.16
15	Iodomethane	142	2.923	2.914	(0.506)	44110	20.0000	16.77
16	Acrylonitrile	53	3.703	3.710	(0.641)	28626	20.0000	18.10
17	Methylene Chloride	84	3.344	3.334	(0.579)	38425	10.0000	9.83
18	Methyl tert-butyl ether	73	3.690	3.697	(0.639)	93072	10.0000	9.97(T)
19	Carbon Disulfide	76	2.965	2.962	(0.513)	116990	20.0000	20.22
20	trans-1,2-Dichloroethene	96	3.674	3.668	(0.636)	32367	10.0000	10.23

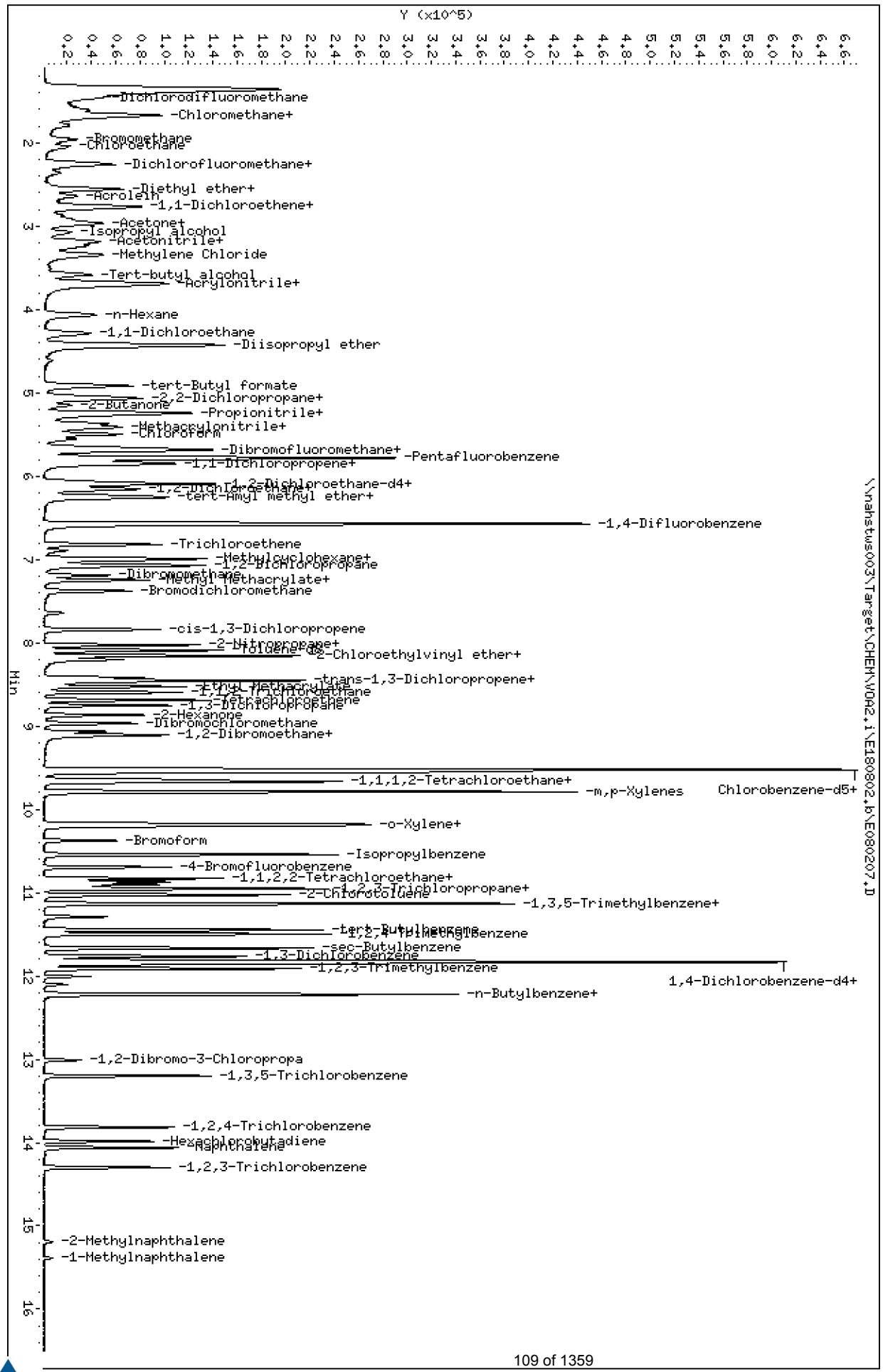
Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080207.D Page 2
Report Date: 04-Sep-2018 17:00

			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	21	Vinyl Acetate	43	5.243	5.256	(0.907)	85414	20.0000	20.03(M)
	22	1,1-Dichloroethane	63	4.284	4.281	(0.741)	71894	10.0000	9.91
	24	2-Butanone	43	5.150	5.150	(0.891)	35600	20.0000	19.98
	25	Methacrylonitrile	41	5.410	5.414	(0.936)	38891	10.0000	9.97
	26	2,2-Dichloropropane	77	5.045	5.044	(0.873)	38792	10.0000	9.82
	27	cis-1,2-Dichloroethene	96	5.073	5.073	(0.878)	39191	10.0000	10.27
	28	Chloroform	83	5.497	5.497	(0.951)	60313	10.0000	9.92
	29	Bromochloromethane	128	5.365	5.378	(0.928)	17916	10.0000	10.08
$	30	Dibromofluoromethane	113	5.693	5.689	(0.985)	23591	10.0000	10.17
	31	1,1,1-Trichloroethane	97	5.657	5.657	(0.979)	51685	10.0000	10.08
	32	1,1-Dichloropropene	75	5.856	5.856	(0.891)	43842	10.0000	10.11
	33	1,2-Dichloroethane	62	6.148	6.148	(0.936)	41299	10.0000	9.23
	34	Carbon Tetrachloride	117	5.837	5.837	(0.888)	43106	10.0000	9.58(M)
$	35	1,2-Dichloroethane-d4	65	6.055	6.059	(1.048)	26924	10.0000	10.17
*	36	1,4-Difluorobenzene	114	6.572	6.575	(1.000)	409662	50.0000	
	37	Benzene	78	6.097	6.097	(0.928)	141855	10.0000	10.12
	38	Trichloroethene	130	6.819	6.819	(1.038)	37563	10.0000	10.03
	39	Bromodichloromethane	83	7.377	7.381	(1.123)	48254	10.0000	10.23
	40	Methyl Methacrylate	41	7.249	7.252	(1.254)	40096	10.0000	10.16
	41	2-Chloroethylvinyl ether	63	8.157	8.164	(1.241)	11589	20.0000	20.39(T)
	42	1,2-Dichloropropane	63	7.069	7.069	(1.076)	41267	10.0000	10.14(M)
	43	2-Nitropropane	43	8.026	8.038	(1.389)	85587	10.0000	10.31
	44	Dibromomethane	93	7.194	7.194	(1.095)	20744	10.0000	10.30
	45	4-Methyl-2-Pentanone	43	8.026	8.038	(0.843)	85587	20.0000	20.67
	46	cis-1,3-Dichloropropene	75	7.839	7.843	(1.193)	54887	10.0000	10.39
*	47	Chlorobenzene-d5	117	9.524	9.527	(1.000)	363386	50.0000	
$	48	Toluene-d8	98	8.090	8.093	(0.849)	94630	10.0000	10.88
	49	Ethyl Methacrylate	69	8.529	8.539	(1.298)	50565	10.0000	9.93
	50	Toluene	91	8.157	8.164	(0.856)	150129	10.0000	10.24
	51	trans-1,3-Dichloropropene	75	8.417	8.420	(1.281)	43975	10.0000	10.74
	52	2-Hexanone	43	8.866	8.873	(0.931)	53046	20.0000	21.79(M)
	53	1,1,2-Trichloroethane	83	8.594	8.600	(0.902)	28314	10.0000	10.15
	54	1,3-Dichloropropane	76	8.751	8.760	(0.919)	56509	10.0000	10.24
	55	Dibromochloromethane	129	8.969	8.975	(0.942)	39639	10.0000	10.17
	56	Tetrachloroethene	164	8.687	8.693	(0.912)	30467	10.0000	10.30
	57	1,2-Dibromoethane	107	9.065	9.072	(0.952)	35052	10.0000	10.44
	58	1-Chlorohexane	55	9.550	9.559	(1.453)	37440	10.0000	9.94
	59	Chlorobenzene	112	9.550	9.556	(1.003)	93169	10.0000	10.24
	60	1,1,1,2-Tetrachloroethane	131	9.646	9.652	(1.013)	37081	10.0000	10.38
	61	Ethylbenzene	106	9.672	9.678	(1.015)	50730	10.0000	9.95
	62	m,p-Xylenes	106	9.787	9.800	(1.028)	125473	20.0000	19.57
	63	o-Xylene	106	10.176	10.182	(1.068)	65376	10.0000	9.75
	64	Styrene	104	10.195	10.204	(1.070)	101912	10.0000	10.50
	66	Bromoform	173	10.375	10.378	(1.089)	28115	10.0000	10.34
	67	Isopropylbenzene	105	10.545	10.551	(1.107)	158107	10.0000	10.12
	68	1,1,2,2-Tetrachloroethane	83	10.869	10.878	(0.918)	47529	10.0000	10.01
$	69	4-Bromofluorobenzene	95	10.692	10.699	(1.123)	33534	10.0000	9.95
*	70	1,4-Dichlorobenzene-d4	152	11.835	11.838	(1.000)	148743	50.0000	
	71	1,2,3-Trichloropropane	75	10.901	10.907	(0.921)	44493	10.0000	9.99
	72	trans-1,4-Dichloro-2-butene	53	10.926	10.936	(1.147)	8368	10.0000	9.39
	73	n-Propylbenzene	91	10.952	10.962	(0.925)	168777	10.0000	9.78
	74	Bromobenzene	156	10.830	10.837	(0.915)	40471	10.0000	10.06
	75	1,3,5-Trimethylbenzene	105	11.129	11.138	(0.940)	126149	10.0000	9.90
	76	2-Chlorotoluene	91	11.026	11.036	(0.932)	108992	10.0000	9.84

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
77	4-Chlorotoluene	91	11.135	11.145	(0.941)	115902	10.0000	9.66
78	tert-Butylbenzene	119	11.446	11.456	(0.967)	107434	10.0000	9.77
79	1,2,4-Trimethylbenzene	105	11.498	11.507	(0.972)	124673	10.0000	9.62
81	sec-Butylbenzene	105	11.665	11.674	(0.986)	148486	10.0000	10.01
82	p-Isopropyltoluene	119	11.815	11.825	(0.998)	119366	10.0000	9.72
83	1,3-Dichlorobenzene	146	11.767	11.774	(0.994)	69865	10.0000	10.10
84	1,4-Dichlorobenzene	146	11.857	11.863	(1.002)	62144	10.0000	9.62
87	n-Butylbenzene	91	12.220	12.226	(1.033)	89410	10.0000	9.84
88	1,2-Dichlorobenzene	146	12.223	12.229	(1.033)	68867	10.0000	10.09
89	1,2-Dibromo-3-Chloropropane	75	13.006	13.009	(1.099)	6984	10.0000	9.22
90	1,2,4-Trichlorobenzene	180	13.818	13.821	(1.168)	35028	10.0000	9.09
91	Hexachlorobutadiene	225	13.988	13.988	(1.182)	18066	10.0000	10.00
92	Naphthalene	128	14.062	14.065	(1.188)	86355	10.0000	8.61
93	1,2,3-Trichlorobenzene	182	14.299	14.302	(1.208)	31035	10.0000	9.08
146	Methyl acetate	43	3.244	3.241	(0.561)	40467	10.0000	9.79(M)
138	Freon TF	101	2.776	2.763	(0.480)	28411	10.0000	10.39
139	Diethyl ether	59	2.558	2.545	(0.443)	65398	10.0000	10.48
147	Methylcyclohexane	83	6.986	6.992	(1.063)	51617	10.0000	9.95
135	1,4-Dioxane	88	7.246	7.246	(1.254)	7134	200.000	193.89
132	n-Butanol	56	6.989	6.996	(1.209)	25030	200.000	193.41
131	Methyl Acrylate	55	5.266	5.282	(0.911)	60823	10.0000	9.49
133	Ethyl Acrylate	55	7.012	7.018	(1.213)	108114	10.0000	9.71
136	n-Hexane	57	4.063	4.063	(0.703)	40724	10.0000	9.71
141	Cyclohexane	56	5.686	5.689	(0.984)	65129	10.0000	9.96
142	Tetrahydrofuran	42	5.423	5.423	(0.938)	27495	20.0000	19.35
148	Tert-butyl alcohol	59	3.581	3.597	(0.620)	73632	200.000	185.62
149	Isopropyl alcohol	45	3.074	3.093	(0.532)	51774	200.000	205.05(M)
151	4-Methyl-2-pentanol	45	8.452	8.478	(0.887)	188427	200.000	218.52
166	1,2,3-Trimethylbenzene	105	11.912	11.921	(1.007)	114630	10.0000	9.37
167	Ethanol	45	2.554	2.545	(0.442)	58210	200.000	182.46
170	1,3,5-Trichlorobenzene	180	13.202	13.208	(1.116)	44995	10.0000	10.14
172	tert-Butyl formate	59	4.919	4.919	(0.851)	94575	20.0000	20.75
173	3,3-Dimethyl-1-butanol	57	9.107	9.110	(0.956)	66519	200.000	208.34
174	tert-Amyl methyl ether	73	6.257	6.261	(1.083)	89763	10.0000	10.17
175	tert-Butyl ethyl ether	59	6.232	6.254	(1.078)	46555	10.0000	9.73
176	tert-Amyl alcohol	59	6.232	6.254	(1.078)	46555	200.000	194.63
157	2-Methylnaphthalene	142	15.194	15.191	(1.284)	4496	10.0000	6.67(T)
156	Diisopropyl ether	45	4.425	4.435	(0.766)	141565	10.0000	10.21(T)
171	1-Methylnaphthalene	142	15.380	15.387	(1.300)	4335	10.0000	5.98(T)
130	Ethyl Acetate	43	5.243	5.256	(0.907)	80336	10.0000	9.47
M 94	1,2-Dichloroethylene (total)	96				71558	20.0000	20.51
M 95	Xylenes (total)	106				190849	30.0000	29.33

QC Flag Legend

T - Target compound detected outside RT window.
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080207.D
Date : 03-AUG-2018 00:21
Client ID:
Sample Info: VSTD010;VSTD010;1;5;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080208.D Page 1
Report Date: 04-Sep-2018 17:00

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080208.D
Lab Smp Id: VSTD020
Inj Date : 03-AUG-2018 00:47
Operator : AP   Inst ID: VOA2.i
Smp Info : VSTD020;VSTD020;1;6;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\E180802.b\8260LL.m
Meth Date : 17-Aug-2018 12:13 Shiva.Targ Quant Type: ISTD
Cal Date : 09-JUN-2018 13:37   Cal File: D060910.D
Als bottle: 34   Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
Cpnd Variable		Local Compound Variable

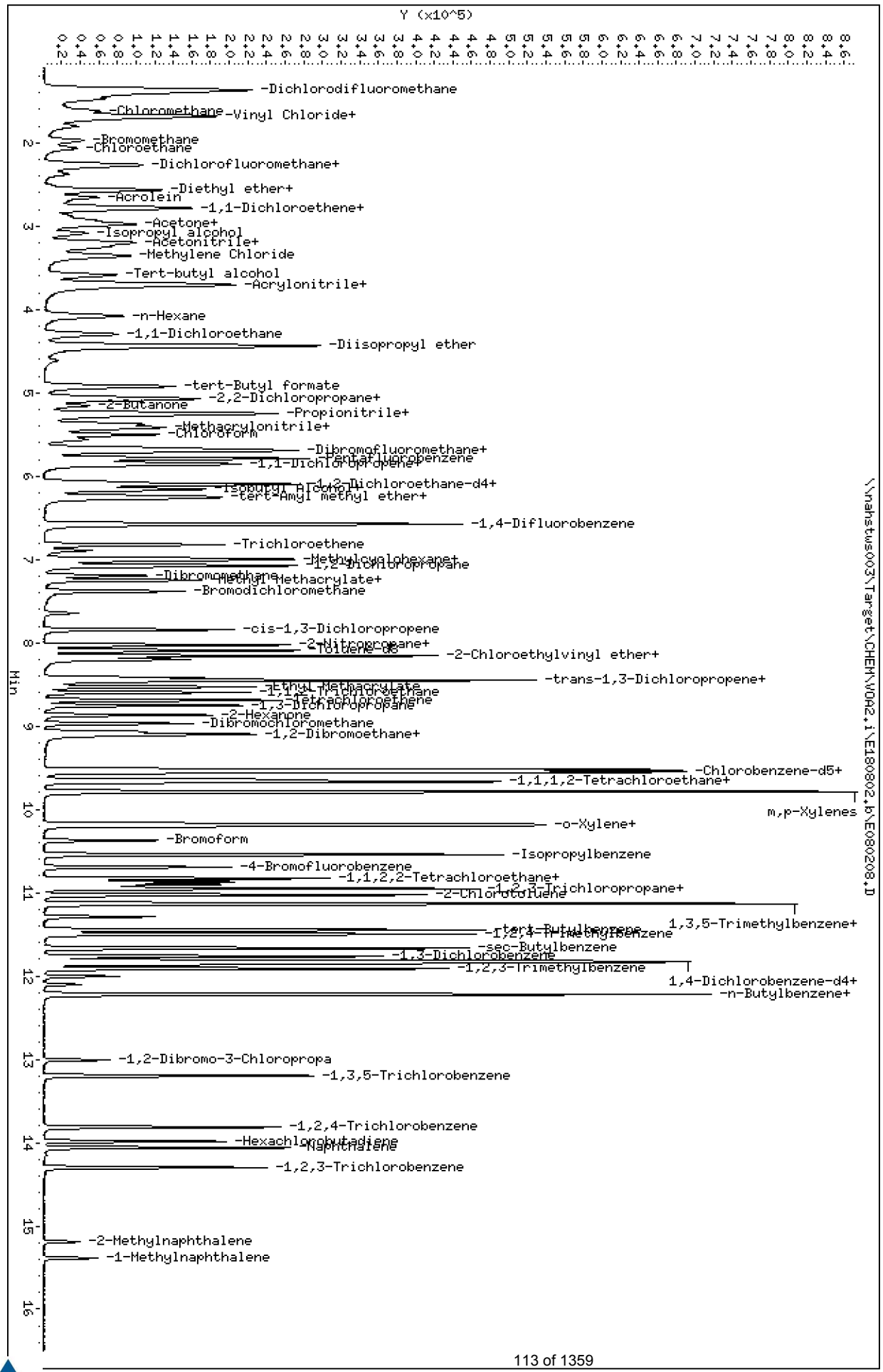
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1	Pentafluorobenzene	168	5.789	5.783	(1.000)	251109	50.0000	
2	Dichlorodifluoromethane	85	1.466	1.454	(0.253)	50532	20.0000	20.44
186	Isobutylene	56	1.678	1.666	(0.290)	101339	20.0000	22.71(AM)
3	Chloromethane	50	1.620	1.601	(0.280)	123465	20.0000	19.92
4	Propionitrile	54	5.246	5.276	(0.906)	244334	200.000	215.25
5	Vinyl Chloride	62	1.707	1.688	(0.295)	86204	20.0000	20.80
6	Bromomethane	94	1.977	1.941	(0.342)	50761	20.0000	22.56(M)
7	Chloroethane	64	2.063	2.031	(0.356)	53126	20.0000	20.06
159	Dichlorofluoromethane	67	2.253	2.227	(0.389)	130501	20.0000	21.22
8	Trichlorofluoromethane	101	2.275	2.253	(0.393)	85560	20.0000	21.13
9	Acrolein	56	2.715	2.699	(0.469)	28091	40.0000	34.91
10	Acetone	43	2.881	2.869	(0.498)	45660	40.0000	39.15
11	1,1-Dichloroethene	96	2.772	2.750	(0.479)	61574	20.0000	20.74
12	Isobutyl Alcohol	74	6.171	6.184	(1.066)	6649	400.000	398.27(A)
13	Acetonitrile	39	3.193	3.174	(0.552)	74469	200.000	203.54
14	Allyl Chloride	41	3.206	3.180	(0.554)	213841	20.0000	20.97
15	Iodomethane	142	2.930	2.914	(0.506)	108093	40.0000	40.75
16	Acrylonitrile	53	3.719	3.710	(0.642)	57890	40.0000	37.28
17	Methylene Chloride	84	3.360	3.334	(0.580)	75907	20.0000	21.72
18	Methyl tert-butyl ether	73	3.709	3.697	(0.641)	184825	20.0000	20.45
19	Carbon Disulfide	76	2.981	2.962	(0.515)	234013	40.0000	41.79
20	trans-1,2-Dichloroethene	96	3.687	3.668	(0.637)	63896	20.0000	20.87

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	21 Vinyl Acetate	43	5.253	5.256	(0.907)	169445	40.0000	41.06(M)
	22 1,1-Dichloroethane	63	4.293	4.281	(0.742)	145083	20.0000	20.67
	24 2-Butanone	43	5.153	5.150	(0.890)	70697	40.0000	41.00
	25 Methacrylonitrile	41	5.416	5.414	(0.936)	81395	20.0000	21.56
	26 2,2-Dichloropropane	77	5.057	5.044	(0.874)	81353	20.0000	21.29
	27 cis-1,2-Dichloroethene	96	5.080	5.073	(0.878)	77902	20.0000	21.10
	28 Chloroform	83	5.503	5.497	(0.951)	120367	20.0000	20.45
	29 Bromochloromethane	128	5.375	5.378	(0.928)	37740	20.0000	21.94
$	30 Dibromofluoromethane	113	5.692	5.689	(0.983)	44899	20.0000	19.99
	31 1,1,1-Trichloroethane	97	5.664	5.657	(0.978)	100939	20.0000	20.34
	32 1,1-Dichloropropene	75	5.863	5.856	(0.891)	84761	20.0000	21.81
	33 1,2-Dichloroethane	62	6.151	6.148	(0.935)	93619	20.0000	21.15
	34 Carbon Tetrachloride	117	5.843	5.837	(0.888)	87056	20.0000	21.50
$	35 1,2-Dichloroethane-d4	65	6.061	6.059	(1.047)	51690	20.0000	20.18
*	36 1,4-Difluorobenzene	114	6.578	6.575	(1.000)	405298	50.0000	
	37 Benzene	78	6.100	6.097	(0.927)	278242	20.0000	20.06
	38 Trichloroethene	130	6.822	6.819	(1.037)	75603	20.0000	20.42
	39 Bromodichloromethane	83	7.380	7.381	(1.122)	97386	20.0000	20.87
	40 Methyl Methacrylate	41	7.249	7.252	(1.252)	79558	20.0000	20.83
	41 2-Chloroethylvinyl ether	63	8.157	8.164	(1.240)	22982	40.0000	40.87(T)
	42 1,2-Dichloropropane	63	7.069	7.069	(1.075)	82902	20.0000	20.60
	43 2-Nitropropane	43	8.029	8.038	(1.387)	170991	20.0000	21.29
	44 Dibromomethane	93	7.197	7.194	(1.094)	42450	20.0000	21.32
	45 4-Methyl-2-Pentanone	43	8.029	8.038	(0.843)	170991	40.0000	41.17
	46 cis-1,3-Dichloropropene	75	7.842	7.843	(1.192)	112442	20.0000	21.53
*	47 Chlorobenzene-d5	117	9.524	9.527	(1.000)	364615	50.0000	
$	48 Toluene-d8	98	8.093	8.093	(0.850)	177474	20.0000	21.93
	49 Ethyl Methacrylate	69	8.529	8.539	(1.297)	105184	20.0000	20.88
	50 Toluene	91	8.160	8.164	(0.857)	291026	20.0000	19.78
	51 trans-1,3-Dichloropropene	75	8.417	8.420	(1.279)	89612	20.0000	22.13
	52 2-Hexanone	43	8.866	8.873	(0.931)	111901	40.0000	46.64(M)
	53 1,1,2-Trichloroethane	83	8.593	8.600	(0.902)	55095	20.0000	19.68
	54 1,3-Dichloropropane	76	8.754	8.760	(0.919)	112753	20.0000	20.37
	55 Dibromochloromethane	129	8.969	8.975	(0.942)	80090	20.0000	20.49
	56 Tetrachloroethene	164	8.686	8.693	(0.912)	59395	20.0000	20.02
	57 1,2-Dibromoethane	107	9.065	9.072	(0.952)	71756	20.0000	21.30
	58 1-Chlorohexane	55	9.553	9.559	(1.452)	71782	20.0000	22.30
	59 Chlorobenzene	112	9.553	9.556	(1.003)	187072	20.0000	20.50
	60 1,1,1,2-Tetrachloroethane	131	9.643	9.652	(1.012)	73428	20.0000	20.49
	61 Ethylbenzene	106	9.668	9.678	(1.015)	100390	20.0000	21.93
	62 m,p-Xylenes	106	9.787	9.800	(1.028)	248667	40.0000	45.46
	63 o-Xylene	106	10.179	10.182	(1.069)	131760	20.0000	22.37
	64 Styrene	104	10.198	10.204	(1.071)	202947	20.0000	20.85
	66 Bromoform	173	10.374	10.378	(1.089)	56910	20.0000	20.86
	67 Isopropylbenzene	105	10.544	10.551	(1.107)	319792	20.0000	20.41
	68 1,1,2,2-Tetrachloroethane	83	10.868	10.878	(0.918)	95943	20.0000	19.94
$	69 4-Bromofluorobenzene	95	10.695	10.699	(1.123)	62709	20.0000	20.54
*	70 1,4-Dichlorobenzene-d4	152	11.834	11.838	(1.000)	150814	50.0000	
	71 1,2,3-Trichloropropane	75	10.901	10.907	(0.921)	89155	20.0000	19.75
	72 trans-1,4-Dichloro-2-butene	53	10.926	10.936	(1.147)	16944	20.0000	17.72
	73 n-Propylbenzene	91	10.952	10.962	(0.925)	341273	20.0000	23.09
	74 Bromobenzene	156	10.833	10.837	(0.915)	84368	20.0000	20.70
	75 1,3,5-Trimethylbenzene	105	11.132	11.138	(0.941)	250204	20.0000	20.43
	76 2-Chlorotoluene	91	11.026	11.036	(0.932)	221839	20.0000	22.77

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
77	4-Chlorotoluene	91	11.138	11.145	(0.941)	234044	20.0000	22.45
78	tert-Butylbenzene	119	11.449	11.456	(0.967)	221284	20.0000	23.26
79	1,2,4-Trimethylbenzene	105	11.497	11.507	(0.972)	251933	20.0000	22.52
81	sec-Butylbenzene	105	11.664	11.674	(0.986)	300936	20.0000	20.01
82	p-Isopropyltoluene	119	11.815	11.825	(0.998)	243485	20.0000	19.57
83	1,3-Dichlorobenzene	146	11.764	11.774	(0.994)	145468	20.0000	20.75
84	1,4-Dichlorobenzene	146	11.857	11.863	(1.002)	134497	20.0000	20.54
87	n-Butylbenzene	91	12.219	12.226	(1.033)	187345	20.0000	20.35
88	1,2-Dichlorobenzene	146	12.219	12.229	(1.033)	143891	20.0000	20.81
89	1,2-Dibromo-3-Chloropropane	75	13.006	13.009	(1.099)	16000	20.0000	21.29
90	1,2,4-Trichlorobenzene	180	13.817	13.821	(1.168)	81951	20.0000	21.23
91	Hexachlorobutadiene	225	13.984	13.988	(1.182)	36905	20.0000	20.14
92	Naphthalene	128	14.061	14.065	(1.188)	207414	20.0000	21.89
93	1,2,3-Trichlorobenzene	182	14.299	14.302	(1.208)	72711	20.0000	21.27
146	Methyl acetate	43	3.254	3.241	(0.562)	75829	20.0000	18.95
138	Freon TF	101	2.788	2.763	(0.482)	55977	20.0000	22.68
139	Diethyl ether	59	2.567	2.545	(0.443)	129690	20.0000	21.47
147	Methylcyclohexane	83	6.995	6.992	(1.063)	102757	20.0000	22.48
135	1,4-Dioxane	88	7.242	7.246	(1.251)	14748	400.000	414.84
132	n-Butanol	56	7.002	6.996	(1.210)	49691	400.000	426.41
131	Methyl Acrylate	55	5.275	5.282	(0.911)	124517	20.0000	21.11
133	Ethyl Acrylate	55	7.008	7.018	(1.211)	219138	20.0000	20.33
136	n-Hexane	57	4.075	4.063	(0.704)	76460	20.0000	18.83
141	Cyclohexane	56	5.692	5.689	(0.983)	133658	20.0000	21.12
142	Tetrahydrofuran	42	5.426	5.423	(0.937)	56530	40.0000	41.10
148	Tert-butyl alcohol	59	3.591	3.597	(0.620)	150333	400.000	390.80
149	Isopropyl alcohol	45	3.080	3.093	(0.532)	99193	400.000	405.88(M)
151	4-Methyl-2-pentanol	45	8.452	8.478	(0.887)	396613	400.000	458.41
166	1,2,3-Trimethylbenzene	105	11.911	11.921	(1.007)	238682	20.0000	22.38
167	Ethanol	45	2.564	2.545	(0.443)	128337	400.000	415.62
170	1,3,5-Trichlorobenzene	180	13.201	13.208	(1.116)	95929	20.0000	21.32
172	tert-Butyl formate	59	4.922	4.919	(0.850)	182102	40.0000	41.28
173	3,3-Dimethyl-1-butanol	57	9.100	9.110	(0.956)	142472	400.000	444.74
174	tert-Amyl methyl ether	73	6.264	6.261	(1.082)	172530	20.0000	20.20
175	tert-Butyl ethyl ether	59	6.238	6.254	(1.078)	98174	20.0000	21.20
176	tert-Amyl alcohol	59	6.238	6.254	(1.078)	98174	400.000	424.04
157	2-Methylnaphthalene	142	15.188	15.191	(1.283)	20571	20.0000	11.14
156	Diisopropyl ether	45	4.438	4.435	(0.767)	281344	20.0000	20.97(T)
171	1-Methylnaphthalene	142	15.383	15.387	(1.300)	29672	20.0000	12.62
130	Ethyl Acetate	43	5.253	5.256	(0.907)	168473	20.0000	20.53
M 94	1,2-Dichloroethylene (total)	96				141798	40.0000	41.98
M 95	Xylenes (total)	106				380427	60.0000	67.84

QC Flag Legend

T - Target compound detected outside RT window.
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080208.D
Date : 03-AUG-2018 00:47
Client ID:
Sample Info: VSTD020;VSTD020;1;6;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

\\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080208.D

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080209.D Page 1
Report Date: 04-Sep-2018 17:00

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080209.D
Lab Smp Id: VSTD050
Inj Date : 03-AUG-2018 01:12
Operator : AP   Inst ID: VOA2.i
Smp Info : VSTD050;VSTD050;1;7;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\E180802.b\8260LL.m
Meth Date : 17-Aug-2018 12:13 Shiva.Targ Quant Type: ISTD
Cal Date : 09-JUN-2018 13:37   Cal File: D060910.D
Als bottle: 35   Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.786	5.783	(1.000)	256521	50.0000	
2	Dichlorodifluoromethane	85	1.470	1.454	(0.254)	118629	50.0000	46.97
186	Isobutylene	56	1.669	1.666	(0.288)	233562	50.0000	51.24(AM)
3	Chloromethane	50	1.614	1.601	(0.279)	293393	50.0000	46.35
4	Propionitrile	54	5.243	5.276	(0.906)	625936	500.000	539.80
5	Vinyl Chloride	62	1.701	1.688	(0.294)	205189	50.0000	48.47
6	Bromomethane	94	1.957	1.941	(0.338)	116355	50.0000	55.12
7	Chloroethane	64	2.054	2.031	(0.355)	125193	50.0000	46.29
159	Dichlorofluoromethane	67	2.243	2.227	(0.388)	305760	50.0000	48.68
8	Trichlorofluoromethane	101	2.265	2.253	(0.392)	199262	50.0000	48.17
9	Acrolein	56	2.699	2.699	(0.466)	91892	100.000	113.98
10	Acetone	43	2.878	2.869	(0.498)	115623	100.000	102.37
11	1,1-Dichloroethene	96	2.766	2.750	(0.478)	148018	50.0000	48.82
12	Isobutyl Alcohol	74	6.167	6.184	(1.066)	17323	1000.00	1017.99(A)
13	Acetonitrile	39	3.190	3.174	(0.551)	196316	500.000	517.44
14	Allyl Chloride	41	3.196	3.180	(0.552)	554088	50.0000	53.20
15	Iodomethane	142	2.926	2.914	(0.506)	287116	100.000	104.18
16	Acrylonitrile	53	3.706	3.710	(0.641)	170902	100.000	106.78
17	Methylene Chloride	84	3.350	3.334	(0.579)	179586	50.0000	52.40
18	Methyl tert-butyl ether	73	3.700	3.697	(0.640)	436067	50.0000	47.25
19	Carbon Disulfide	76	2.968	2.962	(0.513)	572576	100.000	100.09
20	trans-1,2-Dichloroethene	96	3.674	3.668	(0.635)	159470	50.0000	51.01

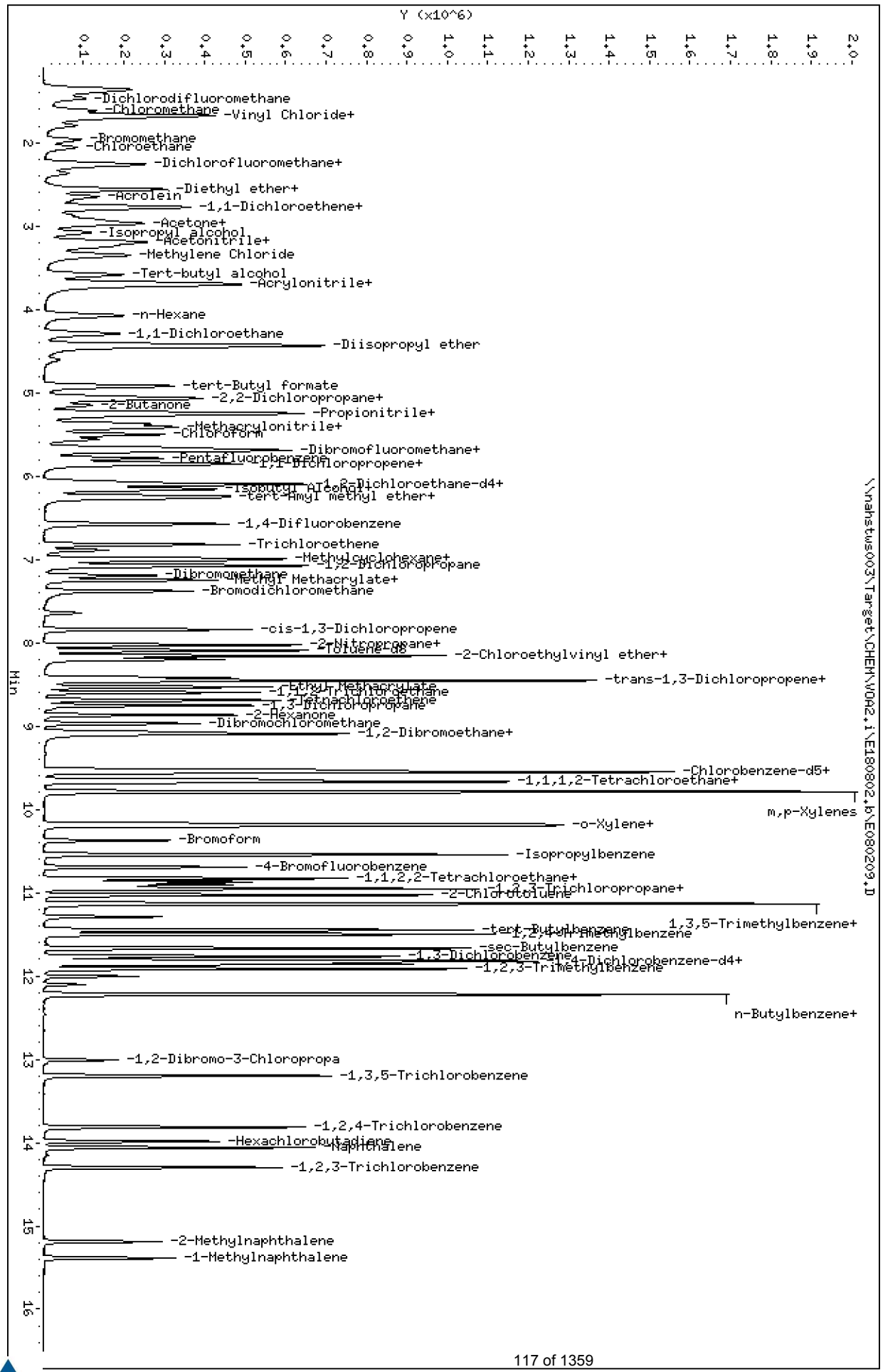
Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080209.D Page 2
Report Date: 04-Sep-2018 17:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	21 Vinyl Acetate	43	5.250	5.256	(0.907)	414502	100.000	98.32(M)
	22 1,1-Dichloroethane	63	4.290	4.281	(0.742)	354022	50.0000	49.37
	24 2-Butanone	43	5.153	5.150	(0.891)	188944	100.000	107.26
	25 Methacrylonitrile	41	5.413	5.414	(0.936)	202014	50.0000	52.39
	26 2,2-Dichloropropane	77	5.051	5.044	(0.873)	190243	50.0000	48.75
	27 cis-1,2-Dichloroethene	96	5.076	5.073	(0.877)	189223	50.0000	50.17
	28 Chloroform	83	5.503	5.497	(0.951)	289319	50.0000	48.13
	29 Bromochloromethane	128	5.372	5.378	(0.928)	92424	50.0000	52.59
$	30 Dibromofluoromethane	113	5.692	5.689	(0.984)	108120	50.0000	47.14
	31 1,1,1-Trichloroethane	97	5.660	5.657	(0.978)	242514	50.0000	47.83
	32 1,1-Dichloropropene	75	5.859	5.856	(0.891)	199068	50.0000	52.71
	33 1,2-Dichloroethane	62	6.148	6.148	(0.935)	224412	50.0000	49.42
	34 Carbon Tetrachloride	117	5.837	5.837	(0.888)	205402	50.0000	51.85
$	35 1,2-Dichloroethane-d4	65	6.062	6.059	(1.048)	131495	50.0000	50.25
*	36 1,4-Difluorobenzene	114	6.575	6.575	(1.000)	415818	50.0000	
	37 Benzene	78	6.097	6.097	(0.927)	667400	50.0000	46.91
	38 Trichloroethene	130	6.822	6.819	(1.038)	183214	50.0000	48.24
	39 Bromodichloromethane	83	7.377	7.381	(1.122)	239535	50.0000	50.05
	40 Methyl Methacrylate	41	7.249	7.252	(1.253)	195518	50.0000	50.11
	41 2-Chloroethylvinyl ether	63	8.157	8.164	(1.241)	54500	100.000	94.48(T)
	42 1,2-Dichloropropane	63	7.069	7.069	(1.075)	199898	50.0000	48.43
	43 2-Nitropropane	43	8.029	8.038	(1.388)	418074	50.0000	50.95
	44 Dibromomethane	93	7.191	7.194	(1.094)	106693	50.0000	52.23
	45 4-Methyl-2-Pentanone	43	8.029	8.038	(0.843)	418074	100.000	97.58
	46 cis-1,3-Dichloropropene	75	7.839	7.843	(1.192)	279282	50.0000	52.12
*	47 Chlorobenzene-d5	117	9.524	9.527	(1.000)	376149	50.0000	
$	48 Toluene-d8	98	8.093	8.093	(0.850)	424582	50.0000	53.26
	49 Ethyl Methacrylate	69	8.529	8.539	(1.297)	252296	50.0000	48.82
	50 Toluene	91	8.157	8.164	(0.856)	687627	50.0000	45.31
	51 trans-1,3-Dichloropropene	75	8.417	8.420	(1.280)	225506	50.0000	54.30
	52 2-Hexanone	43	8.866	8.873	(0.931)	278090	100.000	114.31(M)
	53 1,1,2-Trichloroethane	83	8.597	8.600	(0.903)	137952	50.0000	47.77
	54 1,3-Dichloropropane	76	8.754	8.760	(0.919)	273152	50.0000	47.84
	55 Dibromochloromethane	129	8.969	8.975	(0.942)	196995	50.0000	48.86
	56 Tetrachloroethene	164	8.690	8.693	(0.912)	139836	50.0000	45.70
	57 1,2-Dibromoethane	107	9.068	9.072	(0.952)	177401	50.0000	51.05
	58 1-Chlorohexane	55	9.550	9.559	(1.452)	161052	50.0000	52.60
	59 Chlorobenzene	112	9.553	9.556	(1.003)	447952	50.0000	47.59
	60 1,1,1,2-Tetrachloroethane	131	9.643	9.652	(1.012)	177378	50.0000	48.00
	61 Ethylbenzene	106	9.672	9.678	(1.015)	238317	50.0000	53.53
	62 m,p-Xylenes	106	9.790	9.800	(1.028)	576062	100.000	110.78
	63 o-Xylene	106	10.179	10.182	(1.069)	311088	50.0000	54.75
	64 Styrene	104	10.198	10.204	(1.071)	493382	50.0000	49.13
	66 Bromoform	173	10.374	10.378	(1.089)	142979	50.0000	50.81
	67 Isopropylbenzene	105	10.544	10.551	(1.107)	732233	50.0000	45.31
	68 1,1,2,2-Tetrachloroethane	83	10.872	10.878	(0.919)	231121	50.0000	45.91
$	69 4-Bromofluorobenzene	95	10.695	10.699	(1.123)	158916	50.0000	53.84
*	70 1,4-Dichlorobenzene-d4	152	11.834	11.838	(1.000)	157775	50.0000	
	71 1,2,3-Trichloropropane	75	10.901	10.907	(0.921)	226153	50.0000	47.89
	72 trans-1,4-Dichloro-2-butene	53	10.929	10.936	(1.148)	46161	50.0000	46.73
	73 n-Propylbenzene	91	10.952	10.962	(0.925)	794738	50.0000	55.82
	74 Bromobenzene	156	10.830	10.837	(0.915)	207241	50.0000	48.60
	75 1,3,5-Trimethylbenzene	105	11.132	11.138	(0.941)	588327	50.0000	49.52
	76 2-Chlorotoluene	91	11.026	11.036	(0.932)	518783	50.0000	54.58

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
77	4-Chlorotoluene	91	11.138	11.145	(0.941)	560850	50.0000	55.63
78	tert-Butylbenzene	119	11.449	11.456	(0.967)	507745	50.0000	54.98
79	1,2,4-Trimethylbenzene	105	11.501	11.507	(0.972)	590154	50.0000	54.61
81	sec-Butylbenzene	105	11.667	11.674	(0.986)	703146	50.0000	44.69
82	p-Isopropyltoluene	119	11.818	11.825	(0.999)	581129	50.0000	44.64
83	1,3-Dichlorobenzene	146	11.767	11.774	(0.994)	354486	50.0000	48.34
84	1,4-Dichlorobenzene	146	11.857	11.863	(1.002)	335572	50.0000	49.00
87	n-Butylbenzene	91	12.219	12.226	(1.033)	451878	50.0000	46.92
88	1,2-Dichlorobenzene	146	12.223	12.229	(1.033)	342263	50.0000	47.32
89	1,2-Dibromo-3-Chloropropane	75	13.009	13.009	(1.099)	40068	50.0000	51.49
90	1,2,4-Trichlorobenzene	180	13.814	13.821	(1.167)	205611	50.0000	51.18
91	Hexachlorobutadiene	225	13.988	13.988	(1.182)	88999	50.0000	46.44
92	Naphthalene	128	14.061	14.065	(1.188)	520687	50.0000	54.03
93	1,2,3-Trichlorobenzene	182	14.299	14.302	(1.208)	180007	50.0000	50.63
146	Methyl acetate	43	3.244	3.241	(0.561)	197627	50.0000	48.36
138	Freon TF	101	2.779	2.763	(0.480)	126169	50.0000	51.84
139	Diethyl ether	59	2.561	2.545	(0.443)	314479	50.0000	50.97
147	Methylcyclohexane	83	6.992	6.992	(1.063)	227867	50.0000	51.42
135	1,4-Dioxane	88	7.239	7.246	(1.251)	36043	1000.00	993.32
132	n-Butanol	56	6.995	6.996	(1.209)	116281	1000.00	1013.24
131	Methyl Acrylate	55	5.269	5.282	(0.911)	309415	50.0000	52.69
133	Ethyl Acrylate	55	7.008	7.018	(1.211)	511812	50.0000	46.50
136	n-Hexane	57	4.069	4.063	(0.703)	190912	50.0000	46.04
141	Cyclohexane	56	5.696	5.689	(0.984)	285609	50.0000	44.18
142	Tetrahydrofuran	42	5.420	5.423	(0.937)	137673	100.000	97.99
148	Tert-butyl alcohol	59	3.581	3.597	(0.619)	414105	1000.00	1052.63
149	Isopropyl alcohol	45	3.077	3.093	(0.532)	258706	1000.00	1036.26
151	4-Methyl-2-pentanol	45	8.455	8.478	(0.888)	981638	1000.00	1099.80
166	1,2,3-Trimethylbenzene	105	11.915	11.921	(1.007)	568751	50.0000	54.77
167	Ethanol	45	2.557	2.545	(0.442)	316539	1000.00	1003.49
170	1,3,5-Trichlorobenzene	180	13.198	13.208	(1.115)	230316	50.0000	48.93
172	tert-Butyl formate	59	4.919	4.919	(0.850)	425127	100.000	94.35
173	3,3-Dimethyl-1-butanol	57	9.094	9.110	(0.955)	386592	1000.00	1169.78
174	tert-Amyl methyl ether	73	6.264	6.261	(1.083)	428470	50.0000	49.12
175	tert-Butyl ethyl ether	59	6.238	6.254	(1.078)	258253	50.0000	54.59
176	tert-Amyl alcohol	59	6.238	6.254	(1.078)	258253	1000.00	1091.94
157	2-Methylnaphthalene	142	15.188	15.191	(1.283)	140132	50.0000	42.14
156	Diisopropyl ether	45	4.435	4.435	(0.767)	667093	50.0000	48.68(T)
171	1-Methylnaphthalene	142	15.387	15.387	(1.300)	162503	50.0000	45.62
130	Ethyl Acetate	43	5.250	5.256	(0.907)	411434	50.0000	49.09
M 94	1,2-Dichloroethylene (total)	96				348693	100.000	101.18
M 95	Xylenes (total)	106				887150	150.000	165.54

QC Flag Legend

T - Target compound detected outside RT window.
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\WOA2.i\E180802.b\E080209.D
Date : 03-AUG-2018 01:12
Client ID:
Sample Info: VSTD050;VSTD050;1;7;
Purge Volume: 5.0
Column phase: DB624

Instrument: WOA2.i
Operator: AP
Column diameter: 0.18

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080210.D Page 1
Report Date: 04-Sep-2018 17:00

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080210.D
Lab Smp Id: VSTD100
Inj Date : 03-AUG-2018 01:38
Operator : AP   Inst ID: VOA2.i
Smp Info : VSTD100;VSTD100;1;8;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\E180802.b\8260LL.m
Meth Date : 17-Aug-2018 12:13 Shiva.Targ Quant Type: ISTD
Cal Date : 09-JUN-2018 13:37   Cal File: D060910.D
Als bottle: 36   Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.786	5.783	(1.000)	260800	50.0000	
2 Dichlorodifluoromethane	85	1.460	1.454	(0.252)	251546	100.000	97.97
186 Isobutylene	56	1.665	1.666	(0.288)	405570	100.000	87.53(AM)
3 Chloromethane	50	1.605	1.601	(0.277)	561558	100.000	87.26
4 Propionitrile	54	5.253	5.276	(0.908)	1226474	1000.00	1040.34
5 Vinyl Chloride	62	1.691	1.688	(0.292)	396671	100.000	92.16
6 Bromomethane	94	1.948	1.941	(0.337)	214589	100.000	102.92
7 Chloroethane	64	2.041	2.031	(0.353)	250673	100.000	91.17
159 Dichlorofluoromethane	67	2.240	2.227	(0.387)	595485	100.000	93.25
8 Trichlorofluoromethane	101	2.262	2.253	(0.391)	397396	100.000	94.50
9 Acrolein	56	2.696	2.699	(0.466)	165620	200.000	202.82
10 Acetone	43	2.869	2.869	(0.496)	231438	200.000	205.03
11 1,1-Dichloroethene	96	2.763	2.750	(0.478)	291328	100.000	94.51
12 Isobutyl Alcohol	74	6.168	6.184	(1.066)	35643	2000.00	2061.68(A)
13 Acetonitrile	39	3.180	3.174	(0.550)	381557	1000.00	984.68
14 Allyl Chloride	41	3.187	3.180	(0.551)	1087141	100.000	102.67
15 Iodomethane	142	2.920	2.914	(0.505)	588531	200.000	208.92
16 Acrylonitrile	53	3.703	3.710	(0.640)	332656	200.000	203.97
17 Methylene Chloride	84	3.344	3.334	(0.578)	352075	100.000	102.52
18 Methyl tert-butyl ether	73	3.694	3.697	(0.638)	889003	100.000	94.75
19 Carbon Disulfide	76	2.965	2.962	(0.513)	1123486	200.000	193.18
20 trans-1,2-Dichloroethene	96	3.668	3.668	(0.634)	320936	100.000	100.97

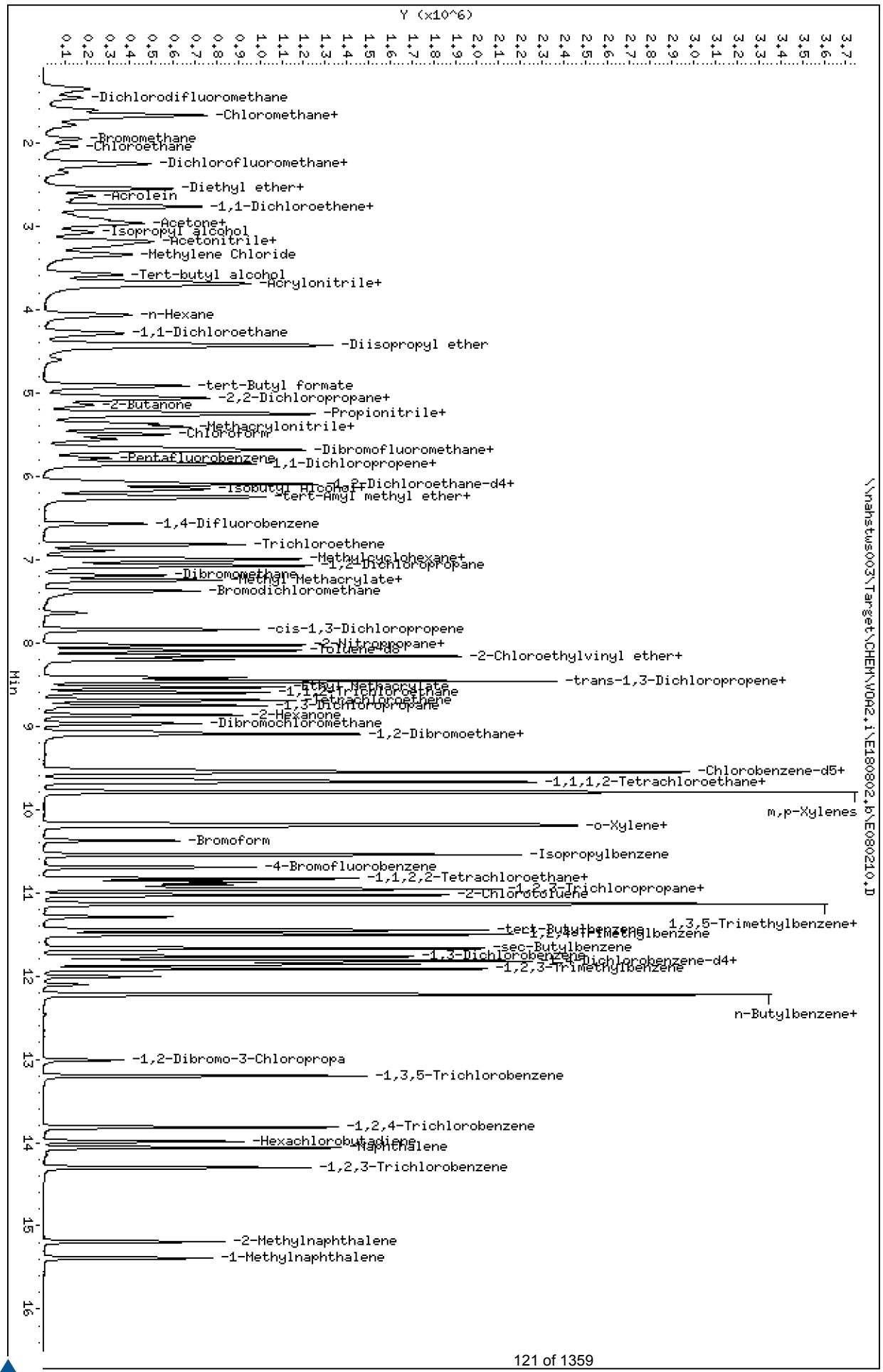
Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080210.D Page 2
Report Date: 04-Sep-2018 17:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	21 Vinyl Acetate	43	5.250	5.256	(0.907)	795847	200.000	185.69
	22 1,1-Dichloroethane	63	4.281	4.281	(0.740)	690143	100.000	94.67
	24 2-Butanone	43	5.144	5.150	(0.889)	368585	200.000	205.81
	25 Methacrylonitrile	41	5.410	5.414	(0.935)	395080	100.000	100.79
	26 2,2-Dichloropropane	77	5.051	5.044	(0.873)	371671	100.000	93.68
	27 cis-1,2-Dichloroethene	96	5.070	5.073	(0.876)	370641	100.000	96.65
	28 Chloroform	83	5.497	5.497	(0.950)	562879	100.000	92.11
	29 Bromochloromethane	128	5.375	5.378	(0.929)	183010	100.000	102.44
$	30 Dibromofluoromethane	113	5.686	5.689	(0.983)	203880	100.000	87.44
	31 1,1,1-Trichloroethane	97	5.657	5.657	(0.978)	474781	100.000	92.11
	32 1,1-Dichloropropene	75	5.860	5.856	(0.891)	397815	100.000	104.62
	33 1,2-Dichloroethane	62	6.148	6.148	(0.935)	451580	100.000	96.87
	34 Carbon Tetrachloride	117	5.837	5.837	(0.888)	416228	100.000	104.15
$	35 1,2-Dichloroethane-d4	65	6.058	6.059	(1.047)	253352	100.000	95.23
*	36 1,4-Difluorobenzene	114	6.575	6.575	(1.000)	426918	50.0000	
	37 Benzene	78	6.097	6.097	(0.927)	1282968	100.000	87.84
	38 Trichloroethene	130	6.819	6.819	(1.037)	355070	100.000	91.06
	39 Bromodichloromethane	83	7.377	7.381	(1.122)	467428	100.000	95.14
	40 Methyl Methacrylate	41	7.249	7.252	(1.253)	383130	100.000	96.58
	41 2-Chloroethylvinyl ether	63	8.160	8.164	(1.241)	107489	200.000	181.51(TA)
	42 1,2-Dichloropropane	63	7.069	7.069	(1.075)	385573	100.000	90.98
	43 2-Nitropropane	43	8.029	8.038	(1.388)	797553	100.000	95.61
	44 Dibromomethane	93	7.191	7.194	(1.094)	211579	100.000	100.89
	45 4-Methyl-2-Pentanone	43	8.029	8.038	(0.843)	797553	200.000	181.38
	46 cis-1,3-Dichloropropene	75	7.843	7.843	(1.193)	557549	100.000	101.36
*	47 Chlorobenzene-d5	117	9.524	9.527	(1.000)	386072	50.0000	
$	48 Toluene-d8	98	8.093	8.093	(0.850)	787074	100.000	97.66
	49 Ethyl Methacrylate	69	8.533	8.539	(1.298)	497184	100.000	93.70
	50 Toluene	91	8.160	8.164	(0.857)	1313115	100.000	84.30
	51 trans-1,3-Dichloropropene	75	8.417	8.420	(1.280)	461900	100.000	108.33
	52 2-Hexanone	43	8.866	8.873	(0.931)	539755	200.000	220.27(M)
	53 1,1,2-Trichloroethane	83	8.597	8.600	(0.903)	270655	100.000	91.32
	54 1,3-Dichloropropane	76	8.754	8.760	(0.919)	530088	100.000	90.46
	55 Dibromochloromethane	129	8.969	8.975	(0.942)	389785	100.000	94.20
	56 Tetrachloroethene	164	8.690	8.693	(0.912)	277489	100.000	88.35
	57 1,2-Dibromoethane	107	9.068	9.072	(0.952)	348324	100.000	97.66
	58 1-Chlorohexane	55	9.553	9.559	(1.453)	325563	100.000	106.69
	59 Chlorobenzene	112	9.553	9.556	(1.003)	847217	100.000	87.70
	60 1,1,1,2-Tetrachloroethane	131	9.646	9.652	(1.013)	346426	100.000	91.33
	61 Ethylbenzene	106	9.672	9.678	(1.015)	462566	100.000	103.33
	62 m,p-Xylenes	106	9.794	9.800	(1.028)	1098324	200.000	211.78
	63 o-Xylene	106	10.179	10.182	(1.069)	593633	100.000	104.17
	64 Styrene	104	10.198	10.204	(1.071)	949321	100.000	92.11
	66 Bromoform	173	10.374	10.378	(1.089)	284156	100.000	98.40
	67 Isopropylbenzene	105	10.548	10.551	(1.107)	1406108	100.000	84.77
	68 1,1,2,2-Tetrachloroethane	83	10.872	10.878	(0.919)	453654	100.000	87.67
$	69 4-Bromofluorobenzene	95	10.695	10.699	(1.123)	306027	100.000	103.04
*	70 1,4-Dichlorobenzene-d4	152	11.835	11.838	(1.000)	162204	50.0000	
	71 1,2,3-Trichloropropane	75	10.904	10.907	(0.921)	443787	100.000	91.42
	72 trans-1,4-Dichloro-2-butene	53	10.930	10.936	(1.148)	98089	100.000	103.59
	73 n-Propylbenzene	91	10.955	10.962	(0.926)	1533096	100.000	107.90
	74 Bromobenzene	156	10.833	10.837	(0.915)	400214	100.000	91.30
	75 1,3,5-Trimethylbenzene	105	11.135	11.138	(0.941)	1118473	100.000	100.20
	76 2-Chlorotoluene	91	11.029	11.036	(0.932)	1003716	100.000	105.35

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
77	4-Chlorotoluene	91	11.141	11.145	(0.941)	1066486	100.000	105.66
78	tert-Butylbenzene	119	11.449	11.456	(0.967)	988606	100.000	107.08
79	1,2,4-Trimethylbenzene	105	11.501	11.507	(0.972)	1151446	100.000	106.67
81	sec-Butylbenzene	105	11.668	11.674	(0.986)	1383915	100.000	85.56
82	p-Isopropyltoluene	119	11.818	11.825	(0.999)	1152457	100.000	86.12
83	1,3-Dichlorobenzene	146	11.767	11.774	(0.994)	692574	100.000	91.87
84	1,4-Dichlorobenzene	146	11.860	11.863	(1.002)	670117	100.000	95.19
87	n-Butylbenzene	91	12.223	12.226	(1.033)	915304	100.000	92.45
88	1,2-Dichlorobenzene	146	12.226	12.229	(1.033)	660494	100.000	88.82
89	1,2-Dibromo-3-Chloropropane	75	13.009	13.009	(1.099)	80963	100.000	101.56
90	1,2,4-Trichlorobenzene	180	13.818	13.821	(1.168)	427522	100.000	103.69
91	Hexachlorobutadiene	225	13.988	13.988	(1.182)	186021	100.000	94.42
92	Naphthalene	128	14.062	14.065	(1.188)	1040481	100.000	106.05
93	1,2,3-Trichlorobenzene	182	14.302	14.302	(1.209)	378478	100.000	103.78
146	Methyl acetate	43	3.241	3.241	(0.560)	401096	100.000	96.54
138	Freon TF	101	2.773	2.763	(0.479)	246185	100.000	100.85
139	Diethyl ether	59	2.554	2.545	(0.442)	611769	100.000	97.54
147	Methylcyclohexane	83	6.992	6.992	(1.063)	469442	100.000	105.64
135	1,4-Dioxane	88	7.239	7.246	(1.251)	73828	2000.00	2001.92
132	n-Butanol	56	6.999	6.996	(1.210)	237583	2000.00	2064.79
131	Methyl Acrylate	55	5.269	5.282	(0.911)	613626	100.000	103.66
133	Ethyl Acrylate	55	7.012	7.018	(1.212)	1022431	100.000	91.37
136	n-Hexane	57	4.066	4.063	(0.703)	394694	100.000	93.63
141	Cyclohexane	56	5.689	5.689	(0.983)	568165	100.000	86.45
142	Tetrahydrofuran	42	5.420	5.423	(0.937)	267095	200.000	186.99
148	Tert-butyl alcohol	59	3.584	3.597	(0.620)	810006	2000.00	2024.57
149	Isopropyl alcohol	45	3.071	3.093	(0.531)	510100	2000.00	2009.72
151	4-Methyl-2-pentanol	45	8.462	8.478	(0.888)	1746238	2000.00	1906.16
166	1,2,3-Trimethylbenzene	105	11.915	11.921	(1.007)	1102788	100.000	105.94
167	Ethanol	45	2.548	2.545	(0.440)	614887	2000.00	1917.34
170	1,3,5-Trichlorobenzene	180	13.202	13.208	(1.116)	477238	100.000	98.63
172	tert-Butyl formate	59	4.916	4.919	(0.850)	894098	200.000	195.17
173	3,3-Dimethyl-1-butanol	57	9.097	9.110	(0.955)	716339	2000.00	2111.85
174	tert-Amyl methyl ether	73	6.261	6.261	(1.082)	877654	100.000	98.97
175	tert-Butyl ethyl ether	59	6.241	6.254	(1.079)	517155	100.000	107.53
176	tert-Amyl alcohol	59	6.241	6.254	(1.079)	517155	2000.00	2150.75
157	2-Methylnaphthalene	142	15.188	15.191	(1.283)	406922	100.000	105.23
156	Diisopropyl ether	45	4.432	4.435	(0.766)	1303416	100.000	93.55(T)
171	1-Methylnaphthalene	142	15.384	15.387	(1.300)	402769	100.000	103.17
130	Ethyl Acetate	43	5.250	5.256	(0.907)	795847	100.000	93.40
M 94	1,2-Dichloroethylene (total)	96				691577	200.000	197.63
M 95	Xylenes (total)	106				1691957	300.000	315.95

QC Flag Legend

T - Target compound detected outside RT window.
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080210.D
Date : 03-AUG-2018 01:38
Client ID:
Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

\\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080210.D

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080211.D Page 1
Report Date: 04-Sep-2018 17:00

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080211.D
Lab Smp Id: VSTD200
Inj Date : 03-AUG-2018 02:04
Operator : AP   Inst ID: VOA2.i
Smp Info : VSTD200;VSTD200;1;9;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\E180802.b\8260LL.m
Meth Date : 17-Aug-2018 12:13 Shiva.Targ Quant Type: ISTD
Cal Date : 09-JUN-2018 13:37   Cal File: D060910.D
Als bottle: 37   Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.783	5.783	(1.000)	270354	50.0000	
2	Dichlorodifluoromethane	85	1.454	1.454	(0.251)	499792	200.000	187.78
186	Isobutylene	56	1.666	1.666	(0.288)	798264	200.000	166.19(AM)
3	Chloromethane	50	1.601	1.601	(0.277)	1116699	200.000	167.39(A)
4	Propionitrile	54	5.276	5.276	(0.912)	2398441	2000.00	1962.56
5	Vinyl Chloride	62	1.688	1.688	(0.292)	775310	200.000	173.78
6	Bromomethane	94	1.941	1.941	(0.336)	418221	200.000	196.68(M)
7	Chloroethane	64	2.031	2.031	(0.351)	479438	200.000	168.21
159	Dichlorofluoromethane	67	2.227	2.227	(0.385)	1174143	200.000	177.38(A)
8	Trichlorofluoromethane	101	2.253	2.253	(0.390)	773963	200.000	177.55
9	Acrolein	56	2.699	2.699	(0.467)	333458	400.000	394.85
10	Acetone	43	2.869	2.869	(0.496)	460575	400.000	396.92
11	1,1-Dichloroethene	96	2.750	2.750	(0.476)	573978	200.000	179.64
12	Isobutyl Alcohol	74	6.184	6.184	(1.069)	71030	4000.00	3964.71(A)
13	Acetonitrile	39	3.174	3.174	(0.549)	806581	2000.00	2002.83(A)
14	Allyl Chloride	41	3.180	3.180	(0.550)	2195299	200.000	200.00(A)
15	Iodomethane	142	2.914	2.914	(0.504)	1154316	400.000	394.29
16	Acrylonitrile	53	3.710	3.710	(0.642)	671162	400.000	396.51
17	Methylene Chloride	84	3.334	3.334	(0.577)	699249	200.000	197.88
18	Methyl tert-butyl ether	73	3.697	3.697	(0.639)	1727023	200.000	177.56
19	Carbon Disulfide	76	2.962	2.962	(0.512)	2249686	400.000	373.17
20	trans-1,2-Dichloroethene	96	3.668	3.668	(0.634)	639292	200.000	194.03

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080211.D Page 2
Report Date: 04-Sep-2018 17:00

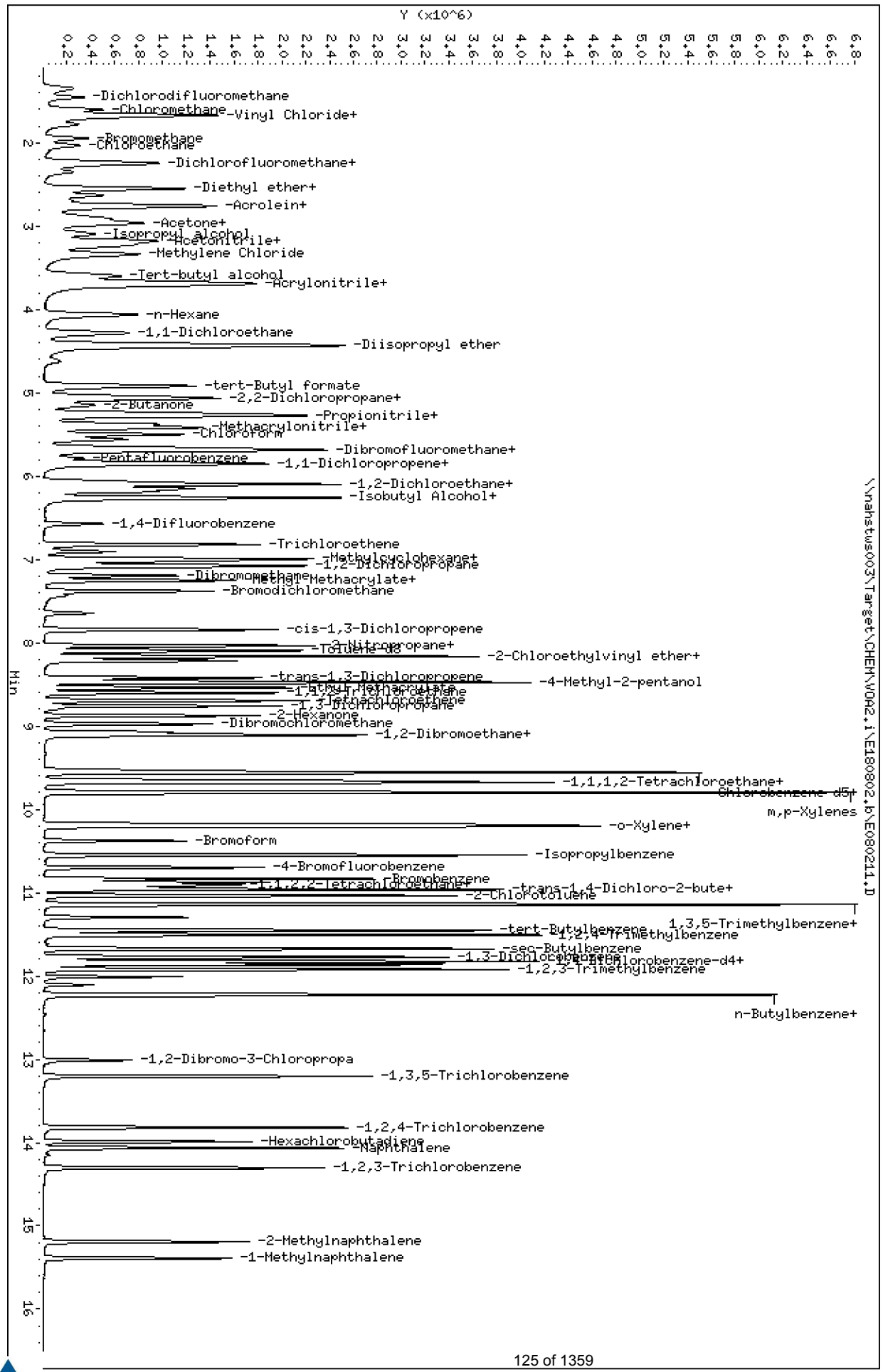
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	21 Vinyl Acetate	43	5.256	5.256	(0.909)	1554040	400.000	349.79(A)
	22 1,1-Dichloroethane	63	4.281	4.281	(0.740)	1367578	200.000	180.97
	24 2-Butanone	43	5.150	5.150	(0.891)	721259	400.000	388.52
	25 Methacrylonitrile	41	5.414	5.414	(0.936)	766405	200.000	188.62
	26 2,2-Dichloropropane	77	5.044	5.044	(0.872)	740521	200.000	180.05
	27 cis-1,2-Dichloroethene	96	5.073	5.073	(0.877)	742976	200.000	186.91
	28 Chloroform	83	5.497	5.497	(0.951)	1111271	200.000	175.44
	29 Bromochloromethane	128	5.378	5.378	(0.930)	346258	200.000	186.97
$	30 Dibromofluoromethane	113	5.689	5.689	(0.984)	401166	200.000	165.97
	31 1,1,1-Trichloroethane	97	5.657	5.657	(0.978)	938221	200.000	175.60
	32 1,1-Dichloropropene	75	5.856	5.856	(0.891)	788264	200.000	196.60
	33 1,2-Dichloroethane	62	6.148	6.148	(0.935)	882089	200.000	177.76
	34 Carbon Tetrachloride	117	5.837	5.837	(0.888)	831824	200.000	197.17
$	35 1,2-Dichloroethane-d4	65	6.059	6.059	(1.048)	496690	200.000	180.10
*	36 1,4-Difluorobenzene	114	6.575	6.575	(1.000)	454445	50.0000	
	37 Benzene	78	6.097	6.097	(0.927)	2486220	200.000	159.92
	38 Trichloroethene	130	6.819	6.819	(1.037)	710981	200.000	171.30
	39 Bromodichloromethane	83	7.381	7.381	(1.122)	912989	200.000	174.57
	40 Methyl Methacrylate	41	7.252	7.252	(1.254)	745382	200.000	181.27
	41 2-Chloroethylvinyl ether	63	8.164	8.164	(1.242)	215382	400.000	341.67(TA)
	42 1,2-Dichloropropane	63	7.069	7.069	(1.075)	776902	200.000	172.22
	43 2-Nitropropane	43	8.038	8.038	(1.390)	1518699	200.000	175.63
	44 Dibromomethane	93	7.194	7.194	(1.094)	421946	200.000	189.02
	45 4-Methyl-2-Pentanone	43	8.038	8.038	(0.844)	1518699	400.000	333.27
	46 cis-1,3-Dichloropropene	75	7.843	7.843	(1.193)	1087445	200.000	185.71
*	47 Chlorobenzene-d5	117	9.527	9.527	(1.000)	400102	50.0000	
$	48 Toluene-d8	98	8.093	8.093	(0.849)	1519477	200.000	183.51
	49 Ethyl Methacrylate	69	8.539	8.539	(1.299)	983733	200.000	174.18
	50 Toluene	91	8.164	8.164	(0.857)	2489442	200.000	154.23
	51 trans-1,3-Dichloropropene	75	8.420	8.420	(1.281)	931967	200.000	205.34(A)
	52 2-Hexanone	43	8.873	8.873	(0.931)	1038275	400.000	351.06(M)
	53 1,1,2-Trichloroethane	83	8.600	8.600	(0.903)	534482	200.000	174.01
	54 1,3-Dichloropropane	76	8.760	8.760	(0.920)	1051453	200.000	173.15
	55 Dibromochloromethane	129	8.975	8.975	(0.942)	763414	200.000	178.04
	56 Tetrachloroethene	164	8.693	8.693	(0.912)	546562	200.000	167.93
	57 1,2-Dibromoethane	107	9.072	9.072	(0.952)	686213	200.000	185.66
	58 1-Chlorohexane	55	9.559	9.559	(1.454)	626126	200.000	195.37
	59 Chlorobenzene	112	9.556	9.556	(1.003)	1632277	200.000	163.05
	60 1,1,1,2-Tetrachloroethane	131	9.652	9.652	(1.013)	678538	200.000	172.63
	61 Ethylbenzene	106	9.678	9.678	(1.016)	904574	200.000	197.07
	62 m,p-Xylenes	106	9.800	9.800	(1.029)	2064636	400.000	389.83
	63 o-Xylene	106	10.182	10.182	(1.069)	1144596	200.000	196.18
	64 Styrene	104	10.204	10.204	(1.071)	1812413	200.000	169.69
	66 Bromoform	173	10.378	10.378	(1.089)	556359	200.000	185.91
	67 Isopropylbenzene	105	10.551	10.551	(1.107)	2586647	200.000	150.48
	68 1,1,2,2-Tetrachloroethane	83	10.878	10.878	(0.919)	874313	200.000	162.77
$	69 4-Bromofluorobenzene	95	10.699	10.699	(1.123)	600849	200.000	197.30
*	70 1,4-Dichlorobenzene-d4	152	11.838	11.838	(1.000)	168372	50.0000	
	71 1,2,3-Trichloropropane	75	10.907	10.907	(0.921)	845378	200.000	167.77
	72 trans-1,4-Dichloro-2-butene	53	10.936	10.936	(1.148)	176104	200.000	199.08
	73 n-Propylbenzene	91	10.962	10.962	(0.926)	2812784	200.000	193.48
	74 Bromobenzene	156	10.837	10.837	(0.915)	776308	200.000	170.61
	75 1,3,5-Trimethylbenzene	105	11.138	11.138	(0.941)	2039238	200.000	199.96
	76 2-Chlorotoluene	91	11.036	11.036	(0.932)	1908838	200.000	195.49

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080211.D Page 3
Report Date: 04-Sep-2018 17:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
77	4-Chlorotoluene	91	11.145	11.145	(0.941)	2015459	200.000	195.03
78	tert-Butylbenzene	119	11.456	11.456	(0.968)	1836426	200.000	194.25
79	1,2,4-Trimethylbenzene	105	11.507	11.507	(0.972)	2151827	200.000	194.75
81	sec-Butylbenzene	105	11.674	11.674	(0.986)	2557821	200.000	152.34
82	p-Isopropyltoluene	119	11.825	11.825	(0.999)	2167935	200.000	156.07
83	1,3-Dichlorobenzene	146	11.774	11.774	(0.995)	1321401	200.000	168.87
84	1,4-Dichlorobenzene	146	11.863	11.863	(1.002)	1307352	200.000	178.91
87	n-Butylbenzene	91	12.226	12.226	(1.033)	1730717	200.000	168.42
88	1,2-Dichlorobenzene	146	12.229	12.229	(1.033)	1246745	200.000	161.52
89	1,2-Dibromo-3-Chloropropane	75	13.009	13.009	(1.099)	164158	200.000	198.72
90	1,2,4-Trichlorobenzene	180	13.821	13.821	(1.168)	845299	200.000	197.68
91	Hexachlorobutadiene	225	13.988	13.988	(1.182)	363074	200.000	177.54
92	Naphthalene	128	14.065	14.065	(1.188)	1981453	200.000	195.47
93	1,2,3-Trichlorobenzene	182	14.302	14.302	(1.208)	747952	200.000	197.77
146	Methyl acetate	43	3.241	3.241	(0.561)	785872	200.000	182.47(A)
138	Freon TF	101	2.763	2.763	(0.478)	499355	200.000	198.75
139	Diethyl ether	59	2.545	2.545	(0.440)	1174554	200.000	180.65
147	Methylcyclohexane	83	6.992	6.992	(1.063)	918919	200.000	196.30
135	1,4-Dioxane	88	7.246	7.246	(1.253)	152862	4000.00	3999.15
132	n-Butanol	56	6.996	6.996	(1.210)	469334	4000.00	3960.35
131	Methyl Acrylate	55	5.282	5.282	(0.913)	1205457	200.000	197.27
133	Ethyl Acrylate	55	7.018	7.018	(1.214)	1992940	200.000	171.80
136	n-Hexane	57	4.063	4.063	(0.703)	769334	200.000	176.06
141	Cyclohexane	56	5.689	5.689	(0.984)	1121288	200.000	164.58(A)
142	Tetrahydrofuran	42	5.423	5.423	(0.938)	530912	400.000	358.55
148	Tert-butyl alcohol	59	3.597	3.597	(0.622)	1649053	4000.00	3975.42
149	Isopropyl alcohol	45	3.093	3.093	(0.535)	1078445	4000.00	4098.77(A)
151	4-Methyl-2-pentanol	45	8.478	8.478	(0.890)	3274909	4000.00	3449.48
166	1,2,3-Trimethylbenzene	105	11.921	11.921	(1.007)	2082564	200.000	195.17
167	Ethanol	45	2.545	2.545	(0.440)	1174855	4000.00	3533.98
170	1,3,5-Trichlorobenzene	180	13.208	13.208	(1.116)	907869	200.000	180.75
172	tert-Butyl formate	59	4.919	4.919	(0.851)	1756860	400.000	369.96
173	3,3-Dimethyl-1-butanol	57	9.110	9.110	(0.956)	1421960	4000.00	4045.11(A)
174	tert-Amyl methyl ether	73	6.261	6.261	(1.083)	1651456	200.000	179.65
175	tert-Butyl ethyl ether	59	6.254	6.254	(1.082)	1020675	200.000	204.73(A)
176	tert-Amyl alcohol	59	6.254	6.254	(1.082)	1020675	4000.00	4094.79(A)
157	2-Methylnaphthalene	142	15.191	15.191	(1.283)	876986	200.000	199.01
156	Diisopropyl ether	45	4.435	4.435	(0.767)	2530817	200.000	175.24
171	1-Methylnaphthalene	142	15.387	15.387	(1.300)	828046	200.000	199.59
130	Ethyl Acetate	43	5.256	5.256	(0.909)	1554040	200.000	175.94
M 94	1,2-Dichloroethylene (total)	96				1382268	400.000	380.95
M 95	Xylenes (total)	106				3209232	600.000	586.01

QC Flag Legend

T - Target compound detected outside RT window.
A - Target compound detected but, quantitated amount
    exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080211.D
Date : 03-AUG-2018 02:04
Client ID:
Sample Info: VSTD200;VSTD200;1;9;
Purge Volume: 5.0
Column phase: DB624

\\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080211.D
Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

Page 1

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080213.D Page 1
Report Date: 04-Sep-2018 17:00

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080213.D
Lab Smp Id: VSTD050
Inj Date : 03-AUG-2018 02:56
Operator : AP   Inst ID: VOA2.i
Smp Info : VSTD050;VSTD050;2;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\E180802.b\8260LL.m
Meth Date : 17-Aug-2018 12:13 Shiva.Targ Quant Type: ISTD
Cal Date : 02-AUG-2018 22:37   Cal File: E080203.D
Als bottle: 39   Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE   Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.786	5.783	(1.000)	259831	50.0000	
2	Dichlorodifluoromethane	85	1.460	1.454	(0.252)	119321	50.0000	46.64
186	Isobutylene	56	1.665	1.666	(0.288)	227883	50.0000	49.36(AM)
3	Chloromethane	50	1.611	1.601	(0.278)	297537	50.0000	46.40
4	Propionitrile	54	5.243	5.276	(0.906)	606572	500.000	516.43
5	Vinyl Chloride	62	1.698	1.688	(0.293)	196554	50.0000	45.84
6	Bromomethane	94	1.961	1.941	(0.339)	123594	50.0000	57.98
7	Chloroethane	64	2.054	2.031	(0.355)	124454	50.0000	45.43
159	Dichlorofluoromethane	67	2.240	2.227	(0.387)	297636	50.0000	46.78
8	Trichlorofluoromethane	101	2.262	2.253	(0.391)	190700	50.0000	45.52
9	Acrolein	56	2.699	2.699	(0.466)	90534	100.000	110.83
10	Acetone	43	2.866	2.869	(0.495)	118757	100.000	103.85
11	1,1-Dichloroethene	96	2.763	2.750	(0.478)	144263	50.0000	46.97
12	Isobutyl Alcohol	74	6.161	6.184	(1.065)	16736	1000.00	970.90(AH)
13	Acetonitrile	39	3.186	3.174	(0.551)	188092	500.000	489.71
14	Allyl Chloride	41	3.196	3.180	(0.552)	546187	50.0000	51.77
15	Iodomethane	142	2.923	2.914	(0.505)	234052	100.000	84.06
16	Acrylonitrile	53	3.700	3.710	(0.640)	163655	100.000	100.97
17	Methylene Chloride	84	3.347	3.334	(0.579)	175252	50.0000	50.42
18	Methyl tert-butyl ether	73	3.700	3.697	(0.640)	455348	50.0000	48.71
19	Carbon Disulfide	76	2.968	2.962	(0.513)	554956	100.000	95.78
20	trans-1,2-Dichloroethene	96	3.677	3.668	(0.636)	156679	50.0000	49.48

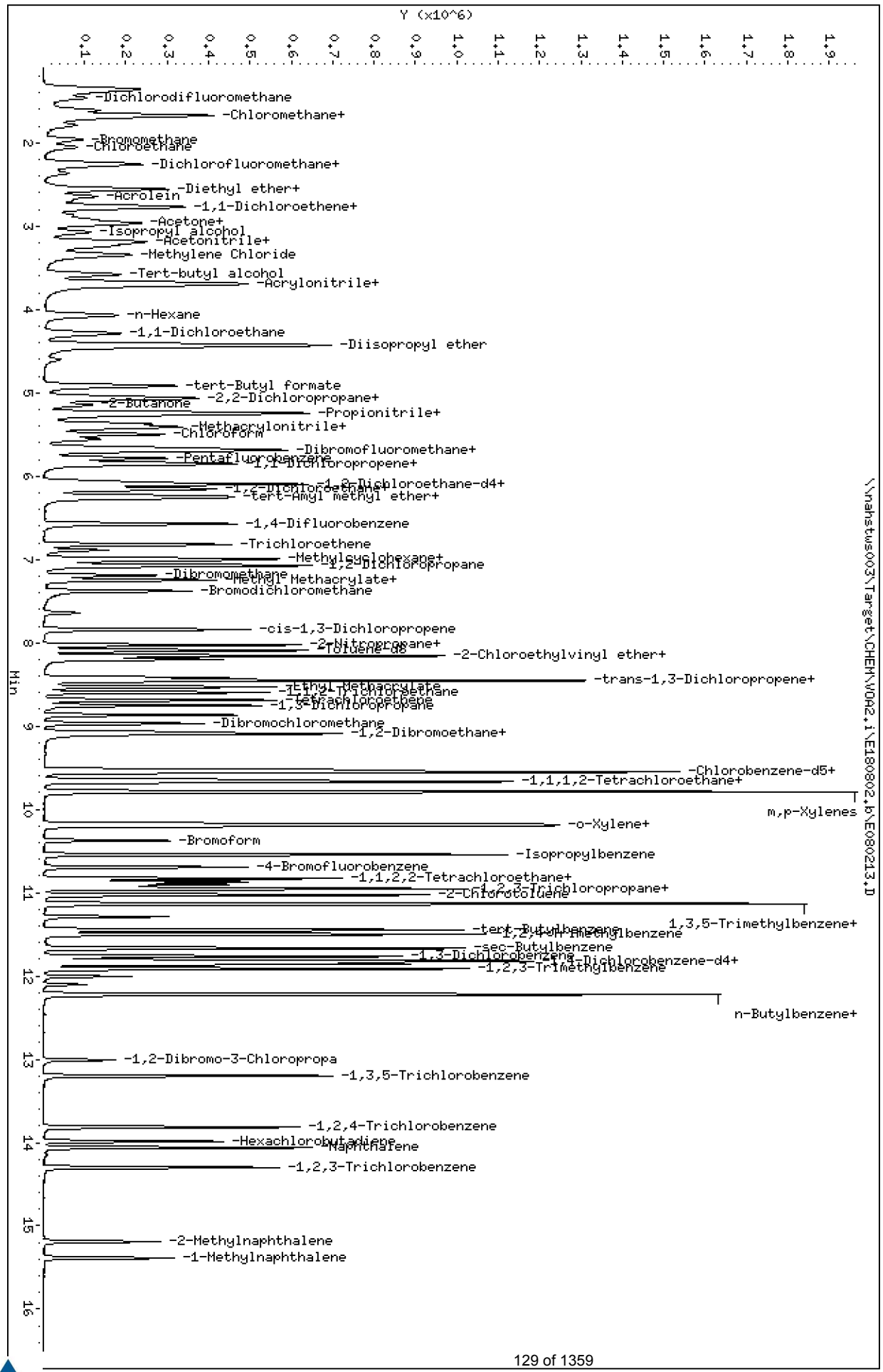
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	21 Vinyl Acetate	43	5.247	5.256	(0.907)	406557	100.000	95.21
	22 1,1-Dichloroethane	63	4.287	4.281	(0.741)	343327	50.0000	47.27
	24 2-Butanone	43	5.144	5.150	(0.889)	185701	100.000	104.08
	25 Methacrylonitrile	41	5.413	5.414	(0.936)	198490	50.0000	50.82
	26 2,2-Dichloropropane	77	5.048	5.044	(0.872)	177985	50.0000	45.02
	27 cis-1,2-Dichloroethene	96	5.077	5.073	(0.877)	186378	50.0000	48.78
	28 Chloroform	83	5.500	5.497	(0.951)	283193	50.0000	46.51
	29 Bromochloromethane	128	5.369	5.378	(0.928)	92094	50.0000	51.74
$	30 Dibromofluoromethane	113	5.689	5.689	(0.983)	106089	50.0000	45.66
	31 1,1,1-Trichloroethane	97	5.657	5.657	(0.978)	233178	50.0000	45.41
	32 1,1-Dichloropropene	75	5.859	5.856	(0.892)	194804	50.0000	50.81
	33 1,2-Dichloroethane	62	6.148	6.148	(0.936)	222959	50.0000	48.45
	34 Carbon Tetrachloride	117	5.840	5.837	(0.889)	201947	50.0000	50.24
$	35 1,2-Dichloroethane-d4	65	6.062	6.059	(1.048)	127673	50.0000	48.17
*	36 1,4-Difluorobenzene	114	6.572	6.575	(1.000)	421442	50.0000	
	37 Benzene	78	6.097	6.097	(0.928)	648251	50.0000	44.96
	38 Trichloroethene	130	6.819	6.819	(1.038)	177936	50.0000	46.22
	39 Bromodichloromethane	83	7.377	7.381	(1.123)	232095	50.0000	47.85
	40 Methyl Methacrylate	41	7.246	7.252	(1.252)	194434	50.0000	49.20
	41 2-Chloroethylvinyl ether	63	8.154	8.164	(1.241)	53274	100.000	91.13(T)
	42 1,2-Dichloropropane	63	7.069	7.069	(1.076)	198383	50.0000	47.42
	43 2-Nitropropane	43	8.025	8.038	(1.387)	411385	50.0000	49.50
	44 Dibromomethane	93	7.194	7.194	(1.095)	106030	50.0000	51.22
	45 4-Methyl-2-Pentanone	43	8.025	8.038	(0.843)	411385	100.000	94.43
	46 cis-1,3-Dichloropropene	75	7.839	7.843	(1.193)	277239	50.0000	51.05
*	47 Chlorobenzene-d5	117	9.524	9.527	(1.000)	382506	50.0000	
$	48 Toluene-d8	98	8.090	8.093	(0.849)	415869	50.0000	51.23
	49 Ethyl Methacrylate	69	8.529	8.539	(1.298)	251750	50.0000	48.06
	50 Toluene	91	8.157	8.164	(0.856)	672527	50.0000	43.58
	51 trans-1,3-Dichloropropene	75	8.417	8.420	(1.281)	222567	50.0000	52.88
	52 2-Hexanone	43	8.452	8.873	(0.887)	228035	100.000	98.60(H)
	53 1,1,2-Trichloroethane	83	8.597	8.600	(0.903)	136213	50.0000	46.38
	54 1,3-Dichloropropane	76	8.754	8.760	(0.919)	272556	50.0000	46.94
	55 Dibromochloromethane	129	8.969	8.975	(0.942)	197163	50.0000	48.09
	56 Tetrachloroethene	164	8.690	8.693	(0.912)	134074	50.0000	43.09
	57 1,2-Dibromoethane	107	9.065	9.072	(0.952)	173602	50.0000	49.13
	58 1-Chlorohexane	55	9.550	9.559	(1.453)	155496	50.0000	49.95
	59 Chlorobenzene	112	9.550	9.556	(1.003)	434390	50.0000	45.38
	60 1,1,1,2-Tetrachloroethane	131	9.643	9.652	(1.012)	172361	50.0000	45.86
	61 Ethylbenzene	106	9.668	9.678	(1.015)	231645	50.0000	51.06
	62 m,p-Xylenes	106	9.787	9.800	(1.028)	558367	100.000	105.27
	63 o-Xylene	106	10.175	10.182	(1.068)	302795	50.0000	52.29
	64 Styrene	104	10.195	10.204	(1.070)	481091	50.0000	47.11
	66 Bromoform	173	10.371	10.378	(1.089)	141452	50.0000	49.44
	67 Isopropylbenzene	105	10.544	10.551	(1.107)	706017	50.0000	42.96
	68 1,1,2,2-Tetrachloroethane	83	10.869	10.878	(0.918)	229574	50.0000	44.70
$	69 4-Bromofluorobenzene	95	10.695	10.699	(1.123)	155825	50.0000	51.83
*	70 1,4-Dichlorobenzene-d4	152	11.834	11.838	(1.000)	160960	50.0000	
	71 1,2,3-Trichloropropane	75	10.901	10.907	(0.921)	219061	50.0000	45.47
	72 trans-1,4-Dichloro-2-butene	53	10.926	10.936	(1.147)	44317	50.0000	44.00
	73 n-Propylbenzene	91	10.955	10.962	(0.926)	753061	50.0000	51.59
	74 Bromobenzene	156	10.830	10.837	(0.915)	199895	50.0000	45.95
	75 1,3,5-Trimethylbenzene	105	11.132	11.138	(0.941)	563252	50.0000	46.14
	76 2-Chlorotoluene	91	11.026	11.036	(0.932)	500821	50.0000	51.49

Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080213.D Page 3
Report Date: 04-Sep-2018 17:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
77	4-Chlorotoluene	91	11.138	11.145	(0.941)	536912	50.0000	52.00
78	tert-Butylbenzene	119	11.446	11.456	(0.967)	489457	50.0000	51.76
79	1,2,4-Trimethylbenzene	105	11.498	11.507	(0.972)	575529	50.0000	52.05
81	sec-Butylbenzene	105	11.668	11.674	(0.986)	676879	50.0000	42.17
82	p-Isopropyltoluene	119	11.818	11.825	(0.999)	562754	50.0000	42.38
83	1,3-Dichlorobenzene	146	11.764	11.774	(0.994)	343330	50.0000	45.89
84	1,4-Dichlorobenzene	146	11.857	11.863	(1.002)	330956	50.0000	47.37
87	n-Butylbenzene	91	12.220	12.226	(1.033)	435200	50.0000	44.30
88	1,2-Dichlorobenzene	146	12.223	12.229	(1.033)	334209	50.0000	45.29
89	1,2-Dibromo-3-Chloropropane	75	13.006	13.009	(1.099)	37914	50.0000	47.73
90	1,2,4-Trichlorobenzene	180	13.814	13.821	(1.167)	200081	50.0000	48.81
91	Hexachlorobutadiene	225	13.984	13.988	(1.182)	87637	50.0000	44.82
92	Naphthalene	128	14.061	14.065	(1.188)	506478	50.0000	51.47
93	1,2,3-Trichlorobenzene	182	14.299	14.302	(1.208)	177909	50.0000	49.05
146	Methyl acetate	43	3.244	3.241	(0.561)	196557	50.0000	47.48
138	Freon TF	101	2.776	2.763	(0.480)	123215	50.0000	49.92
139	Diethyl ether	59	2.558	2.545	(0.442)	311572	50.0000	49.86
147	Methylcyclohexane	83	6.989	6.992	(1.063)	221135	50.0000	49.13
135	1,4-Dioxane	88	7.239	7.246	(1.251)	36483	1000.00	992.64
132	n-Butanol	56	6.992	6.996	(1.209)	109160	1000.00	937.01
131	Methyl Acrylate	55	5.266	5.282	(0.910)	305766	50.0000	51.38
133	Ethyl Acrylate	55	7.011	7.018	(1.212)	500163	50.0000	44.86
136	n-Hexane	57	4.072	4.063	(0.704)	175019	50.0000	41.67
141	Cyclohexane	56	5.689	5.689	(0.983)	268655	50.0000	41.03
142	Tetrahydrofuran	42	5.420	5.423	(0.937)	135735	100.000	95.38
148	Tert-butyl alcohol	59	3.581	3.597	(0.619)	401933	1000.00	1008.70
149	Isopropyl alcohol	45	3.071	3.093	(0.531)	243816	1000.00	964.18
151	4-Methyl-2-pentanol	45	8.455	8.478	(0.888)	959306	1000.00	1056.92
166	1,2,3-Trimethylbenzene	105	11.911	11.921	(1.007)	558606	50.0000	52.62
167	Ethanol	45	2.554	2.545	(0.442)	313286	1000.00	980.53
170	1,3,5-Trichlorobenzene	180	13.201	13.208	(1.116)	226883	50.0000	47.25
172	tert-Butyl formate	59	4.913	4.919	(0.849)	434968	100.000	95.30
173	3,3-Dimethyl-1-butanol	57	9.091	9.110	(0.955)	374764	1000.00	1115.15
174	tert-Amyl methyl ether	73	6.257	6.261	(1.082)	434519	50.0000	49.18
175	tert-Butyl ethyl ether	59	6.235	6.254	(1.078)	248581	50.0000	51.88
176	tert-Amyl alcohol	59	6.235	6.254	(1.078)	248581	1000.00	1037.65
157	2-Methylnaphthalene	142	15.188	15.191	(1.283)	139948	50.0000	41.38
156	Diisopropyl ether	45	4.432	4.435	(0.766)	659076	50.0000	47.48(T)
171	1-Methylnaphthalene	142	15.387	15.387	(1.300)	159371	50.0000	44.04
130	Ethyl Acetate	43	5.247	5.256	(0.907)	406557	50.0000	47.89
M 94	1,2-Dichloroethylene (total)	96				343057	100.000	98.26
M 95	Xylenes (total)	106				861162	150.000	157.56

QC Flag Legend

T - Target compound detected outside RT window.
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\nahstws003\Target\CHEM\VOA2.i\E180802.b\E080213.D
Date : 03-AUG-2018 02:56
Client ID:
Sample Info: VSTD050;VSTD050;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

ALS Houston, US Date: 09-Oct-18

FORM 8 - ANALYSIS RUN LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428
Start Date: 02-Sep-2018 End Date: 03-Sep-2018

Run ID:VOA2_322791
Instrument:VOA2

Sample No.	D/F	Time	File ID
BFB	1	02-Sep-2018 13:16	D090201.D
CCV	1	02-Sep-2018 14:15	D090203.D
CCB	1	02-Sep-2018 14:40	D090204.D
VLCSW-180830	1	02-Sep-2018 15:04	D090205.D
VBLKW-180830	1	02-Sep-2018 15:29	D090206.D
HS18081428-01	1	02-Sep-2018 15:53	D090207.D
HS18081428-01MS	1	02-Sep-2018 16:18	D090208.D
HS18081428-01MSD	1	02-Sep-2018 16:42	D090209.D
HS18081428-02	1	02-Sep-2018 17:06	D090210.D
HS18081428-03	1	02-Sep-2018 17:31	D090211.D
HS18081428-04	1	02-Sep-2018 17:55	D090212.D
HS18081428-05	1	02-Sep-2018 18:20	D090213.D
HS18081428-06	1	02-Sep-2018 18:44	D090214.D
HS18081428-07	1	02-Sep-2018 19:08	D090215.D
HS18081428-08	1	02-Sep-2018 19:33	D090216.D
HS18081428-09	1	02-Sep-2018 19:57	D090217.D
HS18081428-10	1	02-Sep-2018 20:22	D090218.D
HS18081428-11	1	02-Sep-2018 20:46	D090219.D
ZZZZZZZZZZZZ	1	02-Sep-2018 21:11	D090220.D
ZZZZZZZZZZZZ	1	02-Sep-2018 21:35	D090221.D
ZZZZZZZZZZZZ	1	02-Sep-2018 21:59	D090222.D
ZZZZZZZZZZZZ	1	02-Sep-2018 22:24	D090223.D
ZZZZZZZZZZZZ	5	02-Sep-2018 22:48	D090224.D
ZZZZZZZZZZZZ	50	02-Sep-2018 23:15	D090225.D
ZZZZZZZZZZZZ	5	02-Sep-2018 23:40	D090226.D
ZZZZZZZZZZZZ	50	03-Sep-2018 00:07	D090227.D
CCV_END	1	03-Sep-2018 00:31	D090228.D

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090201.D Page 1
Report Date: 09-Oct-2018 14:39

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090201.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 02-SEP-2018 13:16
Operator : AP Inst ID: VOA2.i
Smp Info : BFB;BFB;3;;BFB
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\NAHSTWS003\Target\CHEM\VOA2.i\D180902.b\bfb.m
Meth Date : 04-Jun-2018 15:21 Cesar.Lira 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

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	
10.692	10.696	(0.000)	95	65144			0.00- 100.00	100.00
10.692	10.696	(0.000)	50	12287			15.00- 40.00	18.86
10.692	10.696	(0.000)	75	28552			30.00- 60.00	43.83
10.692	10.696	(0.000)	96	5011			5.00- 9.00	7.69
10.692	10.696	(0.000)	173	0	0.0	0.0	0.00- 2.00	0.00
10.692	10.696	(0.000)	174	54792			50.00- 0.00	84.11
10.692	10.696	(0.000)	175	4870			5.00- 9.00	8.89
10.692	10.696	(0.000)	176	53920			95.00- 101.00	98.41
10.692	10.696	(0.000)	177	4229			5.00- 9.00	7.84

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090201.D

Page 1

Date : 02-SEP-2018 13:16

Client ID: BFB

Instrument: VOA2.i

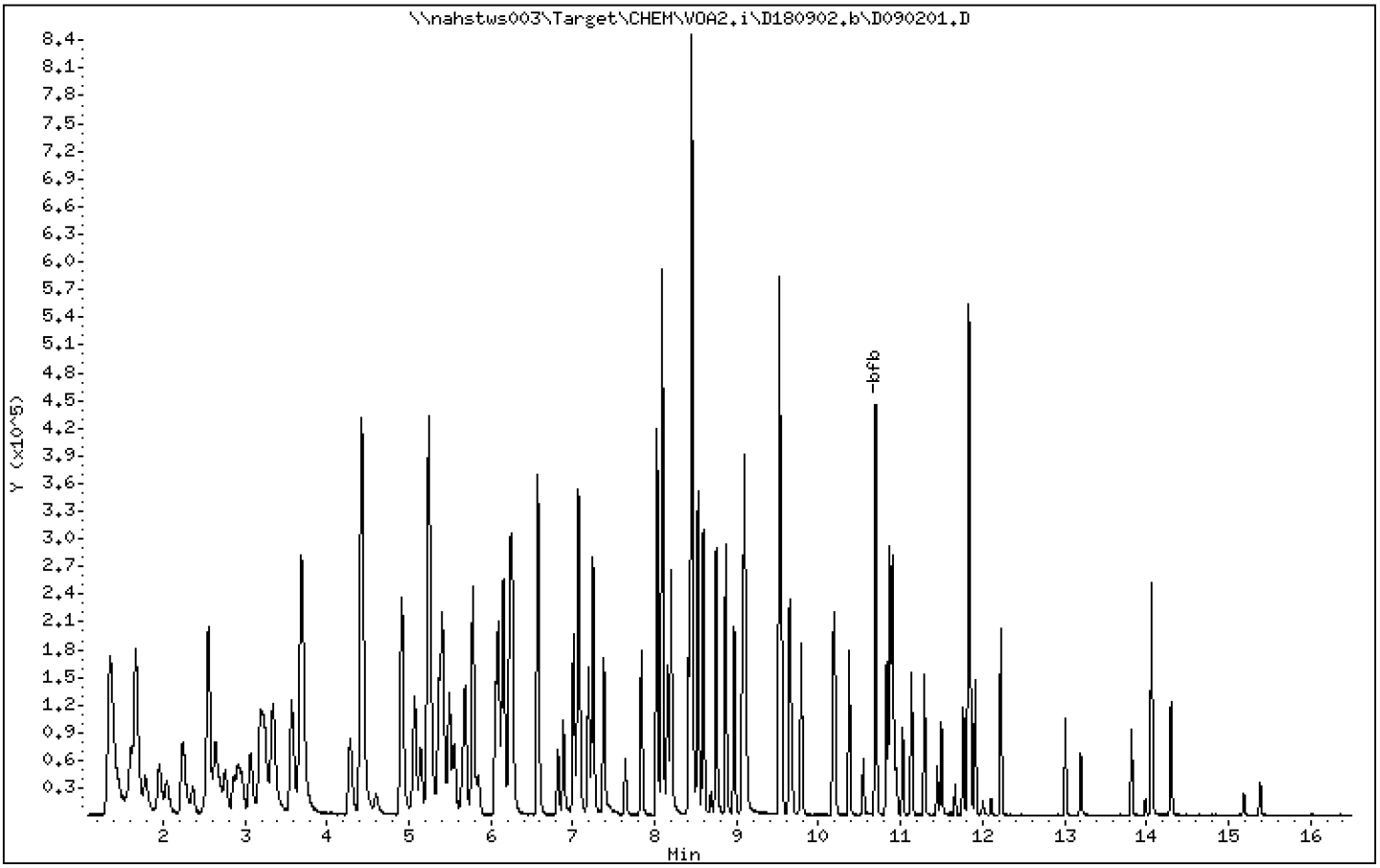
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: AP

Column phase: DB624

Column diameter: 0.18



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090201.D Page 2

Date : 02-SEP-2018 13:16

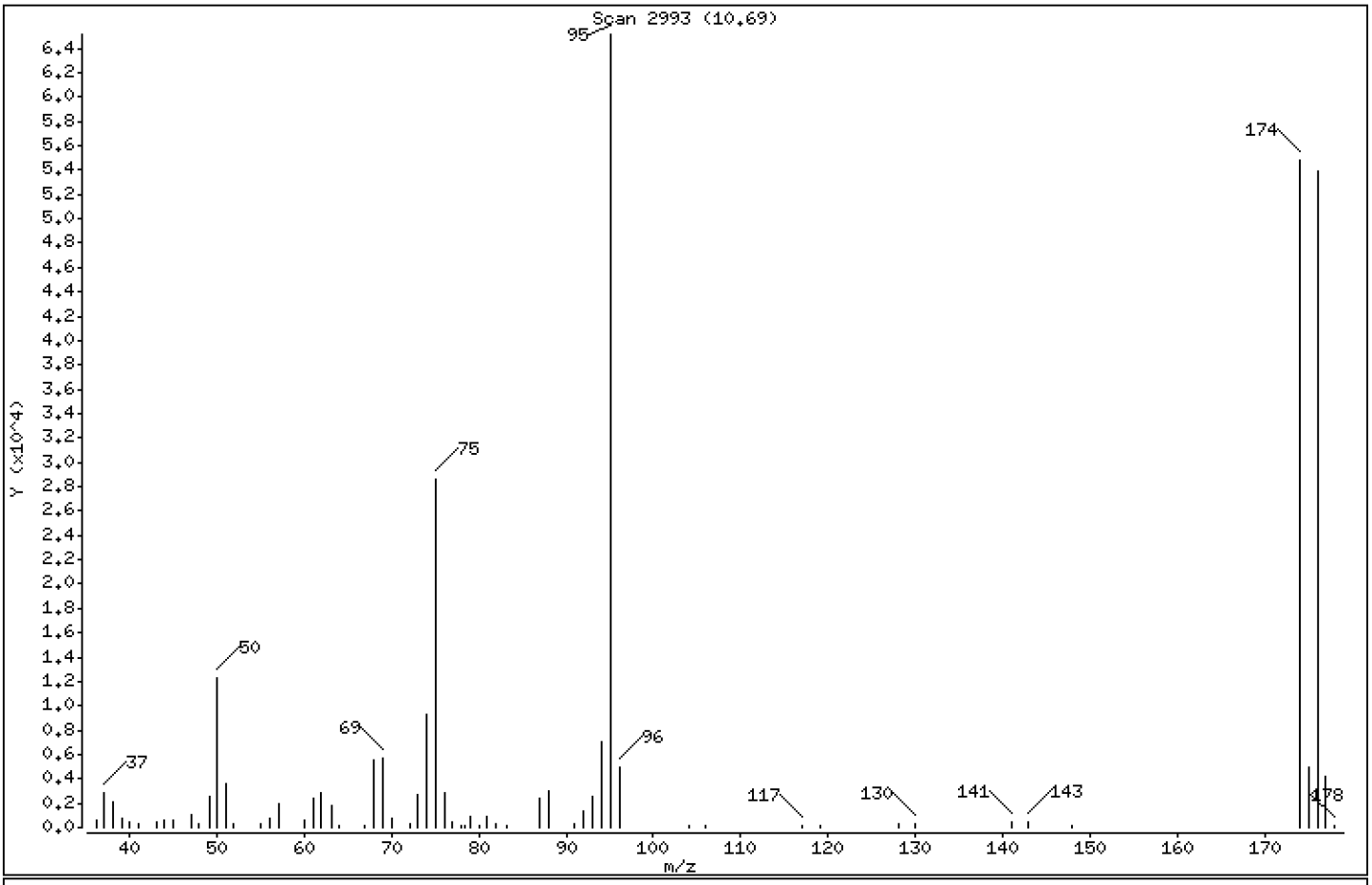
Client ID: BFB Instrument: VOA2.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: AP

Column phase: DB624 Column diameter: 0.18

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	18.86
75	30.00 - 60.00% of mass 95	43.83
96	5.00 - 9.00% of mass 95	7.69
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	84.11
175	5.00 - 9.00% of mass 174	7.48 (8.89)
176	95.00 - 101.00% of mass 174	82.77 (98.41)
177	5.00 - 9.00% of mass 176	6.49 (7.84)

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090201.D

Date : 02-SEP-2018 13:16

Client ID: BFB Instrument: VOA2.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: AP

Column phase: DB624 Column diameter: 0.18

Data File: D090201.D
Spectrum: Scan 2993 (10.69)
Location of Maximum: 95.10
Number of points: 62

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.20	636	56.00	698	76.90	440	104.00	181
37.10	2866	57.10	1875	77.90	218	106.00	165
38.10	2080	60.00	596	78.30	215	117.00	205
39.10	680	61.10	2374	79.00	917	119.00	201
40.00	485	62.00	2791	80.10	197	128.10	238
41.00	252	63.10	1773	80.90	937	130.00	242
43.10	491	64.00	207	81.90	348	141.00	419
44.00	531	67.00	173	83.20	153	142.80	477
45.10	582	68.00	5543	87.00	2429	147.80	202
47.10	1002	69.10	5724	88.00	2965	174.00	54792
48.00	259	70.10	809	90.90	293	175.10	4870
49.10	2609	72.10	296	92.00	1421	176.00	53920
50.10	12287	73.00	2721	93.00	2486	177.00	4229
51.10	3620	74.00	9256	94.10	6973	178.00	216
51.90	266	75.10	28552	95.10	65144		
55.00	264	76.10	2853	96.10	5011		

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090203.D Page 1
Report Date: 09-Oct-2018 14:40

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090203.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 02-SEP-2018 14:15
Operator : AP Inst ID: VOA2.i
Smp Info : CCV;CCV;2;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14
Processing Host: NAHSTWS003

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
Va	0.00000	
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	5.789	5.786	(1.000)	221827	50.0000	
2	Dichlorodifluoromethane	85	1.473	1.470	(0.254)	112290	50.0000	51.41
186	Isobutylene	56	1.681	1.672	(0.291)	182011	50.0000	46.18(AM)
3	Chloromethane	50	1.617	1.611	(0.279)	222000	50.0000	40.55
4	Propionitrile	54	5.247	5.240	(0.906)	459548	500.000	458.29
5	Vinyl Chloride	62	1.707	1.698	(0.295)	175455	50.0000	47.93
6	Bromomethane	94	1.977	1.967	(0.342)	106757	50.0000	58.70
7	Chloroethane	64	2.066	2.054	(0.357)	104471	50.0000	44.67
159	Dichlorofluoromethane	67	2.256	2.250	(0.390)	251272	50.0000	46.26
8	Trichlorofluoromethane	101	2.275	2.269	(0.393)	178054	50.0000	49.78
9	Acrolein	56	2.705	2.692	(0.467)	63069	100.000	90.26
10	Acetone	43	2.878	2.872	(0.497)	79115	100.000	80.25
11	1,1-Dichloroethene	96	2.772	2.766	(0.479)	123795	50.0000	47.22
12	Isobutyl Alcohol	74	6.164	6.164	(1.065)	12160	1000.00	826.07(A)
13	Acetonitrile	39	3.196	3.180	(0.552)	159417	500.000	486.20
14	Allyl Chloride	41	3.202	3.190	(0.553)	426094	50.0000	47.31
15	Iodomethane	142	2.936	2.923	(0.507)	233364	100.000	97.99
16	Acrylonitrile	53	3.716	3.713	(0.642)	122731	100.000	88.76
17	Methylene Chloride	84	3.356	3.350	(0.580)	146698	50.0000	49.41
18	Methyl tert-butyl ether	73	3.713	3.703	(0.641)	362740	50.0000	45.45
19	Carbon Disulfide	76	2.978	2.972	(0.514)	480614	100.000	97.16

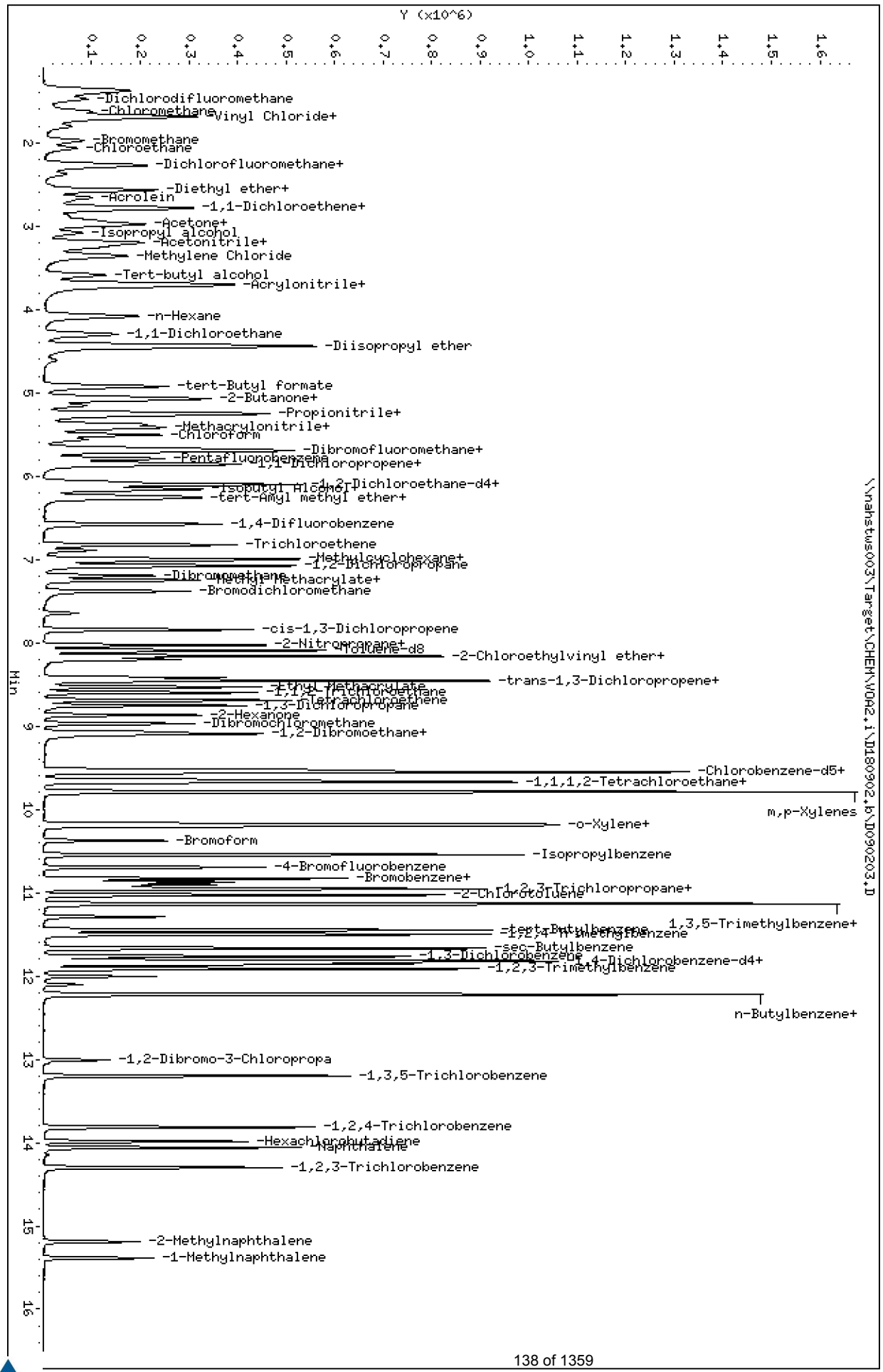
Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090203.D Page 2
Report Date: 09-Oct-2018 14:40

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	20 trans-1,2-Dichloroethene	96	3.687	3.677	(0.637)	133471	50.0000	49.37
	21 Vinyl Acetate	43	5.253	5.243	(0.907)	296974	100.000	81.46
	22 1,1-Dichloroethane	63	4.300	4.287	(0.743)	284089	50.0000	45.81
	24 2-Butanone	43	5.157	5.147	(0.891)	130687	100.000	85.79
	25 Methacrylonitrile	41	5.417	5.407	(0.936)	150300	50.0000	45.08
	26 2,2-Dichloropropane	77	5.054	5.051	(0.873)	192691	50.0000	57.10
	27 cis-1,2-Dichloroethene	96	5.083	5.073	(0.878)	156012	50.0000	47.83
	28 Chloroform	83	5.503	5.497	(0.951)	236701	50.0000	45.54
	29 Bromochloromethane	128	5.378	5.372	(0.929)	76313	50.0000	50.22
$	30 Dibromofluoromethane	113	5.693	5.689	(0.983)	92114	50.0000	46.44
	31 1,1,1-Trichloroethane	97	5.660	5.661	(0.978)	202698	50.0000	46.23
	32 1,1-Dichloropropene	75	5.863	5.860	(0.892)	169465	50.0000	54.77
	33 1,2-Dichloroethane	62	6.155	6.148	(0.936)	178905	50.0000	48.02
	34 Carbon Tetrachloride	117	5.843	5.837	(0.889)	176345	50.0000	54.35
$	35 1,2-Dichloroethane-d4	65	6.065	6.062	(1.048)	105057	50.0000	46.42
*	36 1,4-Difluorobenzene	114	6.575	6.572	(1.000)	341140	50.0000	
	37 Benzene	78	6.100	6.097	(0.928)	543329	50.0000	46.55
	38 Trichloroethene	130	6.825	6.819	(1.038)	156455	50.0000	50.21
	39 Bromodichloromethane	83	7.380	7.381	(1.122)	191762	50.0000	48.84
	40 Methyl Methacrylate	41	7.246	7.249	(1.252)	149635	50.0000	44.35
	41 2-Chloroethylvinyl ether	63	8.160	8.154	(1.241)	44143	100.000	93.28(T)
	42 1,2-Dichloropropane	63	7.072	7.066	(1.076)	160010	50.0000	47.25
	43 2-Nitropropane	43	8.029	8.026	(1.387)	303195	50.0000	42.73
	44 Dibromomethane	93	7.194	7.191	(1.094)	86142	50.0000	51.40
	45 4-Methyl-2-Pentanone	43	8.029	8.026	(0.843)	303195	100.000	85.24
	46 cis-1,3-Dichloropropene	75	7.843	7.836	(1.193)	234789	50.0000	53.41
*	47 Chlorobenzene-d5	117	9.527	9.524	(1.000)	312299	50.0000	
$	48 Toluene-d8	98	8.093	8.090	(0.849)	372720	50.0000	43.17
	49 Ethyl Methacrylate	69	8.532	8.533	(1.298)	201426	50.0000	47.51
	50 Toluene	91	8.160	8.157	(0.857)	569245	50.0000	45.18
	51 trans-1,3-Dichloropropene	75	8.417	8.417	(1.280)	190759	50.0000	55.99
	52 2-Hexanone	43	8.866	8.866	(0.931)	200309	100.000	86.77
	53 1,1,2-Trichloroethane	83	8.597	8.594	(0.902)	108929	50.0000	45.43
	54 1,3-Dichloropropane	76	8.754	8.754	(0.919)	219509	50.0000	46.31
	55 Dibromochloromethane	129	8.972	8.969	(0.942)	164518	50.0000	49.15
	56 Tetrachloroethene	164	8.690	8.690	(0.912)	126101	50.0000	49.63
	57 1,2-Dibromoethane	107	9.065	9.065	(0.952)	142553	50.0000	49.41
	58 1-Chlorohexane	55	9.553	9.550	(1.453)	137685	50.0000	54.94
	59 Chlorobenzene	112	9.553	9.553	(1.003)	373560	50.0000	47.80
	60 1,1,1,2-Tetrachloroethane	131	9.646	9.643	(1.012)	147409	50.0000	48.04
	61 Ethylbenzene	106	9.672	9.669	(1.015)	201332	50.0000	54.51
	62 m,p-Xylenes	106	9.790	9.790	(1.028)	488272	100.000	113.24
	63 o-Xylene	106	10.179	10.176	(1.068)	259054	50.0000	54.93
	64 Styrene	104	10.198	10.198	(1.070)	416398	50.0000	49.94
	66 Bromoform	173	10.374	10.374	(1.089)	118138	50.0000	50.57
	67 Isopropylbenzene	105	10.548	10.545	(1.107)	635231	50.0000	47.34
	68 1,1,2,2-Tetrachloroethane	83	10.872	10.872	(0.919)	179167	50.0000	40.11(M)
$	69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	141910	50.0000	51.23
*	70 1,4-Dichlorobenzene-d4	152	11.834	11.835	(1.000)	140018	50.0000	
	71 1,2,3-Trichloropropane	75	10.901	10.901	(0.921)	175660	50.0000	41.92
	72 trans-1,4-Dichloro-2-butene	53	10.926	10.930	(1.147)	34947	50.0000	42.44
	73 n-Propylbenzene	91	10.955	10.952	(0.926)	680606	50.0000	53.74
	74 Bromobenzene	156	10.830	10.830	(0.915)	175955	50.0000	46.50
	75 1,3,5-Trimethylbenzene	105	11.132	11.132	(0.941)	501062	50.0000	47.30

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
76	2-Chlorotoluene	91	11.029	11.026	(0.932)	435934	50.0000	51.52
77	4-Chlorotoluene	91	11.138	11.138	(0.941)	467809	50.0000	52.09
78	tert-Butylbenzene	119	11.449	11.449	(0.967)	443654	50.0000	54.08
79	1,2,4-Trimethylbenzene	105	11.501	11.498	(0.972)	507264	50.0000	52.79
81	sec-Butylbenzene	105	11.668	11.668	(0.986)	614680	50.0000	44.02
82	p-Isopropyltoluene	119	11.818	11.815	(0.999)	513195	50.0000	44.42
83	1,3-Dichlorobenzene	146	11.764	11.764	(0.994)	306941	50.0000	47.16
84	1,4-Dichlorobenzene	146	11.860	11.857	(1.002)	291659	50.0000	47.99
87	n-Butylbenzene	91	12.223	12.220	(1.033)	404101	50.0000	47.28
88	1,2-Dichlorobenzene	146	12.223	12.223	(1.033)	295672	50.0000	46.06
89	1,2-Dibromo-3-Chloropropane	75	13.009	13.009	(1.099)	29527	50.0000	42.69
90	1,2,4-Trichlorobenzene	180	13.818	13.814	(1.168)	185713	50.0000	52.09
91	Hexachlorobutadiene	225	13.988	13.984	(1.182)	83674	50.0000	49.20
92	Naphthalene	128	14.061	14.058	(1.188)	409188	50.0000	47.72
93	1,2,3-Trichlorobenzene	182	14.299	14.299	(1.208)	153318	50.0000	48.59
146	Methyl acetate	43	3.257	3.244	(0.563)	146048	50.0000	41.33
138	Freon TF	101	2.792	2.779	(0.482)	115913	50.0000	55.16
139	Diethyl ether	59	2.564	2.558	(0.443)	244184	50.0000	45.77
147	Methylcyclohexane	83	6.992	6.989	(1.063)	204081	50.0000	56.36
135	1,4-Dioxane	88	7.242	7.239	(1.251)	25786	1000.00	821.68
132	n-Butanol	56	7.002	6.995	(1.210)	91551	1000.00	919.99
131	Methyl Acrylate	55	5.275	5.266	(0.911)	232984	50.0000	45.75
133	Ethyl Acrylate	55	7.011	7.012	(1.211)	414565	50.0000	43.55
136	n-Hexane	57	4.082	4.075	(0.705)	189233	50.0000	52.77
141	Cyclohexane	56	5.699	5.696	(0.984)	243576	50.0000	43.57
142	Tetrahydrofuran	42	5.423	5.423	(0.937)	99602	100.000	81.98
148	Tert-butyl alcohol	59	3.584	3.575	(0.619)	293880	1000.00	863.98
149	Isopropyl alcohol	45	3.077	3.077	(0.532)	164364	1000.00	761.34
151	4-Methyl-2-pentanol	45	8.455	8.452	(0.888)	673571	1000.00	908.94
166	1,2,3-Trimethylbenzene	105	11.915	11.915	(1.007)	485080	50.0000	52.52
167	Ethanol	45	2.567	2.558	(0.444)	230690	1000.00	845.72
170	1,3,5-Trichlorobenzene	180	13.201	13.202	(1.116)	211551	50.0000	50.64
172	tert-Butyl formate	59	4.922	4.916	(0.850)	348707	100.000	89.49
173	3,3-Dimethyl-1-butanol	57	9.094	9.094	(0.955)	254746	1000.00	928.43
174	tert-Amyl methyl ether	73	6.267	6.264	(1.083)	328550	50.0000	43.56
175	tert-Butyl ethyl ether	59	6.241	6.238	(1.078)	163016	50.0000	39.85
176	tert-Amyl alcohol	59	6.241	6.238	(1.078)	163016	1000.00	797.06
157	2-Methylnaphthalene	142	15.191	15.188	(1.284)	103342	50.0000	36.04
156	Diisopropyl ether	45	4.441	4.432	(0.767)	536446	50.0000	45.27(T)
171	1-Methylnaphthalene	142	15.383	15.384	(1.300)	118422	50.0000	38.32
130	Ethyl Acetate	43	5.253	5.243	(0.907)	297765	50.0000	41.08
M 94	1,2-Dichloroethylene (total)	96				289483	100.000	97.20
M 95	Xylenes (total)	106				747326	150.000	168.17

QC Flag Legend

T - Target compound detected outside RT window.
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090203.D
Date : 02-SEP-2018 14:15
Client ID: CCV
Sample Info: CCV;CCV;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090204.D Page 1
Report Date: 09-Oct-2018 14:40

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090204.D
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 02-SEP-2018 14:40
Operator : AP Inst ID: VOA2.i
Smp Info : CCB;CCB;;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14
Processing Host: NAHSTWS003

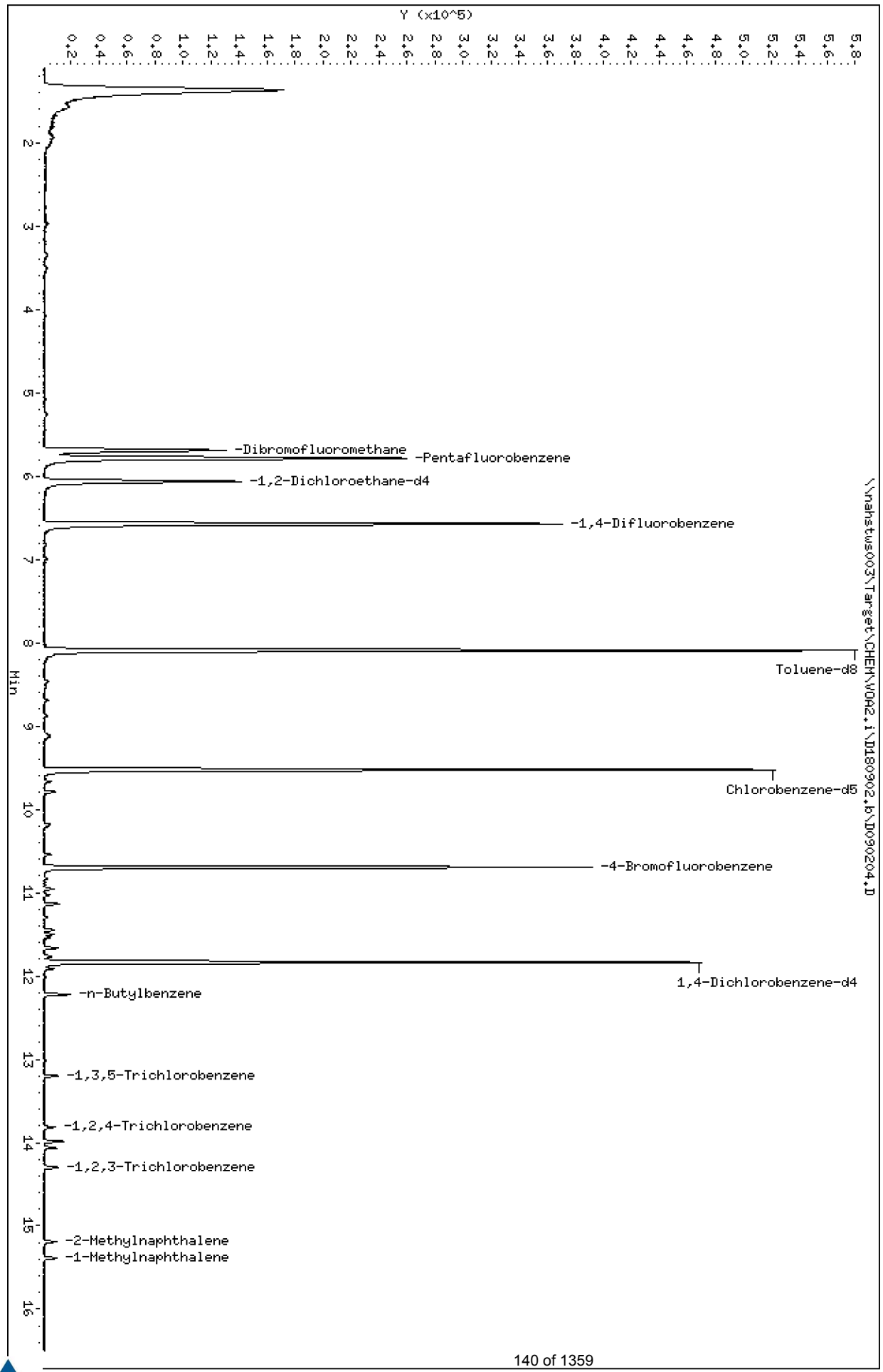
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Va	0.00000	
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	5.783	5.786	(1.000)	239624	50.0000	
$ 30 Dibromofluoromethane	113	5.689	5.689	(0.984)	101122	47.2025	47.20
$ 35 1,2-Dichloroethane-d4	65	6.062	6.062	(1.048)	108357	44.3313	44.33
* 36 1,4-Difluorobenzene	114	6.575	6.572	(1.000)	341864	50.0000	
* 47 Chlorobenzene-d5	117	9.527	9.524	(1.000)	302725	50.0000	
$ 48 Toluene-d8	98	8.090	8.090	(0.849)	384755	45.9764	45.97
$ 69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	131800	49.0872	49.08
* 70 1,4-Dichlorobenzene-d4	152	11.835	11.835	(1.000)	122683	50.0000	
87 n-Butylbenzene	91	12.229	12.220	(1.033)	7160	0.95625	0.95(a)
90 1,2,4-Trichlorobenzene	180	13.821	13.814	(1.168)	3478	0.93522	0.93(a)
93 1,2,3-Trichlorobenzene	182	14.296	14.299	(1.208)	4557	1.44428	1.44
170 1,3,5-Trichlorobenzene	180	13.202	13.202	(1.116)	4110	1.12305	1.12
157 2-Methylnaphthalene	142	15.191	15.188	(1.284)	4707	7.01995	7.01
171 1-Methylnaphthalene	142	15.390	15.384	(1.300)	5532	6.61697	6.61

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090204.D
Date : 02-SEP-2018 14:40
Client ID: CCB
Sample Info: CCB;CCB;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090204.D Page 2

Date : 02-SEP-2018 14:40

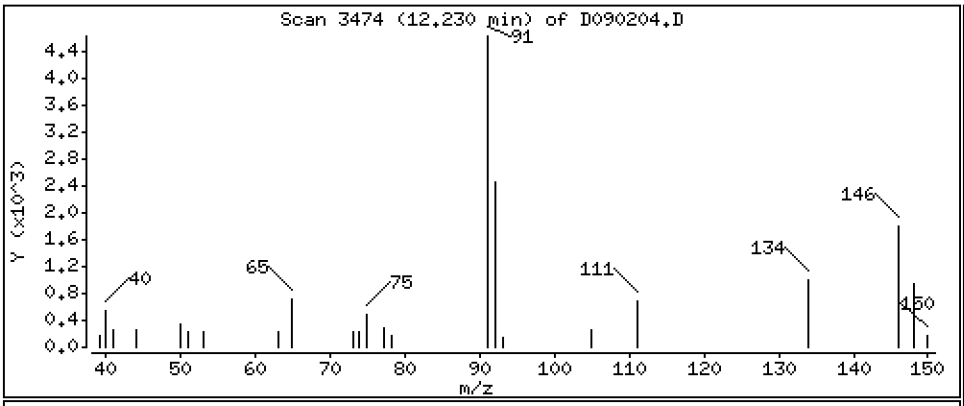
Client ID: CCB Instrument: VOA2.i

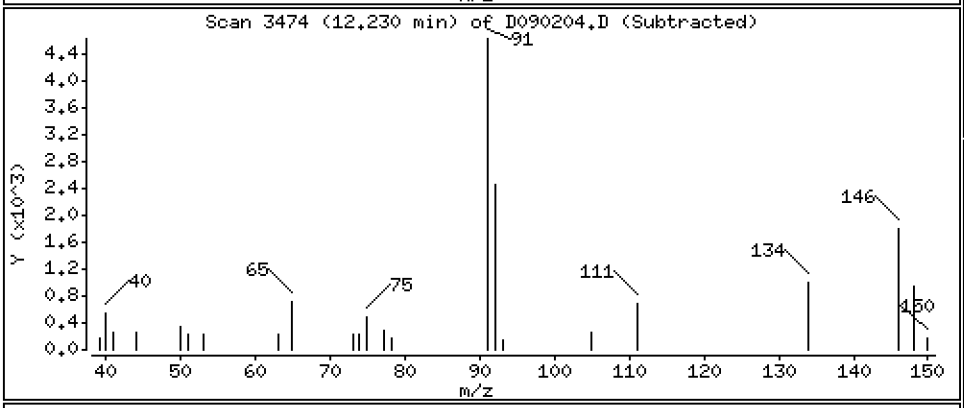
Sample Info: CCB;CCB;;;

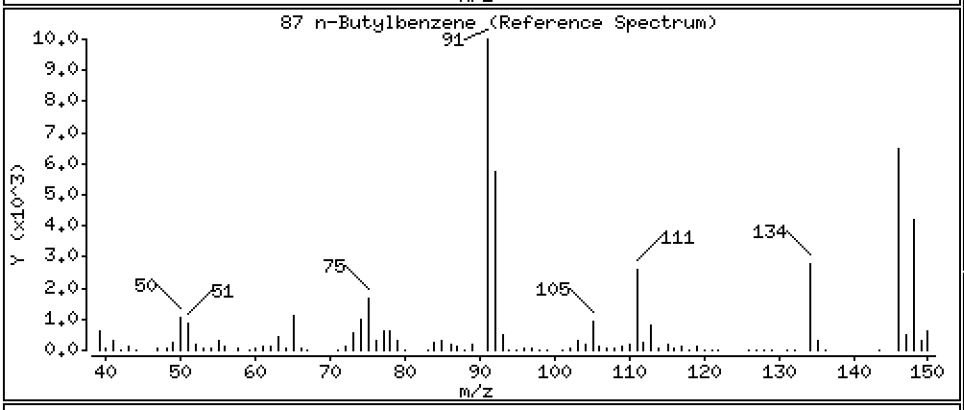
Purge Volume: 5.0 Operator: AP

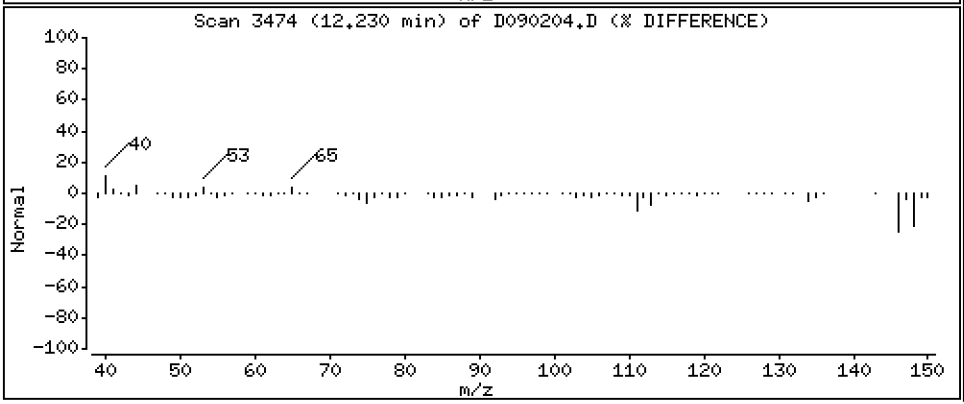
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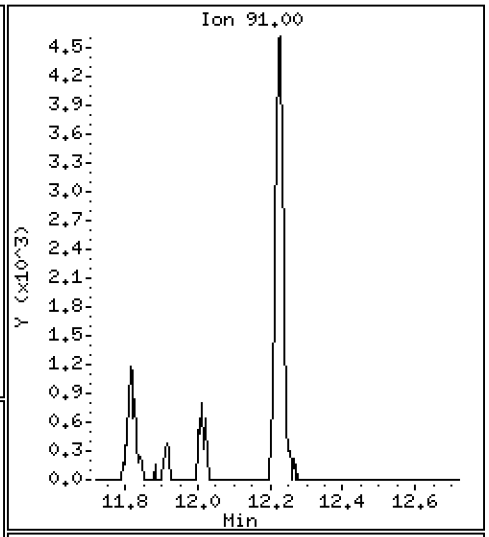
87 n-Butylbenzene Concentration: 0.95 ug/l Review Code:

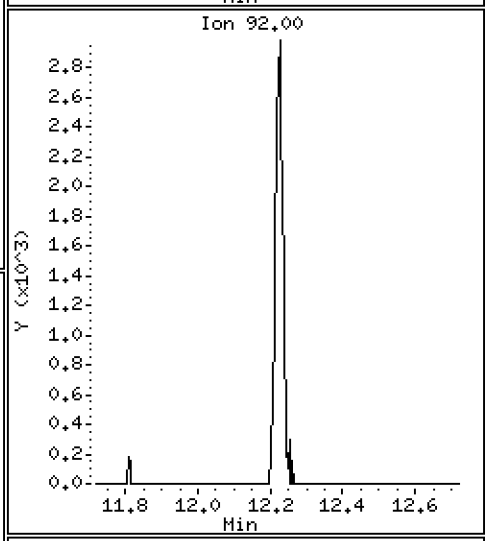


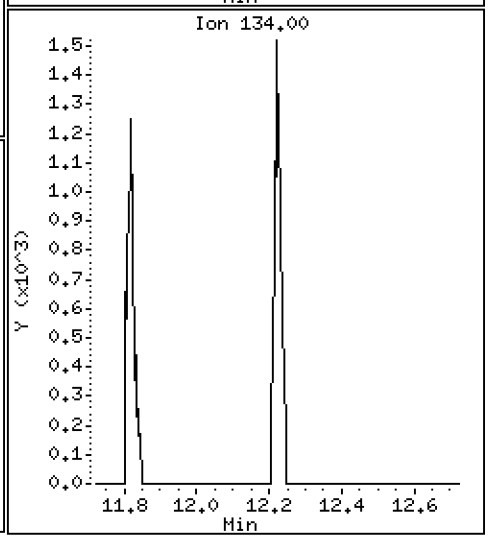












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090204.D Page 3

Date : 02-SEP-2018 14:40

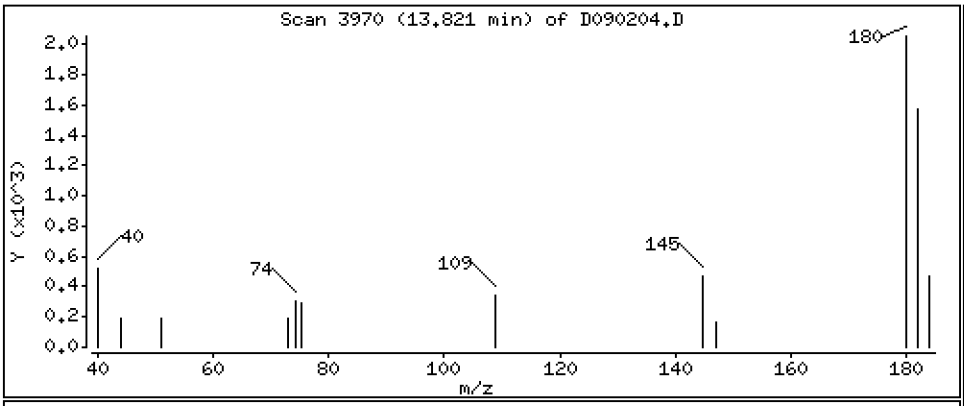
Client ID: CCB Instrument: VOA2.i

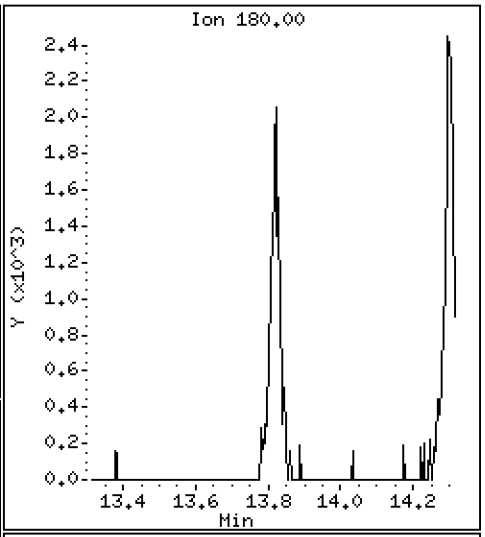
Sample Info: CCB;CCB;;;

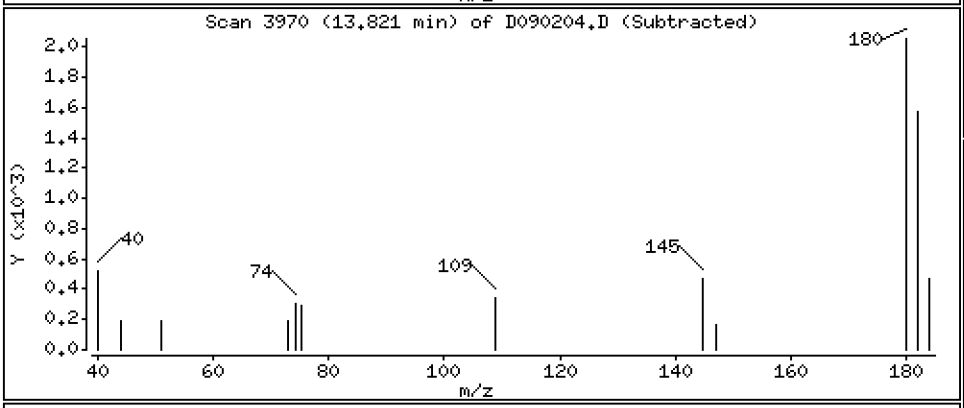
Purge Volume: 5.0 Operator: AP

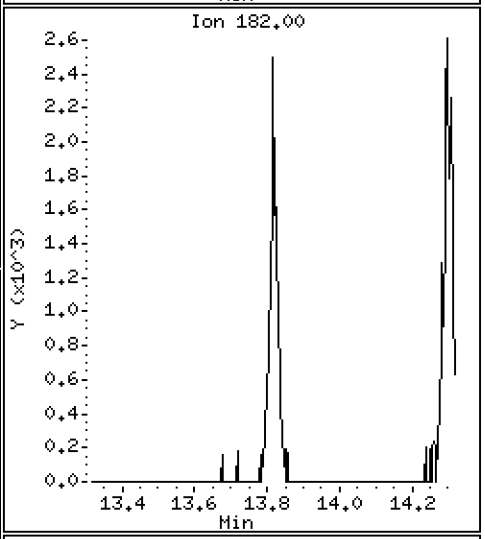
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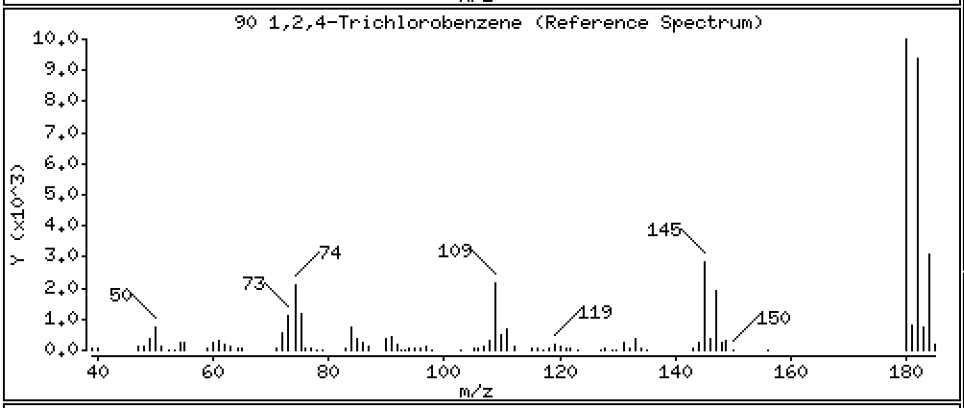
90 1,2,4-Trichlorobenzene Concentration: 0.93 ug/l Review Code:

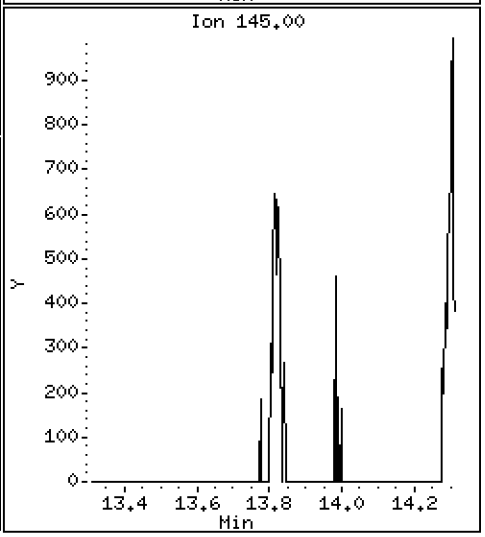


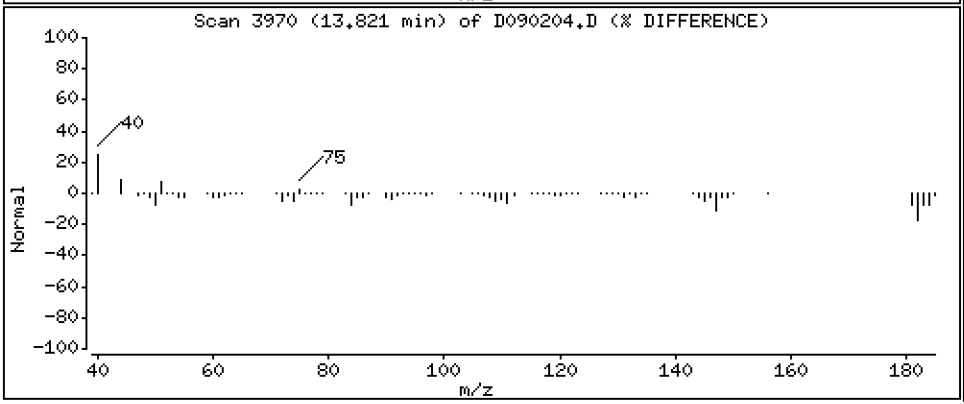












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090204.D Page 4

Date : 02-SEP-2018 14:40

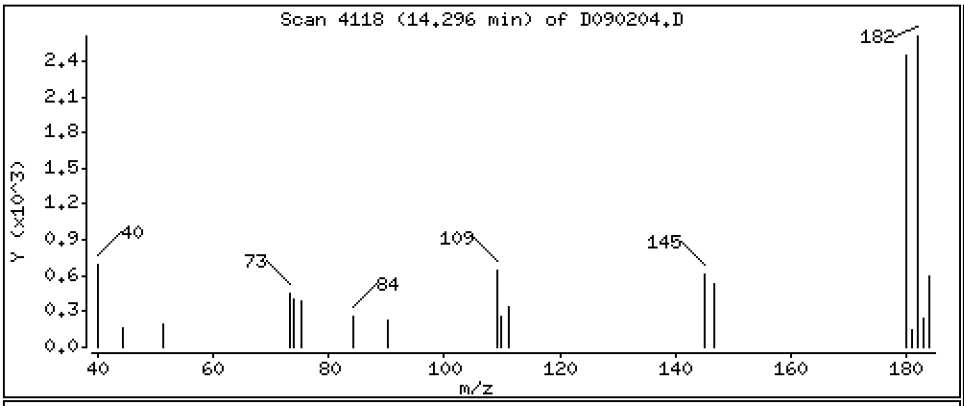
Client ID: CCB Instrument: VOA2.i

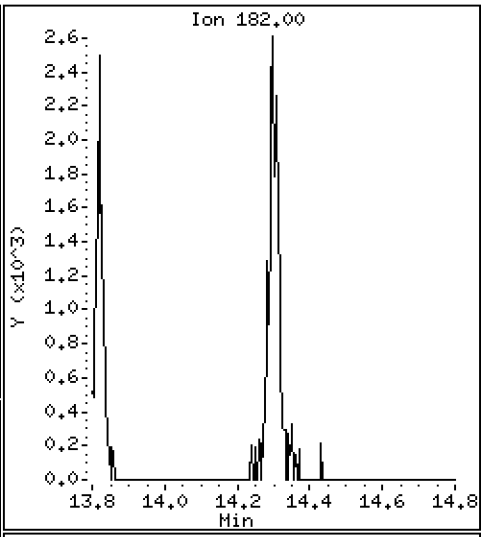
Sample Info: CCB;CCB;;;

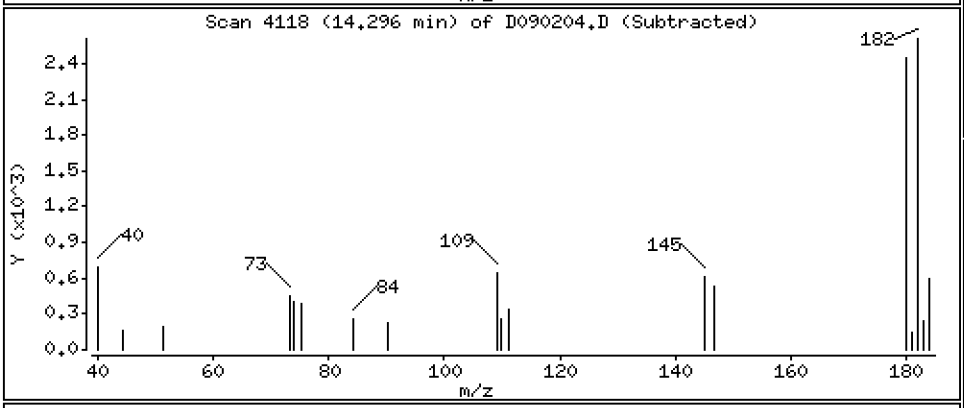
Purge Volume: 5.0 Operator: AP

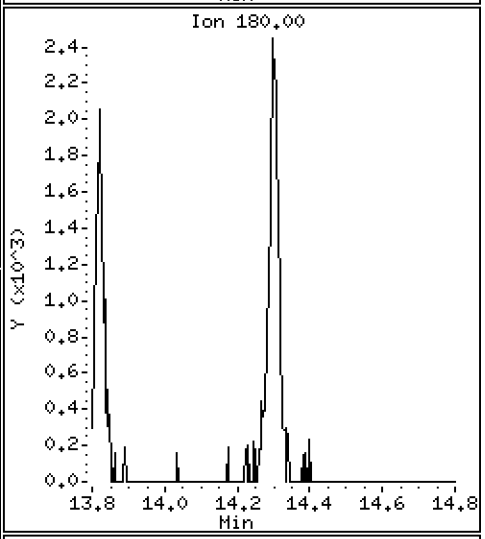
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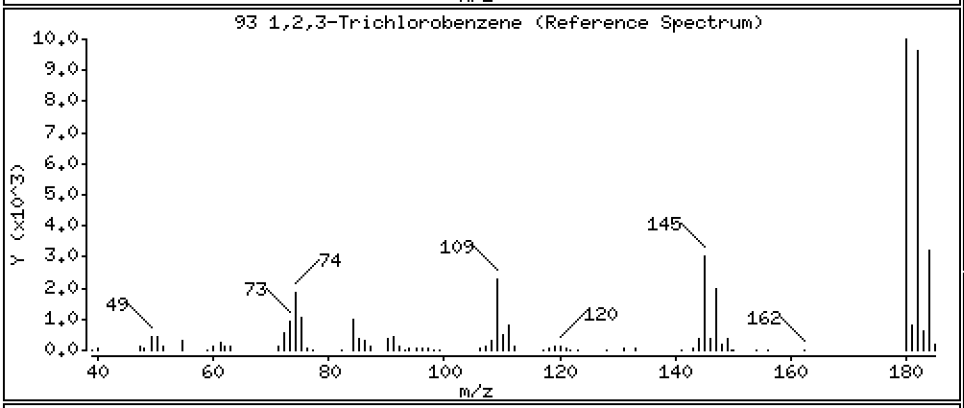
93 1,2,3-Trichlorobenzene Concentration: 1.44 ug/l Review Code:

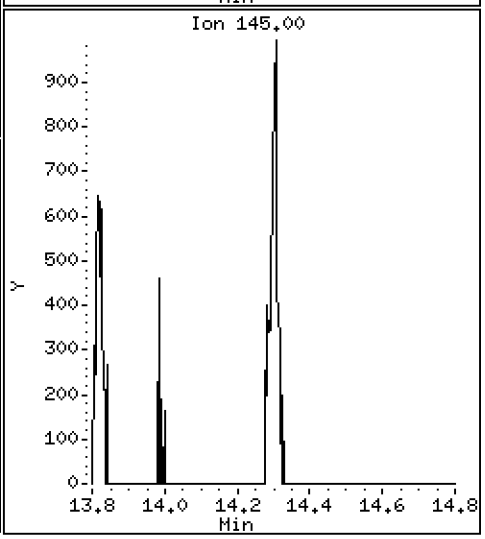


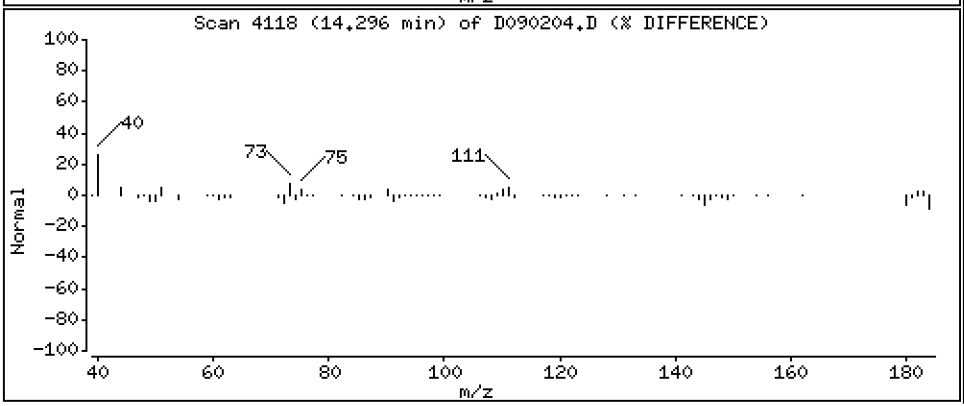












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090204.D Page 5

Date : 02-SEP-2018 14:40

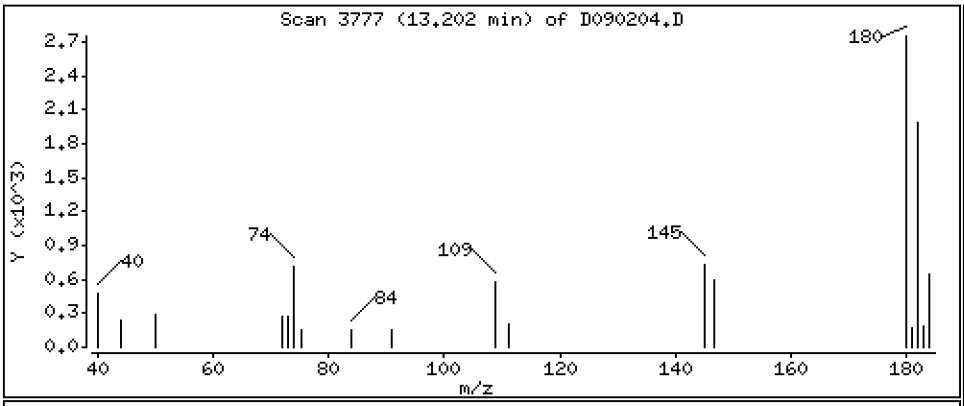
Client ID: CCB Instrument: VOA2.i

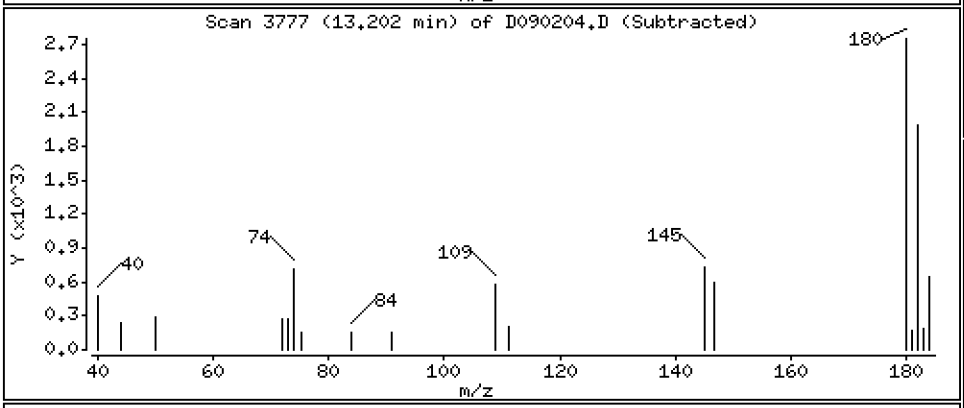
Sample Info: CCB;CCB;;;

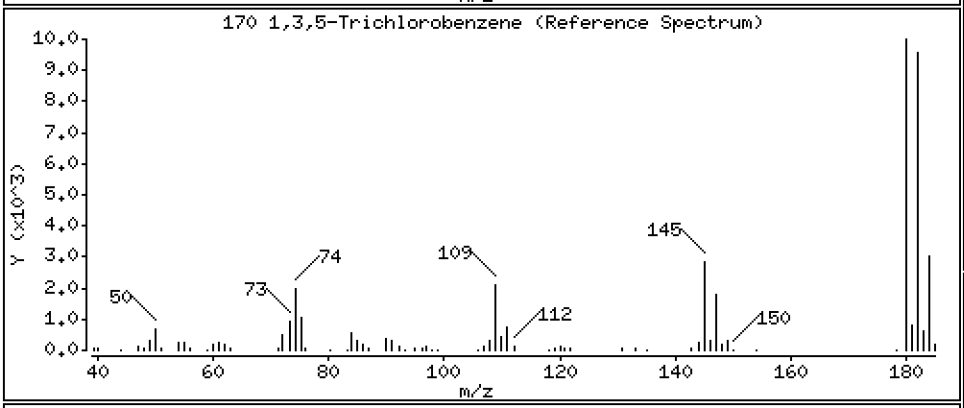
Purge Volume: 5.0 Operator: AP

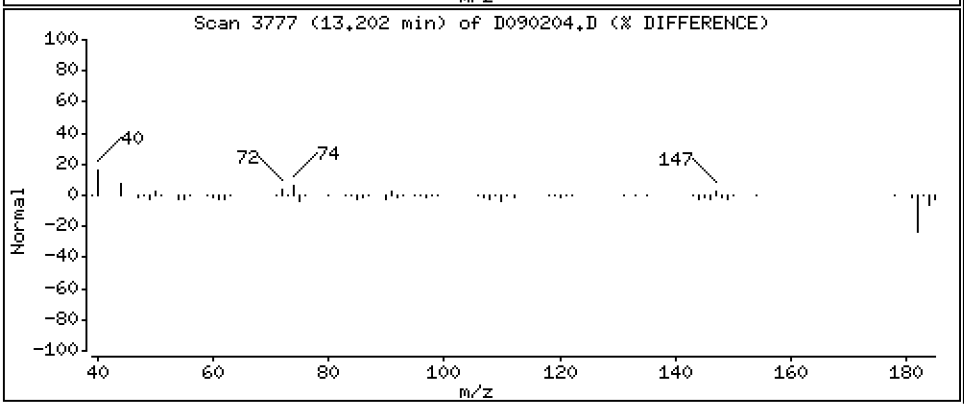
Column phase: DB624 Column diameter: 0.18

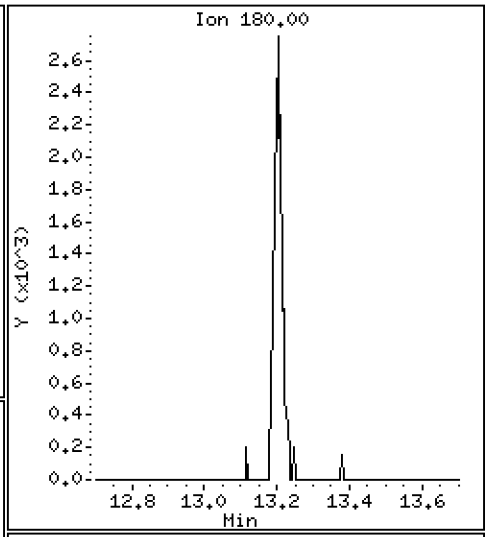
170 1,3,5-Trichlorobenzene Concentration: 1.12 ug/l Review Code:

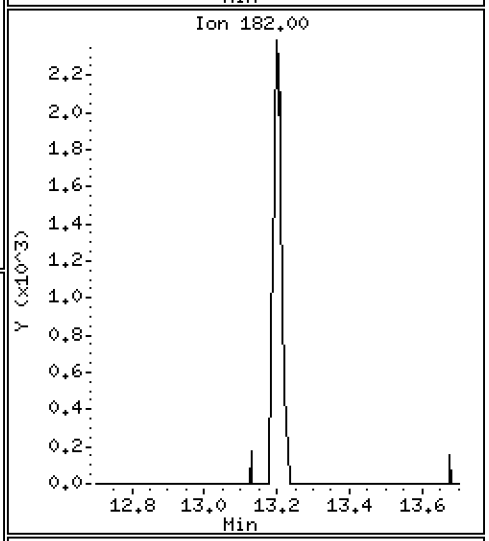


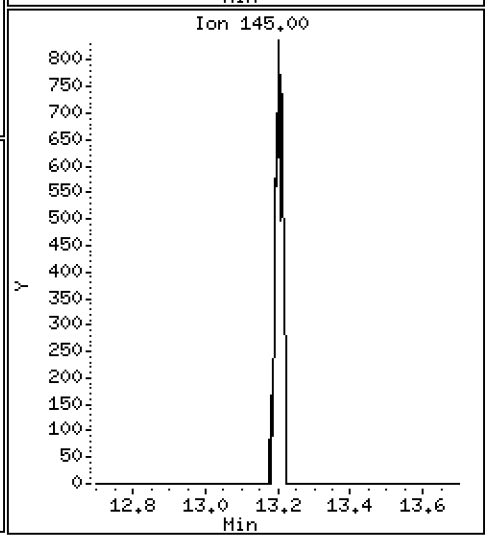












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090204.D Page 6

Date : 02-SEP-2018 14:40

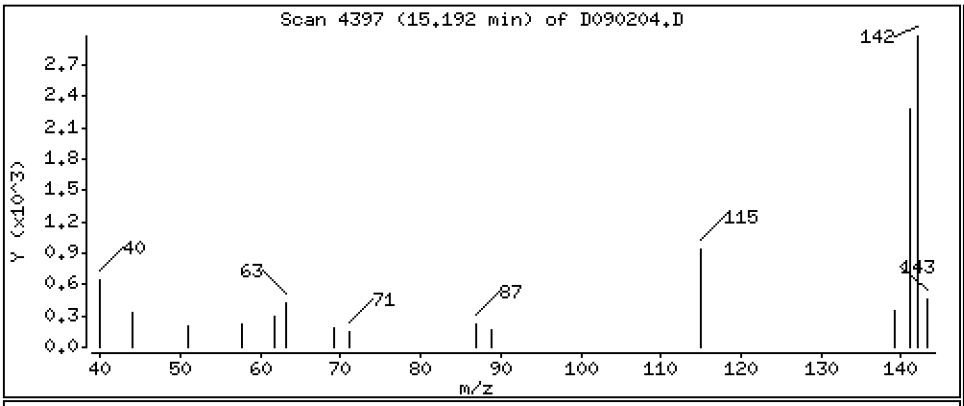
Client ID: CCB Instrument: VOA2.i

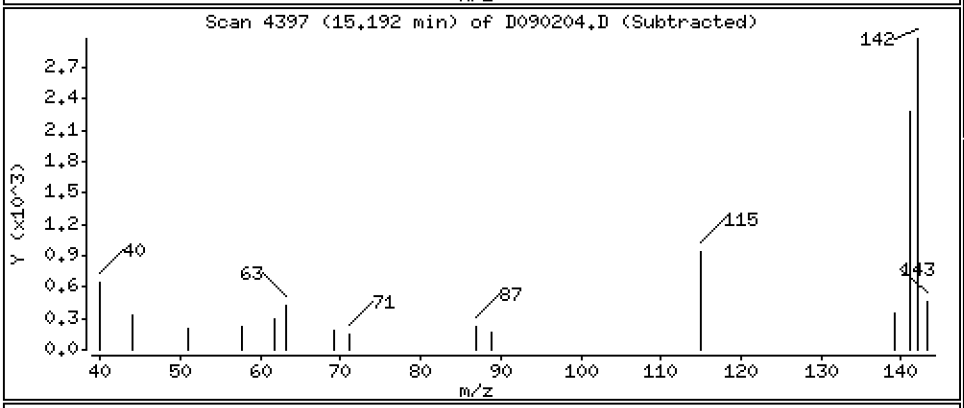
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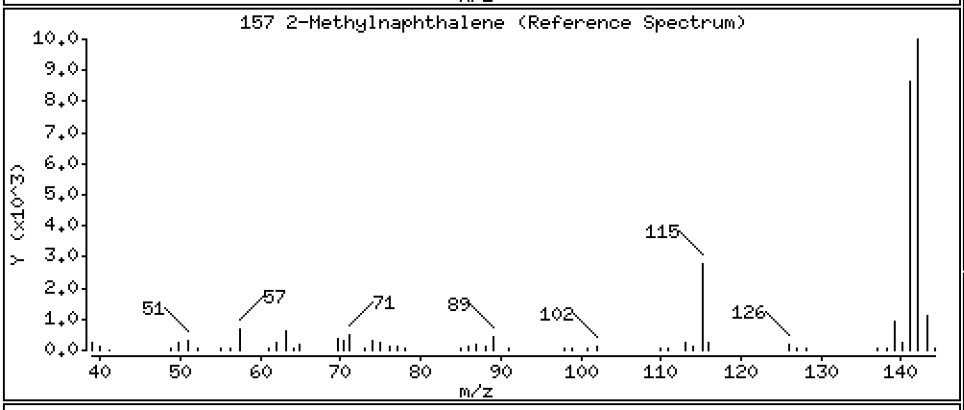
Purge Volume: 5.0 Operator: AP

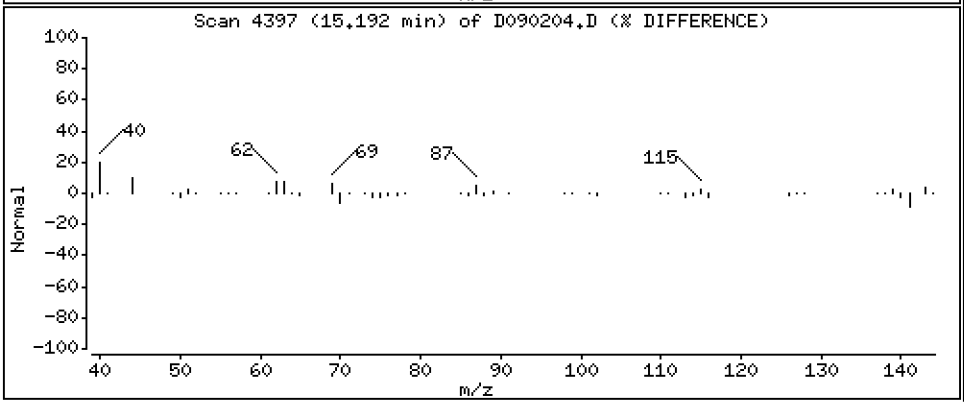
Column phase: DB624 Column diameter: 0.18

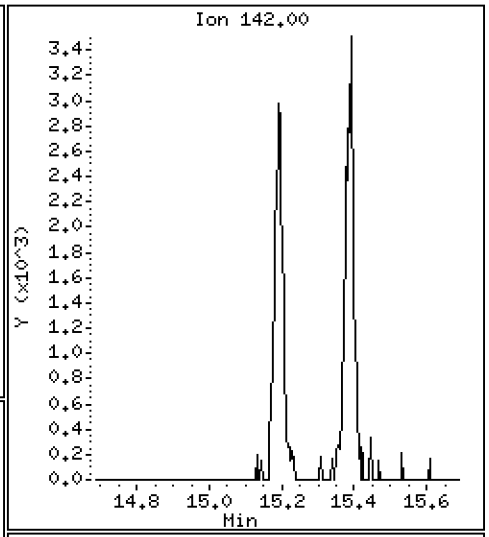
157 2-Methylnaphthalene Concentration: 7.01 ug/l Review Code:

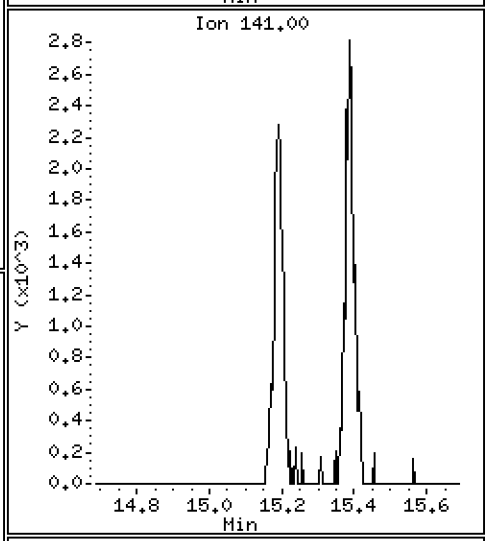


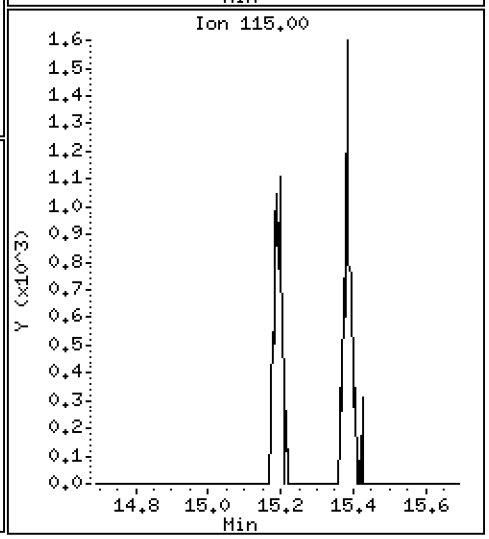












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090204.D Page 7

Date : 02-SEP-2018 14:40

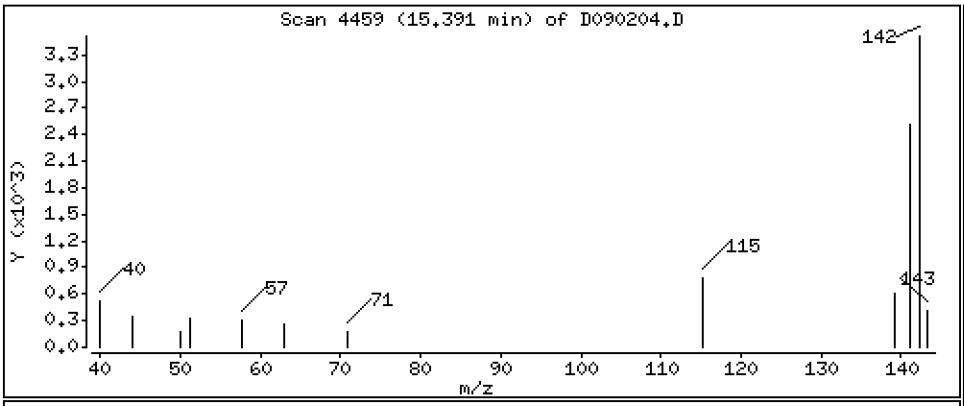
Client ID: CCB Instrument: VOA2.i

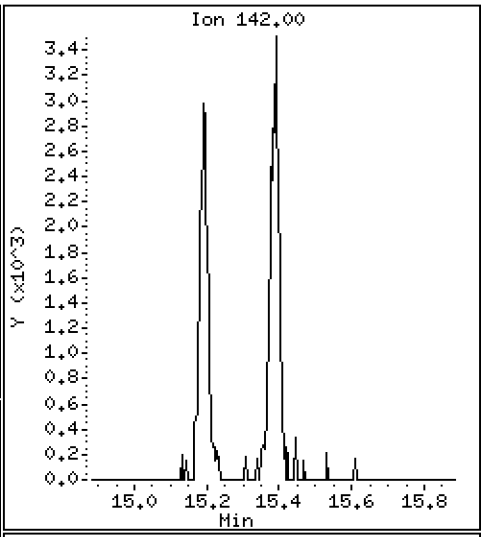
Sample Info: CCB;CCB;;;

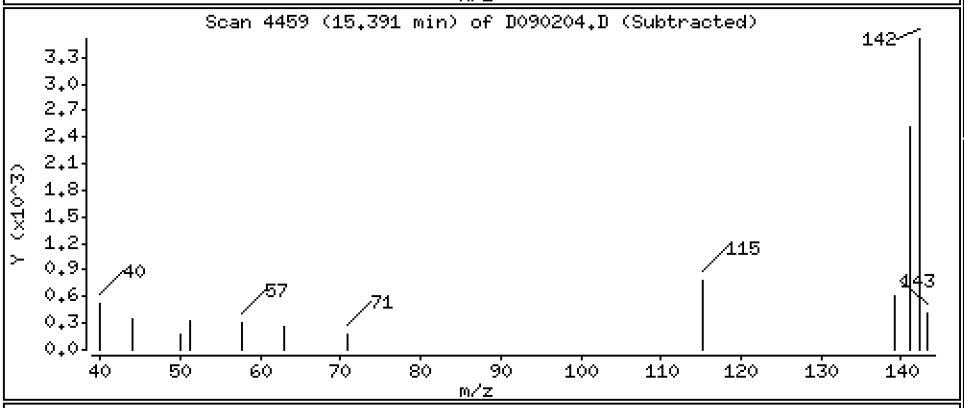
Purge Volume: 5.0 Operator: AP

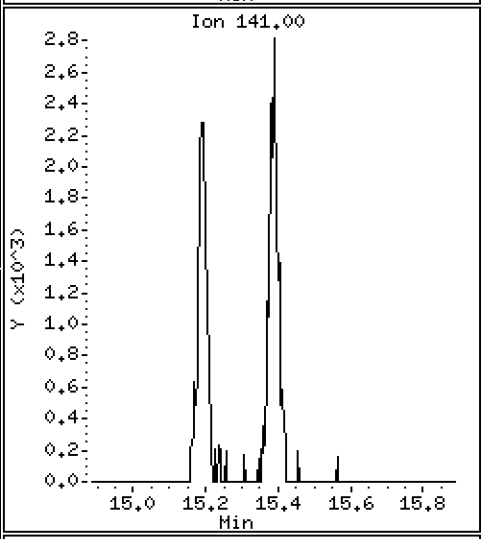
Column phase: DB624 Column diameter: 0.18

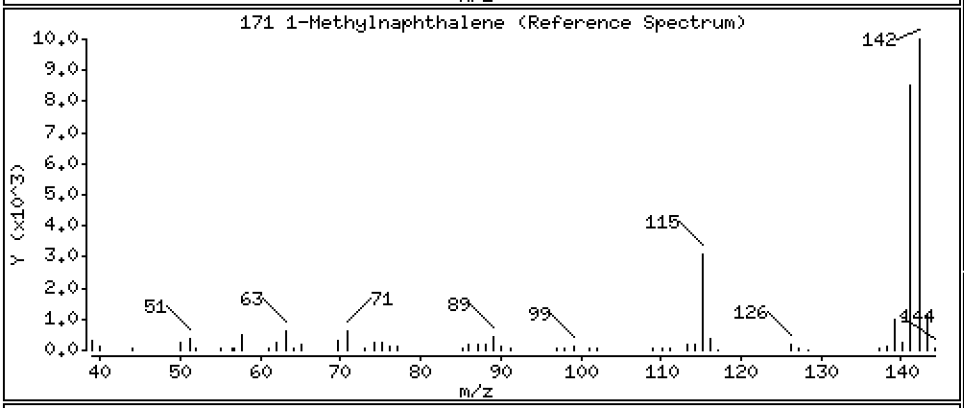
171 1-Methylnaphthalene Concentration: 6.61 ug/l Review Code:

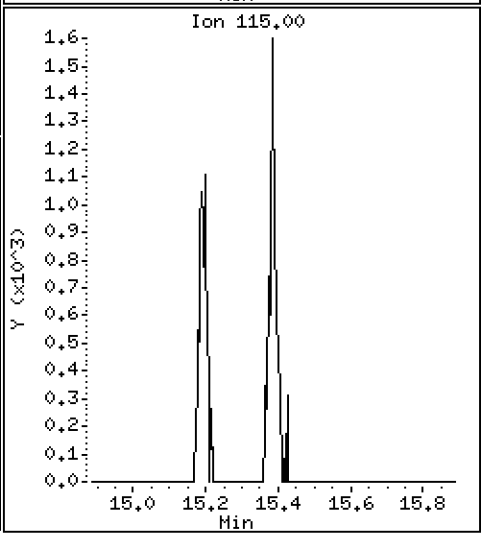


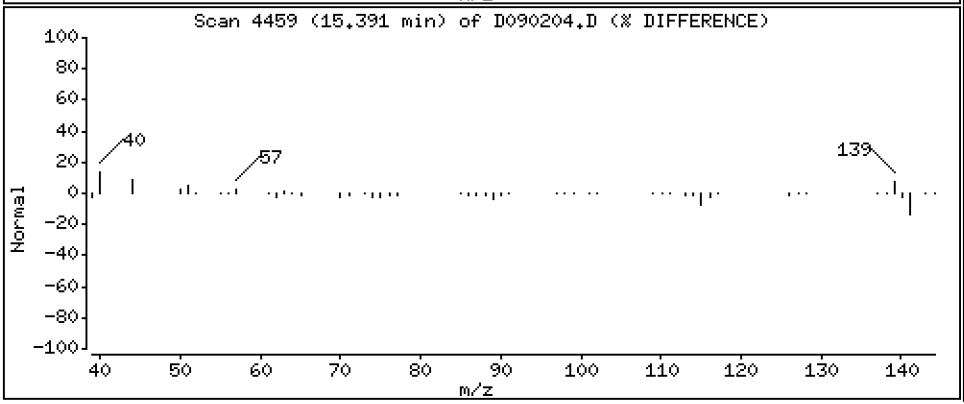












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 1
Report Date: 09-Oct-2018 14:40

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D
Lab Smp Id: VLCSW-180830 Client Smp ID: VLCSW-180830
Inj Date : 02-SEP-2018 15:04
Operator : AP Inst ID: VOA2.i
Smp Info : VLCSW-180830;VLCSW-180830;3;;LCS
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 5 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14
Processing Host: NAHSTWS003

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
Va	0.00000	
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	5.786	5.786	(1.000)	227467	50.0000	
2	Dichlorodifluoromethane	85	1.473	1.470	(0.255)	47498	21.2110	21.21
186	Isobutylene	56	1.675	1.672	(0.290)	80623	19.9498	19.94(AM)
3	Chloromethane	50	1.617	1.611	(0.280)	100300	17.8701	17.87
4	Propionitrile	54	5.243	5.240	(0.906)	201412	195.882	195.88
5	Vinyl Chloride	62	1.704	1.698	(0.295)	76539	20.3903	20.39
6	Bromomethane	94	1.970	1.967	(0.341)	49227	24.4127	24.41
7	Chloroethane	64	2.060	2.054	(0.356)	43863	18.2917	18.29
159	Dichlorofluoromethane	67	2.249	2.250	(0.389)	111380	19.9992	19.99
8	Trichlorofluoromethane	101	2.275	2.269	(0.393)	77463	21.1213	21.12
9	Acrolein	56	2.699	2.692	(0.466)	20881	28.4780	28.47
10	Acetone	43	2.869	2.872	(0.496)	34692	32.2621	32.26
11	1,1-Dichloroethene	96	2.766	2.766	(0.478)	52449	19.5104	19.51
12	Isobutyl Alcohol	74	6.164	6.164	(1.065)	4247	280.409	280.40(A)
13	Acetonitrile	39	3.190	3.180	(0.551)	67638	204.075	204.07
14	Allyl Chloride	41	3.199	3.190	(0.553)	179523	19.4389	19.43
15	Iodomethane	142	2.936	2.923	(0.508)	76948	32.2654	32.26
16	Acrylonitrile	53	3.710	3.713	(0.641)	45423	32.3598	32.35
17	Methylene Chloride	84	3.353	3.350	(0.580)	62005	19.4333	19.43
18	Methyl tert-butyl ether	73	3.706	3.703	(0.641)	157659	19.2657	19.26
19	Carbon Disulfide	76	2.978	2.972	(0.515)	203363	40.0938	40.09

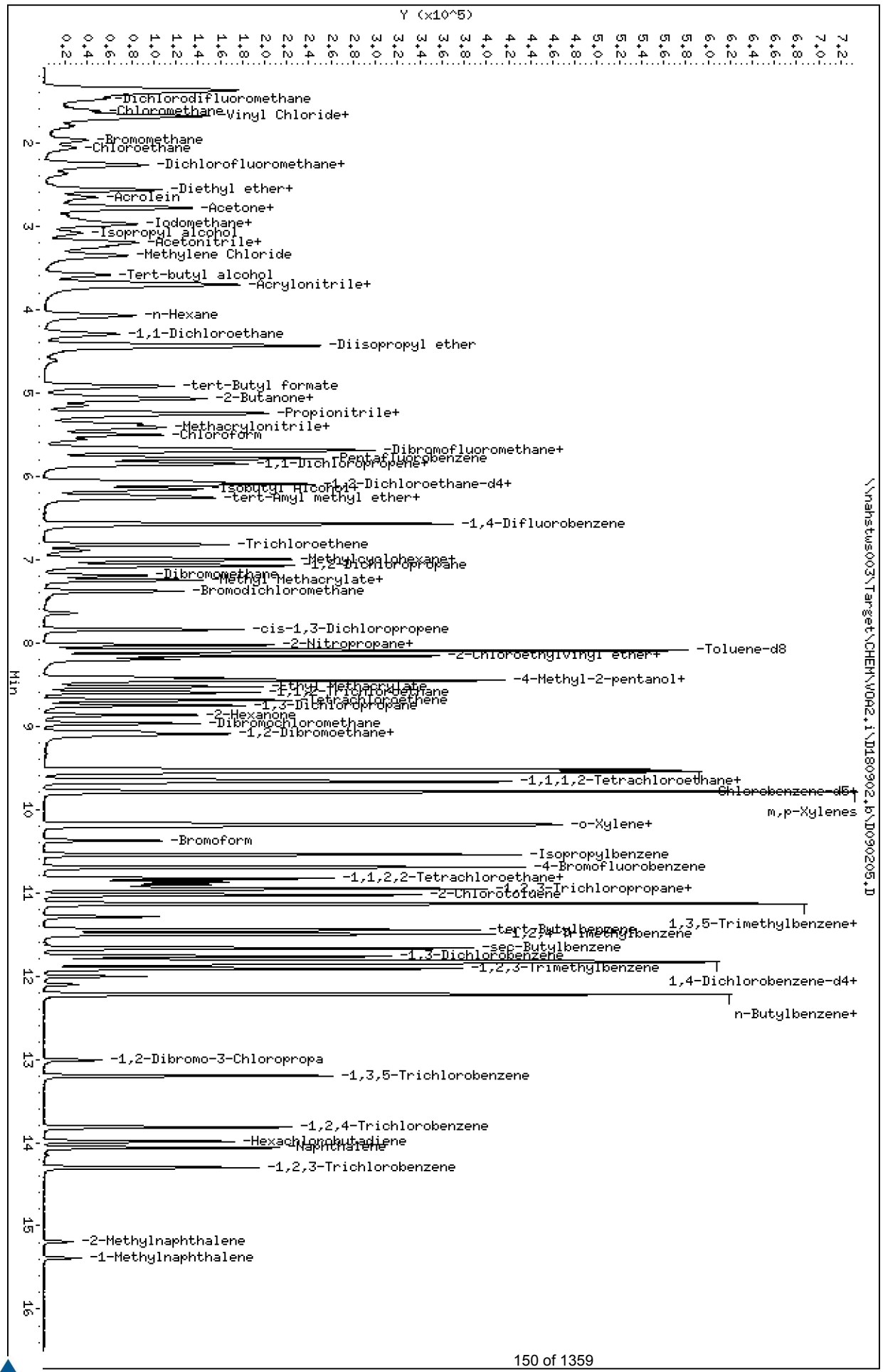
Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 2
Report Date: 09-Oct-2018 14:40

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
20	trans-1,2-Dichloroethene	96	3.681	3.677	(0.636)	58889	21.2439	21.24
21	Vinyl Acetate	43	5.250	5.243	(0.907)	134549	35.9949	35.99(M)
22	1,1-Dichloroethane	63	4.290	4.287	(0.742)	119176	18.7441	18.74
24	2-Butanone	43	5.154	5.147	(0.891)	57020	36.5061	36.50
25	Methacrylonitrile	41	5.417	5.407	(0.936)	66408	19.4255	19.42
26	2,2-Dichloropropane	77	5.051	5.051	(0.873)	83359	24.0901	24.09
27	cis-1,2-Dichloroethene	96	5.077	5.073	(0.877)	68134	20.3725	20.37
28	Chloroform	83	5.507	5.497	(0.952)	103417	19.4052	19.40
29	Bromochloromethane	128	5.375	5.372	(0.929)	33024	21.1946	21.19
$ 30	Dibromofluoromethane	113	5.696	5.689	(0.984)	95724	47.0709	47.07
31	1,1,1-Trichloroethane	97	5.661	5.661	(0.978)	87022	19.3584	19.35
32	1,1-Dichloropropene	75	5.863	5.860	(0.892)	73798	22.7243	22.72
33	1,2-Dichloroethane	62	6.152	6.148	(0.936)	74987	20.1985	20.19
34	Carbon Tetrachloride	117	5.843	5.837	(0.889)	73781	21.7406	21.74
$ 35	1,2-Dichloroethane-d4	65	6.065	6.062	(1.048)	105983	45.6774	45.67
* 36	1,4-Difluorobenzene	114	6.575	6.572	(1.000)	340006	50.0000	
37	Benzene	78	6.097	6.097	(0.927)	238222	20.4806	20.48
38	Trichloroethene	130	6.819	6.819	(1.037)	65776	21.1822	21.18
39	Bromodichloromethane	83	7.381	7.381	(1.122)	83907	21.4441	21.44
40	Methyl Methacrylate	41	7.249	7.249	(1.253)	65824	19.0263	19.02
41	2-Chloroethylvinyl ether	63	8.157	8.154	(1.241)	18768	39.7940	39.79
42	1,2-Dichloropropane	63	7.066	7.066	(1.075)	71022	21.0434	21.04
43	2-Nitropropane	43	8.026	8.026	(1.387)	134346	18.4664	18.46
44	Dibromomethane	93	7.191	7.191	(1.094)	35984	21.5463	21.54
45	4-Methyl-2-Pentanone	43	8.026	8.026	(0.843)	134346	37.9483	37.94
46	cis-1,3-Dichloropropene	75	7.843	7.836	(1.193)	100073	22.8435	22.84
* 47	Chlorobenzene-d5	117	9.524	9.524	(1.000)	310843	50.0000	
$ 48	Toluene-d8	98	8.093	8.090	(0.850)	384293	44.7219	44.72
49	Ethyl Methacrylate	69	8.529	8.533	(1.297)	88201	20.8737	20.87
50	Toluene	91	8.157	8.157	(0.856)	250622	19.9858	19.98
51	trans-1,3-Dichloropropene	75	8.420	8.417	(1.281)	79680	23.4656	23.46(M)
52	2-Hexanone	43	8.866	8.866	(0.931)	88075	38.3318	38.33
53	1,1,2-Trichloroethane	83	8.593	8.594	(0.902)	47438	19.8801	19.88
54	1,3-Dichloropropane	76	8.754	8.754	(0.919)	97092	20.5806	20.58
55	Dibromochloromethane	129	8.969	8.969	(0.942)	70307	21.1055	21.10
56	Tetrachloroethene	164	8.690	8.690	(0.912)	54700	21.6332	21.63
57	1,2-Dibromoethane	107	9.065	9.065	(0.952)	62110	21.6303	21.63
58	1-Chlorohexane	55	9.553	9.550	(1.453)	60562	22.4468	22.44
59	Chlorobenzene	112	9.553	9.553	(1.003)	163457	21.0168	21.01
60	1,1,1,2-Tetrachloroethane	131	9.646	9.643	(1.013)	64357	21.0752	21.07
61	Ethylbenzene	106	9.672	9.669	(1.015)	88447	22.7428	22.74
62	m,p-Xylenes	106	9.787	9.790	(1.028)	213819	45.9170	45.91
63	o-Xylene	106	10.175	10.176	(1.068)	111814	22.2607	22.26
64	Styrene	104	10.195	10.198	(1.070)	178099	21.4637	21.46
66	Bromoform	173	10.374	10.374	(1.089)	50814	21.8555	21.85
67	Isopropylbenzene	105	10.545	10.545	(1.107)	274433	20.5503	20.55
68	1,1,2,2-Tetrachloroethane	83	10.869	10.872	(0.919)	78494	17.9512	17.95
$ 69	4-Bromofluorobenzene	95	10.695	10.695	(1.123)	139419	50.5688	50.56
* 70	1,4-Dichlorobenzene-d4	152	11.831	11.835	(1.000)	137068	50.0000	
71	1,2,3-Trichloropropane	75	10.904	10.901	(0.922)	75441	18.3910	18.39
72	trans-1,4-Dichloro-2-butene	53	10.930	10.930	(1.148)	15304	18.7250	18.72
73	n-Propylbenzene	91	10.952	10.952	(0.926)	292672	21.5885	21.58
74	Bromobenzene	156	10.830	10.830	(0.915)	74709	20.1696	20.16
75	1,3,5-Trimethylbenzene	105	11.132	11.132	(0.941)	219128	19.6341	19.63

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	76 2-Chlorotoluene	91	11.026	11.026	(0.932)	189954	21.2815	21.28
	77 4-Chlorotoluene	91	11.138	11.138	(0.941)	203955	21.4008	21.40
	78 tert-Butylbenzene	119	11.449	11.449	(0.968)	190549	21.8690	21.86
	79 1,2,4-Trimethylbenzene	105	11.498	11.498	(0.972)	215321	20.9804	20.98
	81 sec-Butylbenzene	105	11.664	11.668	(0.986)	260908	19.0893	19.08
	82 p-Isopropyltoluene	119	11.815	11.815	(0.999)	215393	19.0484	19.04
	83 1,3-Dichlorobenzene	146	11.764	11.764	(0.994)	129274	20.2940	20.29
	84 1,4-Dichlorobenzene	146	11.857	11.857	(1.002)	121434	20.4145	20.41
	87 n-Butylbenzene	91	12.220	12.220	(1.033)	168517	20.1442	20.14
	88 1,2-Dichlorobenzene	146	12.223	12.223	(1.033)	124324	19.7859	19.78
	89 1,2-Dibromo-3-Chloropropane	75	13.006	13.009	(1.099)	11893	17.3534	17.35
	90 1,2,4-Trichlorobenzene	180	13.818	13.814	(1.168)	73689	21.0067	21.00
	91 Hexachlorobutadiene	225	13.988	13.984	(1.182)	36423	21.8787	21.87
	92 Naphthalene	128	14.061	14.058	(1.188)	162567	18.7293	18.72
	93 1,2,3-Trichlorobenzene	182	14.302	14.299	(1.209)	62445	20.0935	20.09
	146 Methyl acetate	43	3.257	3.244	(0.563)	60964	16.8246	16.82
	138 Freon TF	101	2.792	2.779	(0.483)	49223	21.9793	21.97
	139 Diethyl ether	59	2.564	2.558	(0.443)	103291	18.8824	18.88
	147 Methylcyclohexane	83	6.992	6.989	(1.063)	87984	23.0035	23.00
	135 1,4-Dioxane	88	7.239	7.239	(1.251)	11264	349.676	349.67
	132 n-Butanol	56	6.995	6.995	(1.209)	40447	380.297	380.29
	131 Methyl Acrylate	55	5.269	5.266	(0.911)	100326	18.6778	18.67
	133 Ethyl Acrylate	55	7.011	7.012	(1.212)	180448	18.4891	18.48
	136 n-Hexane	57	4.075	4.075	(0.704)	78492	21.3494	21.34
	141 Cyclohexane	56	5.693	5.696	(0.984)	103263	18.0148	18.01
	142 Tetrahydrofuran	42	5.420	5.423	(0.937)	43846	35.1947	35.19
	148 Tert-butyl alcohol	59	3.588	3.575	(0.620)	129066	370.427	370.42
	149 Isopropyl alcohol	45	3.084	3.077	(0.533)	79455	358.915	358.91(M)
	151 4-Methyl-2-pentanol	45	8.449	8.452	(0.887)	310125	420.456	420.45
	166 1,2,3-Trimethylbenzene	105	11.911	11.915	(1.007)	205213	21.0161	21.01
	167 Ethanol	45	2.564	2.558	(0.443)	102140	365.166	365.16
	170 1,3,5-Trichlorobenzene	180	13.198	13.202	(1.116)	87433	21.3835	21.38
	172 tert-Butyl formate	59	4.916	4.916	(0.850)	157719	39.4745	39.47
	173 3,3-Dimethyl-1-butanol	57	9.094	9.094	(0.955)	112327	411.298	411.29
	174 tert-Amyl methyl ether	73	6.264	6.264	(1.083)	146672	18.9640	18.96
	175 tert-Butyl ethyl ether	59	6.238	6.238	(1.078)	74645	17.7963	17.79
	176 tert-Amyl alcohol	59	6.238	6.238	(1.078)	74645	355.926	355.92
	157 2-Methylnaphthalene	142	15.191	15.188	(1.284)	13674	9.60459	9.60
	156 Diisopropyl ether	45	4.432	4.432	(0.766)	241323	19.8603	19.86
	171 1-Methylnaphthalene	142	15.387	15.384	(1.301)	18170	10.0811	10.08
	130 Ethyl Acetate	43	5.250	5.243	(0.907)	132423	17.8199	17.81
M	94 1,2-Dichloroethylene (total)	96				127023	41.6164	41.61
M	95 Xylenes (total)	106				325633	68.1778	68.17

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\WOA2.i\D180902.b\D090205.D
Date : 02-SEP-2018 15:04
Client ID: VLCSW-180830
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: WOA2.i
Operator: AP
Column diameter: 0.18

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 2

Date : 02-SEP-2018 15:04

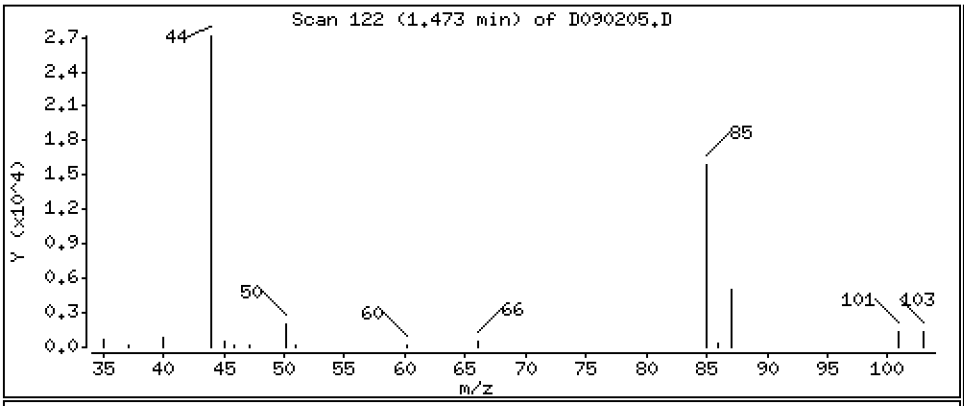
Client ID: VLCSW-180830 Instrument: VOA2.i

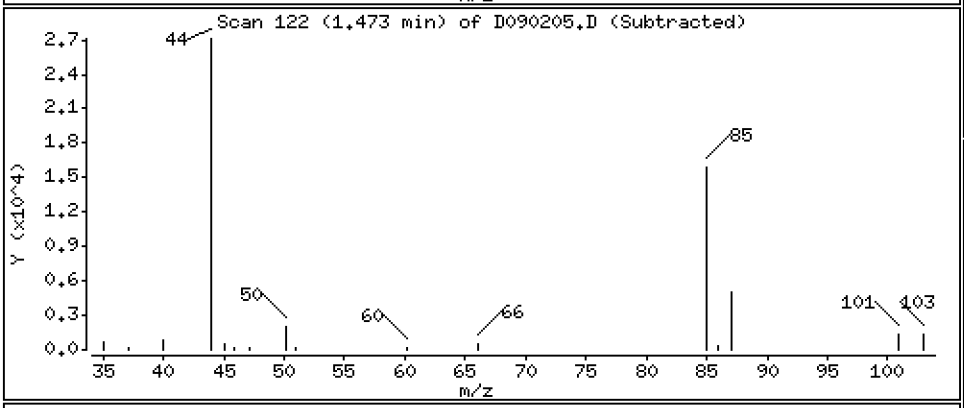
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

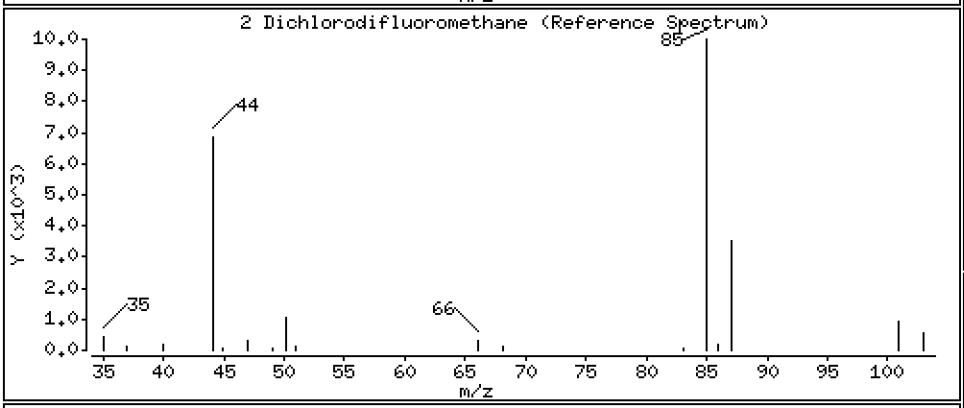
Purge Volume: 5.0 Operator: AP

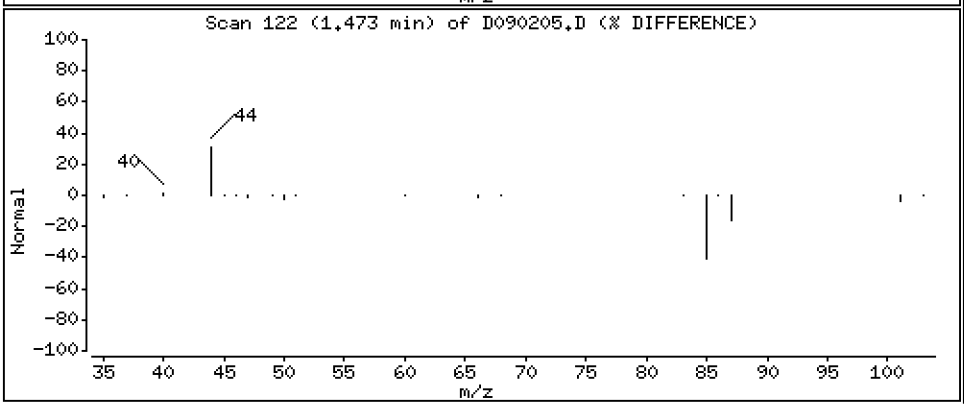
Column phase: DB624 Column diameter: 0.18

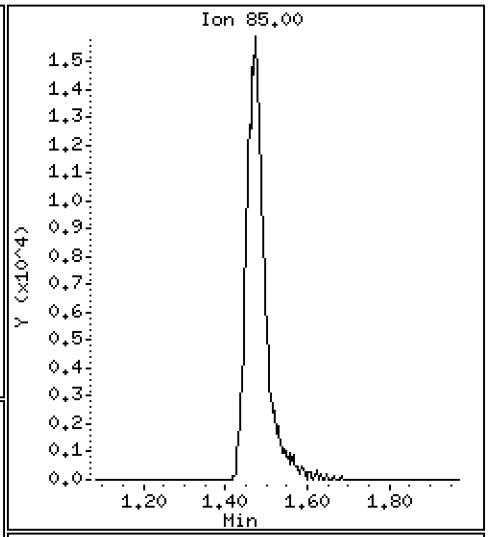
2 Dichlorodifluoromethane Concentration: 21.21 ug/l Review Code:

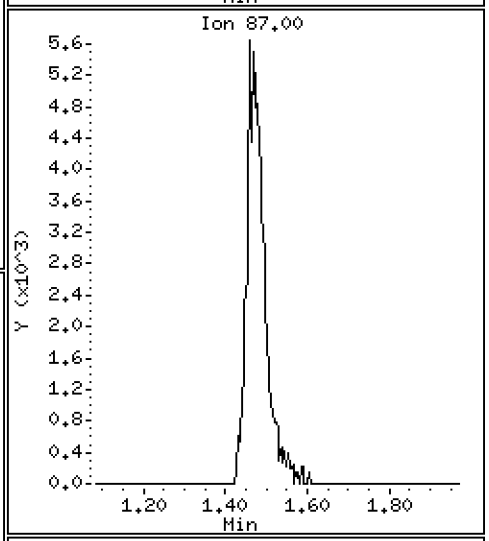


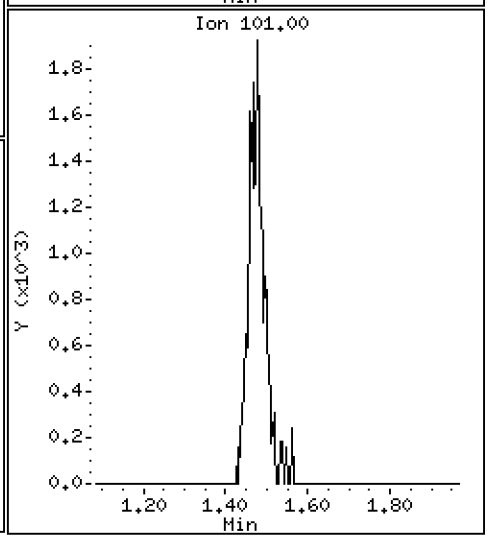












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 3

Date : 02-SEP-2018 15:04

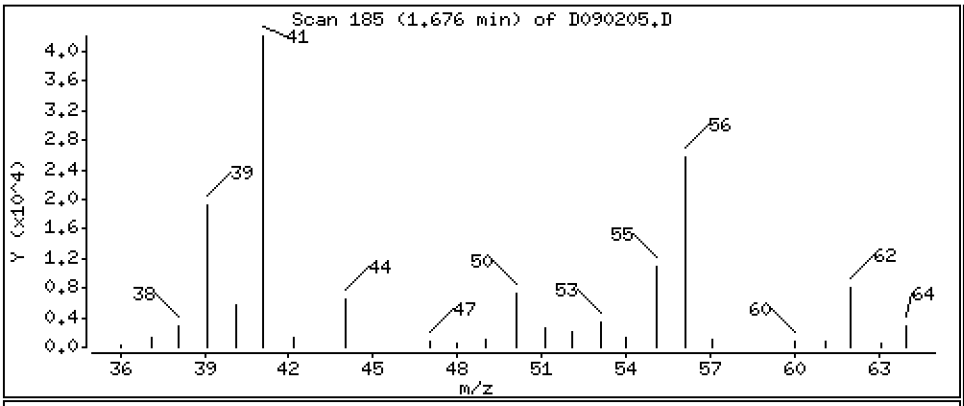
Client ID: VLCSW-180830 Instrument: VOA2.i

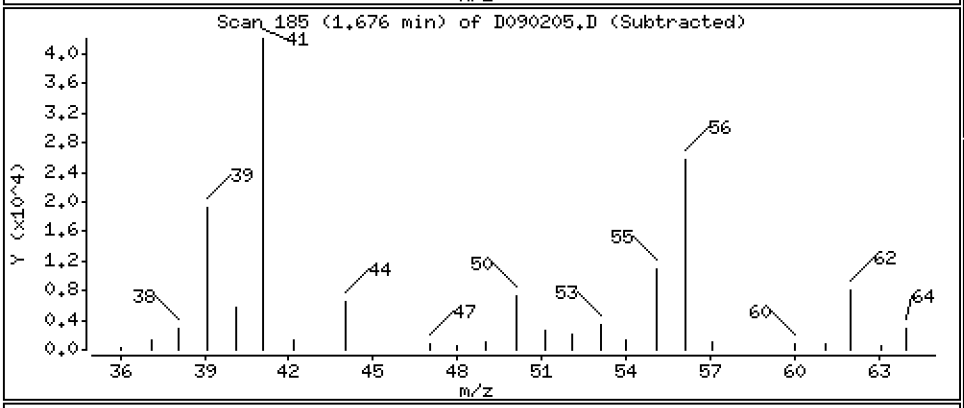
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

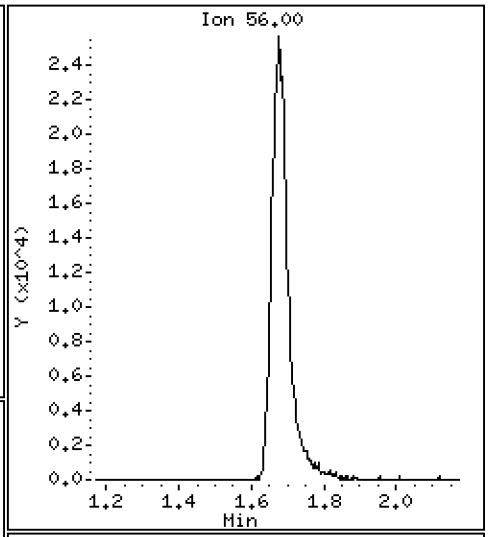
Purge Volume: 5.0 Operator: AP

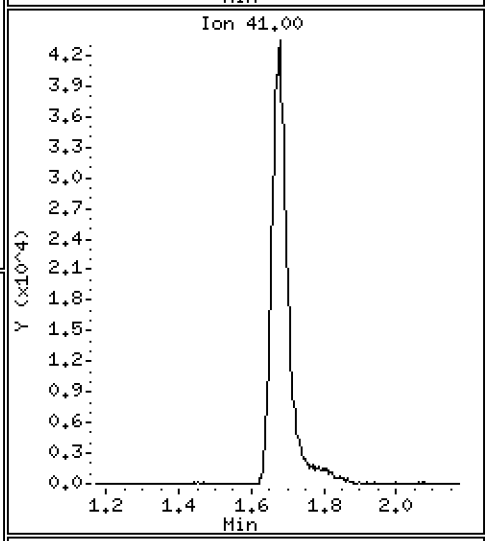
Column phase: DB624 Column diameter: 0.18

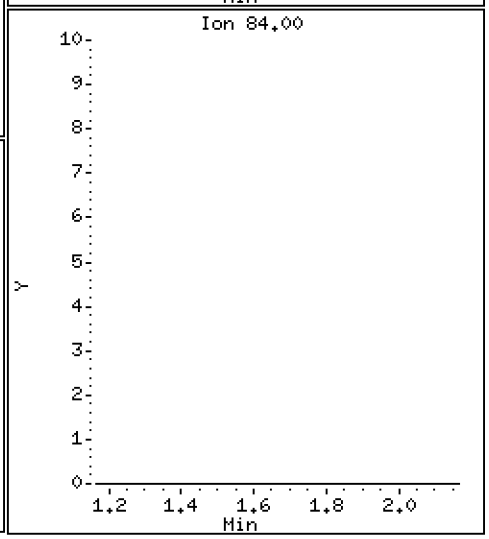
186 Isobutylene Concentration: 19.94 ug/l Review Code:











Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 4

Date : 02-SEP-2018 15:04

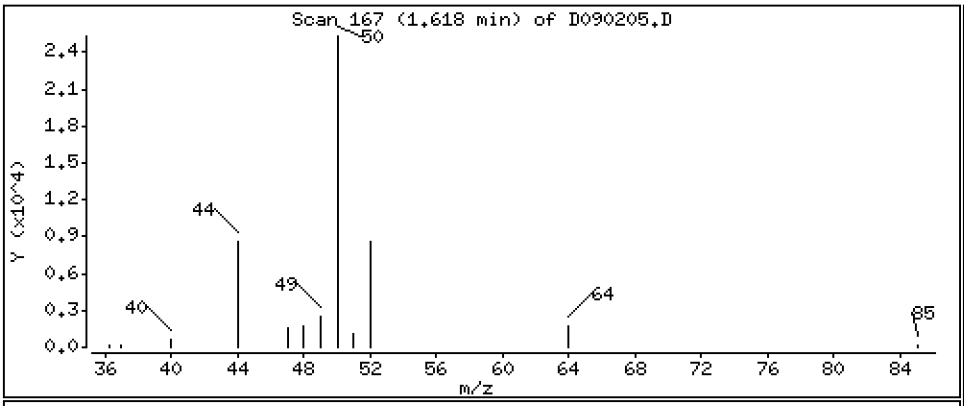
Client ID: VLCSW-180830 Instrument: VOA2.i

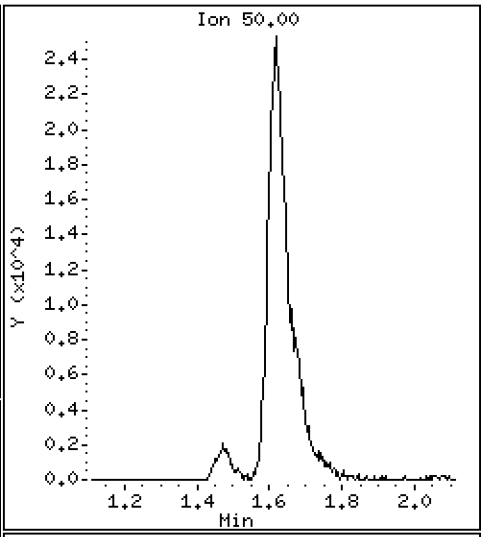
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

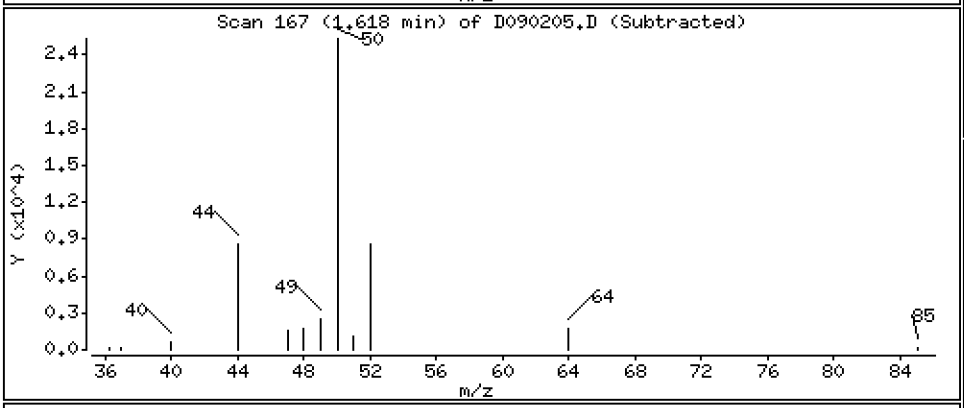
Purge Volume: 5.0 Operator: AP

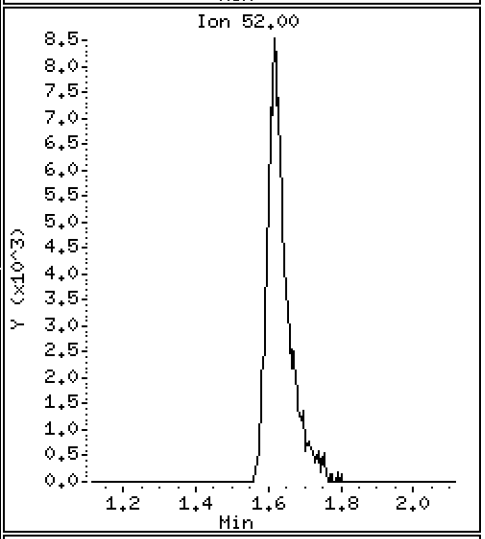
Column phase: DB624 Column diameter: 0.18

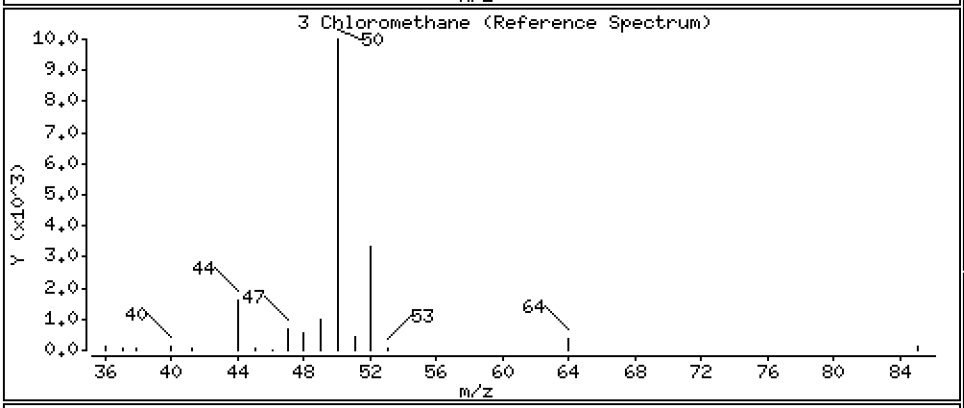
3 Chloromethane Concentration: 17.87 ug/l Review Code:

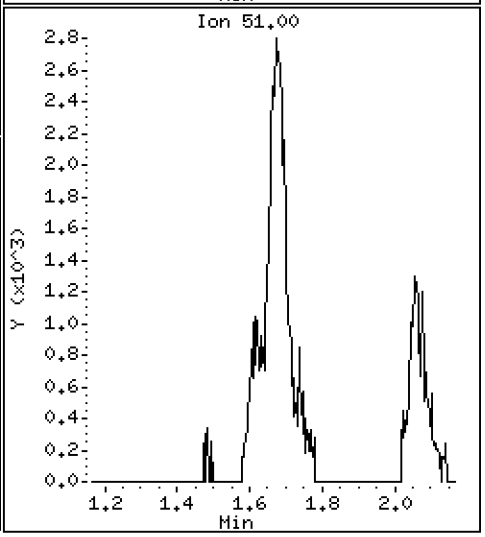


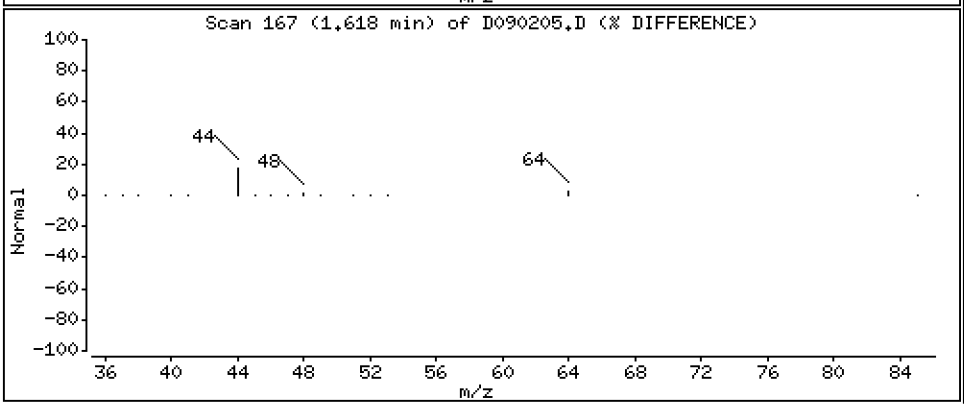












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 5

Date : 02-SEP-2018 15:04

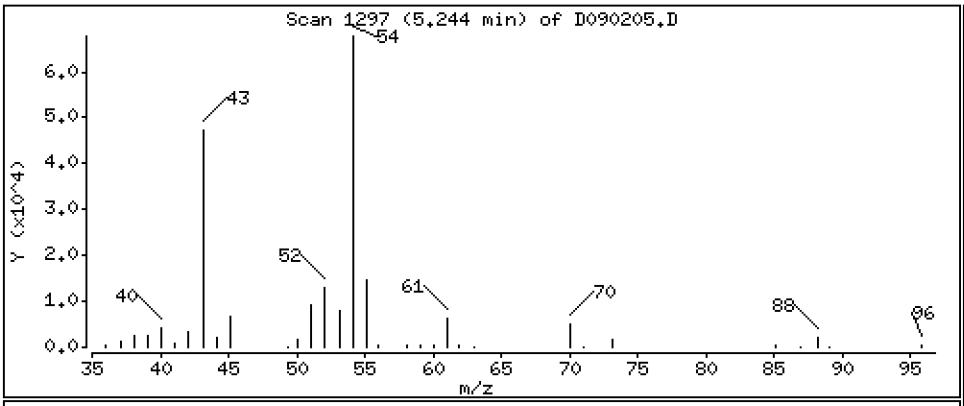
Client ID: VLCSW-180830 Instrument: VOA2.i

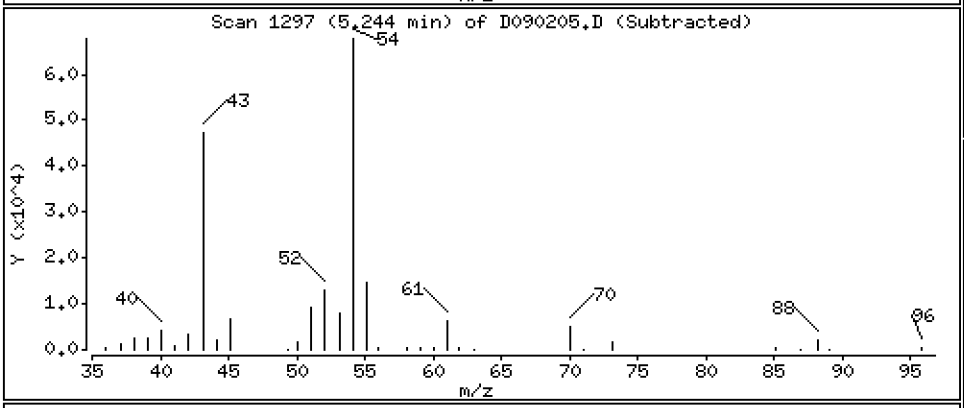
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

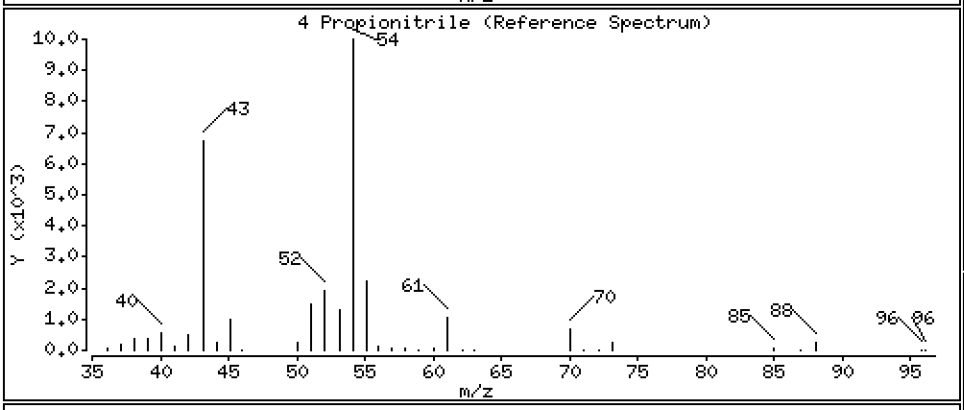
Purge Volume: 5.0 Operator: AP

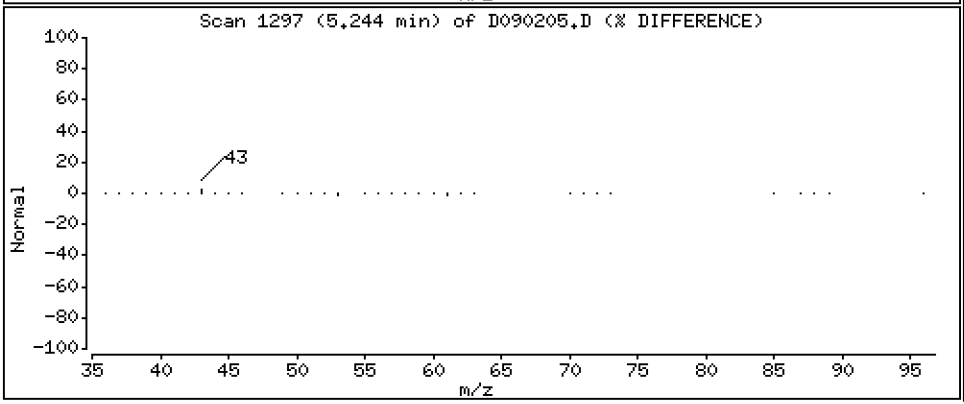
Column phase: DB624 Column diameter: 0.18

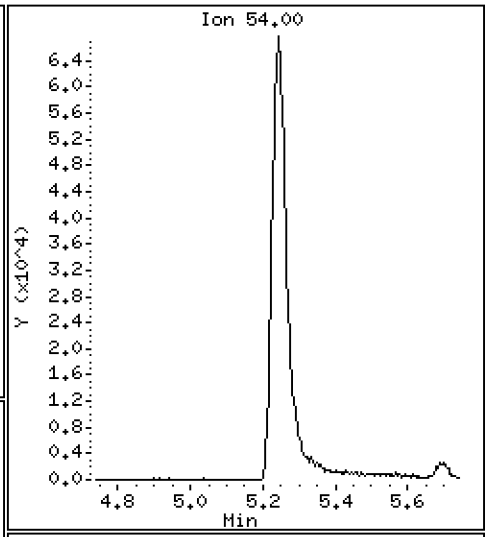
4 Propionitrile Concentration: 195.88 ug/l Review Code:

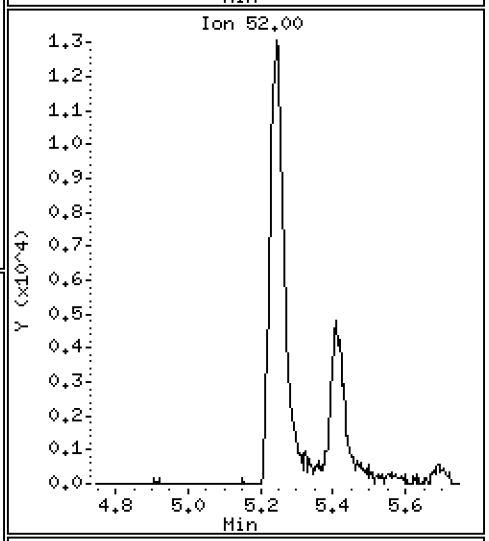


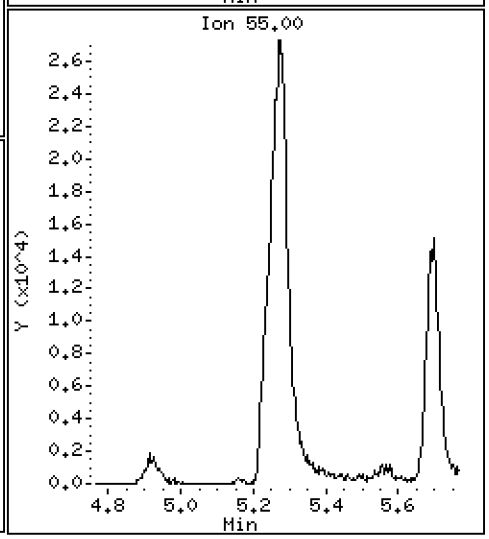












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 6

Date : 02-SEP-2018 15:04

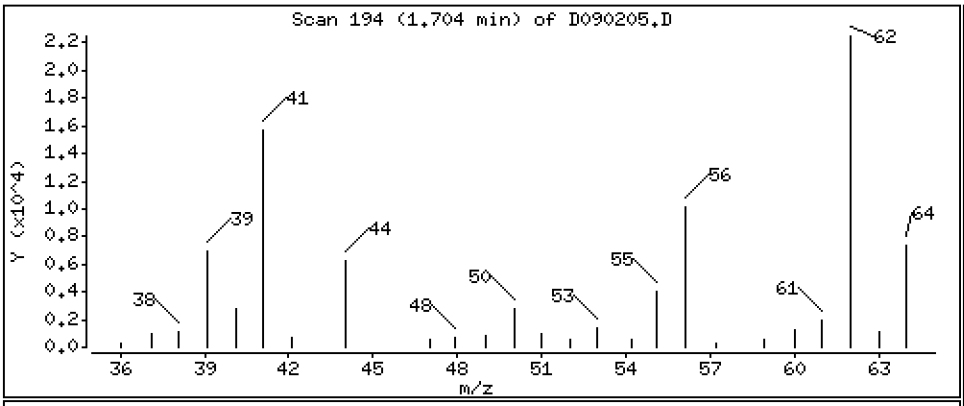
Client ID: VLCSW-180830 Instrument: VOA2.i

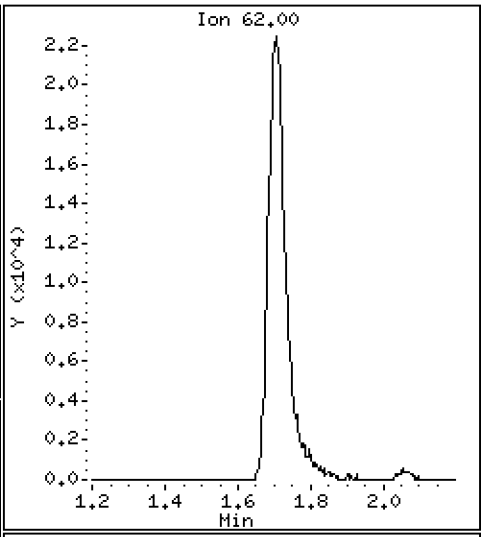
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

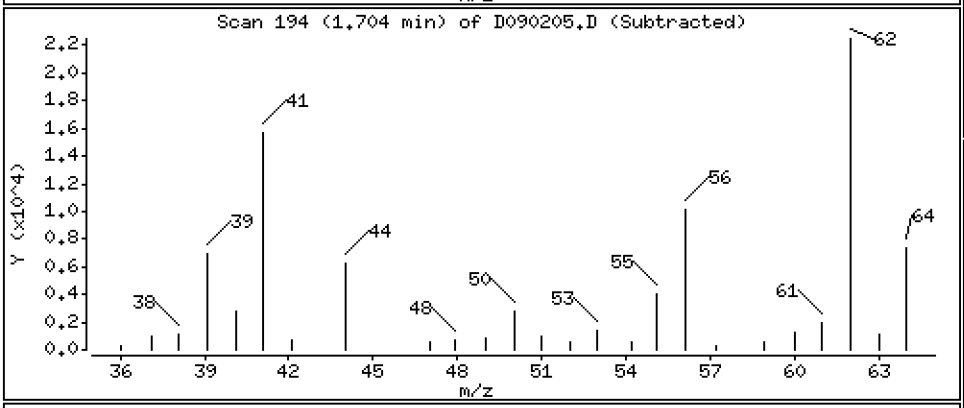
Purge Volume: 5.0 Operator: AP

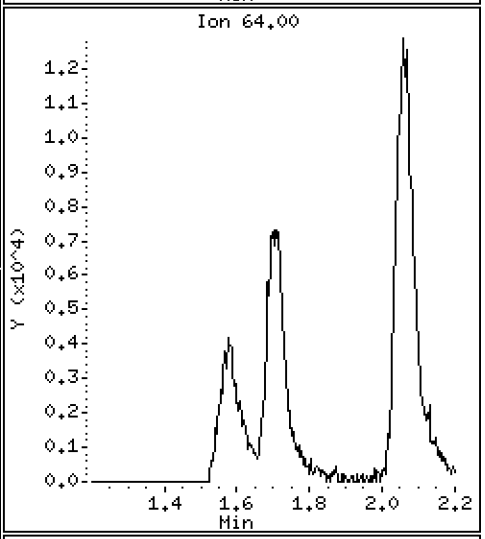
Column phase: DB624 Column diameter: 0.18

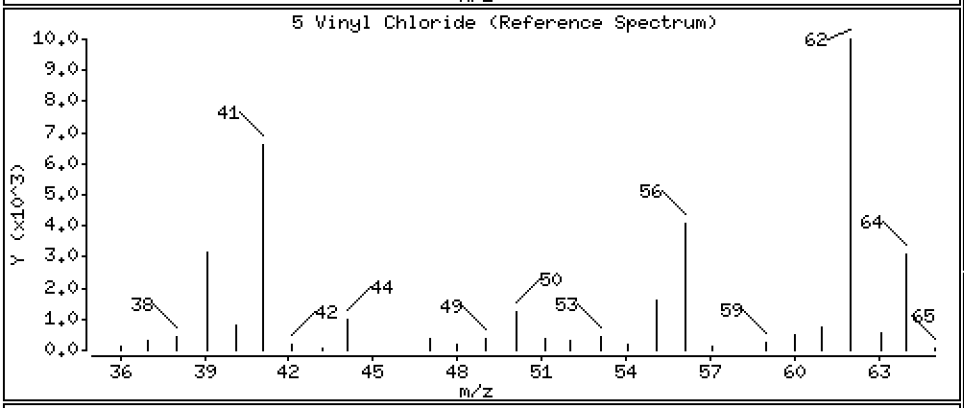
5 Vinyl Chloride Concentration: 20.39 ug/l Review Code:

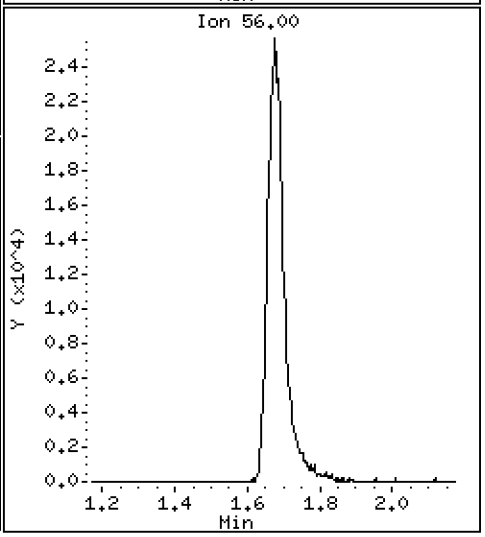


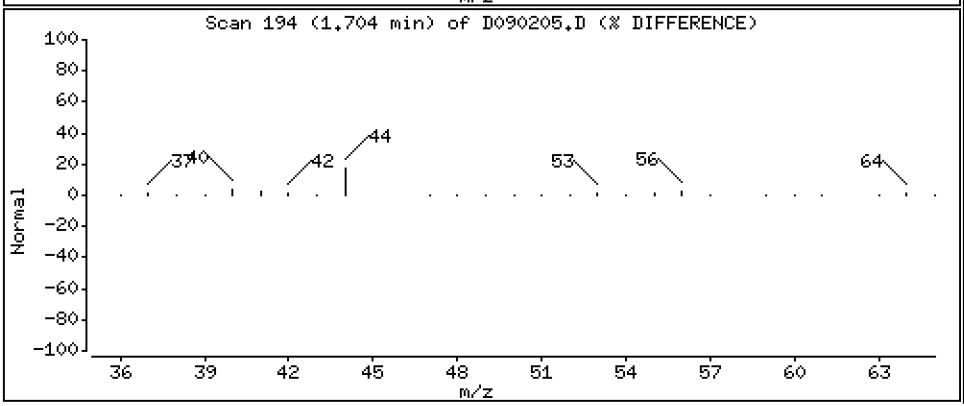












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 7

Date : 02-SEP-2018 15:04

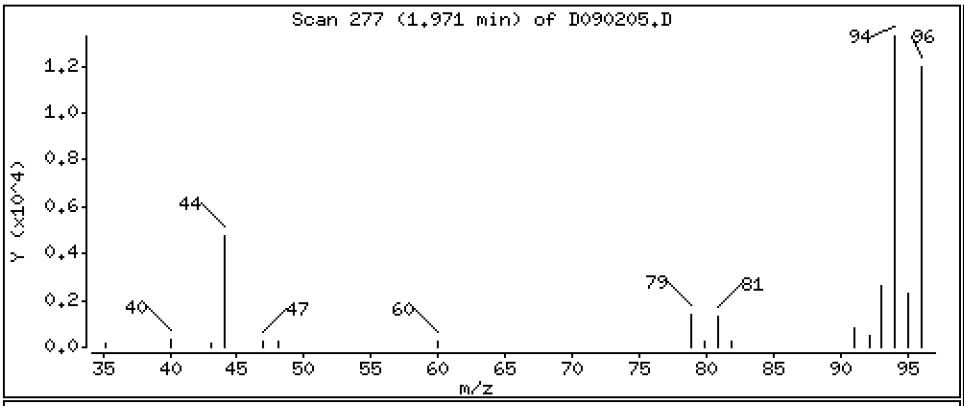
Client ID: VLCSW-180830 Instrument: VOA2.i

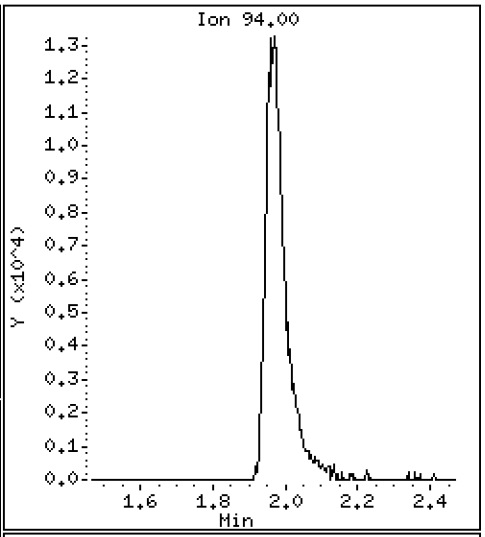
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

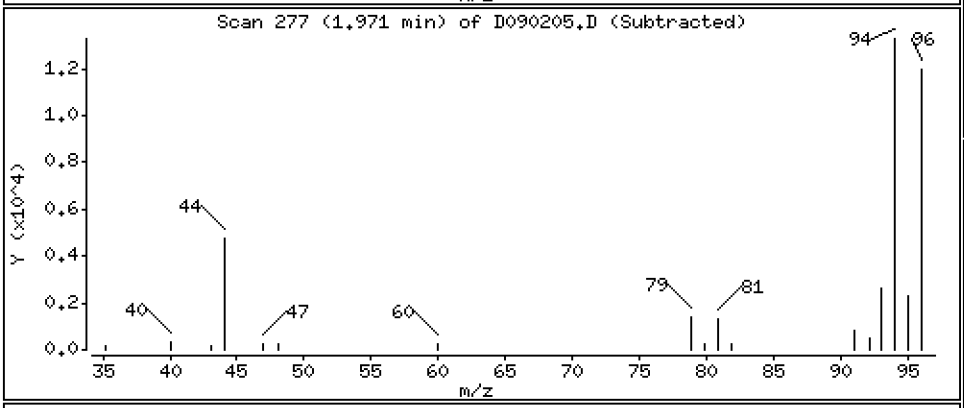
Purge Volume: 5.0 Operator: AP

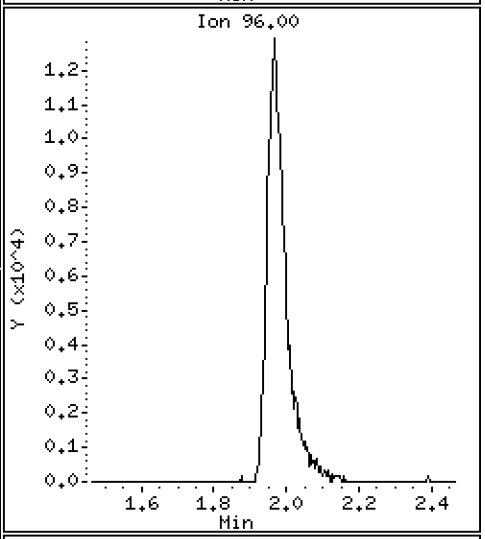
Column phase: DB624 Column diameter: 0.18

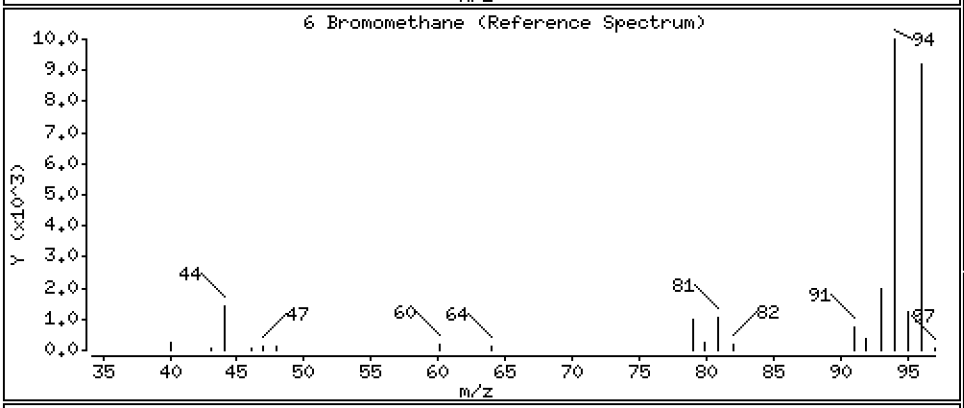
6 Bromomethane Concentration: 24.41 ug/l Review Code:

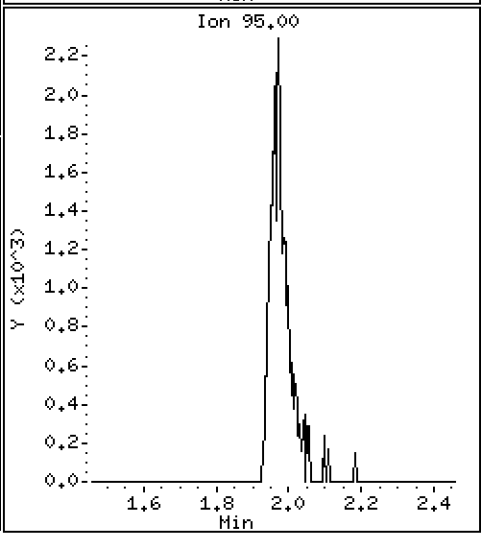


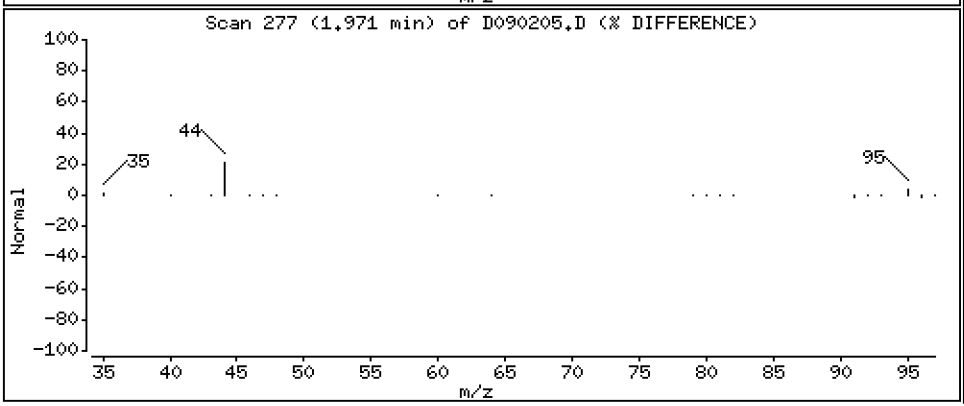












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 8

Date : 02-SEP-2018 15:04

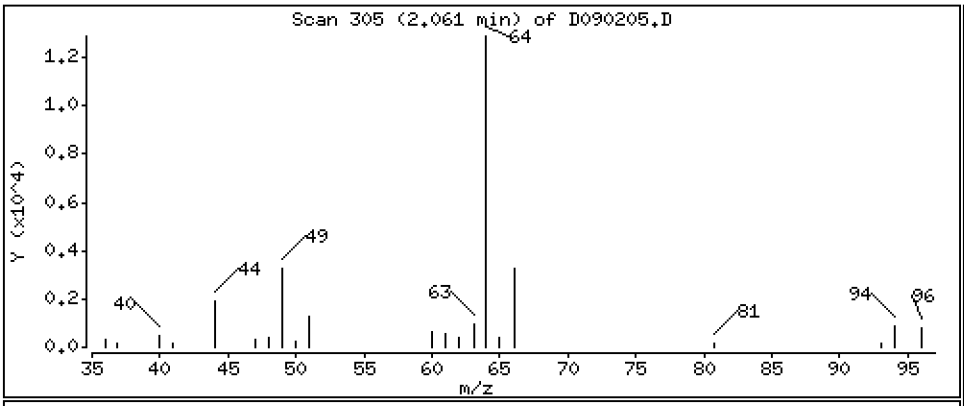
Client ID: VLCSW-180830 Instrument: VOA2.i

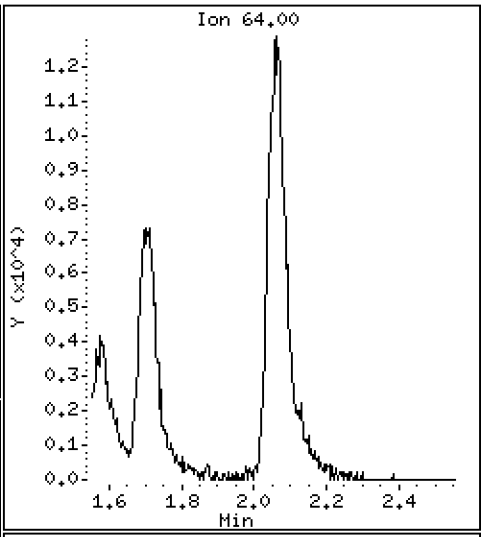
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

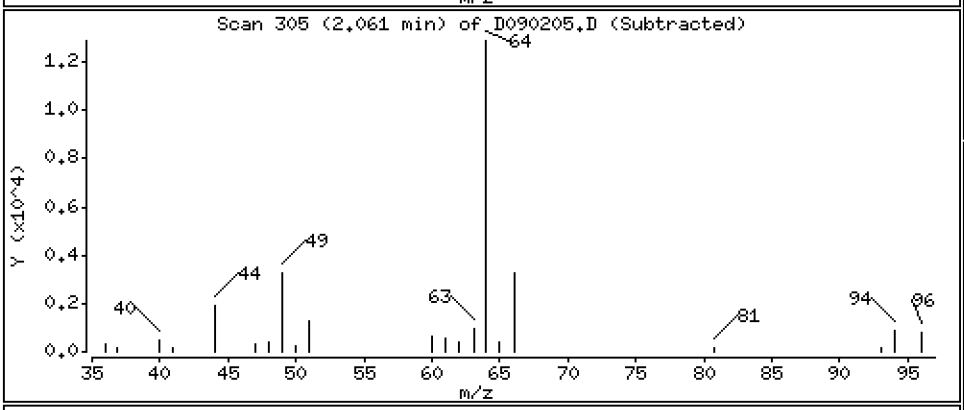
Purge Volume: 5.0 Operator: AP

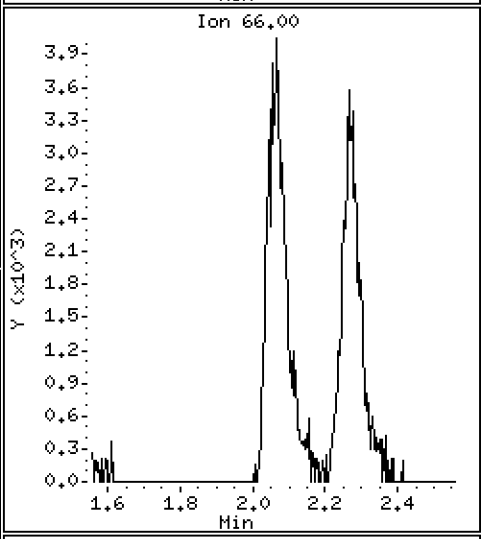
Column phase: DB624 Column diameter: 0.18

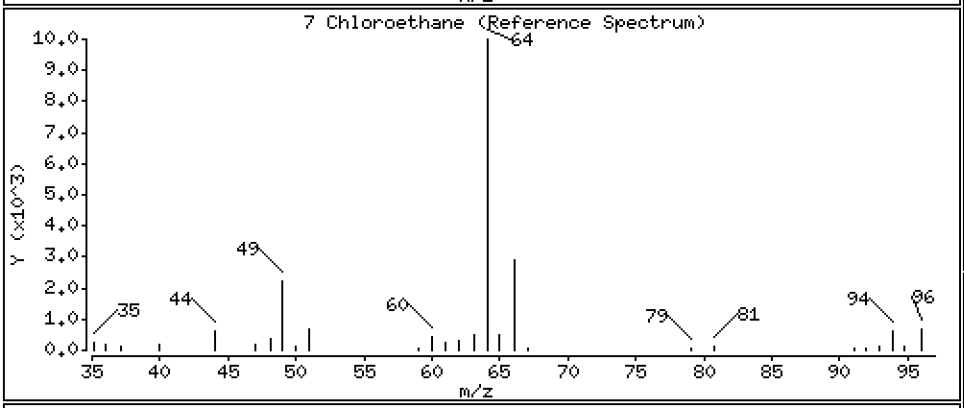
7 Chloroethane Concentration: 18.29 ug/l Review Code:

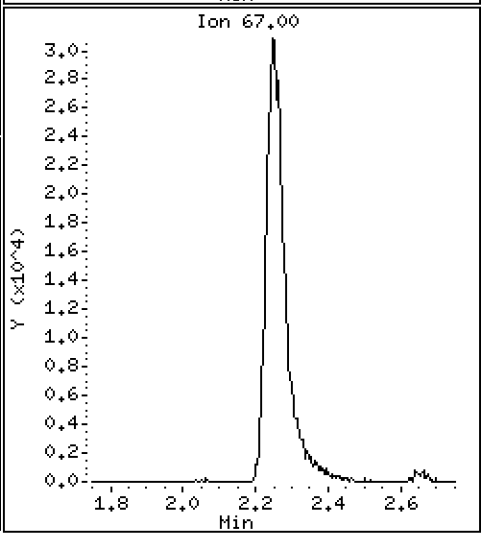


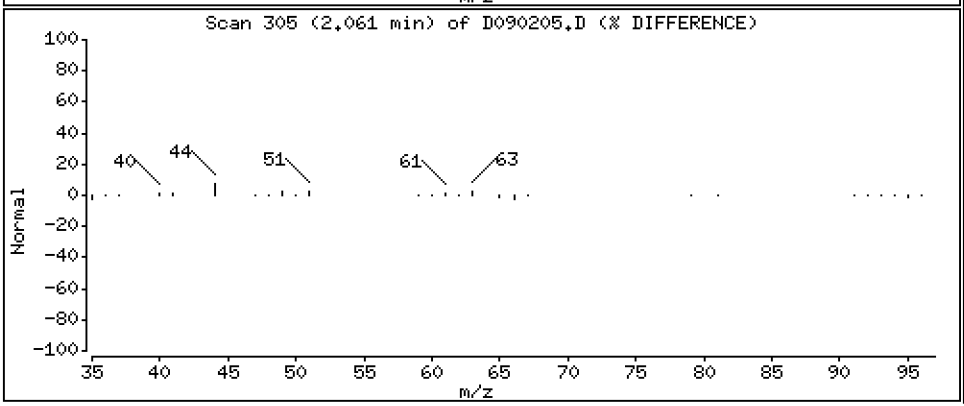












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 9

Date : 02-SEP-2018 15:04

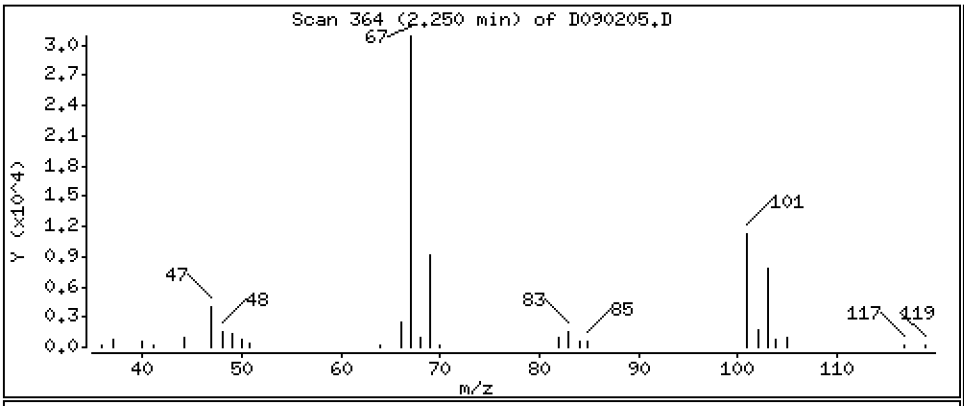
Client ID: VLCSW-180830 Instrument: VOA2.i

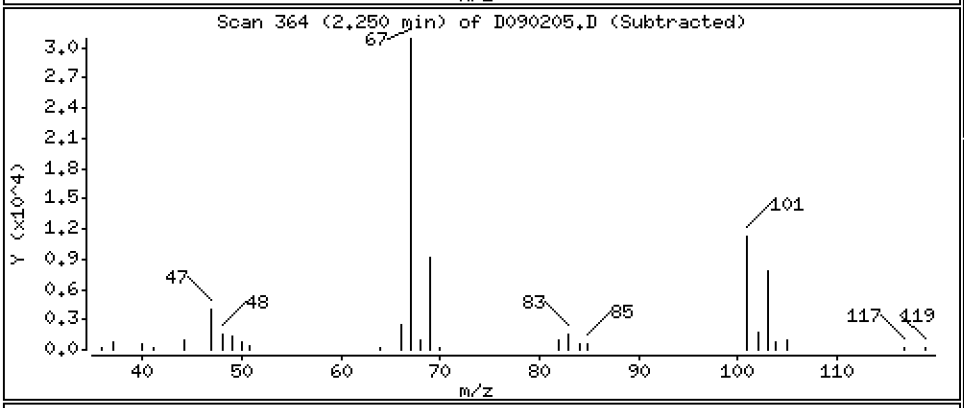
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

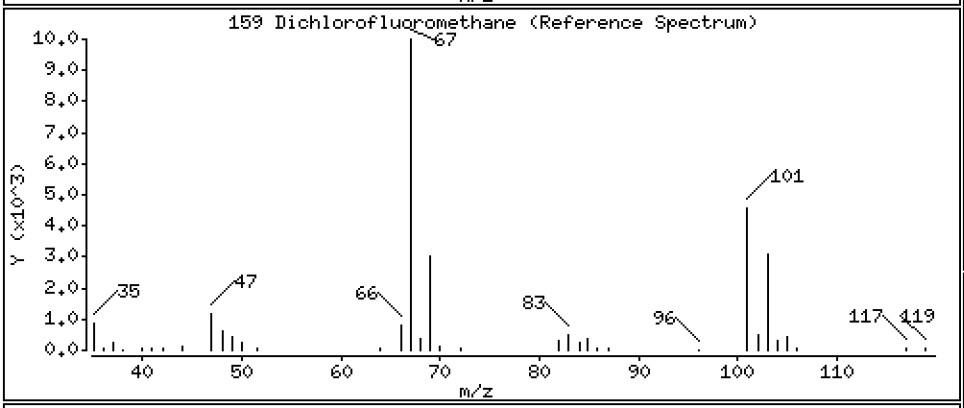
Purge Volume: 5.0 Operator: AP

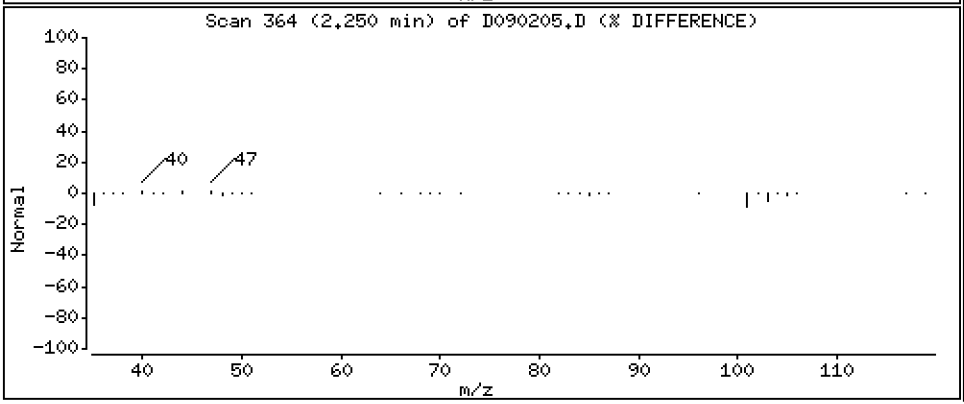
Column phase: DB624 Column diameter: 0.18

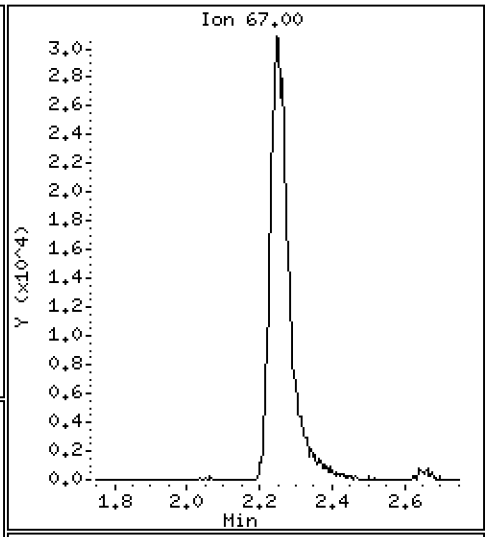
159 Dichlorofluoromethane Concentration: 19.99 ug/l Review Code:

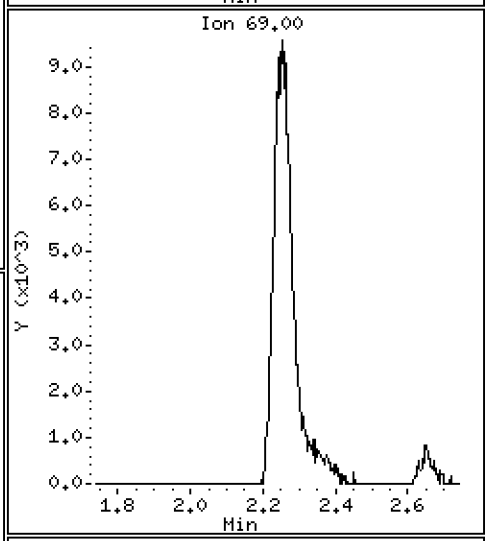


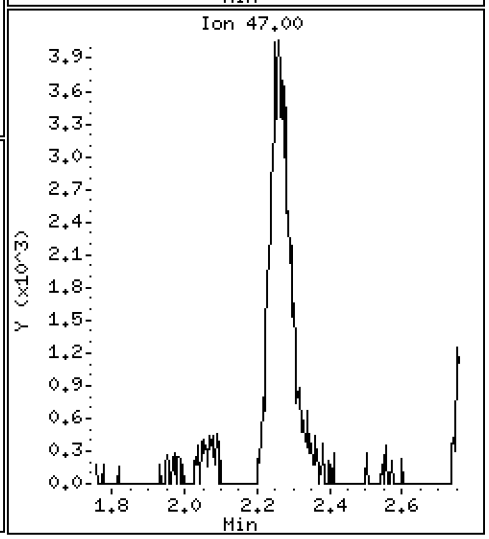












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 10

Date : 02-SEP-2018 15:04

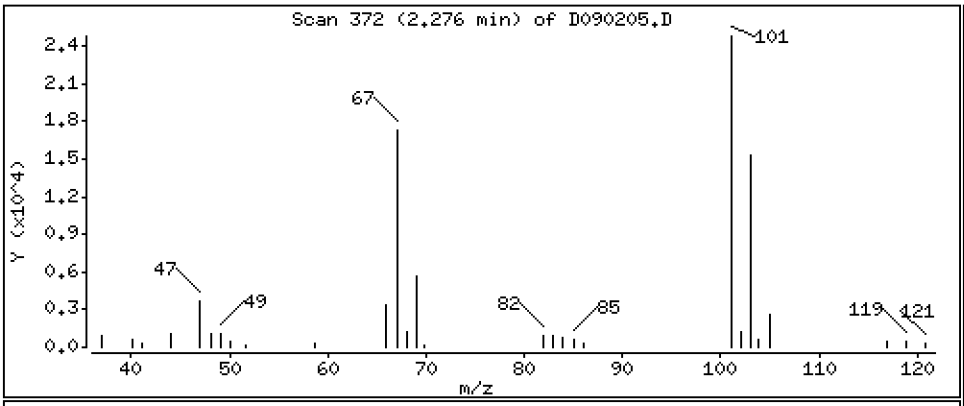
Client ID: VLCSW-180830 Instrument: VOA2.i

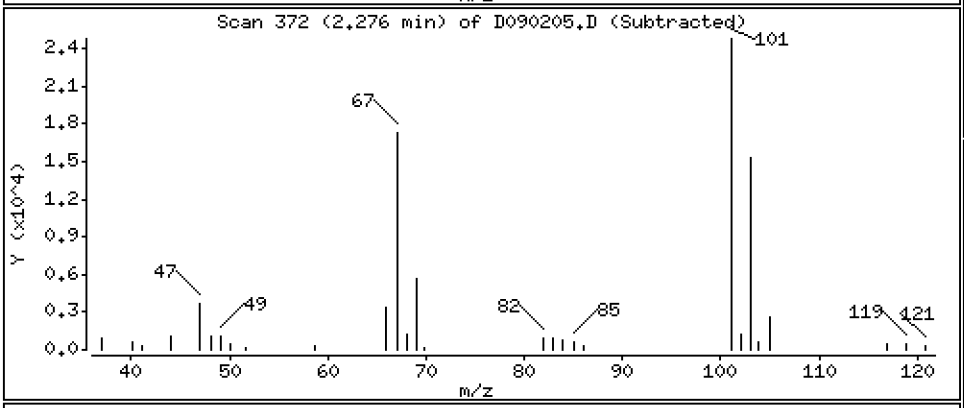
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

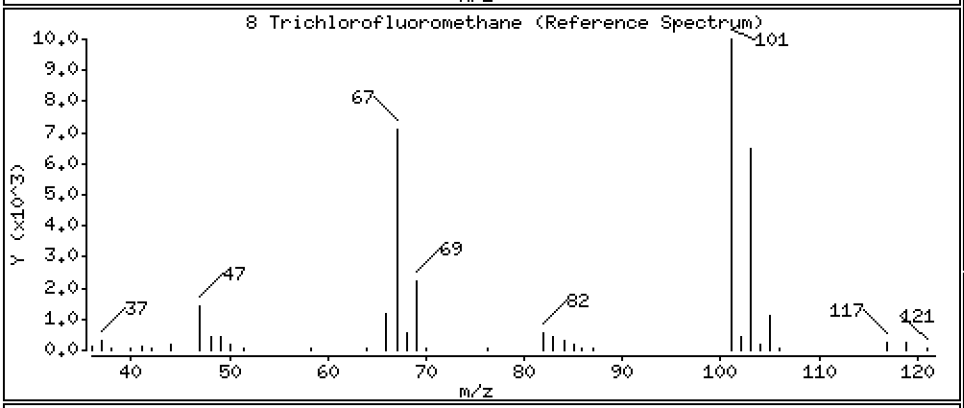
Purge Volume: 5.0 Operator: AP

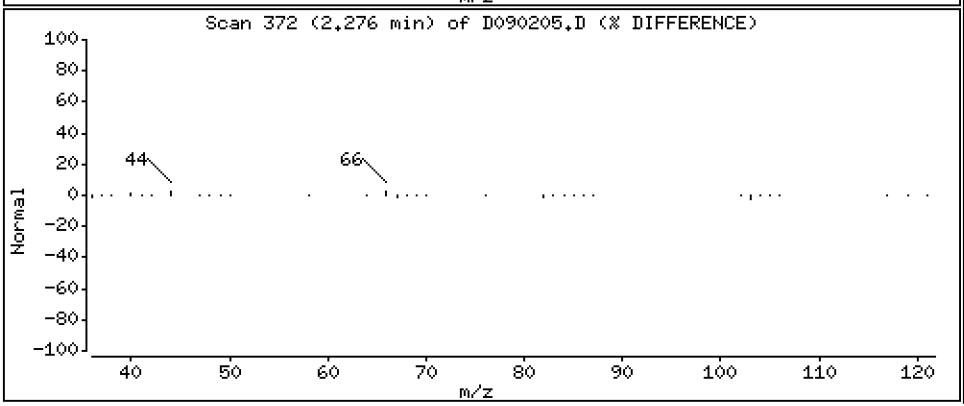
Column phase: DB624 Column diameter: 0.18

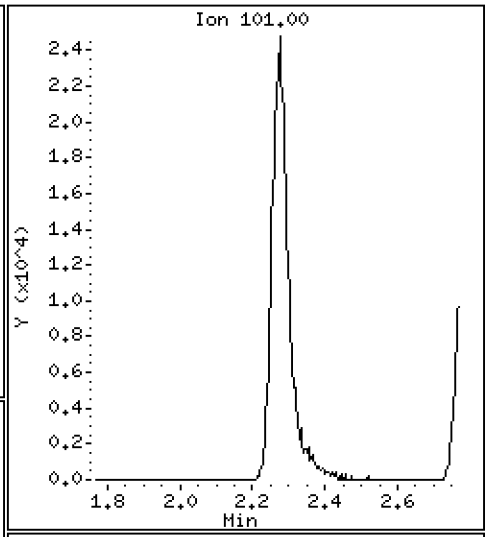
8 Trichlorofluoromethane Concentration: 21.12 ug/l Review Code:

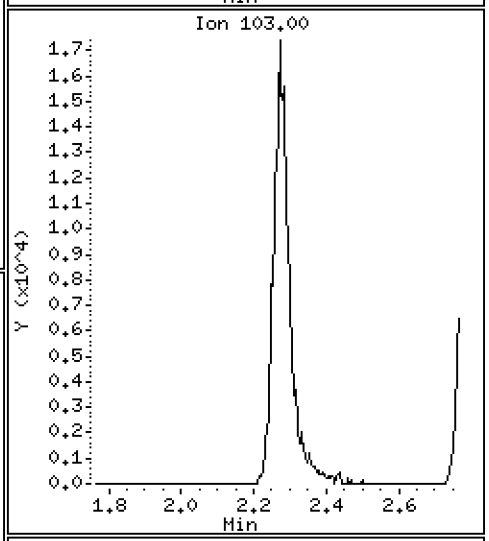


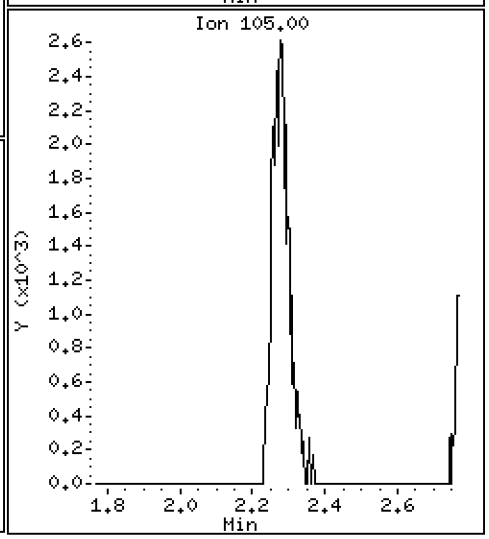












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 11

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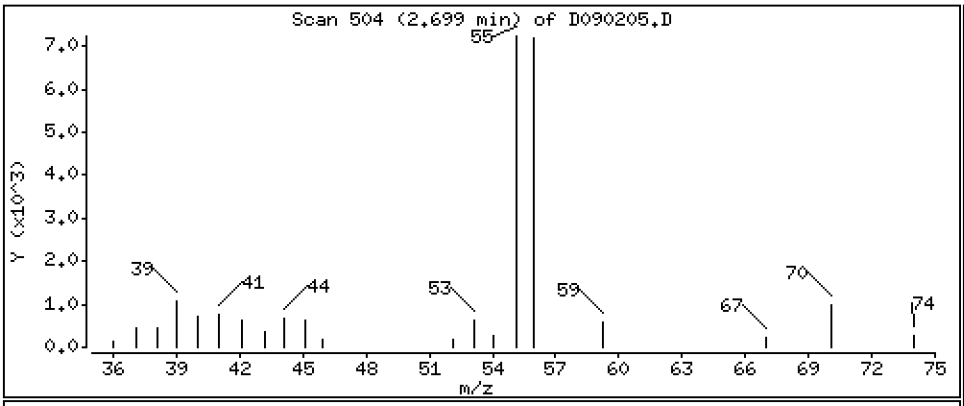
Client ID: VLCSW-180830 Instrument: VOA2.i

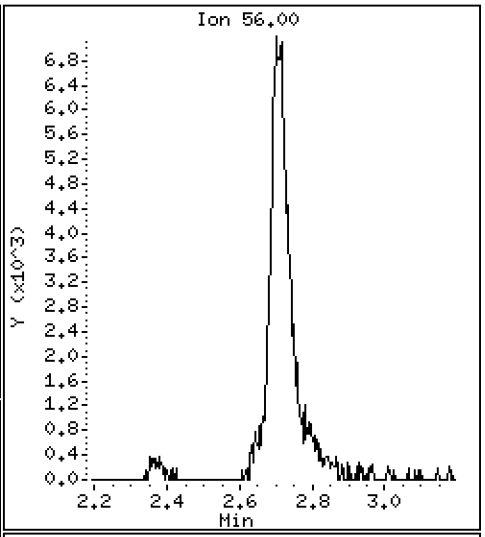
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

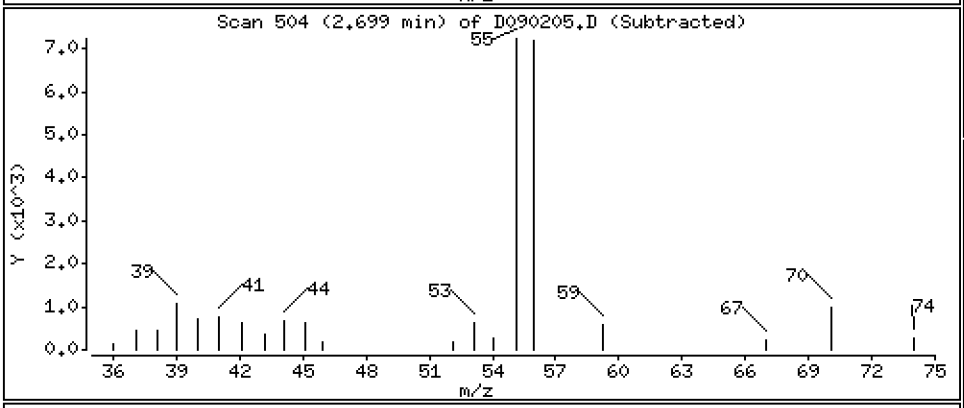
Purge Volume: 5.0 Operator: AP

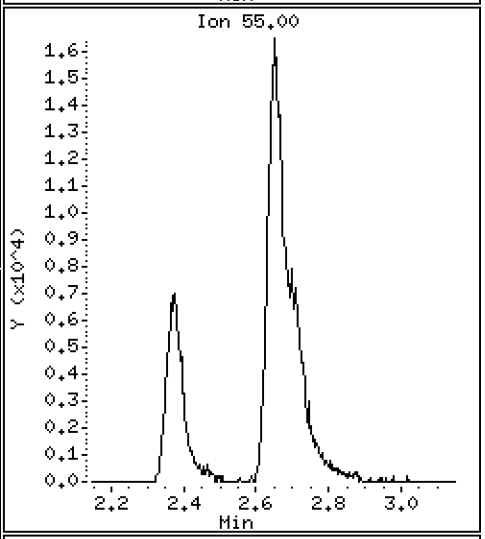
Column phase: DB624 Column diameter: 0.18

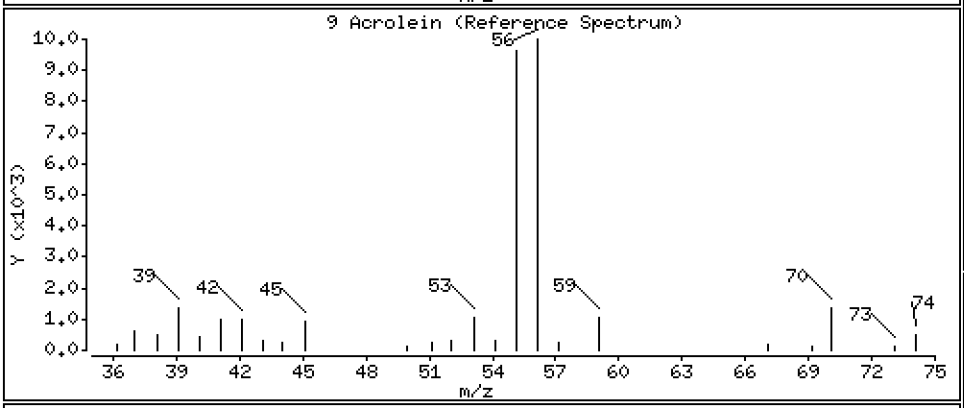
9 Acrolein Concentration: 28.47 ug/l Review Code:

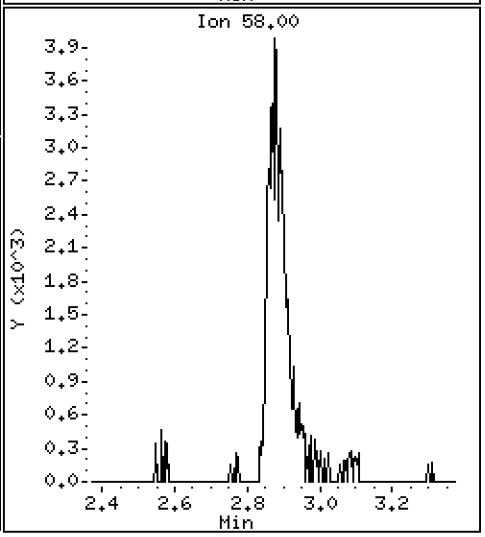


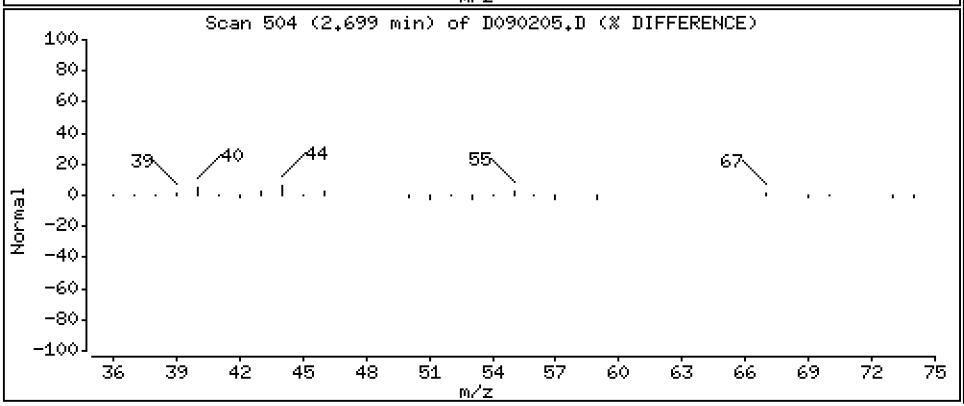












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Date : 02-SEP-2018 15:04

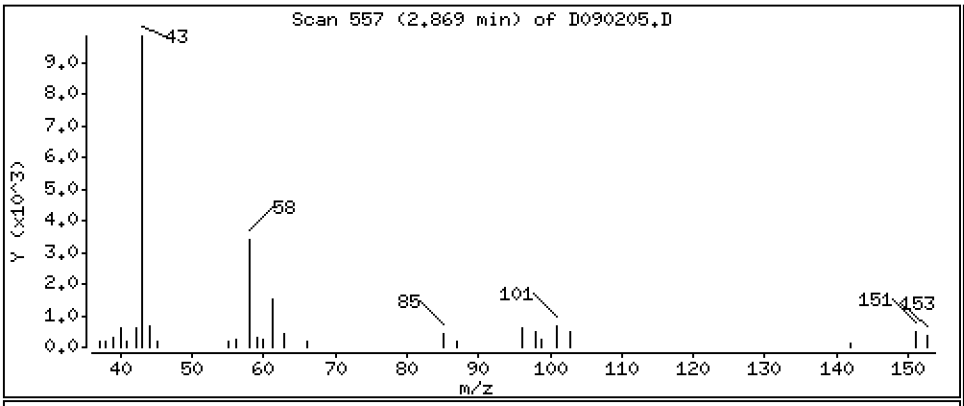
Client ID: VLCSW-180830 Instrument: VOA2.i

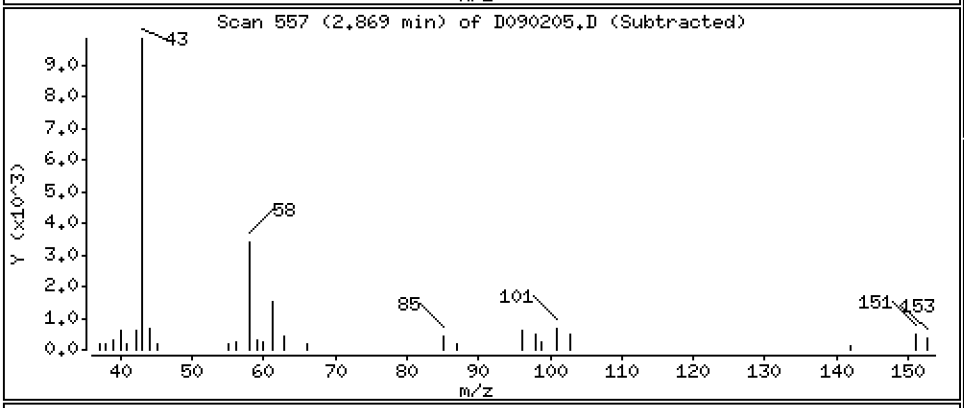
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

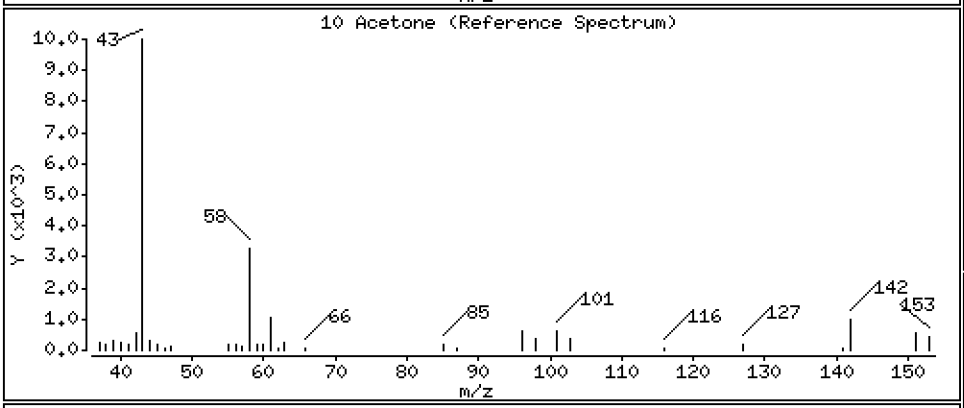
Purge Volume: 5.0 Operator: AP

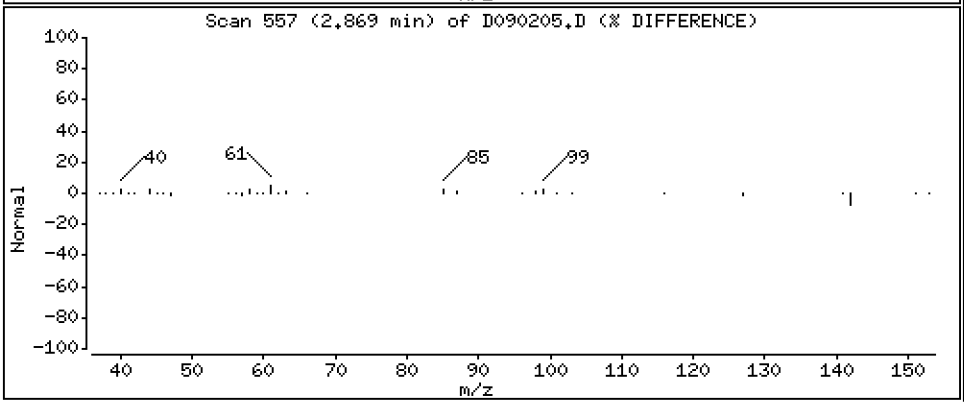
Column phase: DB624 Column diameter: 0.18

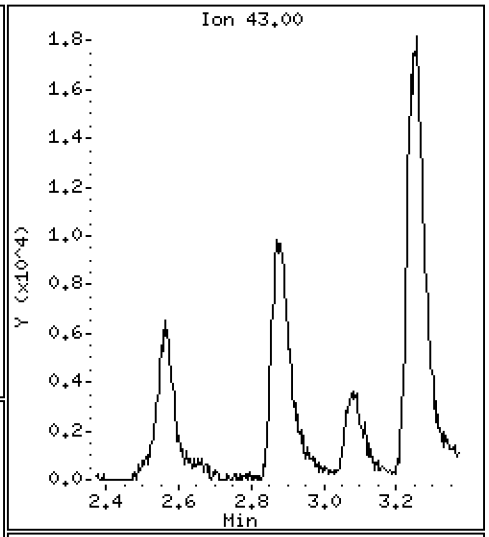
10 Acetone Concentration: 32.26 ug/l Review Code:

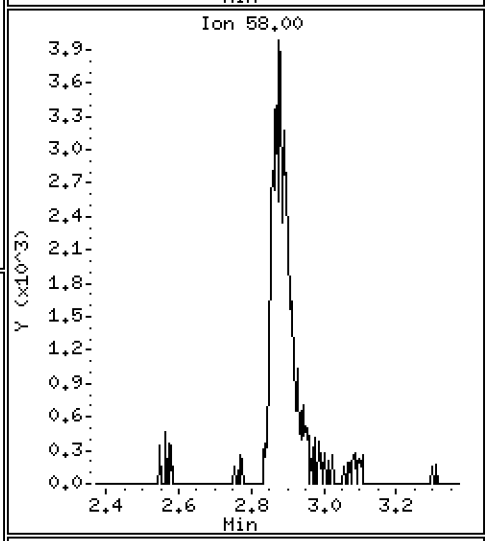


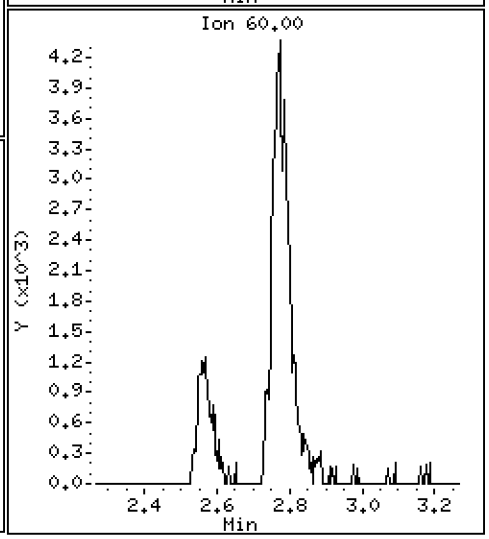












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Date : 02-SEP-2018 15:04

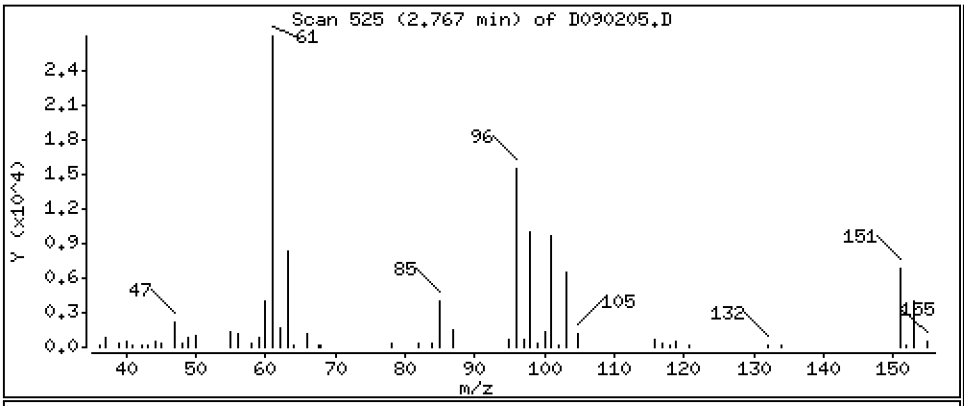
Client ID: VLCSW-180830 Instrument: VOA2.i

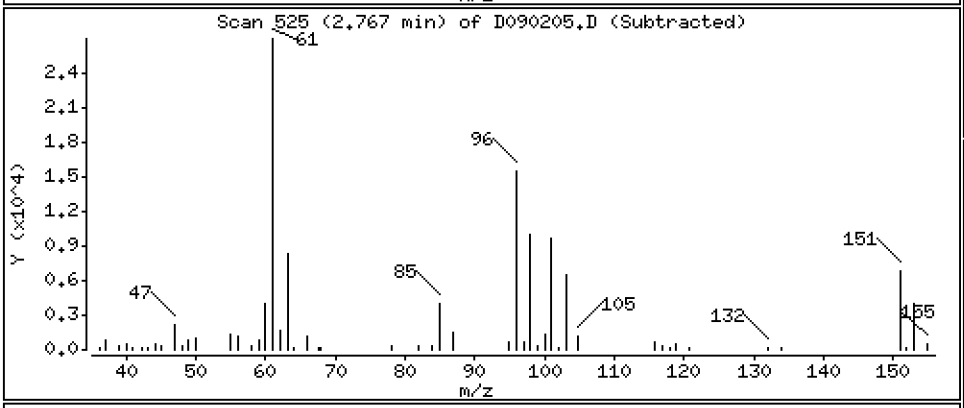
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

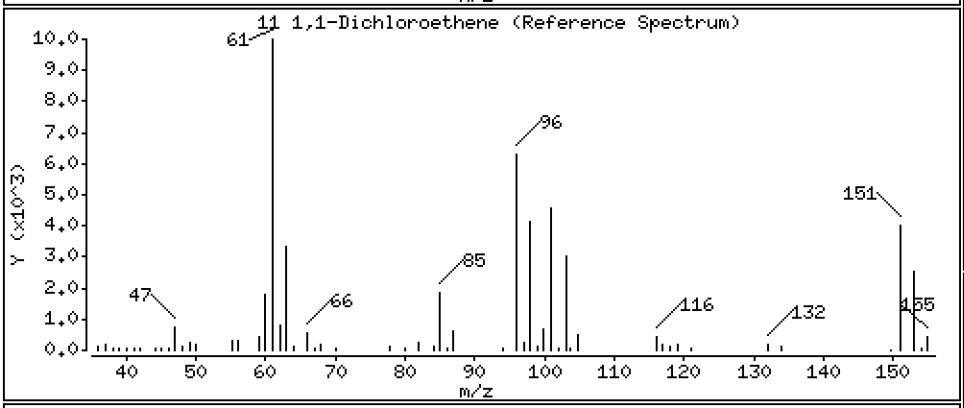
Purge Volume: 5.0 Operator: AP

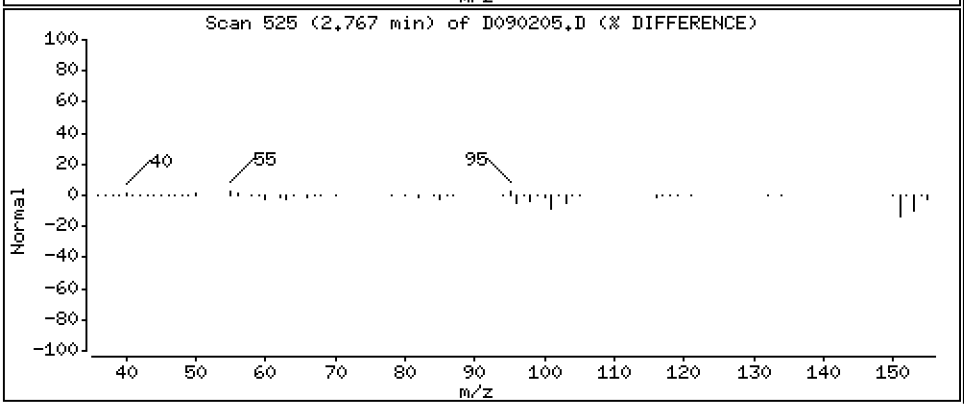
Column phase: DB624 Column diameter: 0.18

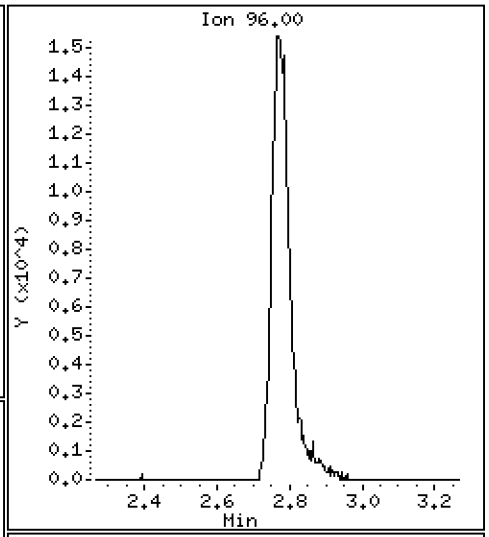
11 1,1-Dichloroethene Concentration: 19.51 ug/l Review Code:

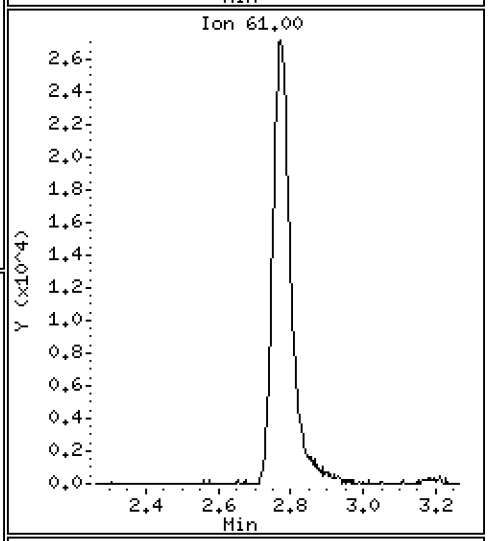


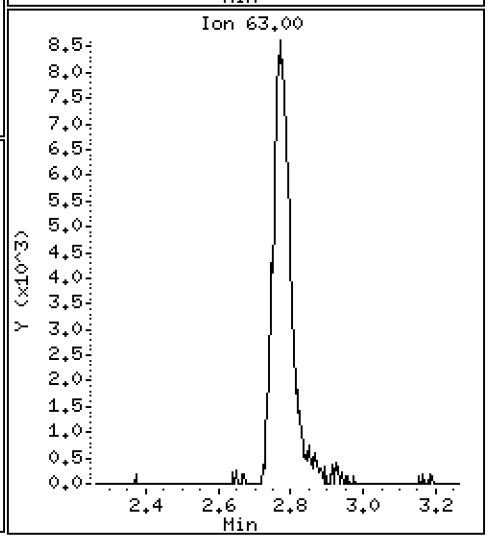












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Date : 02-SEP-2018 15:04

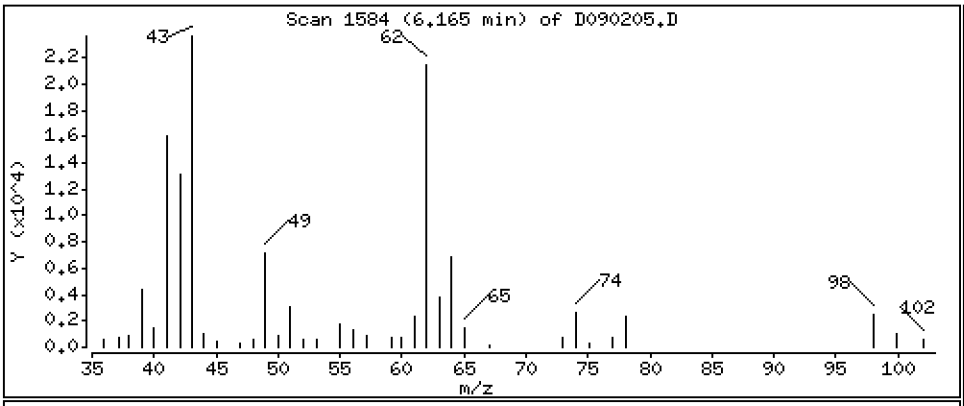
Client ID: VLCSW-180830 Instrument: VOA2.i

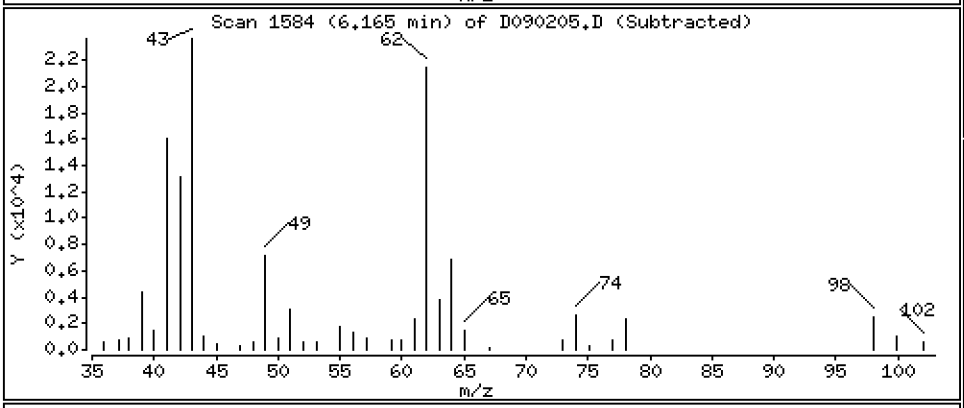
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

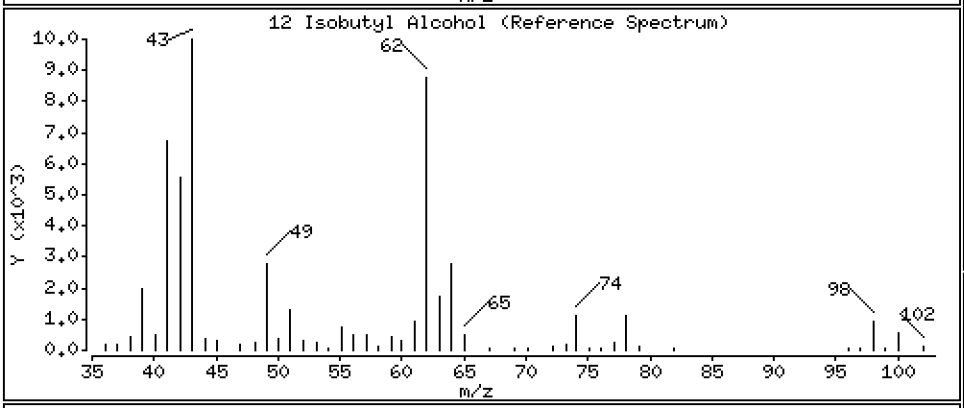
Purge Volume: 5.0 Operator: AP

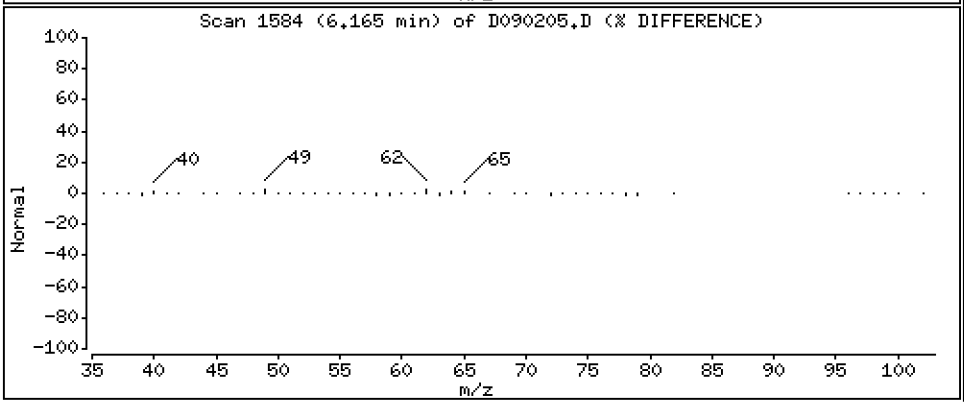
Column phase: DB624 Column diameter: 0.18

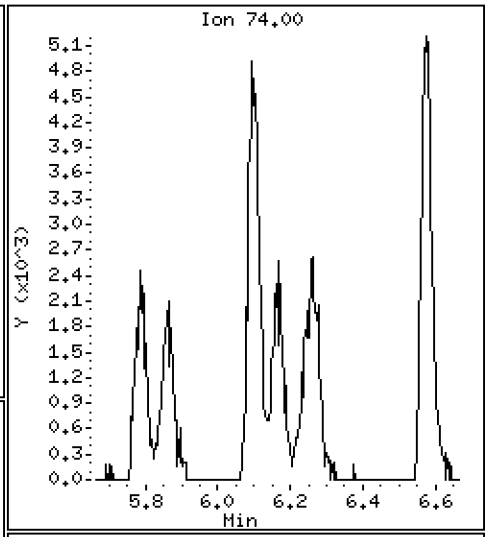
12 Isobutyl Alcohol Concentration: 280.40 ug/l Review Code:

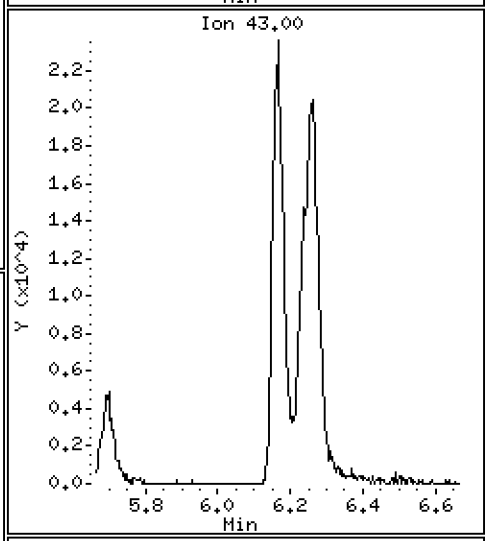


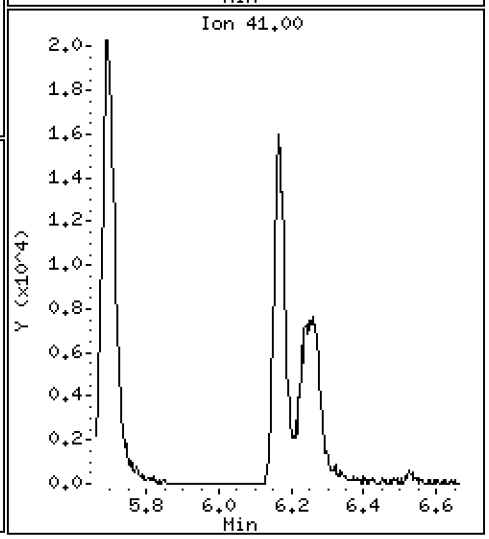












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Date : 02-SEP-2018 15:04

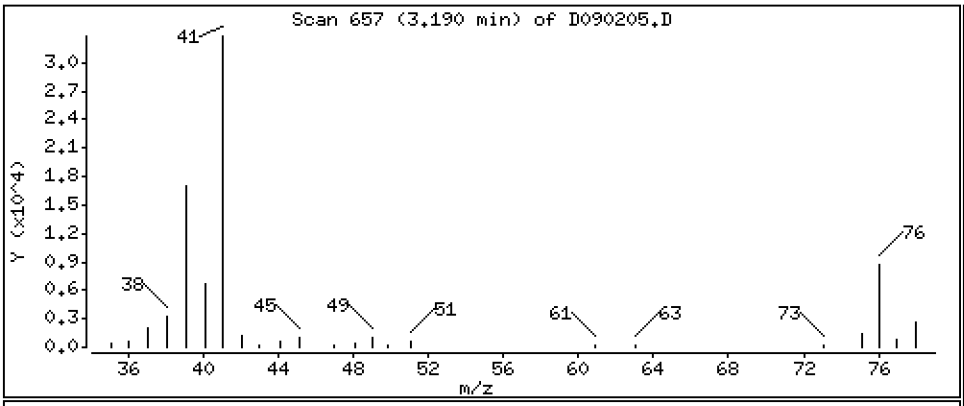
Client ID: VLCSW-180830 Instrument: VOA2.i

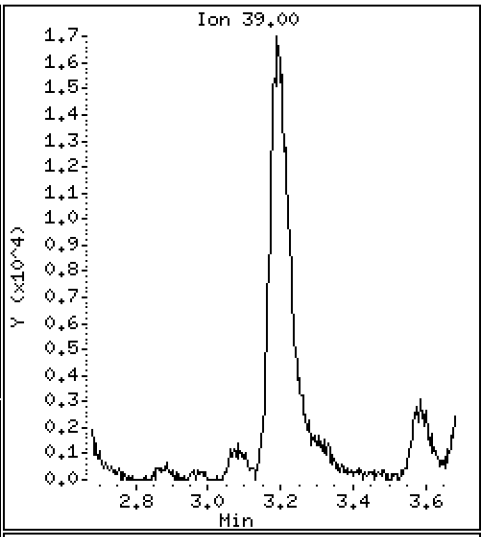
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

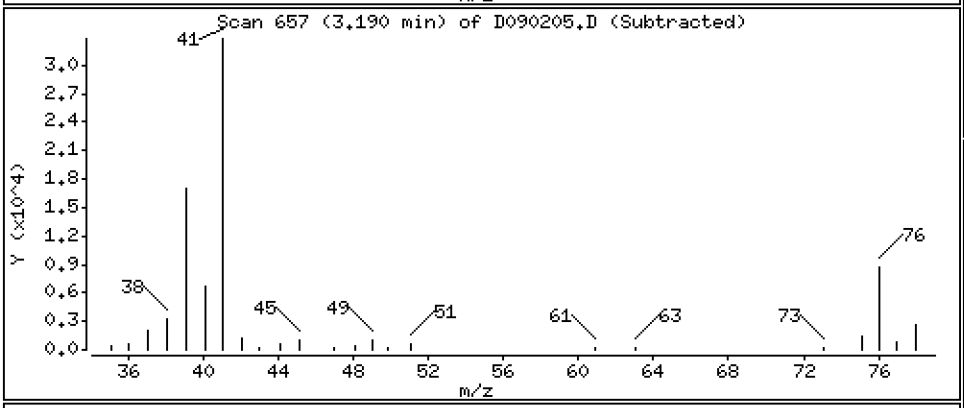
Purge Volume: 5.0 Operator: AP

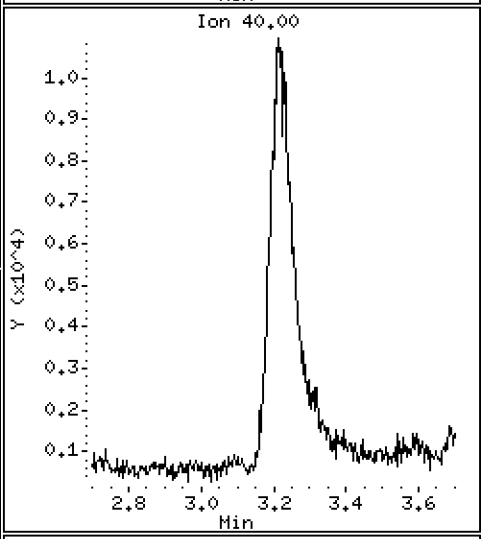
Column phase: DB624 Column diameter: 0.18

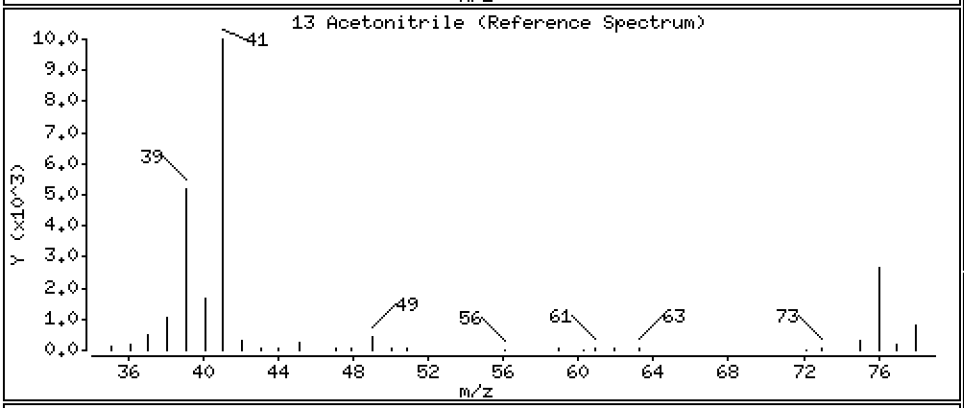
13 Acetonitrile Concentration: 204.07 ug/l Review Code:

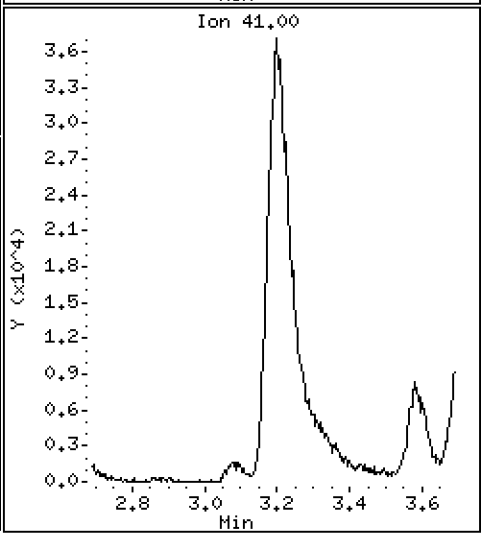


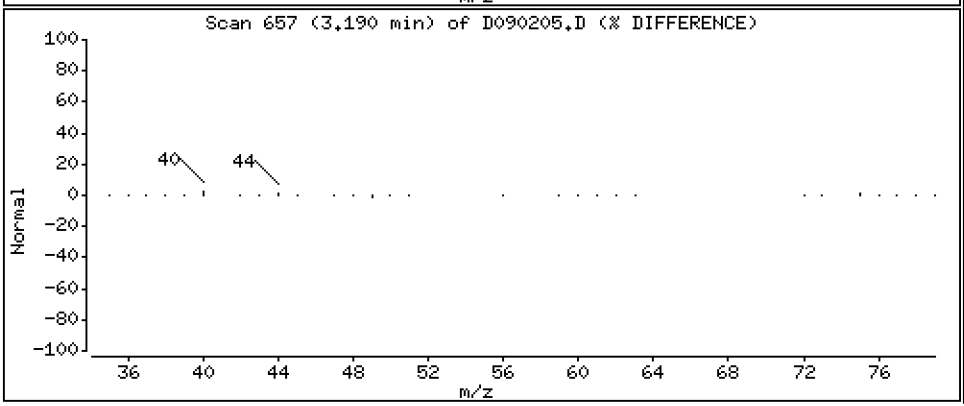












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Date : 02-SEP-2018 15:04

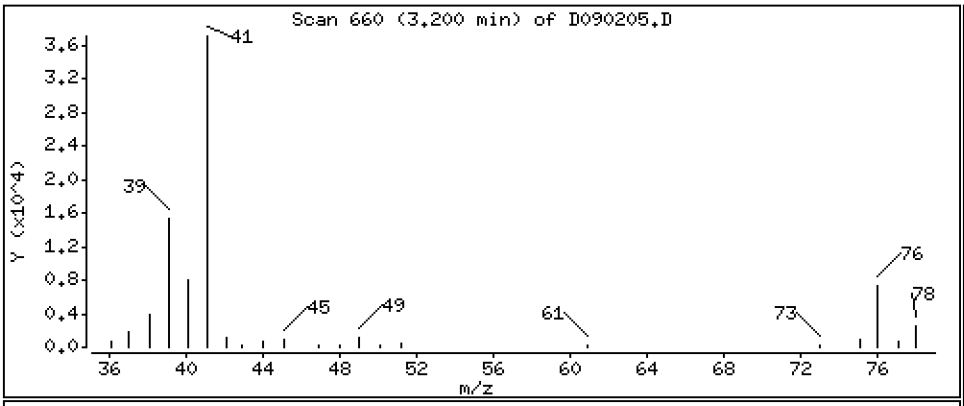
Client ID: VLCSW-180830 Instrument: VOA2.i

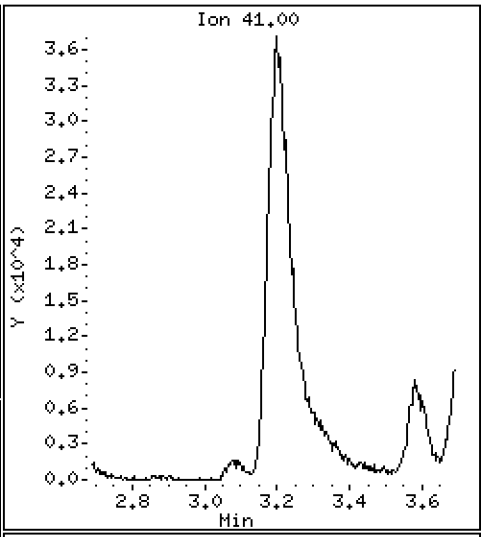
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

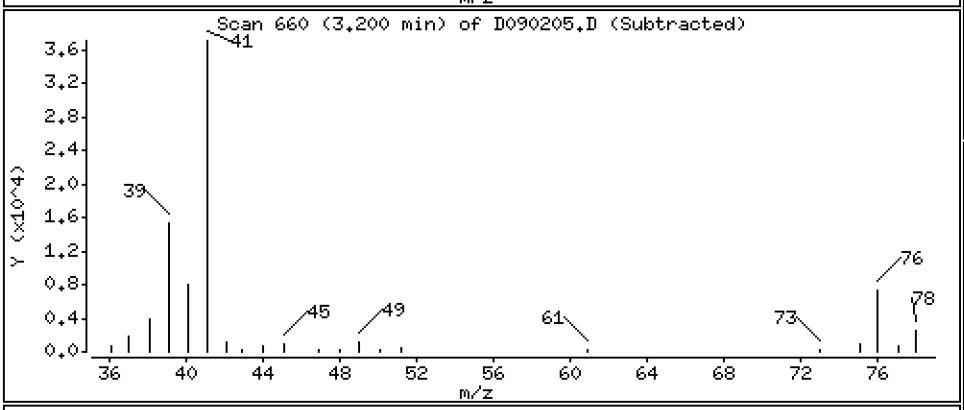
Purge Volume: 5.0 Operator: AP

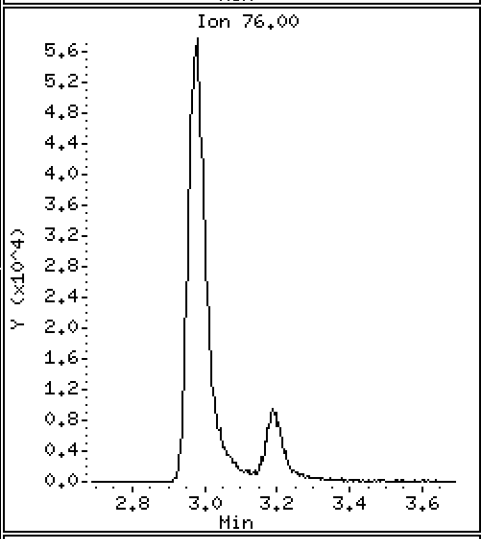
Column phase: DB624 Column diameter: 0.18

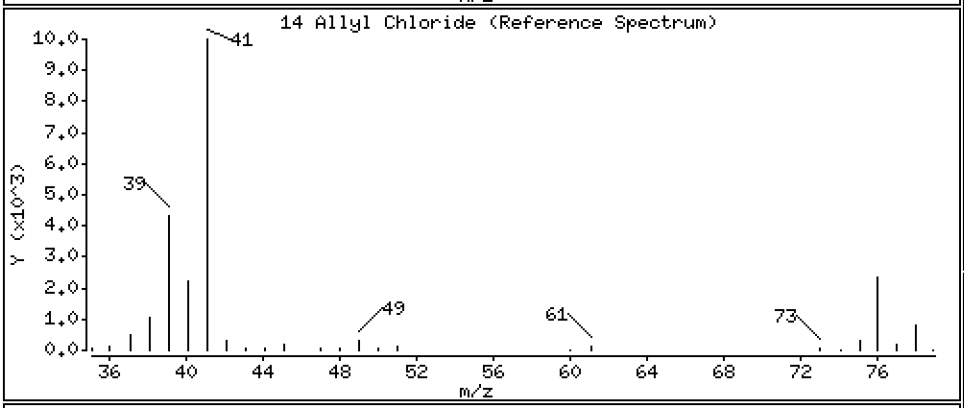
14 Allyl Chloride Concentration: 19.43 ug/l Review Code:

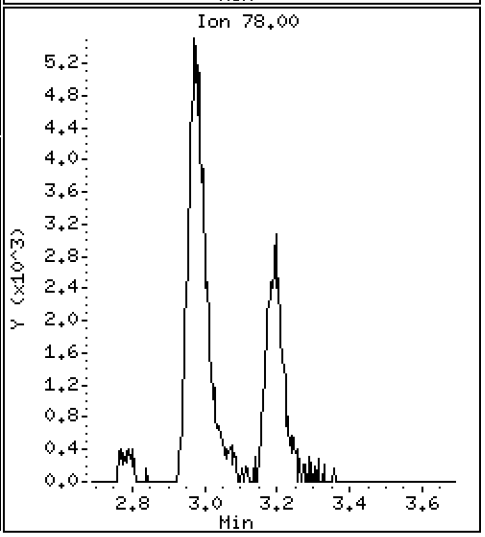


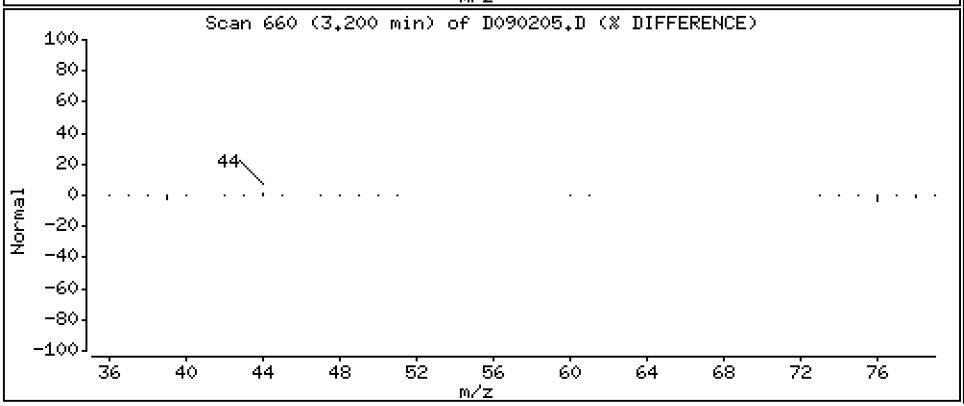












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Date : 02-SEP-2018 15:04

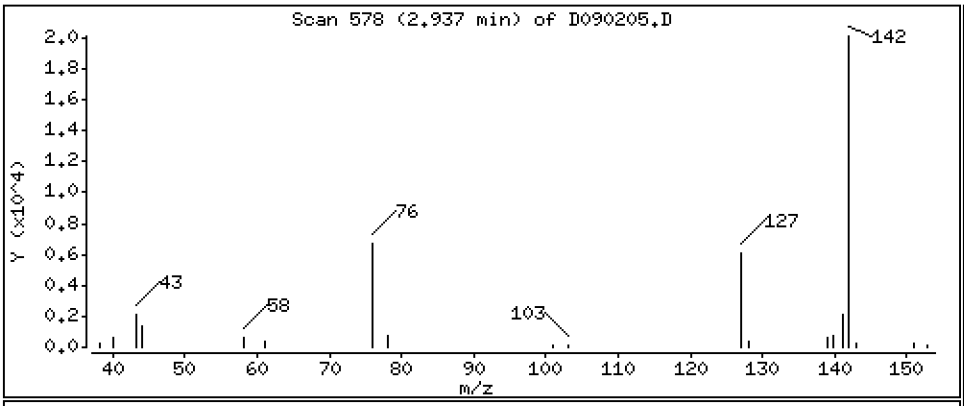
Client ID: VLCSW-180830 Instrument: VOA2.i

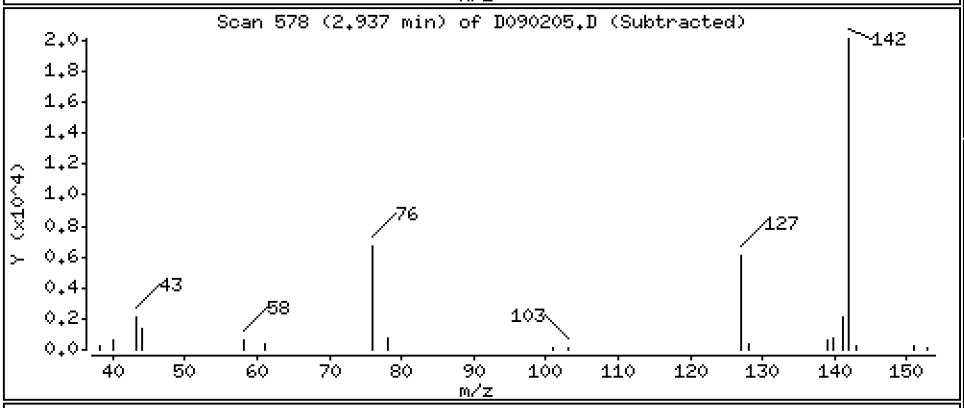
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

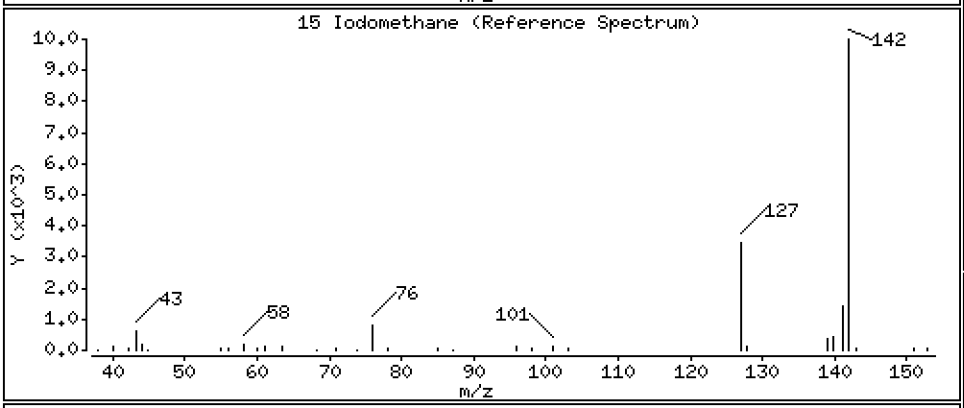
Purge Volume: 5.0 Operator: AP

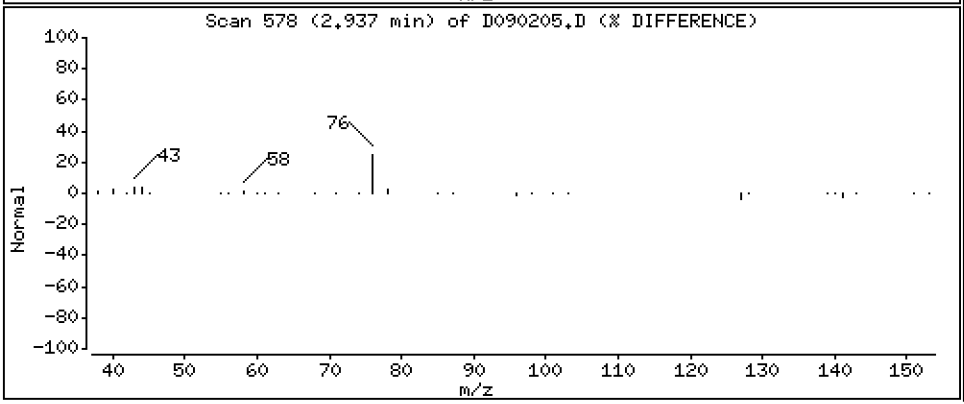
Column phase: DB624 Column diameter: 0.18

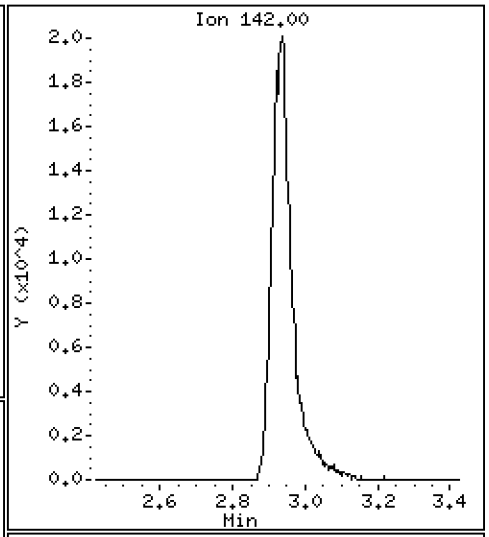
15 Iodomethane Concentration: 32.26 ug/l Review Code:

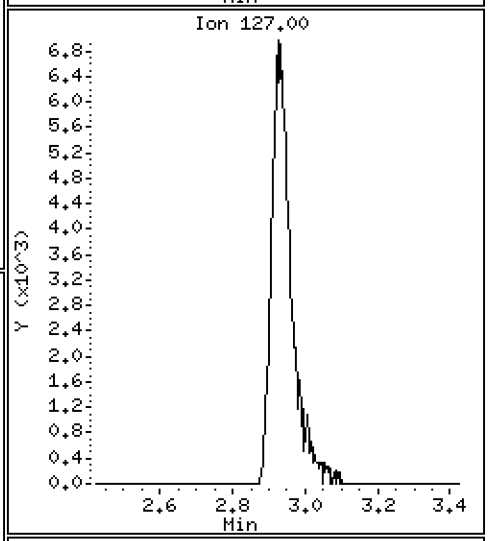


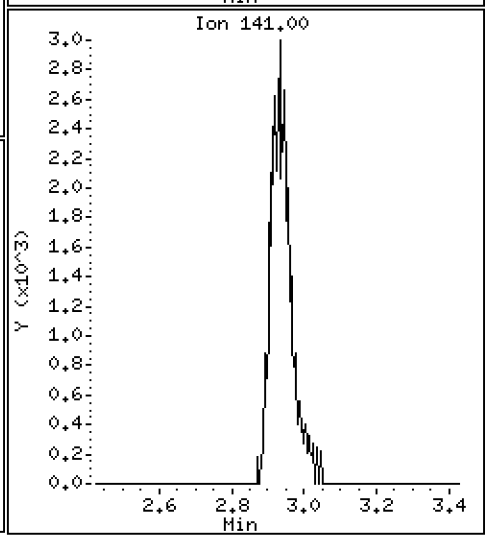












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 18

Date : 02-SEP-2018 15:04

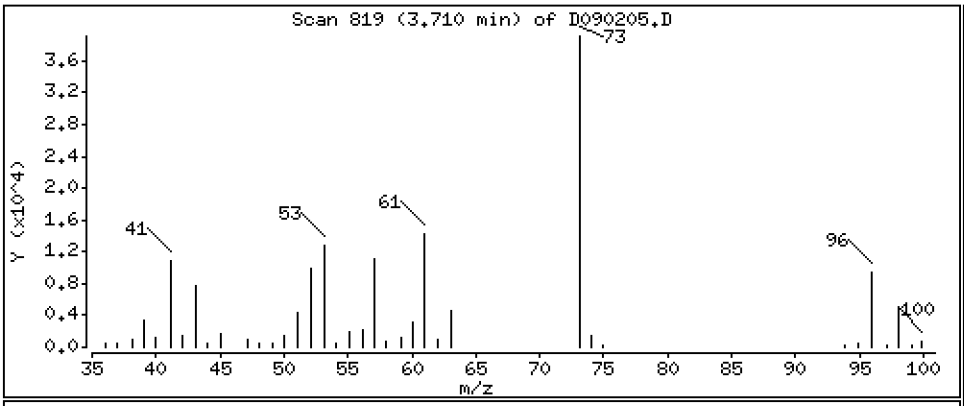
Client ID: VLCSW-180830 Instrument: VOA2.i

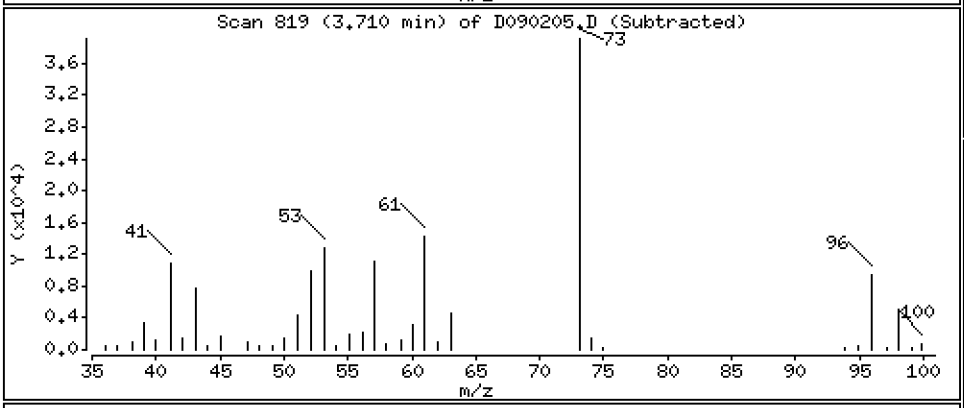
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

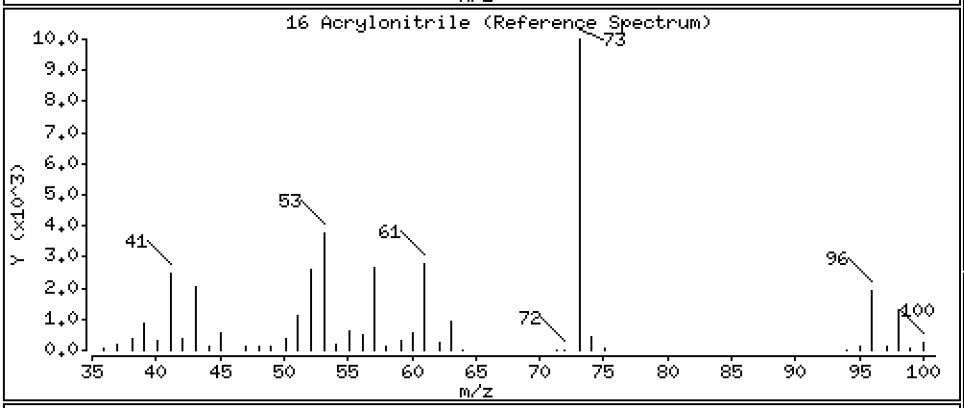
Purge Volume: 5.0 Operator: AP

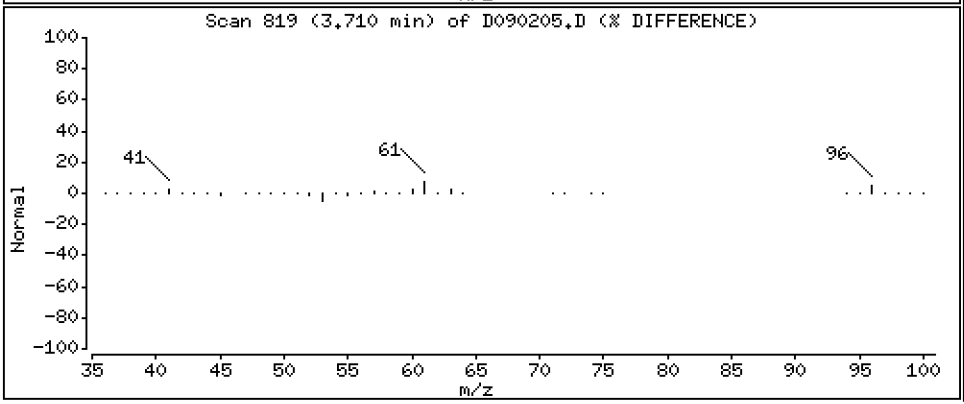
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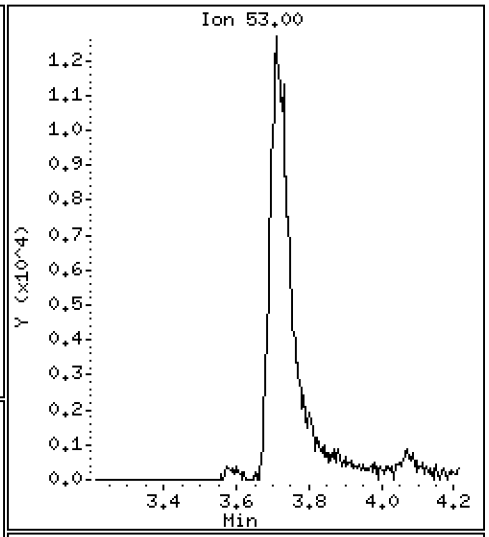
16 Acrylonitrile Concentration: 32.35 ug/l Review Code:

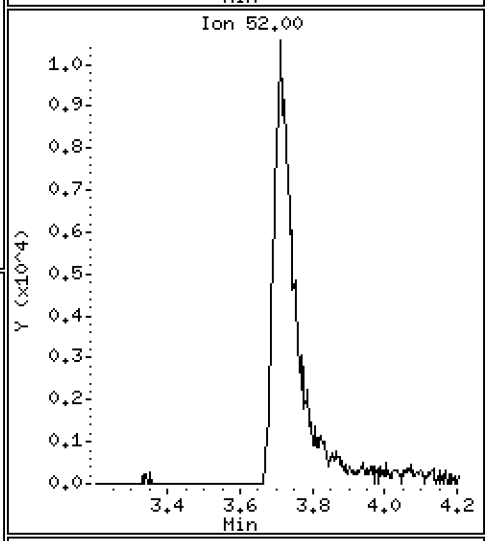


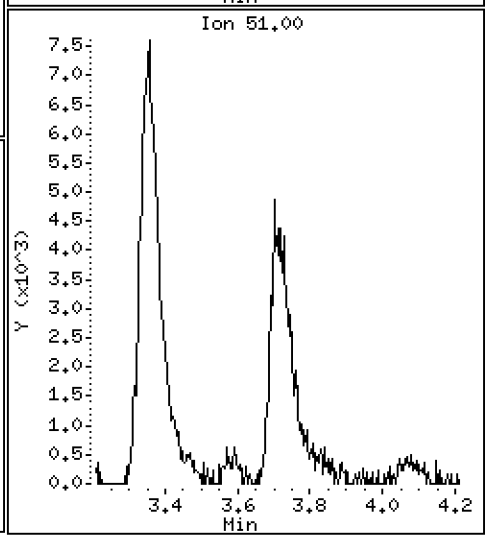












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 19

Date : 02-SEP-2018 15:04

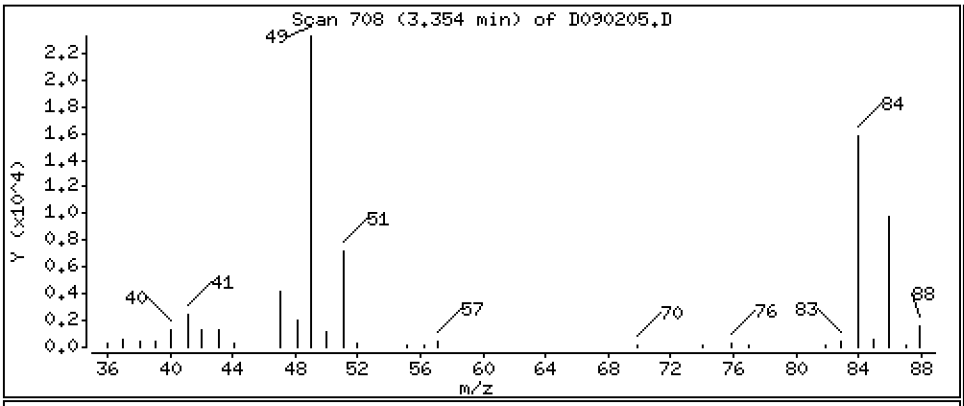
Client ID: VLCSW-180830 Instrument: VOA2.i

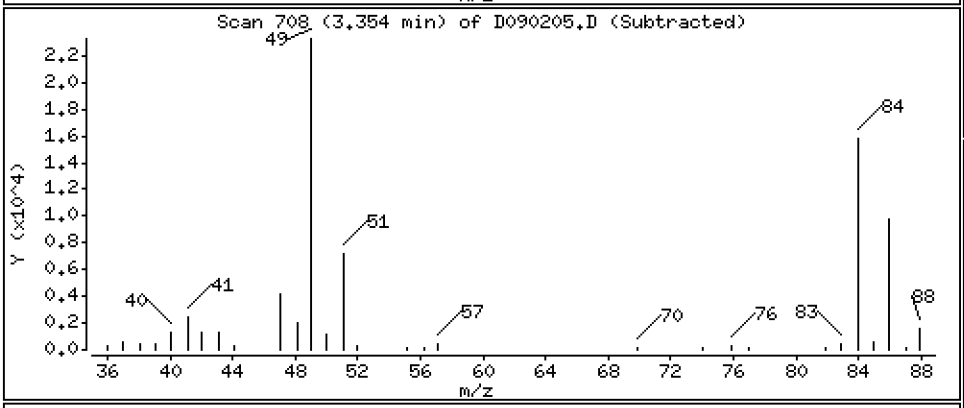
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

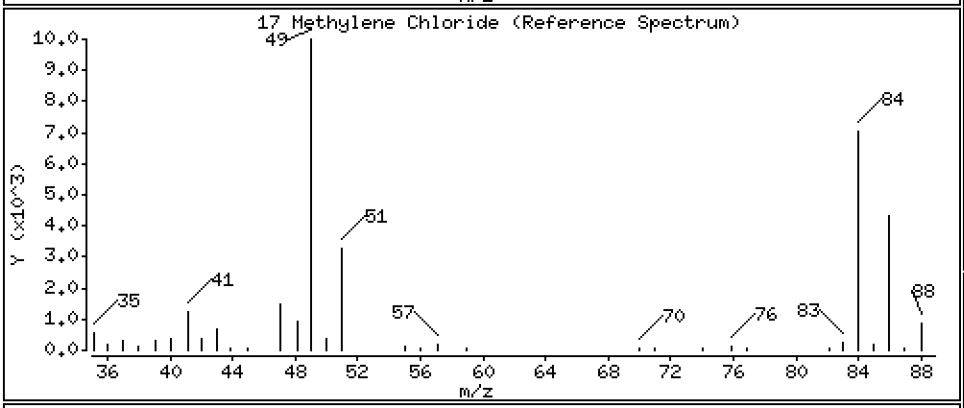
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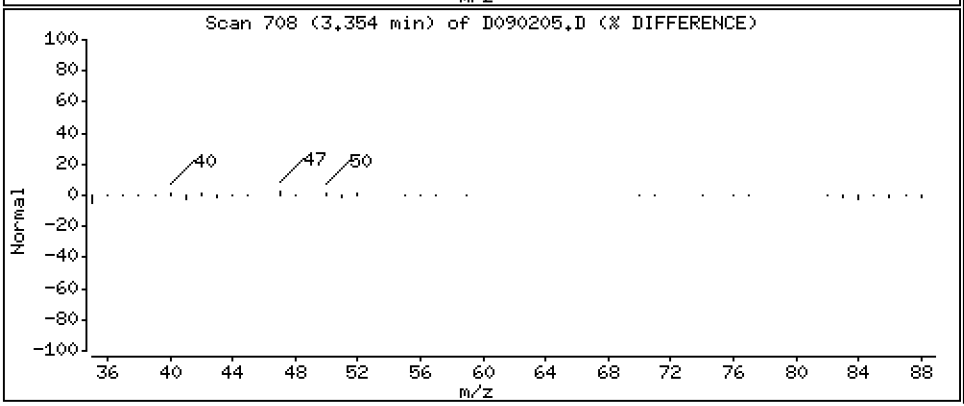
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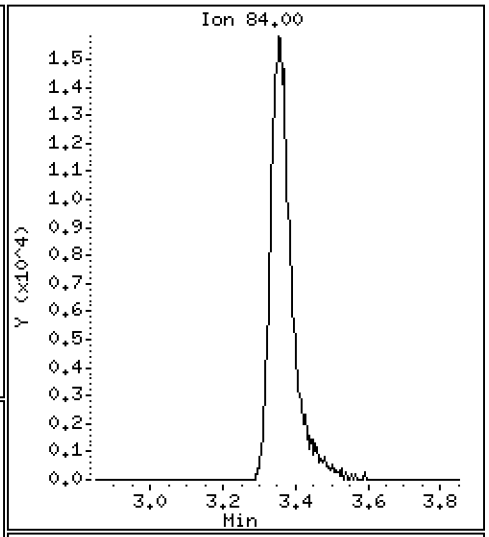
17 Methylene Chloride Concentration: 19.43 ug/l Review Code:

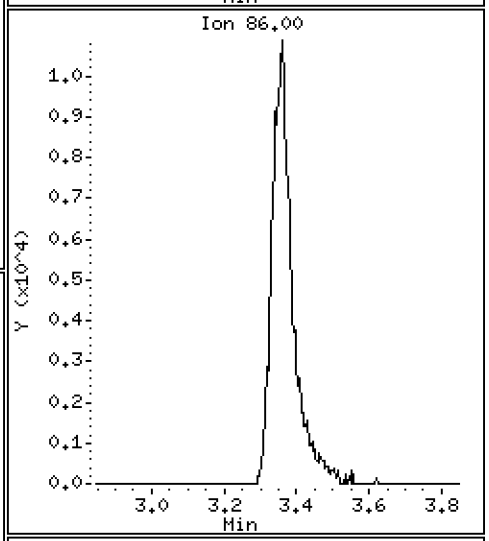


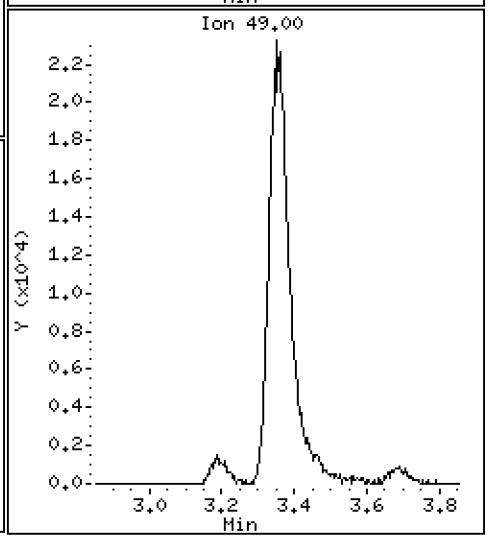












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 20

Date : 02-SEP-2018 15:04

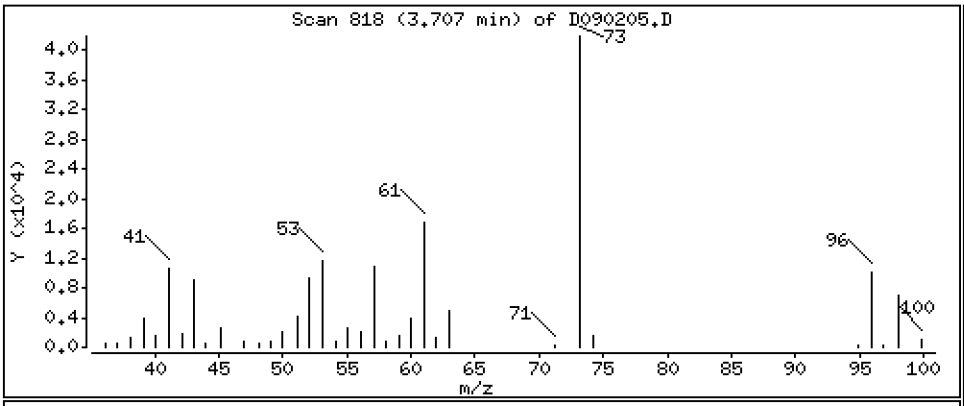
Client ID: VLCSW-180830 Instrument: VOA2.i

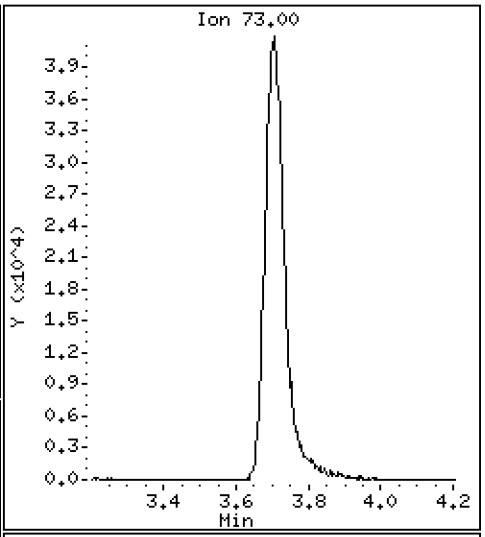
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

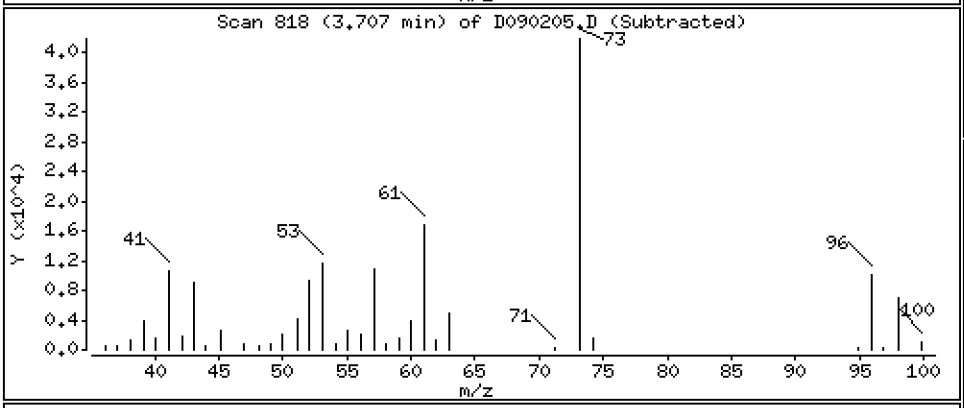
Purge Volume: 5.0 Operator: AP

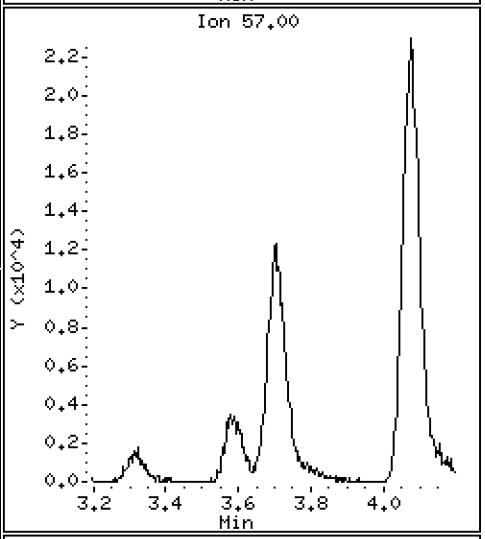
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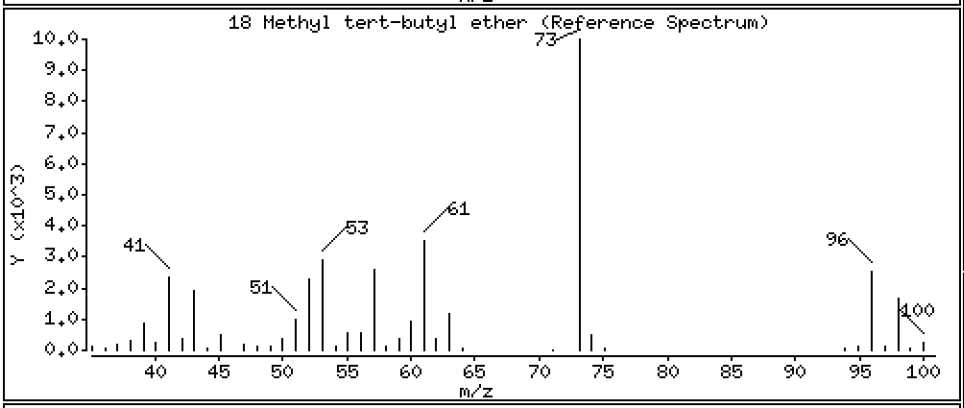
18 Methyl tert-butyl ether Concentration: 19.26 ug/l Review Code:

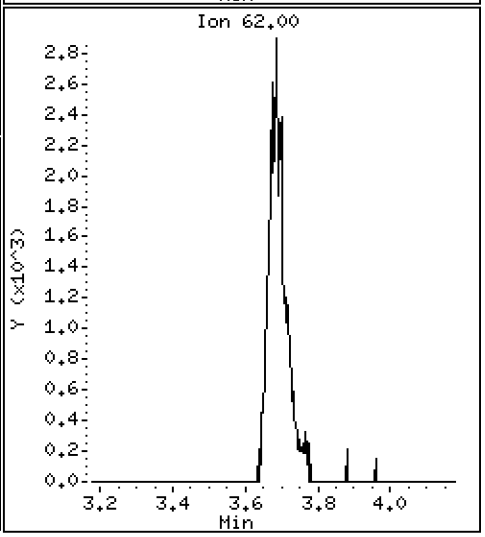


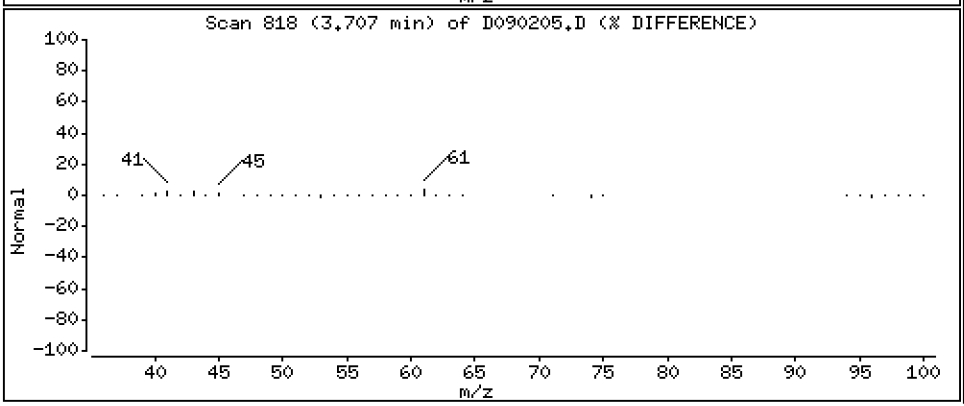












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Date : 02-SEP-2018 15:04

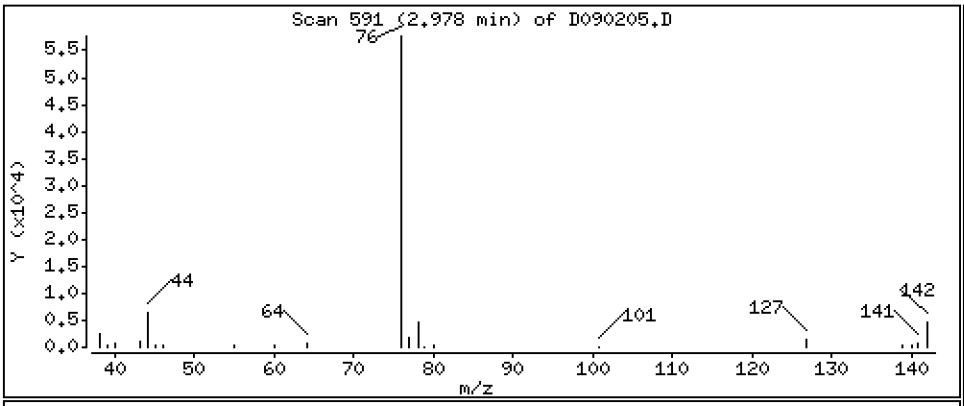
Client ID: VLCSW-180830 Instrument: VOA2.i

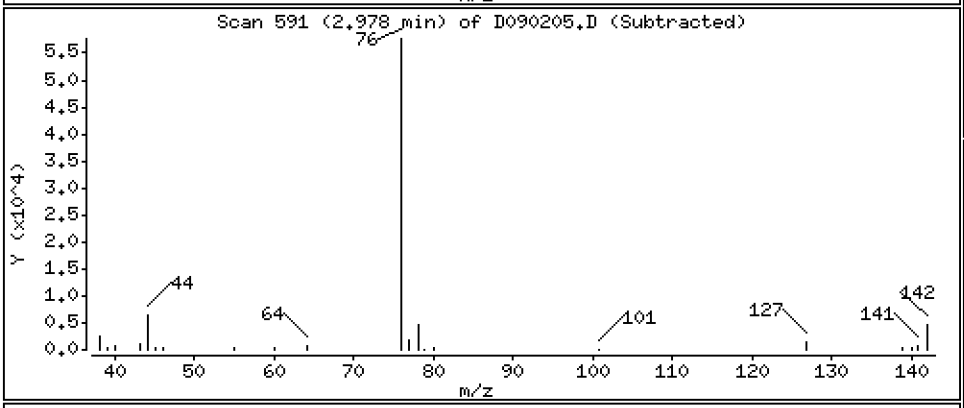
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

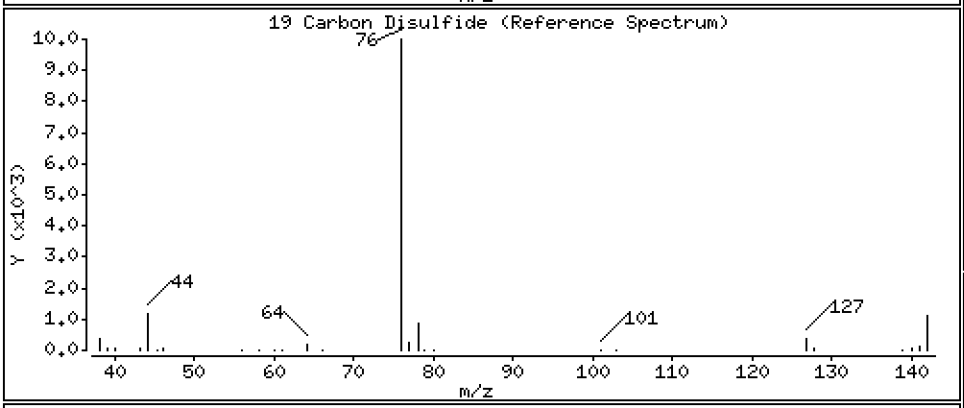
Purge Volume: 5.0 Operator: AP

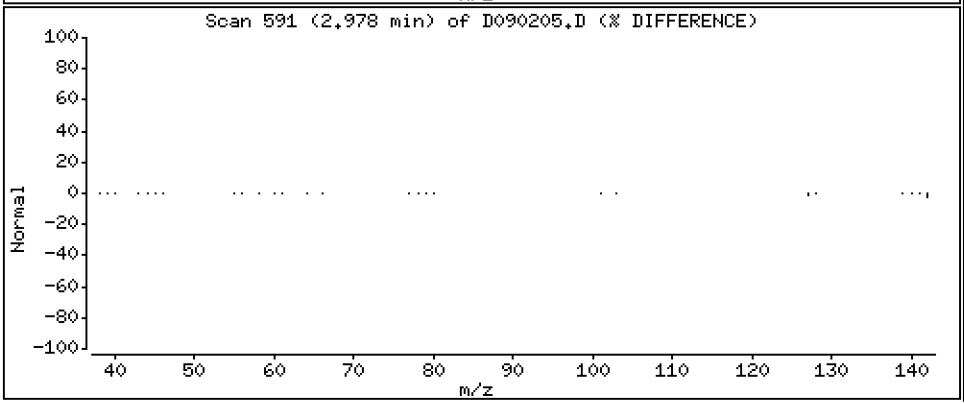
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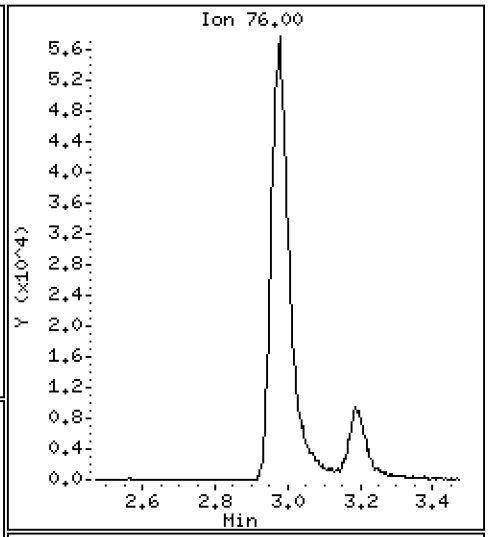
19 Carbon Disulfide Concentration: 40.09 ug/l Review Code:

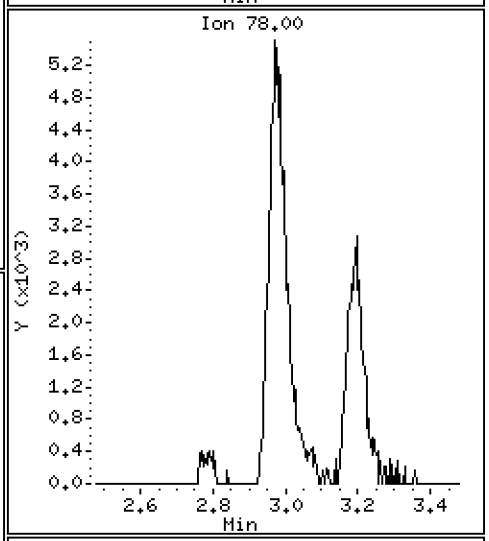


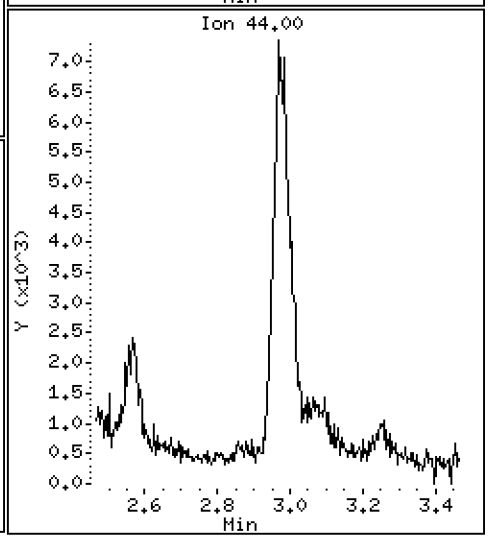












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Date : 02-SEP-2018 15:04

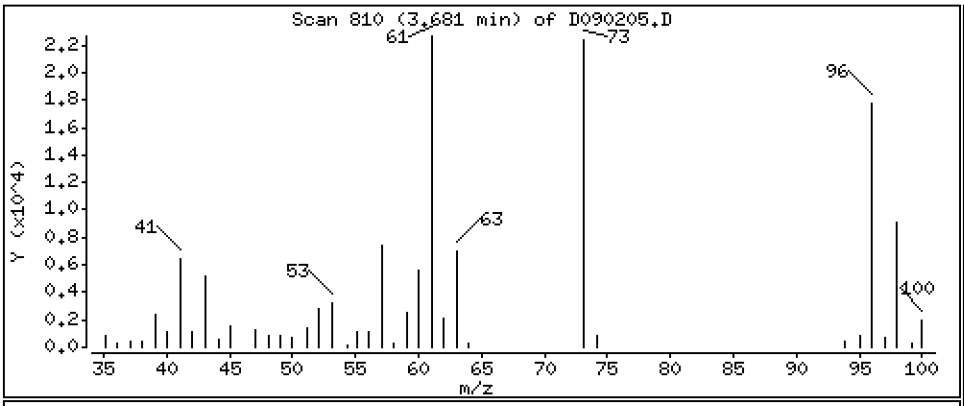
Client ID: VLCSW-180830 Instrument: VOA2.i

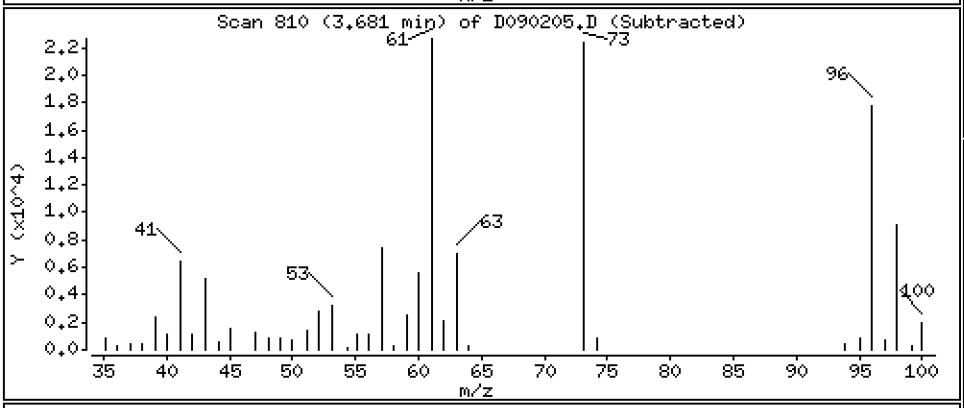
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

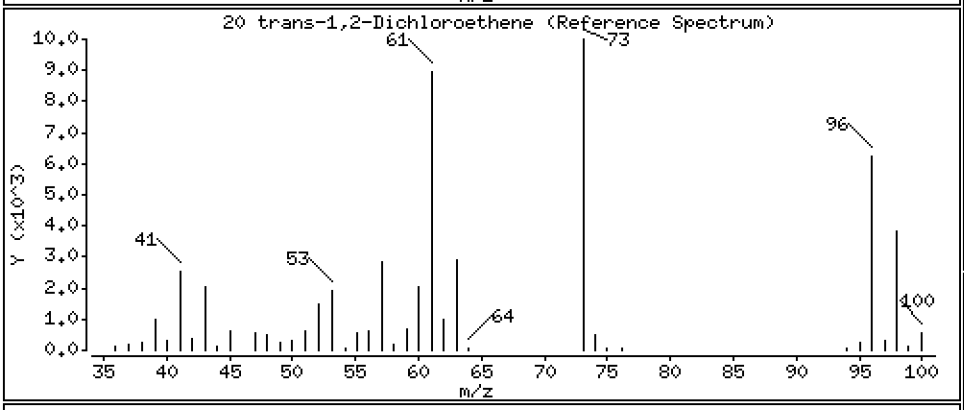
Purge Volume: 5.0 Operator: AP

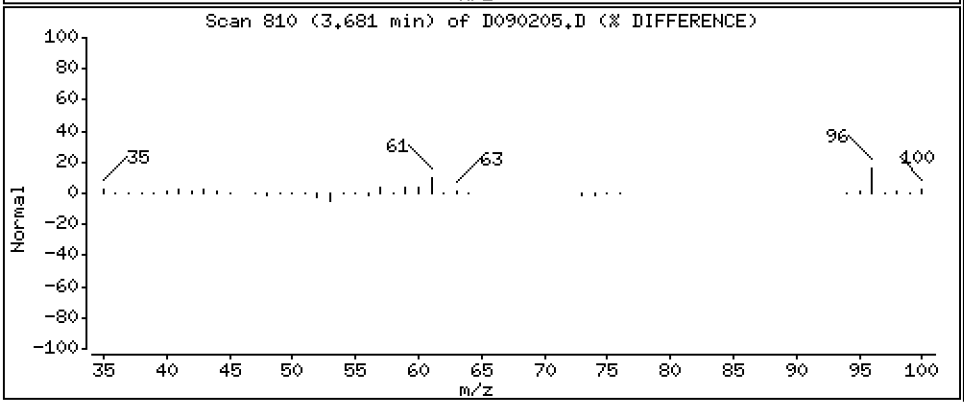
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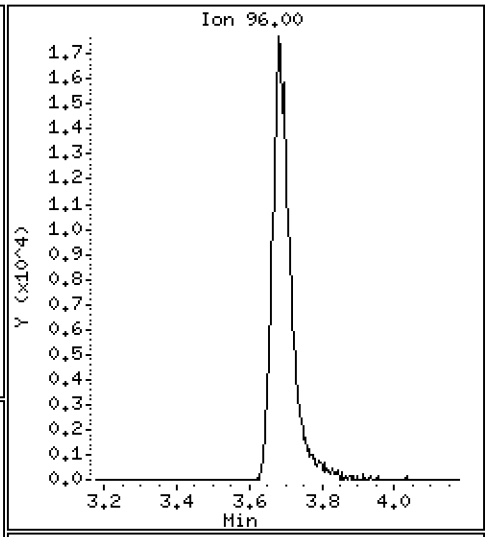
20 trans-1,2-Dichloroethene Concentration: 21.24 ug/l Review Code:

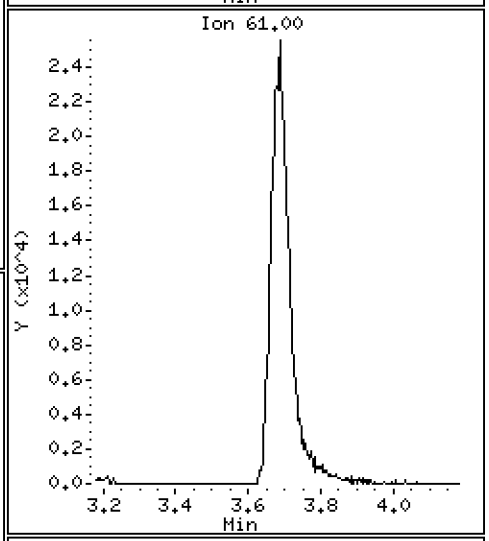


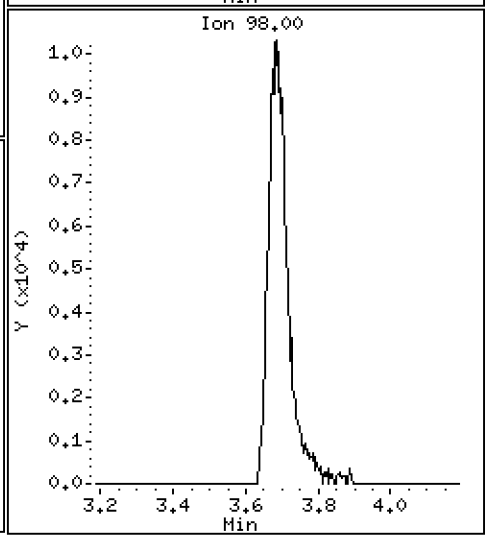












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 23

Date : 02-SEP-2018 15:04

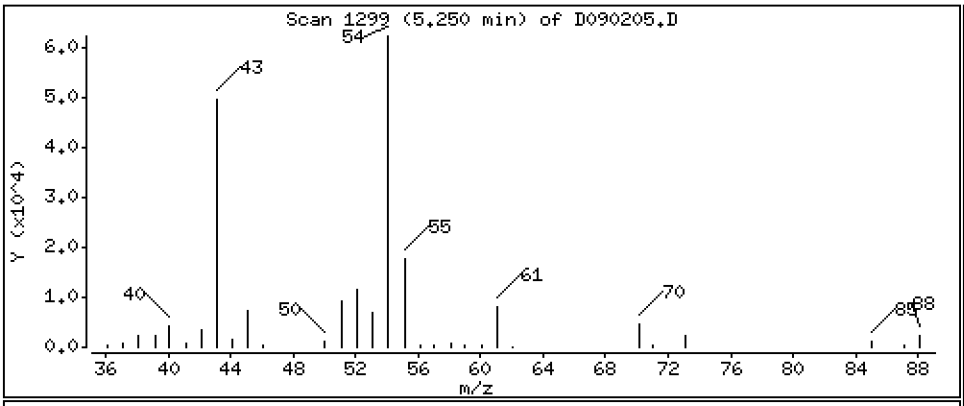
Client ID: VLCSW-180830 Instrument: VOA2.i

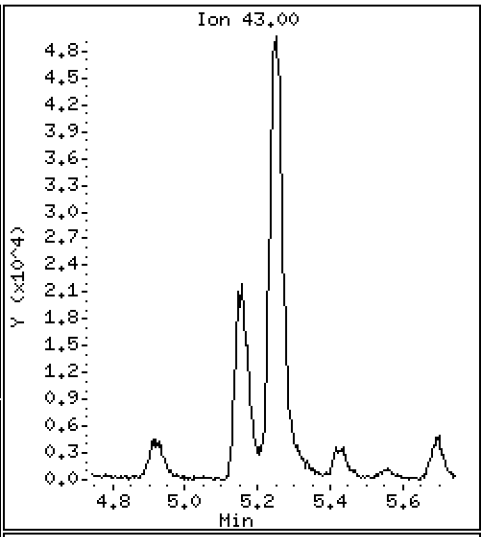
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

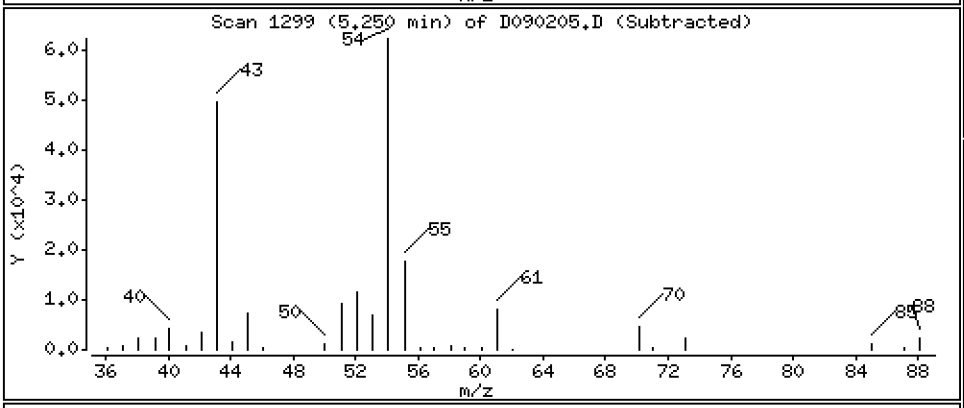
Purge Volume: 5.0 Operator: AP

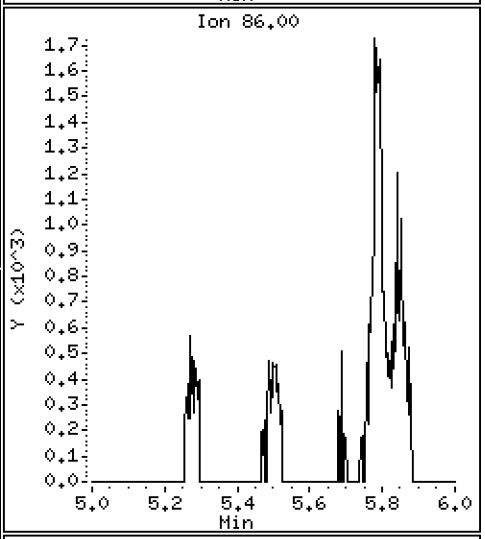
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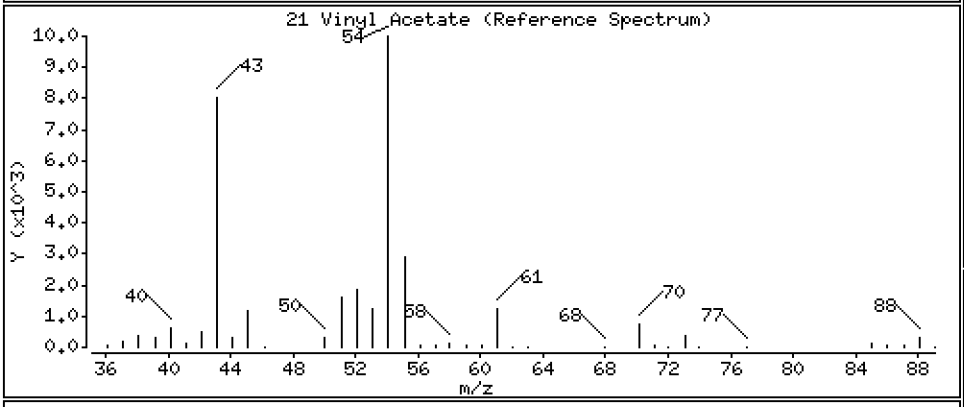
21 Vinyl Acetate Concentration: 35.99 ug/l Review Code:

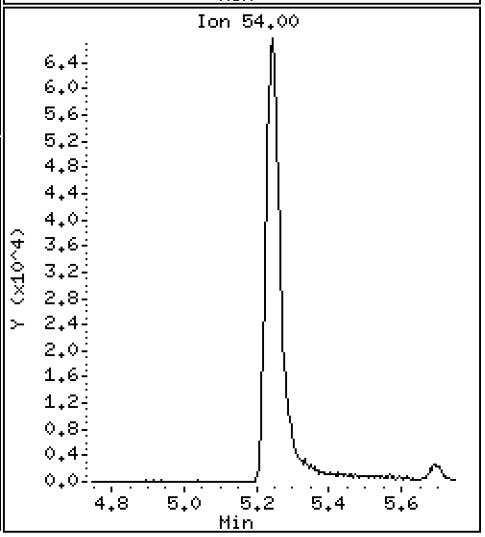


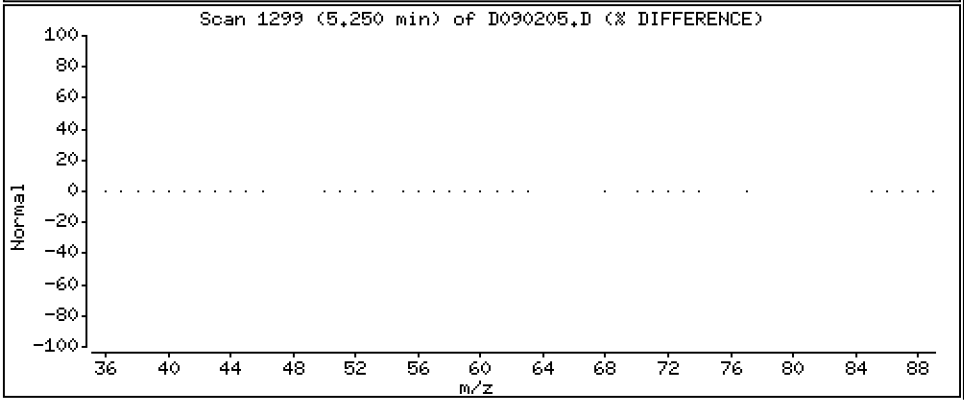












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 24

Date : 02-SEP-2018 15:04

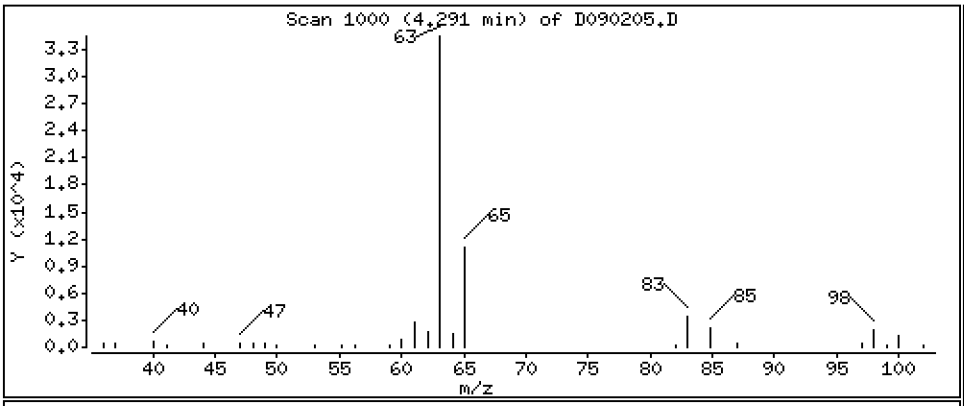
Client ID: VLCSW-180830 Instrument: VOA2.i

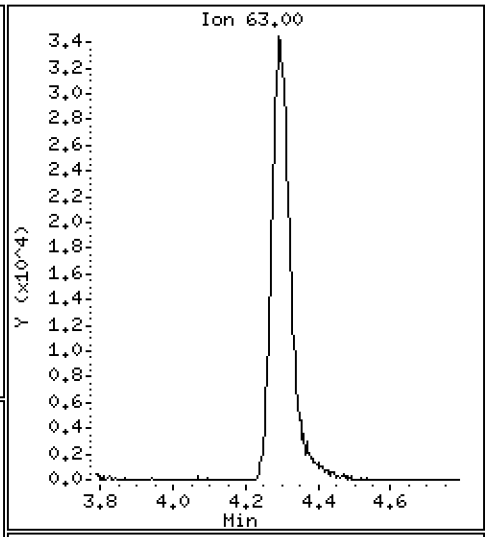
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

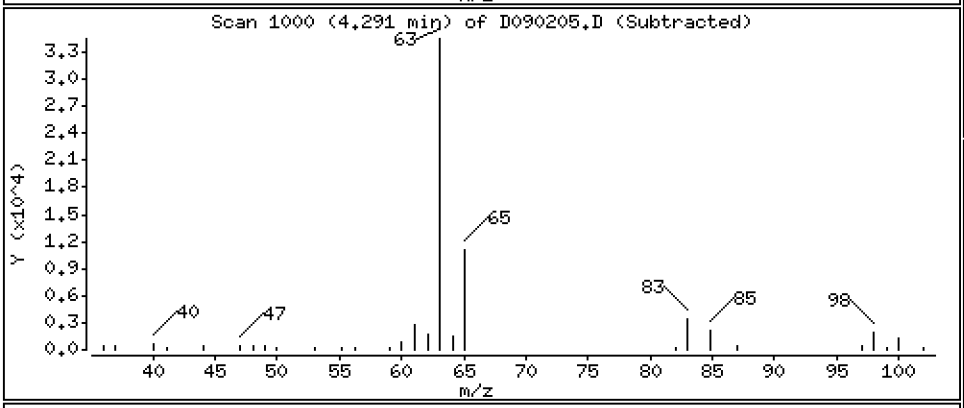
Purge Volume: 5.0 Operator: AP

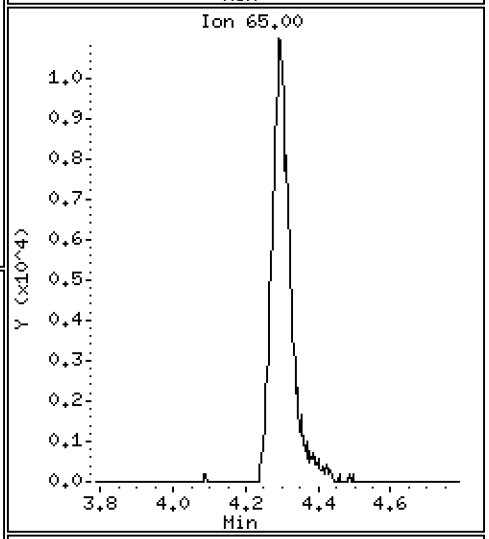
Column phase: DB624 Column diameter: 0.18

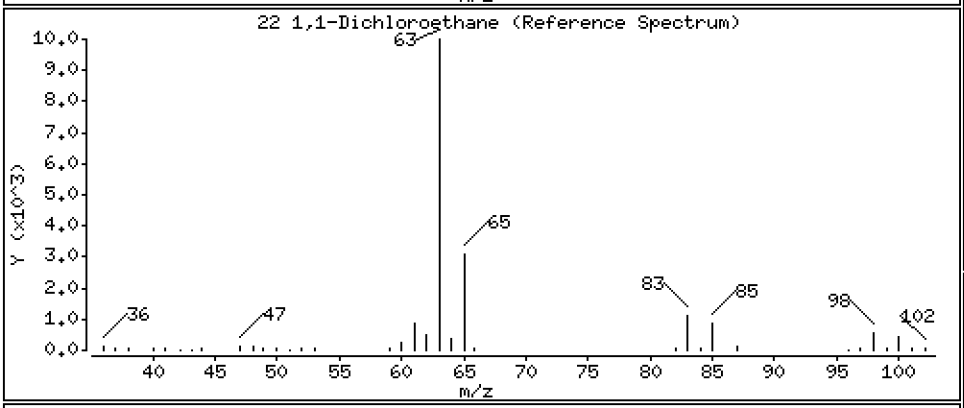
22 1,1-Dichloroethane Concentration: 18.74 ug/l Review Code:

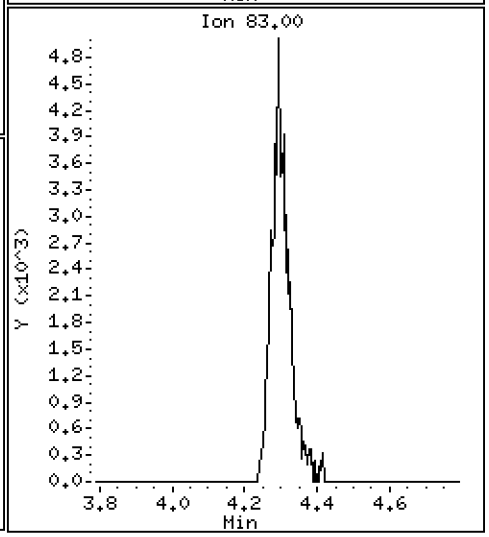


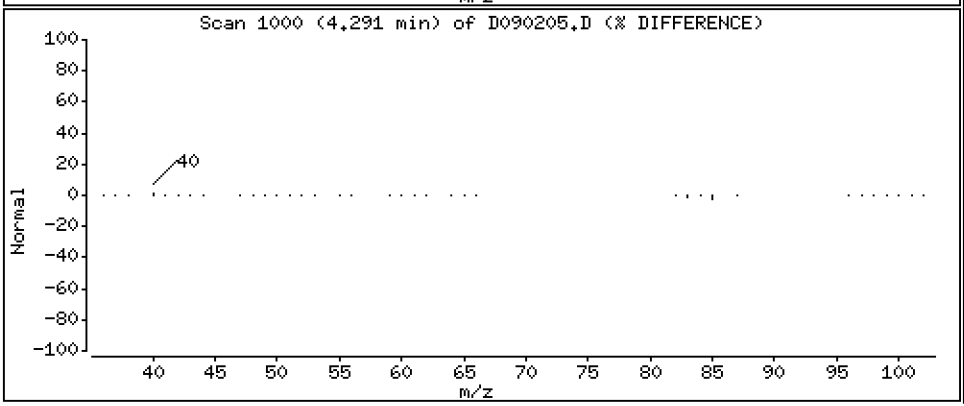












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 25

Date : 02-SEP-2018 15:04

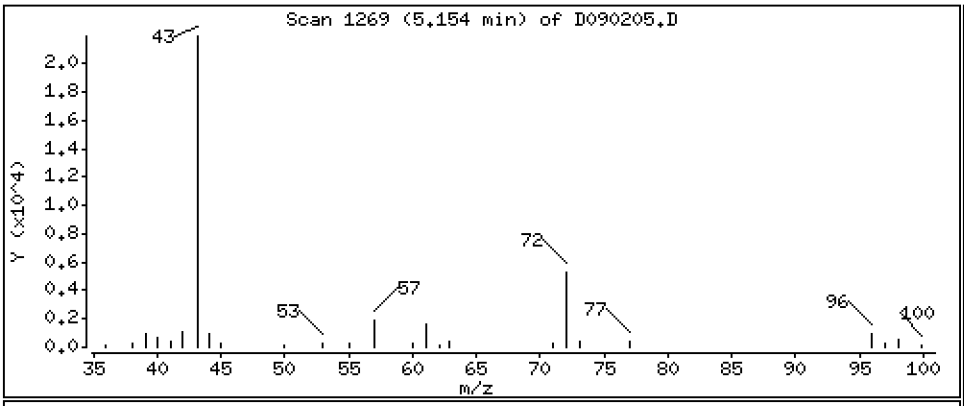
Client ID: VLCSW-180830 Instrument: VOA2.i

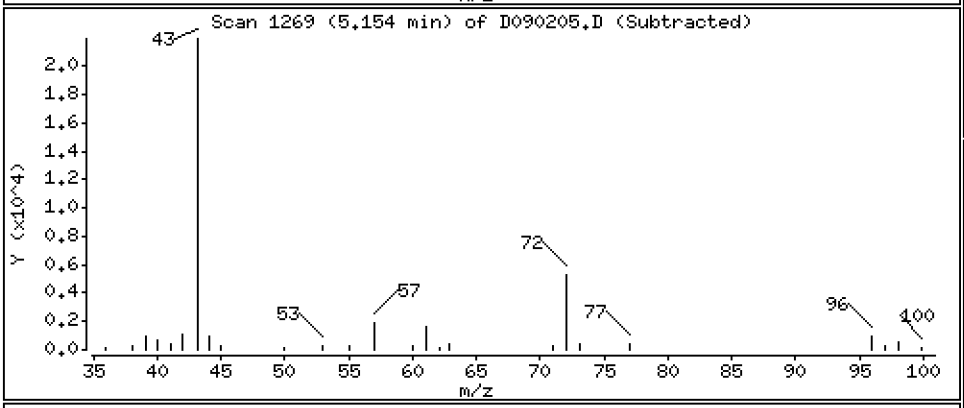
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

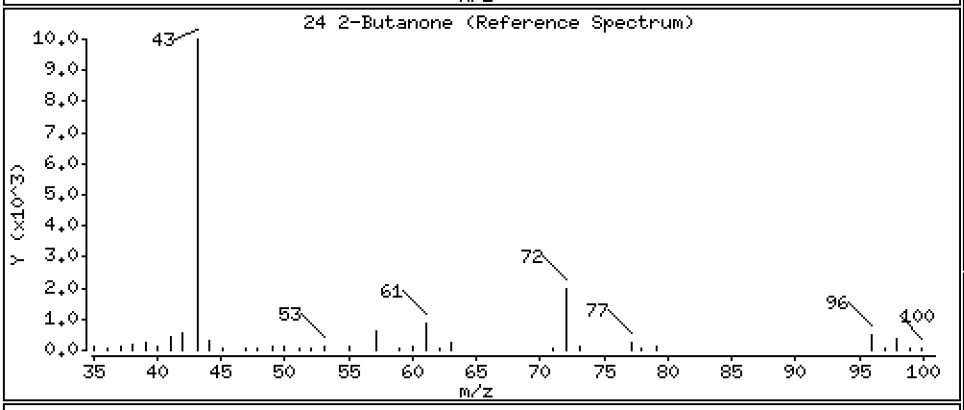
Purge Volume: 5.0 Operator: AP

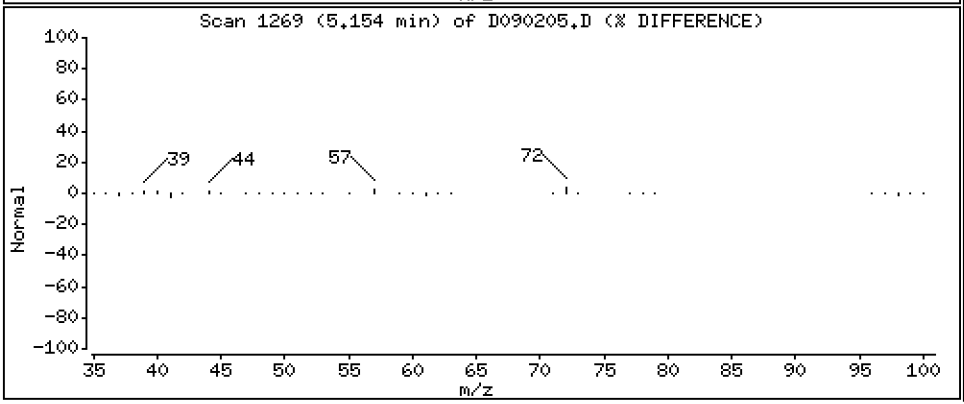
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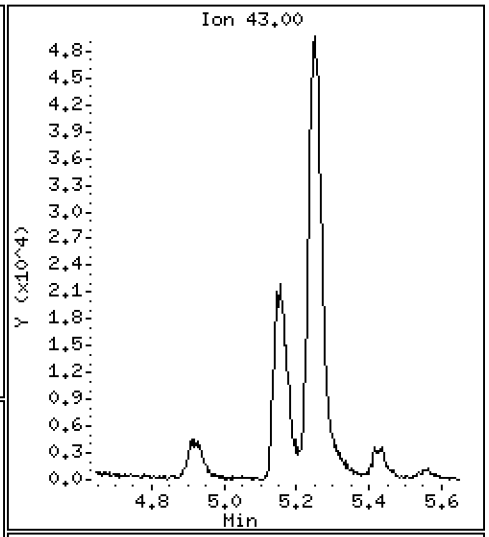
24 2-Butanone Concentration: 36.50 ug/l Review Code:

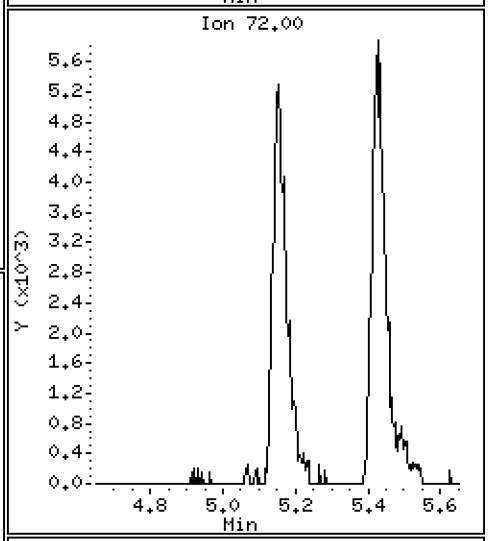


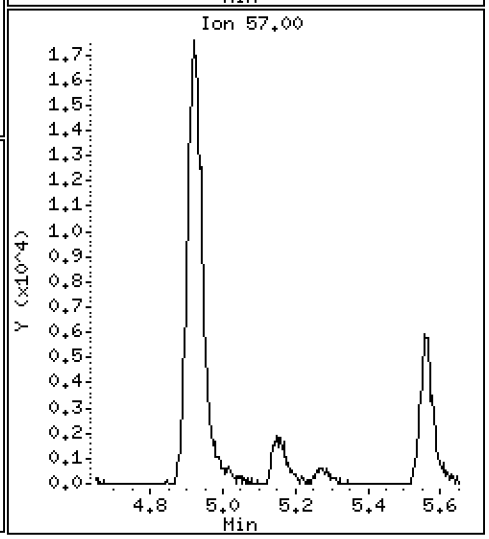












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 26

Date : 02-SEP-2018 15:04

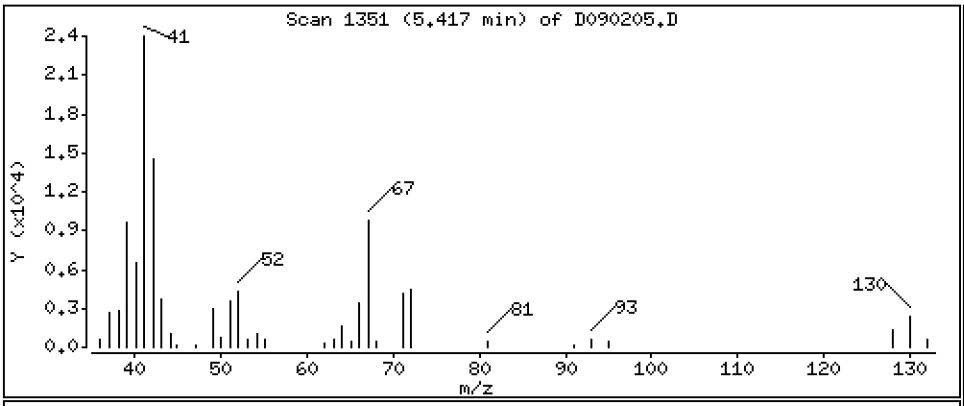
Client ID: VLCSW-180830 Instrument: VOA2.i

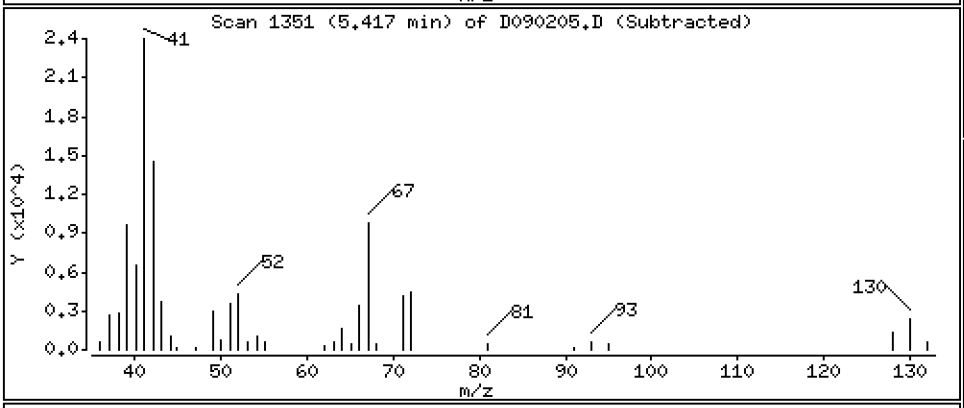
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

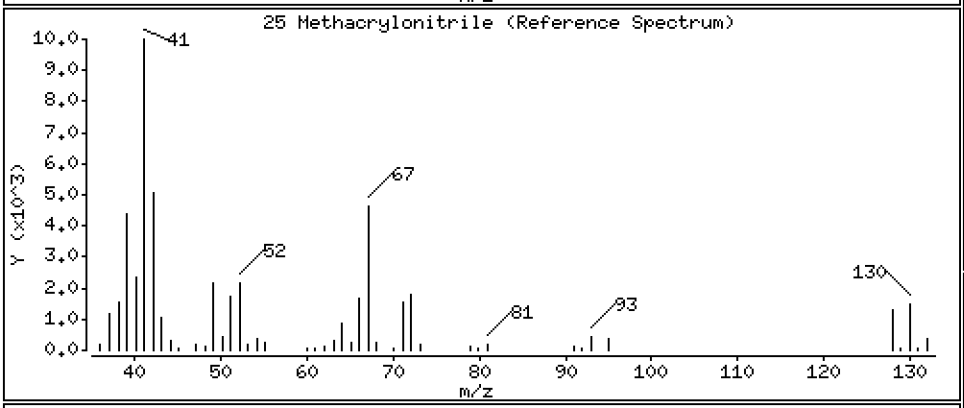
Purge Volume: 5.0 Operator: AP

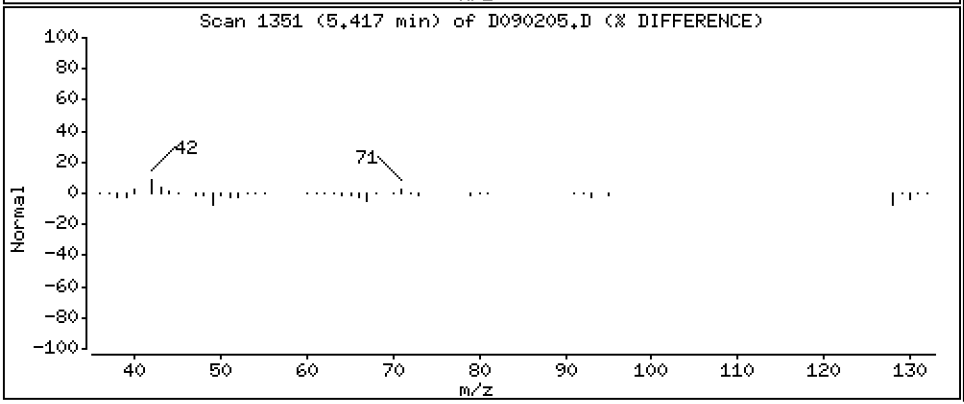
Column phase: DB624 Column diameter: 0.18

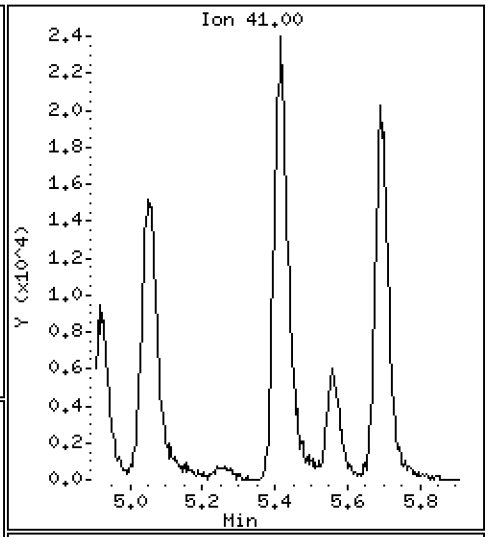
25 Methacrylonitrile Concentration: 19.42 ug/l Review Code:

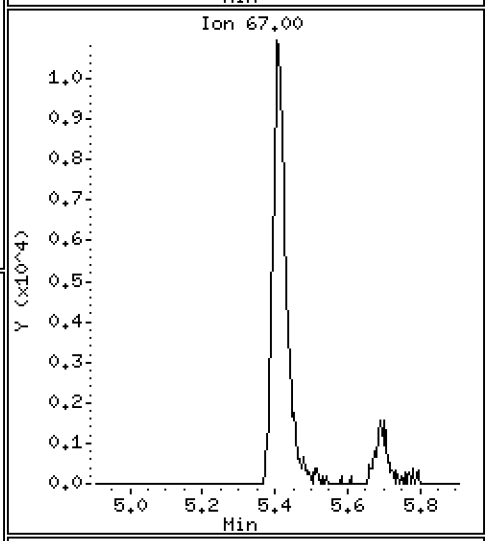


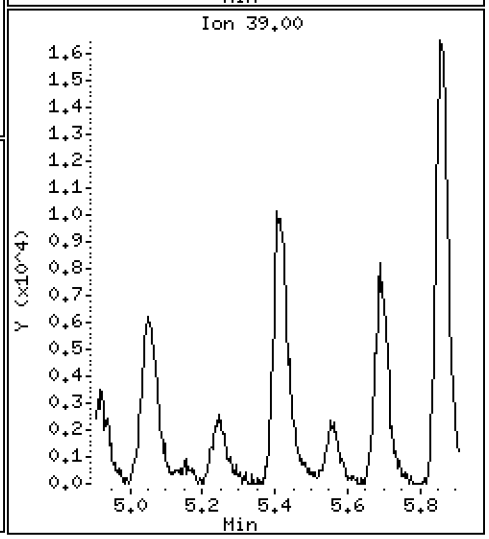












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 27

Date : 02-SEP-2018 15:04

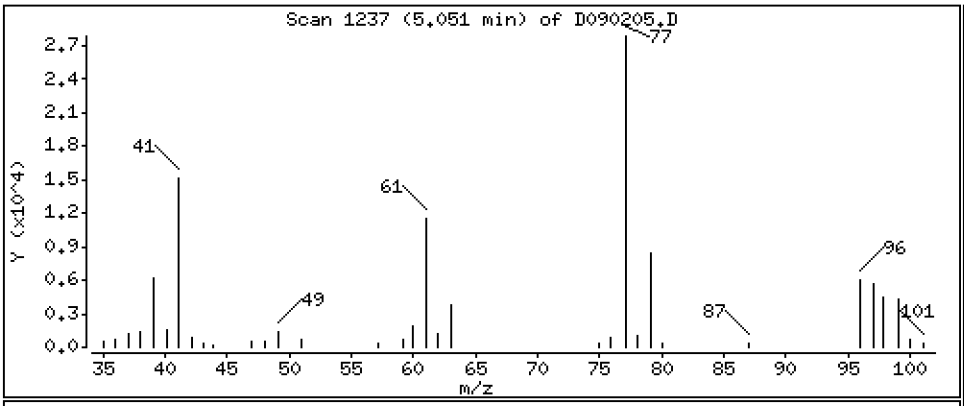
Client ID: VLCSW-180830 Instrument: VOA2.i

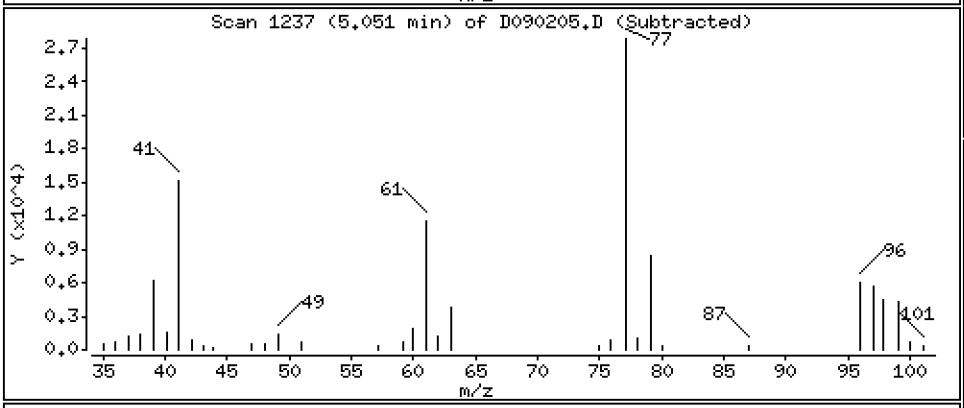
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

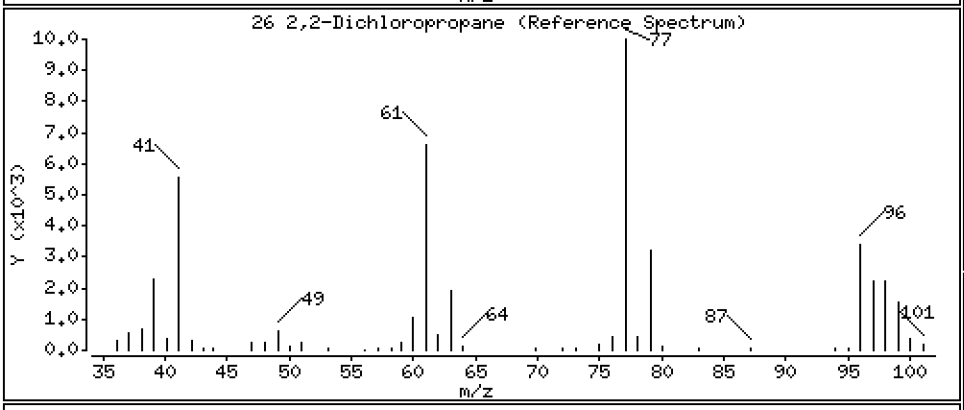
Purge Volume: 5.0 Operator: AP

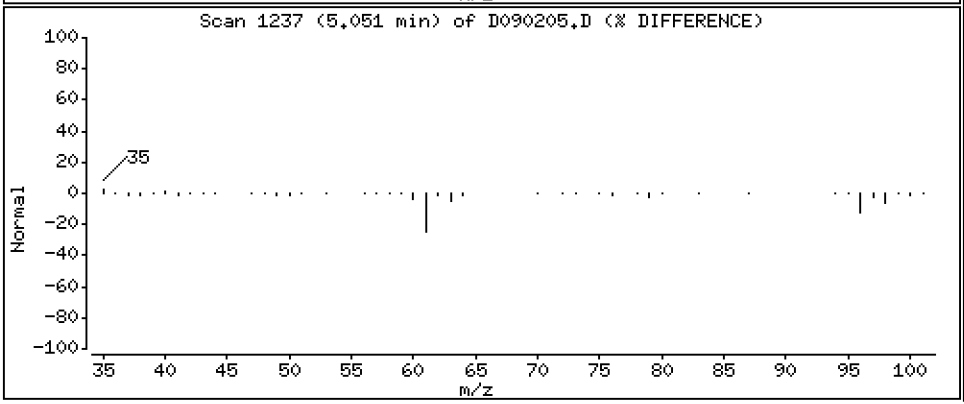
Column phase: DB624 Column diameter: 0.18

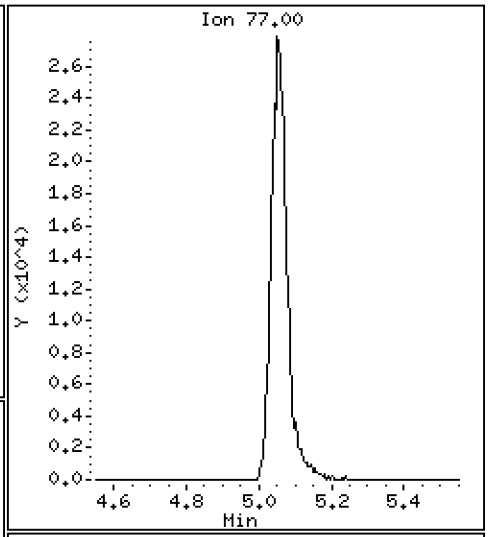
26 2,2-Dichloropropane Concentration: 24.09 ug/l Review Code:

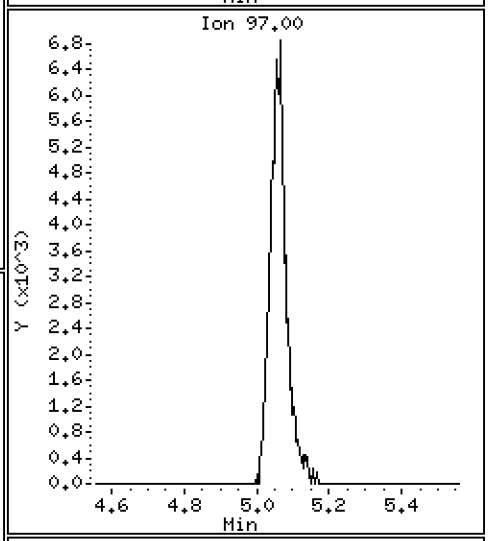


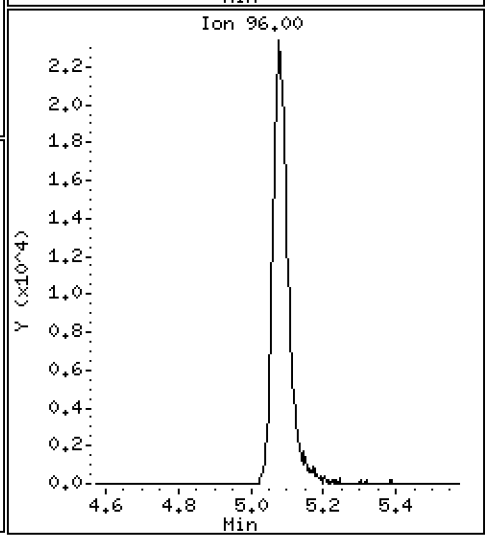












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 28

Date : 02-SEP-2018 15:04

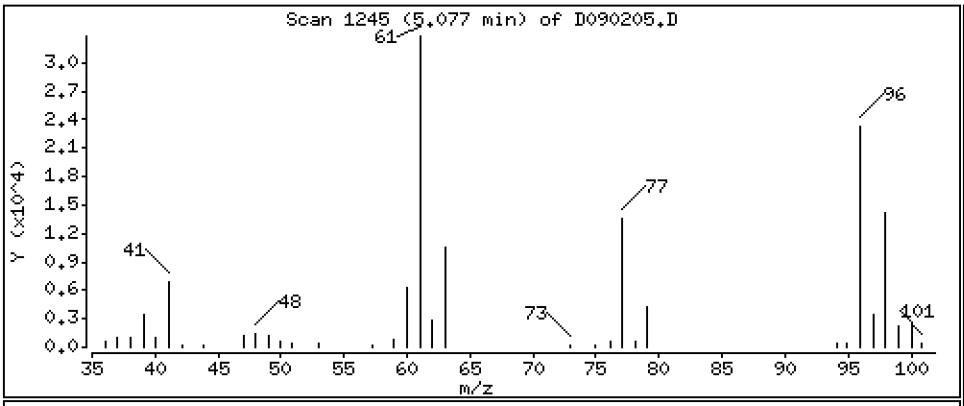
Client ID: VLCSW-180830 Instrument: VOA2.i

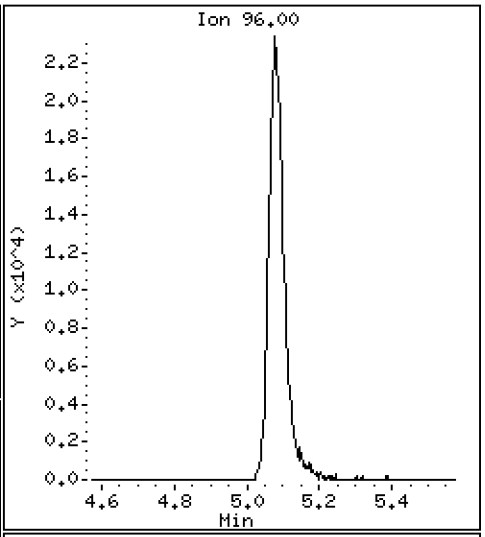
Sample Info: VLCSW-180830:VLCSW-180830:3::LCS

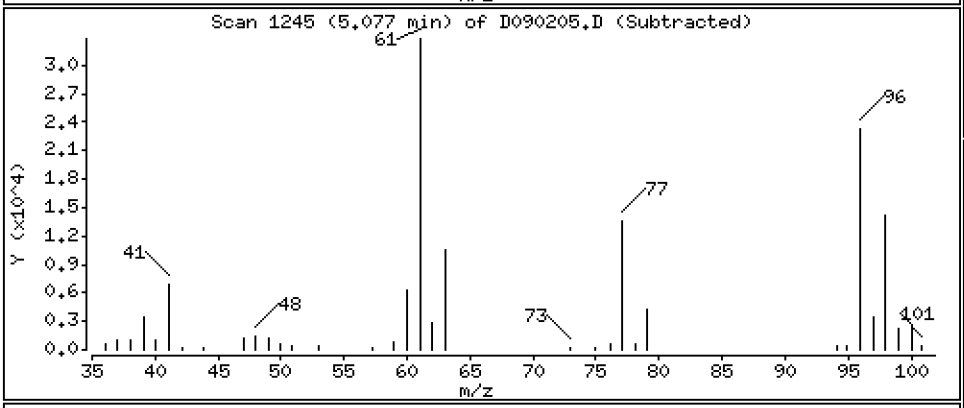
Purge Volume: 5.0 Operator: AP

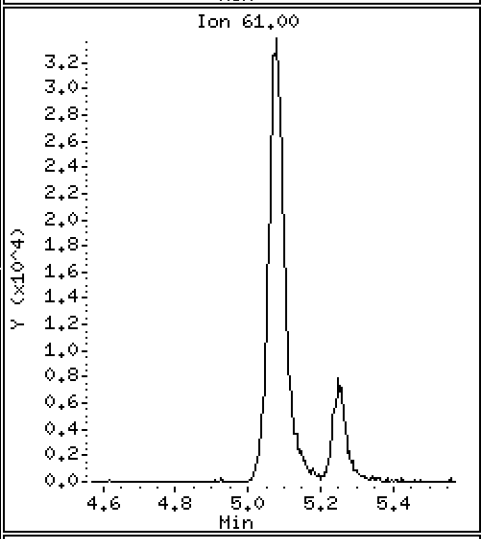
Column phase: DB624 Column diameter: 0.18

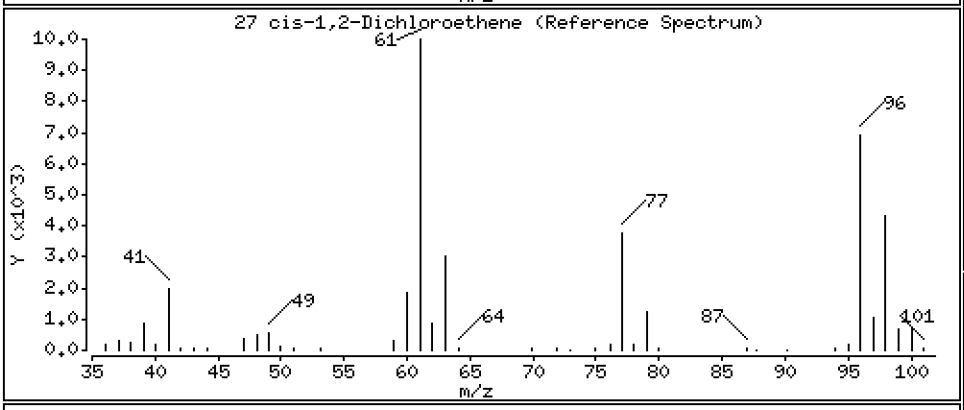
27 cis-1,2-Dichloroethene Concentration: 20.37 ug/l Review Code:

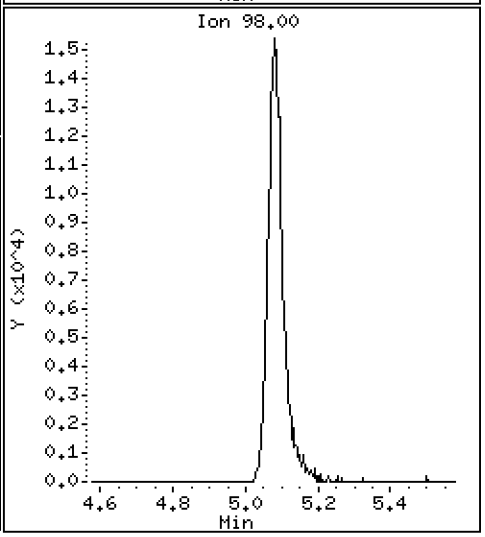


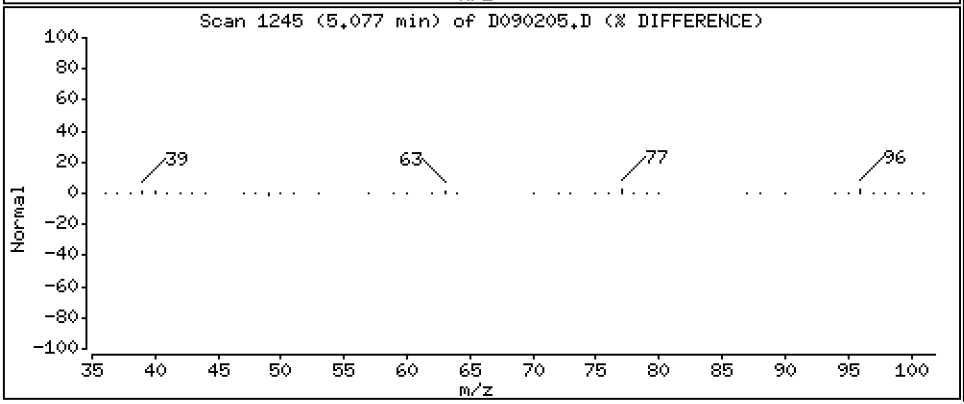












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 29

Date : 02-SEP-2018 15:04

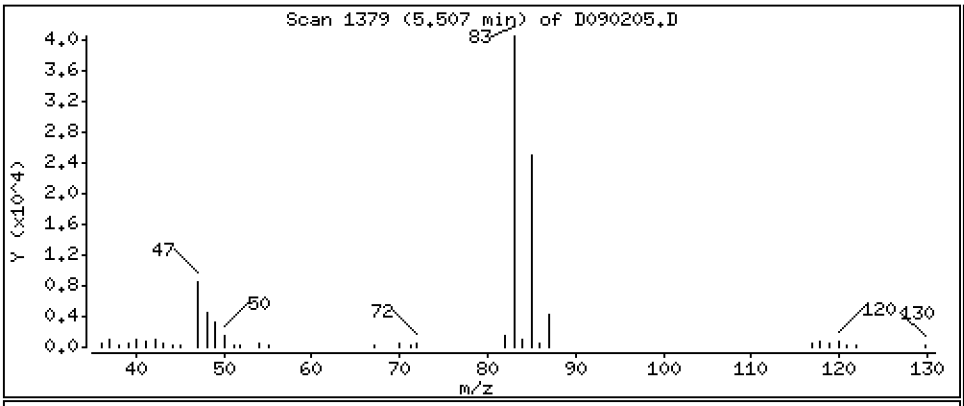
Client ID: VLCSW-180830 Instrument: VOA2.i

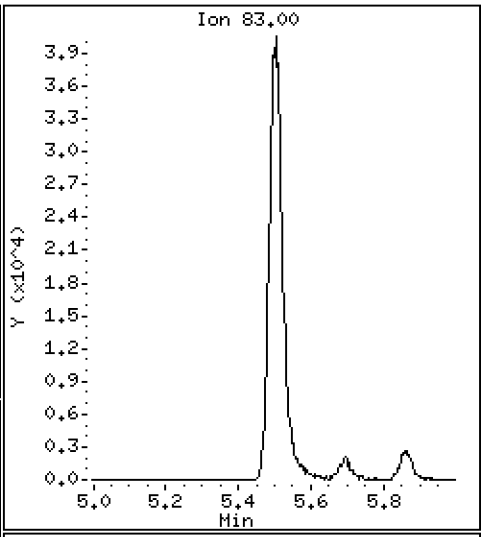
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

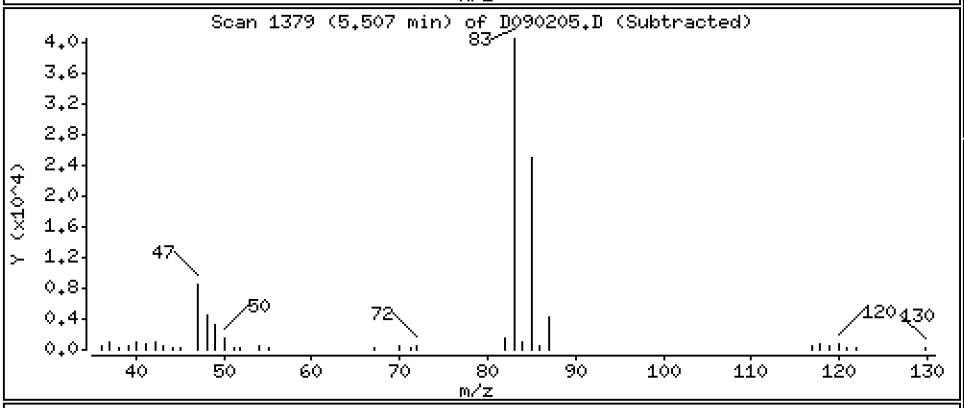
Purge Volume: 5.0 Operator: AP

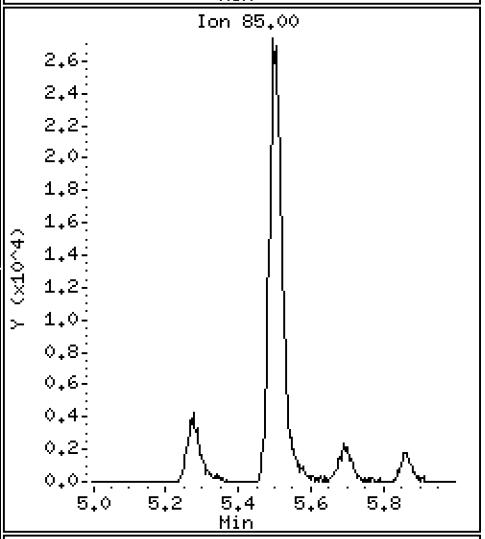
Column phase: DB624 Column diameter: 0.18

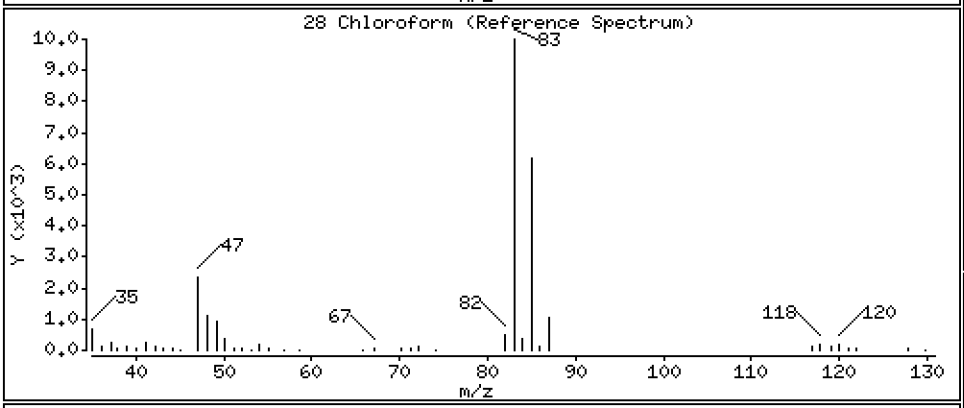
28 Chloroform Concentration: 19.40 ug/l Review Code:

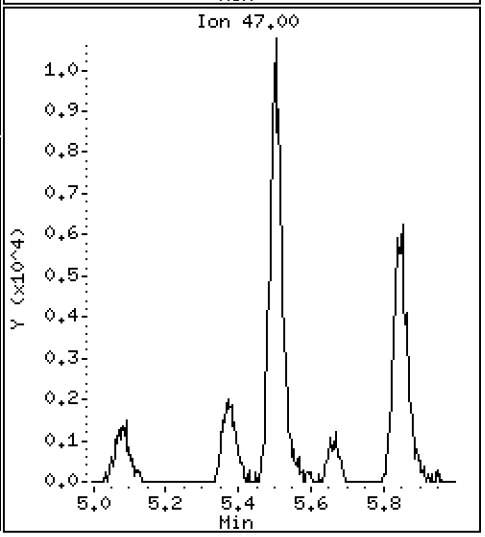


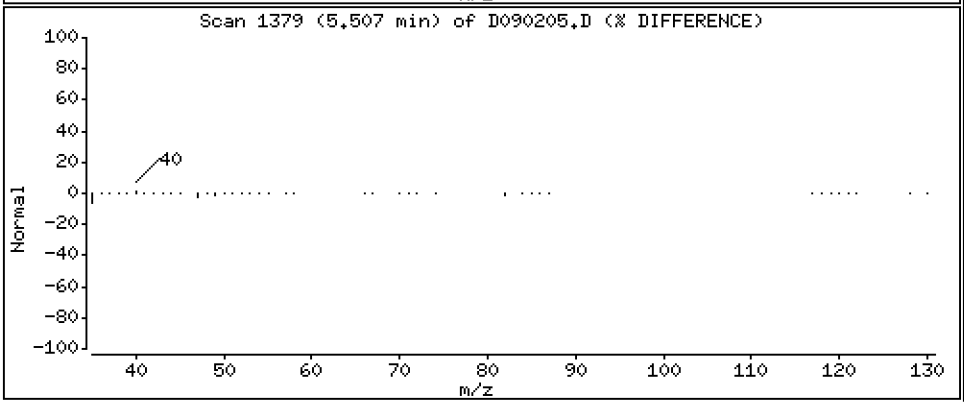












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 30

Date : 02-SEP-2018 15:04

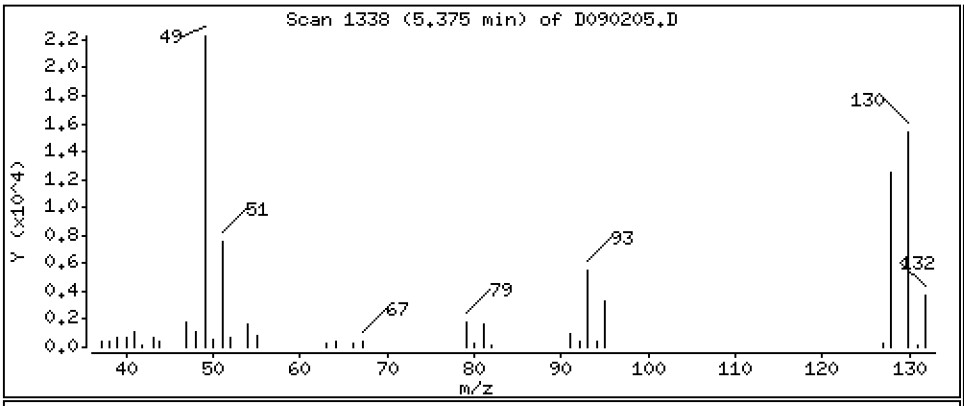
Client ID: VLCSW-180830 Instrument: VOA2.i

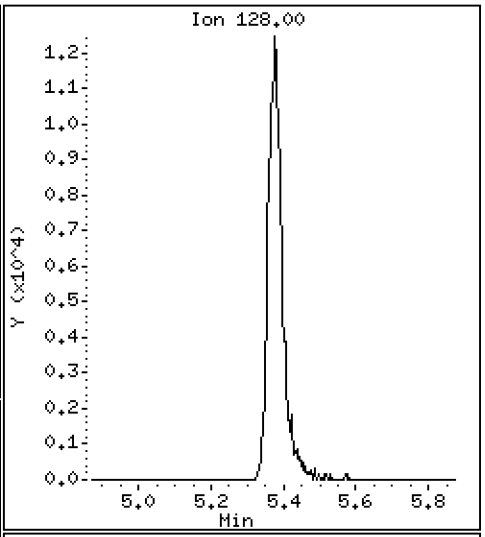
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

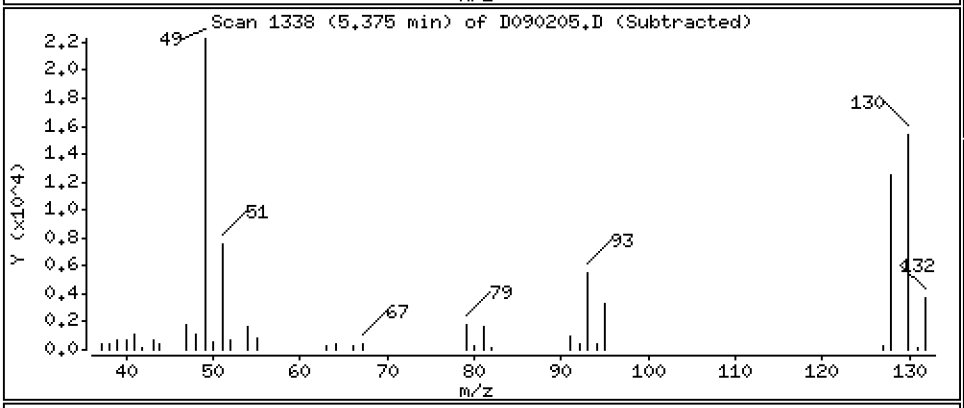
Purge Volume: 5.0 Operator: AP

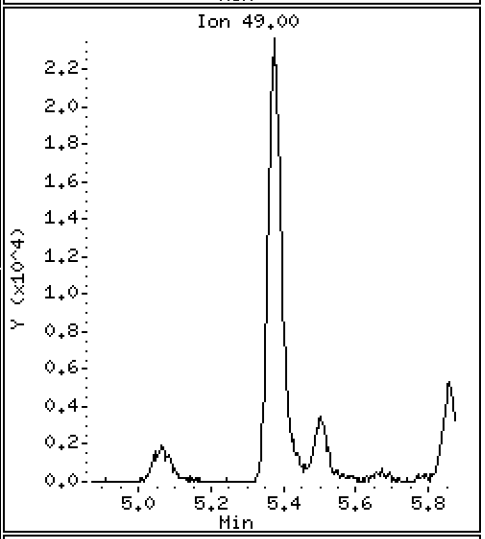
Column phase: DB624 Column diameter: 0.18

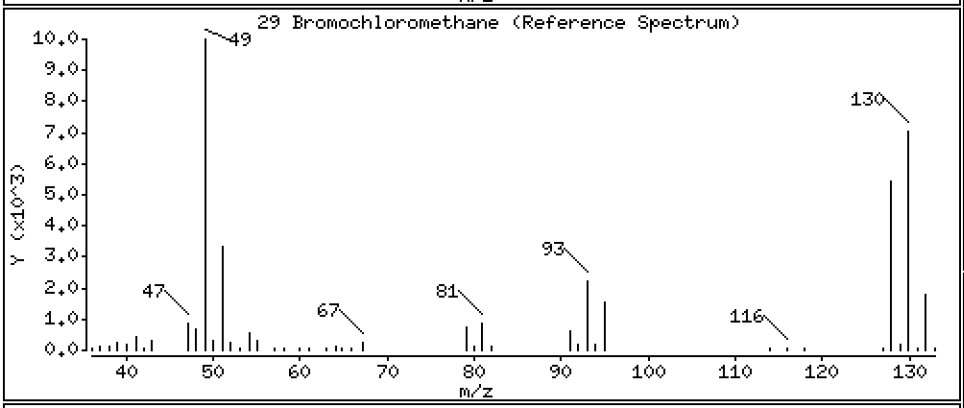
29 Bromochloromethane Concentration: 21.19 ug/l Review Code:

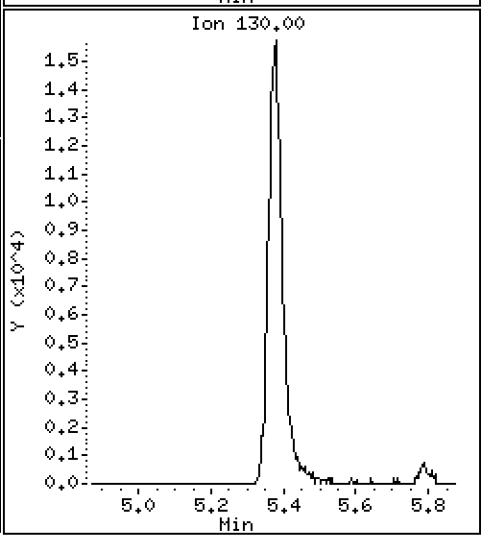


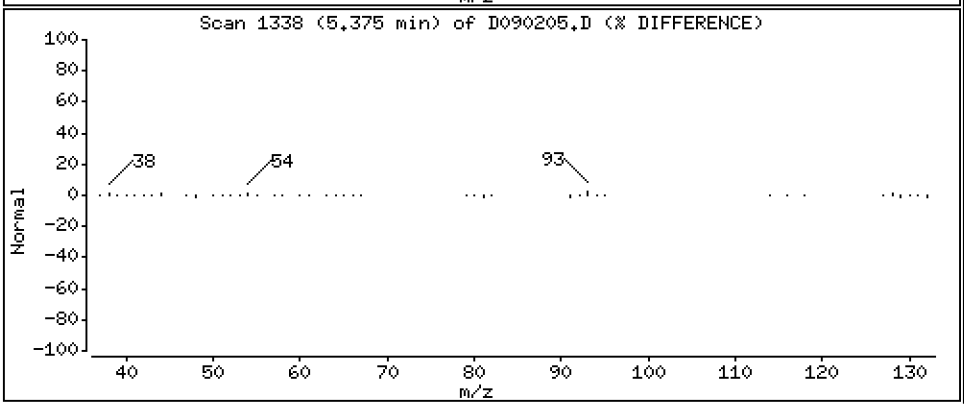












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 31

Date : 02-SEP-2018 15:04

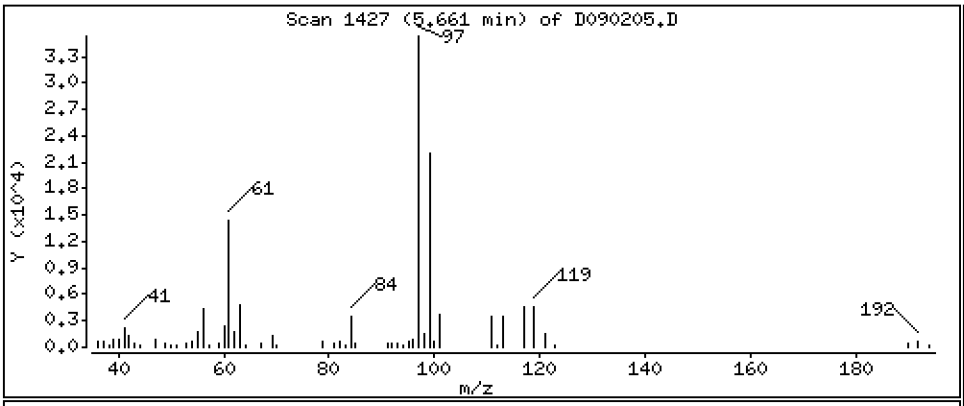
Client ID: VLCSW-180830 Instrument: VOA2.i

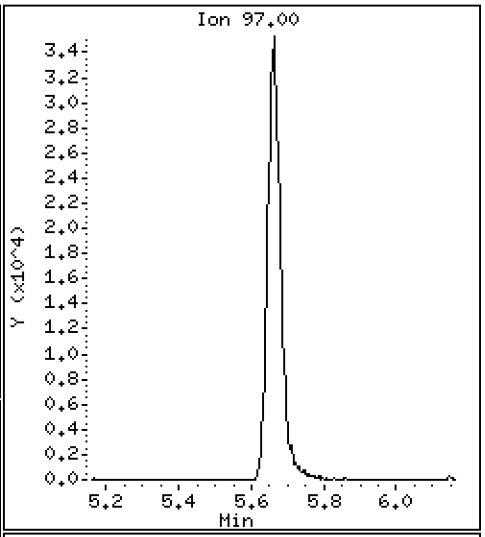
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

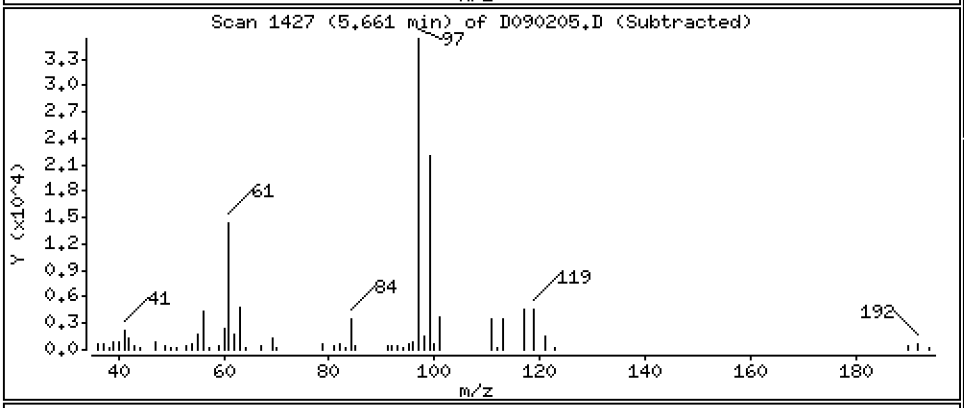
Purge Volume: 5.0 Operator: AP

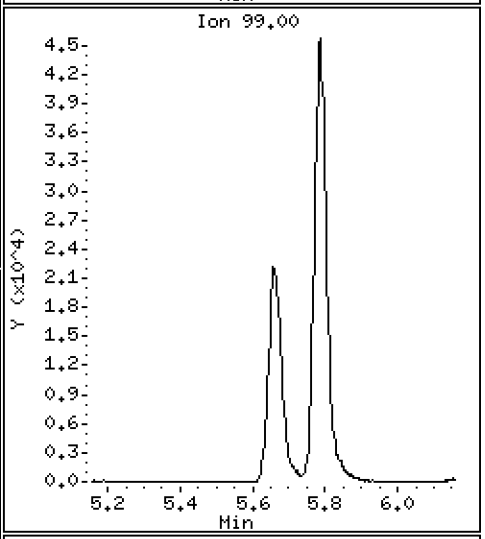
Column phase: DB624 Column diameter: 0.18

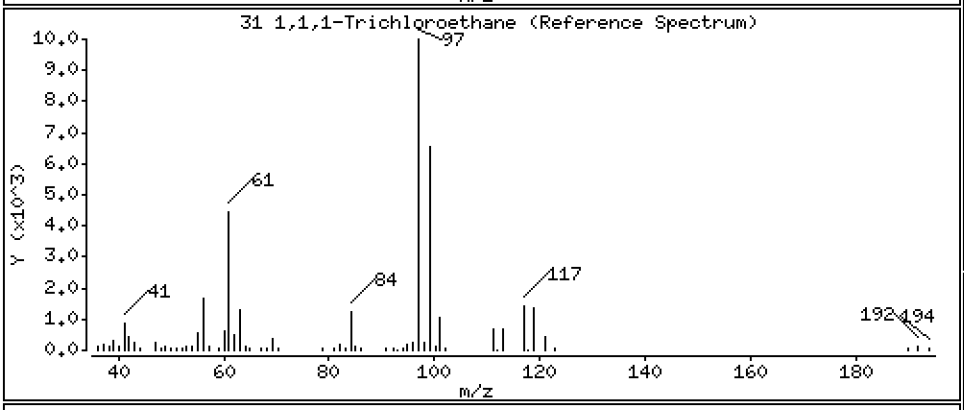
31 1,1,1-Trichloroethane Concentration: 19.35 ug/l Review Code:

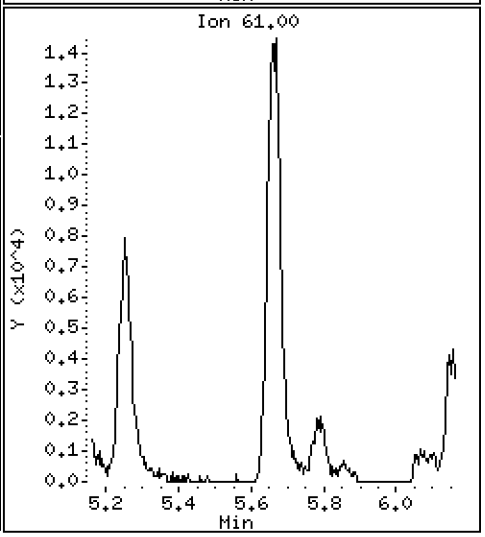


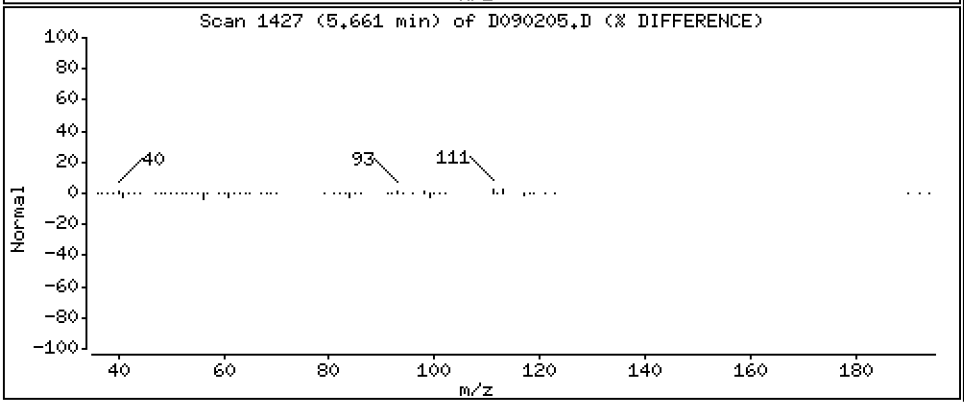












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 32

Date : 02-SEP-2018 15:04

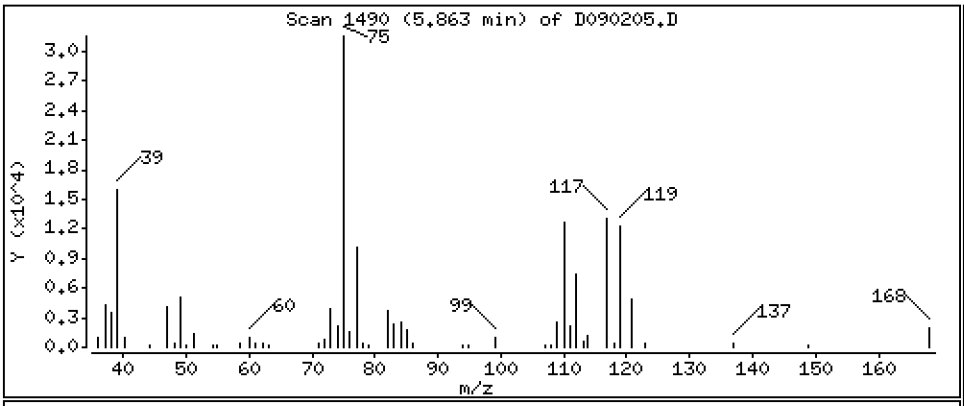
Client ID: VLCSW-180830 Instrument: VOA2.i

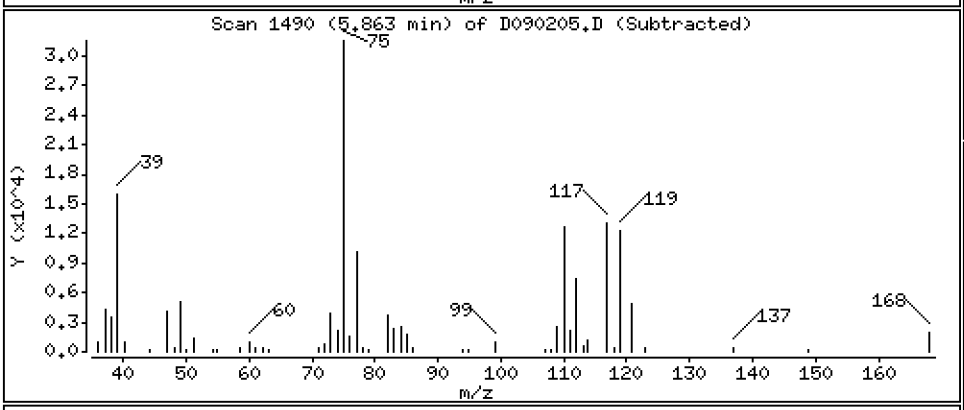
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

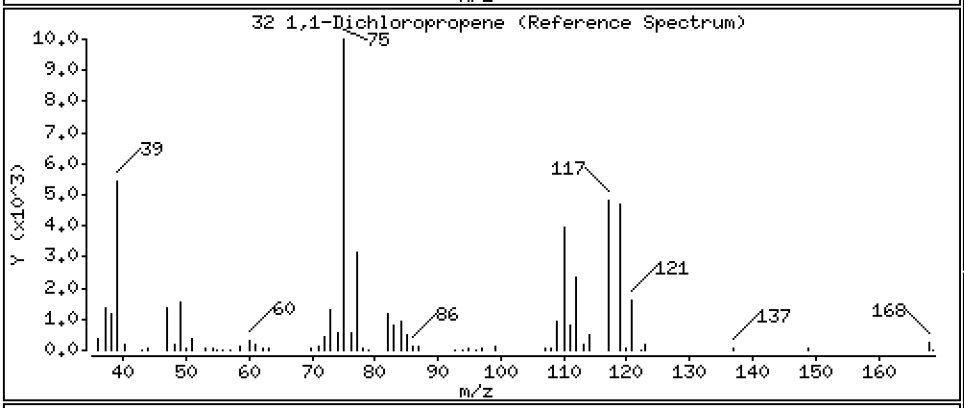
Purge Volume: 5.0 Operator: AP

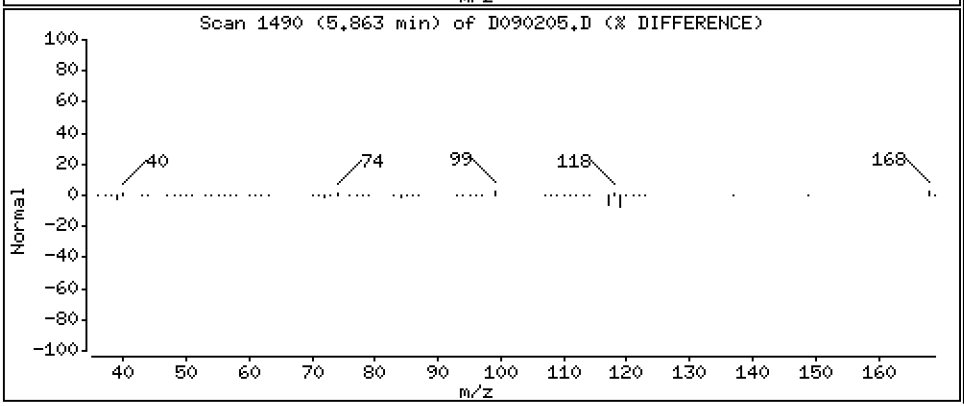
Column phase: DB624 Column diameter: 0.18

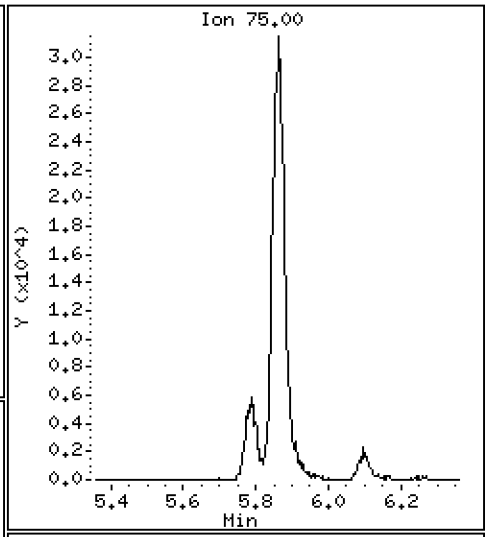
32 1,1-Dichloropropene Concentration: 22.72 ug/l Review Code:

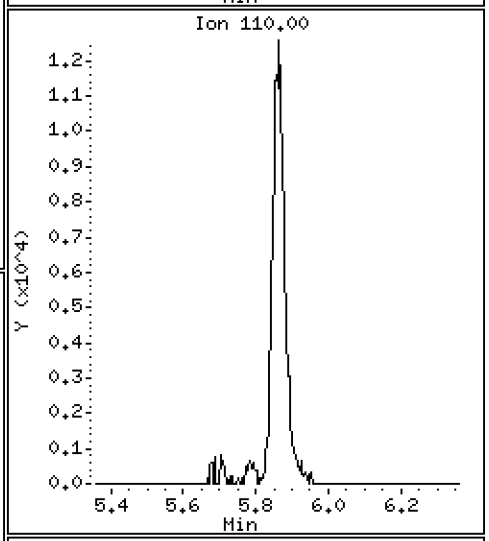


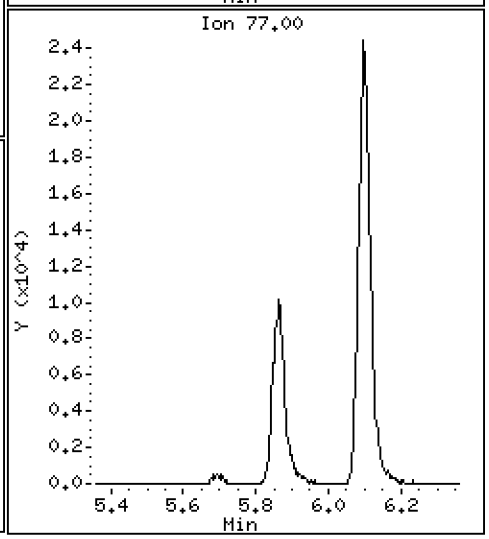












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 33

Date : 02-SEP-2018 15:04

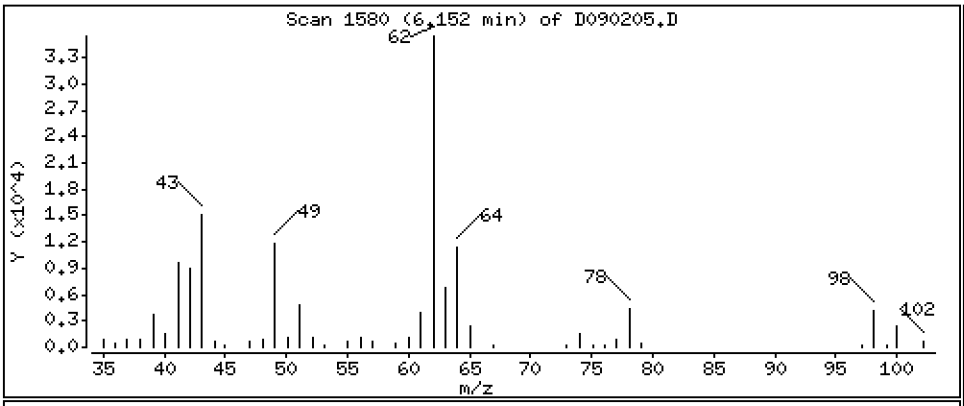
Client ID: VLCSW-180830 Instrument: VOA2.i

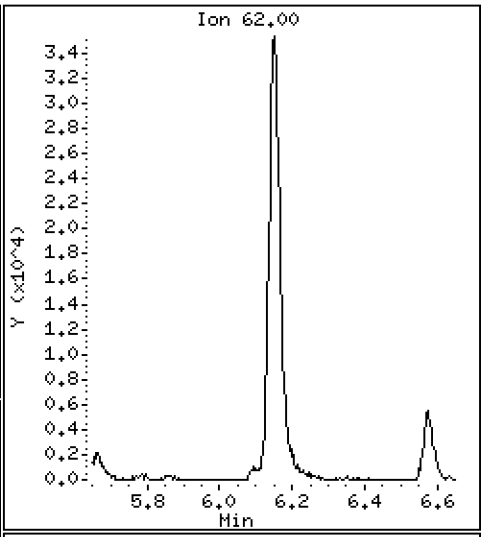
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

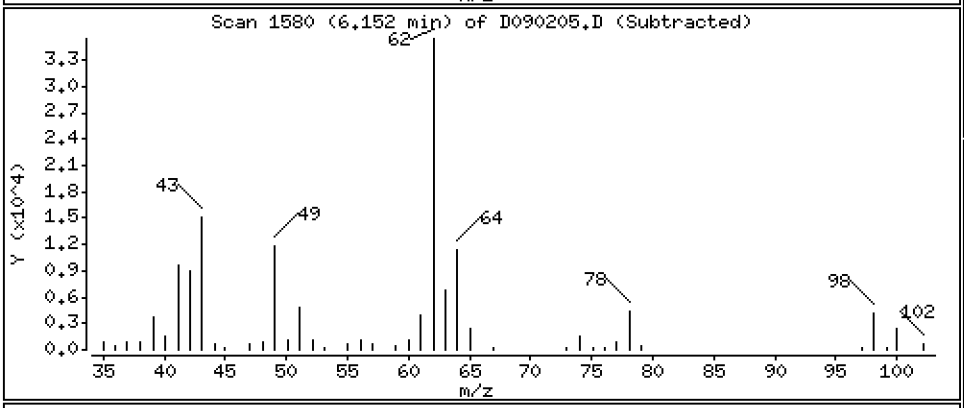
Purge Volume: 5.0 Operator: AP

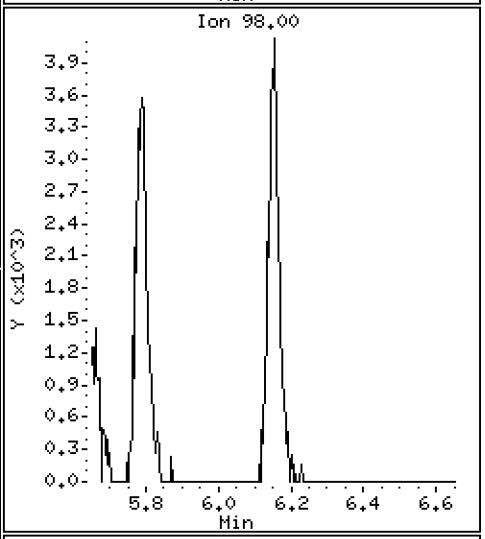
Column phase: DB624 Column diameter: 0.18

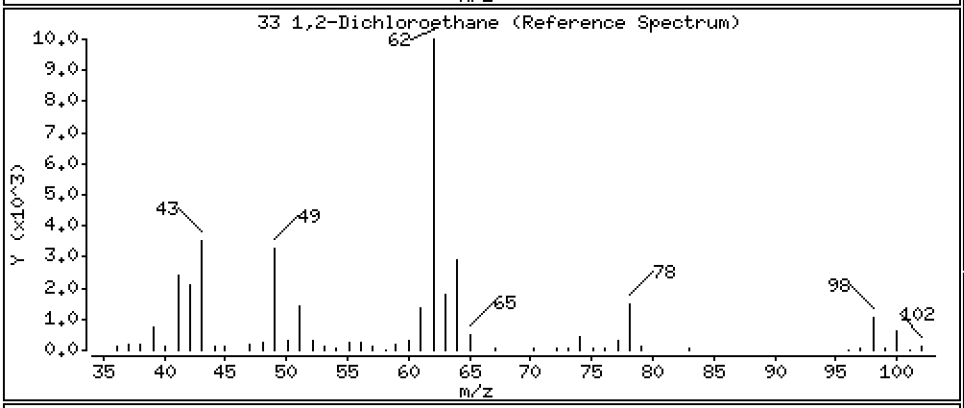
33 1,2-Dichloroethane Concentration: 20.19 ug/l Review Code:

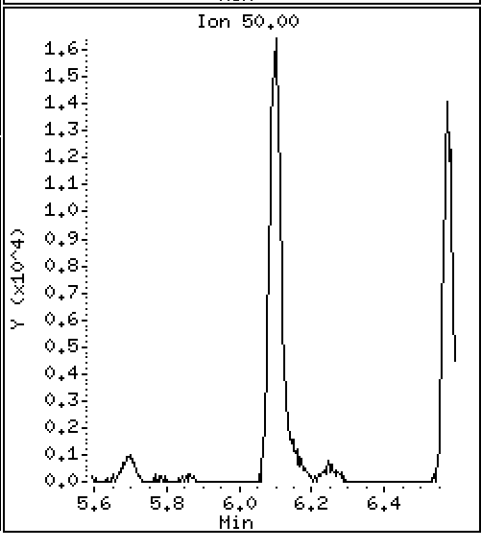


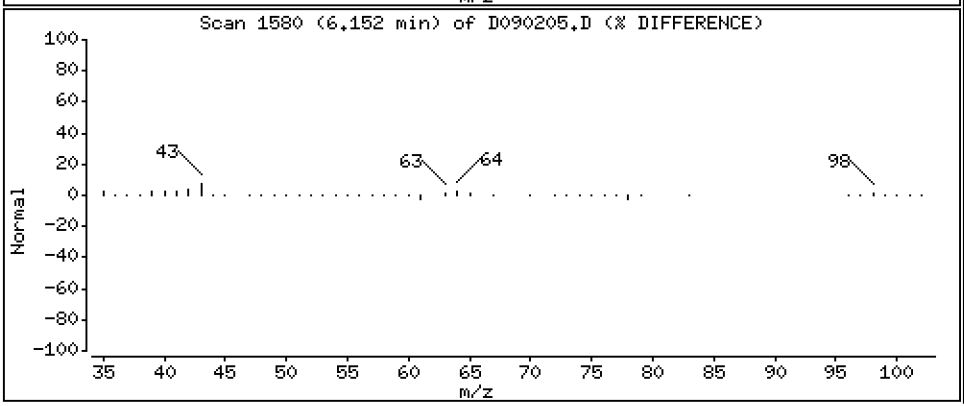












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 34

Date : 02-SEP-2018 15:04

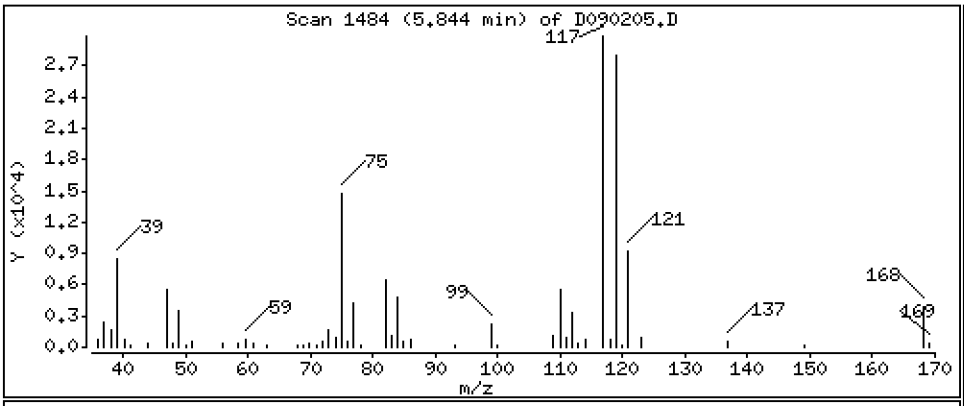
Client ID: VLCSW-180830 Instrument: VOA2.i

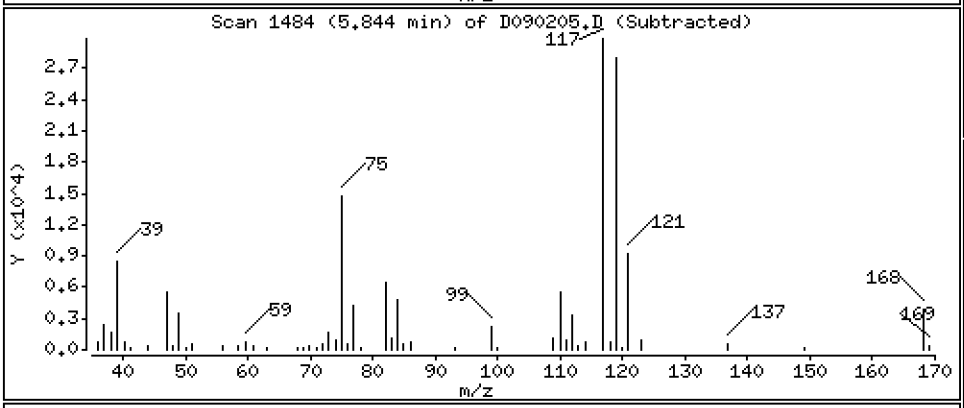
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

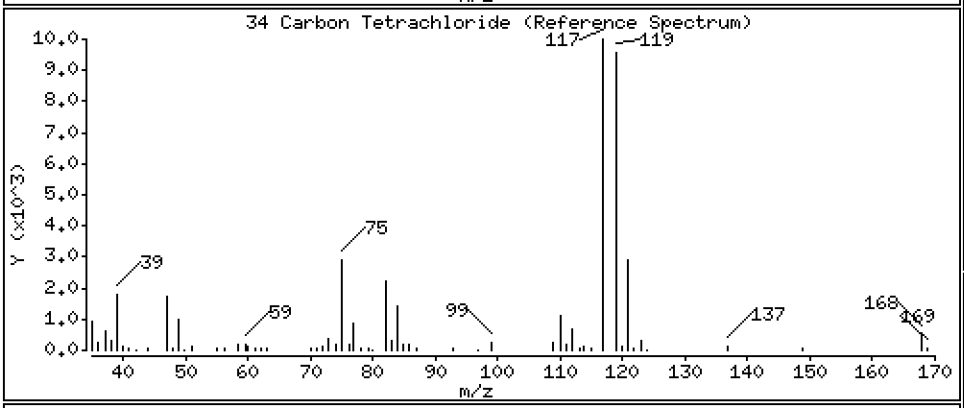
Purge Volume: 5.0 Operator: AP

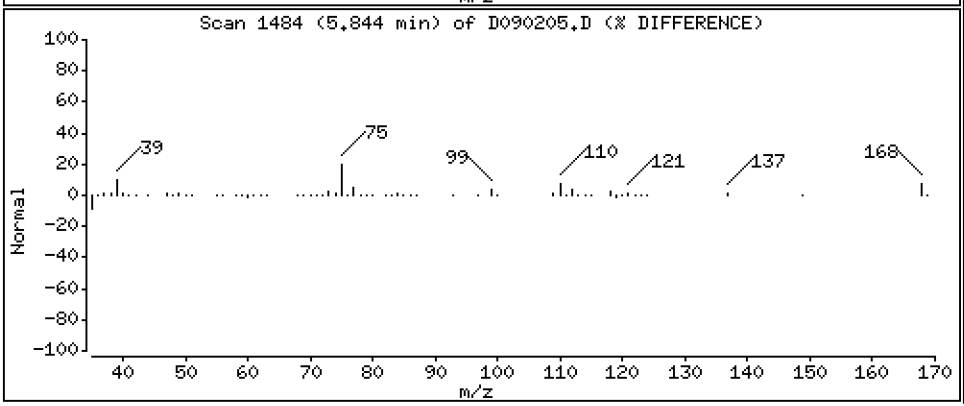
Column phase: DB624 Column diameter: 0.18

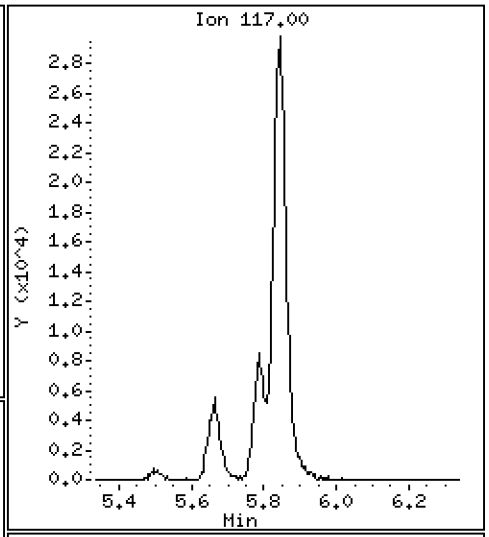
34 Carbon Tetrachloride Concentration: 21.74 ug/l Review Code:

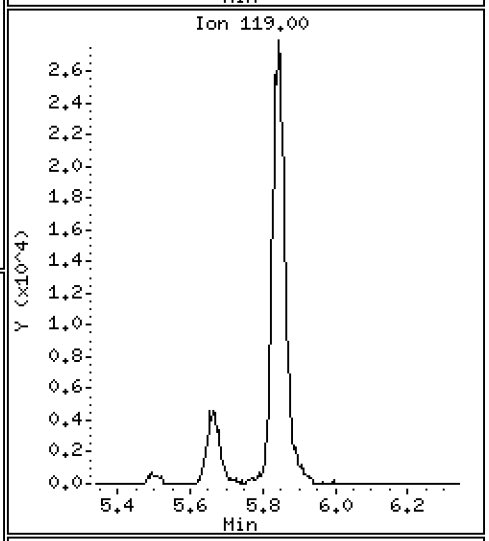


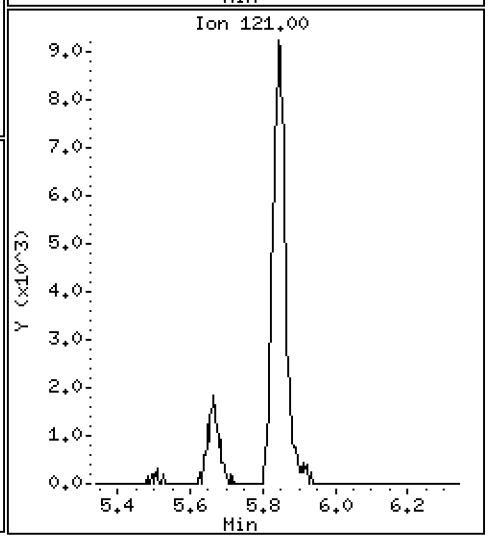












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 35

Date : 02-SEP-2018 15:04

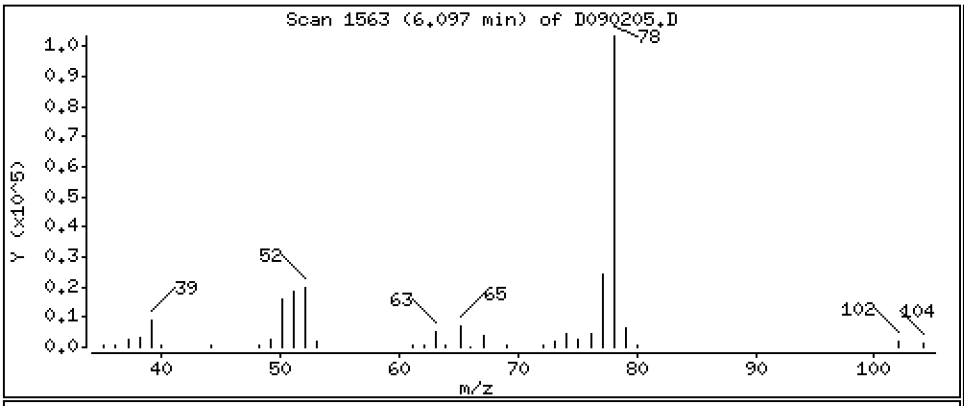
Client ID: VLCSW-180830 Instrument: VOA2.i

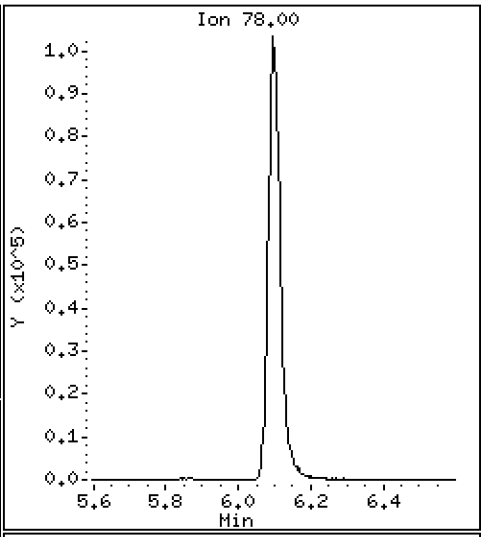
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

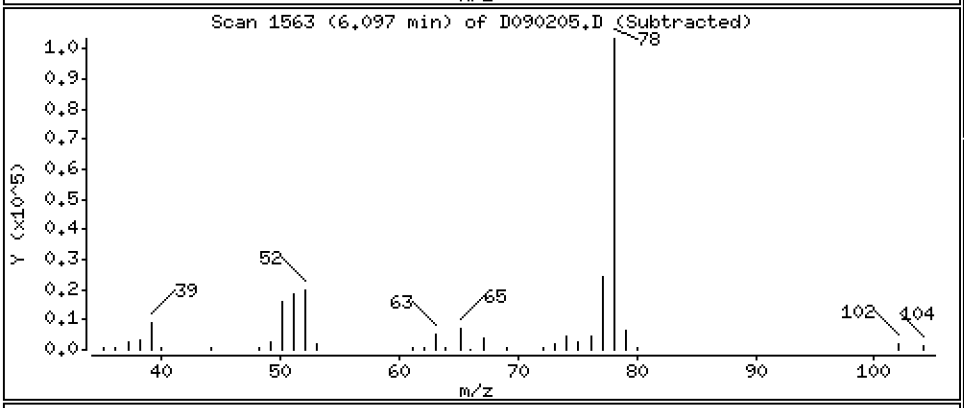
Purge Volume: 5.0 Operator: AP

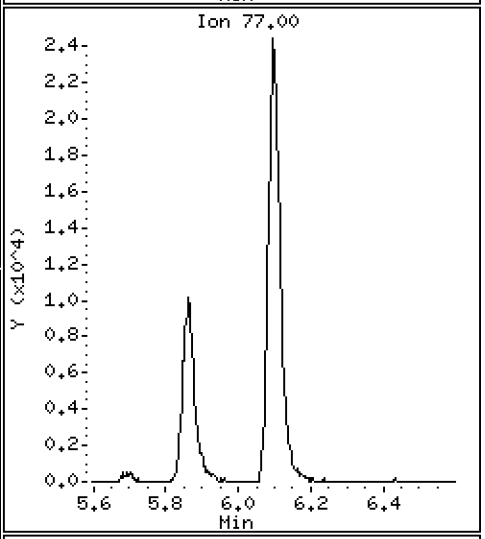
Column phase: DB624 Column diameter: 0.18

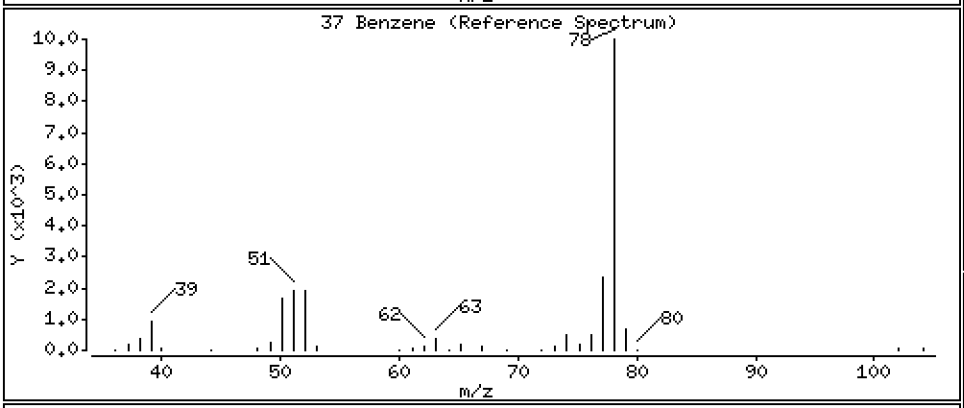
37 Benzene Concentration: 20.48 ug/l Review Code:

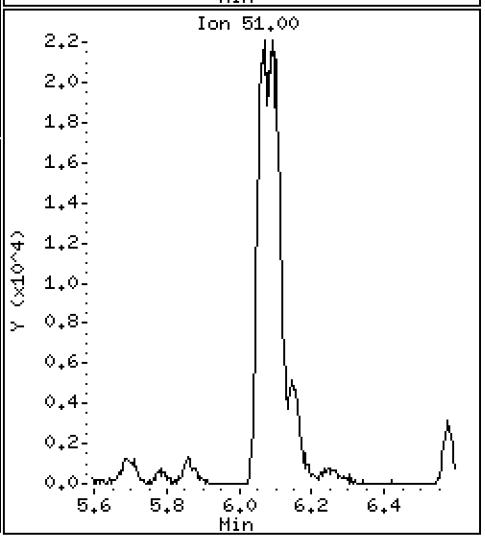


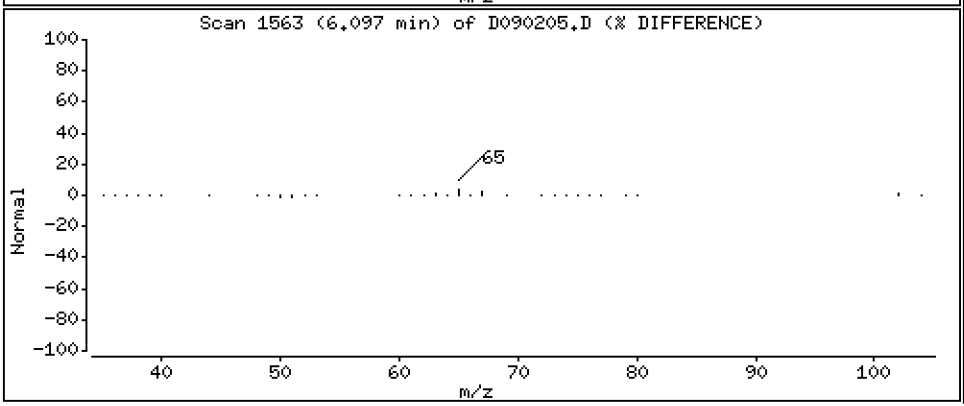












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 36

Date : 02-SEP-2018 15:04

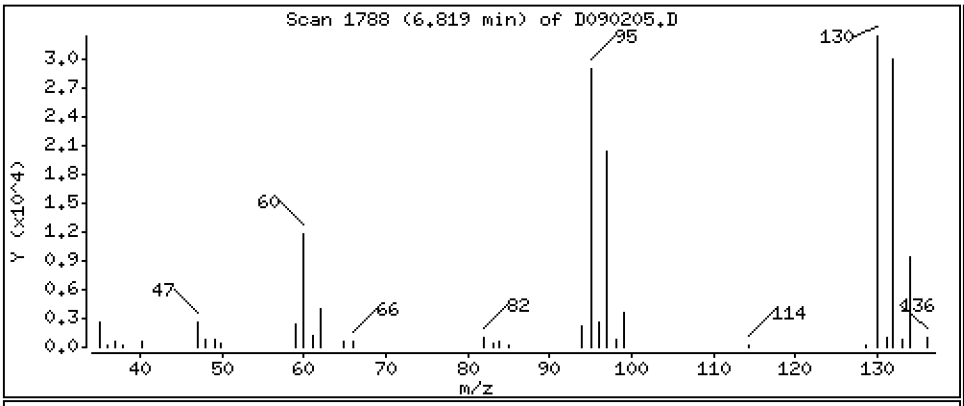
Client ID: VLCSW-180830 Instrument: VOA2.i

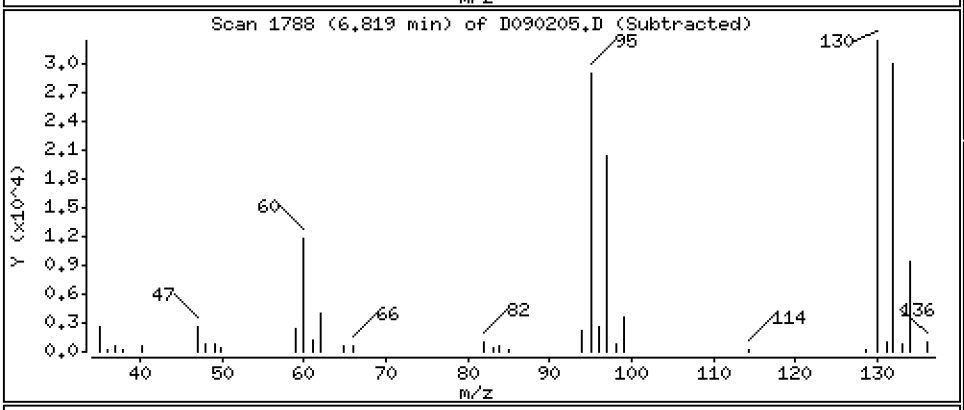
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

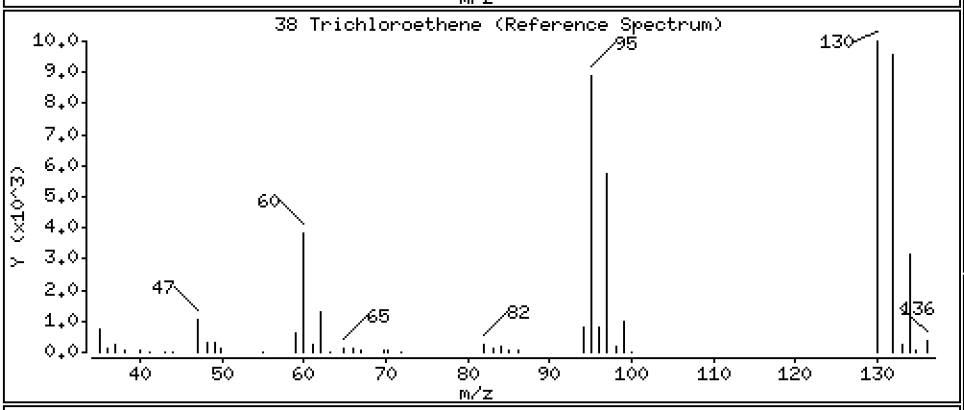
Purge Volume: 5.0 Operator: AP

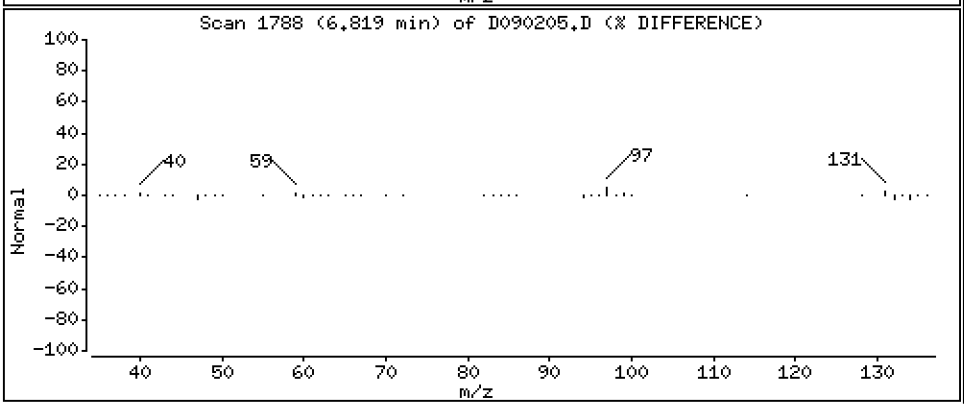
Column phase: DB624 Column diameter: 0.18

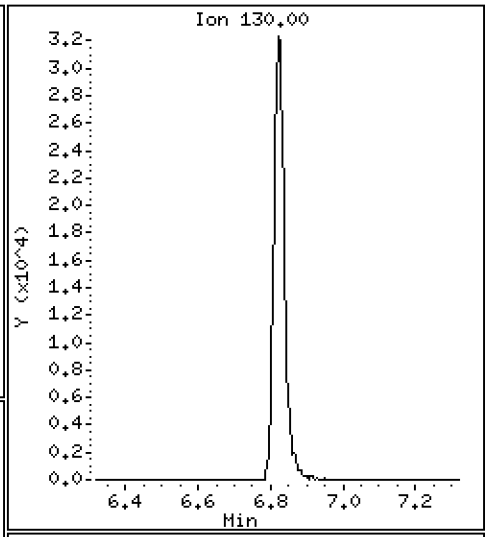
38 Trichloroethene Concentration: 21.18 ug/l Review Code:

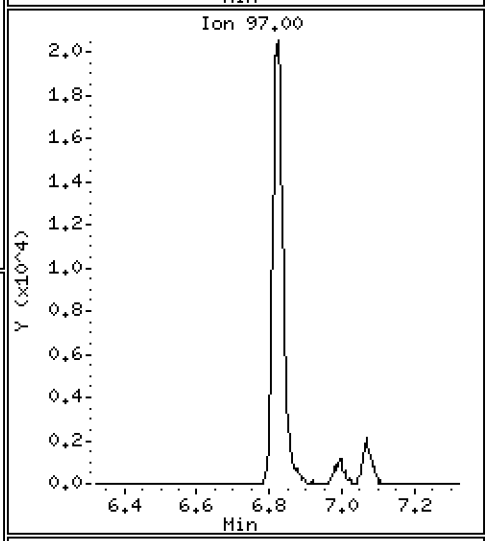


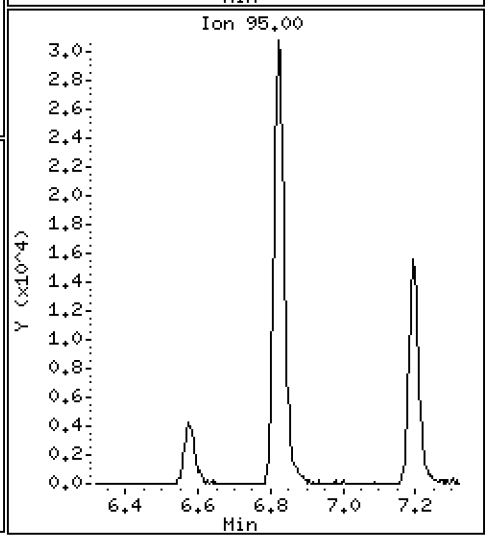












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Date : 02-SEP-2018 15:04

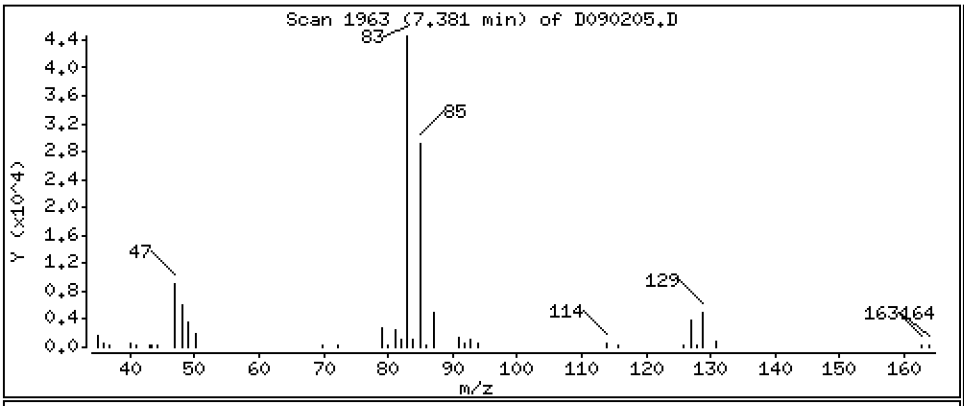
Client ID: VLCSW-180830 Instrument: VOA2.i

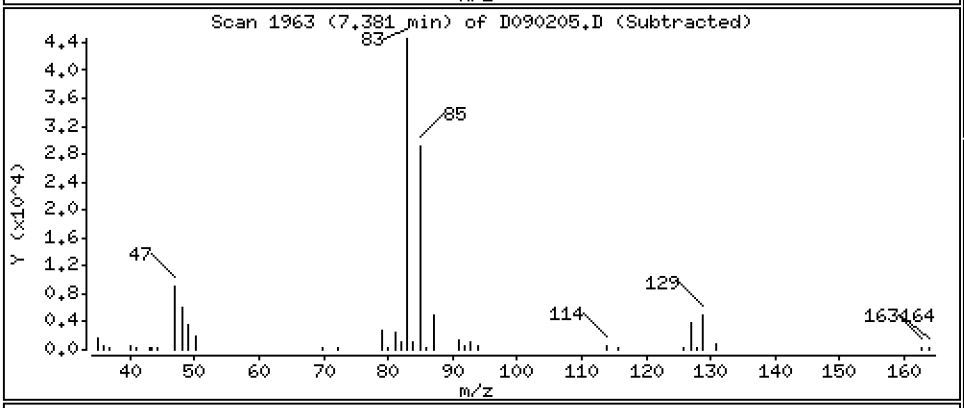
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

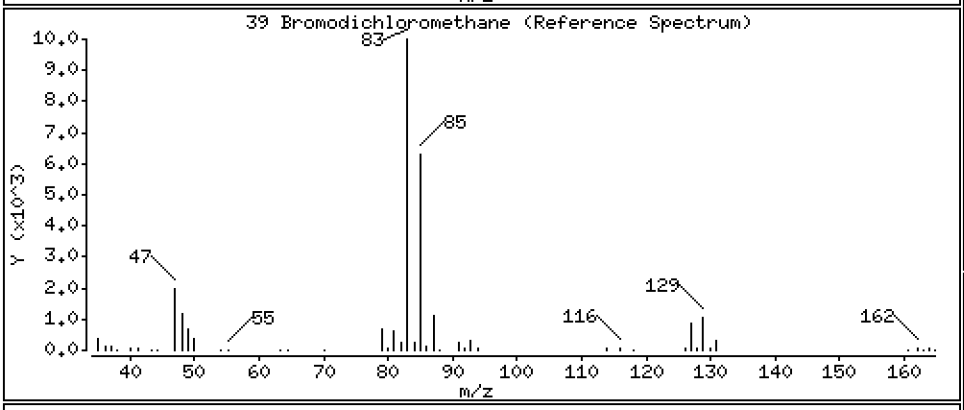
Purge Volume: 5.0 Operator: AP

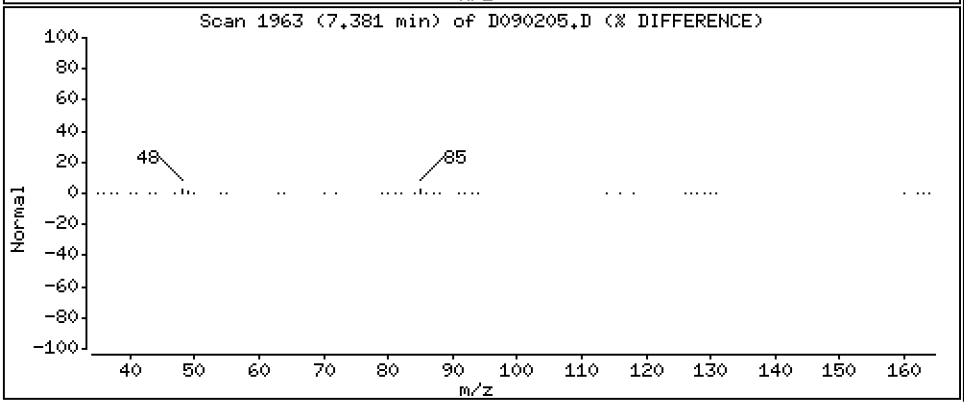
Column phase: DB624 Column diameter: 0.18

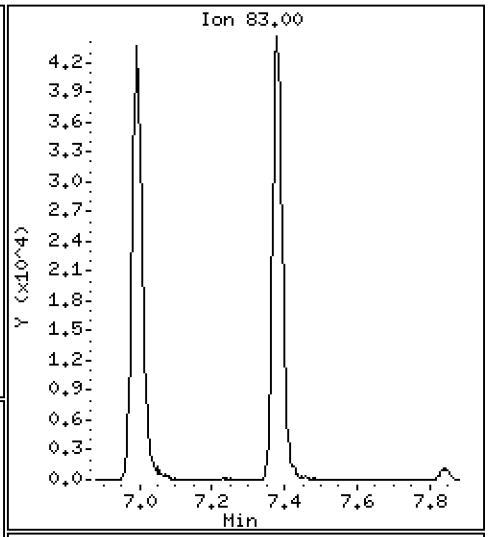
39 Bromodichloromethane Concentration: 21.44 ug/l Review Code:

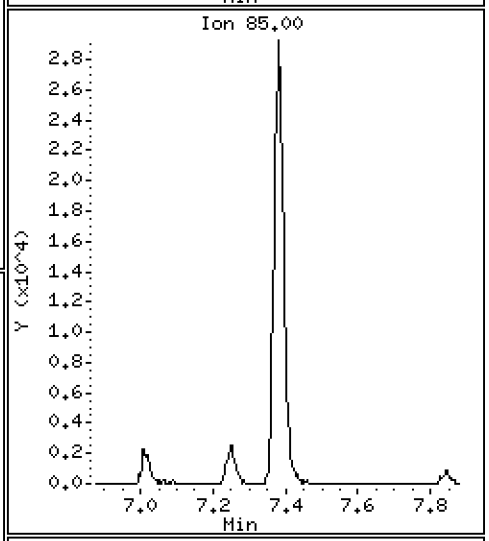


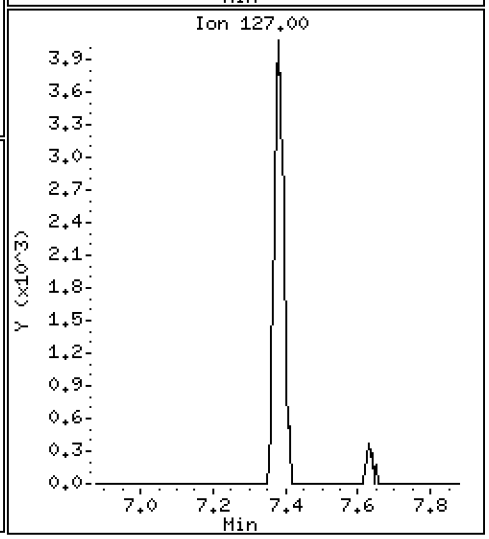












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 38

Date : 02-SEP-2018 15:04

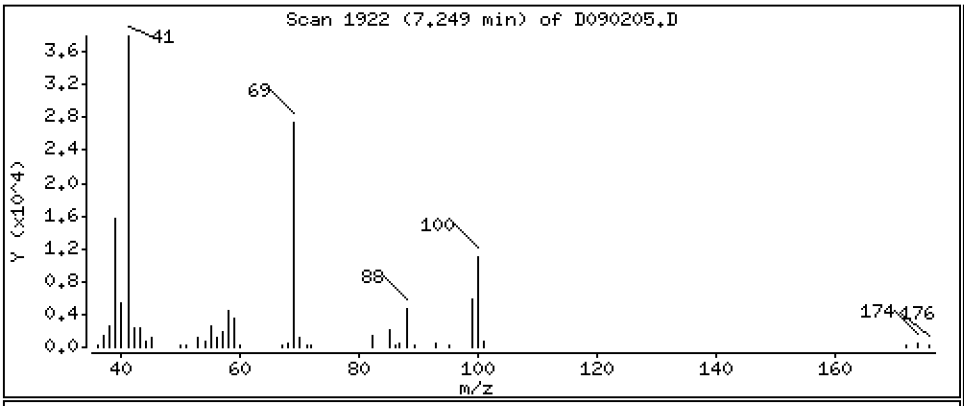
Client ID: VLCSW-180830 Instrument: VOA2.i

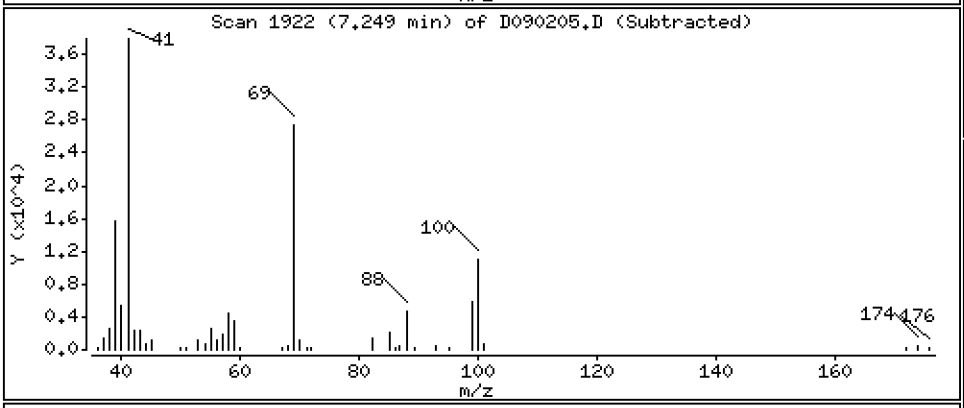
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

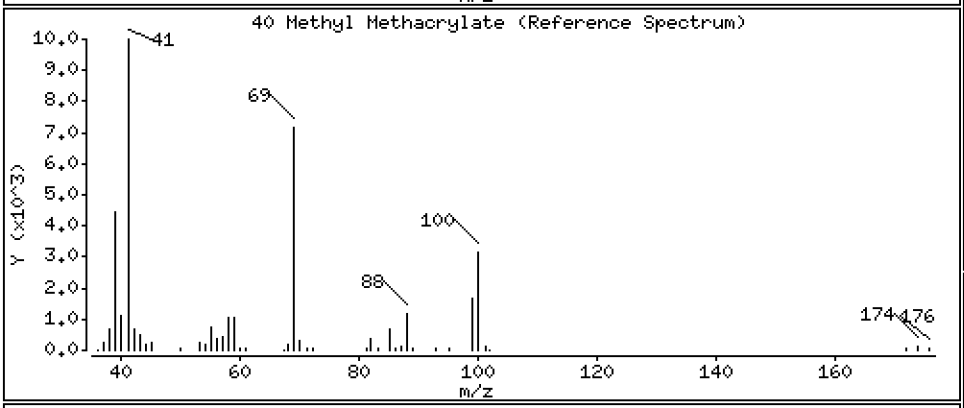
Purge Volume: 5.0 Operator: AP

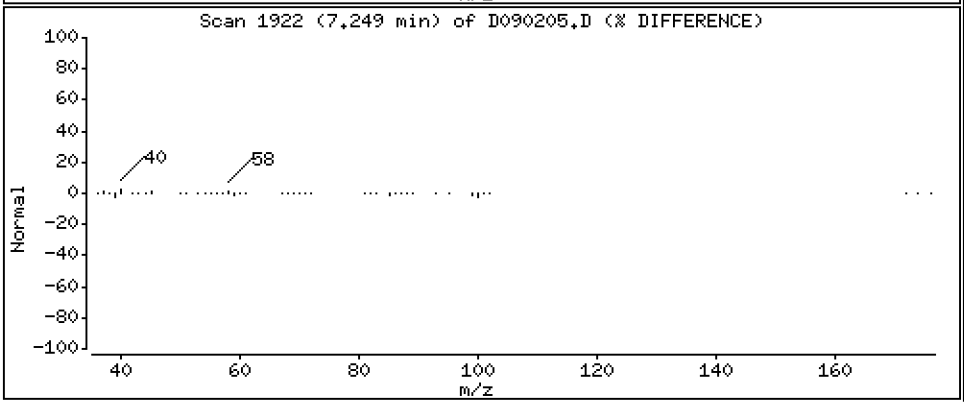
Column phase: DB624 Column diameter: 0.18

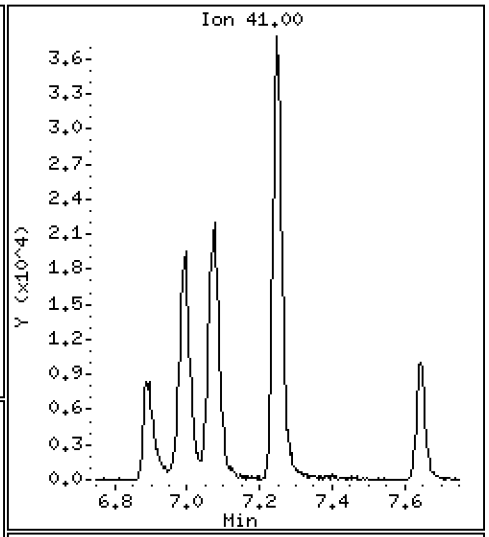
40 Methyl Methacrylate Concentration: 19.02 ug/l Review Code:

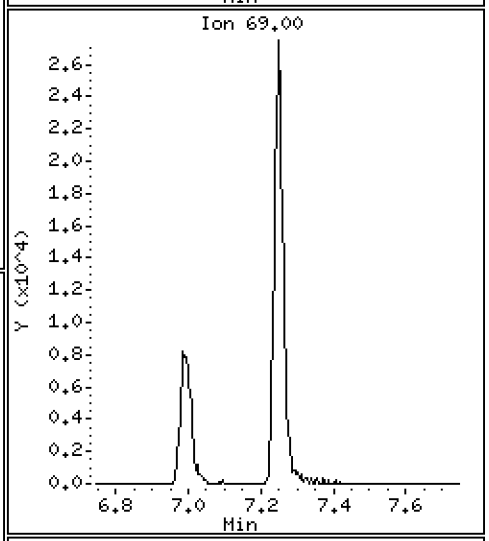


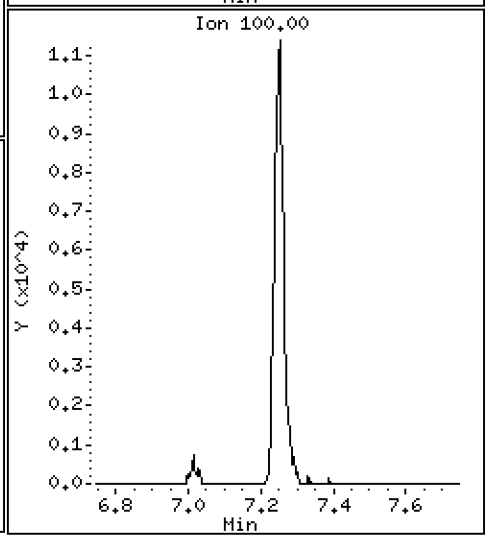












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Date : 02-SEP-2018 15:04

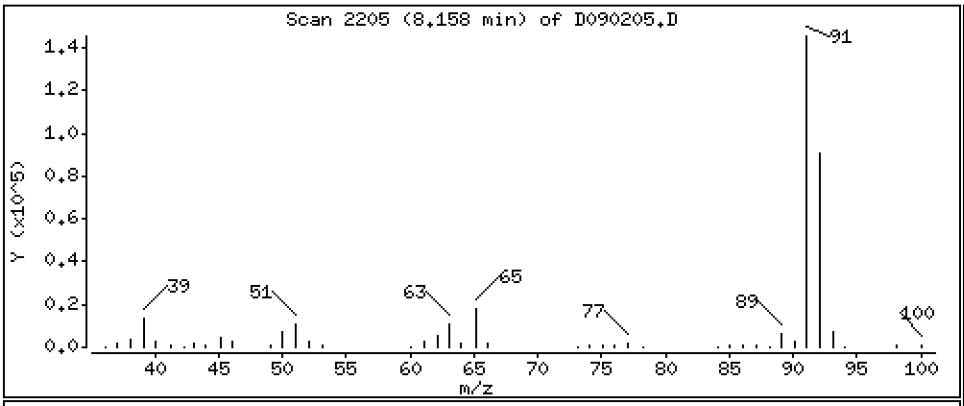
Client ID: VLCSW-180830 Instrument: VOA2.i

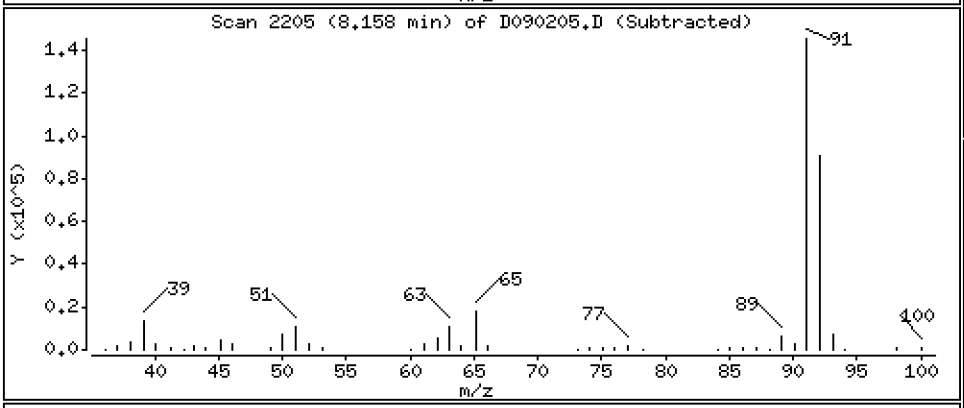
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

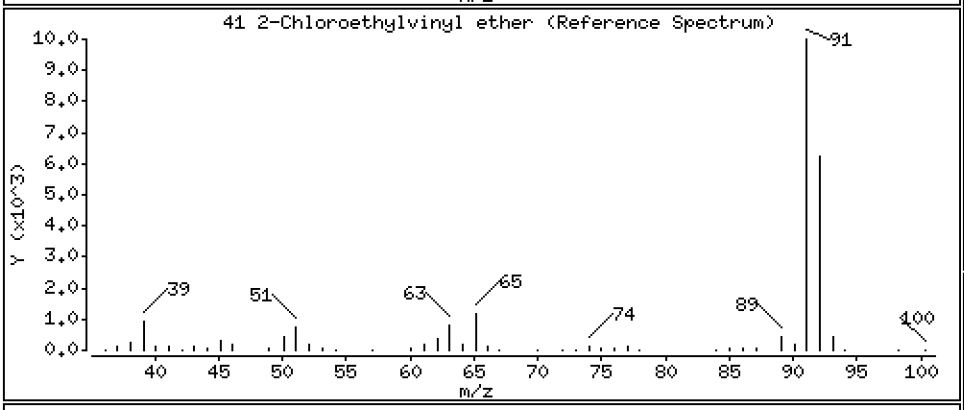
Purge Volume: 5.0 Operator: AP

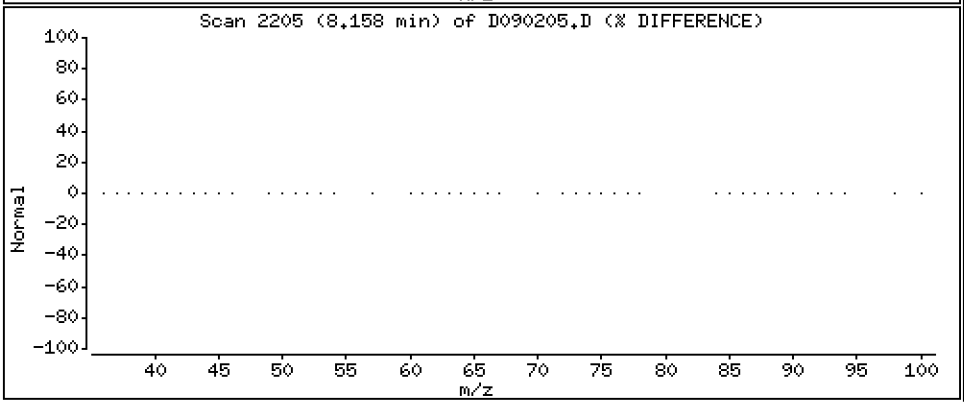
Column phase: DB624 Column diameter: 0.18

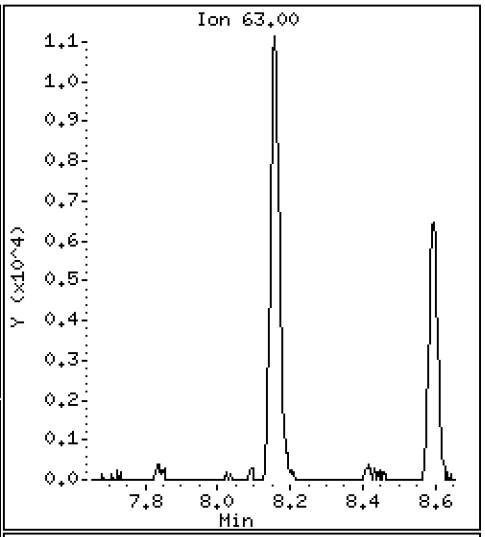
41 2-Chloroethylvinyl ether Concentration: 39.79 ug/l Review Code:

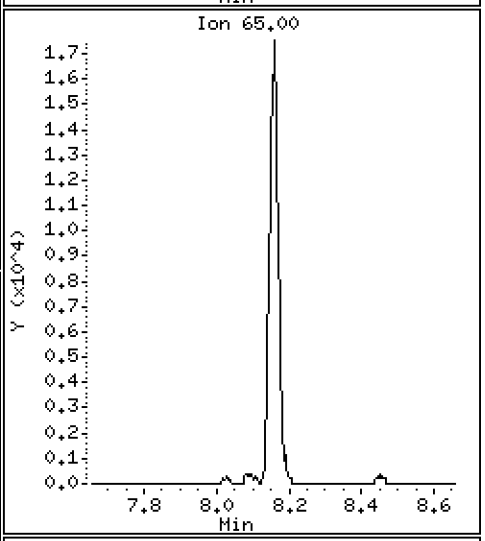


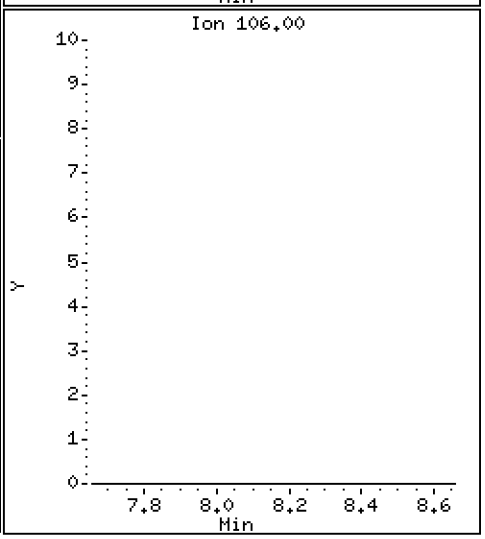












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Date : 02-SEP-2018 15:04

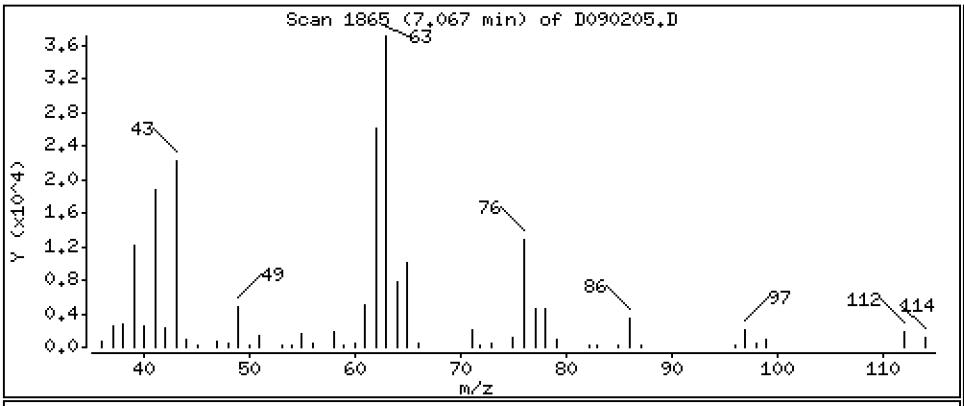
Client ID: VLCSW-180830 Instrument: VOA2.i

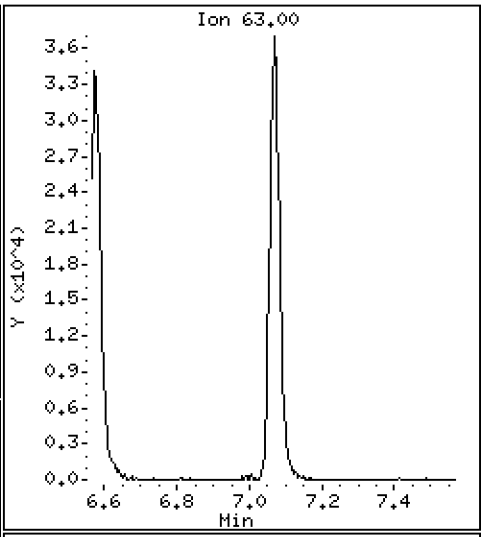
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

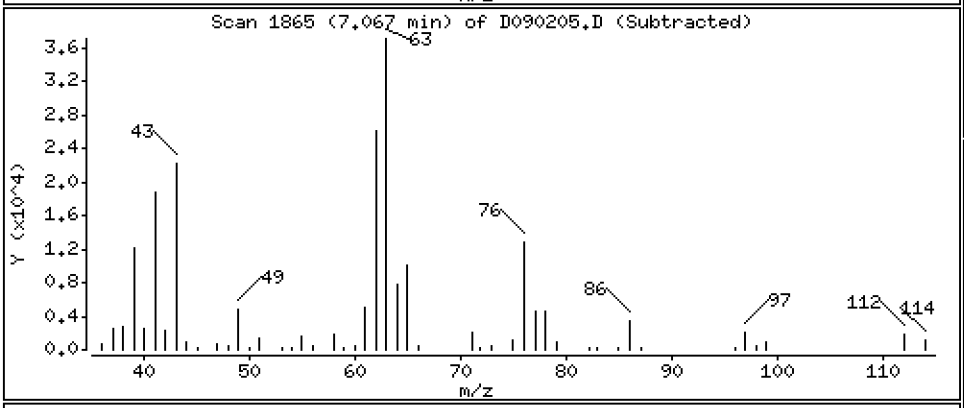
Purge Volume: 5.0 Operator: AP

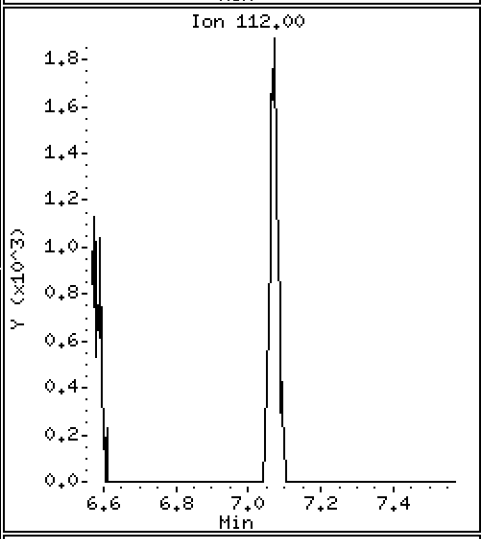
Column phase: DB624 Column diameter: 0.18

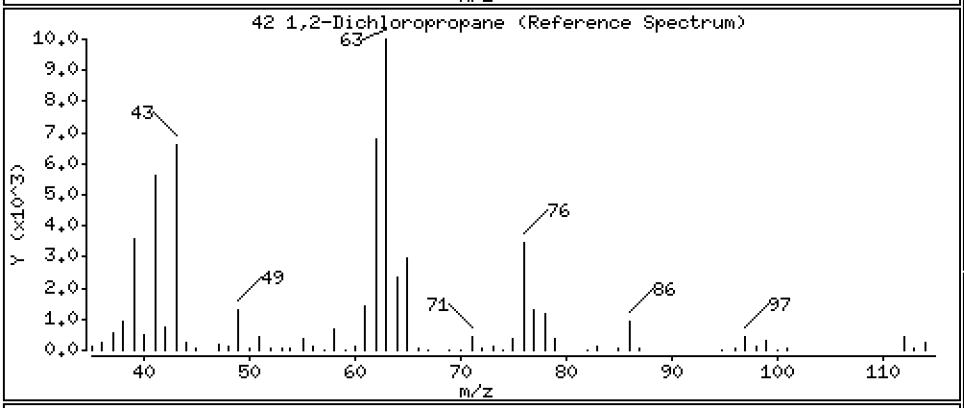
42 1,2-Dichloropropane Concentration: 21.04 ug/l Review Code:

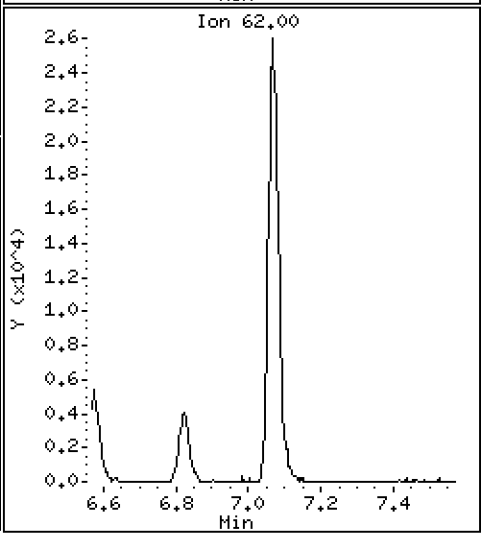


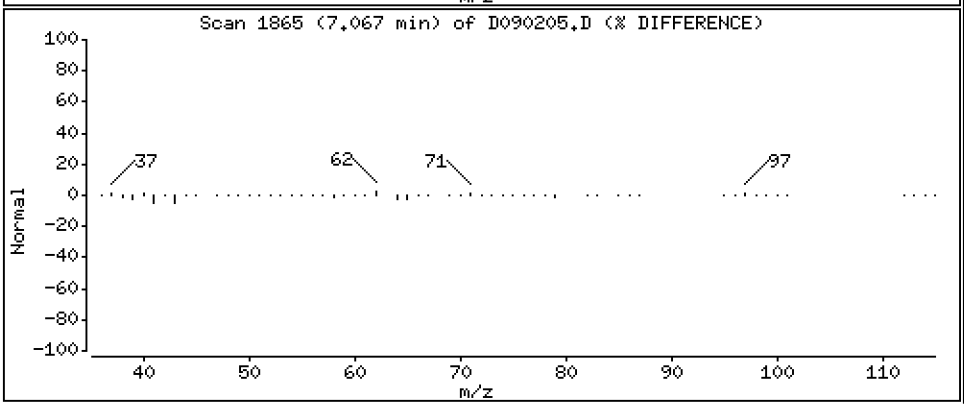












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 41

Date : 02-SEP-2018 15:04

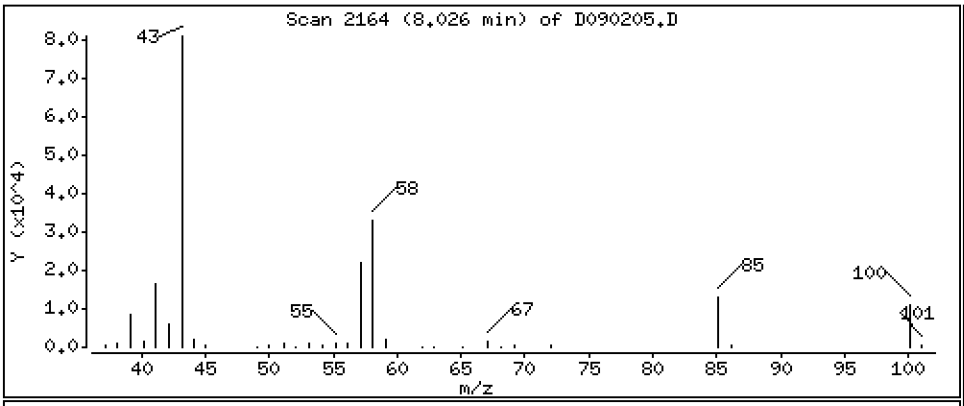
Client ID: VLCSW-180830 Instrument: VOA2.i

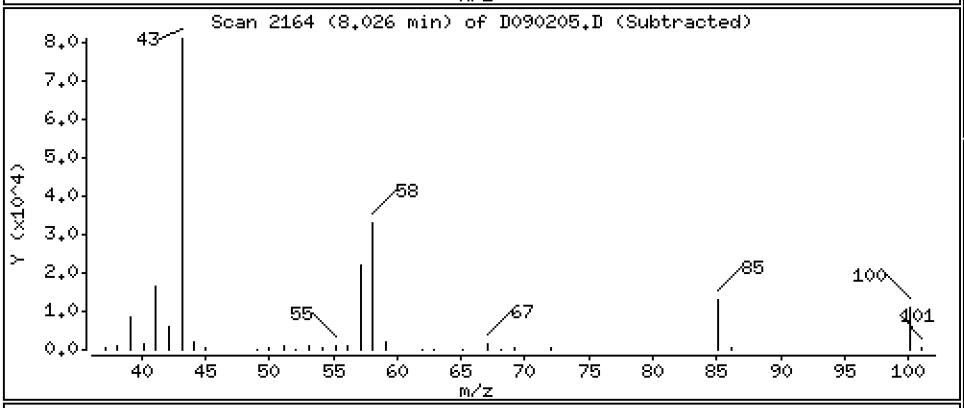
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

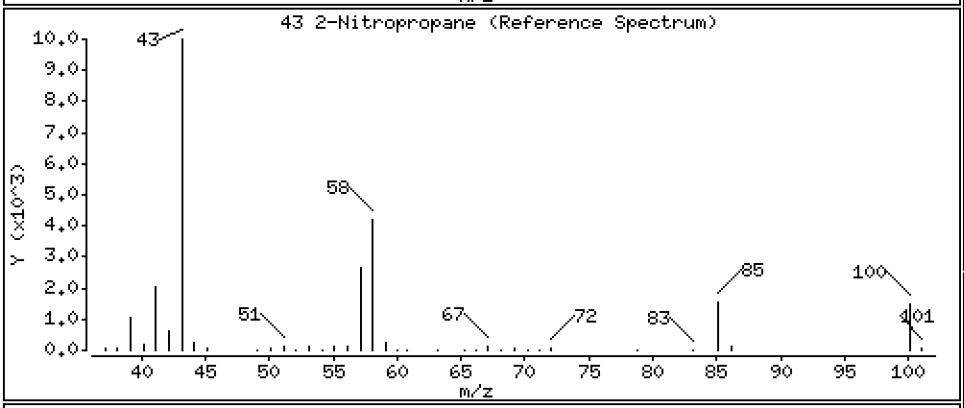
Purge Volume: 5.0 Operator: AP

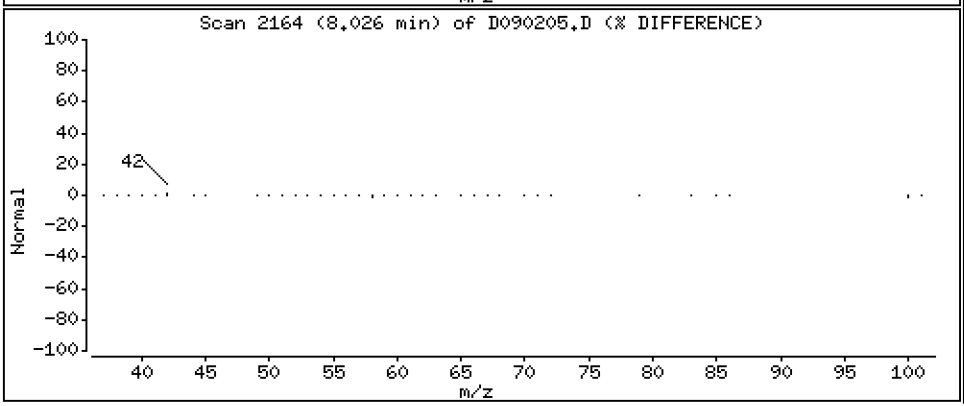
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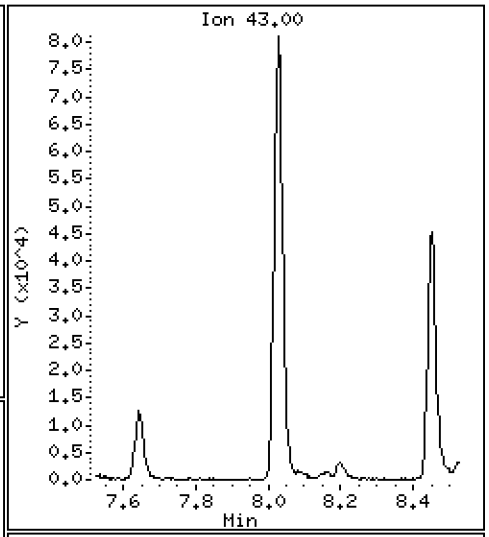
43 2-Nitropropane Concentration: 18.46 ug/l Review Code:

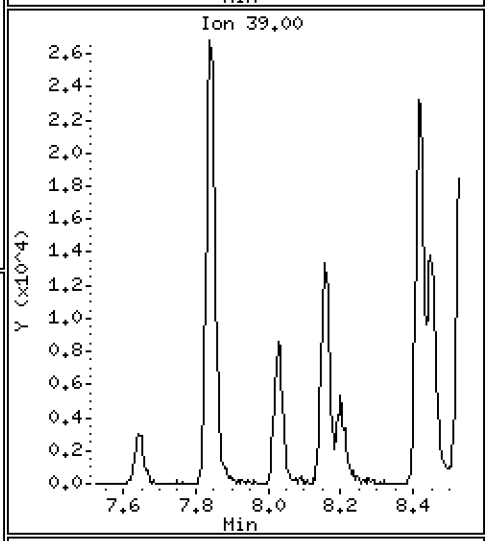


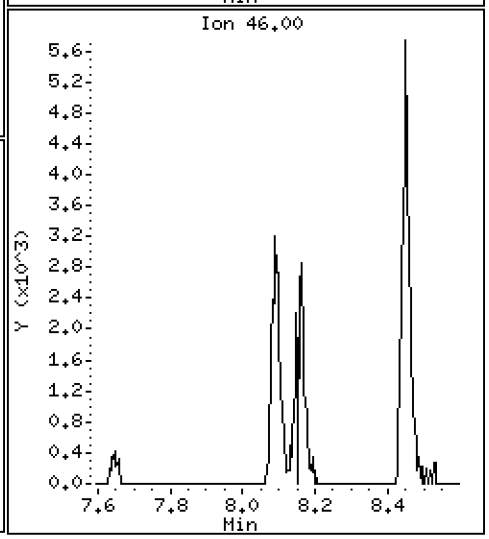












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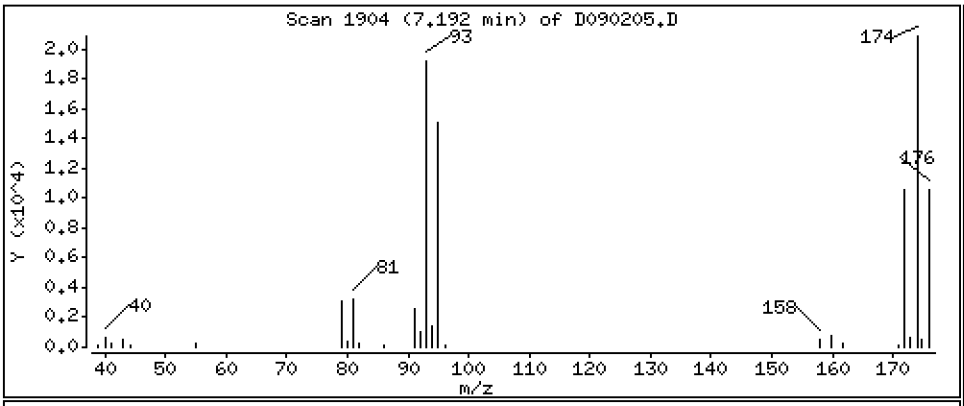
Client ID: VLCSW-180830 Instrument: VOA2.i

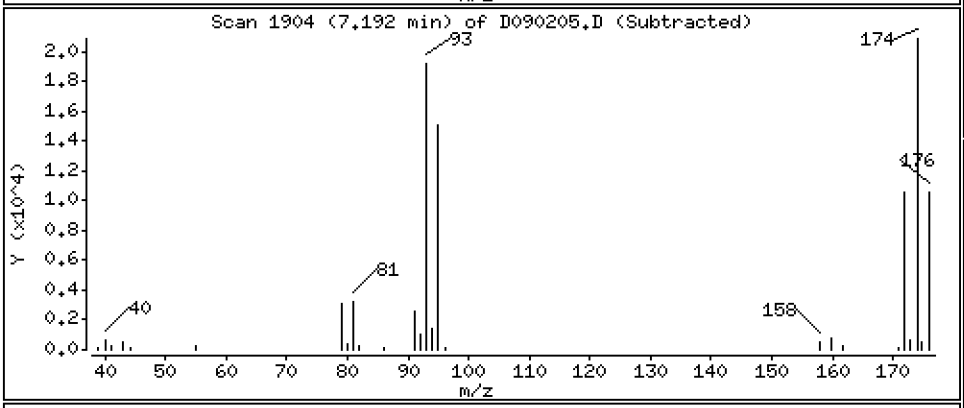
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

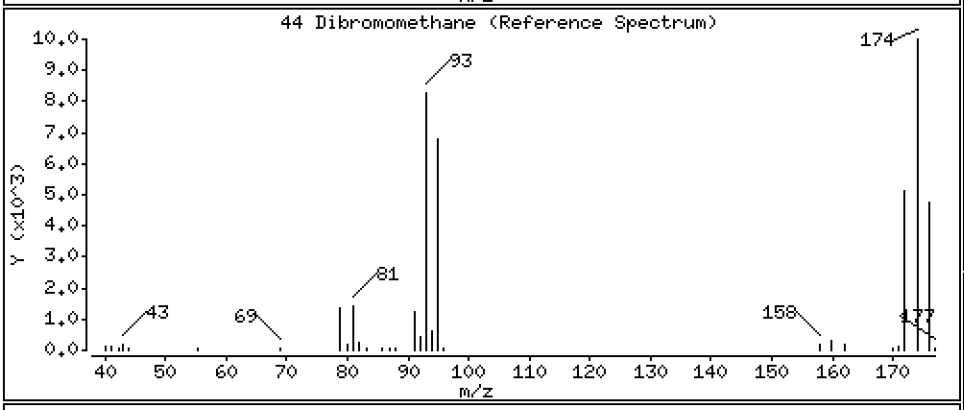
Purge Volume: 5.0 Operator: AP

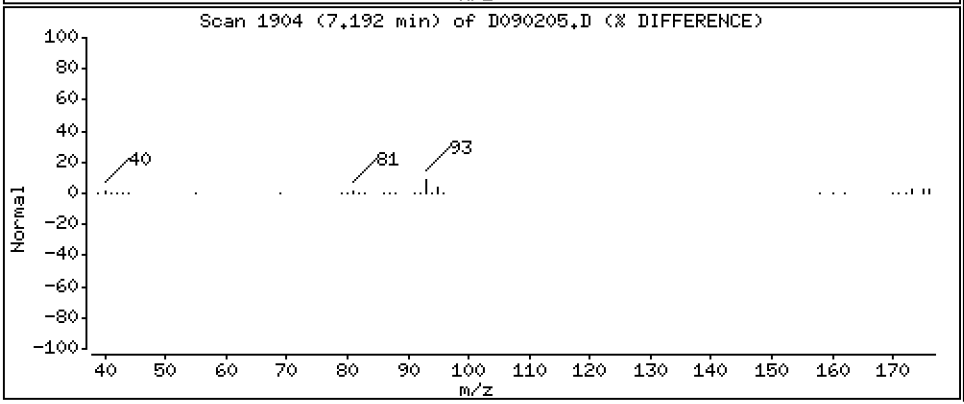
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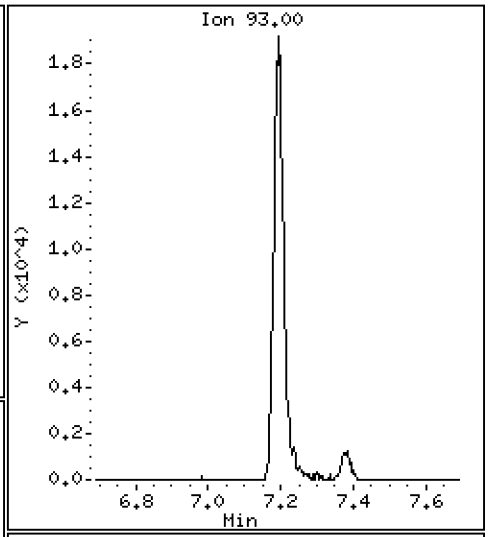
44 Dibromomethane Concentration: 21.54 ug/l Review Code:

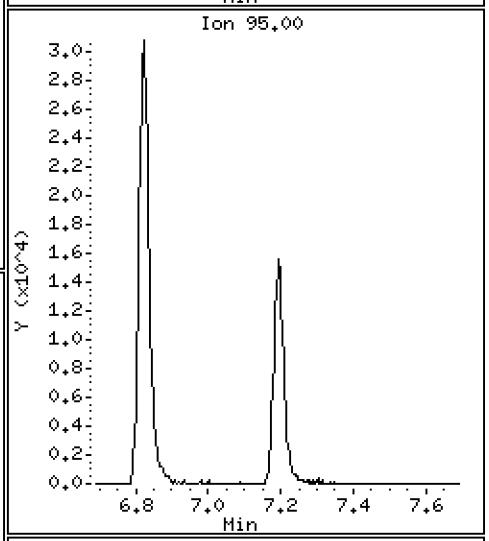


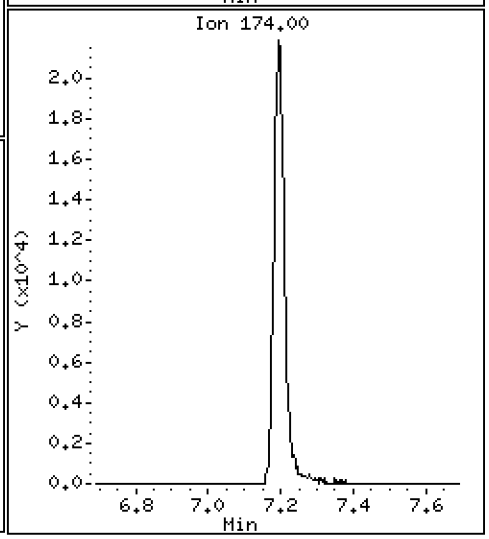












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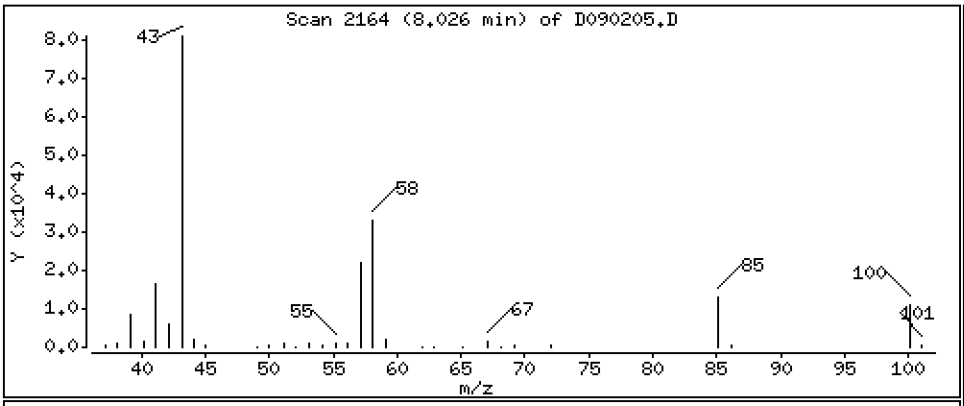
Client ID: VLCSW-180830 Instrument: VOA2.i

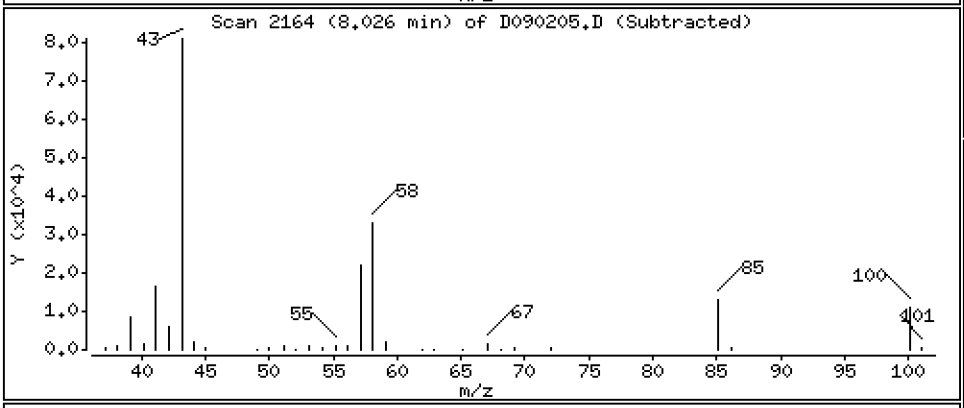
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

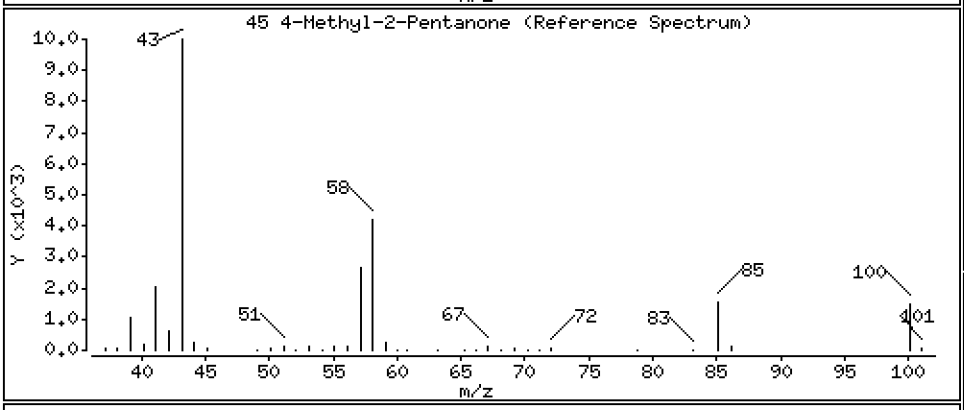
Purge Volume: 5.0 Operator: AP

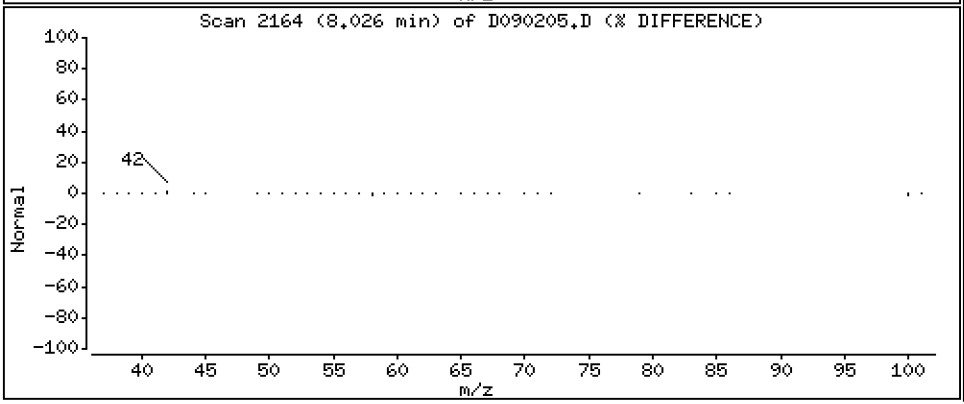
Column phase: DB624 Column diameter: 0.18

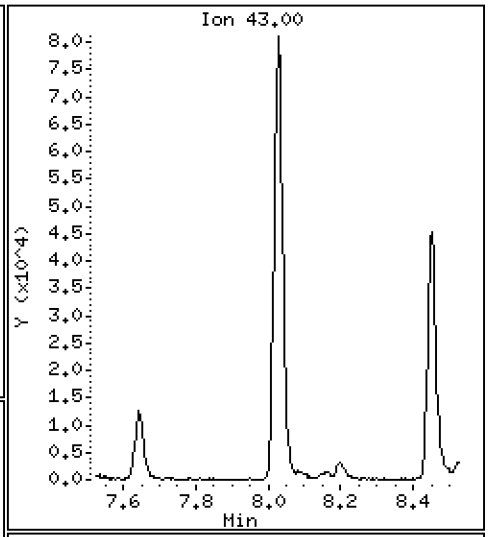
45 4-Methyl-2-Pentanone Concentration: 37.94 ug/l Review Code:

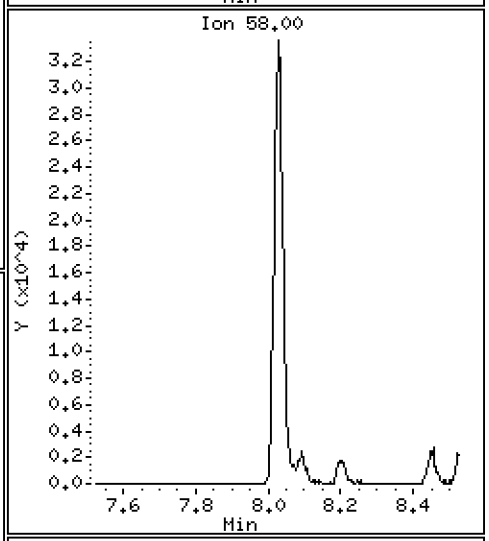


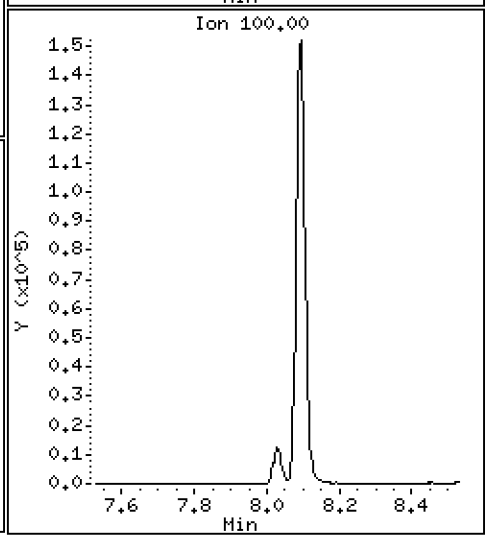












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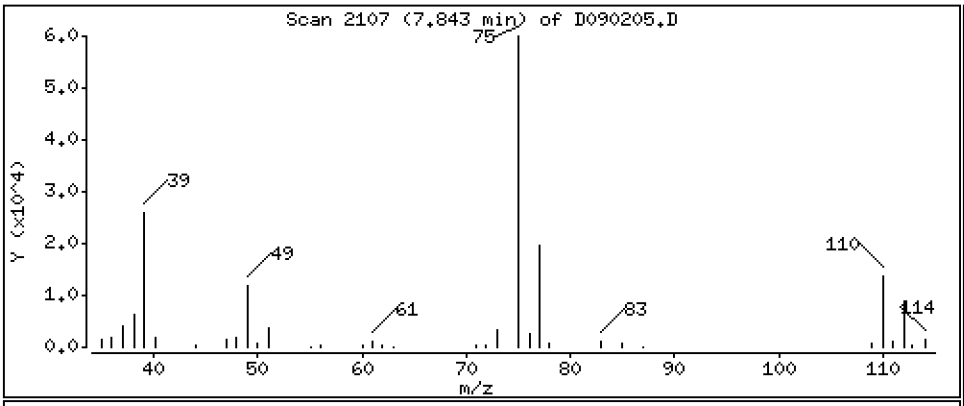
Client ID: VLCSW-180830 Instrument: VOA2.i

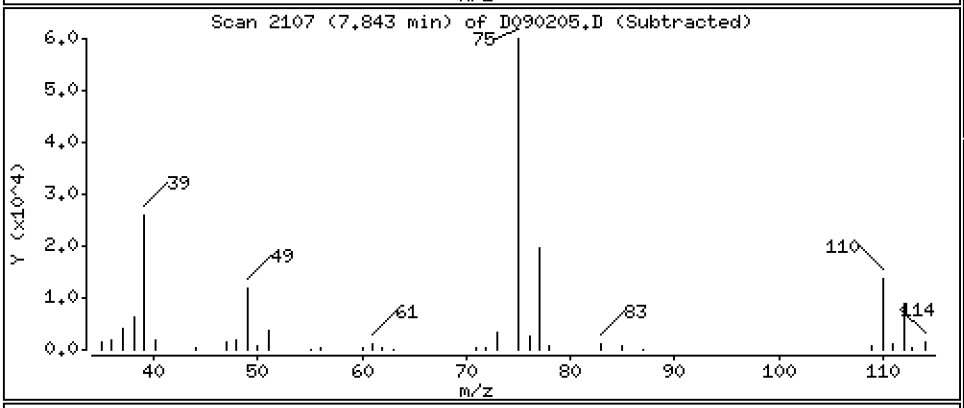
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

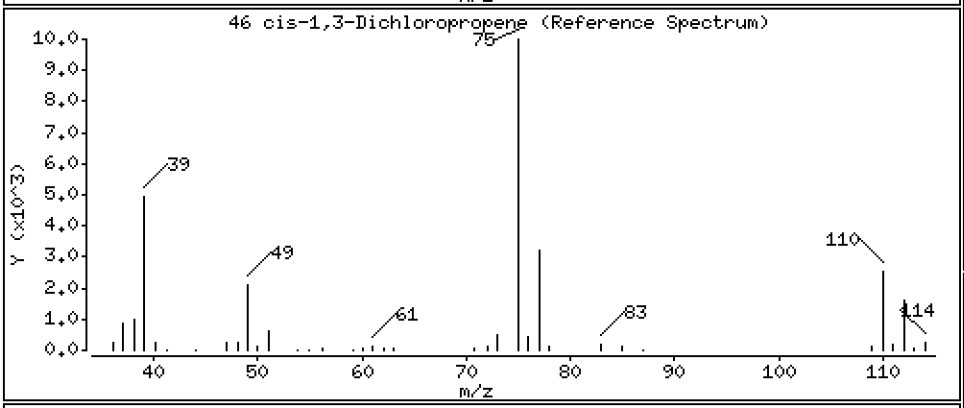
Purge Volume: 5.0 Operator: AP

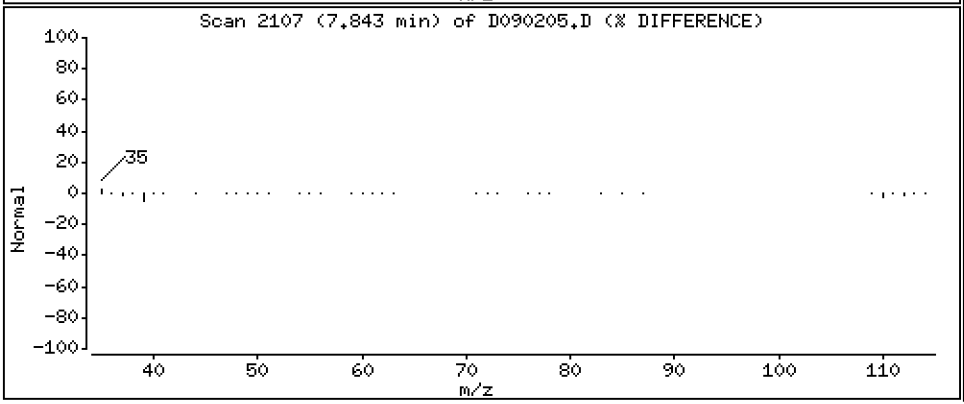
Column phase: DB624 Column diameter: 0.18

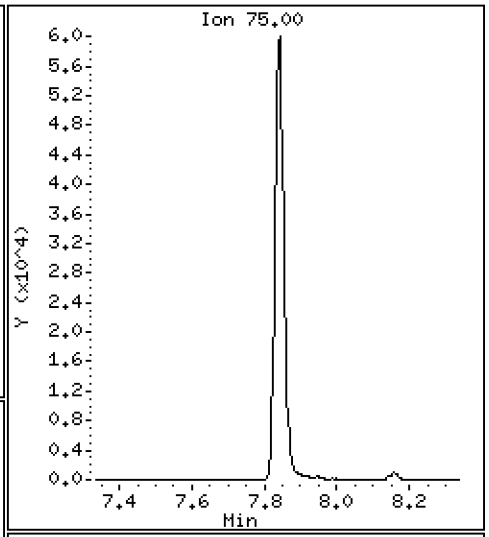
46 cis-1,3-Dichloropropene Concentration: 22.84 ug/l Review Code:

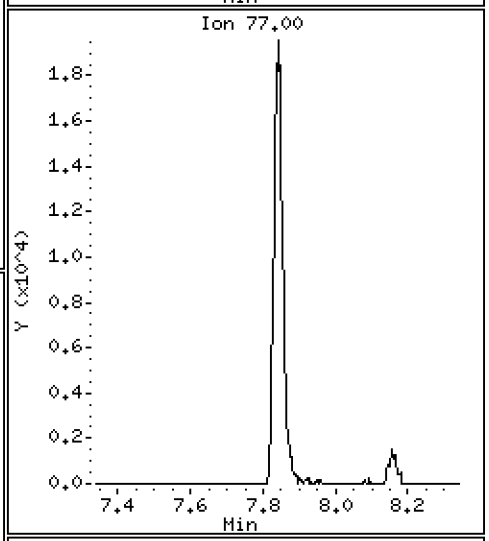


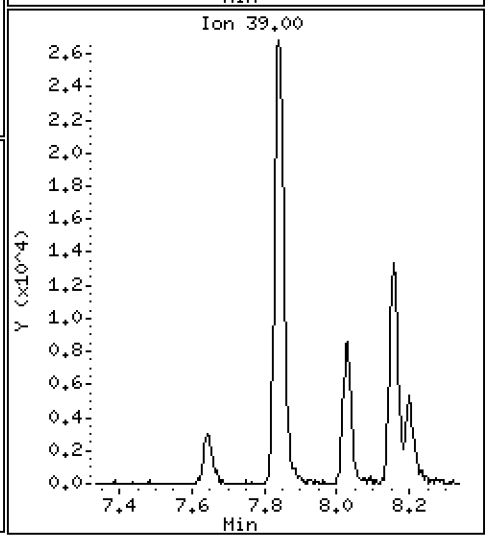












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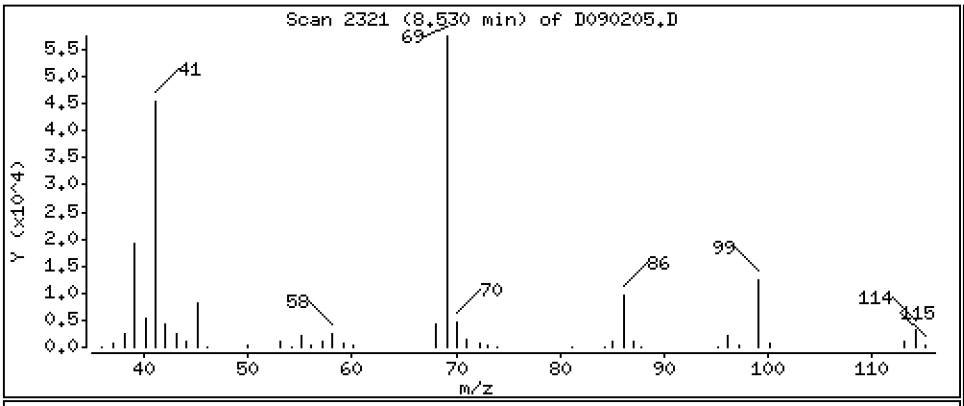
Client ID: VLCSW-180830 Instrument: VOA2.i

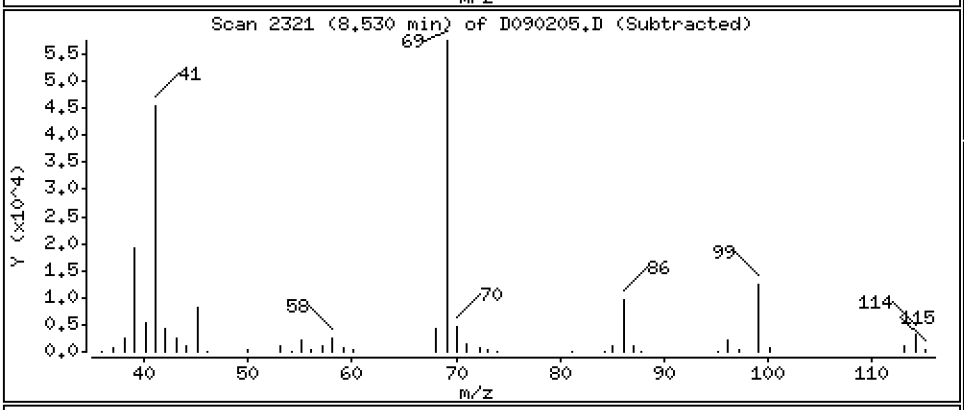
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

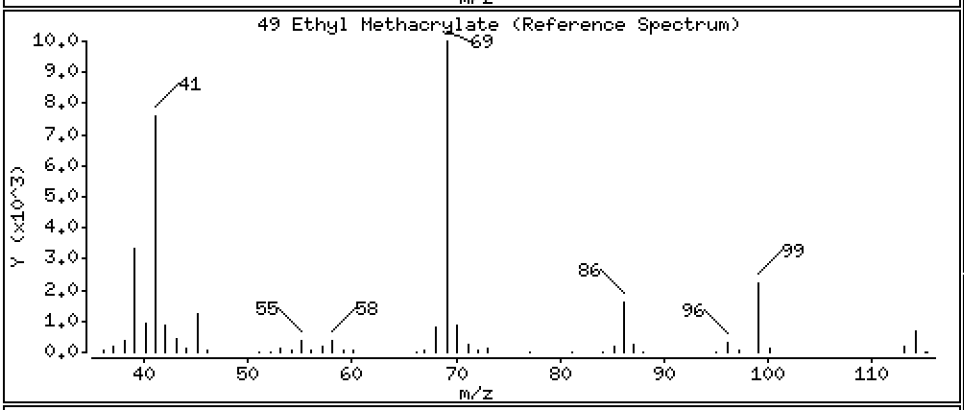
Purge Volume: 5.0 Operator: AP

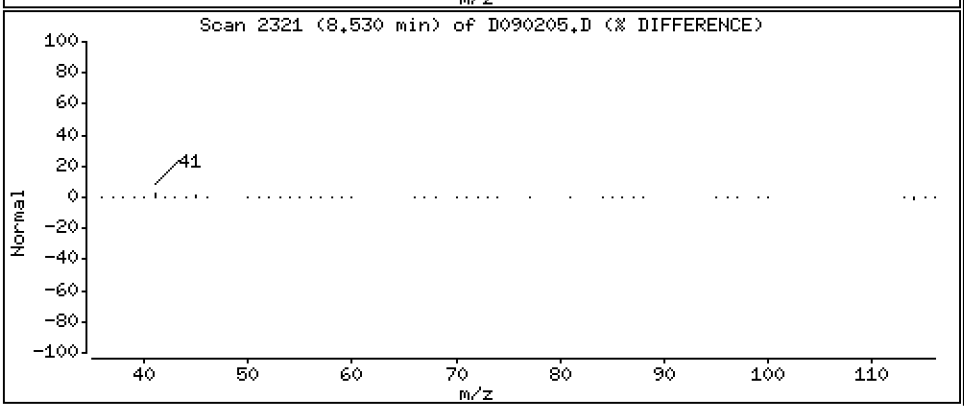
Column phase: DB624 Column diameter: 0.18

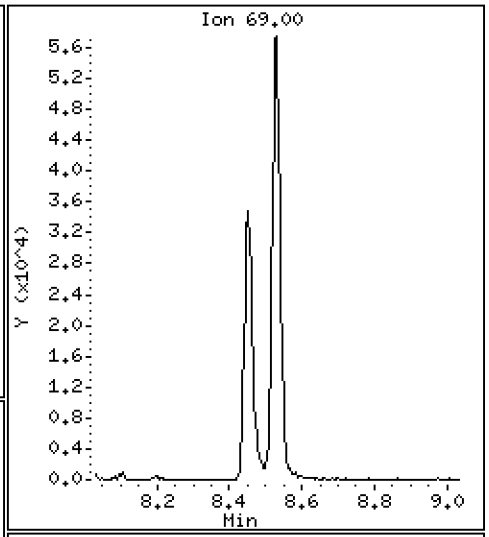
49 Ethyl Methacrylate Concentration: 20.87 ug/l Review Code:

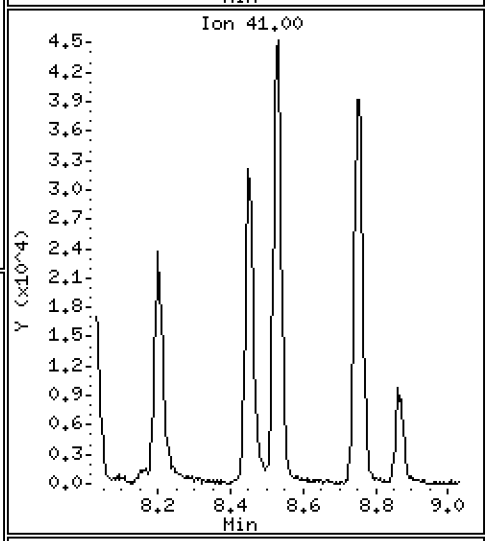


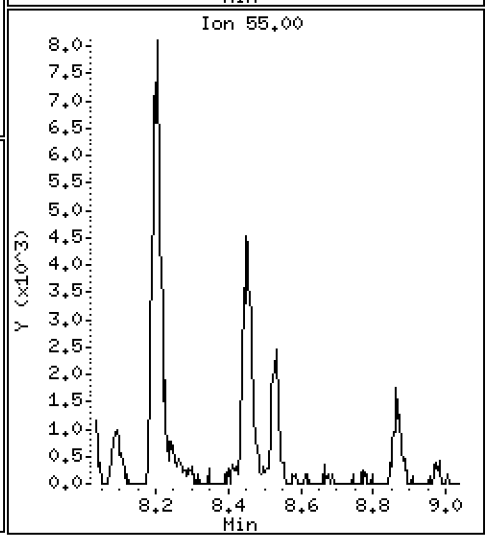












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Date : 02-SEP-2018 15:04

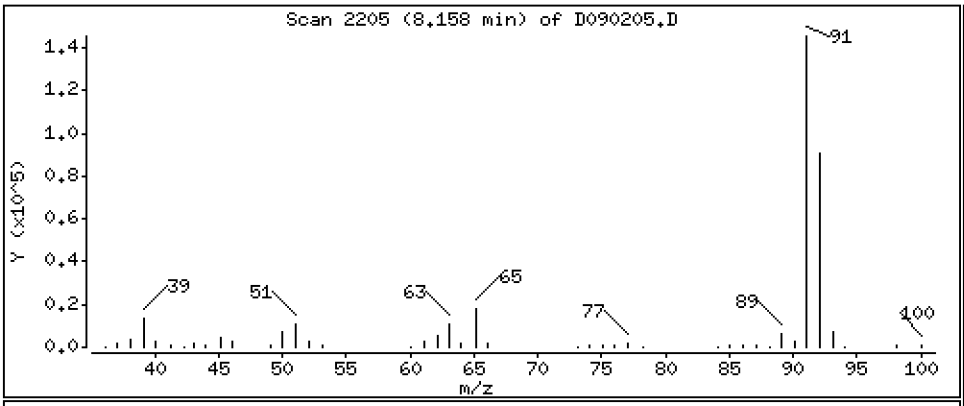
Client ID: VLCSW-180830 Instrument: VOA2.i

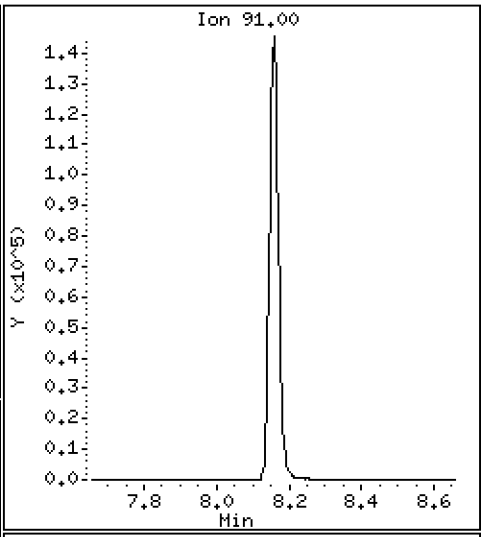
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

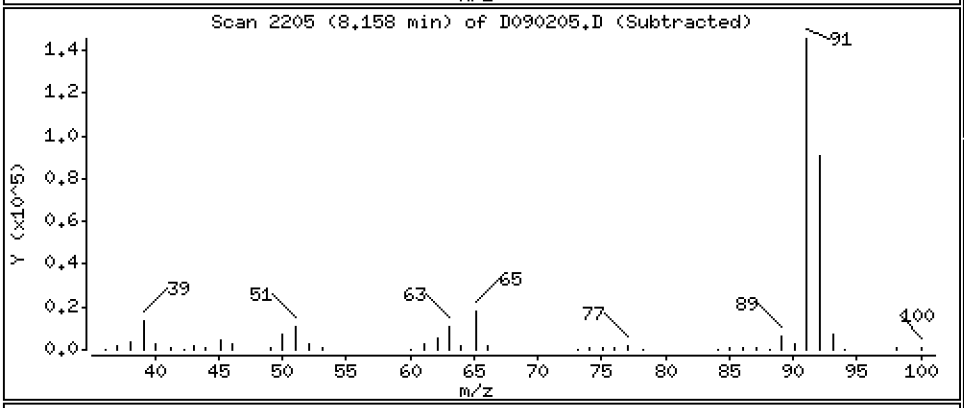
Purge Volume: 5.0 Operator: AP

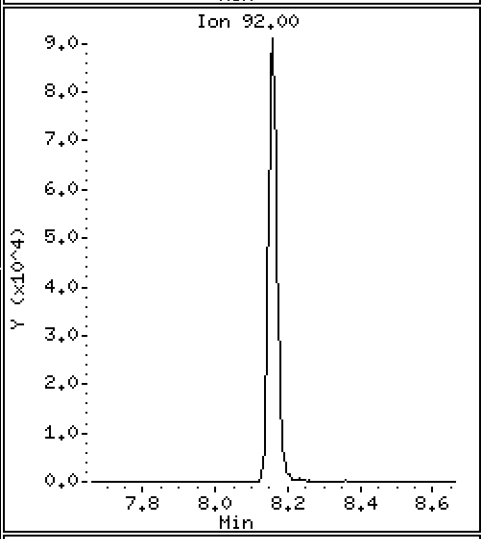
Column phase: DB624 Column diameter: 0.18

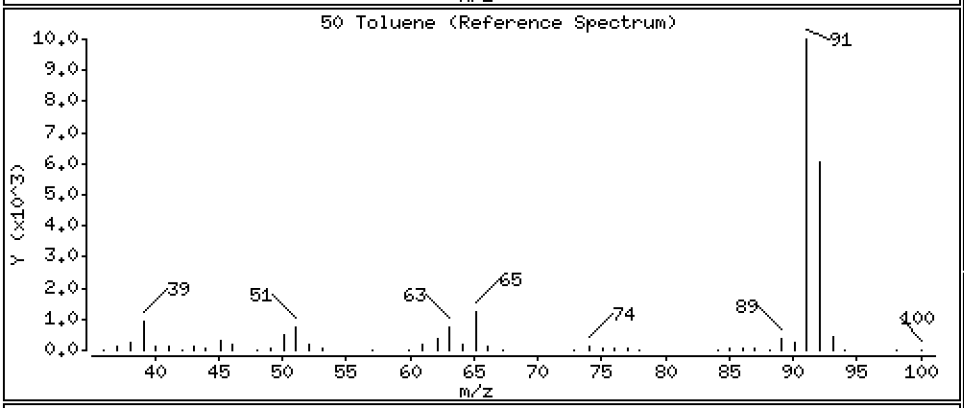
50 Toluene Concentration: 19.98 ug/l Review Code:

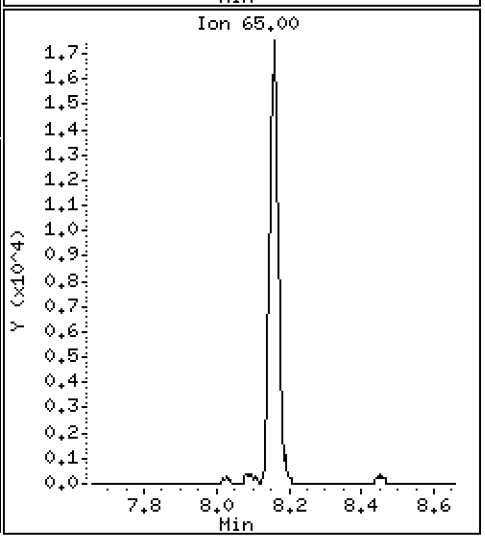


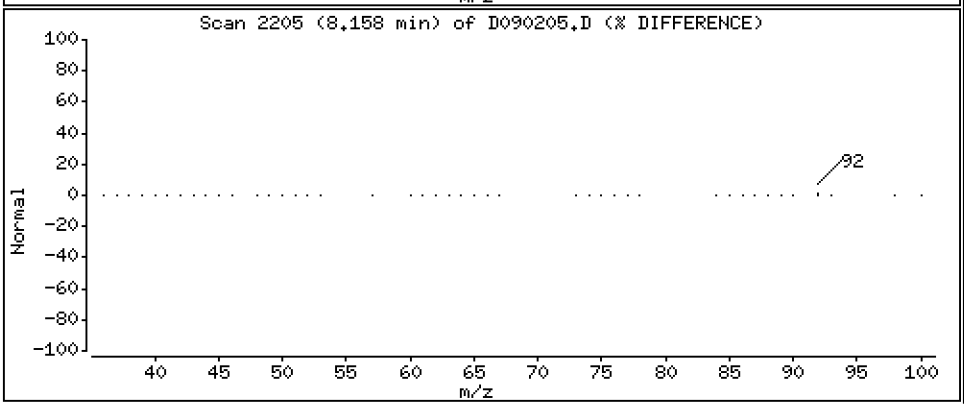












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Date : 02-SEP-2018 15:04

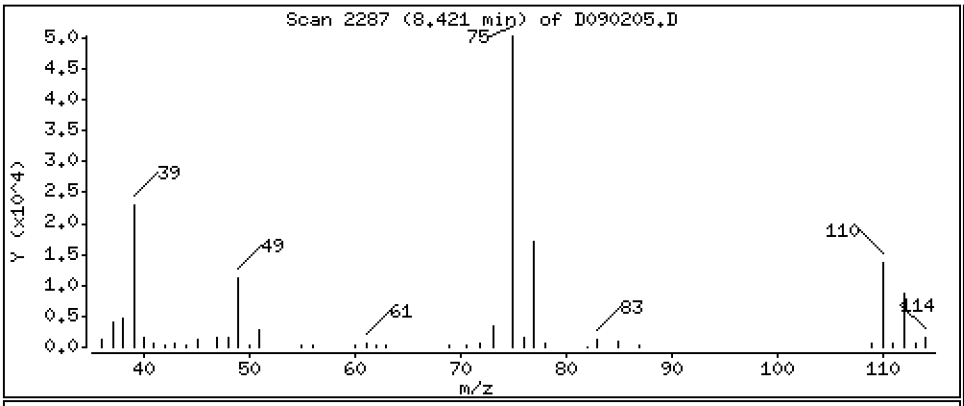
Client ID: VLCSW-180830 Instrument: VOA2.i

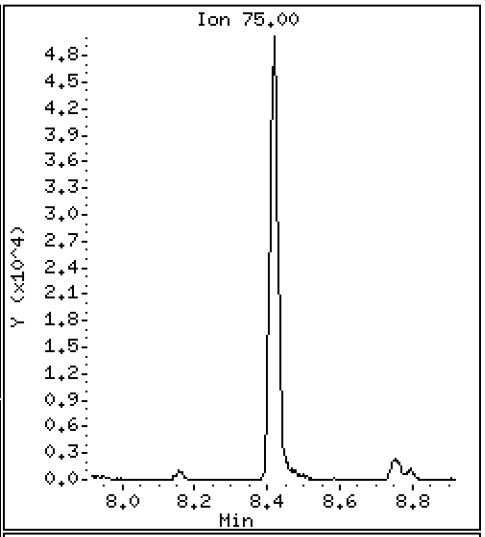
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

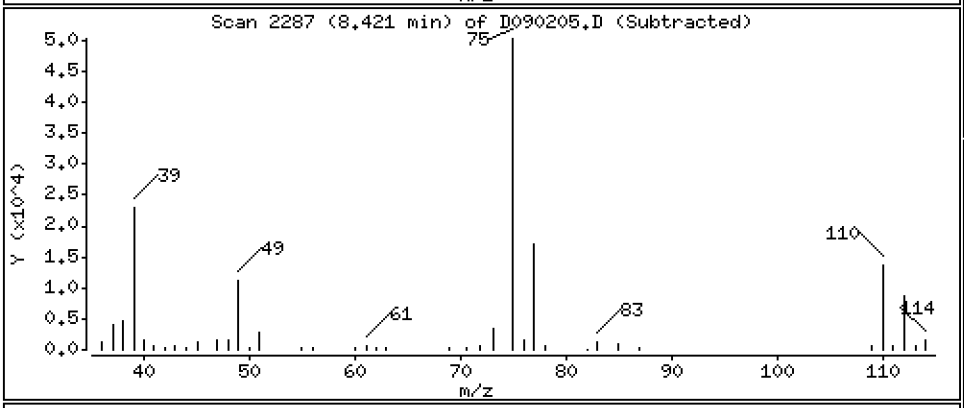
Purge Volume: 5.0 Operator: AP

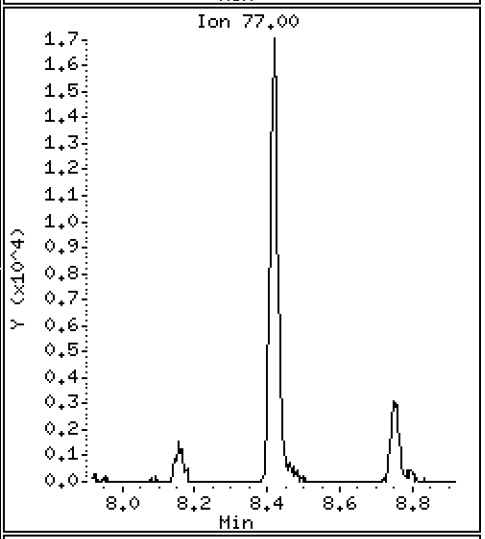
Column phase: DB624 Column diameter: 0.18

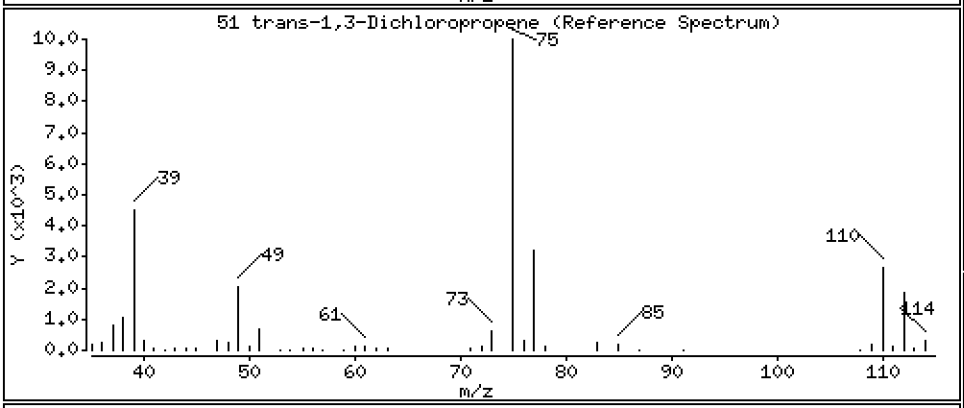
51 trans-1,3-Dichloropropene Concentration: 23.46 ug/l Review Code:

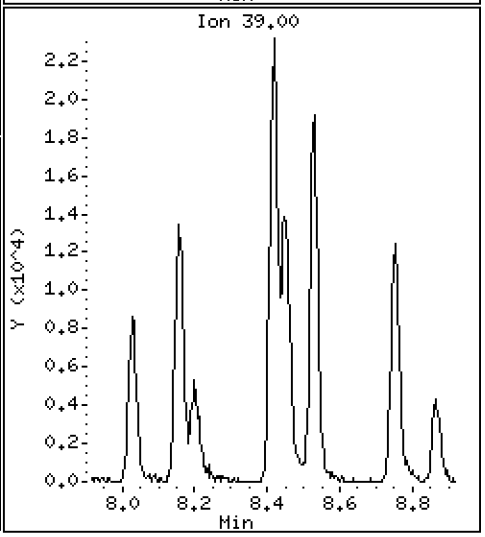


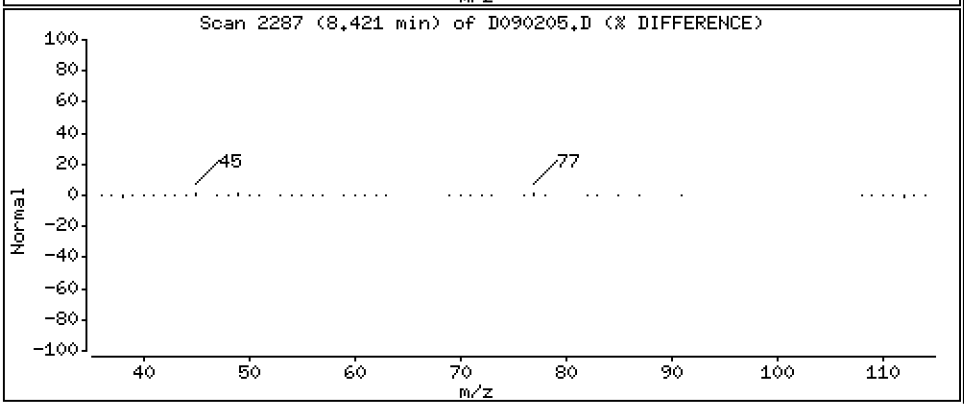












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Date : 02-SEP-2018 15:04

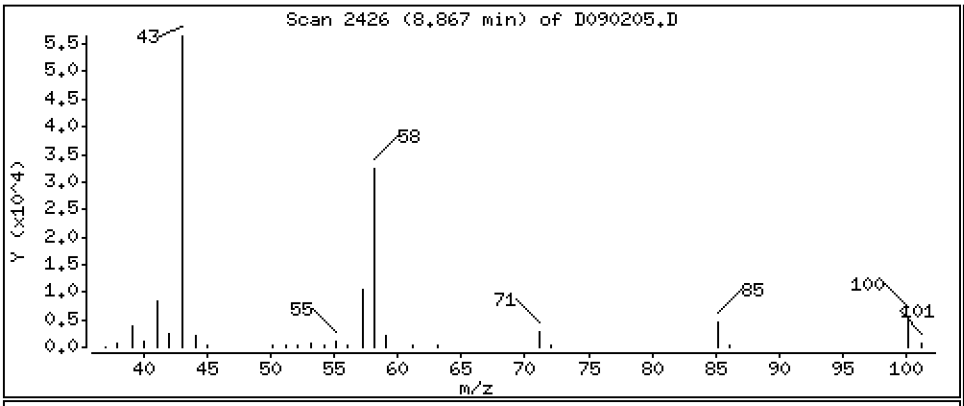
Client ID: VLCSW-180830 Instrument: VOA2.i

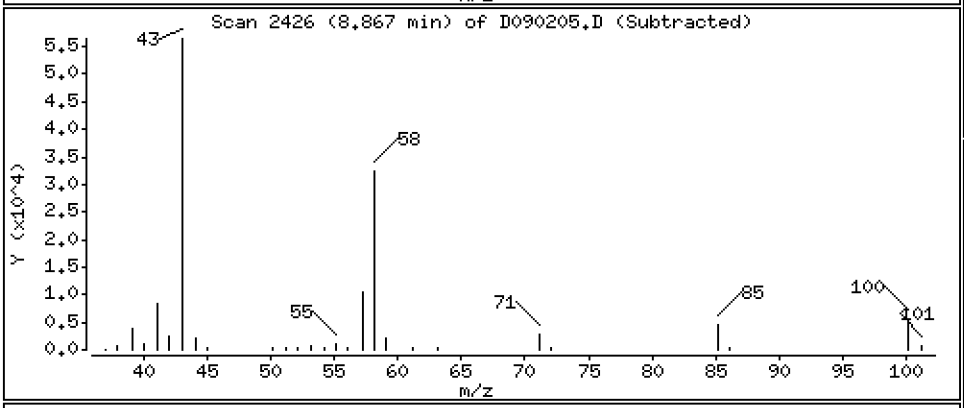
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

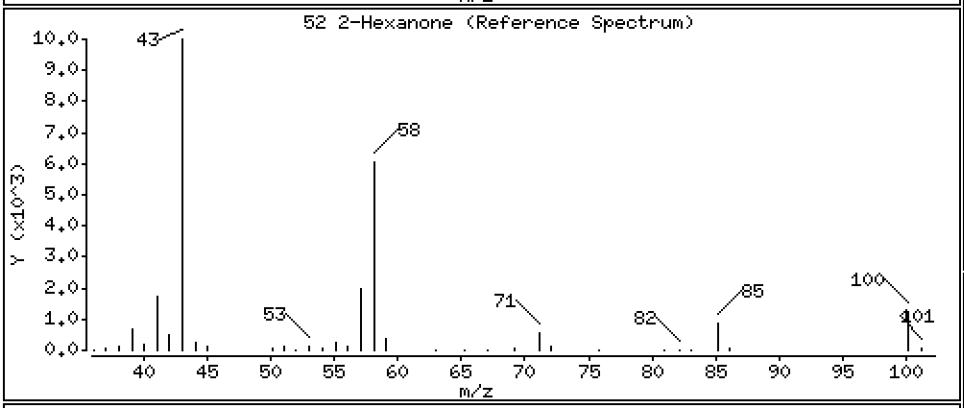
Purge Volume: 5.0 Operator: AP

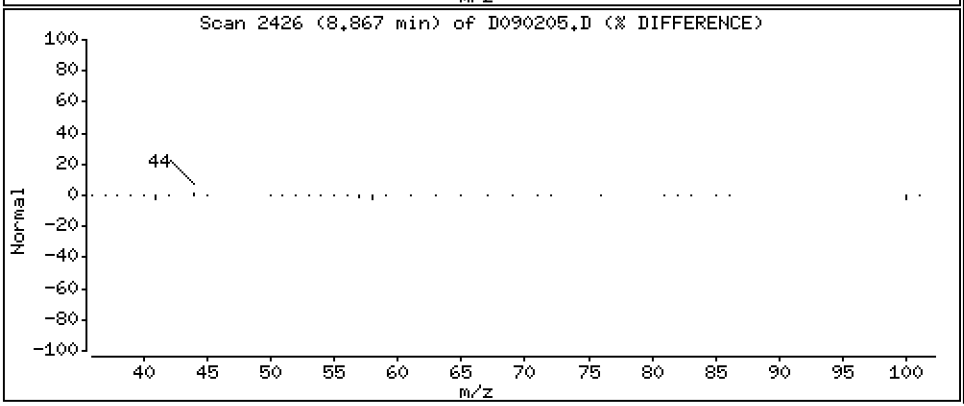
Column phase: DB624 Column diameter: 0.18

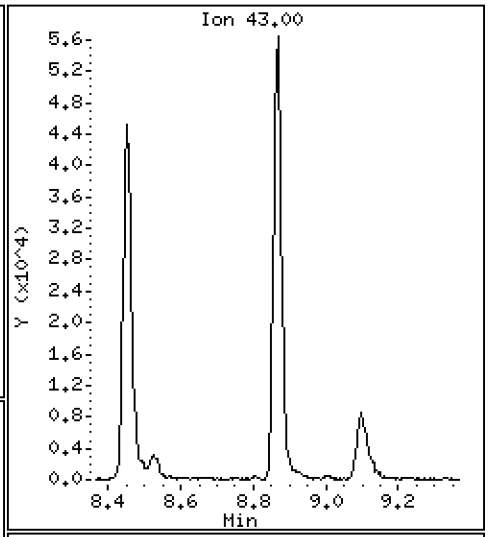
52 2-Hexanone Concentration: 38.33 ug/l Review Code:

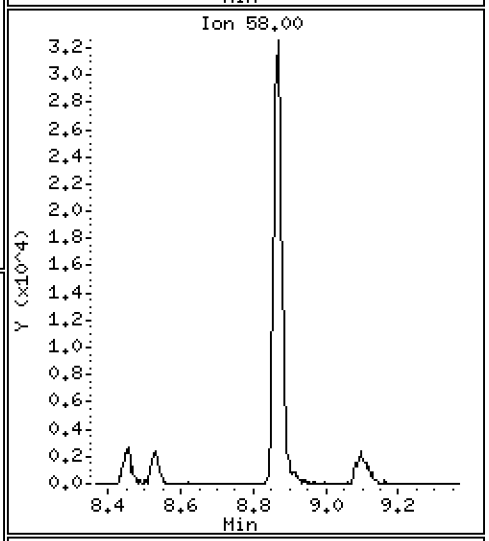


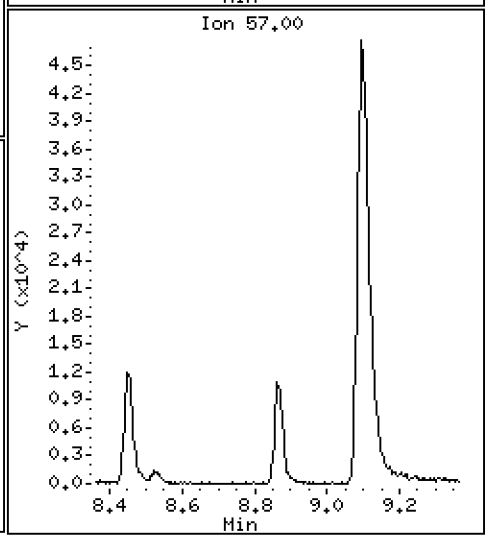












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 49

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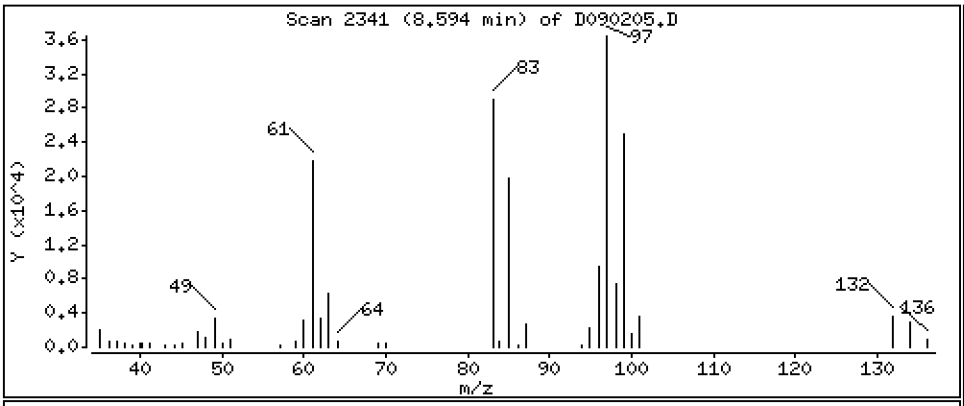
Client ID: VLCSW-180830 Instrument: VOA2.i

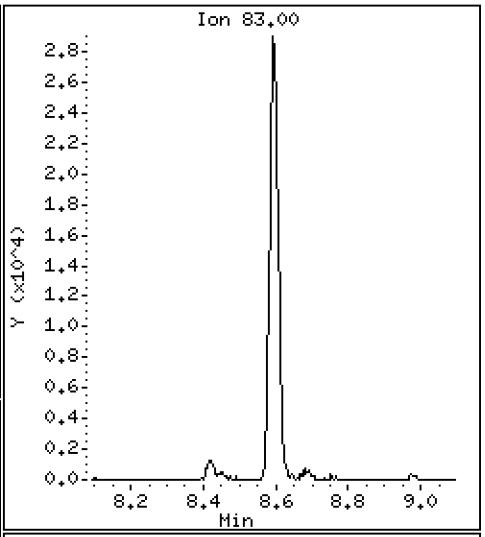
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

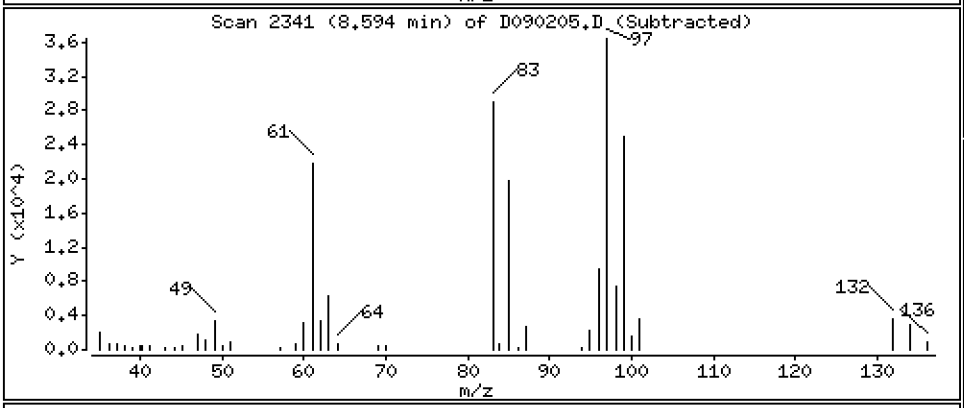
Purge Volume: 5.0 Operator: AP

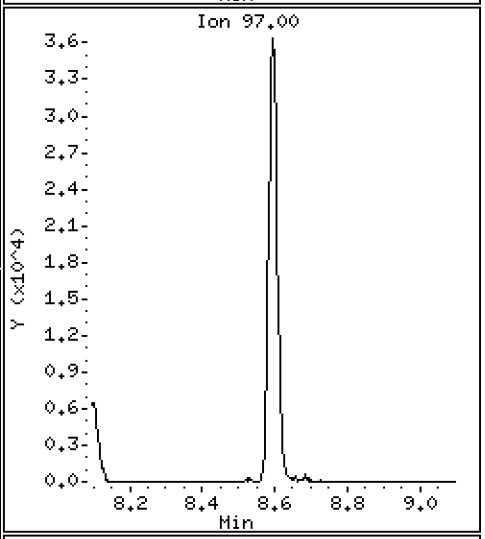
Column phase: DB624 Column diameter: 0.18

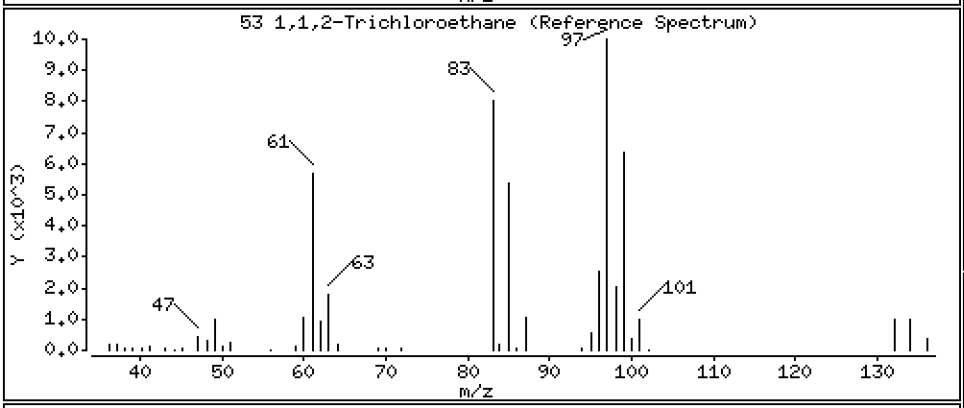
53 1,1,2-Trichloroethane Concentration: 19.88 ug/l Review Code:

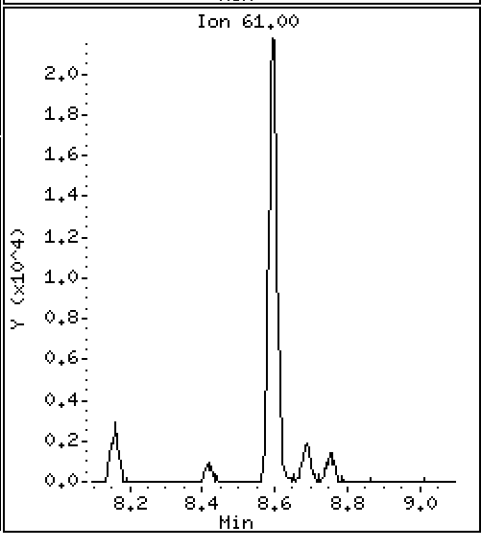


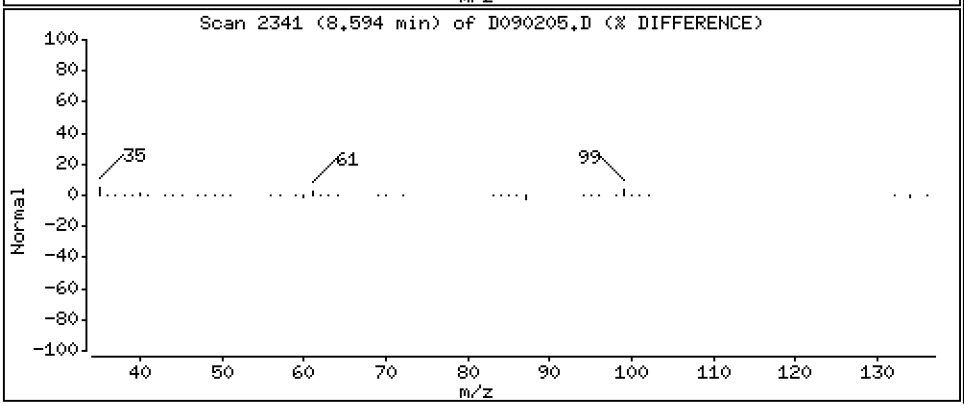












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 50

Date : 02-SEP-2018 15:04

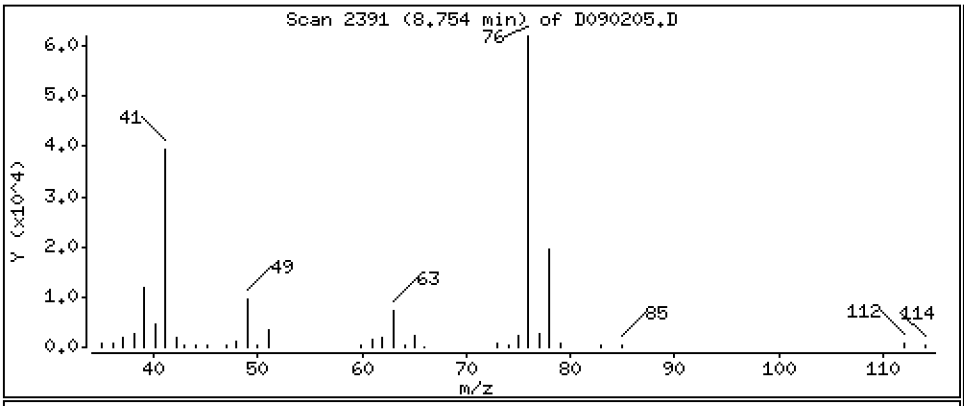
Client ID: VLCSW-180830 Instrument: VOA2.i

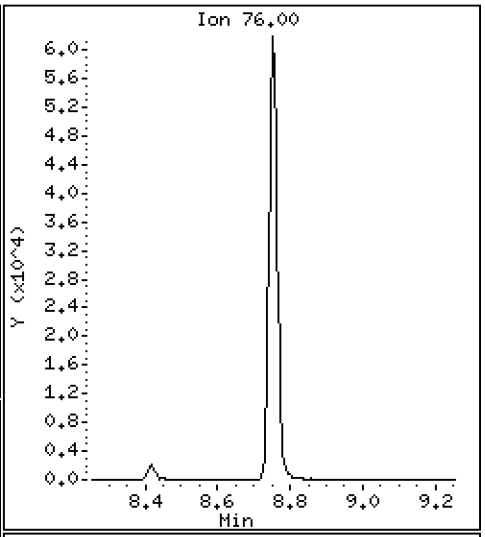
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

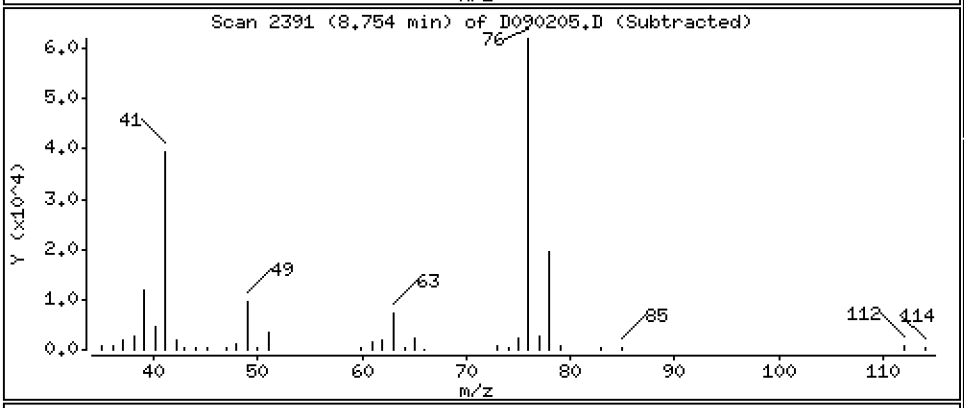
Purge Volume: 5.0 Operator: AP

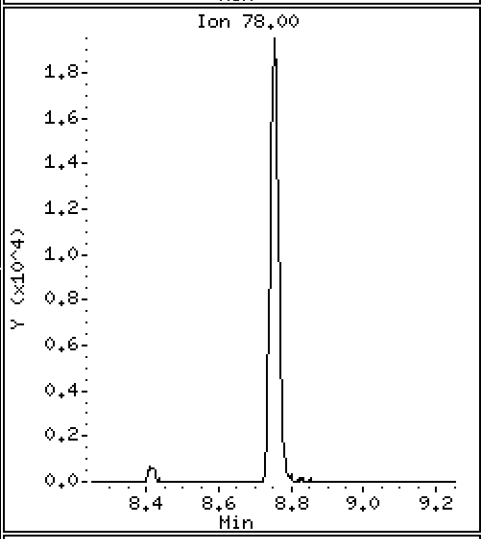
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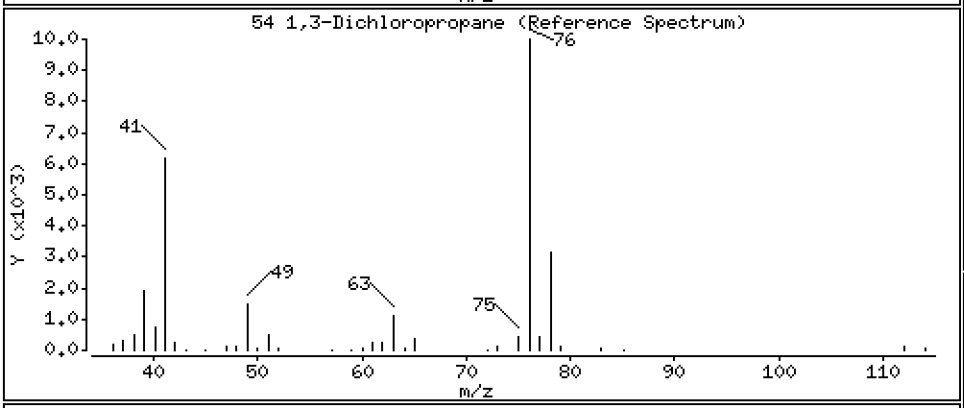
54 1,3-Dichloropropane Concentration: 20.58 ug/l Review Code:

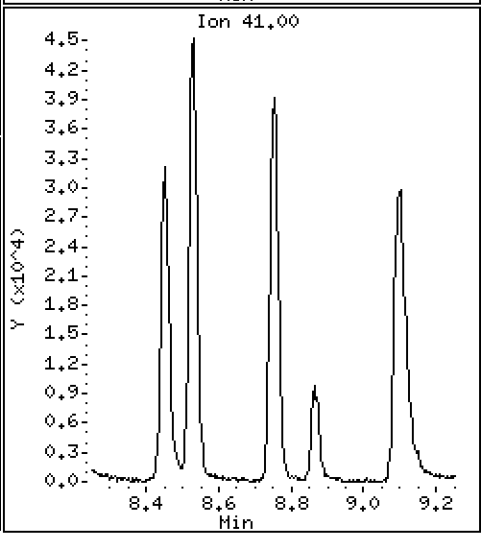


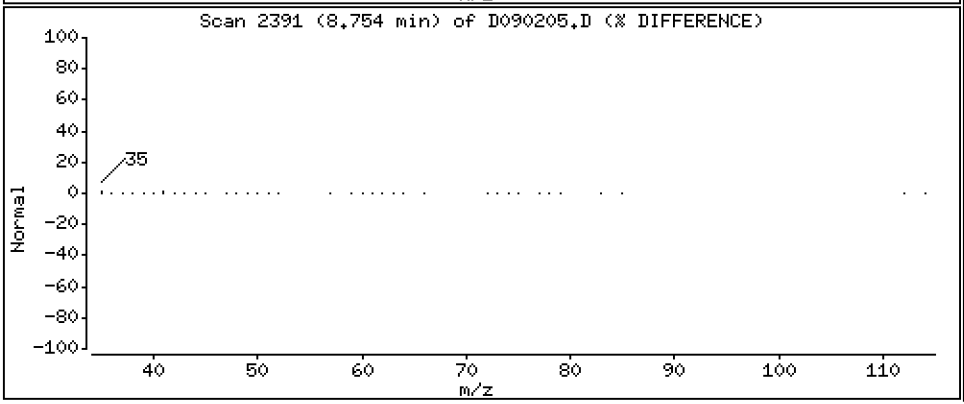












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 51

Date : 02-SEP-2018 15:04

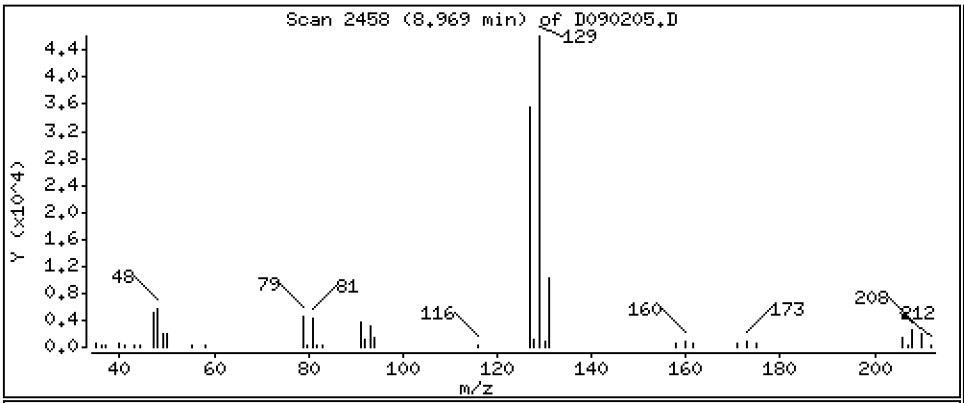
Client ID: VLCSW-180830 Instrument: VOA2.i

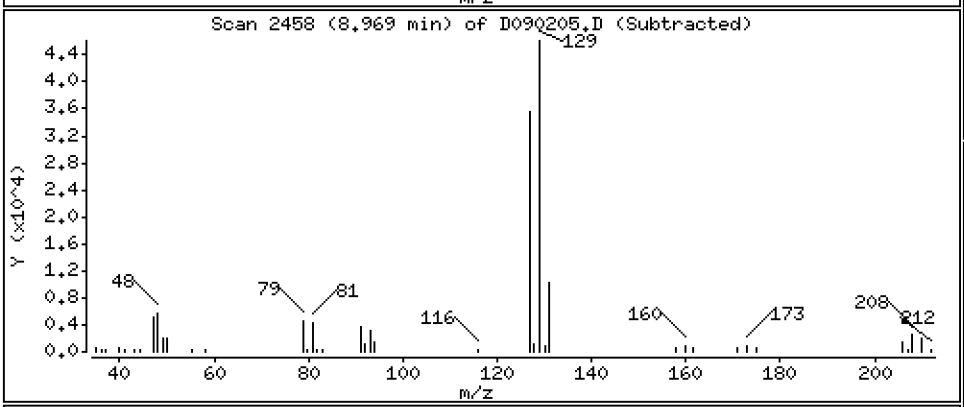
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

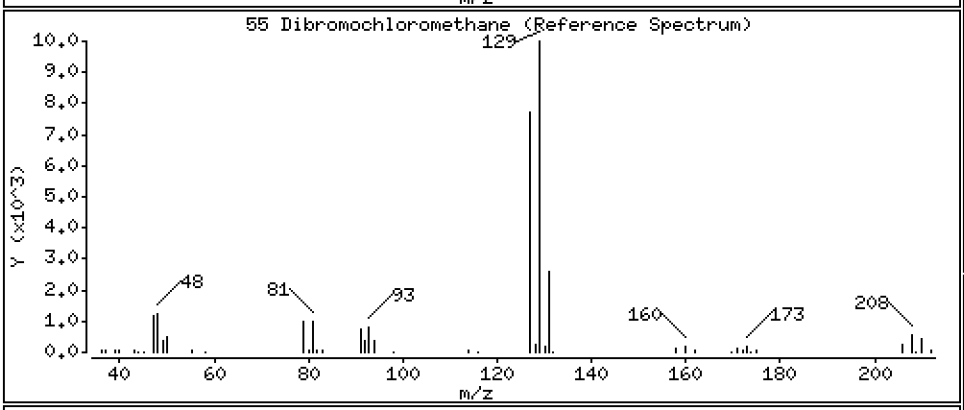
Purge Volume: 5.0 Operator: AP

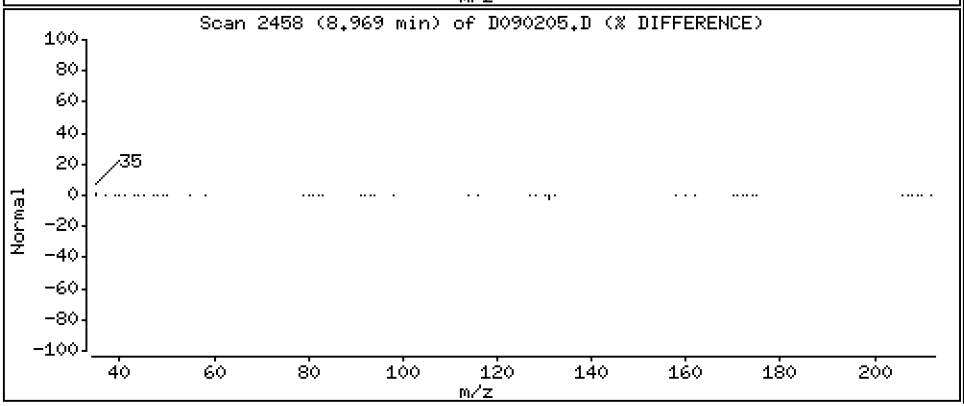
Column phase: DB624 Column diameter: 0.18

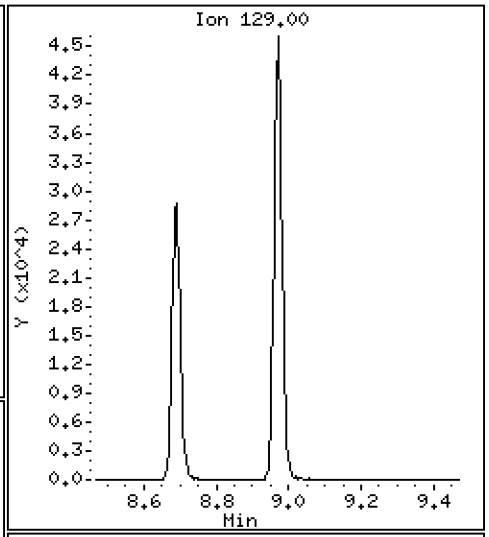
55 Dibromochloromethane Concentration: 21.10 ug/l Review Code:

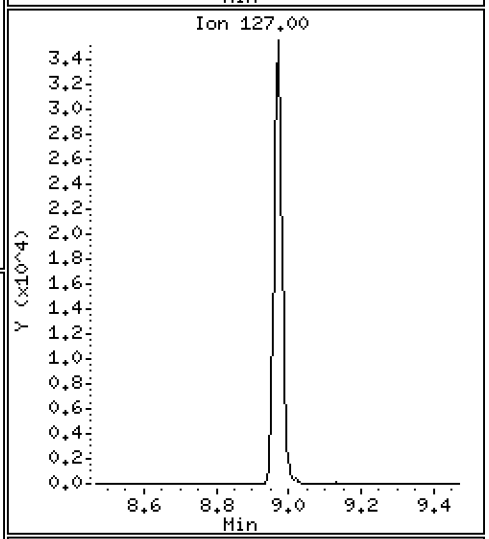


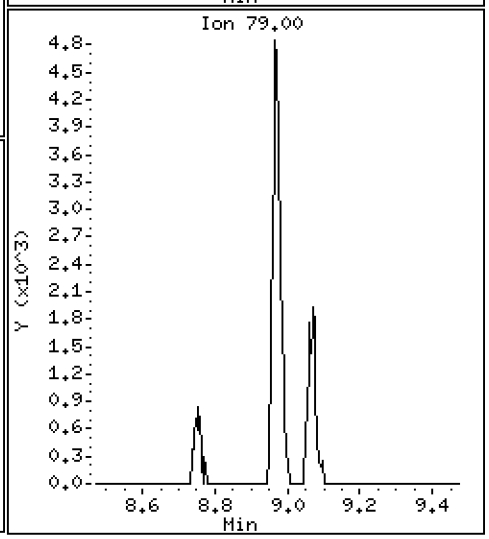












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Date : 02-SEP-2018 15:04

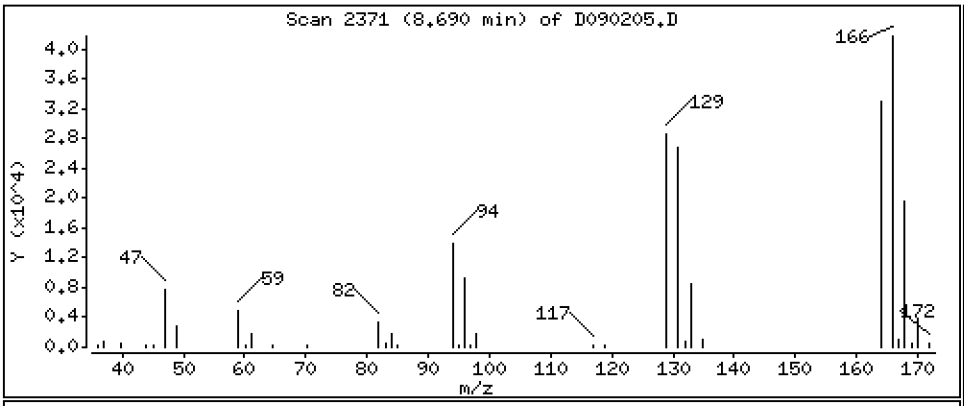
Client ID: VLCSW-180830 Instrument: VOA2.i

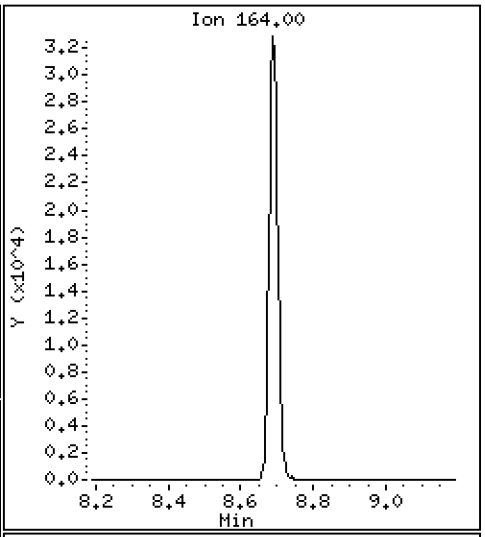
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

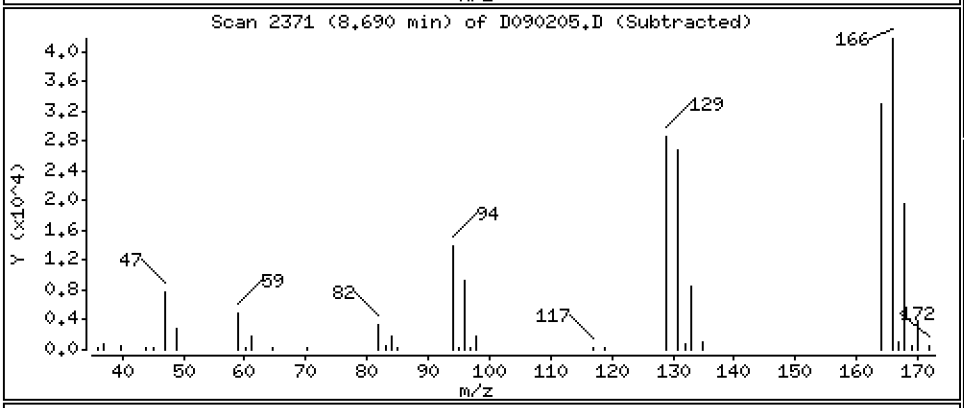
Purge Volume: 5.0 Operator: AP

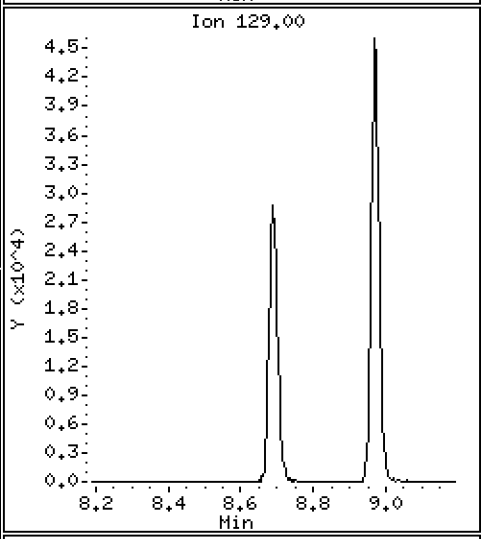
Column phase: DB624 Column diameter: 0.18

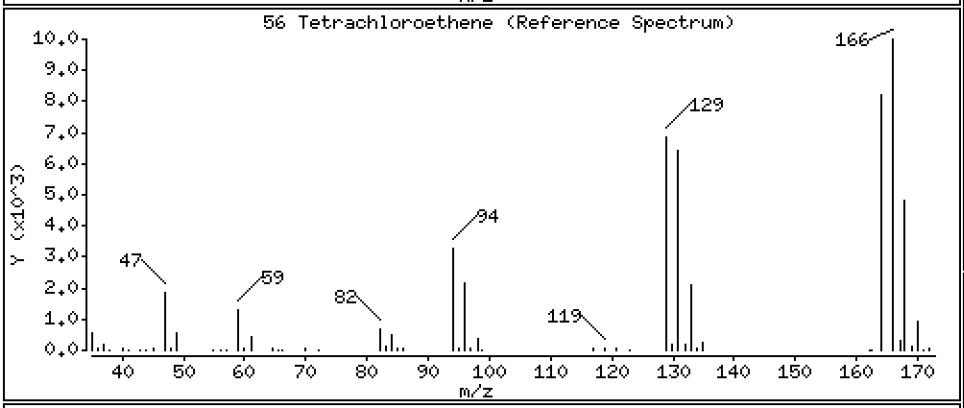
56 Tetrachloroethene Concentration: 21.63 ug/l Review Code:

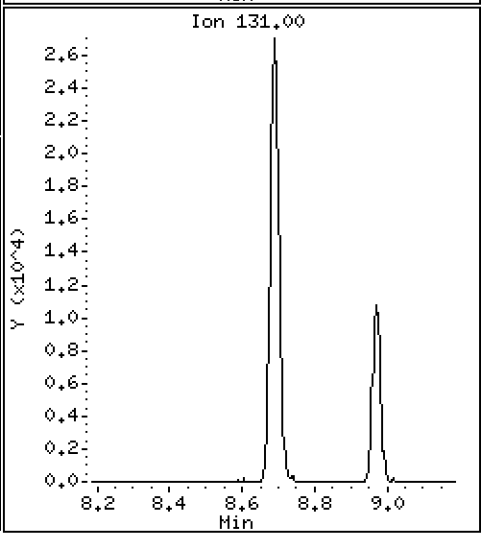


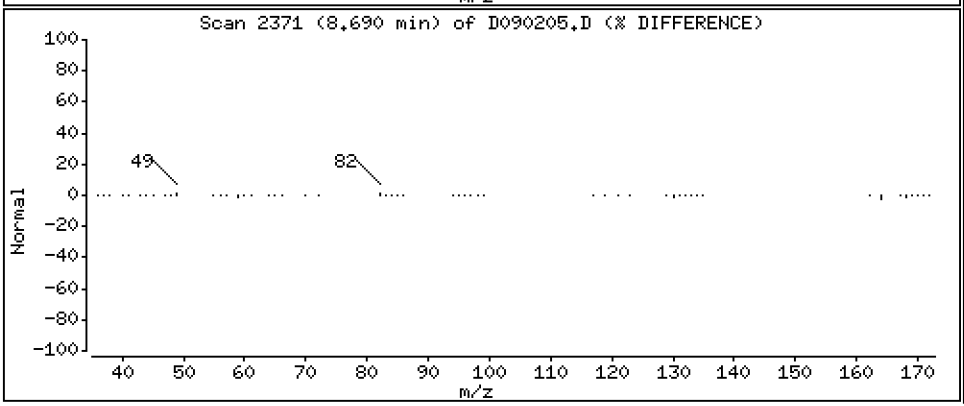












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Date : 02-SEP-2018 15:04

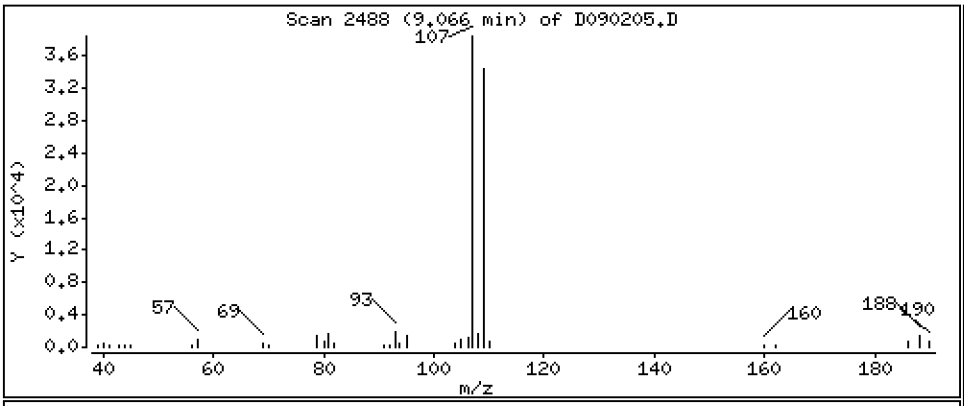
Client ID: VLCSW-180830 Instrument: VOA2.i

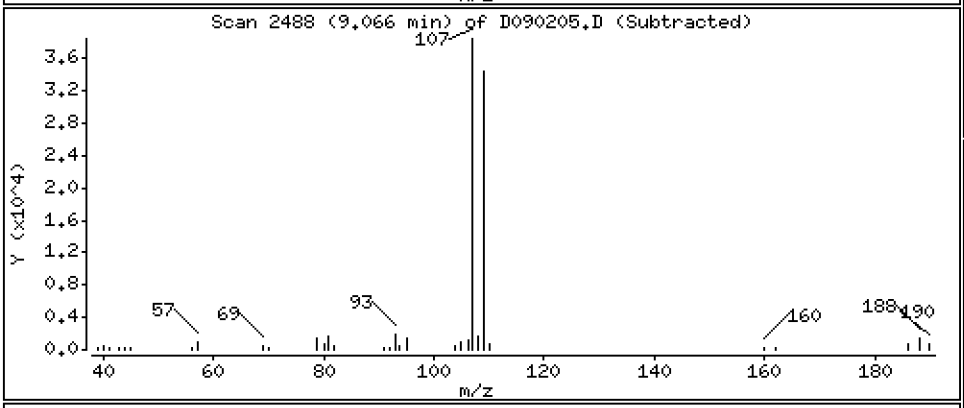
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

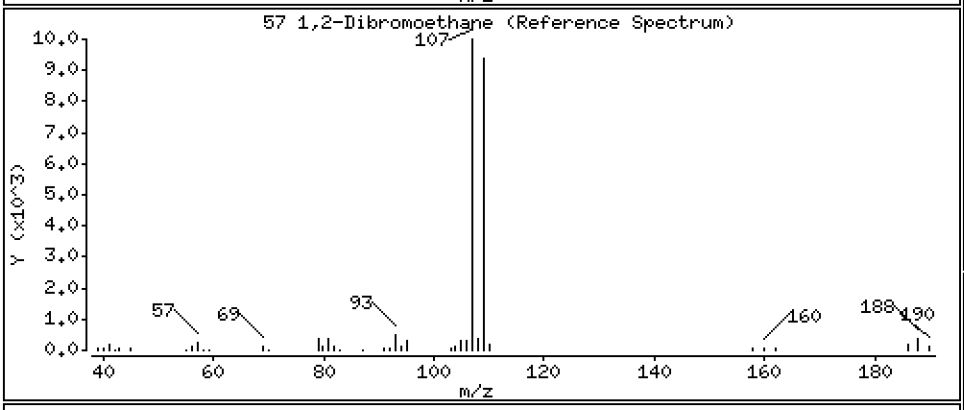
Purge Volume: 5.0 Operator: AP

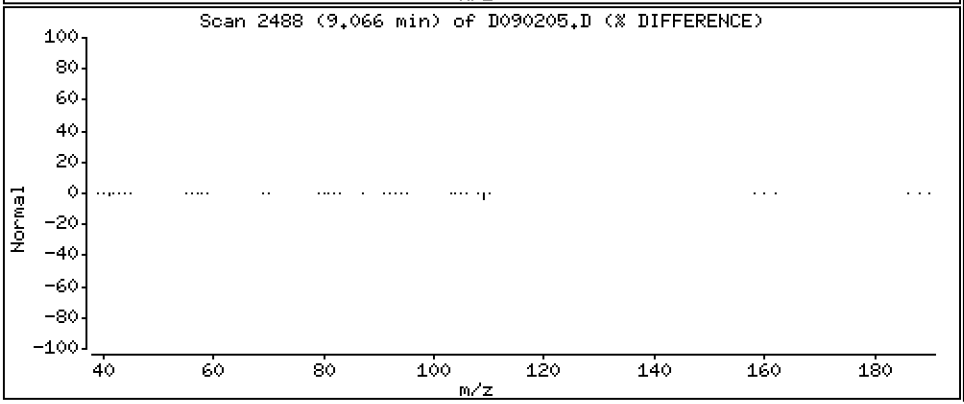
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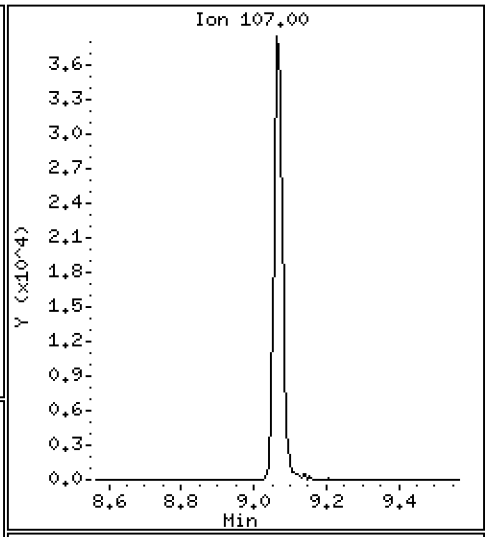
57 1,2-Dibromoethane Concentration: 21.63 ug/l Review Code:

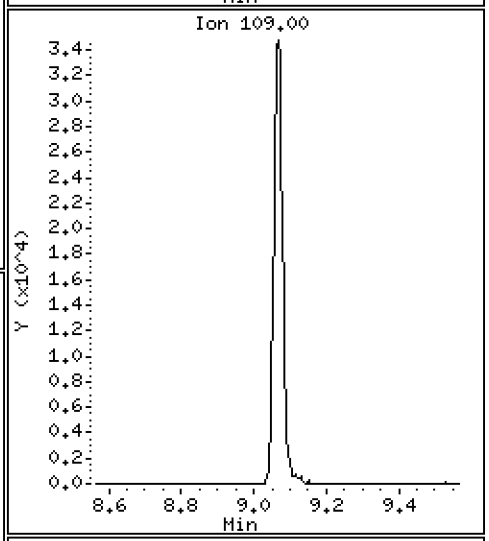


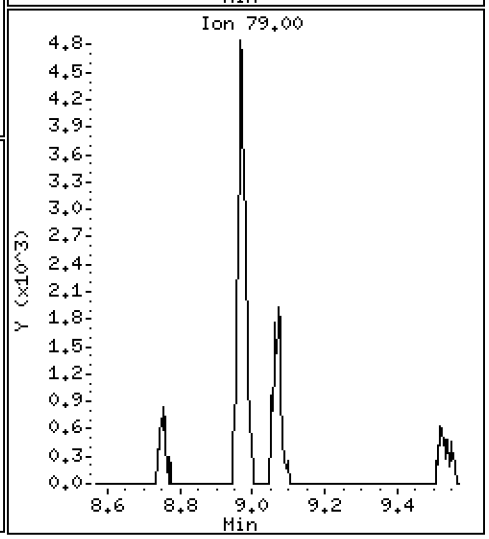












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 54

Date : 02-SEP-2018 15:04

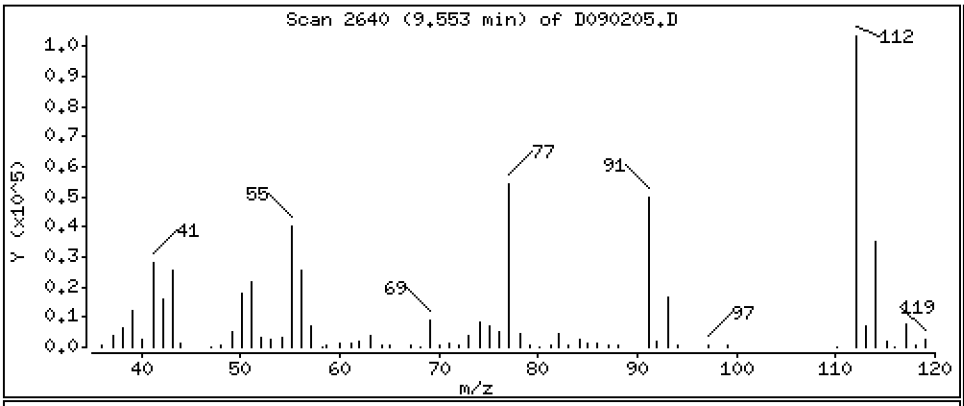
Client ID: VLCSW-180830 Instrument: VOA2.i

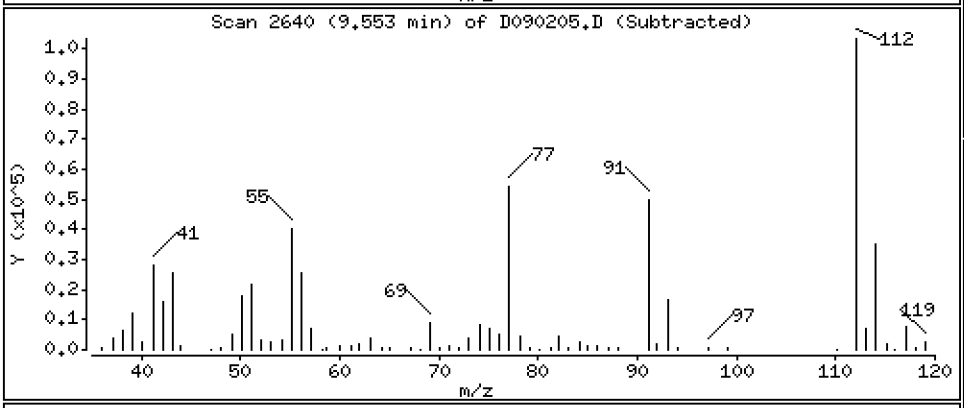
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

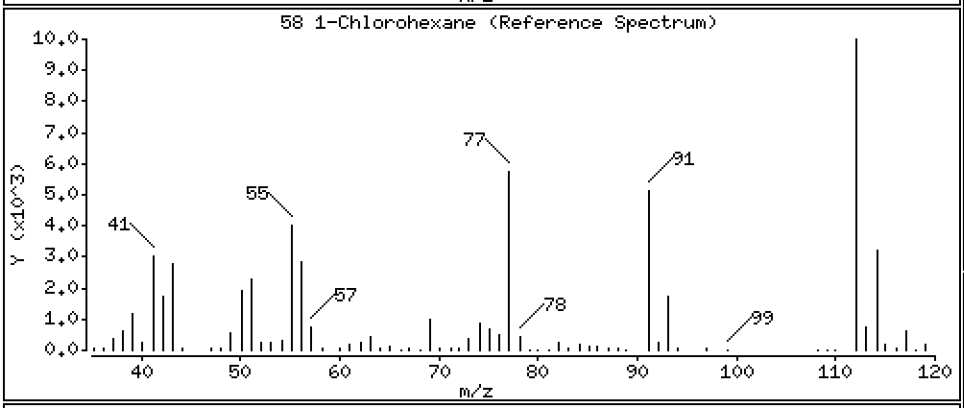
Purge Volume: 5.0 Operator: AP

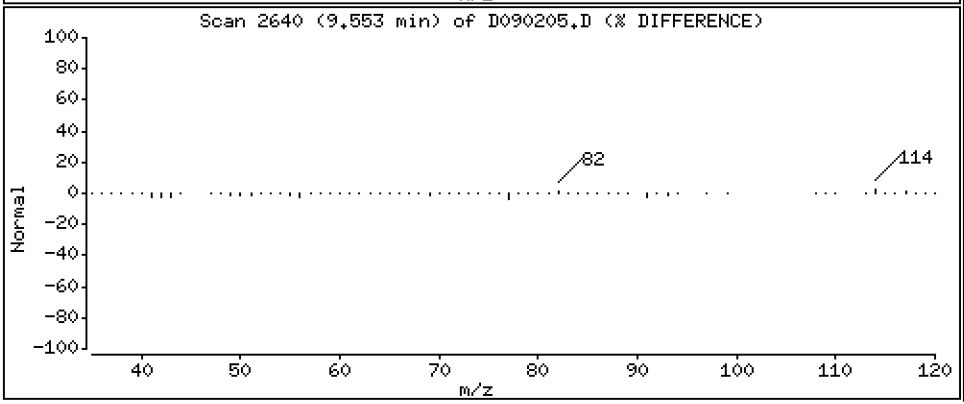
Column phase: DB624 Column diameter: 0.18

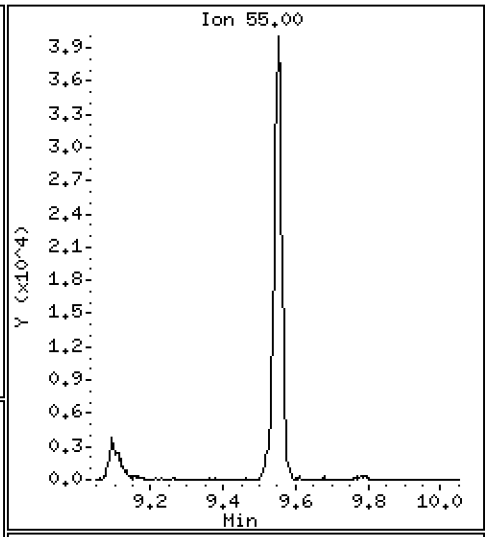
58 1-Chlorohexane Concentration: 22.44 ug/l Review Code:

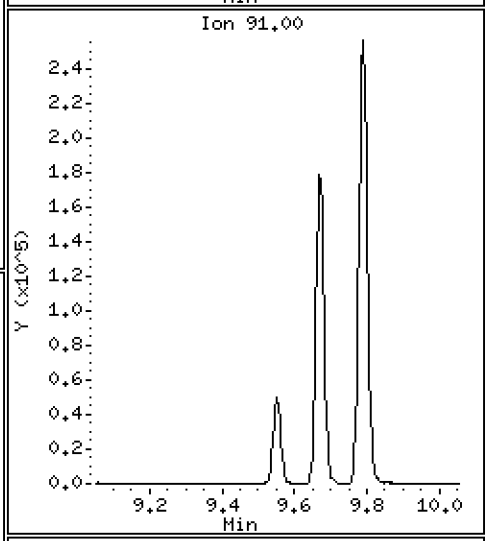


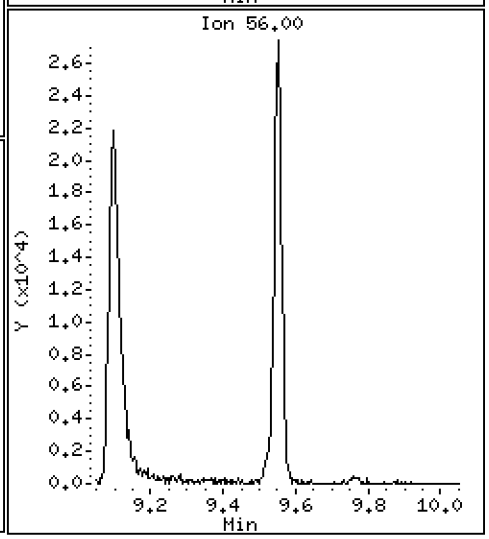












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 55

Date : 02-SEP-2018 15:04

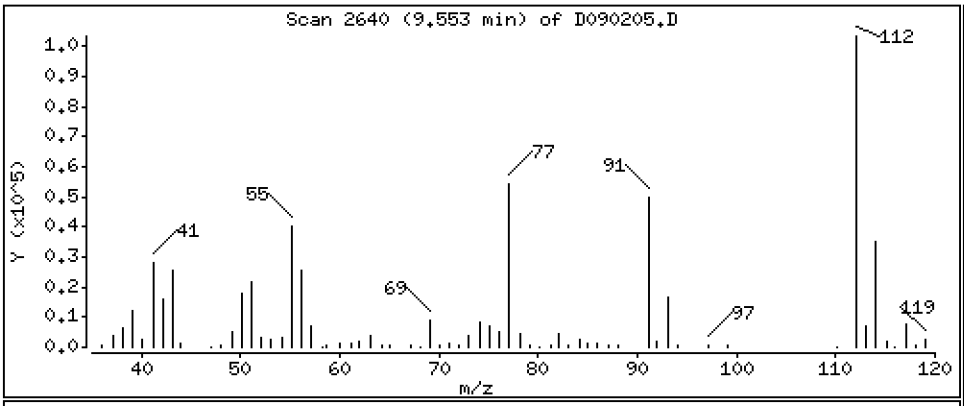
Client ID: VLCSW-180830 Instrument: VOA2.i

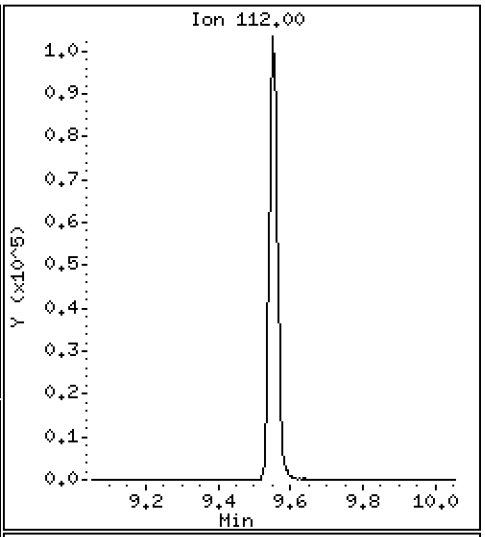
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

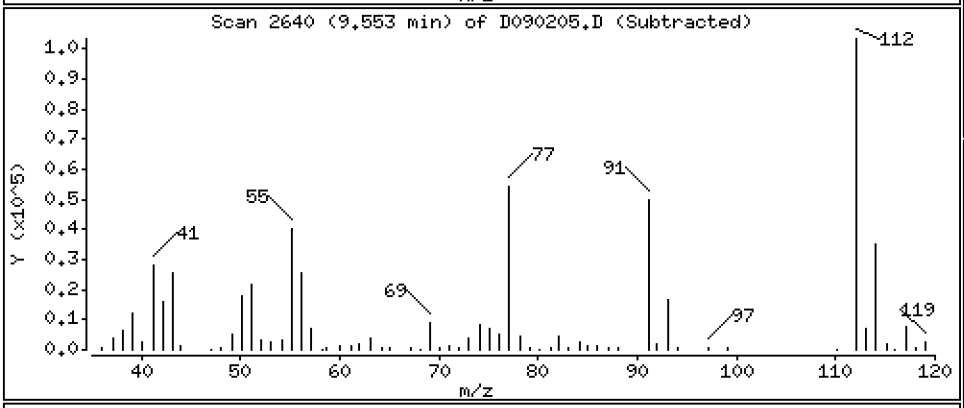
Purge Volume: 5.0 Operator: AP

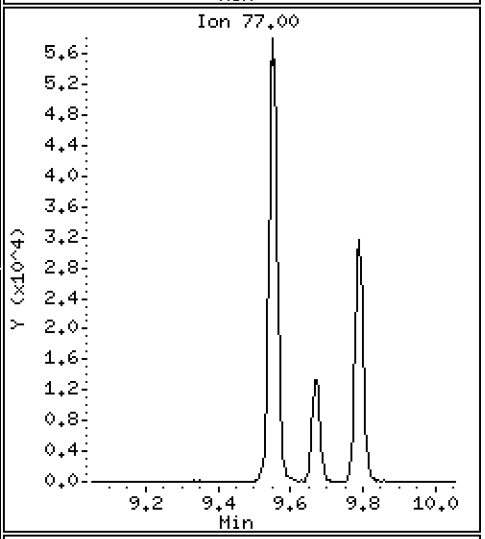
Column phase: DB624 Column diameter: 0.18

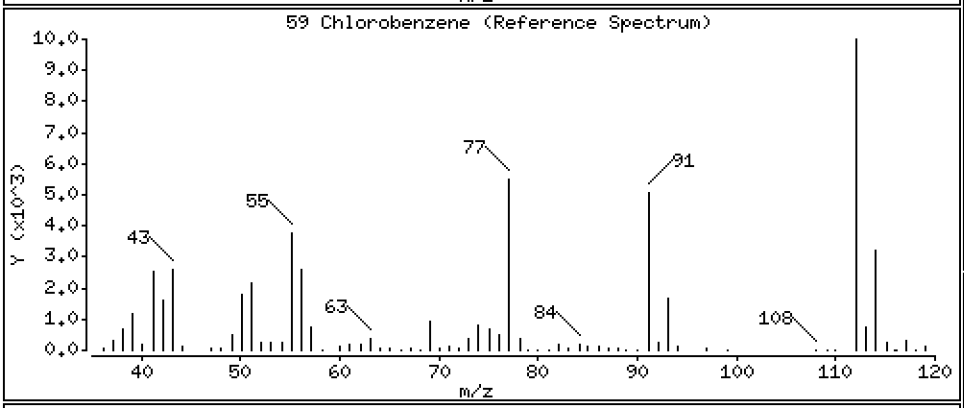
59 Chlorobenzene Concentration: 21.01 ug/l Review Code:

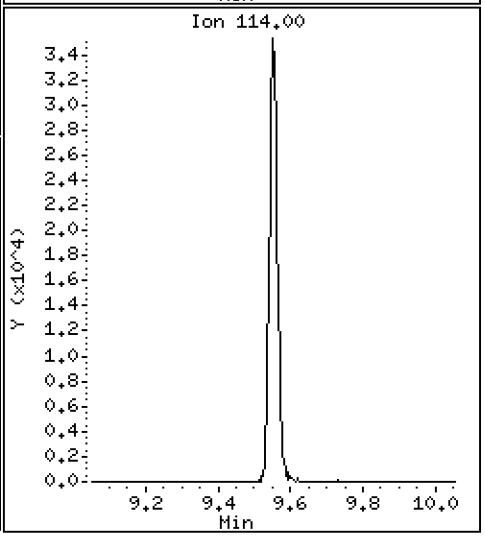


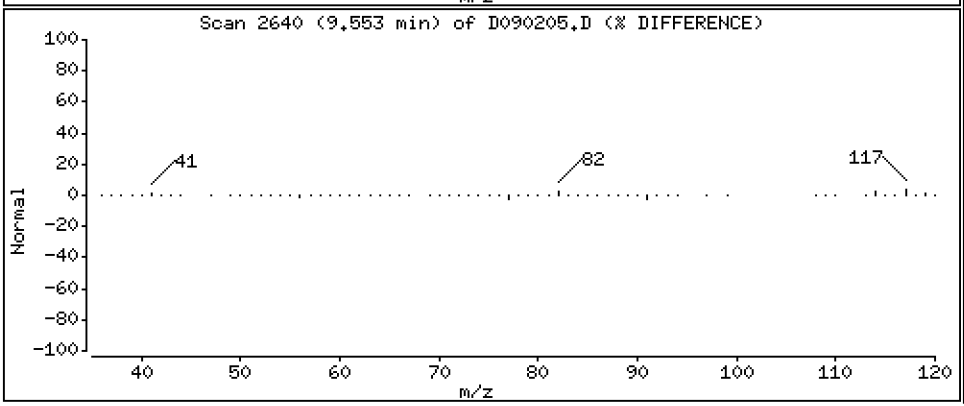












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 56

Date : 02-SEP-2018 15:04

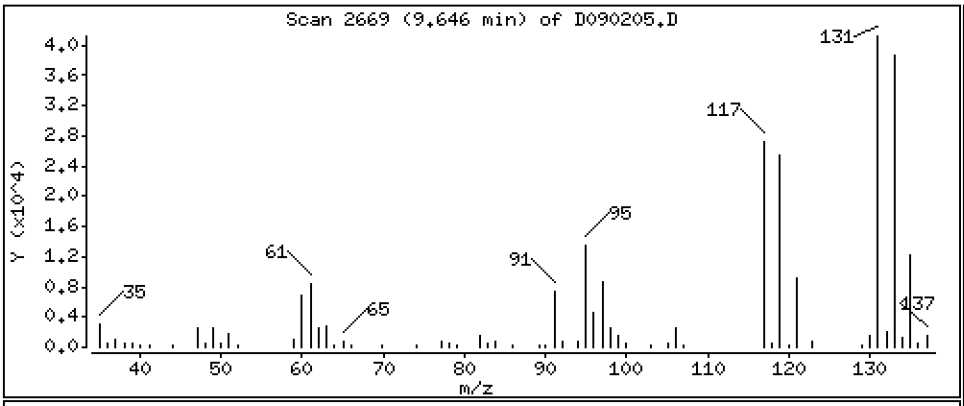
Client ID: VLCSW-180830 Instrument: VOA2.i

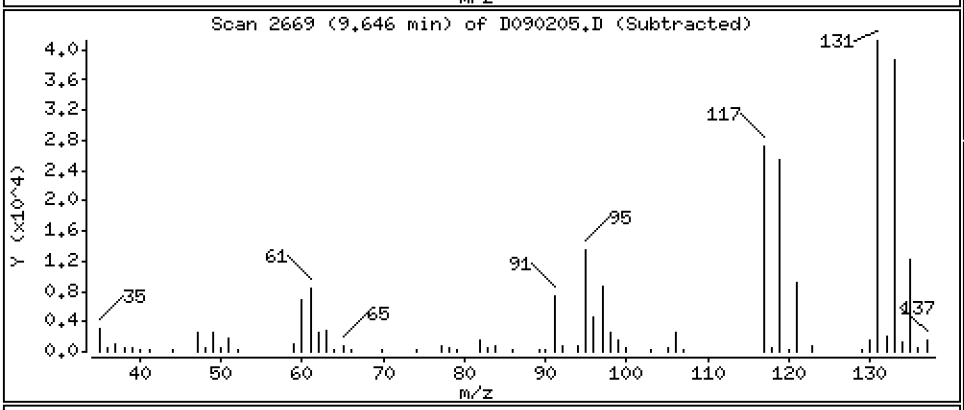
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

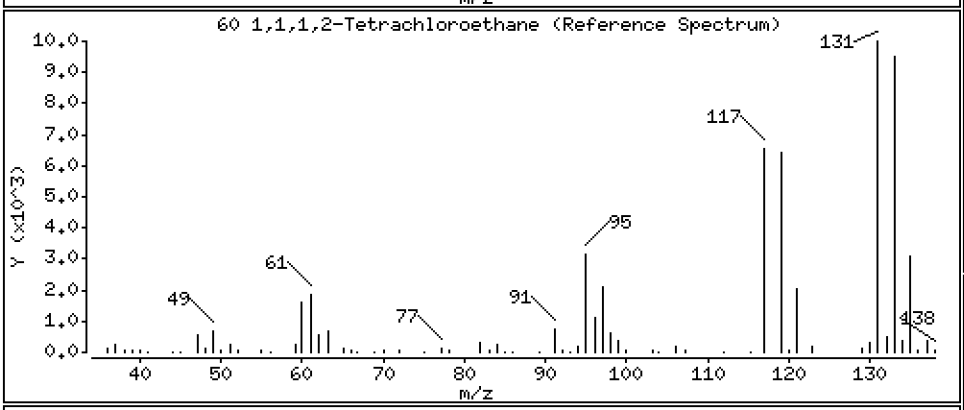
Purge Volume: 5.0 Operator: AP

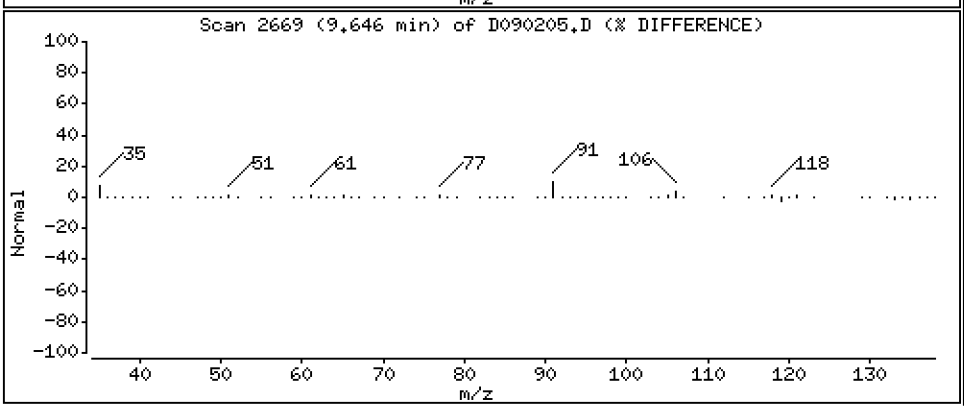
Column phase: DB624 Column diameter: 0.18

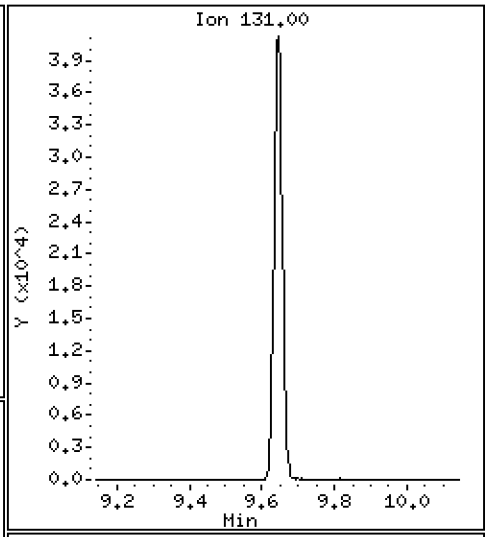
60 1,1,1,2-Tetrachloroethane Concentration: 21.07 ug/l Review Code:

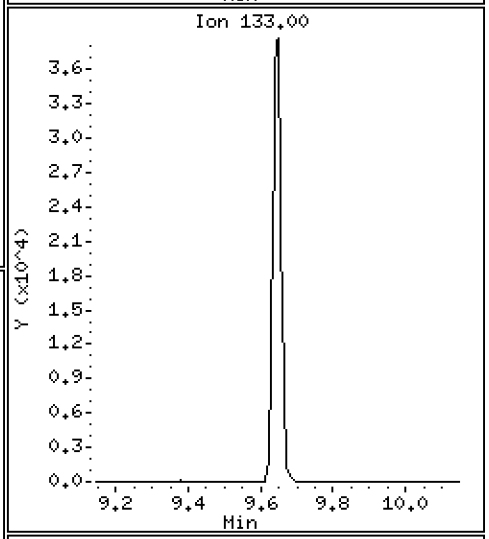


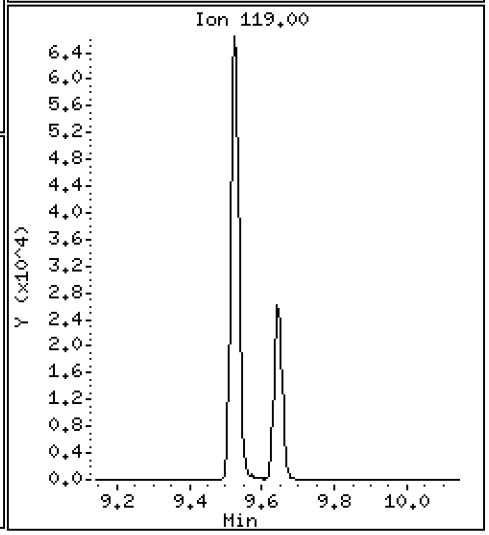












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 57

Date : 02-SEP-2018 15:04

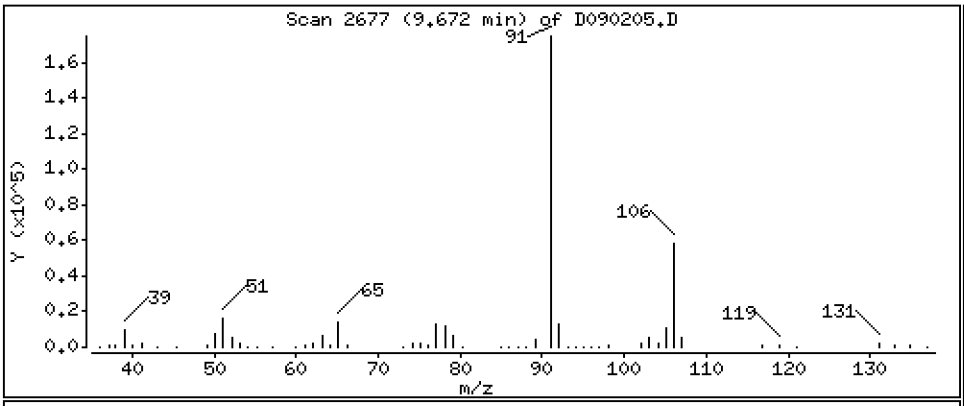
Client ID: VLCSW-180830 Instrument: VOA2.i

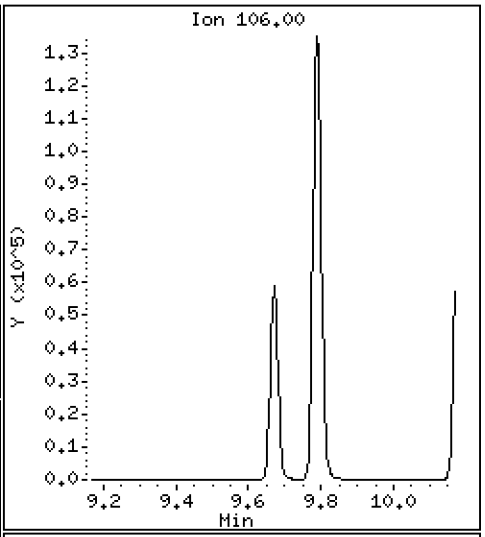
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

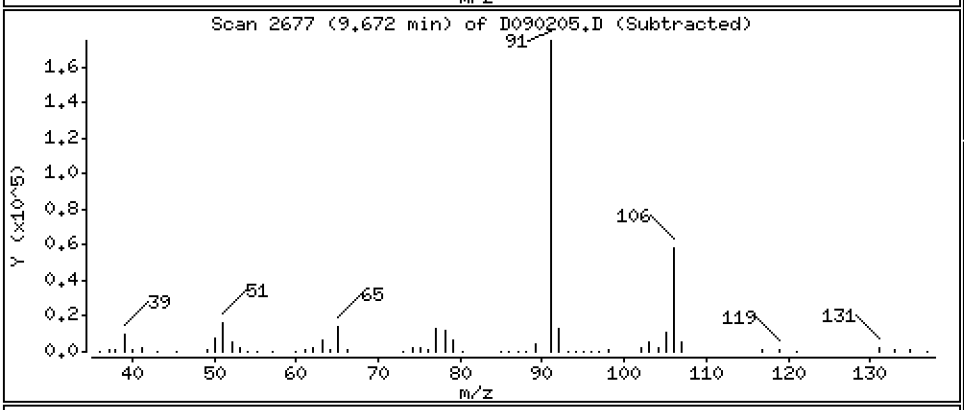
Purge Volume: 5.0 Operator: AP

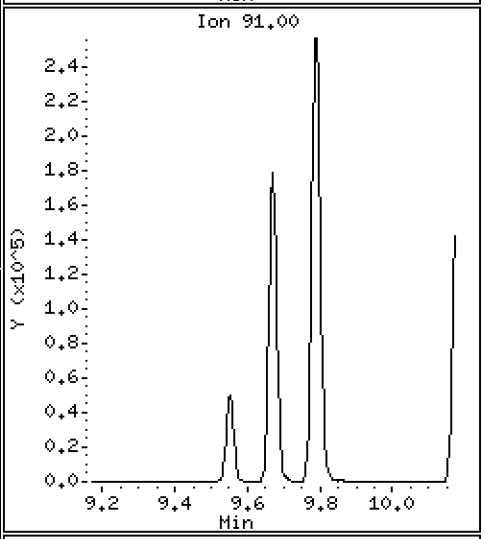
Column phase: DB624 Column diameter: 0.18

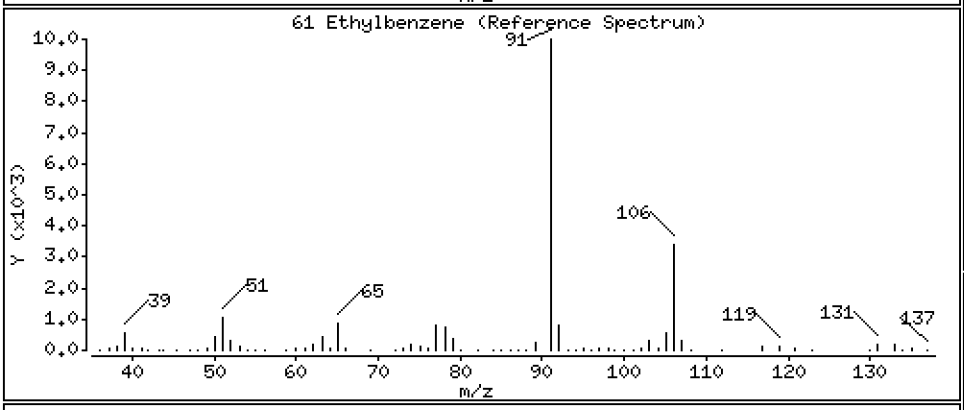
61 Ethylbenzene Concentration: 22.74 ug/l Review Code:

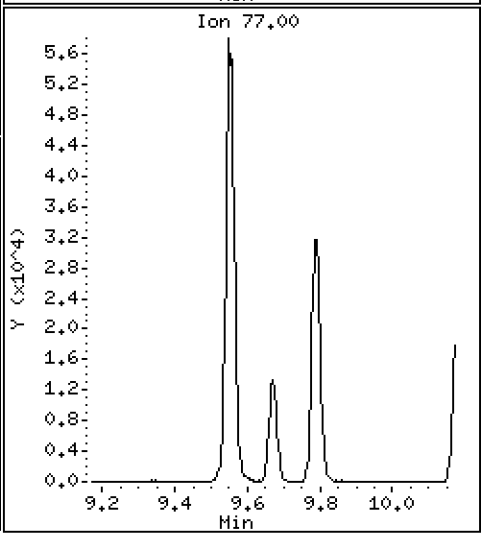


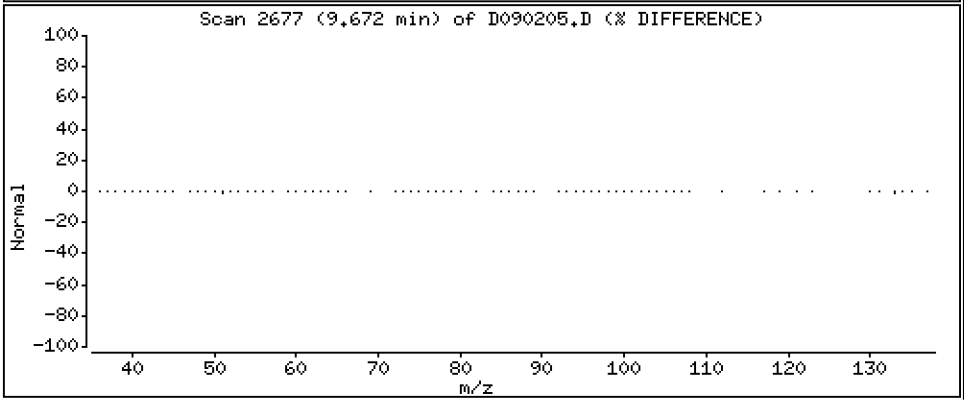












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 58

Date : 02-SEP-2018 15:04

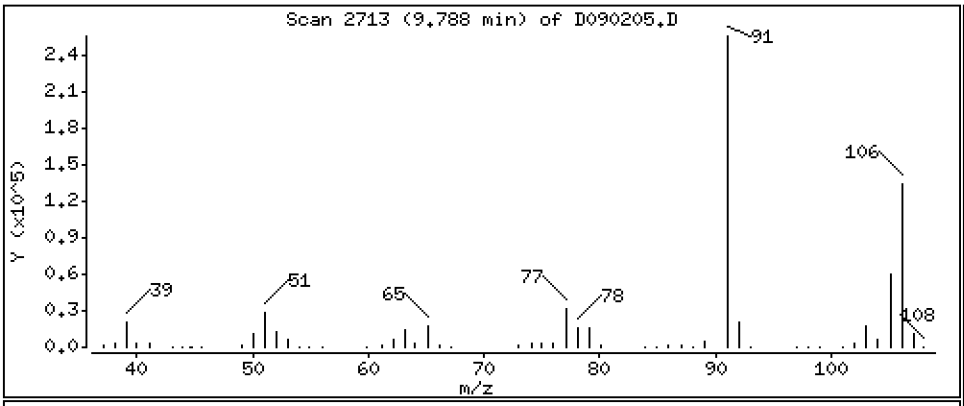
Client ID: VLCSW-180830 Instrument: VOA2.i

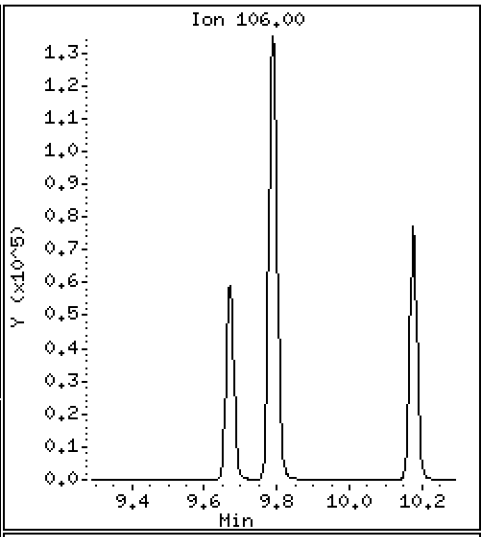
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

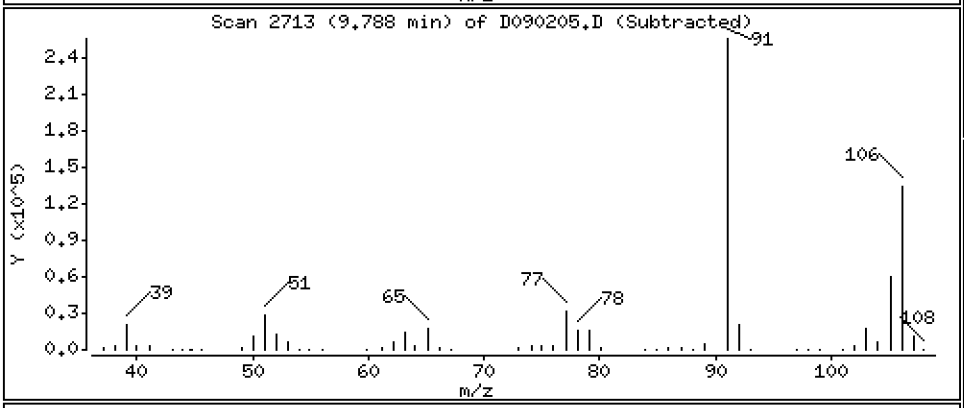
Purge Volume: 5.0 Operator: AP

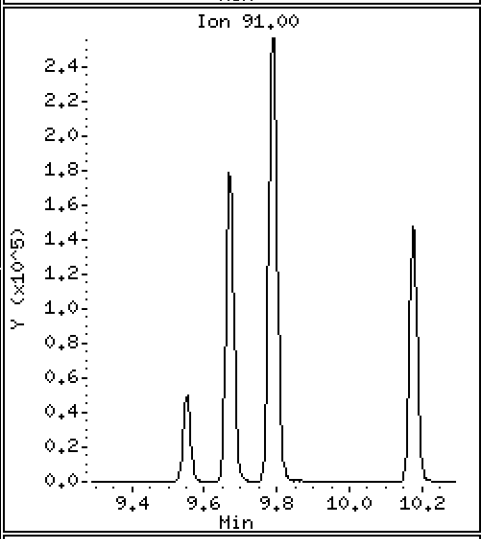
Column phase: DB624 Column diameter: 0.18

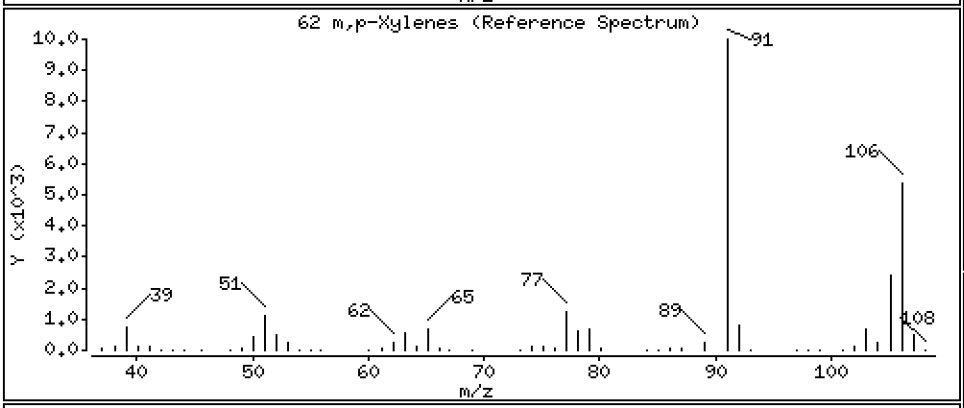
62 m,p-Xylenes Concentration: 45.91 ug/l Review Code:

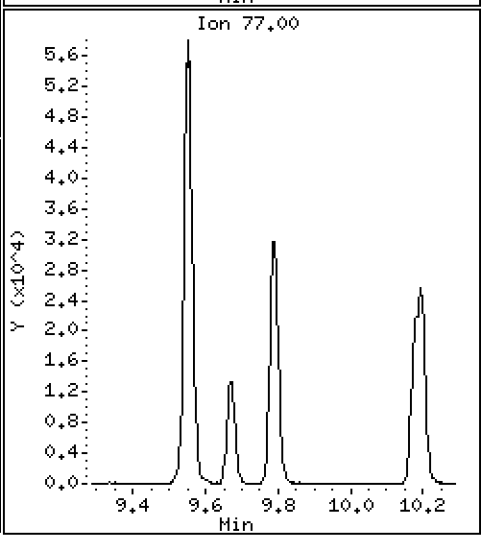


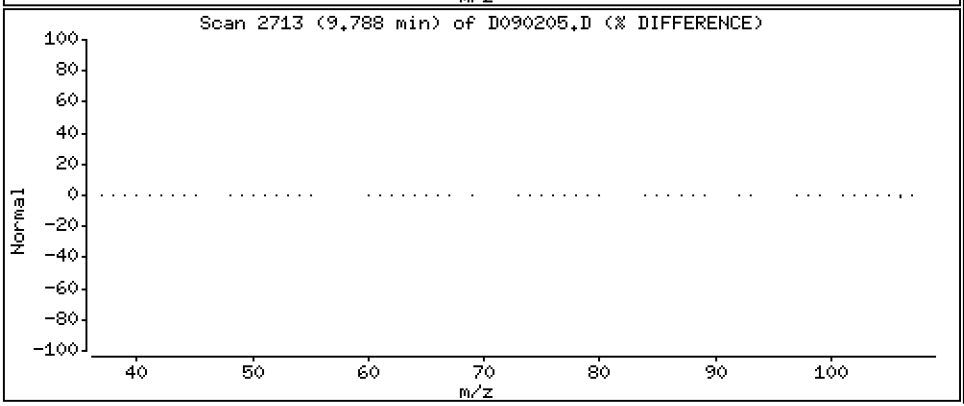












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 59

Date : 02-SEP-2018 15:04

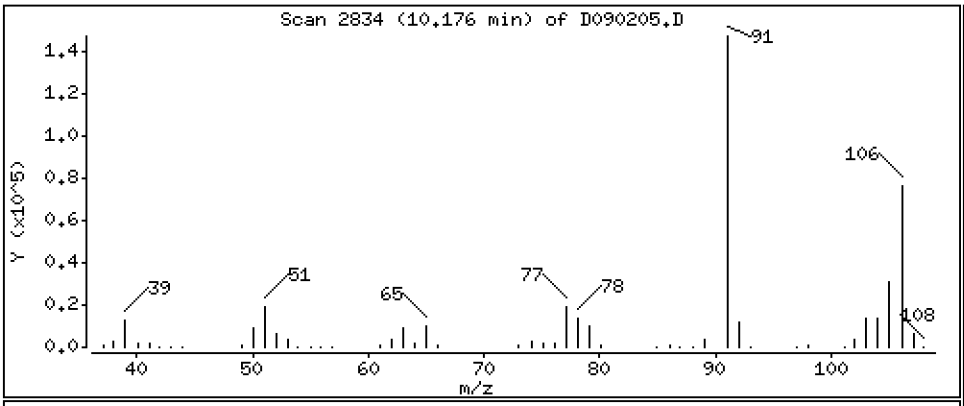
Client ID: VLCSW-180830 Instrument: VOA2.i

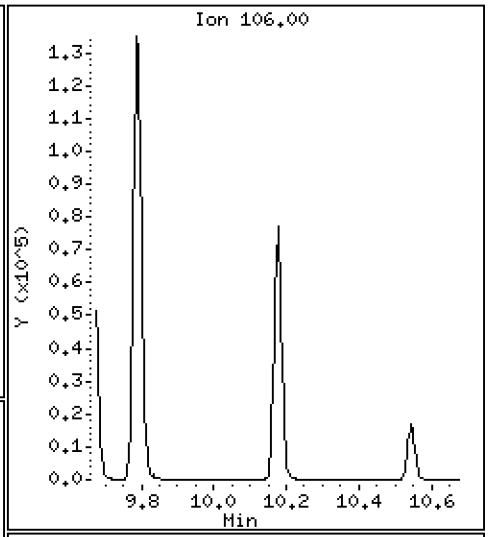
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

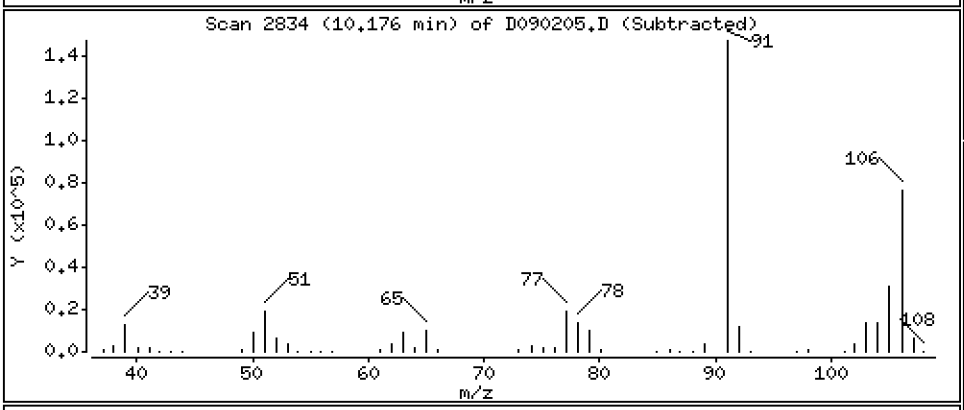
Purge Volume: 5.0 Operator: AP

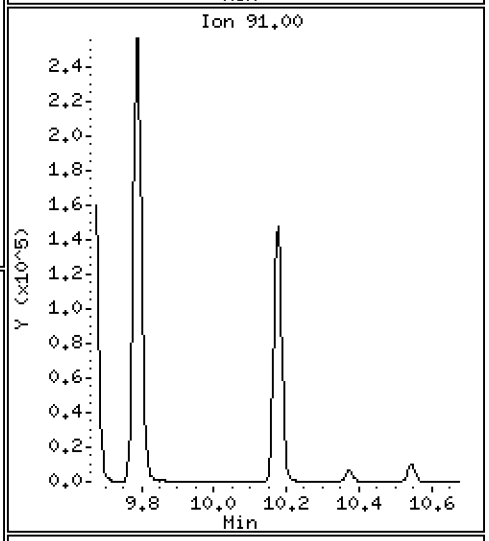
Column phase: DB624 Column diameter: 0.18

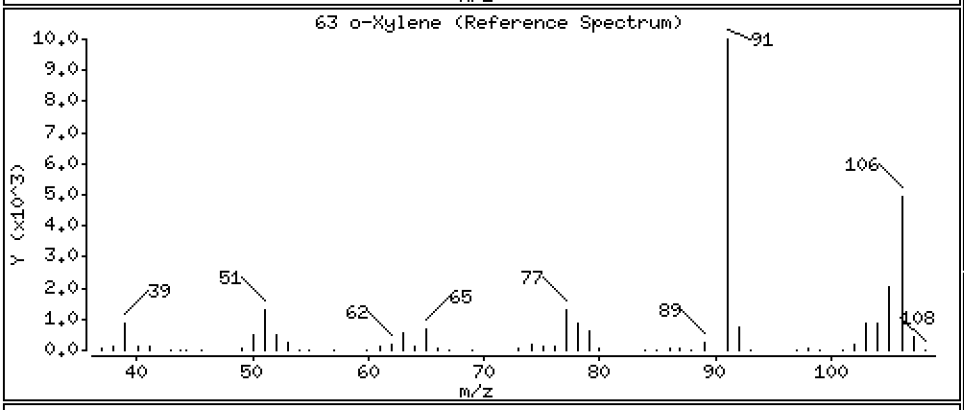
63 o-Xylene Concentration: 22.26 ug/l Review Code:

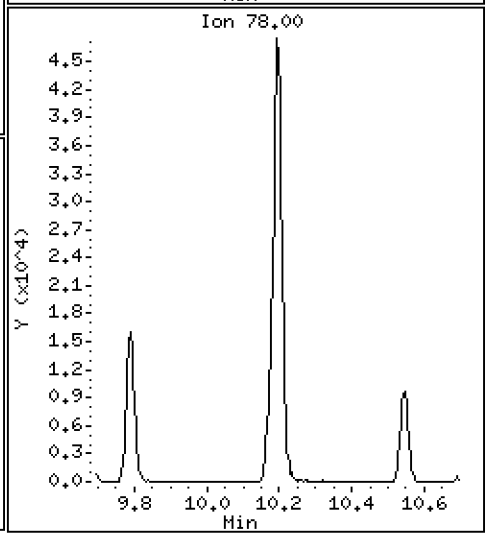


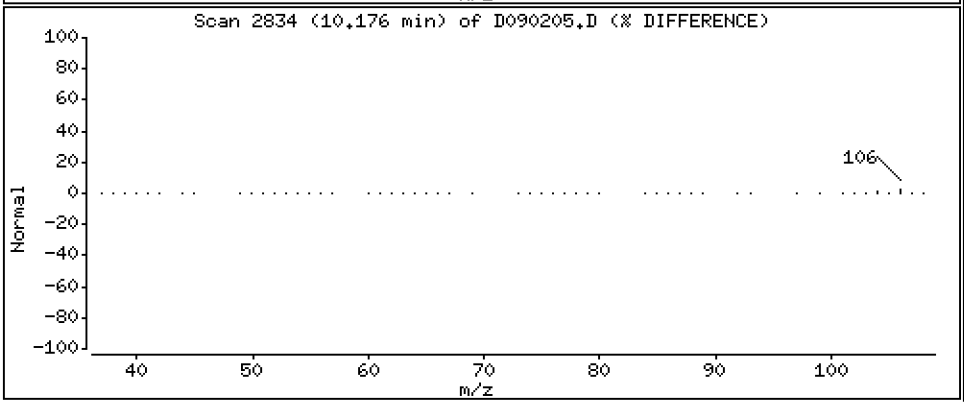












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Date : 02-SEP-2018 15:04

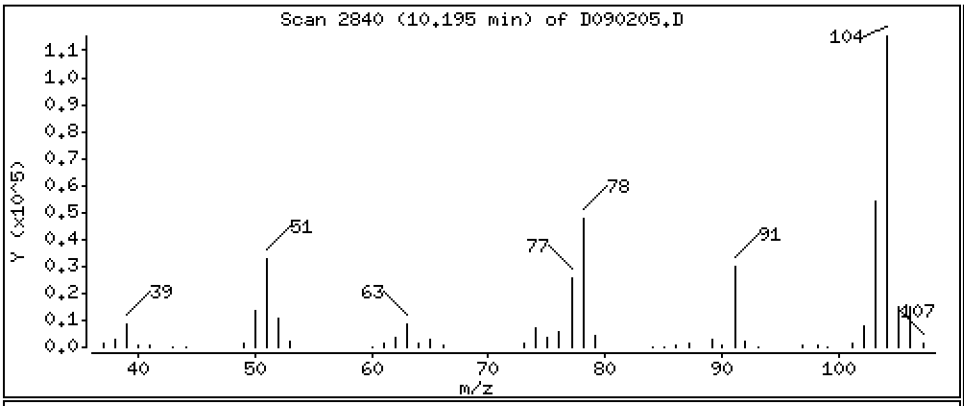
Client ID: VLCSW-180830 Instrument: VOA2.i

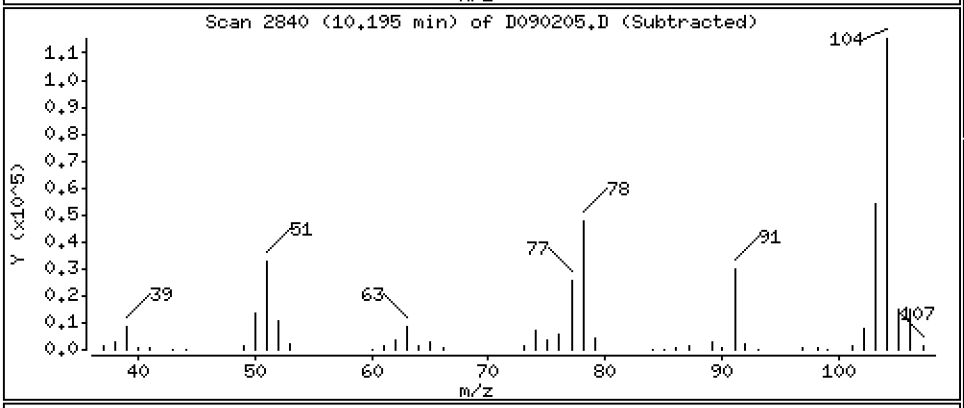
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

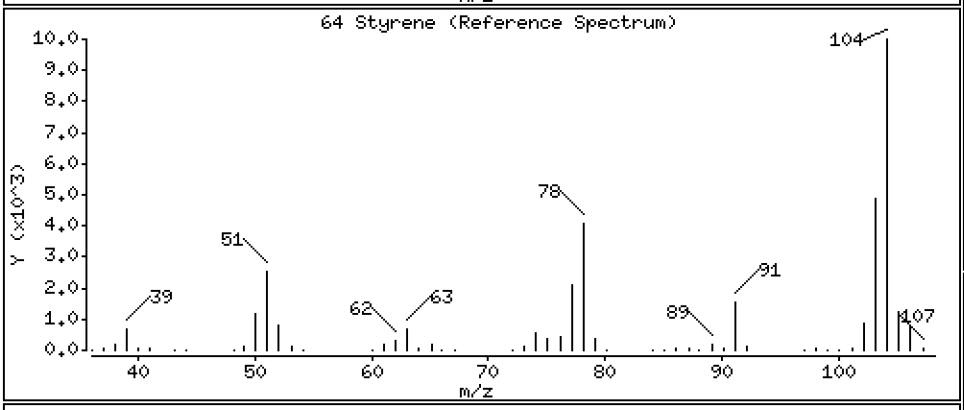
Purge Volume: 5.0 Operator: AP

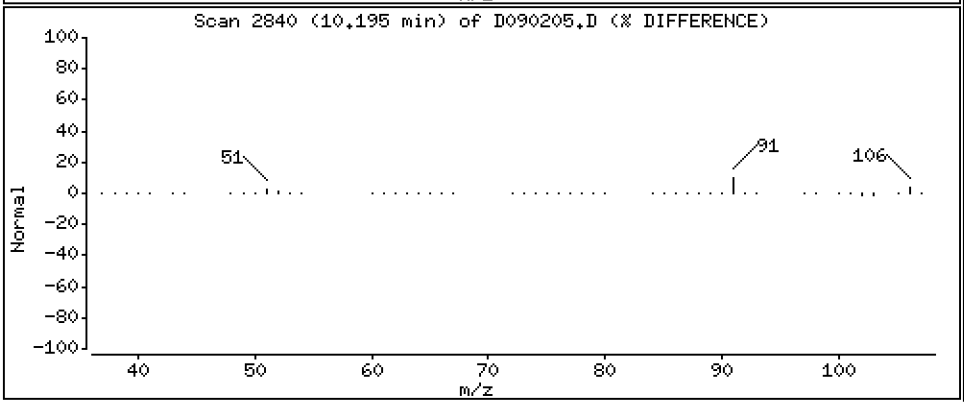
Column phase: DB624 Column diameter: 0.18

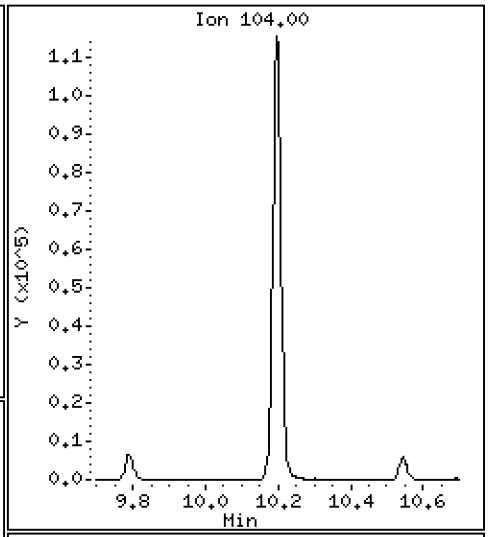
64 Styrene Concentration: 21.46 ug/l Review Code:

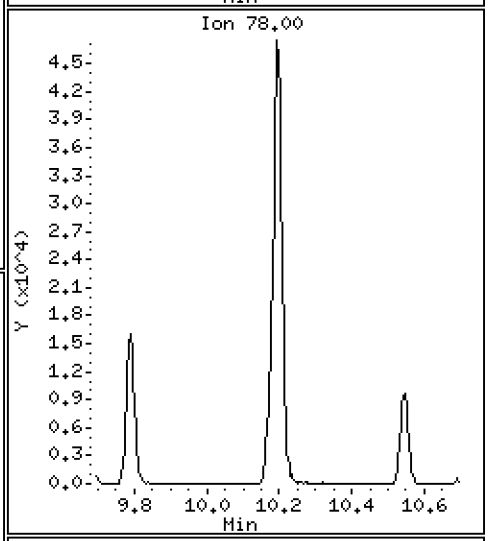


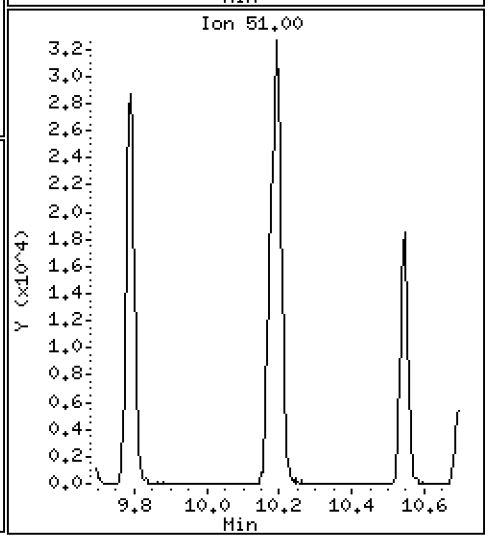












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Date : 02-SEP-2018 15:04

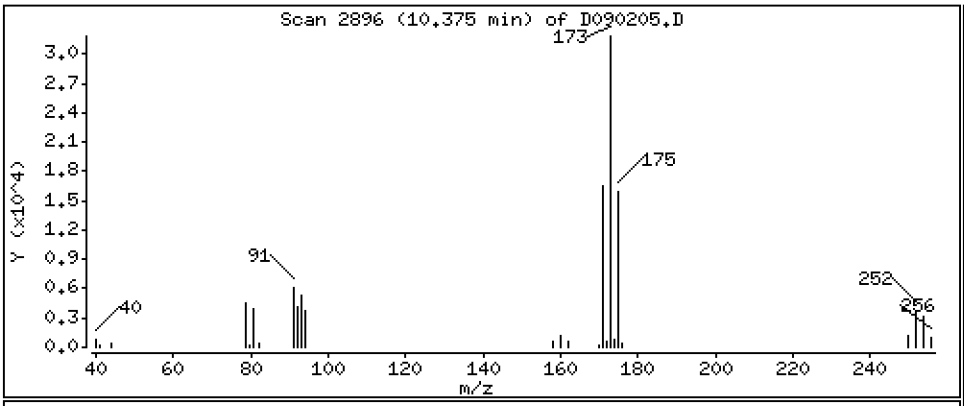
Client ID: VLCSW-180830 Instrument: VOA2.i

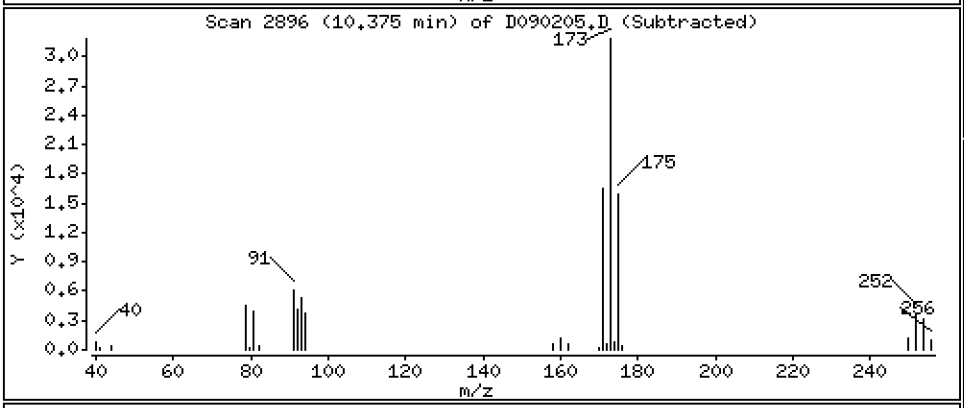
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

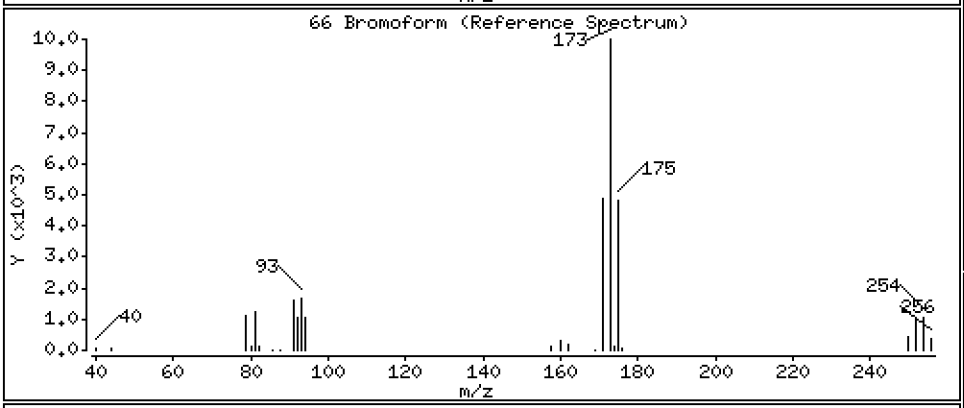
Purge Volume: 5.0 Operator: AP

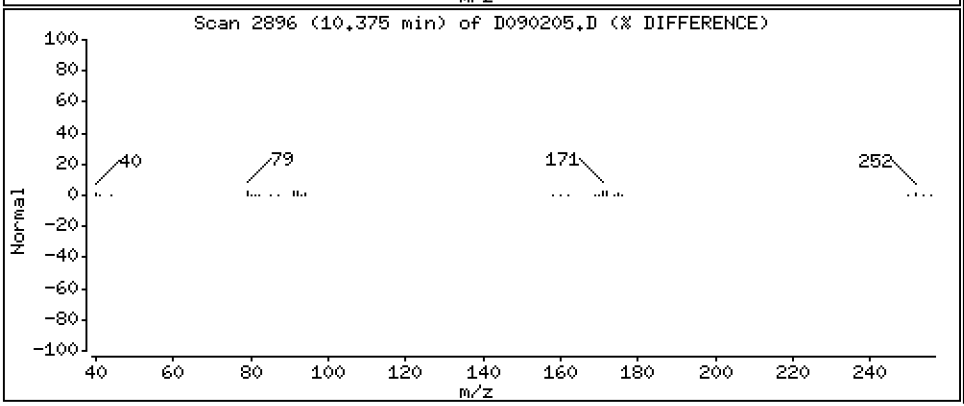
Column phase: DB624 Column diameter: 0.18

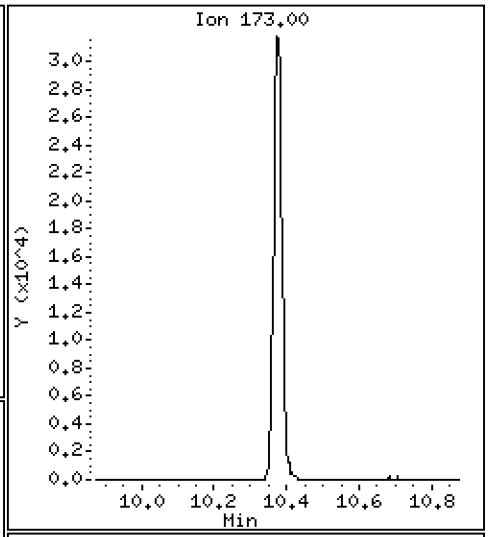
66 Bromoform Concentration: 21.85 ug/l Review Code:

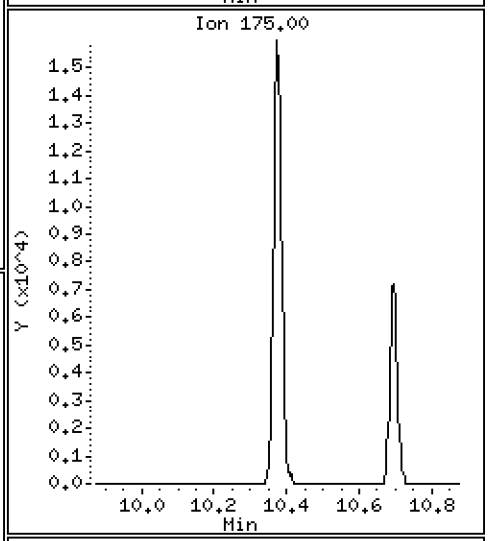


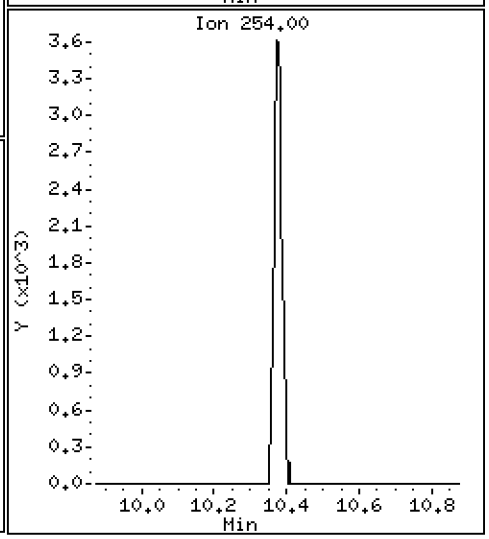












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 62

Date : 02-SEP-2018 15:04

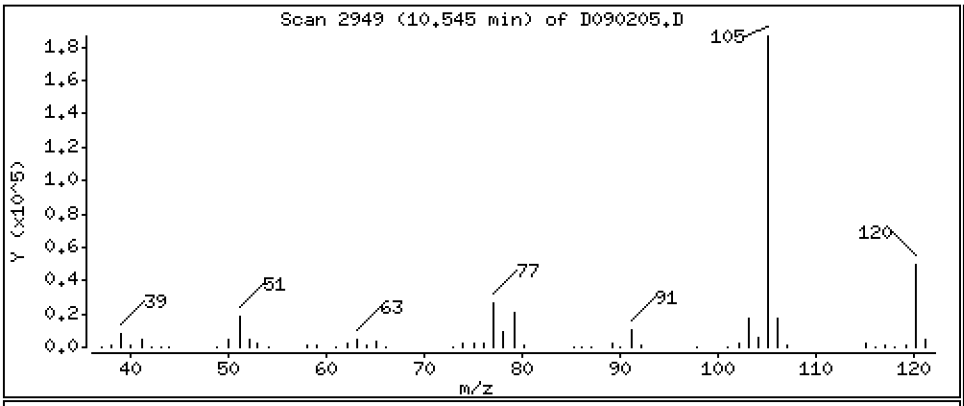
Client ID: VLCSW-180830 Instrument: VOA2.i

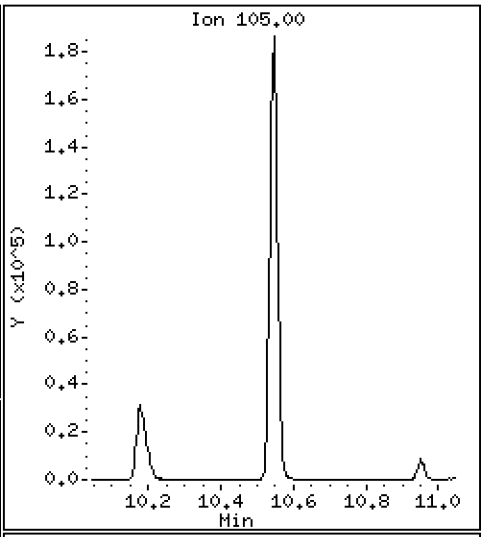
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

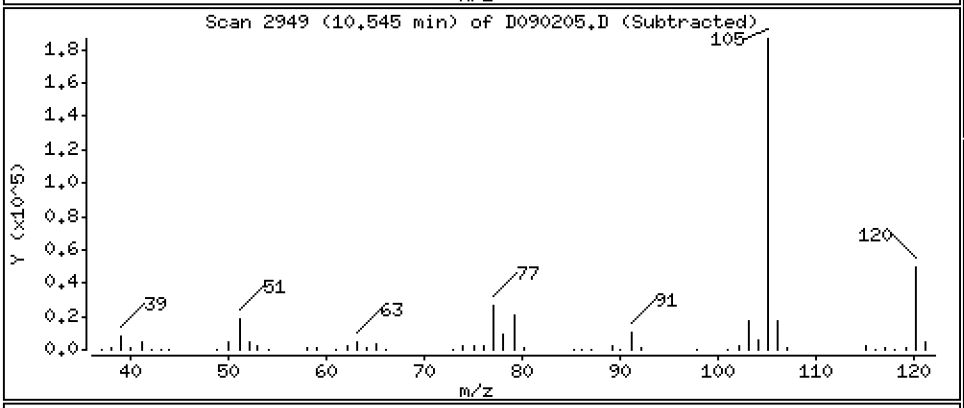
Purge Volume: 5.0 Operator: AP

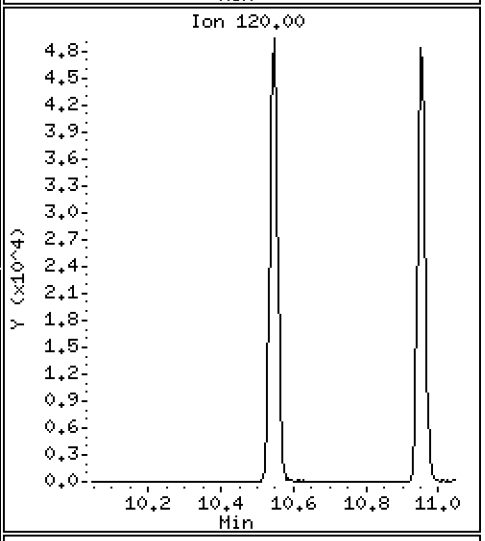
Column phase: DB624 Column diameter: 0.18

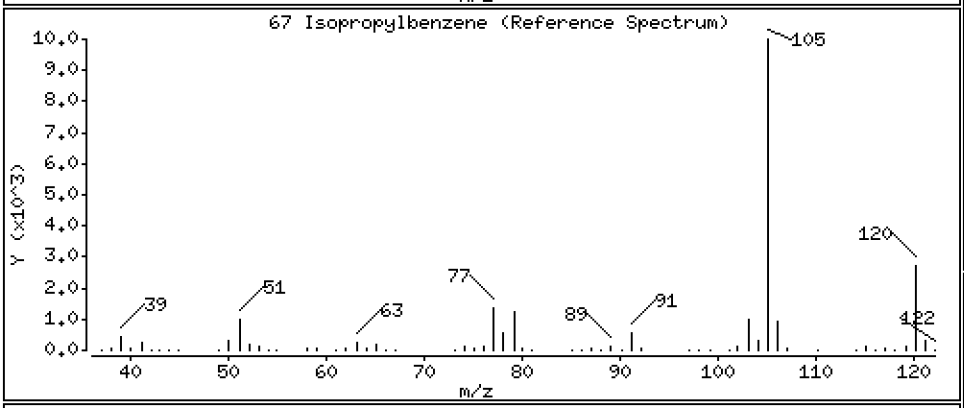
67 Isopropylbenzene Concentration: 20.55 ug/l Review Code:

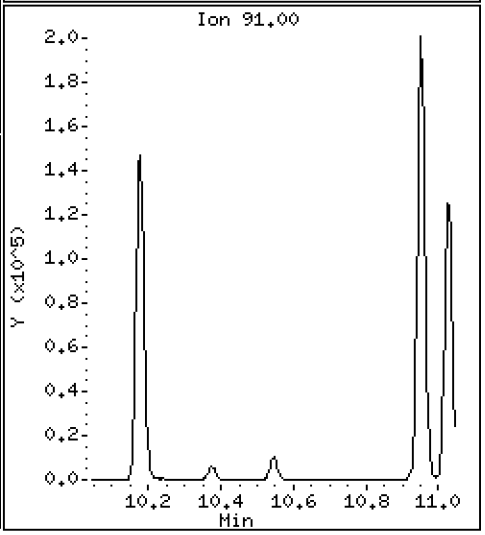


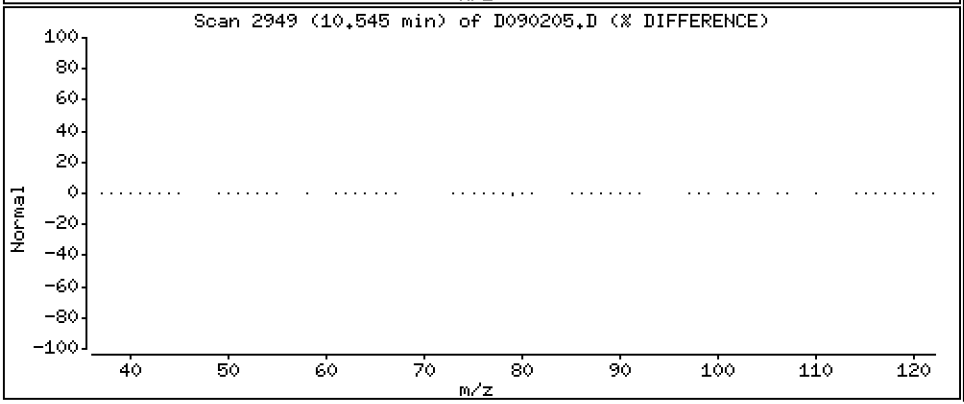












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 63

Date : 02-SEP-2018 15:04

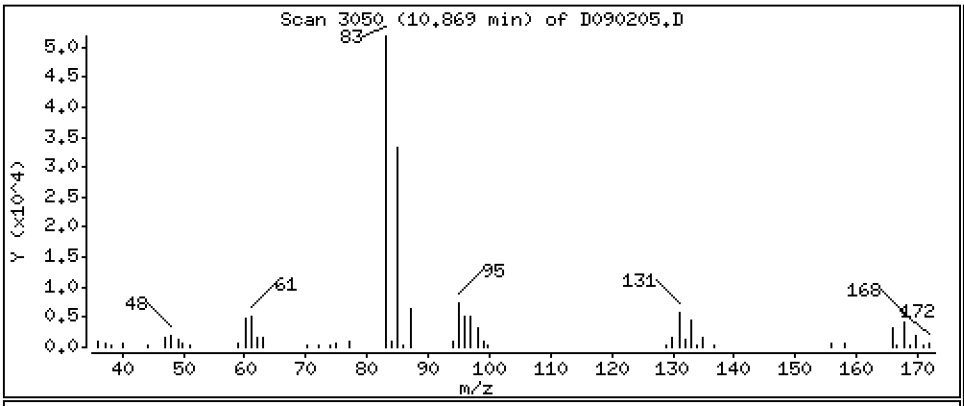
Client ID: VLCSW-180830 Instrument: VOA2.i

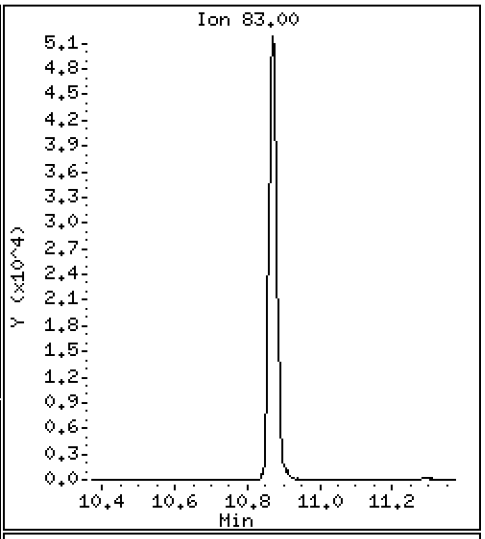
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

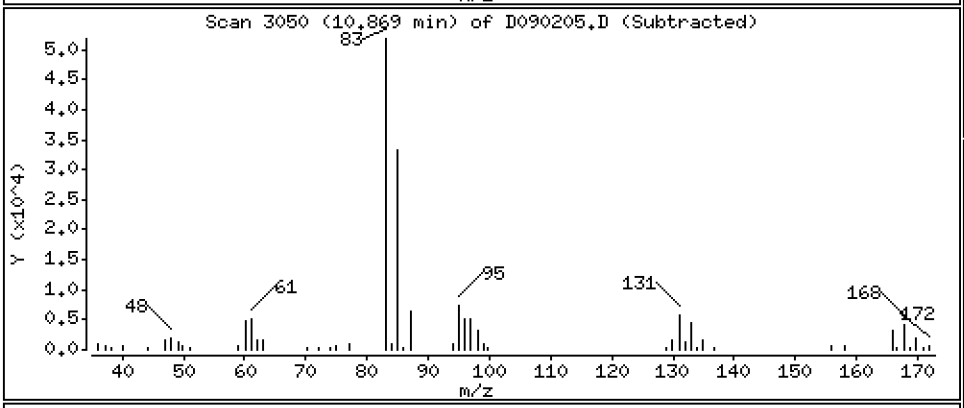
Purge Volume: 5.0 Operator: AP

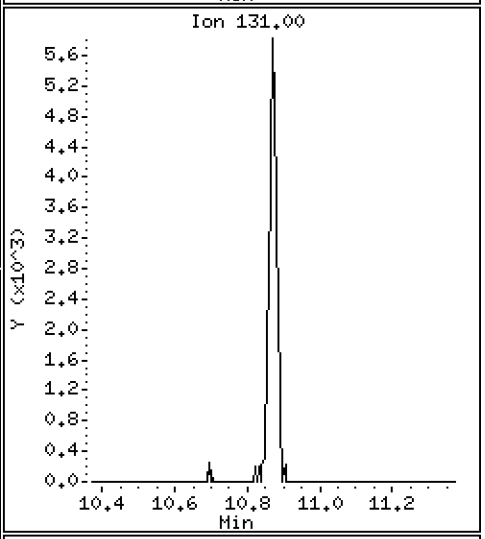
Column phase: DB624 Column diameter: 0.18

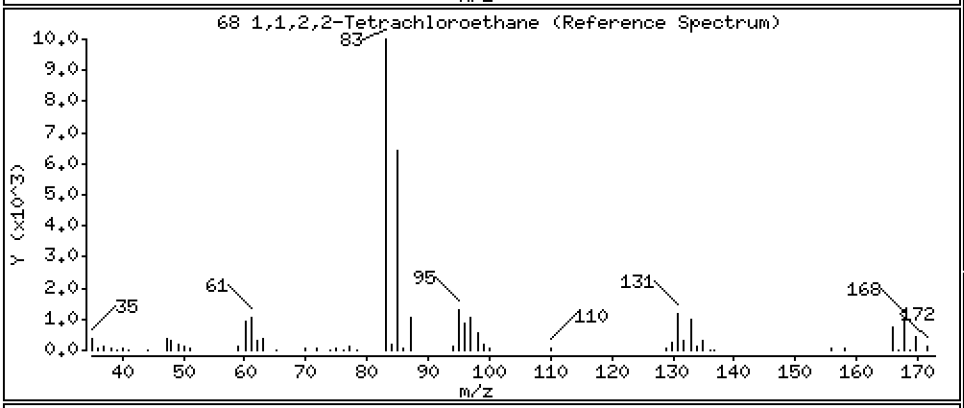
68 1,1,2,2-Tetrachloroethane Concentration: 17.95 ug/l Review Code:

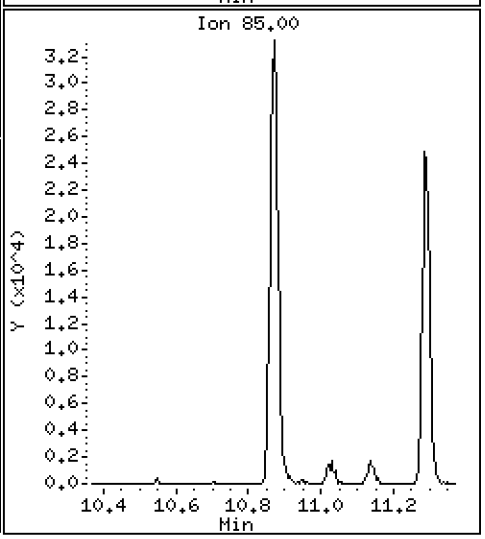


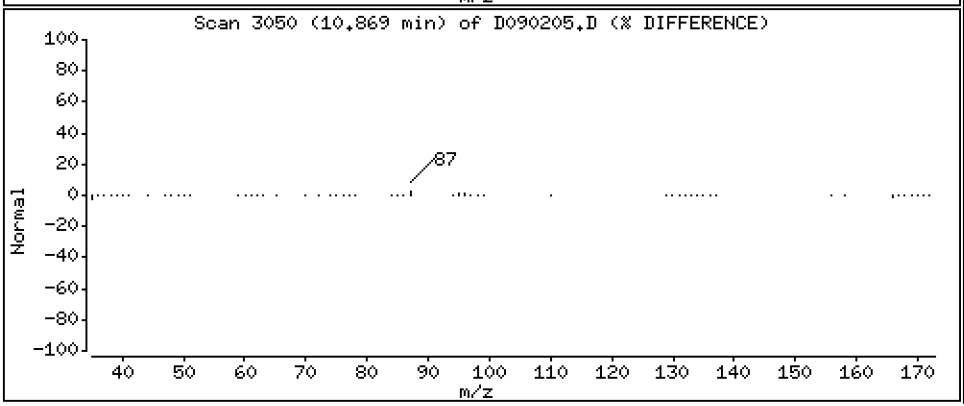












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 64

Date : 02-SEP-2018 15:04

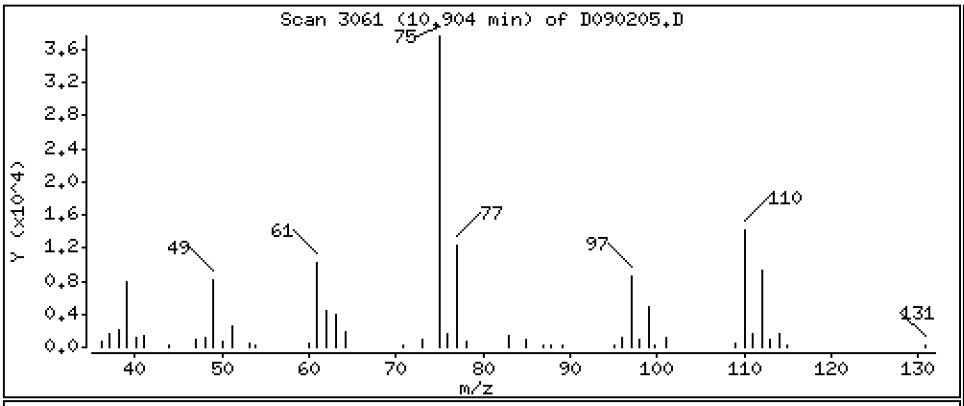
Client ID: VLCSW-180830 Instrument: VOA2.i

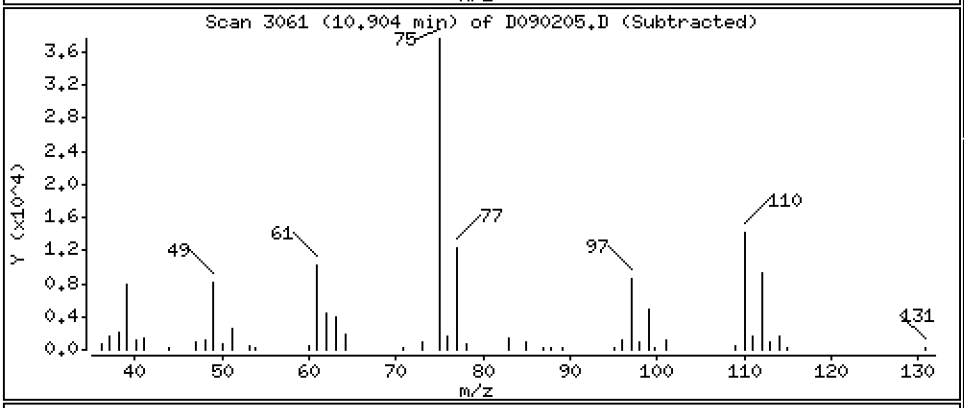
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

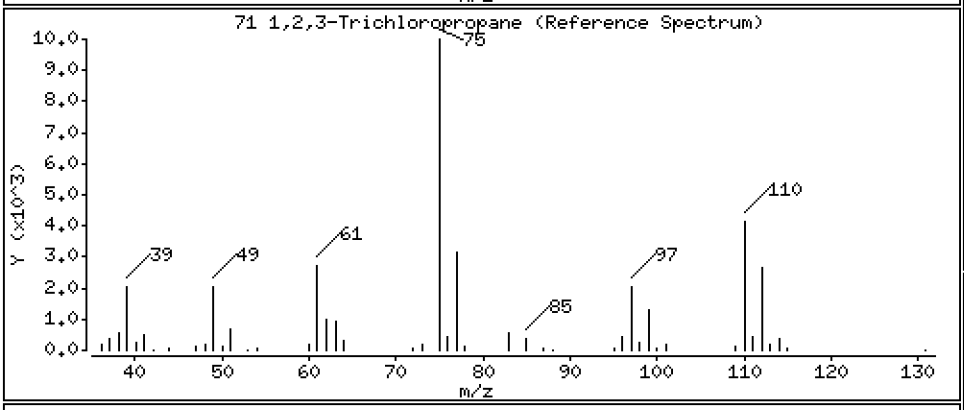
Purge Volume: 5.0 Operator: AP

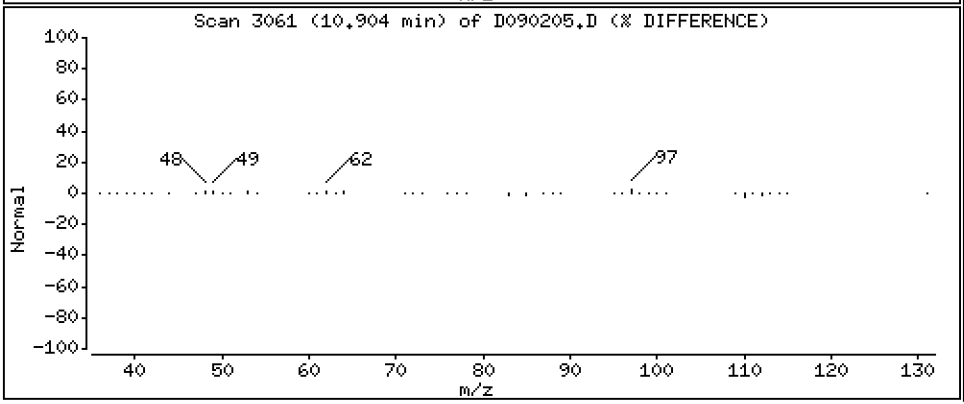
Column phase: DB624 Column diameter: 0.18

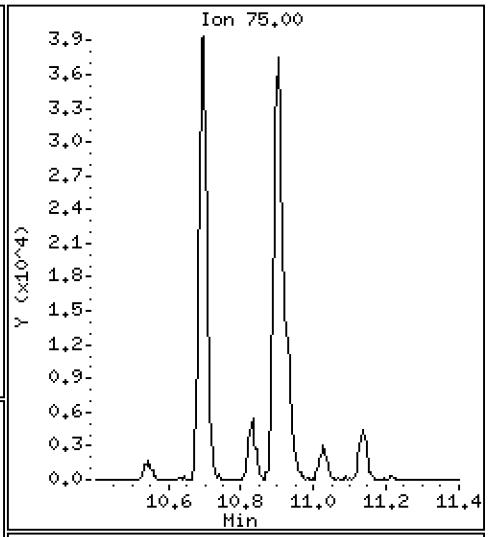
71 1,2,3-Trichloropropane Concentration: 18.39 ug/l Review Code:

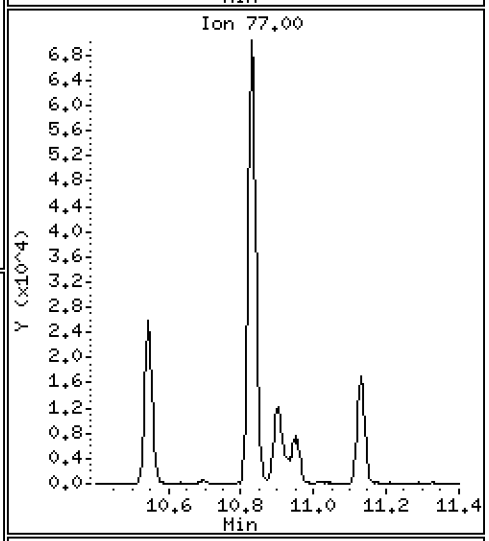


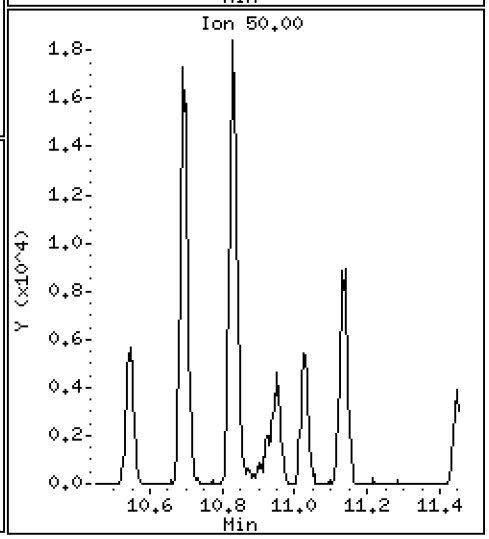












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 65

Date : 02-SEP-2018 15:04

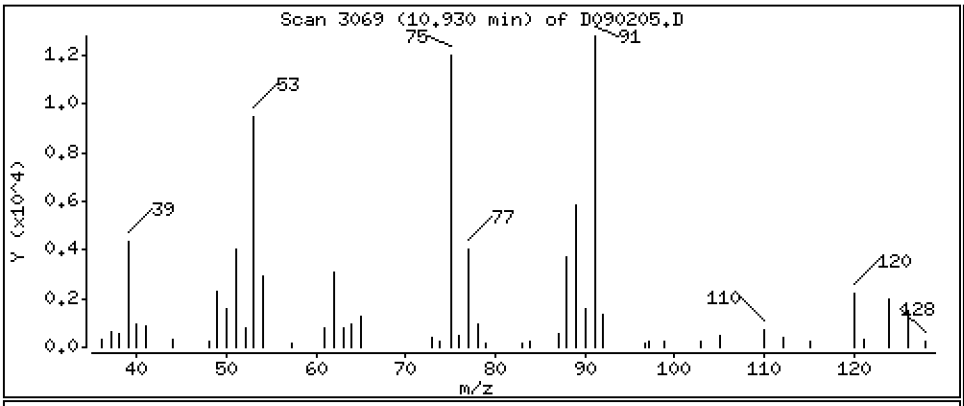
Client ID: VLCSW-180830 Instrument: VOA2.i

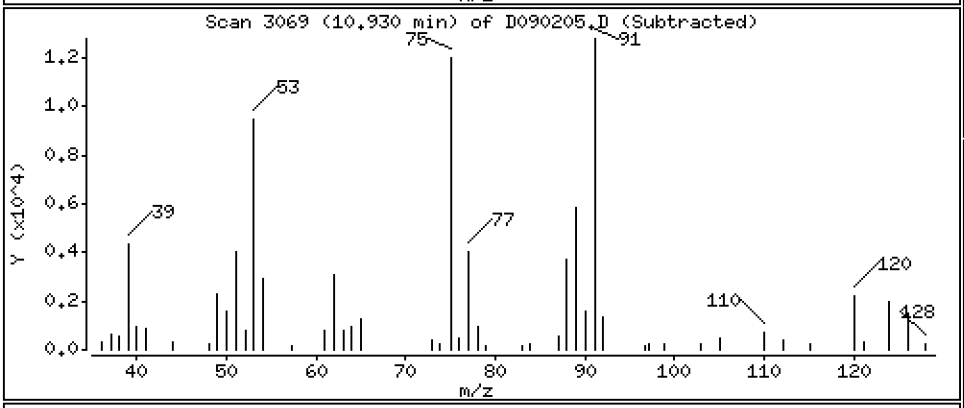
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

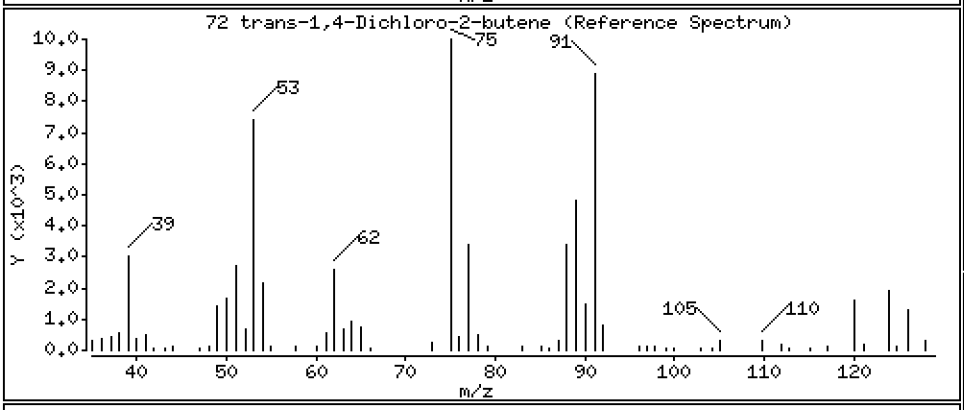
Purge Volume: 5.0 Operator: AP

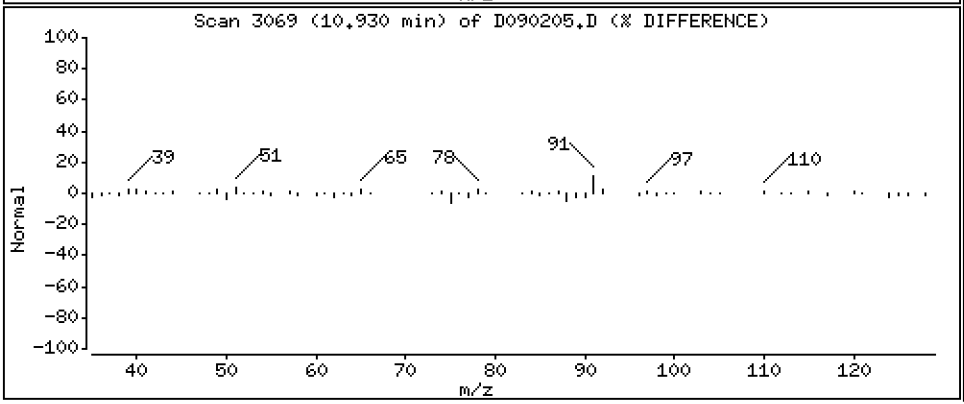
Column phase: DB624 Column diameter: 0.18

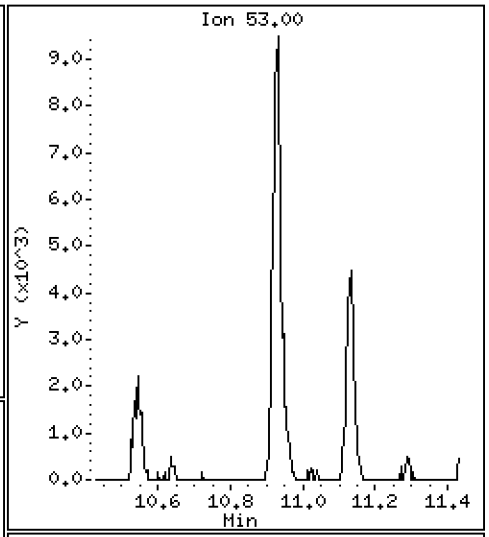
72 trans-1,4-Dichloro-2-butene Concentration: 18.72 ug/l Review Code:

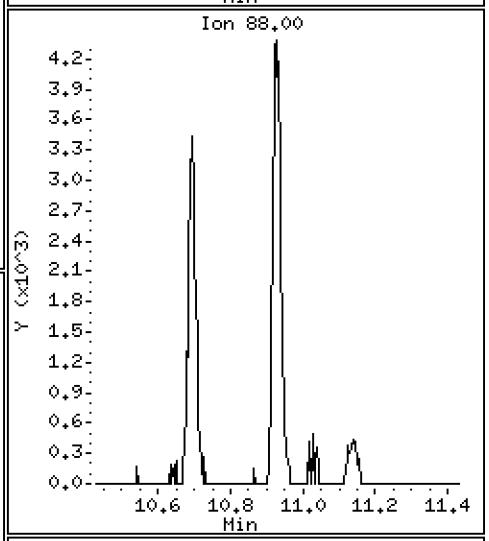


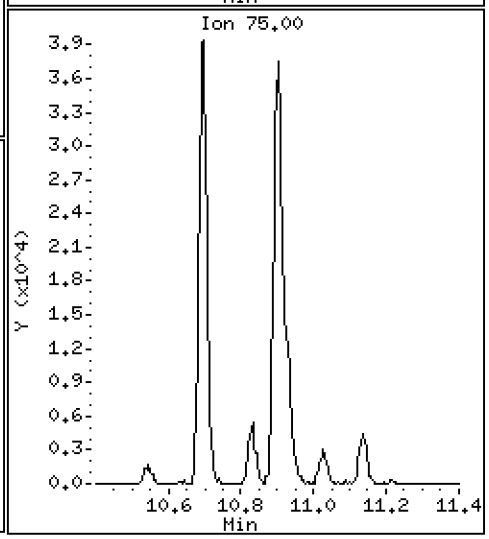












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 66

Date : 02-SEP-2018 15:04

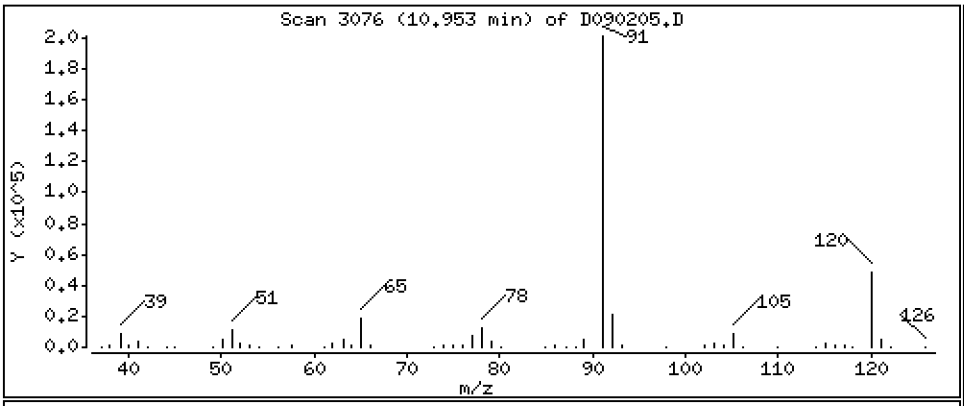
Client ID: VLCSW-180830 Instrument: VOA2.i

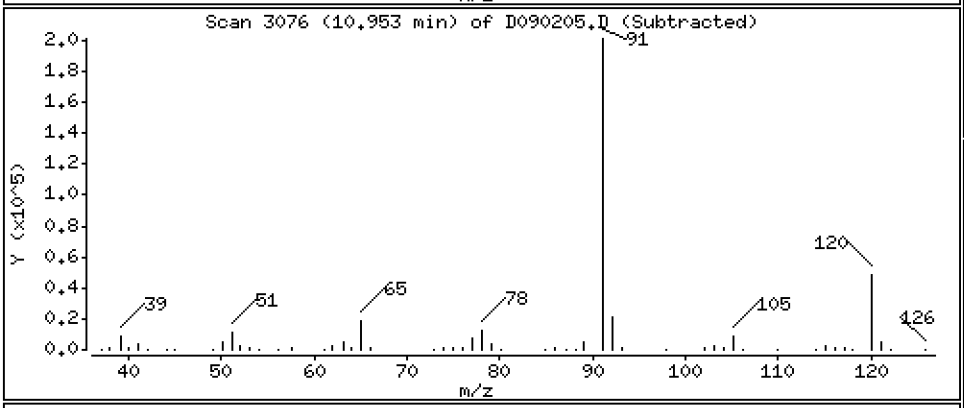
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

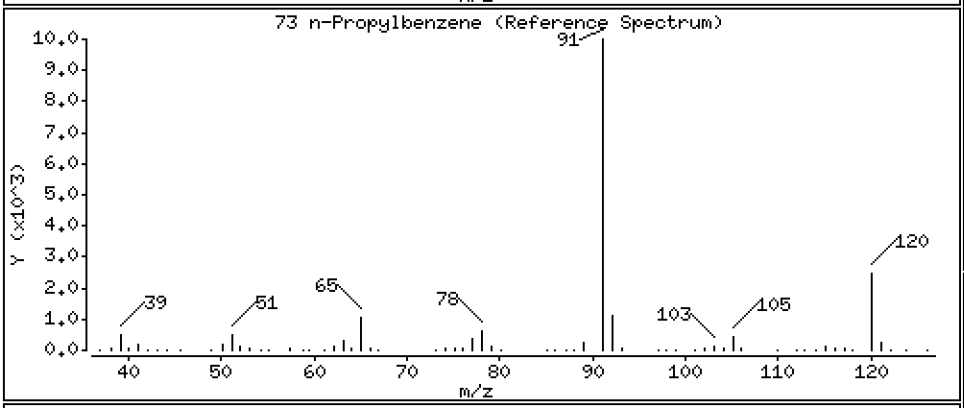
Purge Volume: 5.0 Operator: AP

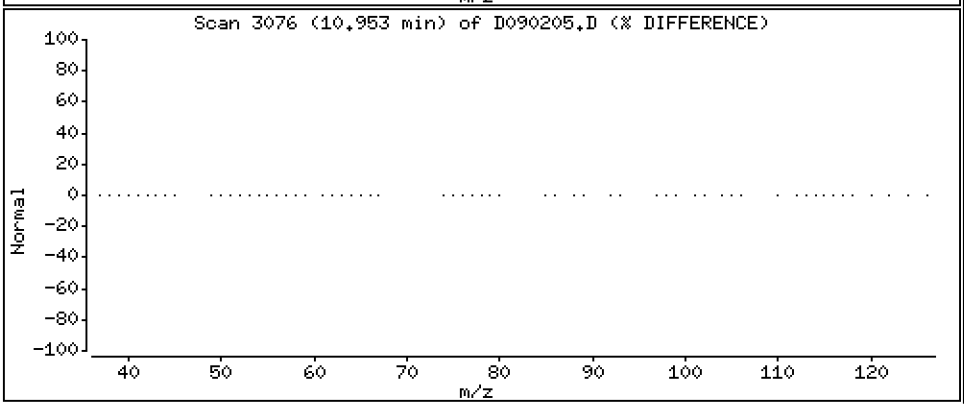
Column phase: DB624 Column diameter: 0.18

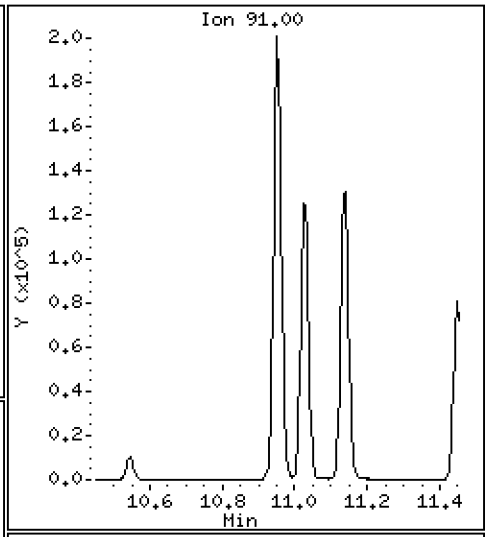
73 n-Propylbenzene Concentration: 21.58 ug/l Review Code:

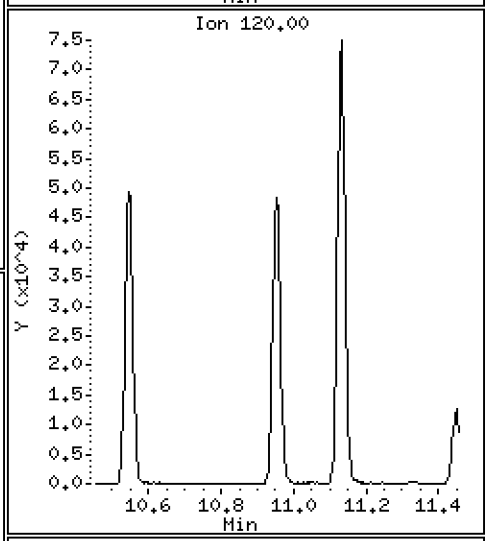


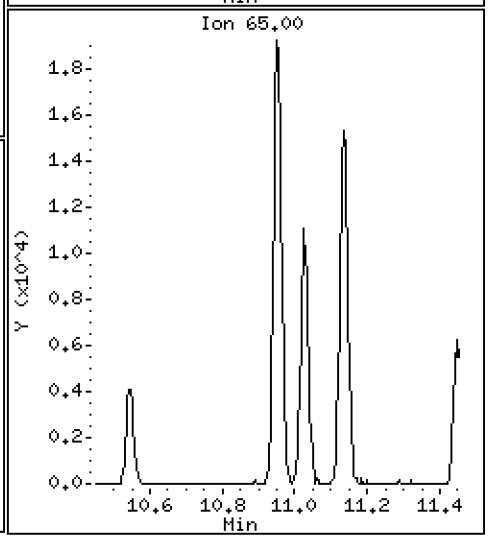












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 67

Date : 02-SEP-2018 15:04

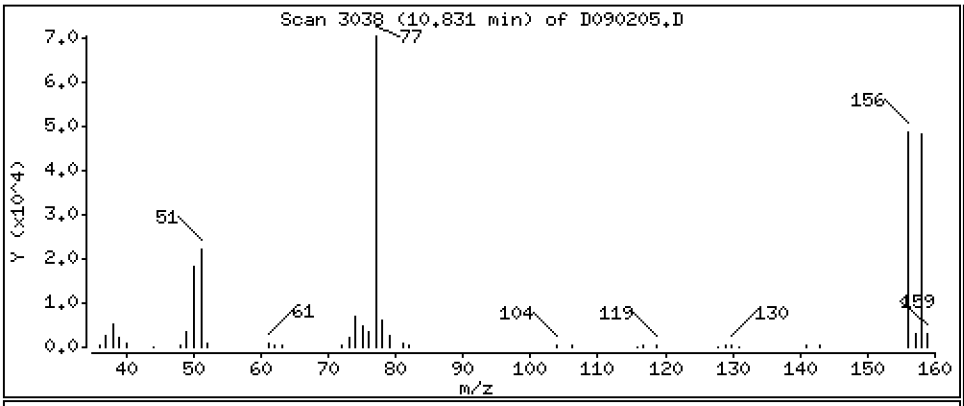
Client ID: VLCSW-180830 Instrument: VOA2.i

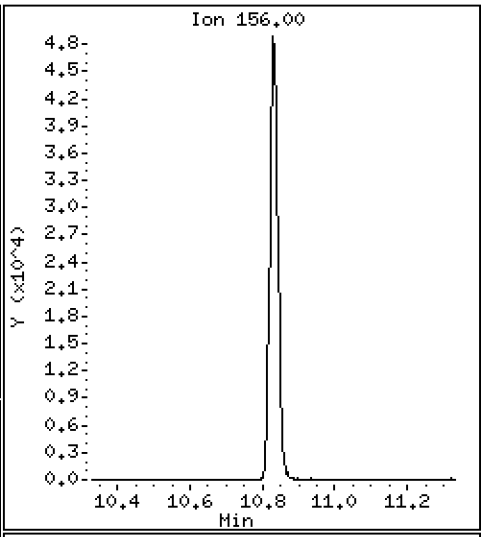
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

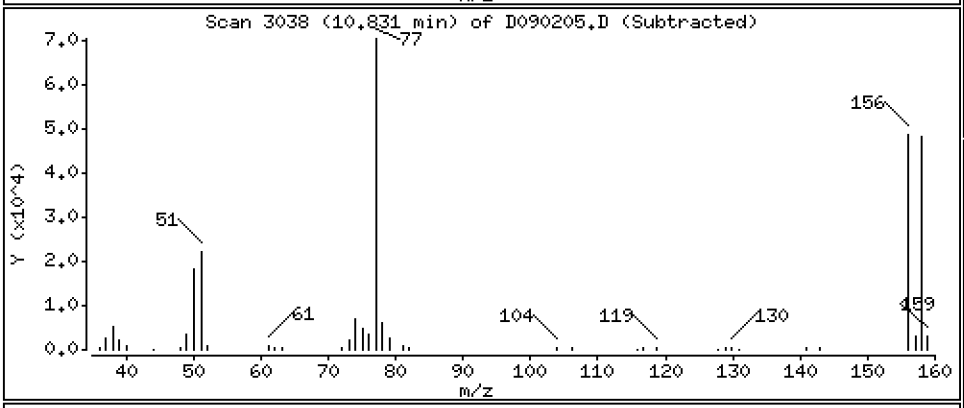
Purge Volume: 5.0 Operator: AP

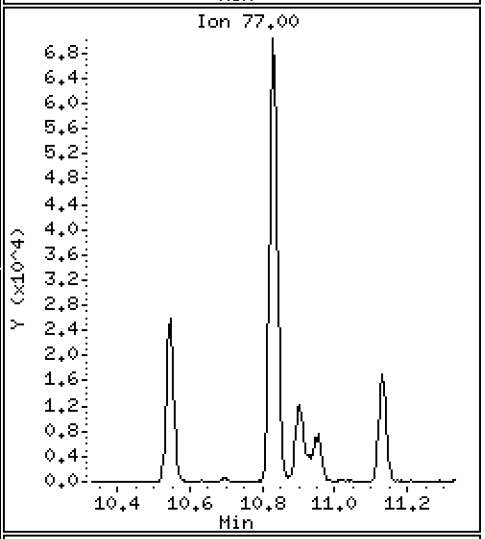
Column phase: DB624 Column diameter: 0.18

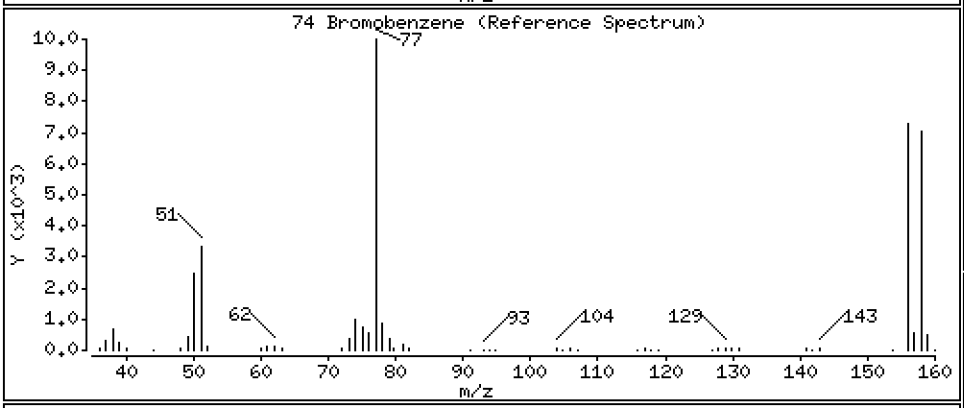
74 Bromobenzene Concentration: 20.16 ug/l Review Code:

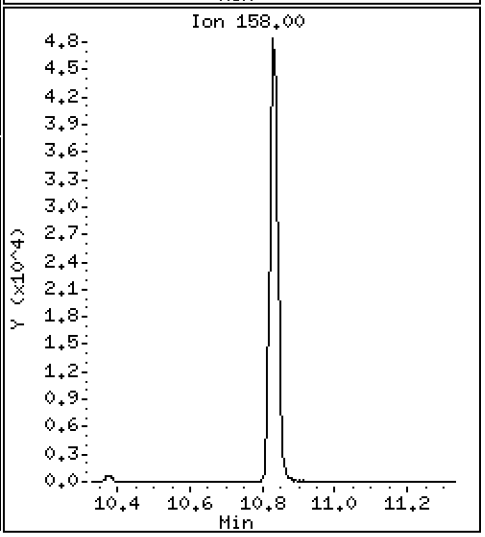


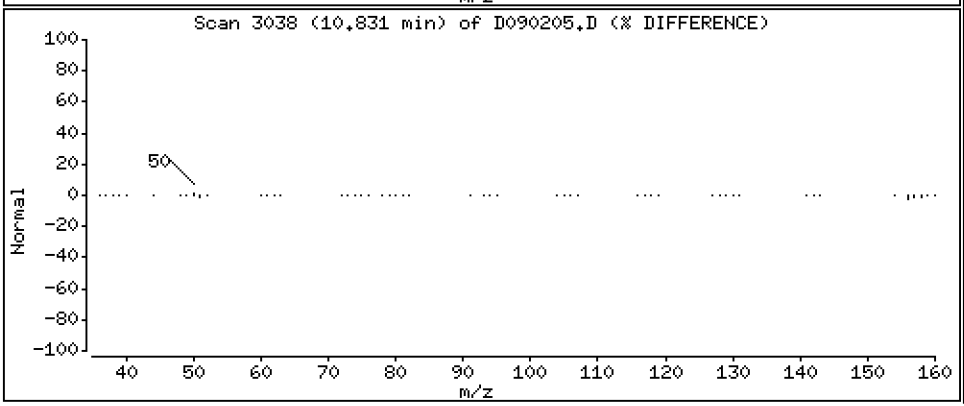












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 68

Date : 02-SEP-2018 15:04

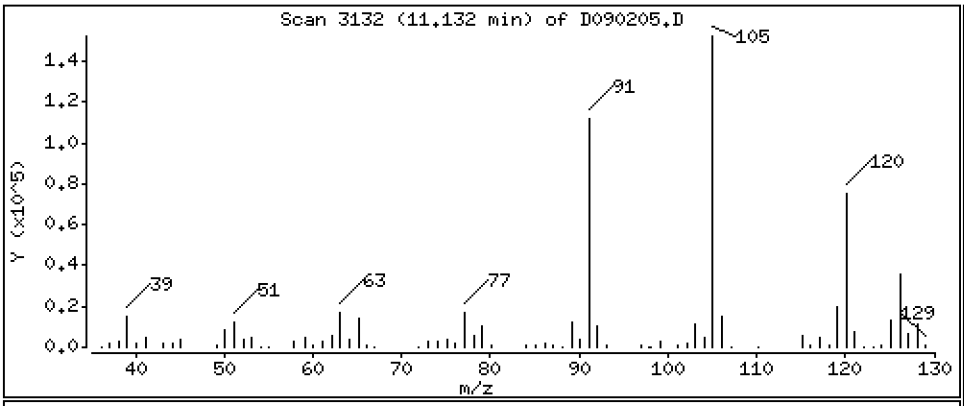
Client ID: VLCSW-180830 Instrument: VOA2.i

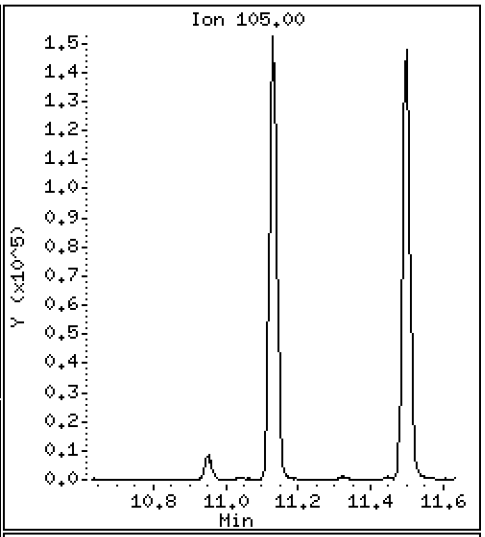
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

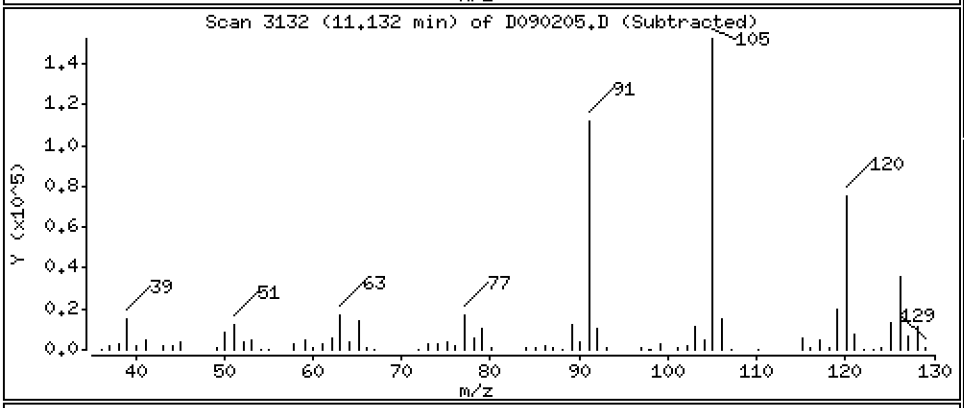
Purge Volume: 5.0 Operator: AP

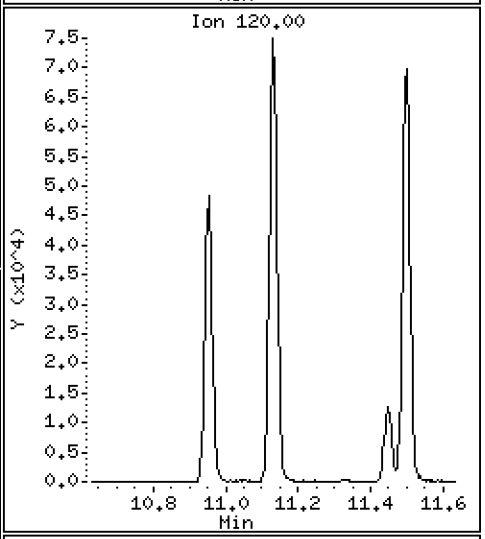
Column phase: DB624 Column diameter: 0.18

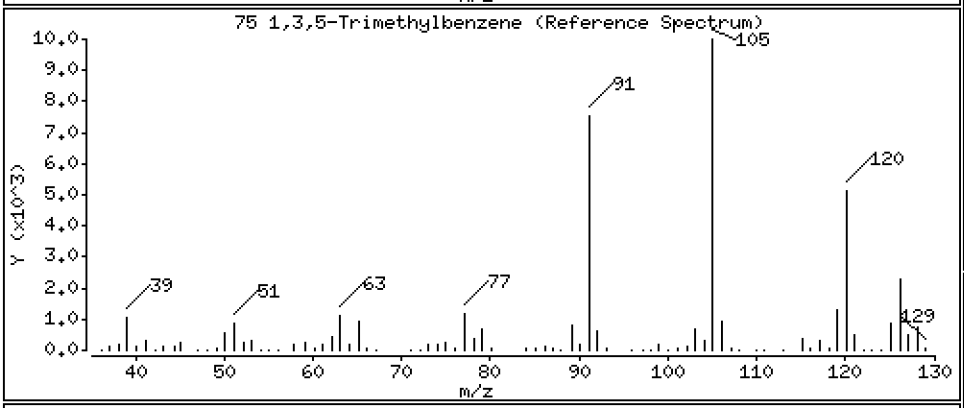
75 1,3,5-Trimethylbenzene Concentration: 19.63 ug/l Review Code:

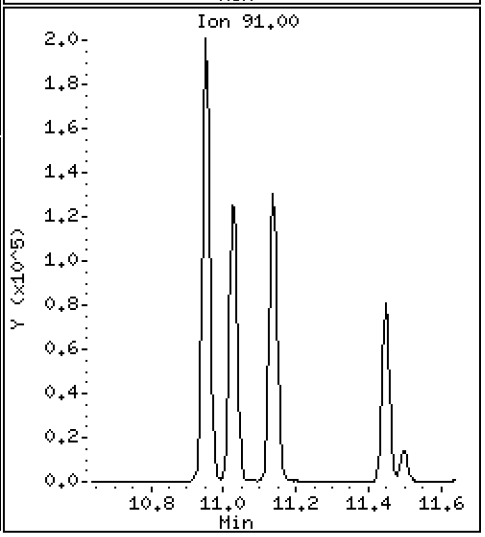


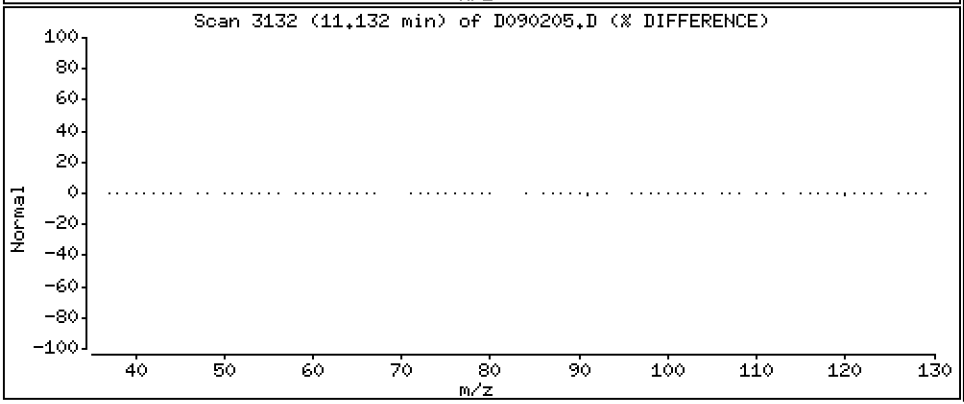












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 69

Date : 02-SEP-2018 15:04

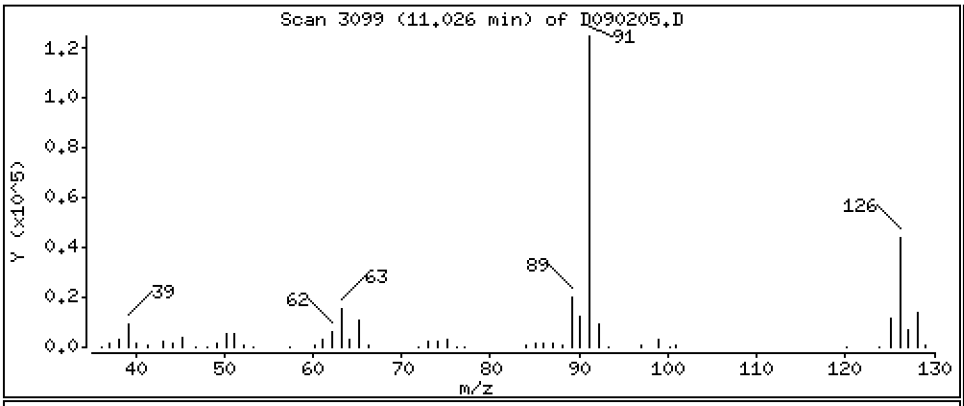
Client ID: VLCSW-180830 Instrument: VOA2.i

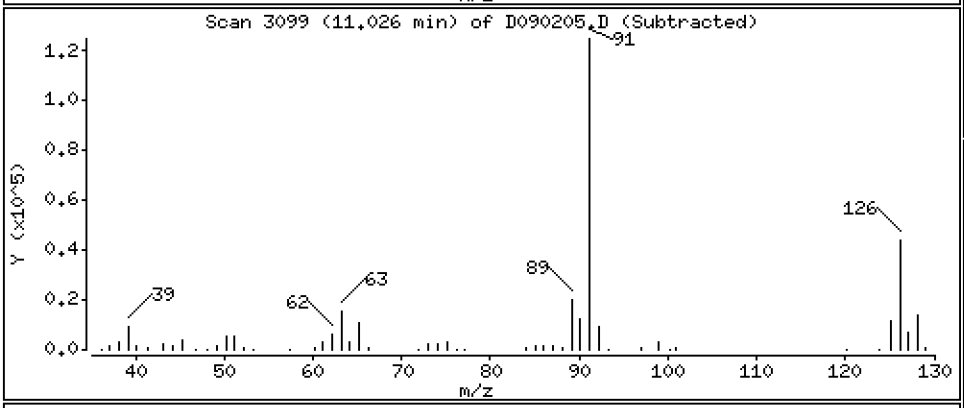
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

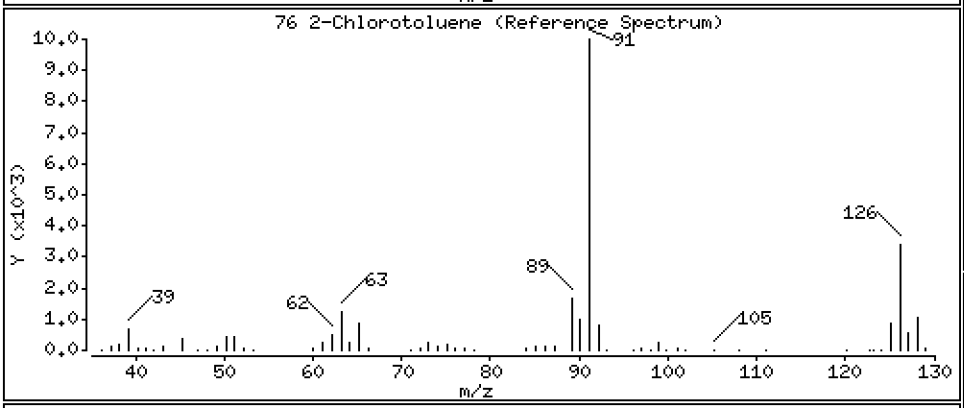
Purge Volume: 5.0 Operator: AP

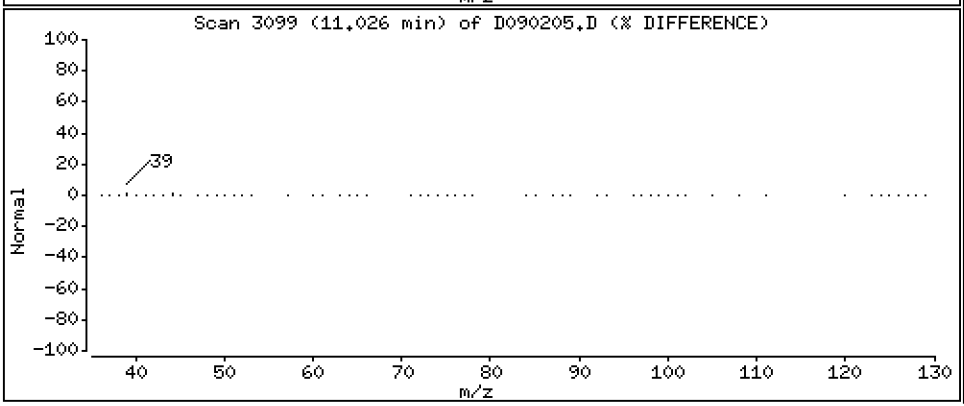
Column phase: DB624 Column diameter: 0.18

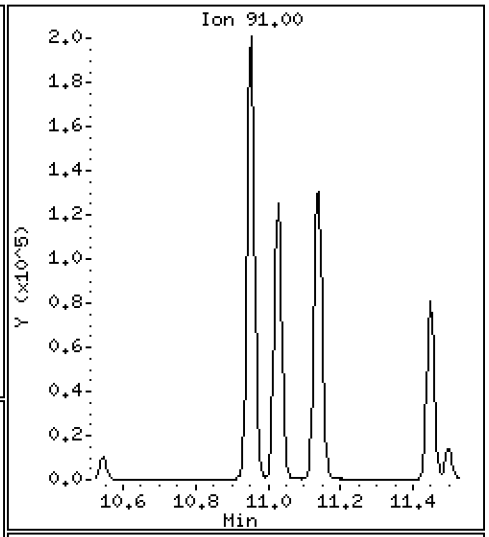
76 2-Chlorotoluene Concentration: 21.28 ug/l Review Code:

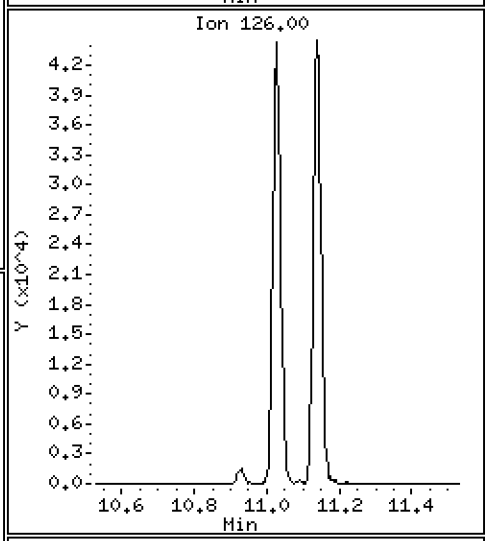


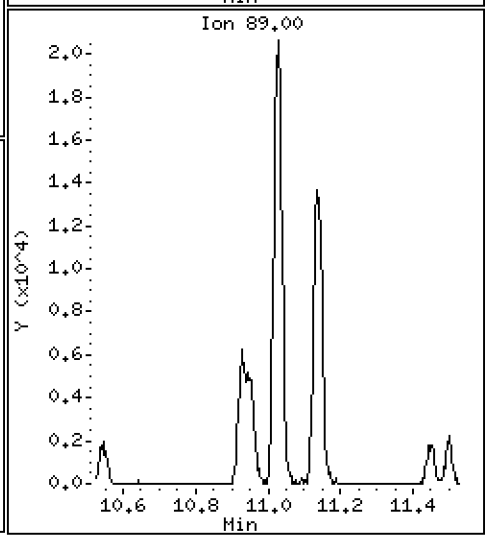












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 70

Date : 02-SEP-2018 15:04

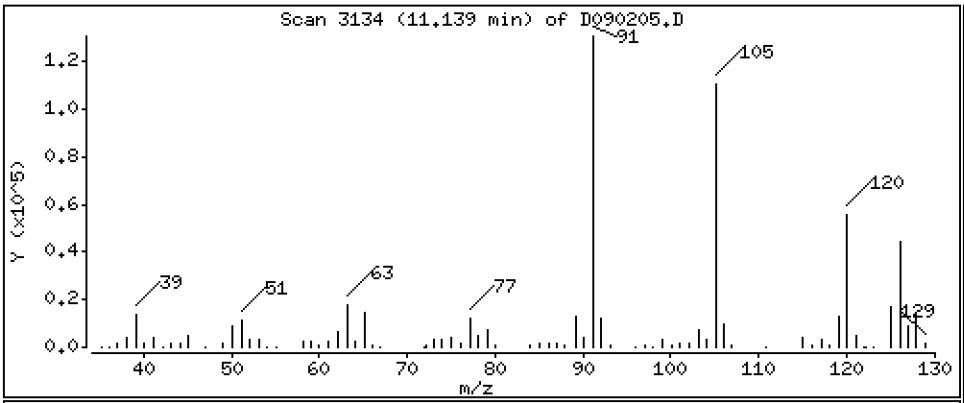
Client ID: VLCSW-180830 Instrument: VOA2.i

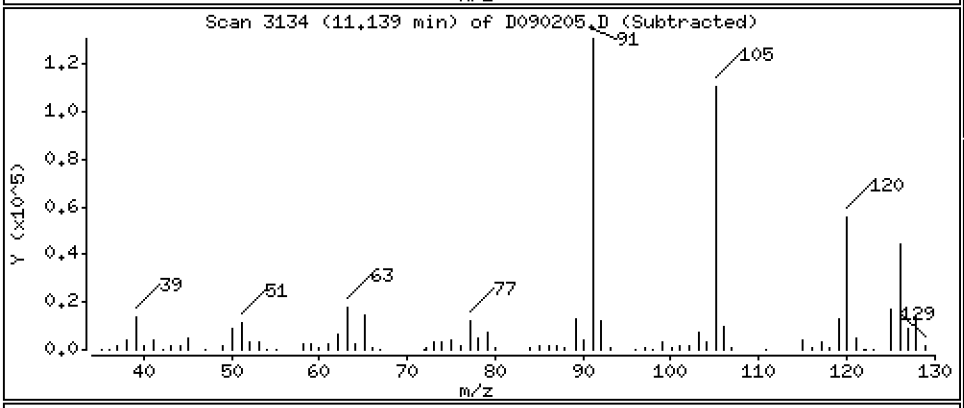
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

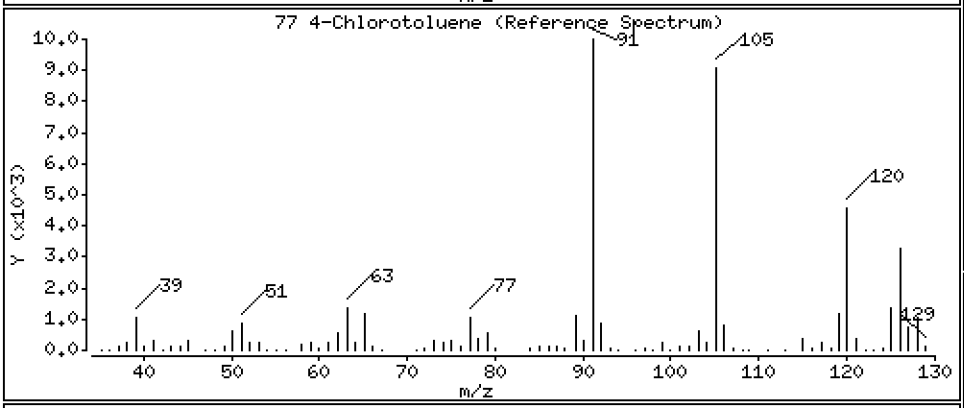
Purge Volume: 5.0 Operator: AP

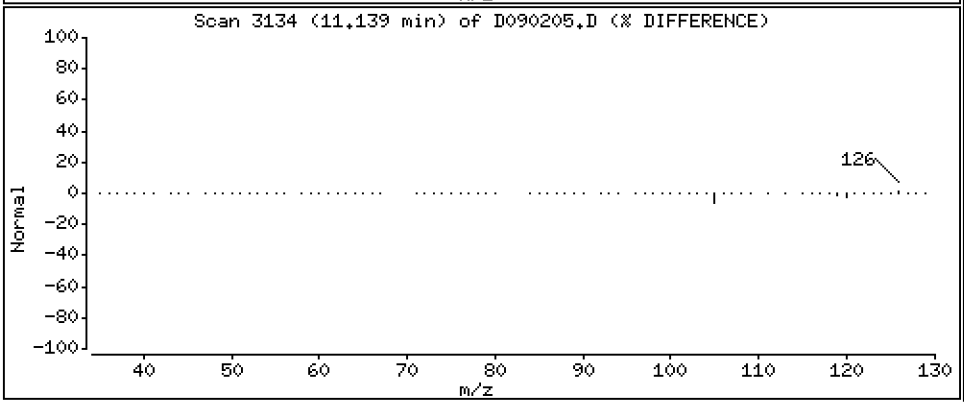
Column phase: DB624 Column diameter: 0.18

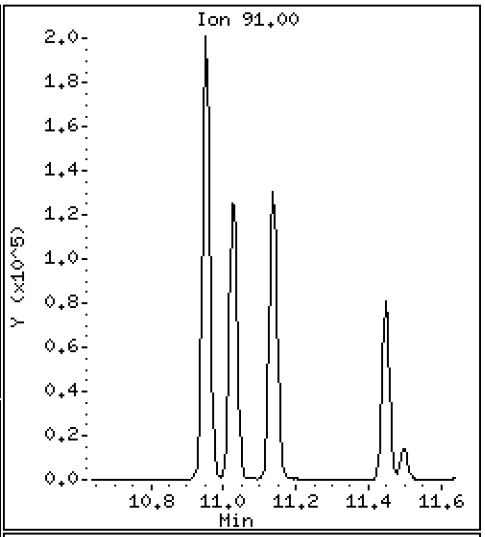
77 4-Chlorotoluene Concentration: 21.40 ug/l Review Code:

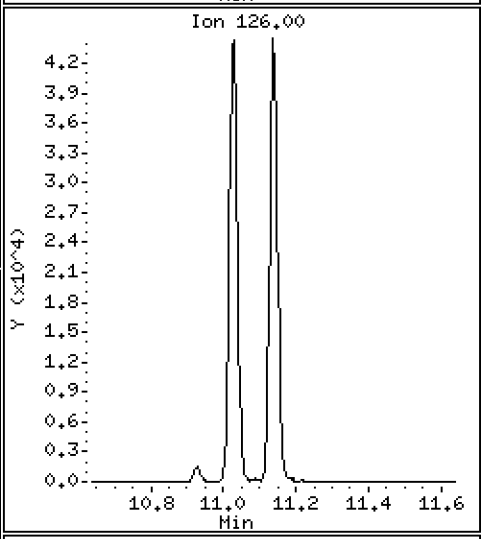


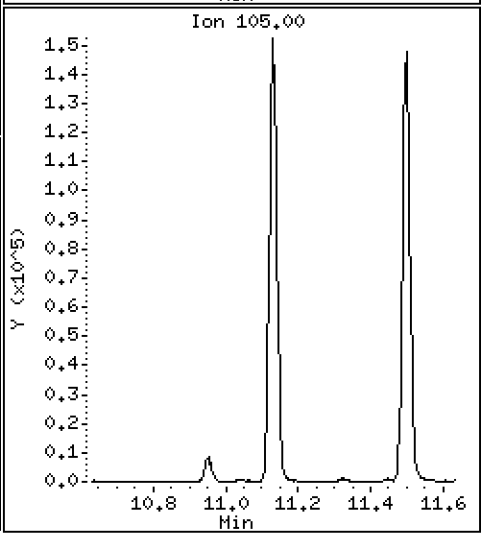












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 71

Date : 02-SEP-2018 15:04

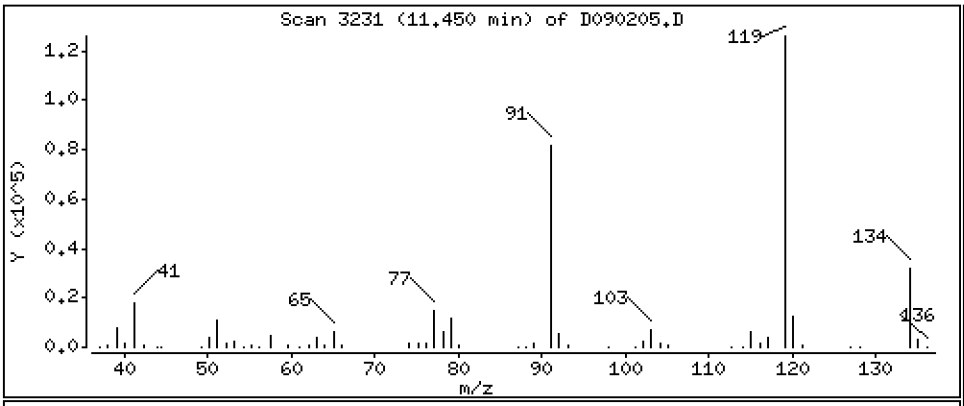
Client ID: VLCSW-180830 Instrument: VOA2.i

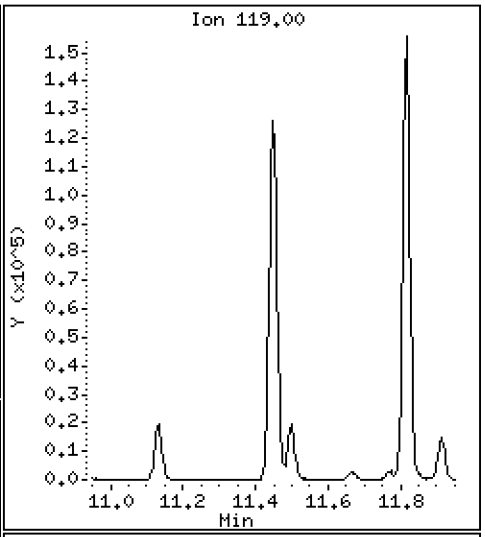
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

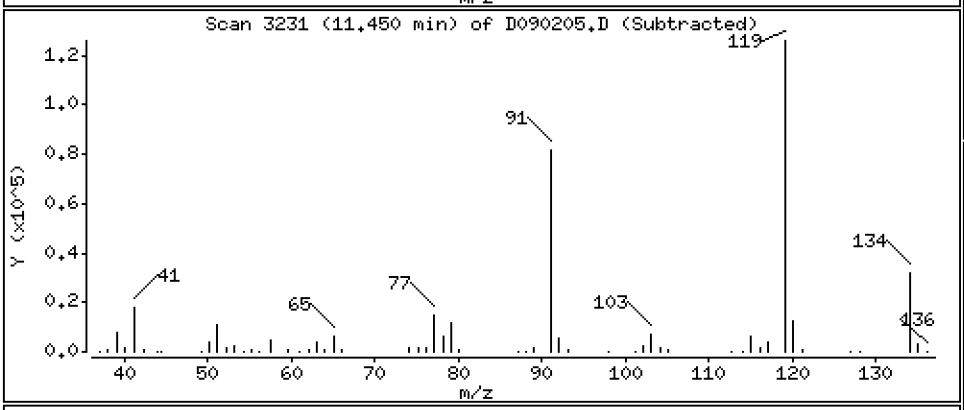
Purge Volume: 5.0 Operator: AP

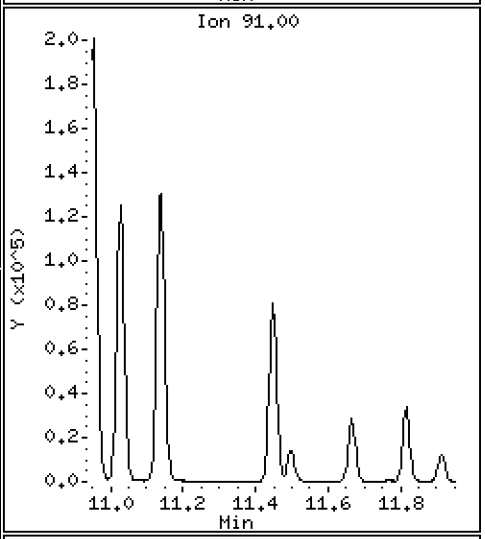
Column phase: DB624 Column diameter: 0.18

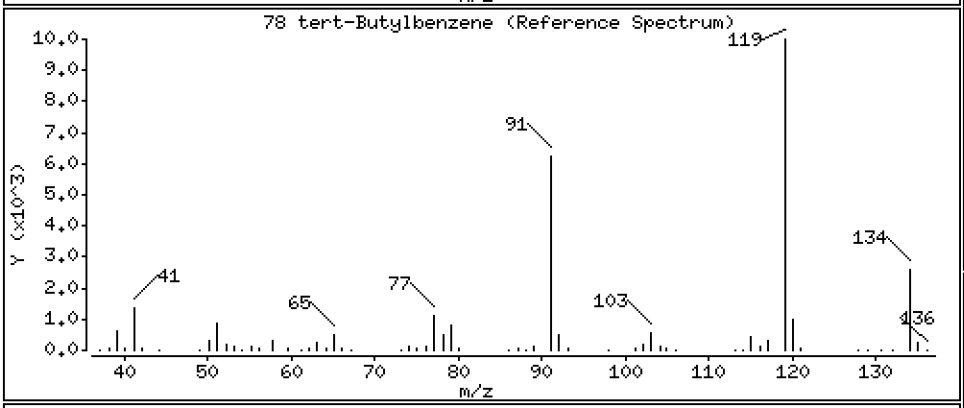
78 tert-Butylbenzene Concentration: 21.86 ug/l Review Code:

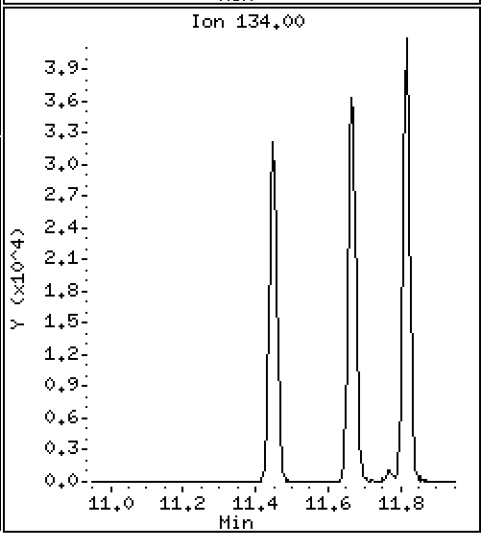


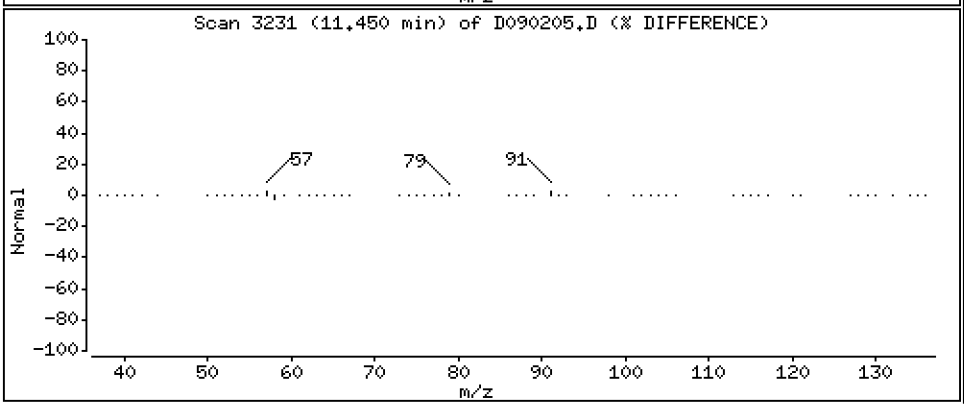












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 72

Date : 02-SEP-2018 15:04

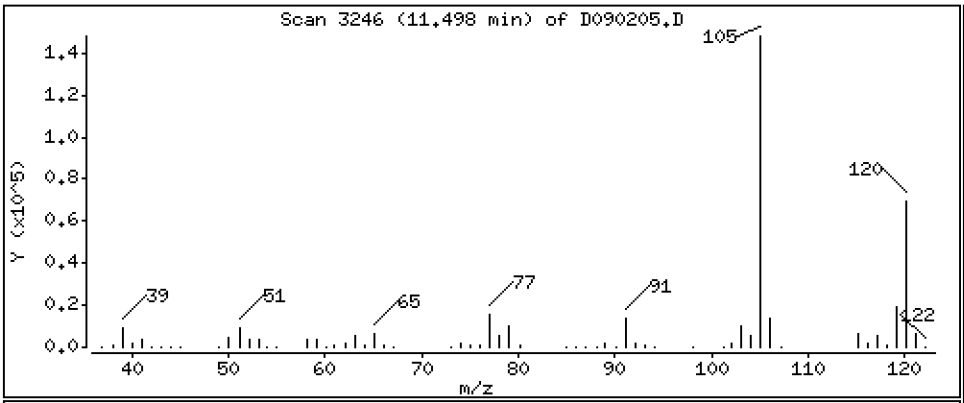
Client ID: VLCSW-180830 Instrument: VOA2.i

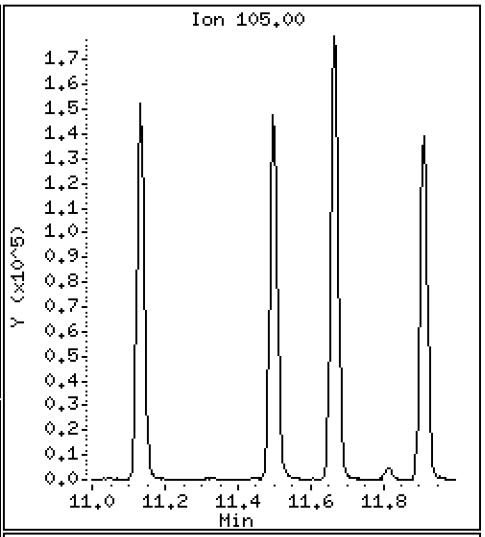
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

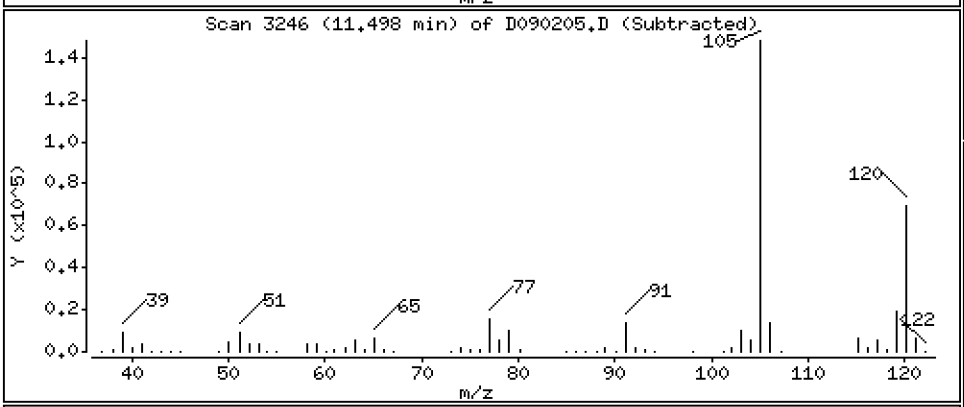
Purge Volume: 5.0 Operator: AP

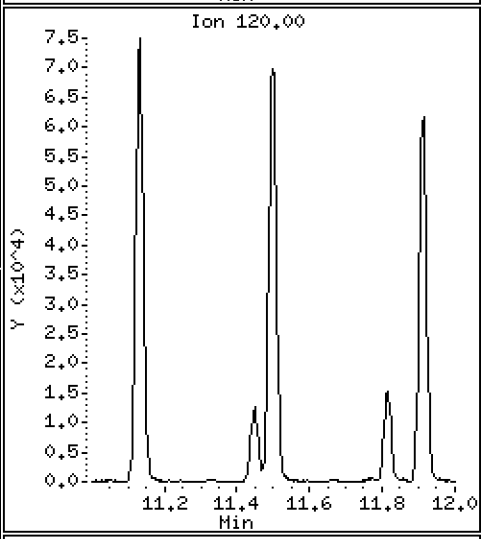
Column phase: DB624 Column diameter: 0.18

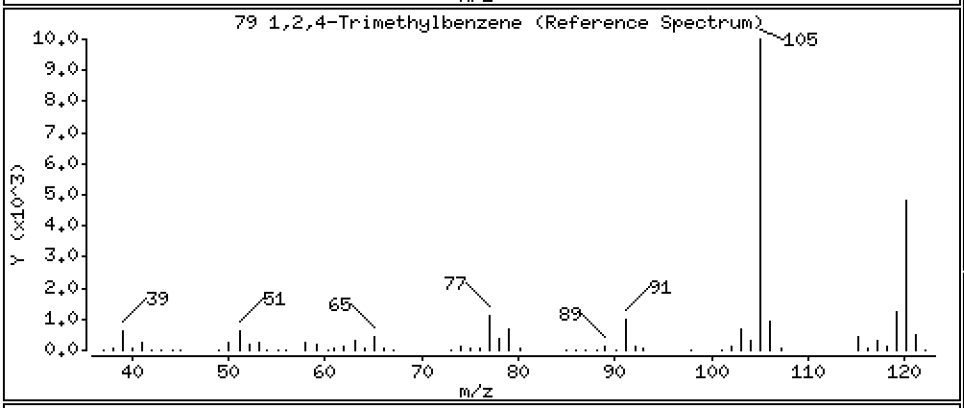
79 1,2,4-Trimethylbenzene Concentration: 20.98 ug/l Review Code:

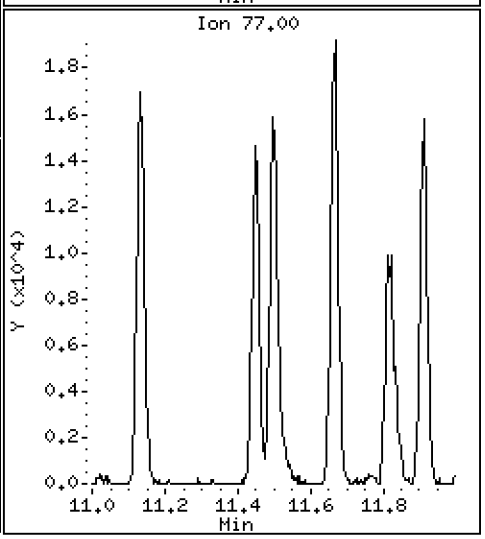


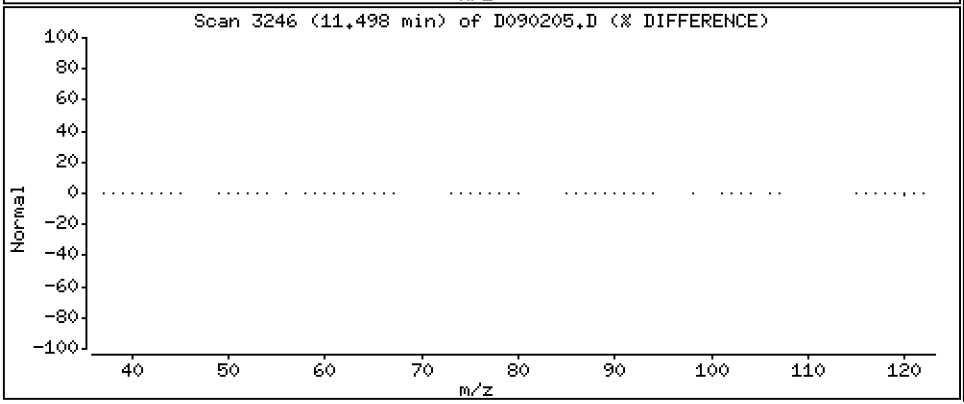












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 73

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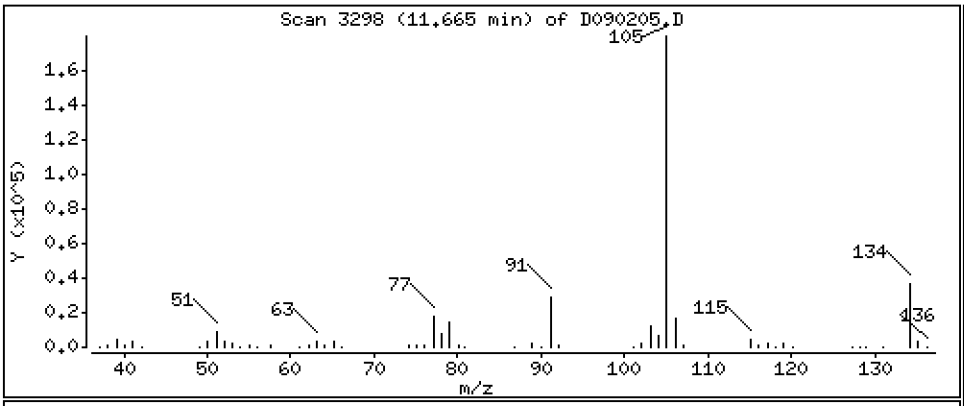
Client ID: VLCSW-180830 Instrument: VOA2.i

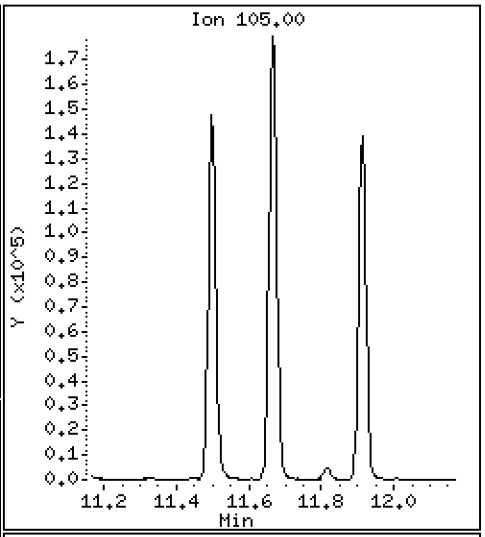
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

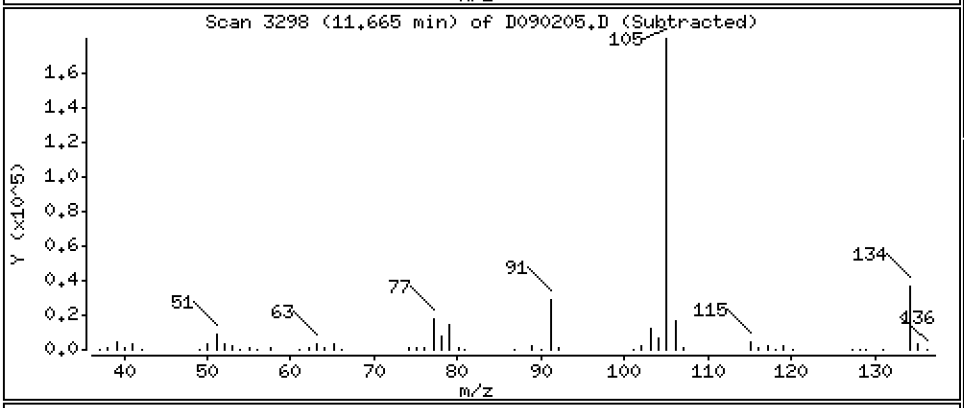
Purge Volume: 5.0 Operator: AP

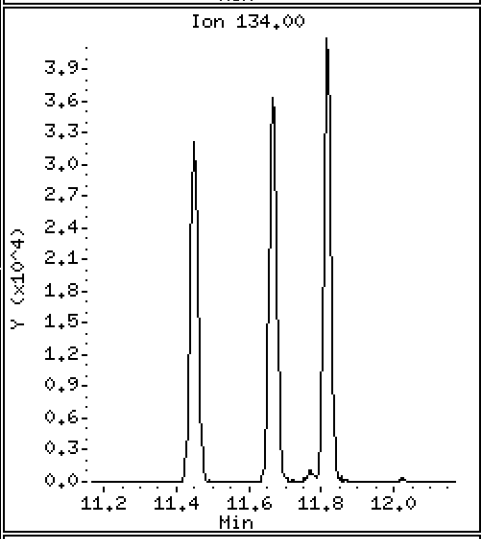
Column phase: DB624 Column diameter: 0.18

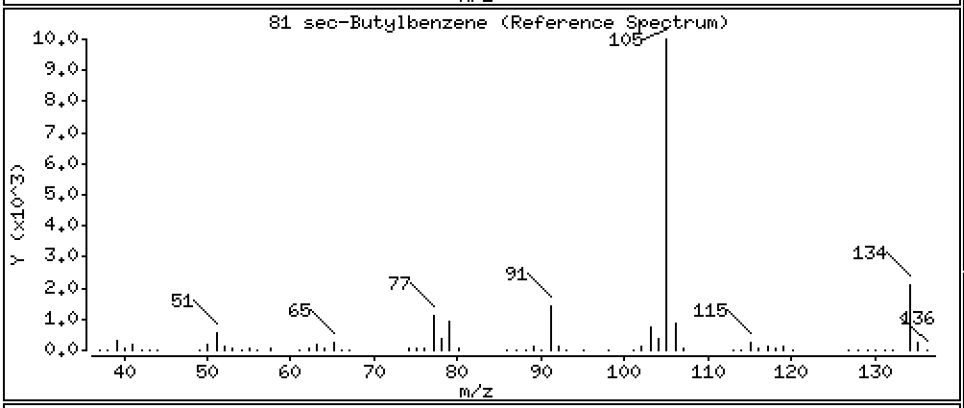
81 sec-Butylbenzene Concentration: 19.08 ug/l Review Code:

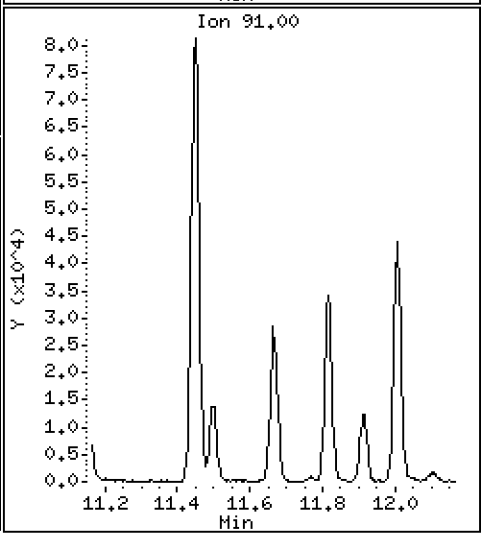


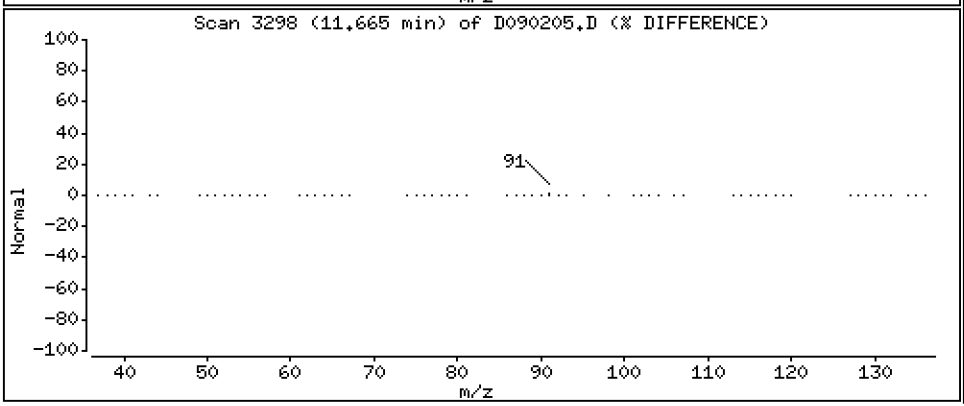












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 74

Date : 02-SEP-2018 15:04

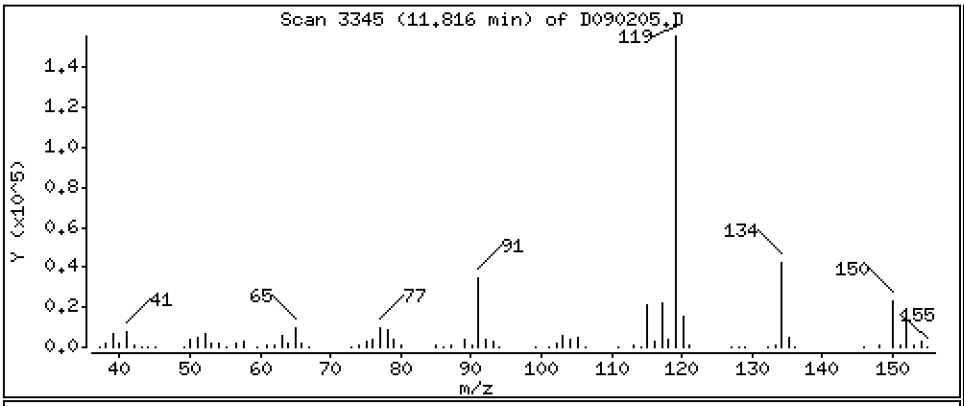
Client ID: VLCSW-180830 Instrument: VOA2.i

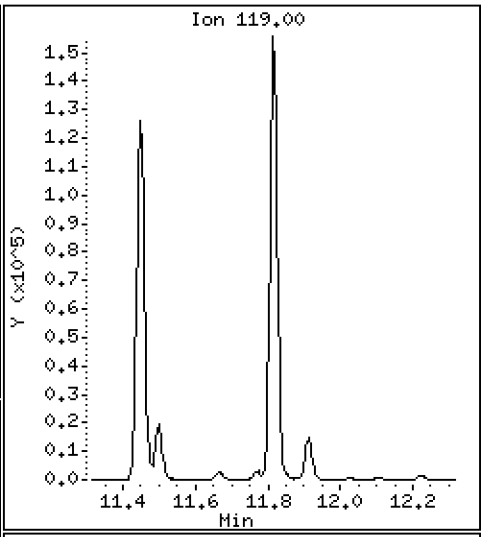
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

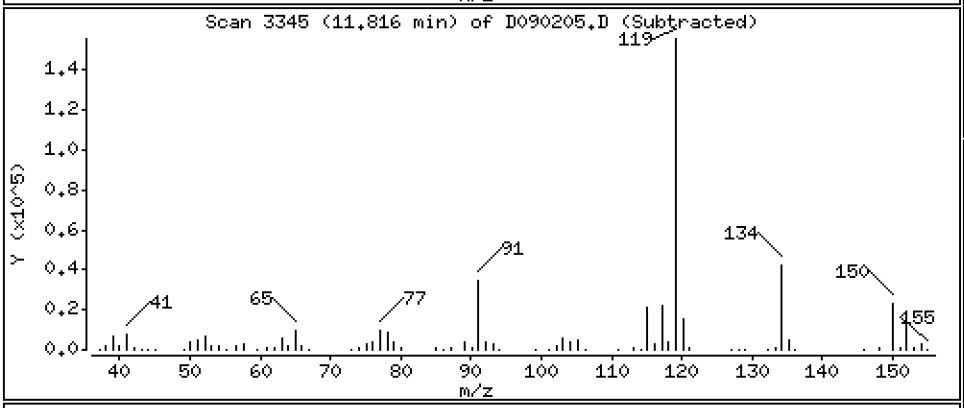
Purge Volume: 5.0 Operator: AP

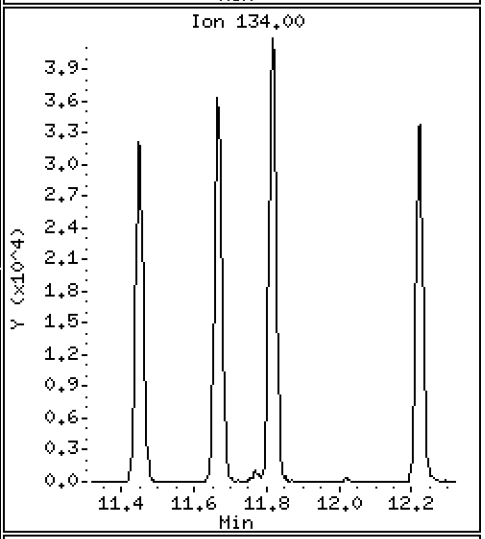
Column phase: DB624 Column diameter: 0.18

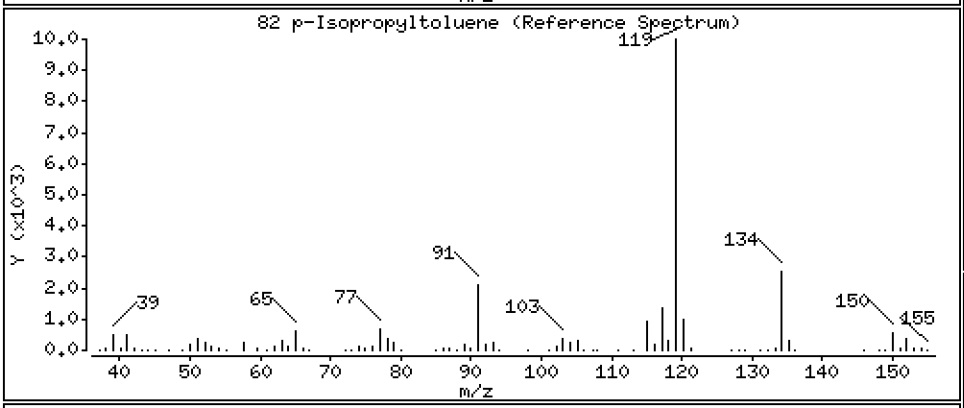
82 p-Isopropyltoluene Concentration: 19.04 ug/l Review Code:

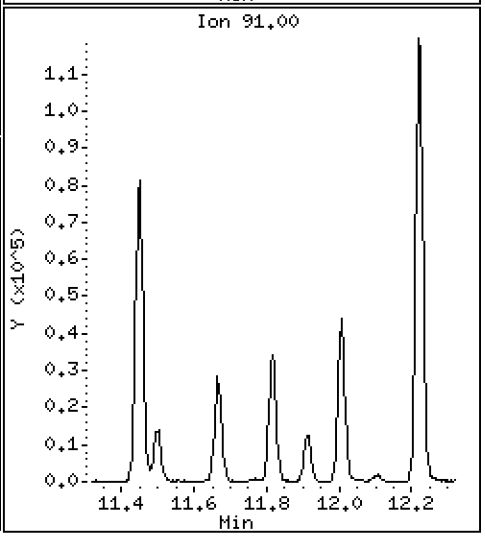


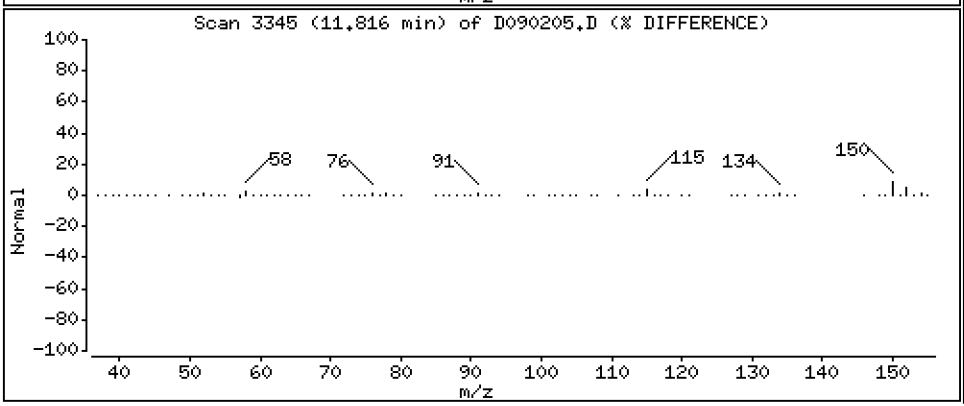












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Date : 02-SEP-2018 15:04

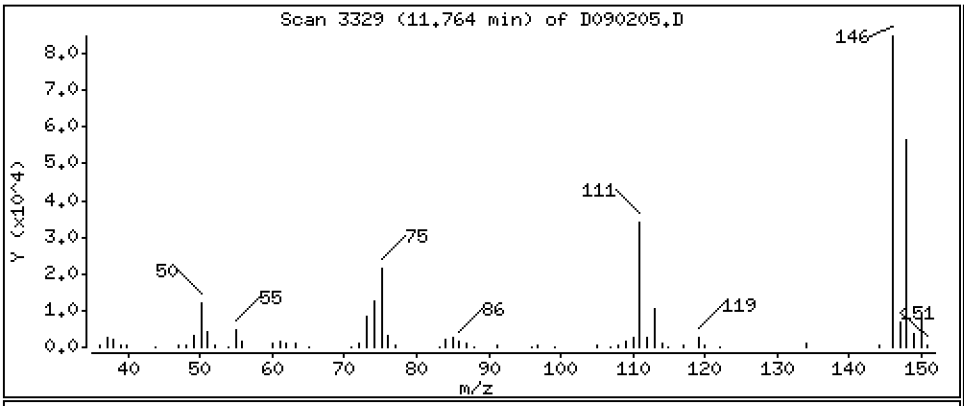
Client ID: VLCSW-180830 Instrument: VOA2.i

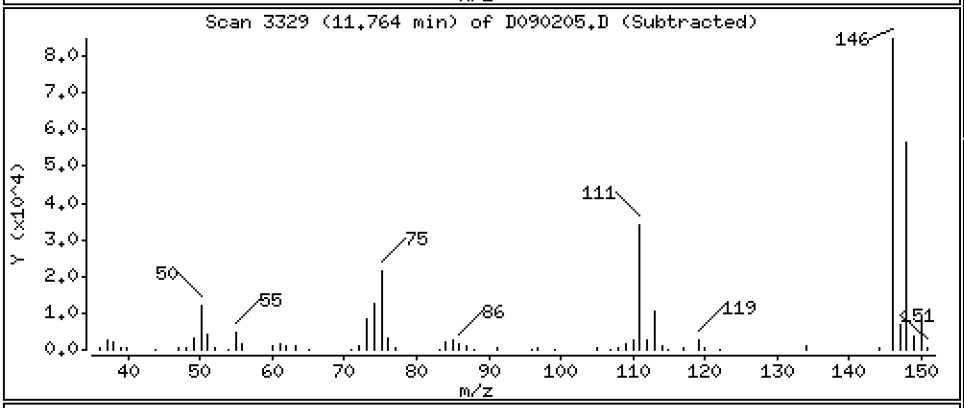
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

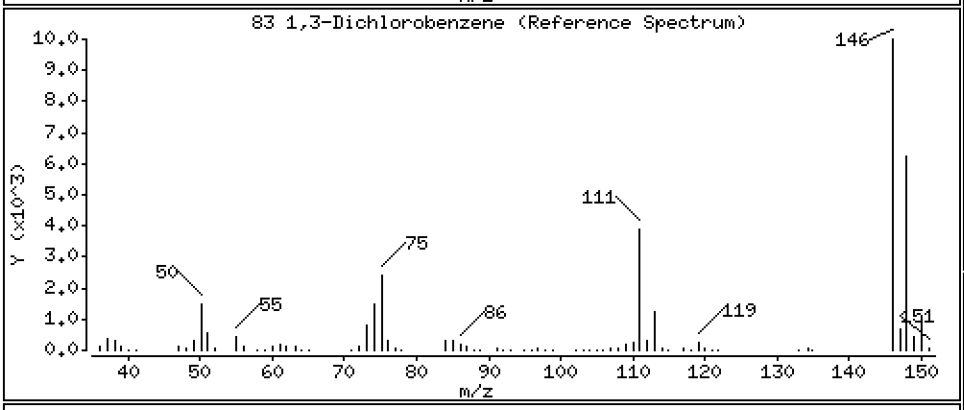
Purge Volume: 5.0 Operator: AP

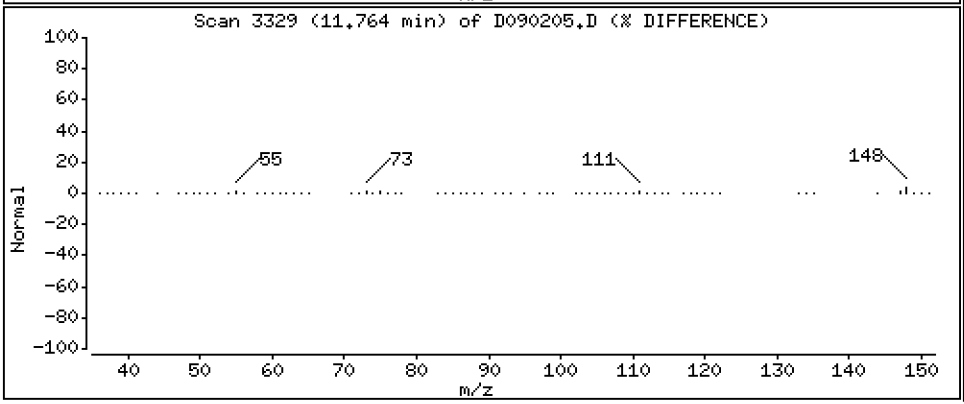
Column phase: DB624 Column diameter: 0.18

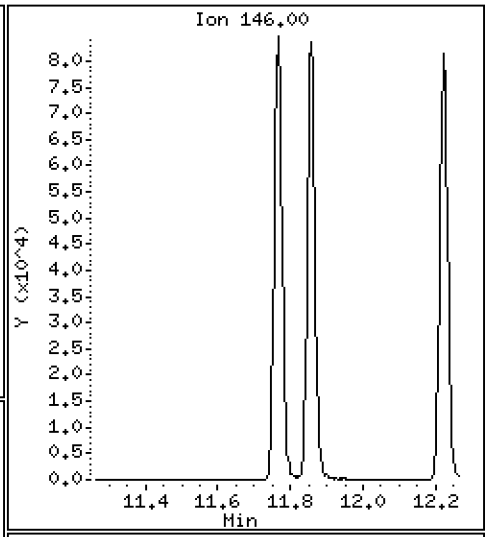
83 1,3-Dichlorobenzene Concentration: 20.29 ug/l Review Code:

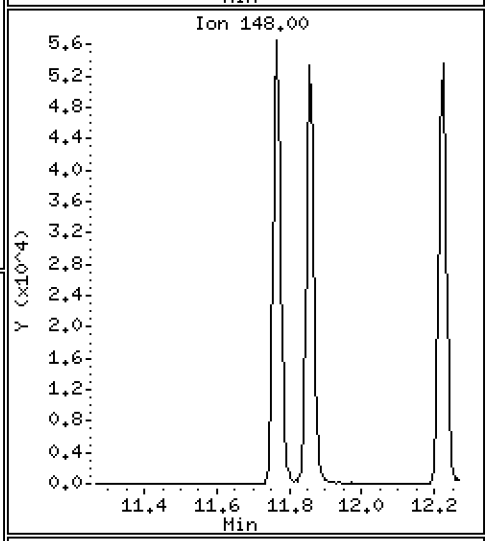


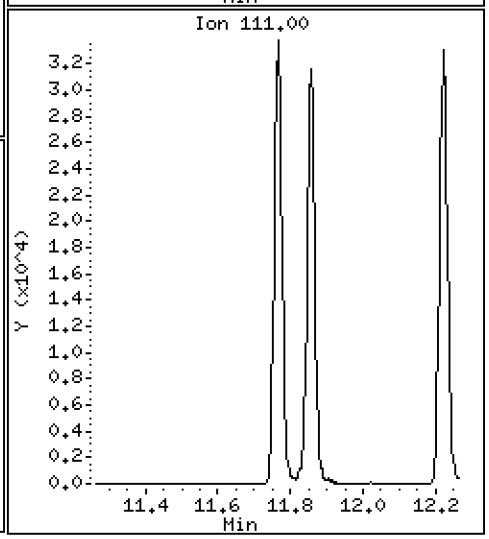












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Date : 02-SEP-2018 15:04

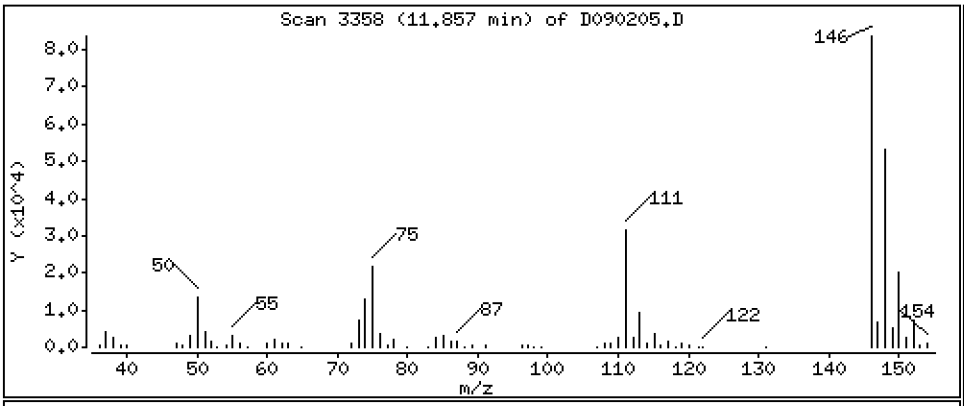
Client ID: VLCSW-180830 Instrument: VOA2.i

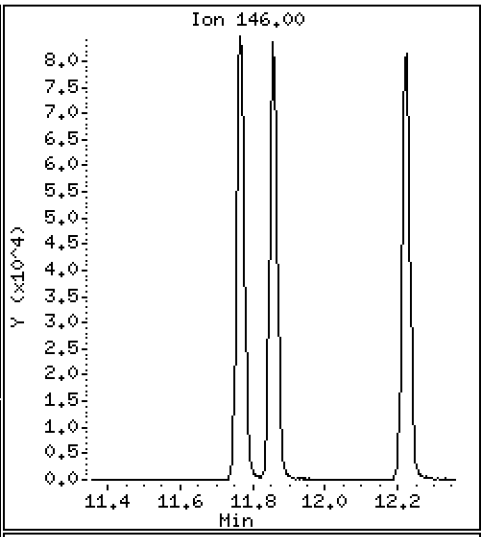
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

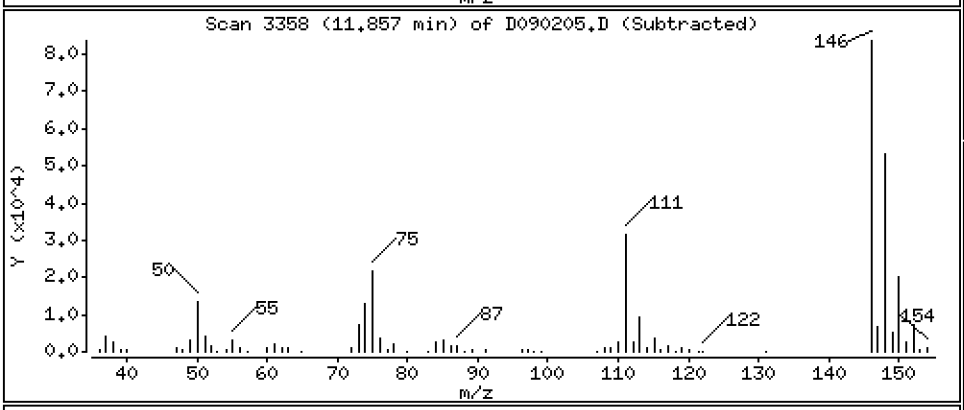
Purge Volume: 5.0 Operator: AP

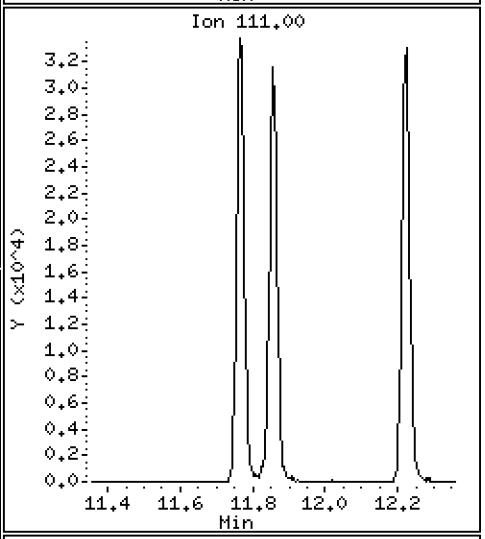
Column phase: DB624 Column diameter: 0.18

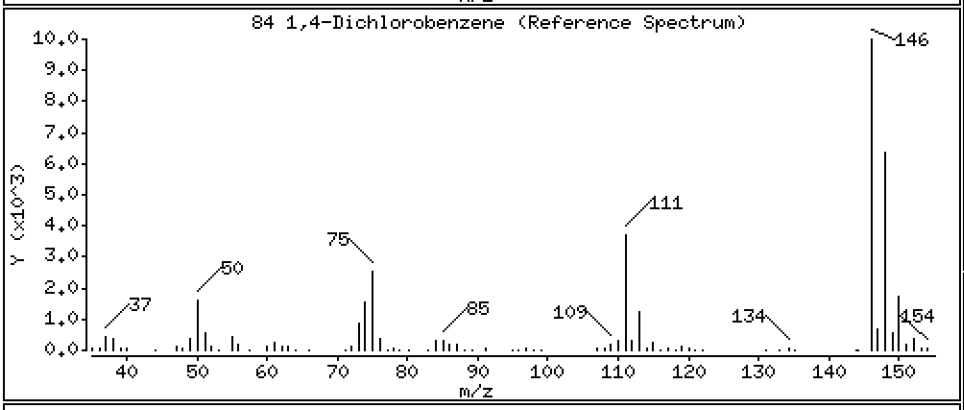
84 1,4-Dichlorobenzene Concentration: 20.41 ug/l Review Code:

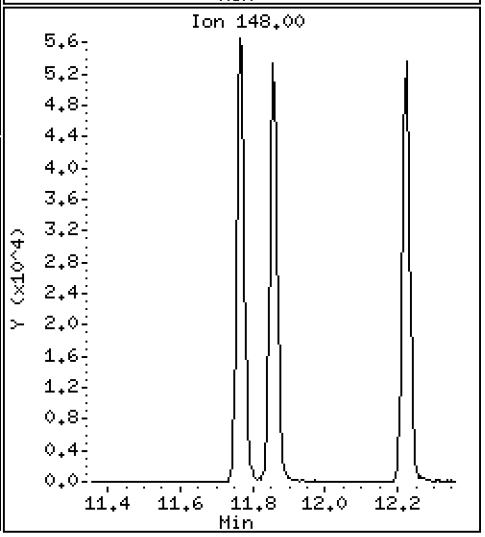


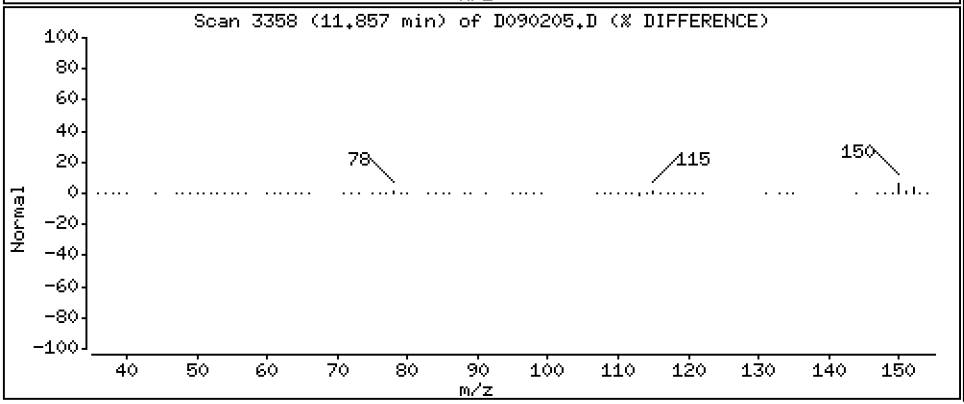












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Date : 02-SEP-2018 15:04

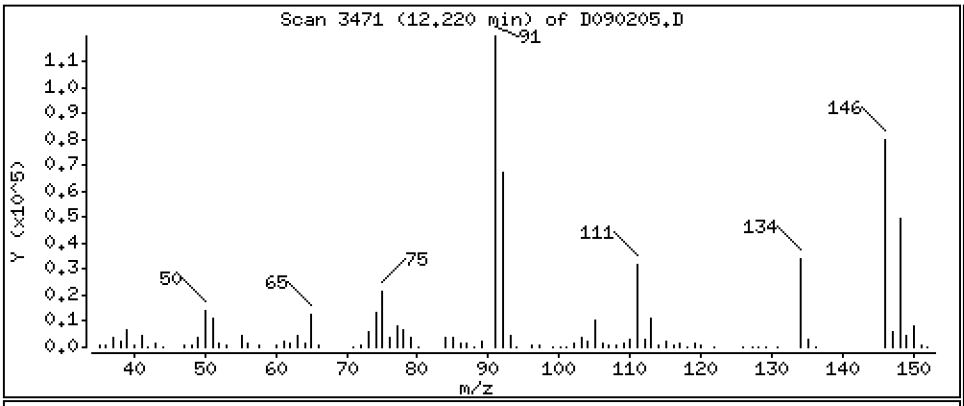
Client ID: VLCSW-180830 Instrument: VOA2.i

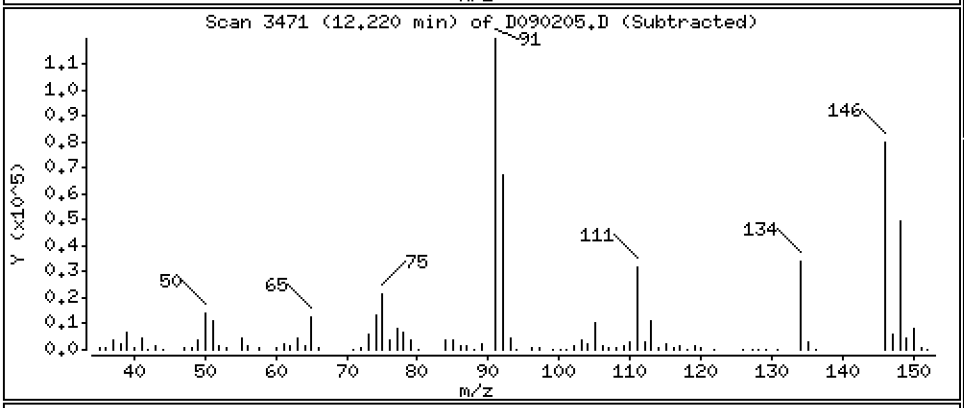
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

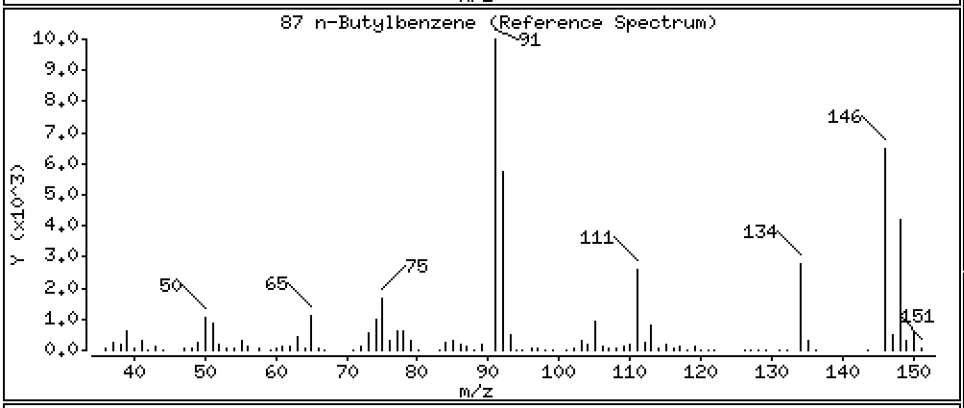
Purge Volume: 5.0 Operator: AP

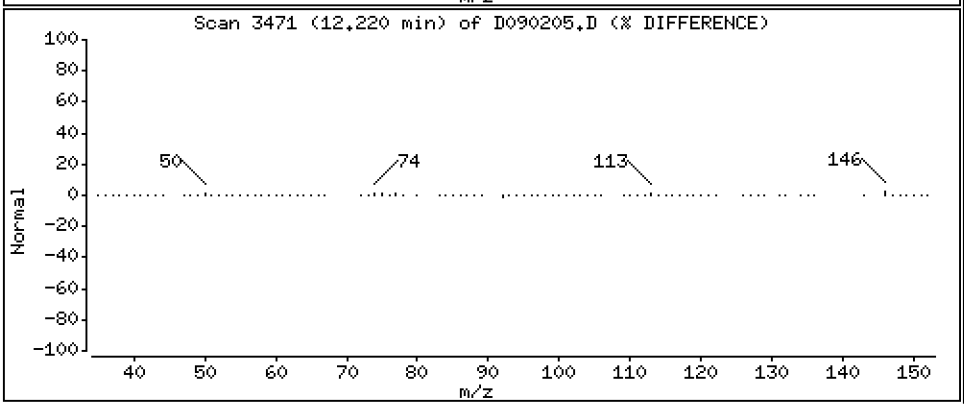
Column phase: DB624 Column diameter: 0.18

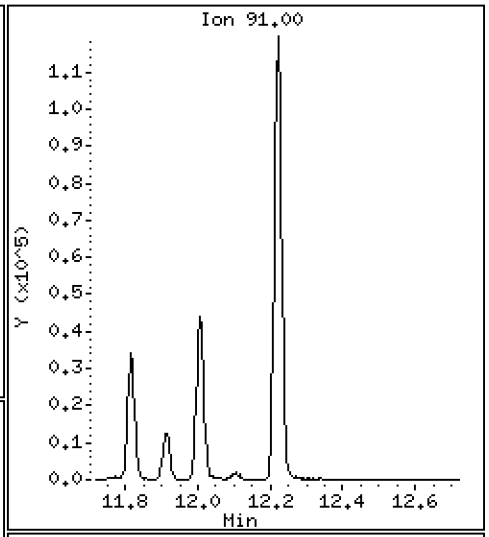
87 n-Butylbenzene Concentration: 20.14 ug/l Review Code:

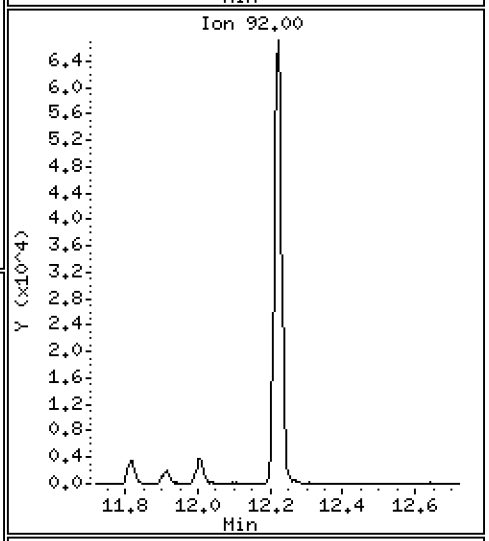


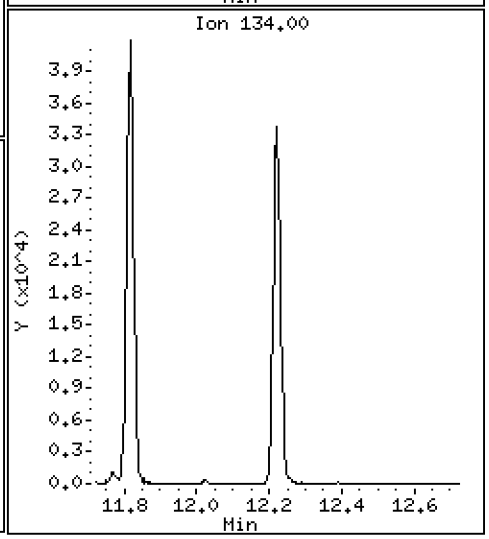












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Date : 02-SEP-2018 15:04

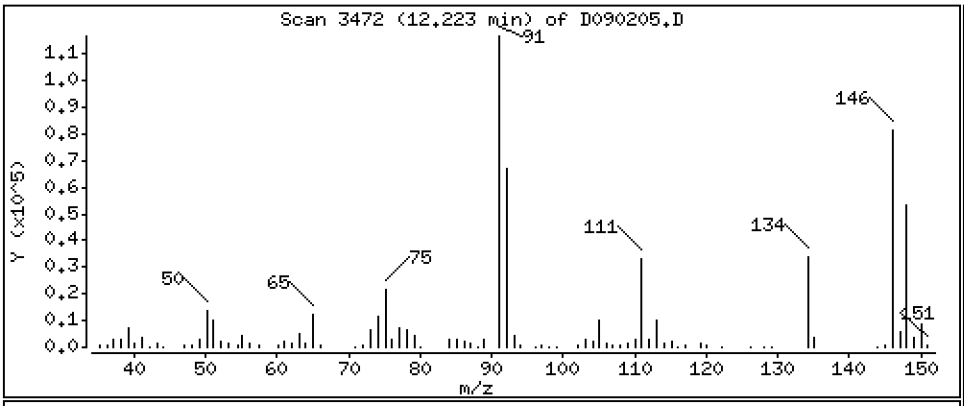
Client ID: VLCSW-180830 Instrument: VOA2.i

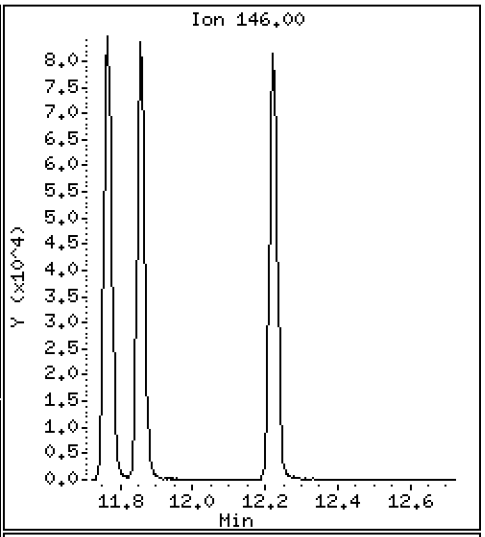
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

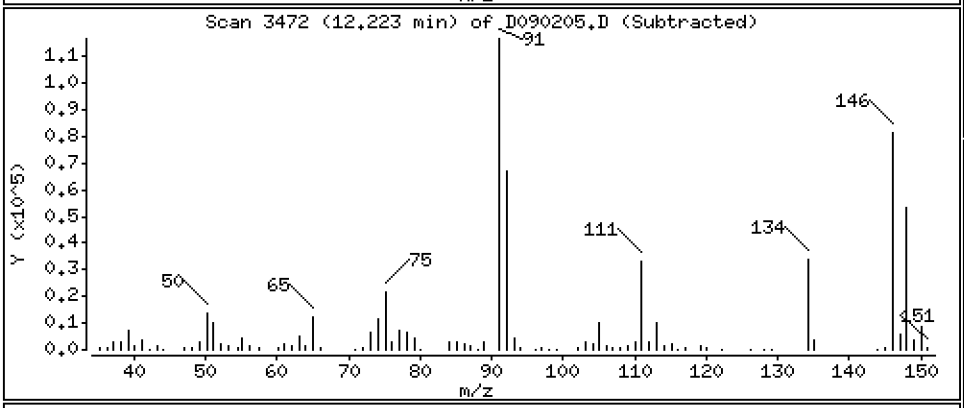
Purge Volume: 5.0 Operator: AP

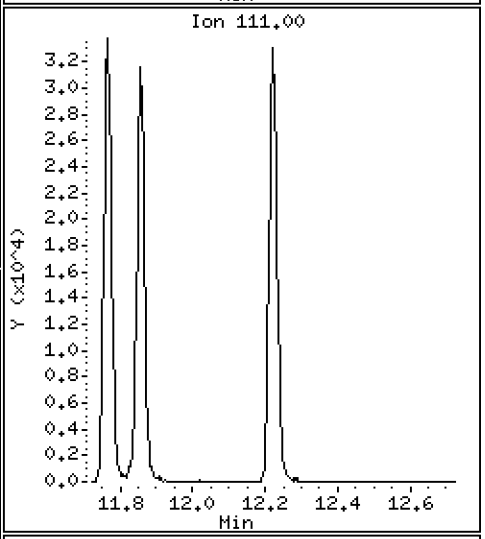
Column phase: DB624 Column diameter: 0.18

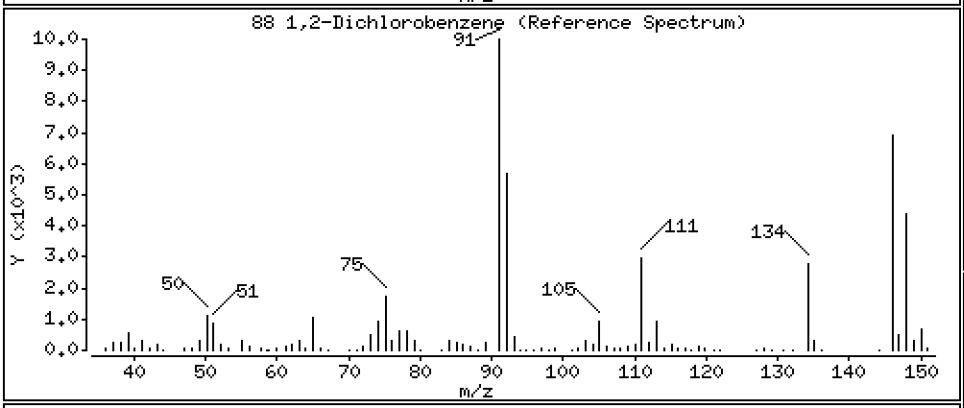
88 1,2-Dichlorobenzene Concentration: 19.78 ug/l Review Code:

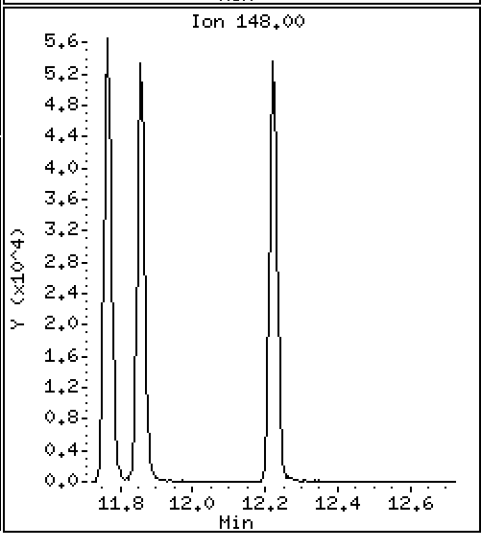


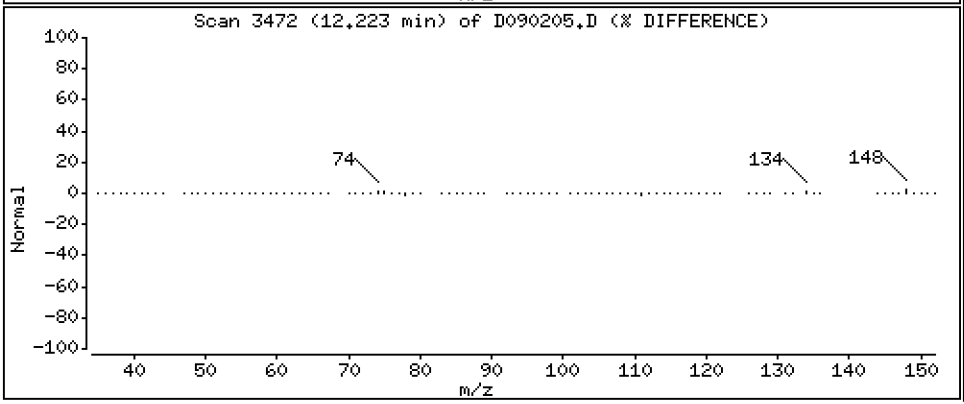












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 79

Date : 02-SEP-2018 15:04

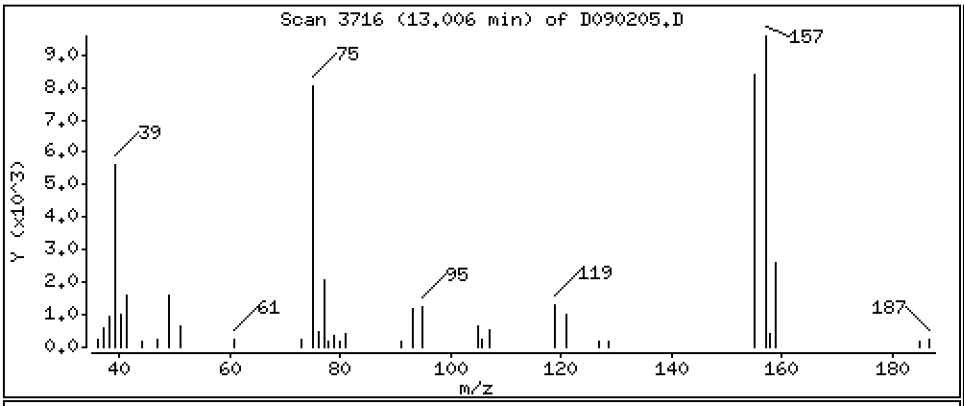
Client ID: VLCSW-180830 Instrument: VOA2.i

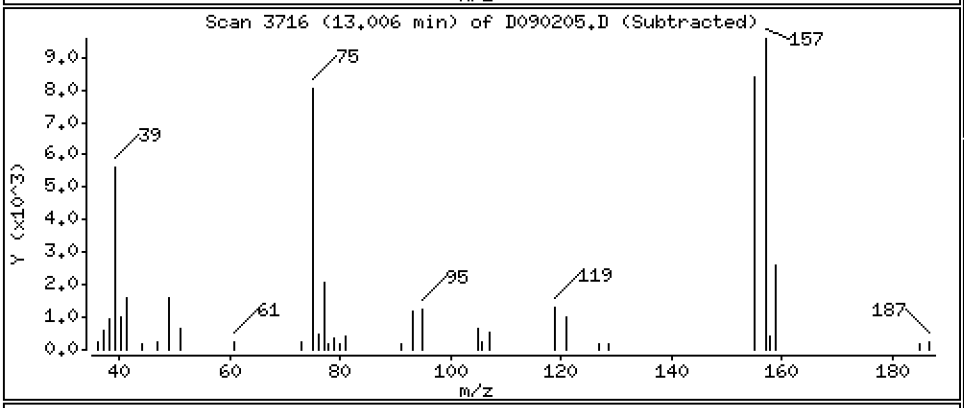
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

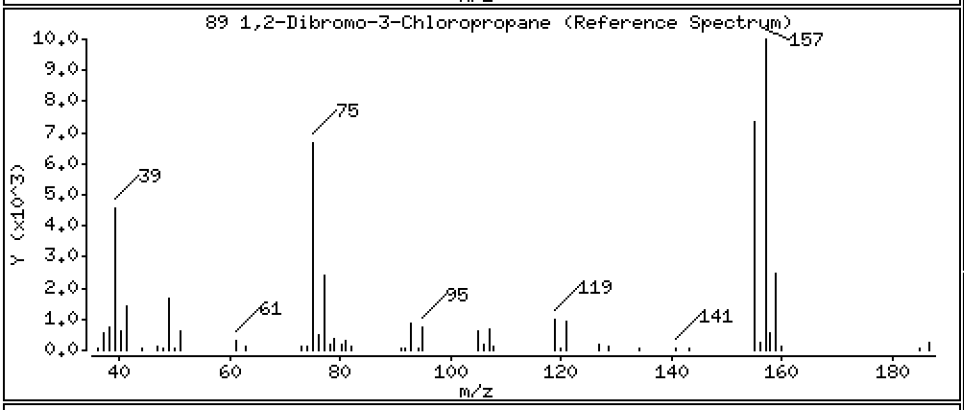
Purge Volume: 5.0 Operator: AP

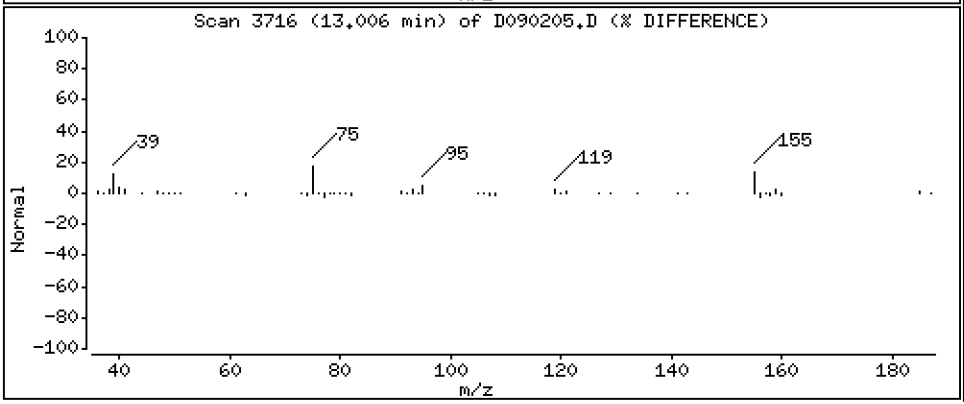
Column phase: DB624 Column diameter: 0.18

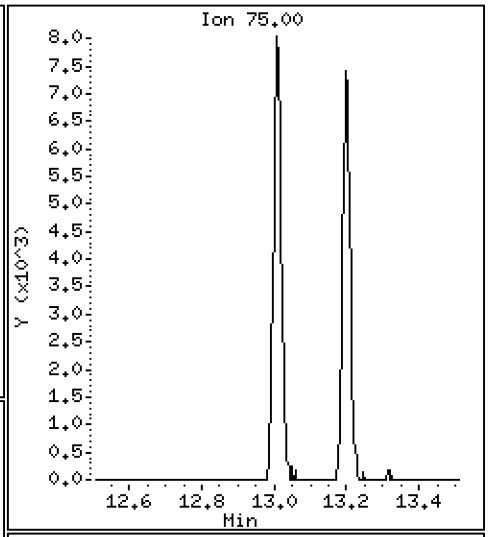
89 1,2-Dibromo-3-Chloropropane Concentration: 17.35 ug/l Review Code:

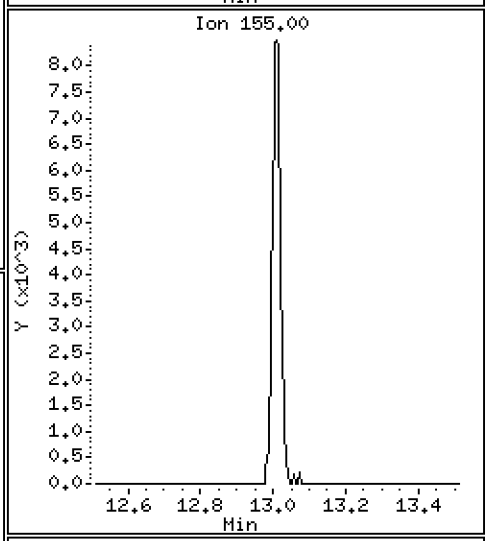


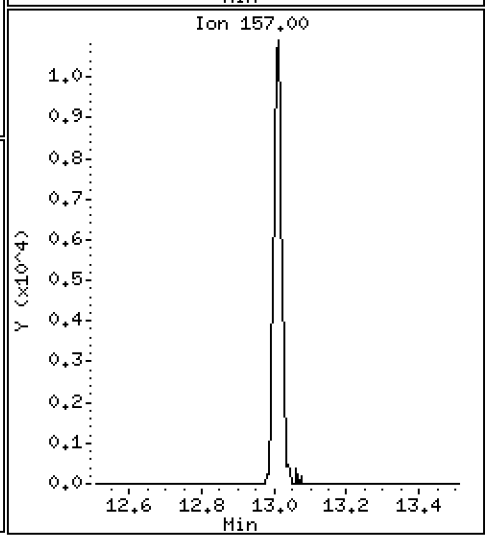












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 80

Date : 02-SEP-2018 15:04

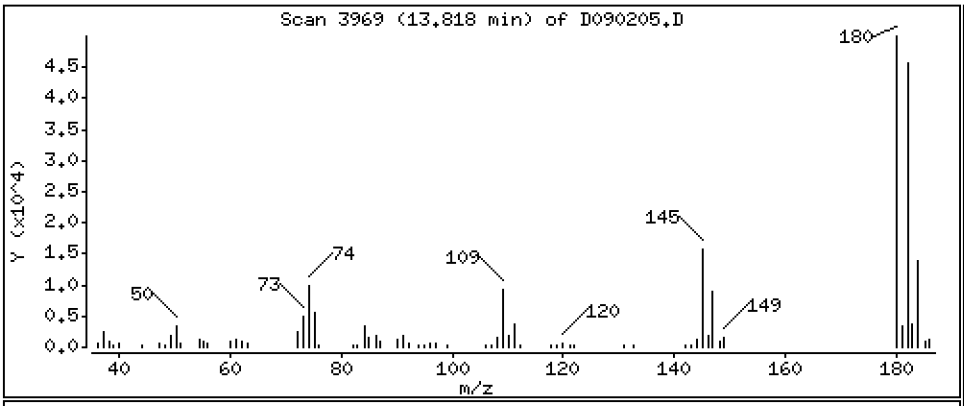
Client ID: VLCSW-180830 Instrument: VOA2.i

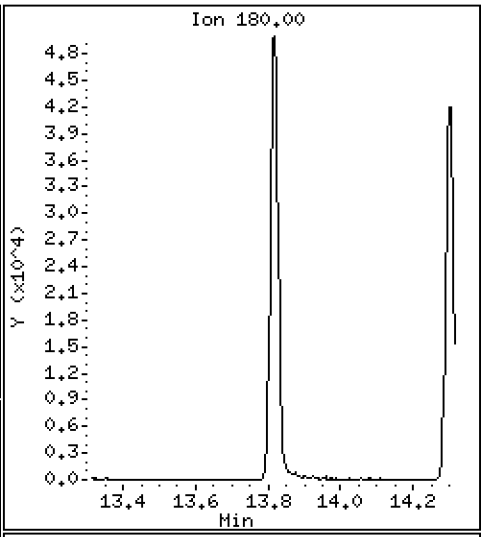
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

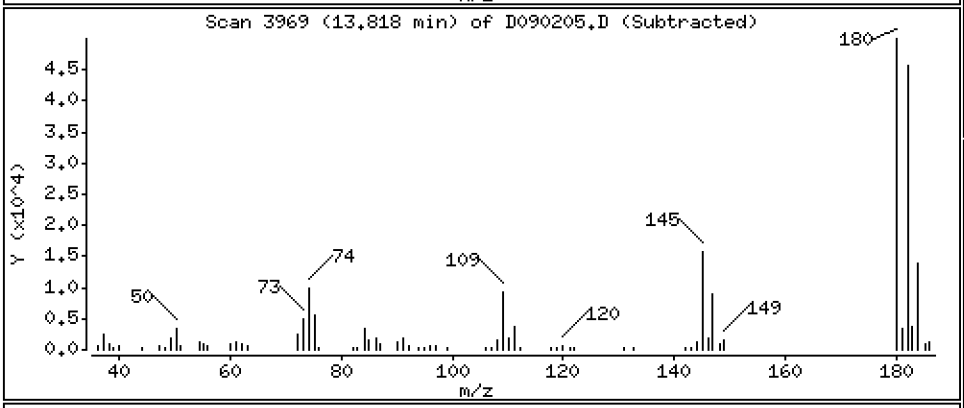
Purge Volume: 5.0 Operator: AP

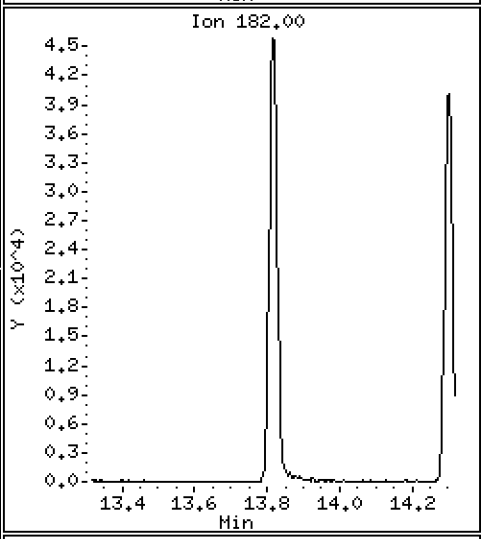
Column phase: DB624 Column diameter: 0.18

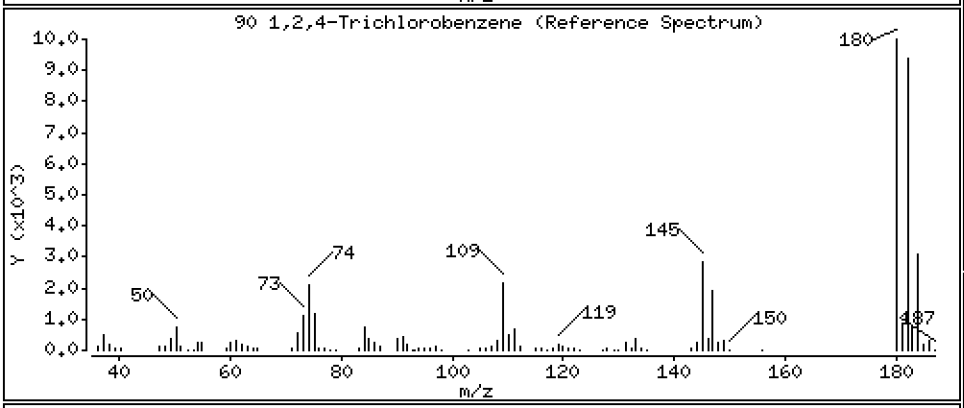
90 1,2,4-Trichlorobenzene Concentration: 21.00 ug/l Review Code:

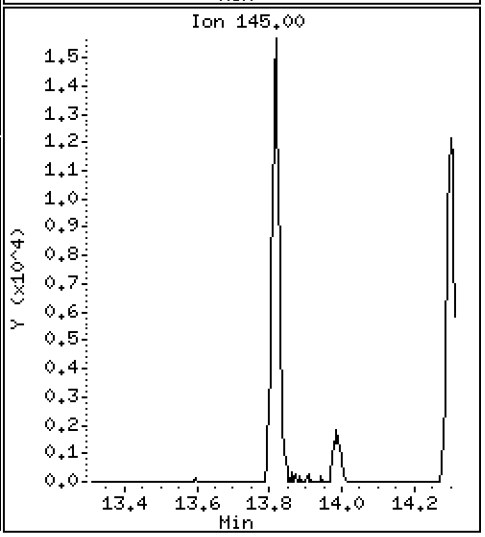


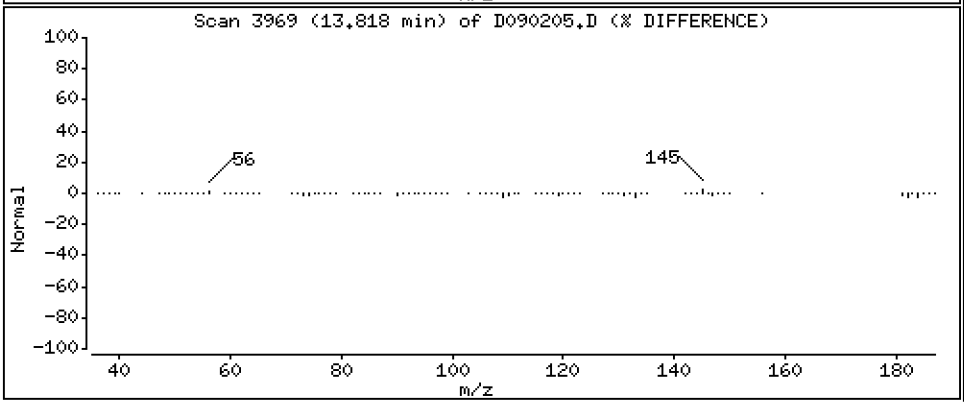












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 81

Date : 02-SEP-2018 15:04

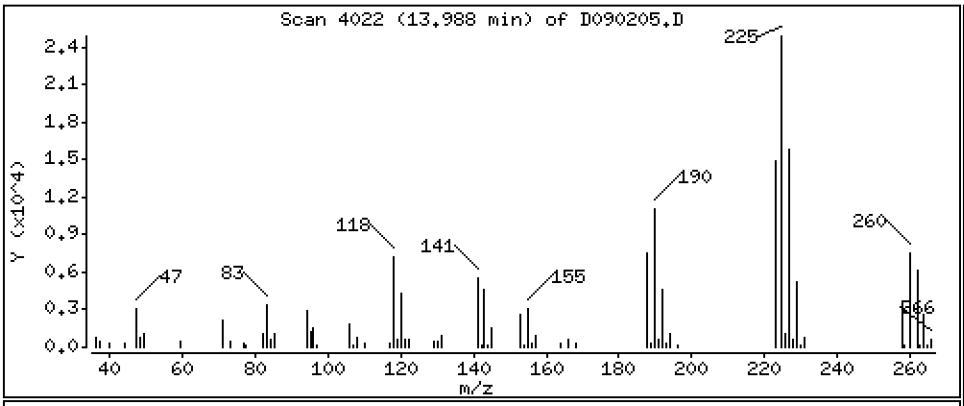
Client ID: VLCSW-180830 Instrument: VOA2.i

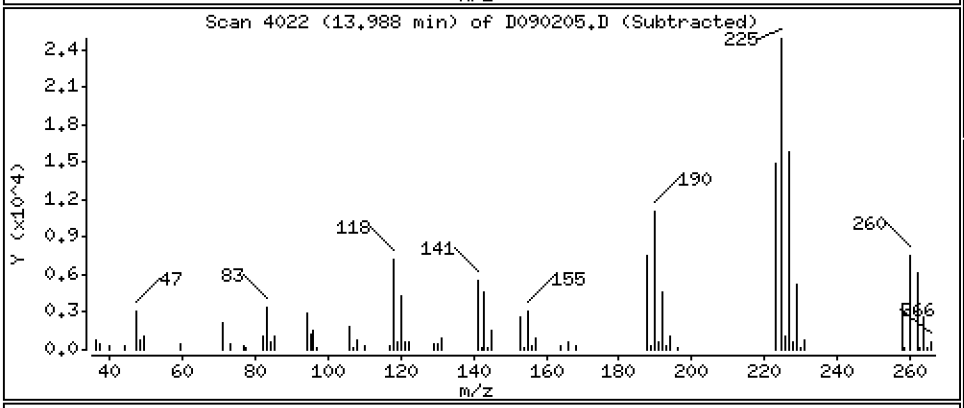
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

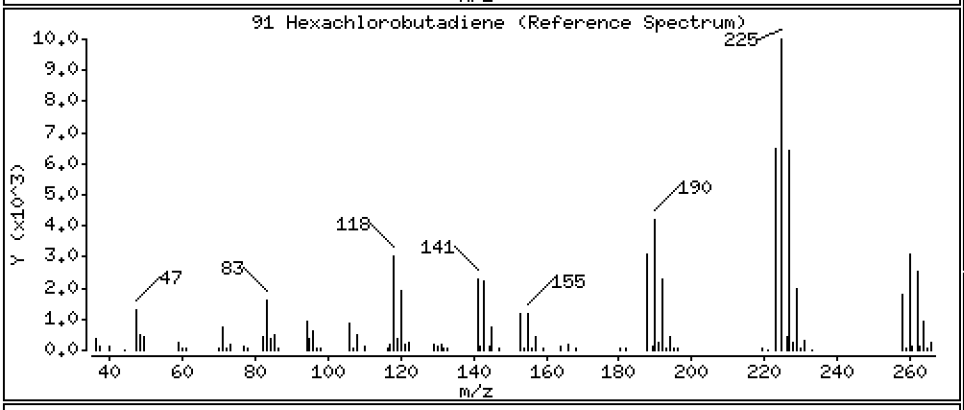
Purge Volume: 5.0 Operator: AP

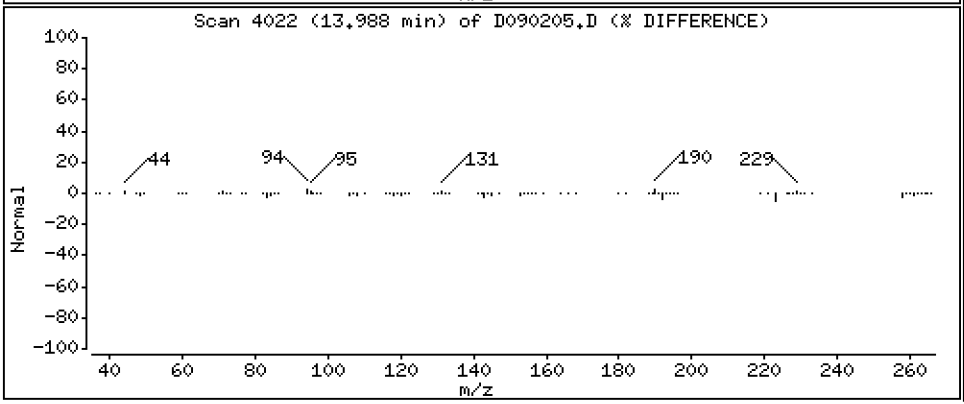
Column phase: DB624 Column diameter: 0.18

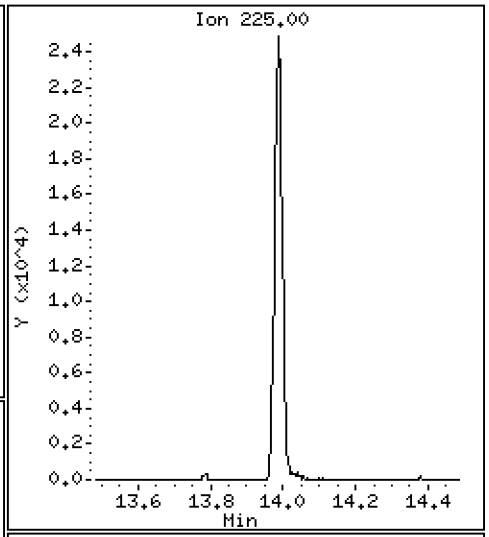
91 Hexachlorobutadiene Concentration: 21.87 ug/l Review Code:

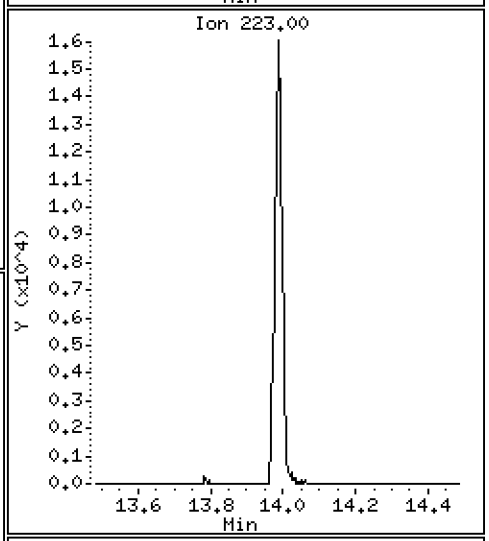


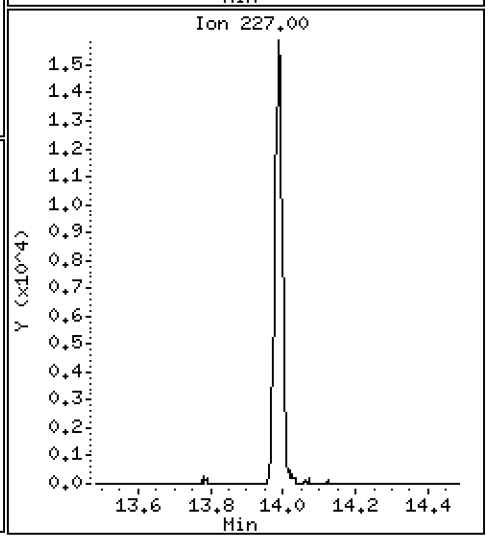












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 82

Date : 02-SEP-2018 15:04

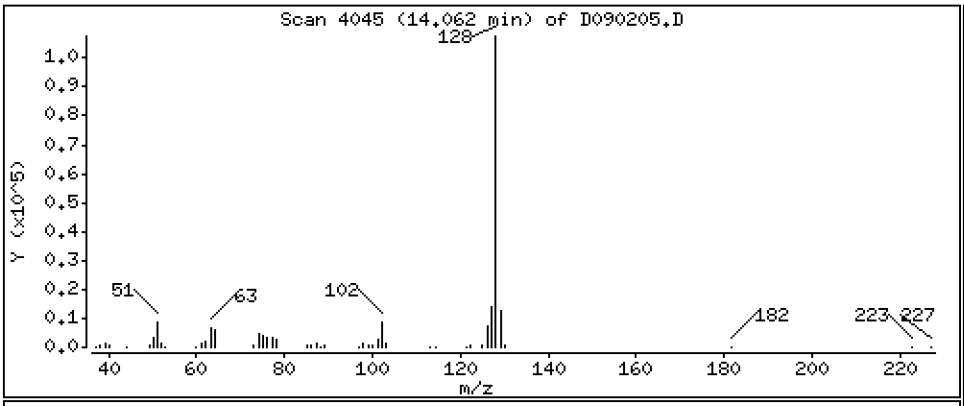
Client ID: VLCSW-180830 Instrument: VOA2.i

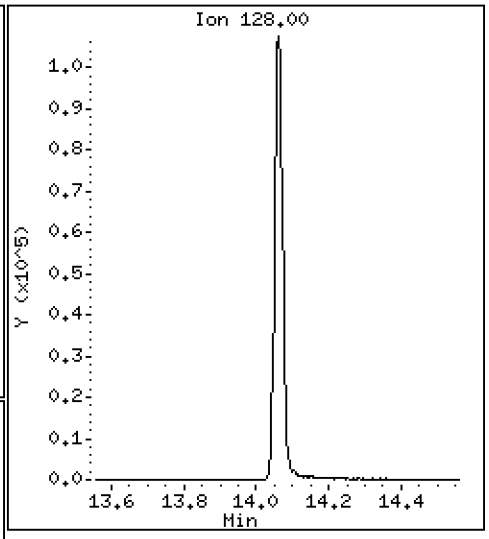
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

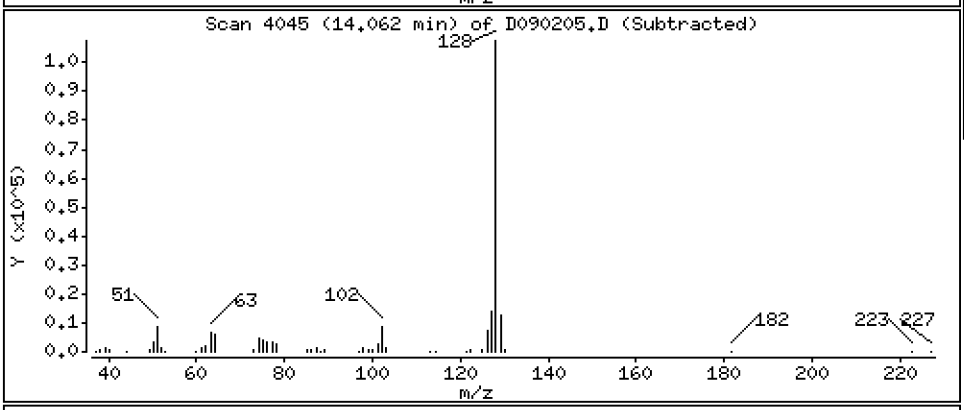
Purge Volume: 5.0 Operator: AP

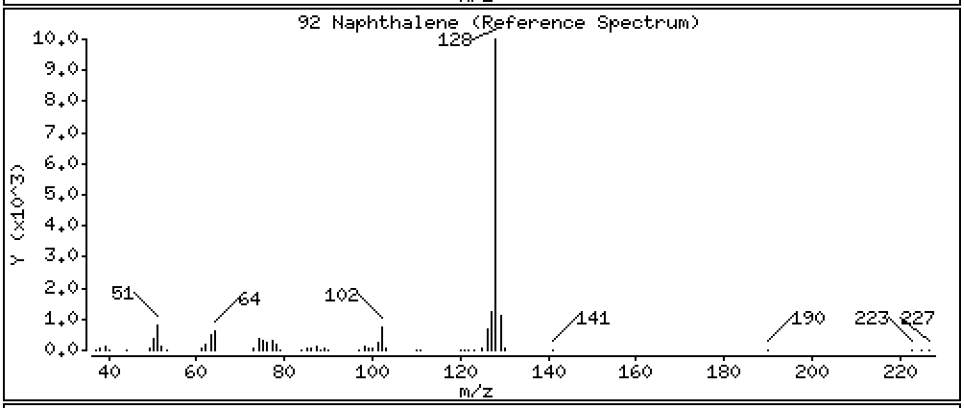
Column phase: DB624 Column diameter: 0.18

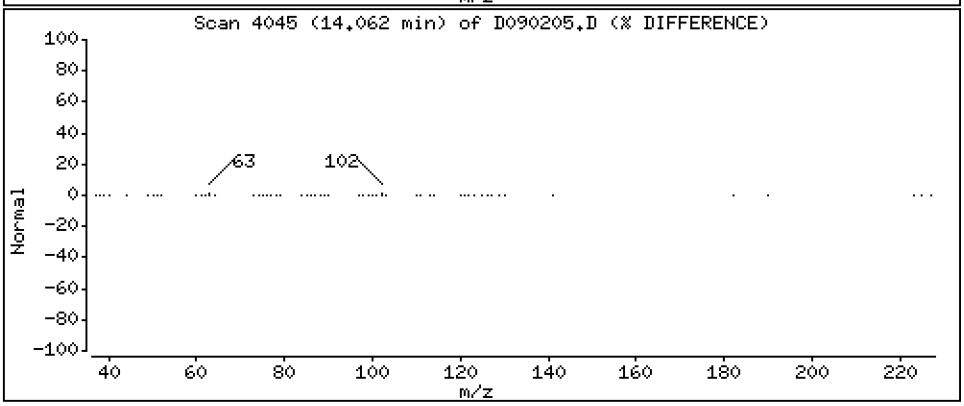
92 Naphthalene Concentration: 18.72 ug/l Review Code:











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Date : 02-SEP-2018 15:04

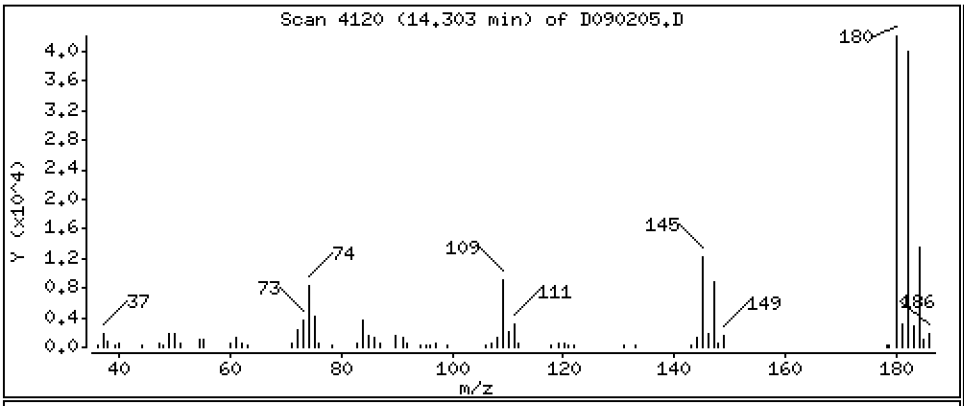
Client ID: VLCSW-180830 Instrument: VOA2.i

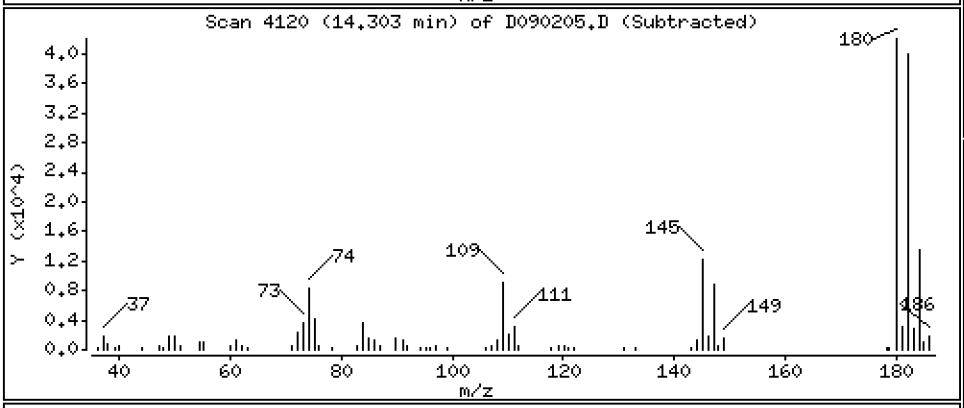
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

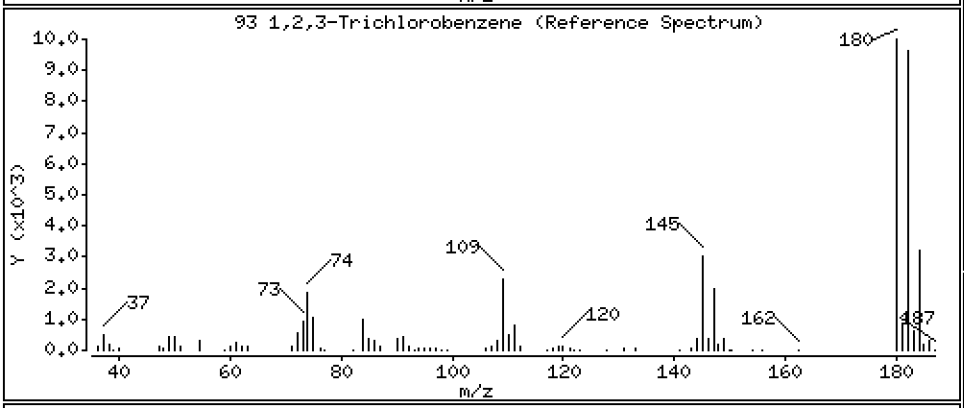
Purge Volume: 5.0 Operator: AP

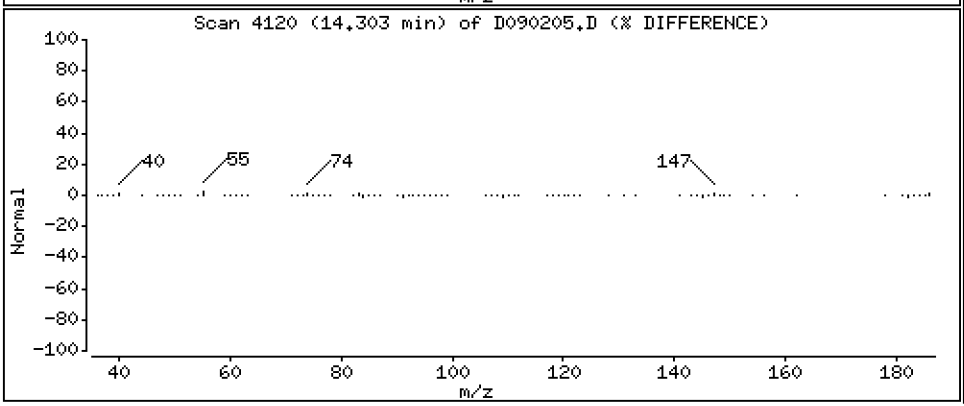
Column phase: DB624 Column diameter: 0.18

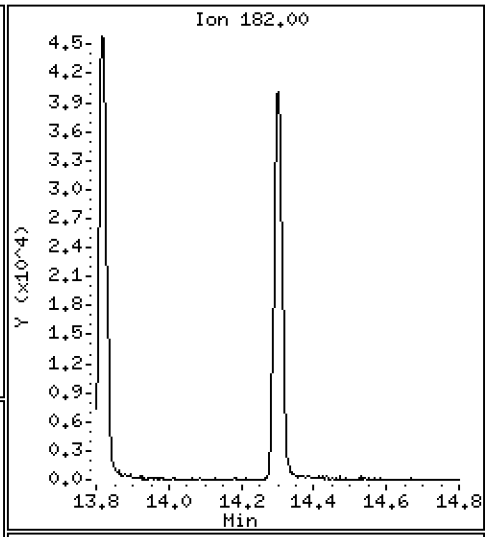
93 1,2,3-Trichlorobenzene Concentration: 20.09 ug/l Review Code:

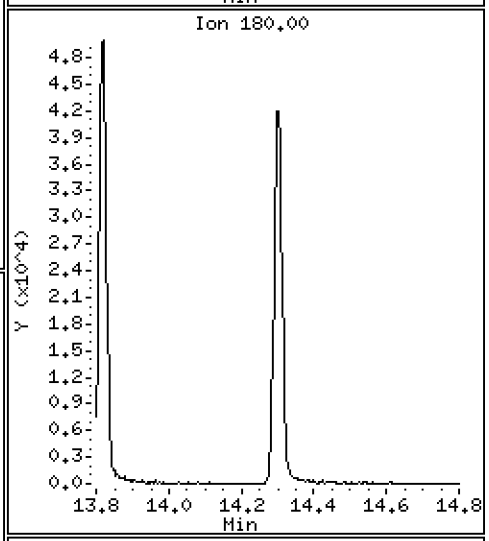


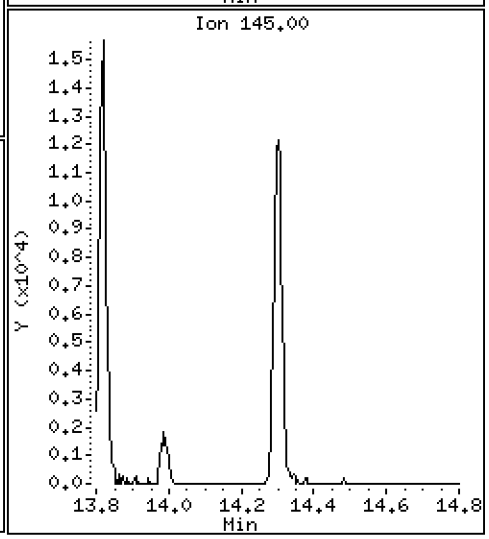












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 84

Date : 02-SEP-2018 15:04

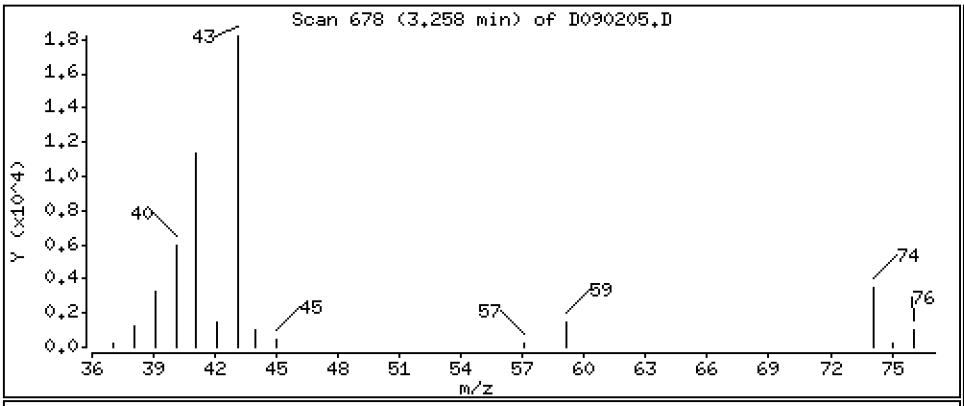
Client ID: VLCSW-180830 Instrument: VOA2.i

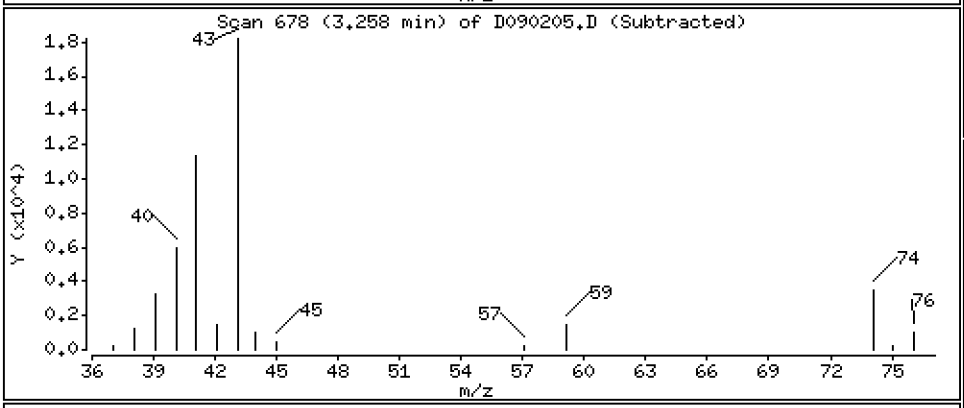
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

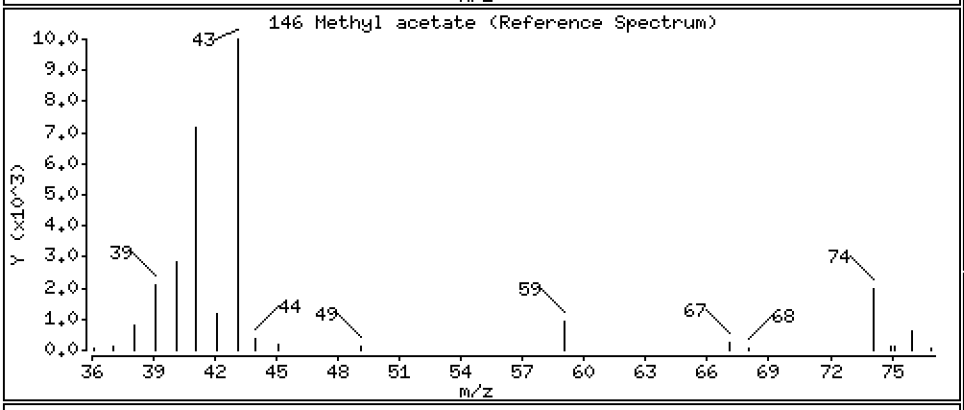
Purge Volume: 5.0 Operator: AP

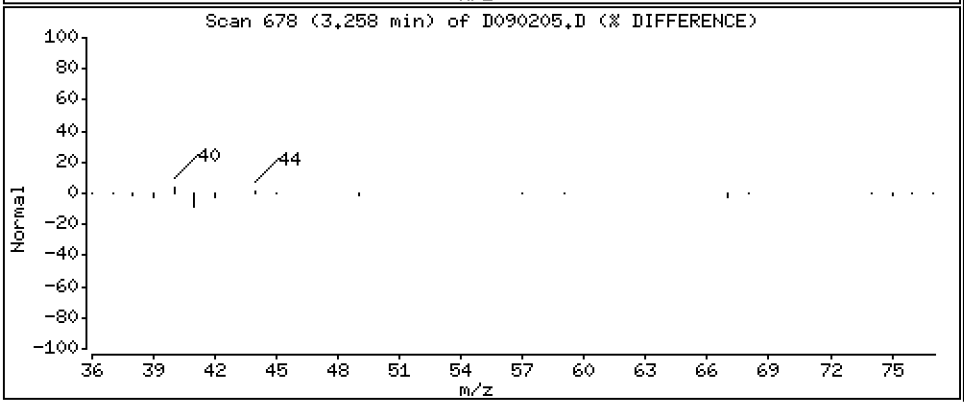
Column phase: DB624 Column diameter: 0.18

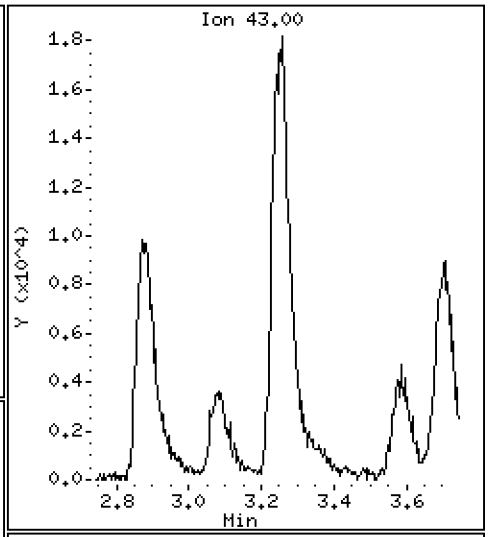
146 Methyl acetate Concentration: 16.82 ug/l Review Code:

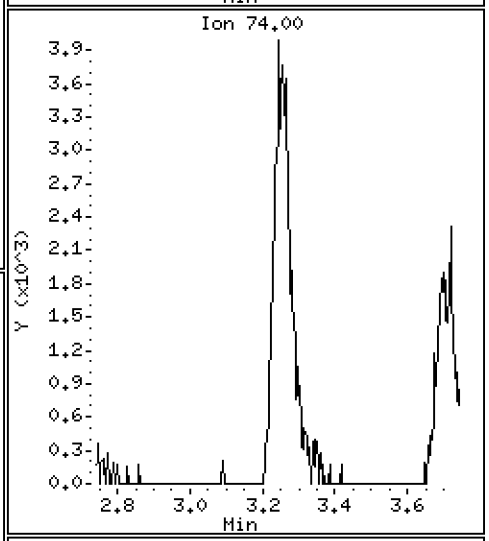


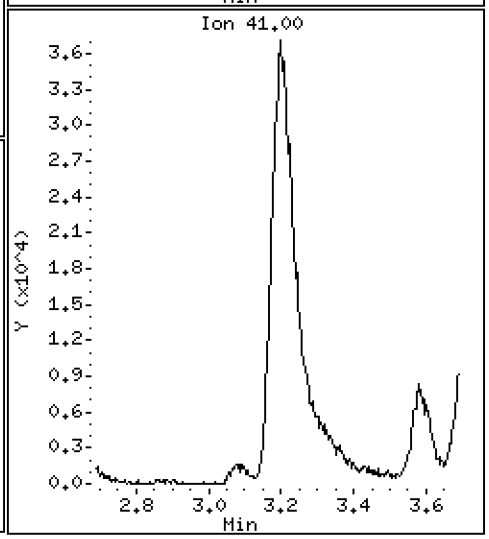












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 85

Date : 02-SEP-2018 15:04

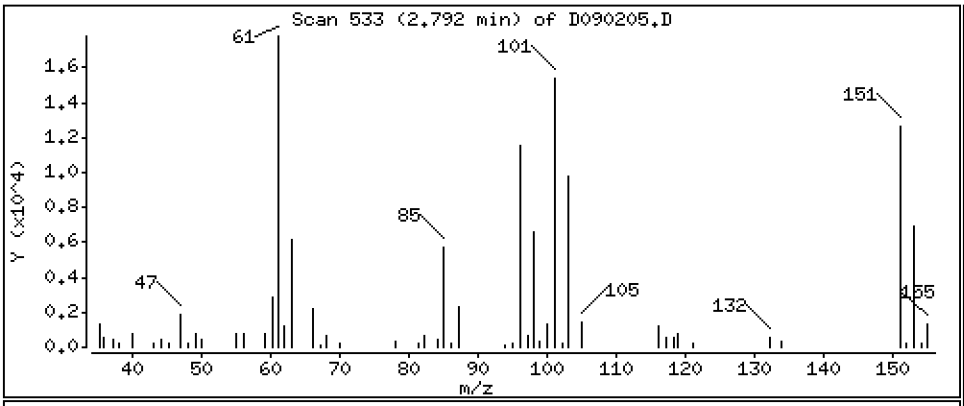
Client ID: VLCSW-180830 Instrument: VOA2.i

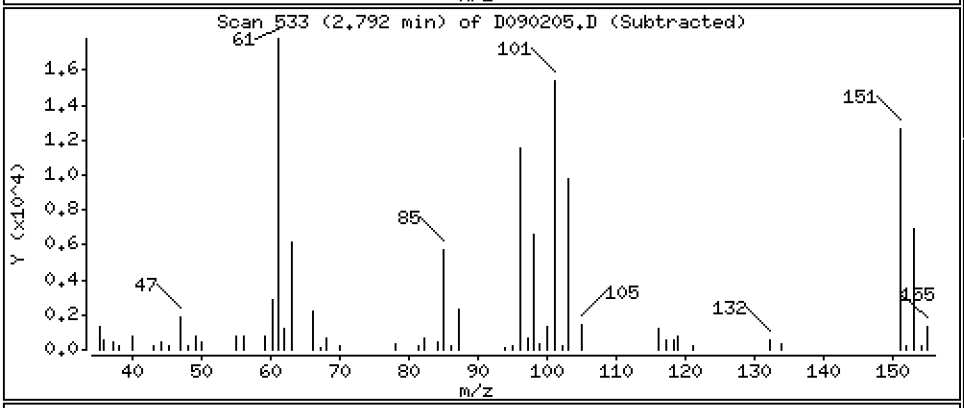
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

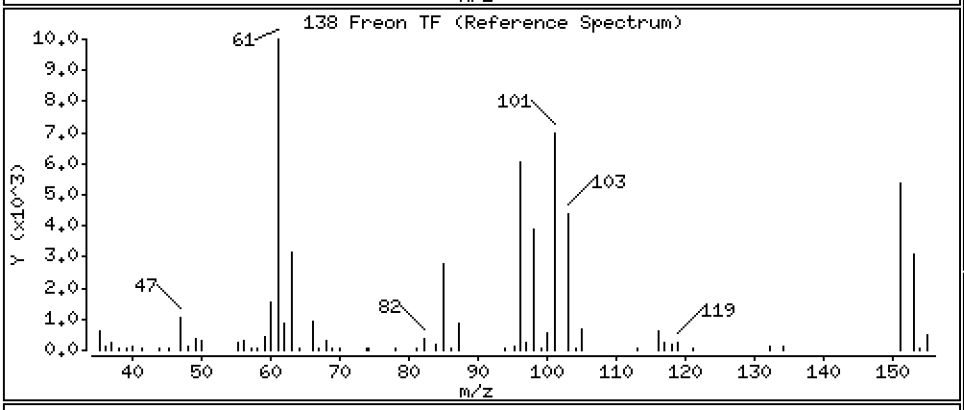
Purge Volume: 5.0 Operator: AP

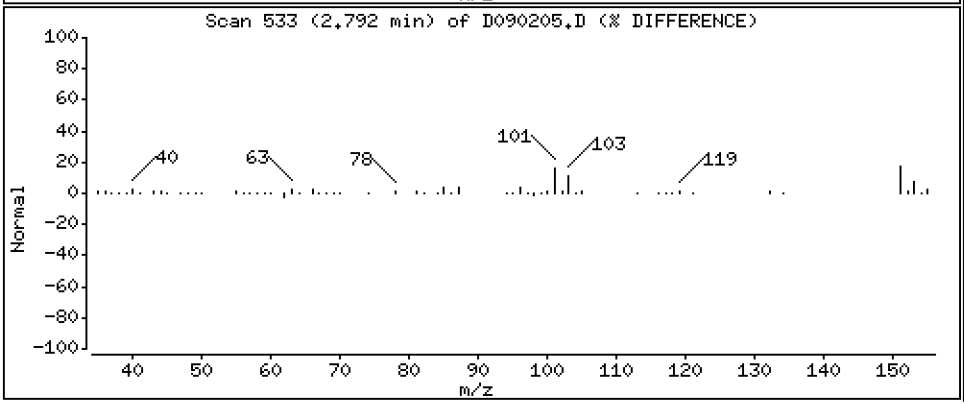
Column phase: DB624 Column diameter: 0.18

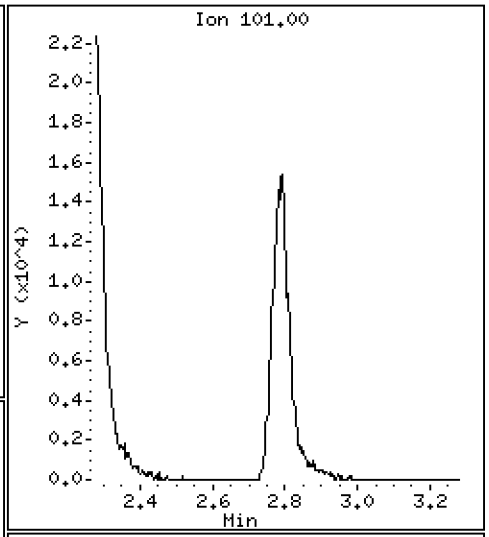
138 Freon TF Concentration: 21.97 ug/l Review Code:

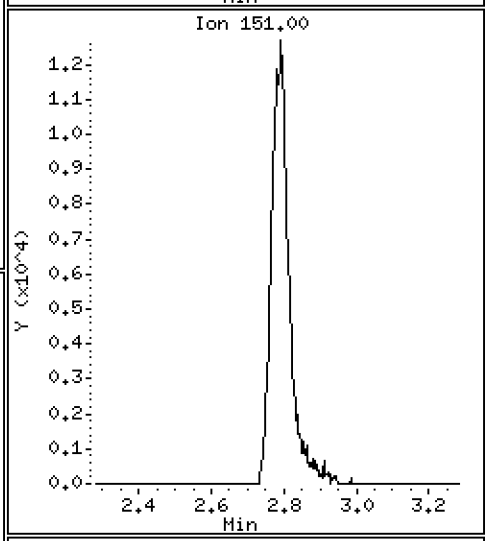


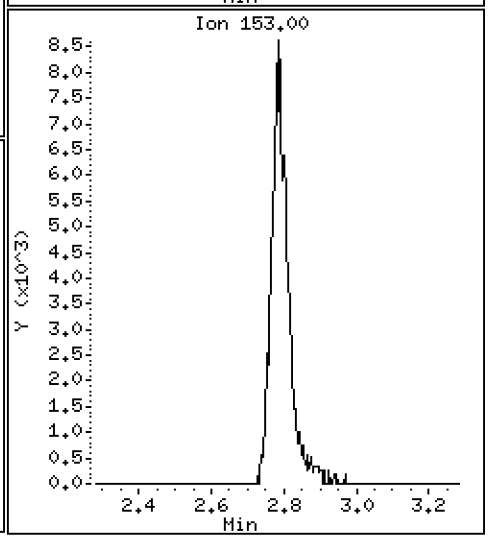












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 86

Date : 02-SEP-2018 15:04

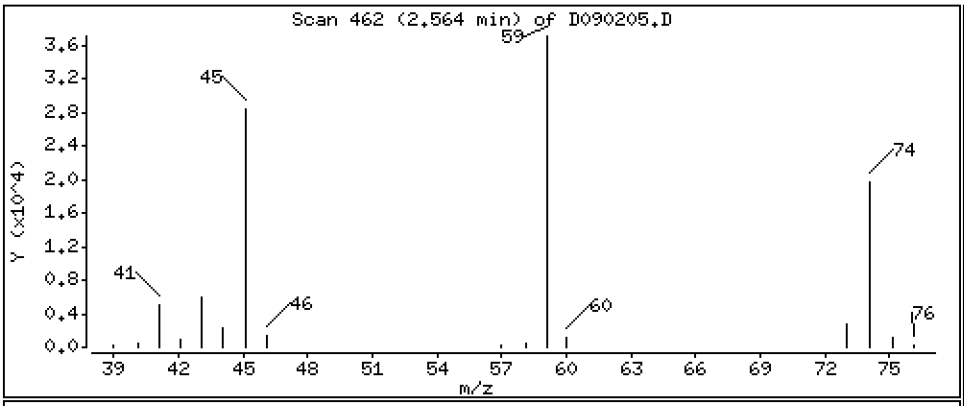
Client ID: VLCSW-180830 Instrument: VOA2.i

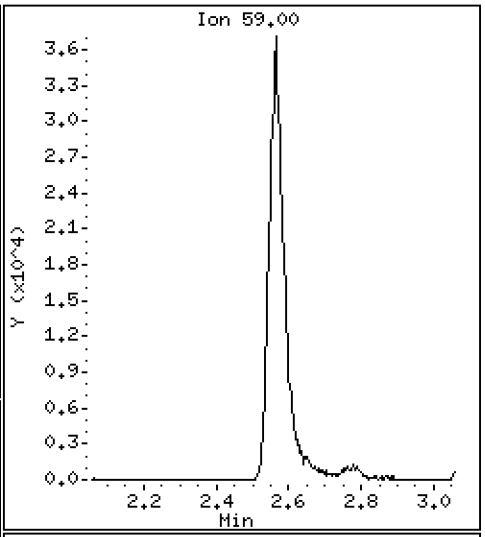
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

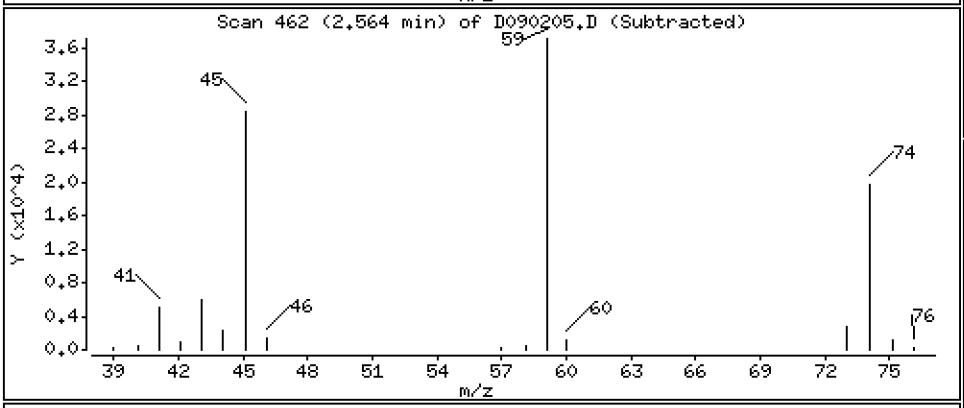
Purge Volume: 5.0 Operator: AP

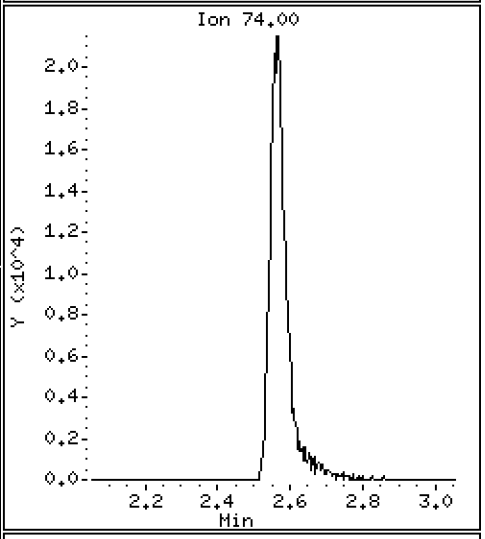
Column phase: DB624 Column diameter: 0.18

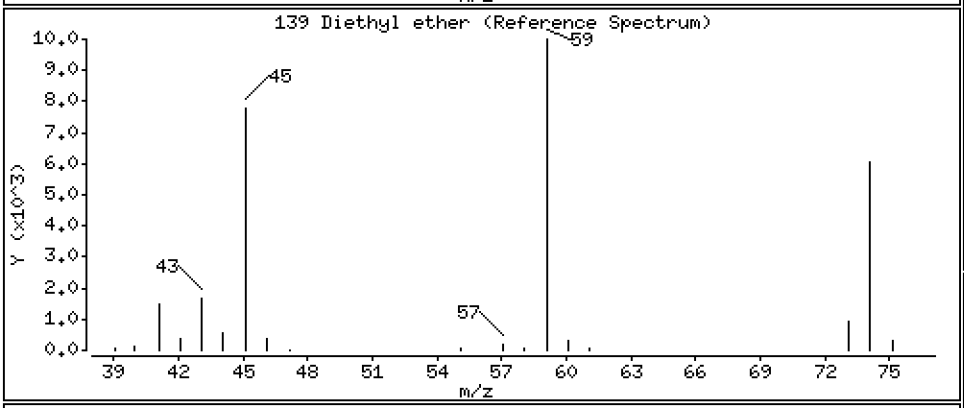
139 Diethyl ether Concentration: 18.88 ug/l Review Code:

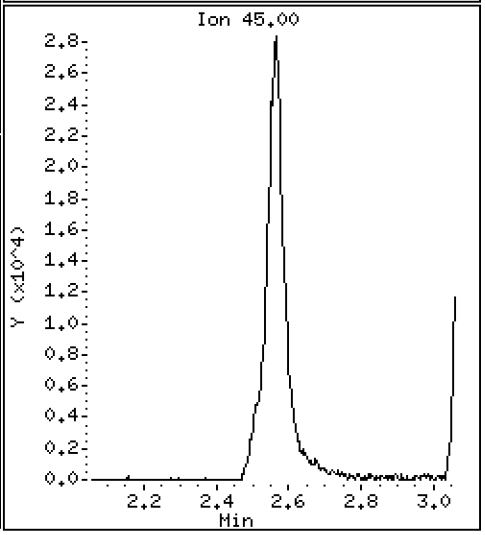


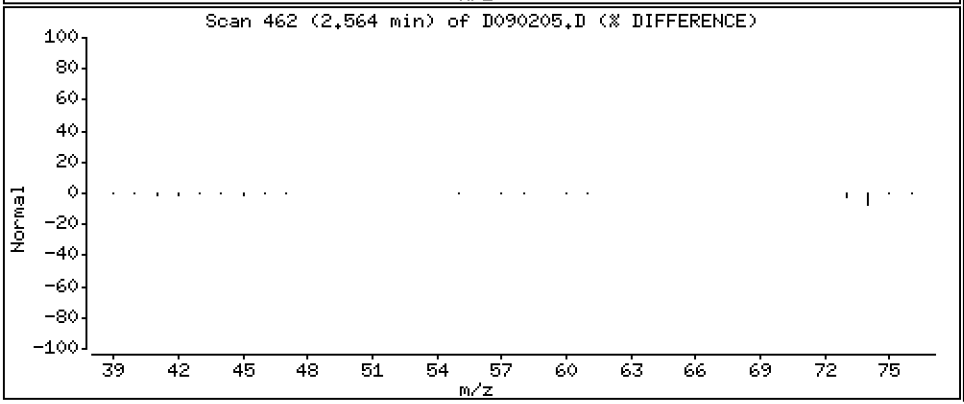












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 87

Date : 02-SEP-2018 15:04

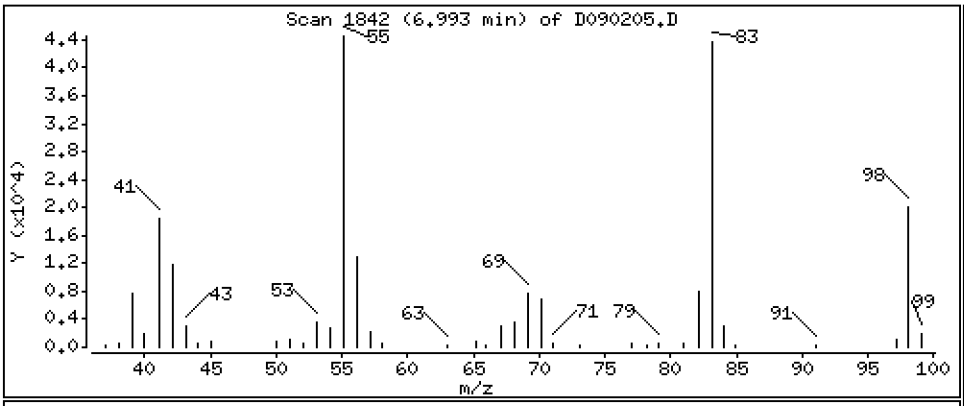
Client ID: VLCSW-180830 Instrument: VOA2.i

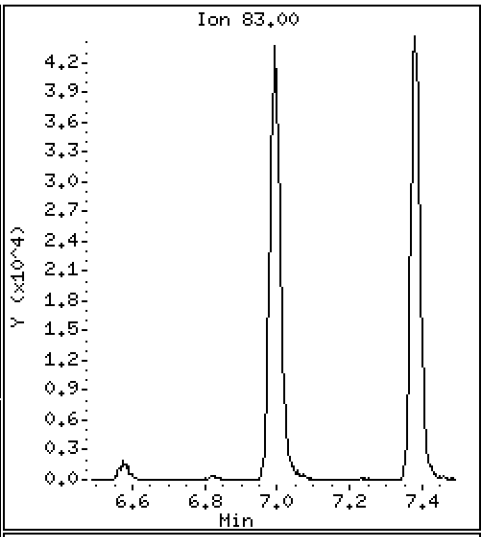
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

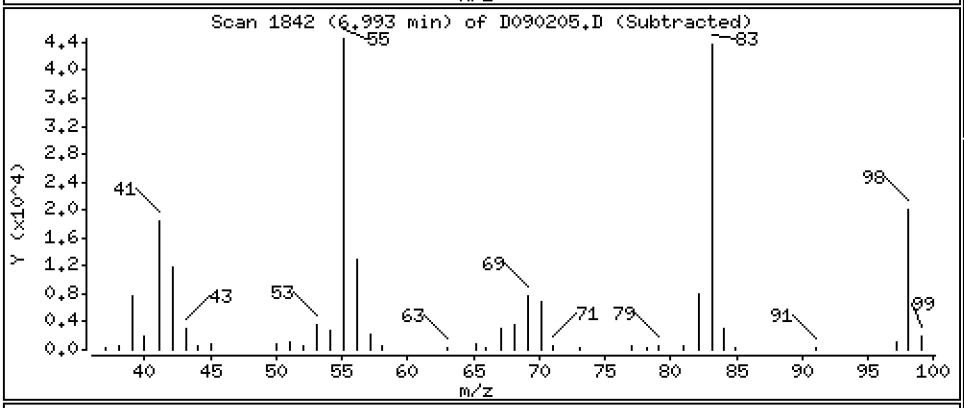
Purge Volume: 5.0 Operator: AP

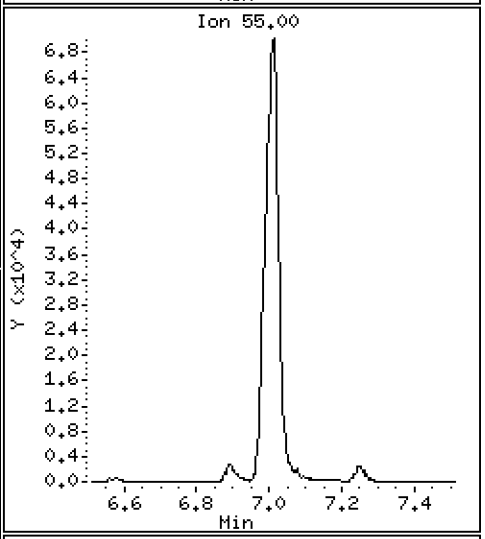
Column phase: DB624 Column diameter: 0.18

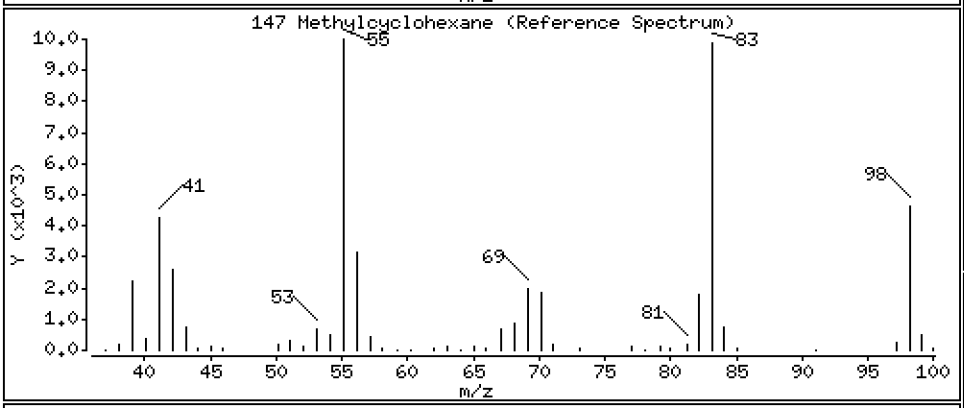
147 Methylcyclohexane Concentration: 23.00 ug/l Review Code:

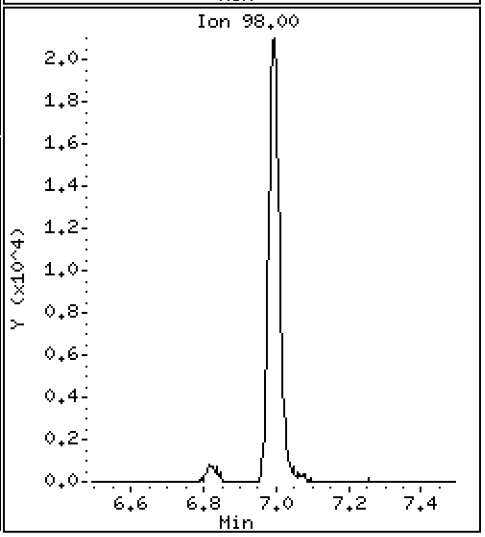


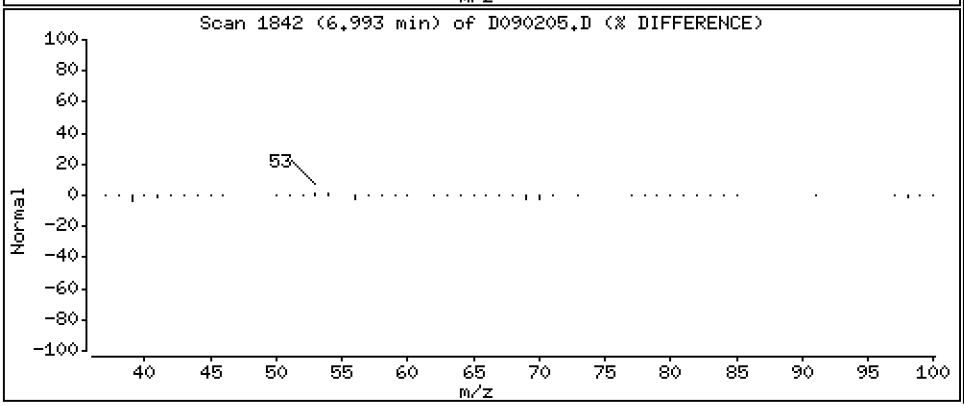












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 88

Date : 02-SEP-2018 15:04

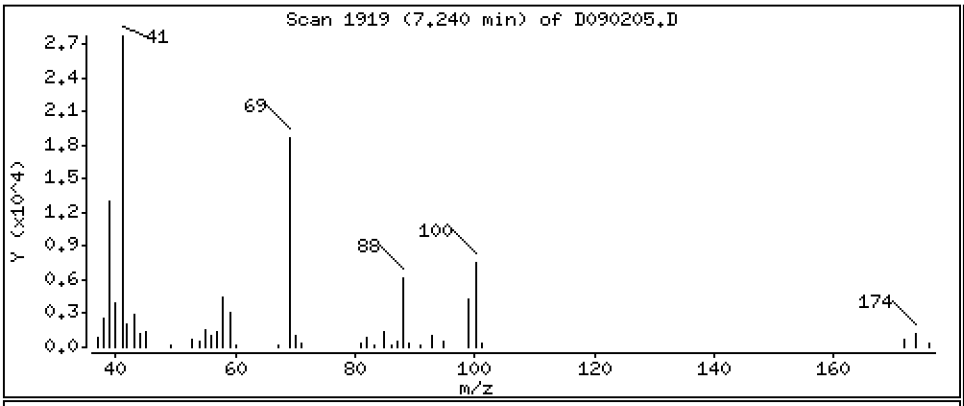
Client ID: VLCSW-180830 Instrument: VOA2.i

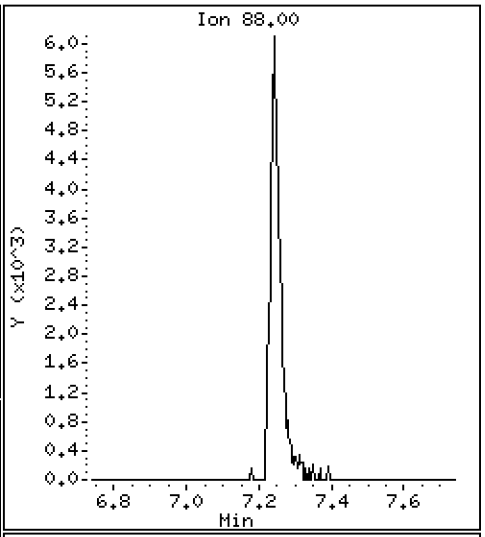
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

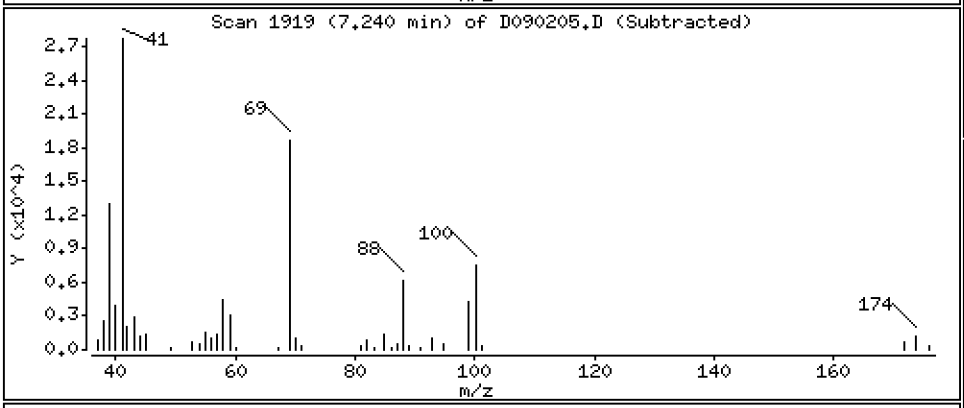
Purge Volume: 5.0 Operator: AP

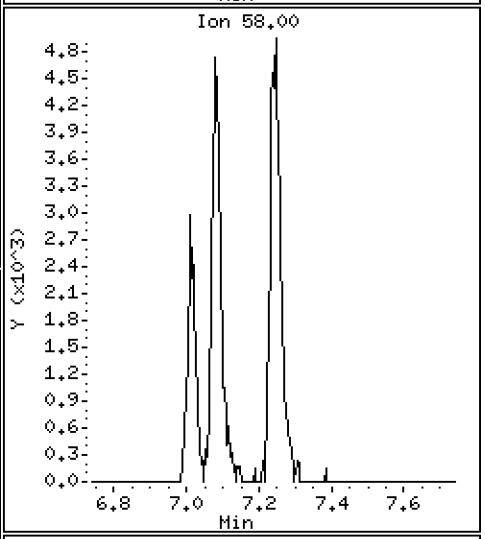
Column phase: DB624 Column diameter: 0.18

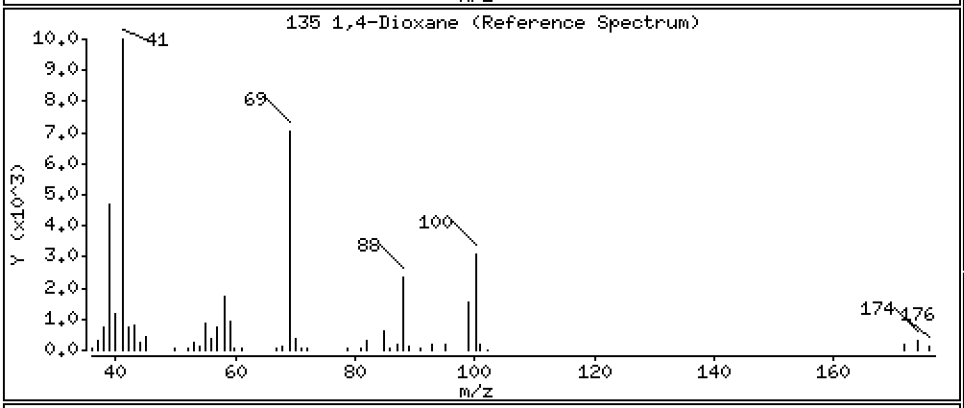
135 1,4-Dioxane Concentration: 349.67 ug/l Review Code:

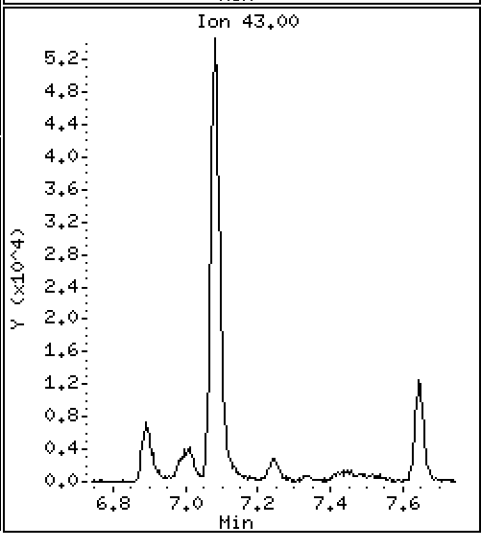


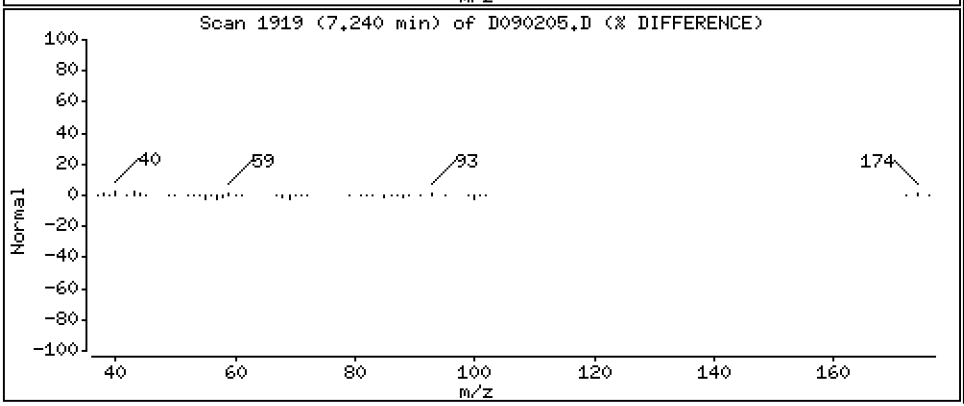












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 89

Date : 02-SEP-2018 15:04

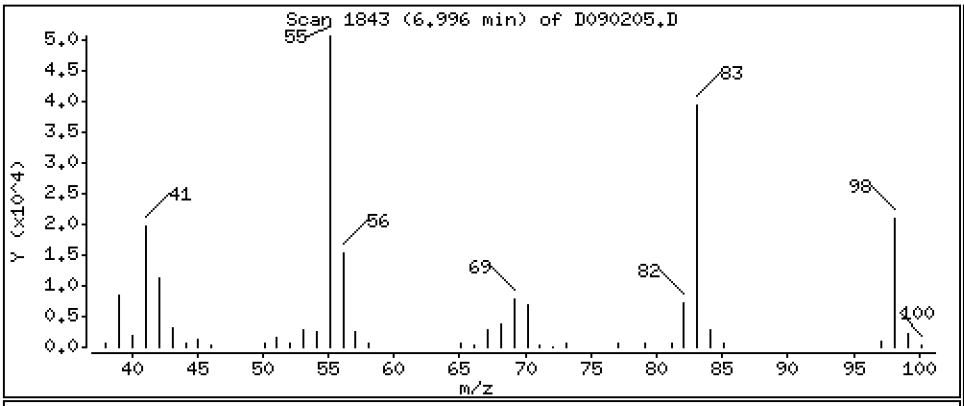
Client ID: VLCSW-180830 Instrument: VOA2.i

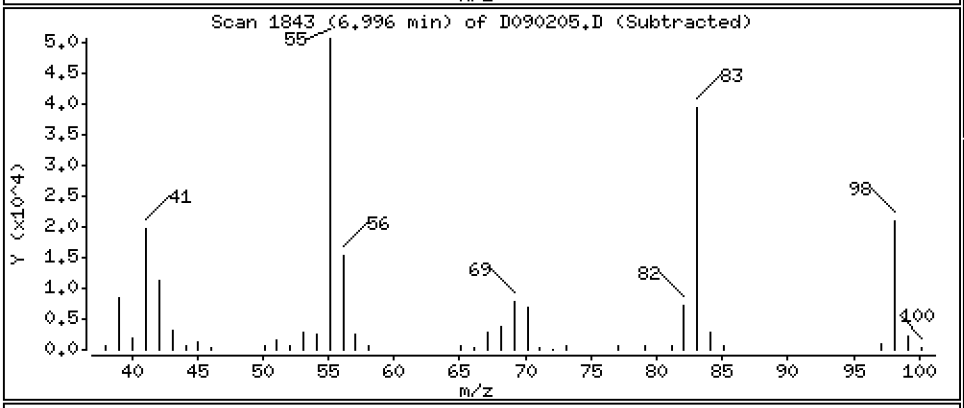
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

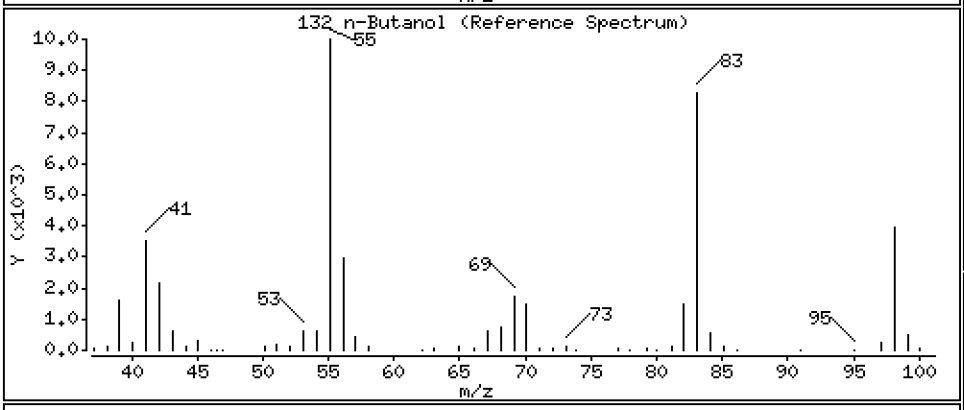
Purge Volume: 5.0 Operator: AP

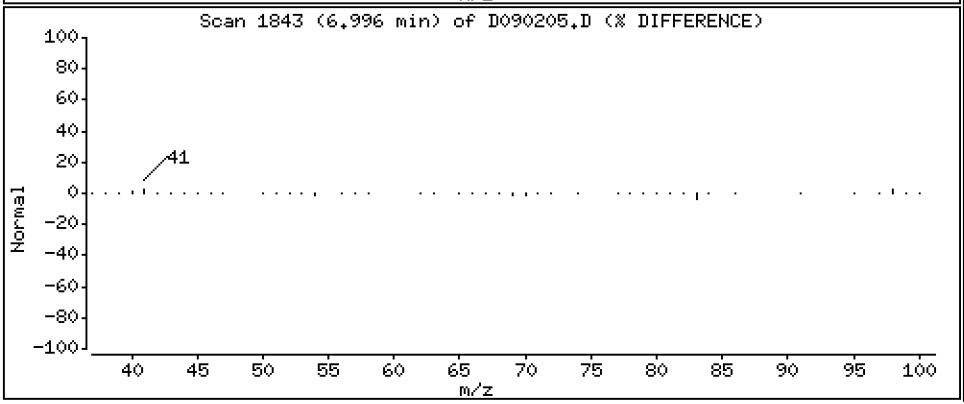
Column phase: DB624 Column diameter: 0.18

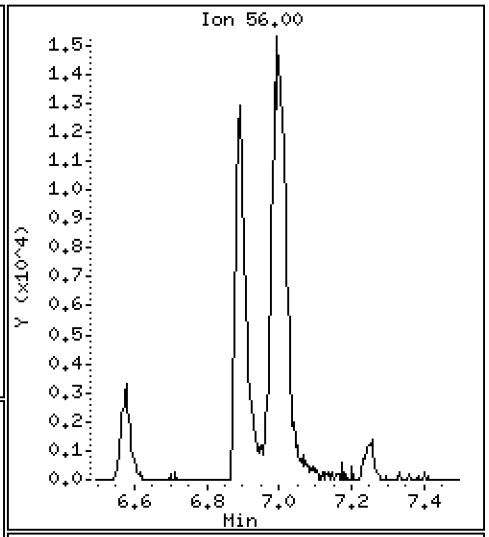
132 n-Butanol Concentration: 380.29 ug/l Review Code:

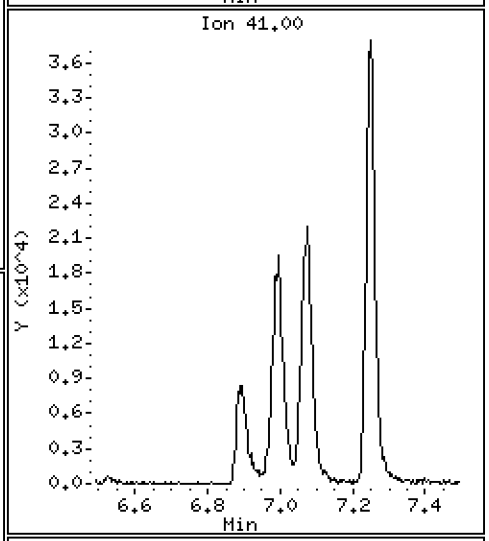


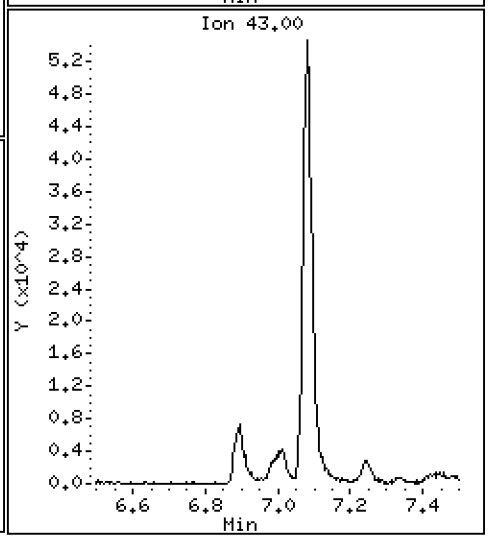












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 90

Date : 02-SEP-2018 15:04

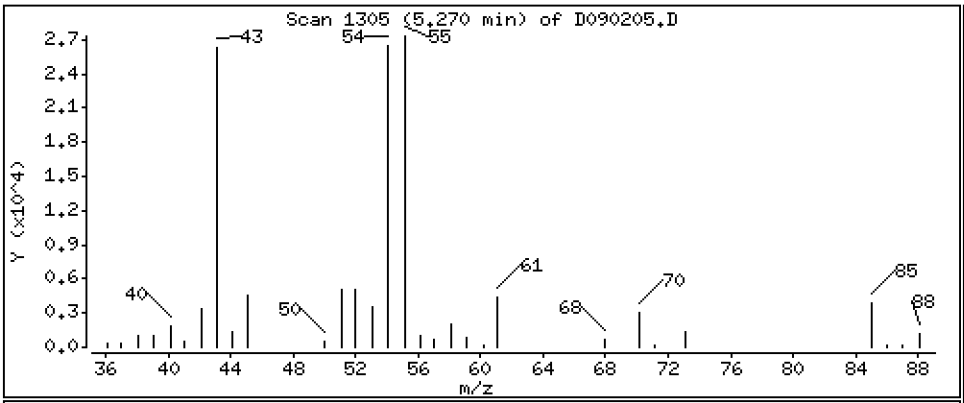
Client ID: VLCSW-180830 Instrument: VOA2.i

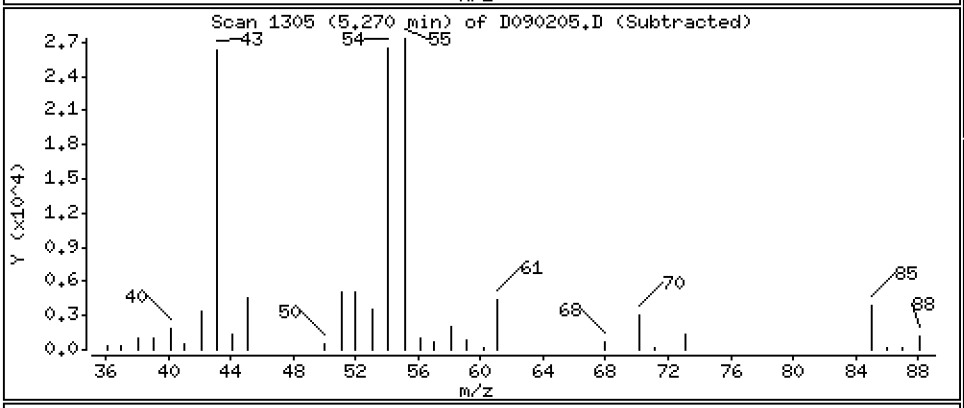
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

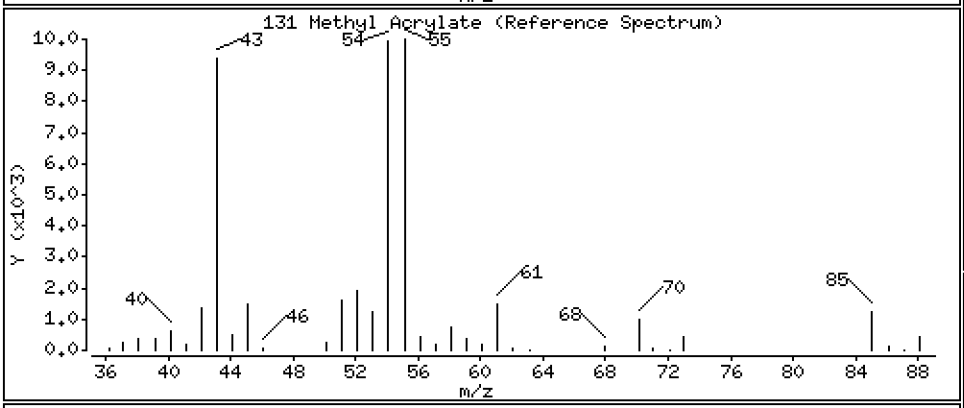
Purge Volume: 5.0 Operator: AP

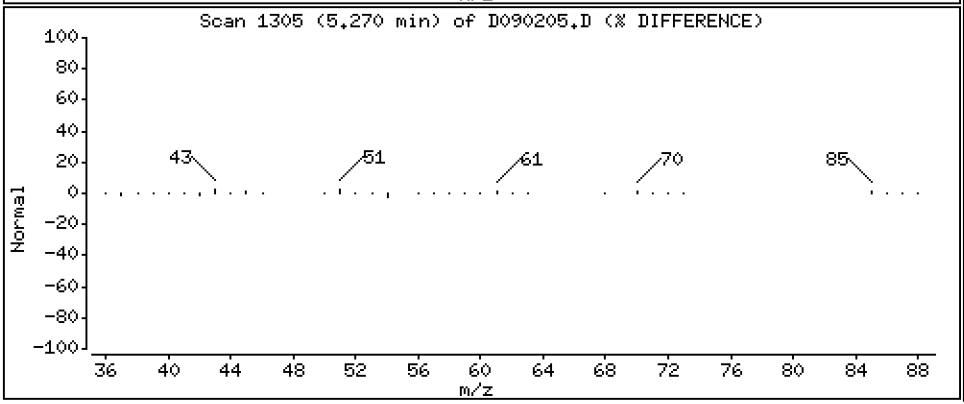
Column phase: DB624 Column diameter: 0.18

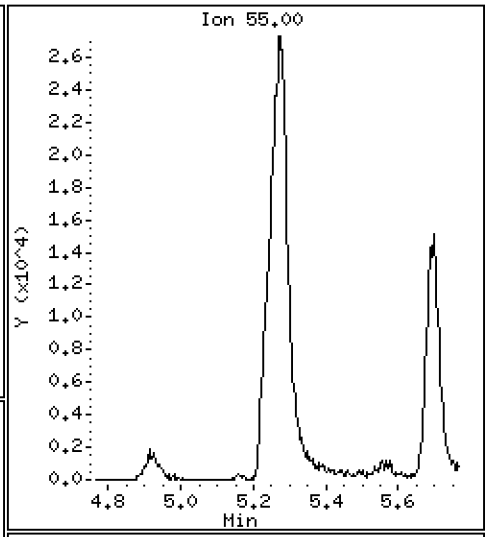
131 Methyl Acrylate Concentration: 18.67 ug/l Review Code:

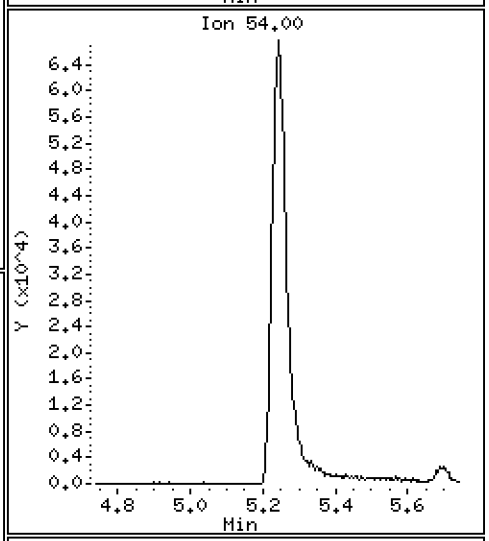


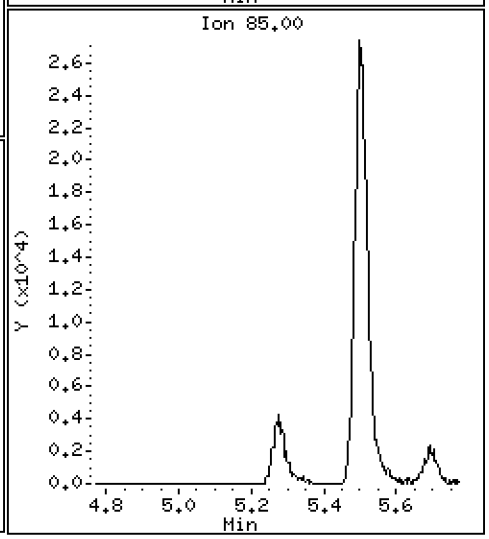












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Date : 02-SEP-2018 15:04

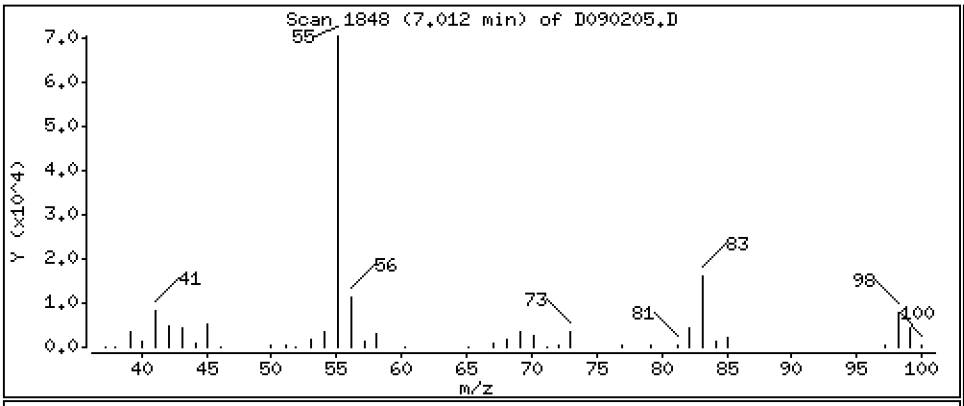
Client ID: VLCSW-180830 Instrument: VOA2.i

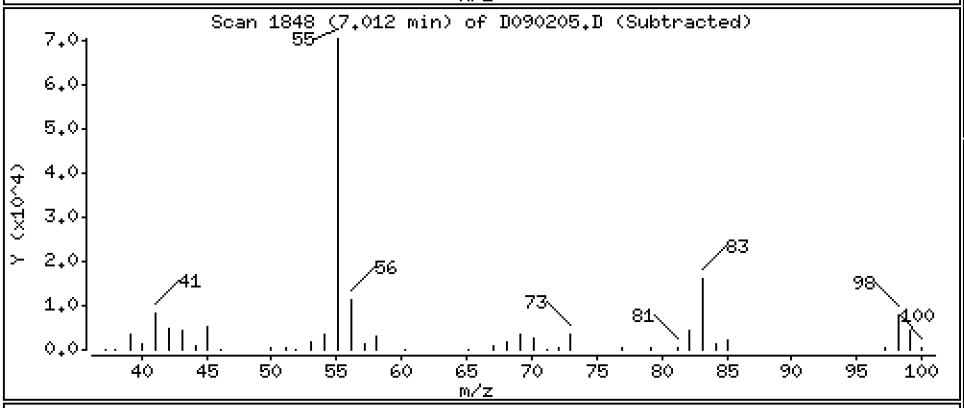
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

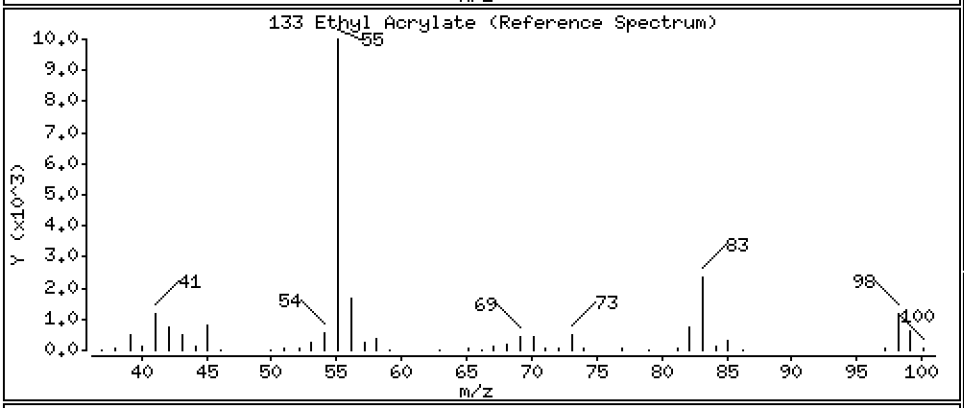
Purge Volume: 5.0 Operator: AP

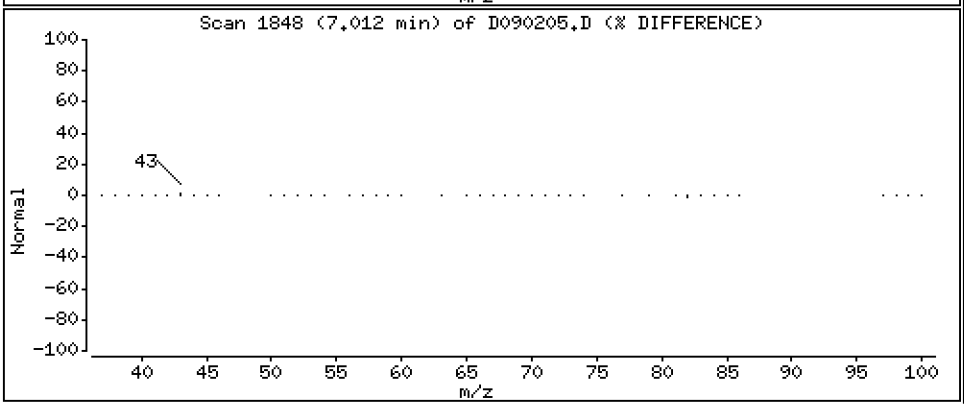
Column phase: DB624 Column diameter: 0.18

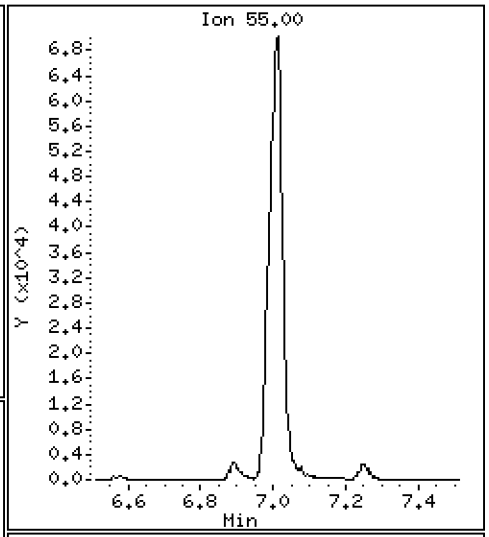
133 Ethyl Acrylate Concentration: 18.48 ug/l Review Code:

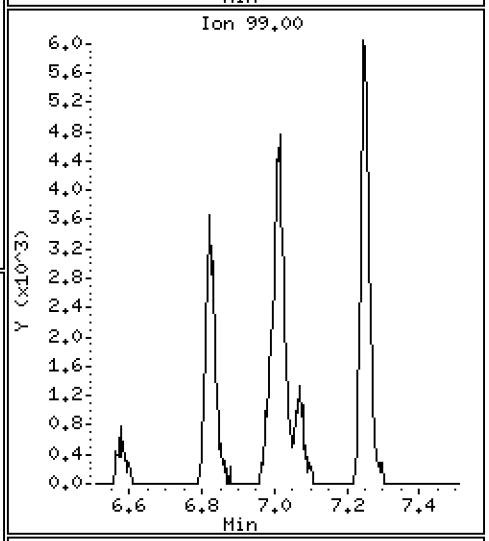


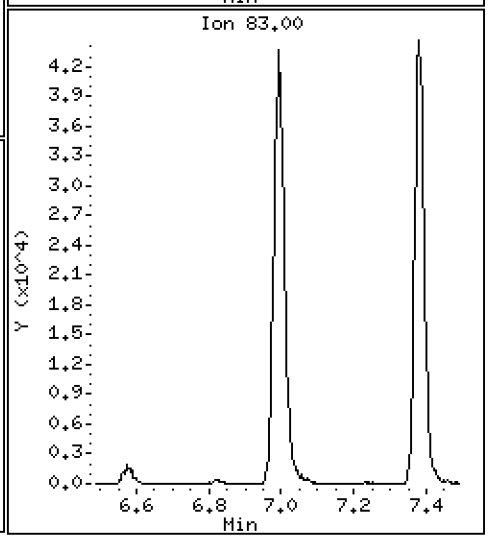












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Date : 02-SEP-2018 15:04

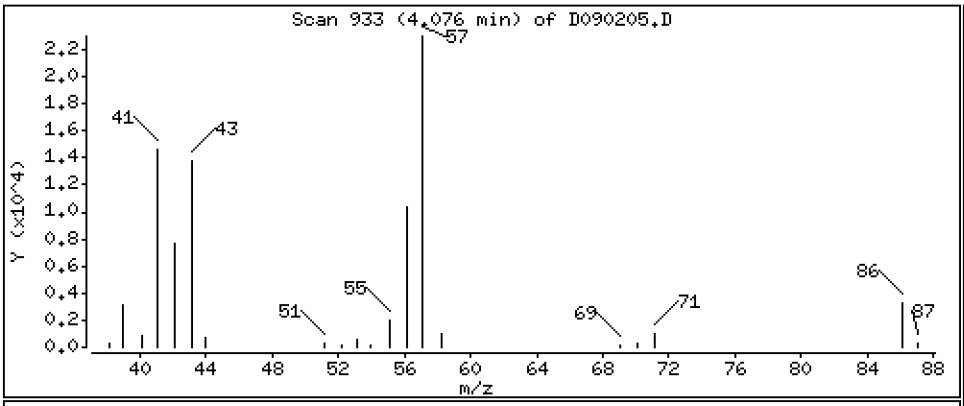
Client ID: VLCSW-180830 Instrument: VOA2.i

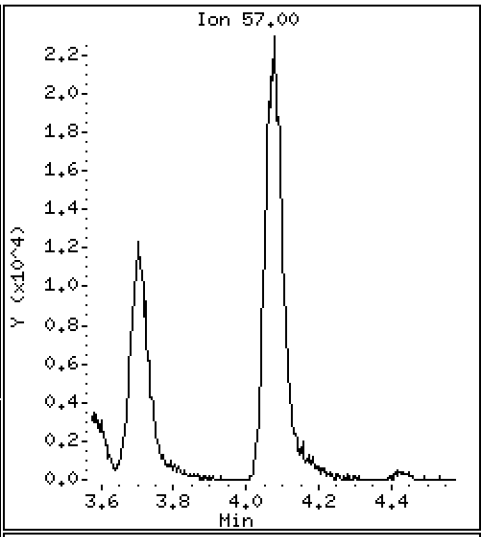
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

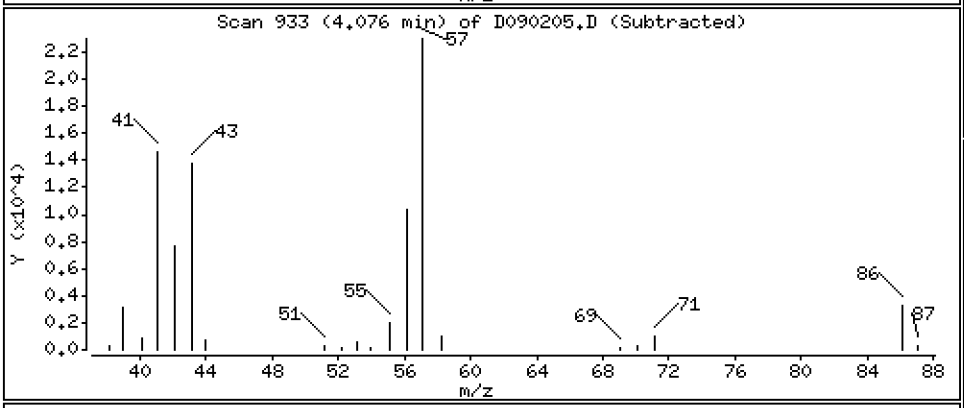
Purge Volume: 5.0 Operator: AP

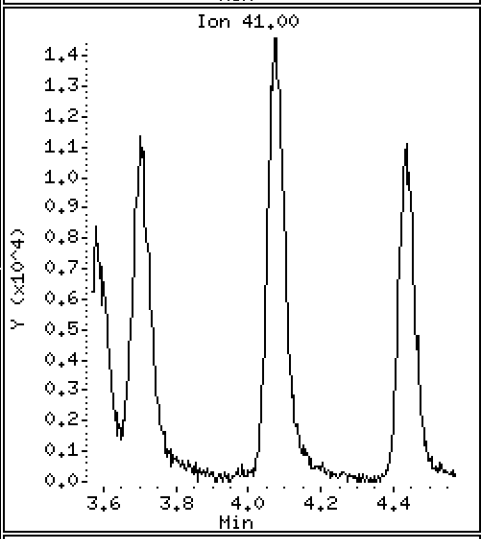
Column phase: DB624 Column diameter: 0.18

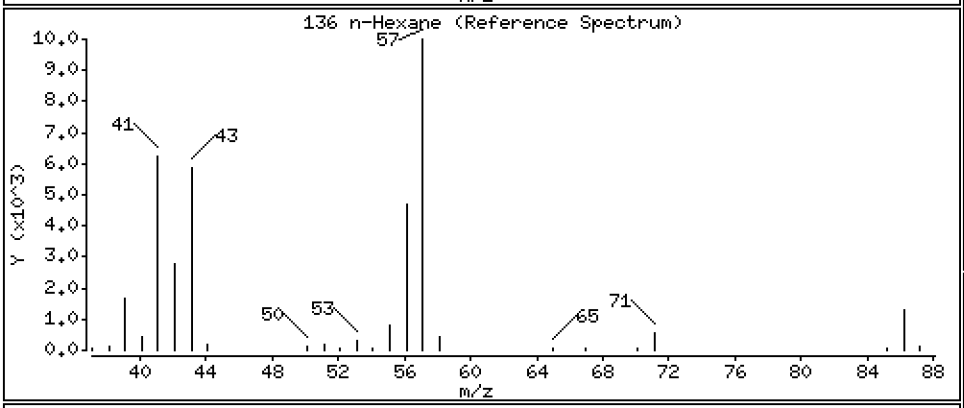
136 n-Hexane Concentration: 21.34 ug/l Review Code:

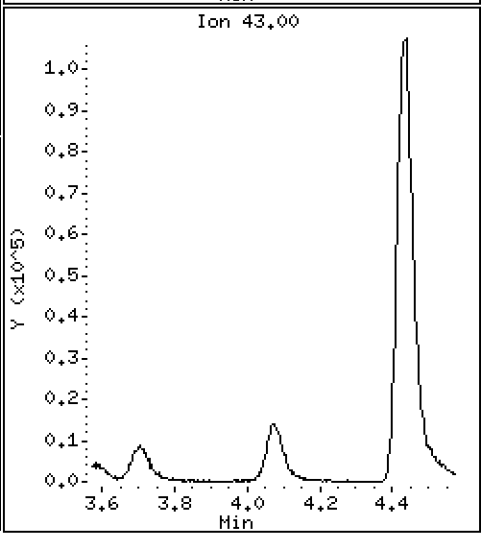


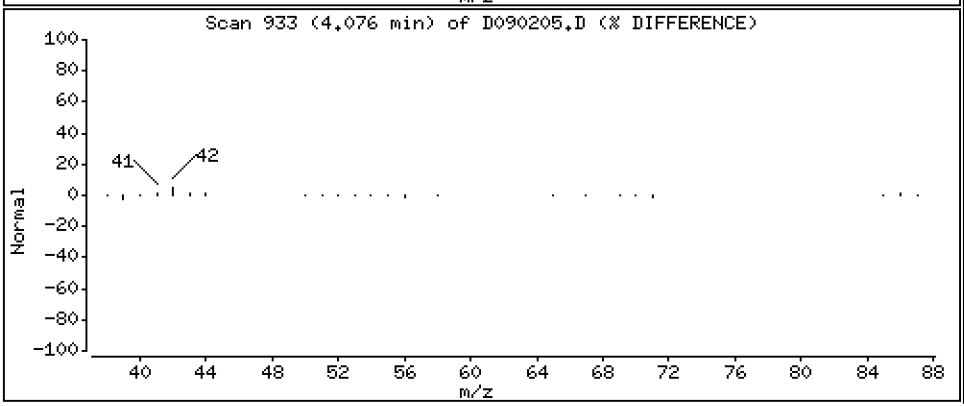












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Date : 02-SEP-2018 15:04

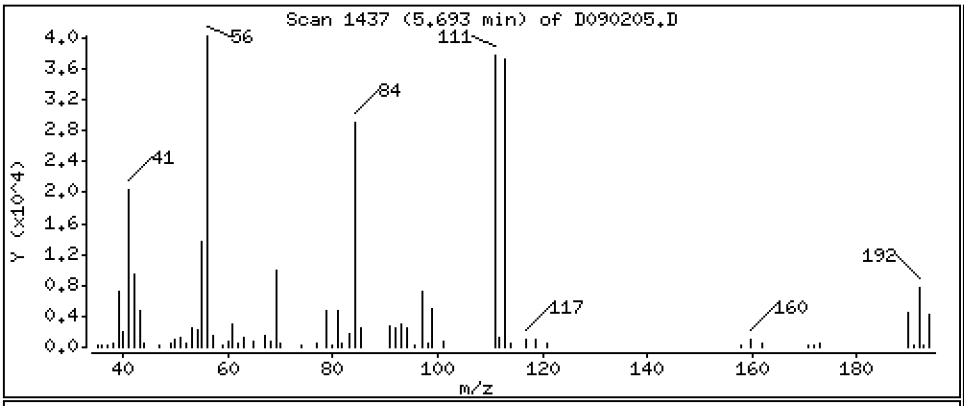
Client ID: VLCSW-180830 Instrument: VOA2.i

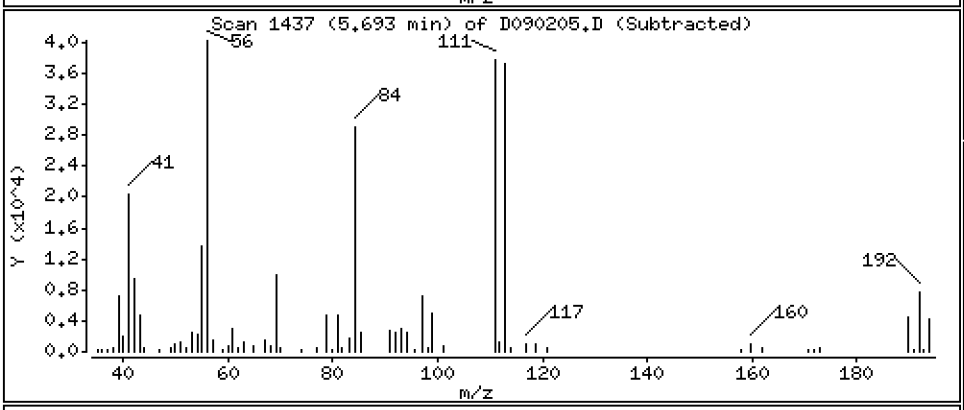
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

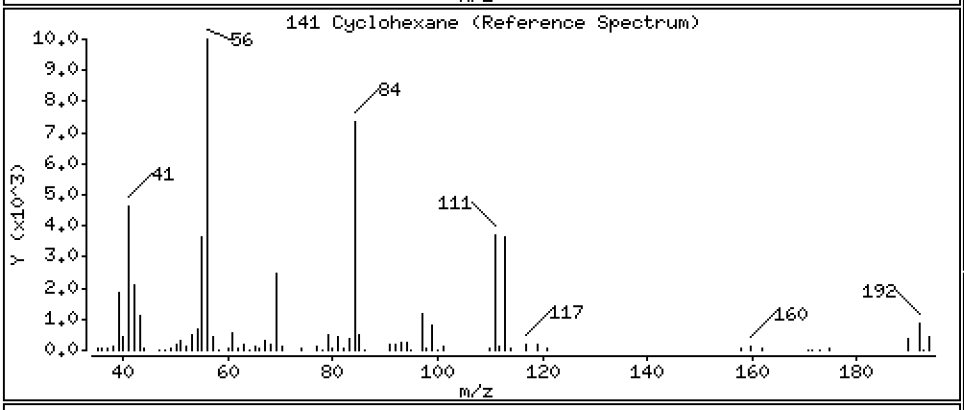
Purge Volume: 5.0 Operator: AP

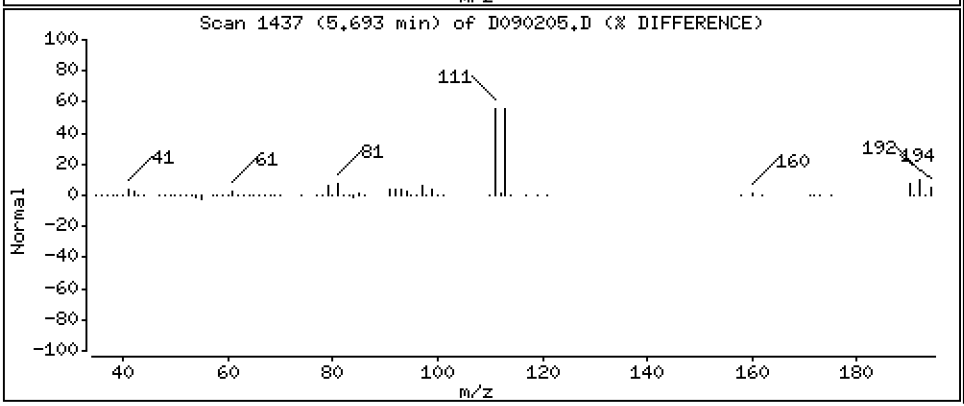
Column phase: DB624 Column diameter: 0.18

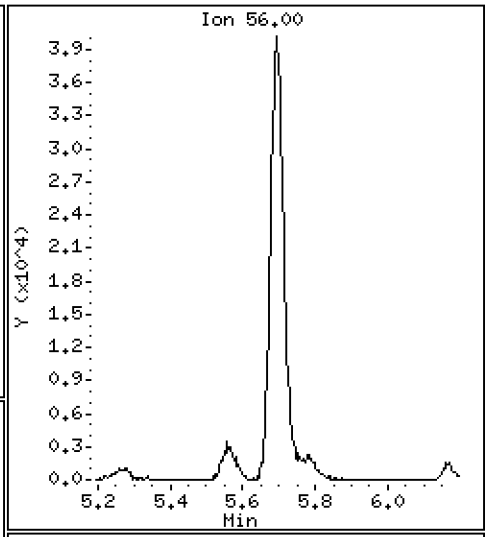
141 Cyclohexane Concentration: 18.01 ug/l Review Code:

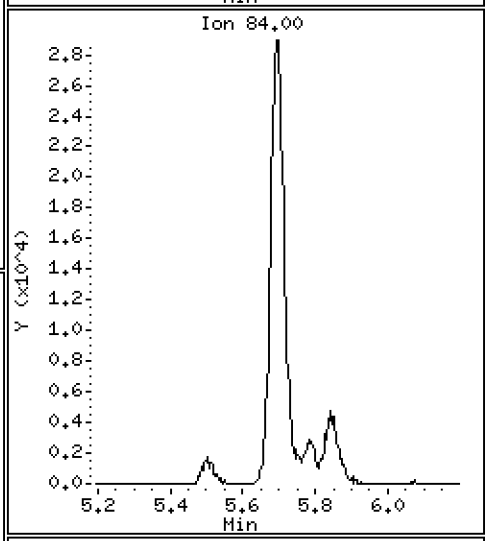


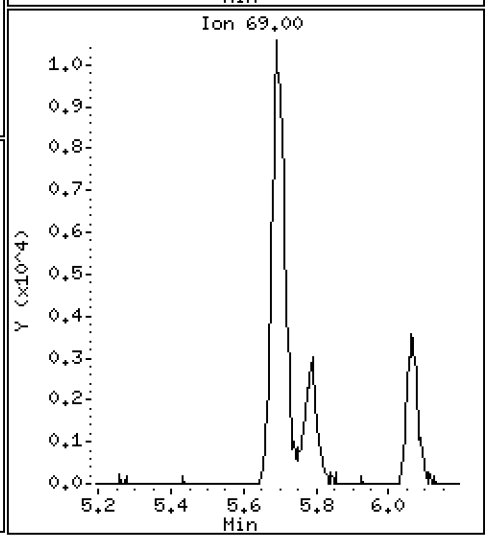












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Date : 02-SEP-2018 15:04

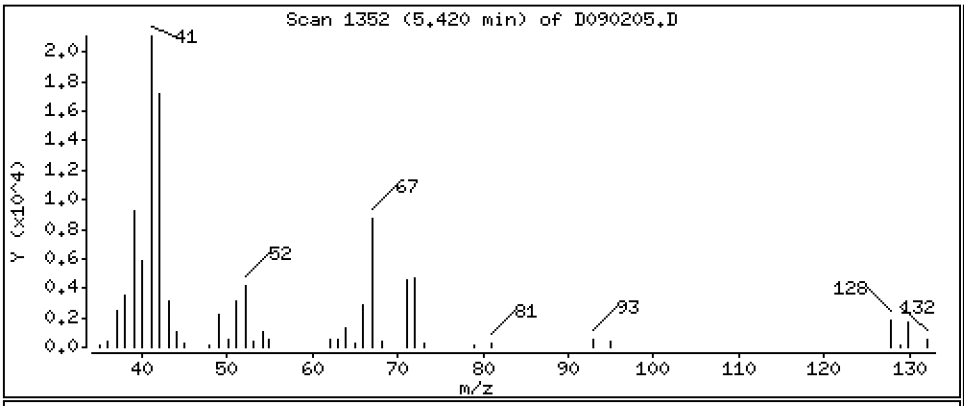
Client ID: VLCSW-180830 Instrument: VOA2.i

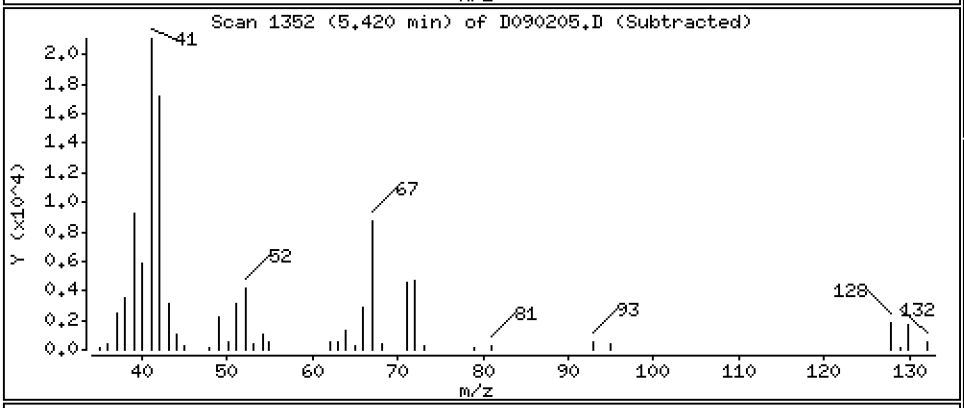
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

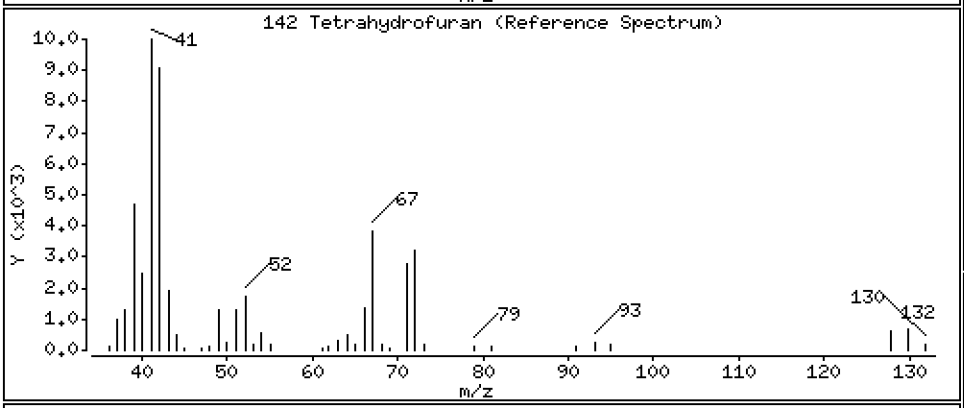
Purge Volume: 5.0 Operator: AP

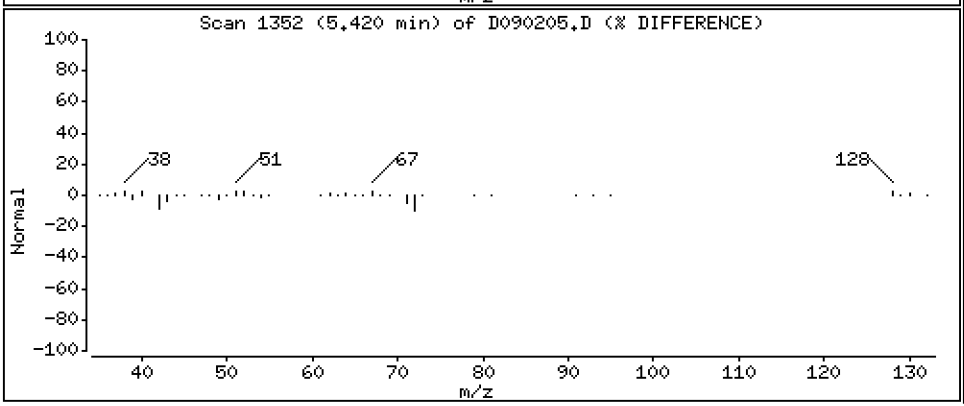
Column phase: DB624 Column diameter: 0.18

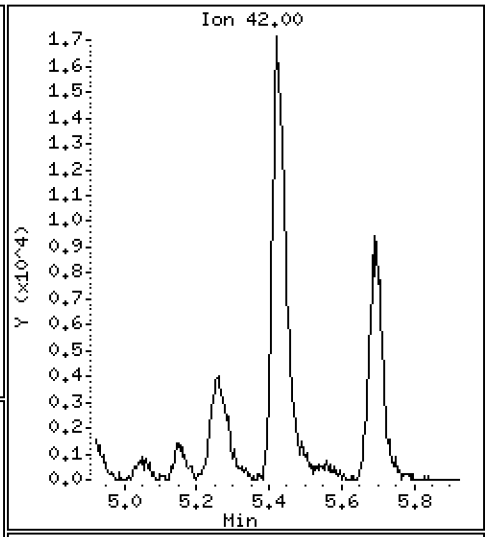
142 Tetrahydrofuran Concentration: 35.19 ug/l Review Code:

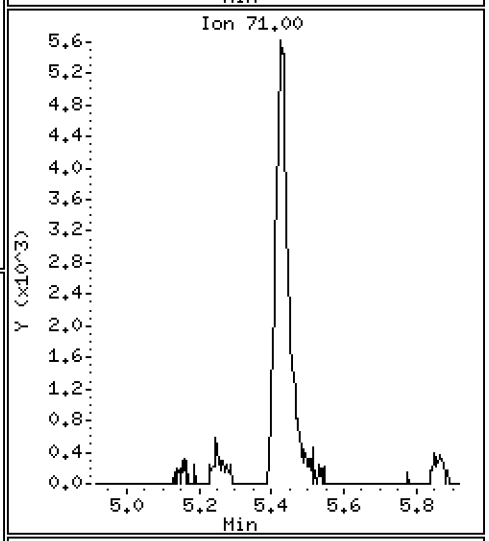


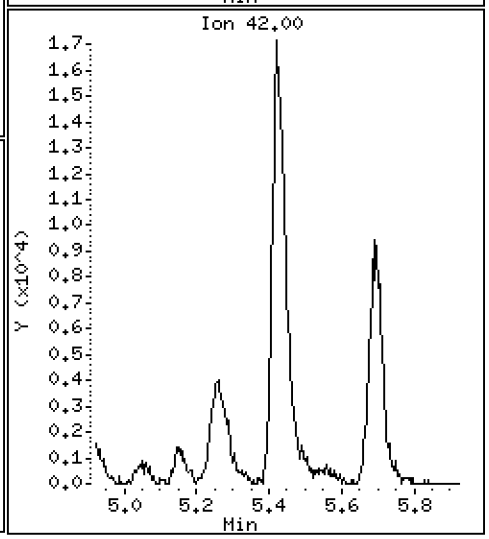












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Date : 02-SEP-2018 15:04

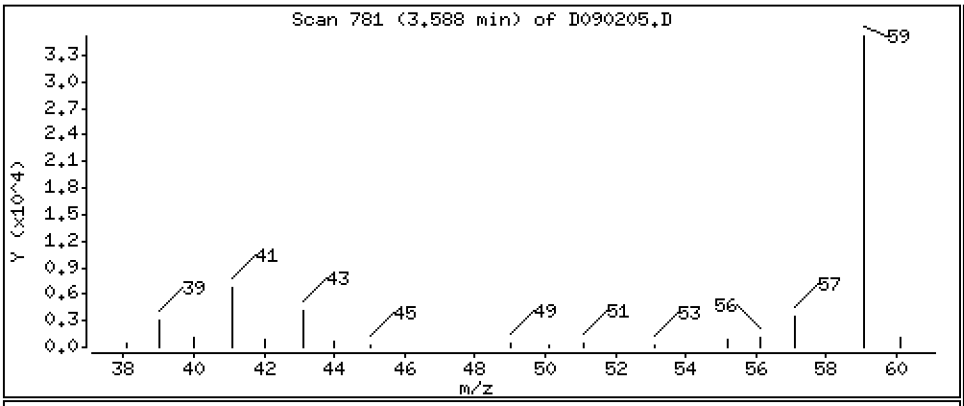
Client ID: VLCSW-180830 Instrument: VOA2.i

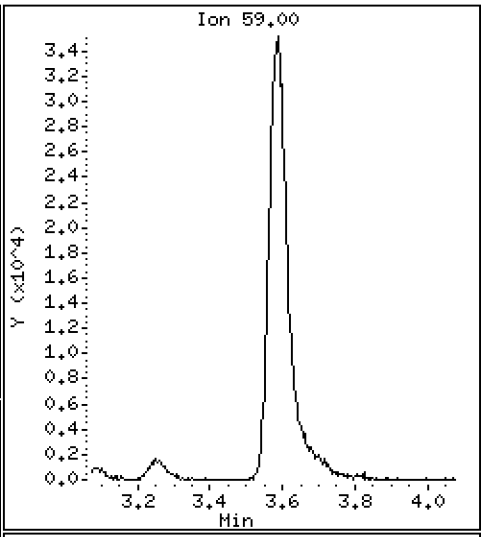
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

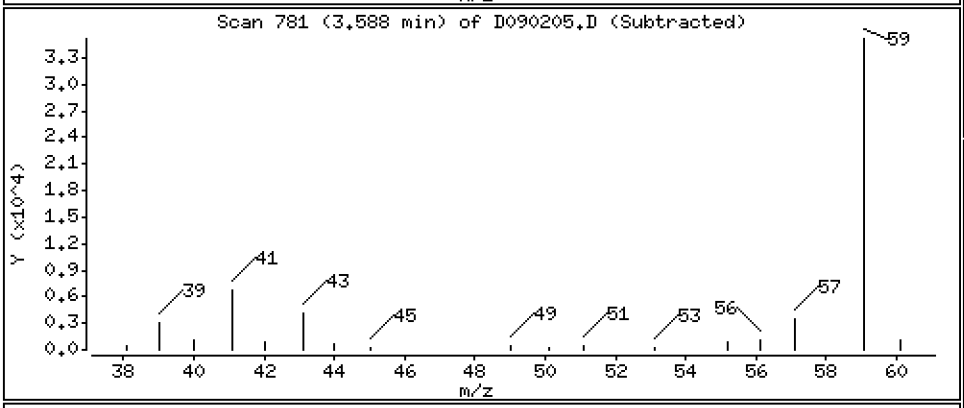
Purge Volume: 5.0 Operator: AP

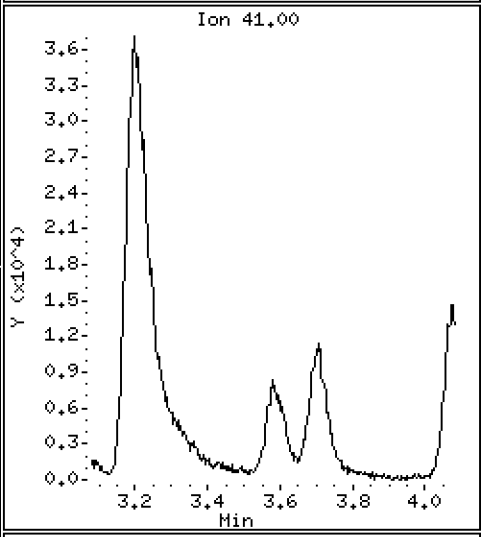
Column phase: DB624 Column diameter: 0.18

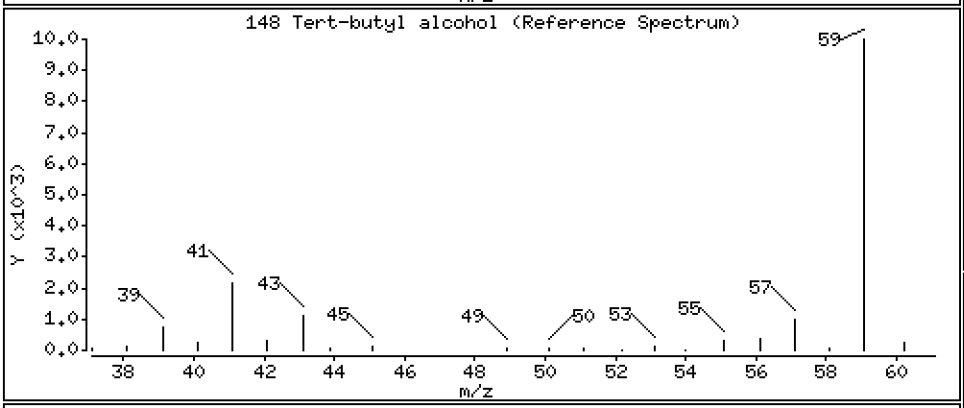
148 Tert-butyl alcohol Concentration: 370.42 ug/l Review Code:

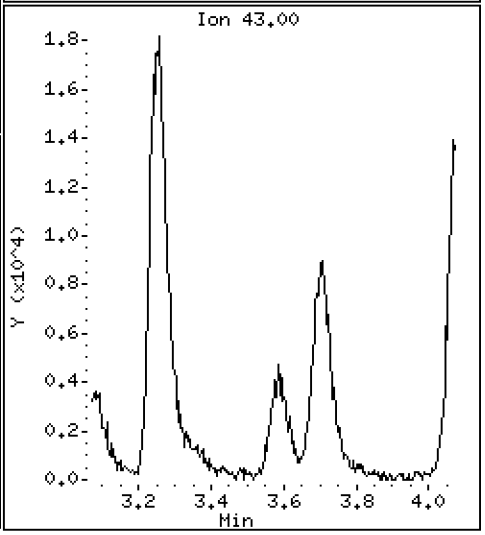


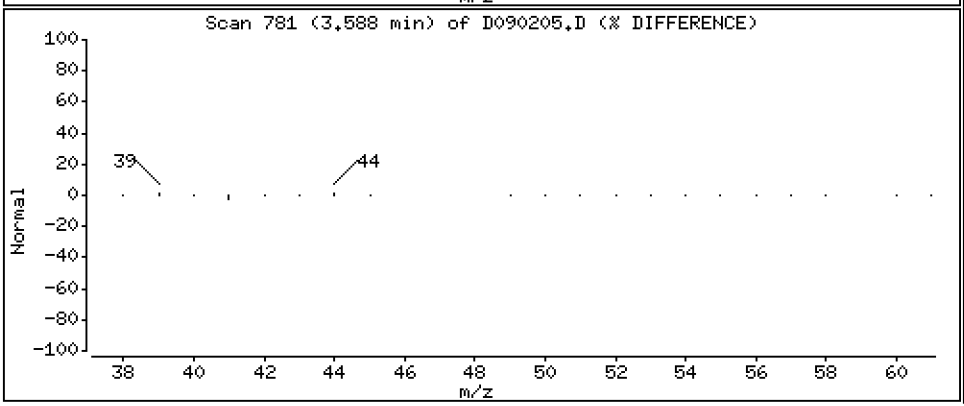












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 96

Date : 02-SEP-2018 15:04

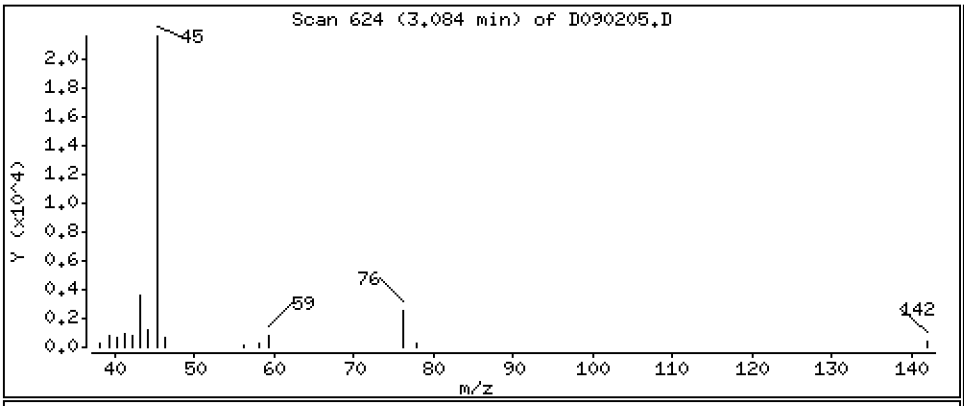
Client ID: VLCSW-180830 Instrument: VOA2.i

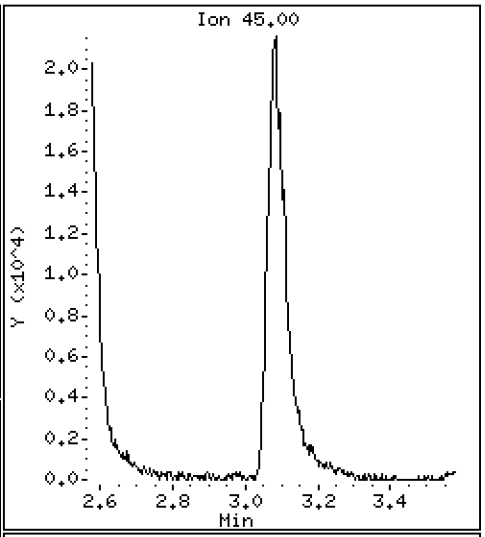
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

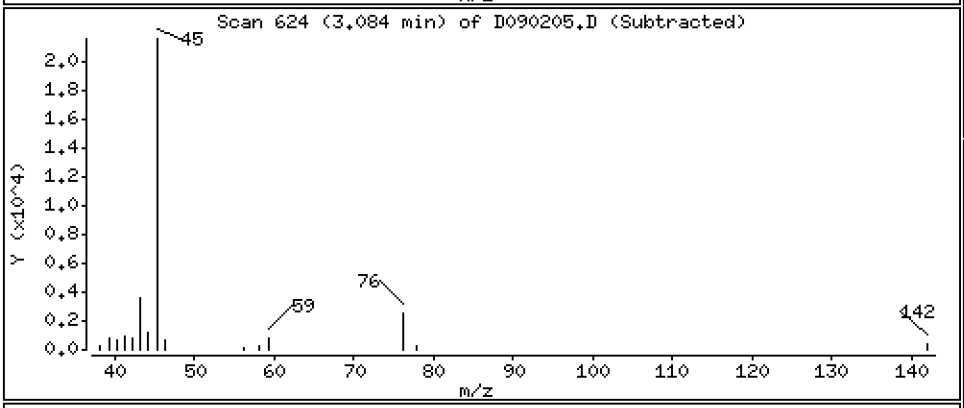
Purge Volume: 5.0 Operator: AP

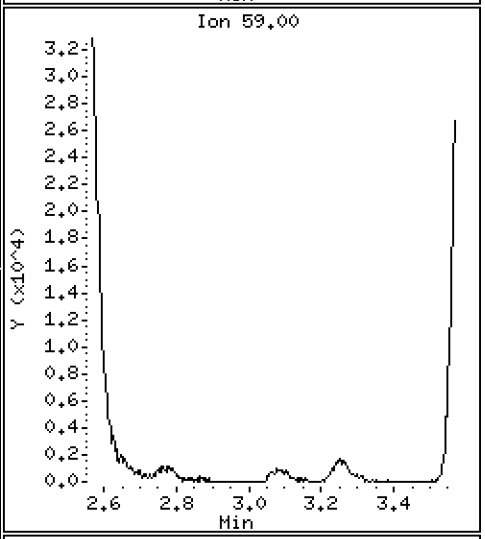
Column phase: DB624 Column diameter: 0.18

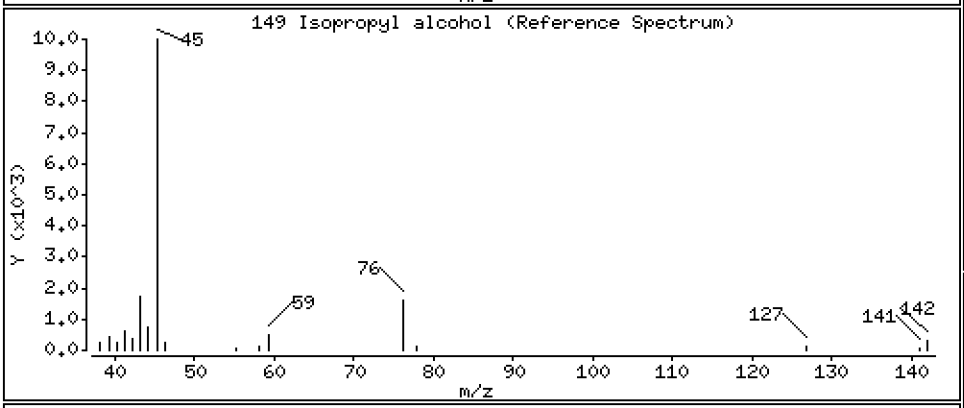
149 Isopropyl alcohol Concentration: 358.91 ug/l Review Code:

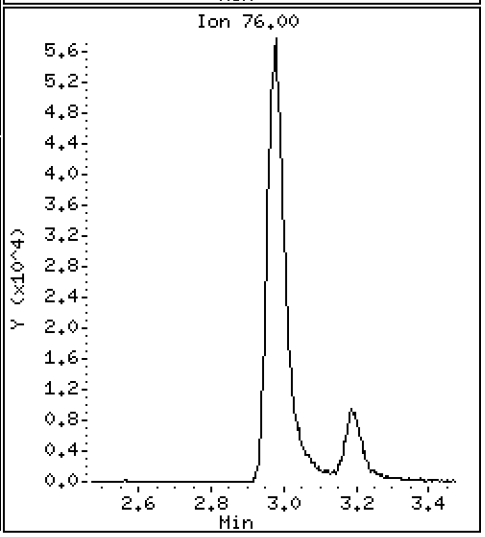


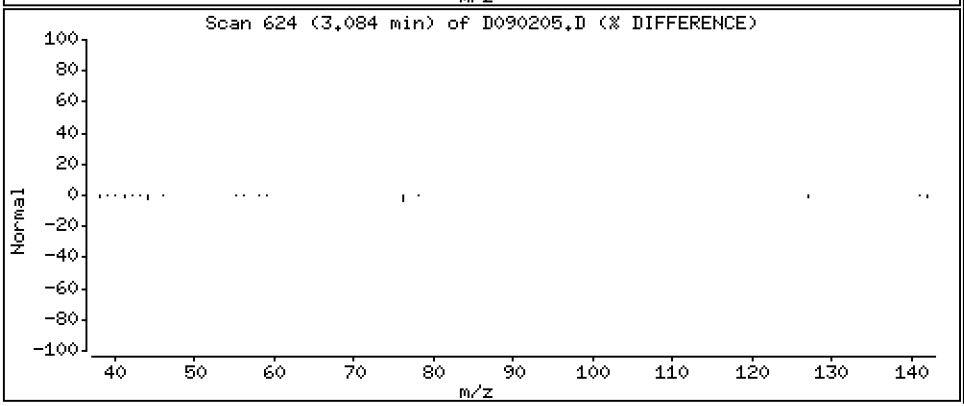












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 97

Date : 02-SEP-2018 15:04

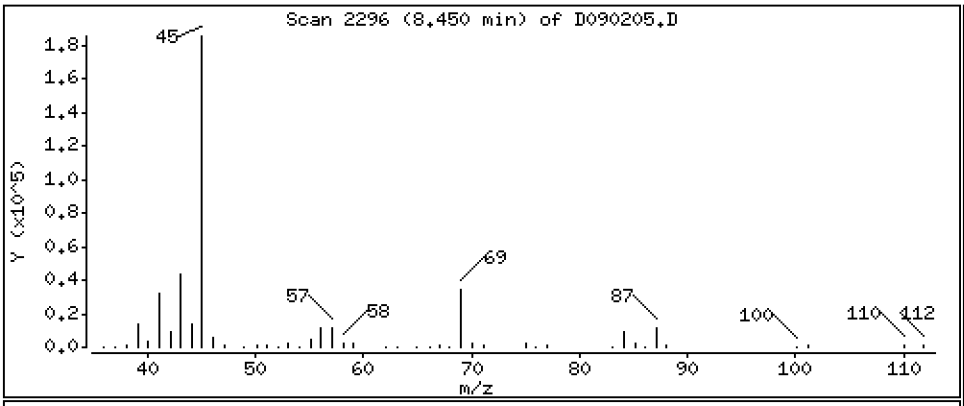
Client ID: VLCSW-180830 Instrument: VOA2.i

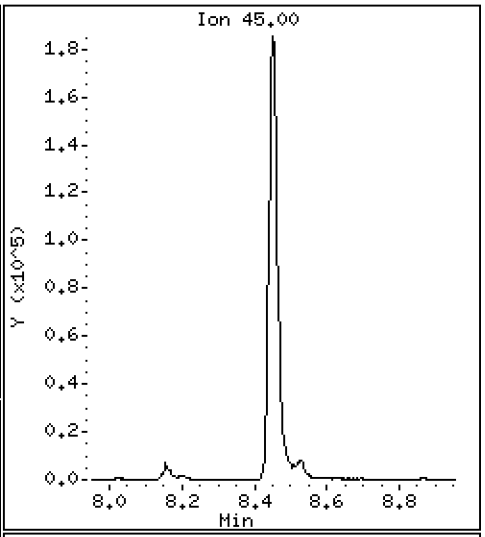
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

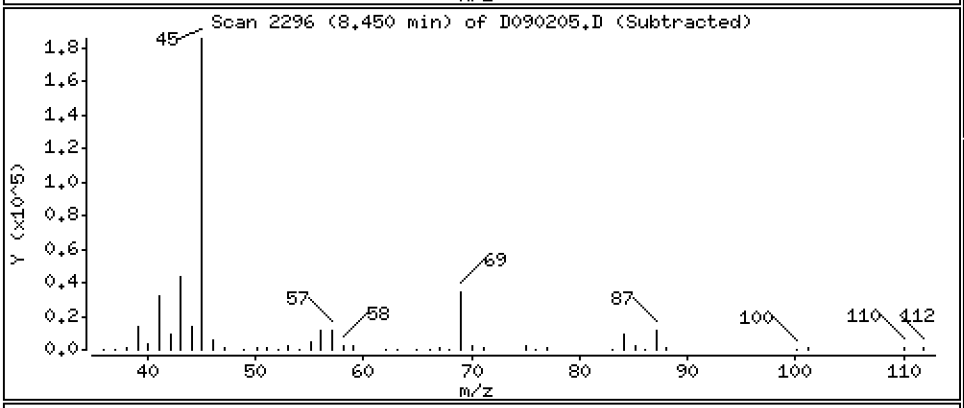
Purge Volume: 5.0 Operator: AP

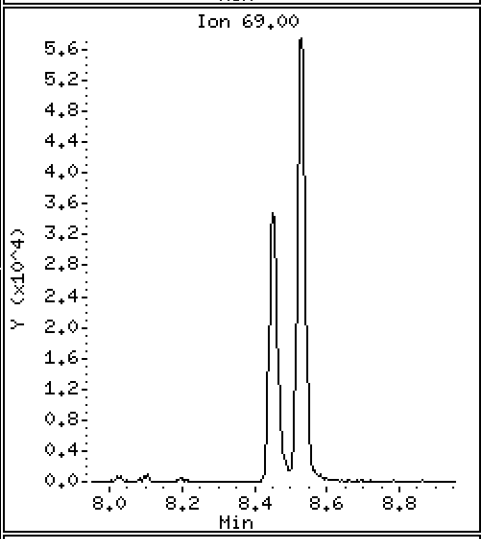
Column phase: DB624 Column diameter: 0.18

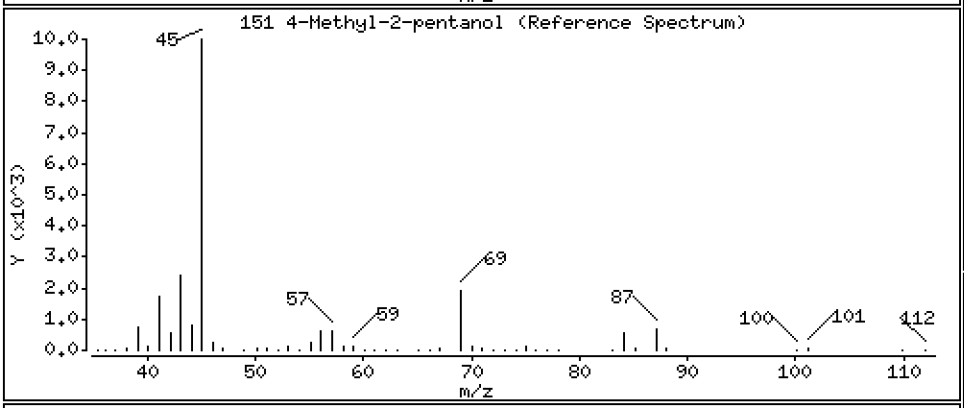
151 4-Methyl-2-pentanol Concentration: 420.45 ug/l Review Code:

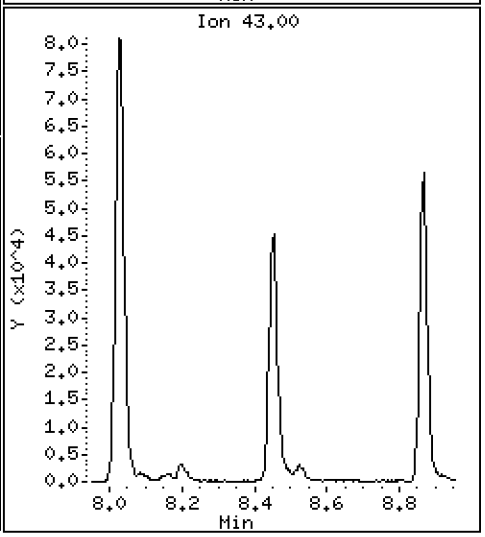


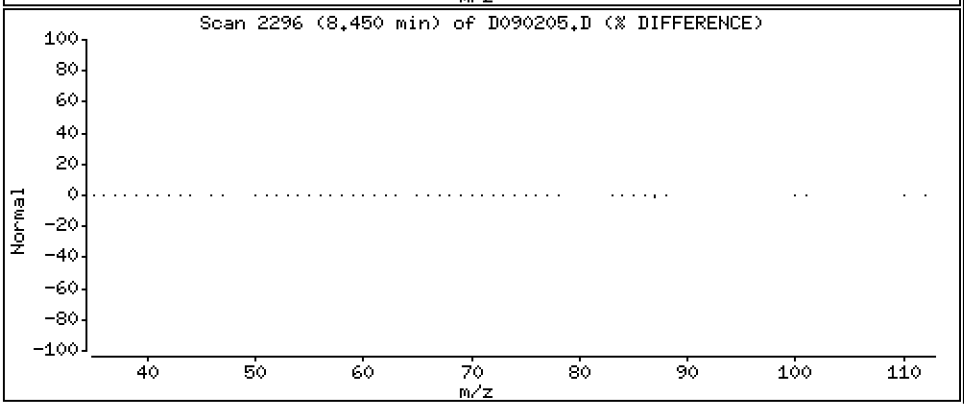












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 98

Date : 02-SEP-2018 15:04

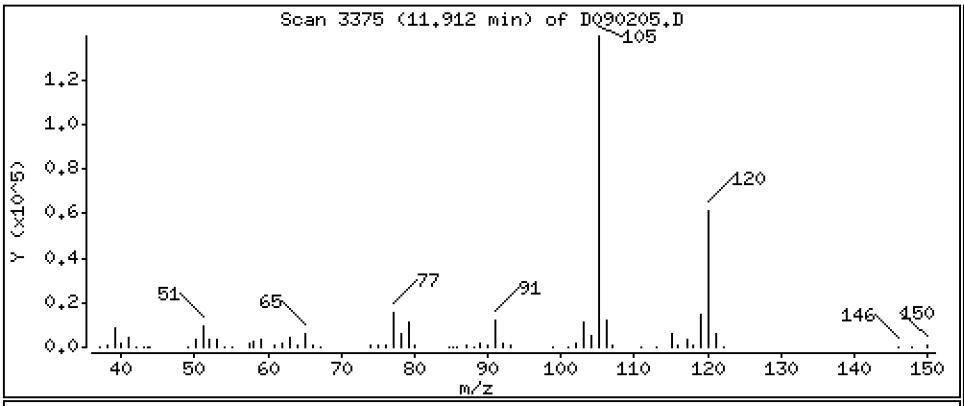
Client ID: VLCSW-180830 Instrument: VOA2.i

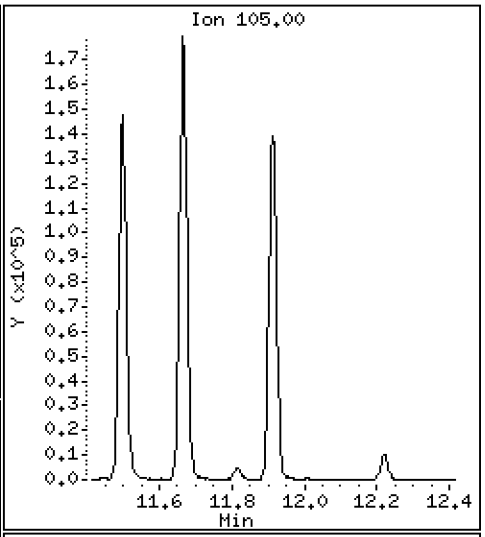
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

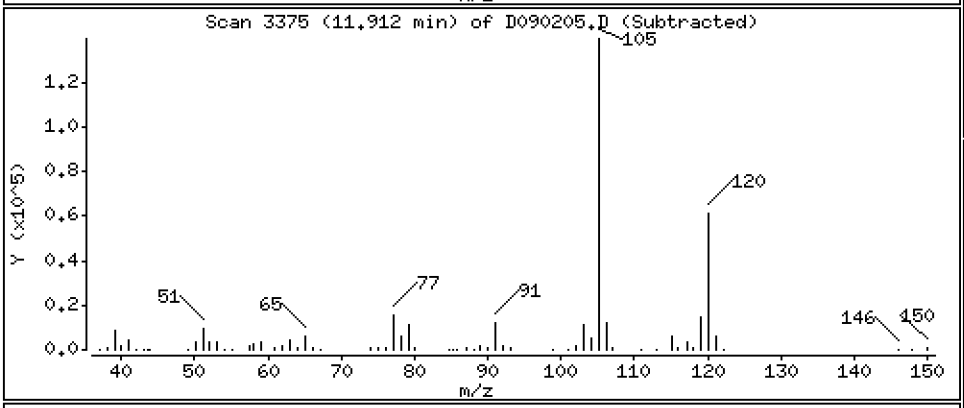
Purge Volume: 5.0 Operator: AP

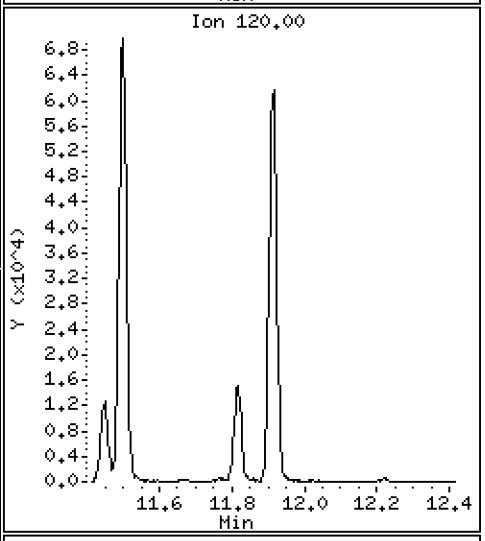
Column phase: DB624 Column diameter: 0.18

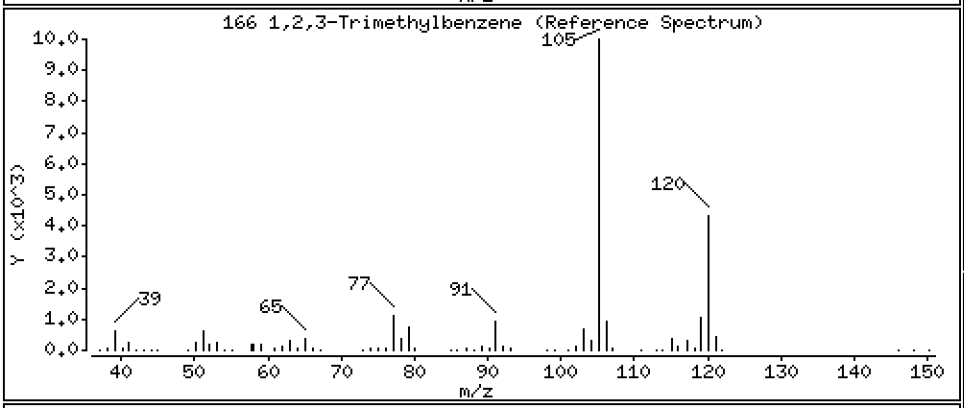
166 1,2,3-Trimethylbenzene Concentration: 21.01 ug/l Review Code:

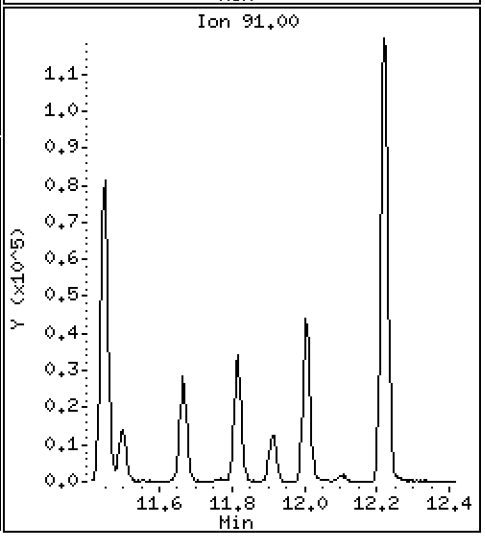


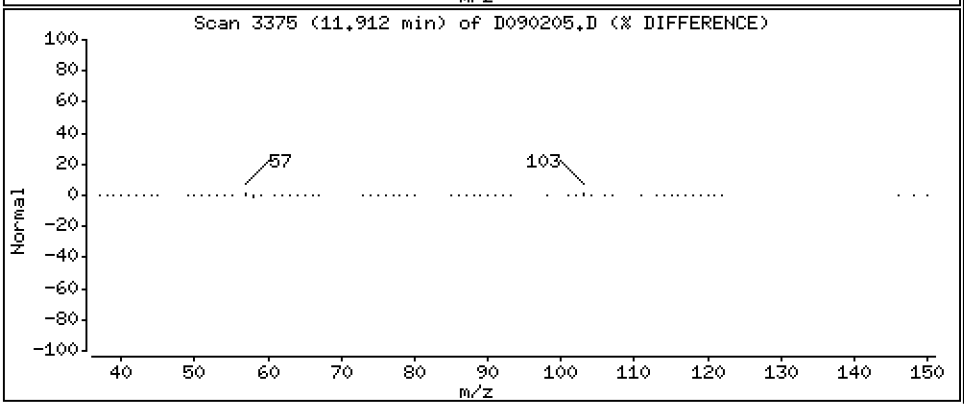












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 99

Date : 02-SEP-2018 15:04

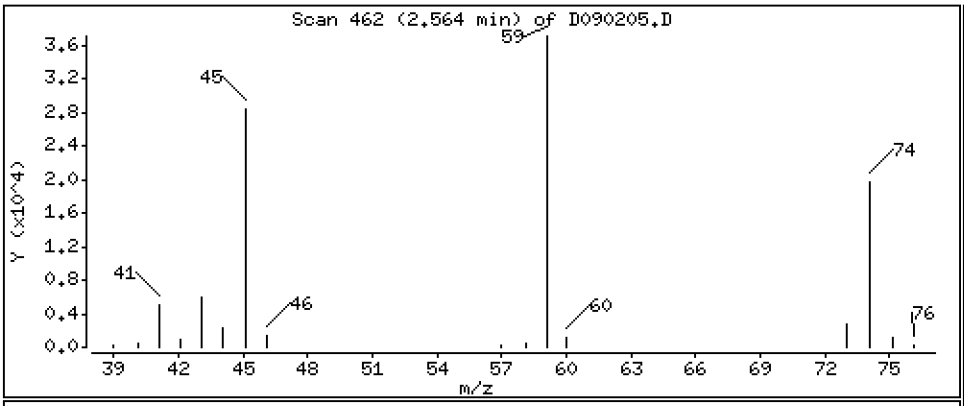
Client ID: VLCSW-180830 Instrument: VOA2.i

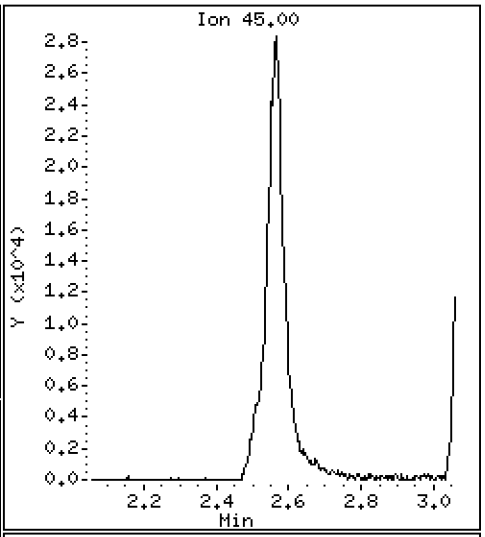
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

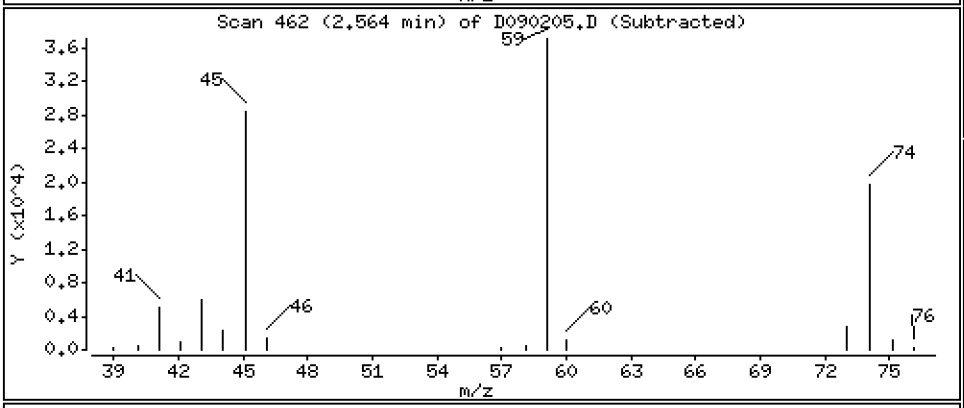
Purge Volume: 5.0 Operator: AP

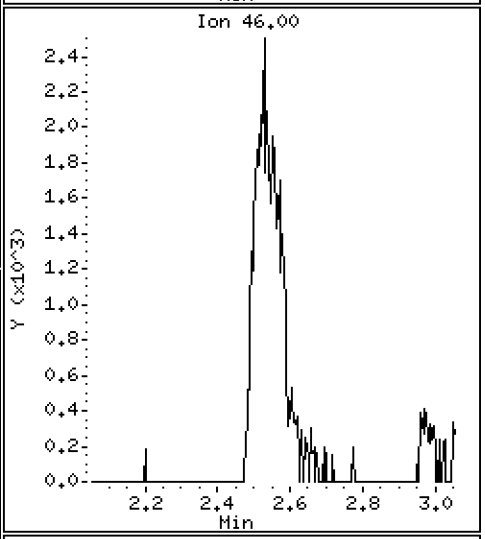
Column phase: DB624 Column diameter: 0.18

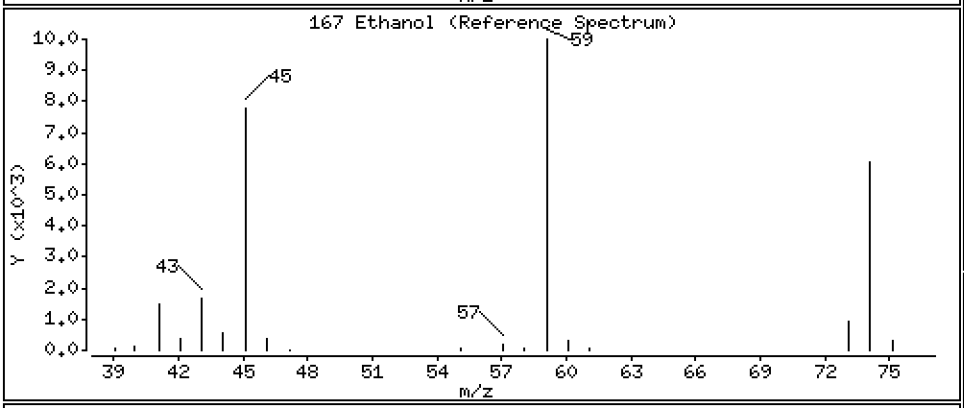
167 Ethanol Concentration: 365.16 ug/l Review Code:

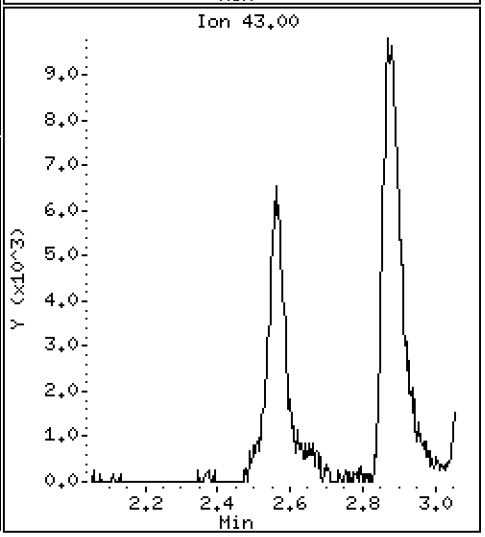


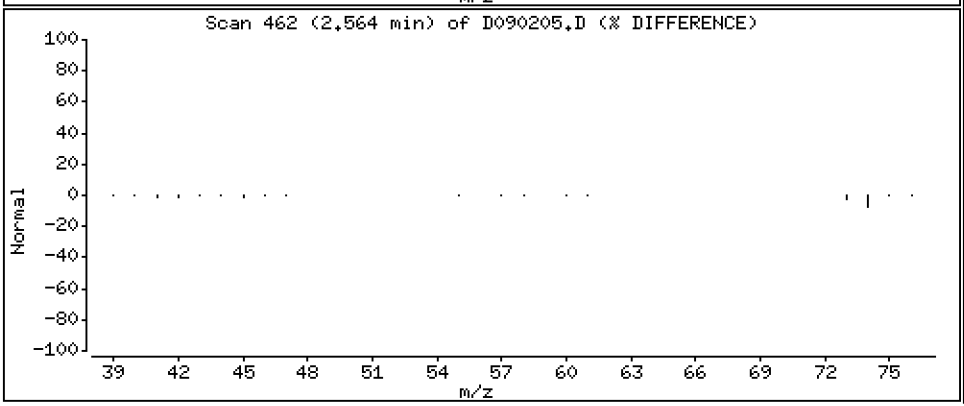












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 100

Date : 02-SEP-2018 15:04

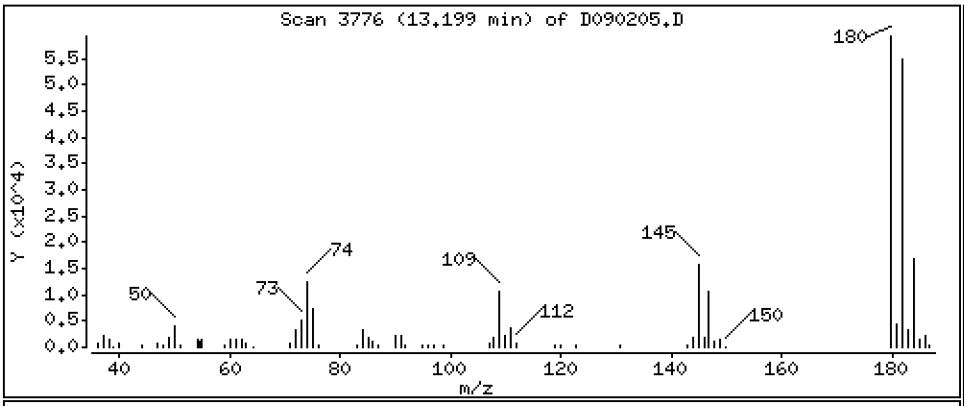
Client ID: VLCSW-180830 Instrument: VOA2.i

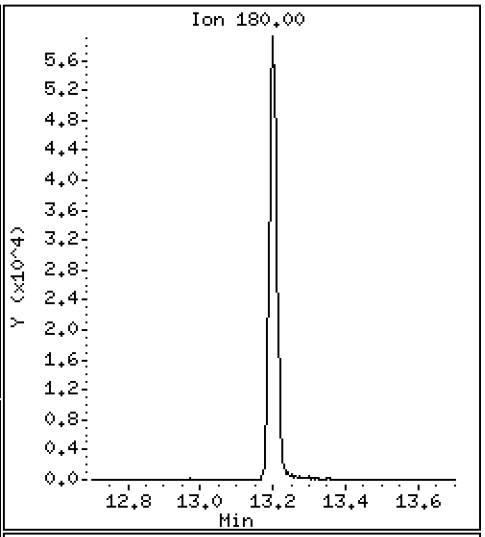
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

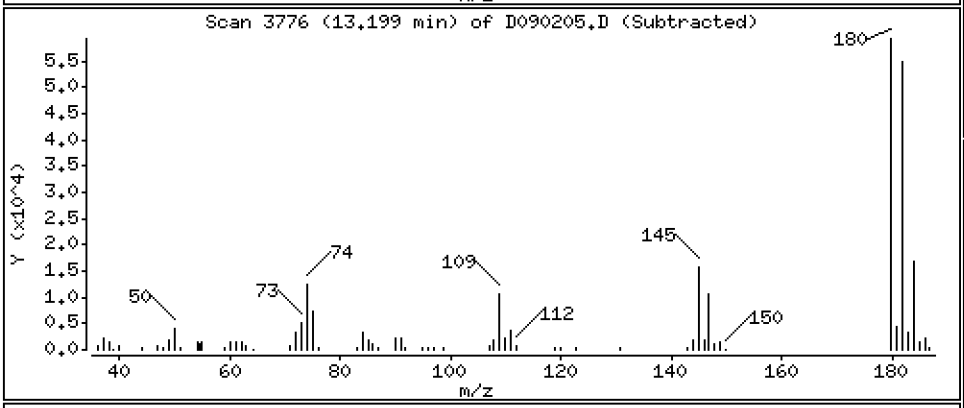
Purge Volume: 5.0 Operator: AP

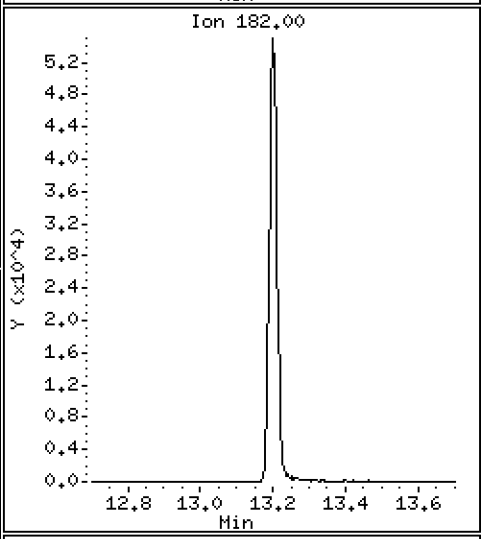
Column phase: DB624 Column diameter: 0.18

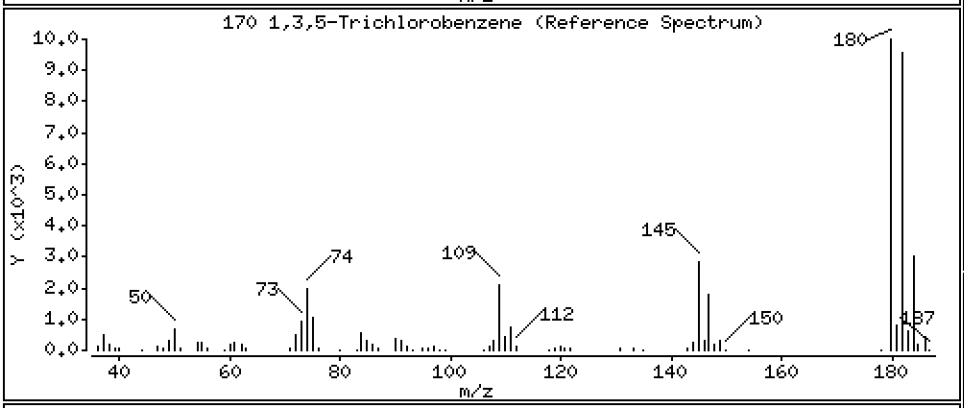
170 1,3,5-Trichlorobenzene Concentration: 21.38 ug/l Review Code:

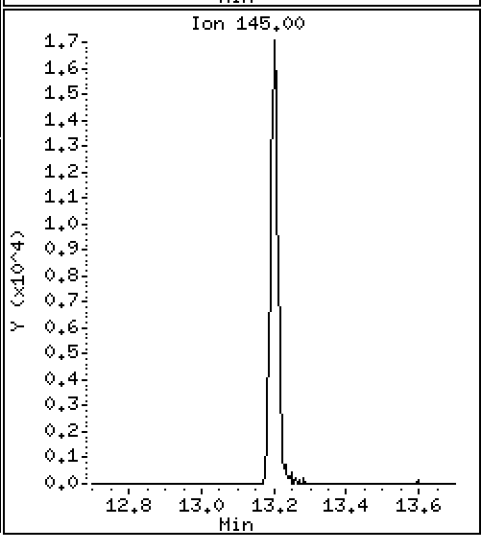


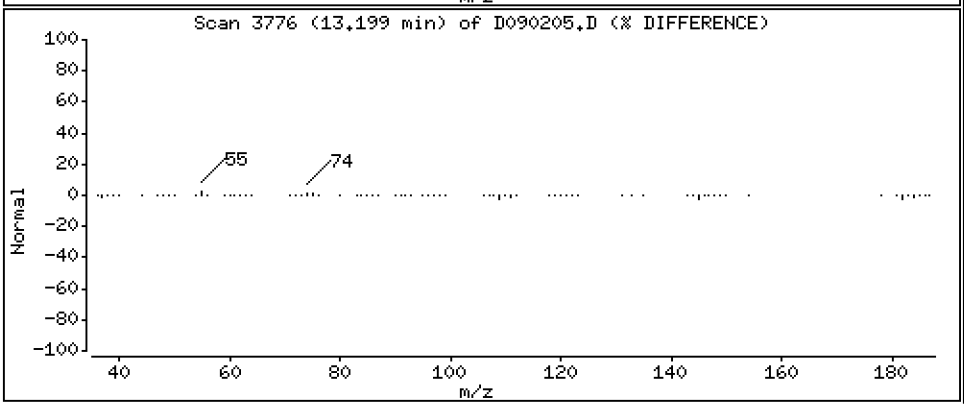












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 101

Date : 02-SEP-2018 15:04

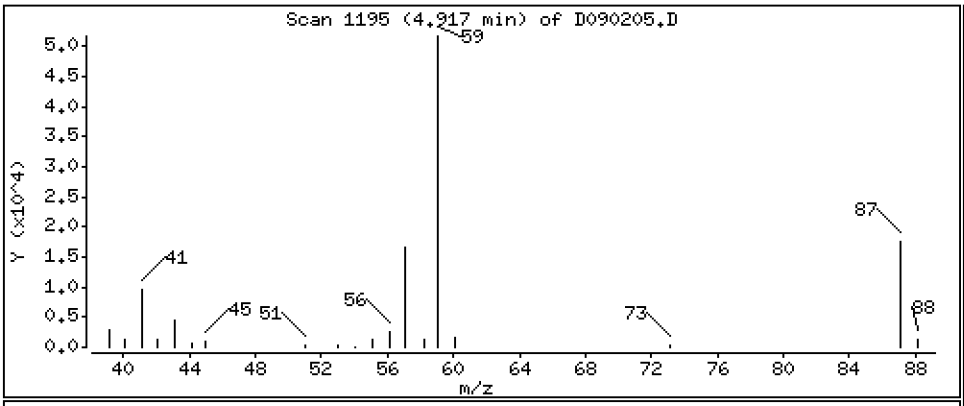
Client ID: VLCSW-180830 Instrument: VOA2.i

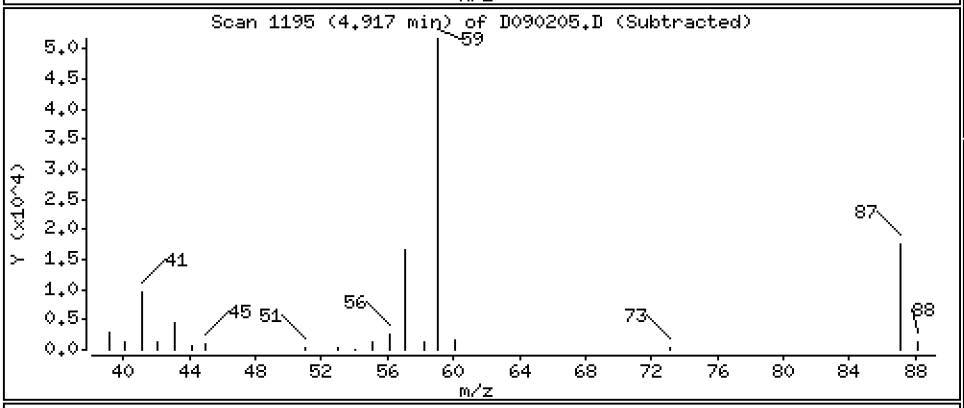
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

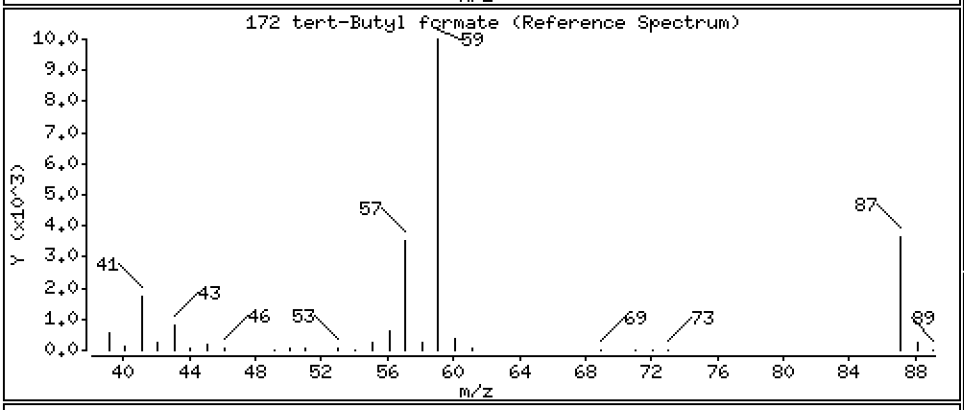
Purge Volume: 5.0 Operator: AP

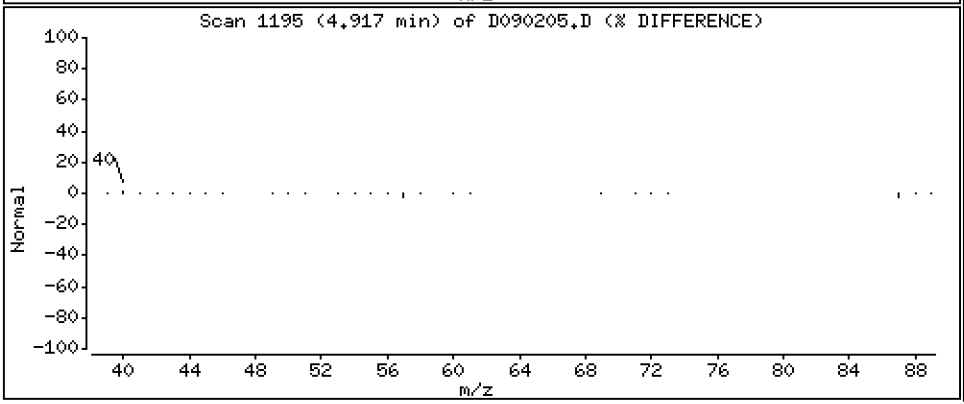
Column phase: DB624 Column diameter: 0.18

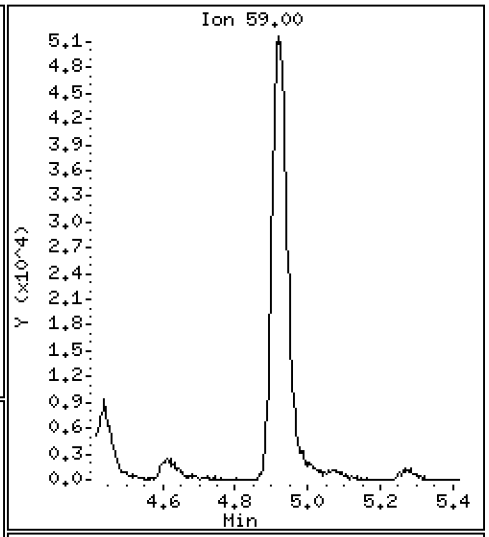
172 tert-Butyl formate Concentration: 39.47 ug/l Review Code:

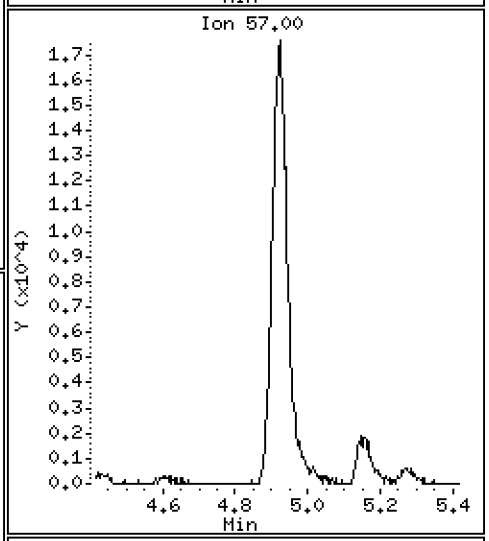


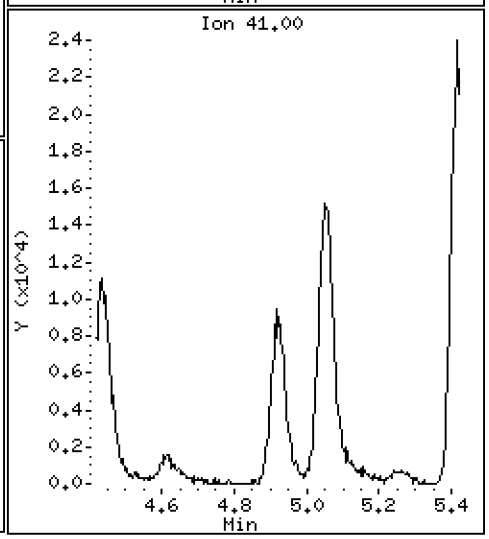












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 102

Date : 02-SEP-2018 15:04

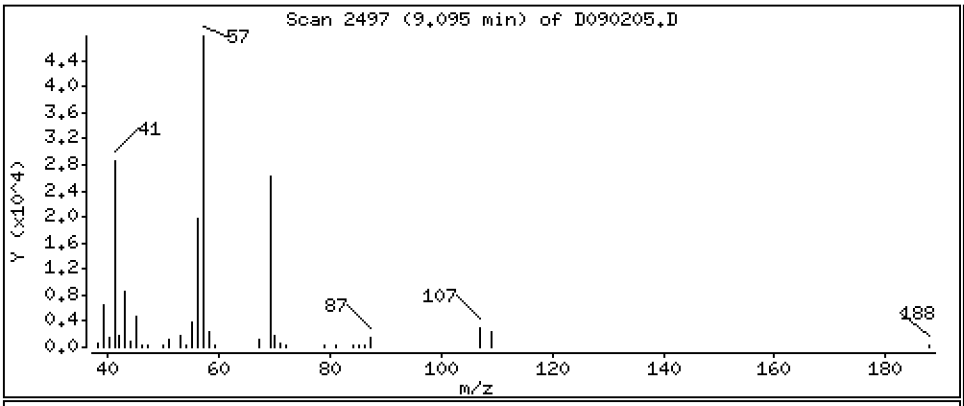
Client ID: VLCSW-180830 Instrument: VOA2.i

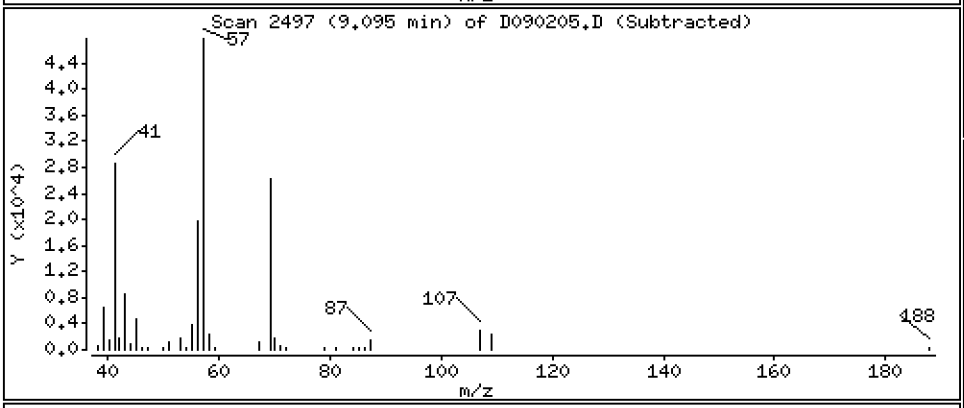
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

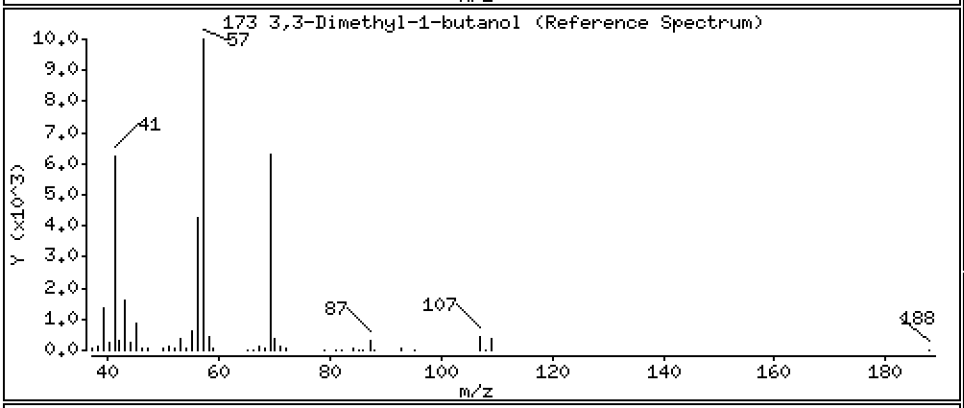
Purge Volume: 5.0 Operator: AP

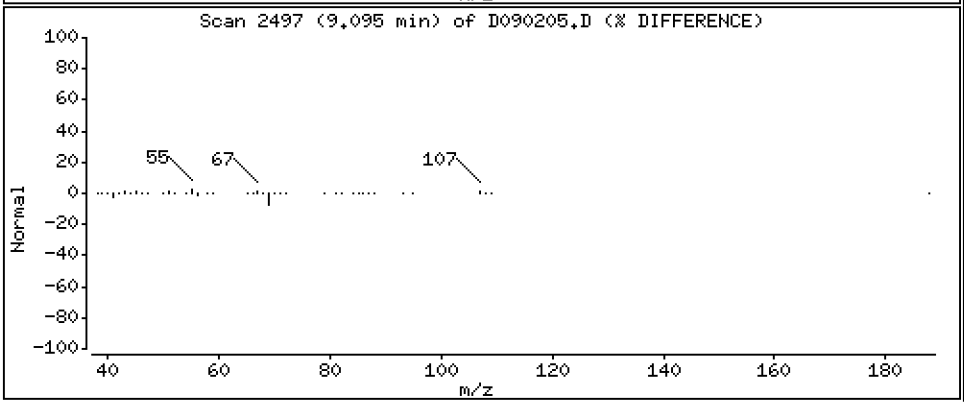
Column phase: DB624 Column diameter: 0.18

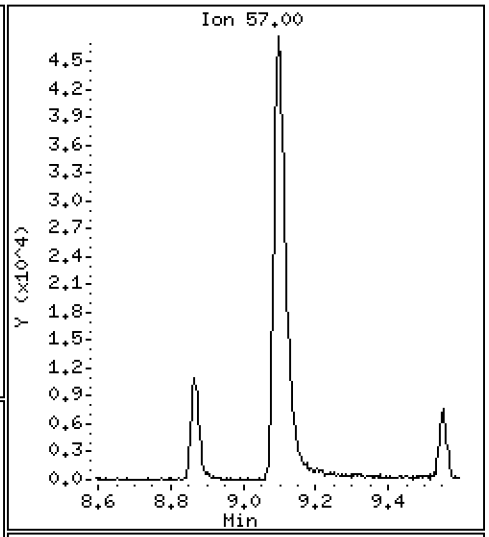
173 3,3-Dimethyl-1-butanol Concentration: 411.29 ug/l Review Code:

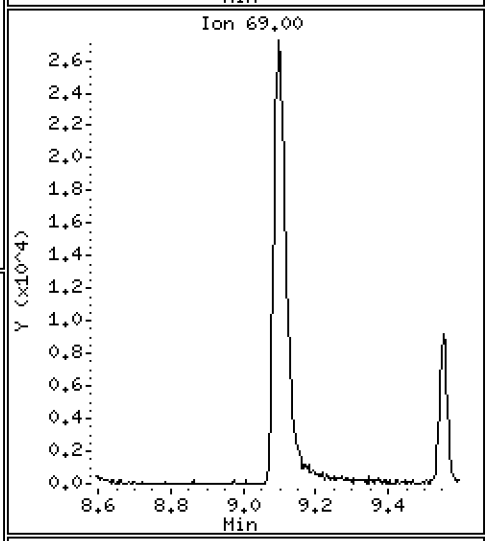


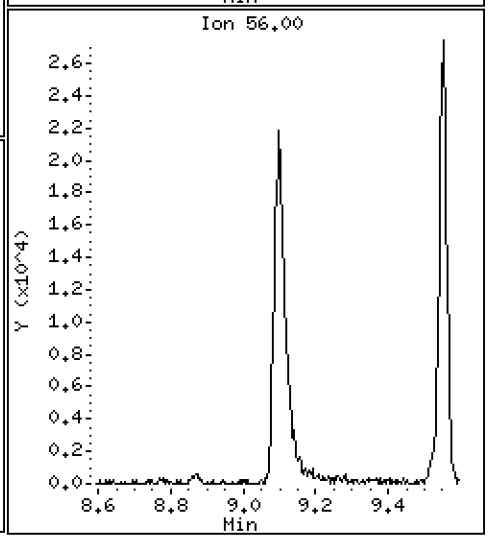












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 103

Date : 02-SEP-2018 15:04

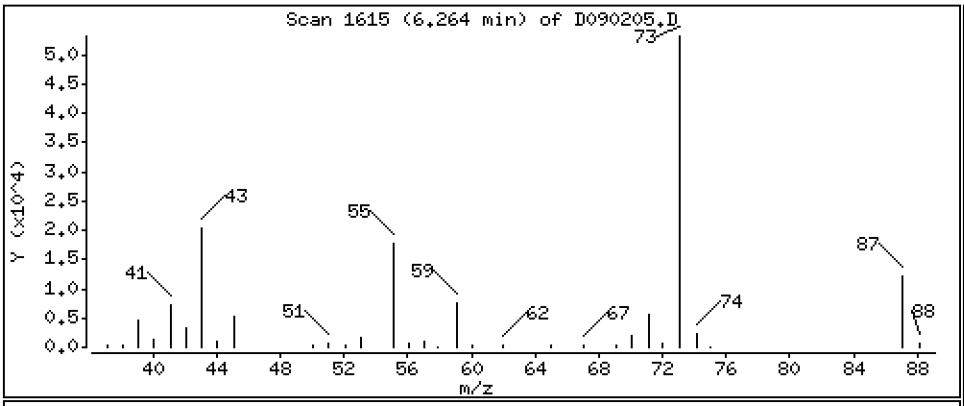
Client ID: VLCSW-180830 Instrument: VOA2.i

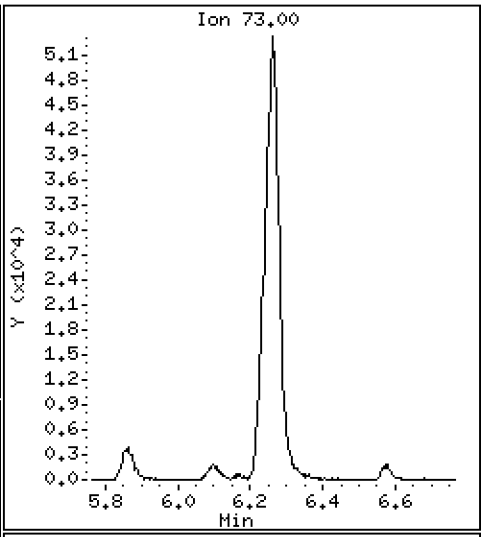
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

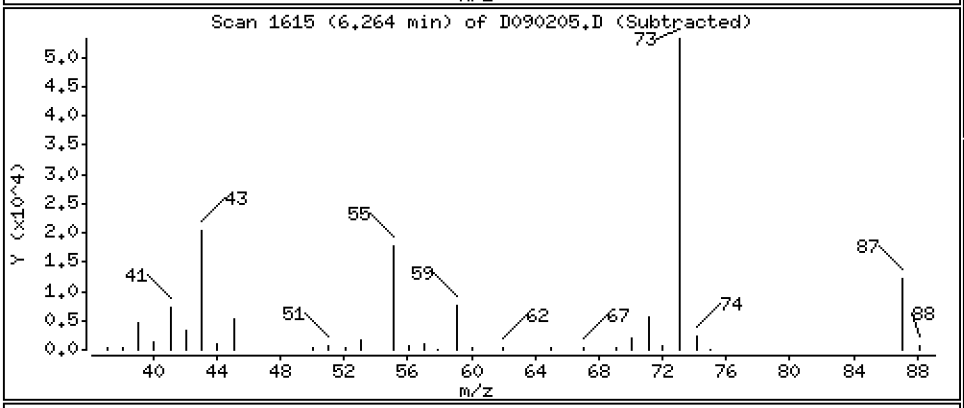
Purge Volume: 5.0 Operator: AP

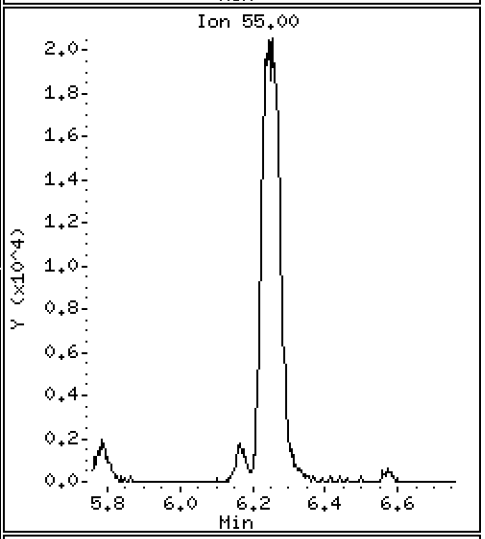
Column phase: DB624 Column diameter: 0.18

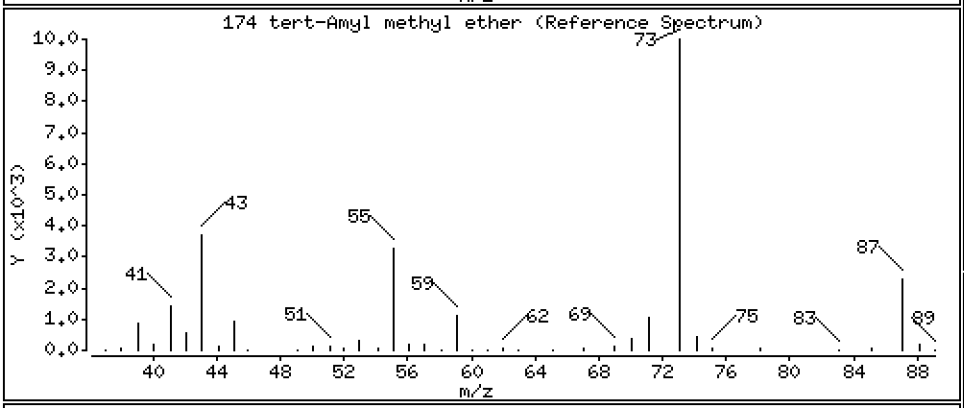
174 tert-Amyl methyl ether Concentration: 18.96 ug/l Review Code:

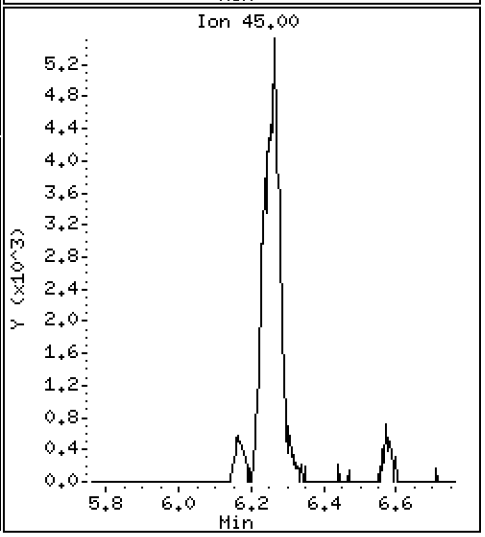


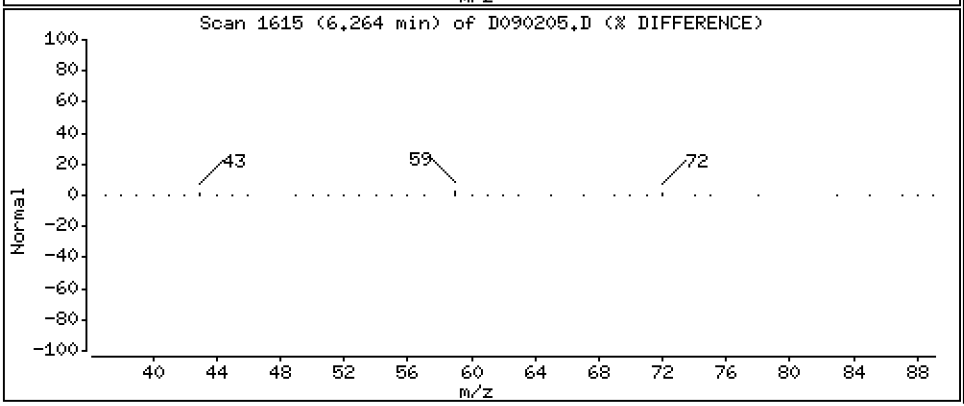












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 104

Date : 02-SEP-2018 15:04

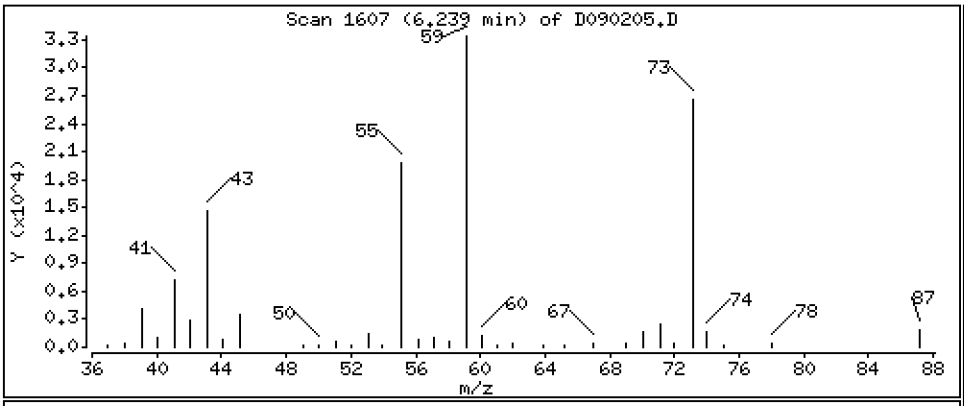
Client ID: VLCSW-180830 Instrument: VOA2.i

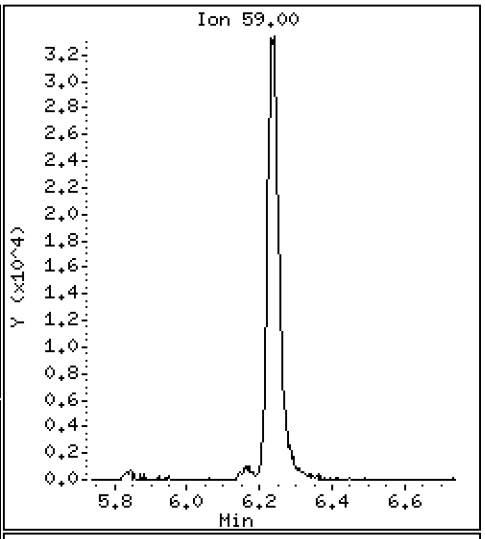
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

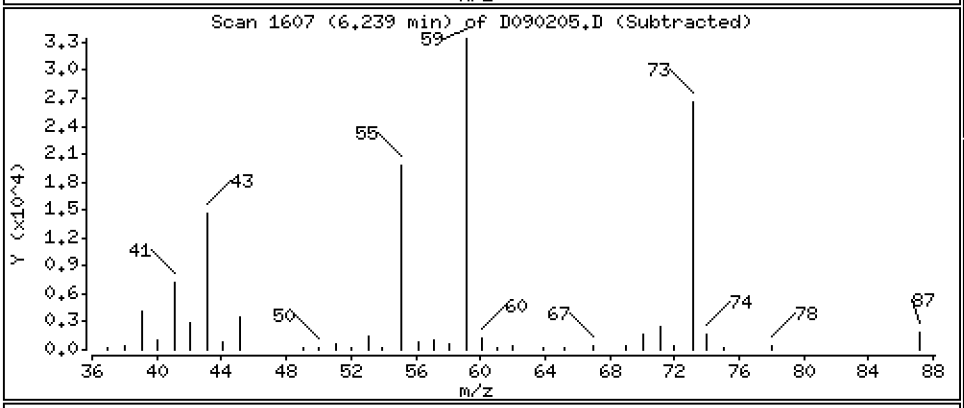
Purge Volume: 5.0 Operator: AP

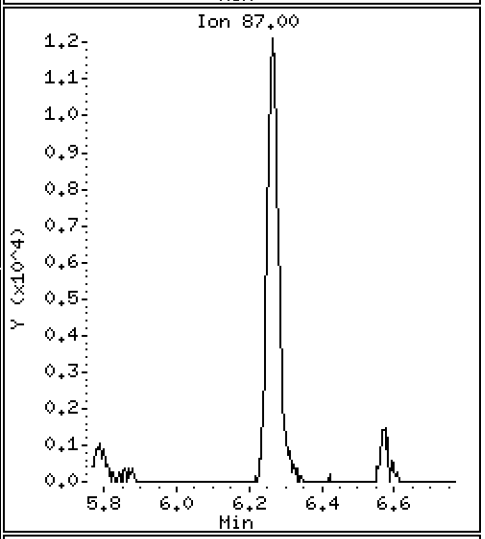
Column phase: DB624 Column diameter: 0.18

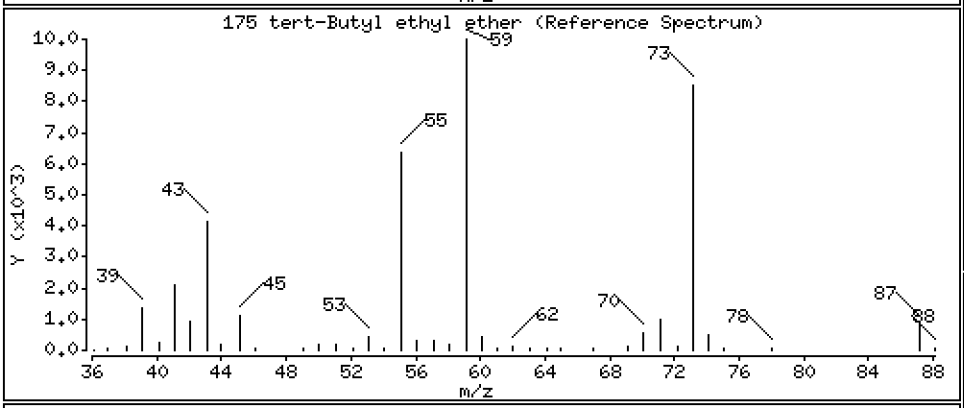
175 tert-Butyl ethyl ether Concentration: 17.79 ug/l Review Code:

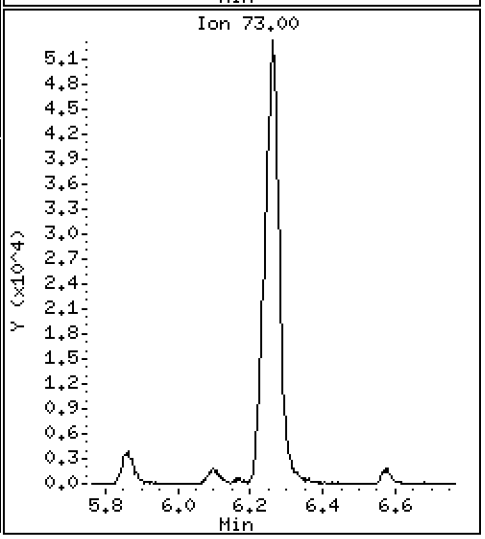


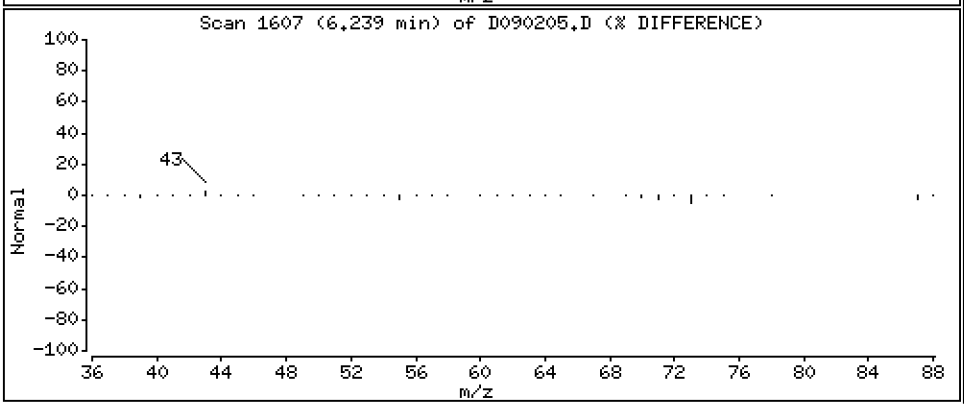












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 105

Date : 02-SEP-2018 15:04

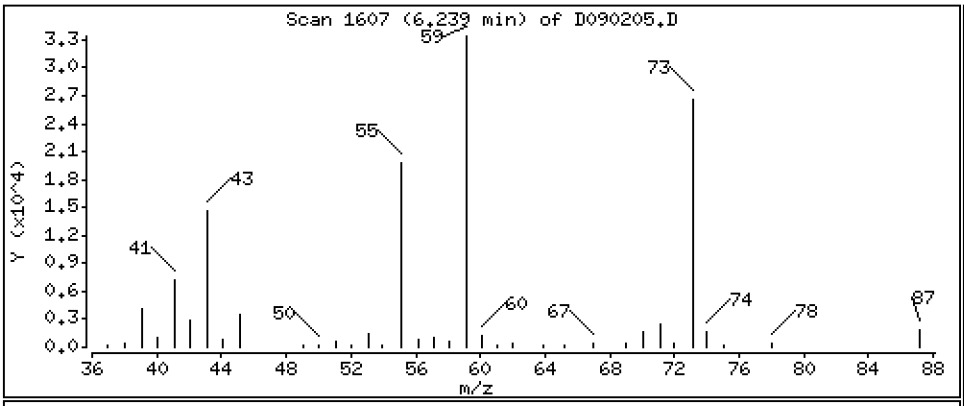
Client ID: VLCSW-180830 Instrument: VOA2.i

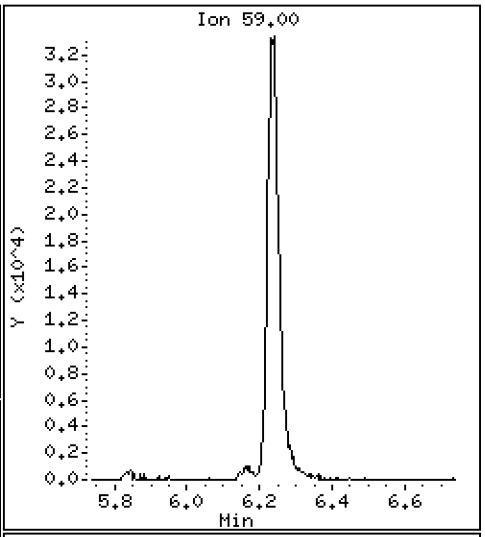
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

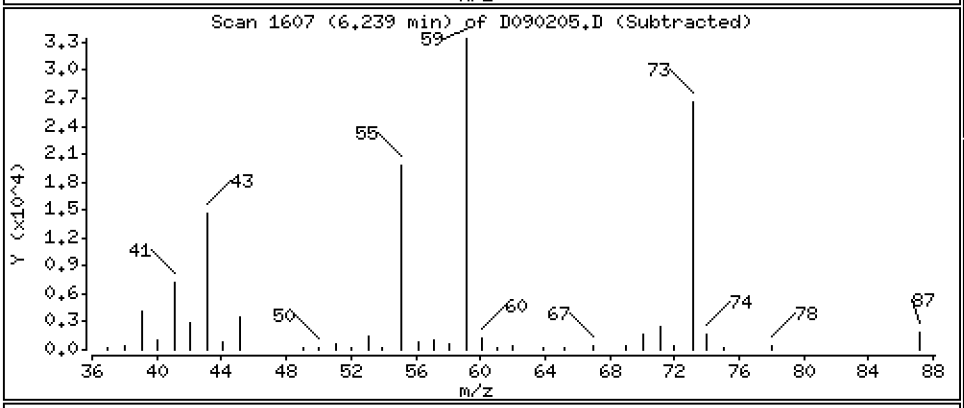
Purge Volume: 5.0 Operator: AP

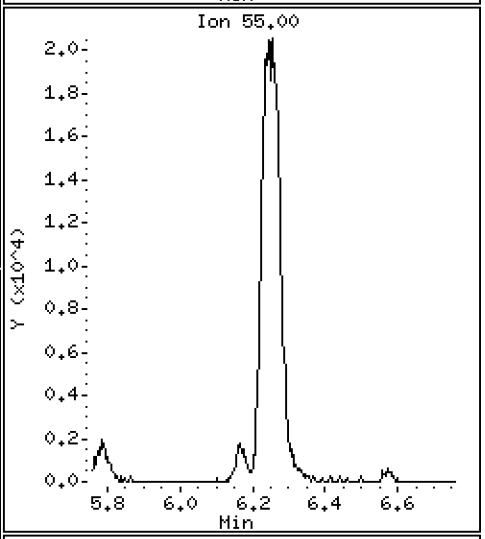
Column phase: DB624 Column diameter: 0.18

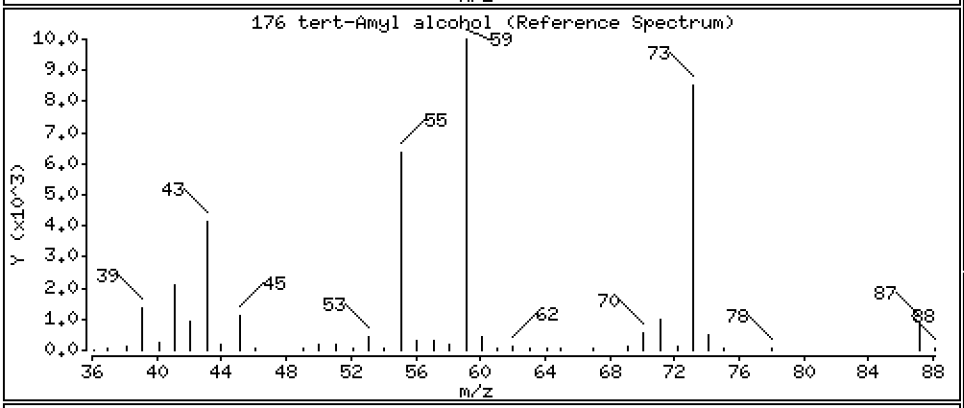
176 tert-Amyl alcohol Concentration: 355.92 ug/l Review Code:

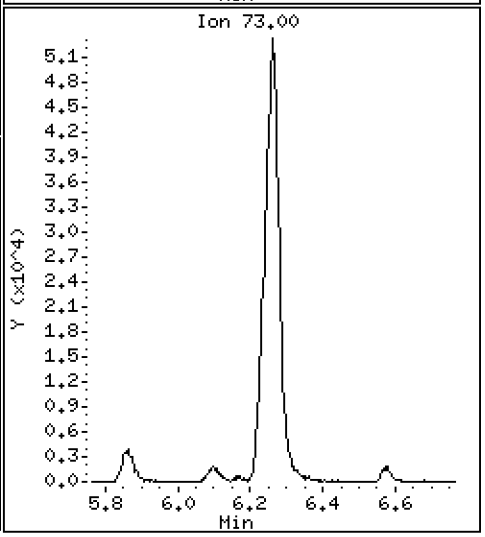


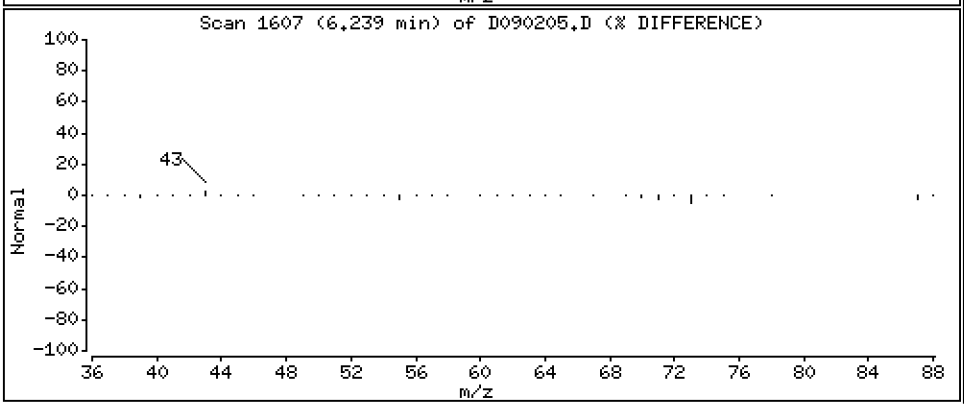












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 106

Date : 02-SEP-2018 15:04

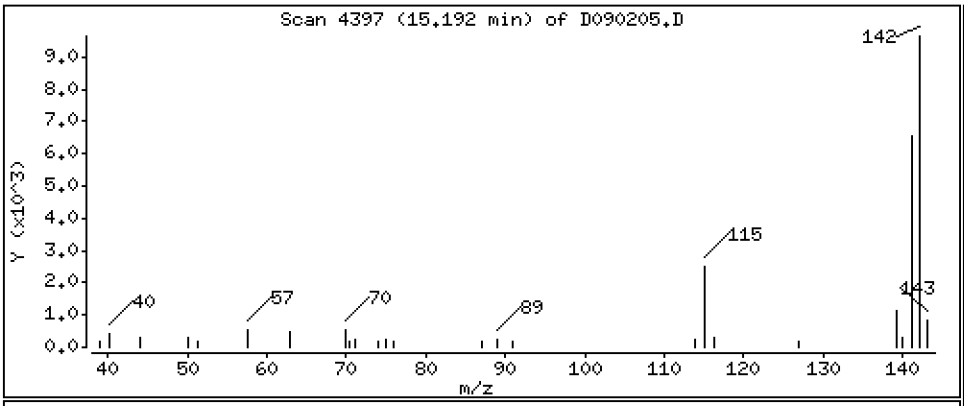
Client ID: VLCSW-180830 Instrument: VOA2.i

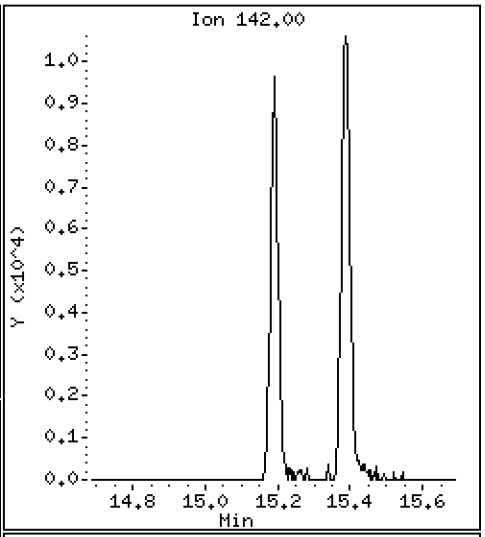
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

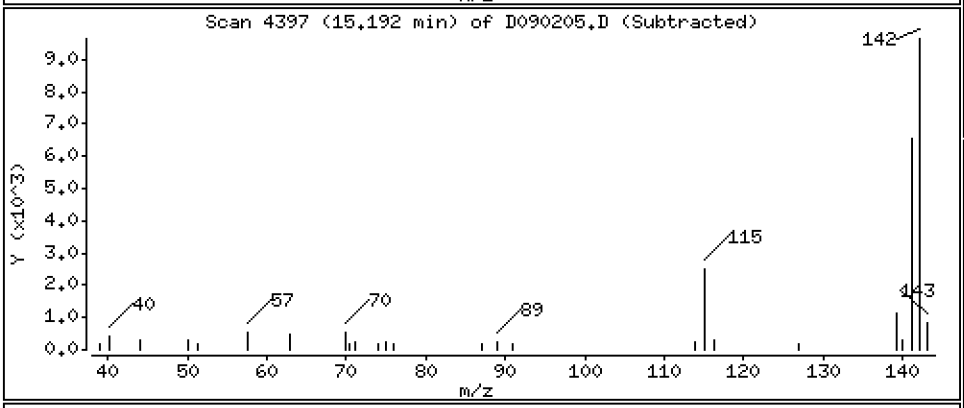
Purge Volume: 5.0 Operator: AP

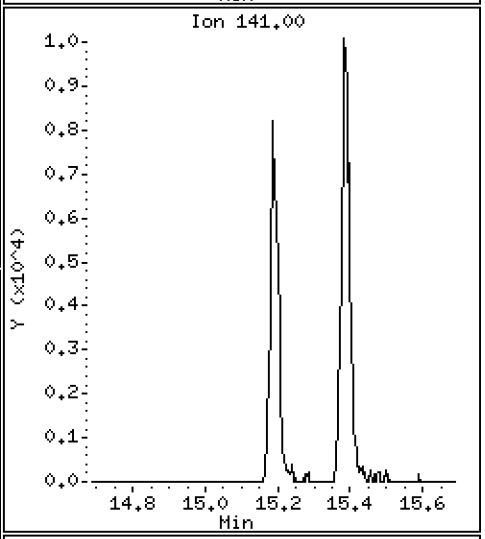
Column phase: DB624 Column diameter: 0.18

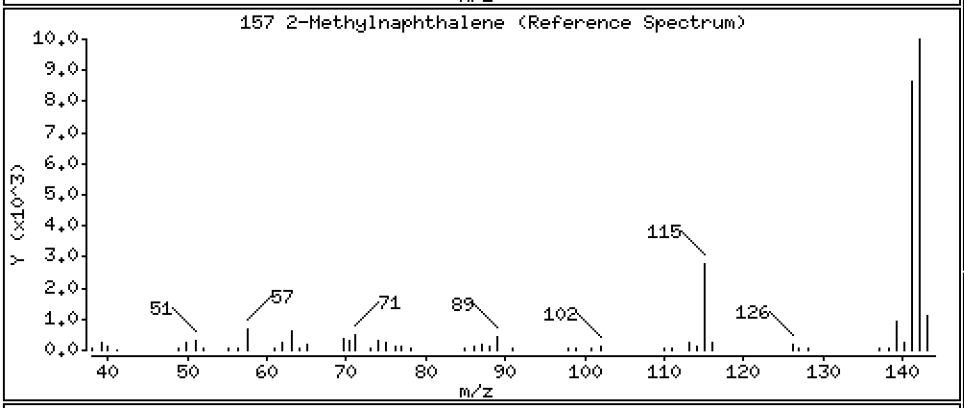
157 2-Methylnaphthalene Concentration: 9.60 ug/l Review Code:

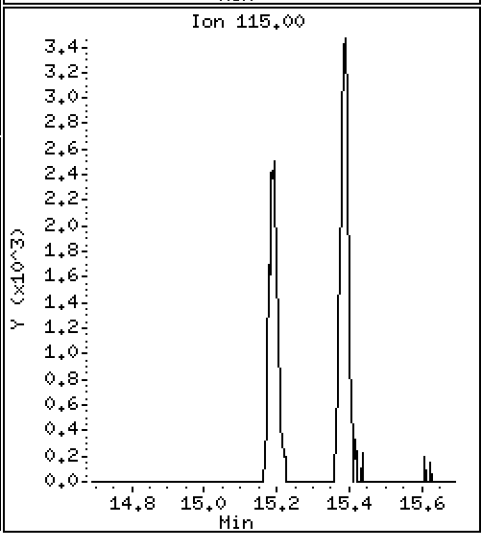


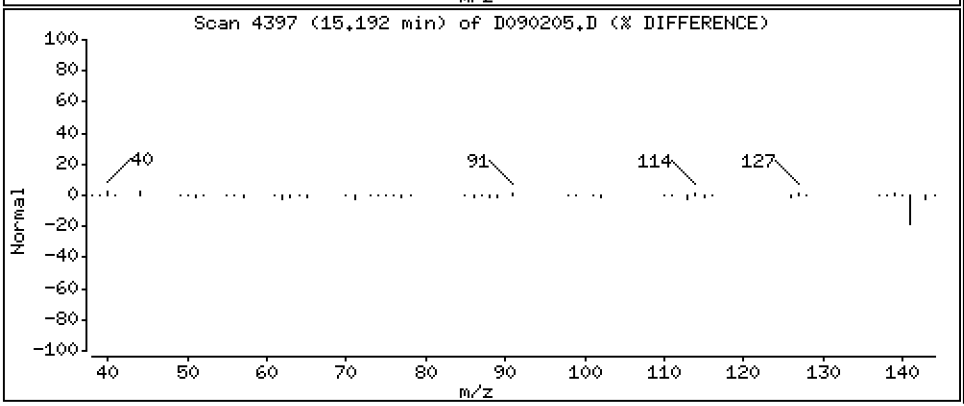












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 107

Date : 02-SEP-2018 15:04

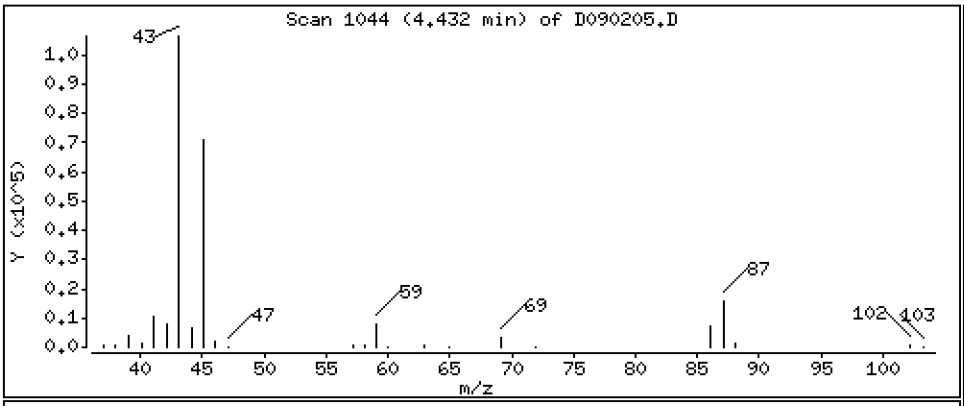
Client ID: VLCSW-180830 Instrument: VOA2.i

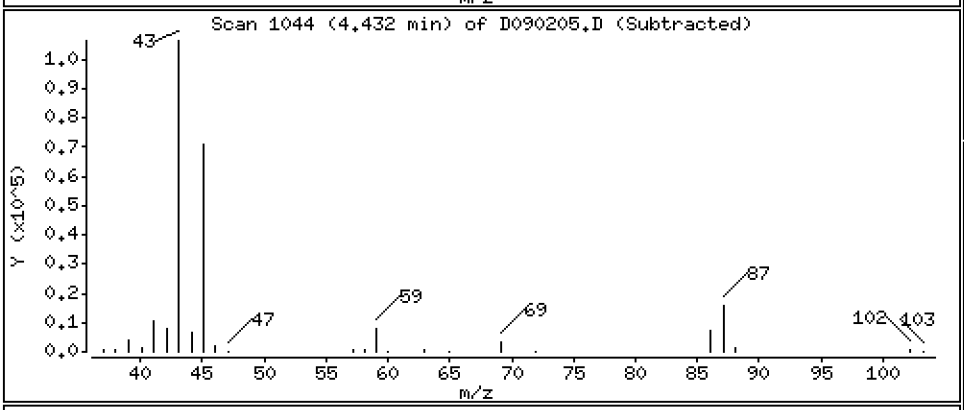
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

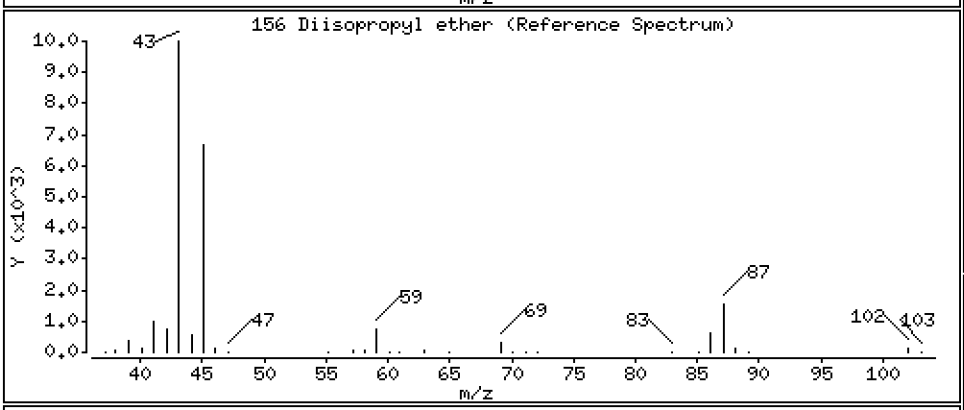
Purge Volume: 5.0 Operator: AP

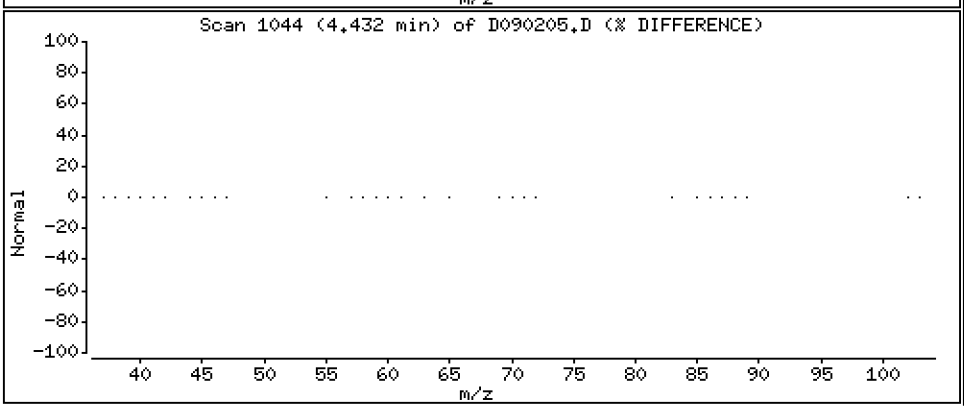
Column phase: DB624 Column diameter: 0.18

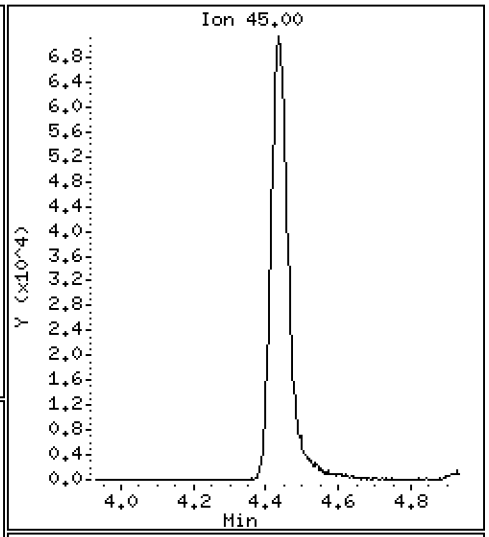
156 Diisopropyl ether Concentration: 19.86 ug/l Review Code:

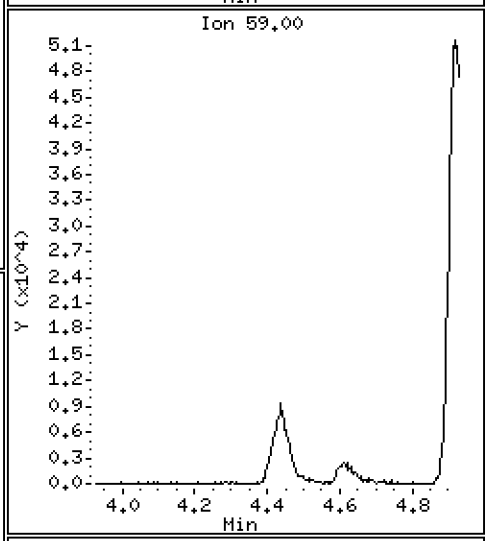


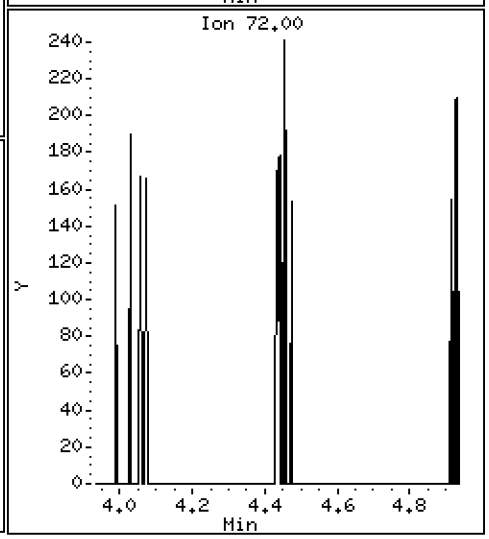












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 108

Date : 02-SEP-2018 15:04

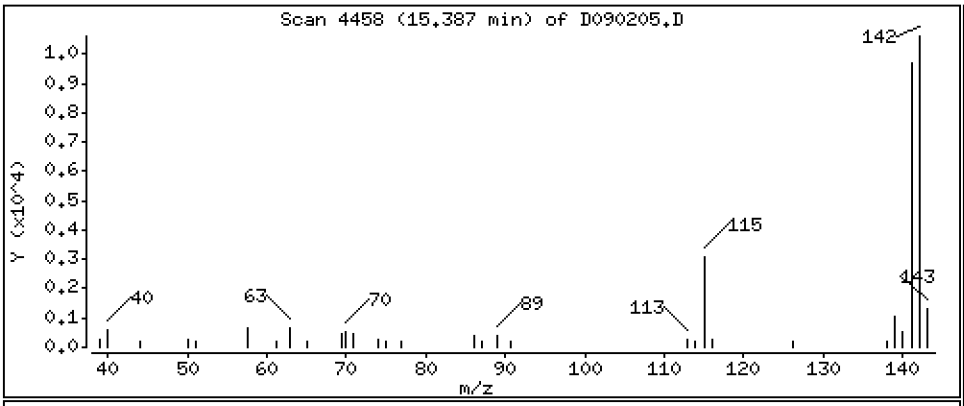
Client ID: VLCSW-180830 Instrument: VOA2.i

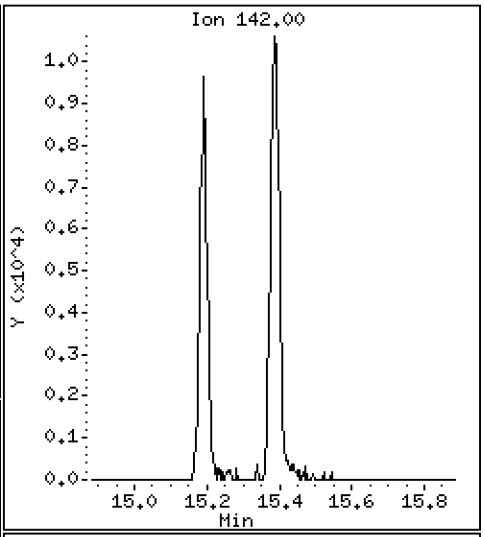
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

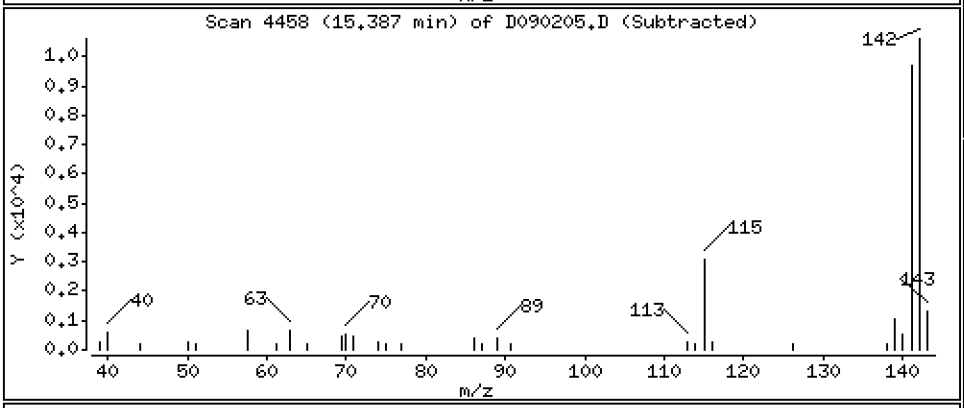
Purge Volume: 5.0 Operator: AP

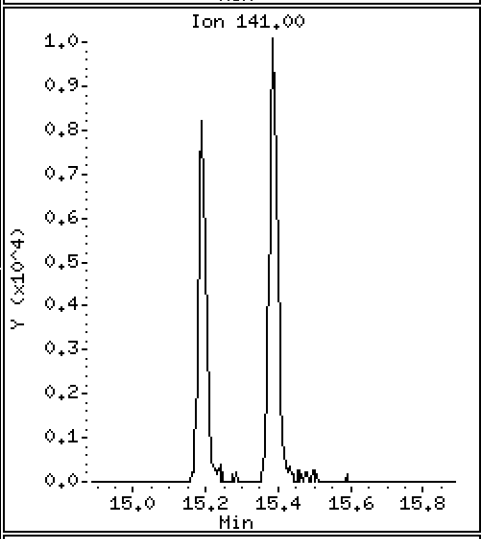
Column phase: DB624 Column diameter: 0.18

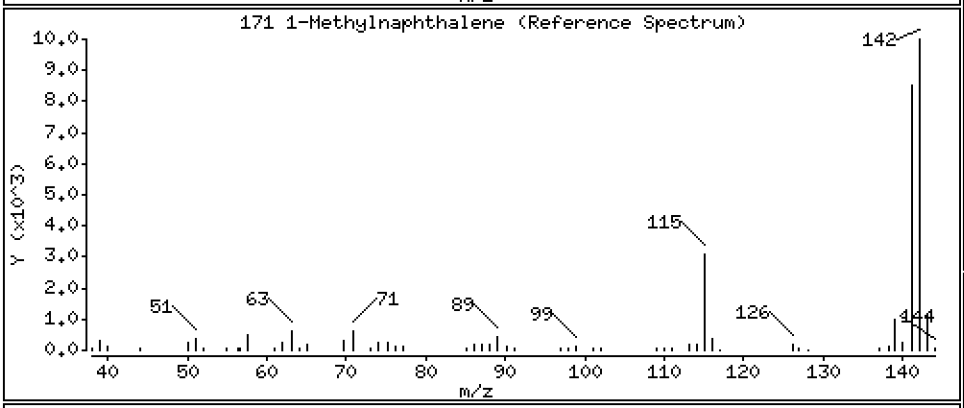
171 1-Methylnaphthalene Concentration: 10.08 ug/l Review Code:

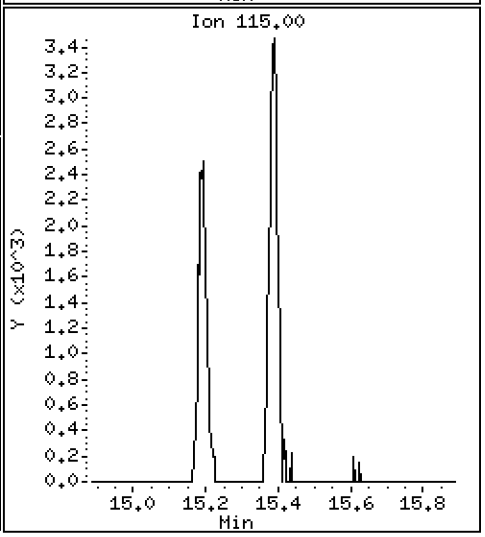


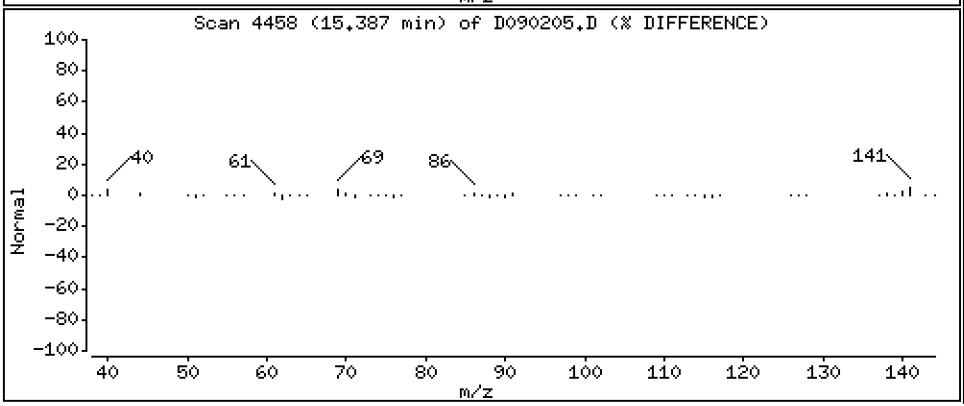












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090205.D Page 109

Date : 02-SEP-2018 15:04

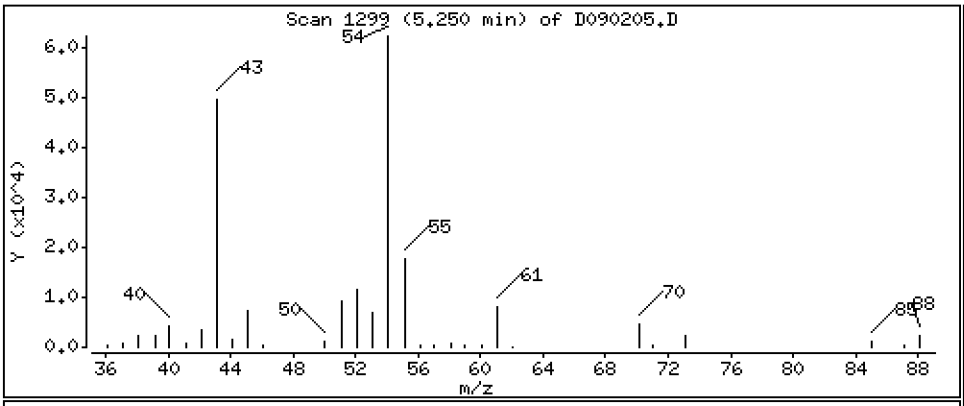
Client ID: VLCSW-180830 Instrument: VOA2.i

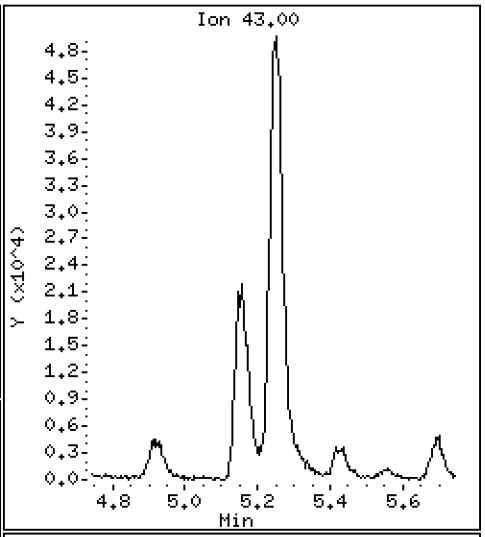
Sample Info: VLCSW-180830;VLCSW-180830;3;;LCS

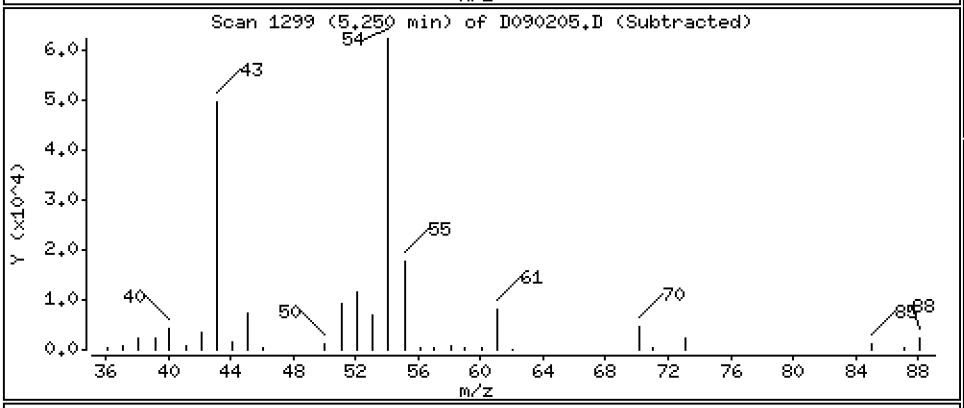
Purge Volume: 5.0 Operator: AP

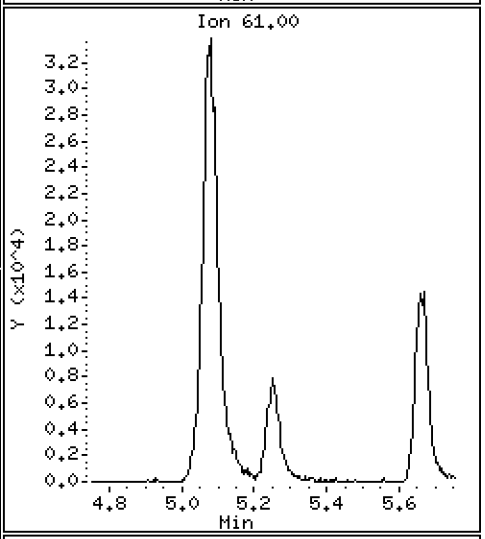
Column phase: DB624 Column diameter: 0.18

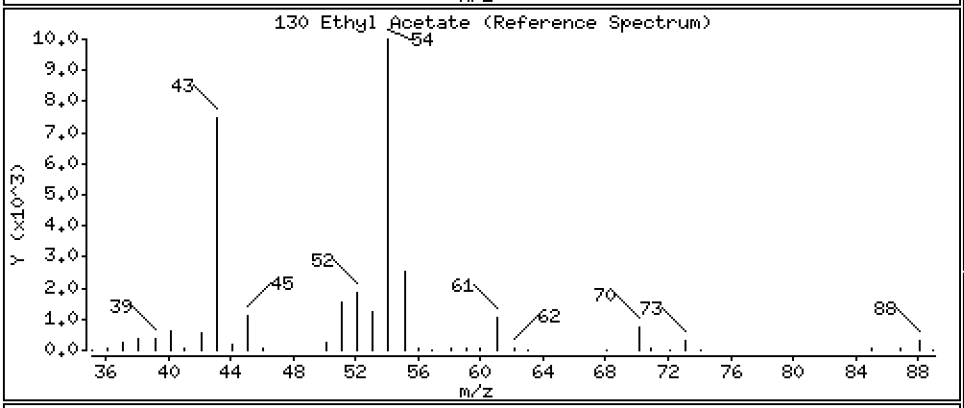
130 Ethyl Acetate Concentration: 17.81 ug/l Review Code:

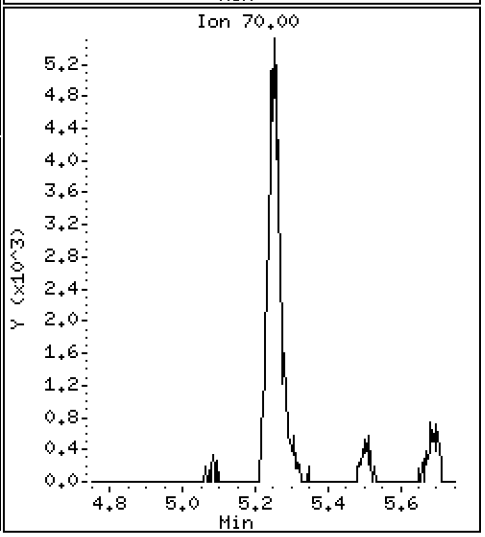


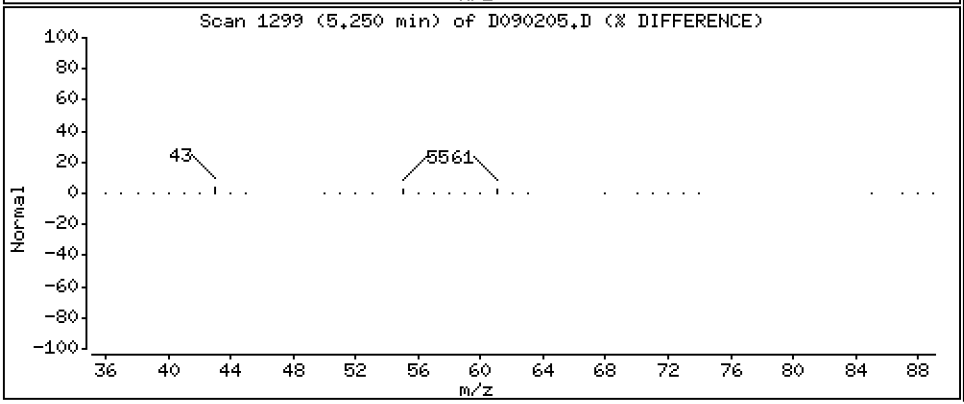












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090207.D Page 1
Report Date: 09-Oct-2018 14:45

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090207.D
Lab Smp Id: HS18081428-01 Client Smp ID: HS18081428-01
Inj Date : 02-SEP-2018 15:53
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-01;HS18081428-01;;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14
Processing Host: NAHSTWS003

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
Va	0.00000	
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	5.783	5.786	(1.000)	232695	50.0000	
$ 30 Dibromofluoromethane	113	5.689	5.689	(0.984)	99003	47.5895	47.58
$ 35 1,2-Dichloroethane-d4	65	6.062	6.062	(1.048)	104642	44.0862	44.08
* 36 1,4-Difluorobenzene	114	6.575	6.572	(1.000)	329850	50.0000	
* 47 Chlorobenzene-d5	117	9.524	9.524	(1.000)	292353	50.0000	
$ 48 Toluene-d8	98	8.090	8.090	(0.849)	368494	45.5955	45.59
$ 69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	127914	49.3301	49.33
* 70 1,4-Dichlorobenzene-d4	152	11.835	11.835	(1.000)	119449	50.0000	

00917010

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090207.D

Page 1

Date : 02-SEP-2018 15:53

Client ID: HS18081428-01

Instrument: VOA2.i

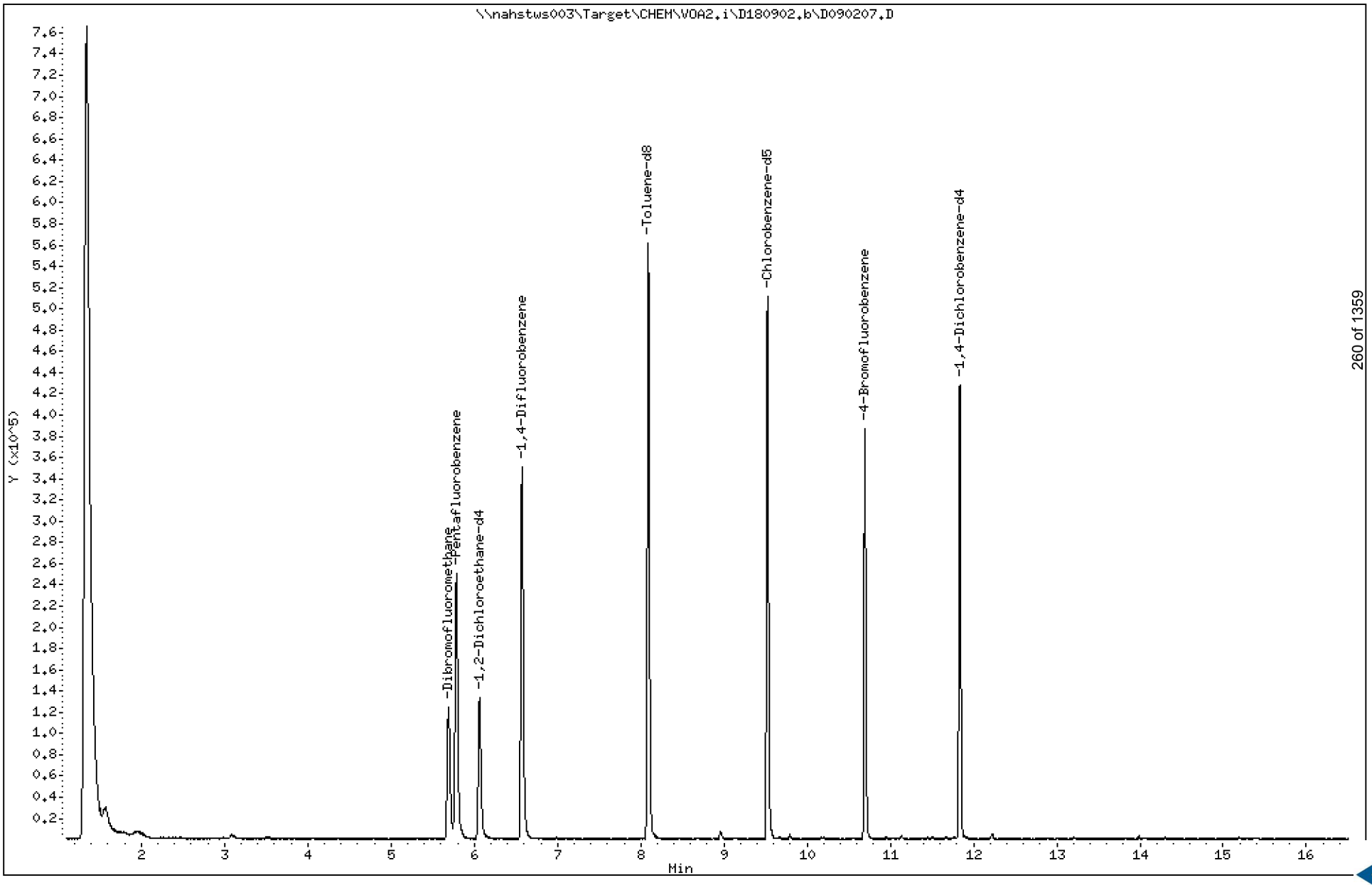
Sample Info: HS18081428-01;HS18081428-01;;;

Purge Volume: 5.0

Operator: AP

Column phase: DB624

Column diameter: 0.18



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 1
Report Date: 09-Oct-2018 14:40

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D
Lab Smp Id: HS18081428-01MS Client Smp ID: HS18081428-01MS
Inj Date : 02-SEP-2018 16:18
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-01MS;HS18081428-01MS;3;;MS
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 8 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14
Processing Host: NAHSTWS003

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
Va	0.00000	
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	5.786	5.786	(1.000)	224702	50.0000	
2	Dichlorodifluoromethane	85	1.470	1.470	(0.254)	29385	13.2838	13.28
186	Isobutylene	56	1.672	1.672	(0.289)	28189	7.06109	7.06(AM)
3	Chloromethane	50	1.604	1.611	(0.277)	75524	13.6214	13.62
4	Propionitrile	54	5.240	5.240	(0.906)	152348	149.988	149.98
5	Vinyl Chloride	62	1.697	1.698	(0.293)	60368	16.2802	16.28
6	Bromomethane	94	1.957	1.967	(0.338)	39590	19.2046	19.20
7	Chloroethane	64	2.057	2.054	(0.356)	34710	14.6528	14.65
159	Dichlorofluoromethane	67	2.240	2.250	(0.387)	87610	15.9246	15.92
8	Trichlorofluoromethane	101	2.265	2.269	(0.392)	54014	14.9088	14.90
9	Acrolein	56	2.695	2.692	(0.466)	17365	23.8188	23.81
10	Acetone	43	2.869	2.872	(0.496)	29811	27.5965	27.59
11	1,1-Dichloroethene	96	2.760	2.766	(0.477)	41706	15.7050	15.70
12	Isobutyl Alcohol	74	6.164	6.164	(1.065)	3761	251.227	251.22(A)
13	Acetonitrile	39	3.177	3.180	(0.549)	51270	157.745	157.74
14	Allyl Chloride	41	3.190	3.190	(0.551)	139589	15.3008	15.30
15	Iodomethane	142	2.920	2.923	(0.505)	60071	25.7322	25.73
16	Acrylonitrile	53	3.706	3.713	(0.641)	42173	30.4446	30.44
17	Methylene Chloride	84	3.340	3.350	(0.577)	51768	16.1784	16.17
18	Methyl tert-butyl ether	73	3.693	3.703	(0.638)	123273	15.2491	15.24
19	Carbon Disulfide	76	2.968	2.972	(0.513)	163680	32.6672	32.66

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 2
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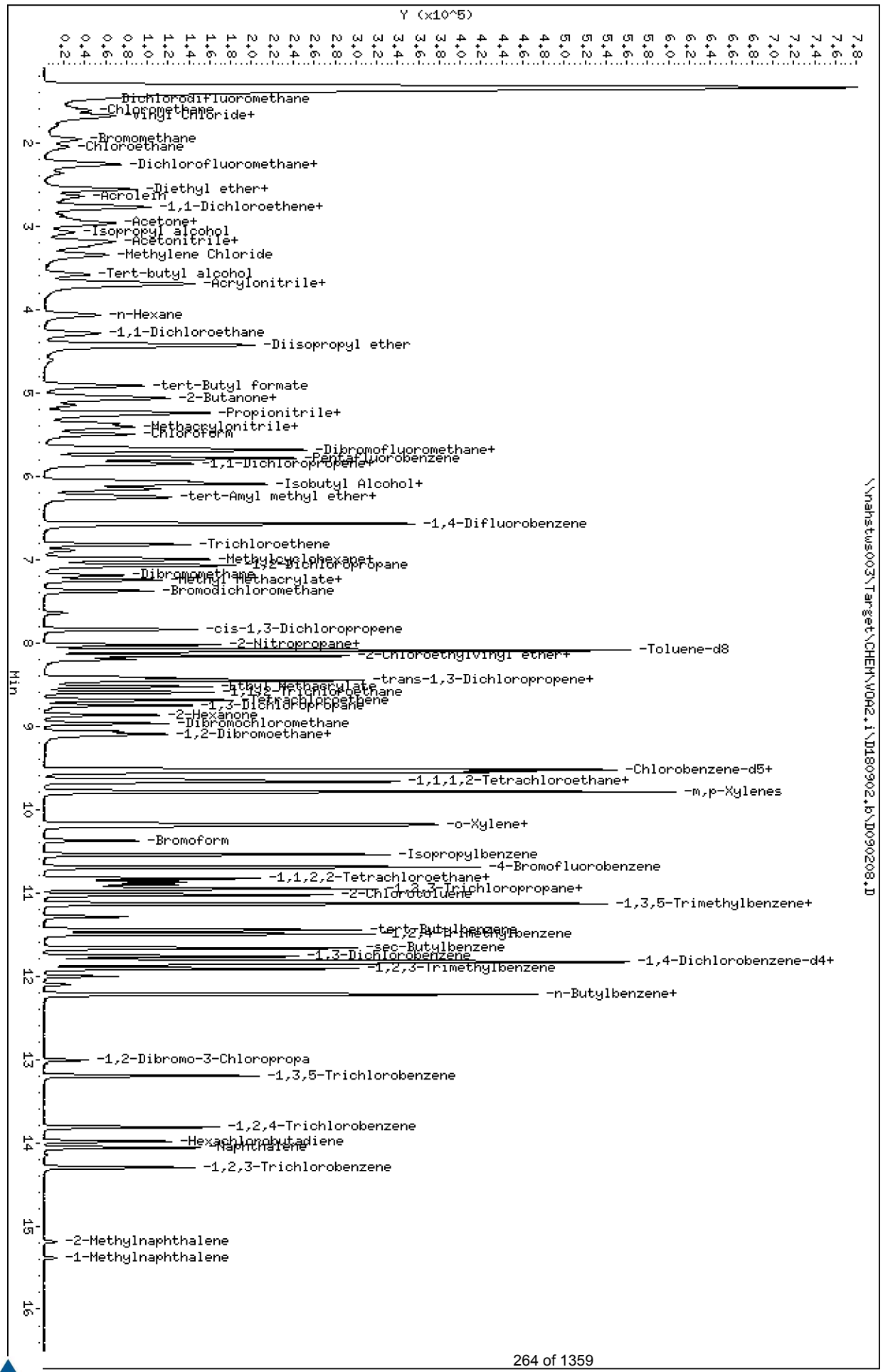
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
20	trans-1,2-Dichloroethene	96	3.684	3.677	(0.637)	46643	17.0332	17.03
21	Vinyl Acetate	43	5.247	5.243	(0.907)	105530	28.5791	28.57(M)
22	1,1-Dichloroethane	63	4.287	4.287	(0.741)	101766	16.2028	16.20
24	2-Butanone	43	5.153	5.147	(0.891)	45558	29.5267	29.52
25	Methacrylonitrile	41	5.407	5.407	(0.935)	52639	15.5873	15.58
26	2,2-Dichloropropane	77	5.044	5.051	(0.872)	65859	19.2669	19.26
27	cis-1,2-Dichloroethene	96	5.073	5.073	(0.877)	55319	16.7443	16.74
28	Chloroform	83	5.497	5.497	(0.950)	86543	16.4388	16.43
29	Bromochloromethane	128	5.365	5.372	(0.927)	27342	17.7639	17.76
$ 30	Dibromofluoromethane	113	5.686	5.689	(0.983)	94420	47.0010	47.00
31	1,1,1-Trichloroethane	97	5.657	5.661	(0.978)	70077	15.7807	15.78
32	1,1-Dichloropropene	75	5.859	5.860	(0.892)	57150	17.5098	17.50
33	1,2-Dichloroethane	62	6.145	6.148	(0.935)	63728	17.5188	17.51
34	Carbon Tetrachloride	117	5.834	5.837	(0.888)	58319	17.1795	17.17
$ 35	1,2-Dichloroethane-d4	65	6.058	6.062	(1.047)	102472	44.7077	44.70
* 36	1,4-Difluorobenzene	114	6.572	6.572	(1.000)	333154	50.0000	
37	Benzene	78	6.094	6.097	(0.927)	195104	17.1186	17.11
38	Trichloroethene	130	6.819	6.819	(1.038)	54548	17.9277	17.92
39	Bromodichloromethane	83	7.380	7.381	(1.123)	69158	18.0383	18.03
40	Methyl Methacrylate	41	7.246	7.249	(1.252)	53967	15.7910	15.79
41	2-Chloroethylvinyl ether	63	8.157	8.154	(1.241)	15677	33.9237	33.92
42	1,2-Dichloropropane	63	7.066	7.066	(1.075)	60592	18.3223	18.32(M)
43	2-Nitropropane	43	8.025	8.026	(1.387)	108970	15.1627	15.16
44	Dibromomethane	93	7.191	7.191	(1.094)	29189	17.8371	17.83
45	4-Methyl-2-Pentanone	43	8.025	8.026	(0.843)	108970	31.6763	31.67
46	cis-1,3-Dichloropropene	75	7.839	7.836	(1.193)	81624	19.0154	19.01
* 47	Chlorobenzene-d5	117	9.524	9.524	(1.000)	302051	50.0000	
$ 48	Toluene-d8	98	8.090	8.090	(0.849)	372162	44.5708	44.57
49	Ethyl Methacrylate	69	8.529	8.533	(1.298)	71422	17.2504	17.25
50	Toluene	91	8.157	8.157	(0.856)	206663	16.9600	16.96
51	trans-1,3-Dichloropropene	75	8.414	8.417	(1.280)	66723	20.0539	20.05
52	2-Hexanone	43	8.863	8.866	(0.931)	69188	30.9883	30.98
53	1,1,2-Trichloroethane	83	8.590	8.594	(0.902)	39374	16.9810	16.98
54	1,3-Dichloropropane	76	8.754	8.754	(0.919)	78277	17.0754	17.07
55	Dibromochloromethane	129	8.969	8.969	(0.942)	58686	18.1297	18.12
56	Tetrachloroethene	164	8.690	8.690	(0.912)	42627	17.3492	17.34
57	1,2-Dibromoethane	107	9.065	9.065	(0.952)	49585	17.7710	17.77
58	1-Chlorohexane	55	9.550	9.550	(1.453)	45961	16.6574	16.65
59	Chlorobenzene	112	9.553	9.553	(1.003)	133530	17.6686	17.66
60	1,1,1,2-Tetrachloroethane	131	9.643	9.643	(1.012)	52794	17.7919	17.79
61	Ethylbenzene	106	9.668	9.669	(1.015)	71541	18.5362	18.53
62	m,p-Xylenes	106	9.787	9.790	(1.028)	175246	37.6366	37.63
63	o-Xylene	106	10.175	10.176	(1.068)	91650	18.3466	18.34
64	Styrene	104	10.195	10.198	(1.070)	141526	17.5525	17.55
66	Bromoform	173	10.374	10.374	(1.089)	40900	18.1035	18.10
67	Isopropylbenzene	105	10.544	10.545	(1.107)	219169	16.8897	16.88
68	1,1,2,2-Tetrachloroethane	83	10.869	10.872	(0.918)	63857	15.1126	15.11
$ 69	4-Bromofluorobenzene	95	10.695	10.695	(1.123)	135889	50.7231	50.72
* 70	1,4-Dichlorobenzene-d4	152	11.834	11.835	(1.000)	132453	50.0000	
71	1,2,3-Trichloropropane	75	10.901	10.901	(0.921)	59490	15.0077	15.00
72	trans-1,4-Dichloro-2-butene	53	10.926	10.930	(1.147)	11799	15.0631	15.06
73	n-Propylbenzene	91	10.952	10.952	(0.925)	231449	17.0129	17.01
74	Bromobenzene	156	10.830	10.830	(0.915)	60221	16.8247	16.82
75	1,3,5-Trimethylbenzene	105	11.132	11.132	(0.941)	171764	15.6713	15.67

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	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
76	2-Chlorotoluene	91	11.029	11.026	(0.932)	154568	17.4498	17.44
77	4-Chlorotoluene	91	11.138	11.138	(0.941)	162269	17.0465	17.04
78	tert-Butylbenzene	119	11.449	11.449	(0.967)	149923	17.1904	17.19
79	1,2,4-Trimethylbenzene	105	11.497	11.498	(0.972)	168451	16.3431	16.34
81	sec-Butylbenzene	105	11.664	11.668	(0.986)	203128	15.3796	15.37
82	p-Isopropyltoluene	119	11.815	11.815	(0.998)	164448	15.0498	15.04
83	1,3-Dichlorobenzene	146	11.764	11.764	(0.994)	103680	16.8432	16.84
84	1,4-Dichlorobenzene	146	11.854	11.857	(1.002)	94929	16.5147	16.51
87	n-Butylbenzene	91	12.219	12.220	(1.033)	125185	15.4858	15.48
88	1,2-Dichlorobenzene	146	12.223	12.223	(1.033)	100018	16.4722	16.47
89	1,2-Dibromo-3-Chloropropane	75	13.006	13.009	(1.099)	9490	14.2660	14.26
90	1,2,4-Trichlorobenzene	180	13.818	13.814	(1.168)	54963	16.1728	16.17
91	Hexachlorobutadiene	225	13.988	13.984	(1.182)	25400	15.7890	15.78
92	Naphthalene	128	14.061	14.058	(1.188)	117738	13.7668	13.76
93	1,2,3-Trichlorobenzene	182	14.299	14.299	(1.208)	46272	15.3589	15.35
146	Methyl acetate	43	3.241	3.244	(0.560)	50761	14.1812	14.18
138	Freon TF	101	2.776	2.779	(0.480)	32923	14.4041	14.40
139	Diethyl ether	59	2.557	2.558	(0.442)	88685	16.4118	16.41
147	Methylcyclohexane	83	6.992	6.989	(1.064)	61461	15.7023	15.70
135	1,4-Dioxane	88	7.242	7.239	(1.252)	9319	292.755	292.75
132	n-Butanol	56	7.008	6.995	(1.211)	27393	251.846	251.84
131	Methyl Acrylate	55	5.266	5.266	(0.910)	80820	15.0602	15.06
133	Ethyl Acrylate	55	7.011	7.012	(1.212)	139705	14.4906	14.49
136	n-Hexane	57	4.066	4.075	(0.703)	50836	13.9973	13.99
141	Cyclohexane	56	5.686	5.696	(0.983)	75955	13.4138	13.41
142	Tetrahydrofuran	42	5.420	5.423	(0.937)	35067	28.4943	28.49
148	Tert-butyl alcohol	59	3.575	3.575	(0.618)	94787	275.567	275.56
149	Isopropyl alcohol	45	3.074	3.077	(0.531)	65086	297.625	297.62(M)
151	4-Methyl-2-pentanol	45	8.449	8.452	(0.887)	231248	322.644	322.64
166	1,2,3-Trimethylbenzene	105	11.911	11.915	(1.007)	164915	16.9780	16.97
167	Ethanol	45	2.554	2.558	(0.442)	84550	305.999	305.99
170	1,3,5-Trichlorobenzene	180	13.201	13.202	(1.116)	64770	16.3928	16.39
172	tert-Butyl formate	59	4.916	4.916	(0.850)	127035	32.1860	32.18
173	3,3-Dimethyl-1-butanol	57	9.094	9.094	(0.955)	80594	303.694	303.69
174	tert-Amyl methyl ether	73	6.257	6.264	(1.082)	113838	14.8999	14.89
175	tert-Butyl ethyl ether	59	6.232	6.238	(1.077)	56207	13.5653	13.56
176	tert-Amyl alcohol	59	6.232	6.238	(1.077)	56207	271.307	271.30
157	2-Methylnaphthalene	142	15.188	15.188	(1.283)	6843	7.58035	7.58
156	Diisopropyl ether	45	4.428	4.432	(0.765)	197363	16.4424	16.44
171	1-Methylnaphthalene	142	15.390	15.384	(1.300)	7284	7.00909	7.00
130	Ethyl Acetate	43	5.247	5.243	(0.907)	103075	14.0413	14.04
M 94	1,2-Dichloroethylene (total)	96				101962	33.7775	33.77
M 95	Xylenes (total)	106				266896	55.9832	55.98

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



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Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

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Date : 02-SEP-2018 16:18

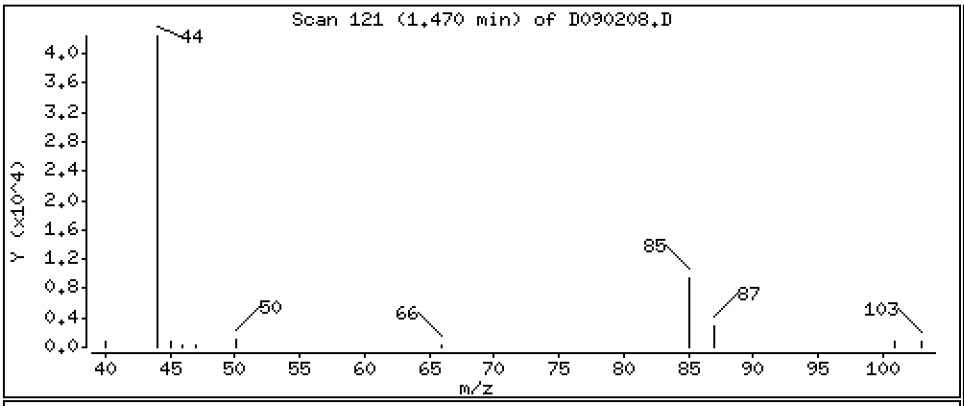
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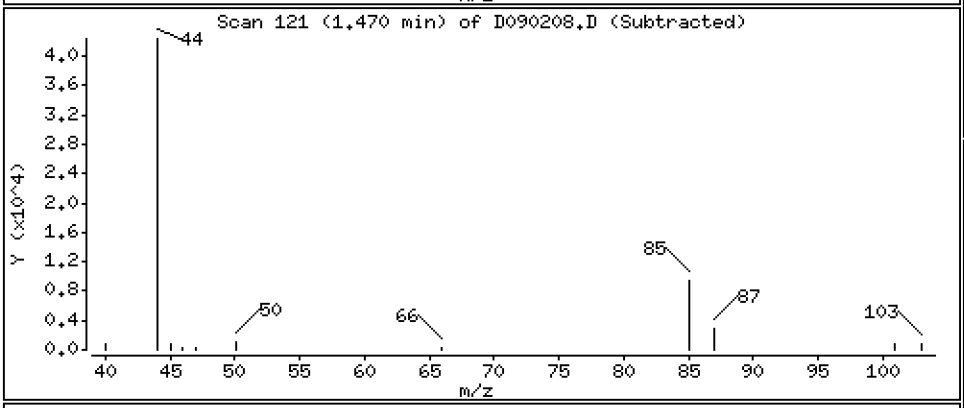
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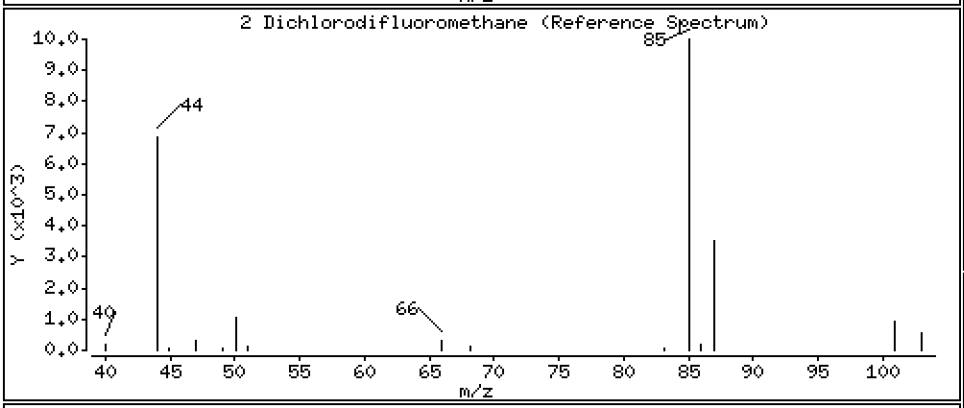
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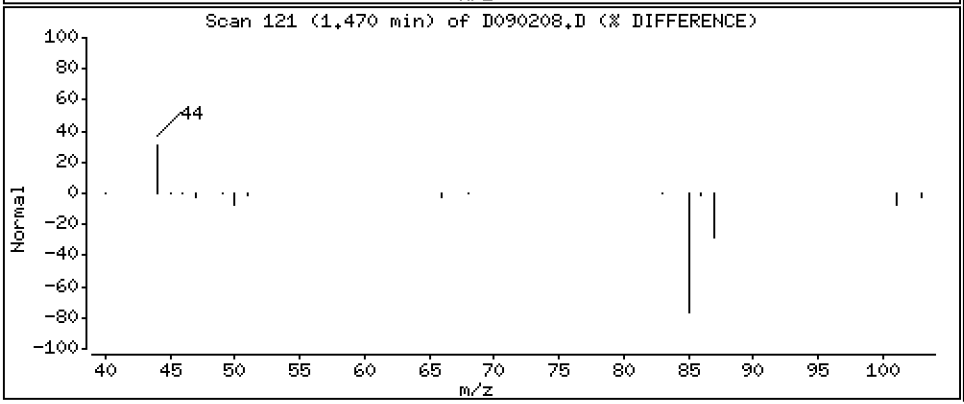
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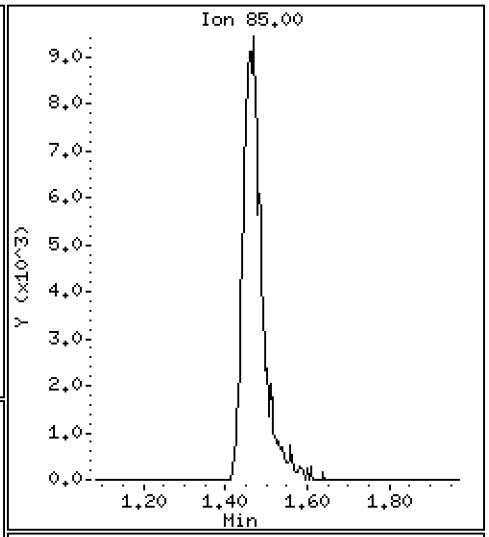
2 Dichlorodifluoromethane Concentration: 13.28 ug/l Review Code:

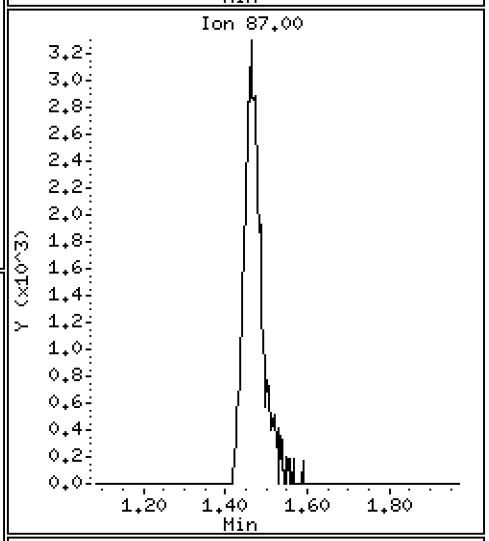


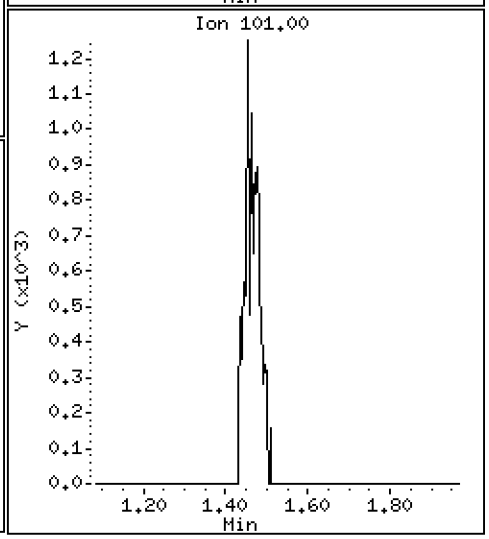












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Date : 02-SEP-2018 16:18

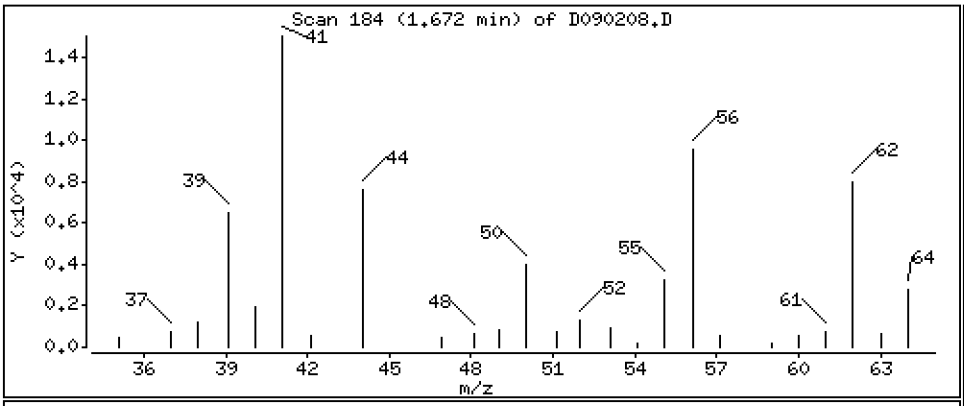
Client ID: HS18081428-01MS Instrument: VOA2.i

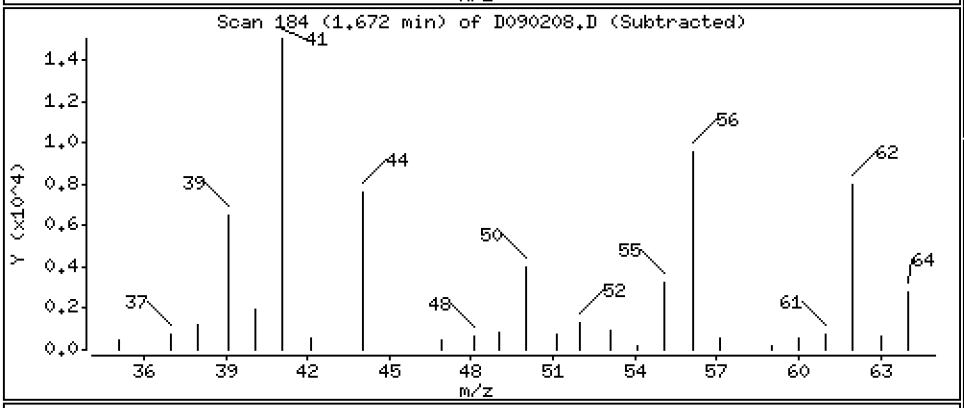
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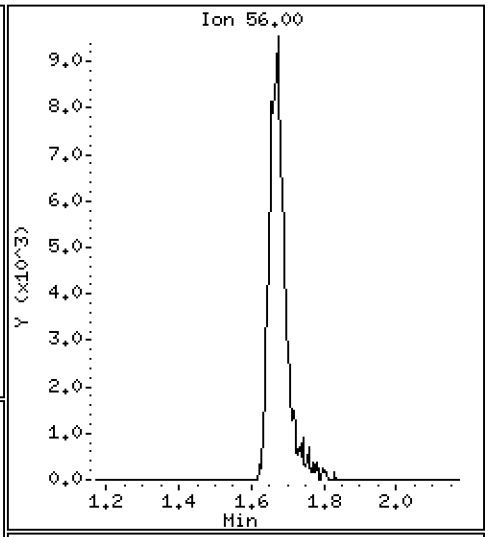
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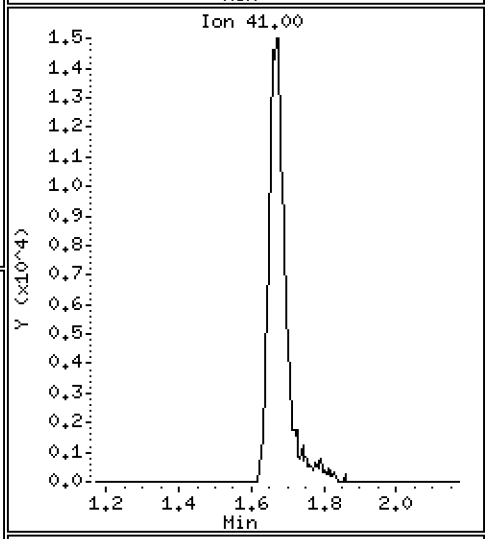
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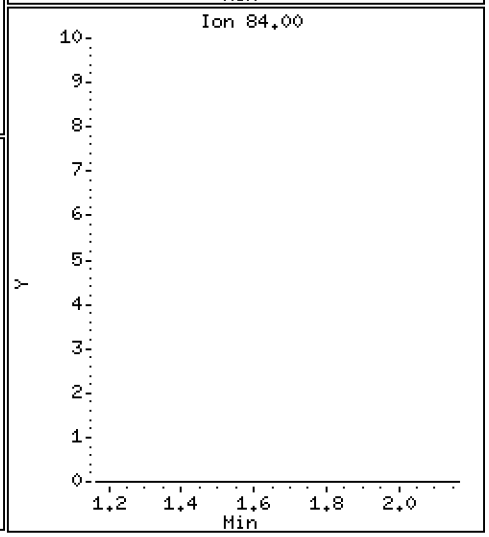
186 Isobutylene Concentration: 7.06 ug/l Review Code:











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Date : 02-SEP-2018 16:18

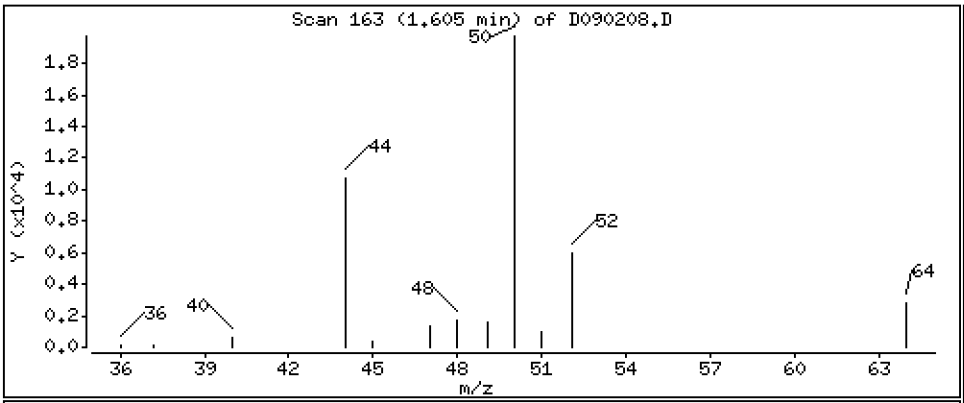
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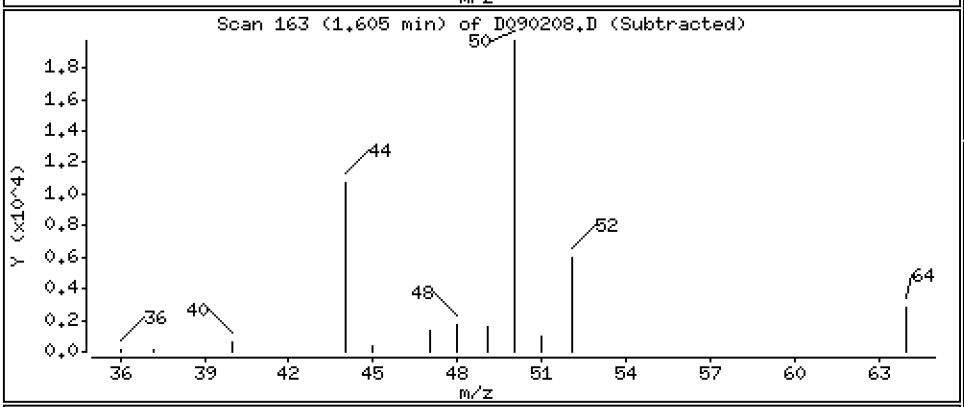
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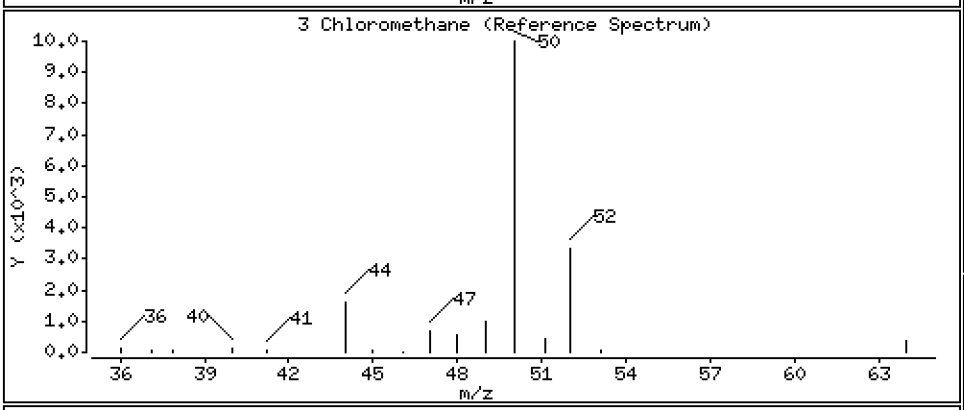
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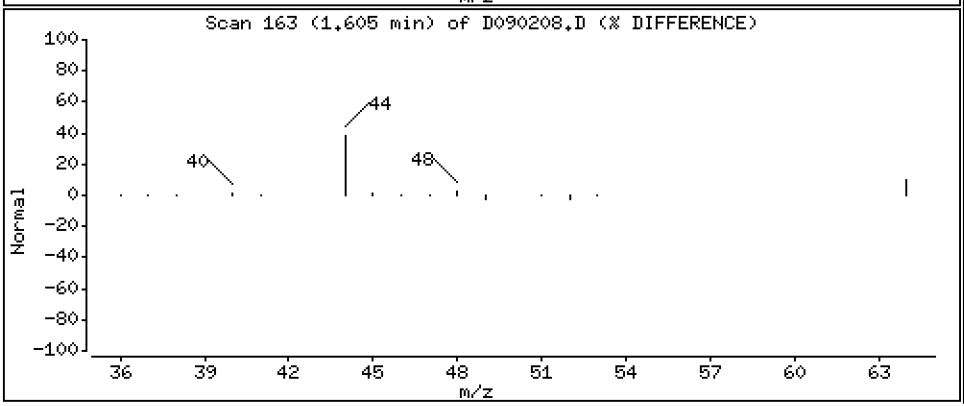
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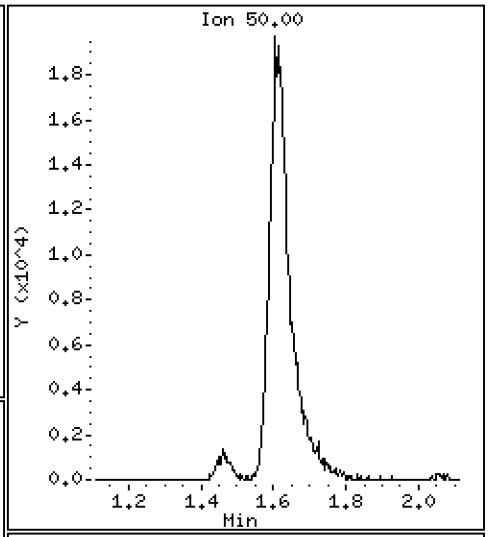
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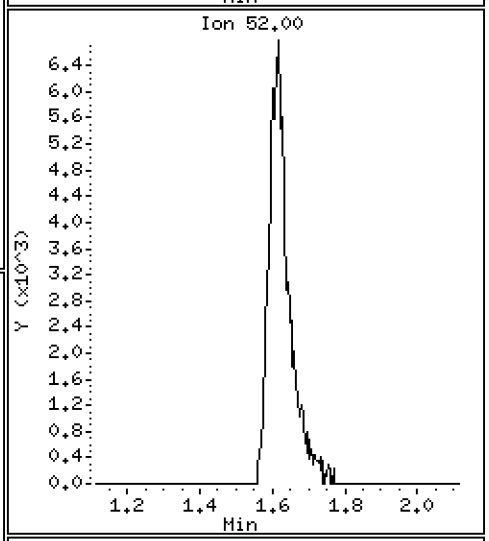


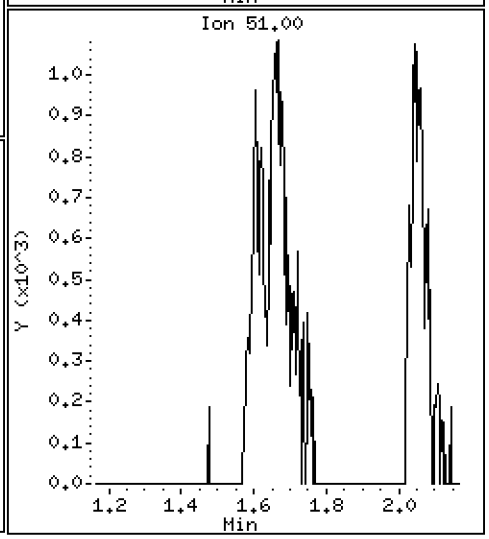












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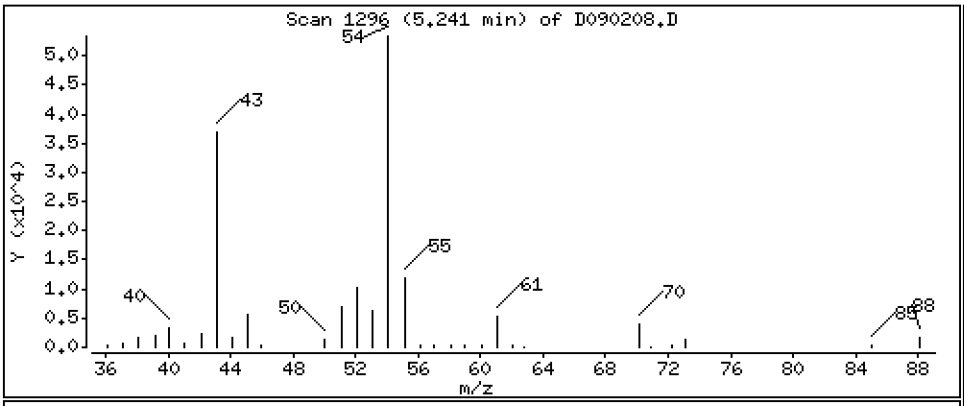
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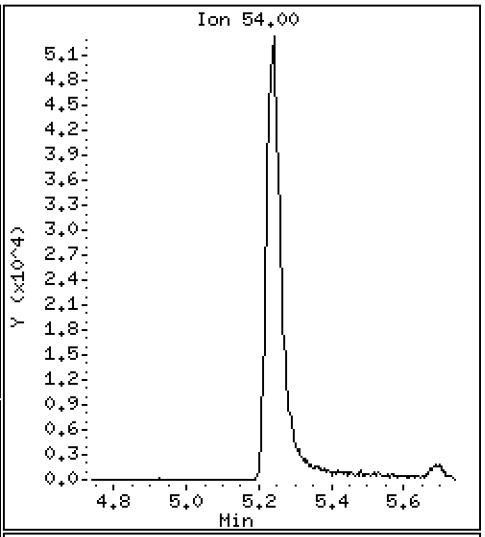
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

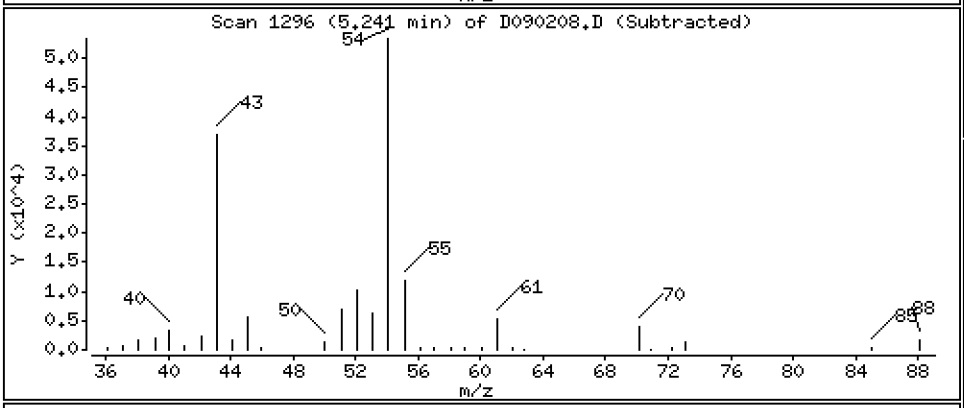
Purge Volume: 5.0 Operator: AP

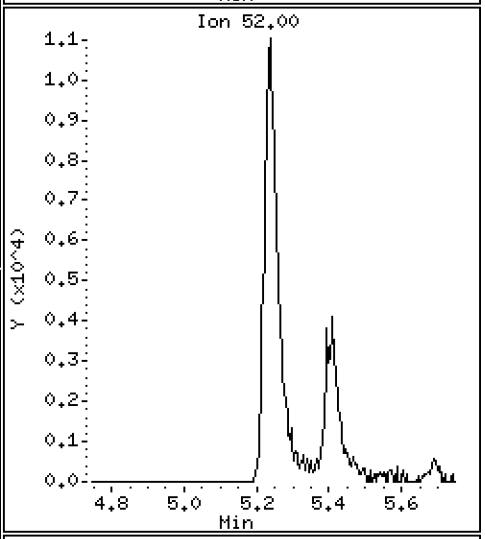
Column phase: DB624 Column diameter: 0.18

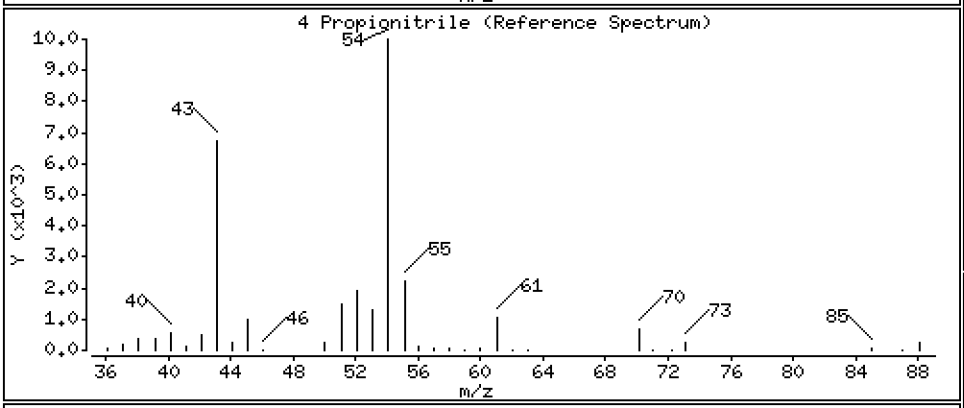
4 Propionitrile Concentration: 149.98 ug/l Review Code:

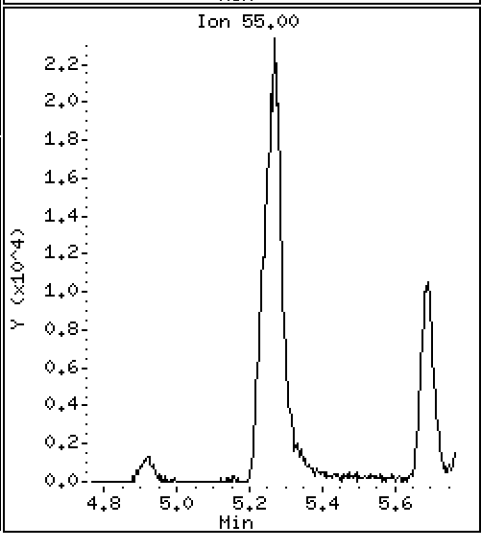


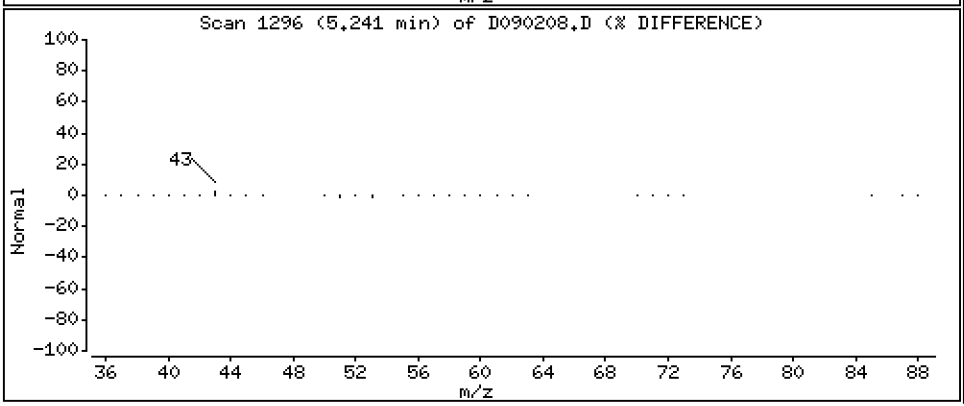












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 6

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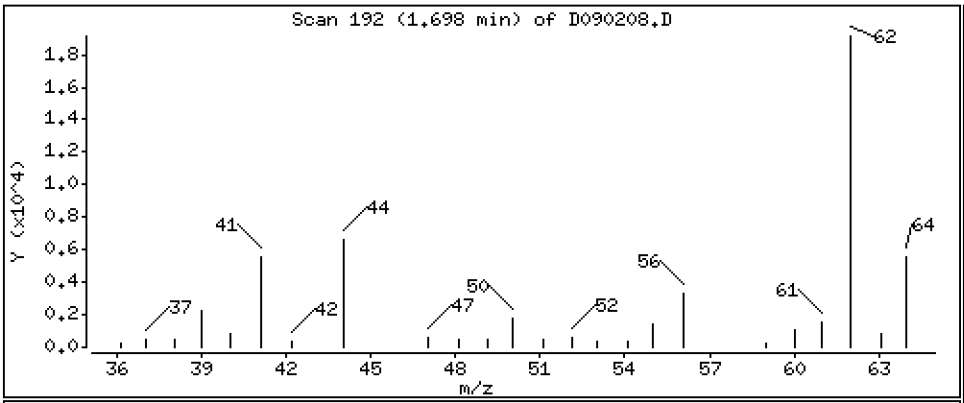
Client ID: HS18081428-01MS Instrument: VOA2.i

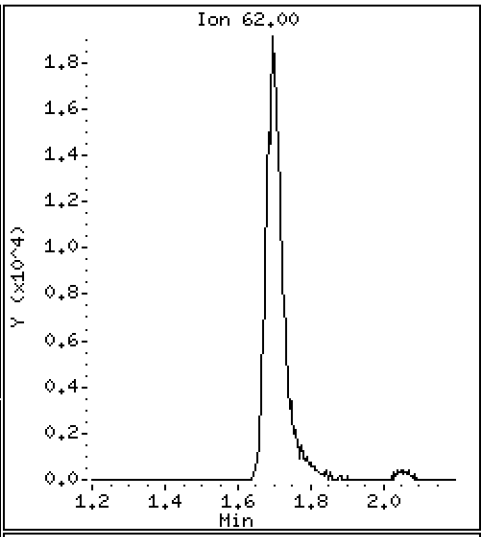
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

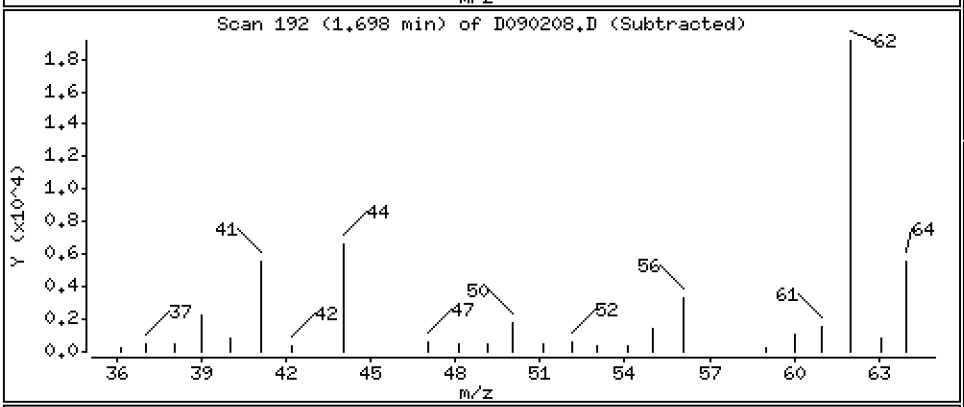
Purge Volume: 5.0 Operator: AP

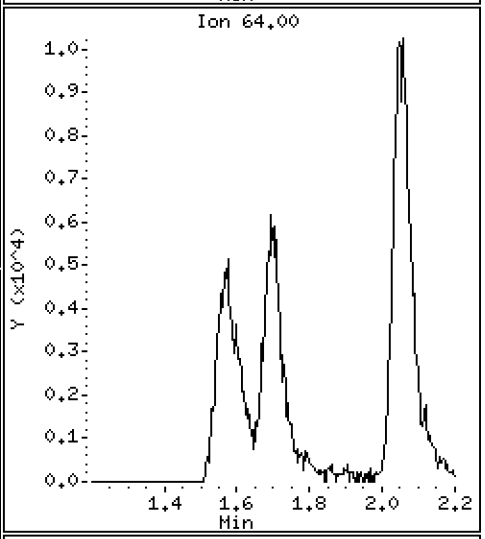
Column phase: DB624 Column diameter: 0.18

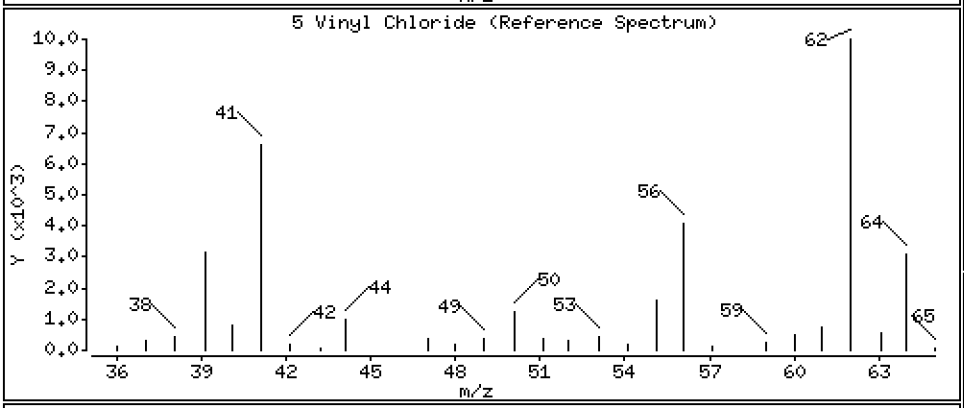
5 Vinyl Chloride Concentration: 16.28 ug/l Review Code:

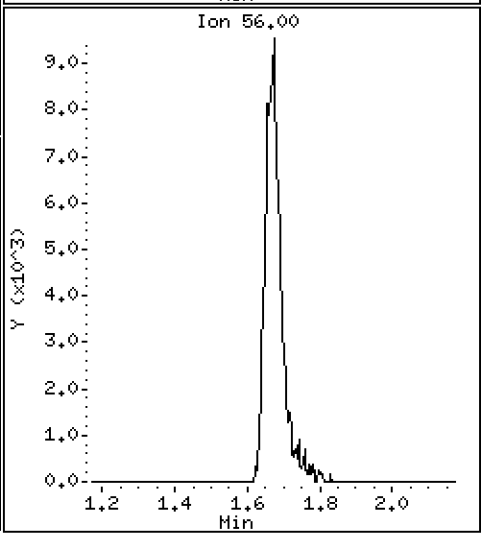


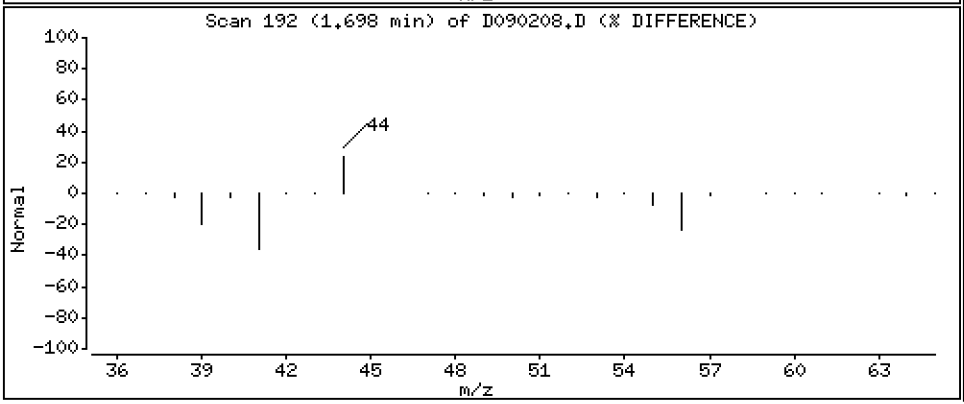












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 7

Date : 02-SEP-2018 16:18

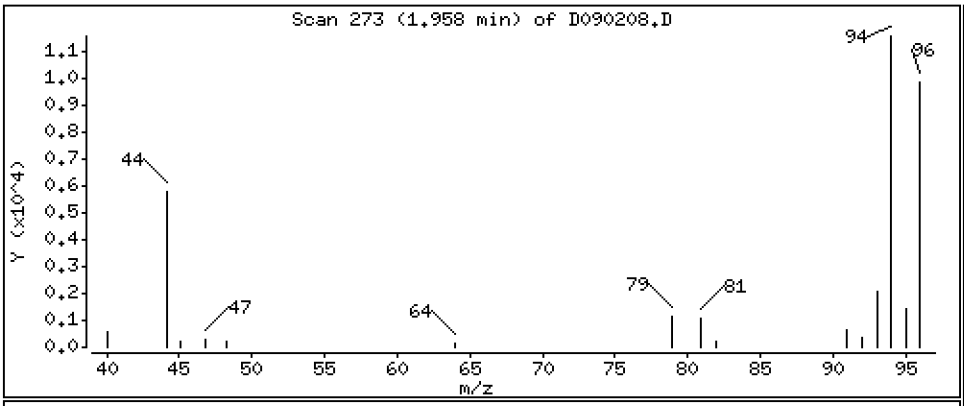
Client ID: HS18081428-01MS Instrument: VOA2.i

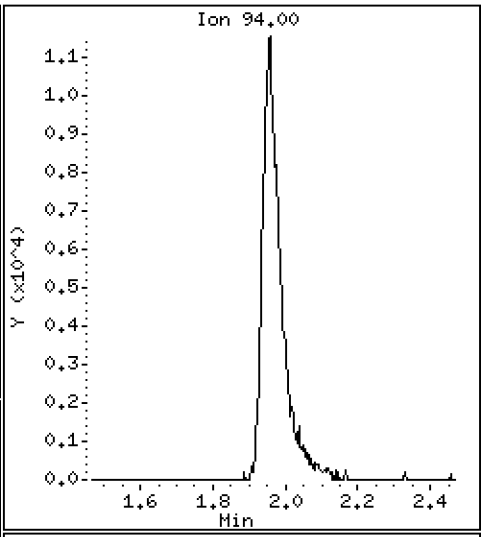
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

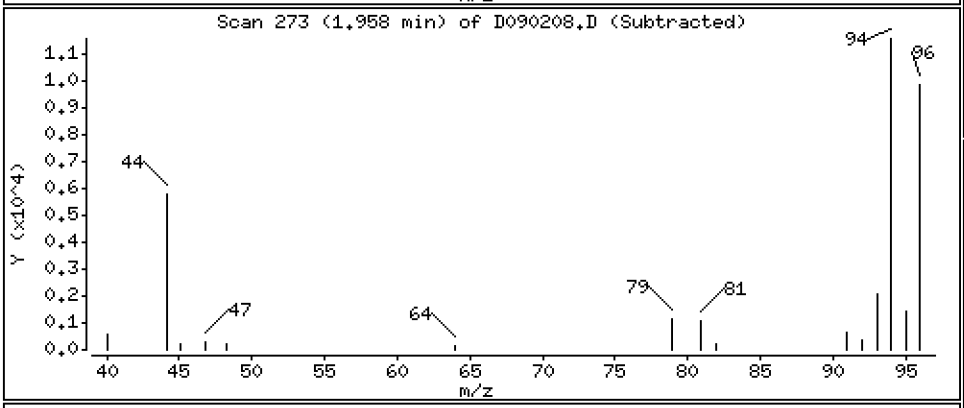
Purge Volume: 5.0 Operator: AP

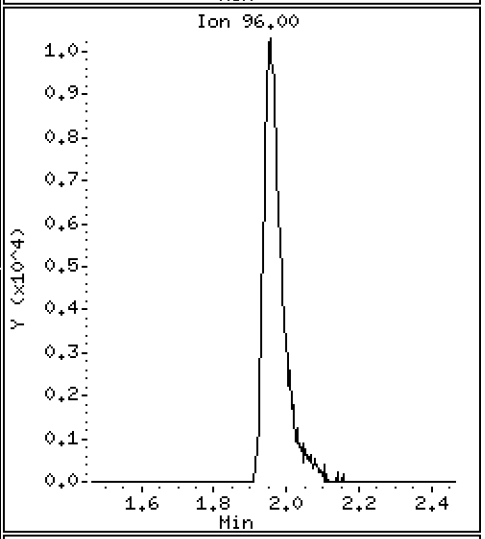
Column phase: DB624 Column diameter: 0.18

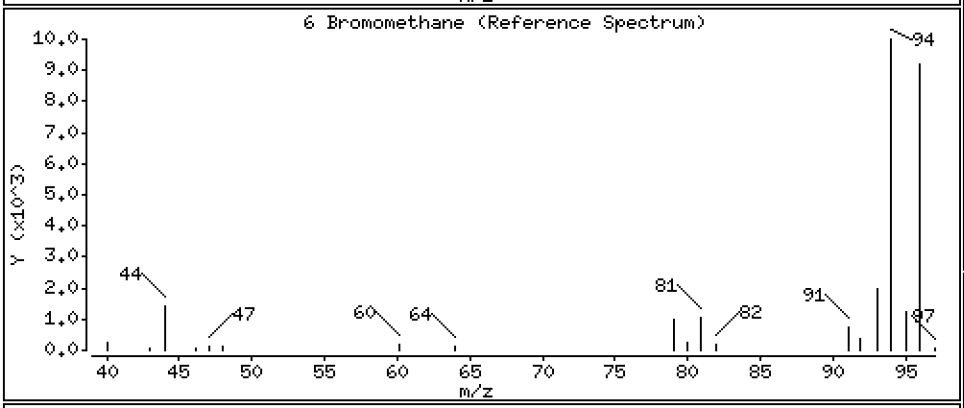
6 Bromomethane Concentration: 19.20 ug/l Review Code:

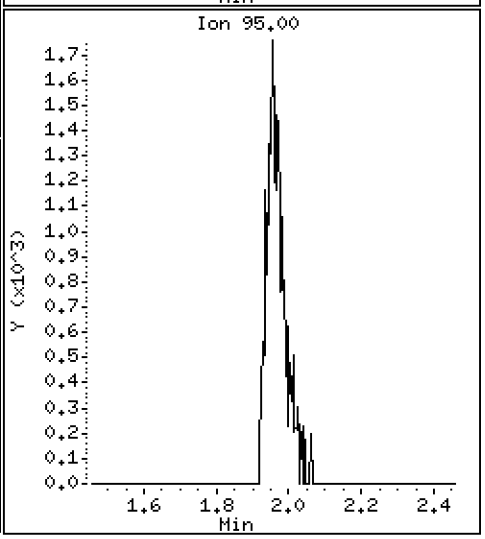


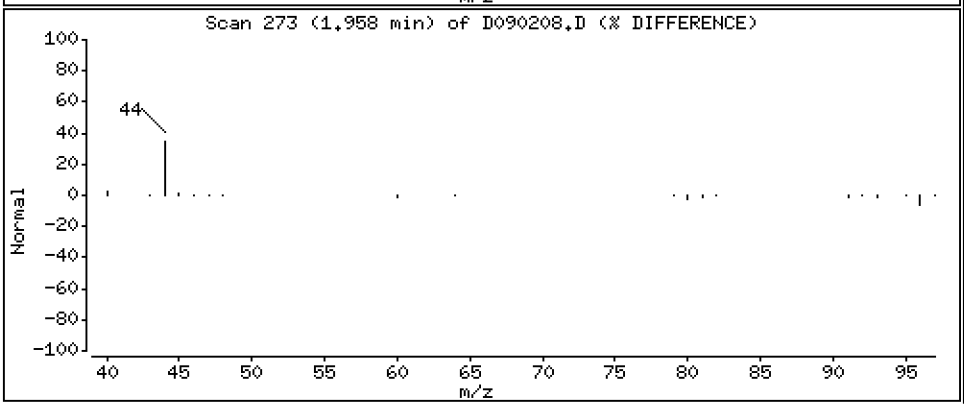












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Date : 02-SEP-2018 16:18

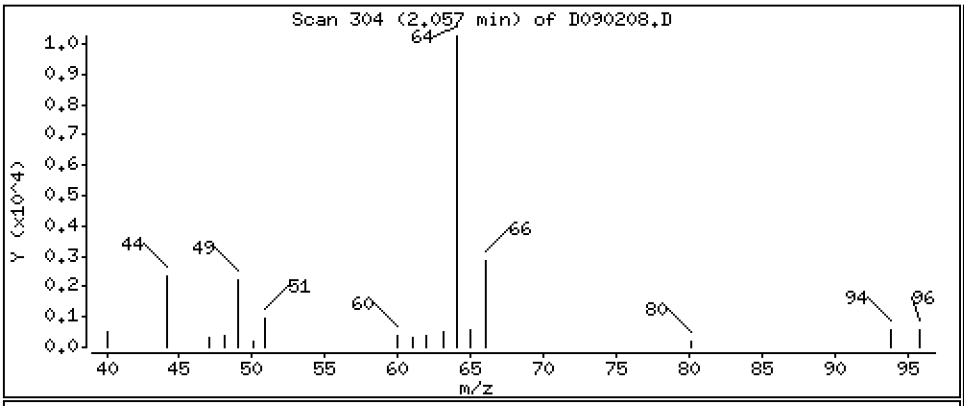
Client ID: HS18081428-01MS Instrument: VOA2.i

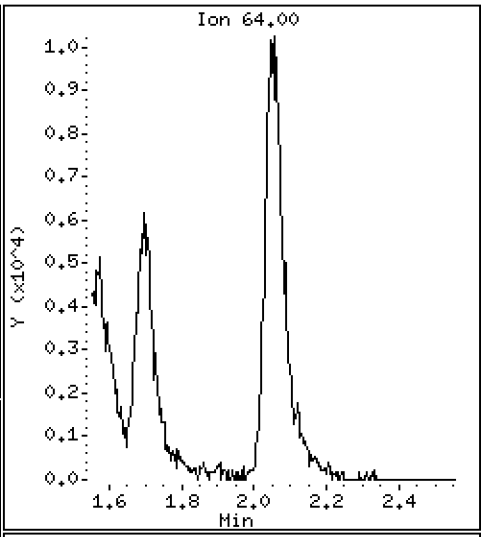
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

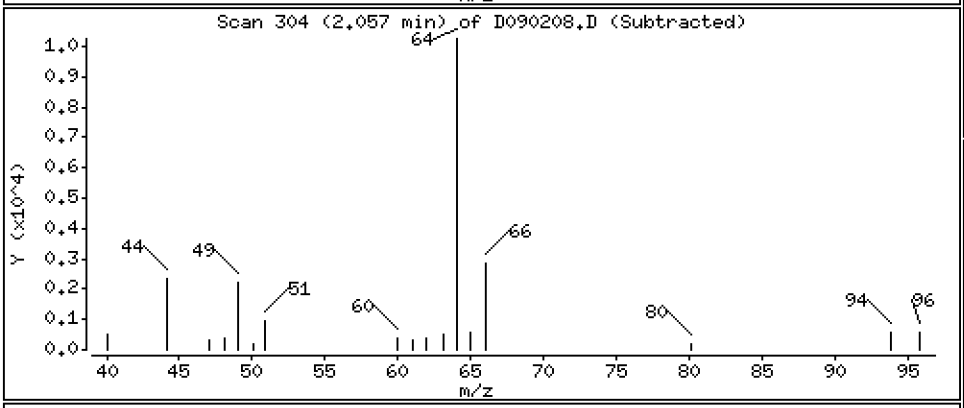
Purge Volume: 5.0 Operator: AP

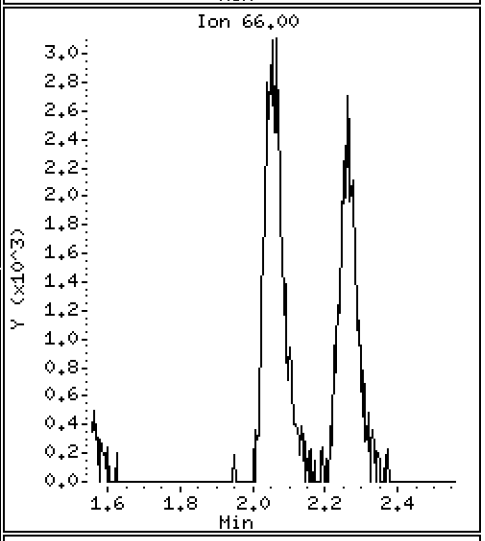
Column phase: DB624 Column diameter: 0.18

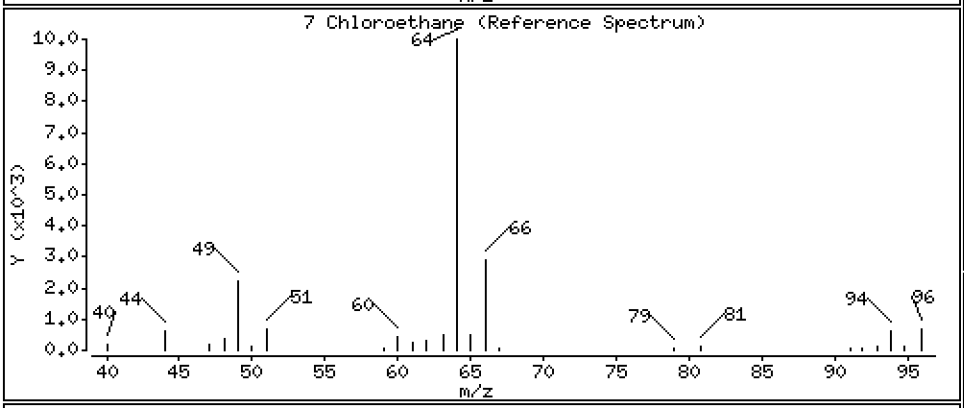
7 Chloroethane Concentration: 14.65 ug/l Review Code:

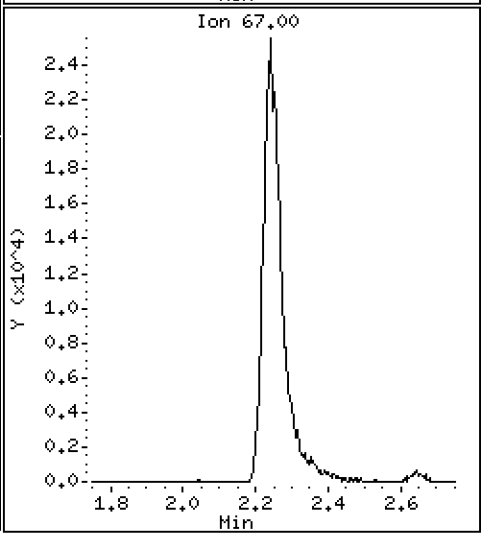


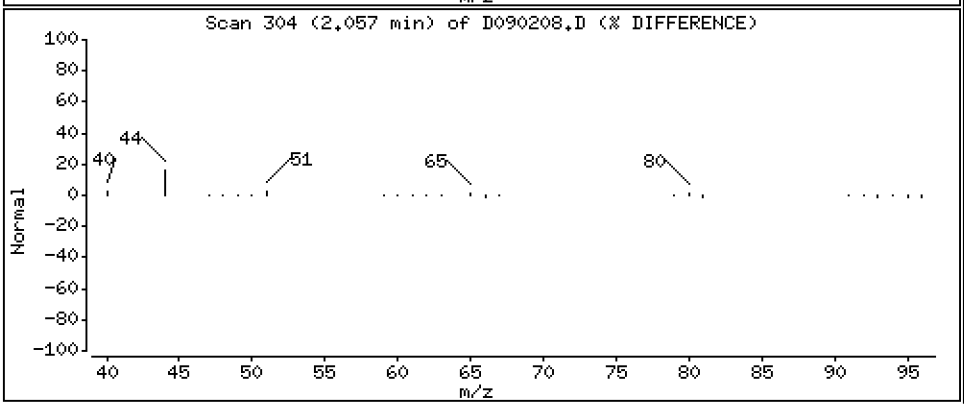












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Date : 02-SEP-2018 16:18

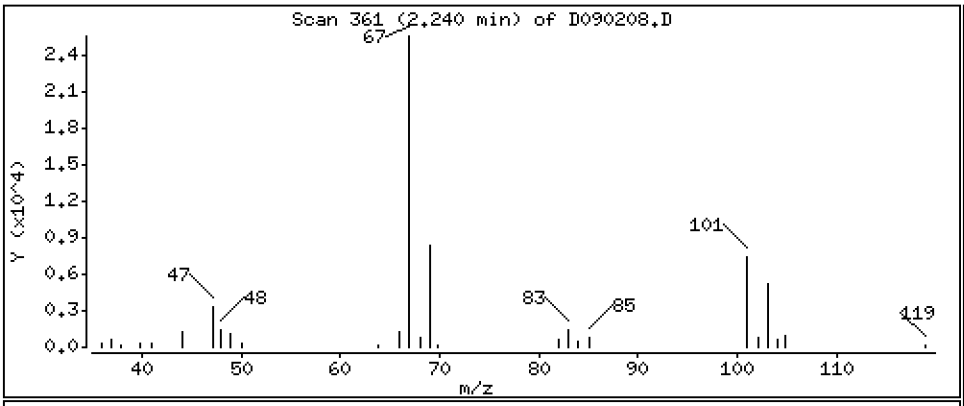
Client ID: HS18081428-01MS Instrument: VOA2.i

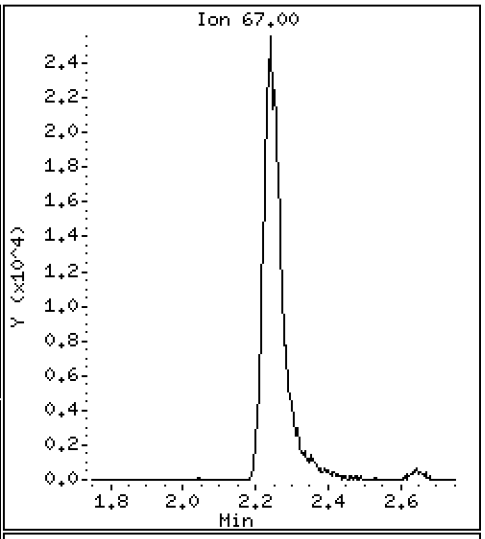
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

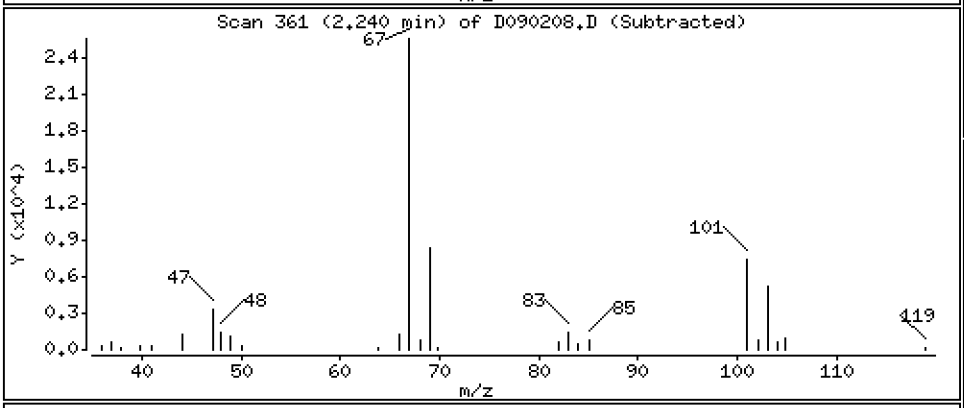
Purge Volume: 5.0 Operator: AP

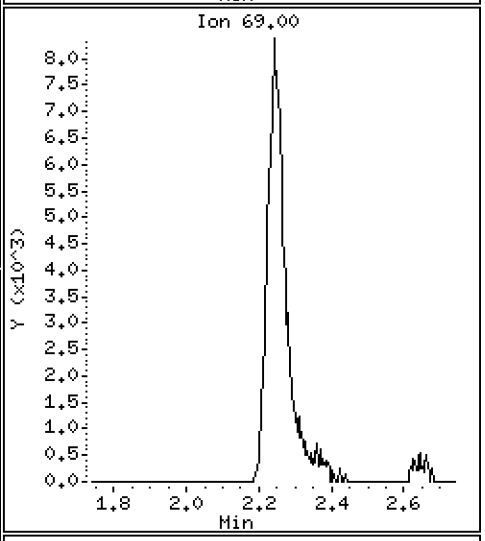
Column phase: DB624 Column diameter: 0.18

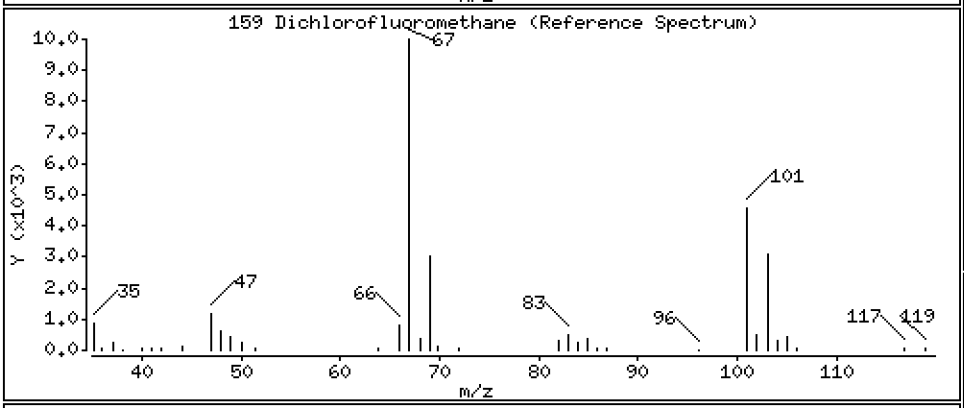
159 Dichlorofluoromethane Concentration: 15.92 ug/l Review Code:

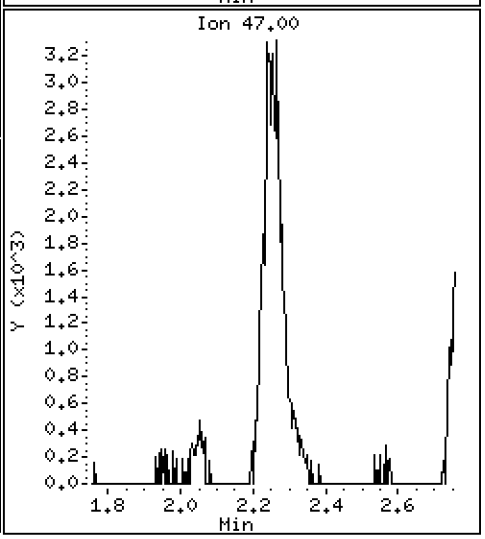


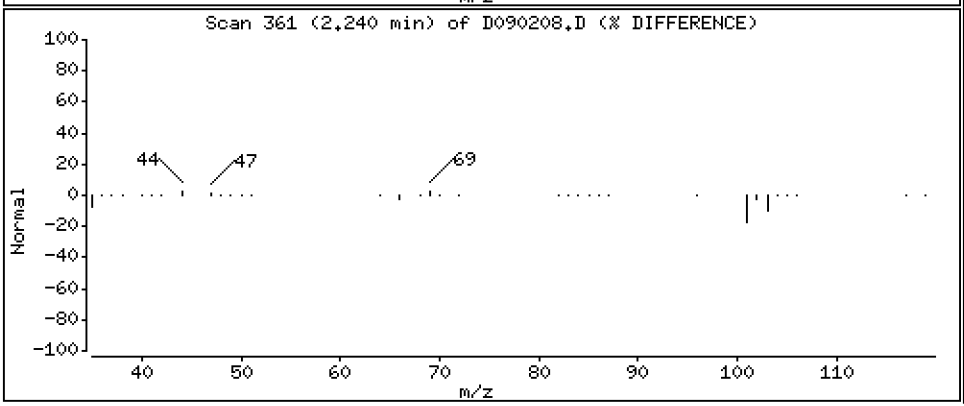












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Date : 02-SEP-2018 16:18

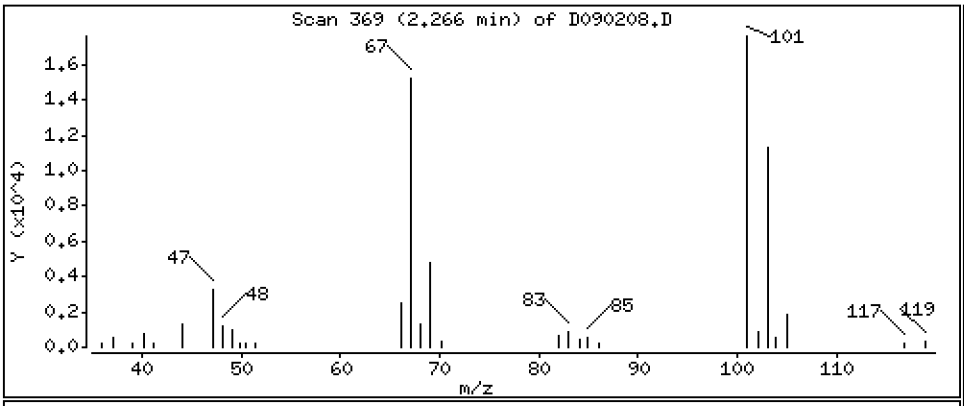
Client ID: HS18081428-01MS Instrument: VOA2.i

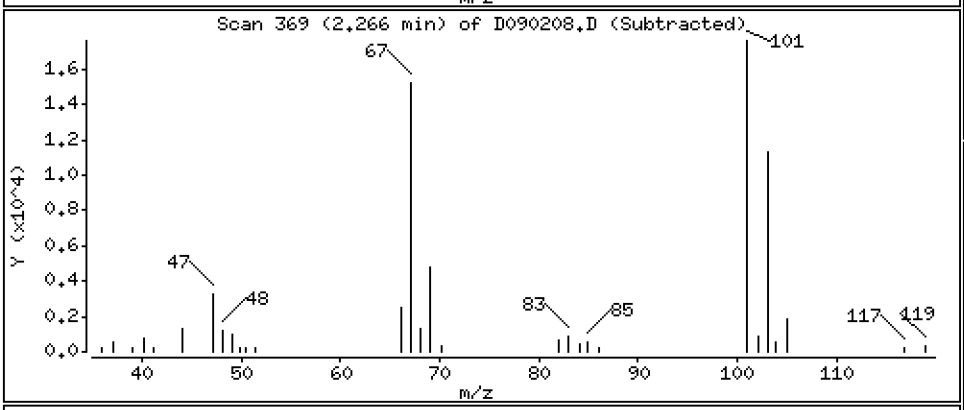
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

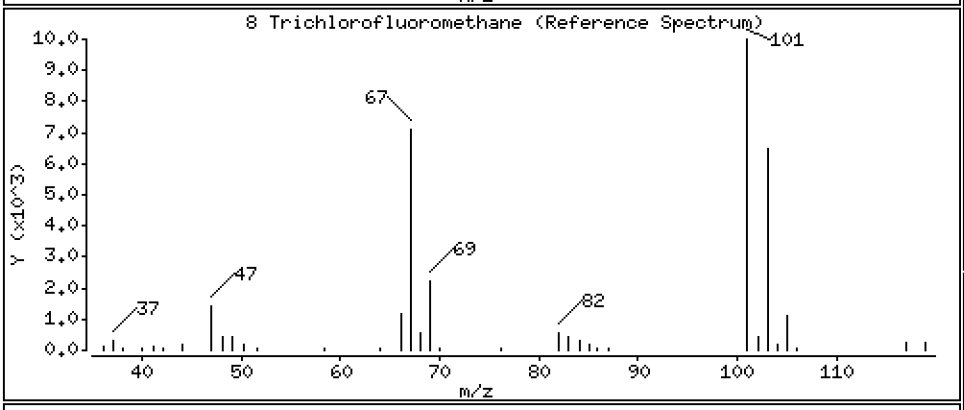
Purge Volume: 5.0 Operator: AP

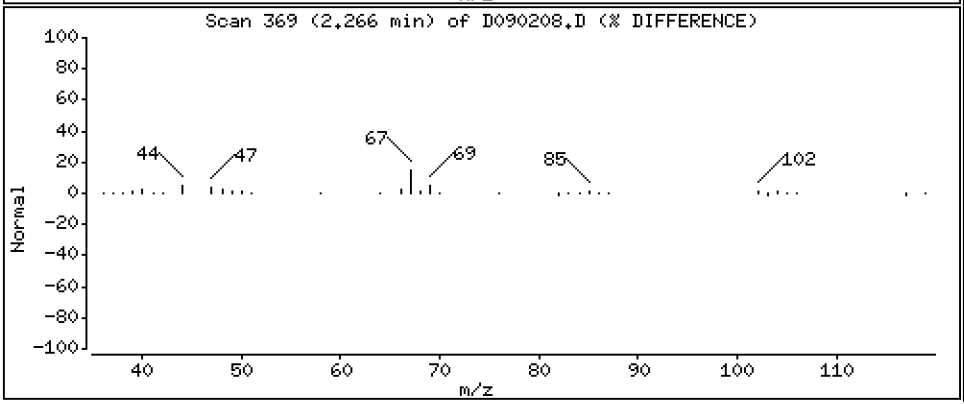
Column phase: DB624 Column diameter: 0.18

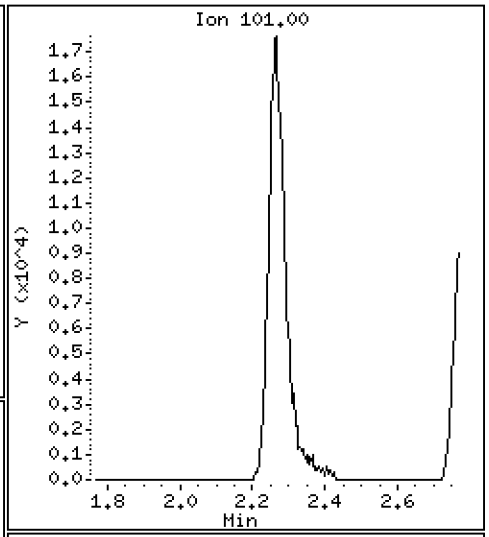
8 Trichlorofluoromethane Concentration: 14.90 ug/l Review Code:

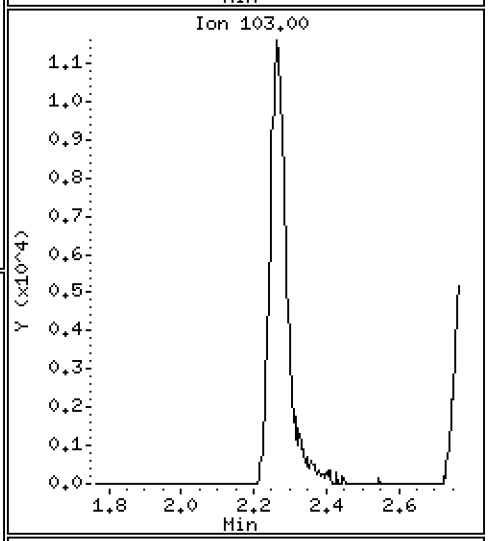


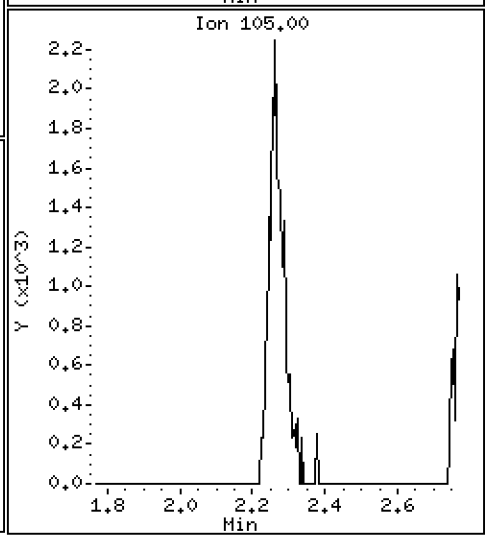












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Date : 02-SEP-2018 16:18

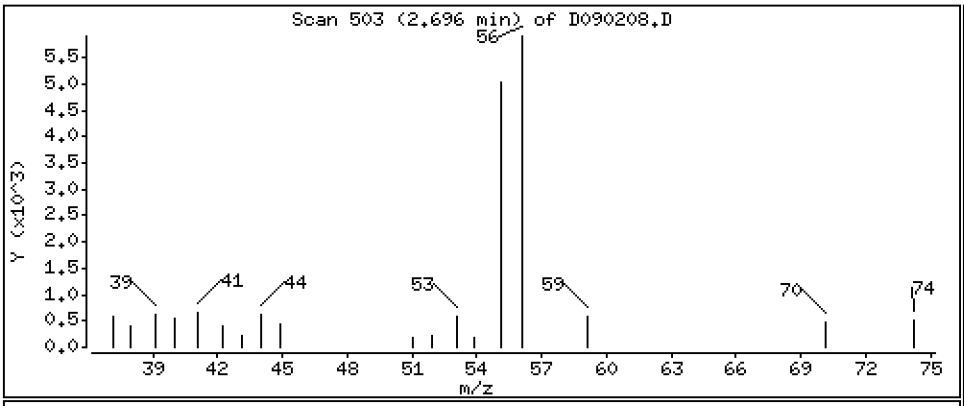
Client ID: HS18081428-01MS Instrument: VOA2.i

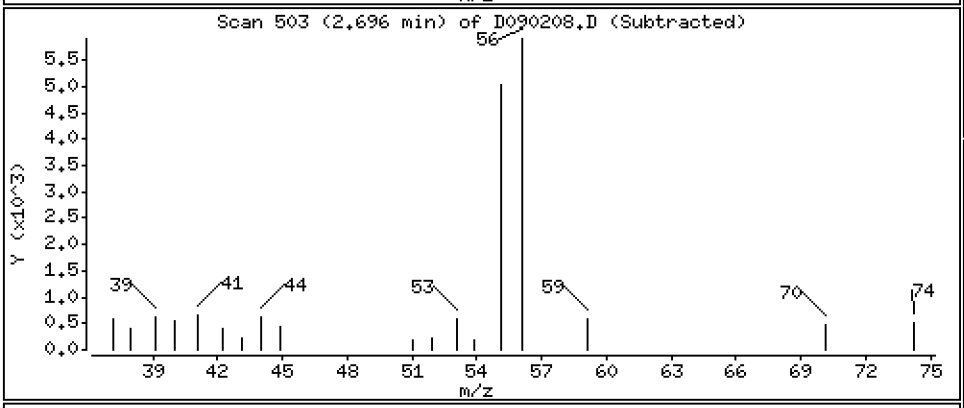
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

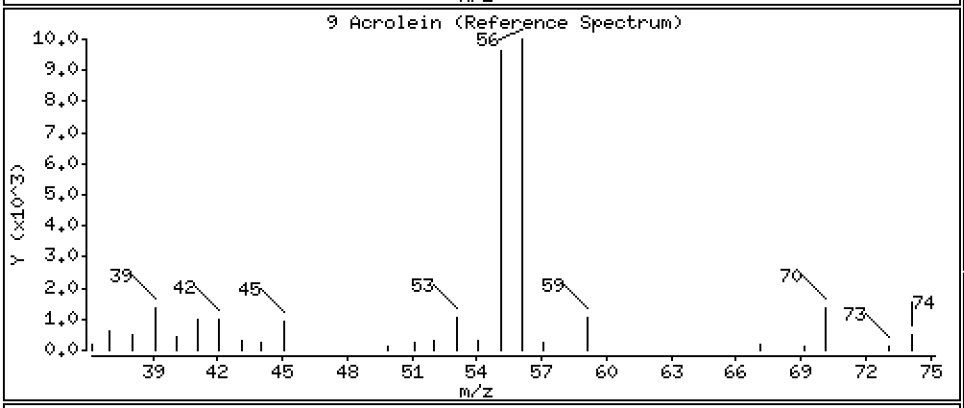
Purge Volume: 5.0 Operator: AP

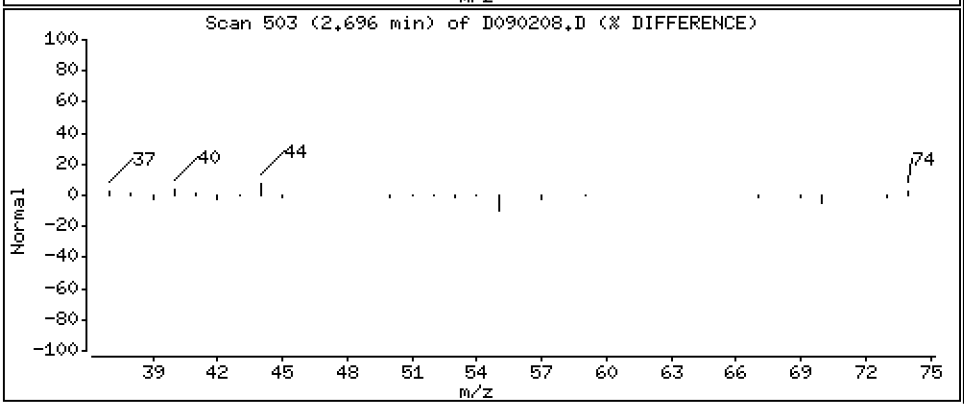
Column phase: DB624 Column diameter: 0.18

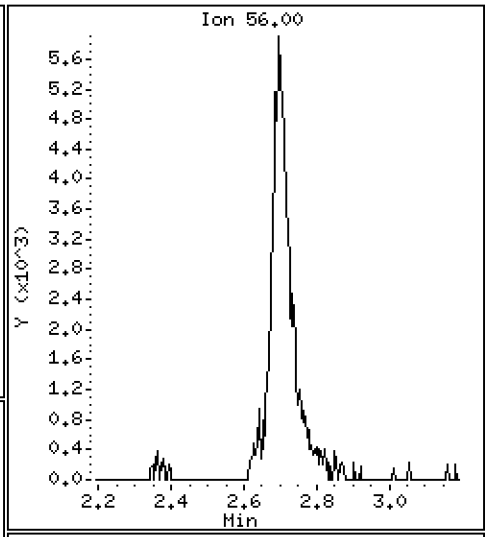
9 Acrolein Concentration: 23.81 ug/l Review Code:

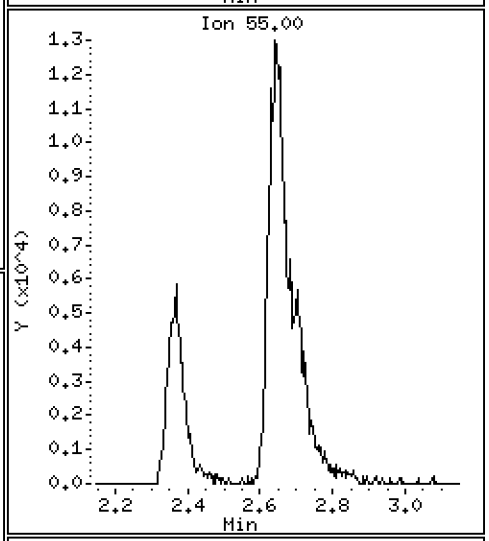


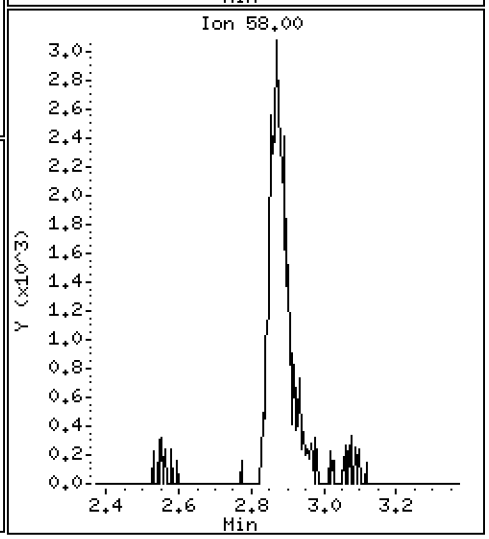












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Date : 02-SEP-2018 16:18

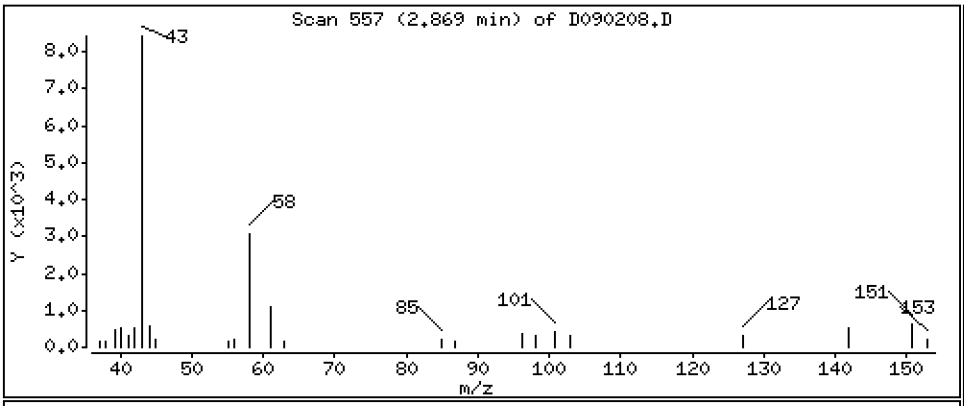
Client ID: HS18081428-01MS Instrument: VOA2.i

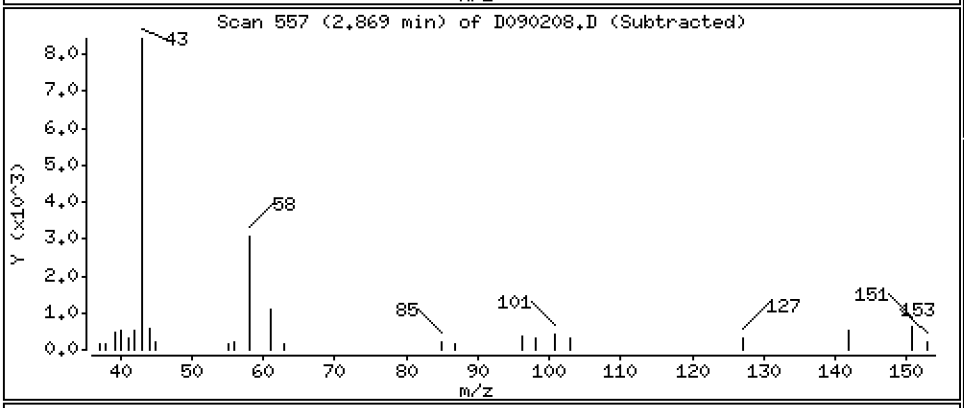
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

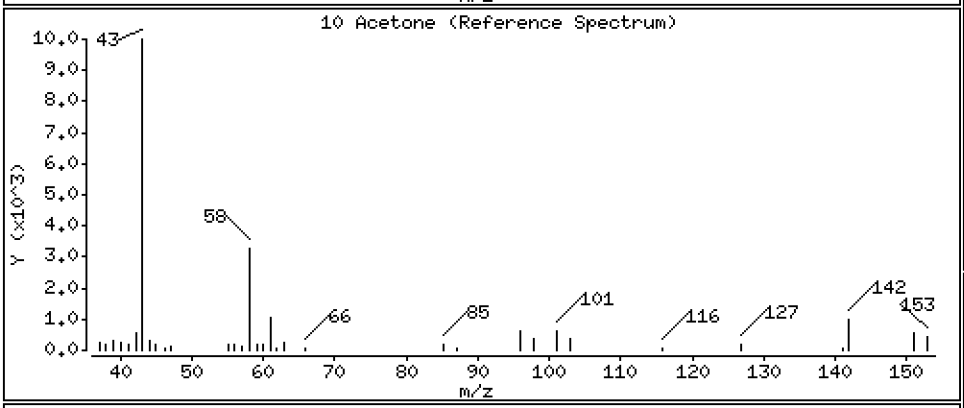
Purge Volume: 5.0 Operator: AP

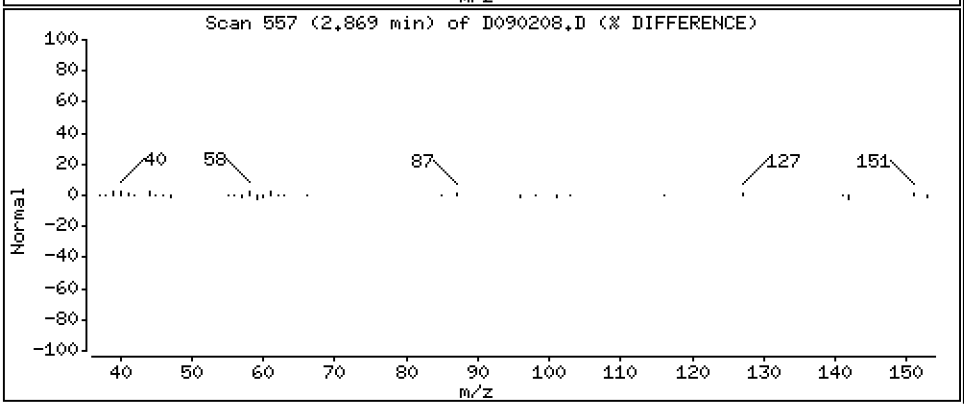
Column phase: DB624 Column diameter: 0.18

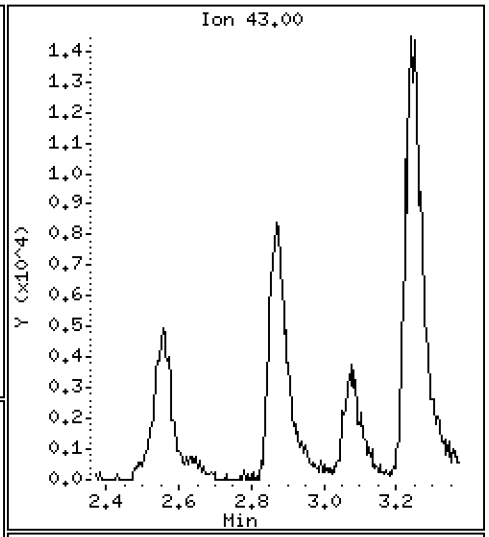
10 Acetone Concentration: 27.59 ug/l Review Code:

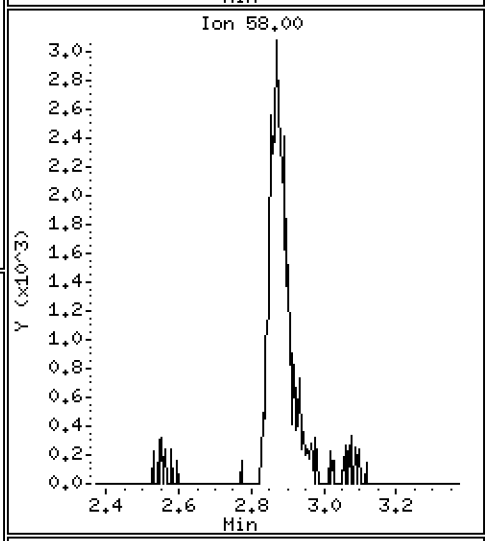


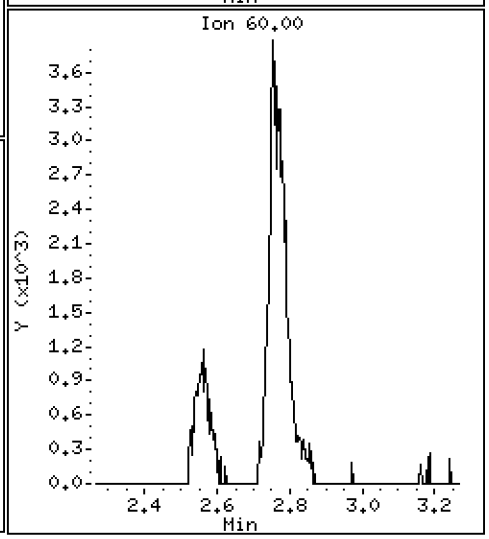












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 13

Date : 02-SEP-2018 16:18

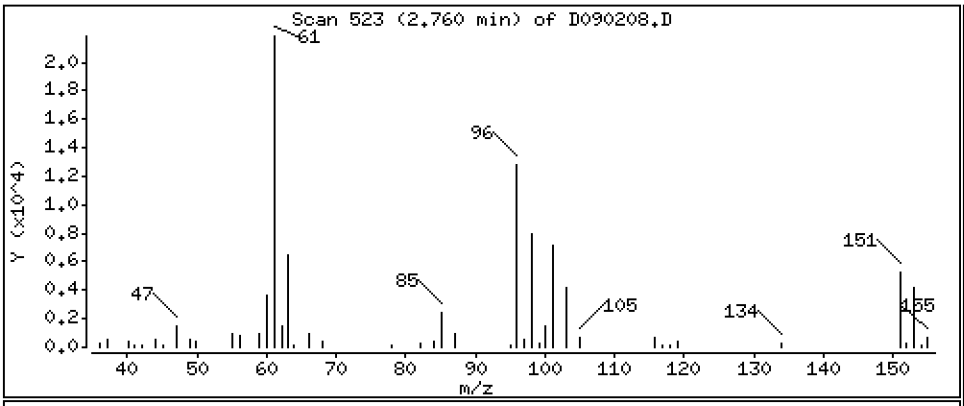
Client ID: HS18081428-01MS Instrument: VOA2.i

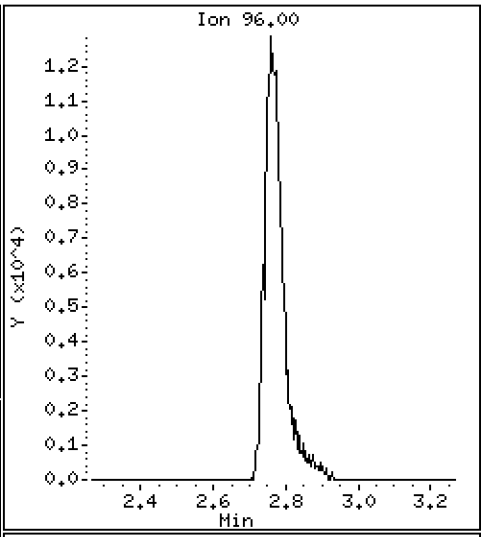
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

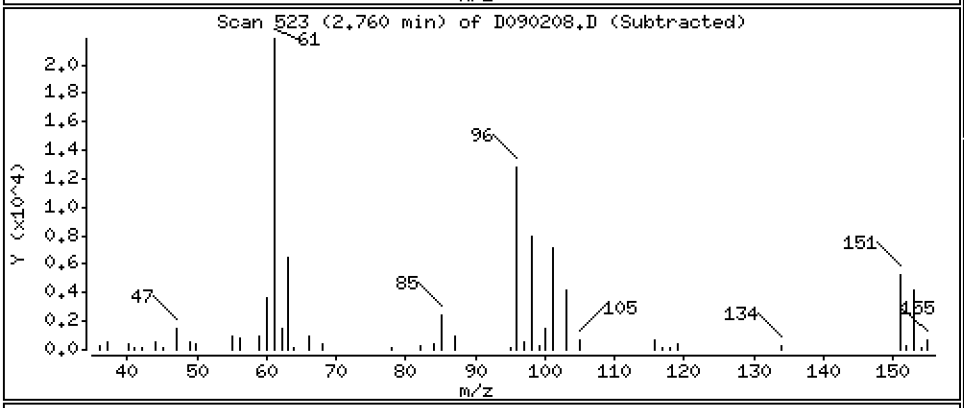
Purge Volume: 5.0 Operator: AP

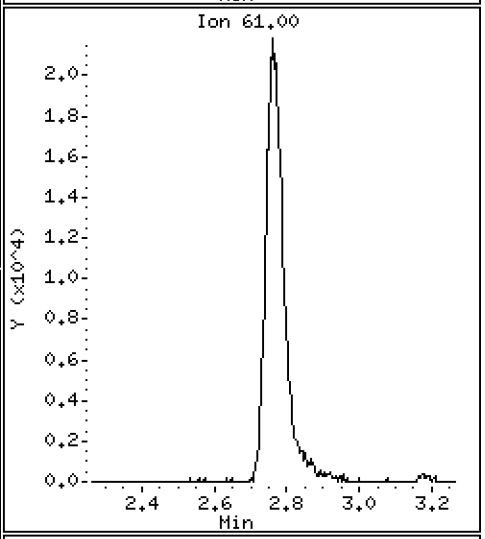
Column phase: DB624 Column diameter: 0.18

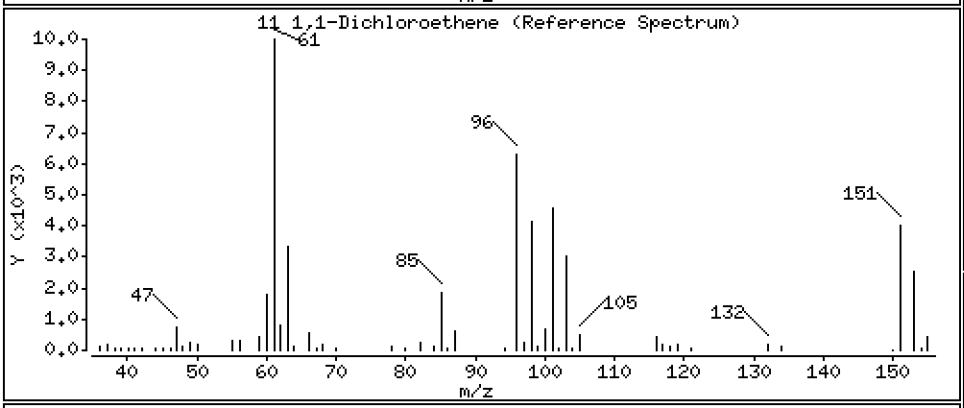
11 1,1-Dichloroethene Concentration: 15.70 ug/l Review Code:

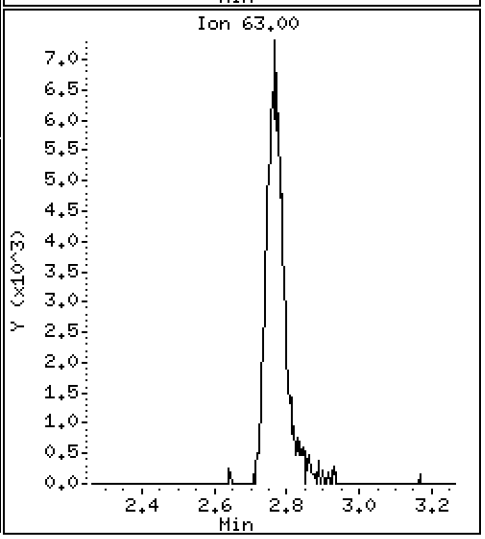


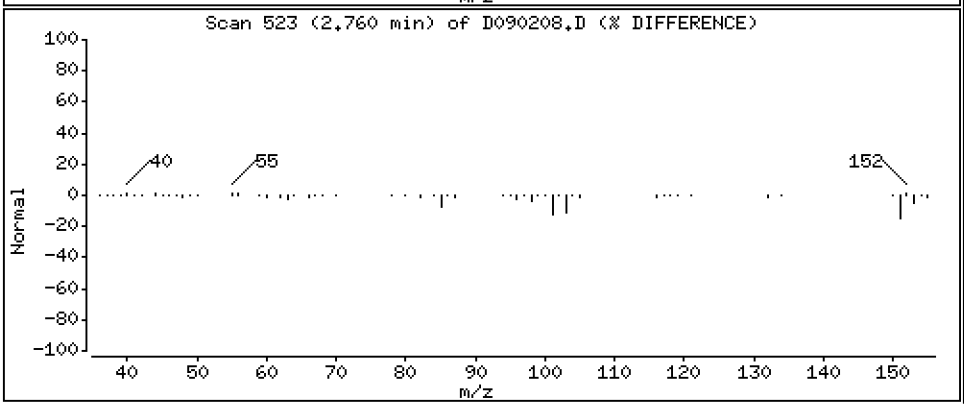












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 14

Date : 02-SEP-2018 16:18

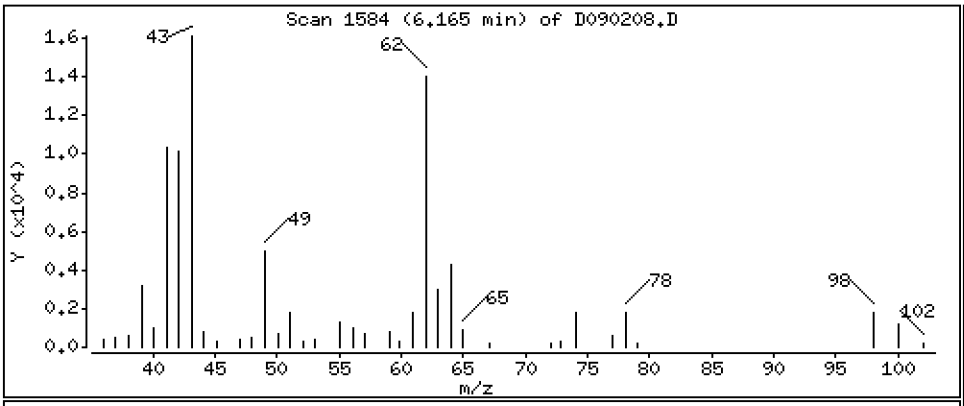
Client ID: HS18081428-01MS Instrument: VOA2.i

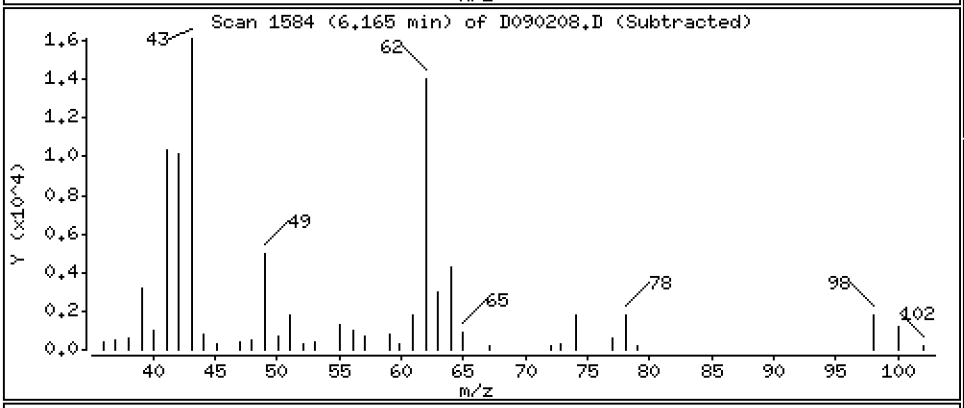
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

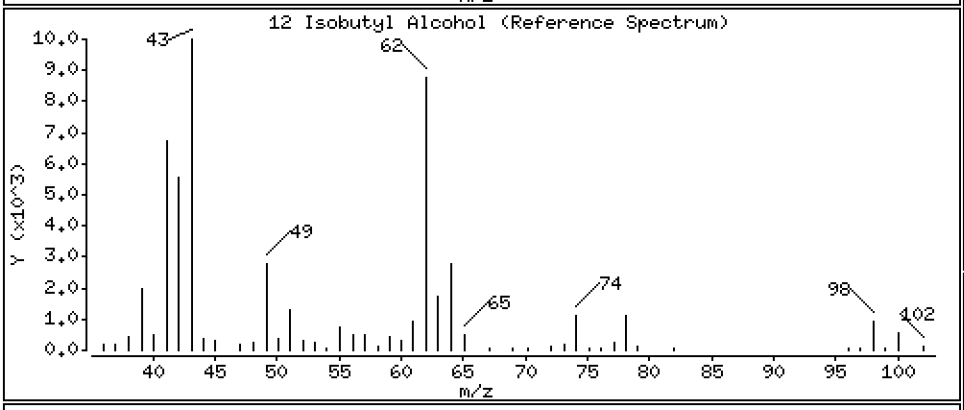
Purge Volume: 5.0 Operator: AP

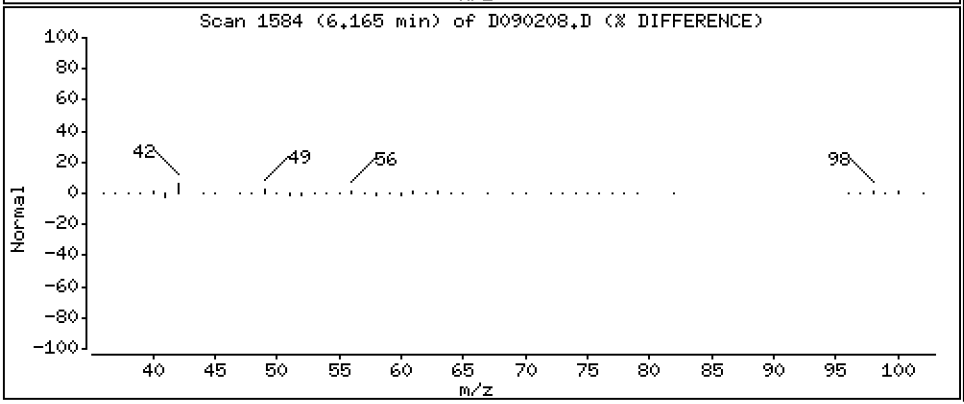
Column phase: DB624 Column diameter: 0.18

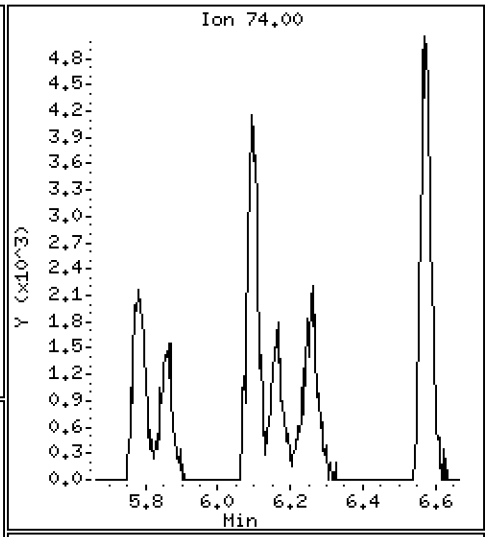
12 Isobutyl Alcohol Concentration: 251.22 ug/l Review Code:

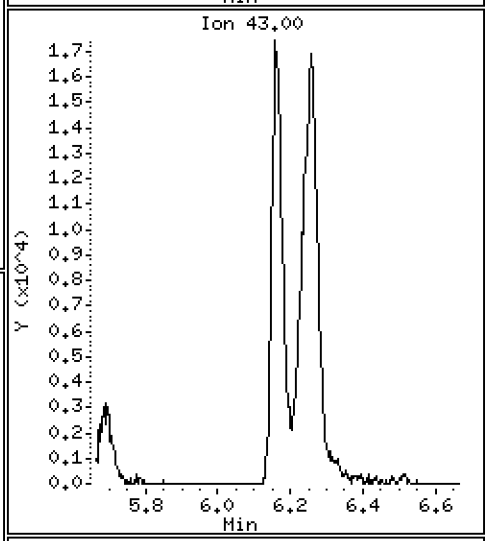


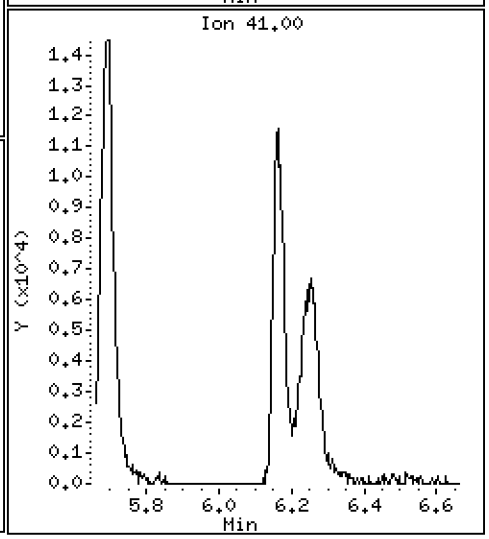












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 15

Date : 02-SEP-2018 16:18

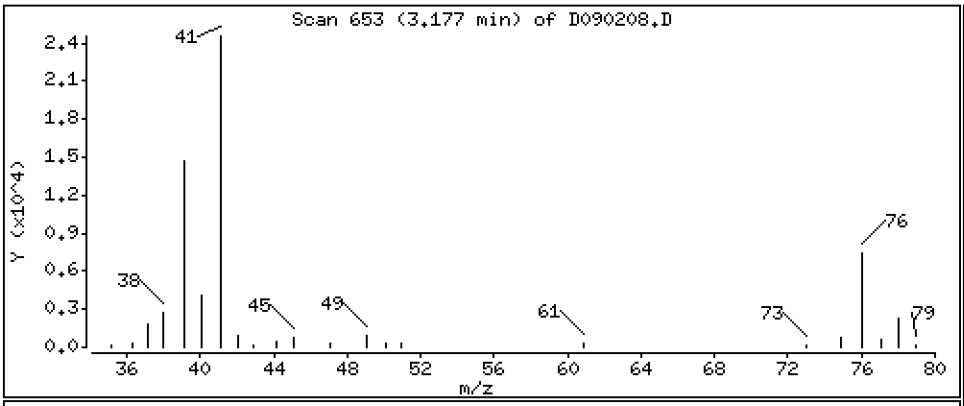
Client ID: HS18081428-01MS Instrument: VOA2.i

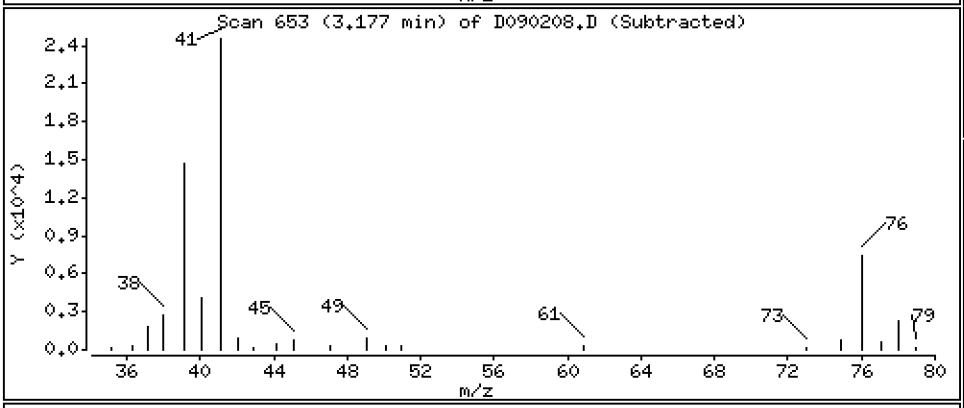
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

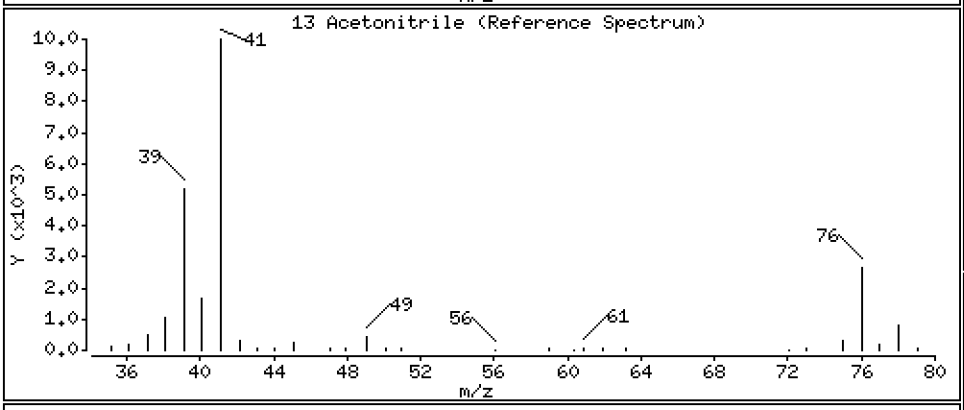
Purge Volume: 5.0 Operator: AP

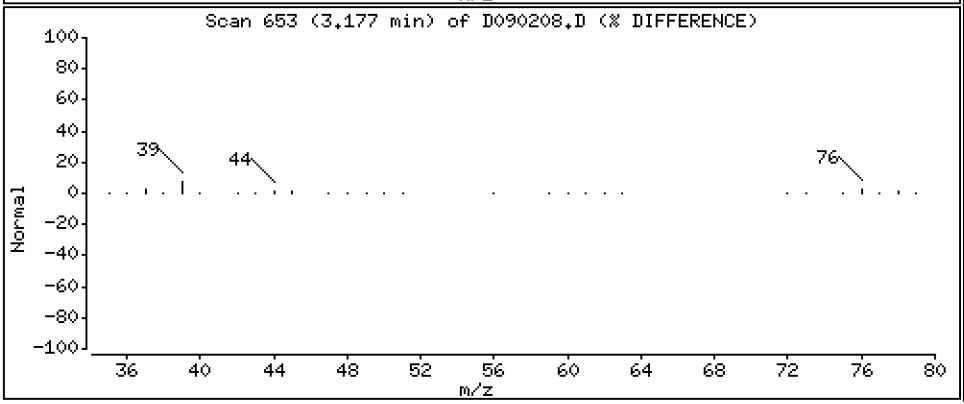
Column phase: DB624 Column diameter: 0.18

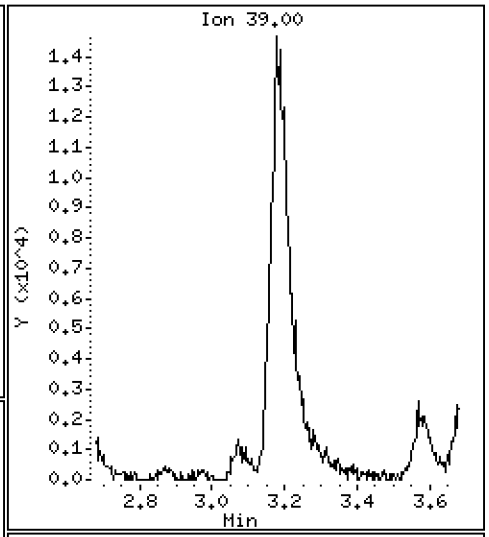
13 Acetonitrile Concentration: 157.74 ug/l Review Code:

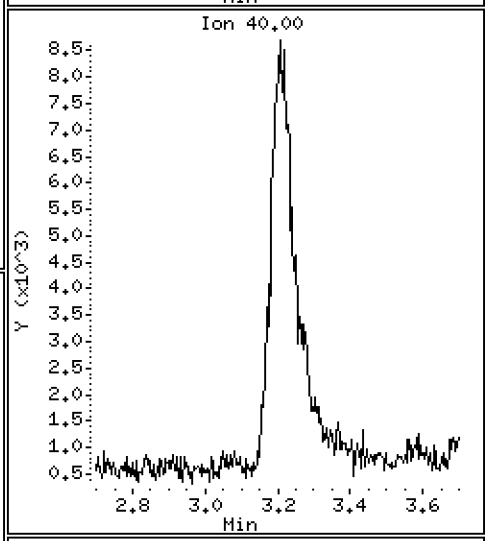


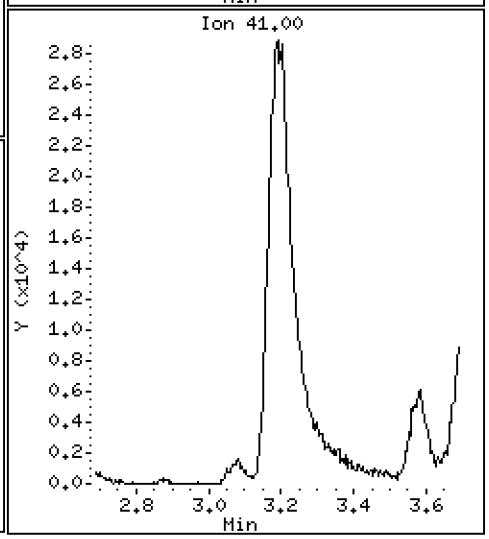












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Date : 02-SEP-2018 16:18

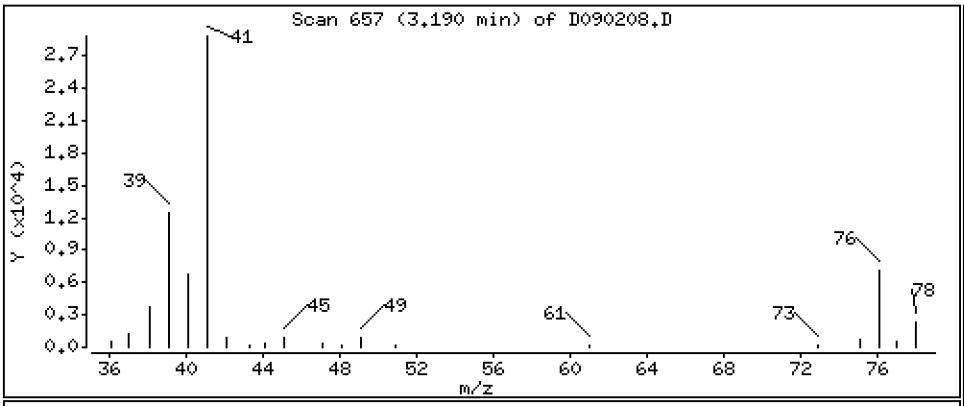
Client ID: HS18081428-01MS Instrument: VOA2.i

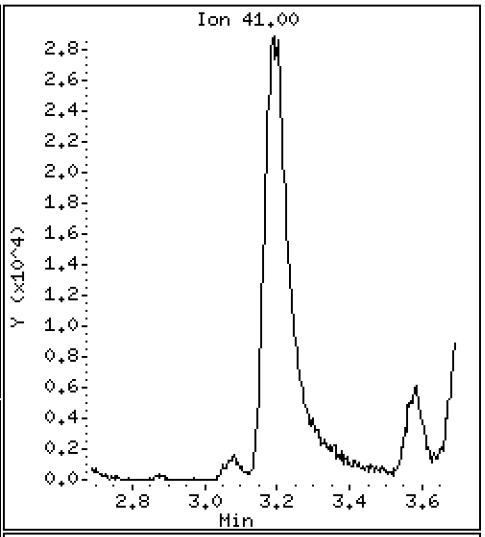
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

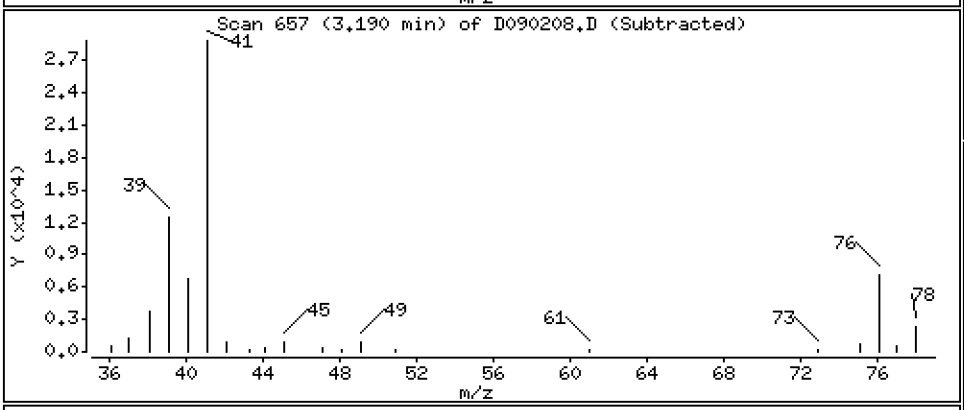
Purge Volume: 5.0 Operator: AP

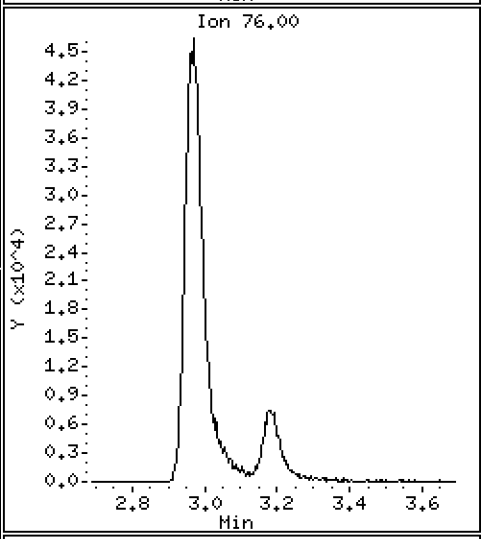
Column phase: DB624 Column diameter: 0.18

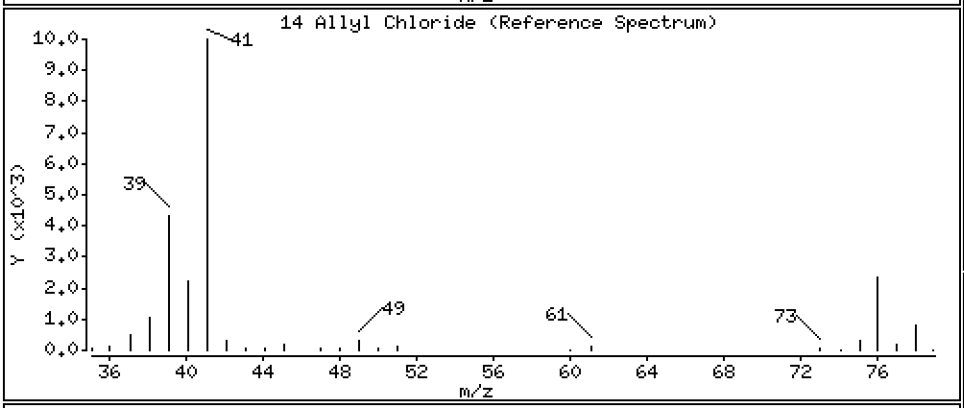
14 Allyl Chloride Concentration: 15.30 ug/l Review Code:

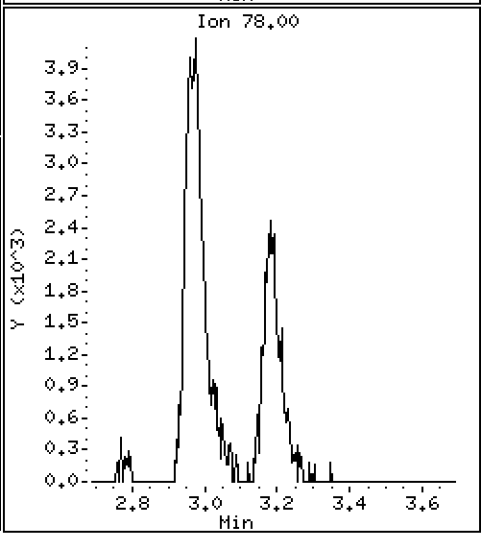


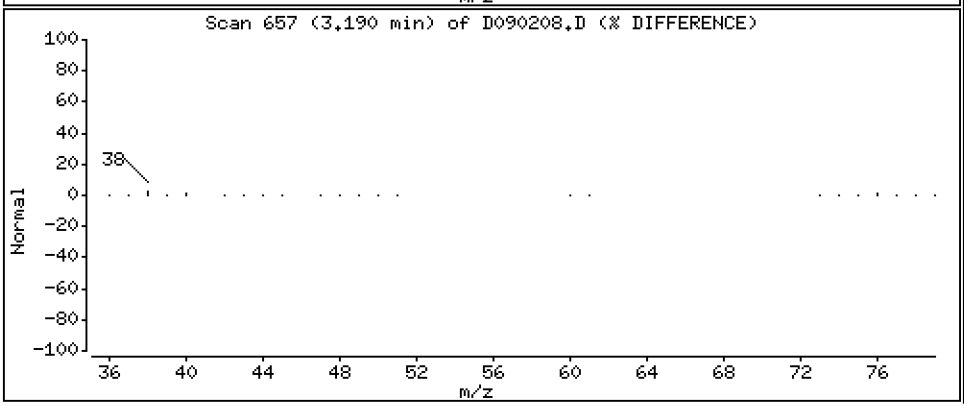












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Date : 02-SEP-2018 16:18

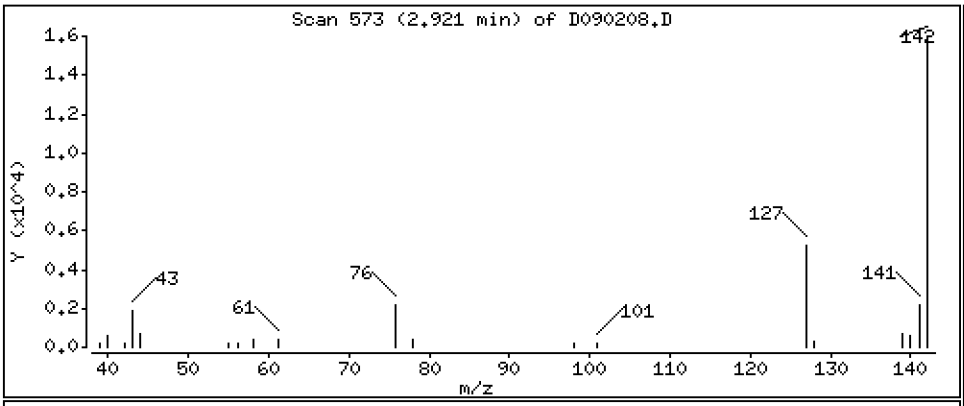
Client ID: HS18081428-01MS Instrument: VOA2.i

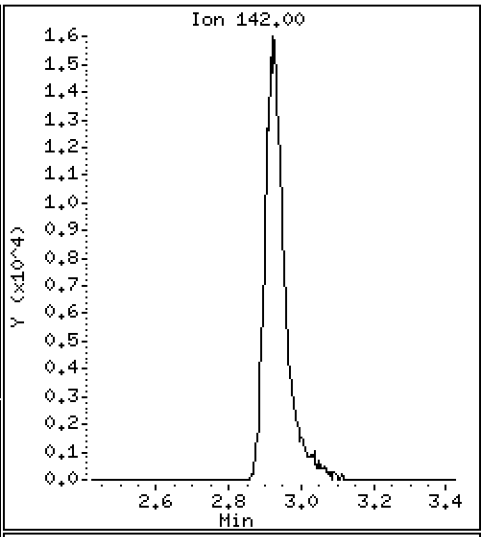
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

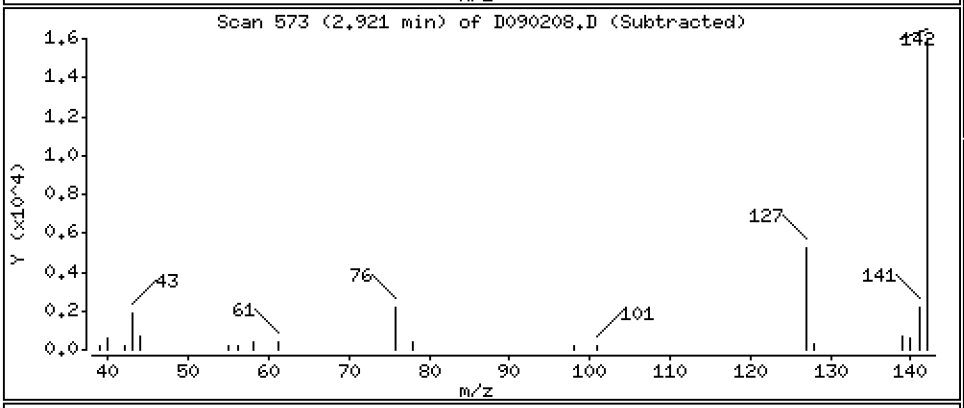
Purge Volume: 5.0 Operator: AP

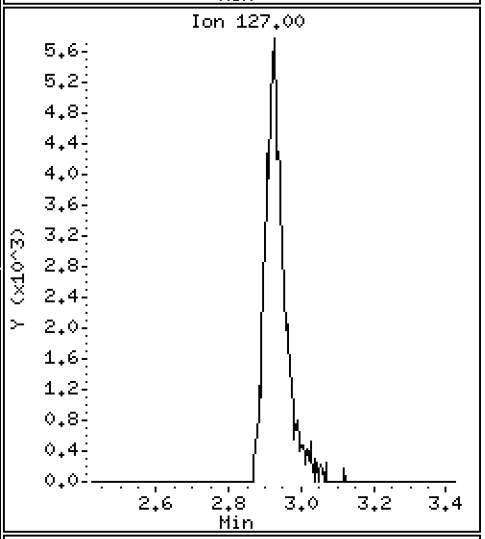
Column phase: DB624 Column diameter: 0.18

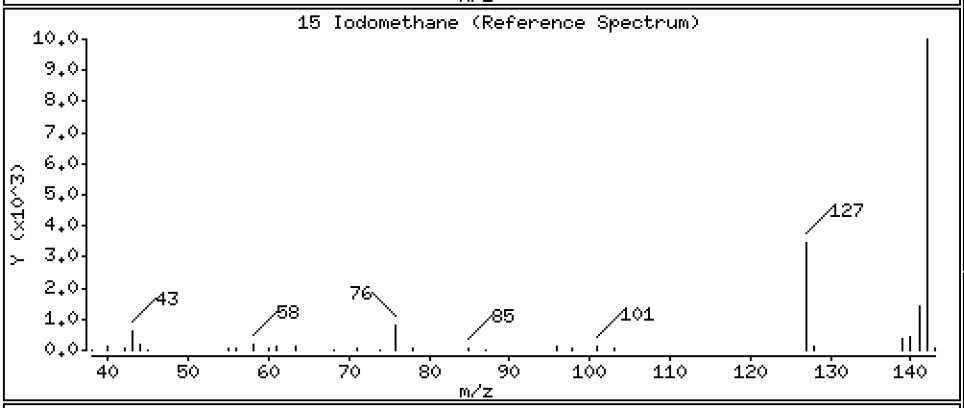
15 Iodomethane Concentration: 25.73 ug/l Review Code:

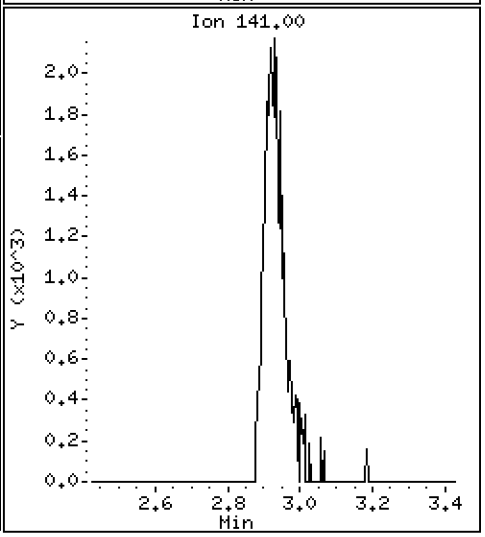


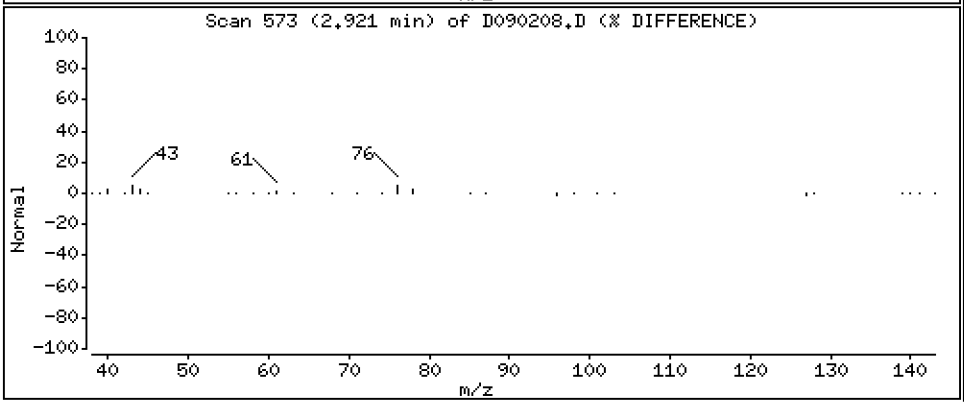












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 18

Date : 02-SEP-2018 16:18

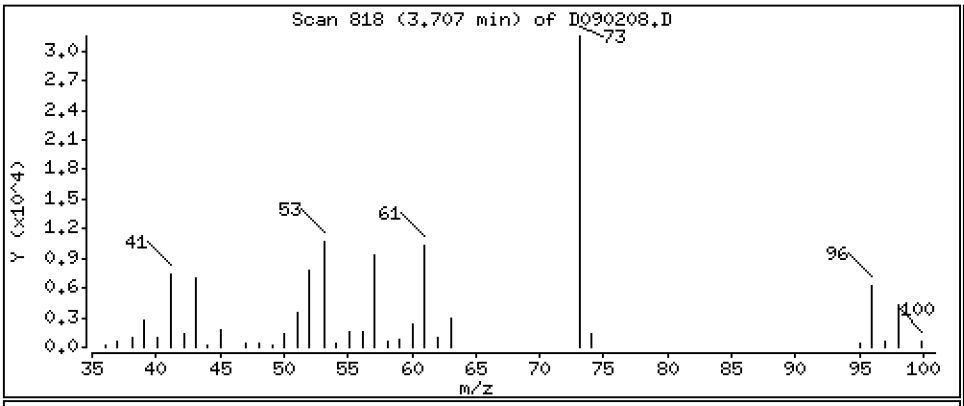
Client ID: HS18081428-01MS Instrument: VOA2.i

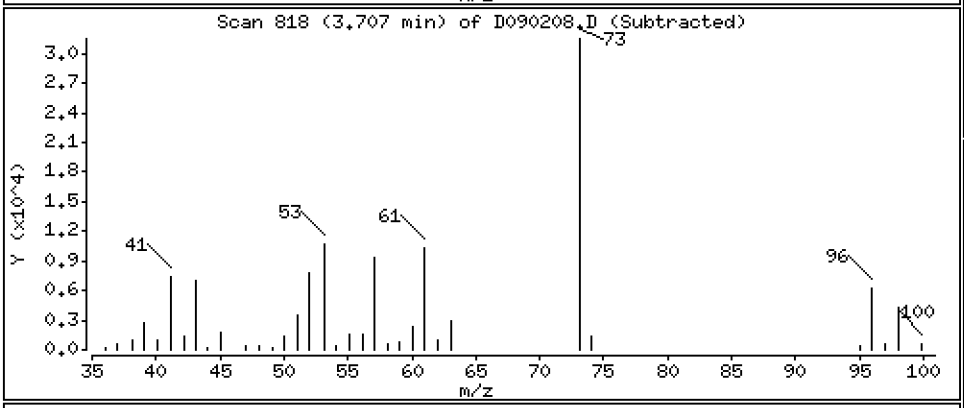
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

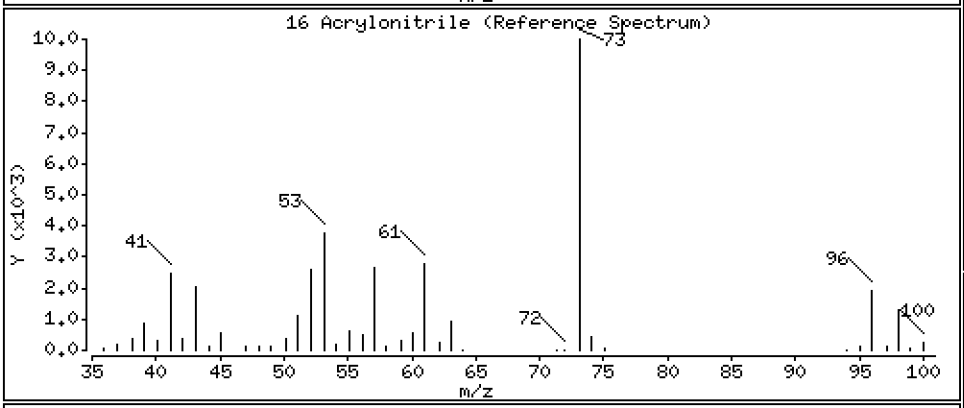
Purge Volume: 5.0 Operator: AP

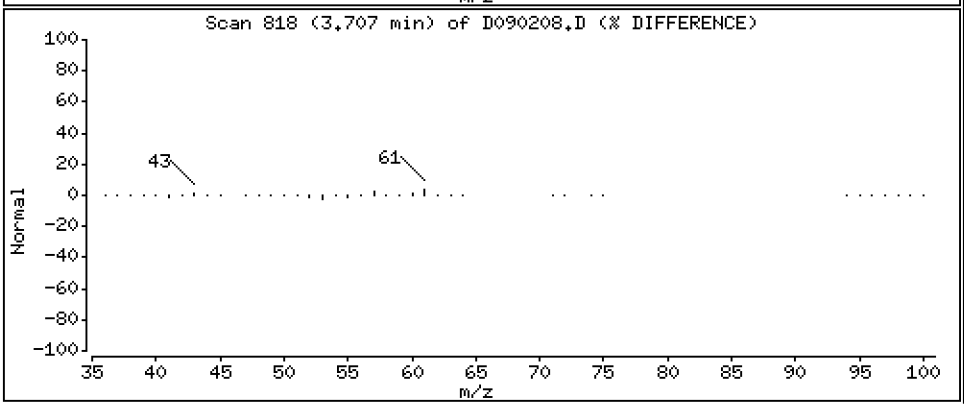
Column phase: DB624 Column diameter: 0.18

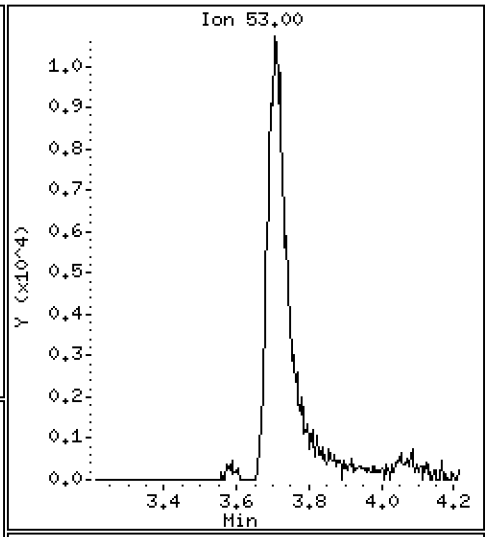
16 Acrylonitrile Concentration: 30.44 ug/l Review Code:

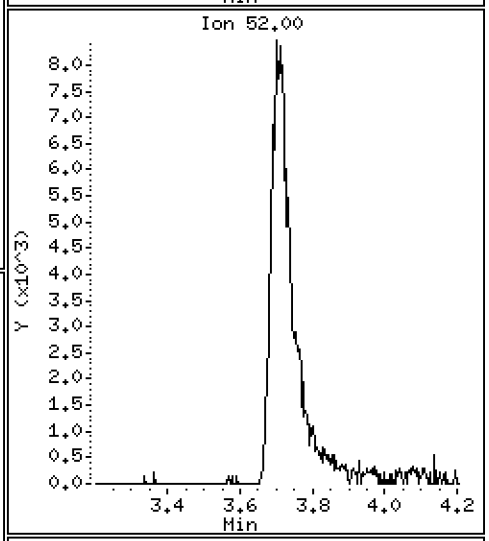


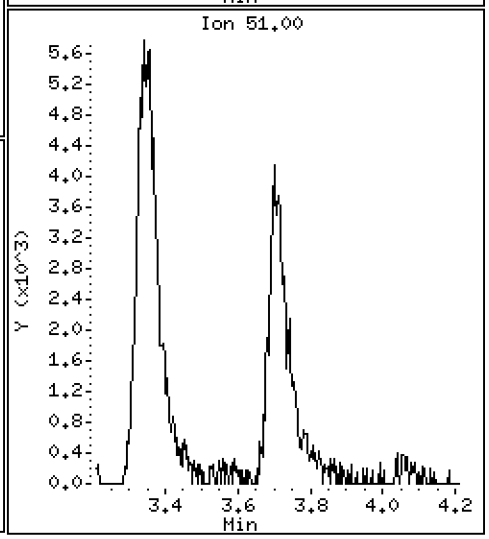












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 19

Date : 02-SEP-2018 16:18

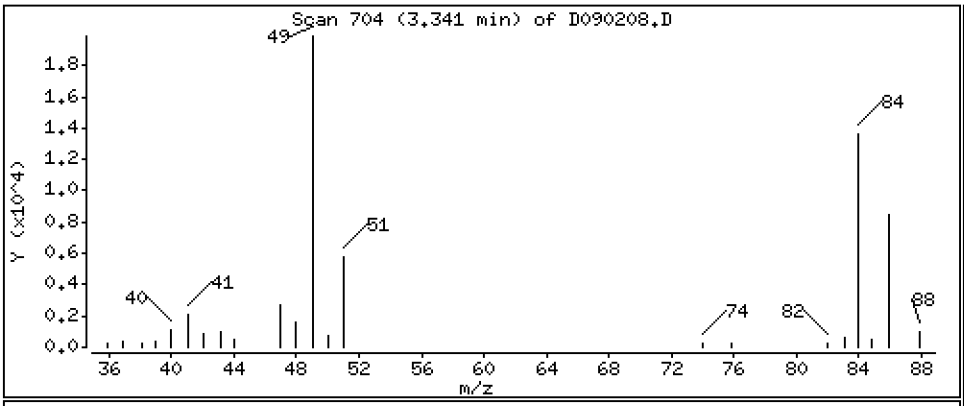
Client ID: HS18081428-01MS Instrument: VOA2.i

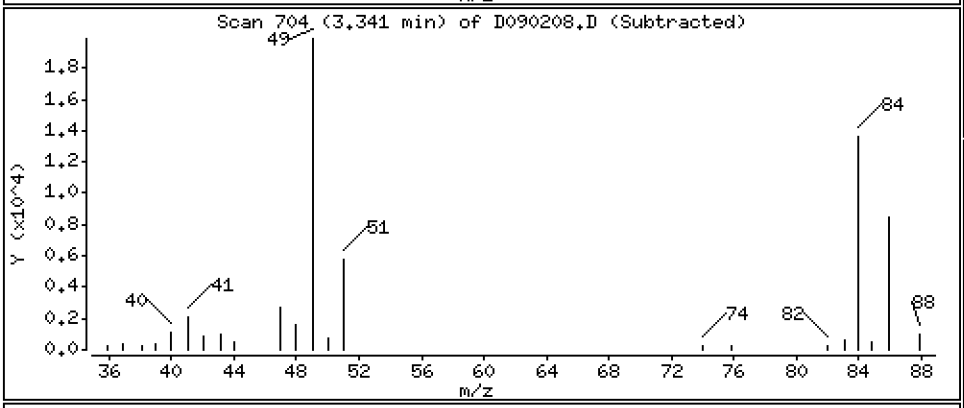
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

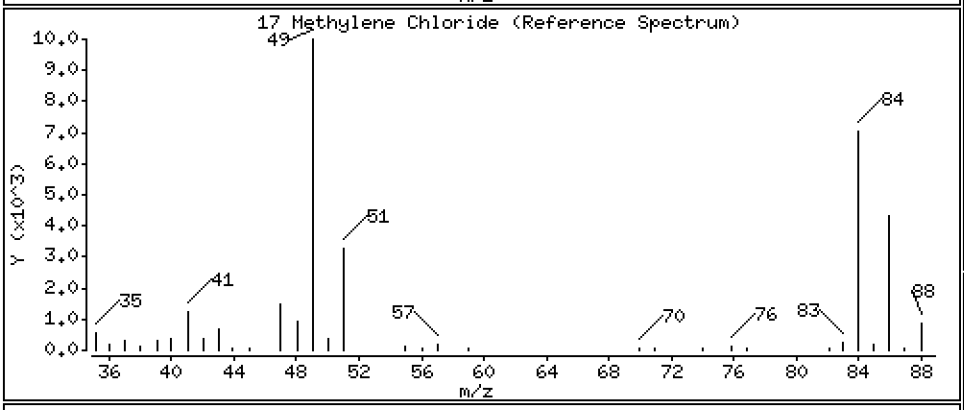
Purge Volume: 5.0 Operator: AP

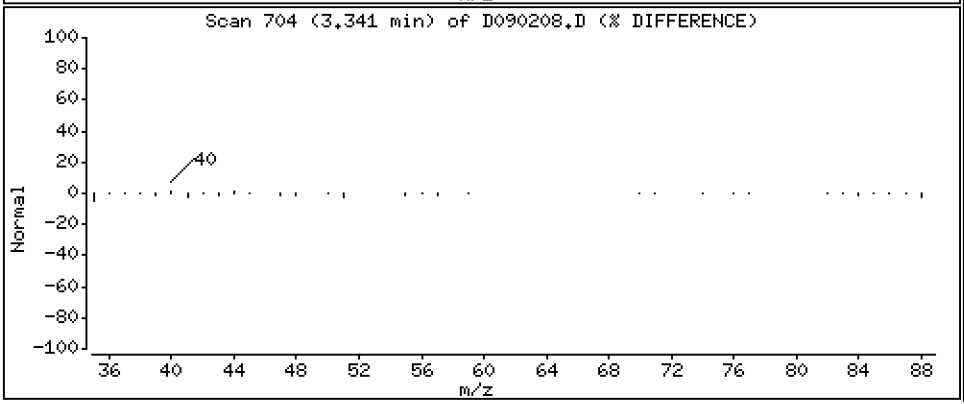
Column phase: DB624 Column diameter: 0.18

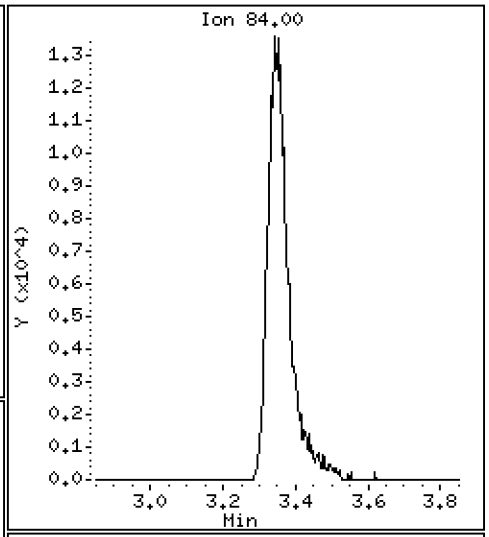
17 Methylene Chloride Concentration: 16.17 ug/l Review Code:

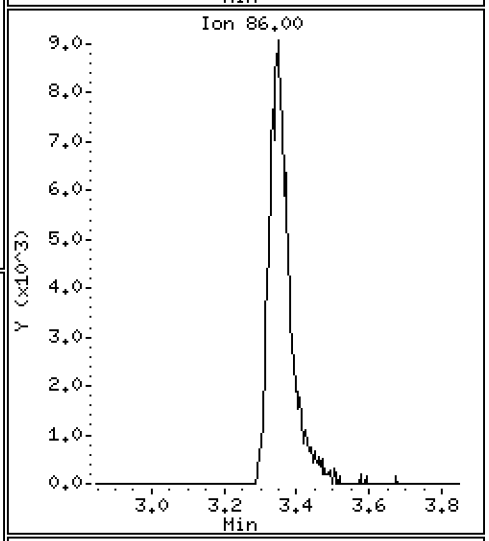


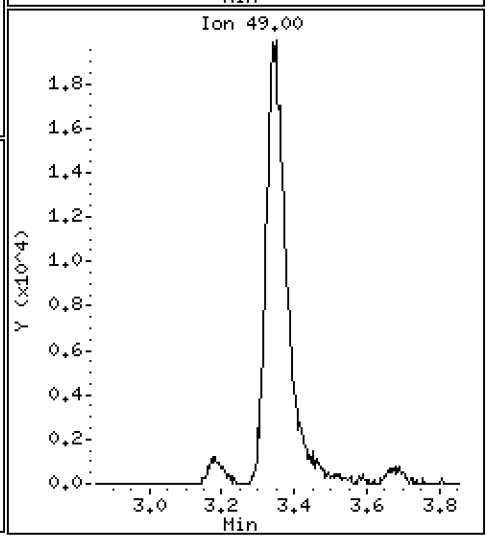












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 20

Date : 02-SEP-2018 16:18

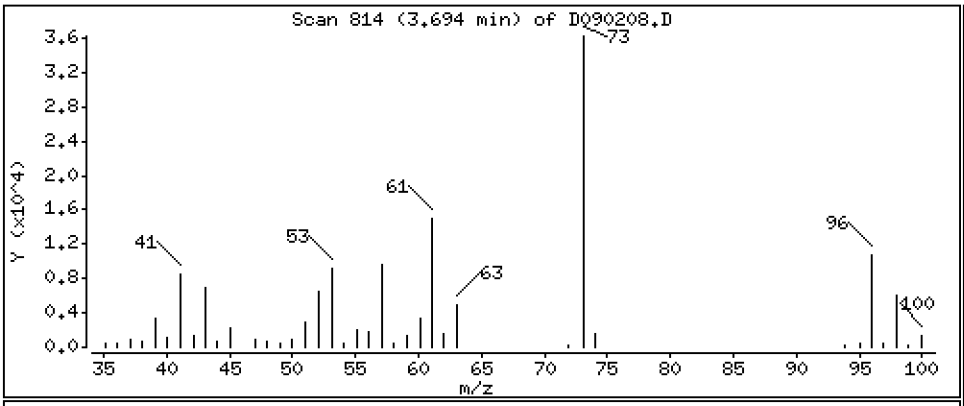
Client ID: HS18081428-01MS Instrument: VOA2.i

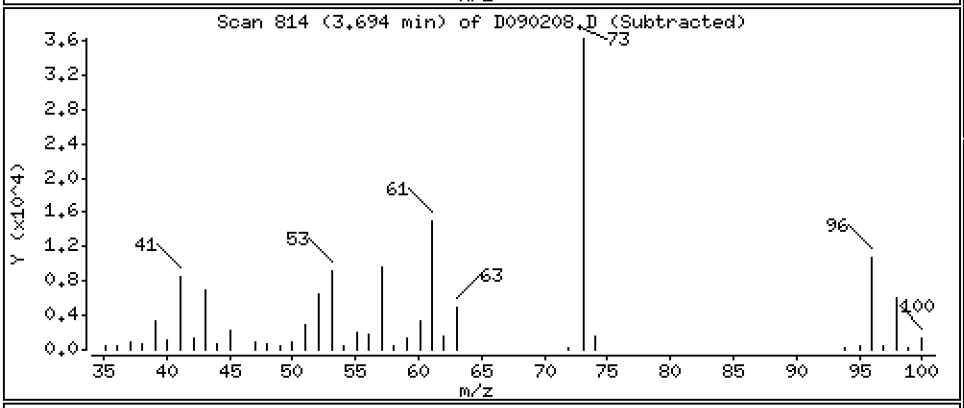
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

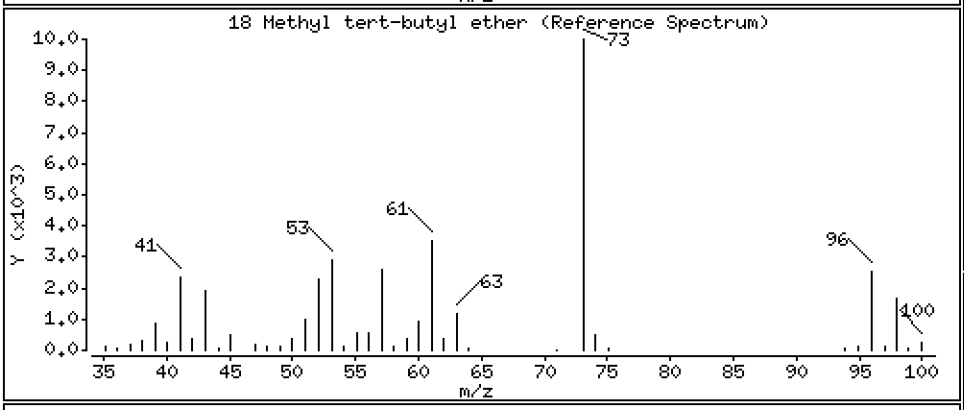
Purge Volume: 5.0 Operator: AP

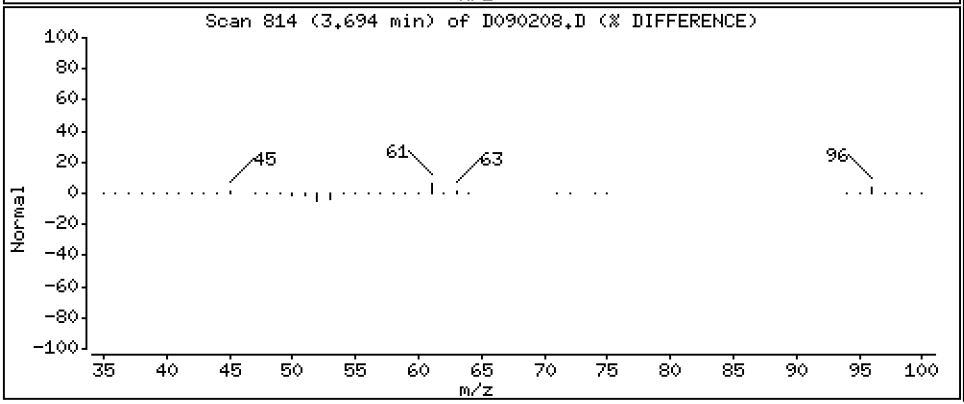
Column phase: DB624 Column diameter: 0.18

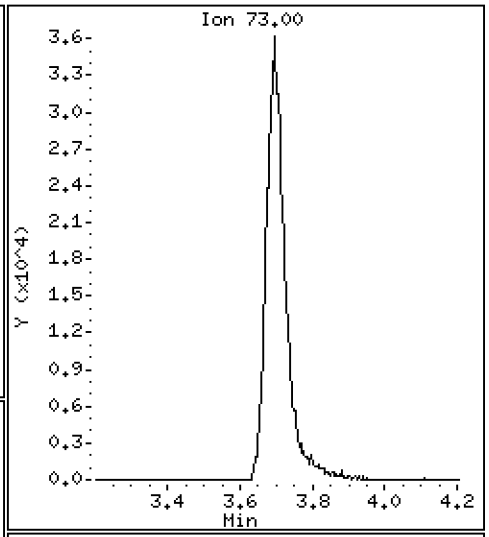
18 Methyl tert-butyl ether Concentration: 15.24 ug/l Review Code:

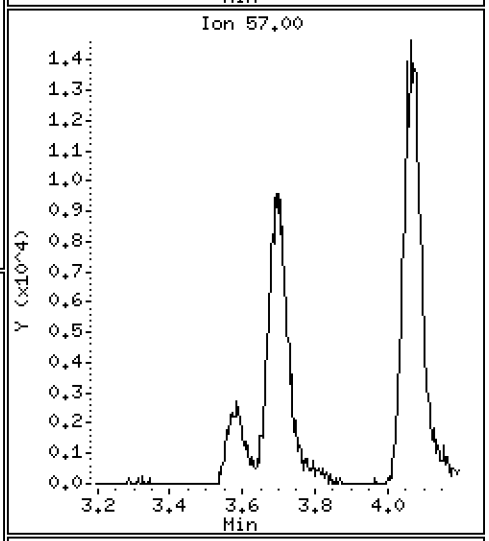


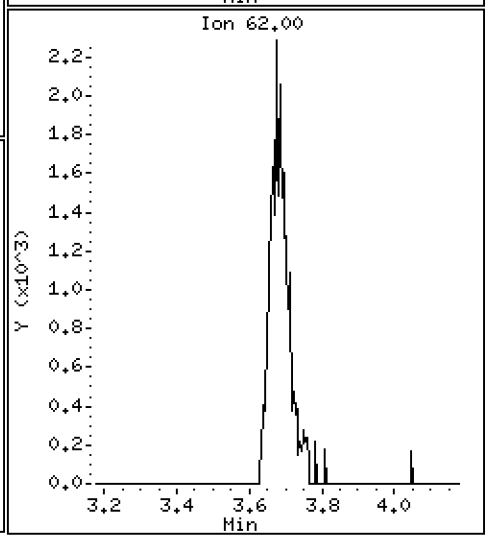












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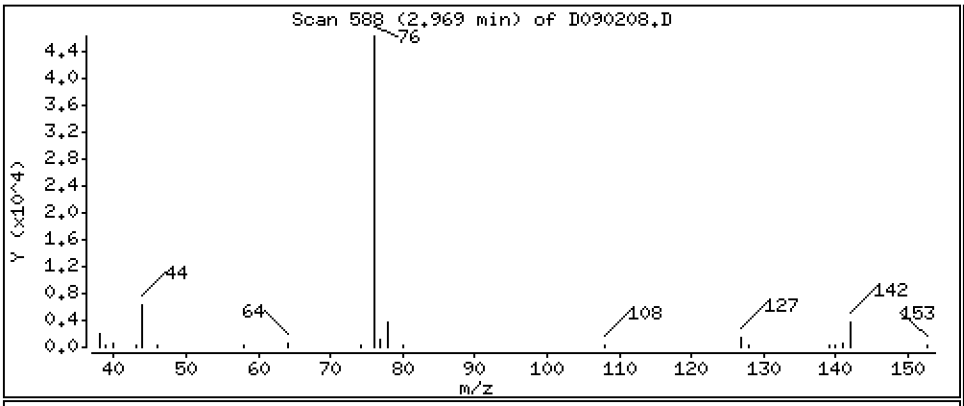
Client ID: HS18081428-01MS Instrument: VOA2.i

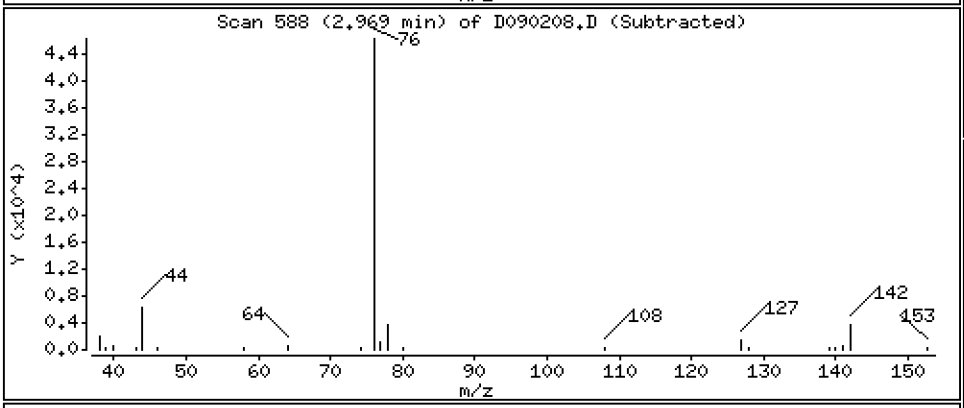
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

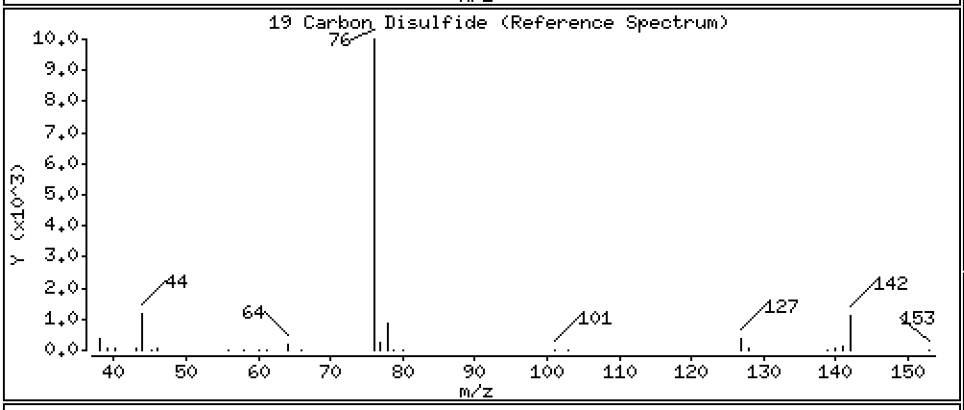
Purge Volume: 5.0 Operator: AP

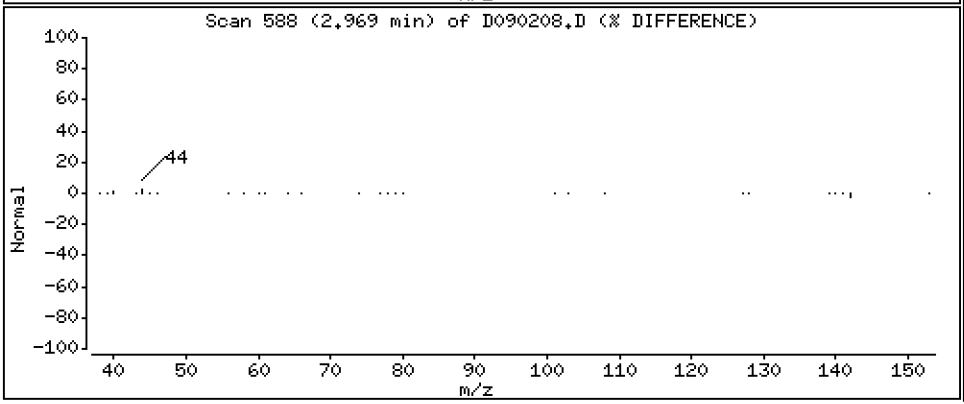
Column phase: DB624 Column diameter: 0.18

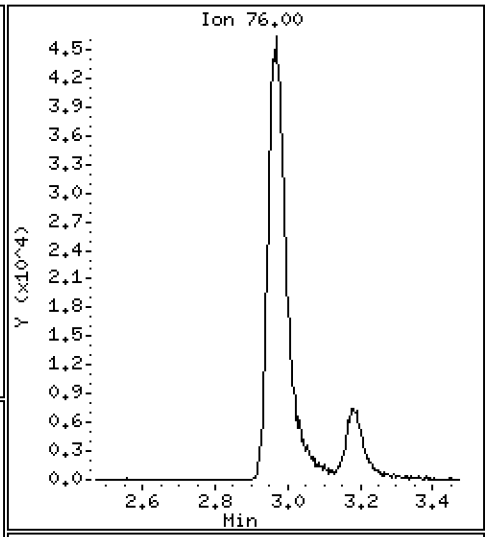
19 Carbon Disulfide Concentration: 32.66 ug/l Review Code:

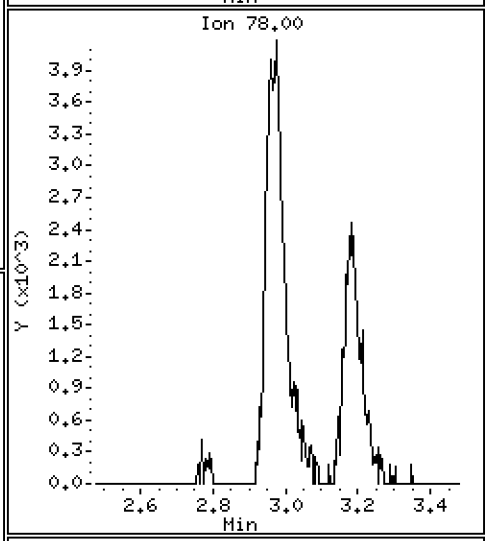


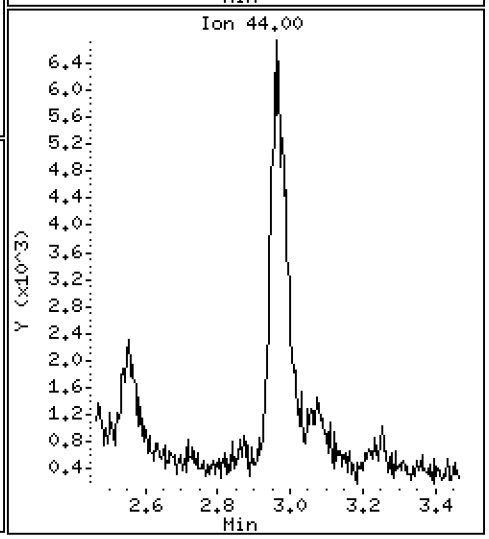












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 22

Date : 02-SEP-2018 16:18

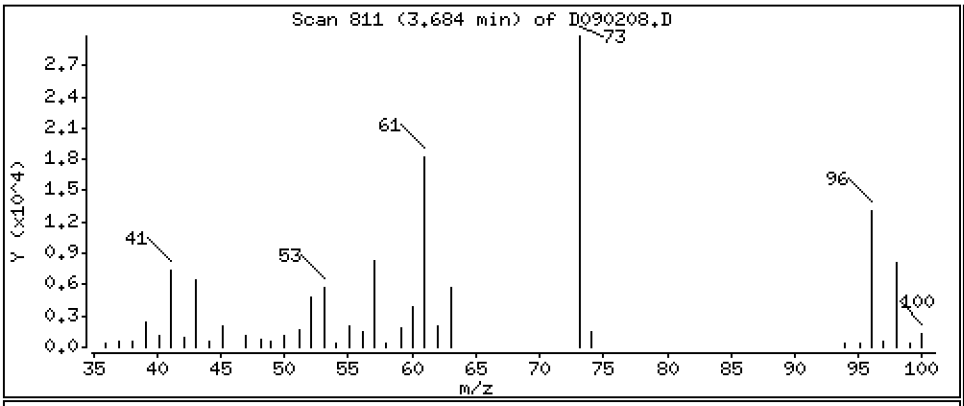
Client ID: HS18081428-01MS Instrument: VOA2.i

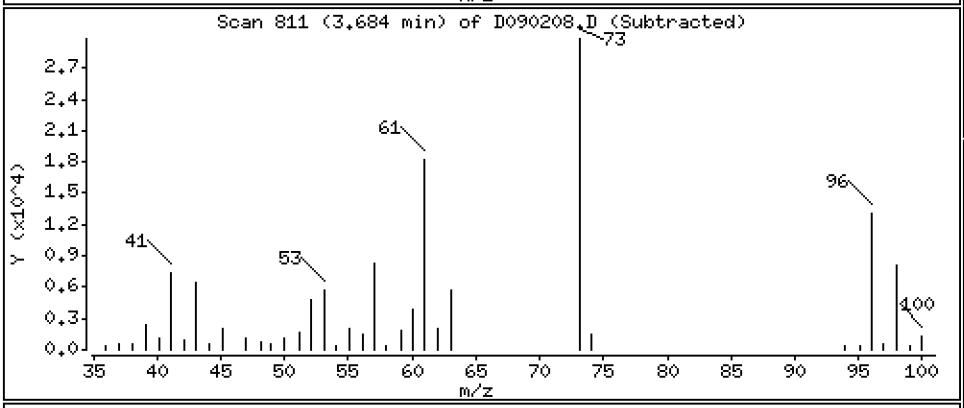
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

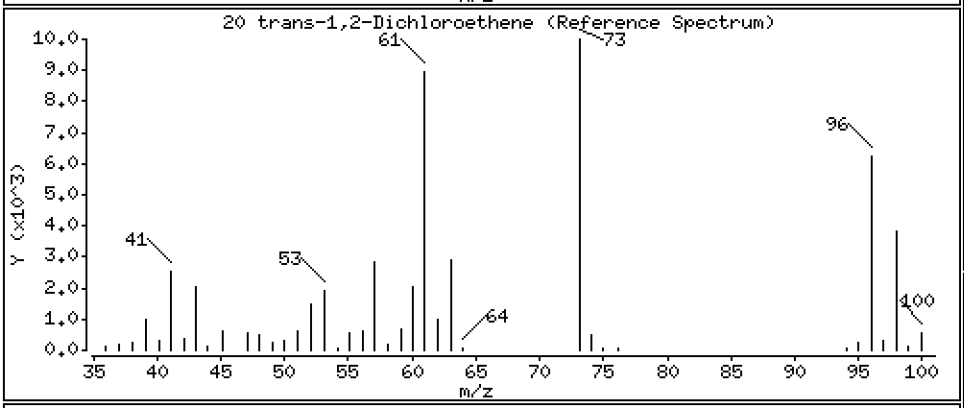
Purge Volume: 5.0 Operator: AP

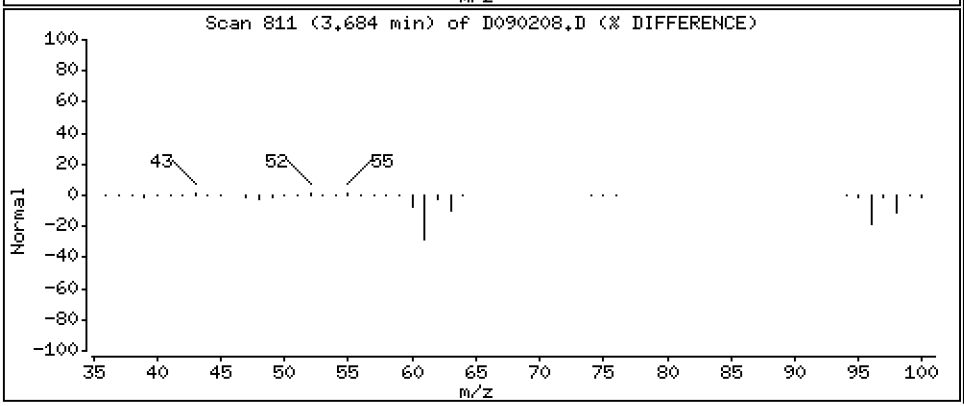
Column phase: DB624 Column diameter: 0.18

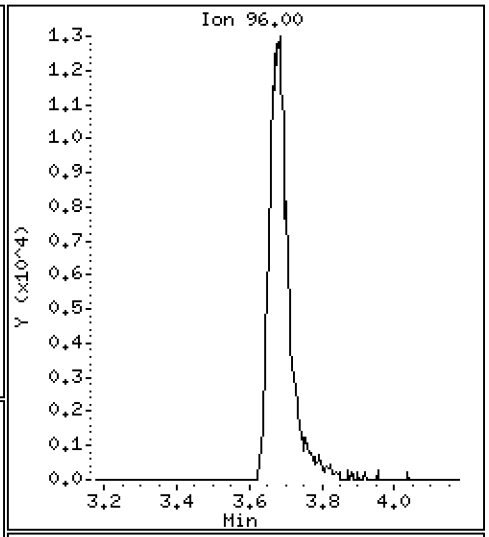
20 trans-1,2-Dichloroethene Concentration: 17.03 ug/l Review Code:

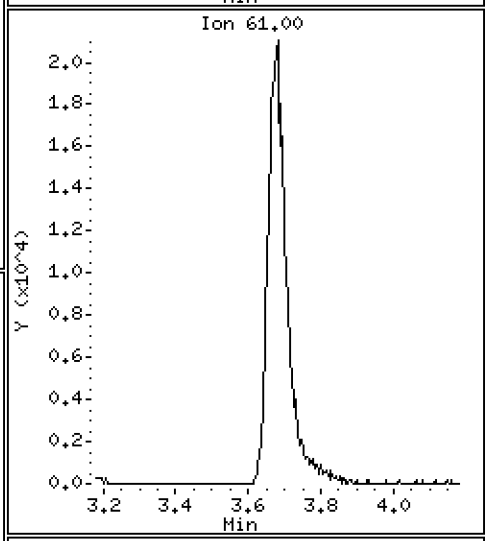


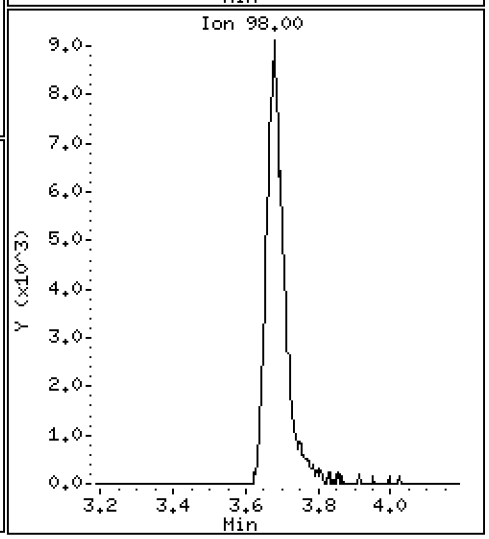












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Date : 02-SEP-2018 16:18

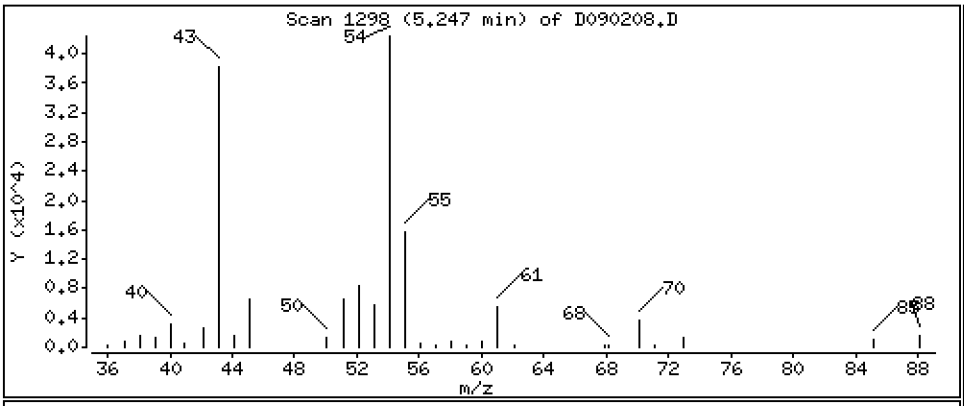
Client ID: HS18081428-01MS Instrument: VOA2.i

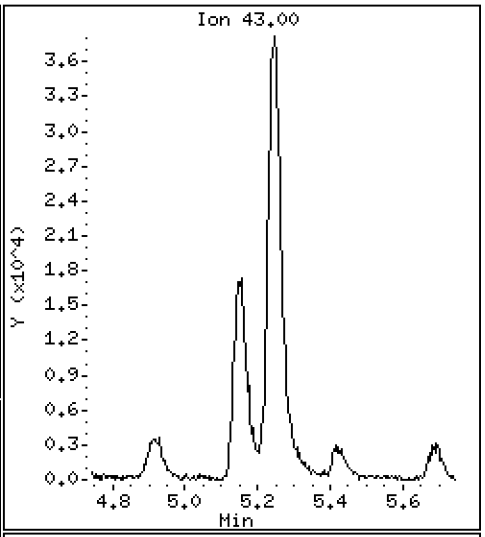
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

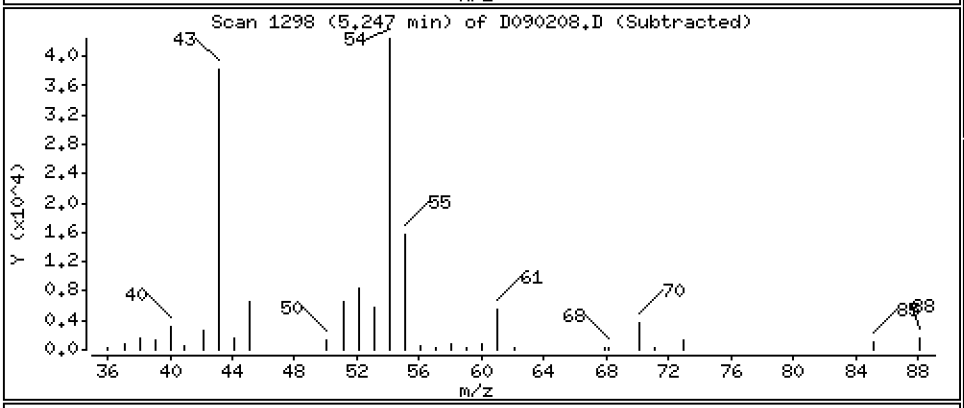
Purge Volume: 5.0 Operator: AP

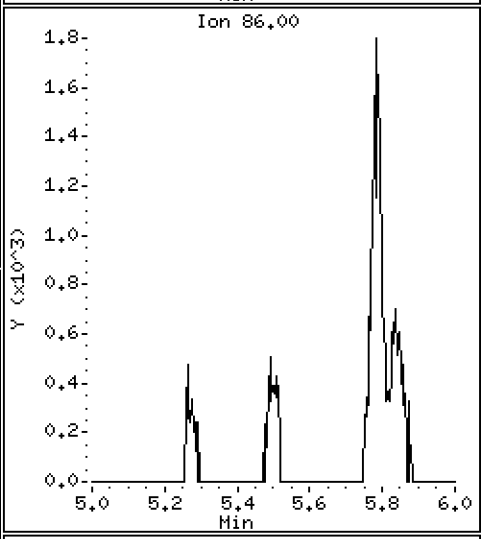
Column phase: DB624 Column diameter: 0.18

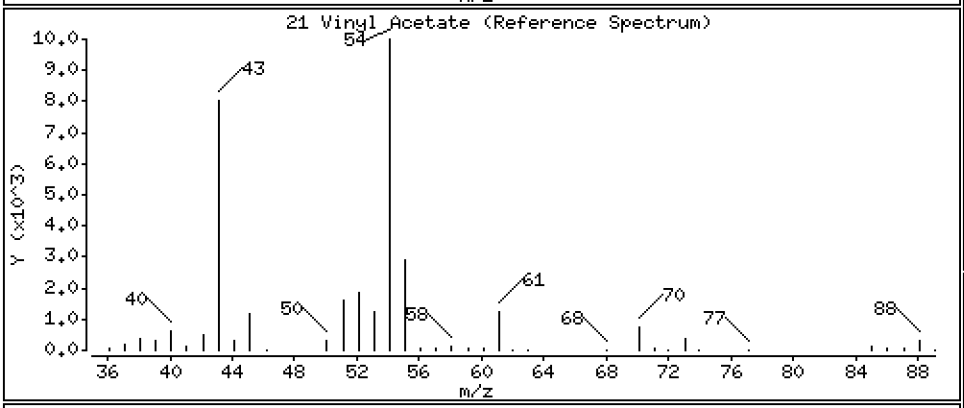
21 Vinyl Acetate Concentration: 28.57 ug/l Review Code:

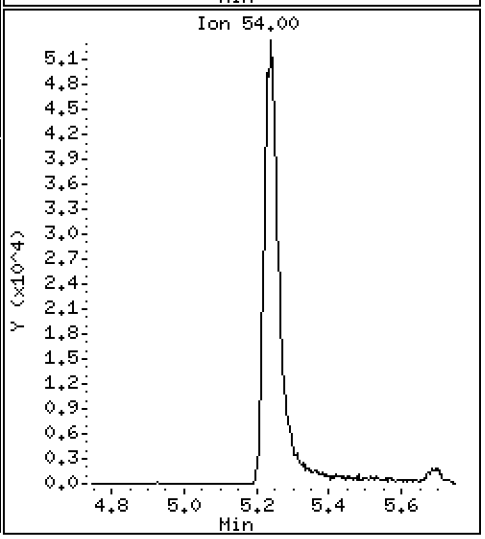


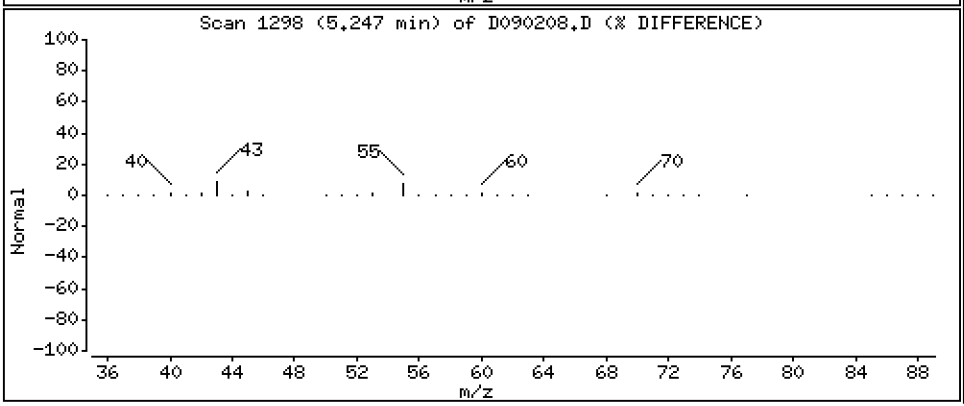












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Date : 02-SEP-2018 16:18

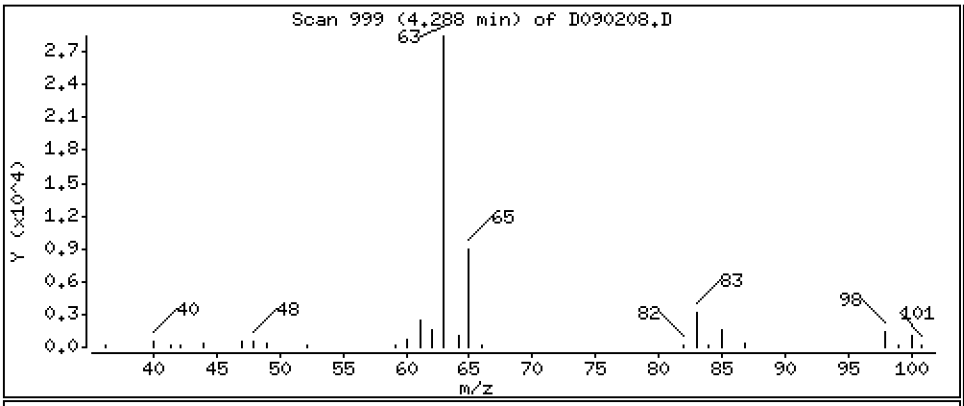
Client ID: HS18081428-01MS Instrument: VOA2.i

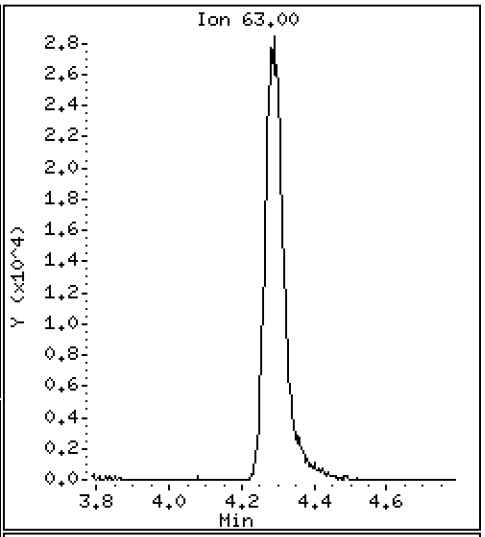
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

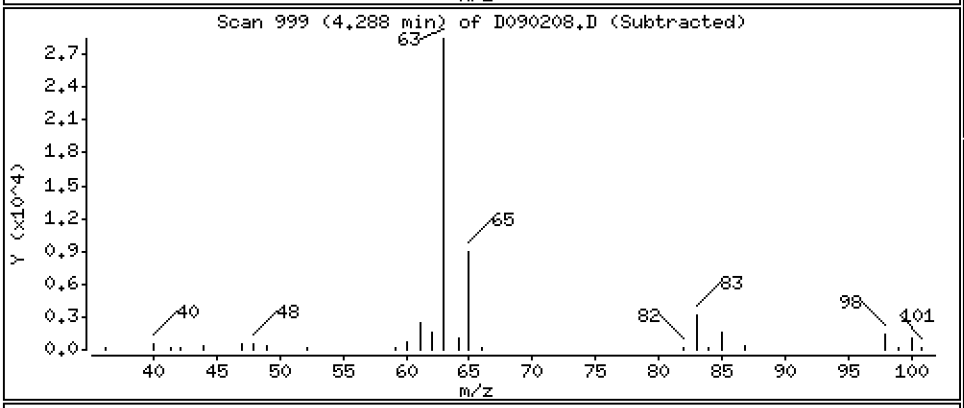
Purge Volume: 5.0 Operator: AP

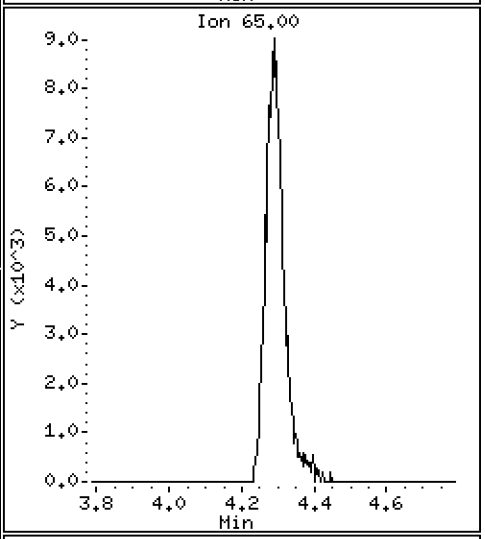
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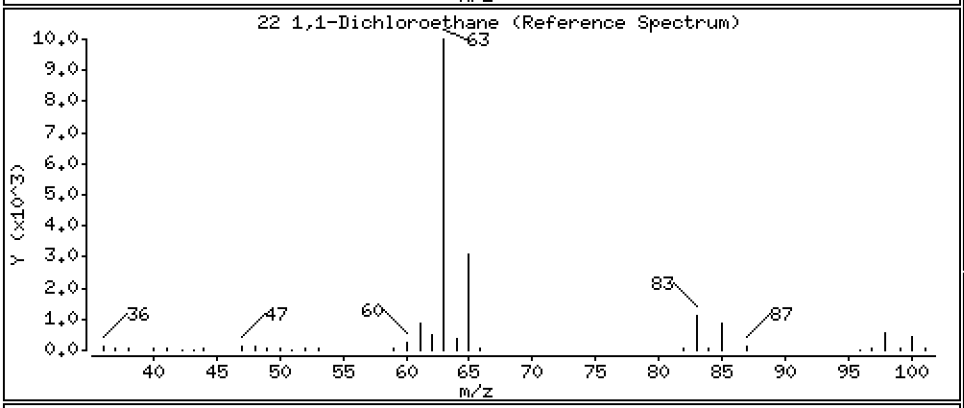
22 1,1-Dichloroethane Concentration: 16.20 ug/l Review Code:

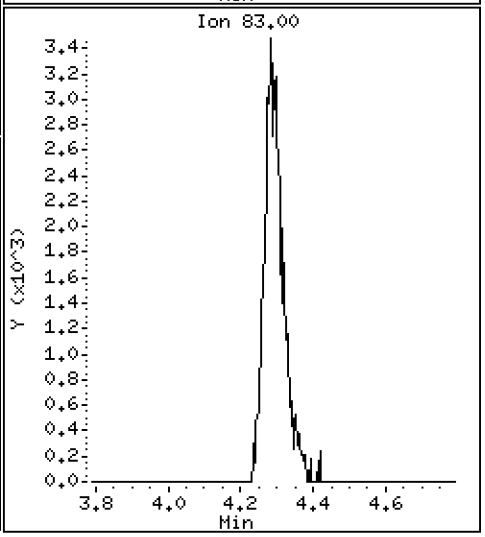


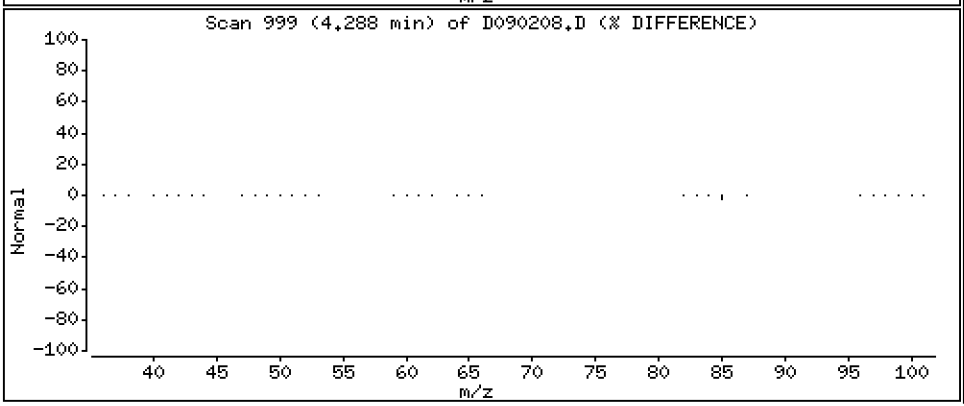












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Date : 02-SEP-2018 16:18

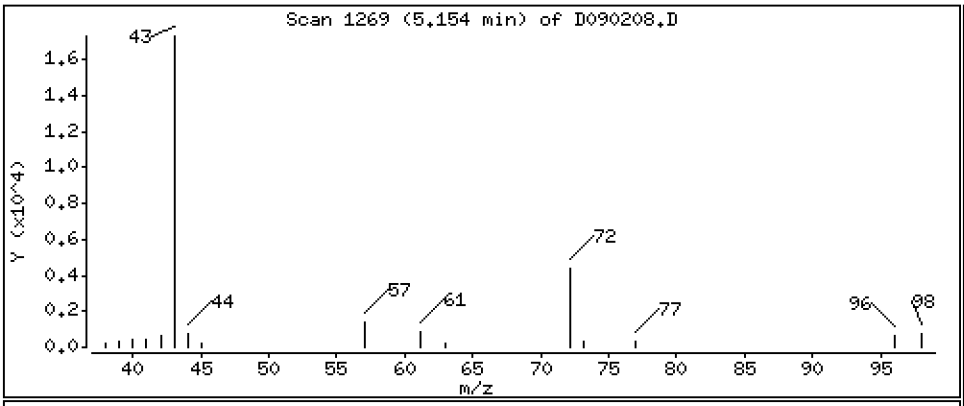
Client ID: HS18081428-01MS Instrument: VOA2.i

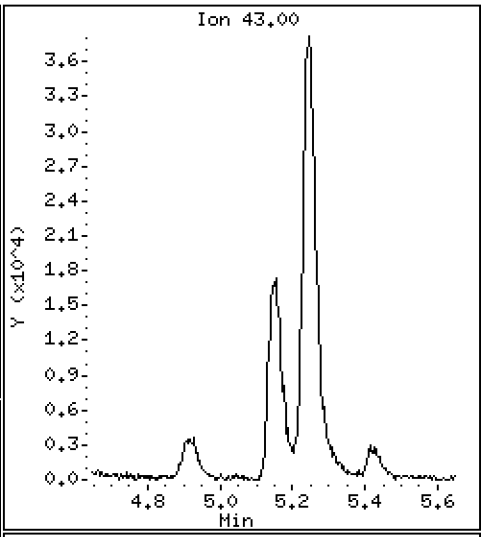
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

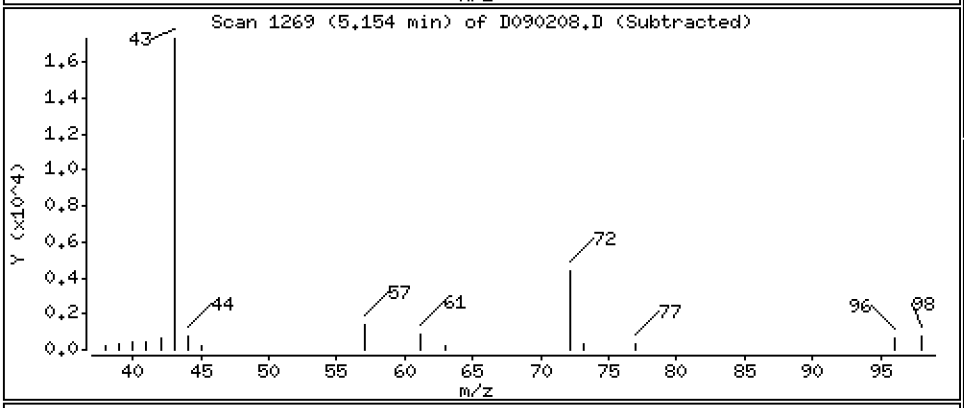
Purge Volume: 5.0 Operator: AP

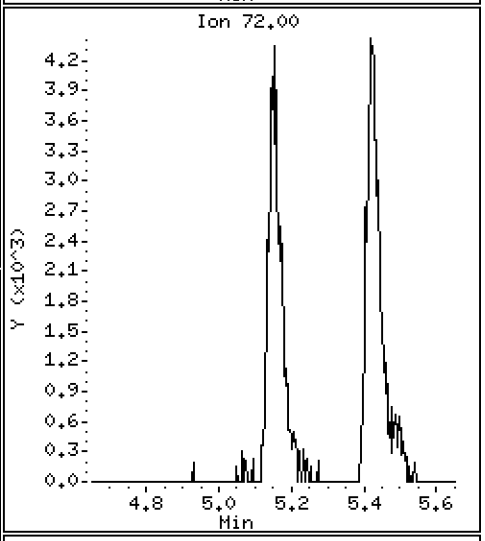
Column phase: DB624 Column diameter: 0.18

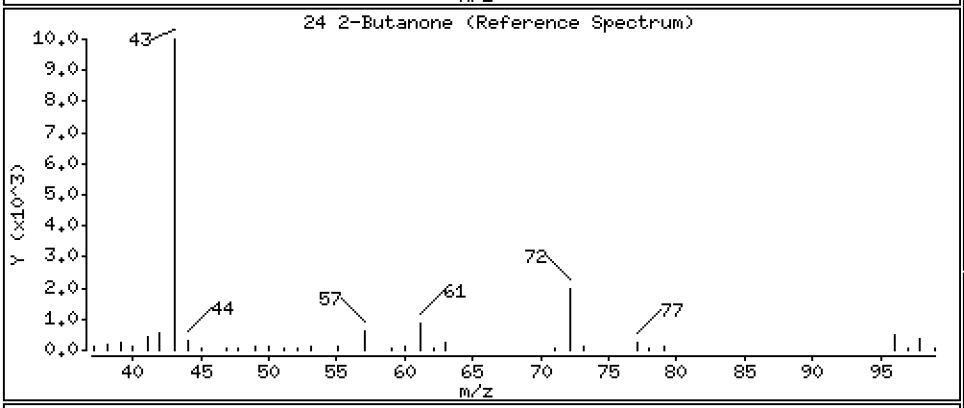
24 2-Butanone Concentration: 29.52 ug/l Review Code:

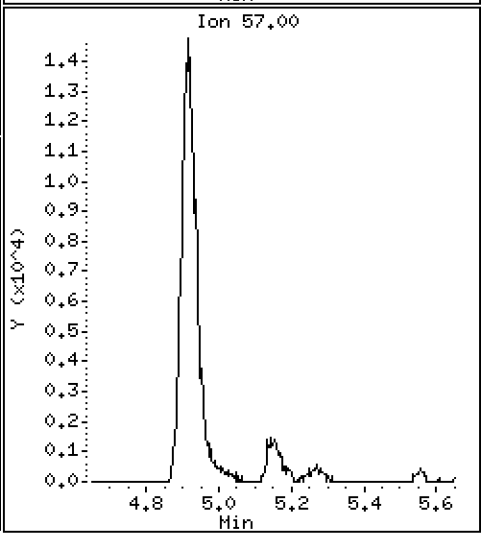


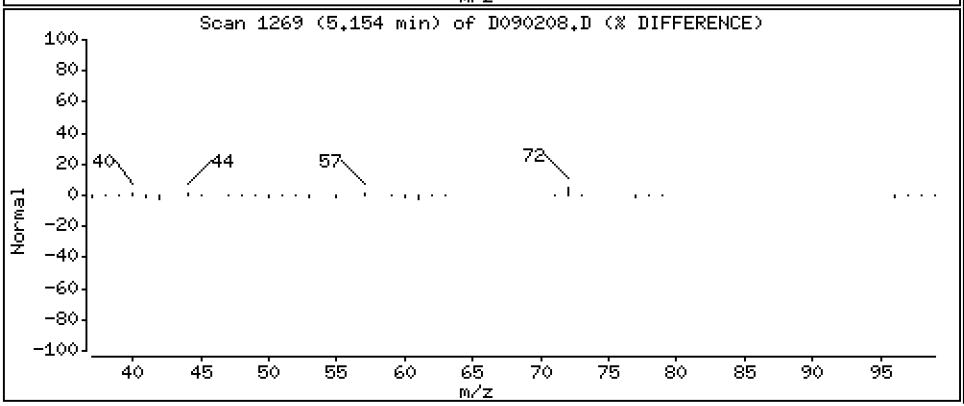












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 26

Date : 02-SEP-2018 16:18

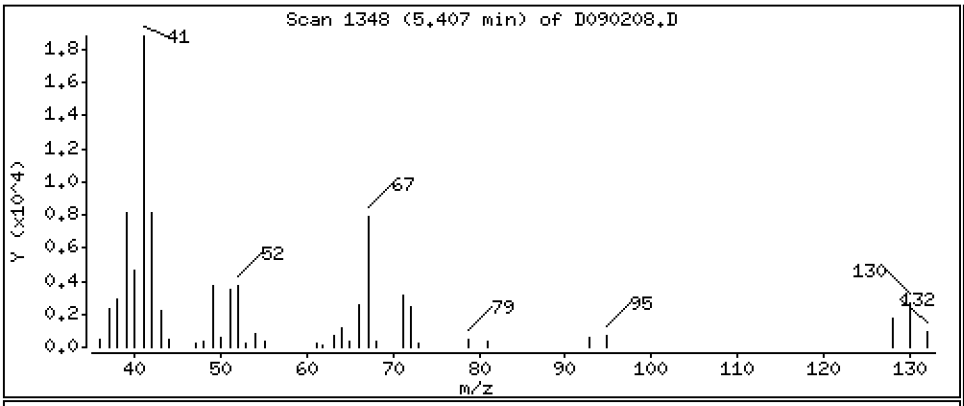
Client ID: HS18081428-01MS Instrument: VOA2.i

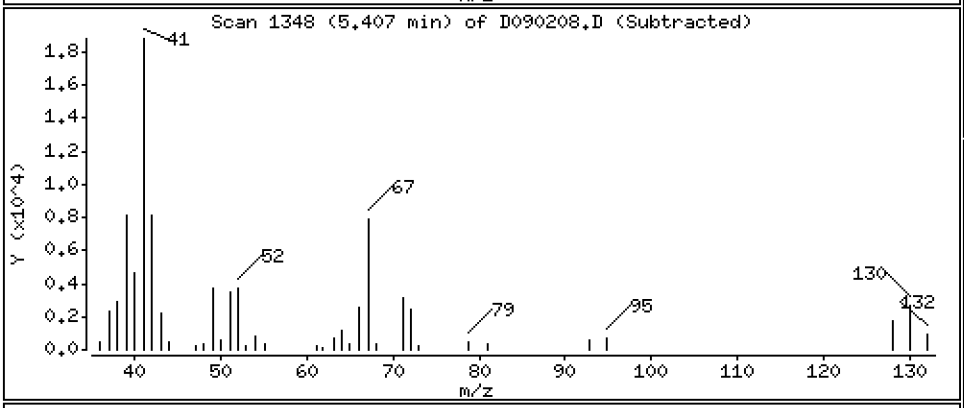
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

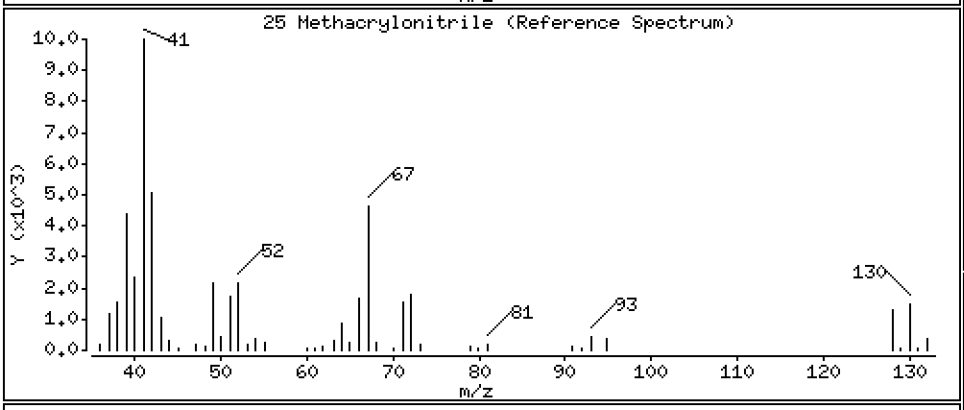
Purge Volume: 5.0 Operator: AP

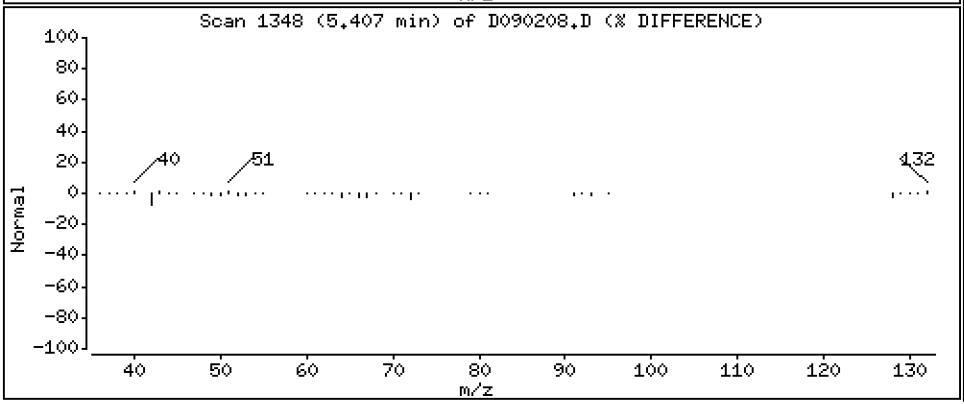
Column phase: DB624 Column diameter: 0.18

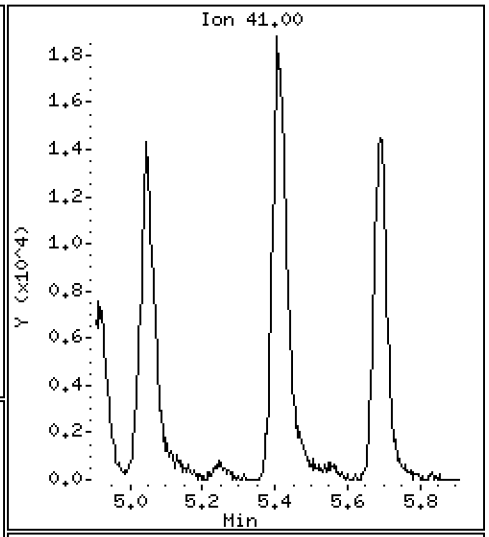
25 Methacrylonitrile Concentration: 15.58 ug/l Review Code:

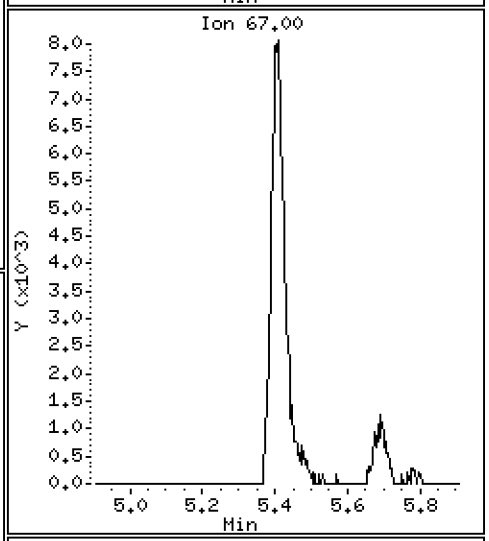


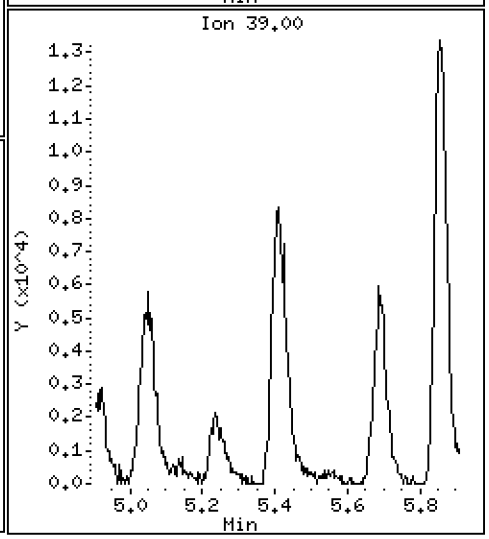












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 27

Date : 02-SEP-2018 16:18

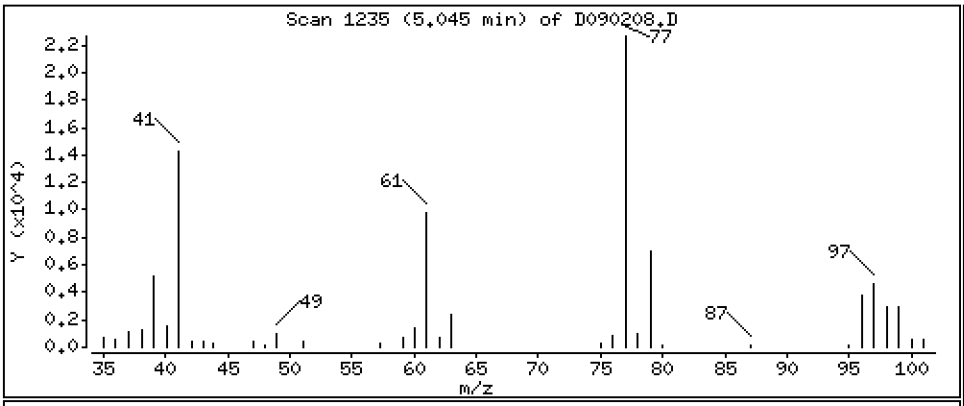
Client ID: HS18081428-01MS Instrument: VOA2.i

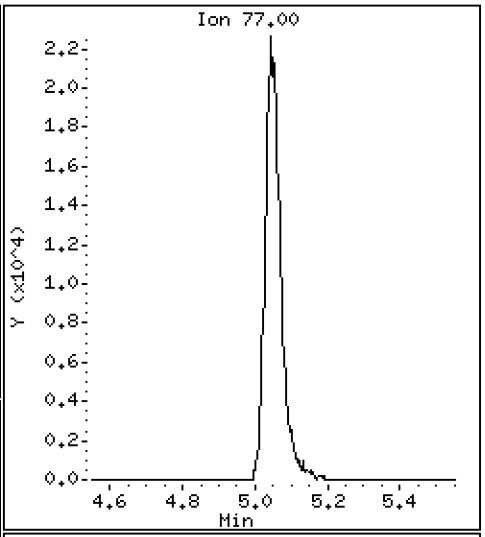
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

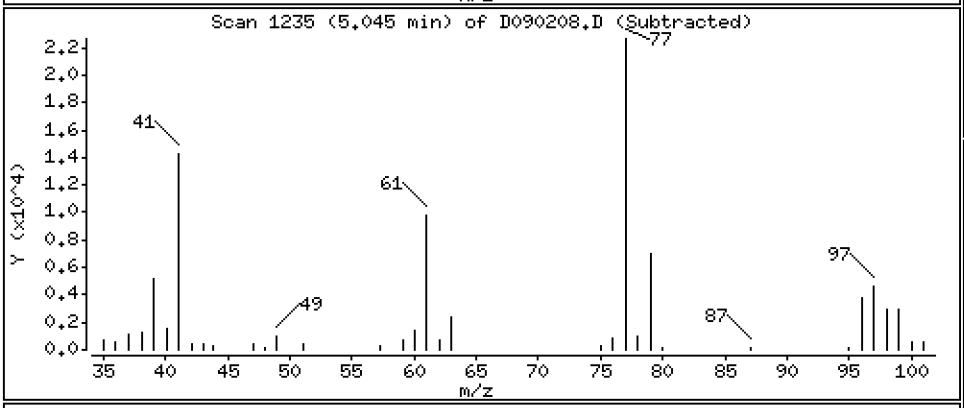
Purge Volume: 5.0 Operator: AP

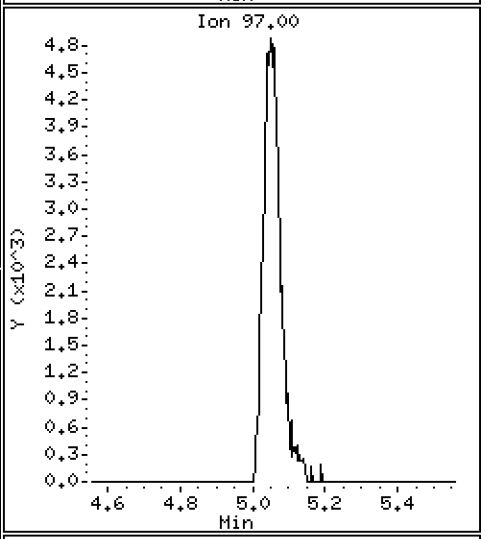
Column phase: DB624 Column diameter: 0.18

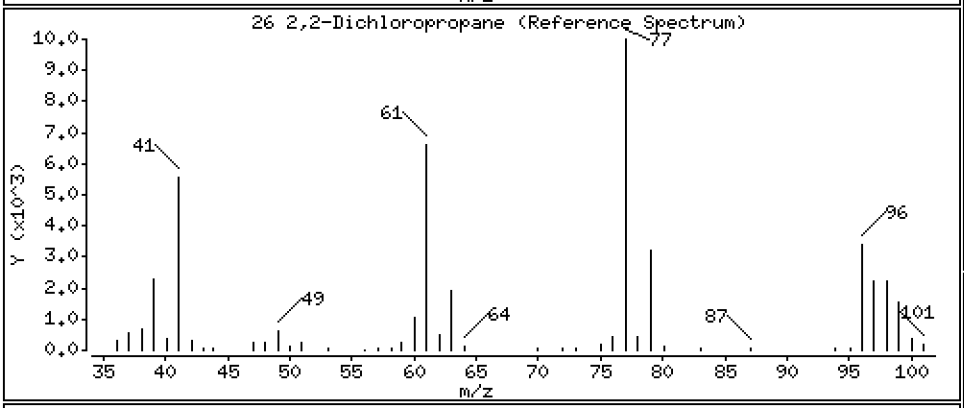
26 2,2-Dichloropropane Concentration: 19.26 ug/l Review Code:

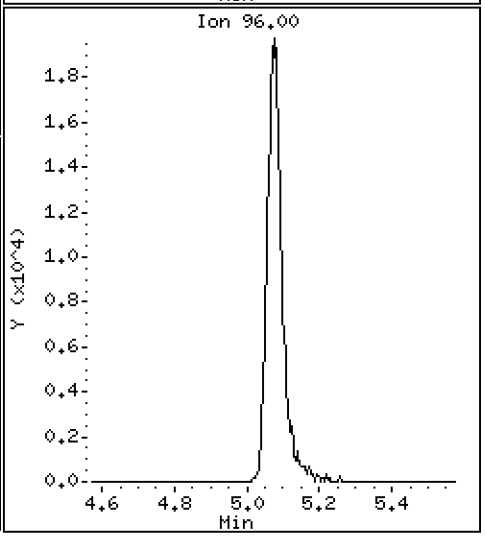


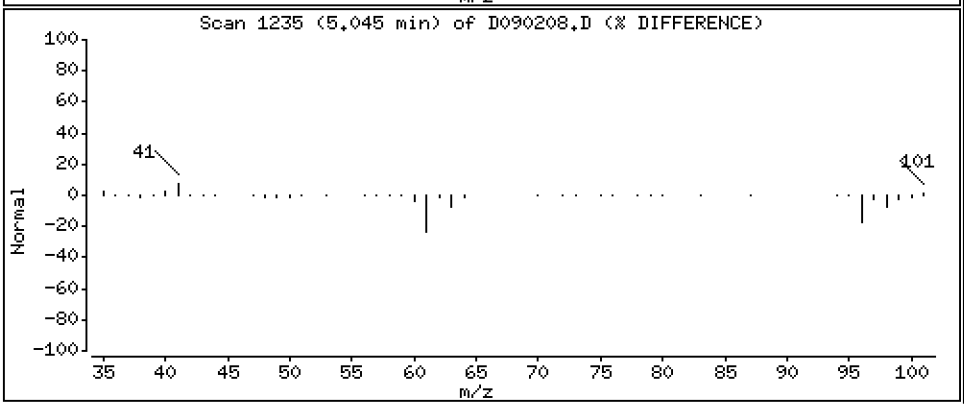












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 28

Date : 02-SEP-2018 16:18

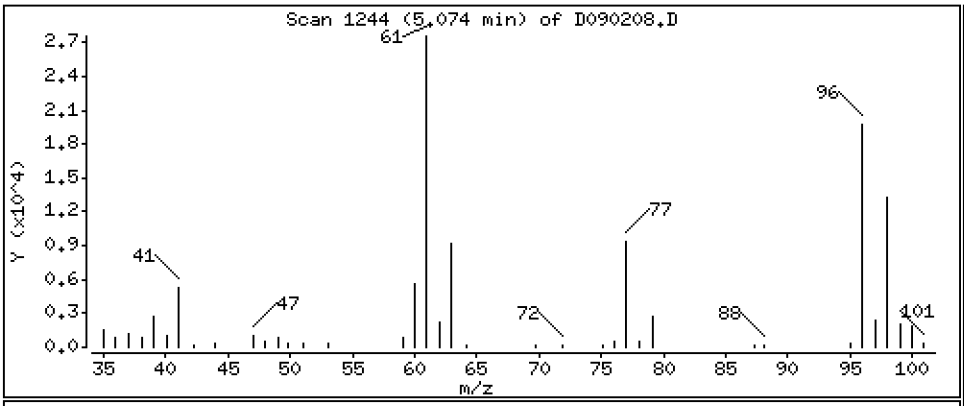
Client ID: HS18081428-01MS Instrument: VOA2.i

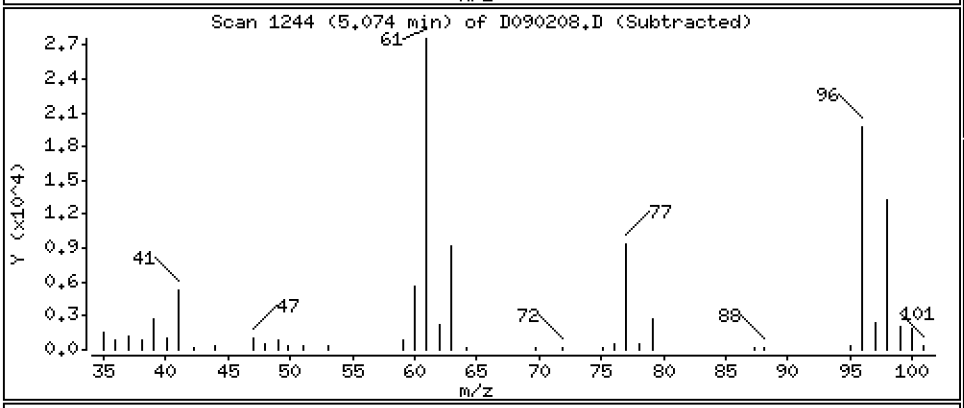
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

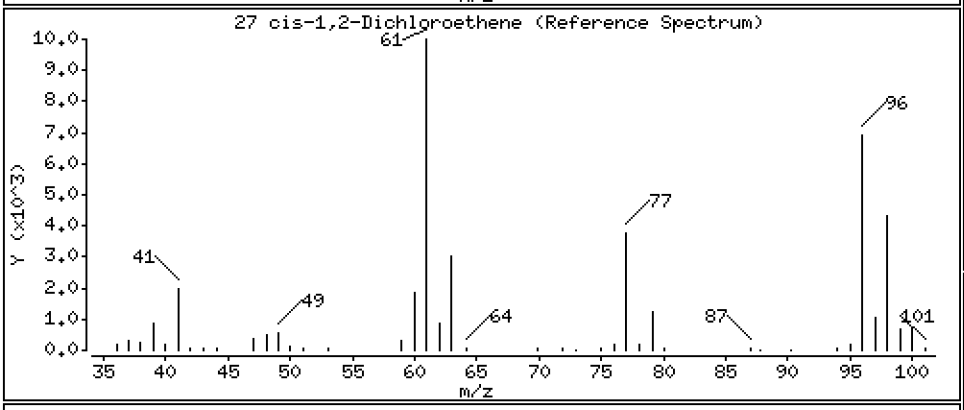
Purge Volume: 5.0 Operator: AP

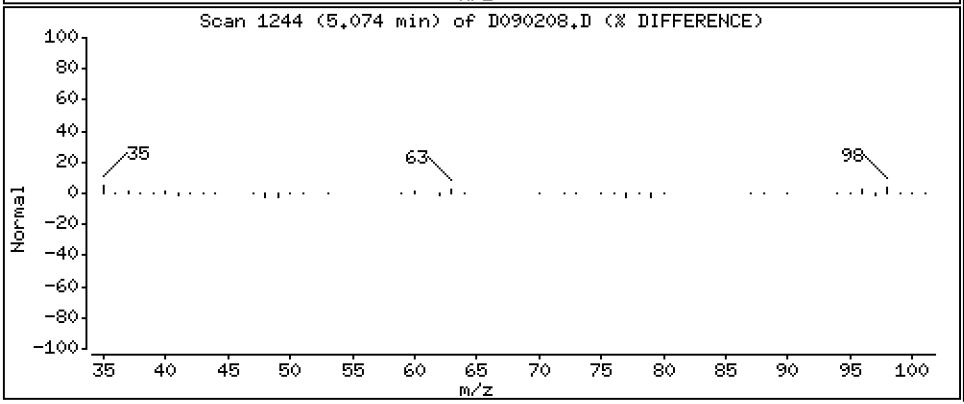
Column phase: DB624 Column diameter: 0.18

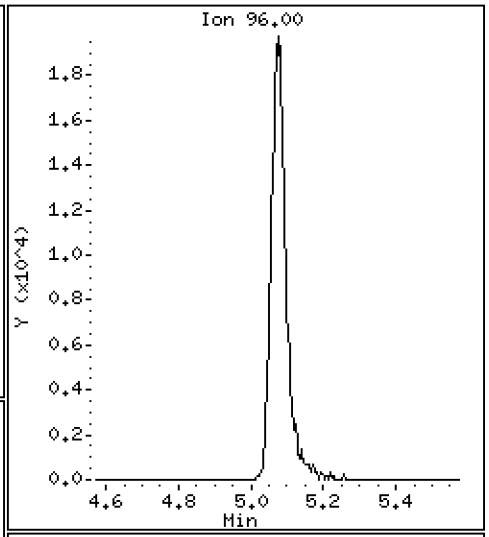
27 cis-1,2-Dichloroethene Concentration: 16.74 ug/l Review Code:

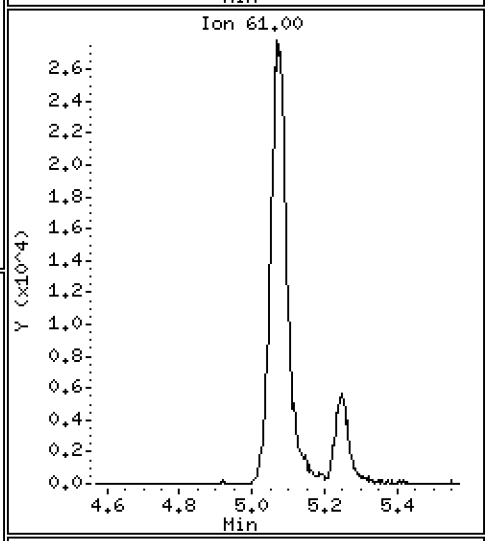


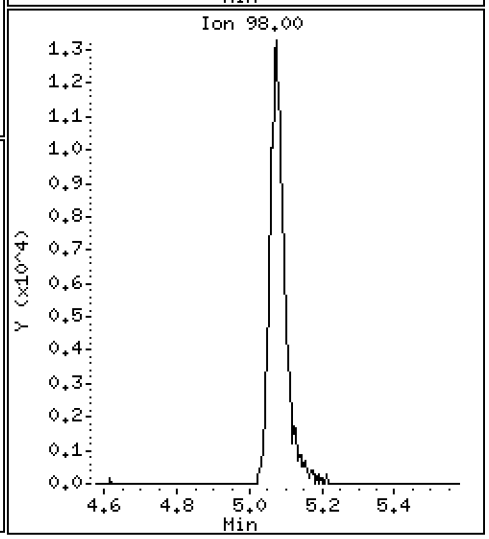












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 29

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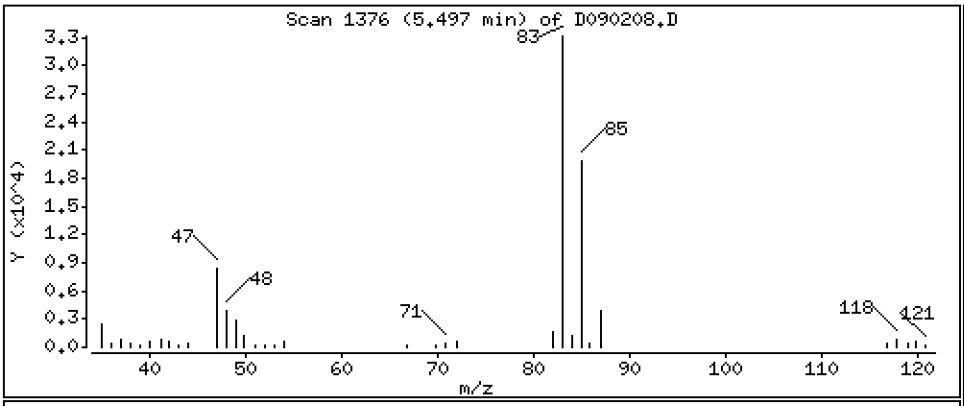
Client ID: HS18081428-01MS Instrument: VOA2.i

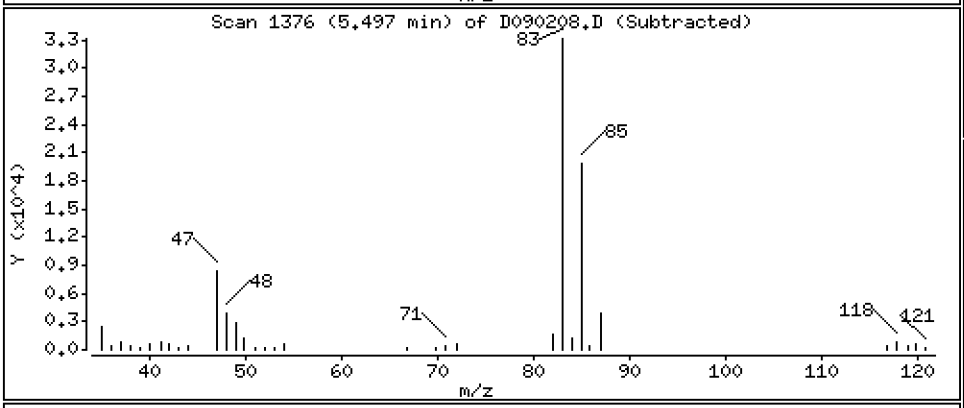
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

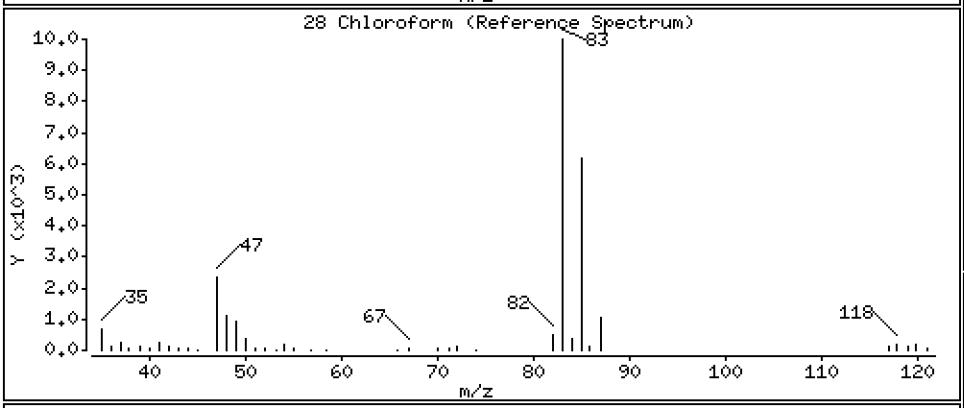
Purge Volume: 5.0 Operator: AP

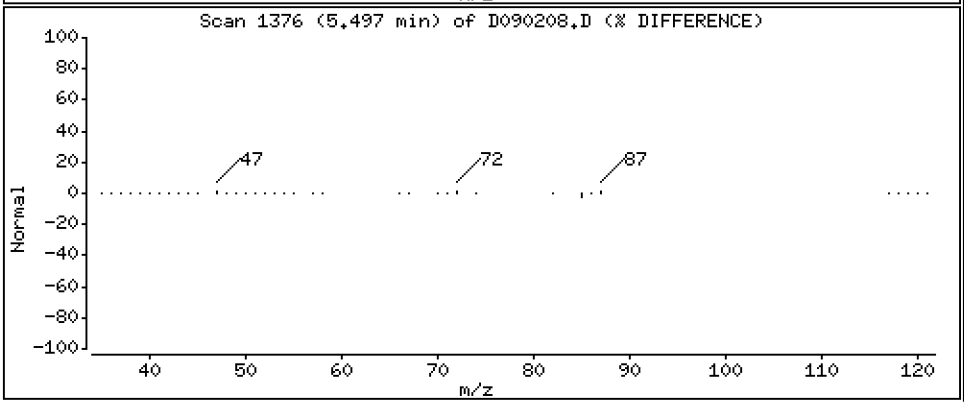
Column phase: DB624 Column diameter: 0.18

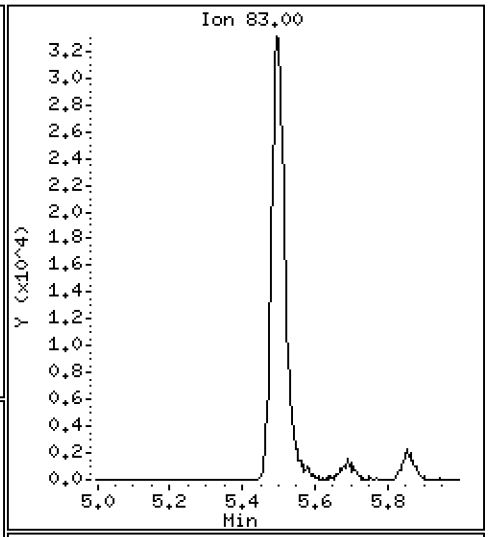
28 Chloroform Concentration: 16.43 ug/l Review Code:

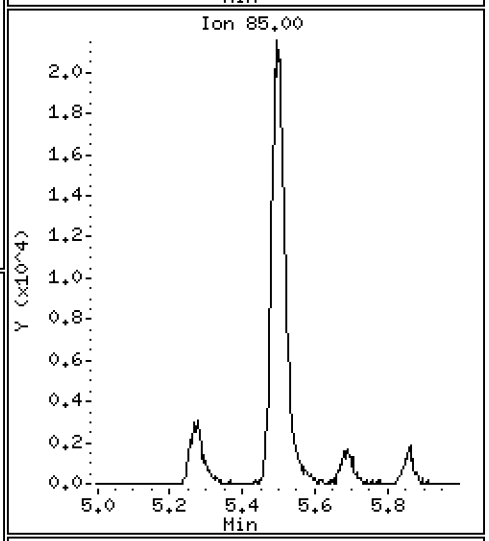


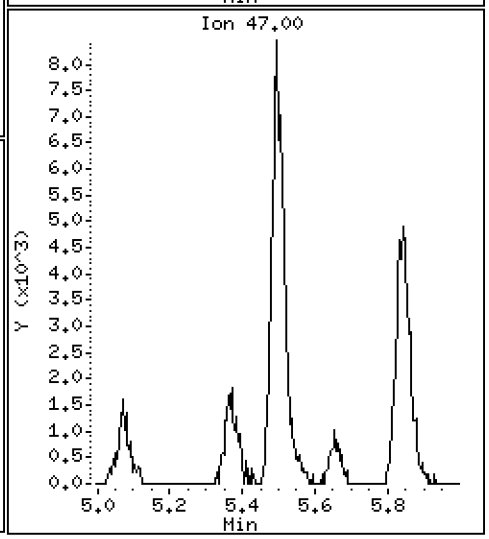












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Date : 02-SEP-2018 16:18

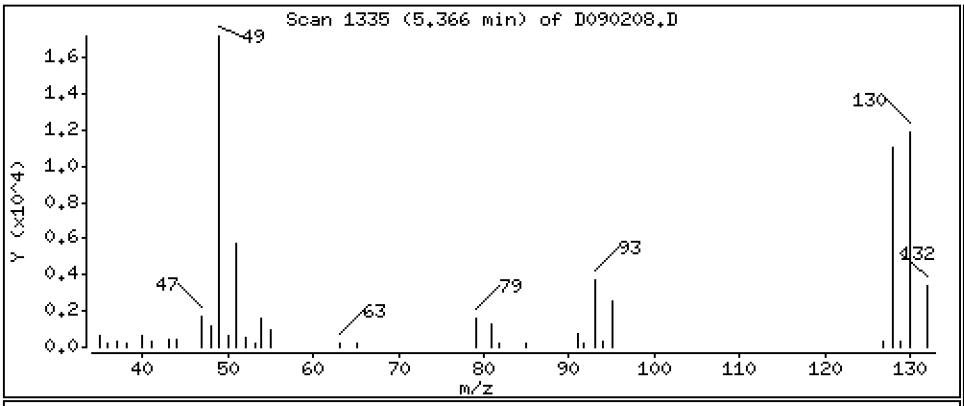
Client ID: HS18081428-01MS Instrument: VOA2.i

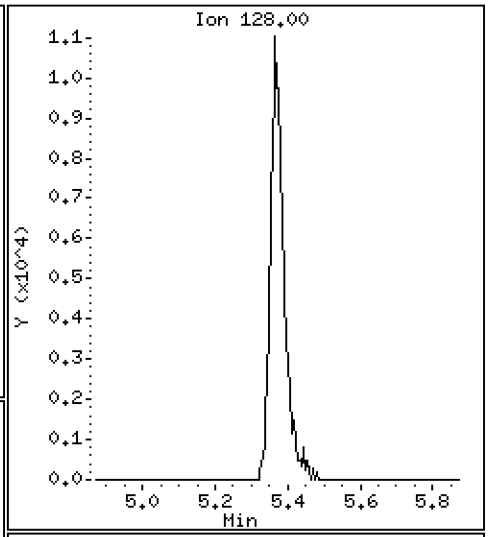
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

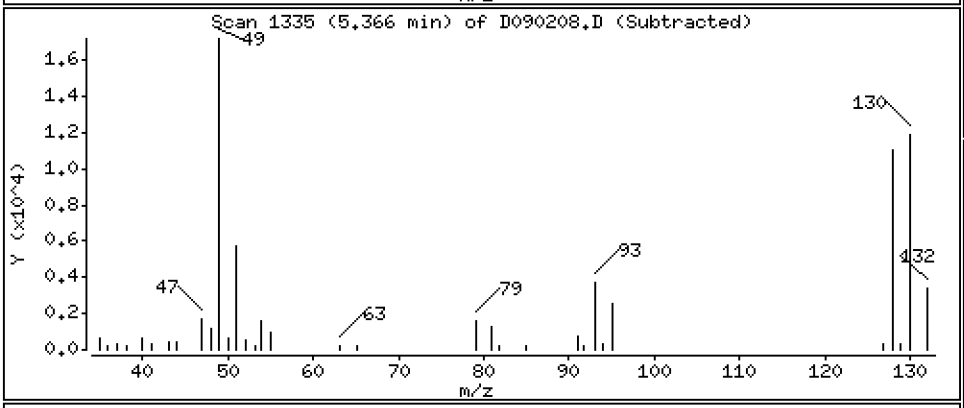
Purge Volume: 5.0 Operator: AP

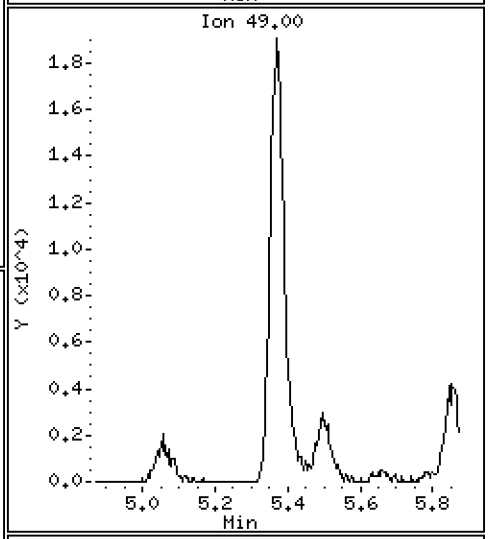
Column phase: DB624 Column diameter: 0.18

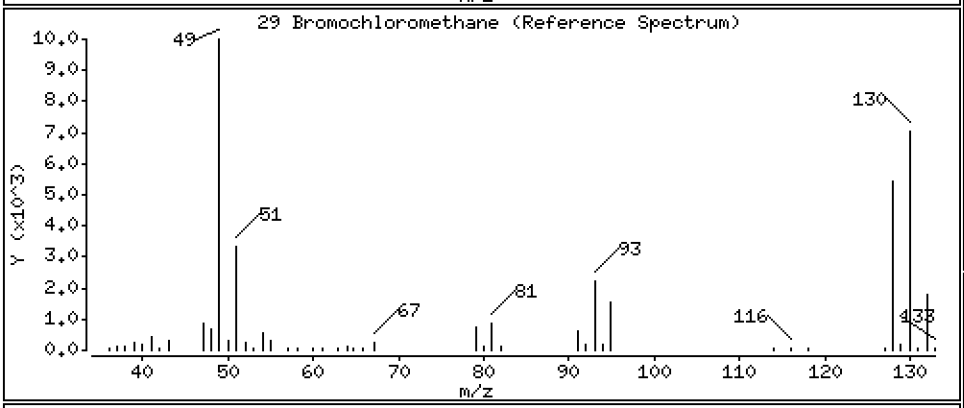
29 Bromochloromethane Concentration: 17.76 ug/l Review Code:

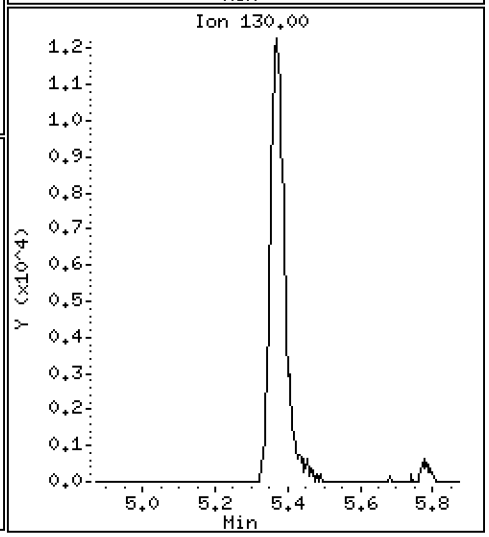


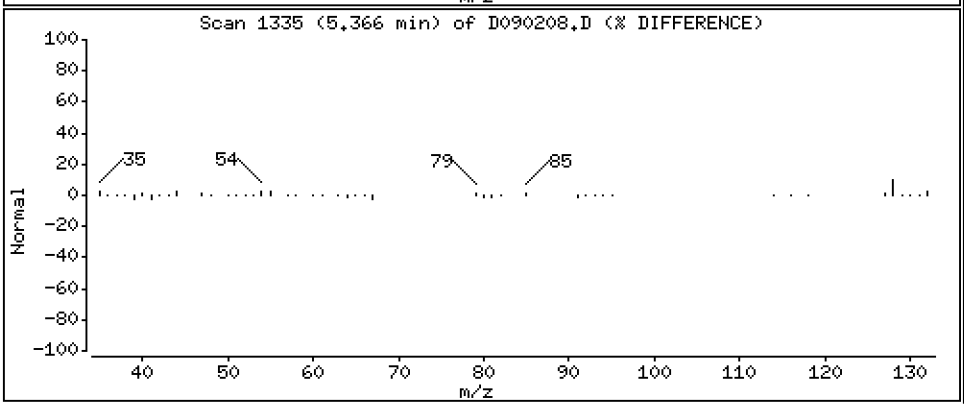












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Date : 02-SEP-2018 16:18

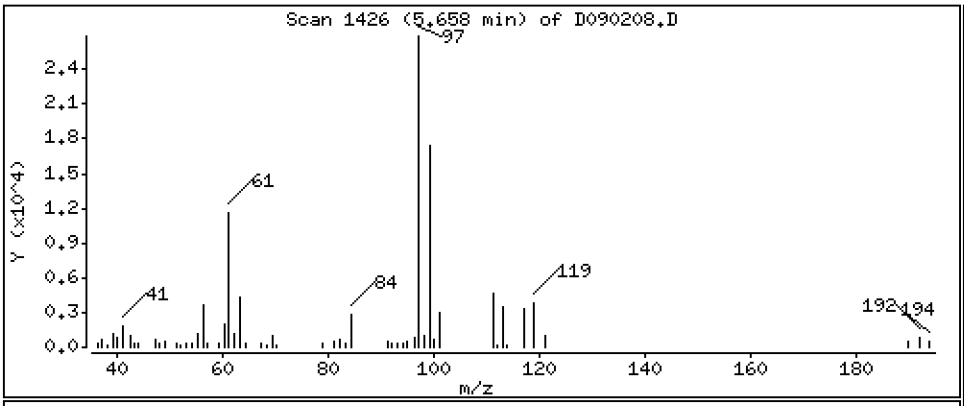
Client ID: HS18081428-01MS Instrument: VOA2.i

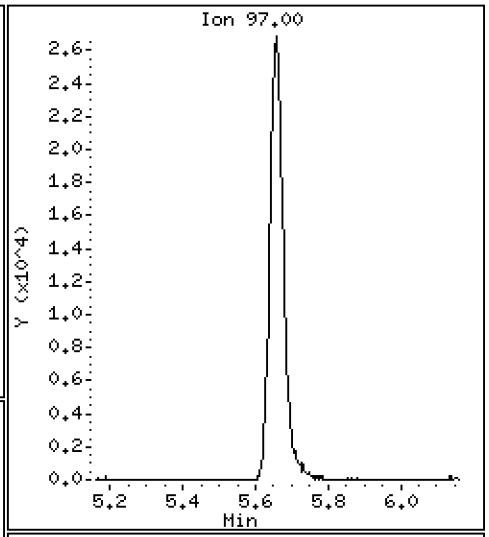
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

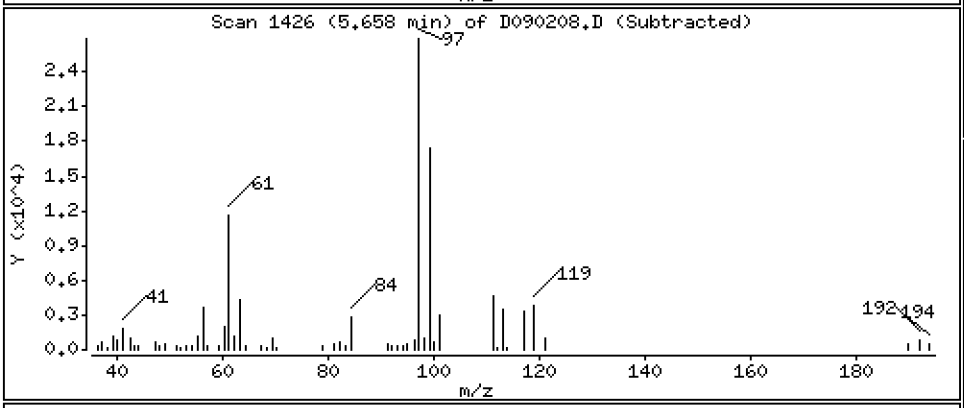
Purge Volume: 5.0 Operator: AP

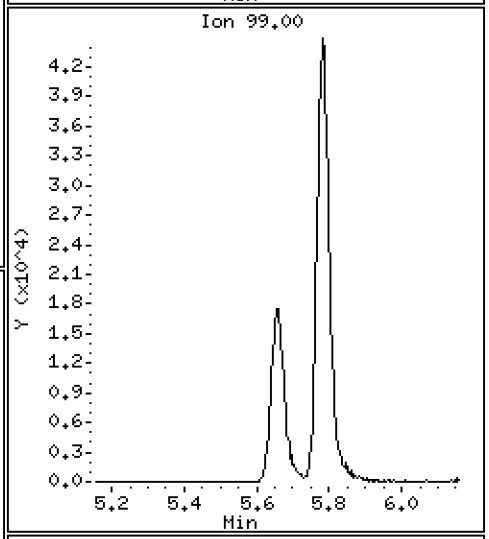
Column phase: DB624 Column diameter: 0.18

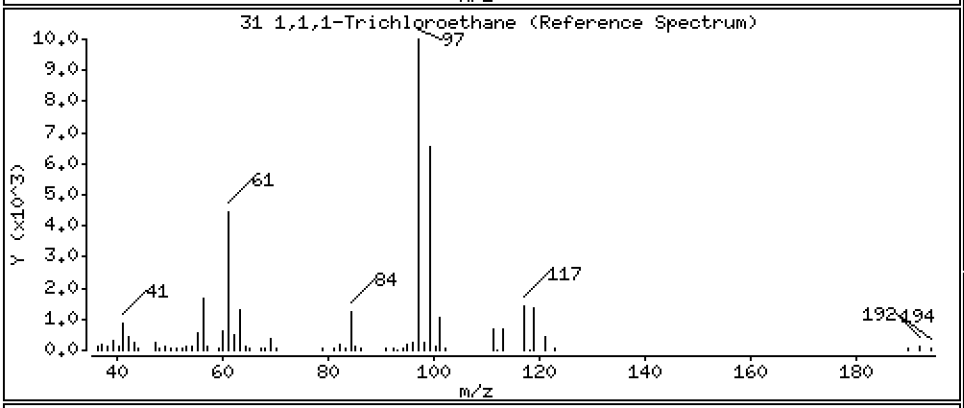
31 1,1,1-Trichloroethane Concentration: 15.78 ug/l Review Code:

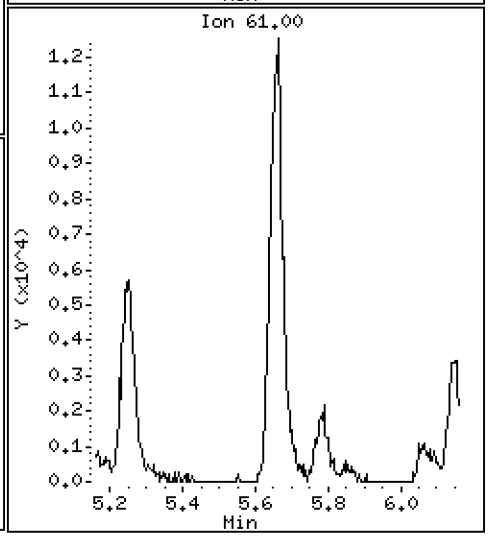


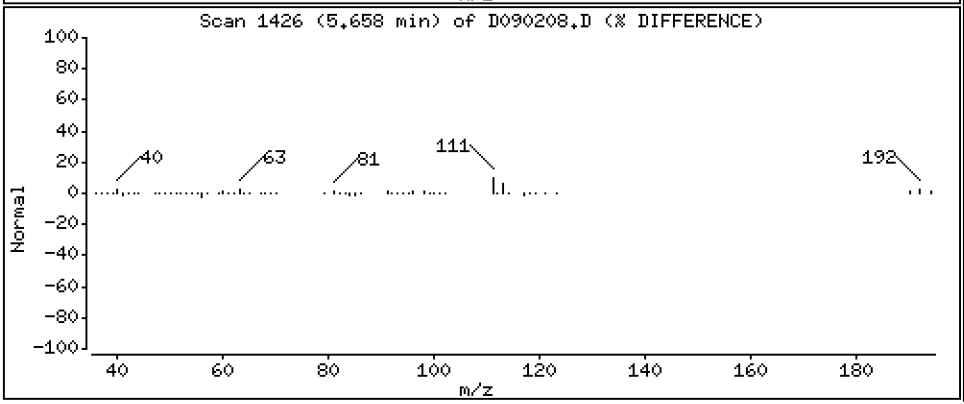












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Date : 02-SEP-2018 16:18

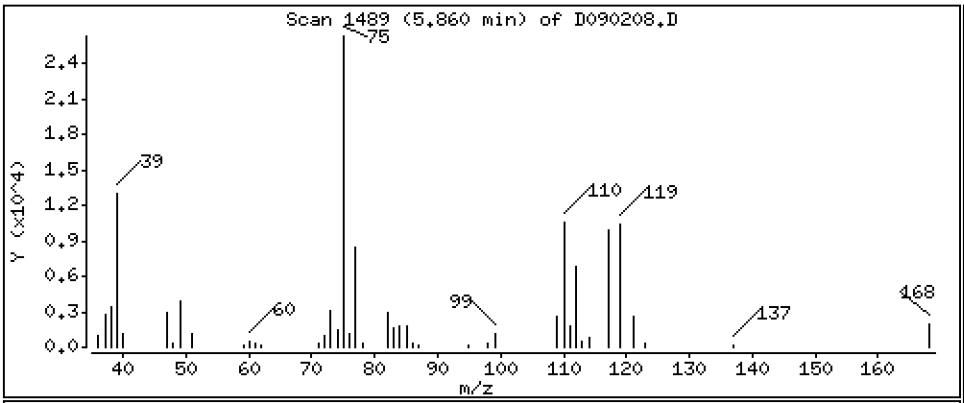
Client ID: HS18081428-01MS Instrument: VOA2.i

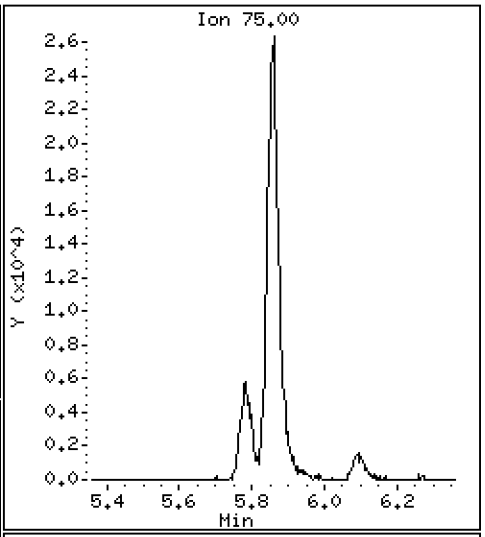
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

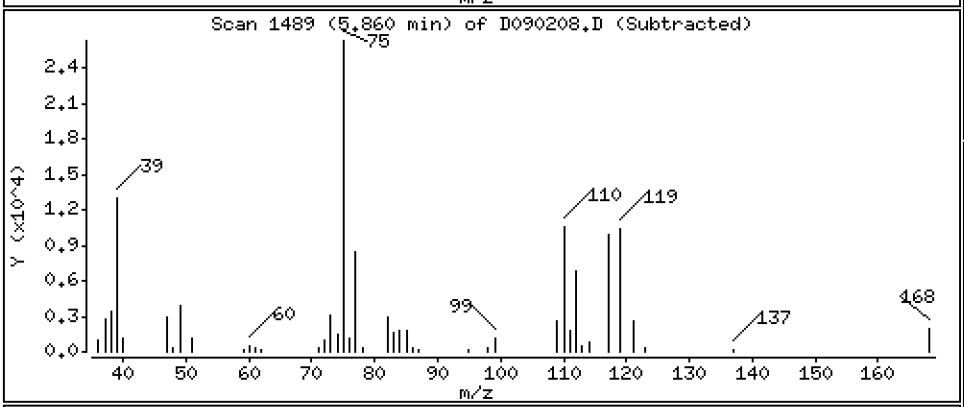
Purge Volume: 5.0 Operator: AP

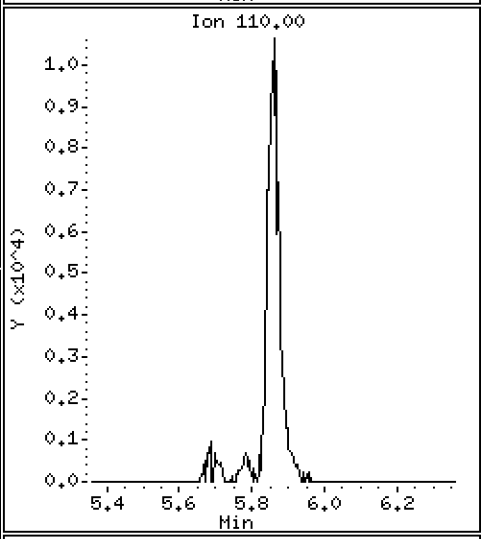
Column phase: DB624 Column diameter: 0.18

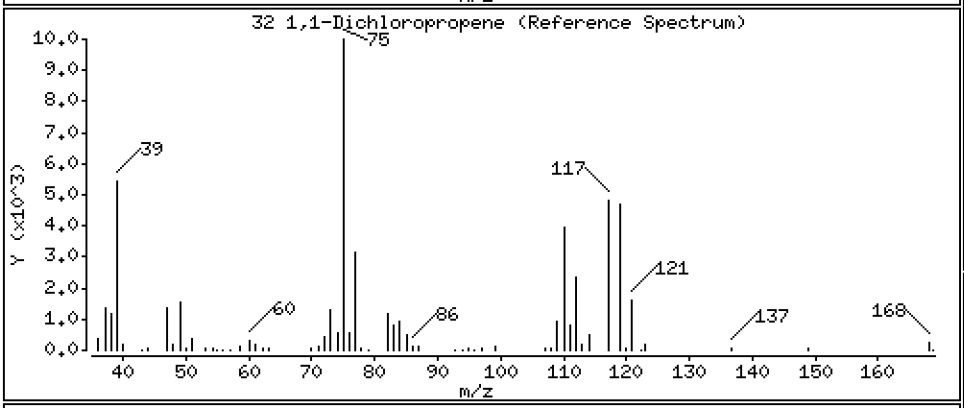
32 1,1-Dichloropropene Concentration: 17.50 ug/l Review Code:

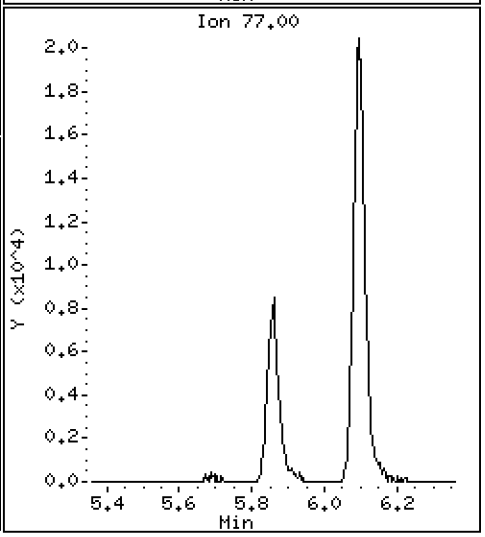


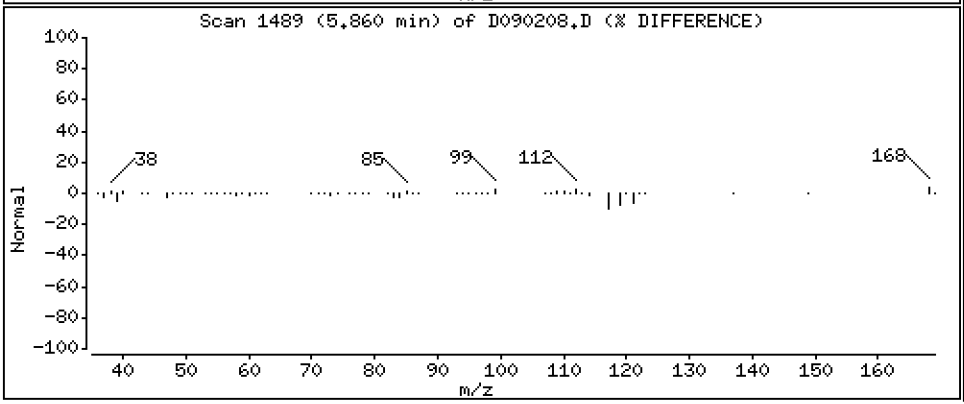












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Date : 02-SEP-2018 16:18

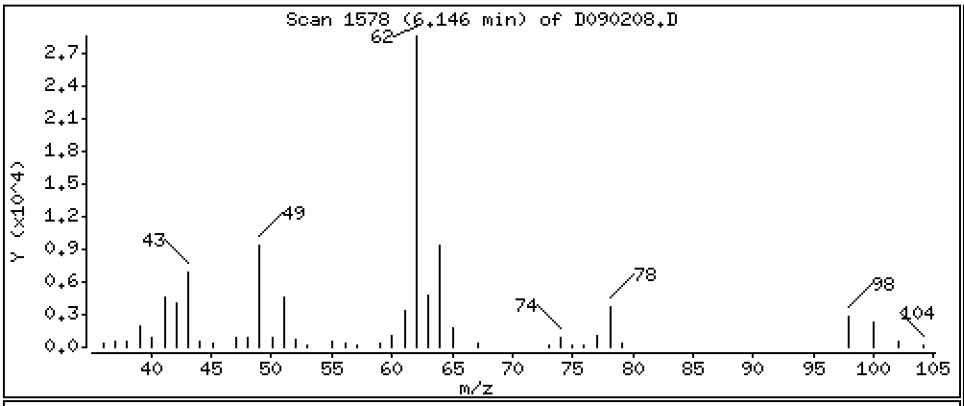
Client ID: HS18081428-01MS Instrument: VOA2.i

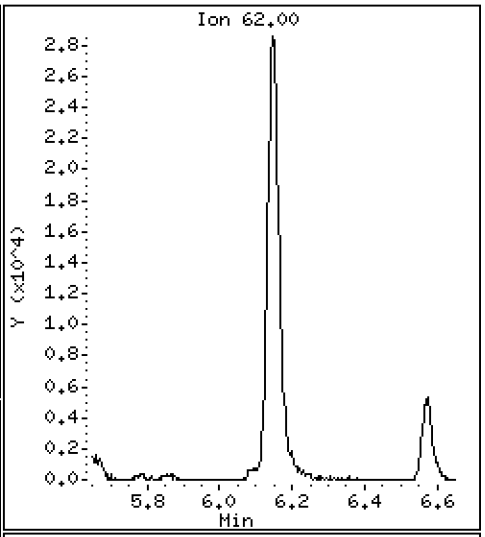
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

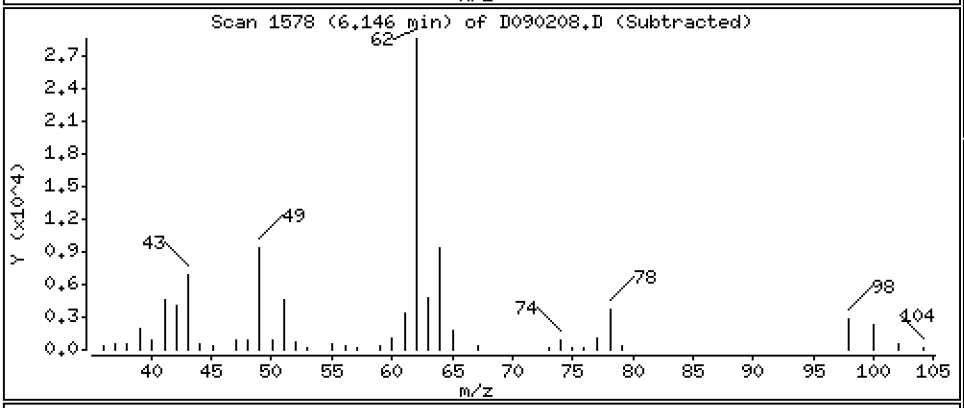
Purge Volume: 5.0 Operator: AP

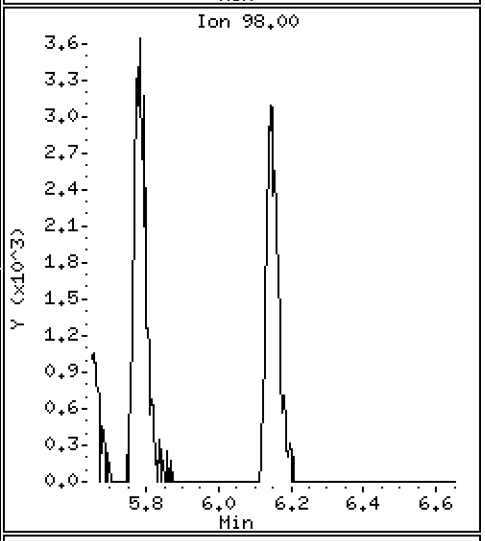
Column phase: DB624 Column diameter: 0.18

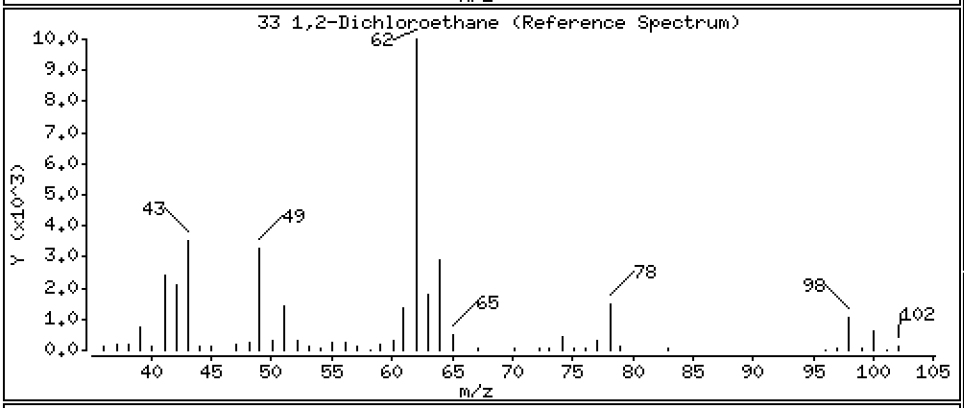
33 1,2-Dichloroethane Concentration: 17.51 ug/l Review Code:

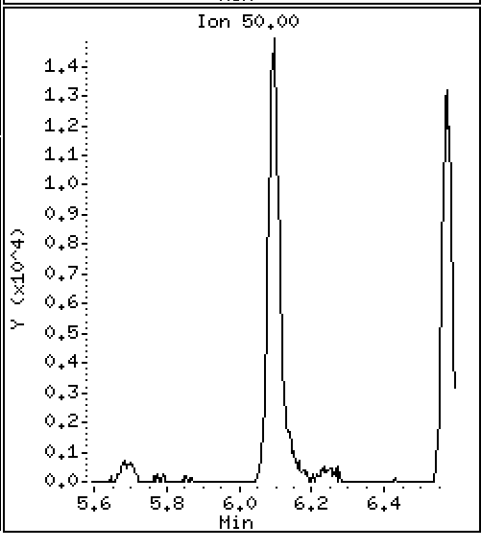


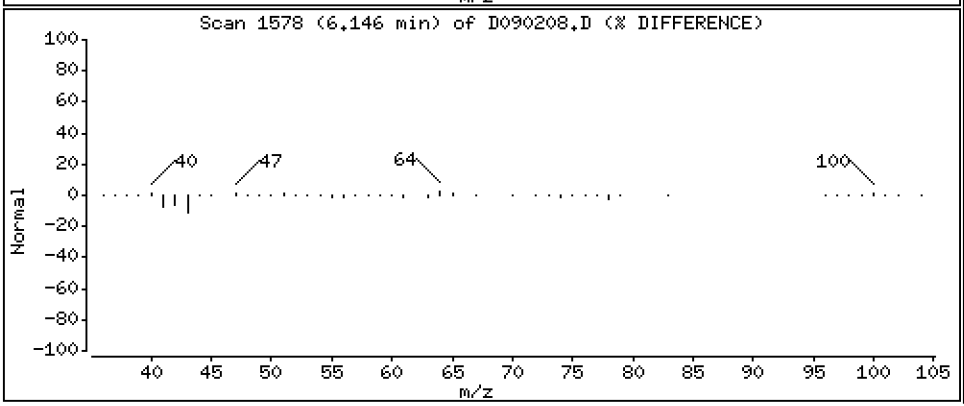












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 34

Date : 02-SEP-2018 16:18

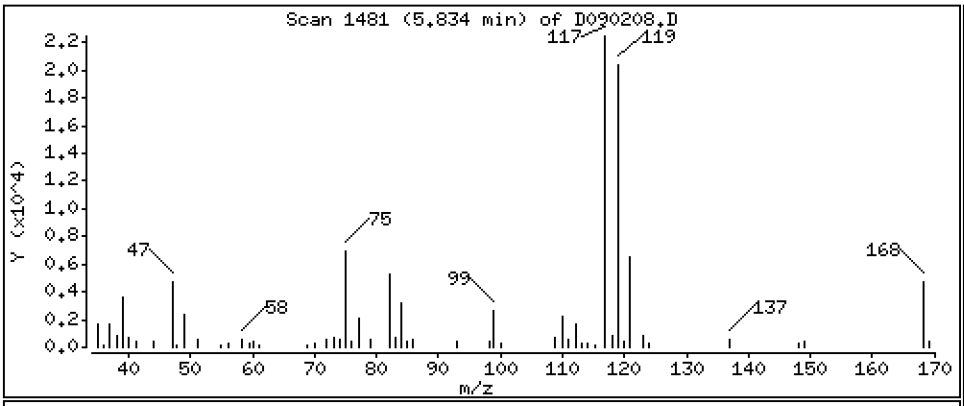
Client ID: HS18081428-01MS Instrument: VOA2.i

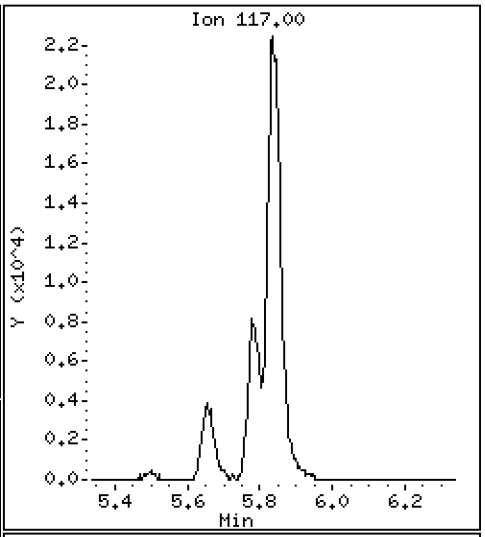
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

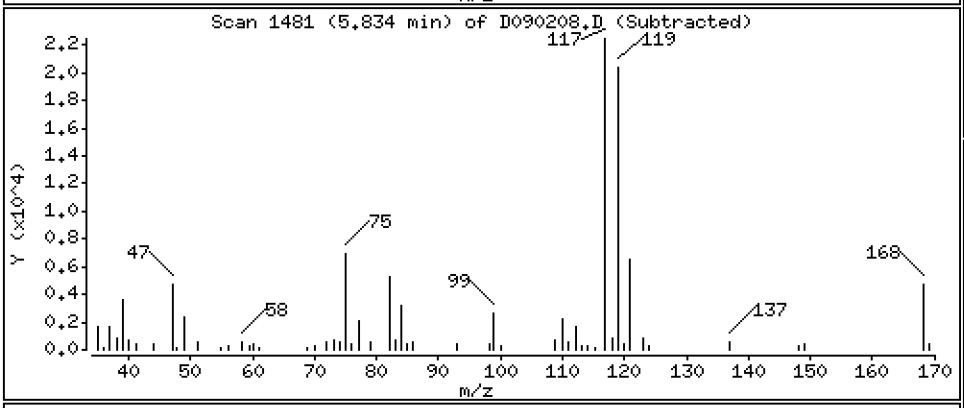
Purge Volume: 5.0 Operator: AP

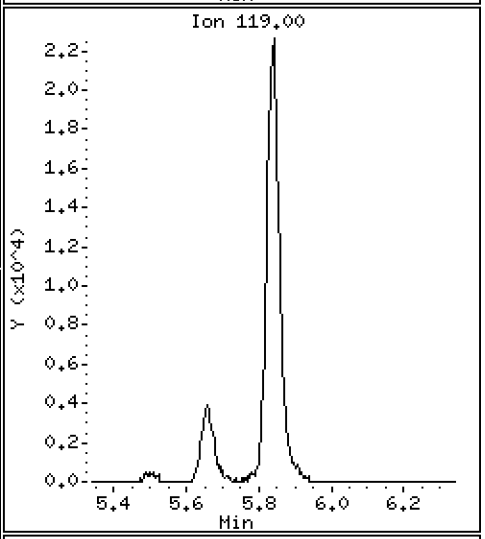
Column phase: DB624 Column diameter: 0.18

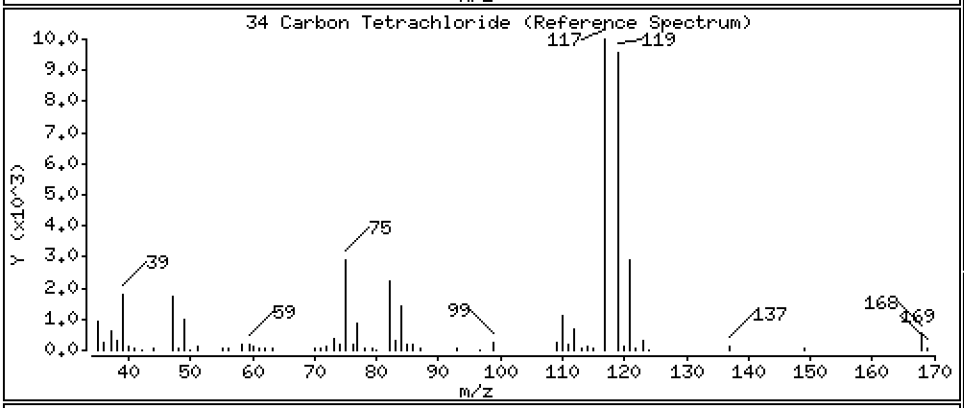
34 Carbon Tetrachloride Concentration: 17.17 ug/l Review Code:

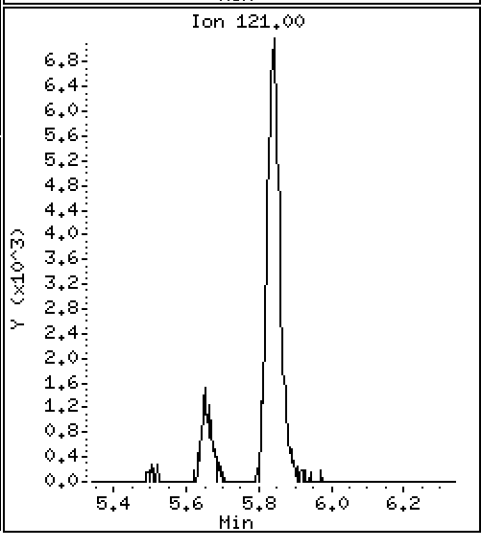


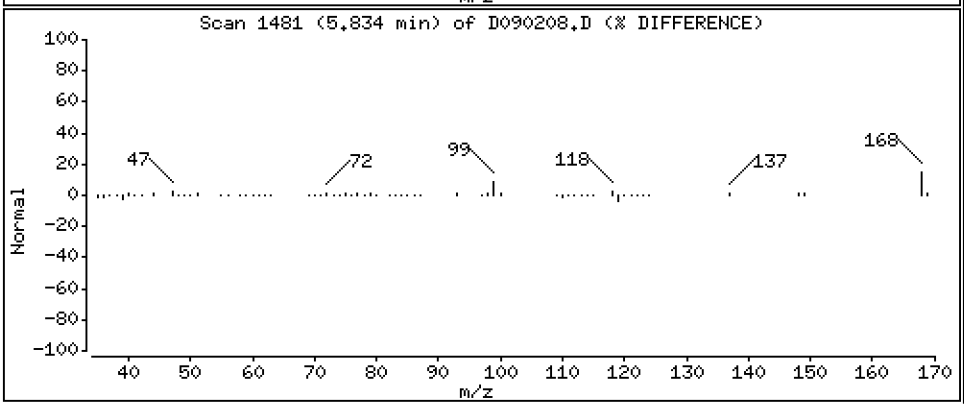












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Date : 02-SEP-2018 16:18

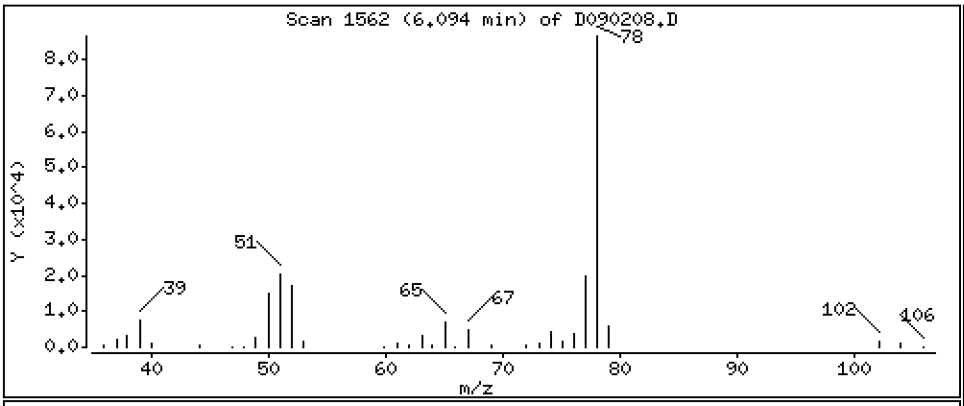
Client ID: HS18081428-01MS Instrument: VOA2.i

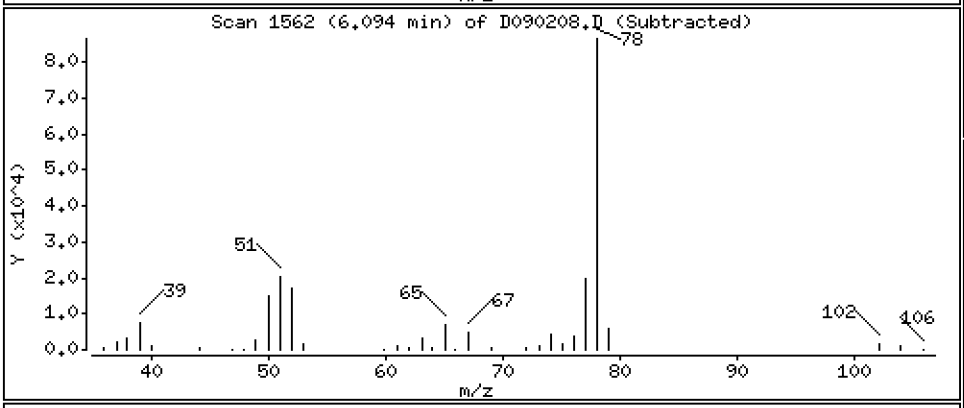
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

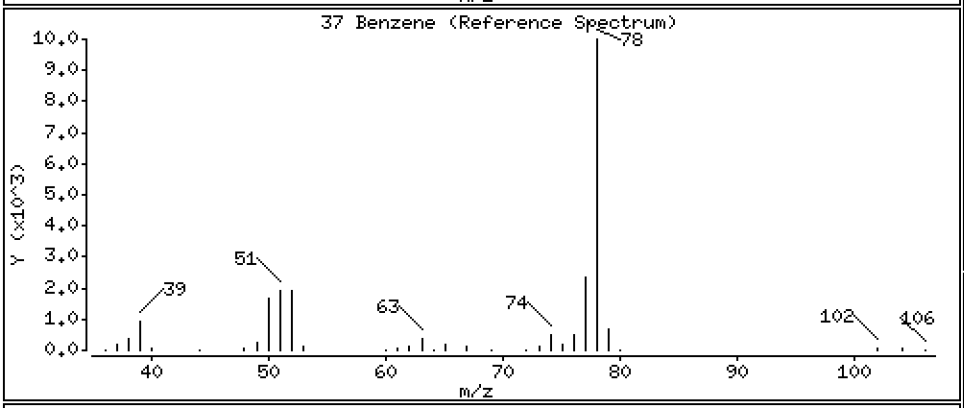
Purge Volume: 5.0 Operator: AP

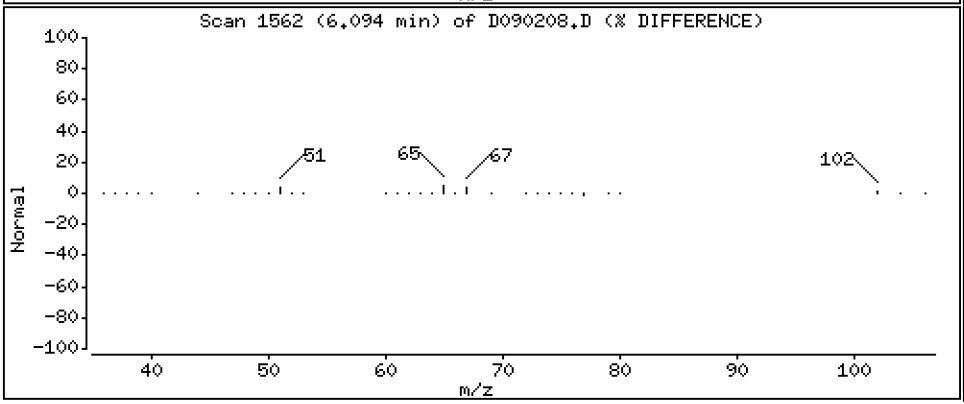
Column phase: DB624 Column diameter: 0.18

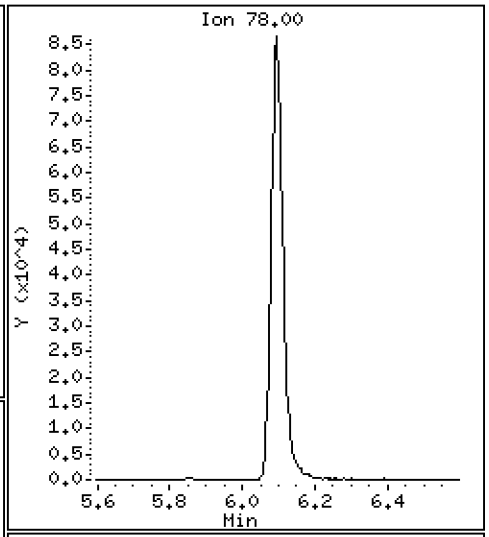
37 Benzene Concentration: 17.11 ug/l Review Code:

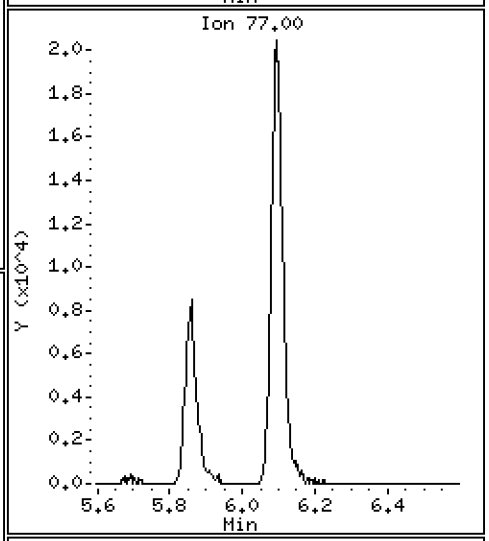


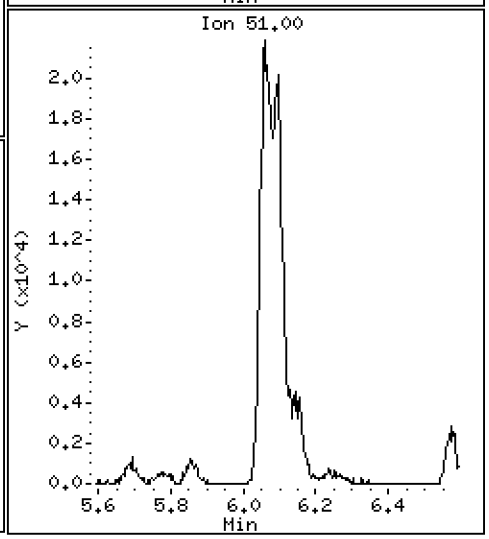












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 36

Date : 02-SEP-2018 16:18

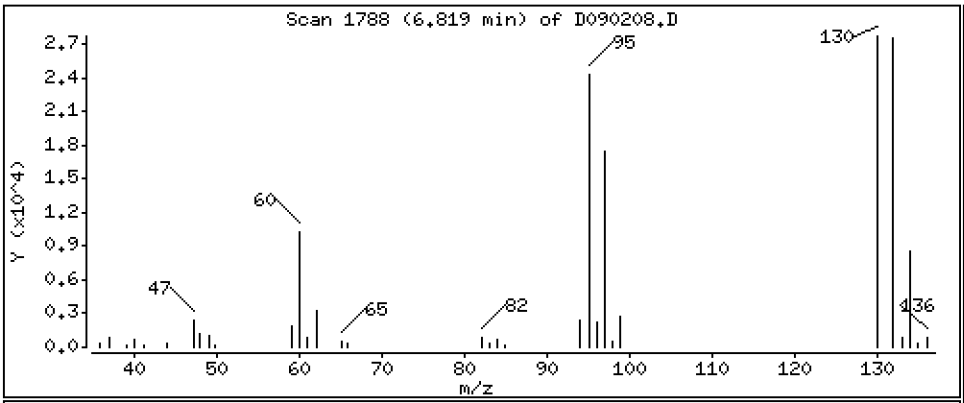
Client ID: HS18081428-01MS Instrument: VOA2.i

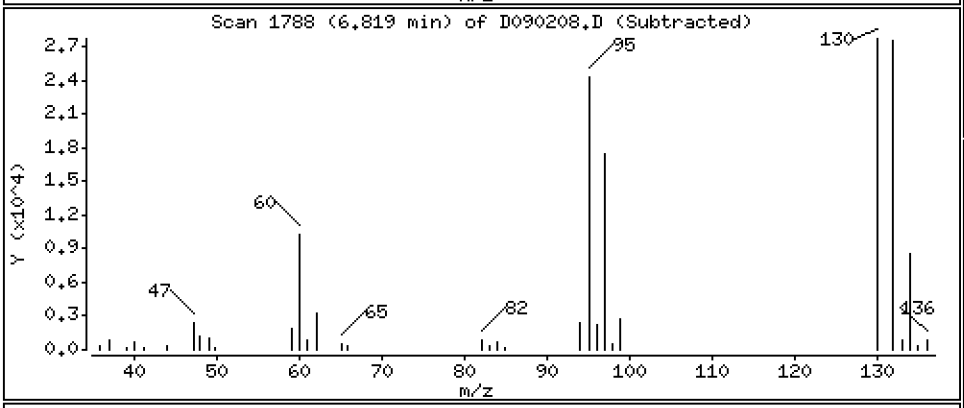
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

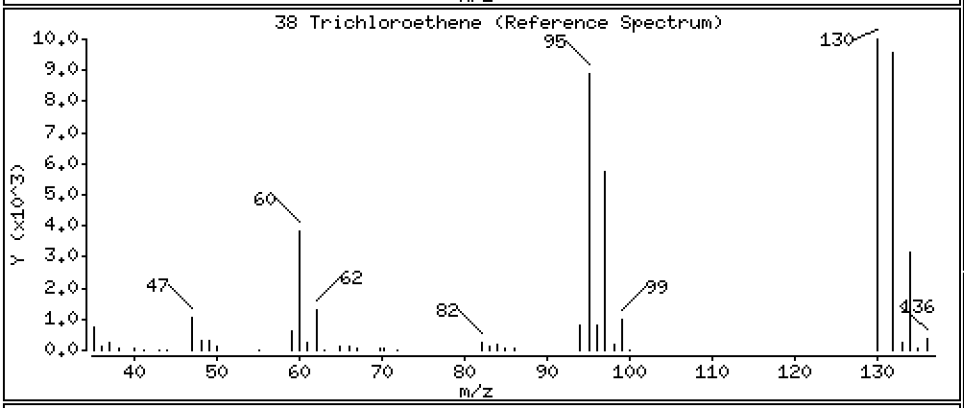
Purge Volume: 5.0 Operator: AP

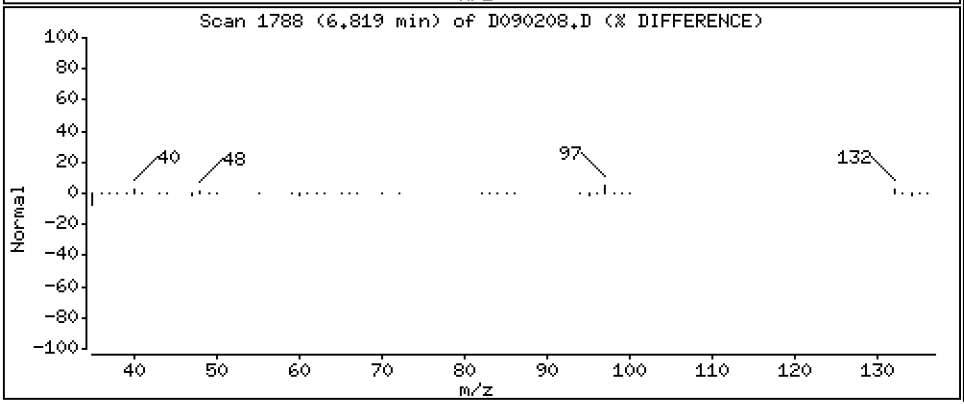
Column phase: DB624 Column diameter: 0.18

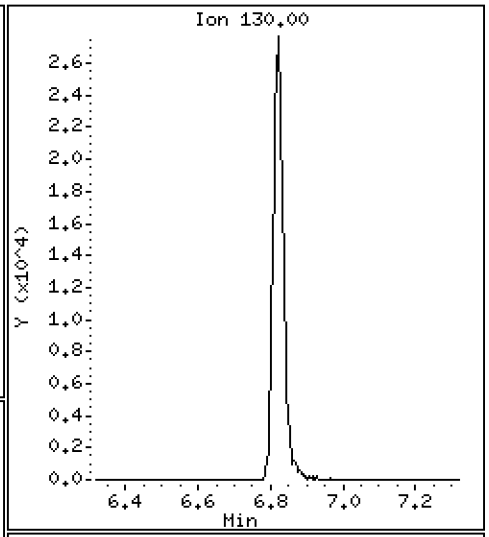
38 Trichloroethene Concentration: 17.92 ug/l Review Code:

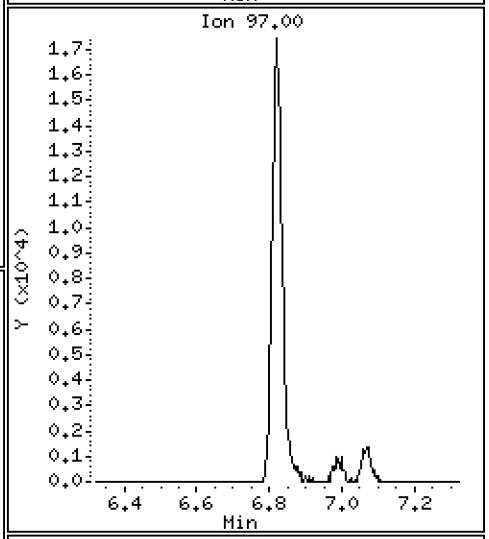


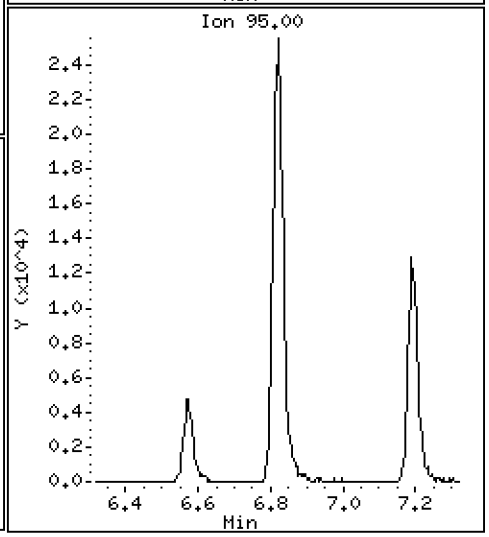












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 37

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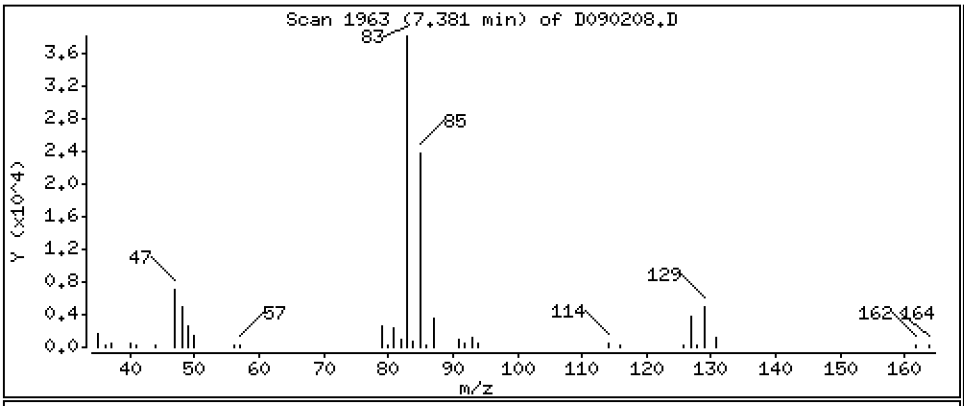
Client ID: HS18081428-01MS Instrument: VOA2.i

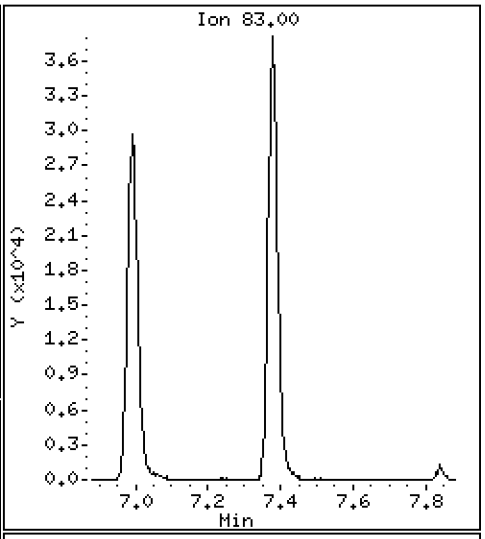
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

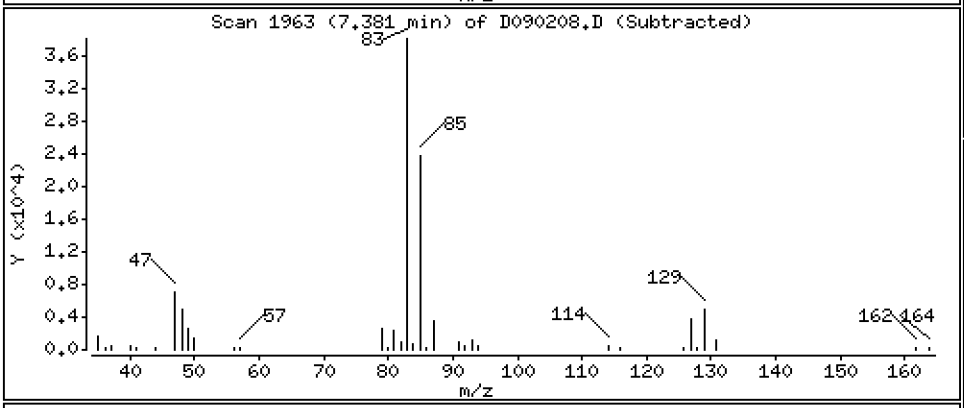
Purge Volume: 5.0 Operator: AP

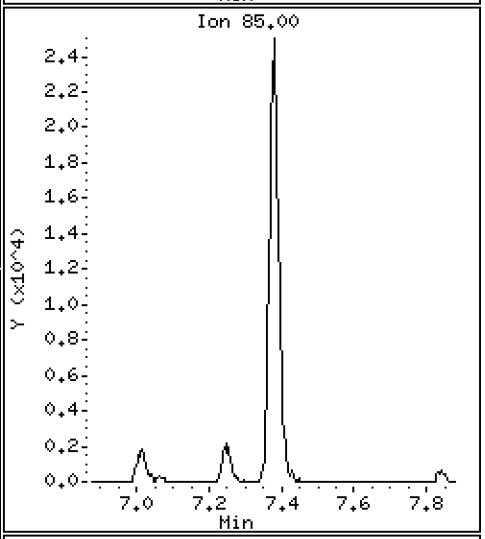
Column phase: DB624 Column diameter: 0.18

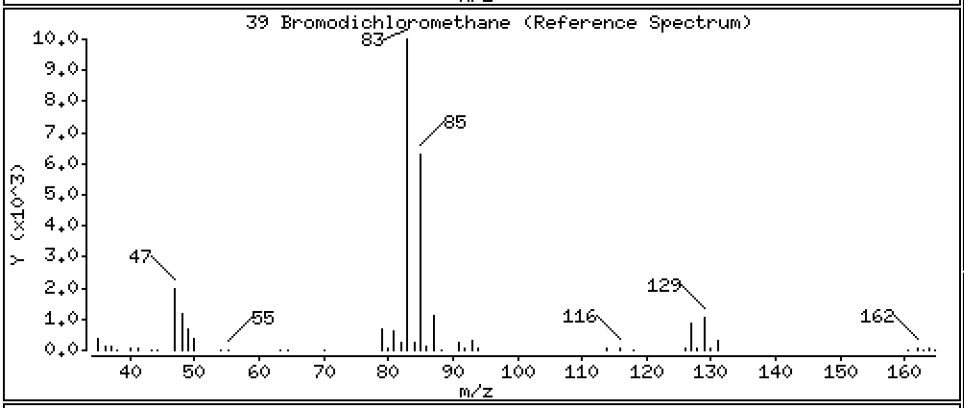
39 Bromodichloromethane Concentration: 18.03 ug/l Review Code:

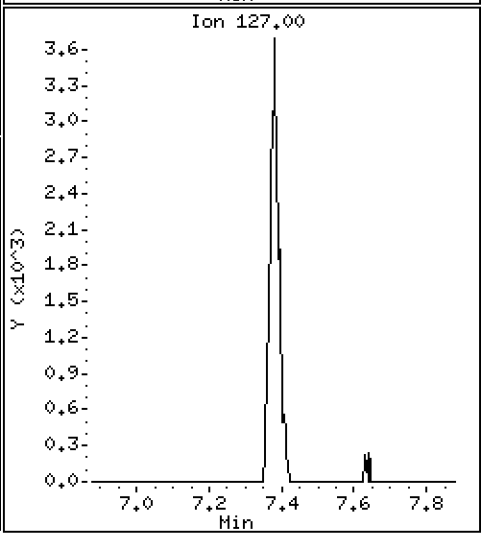


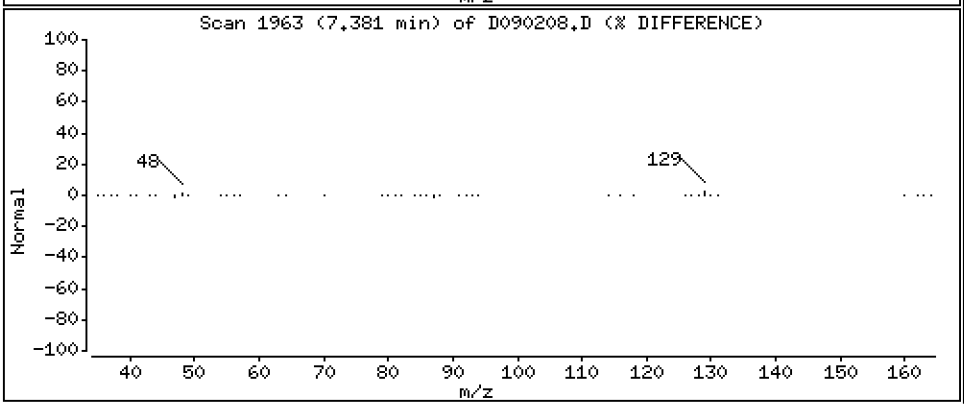












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 38

Date : 02-SEP-2018 16:18

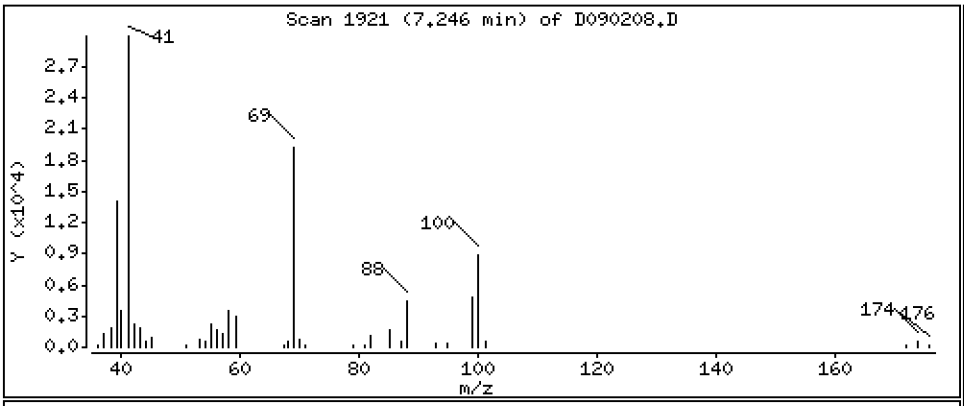
Client ID: HS18081428-01MS Instrument: VOA2.i

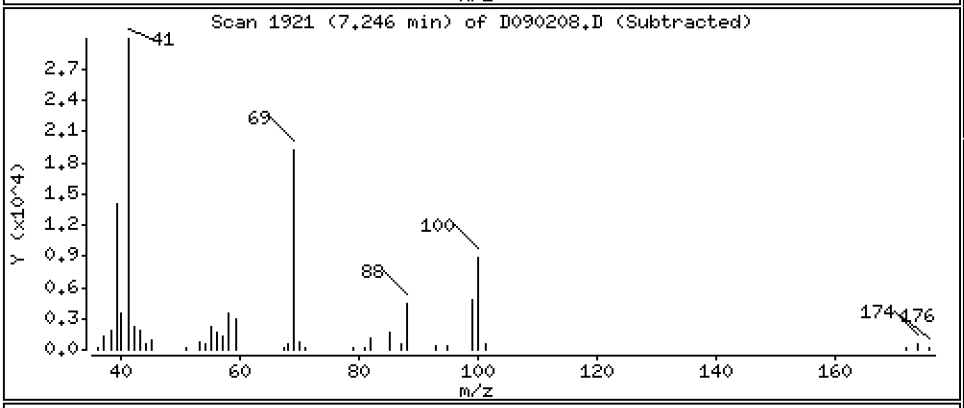
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

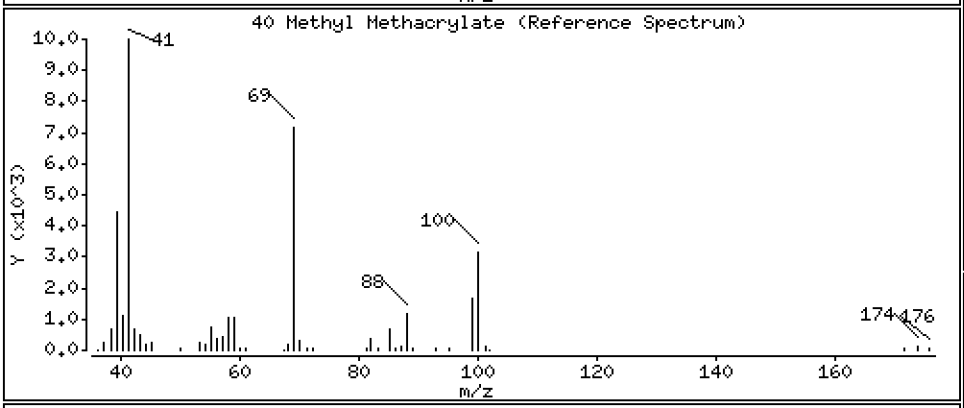
Purge Volume: 5.0 Operator: AP

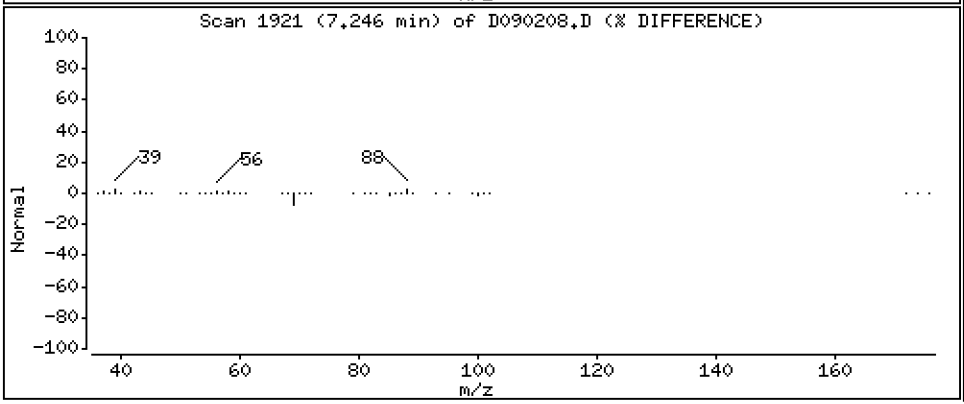
Column phase: DB624 Column diameter: 0.18

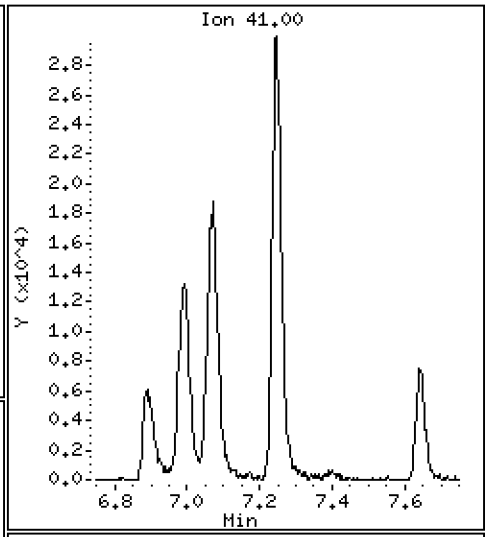
40 Methyl Methacrylate Concentration: 15.79 ug/l Review Code:

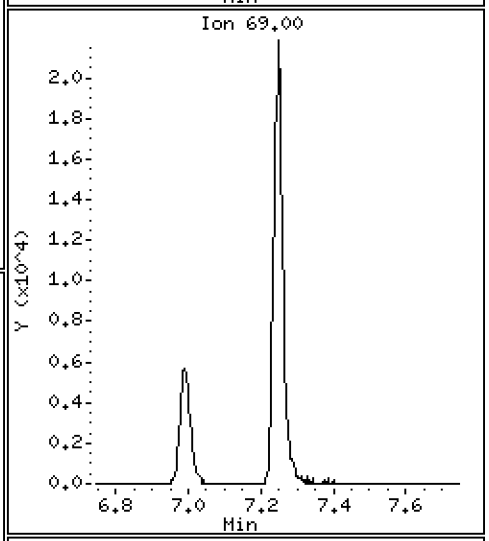


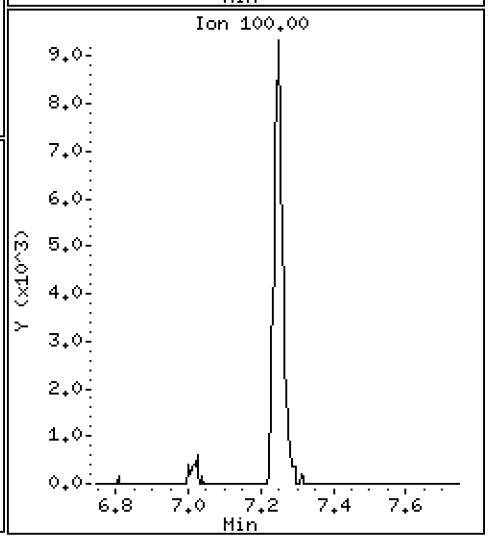












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Date : 02-SEP-2018 16:18

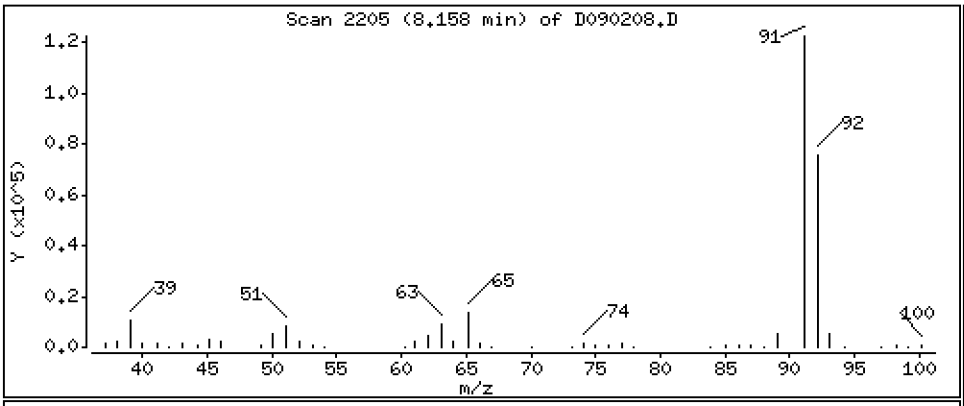
Client ID: HS18081428-01MS Instrument: VOA2.i

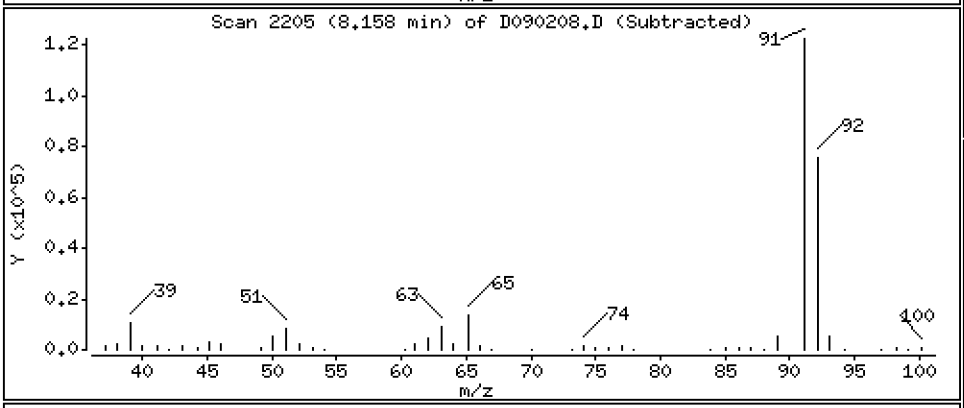
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

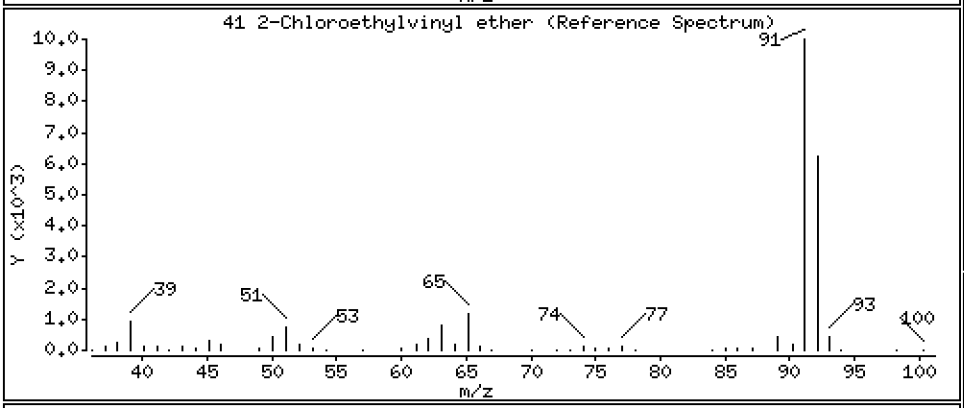
Purge Volume: 5.0 Operator: AP

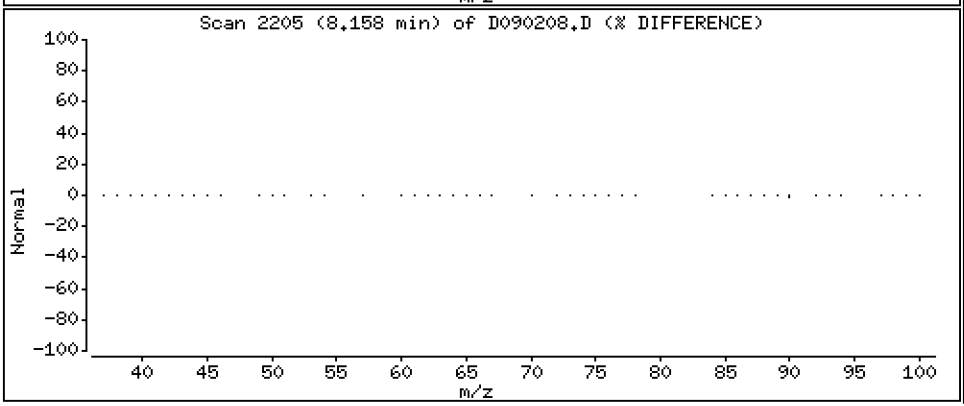
Column phase: DB624 Column diameter: 0.18

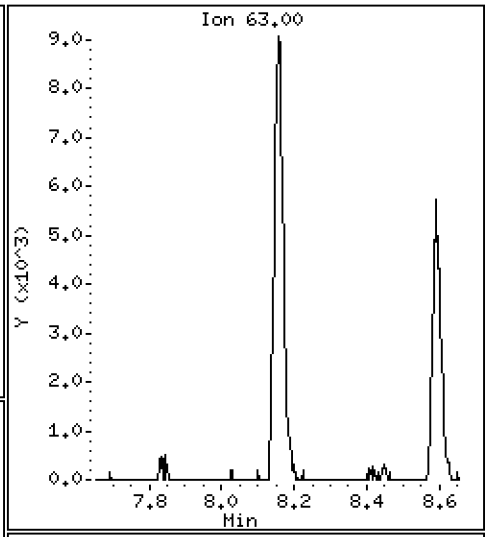
41 2-Chloroethylvinyl ether Concentration: 33.92 ug/l Review Code:

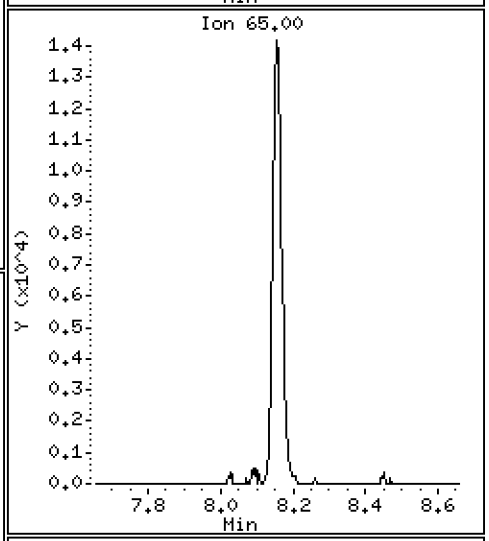


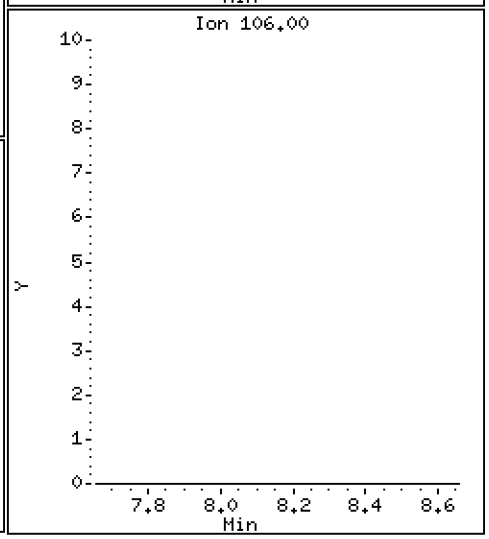












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Date : 02-SEP-2018 16:18

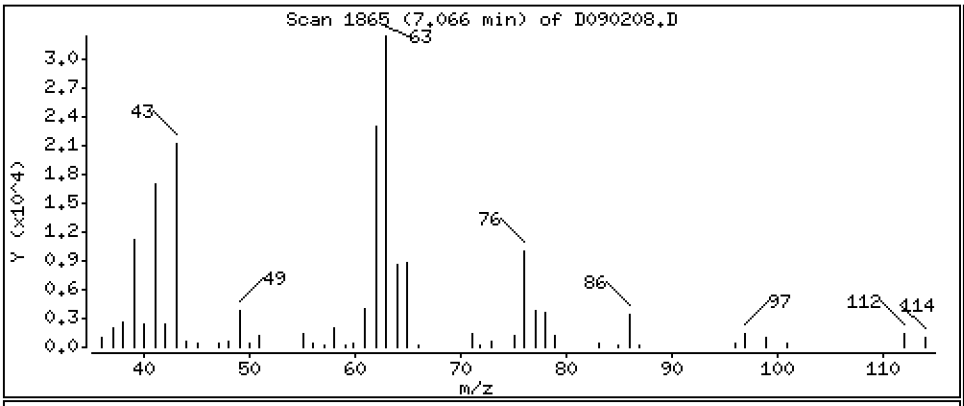
Client ID: HS18081428-01MS Instrument: VOA2.i

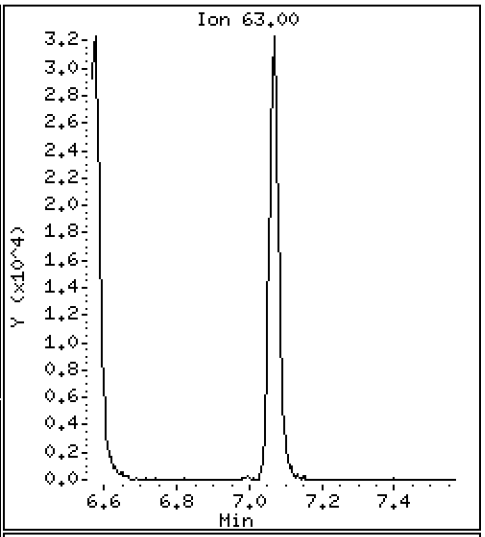
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

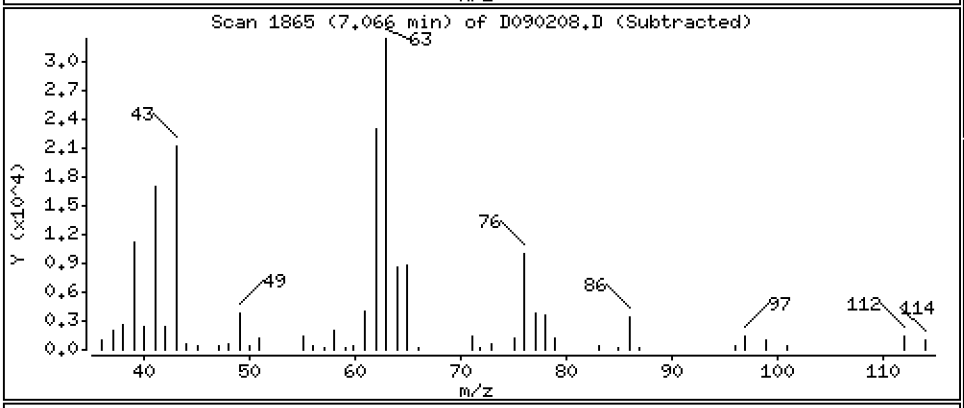
Purge Volume: 5.0 Operator: AP

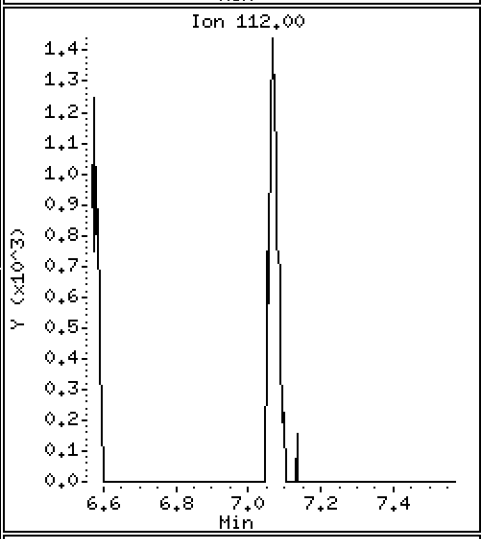
Column phase: DB624 Column diameter: 0.18

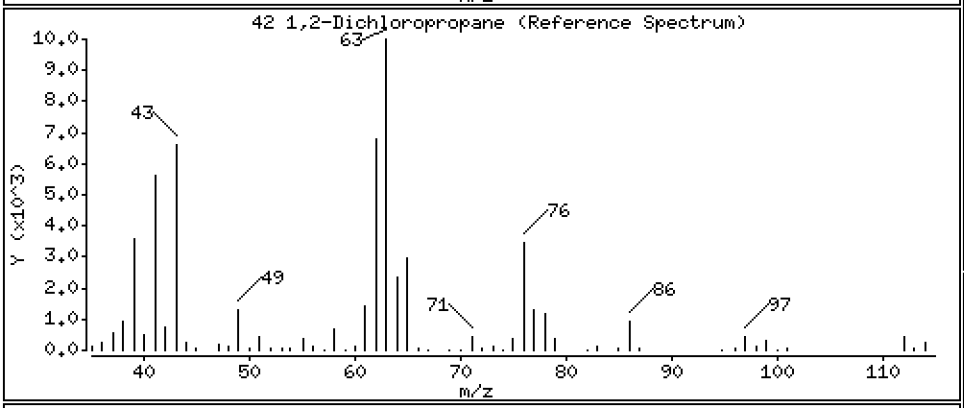
42 1,2-Dichloropropane Concentration: 18.32 ug/l Review Code:

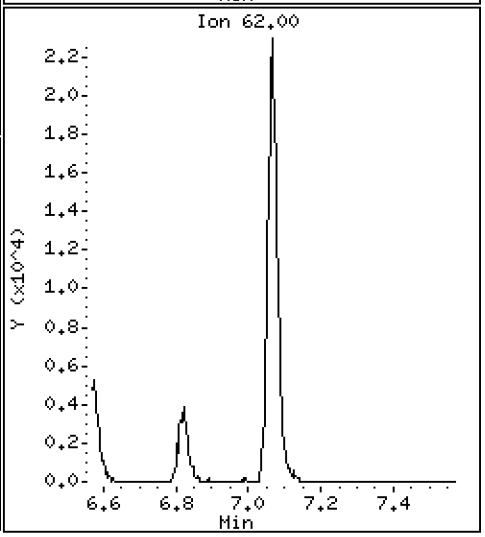


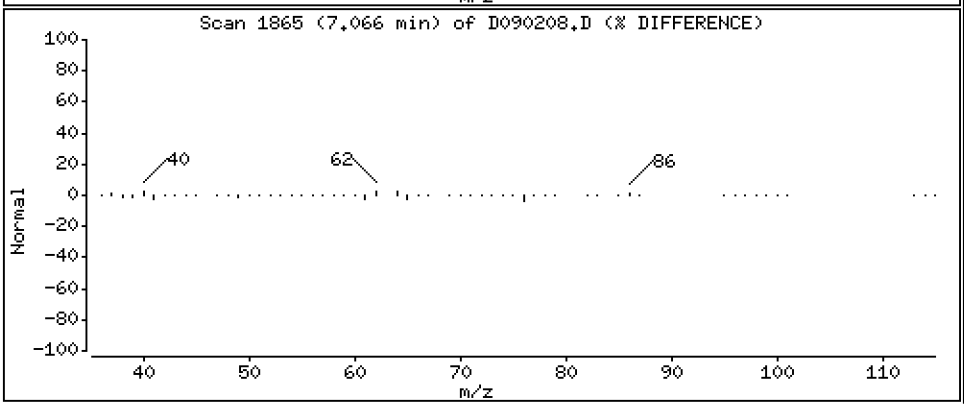












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Date : 02-SEP-2018 16:18

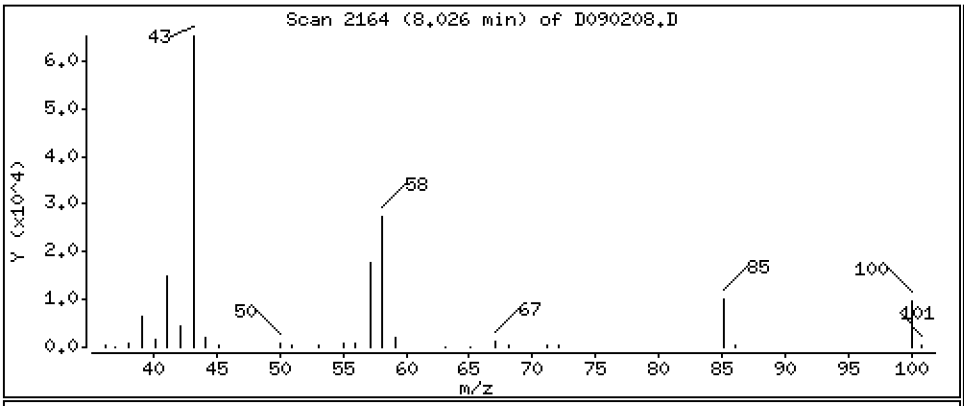
Client ID: HS18081428-01MS Instrument: VOA2.i

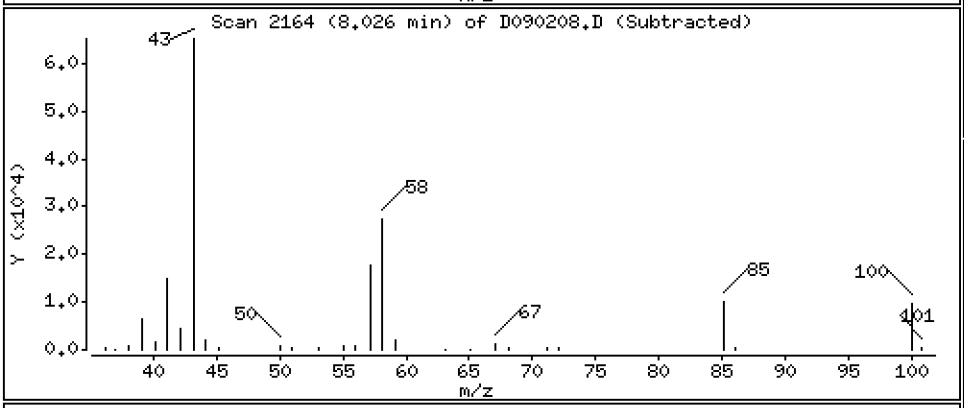
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

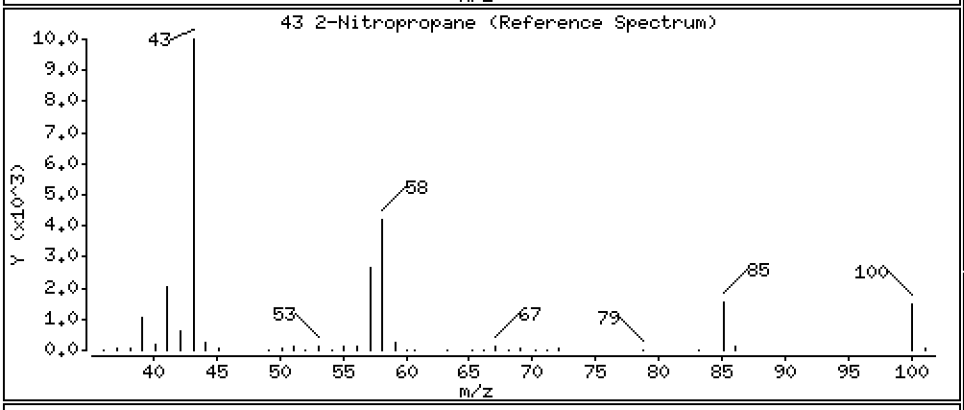
Purge Volume: 5.0 Operator: AP

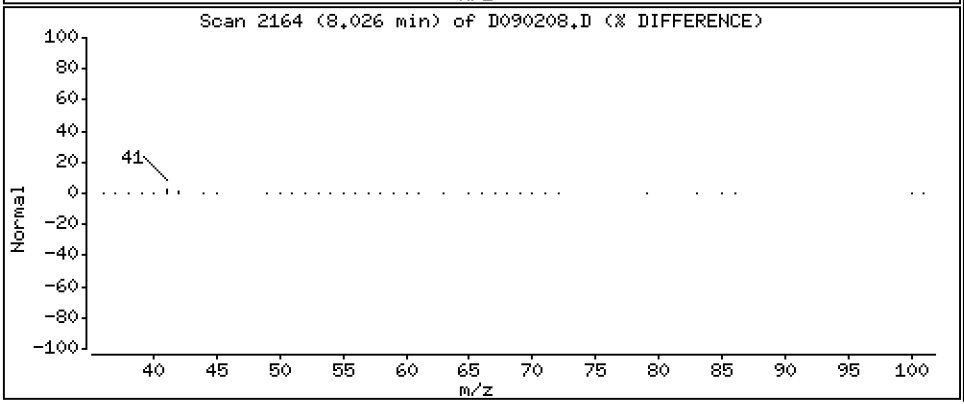
Column phase: DB624 Column diameter: 0.18

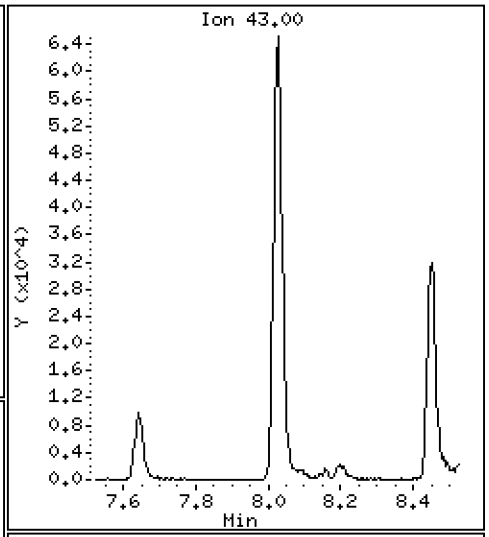
43 2-Nitropropane Concentration: 15.16 ug/l Review Code:

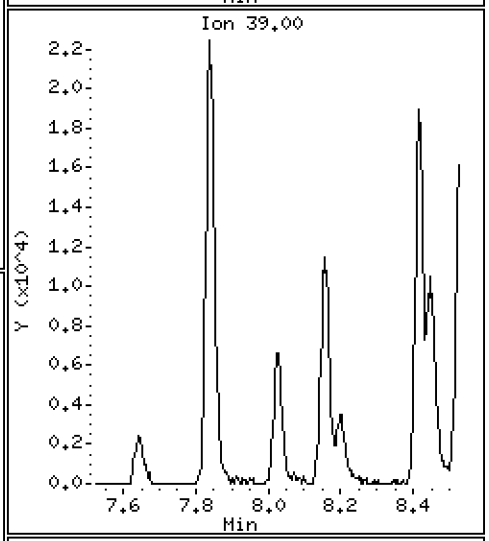


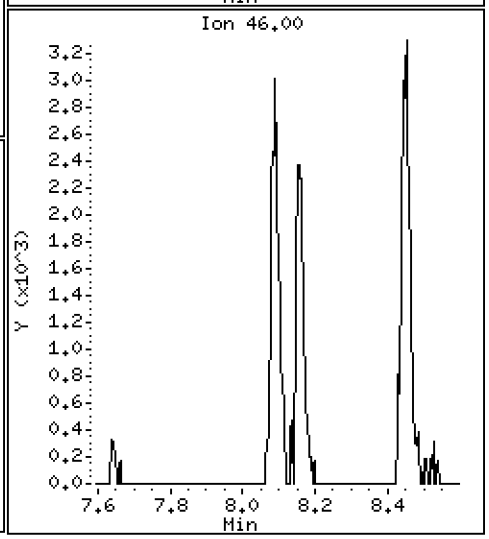












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 42

Date : 02-SEP-2018 16:18

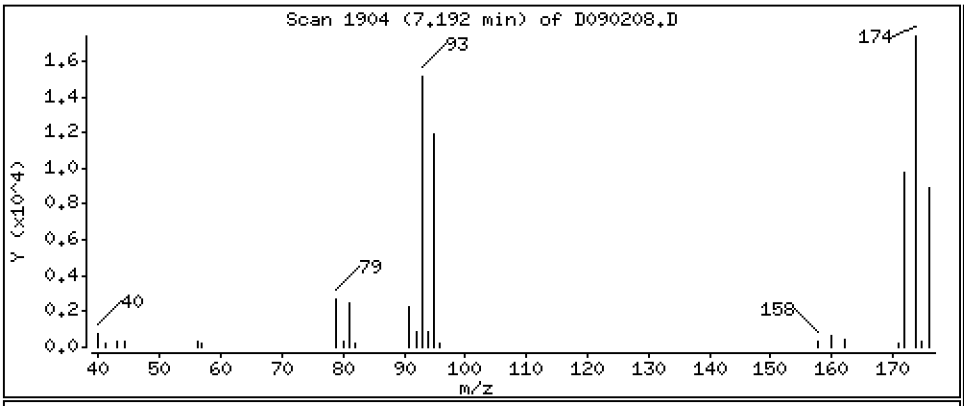
Client ID: HS18081428-01MS Instrument: VOA2.i

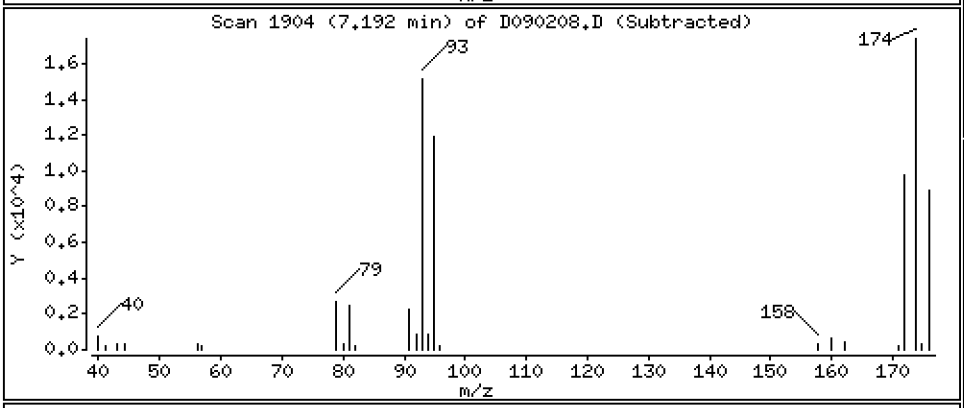
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

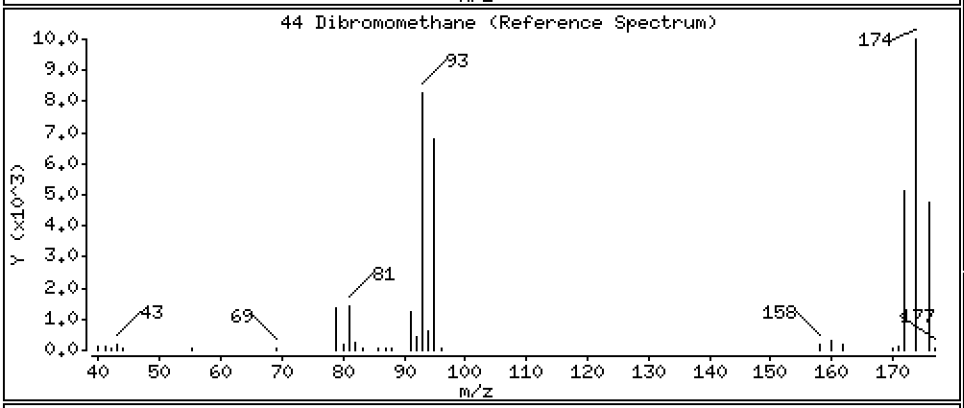
Purge Volume: 5.0 Operator: AP

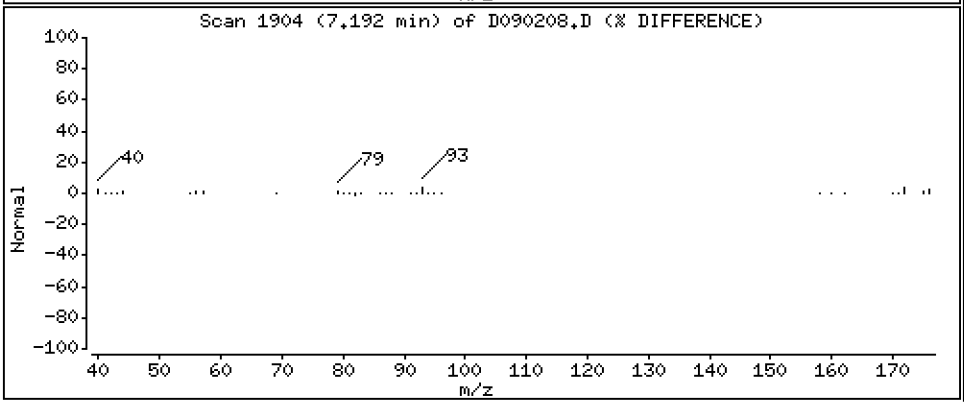
Column phase: DB624 Column diameter: 0.18

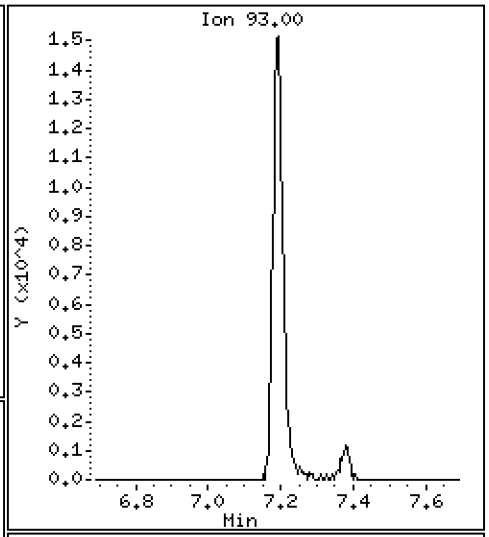
44 Dibromomethane Concentration: 17.83 ug/l Review Code:

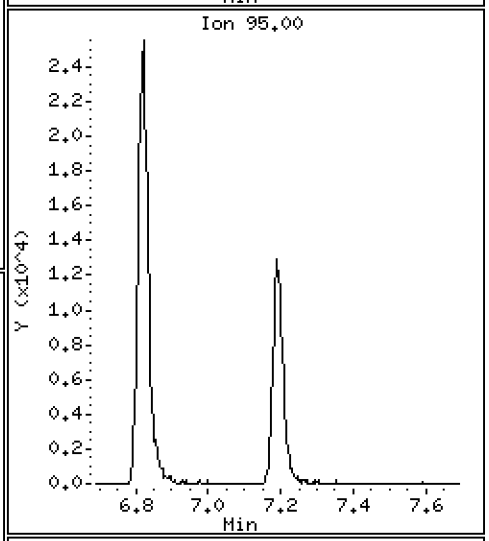


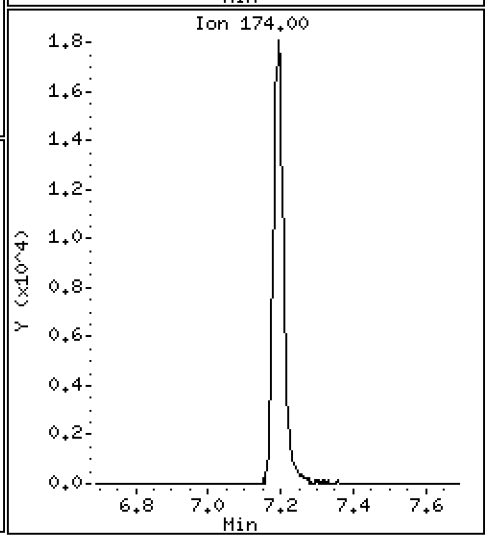












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 43

Date : 02-SEP-2018 16:18

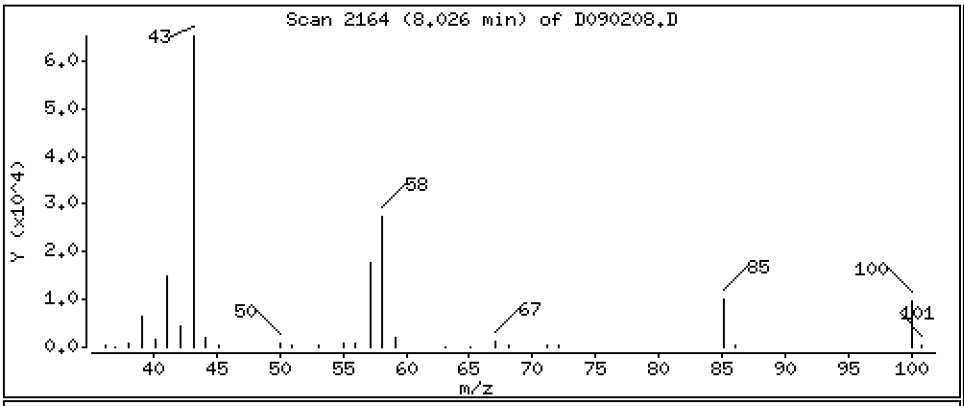
Client ID: HS18081428-01MS Instrument: VOA2.i

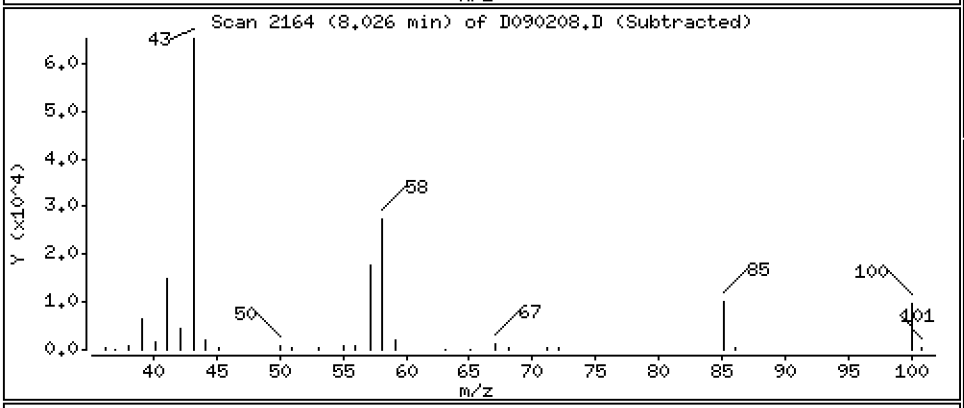
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

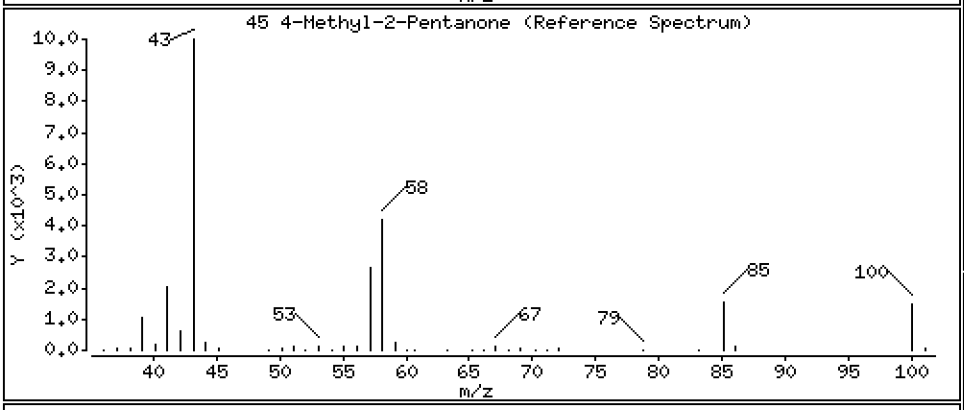
Purge Volume: 5.0 Operator: AP

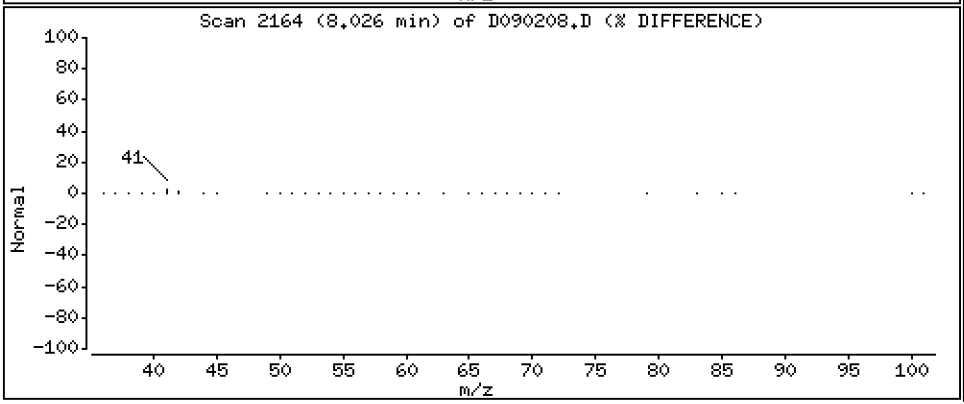
Column phase: DB624 Column diameter: 0.18

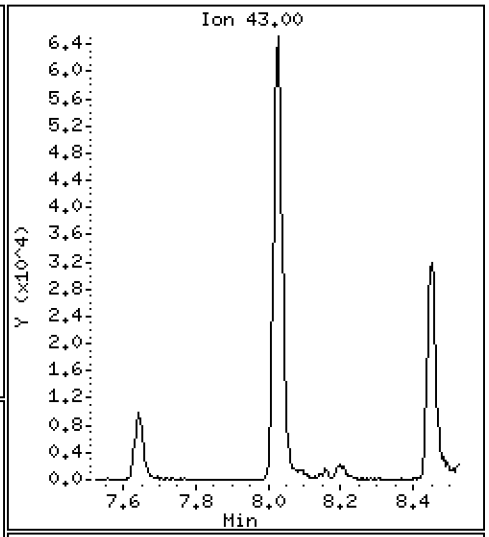
45 4-Methyl-2-Pentanone Concentration: 31.67 ug/l Review Code:

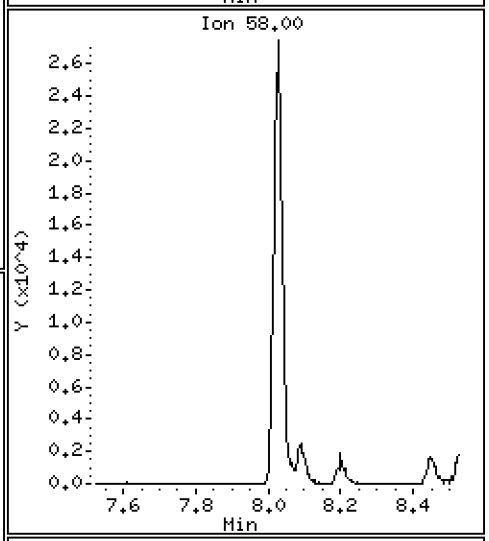


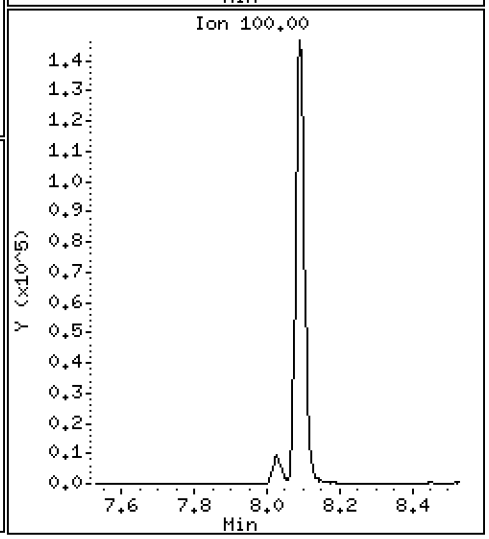












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 44

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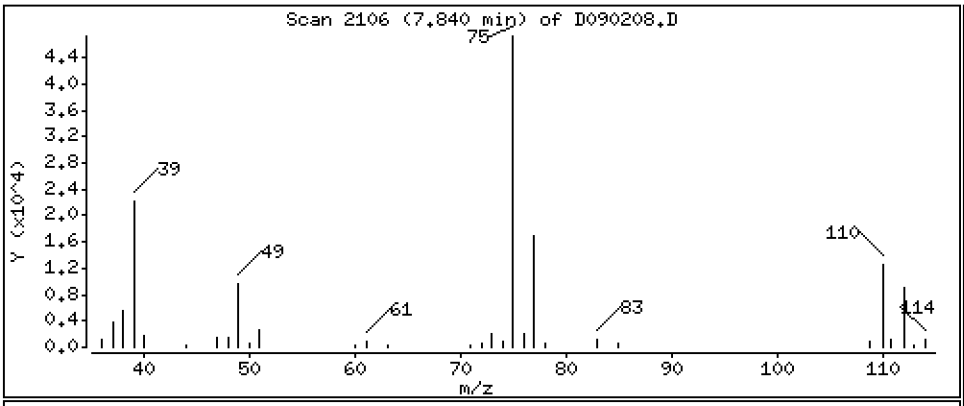
Client ID: HS18081428-01MS Instrument: VOA2.i

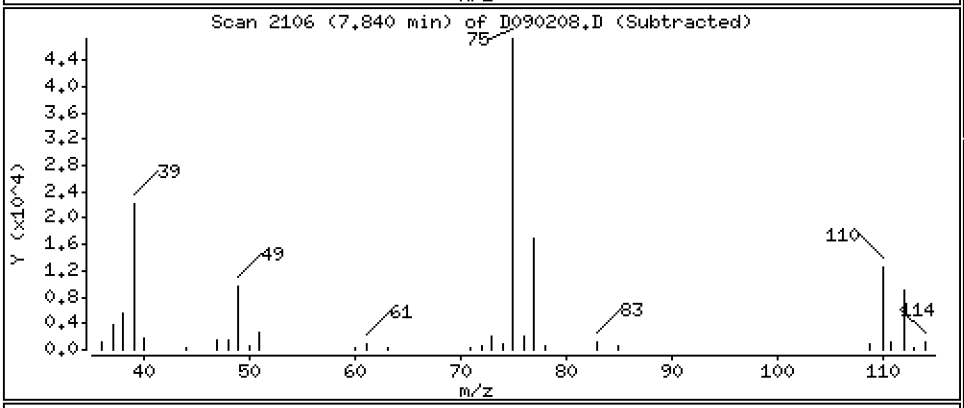
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

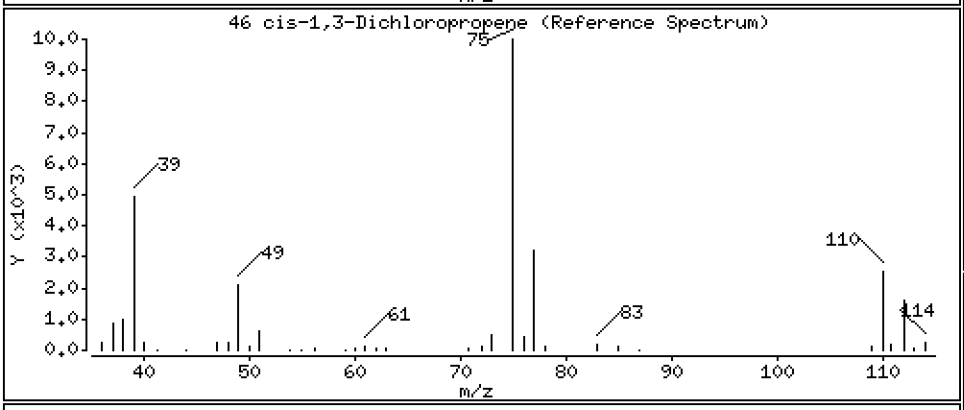
Purge Volume: 5.0 Operator: AP

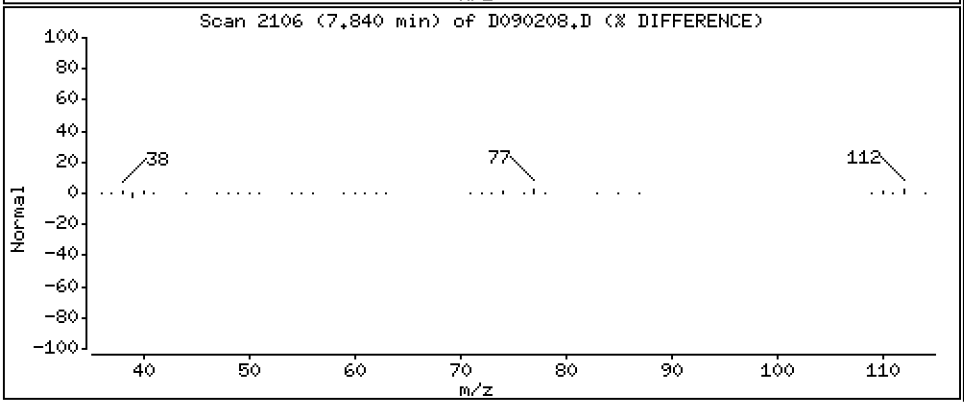
Column phase: DB624 Column diameter: 0.18

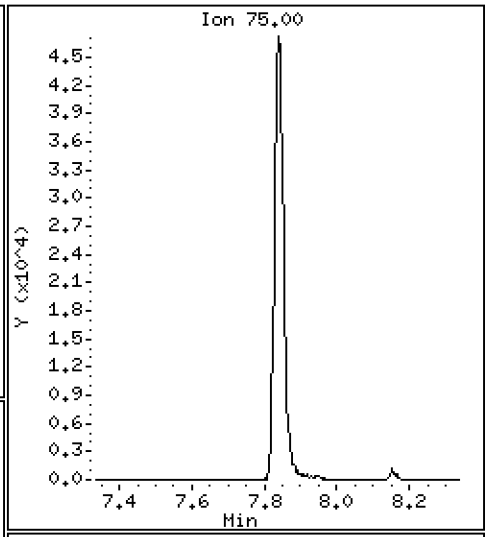
46 cis-1,3-Dichloropropene Concentration: 19.01 ug/l Review Code:

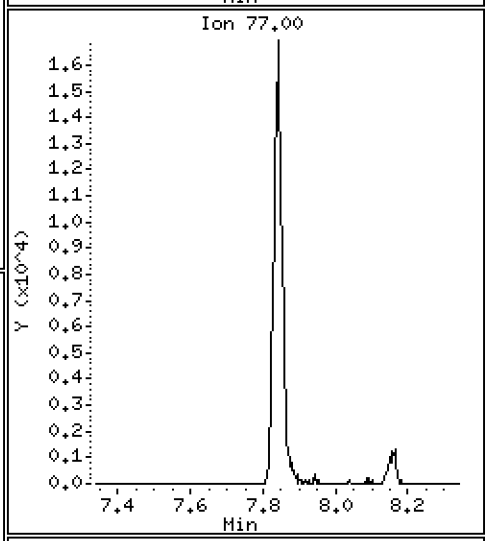


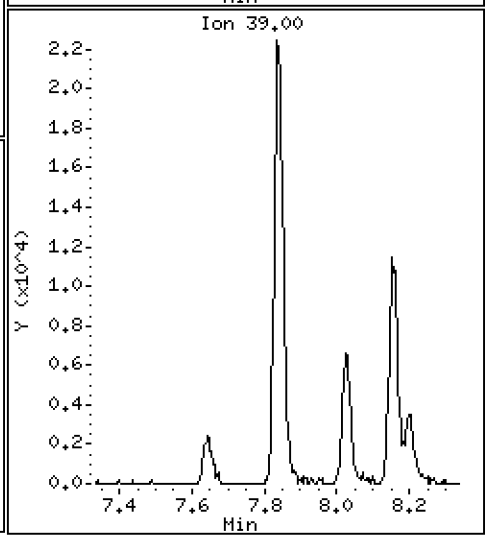












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 45

Date : 02-SEP-2018 16:18

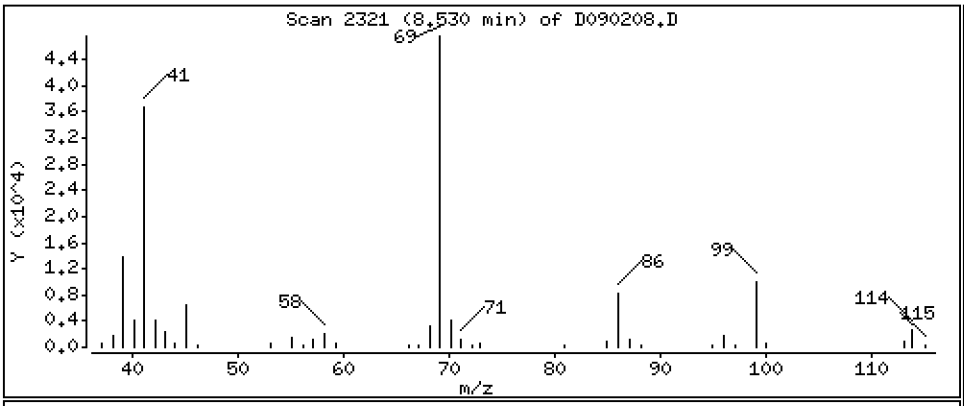
Client ID: HS18081428-01MS Instrument: VOA2.i

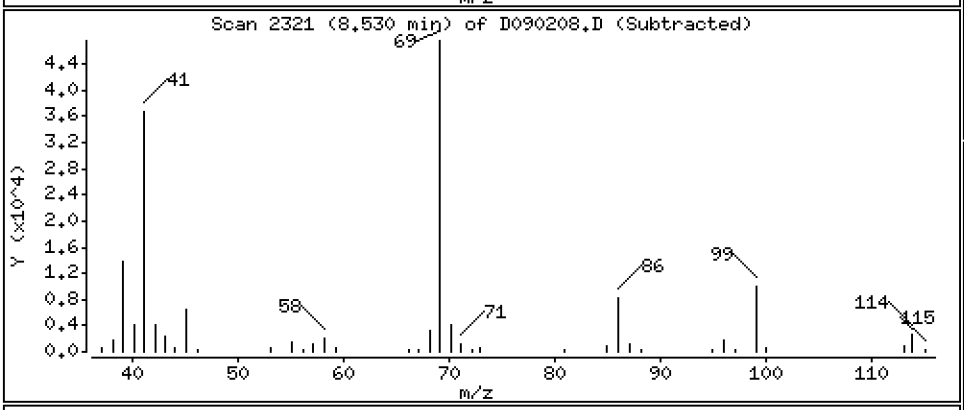
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

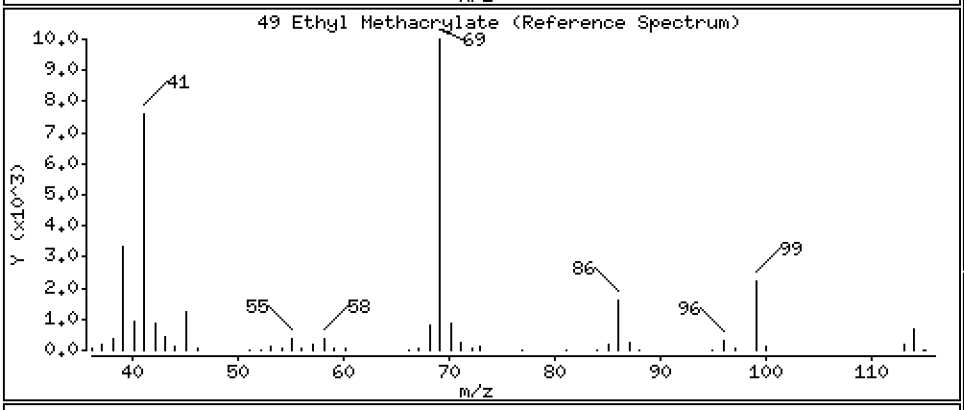
Purge Volume: 5.0 Operator: AP

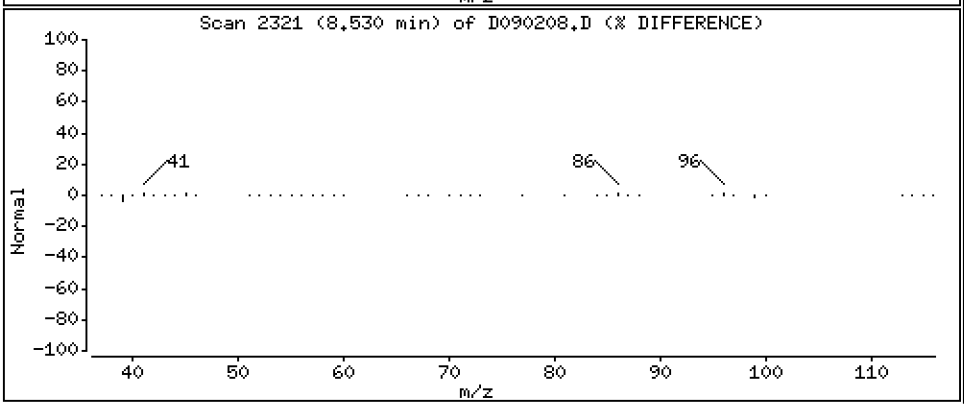
Column phase: DB624 Column diameter: 0.18

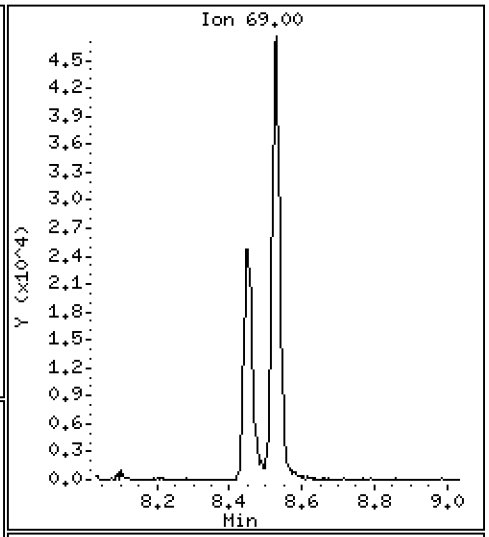
49 Ethyl Methacrylate Concentration: 17.25 ug/l Review Code:

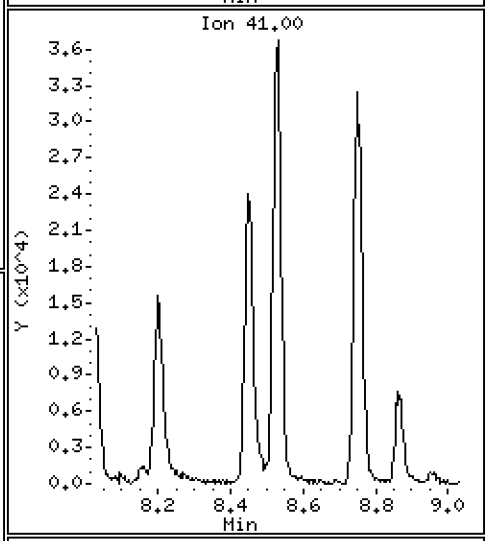


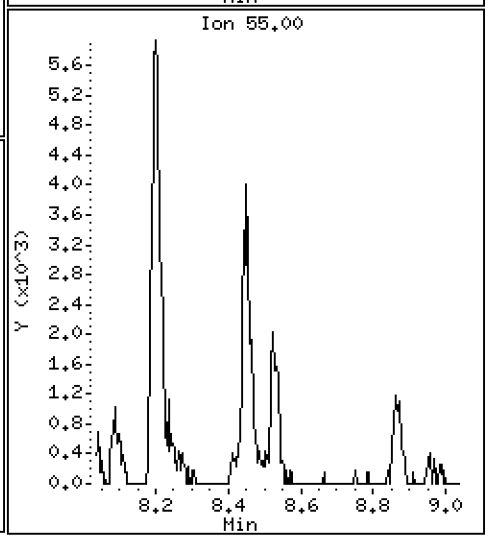












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 46

Date : 02-SEP-2018 16:18

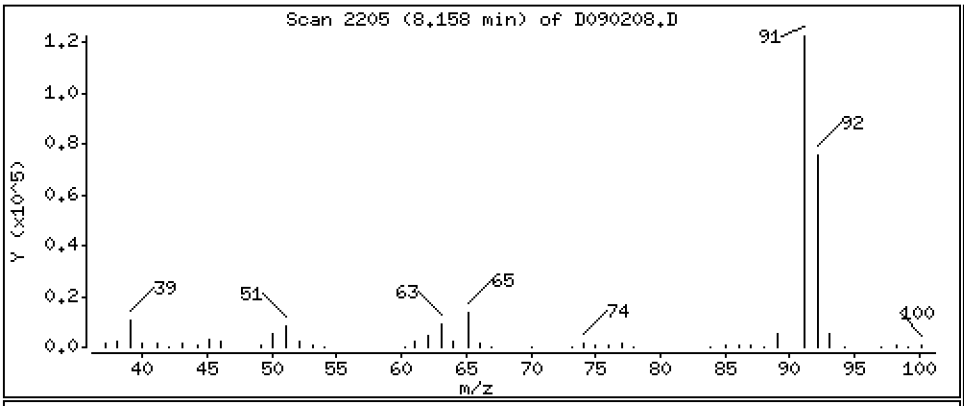
Client ID: HS18081428-01MS Instrument: VOA2.i

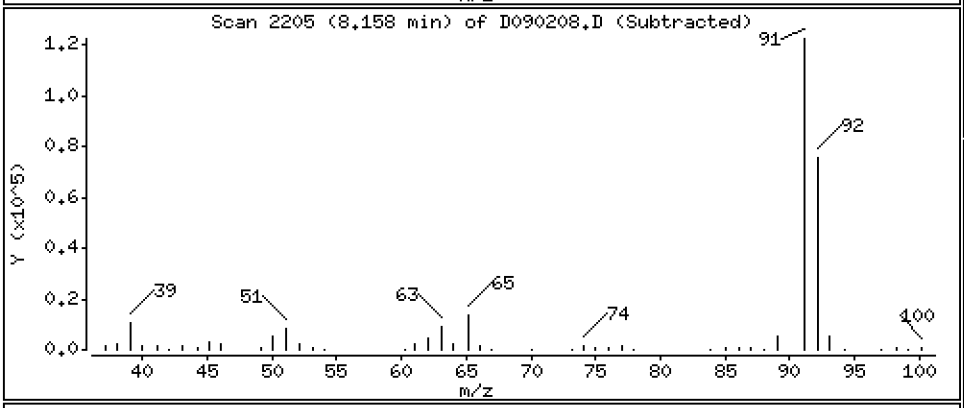
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

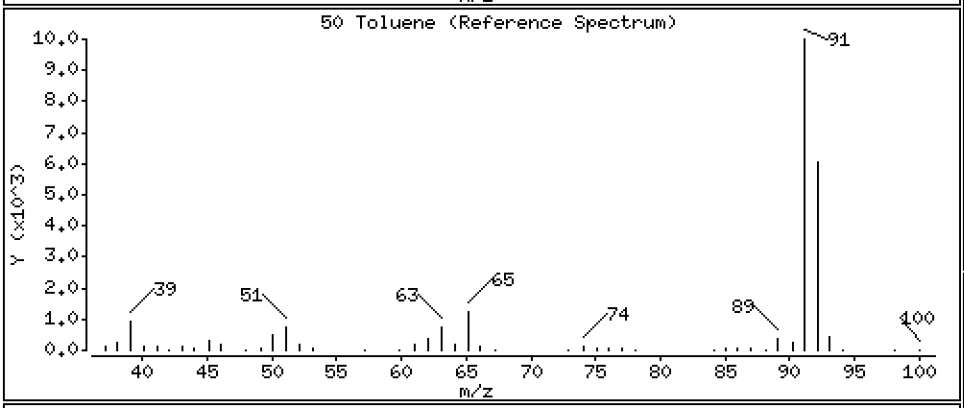
Purge Volume: 5.0 Operator: AP

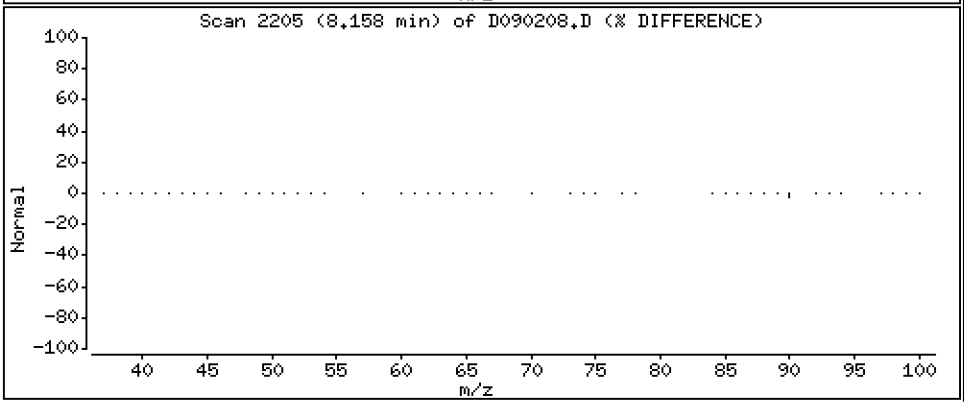
Column phase: DB624 Column diameter: 0.18

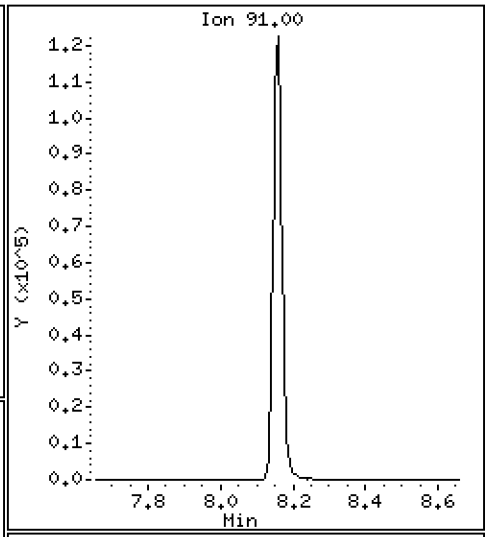
50 Toluene Concentration: 16.96 ug/l Review Code:

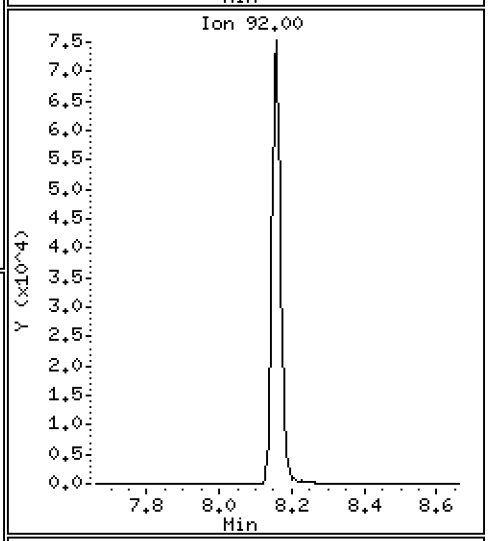


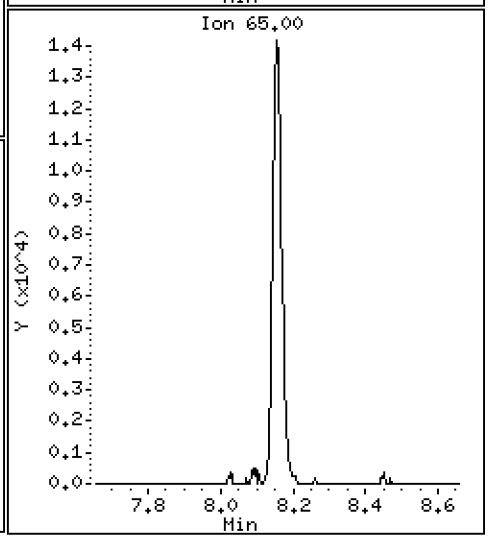












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Date : 02-SEP-2018 16:18

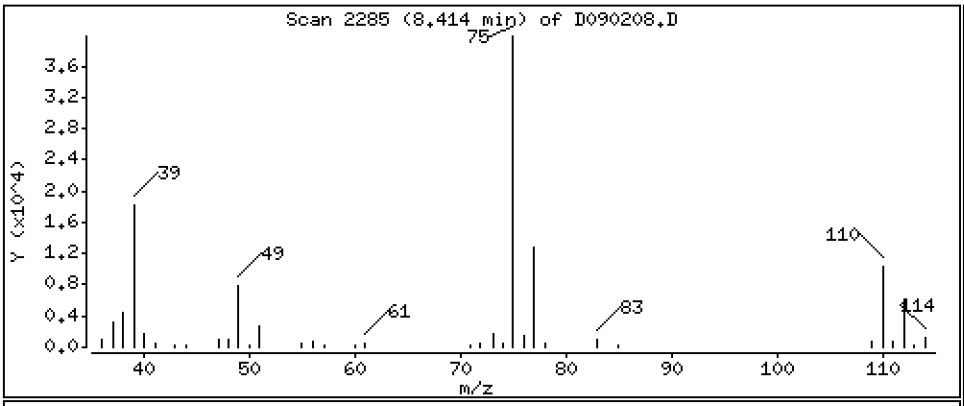
Client ID: HS18081428-01MS Instrument: VOA2.i

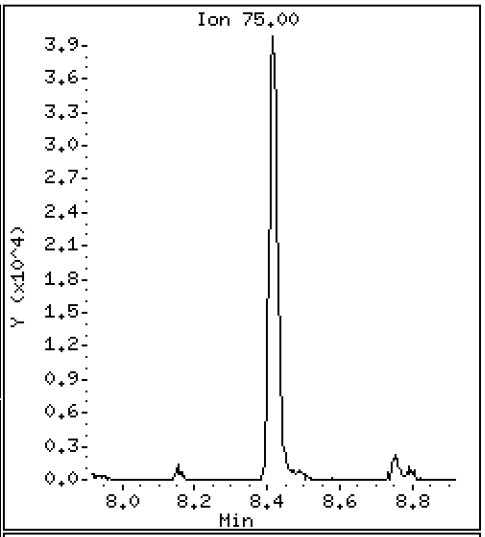
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

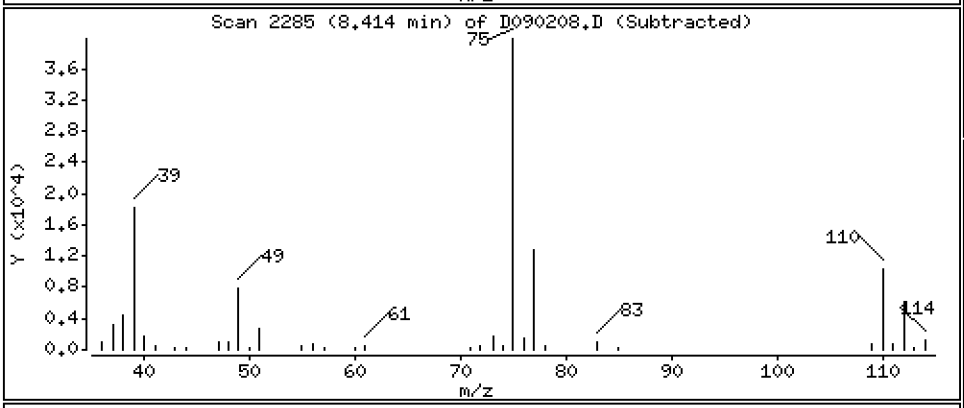
Purge Volume: 5.0 Operator: AP

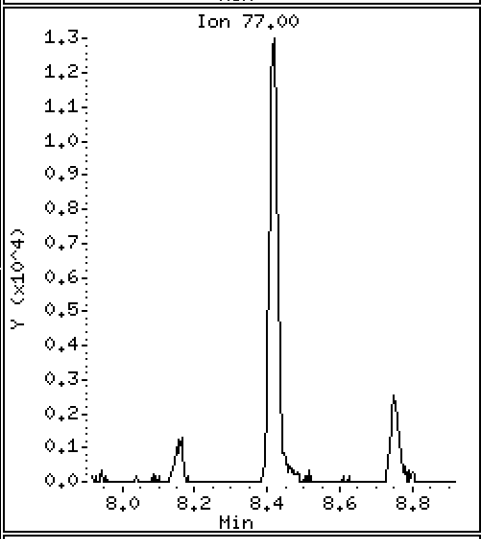
Column phase: DB624 Column diameter: 0.18

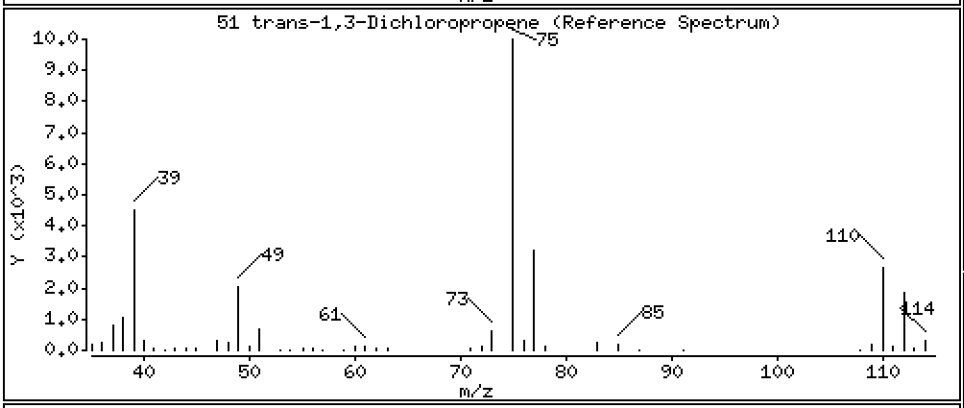
51 trans-1,3-Dichloropropene Concentration: 20.05 ug/l Review Code:

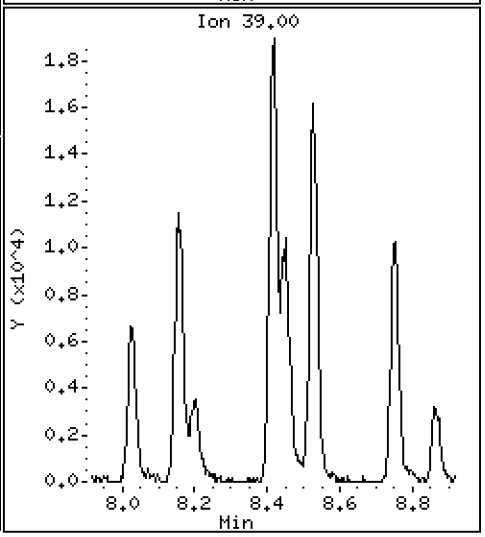


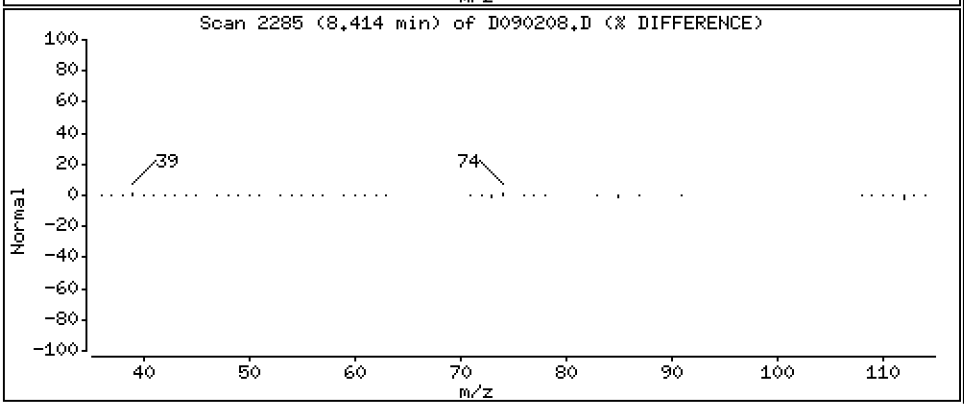












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 48

Date : 02-SEP-2018 16:18

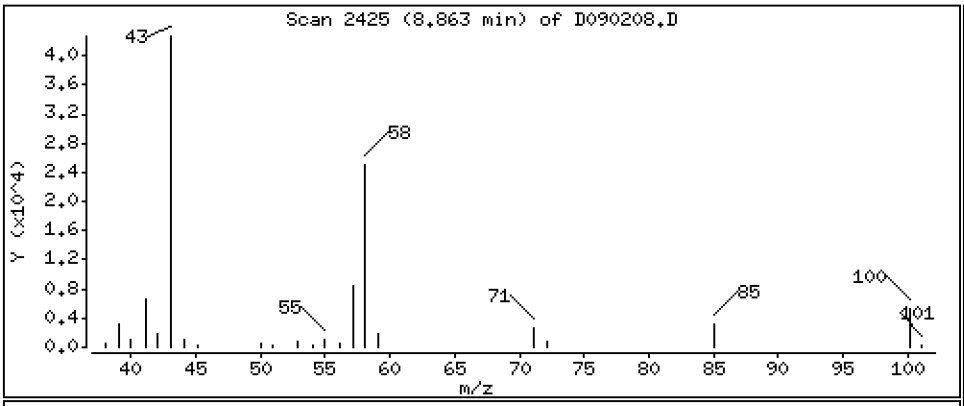
Client ID: HS18081428-01MS Instrument: VOA2.i

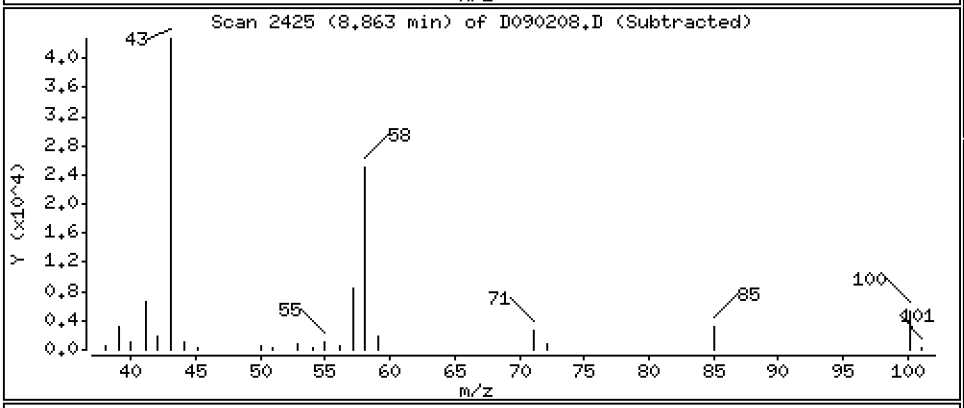
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

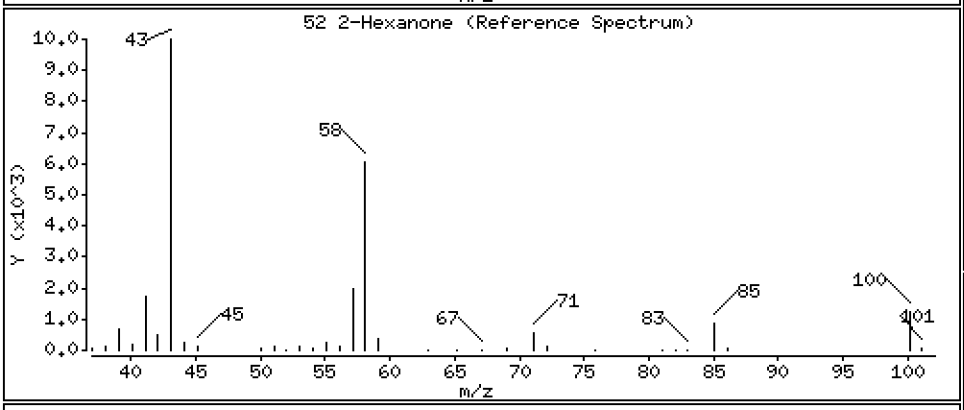
Purge Volume: 5.0 Operator: AP

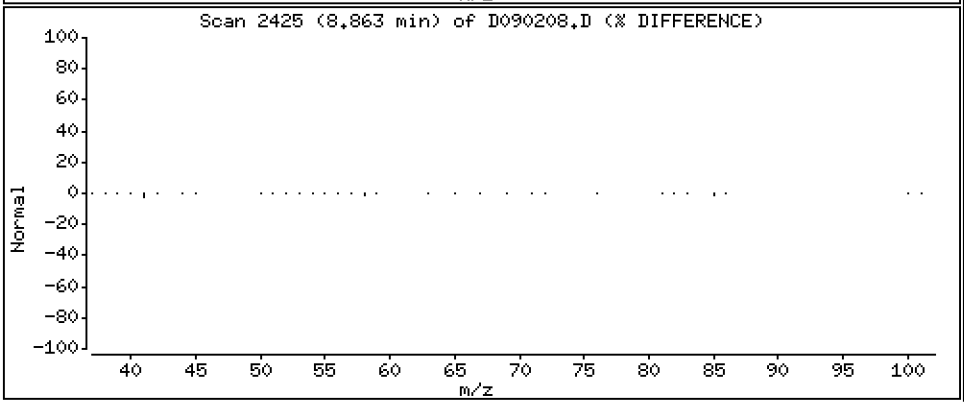
Column phase: DB624 Column diameter: 0.18

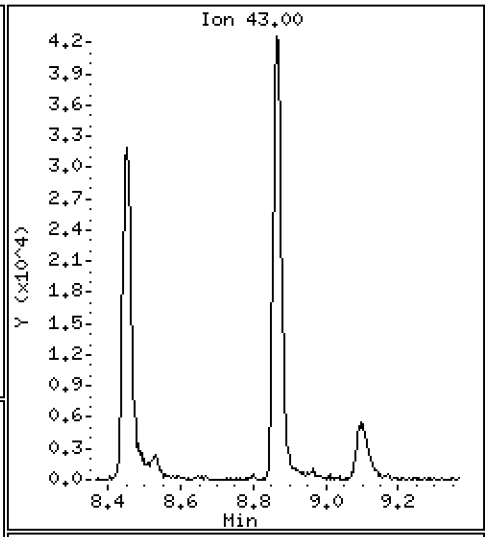
52 2-Hexanone Concentration: 30.98 ug/l Review Code:

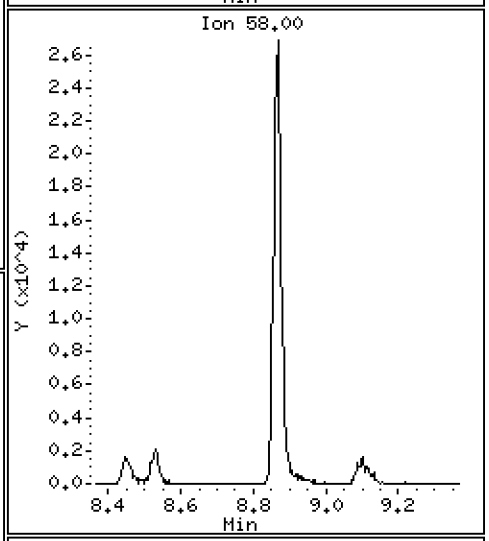


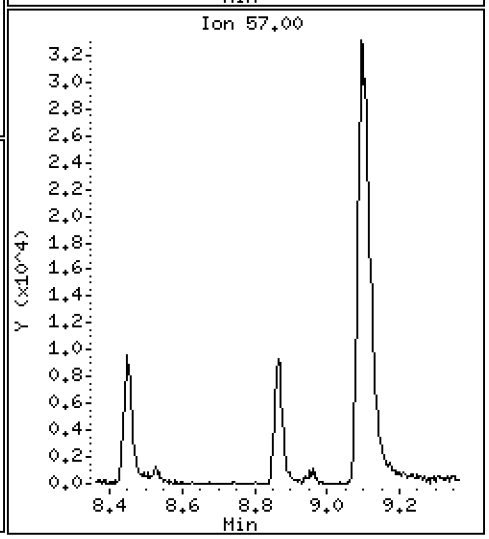












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 49

Date : 02-SEP-2018 16:18

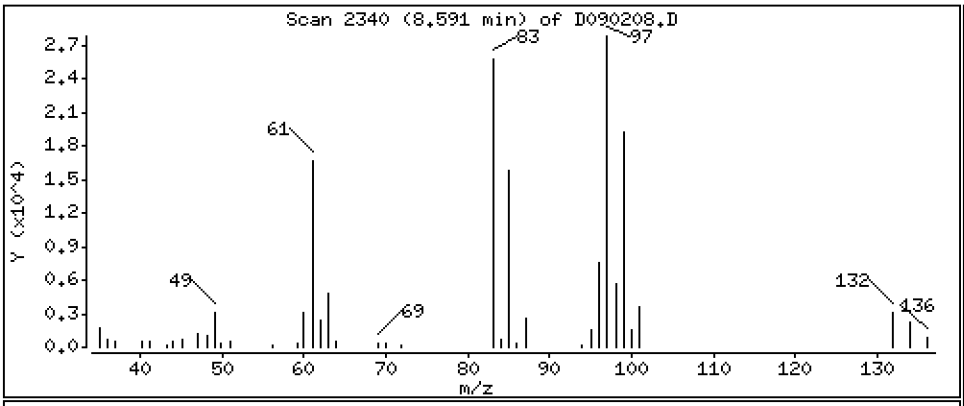
Client ID: HS18081428-01MS Instrument: VOA2.i

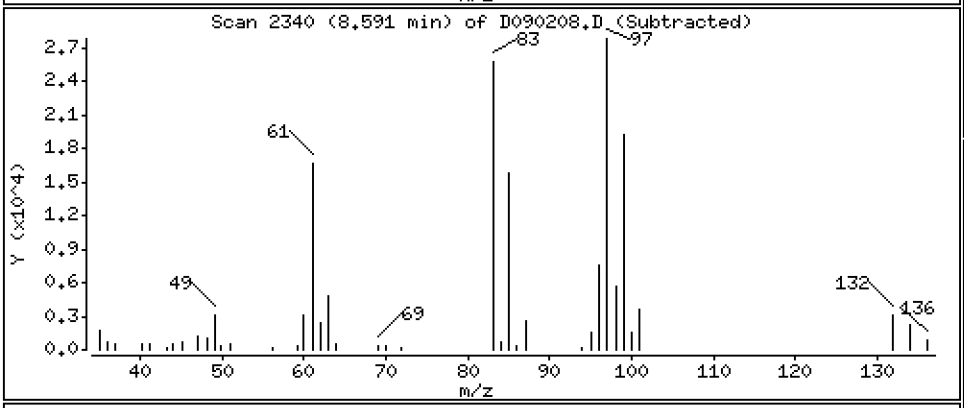
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

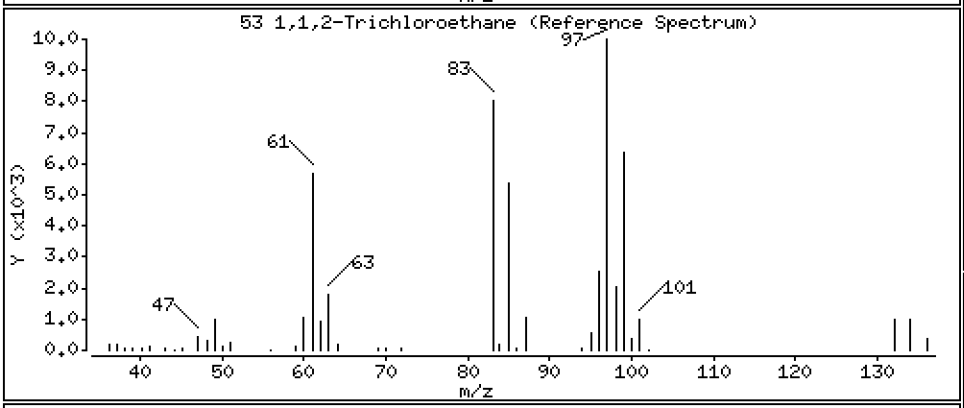
Purge Volume: 5.0 Operator: AP

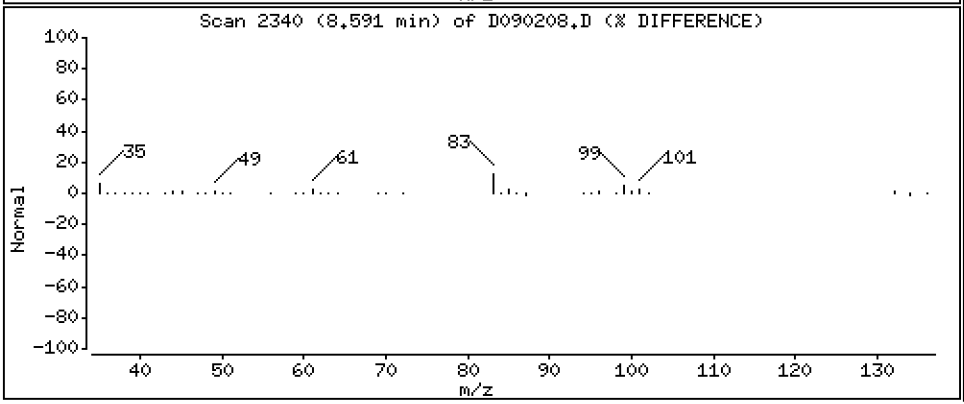
Column phase: DB624 Column diameter: 0.18

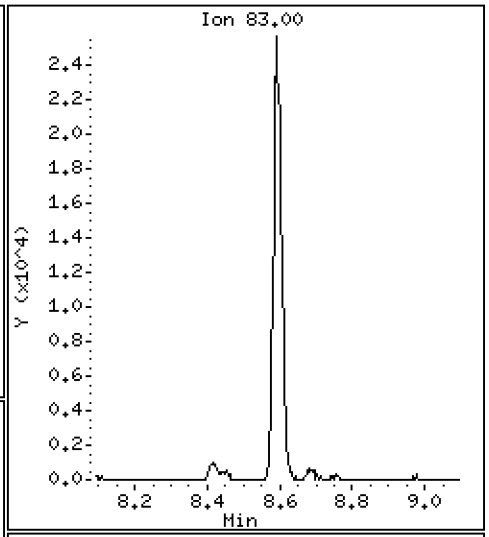
53 1,1,2-Trichloroethane Concentration: 16.98 ug/l Review Code:

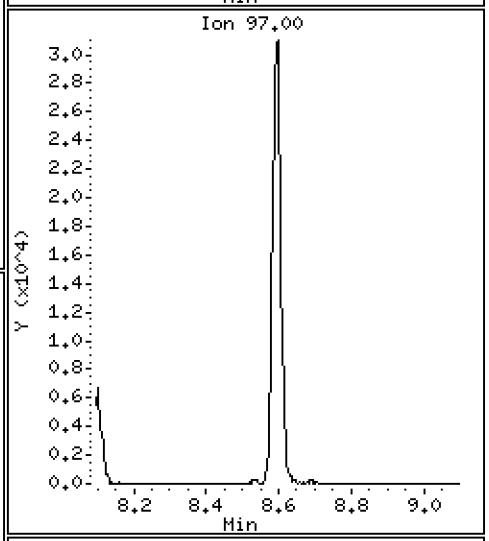


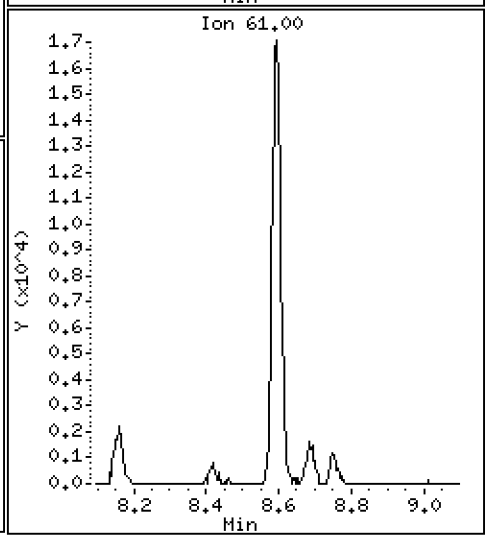












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 50

Date : 02-SEP-2018 16:18

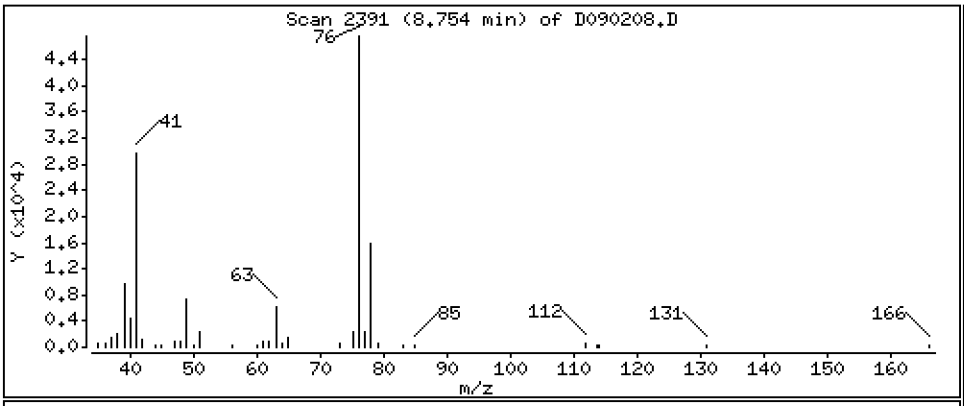
Client ID: HS18081428-01MS Instrument: VOA2.i

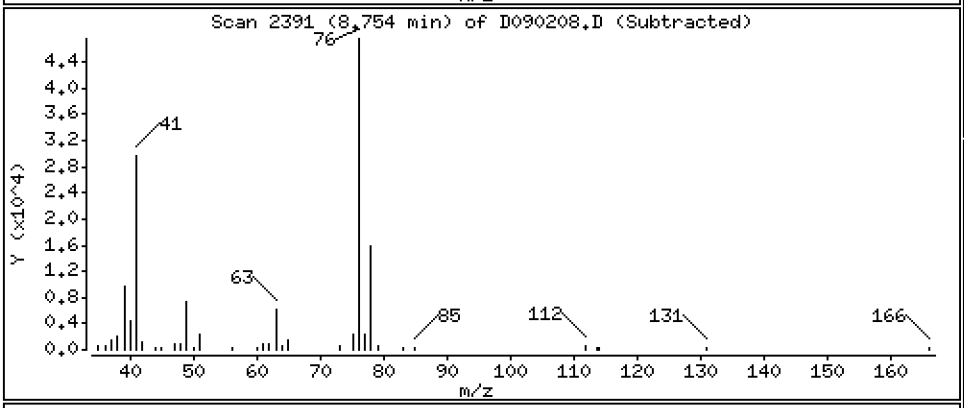
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

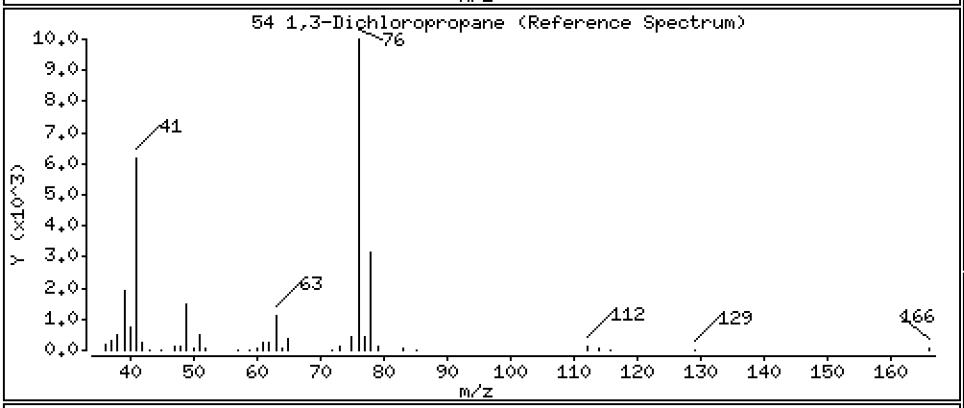
Purge Volume: 5.0 Operator: AP

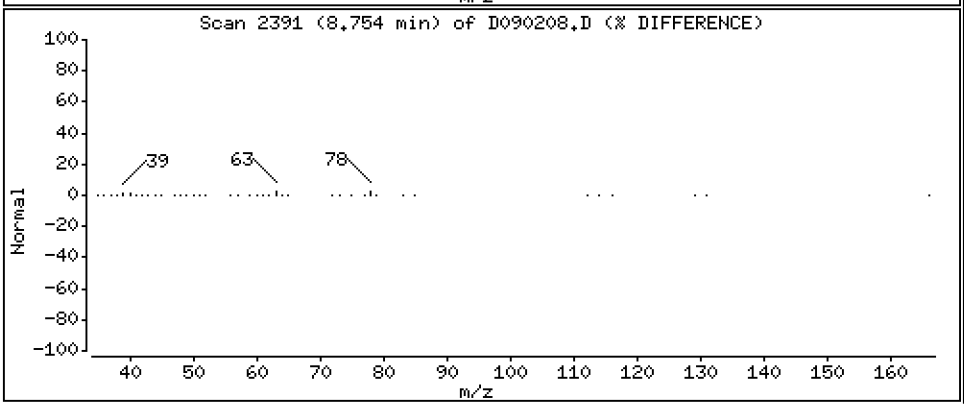
Column phase: DB624 Column diameter: 0.18

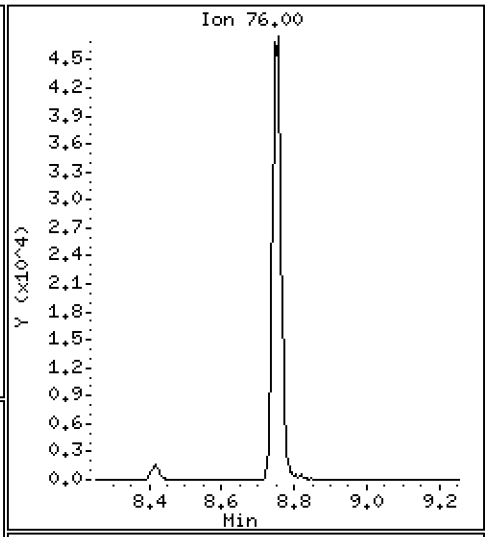
54 1,3-Dichloropropane Concentration: 17.07 ug/l Review Code:

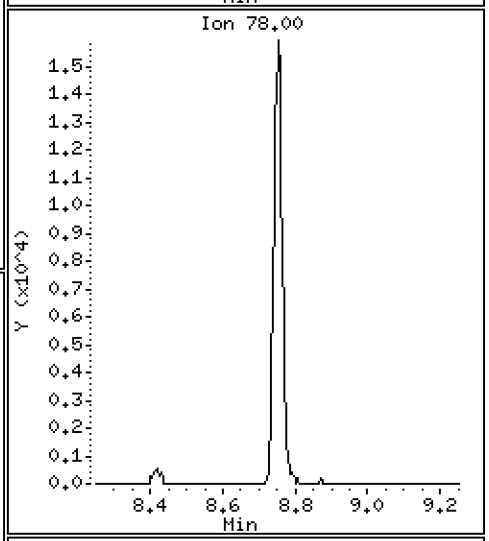


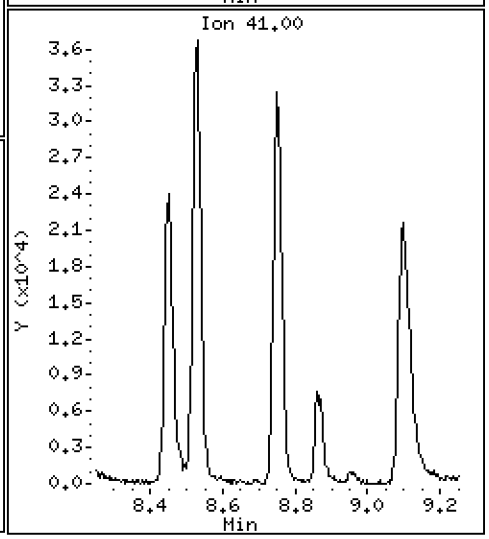












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 51

Date : 02-SEP-2018 16:18

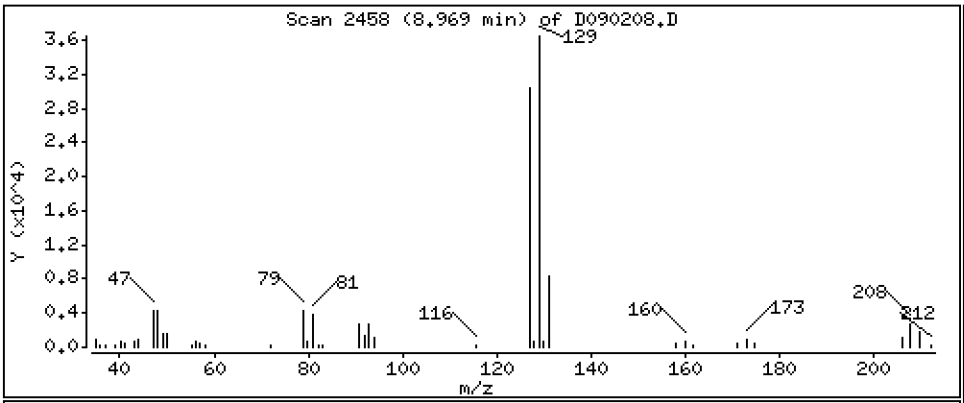
Client ID: HS18081428-01MS Instrument: VOA2.i

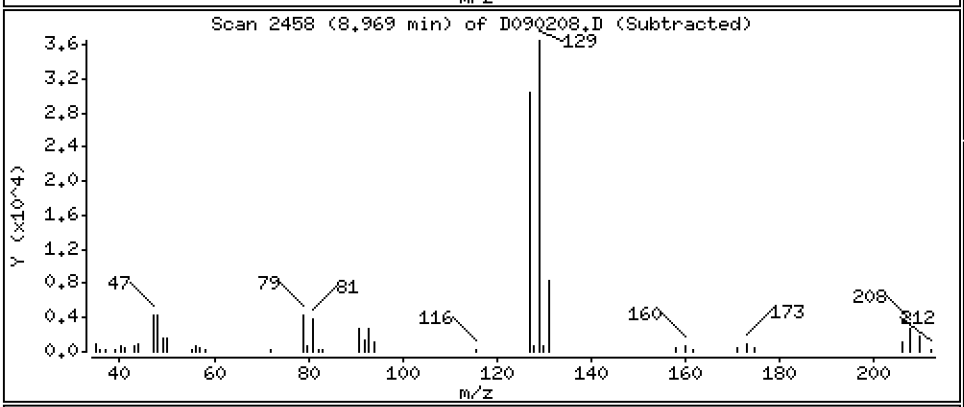
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

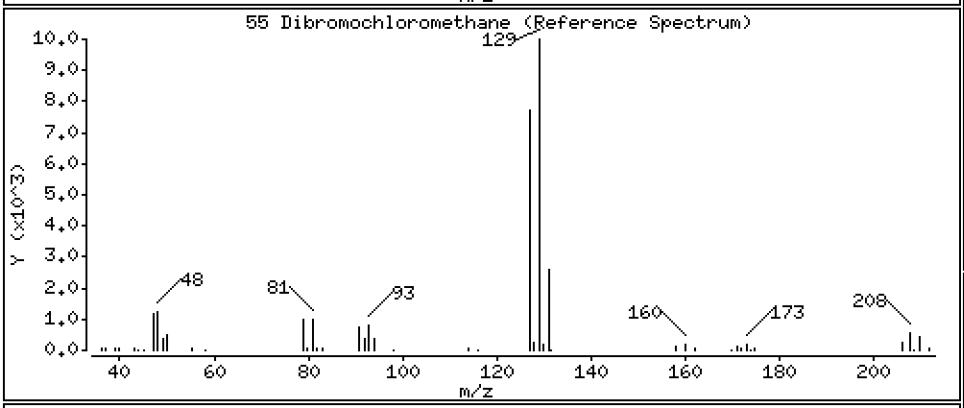
Purge Volume: 5.0 Operator: AP

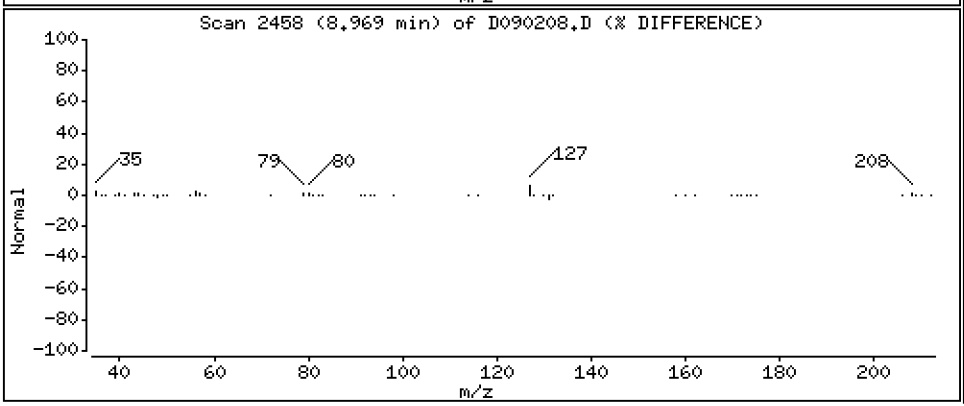
Column phase: DB624 Column diameter: 0.18

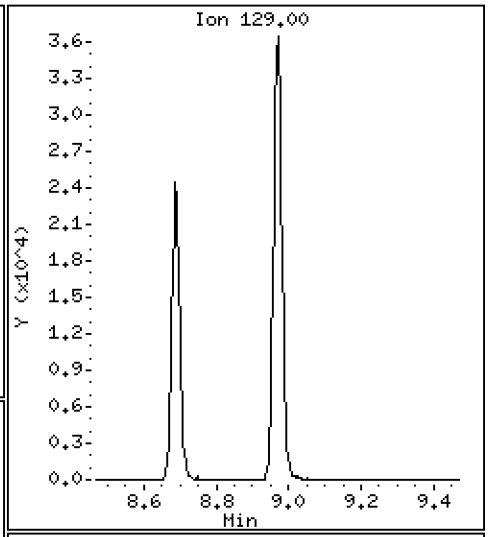
55 Dibromochloromethane Concentration: 18.12 ug/l Review Code:

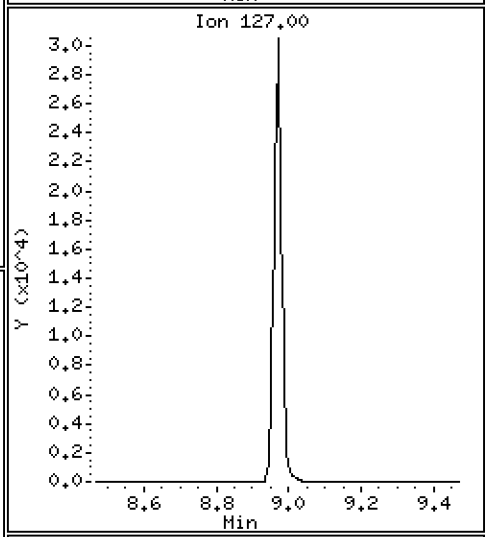


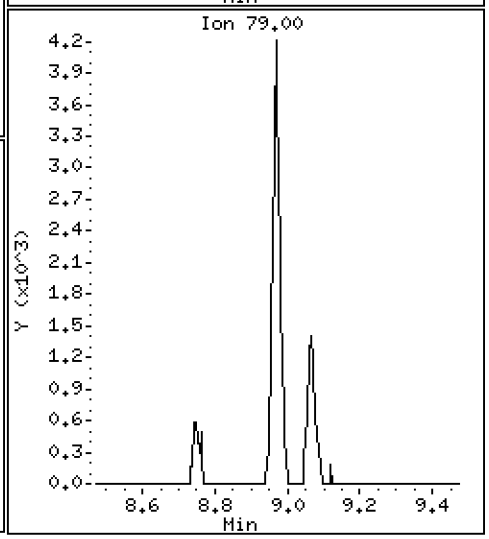












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 52

Date : 02-SEP-2018 16:18

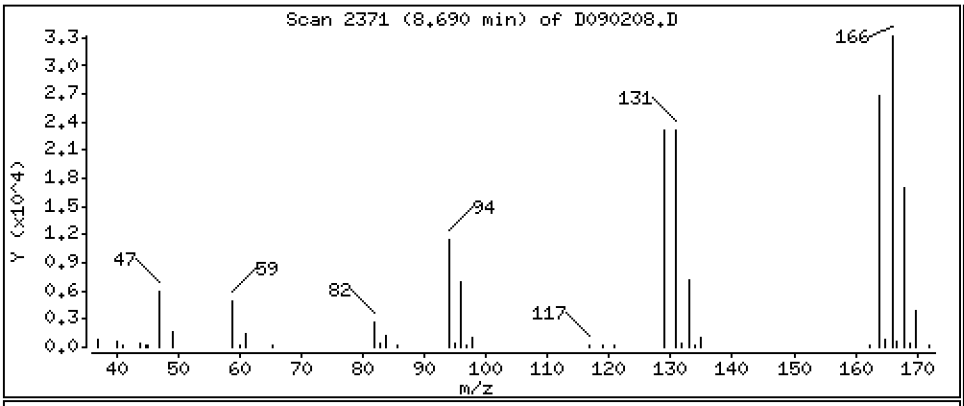
Client ID: HS18081428-01MS Instrument: VOA2.i

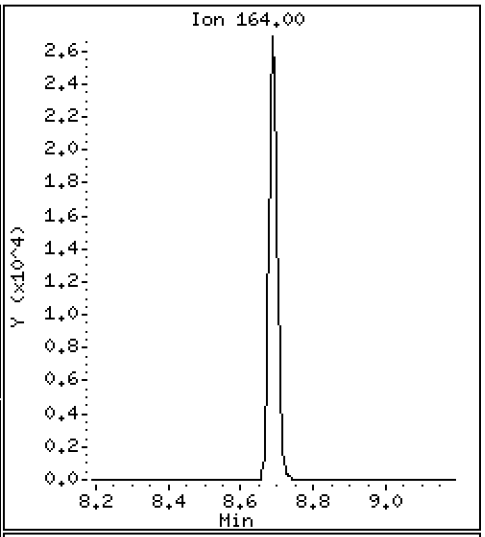
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

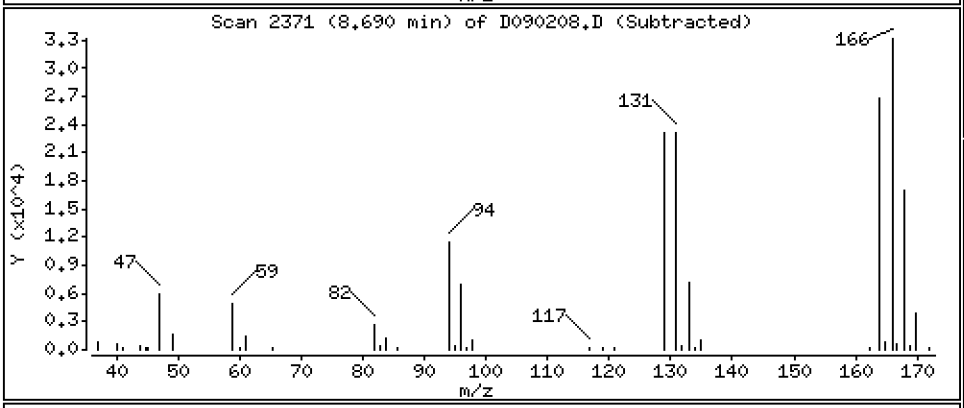
Purge Volume: 5.0 Operator: AP

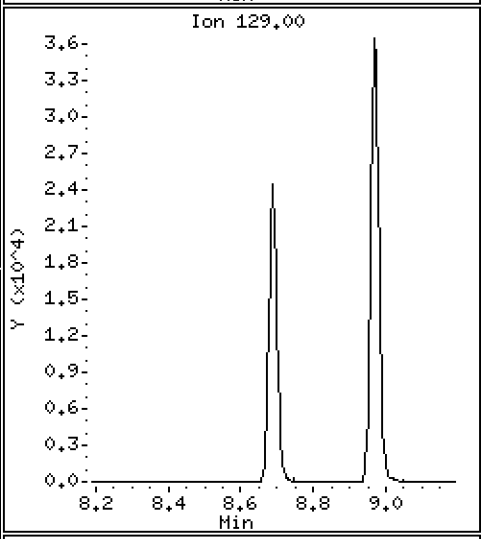
Column phase: DB624 Column diameter: 0.18

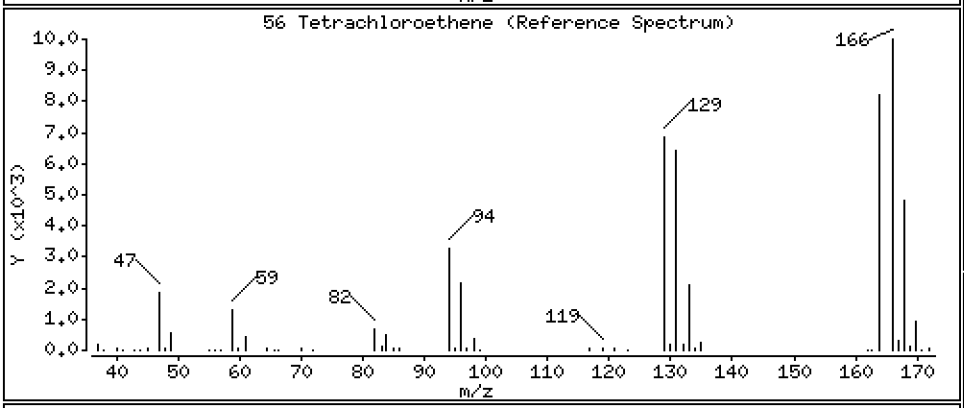
56 Tetrachloroethene Concentration: 17.34 ug/l Review Code:

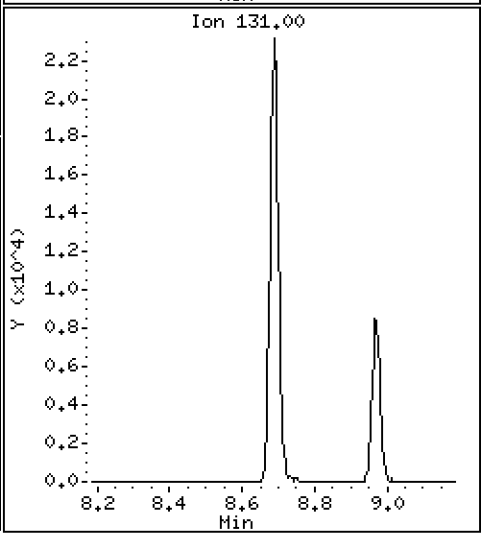


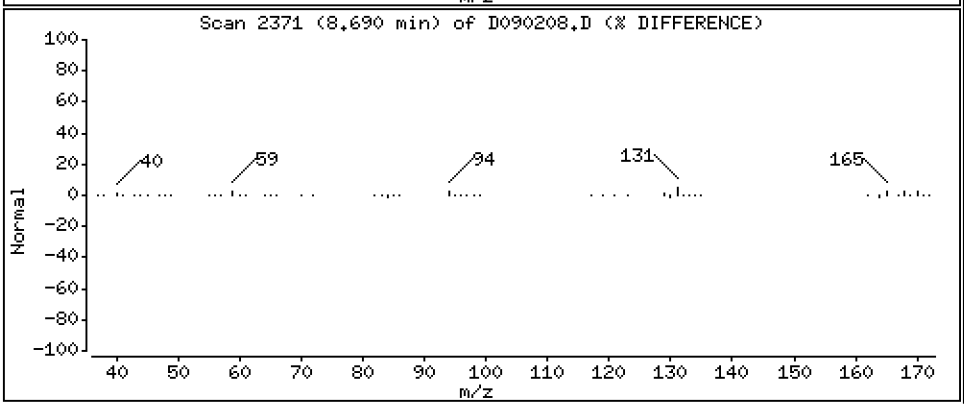












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 53

Date : 02-SEP-2018 16:18

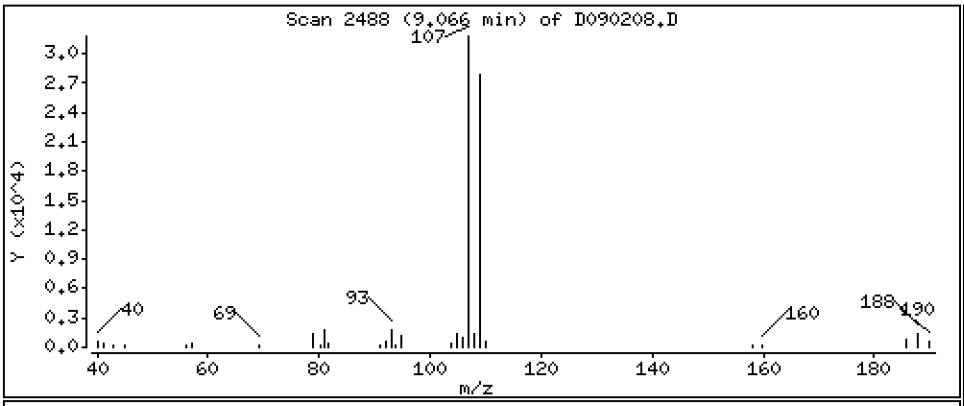
Client ID: HS18081428-01MS Instrument: VOA2.i

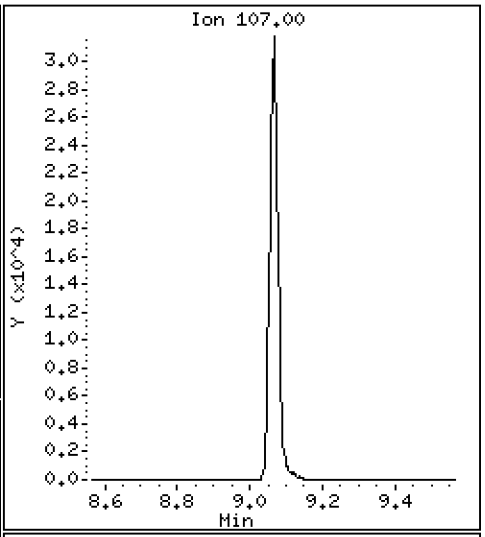
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

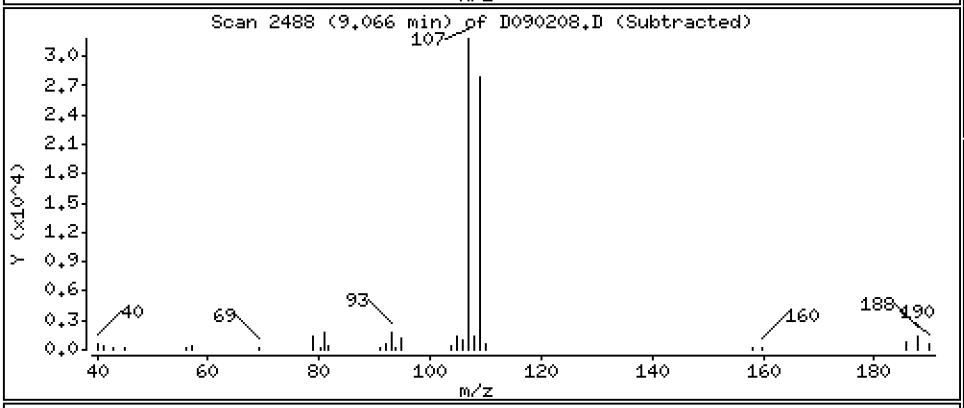
Purge Volume: 5.0 Operator: AP

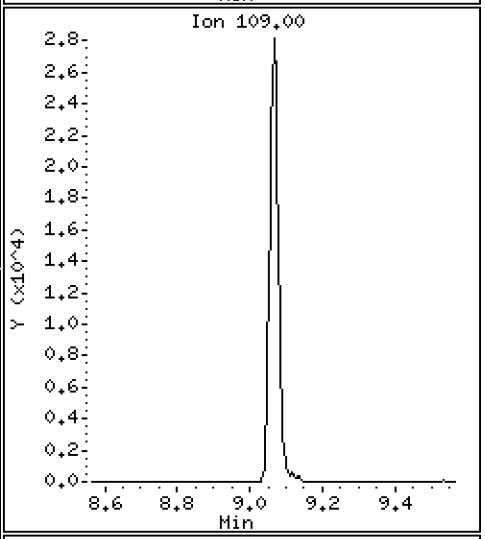
Column phase: DB624 Column diameter: 0.18

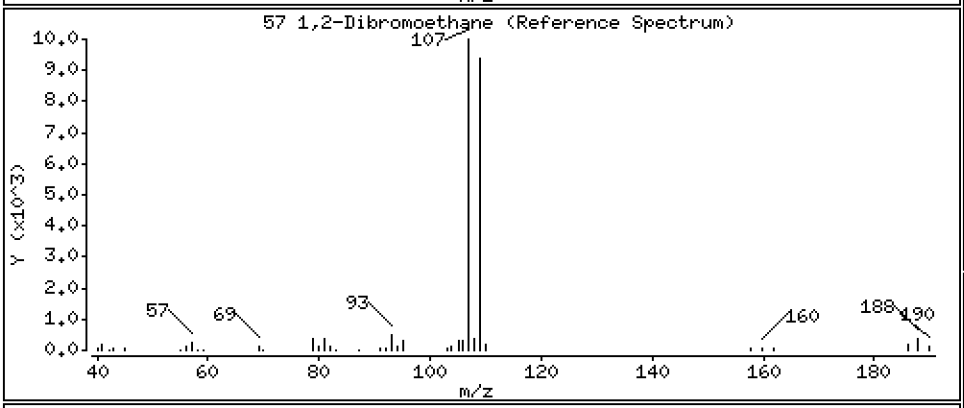
57 1,2-Dibromoethane Concentration: 17.77 ug/l Review Code:

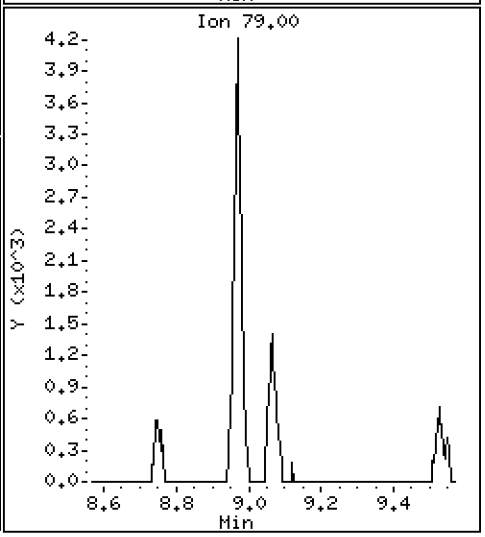


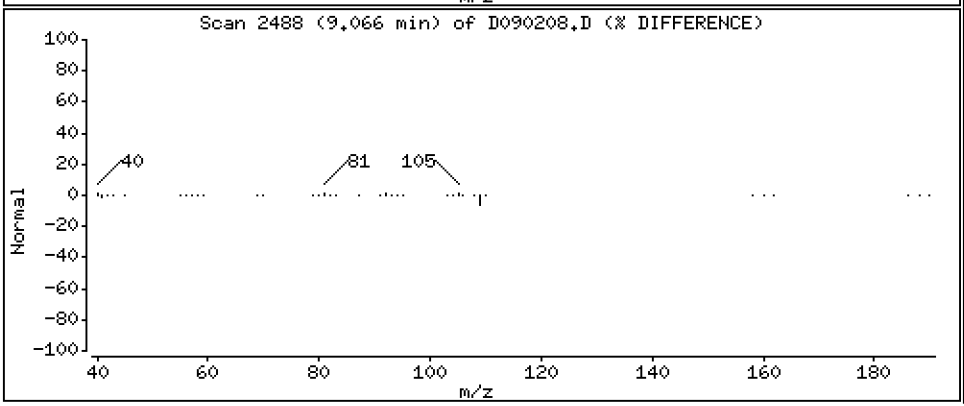












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 54

Date : 02-SEP-2018 16:18

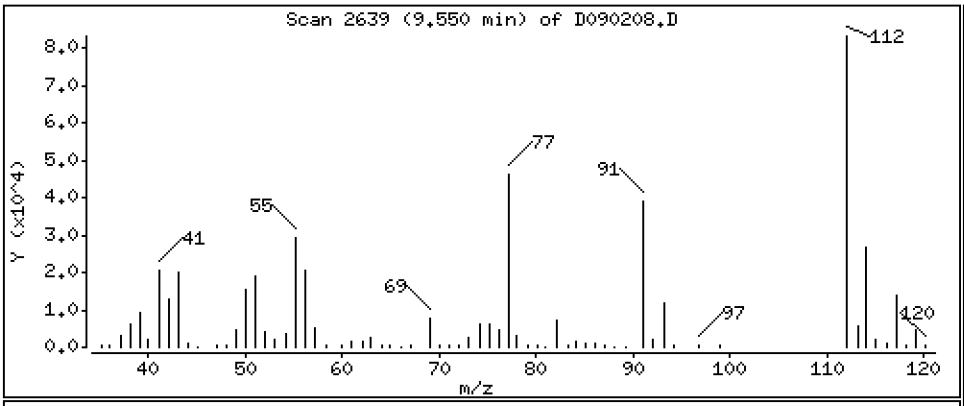
Client ID: HS18081428-01MS Instrument: VOA2.i

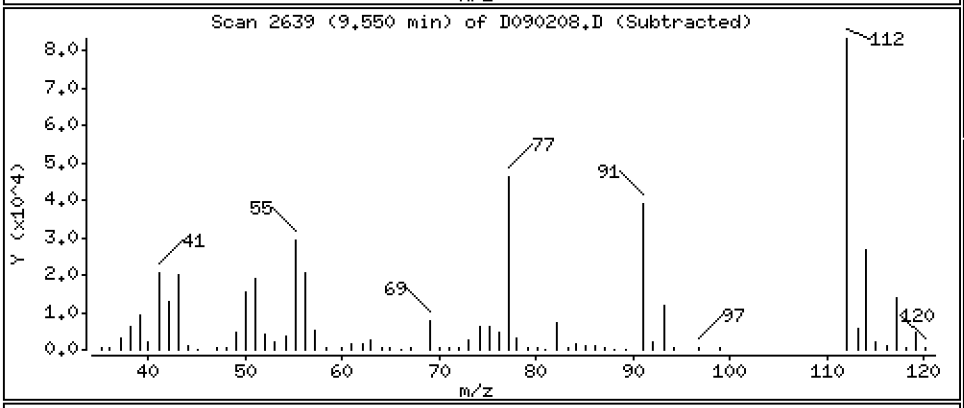
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

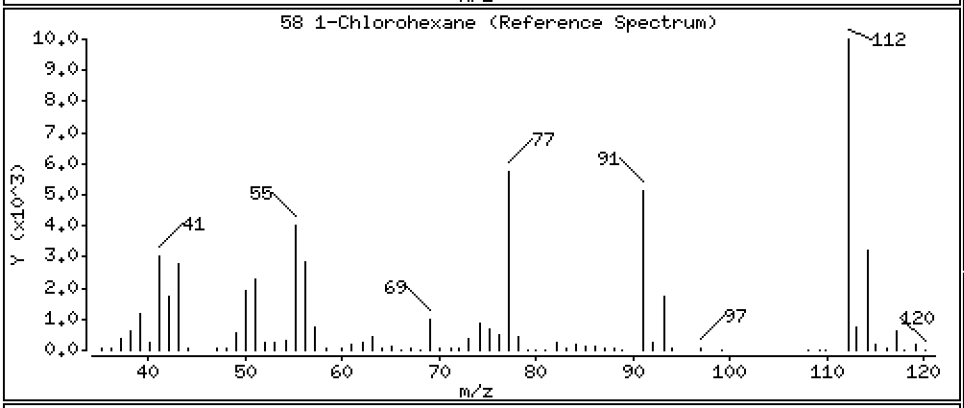
Purge Volume: 5.0 Operator: AP

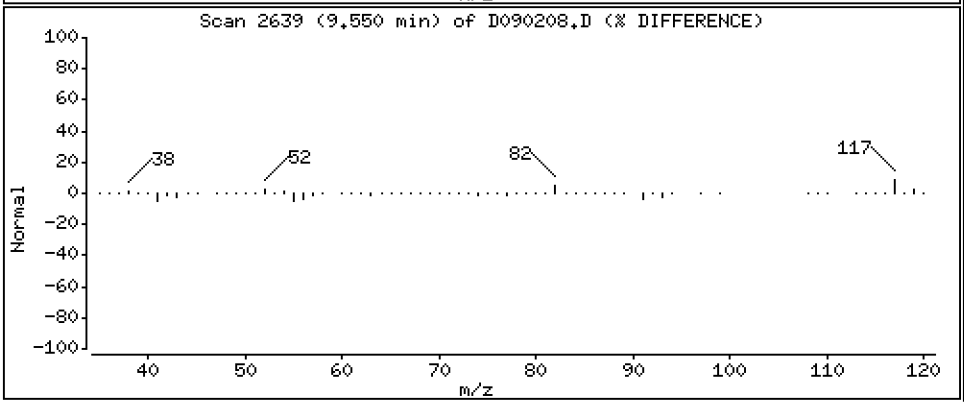
Column phase: DB624 Column diameter: 0.18

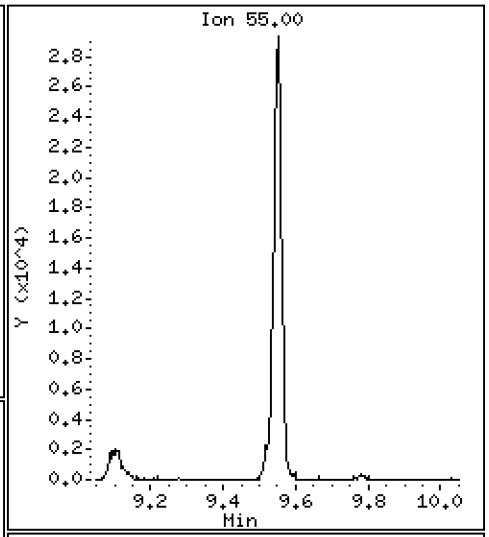
58 1-Chlorohexane Concentration: 16.65 ug/l Review Code:

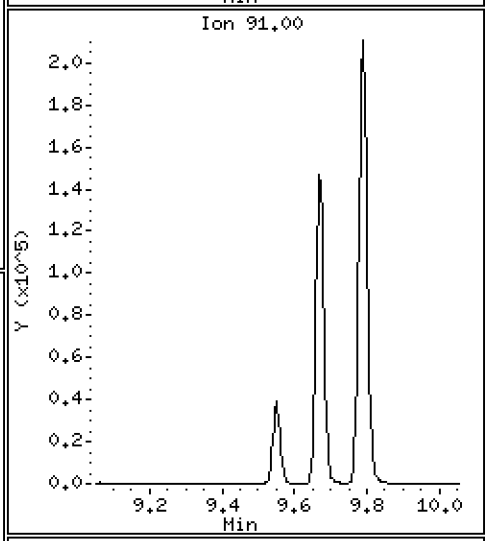


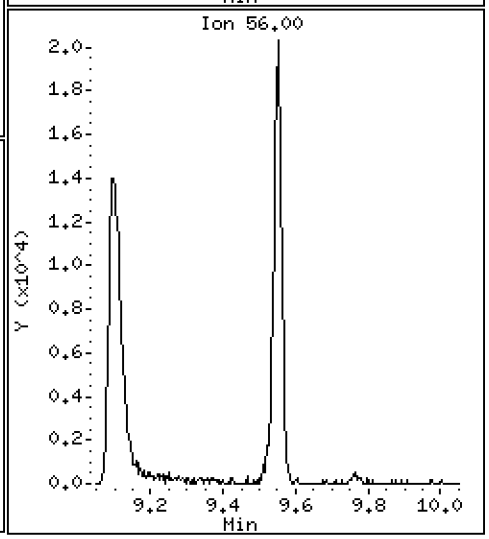












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 55

Date : 02-SEP-2018 16:18

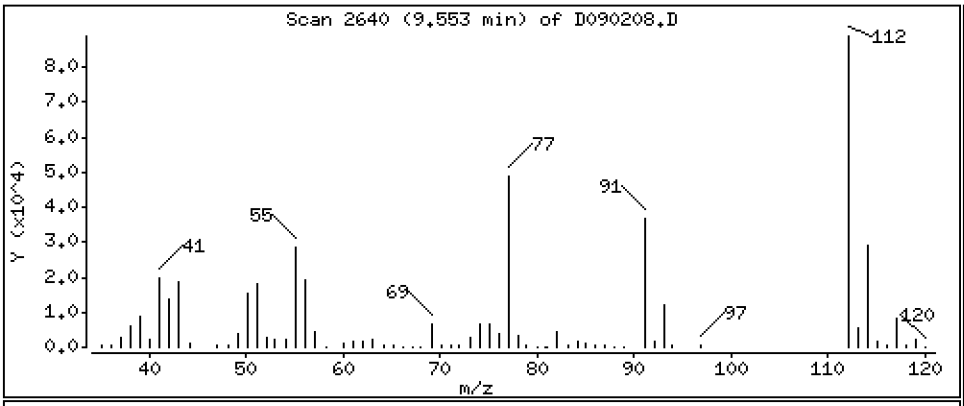
Client ID: HS18081428-01MS Instrument: VOA2.i

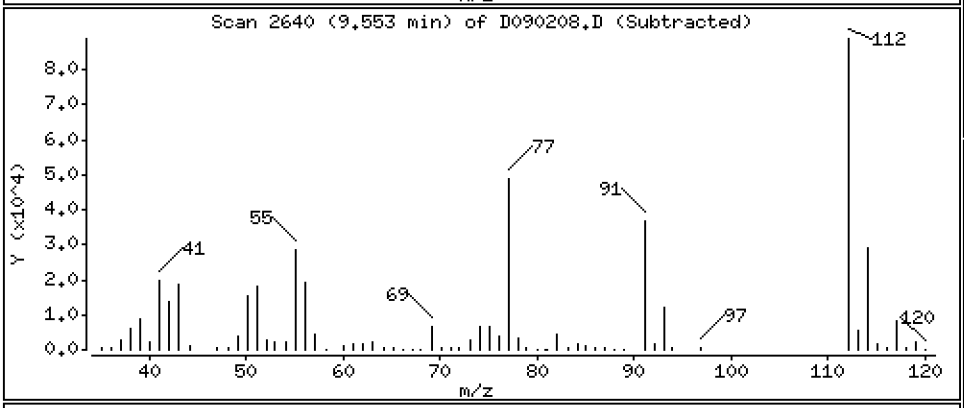
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

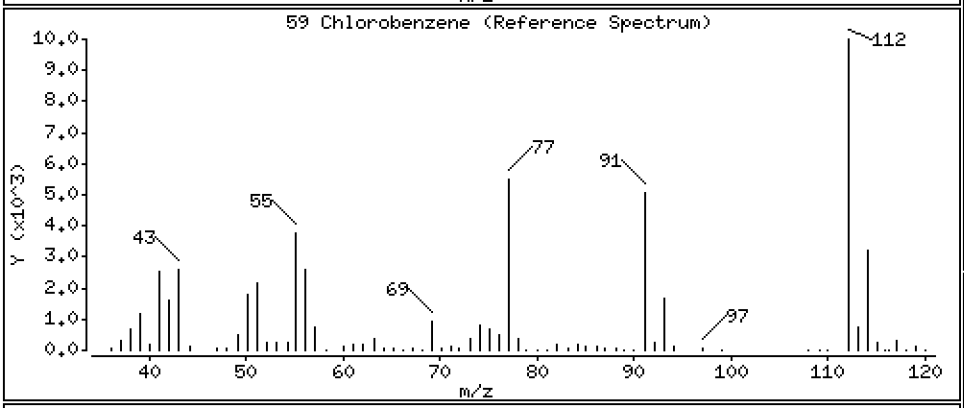
Purge Volume: 5.0 Operator: AP

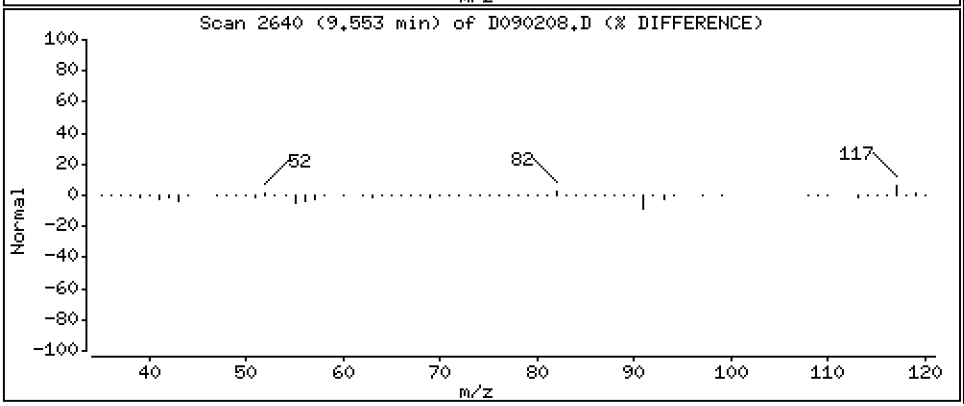
Column phase: DB624 Column diameter: 0.18

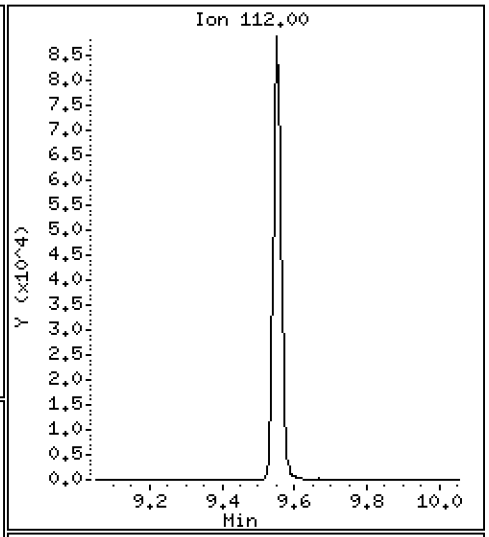
59 Chlorobenzene Concentration: 17.66 ug/l Review Code:

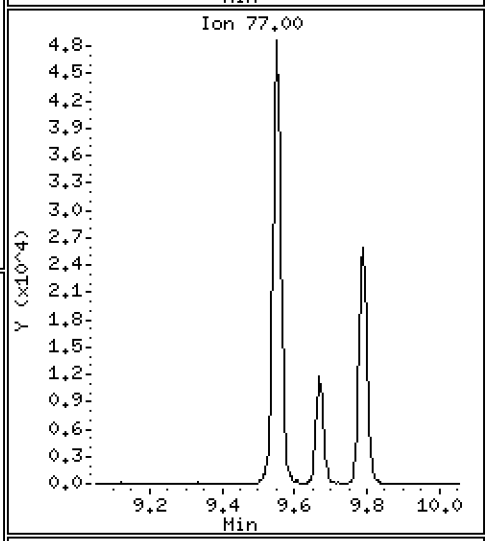


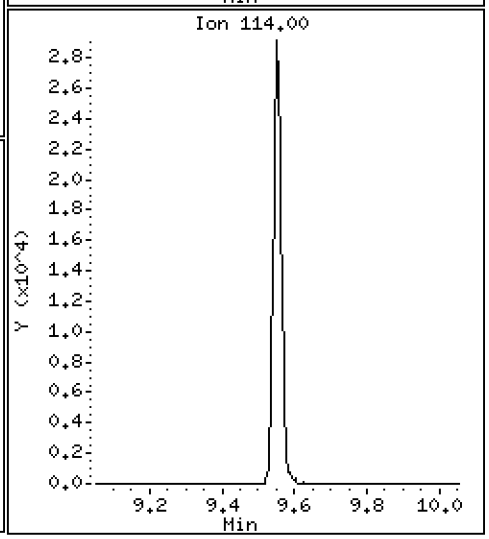












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 56

Date : 02-SEP-2018 16:18

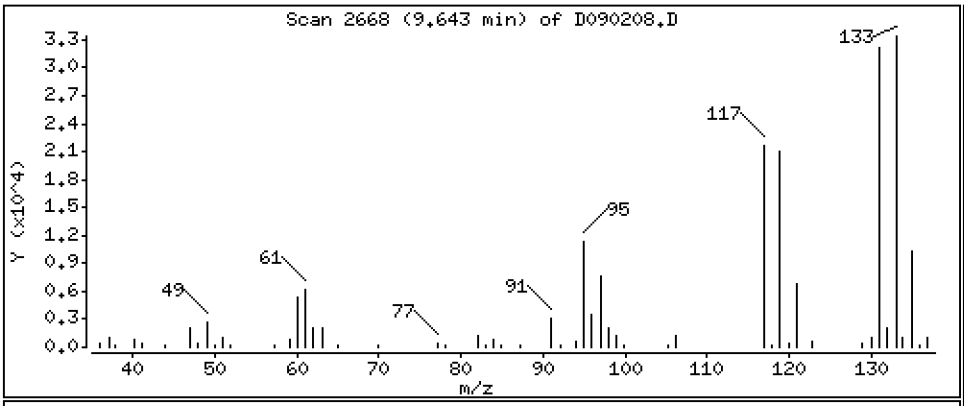
Client ID: HS18081428-01MS Instrument: VOA2.i

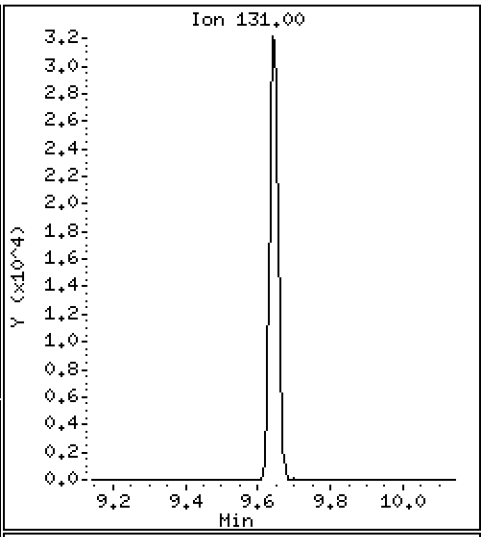
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

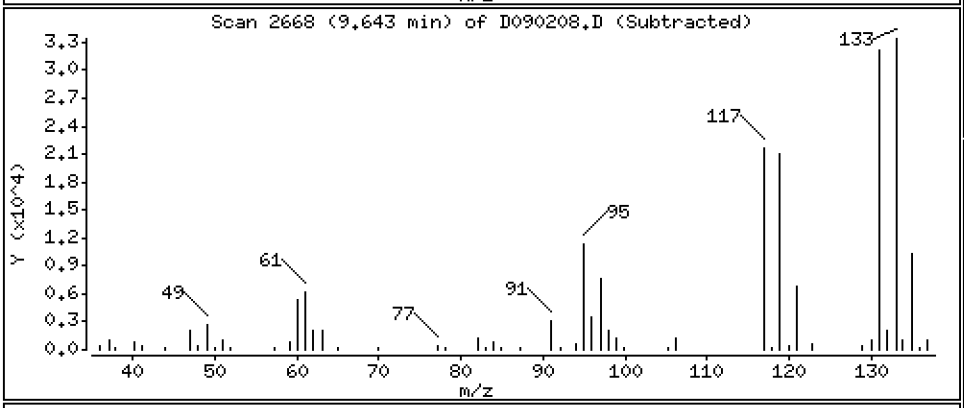
Purge Volume: 5.0 Operator: AP

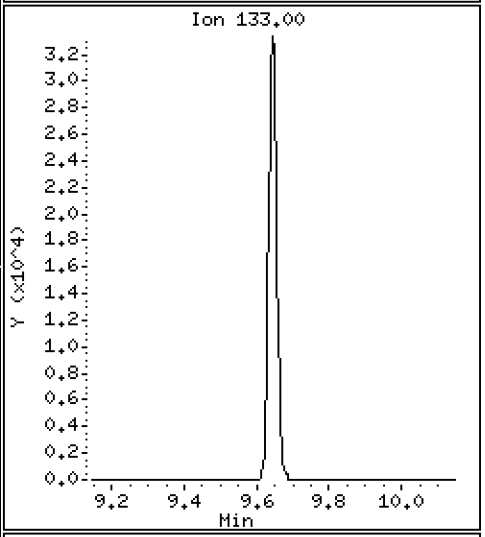
Column phase: DB624 Column diameter: 0.18

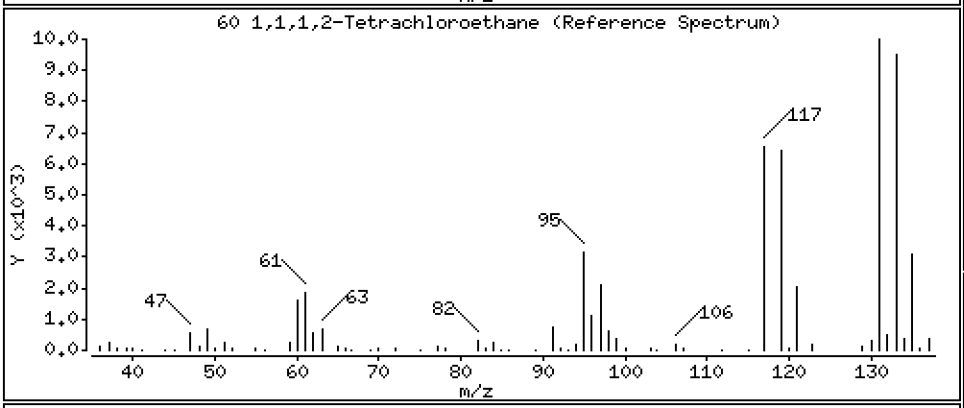
60 1,1,1,2-Tetrachloroethane Concentration: 17.79 ug/l Review Code:

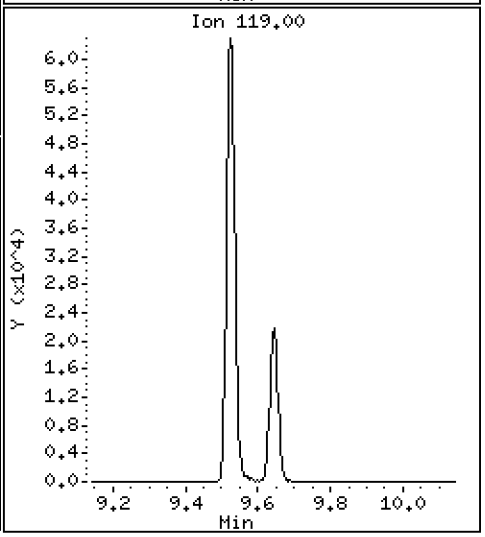


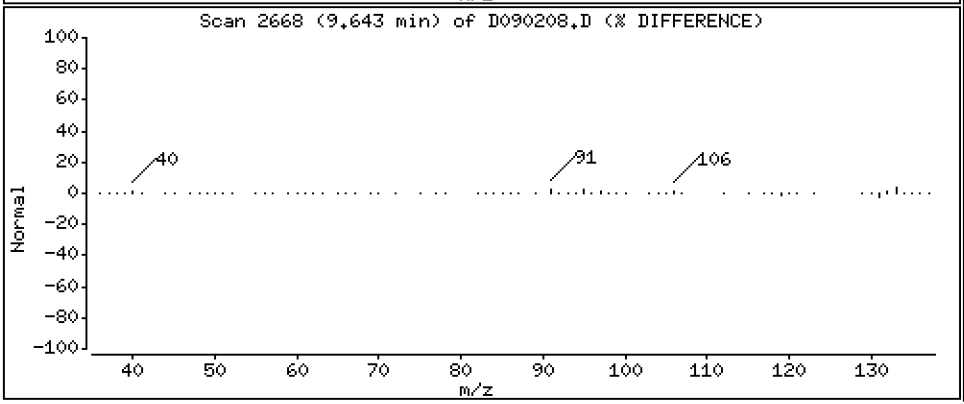












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 57

Date : 02-SEP-2018 16:18

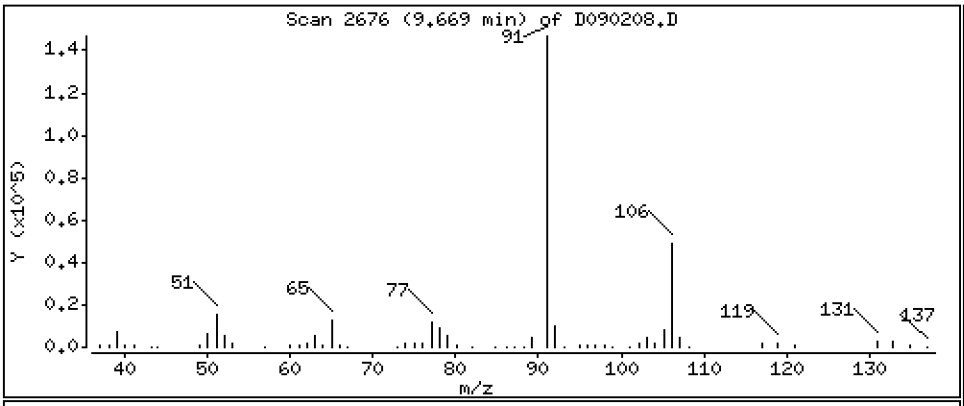
Client ID: HS18081428-01MS Instrument: VOA2.i

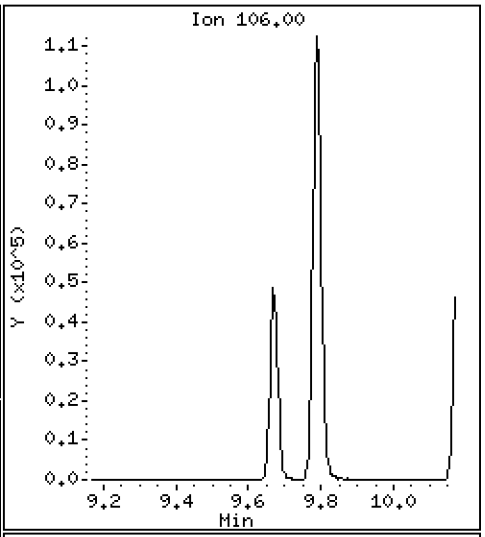
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

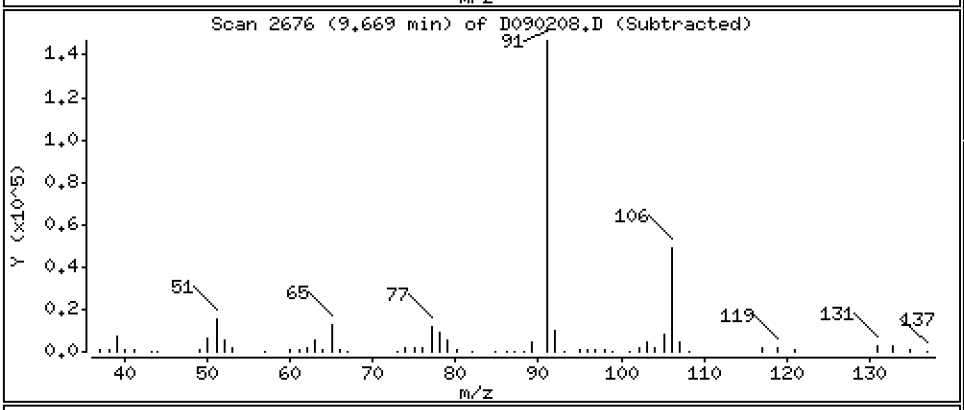
Purge Volume: 5.0 Operator: AP

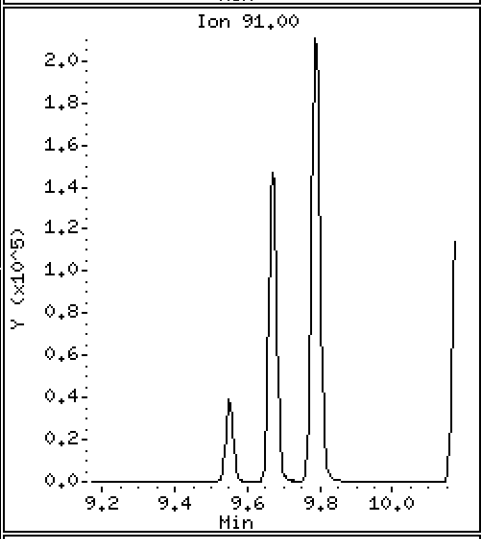
Column phase: DB624 Column diameter: 0.18

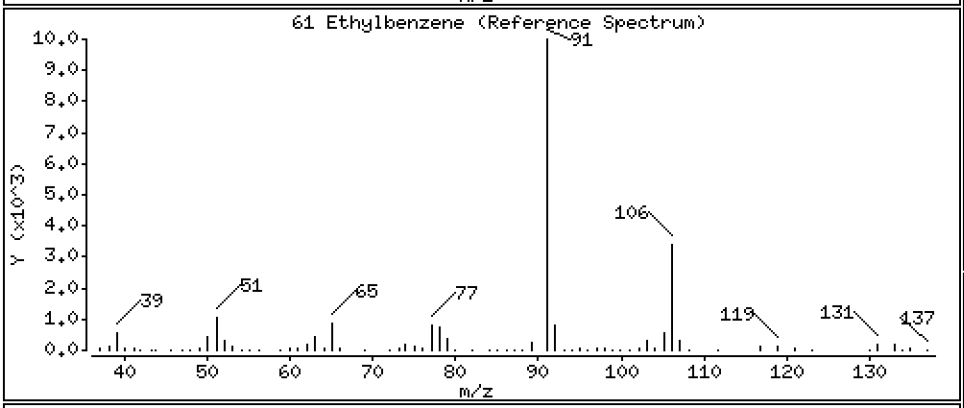
61 Ethylbenzene Concentration: 18.53 ug/l Review Code:

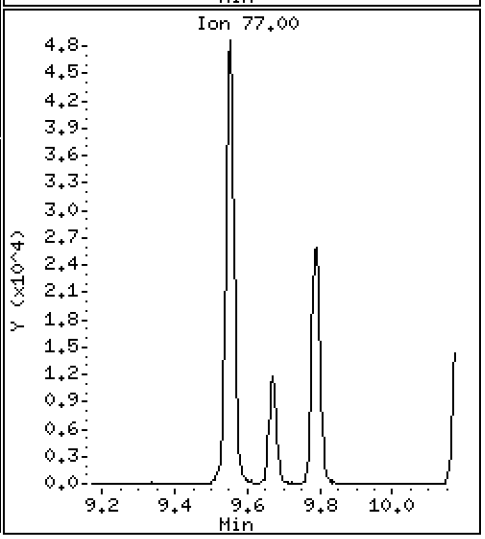


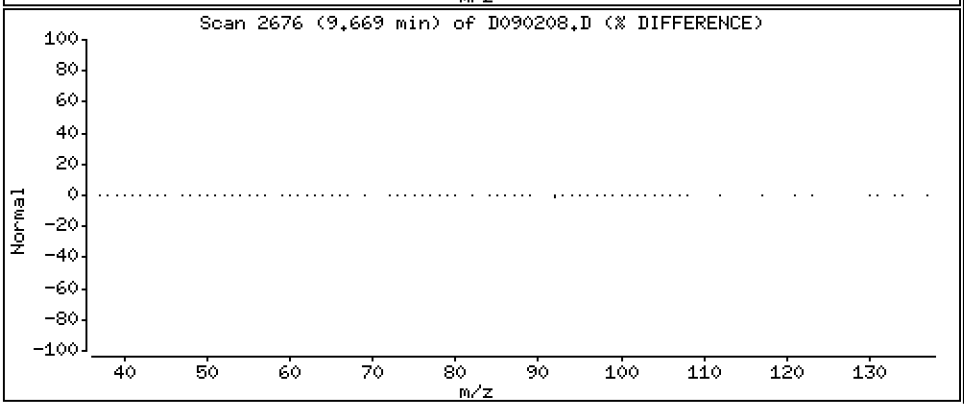












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 58

Date : 02-SEP-2018 16:18

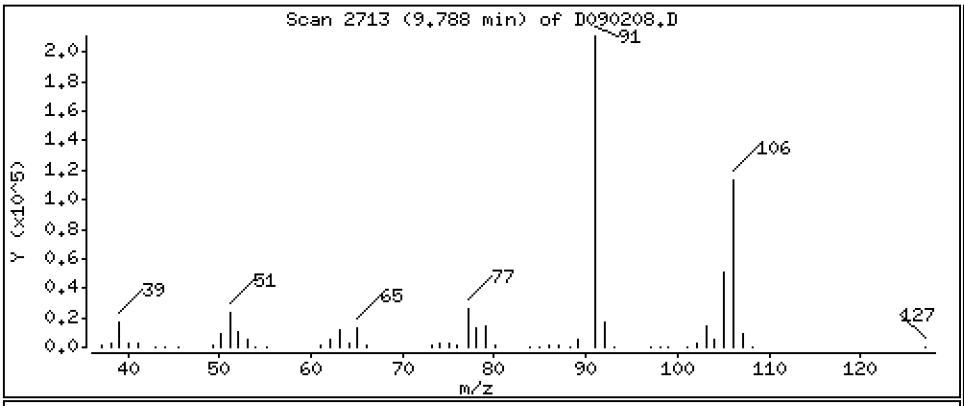
Client ID: HS18081428-01MS Instrument: VOA2.i

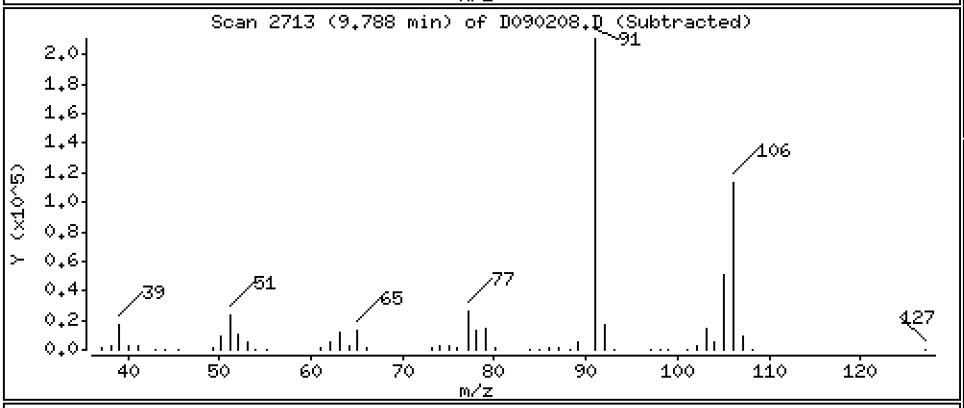
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

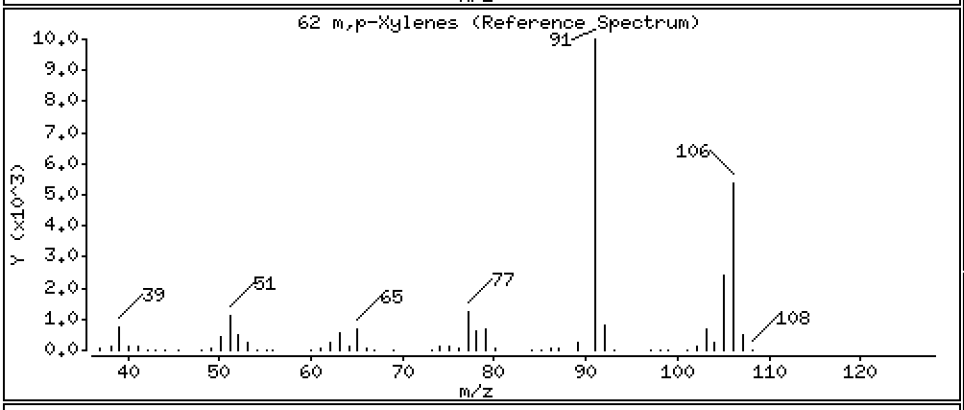
Purge Volume: 5.0 Operator: AP

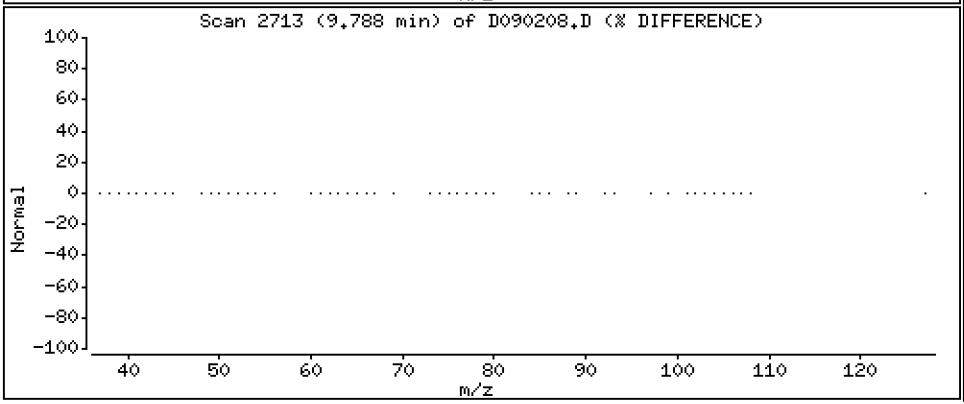
Column phase: DB624 Column diameter: 0.18

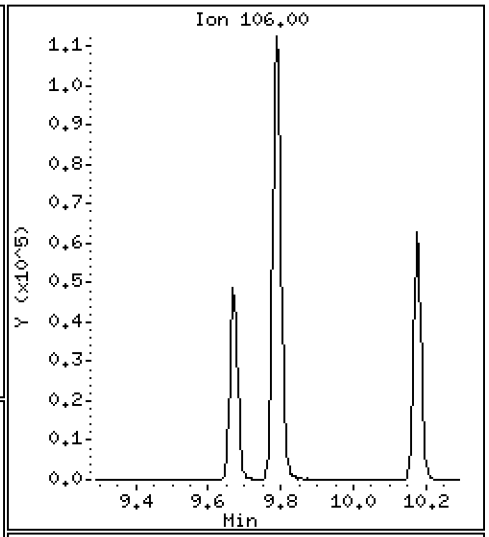
62 m,p-Xylenes Concentration: 37.63 ug/l Review Code:

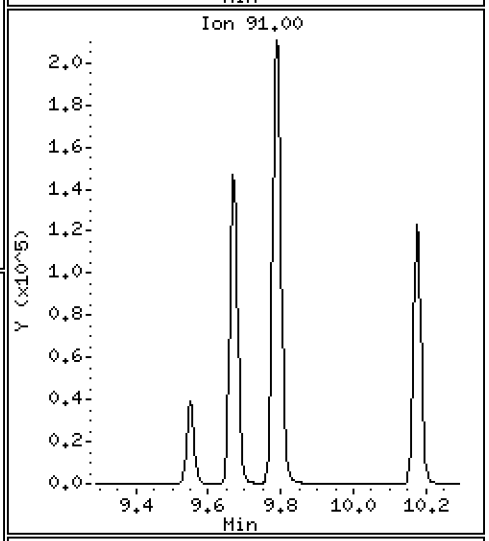


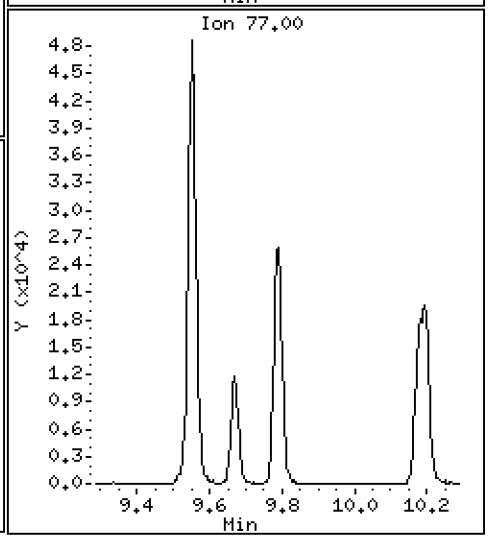












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 59

Date : 02-SEP-2018 16:18

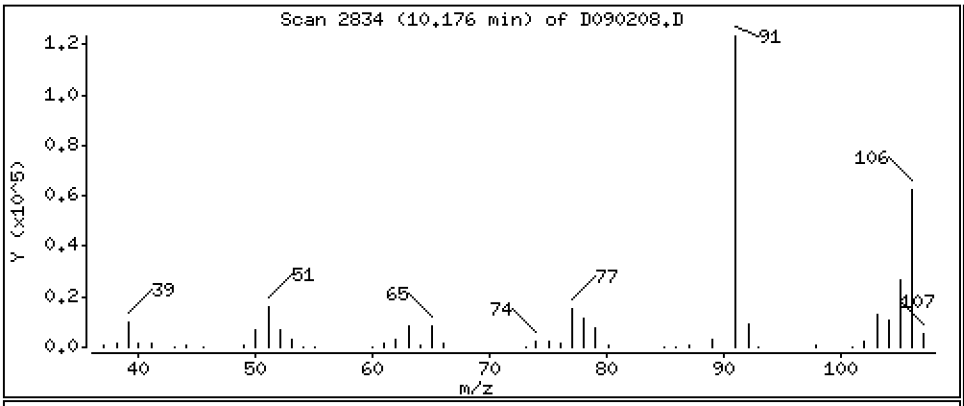
Client ID: HS18081428-01MS Instrument: VOA2.i

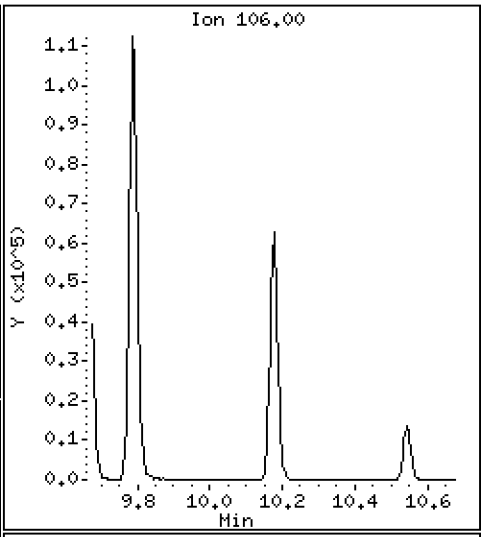
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

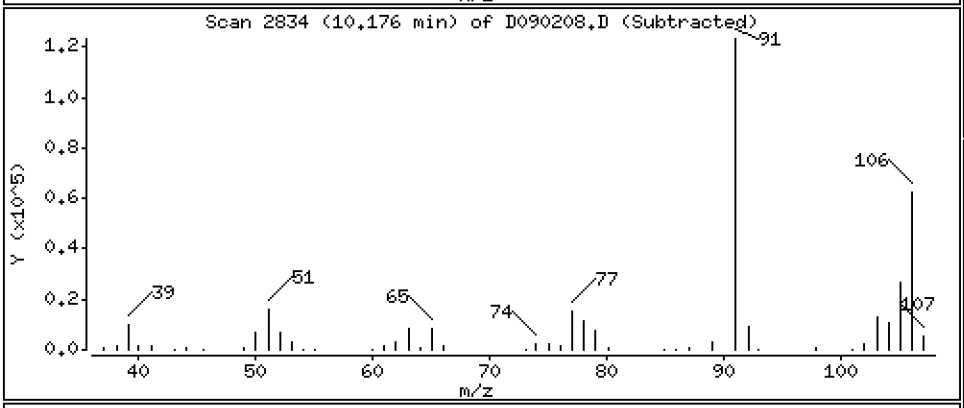
Purge Volume: 5.0 Operator: AP

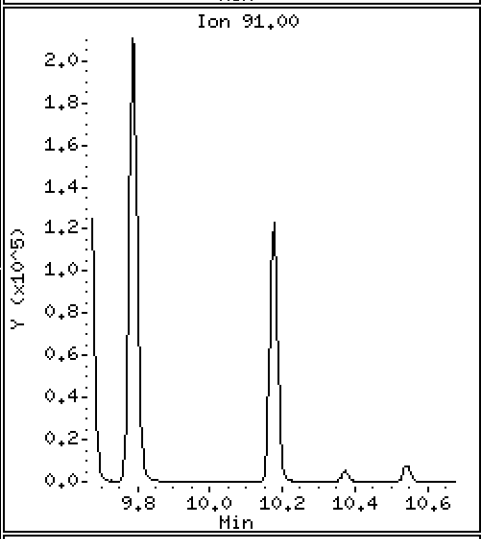
Column phase: DB624 Column diameter: 0.18

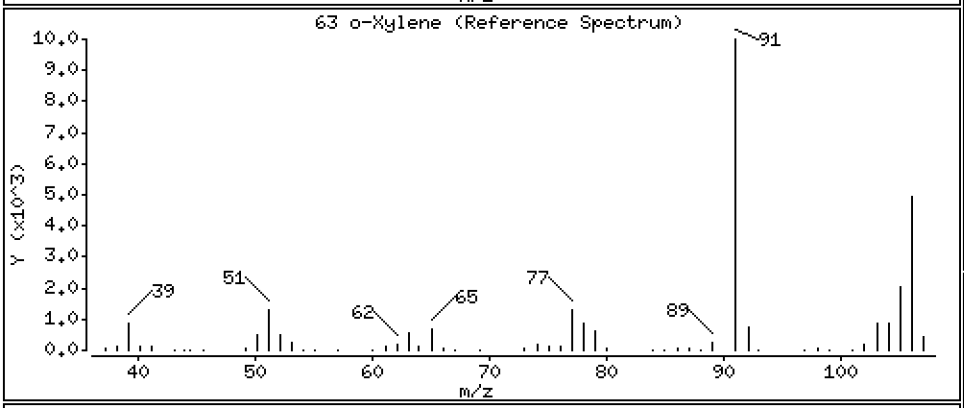
63 o-Xylene Concentration: 18.34 ug/l Review Code:

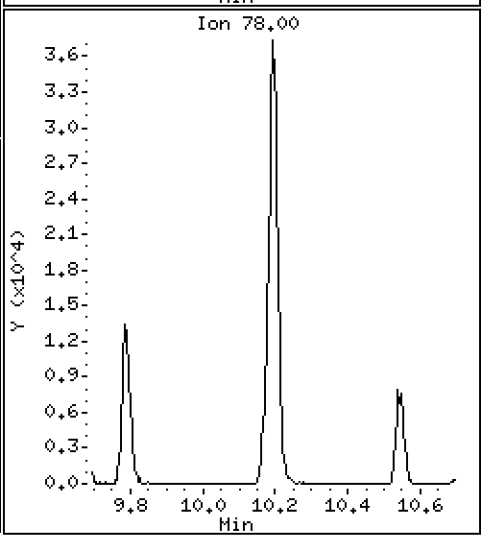


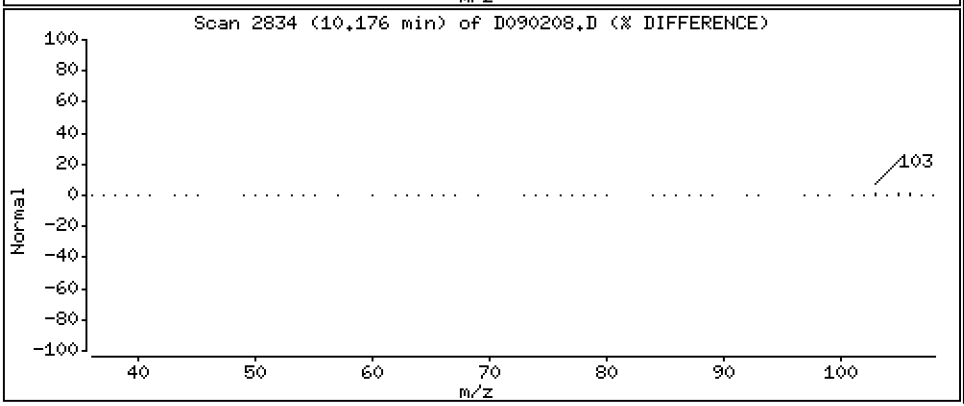












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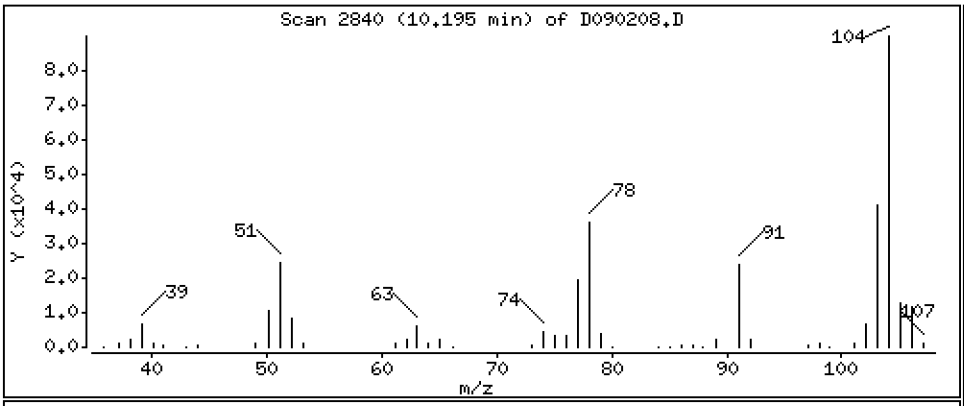
Client ID: HS18081428-01MS Instrument: VOA2.i

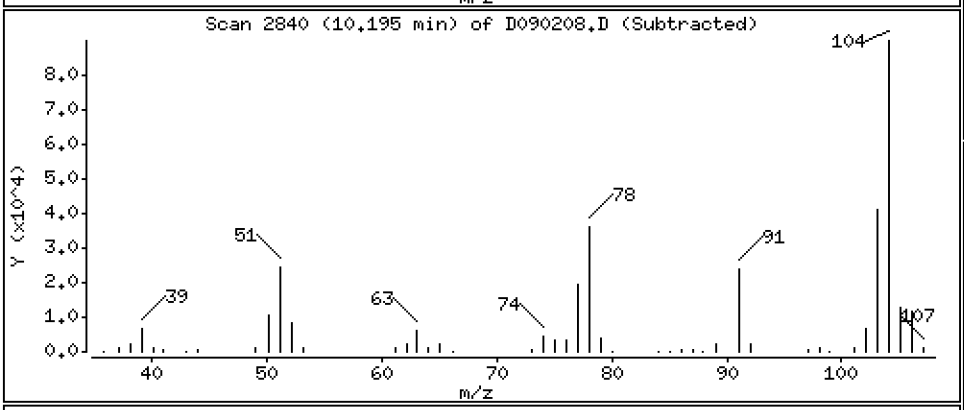
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

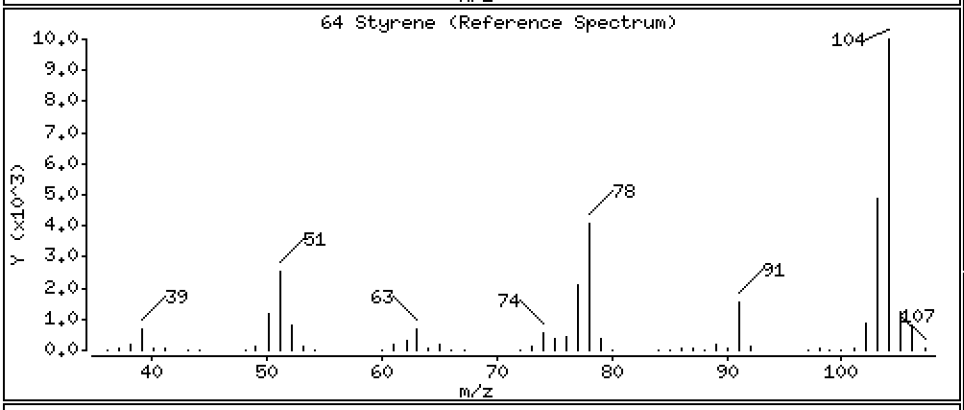
Purge Volume: 5.0 Operator: AP

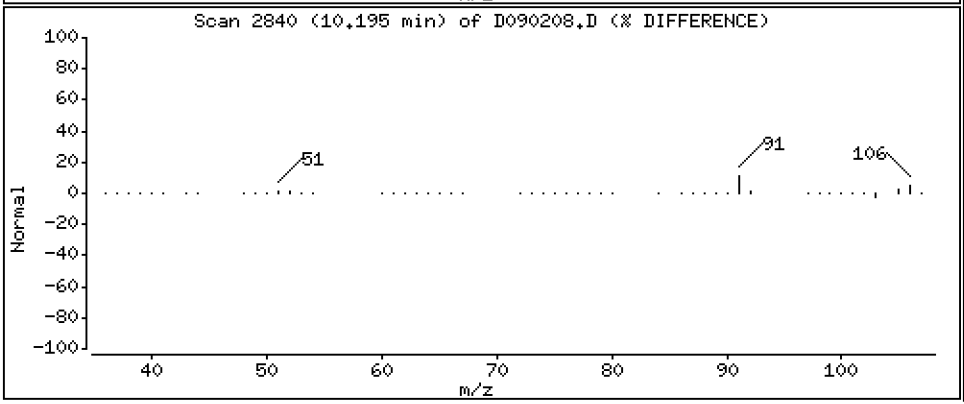
Column phase: DB624 Column diameter: 0.18

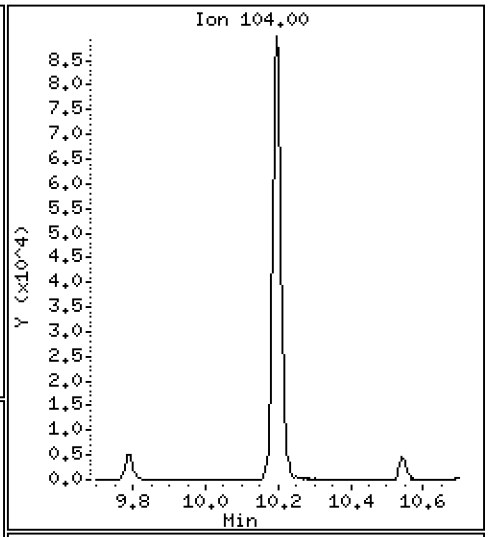
64 Styrene Concentration: 17.55 ug/l Review Code:

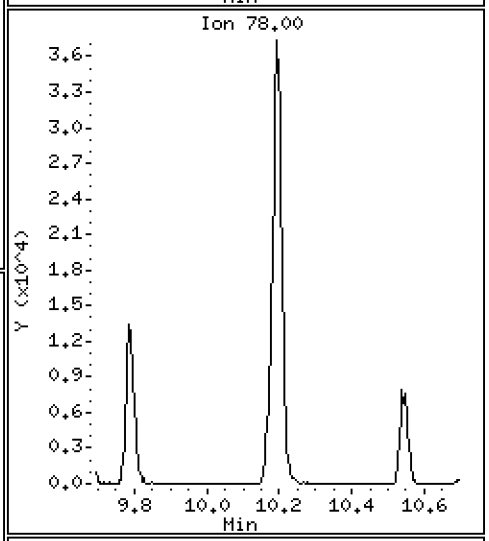


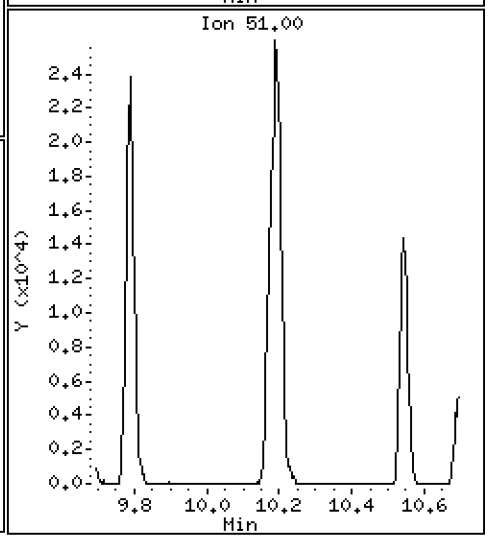












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Date : 02-SEP-2018 16:18

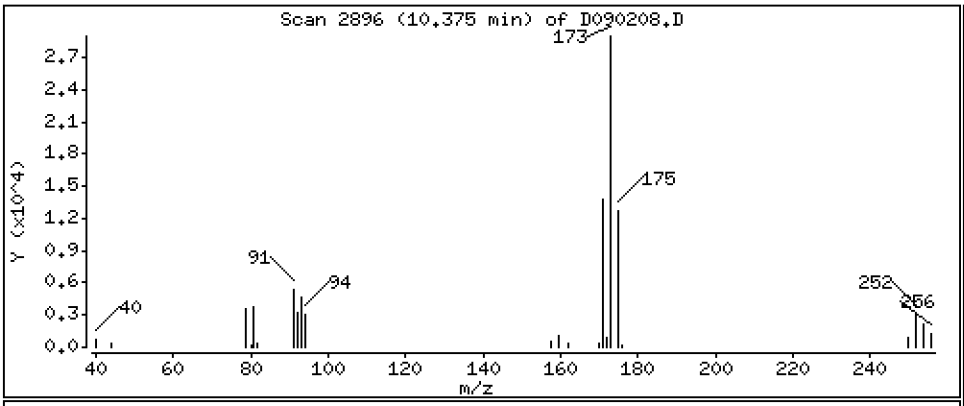
Client ID: HS18081428-01MS Instrument: VOA2.i

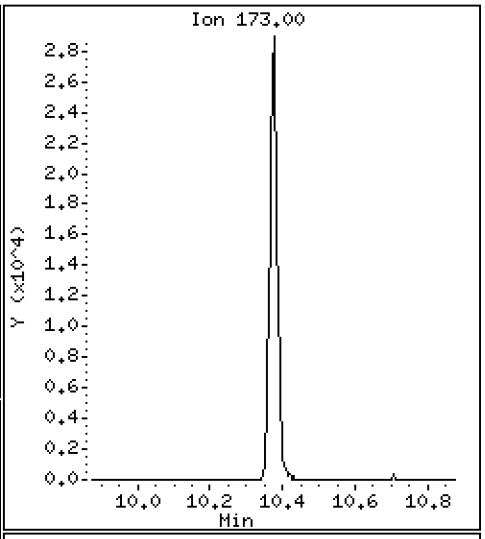
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

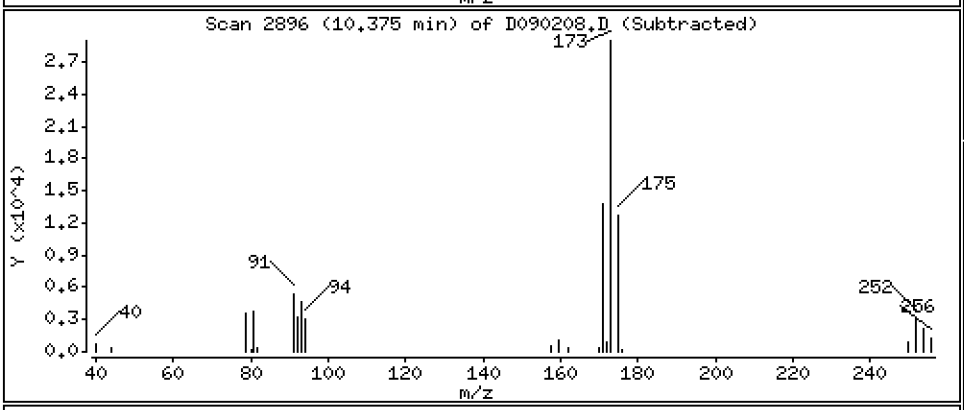
Purge Volume: 5.0 Operator: AP

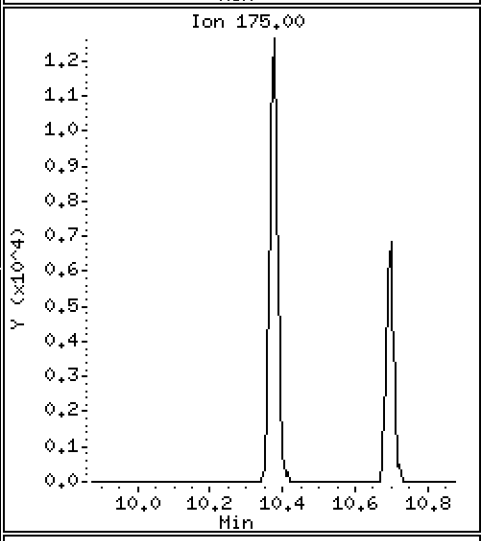
Column phase: DB624 Column diameter: 0.18

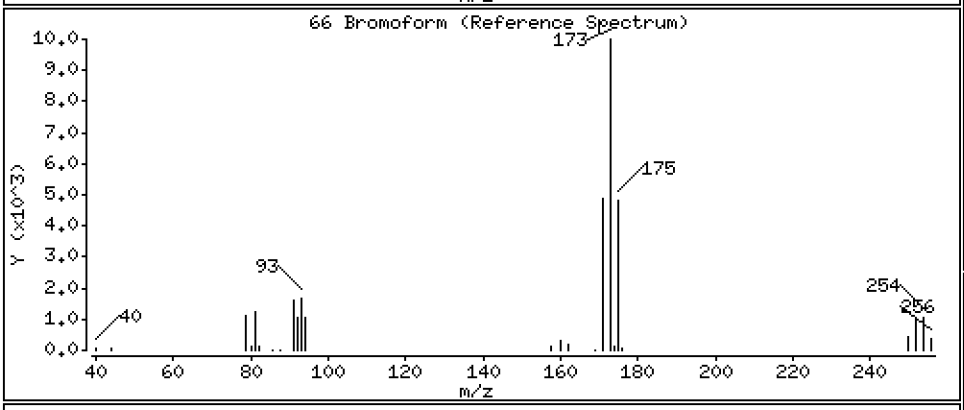
66 Bromoform Concentration: 18.10 ug/l Review Code:

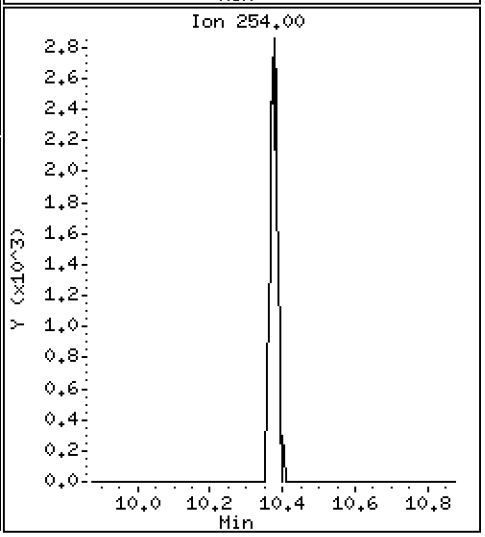


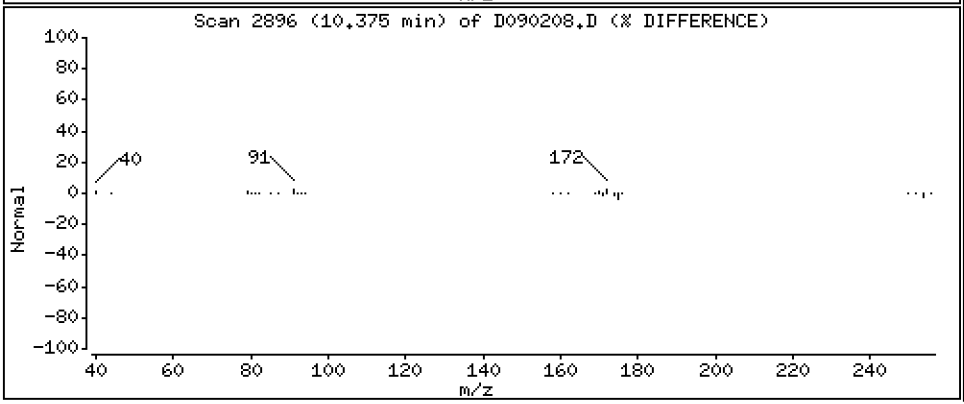












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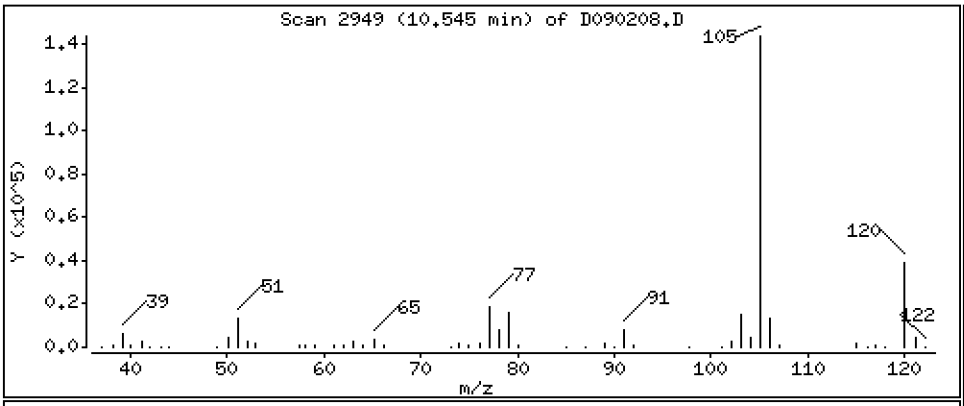
Client ID: HS18081428-01MS Instrument: VOA2.i

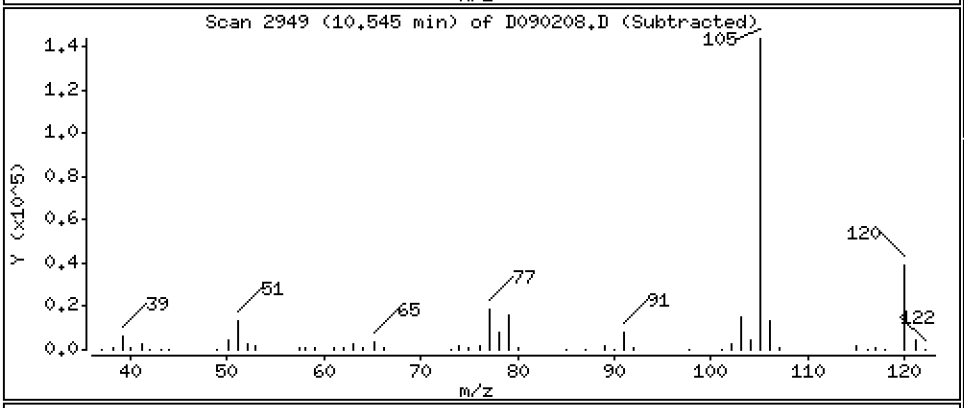
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

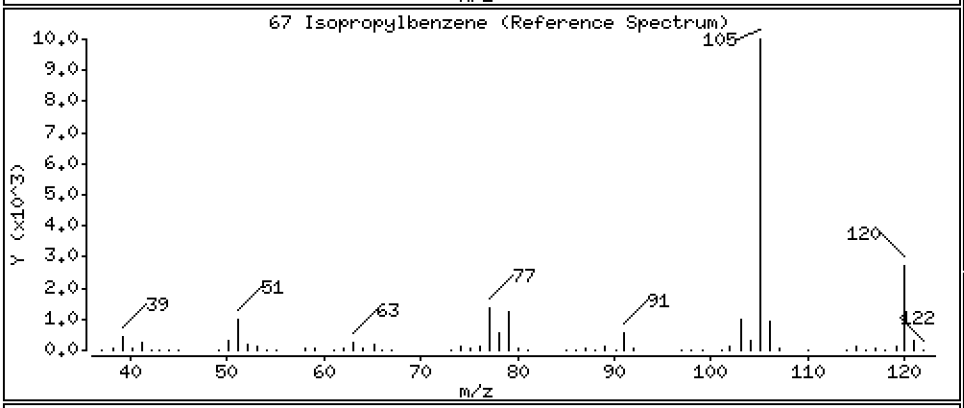
Purge Volume: 5.0 Operator: AP

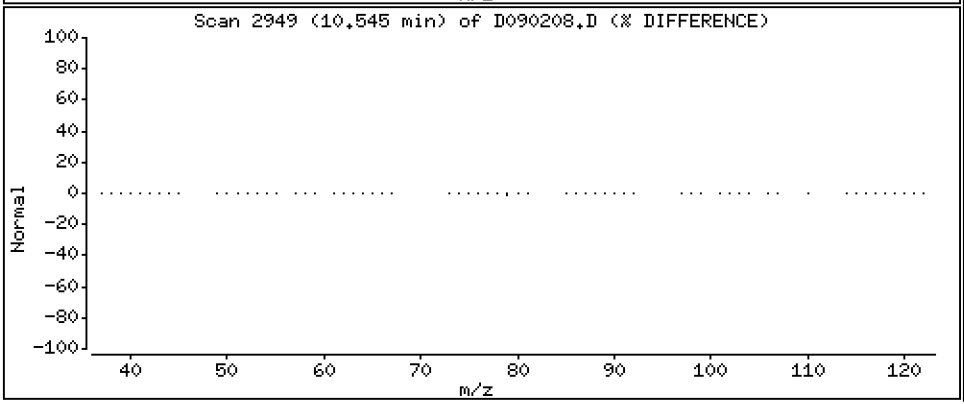
Column phase: DB624 Column diameter: 0.18

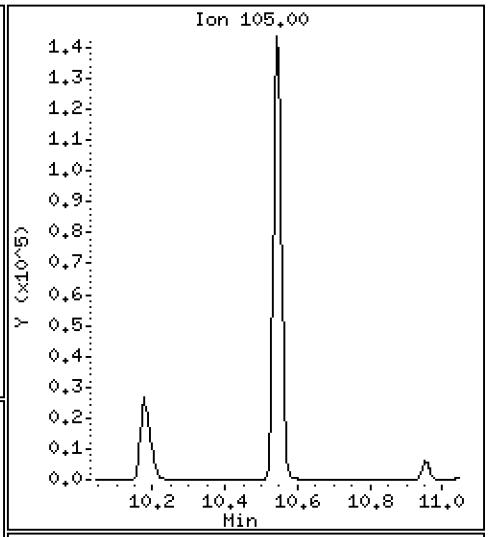
67 Isopropylbenzene Concentration: 16.88 ug/l Review Code:

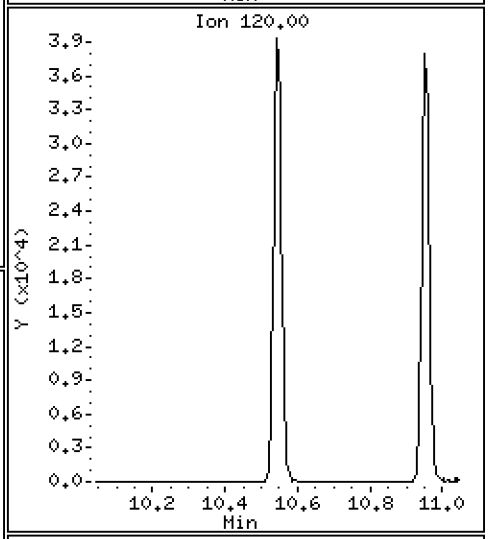


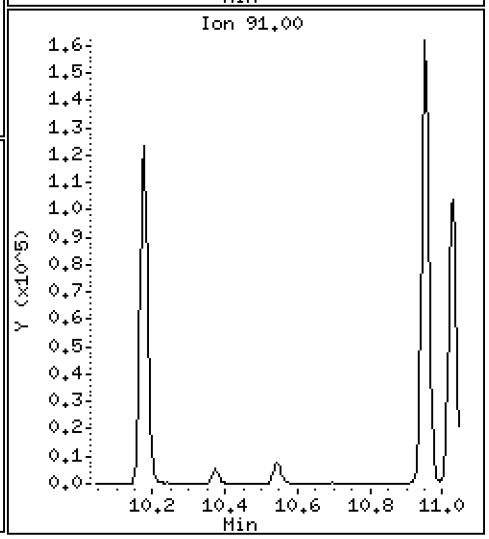












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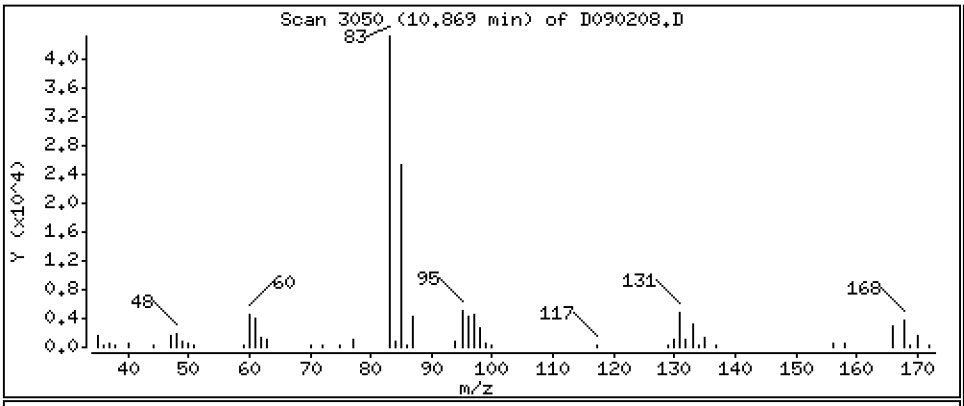
Client ID: HS18081428-01MS Instrument: VOA2.i

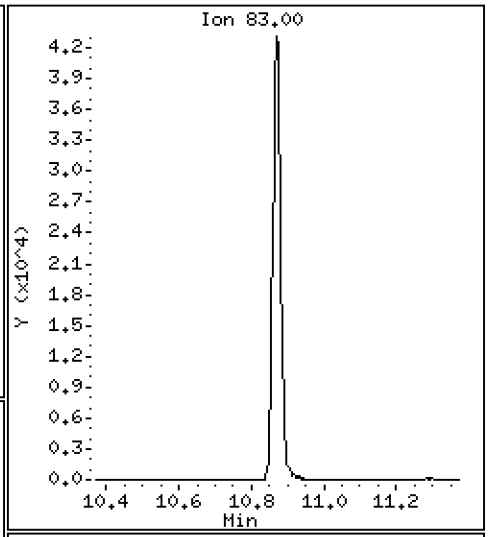
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

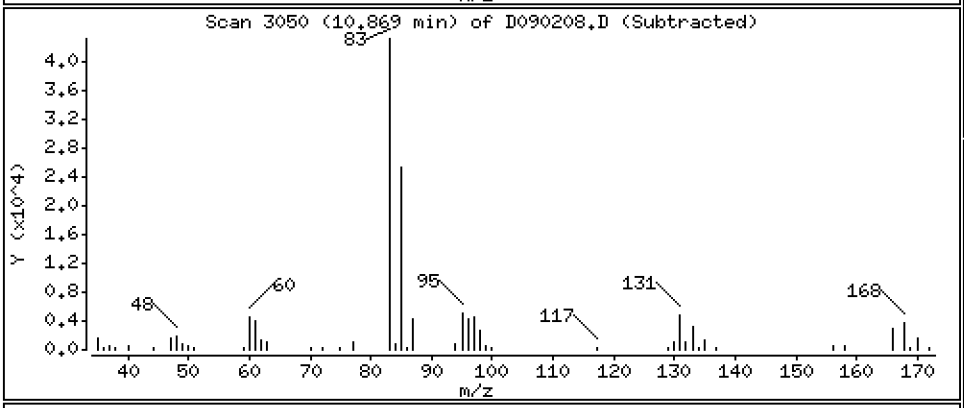
Purge Volume: 5.0 Operator: AP

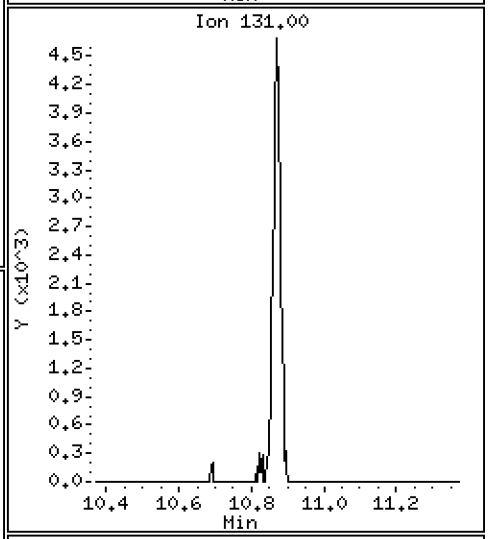
Column phase: DB624 Column diameter: 0.18

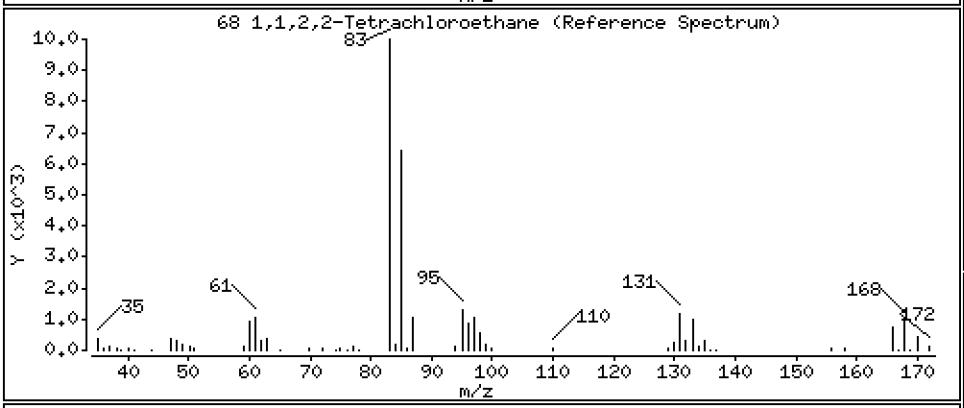
68 1,1,2,2-Tetrachloroethane Concentration: 15.11 ug/l Review Code:

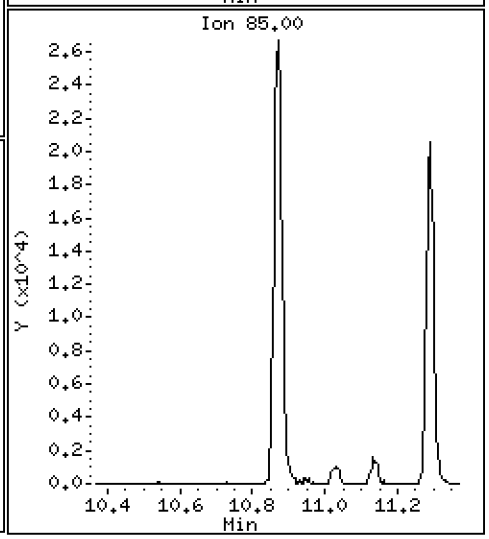


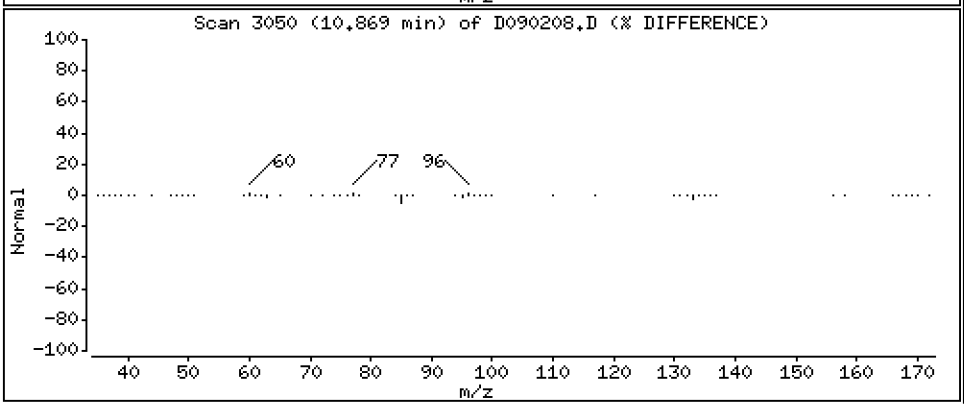












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Date : 02-SEP-2018 16:18

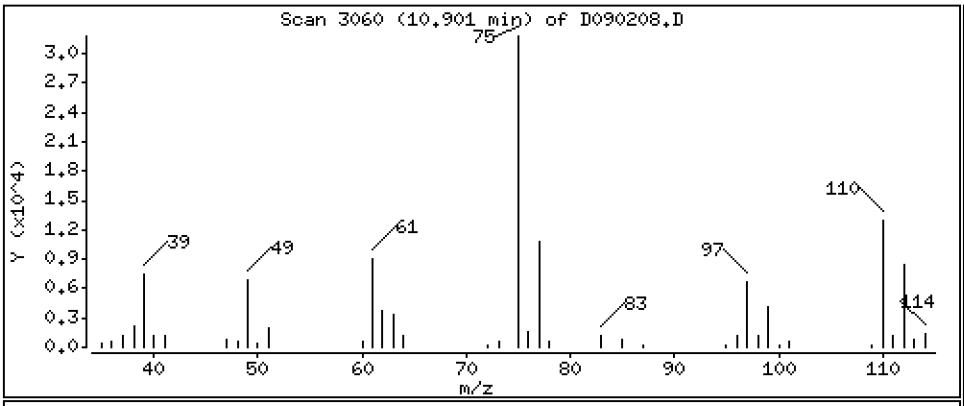
Client ID: HS18081428-01MS Instrument: VOA2.i

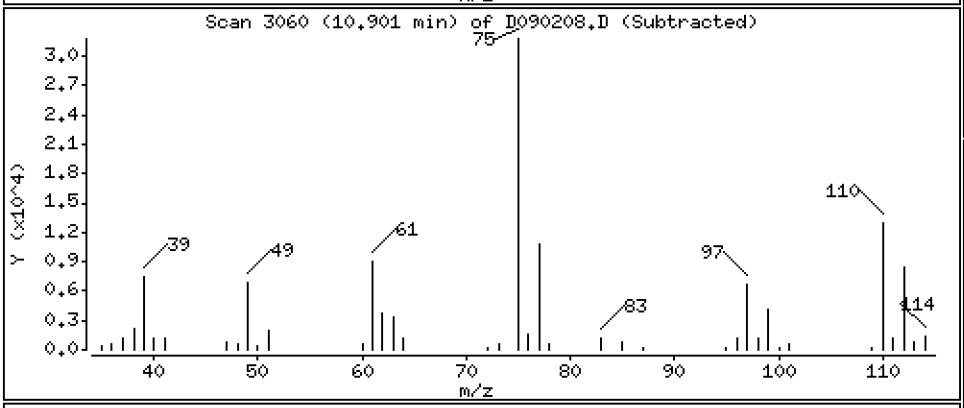
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

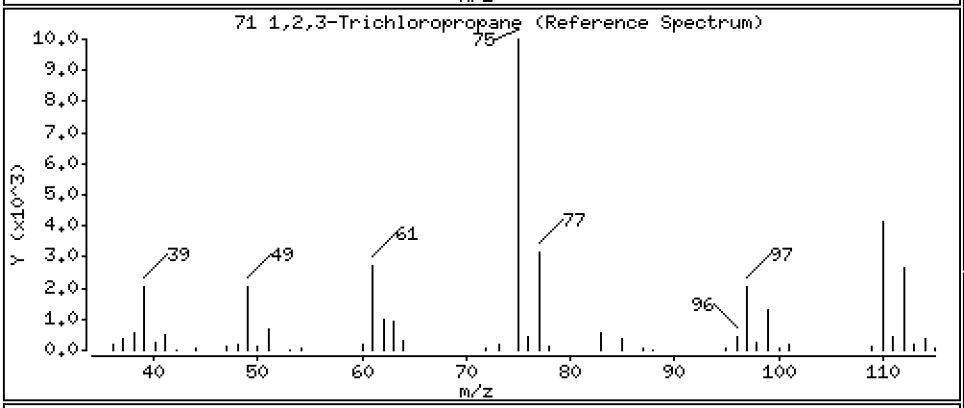
Purge Volume: 5.0 Operator: AP

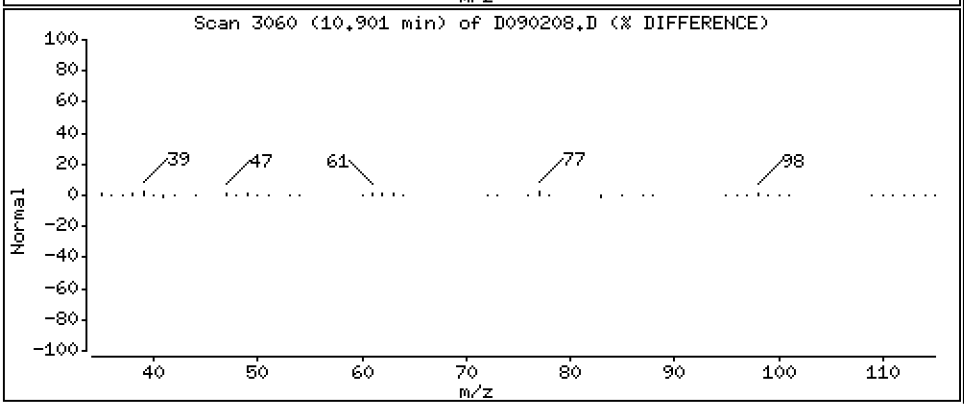
Column phase: DB624 Column diameter: 0.18

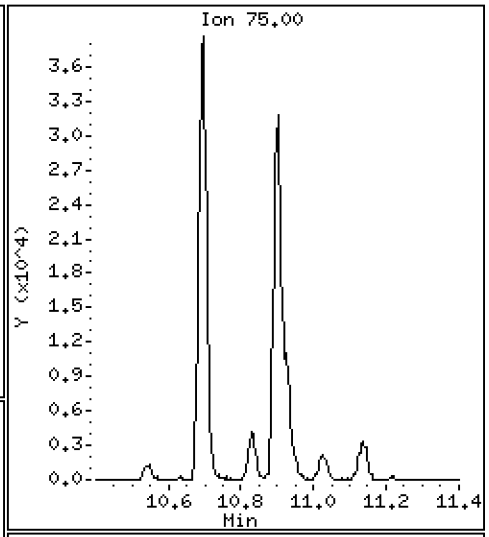
71 1,2,3-Trichloropropane Concentration: 15.00 ug/l Review Code:

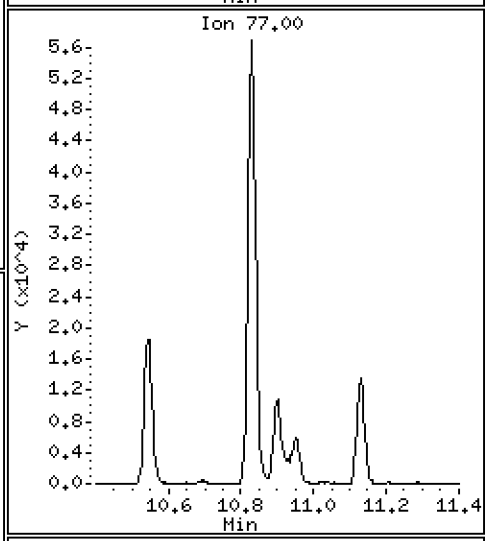


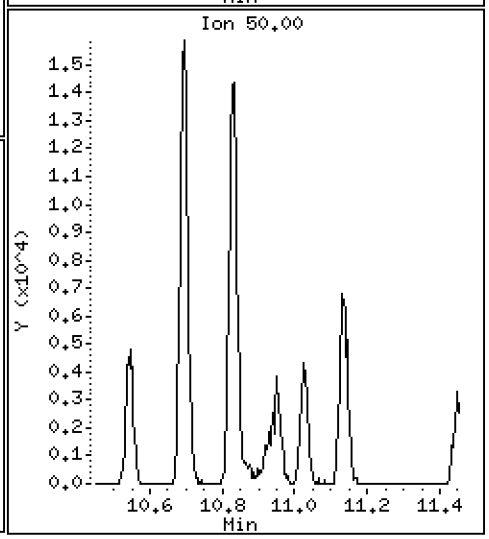












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Date : 02-SEP-2018 16:18

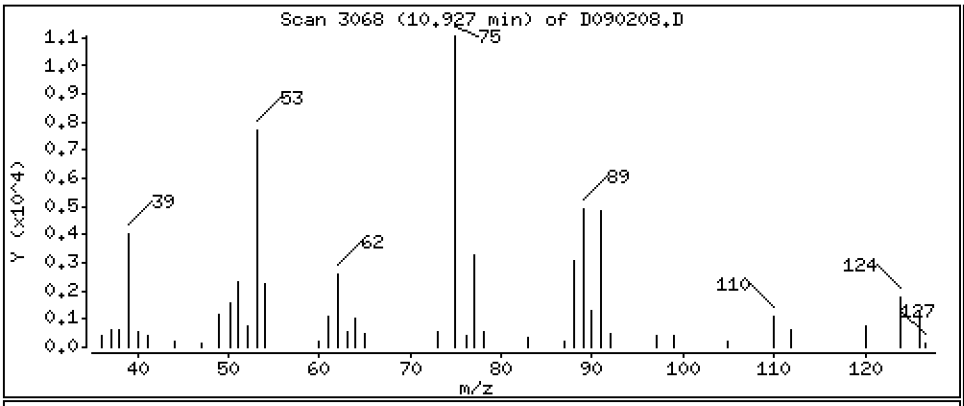
Client ID: HS18081428-01MS Instrument: VOA2.i

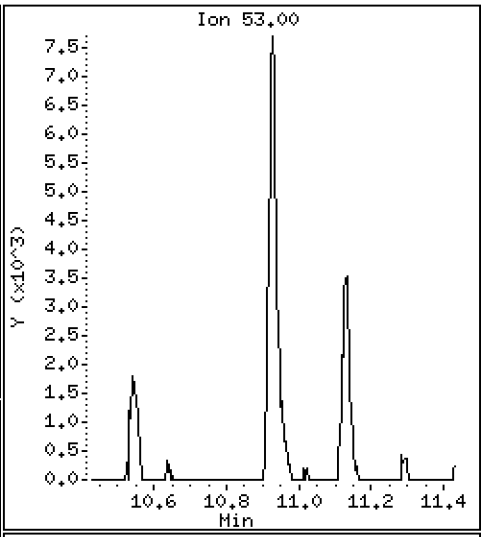
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

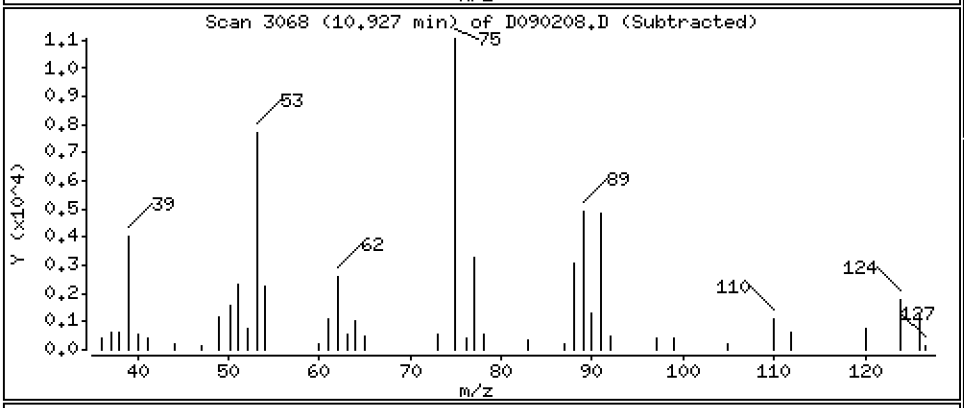
Purge Volume: 5.0 Operator: AP

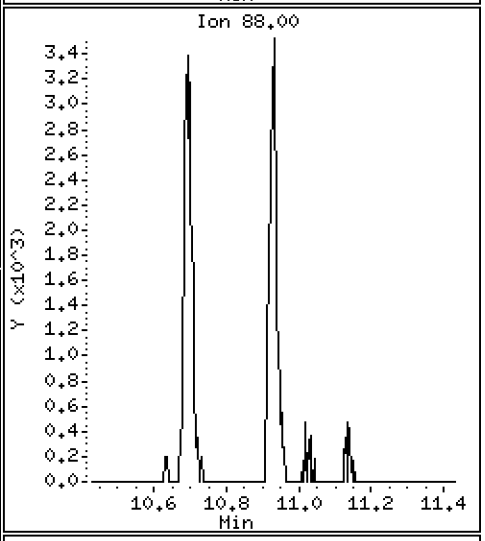
Column phase: DB624 Column diameter: 0.18

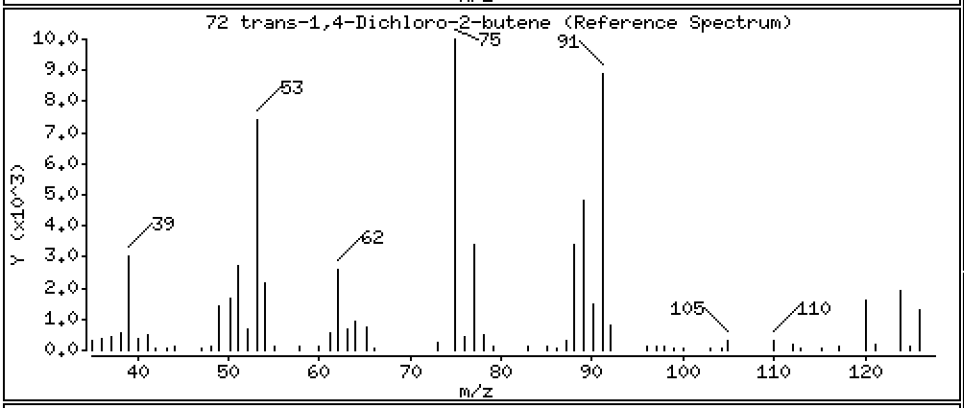
72 trans-1,4-Dichloro-2-butene Concentration: 15.06 ug/l Review Code:

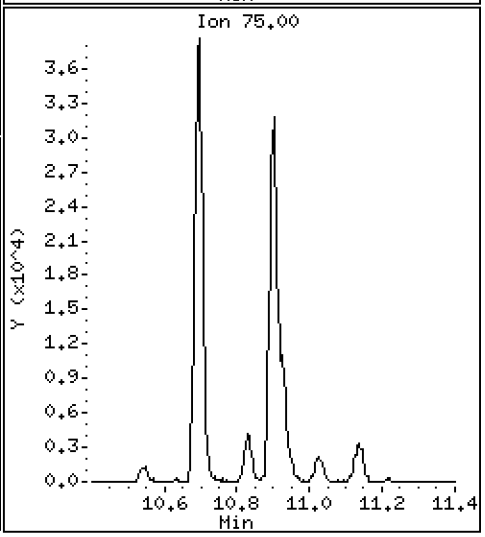


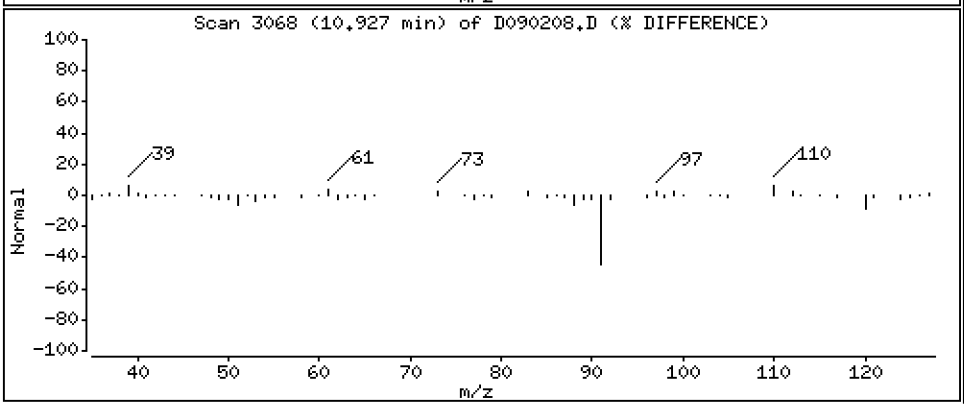












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Date : 02-SEP-2018 16:18

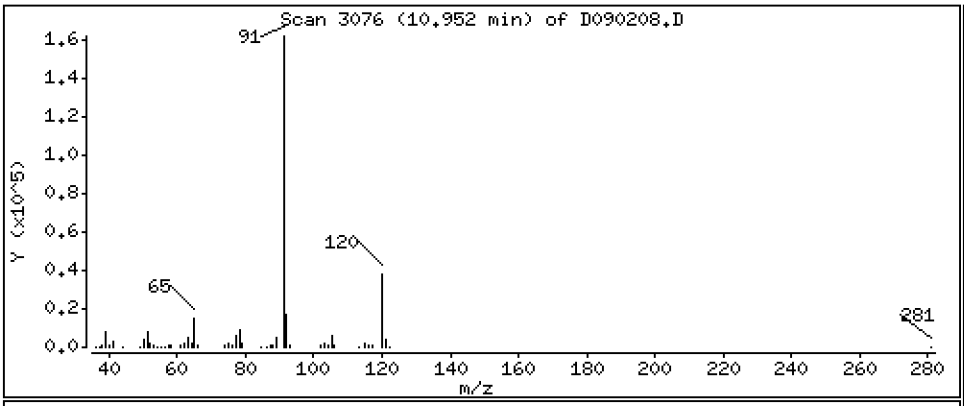
Client ID: HS18081428-01MS Instrument: VOA2.i

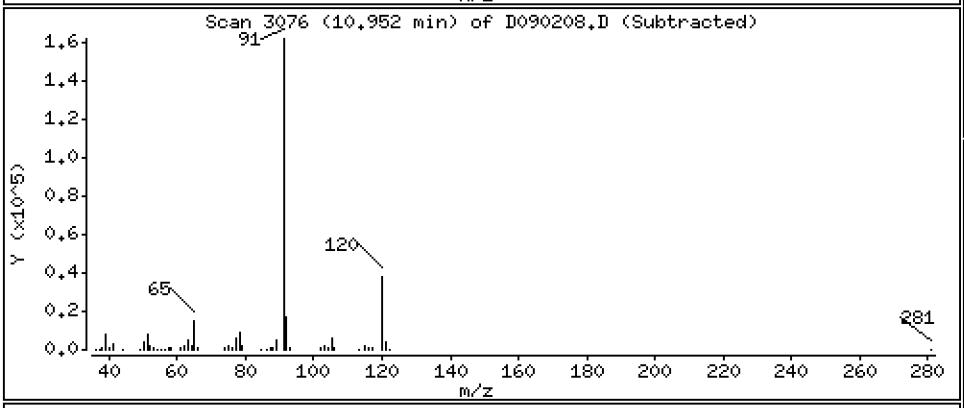
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

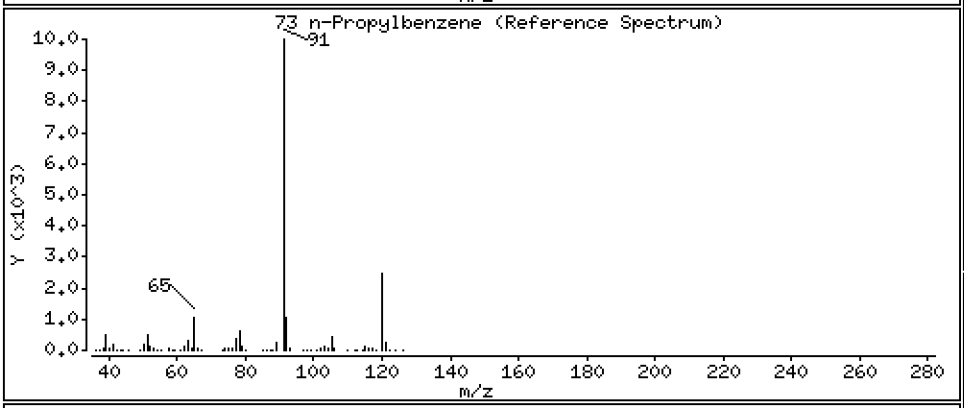
Purge Volume: 5.0 Operator: AP

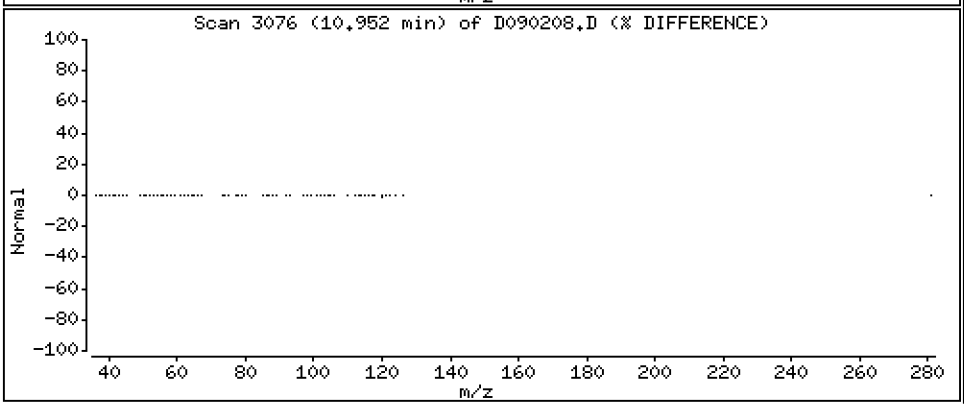
Column phase: DB624 Column diameter: 0.18

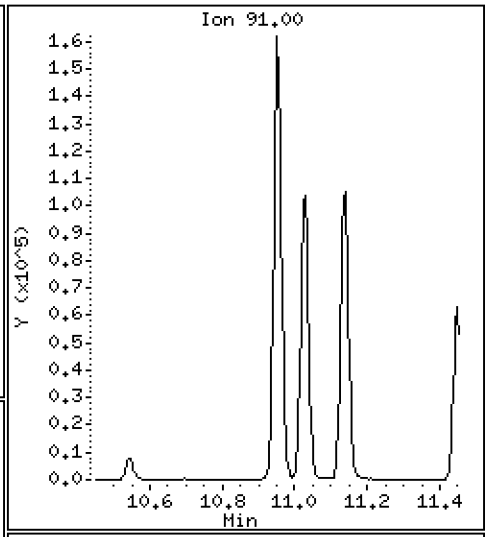
73 n-Propylbenzene Concentration: 17.01 ug/l Review Code:

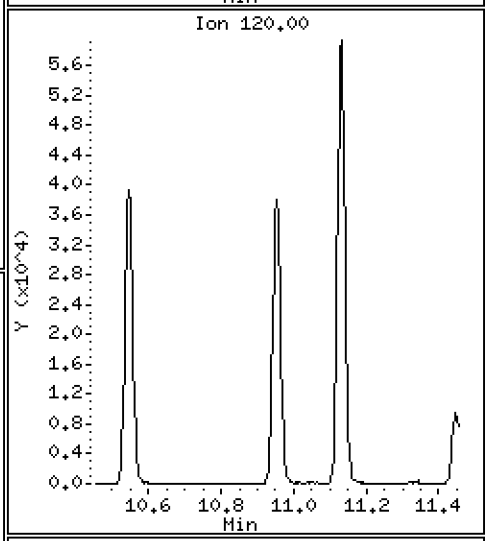


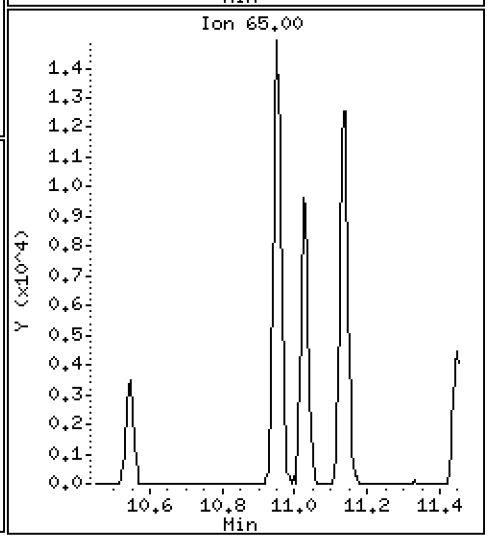












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 67

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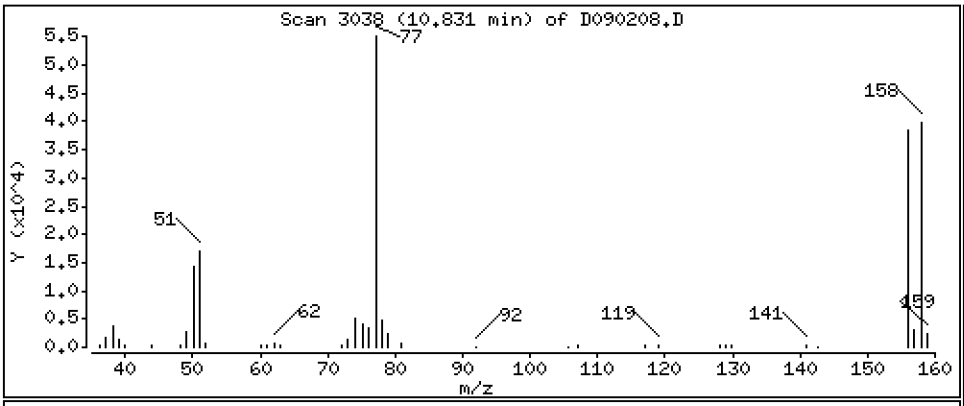
Client ID: HS18081428-01MS Instrument: VOA2.i

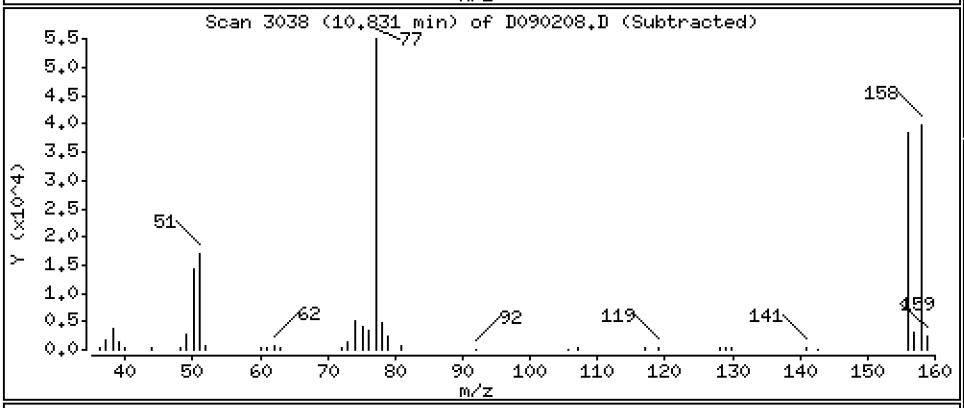
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

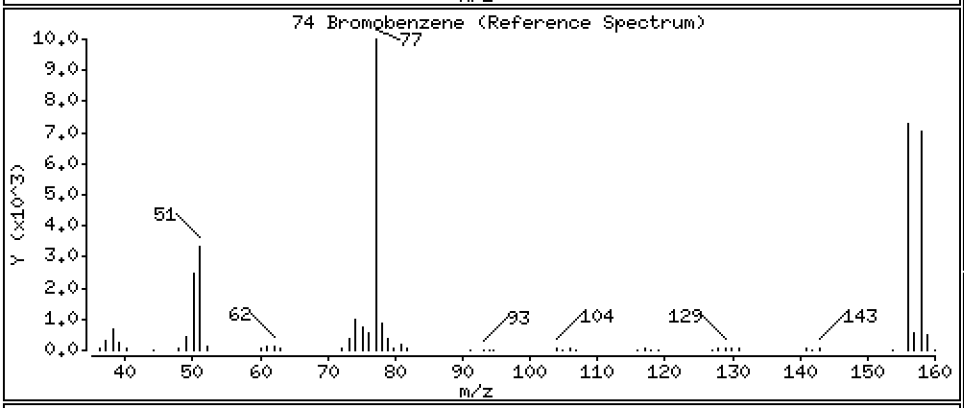
Purge Volume: 5.0 Operator: AP

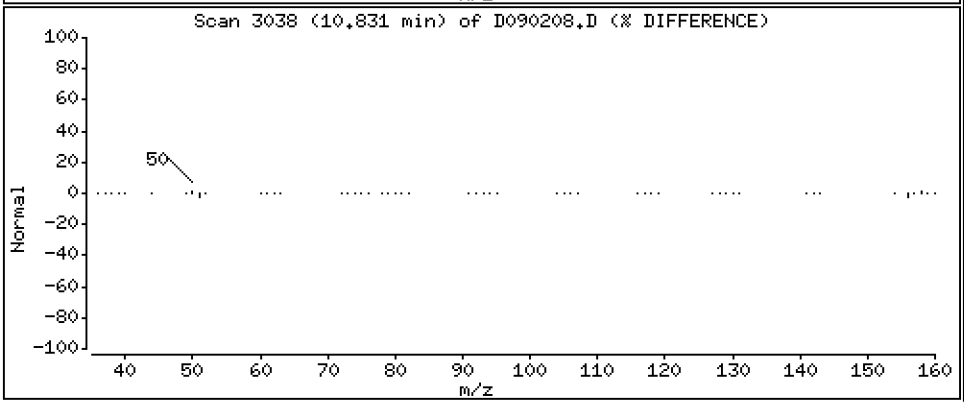
Column phase: DB624 Column diameter: 0.18

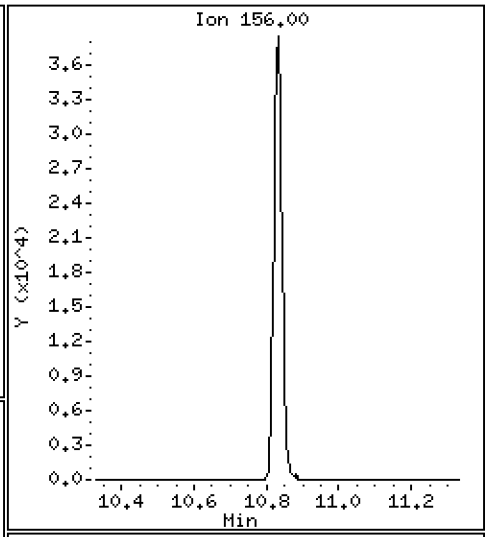
74 Bromobenzene Concentration: 16.82 ug/l Review Code:

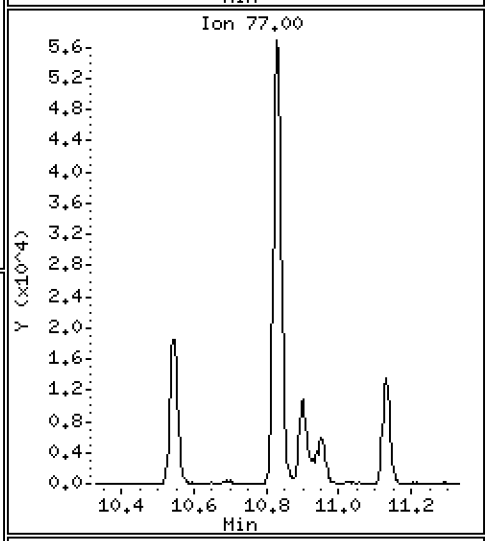


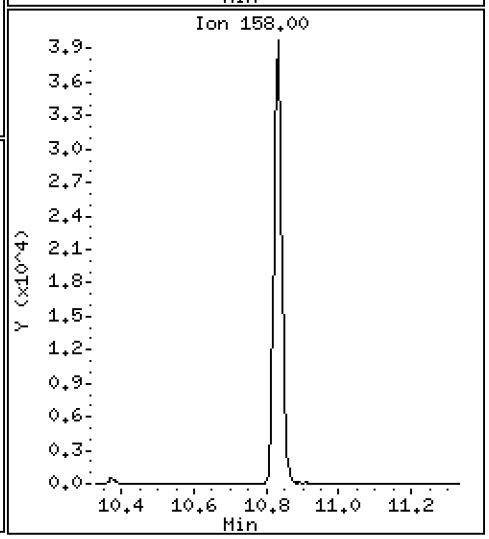












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 68

Date : 02-SEP-2018 16:18

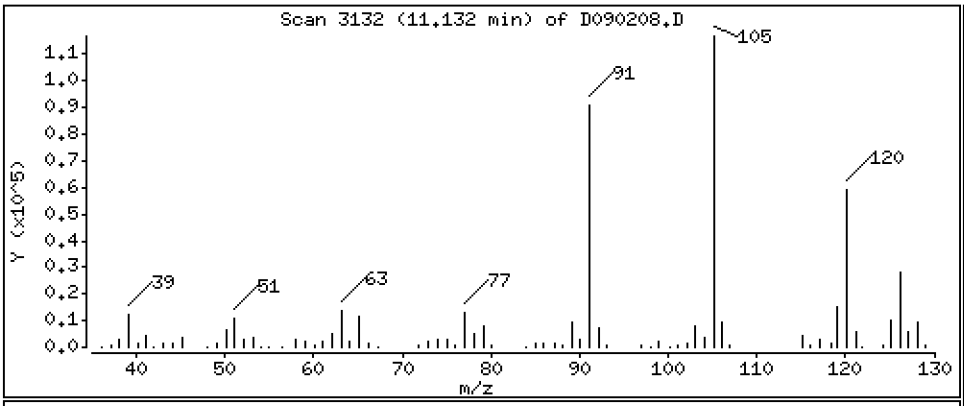
Client ID: HS18081428-01MS Instrument: VOA2.i

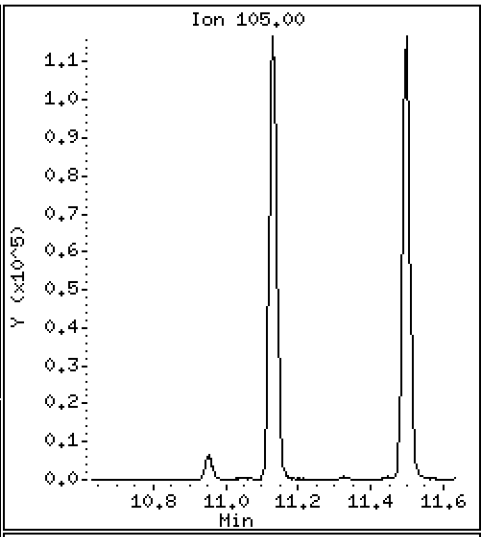
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

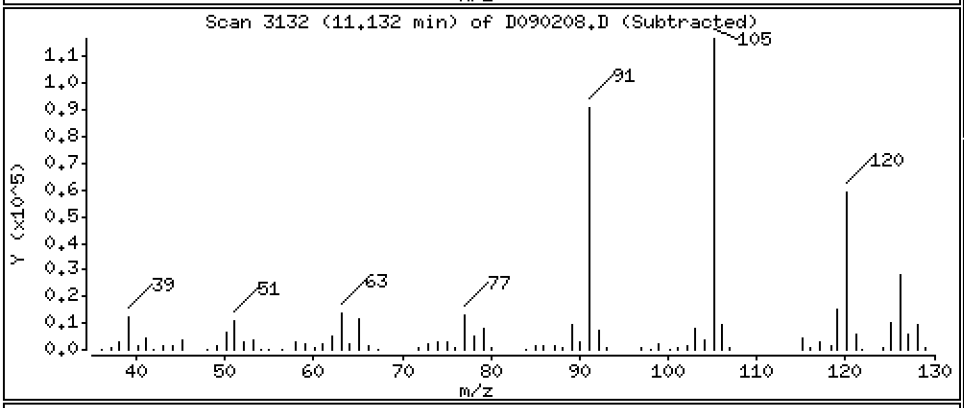
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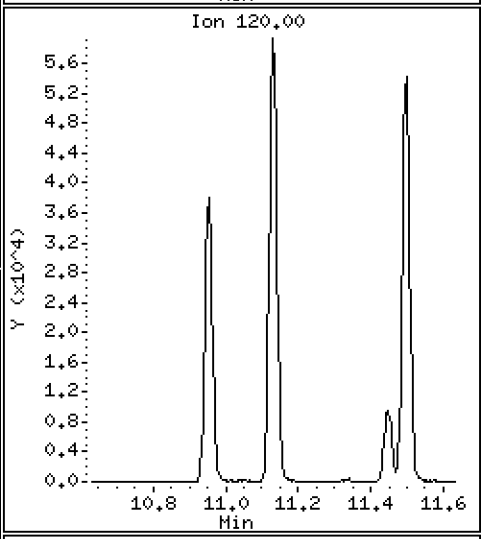
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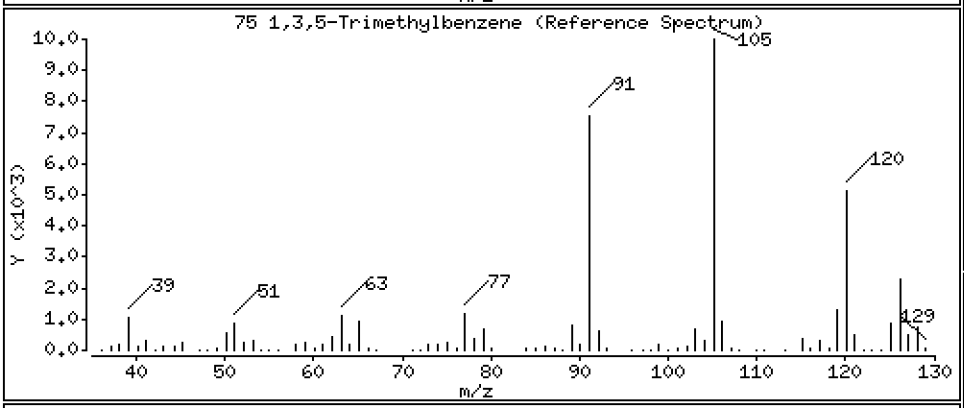
75 1,3,5-Trimethylbenzene Concentration: 15.67 ug/l Review Code:

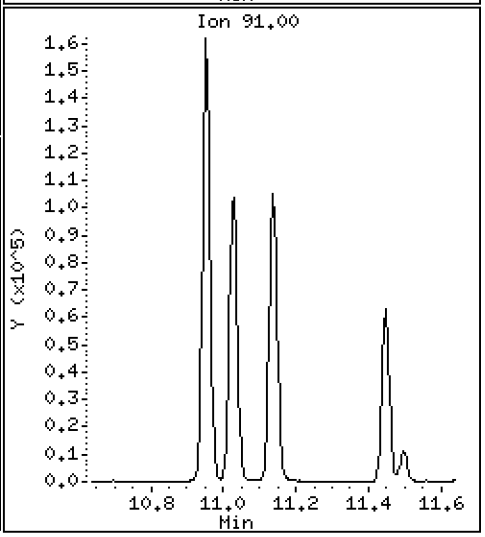


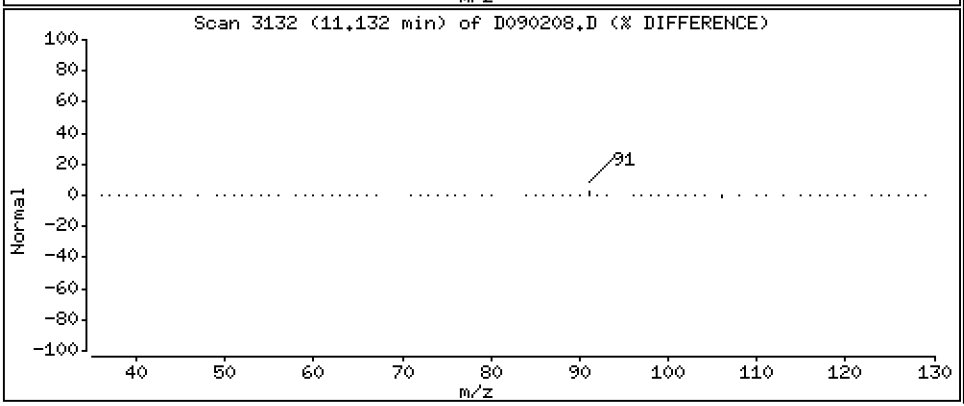












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 69

Date : 02-SEP-2018 16:18

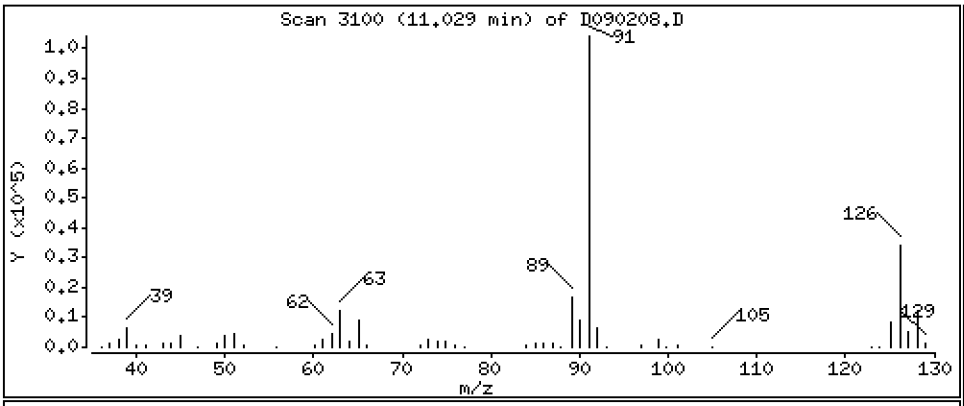
Client ID: HS18081428-01MS Instrument: VOA2.i

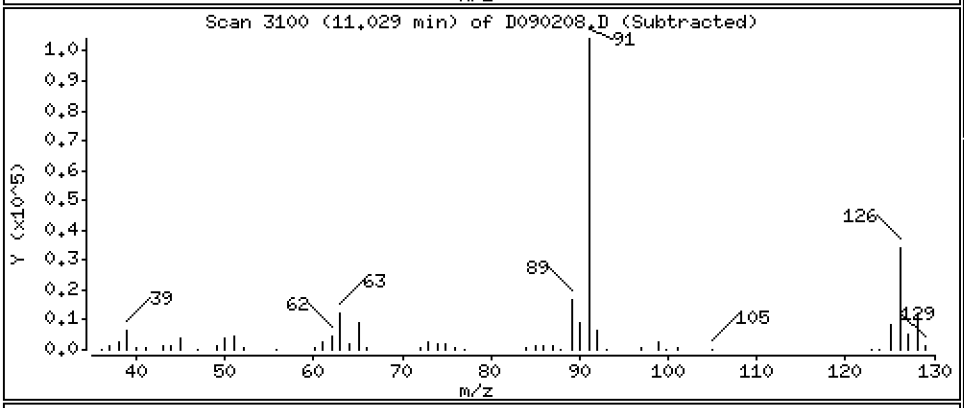
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

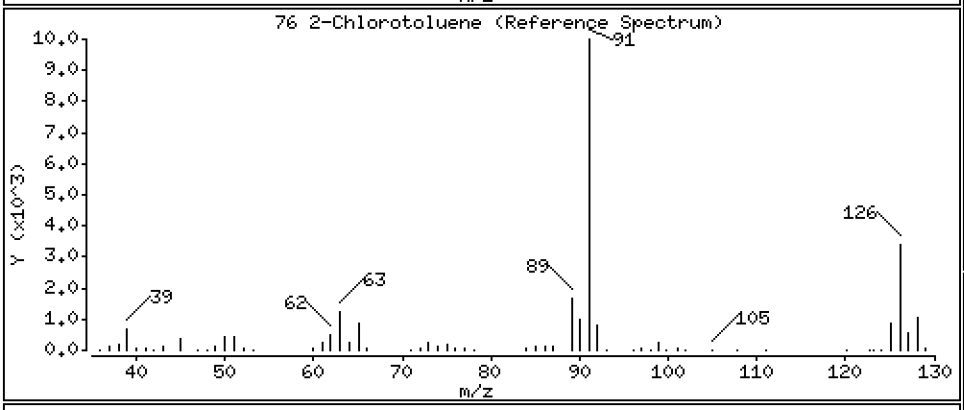
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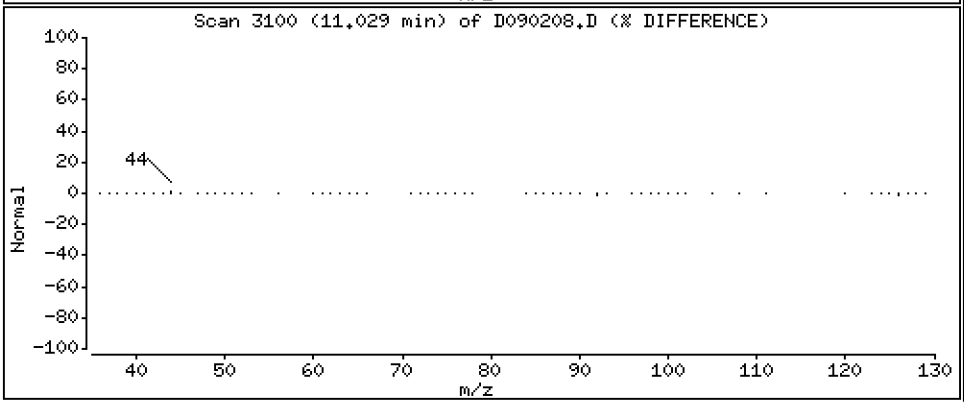
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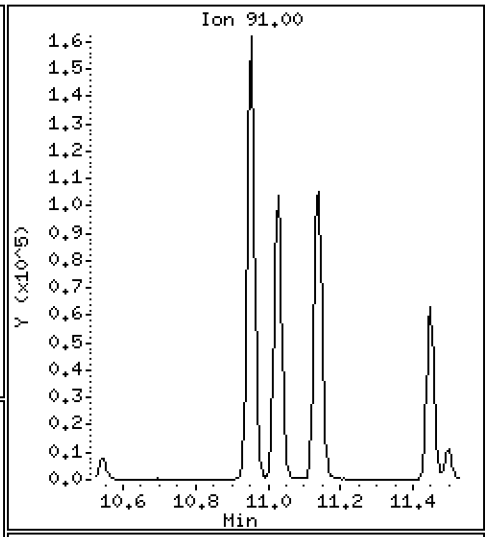
76 2-Chlorotoluene Concentration: 17.44 ug/l Review Code:

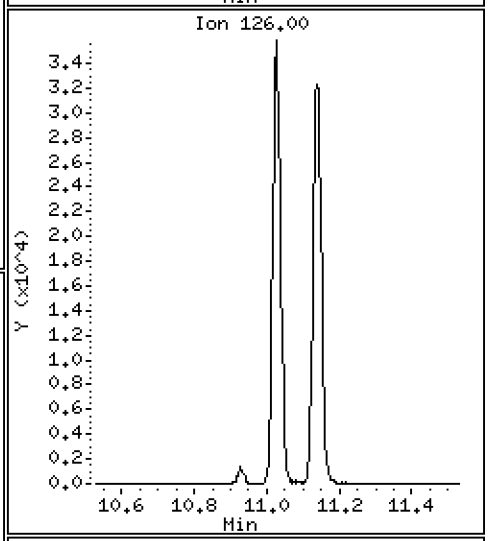


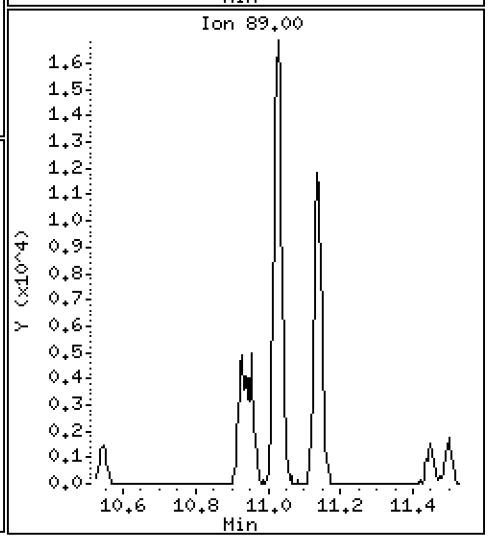












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Date : 02-SEP-2018 16:18

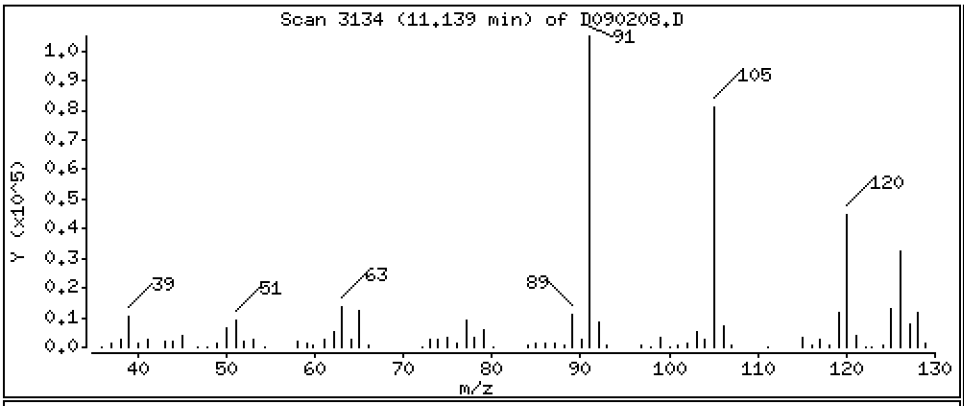
Client ID: HS18081428-01MS Instrument: VOA2.i

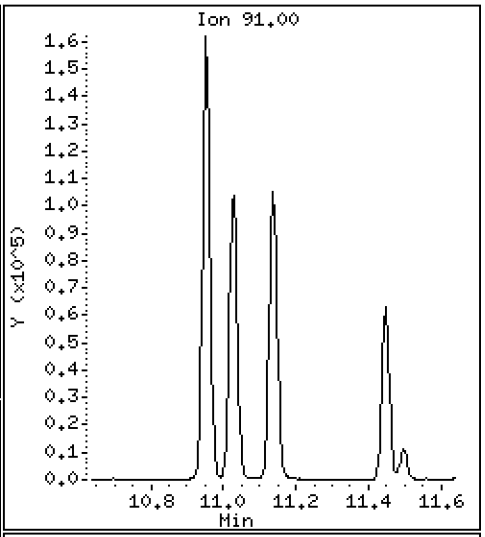
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

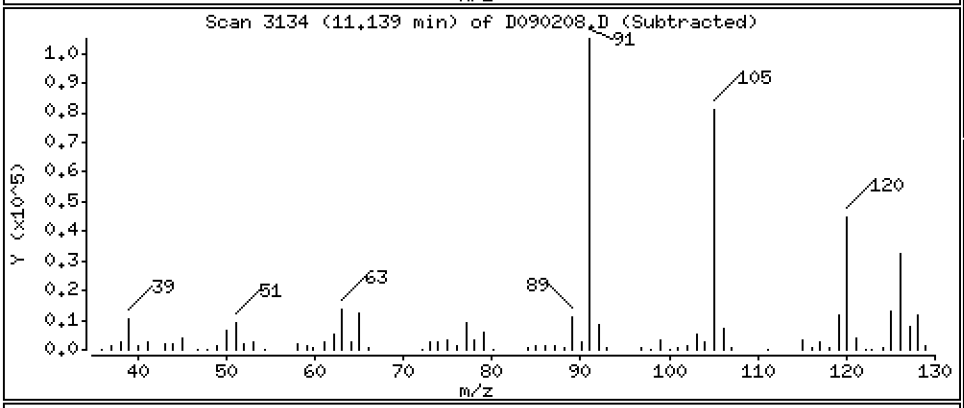
Purge Volume: 5.0 Operator: AP

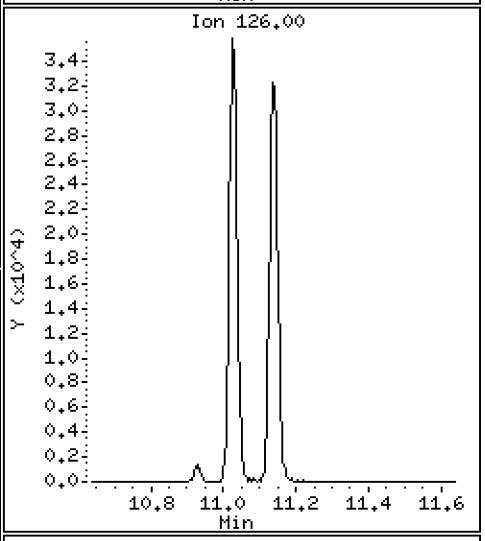
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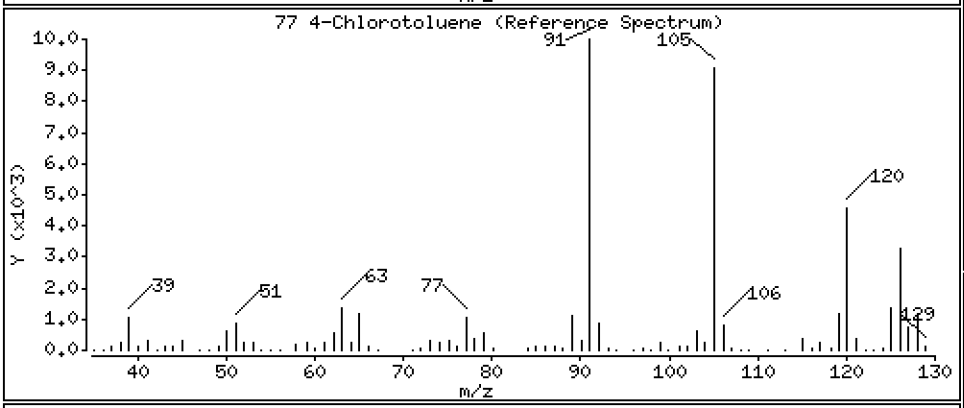
77 4-Chlorotoluene Concentration: 17.04 ug/l Review Code:

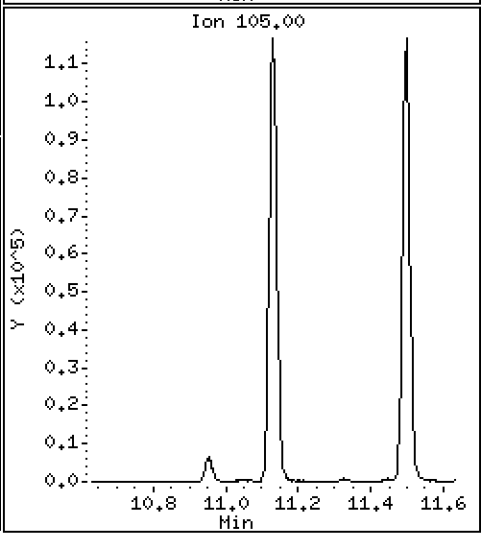


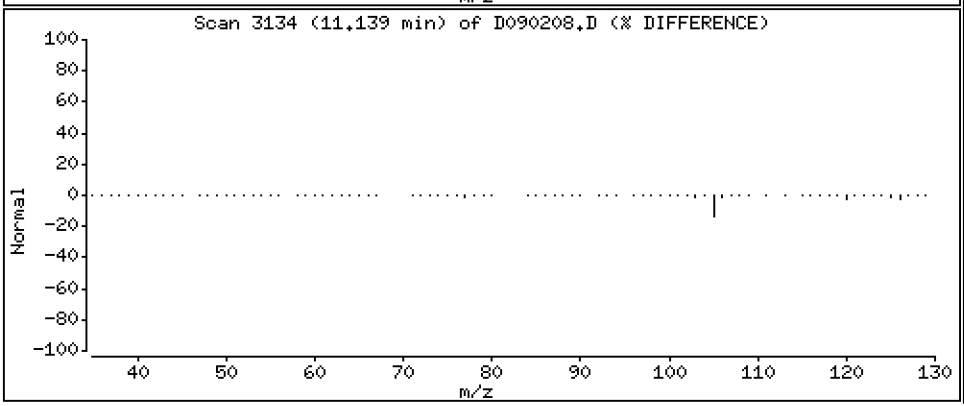












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Date : 02-SEP-2018 16:18

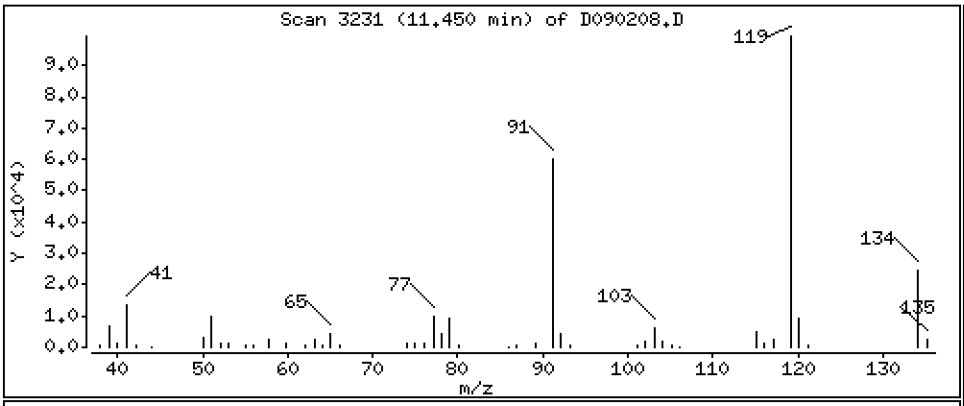
Client ID: HS18081428-01MS Instrument: VOA2.i

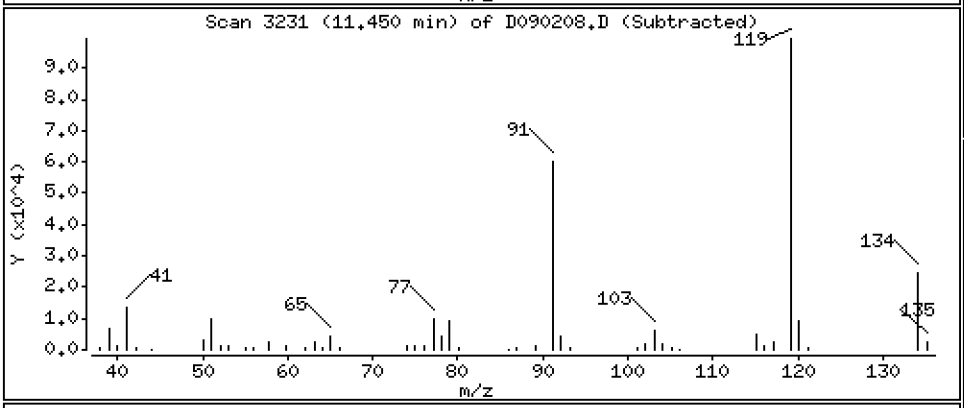
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

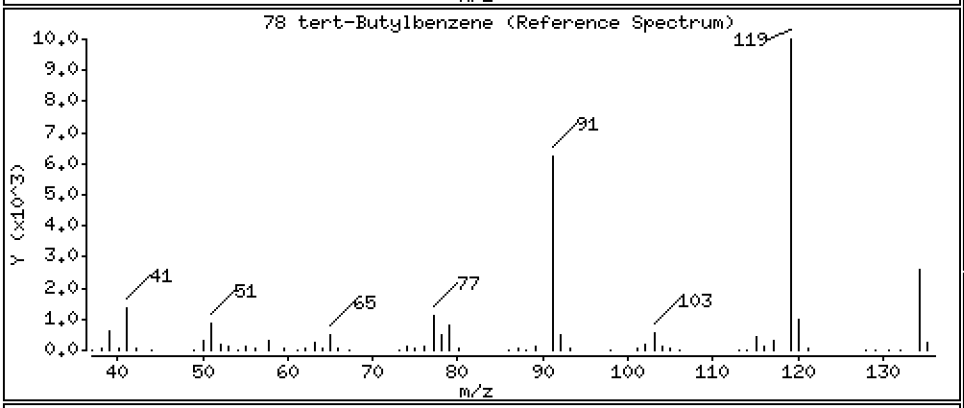
Purge Volume: 5.0 Operator: AP

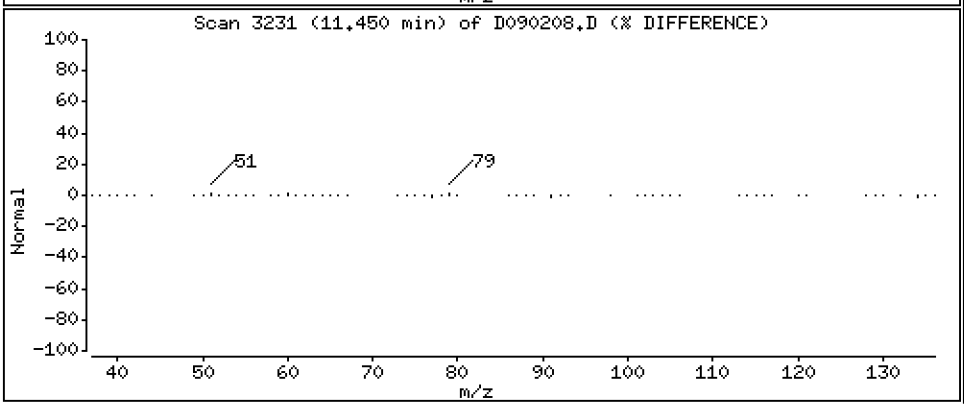
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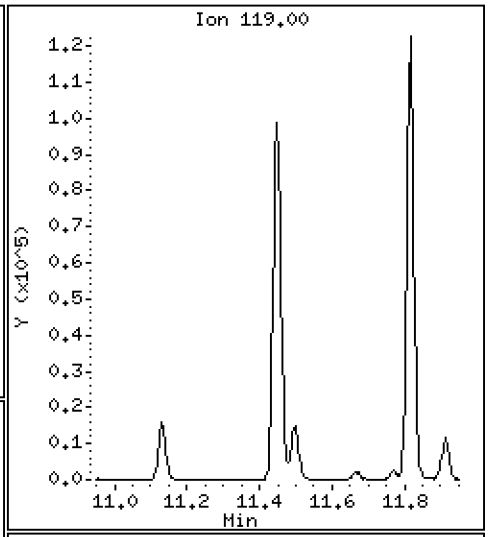
78 tert-Butylbenzene Concentration: 17.19 ug/l Review Code:

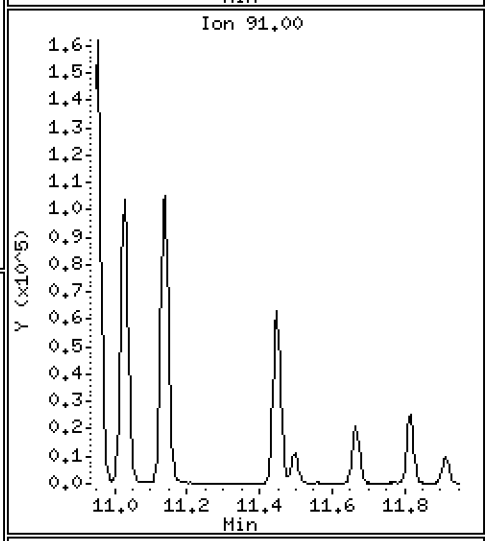


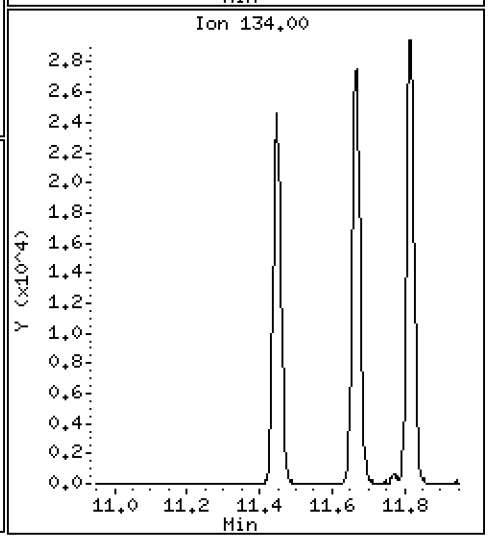












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 72

Date : 02-SEP-2018 16:18

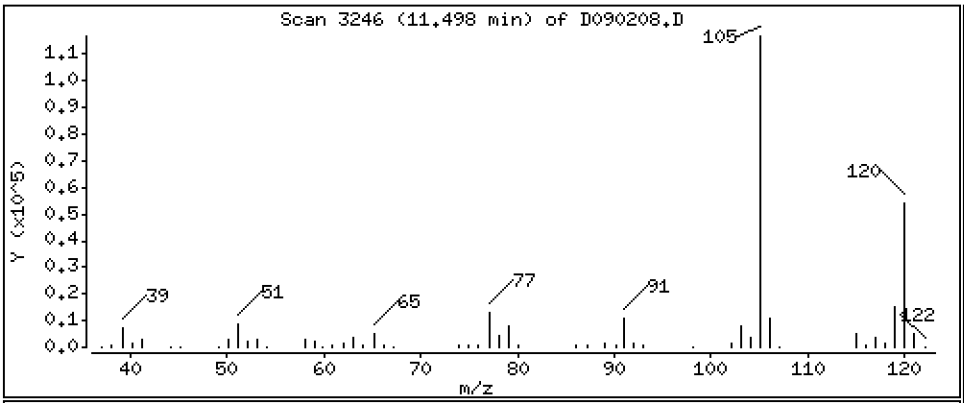
Client ID: HS18081428-01MS Instrument: VOA2.i

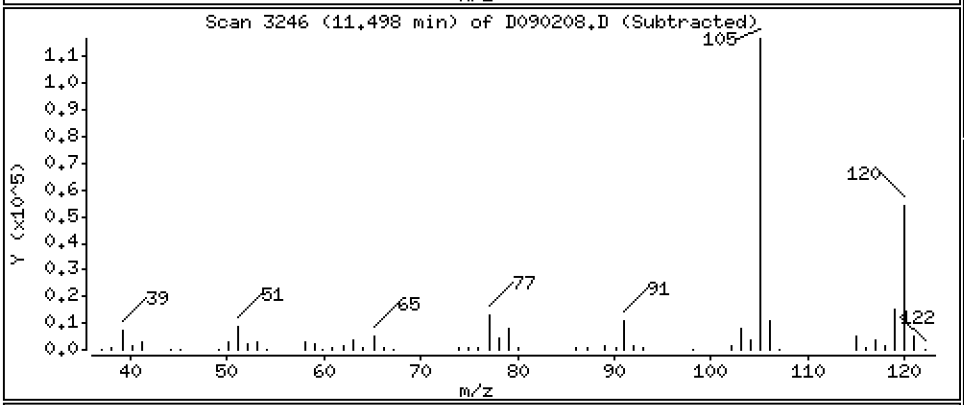
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

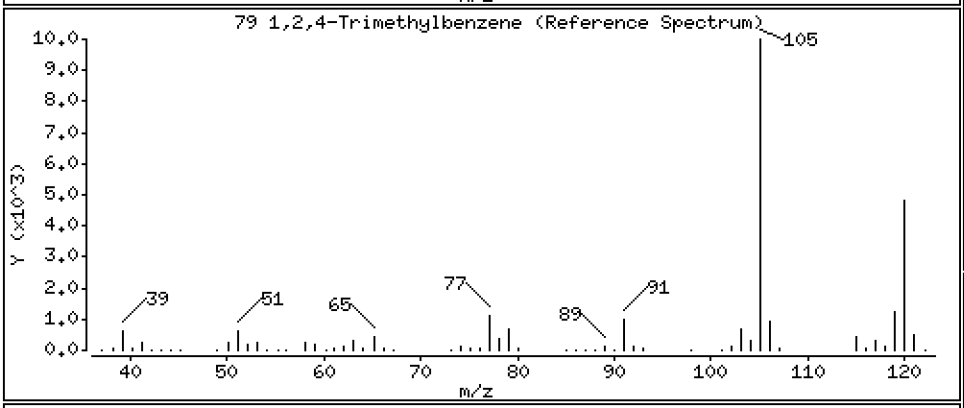
Purge Volume: 5.0 Operator: AP

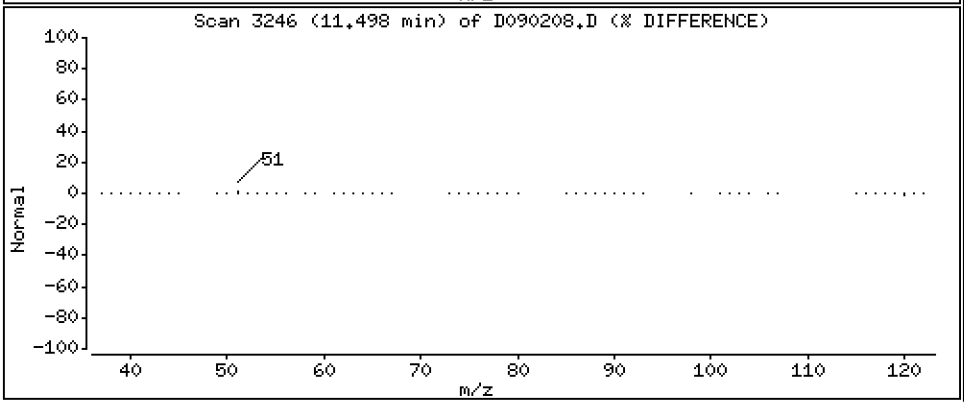
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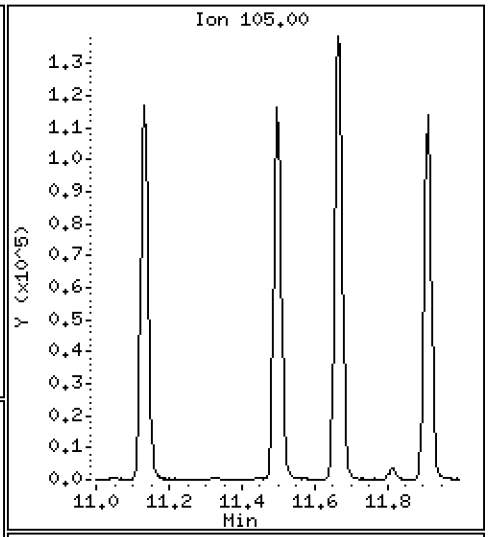
79 1,2,4-Trimethylbenzene Concentration: 16.34 ug/l Review Code:

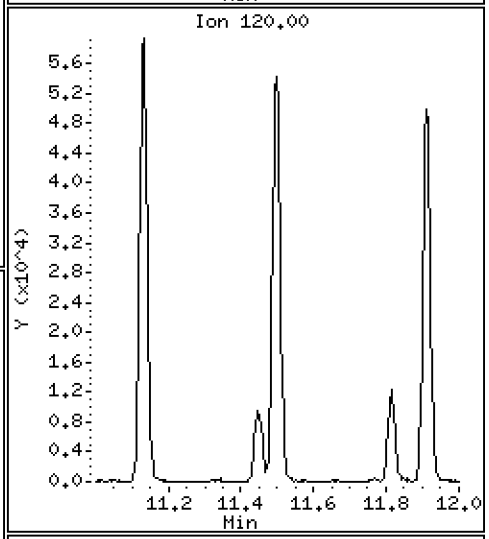


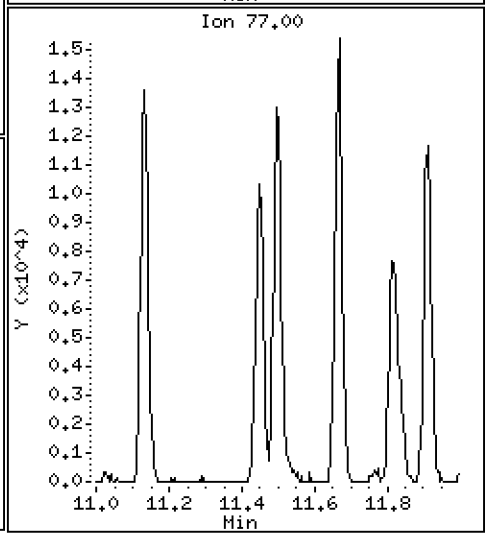












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 73

Date : 02-SEP-2018 16:18

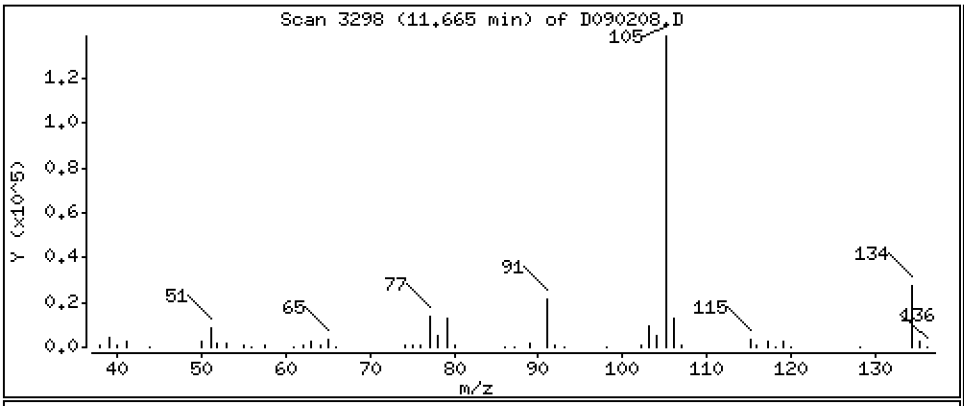
Client ID: HS18081428-01MS Instrument: VOA2.i

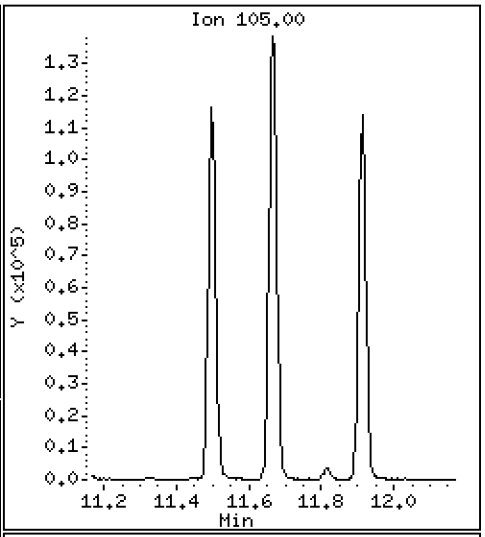
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

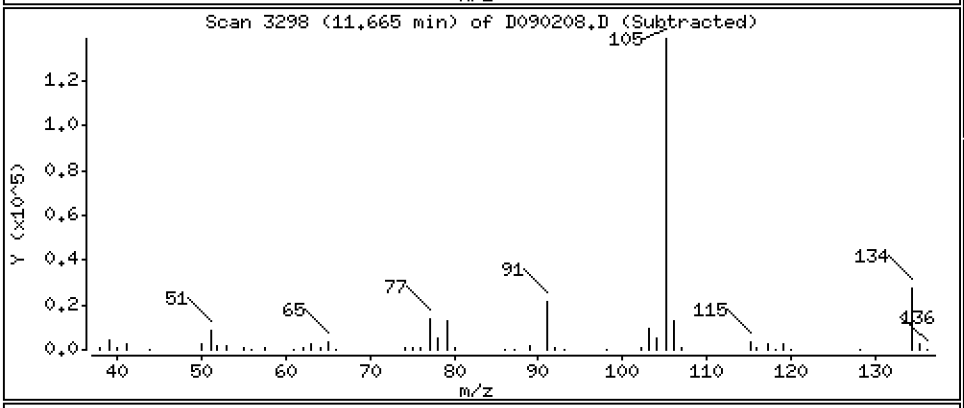
Purge Volume: 5.0 Operator: AP

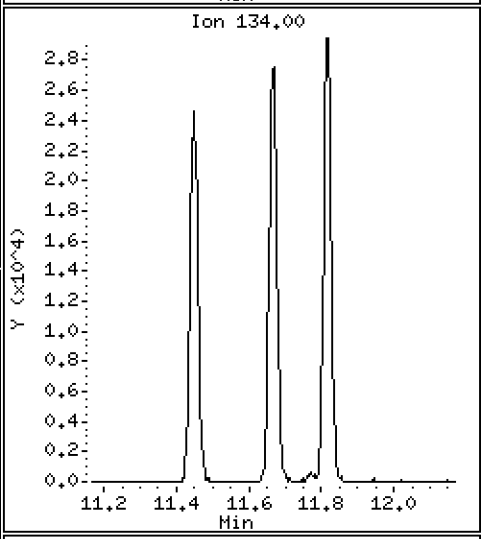
Column phase: DB624 Column diameter: 0.18

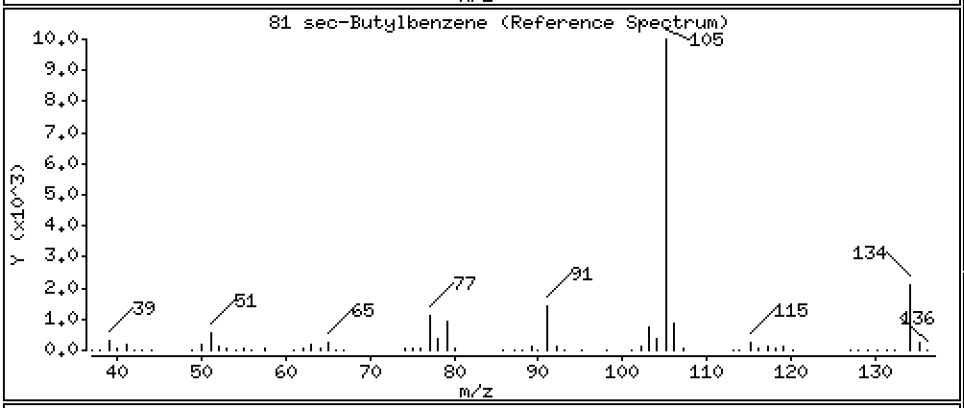
81 sec-Butylbenzene Concentration: 15.37 ug/l Review Code:

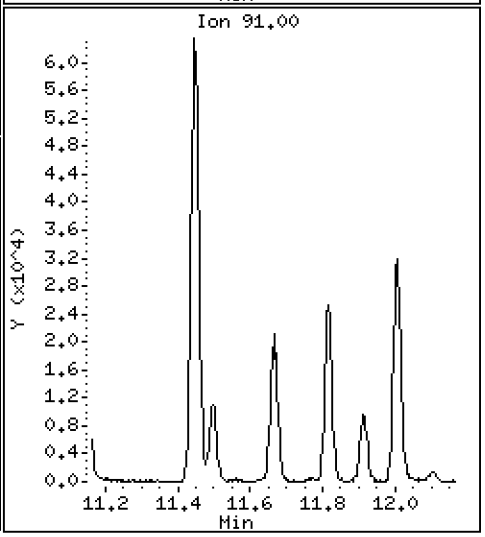


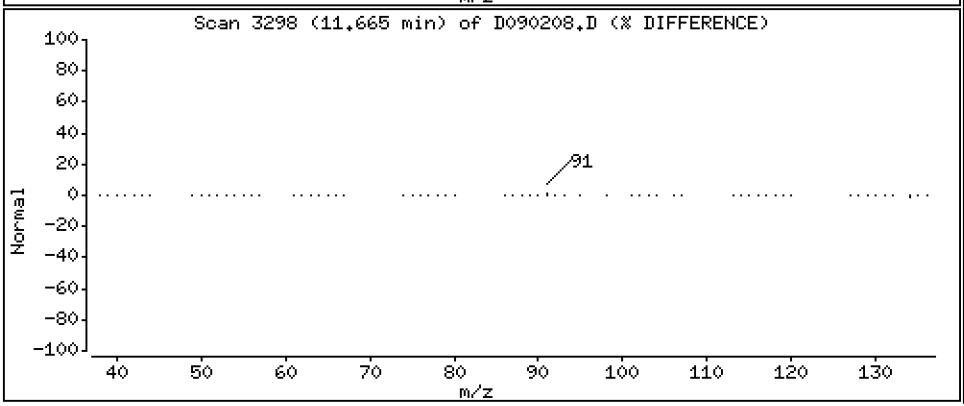












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 74

Date : 02-SEP-2018 16:18

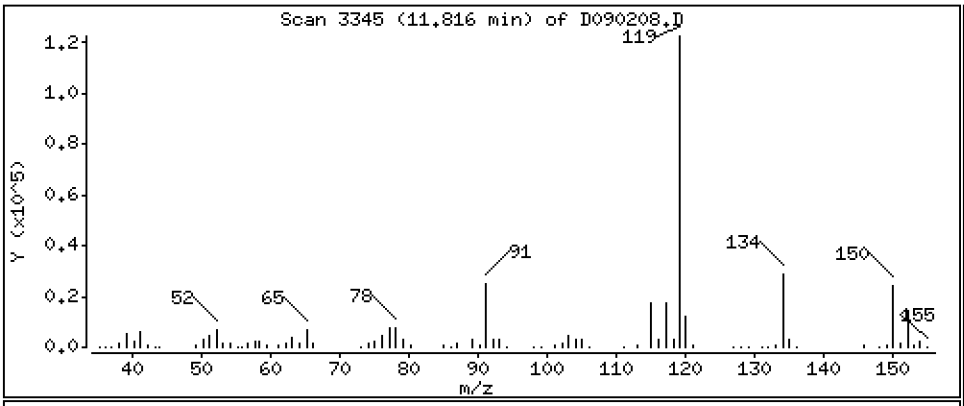
Client ID: HS18081428-01MS Instrument: VOA2.i

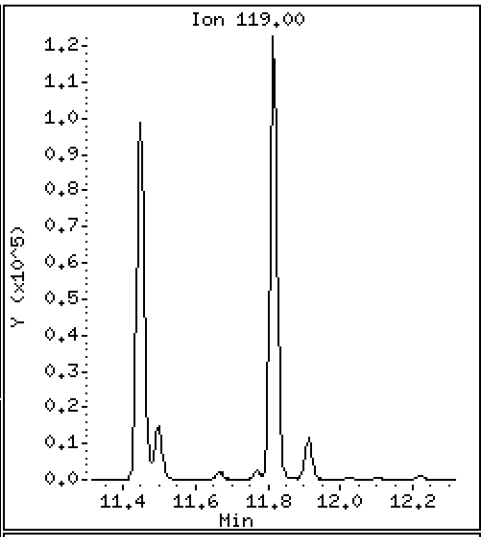
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

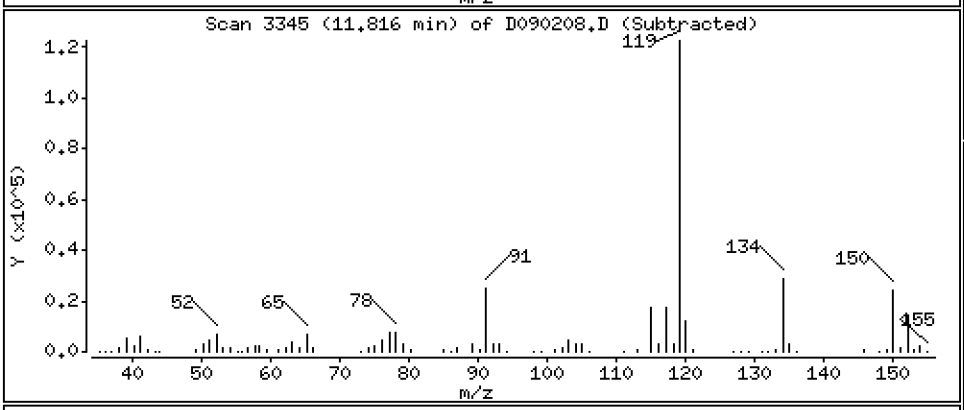
Purge Volume: 5.0 Operator: AP

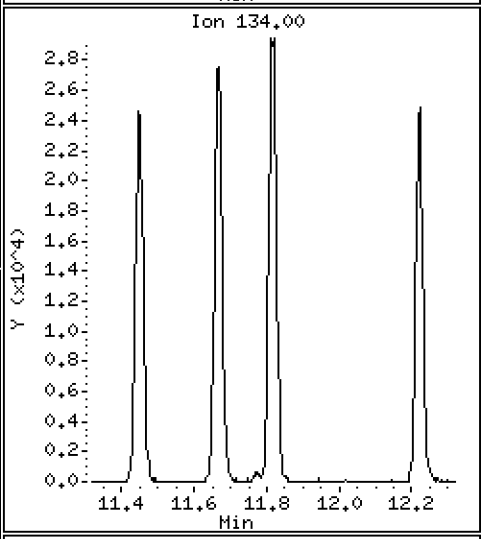
Column phase: DB624 Column diameter: 0.18

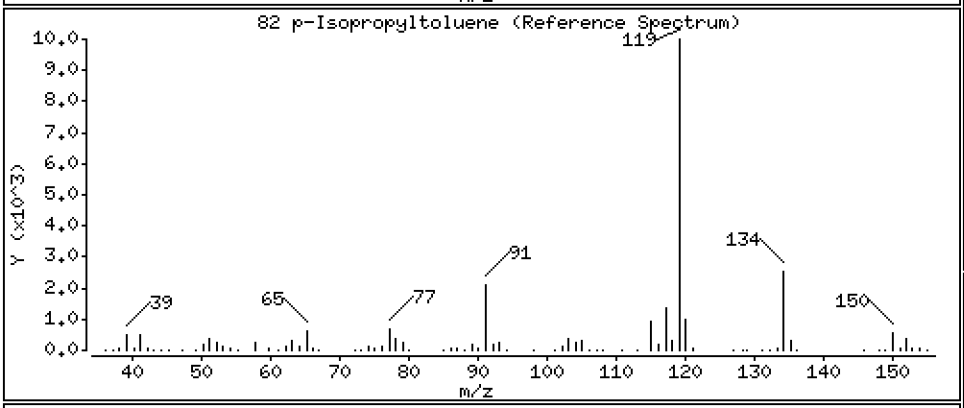
82 p-Isopropyltoluene Concentration: 15.04 ug/l Review Code:

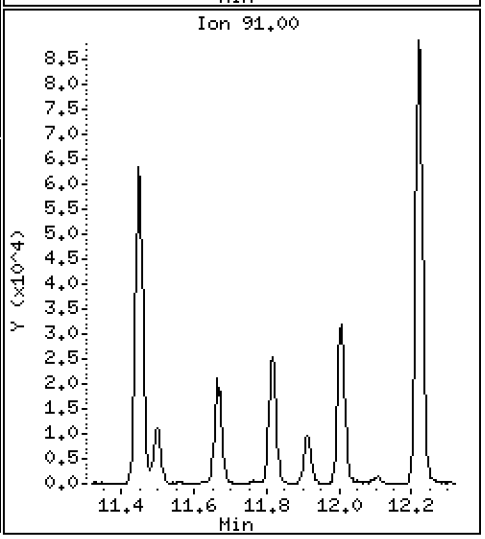


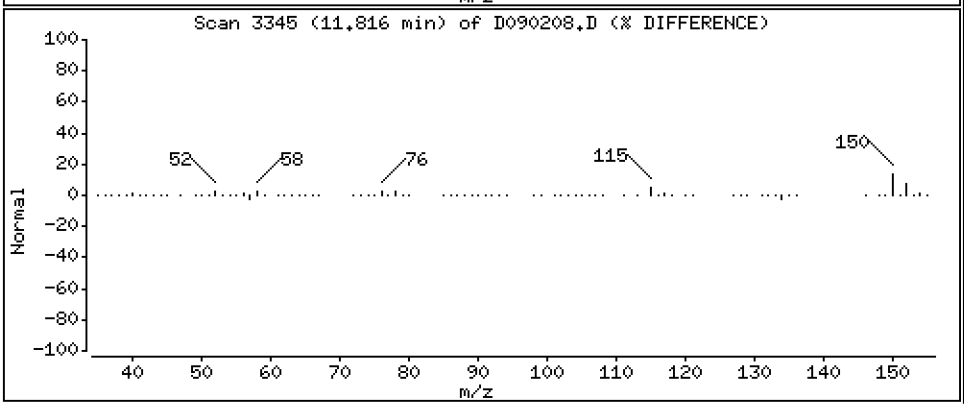












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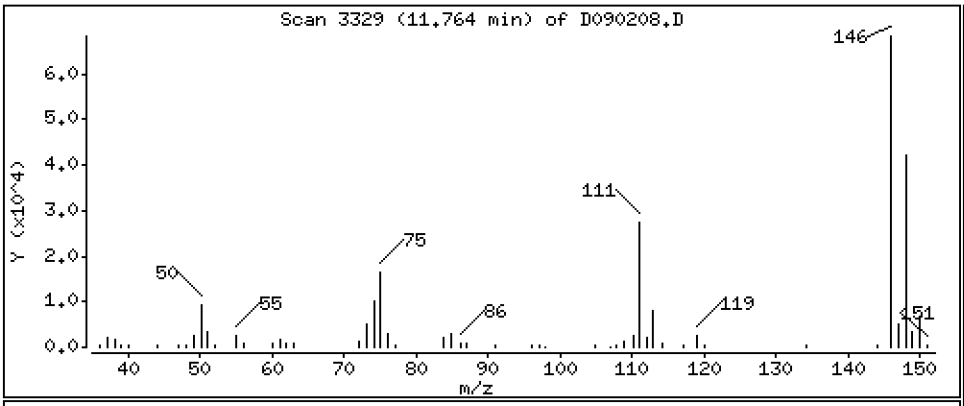
Client ID: HS18081428-01MS Instrument: VOA2.i

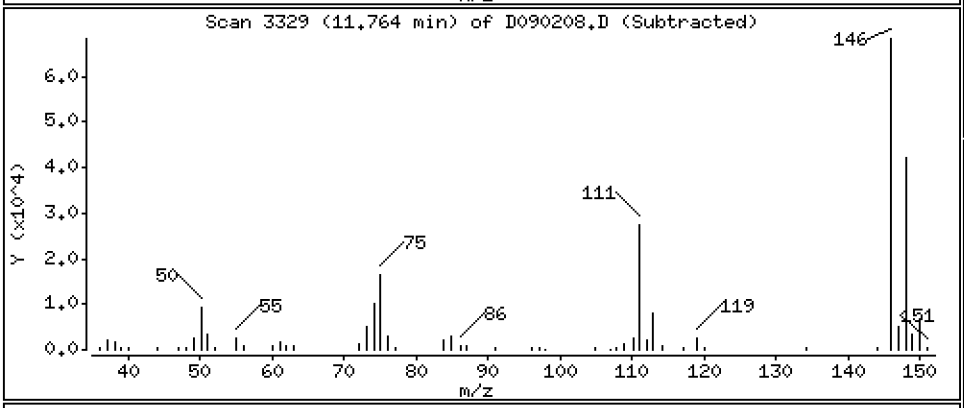
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

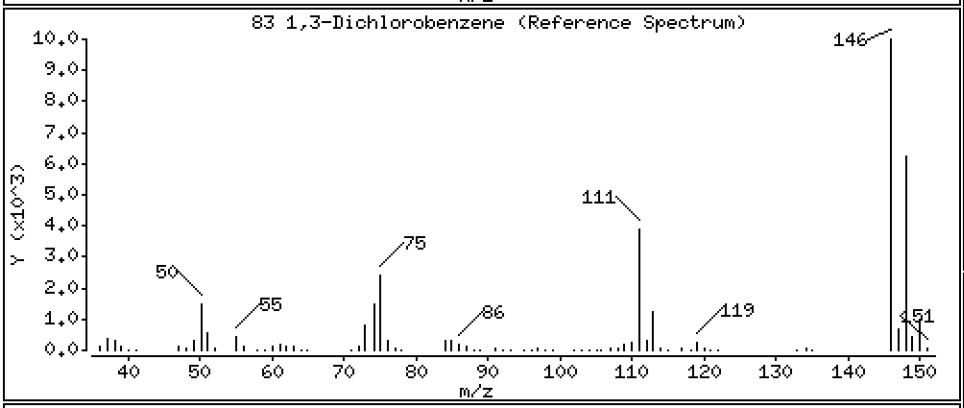
Purge Volume: 5.0 Operator: AP

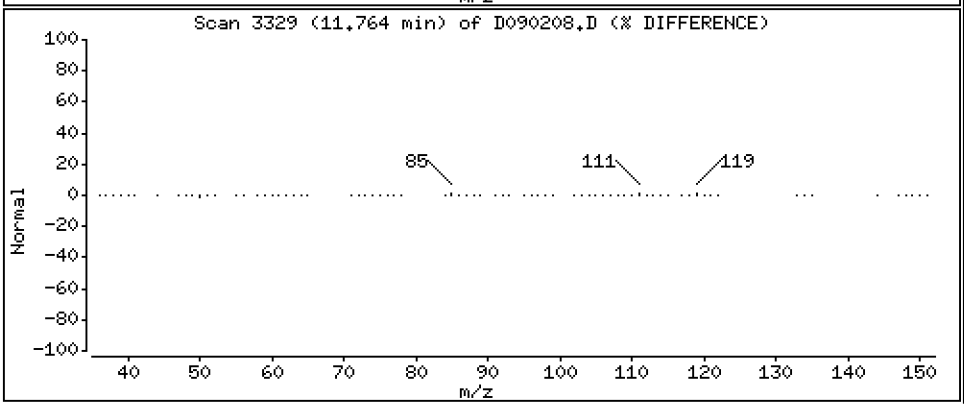
Column phase: DB624 Column diameter: 0.18

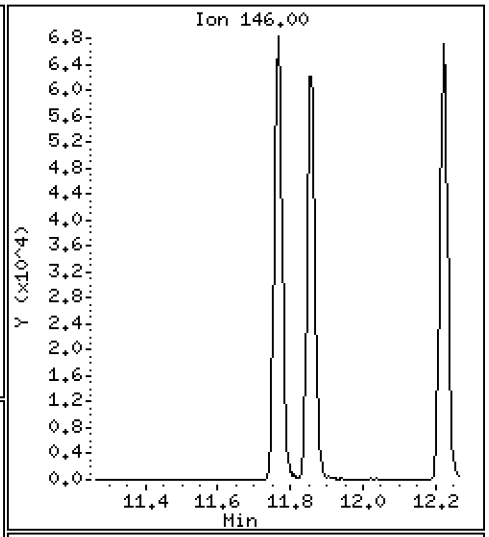
83 1,3-Dichlorobenzene Concentration: 16.84 ug/l Review Code:

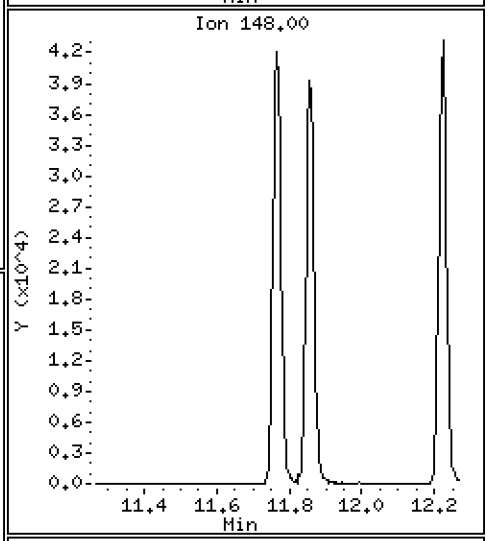


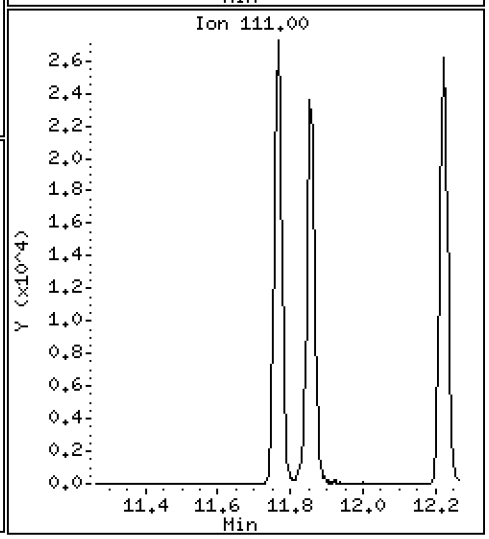












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 76

Date : 02-SEP-2018 16:18

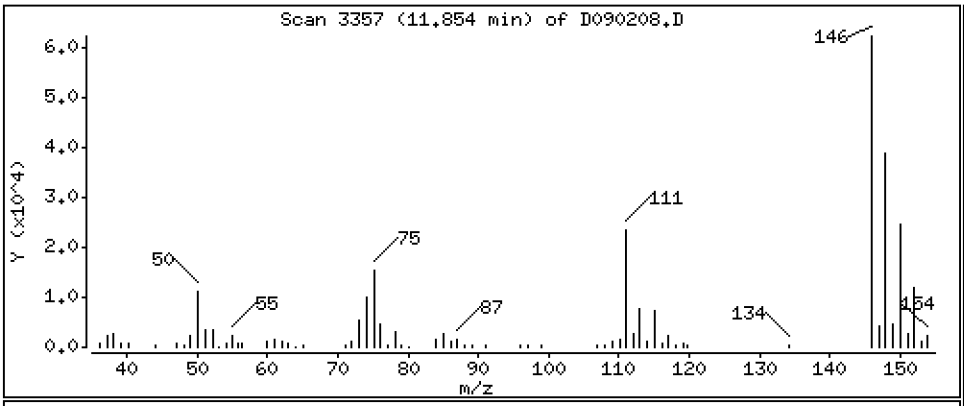
Client ID: HS18081428-01MS Instrument: VOA2.i

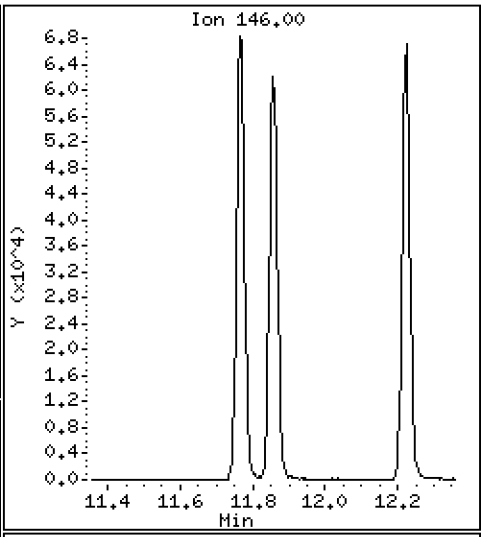
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

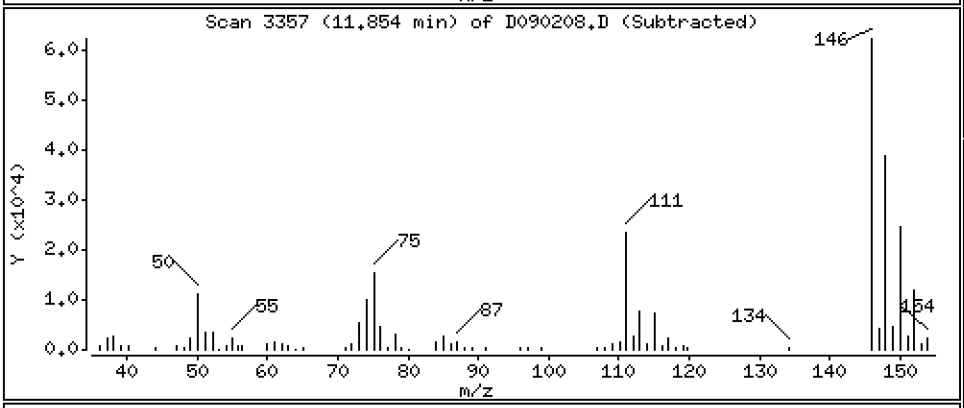
Purge Volume: 5.0 Operator: AP

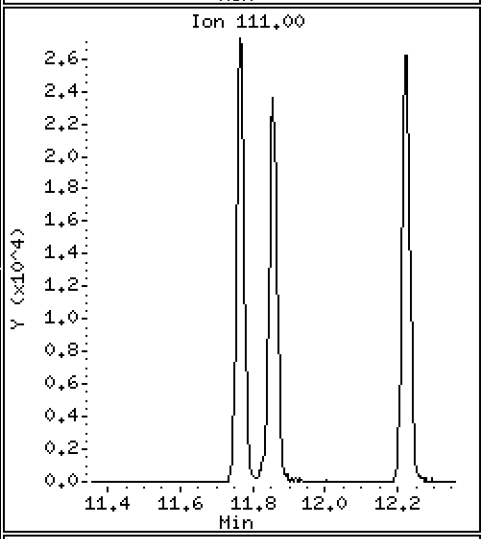
Column phase: DB624 Column diameter: 0.18

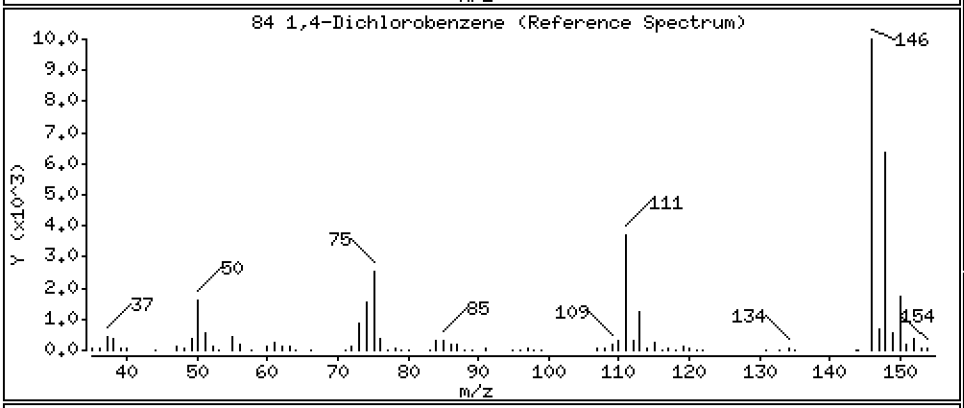
84 1,4-Dichlorobenzene Concentration: 16.51 ug/l Review Code:

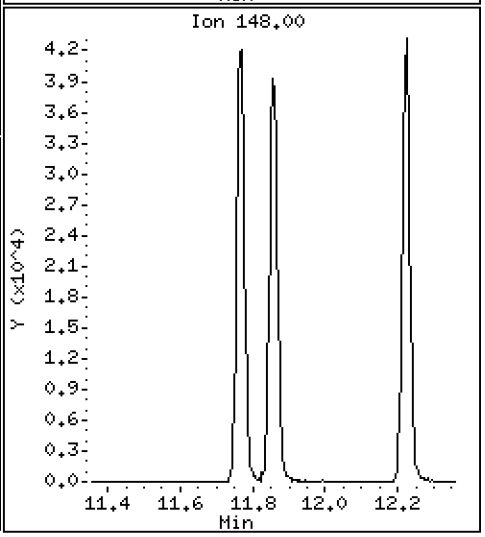


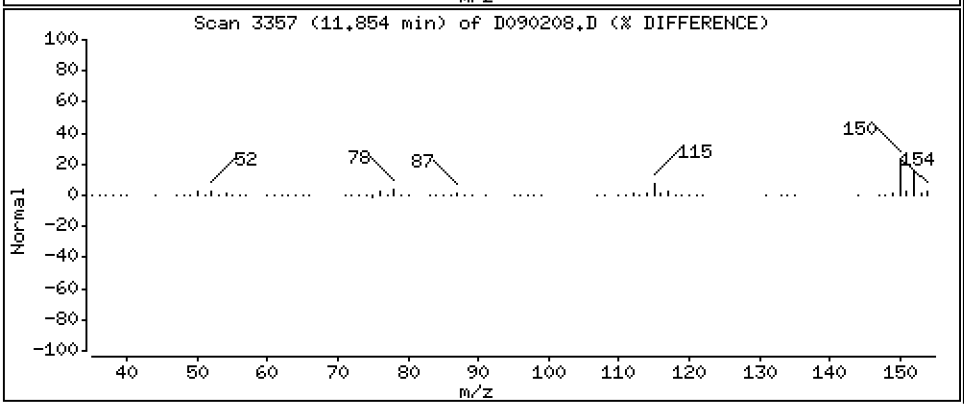












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 77

Date : 02-SEP-2018 16:18

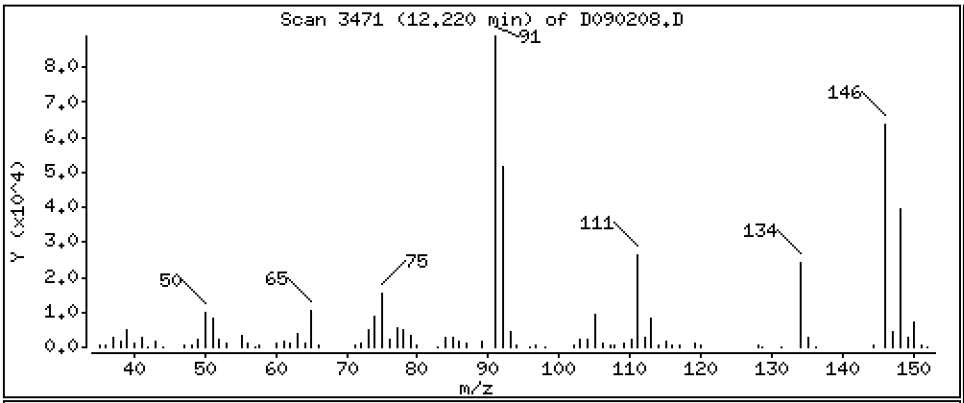
Client ID: HS18081428-01MS Instrument: VOA2.i

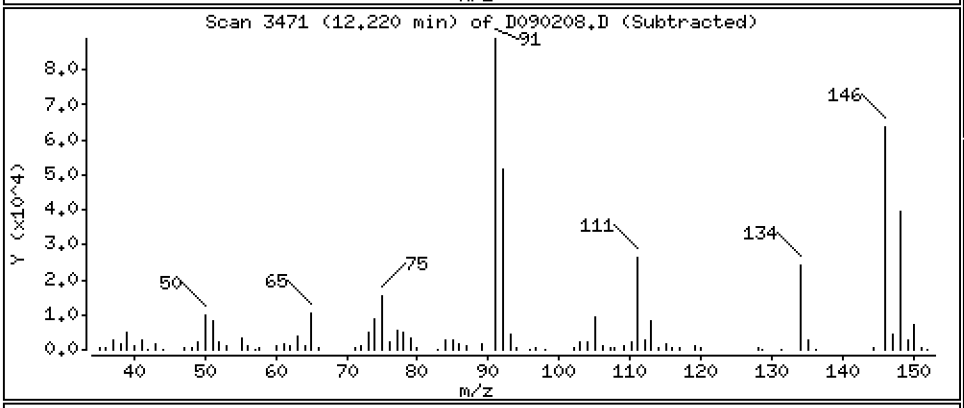
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

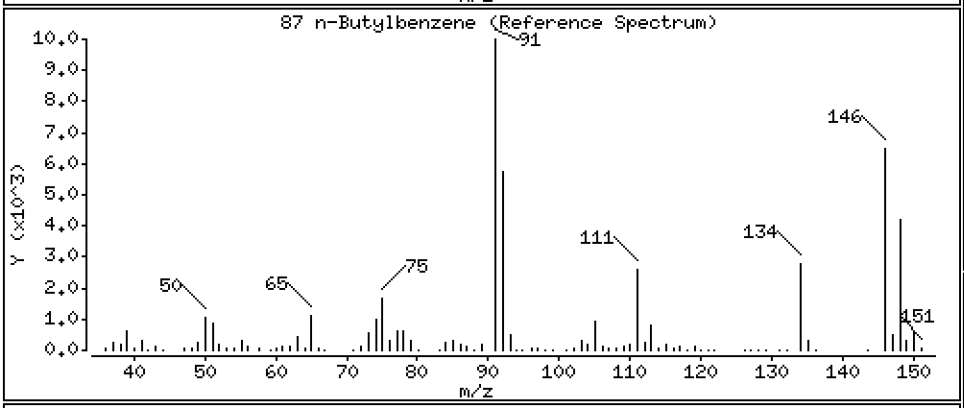
Purge Volume: 5.0 Operator: AP

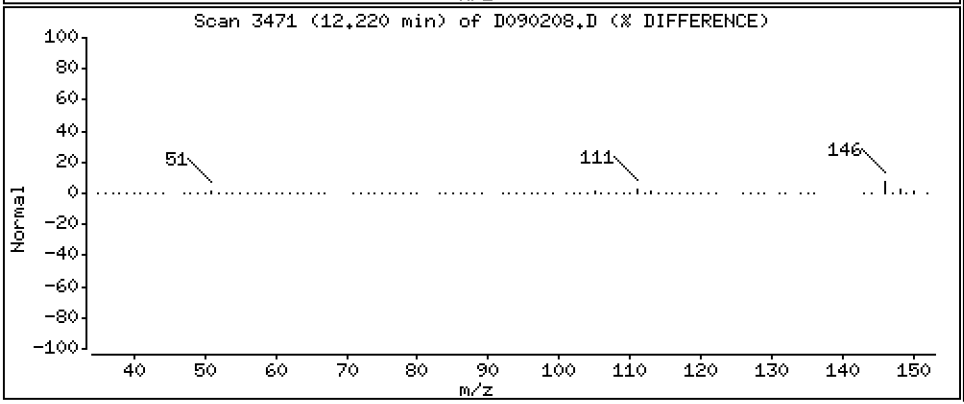
Column phase: DB624 Column diameter: 0.18

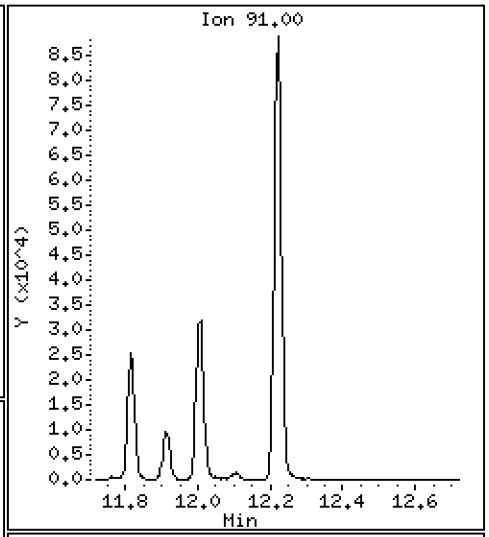
87 n-Butylbenzene Concentration: 15.48 ug/l Review Code:

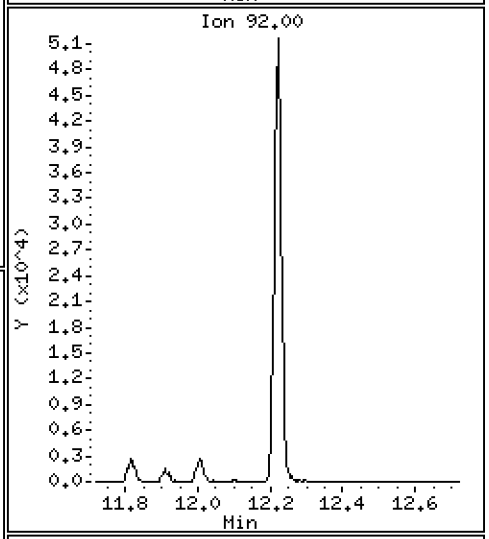


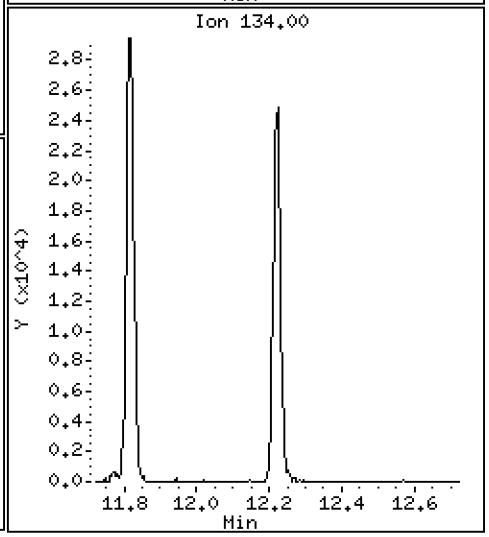












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Date : 02-SEP-2018 16:18

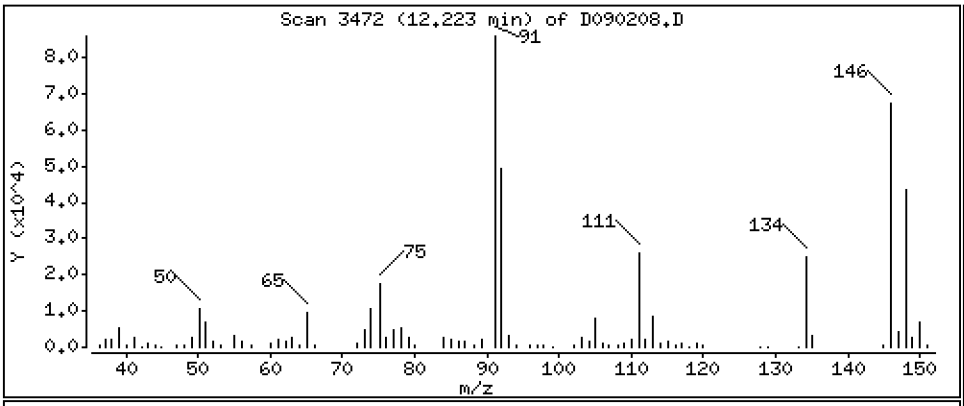
Client ID: HS18081428-01MS Instrument: VOA2.i

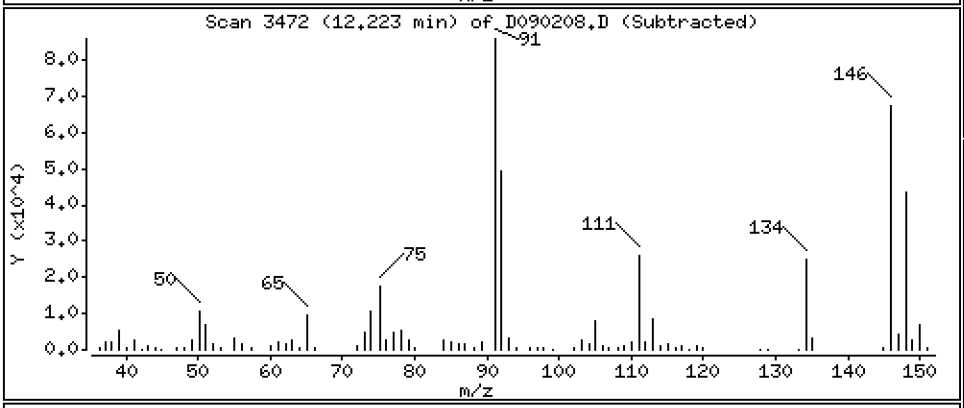
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

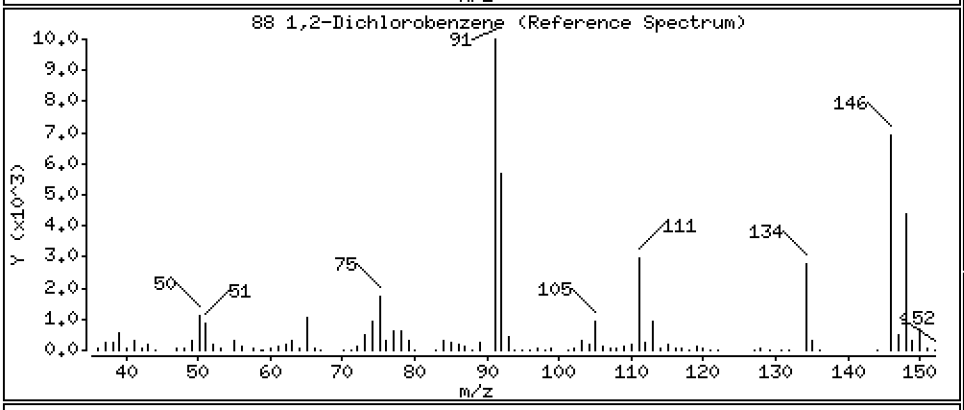
Purge Volume: 5.0 Operator: AP

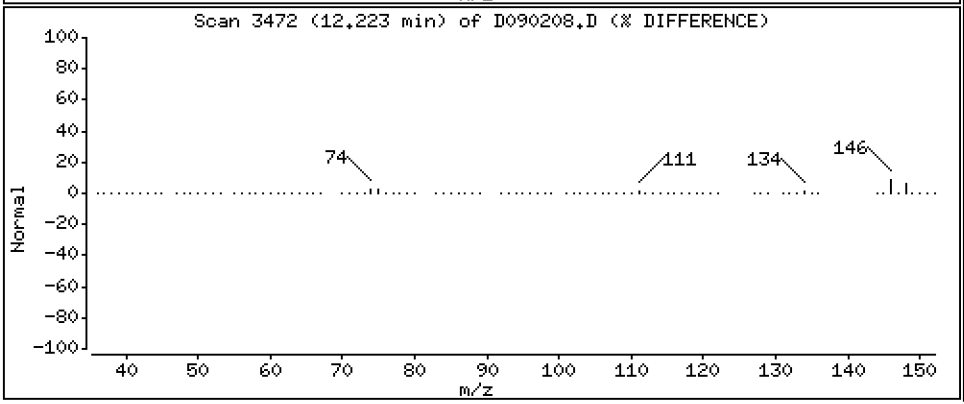
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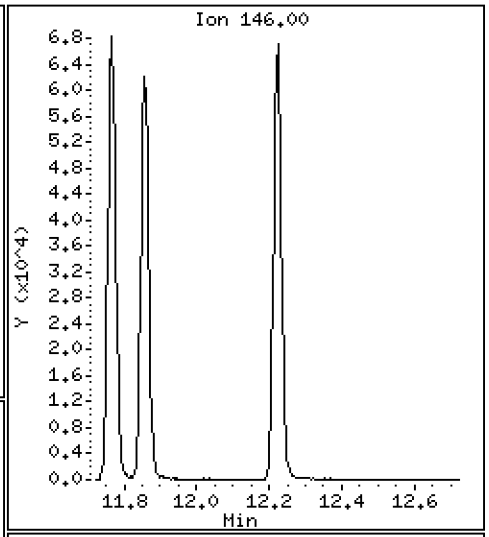
88 1,2-Dichlorobenzene Concentration: 16.47 ug/l Review Code:

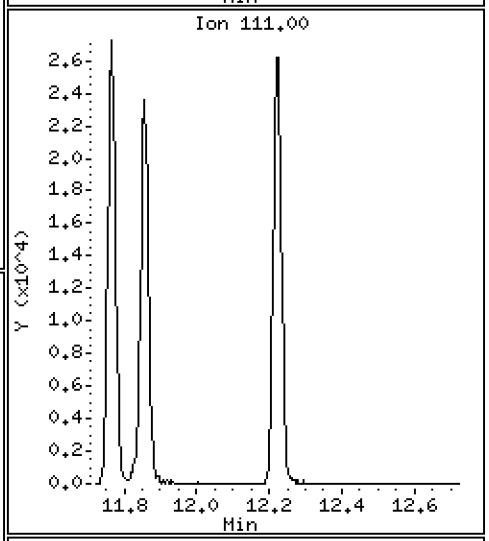


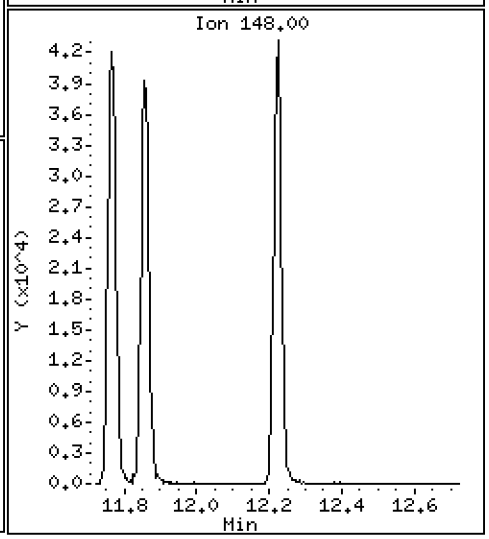












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 79

Date : 02-SEP-2018 16:18

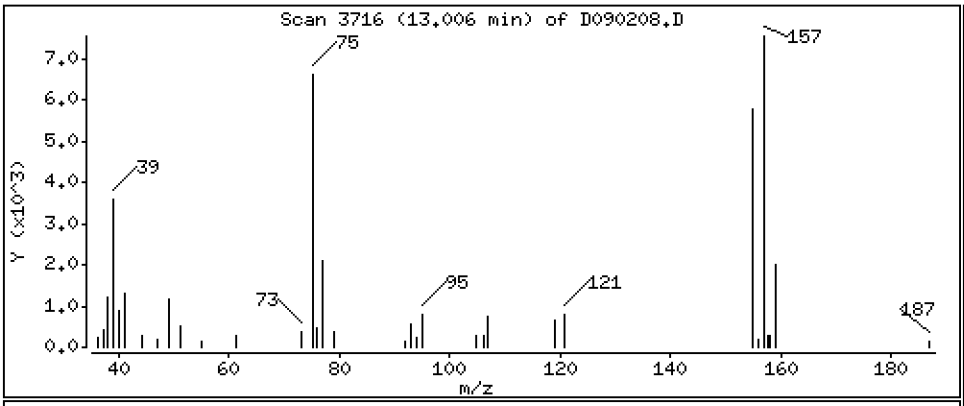
Client ID: HS18081428-01MS Instrument: VOA2.i

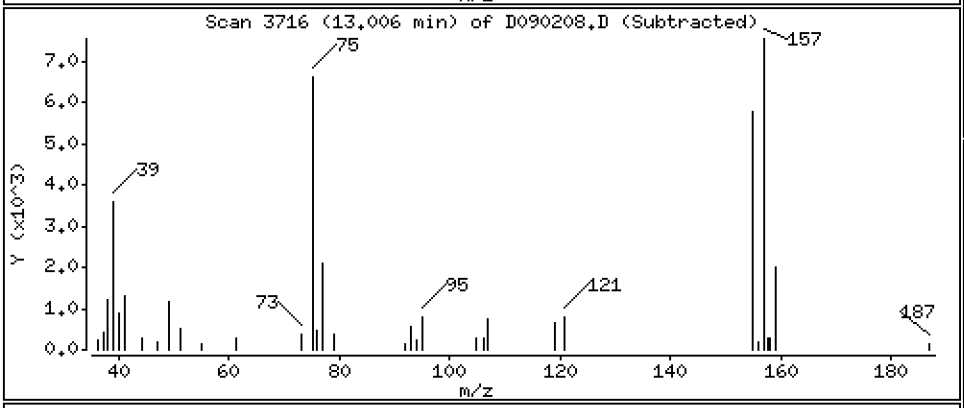
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

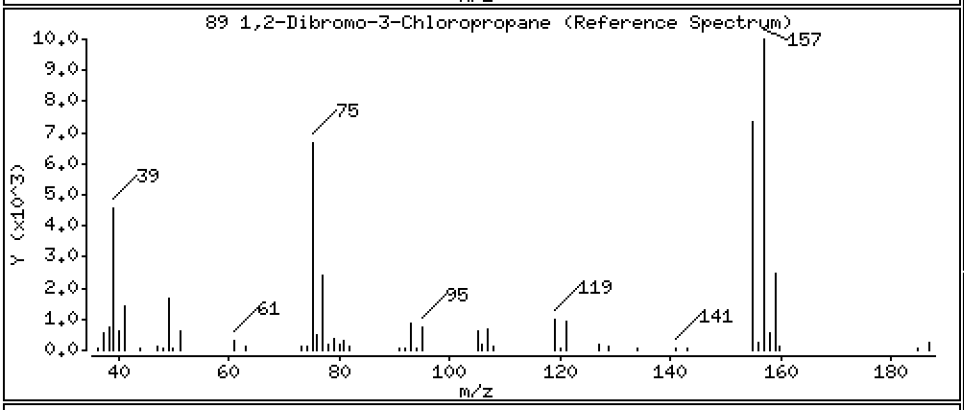
Purge Volume: 5.0 Operator: AP

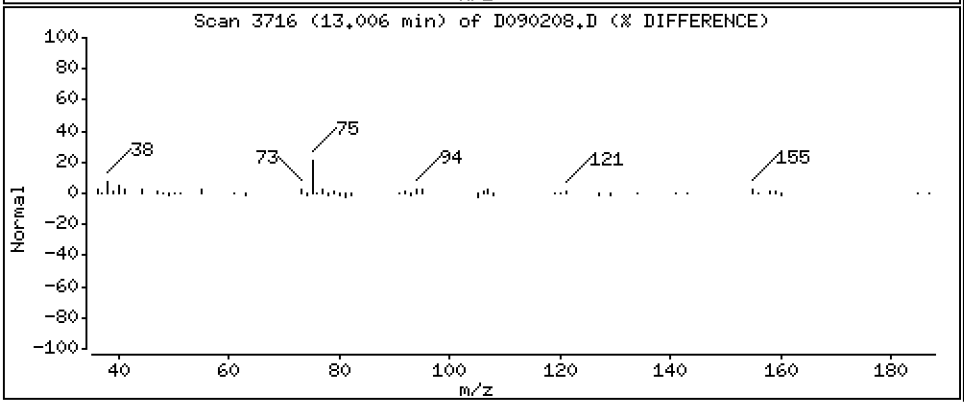
Column phase: DB624 Column diameter: 0.18

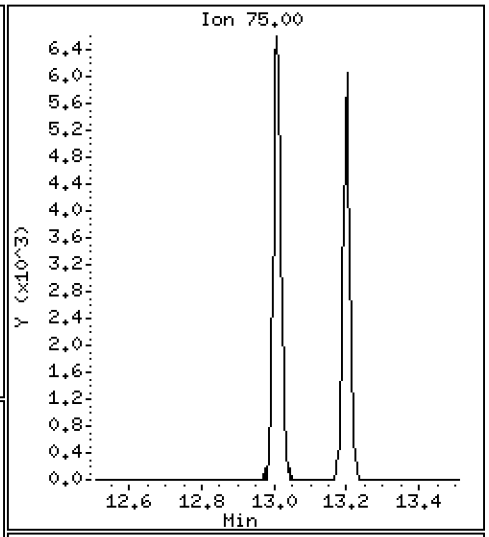
89 1,2-Dibromo-3-Chloropropane Concentration: 14.26 ug/l Review Code:

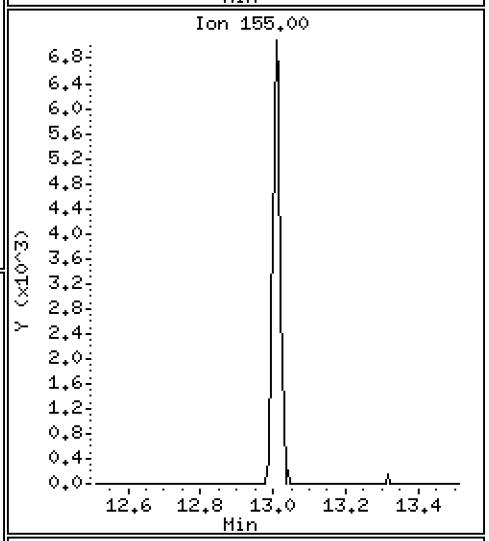


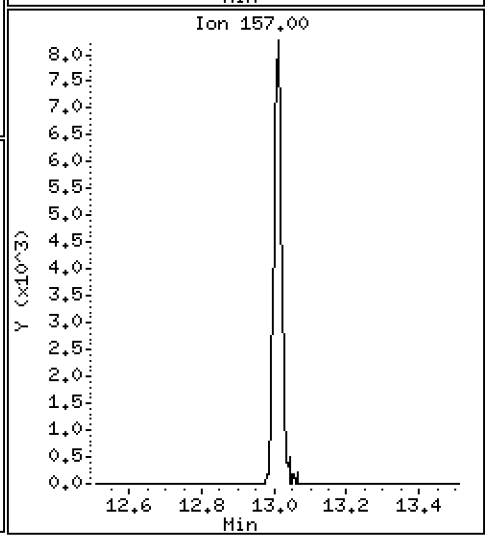












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 80

Date : 02-SEP-2018 16:18

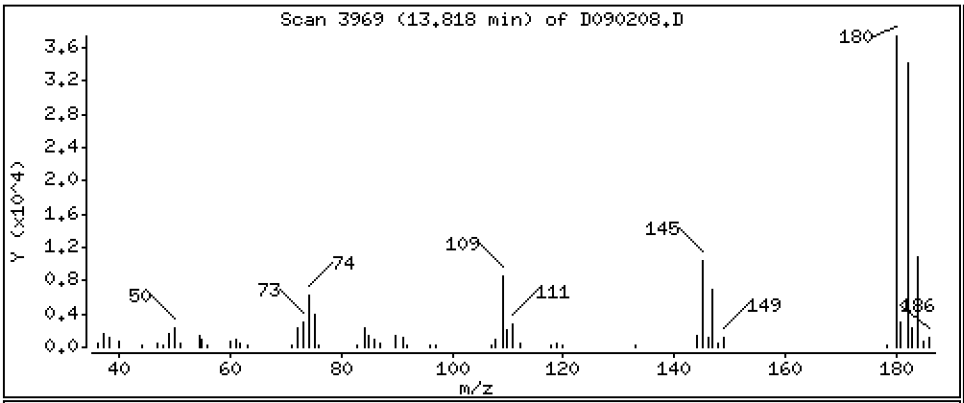
Client ID: HS18081428-01MS Instrument: VOA2.i

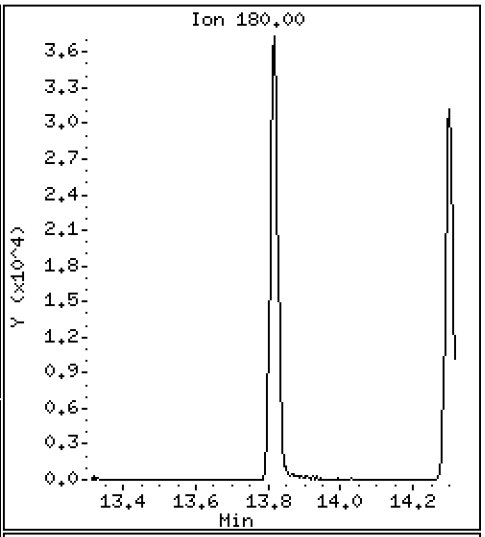
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

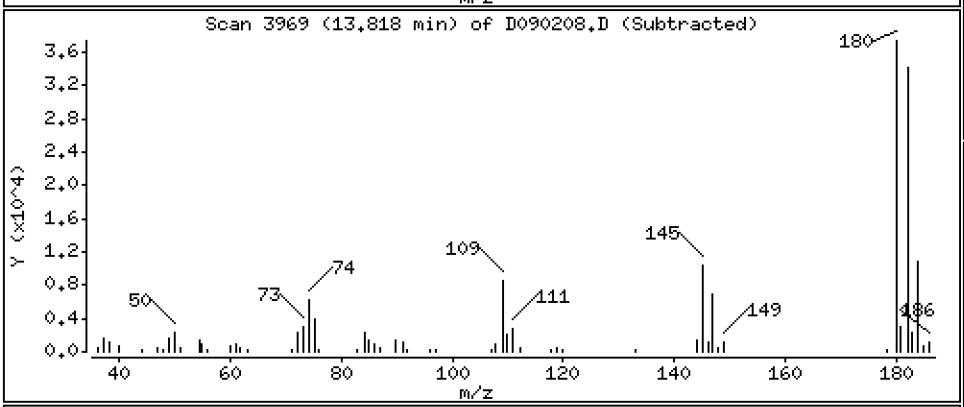
Purge Volume: 5.0 Operator: AP

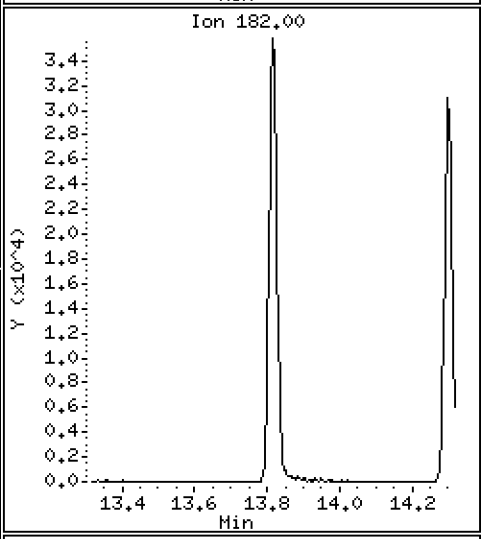
Column phase: DB624 Column diameter: 0.18

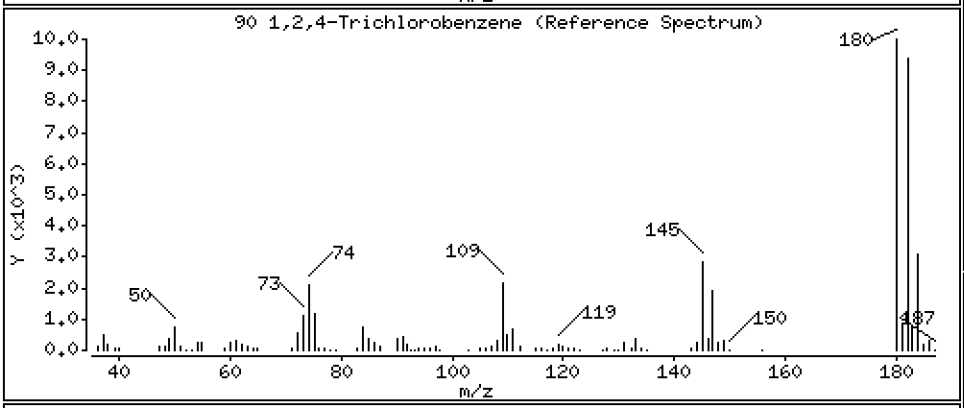
90 1,2,4-Trichlorobenzene Concentration: 16.17 ug/l Review Code:

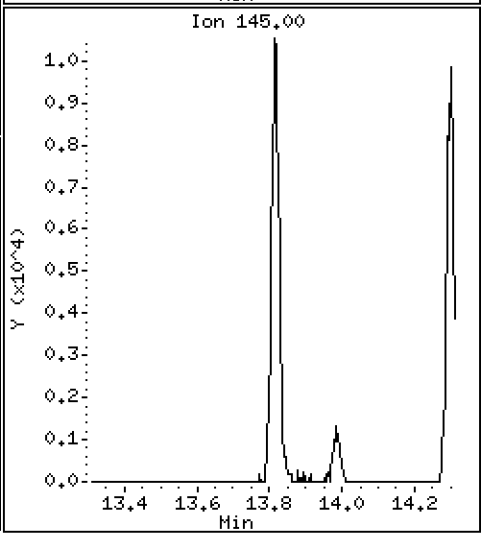


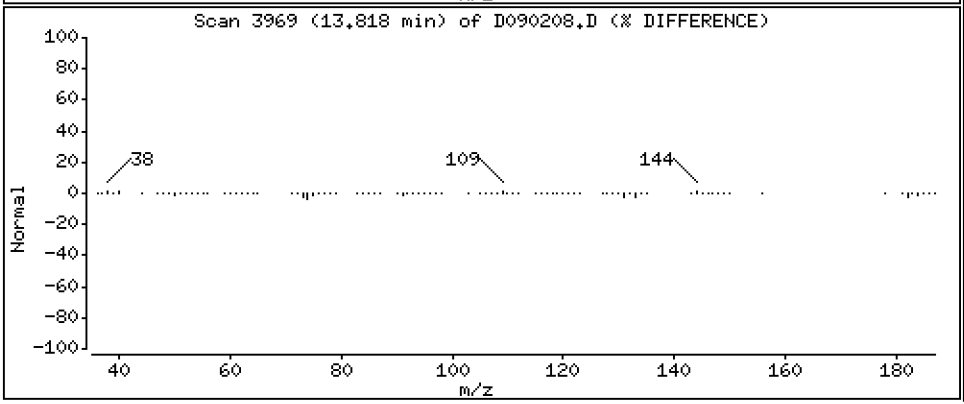












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 81

Date : 02-SEP-2018 16:18

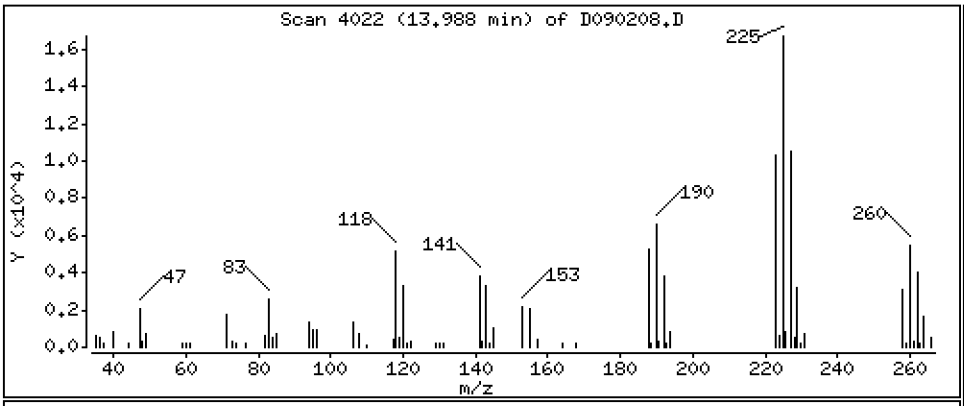
Client ID: HS18081428-01MS Instrument: VOA2.i

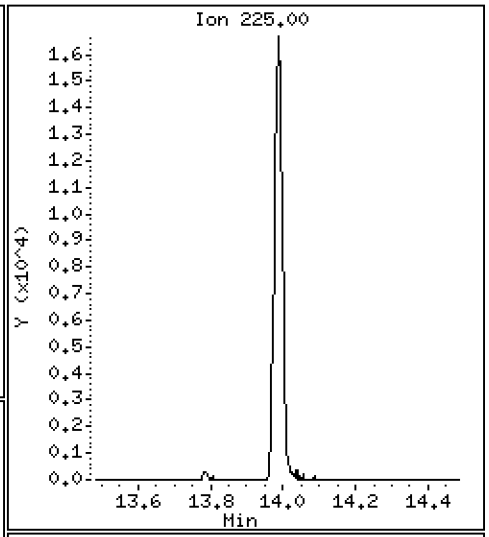
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

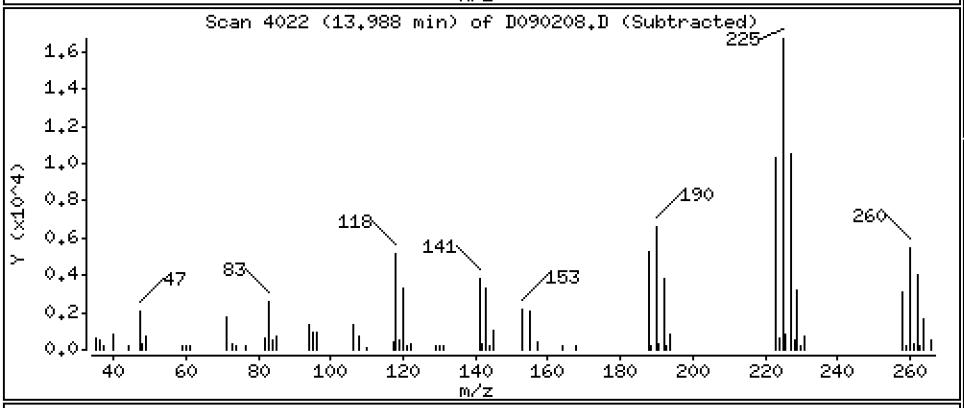
Purge Volume: 5.0 Operator: AP

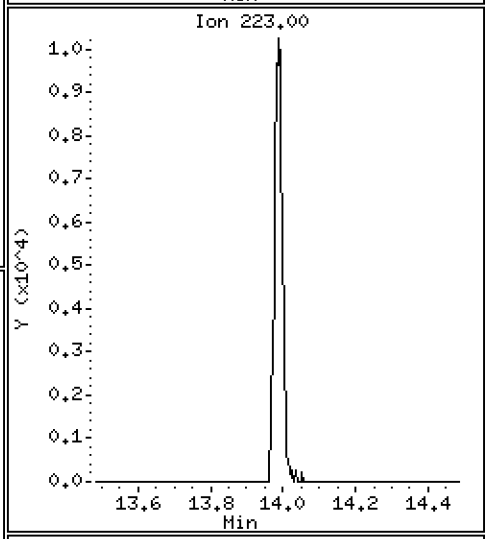
Column phase: DB624 Column diameter: 0.18

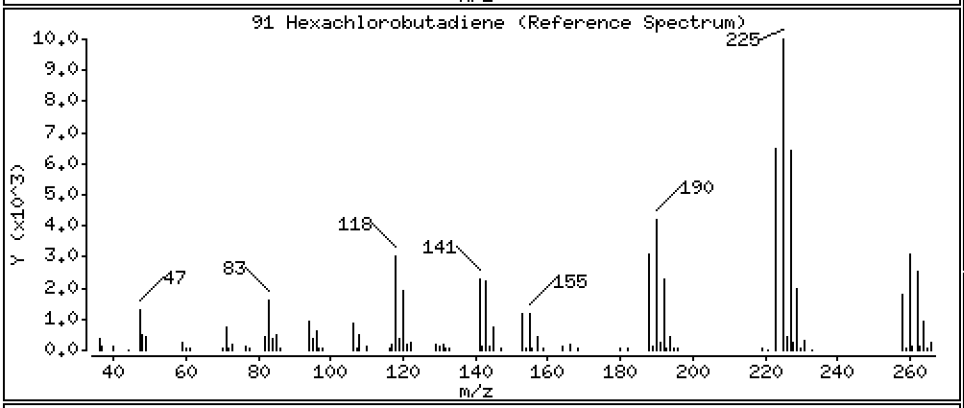
91 Hexachlorobutadiene Concentration: 15.78 ug/l Review Code:

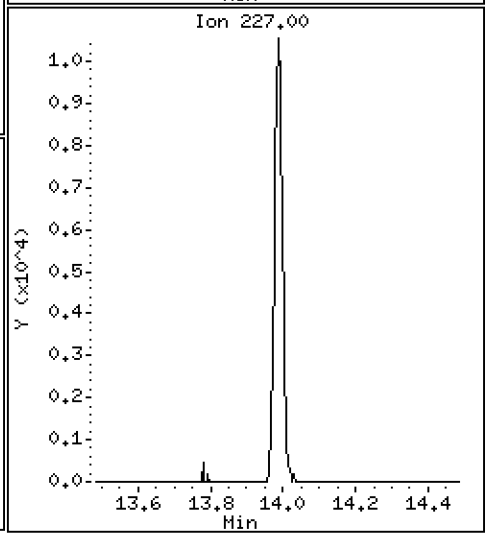


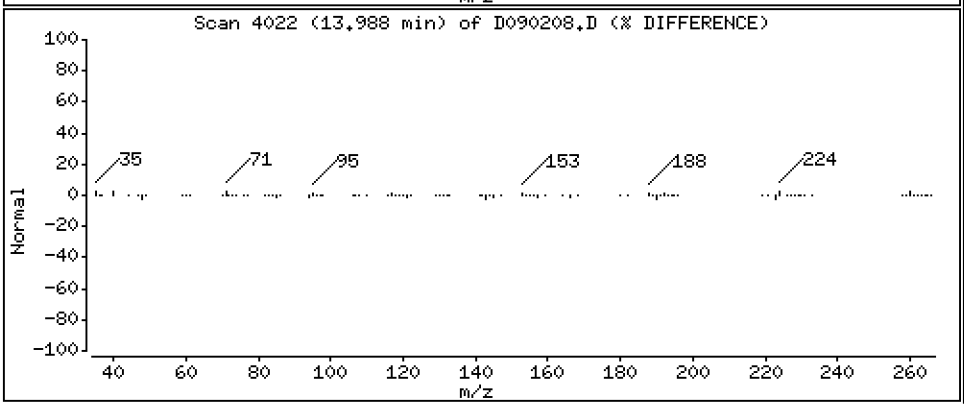












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 82

Date : 02-SEP-2018 16:18

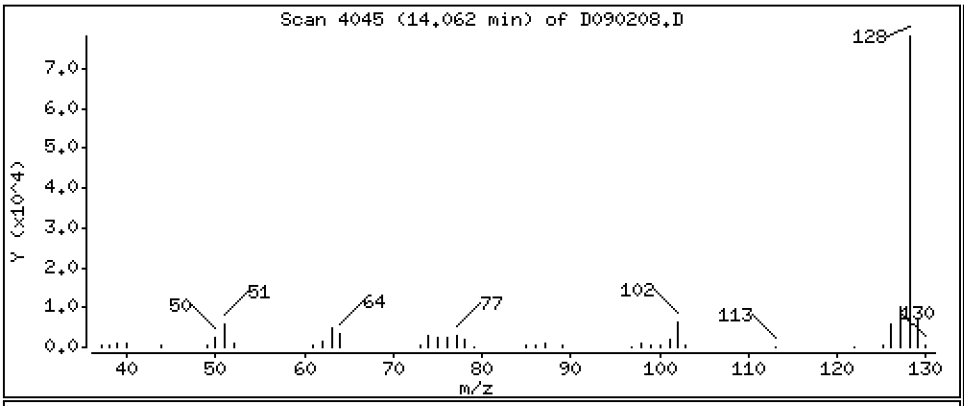
Client ID: HS18081428-01MS Instrument: VOA2.i

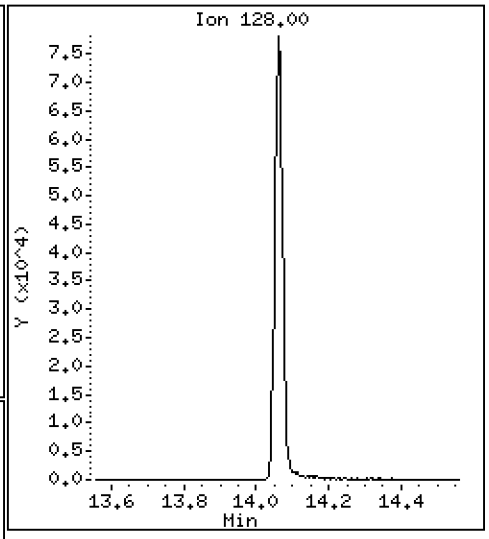
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

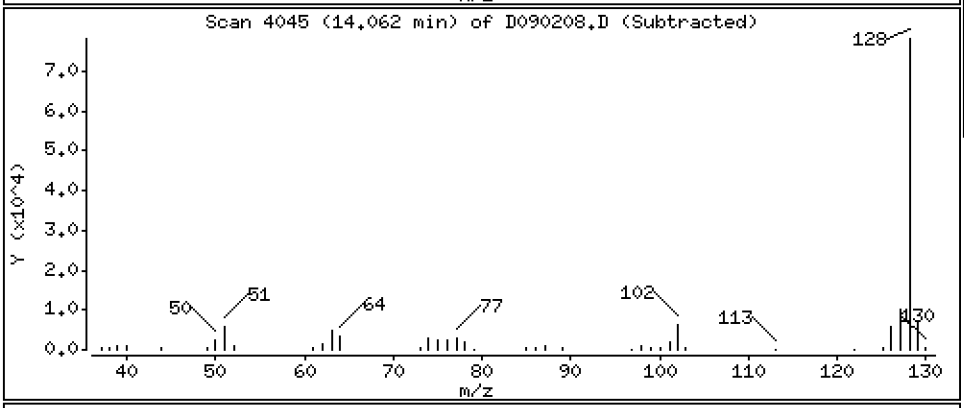
Purge Volume: 5.0 Operator: AP

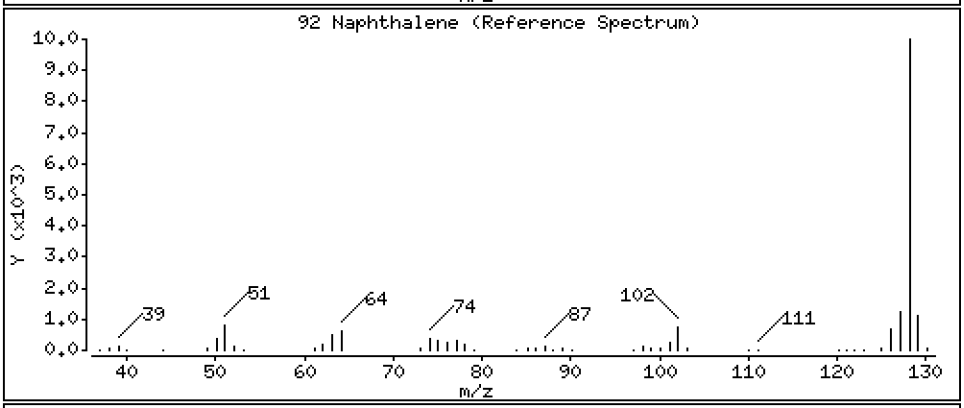
Column phase: DB624 Column diameter: 0.18

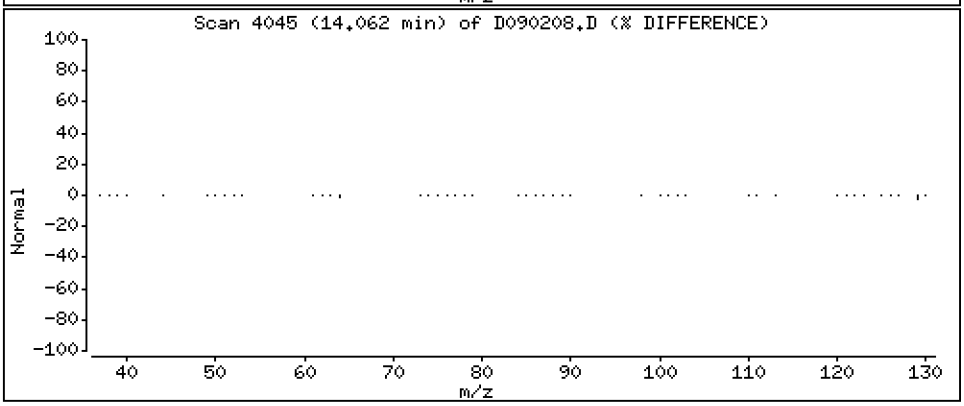
92 Naphthalene Concentration: 13.76 ug/l Review Code:











Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 83

Date : 02-SEP-2018 16:18

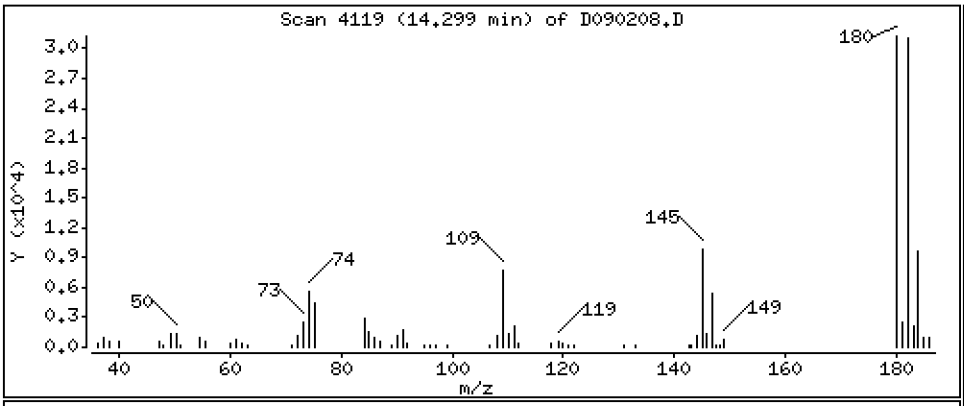
Client ID: HS18081428-01MS Instrument: VOA2.i

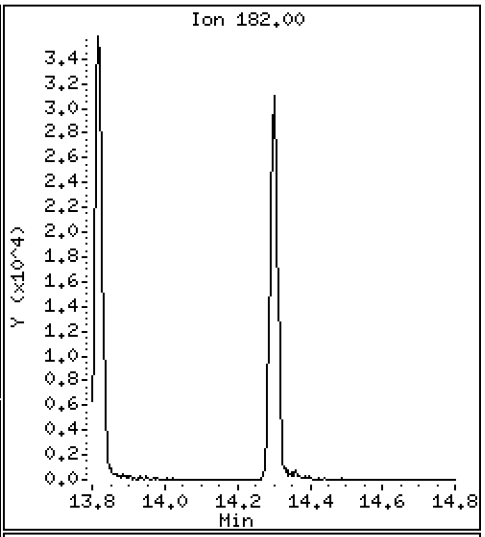
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

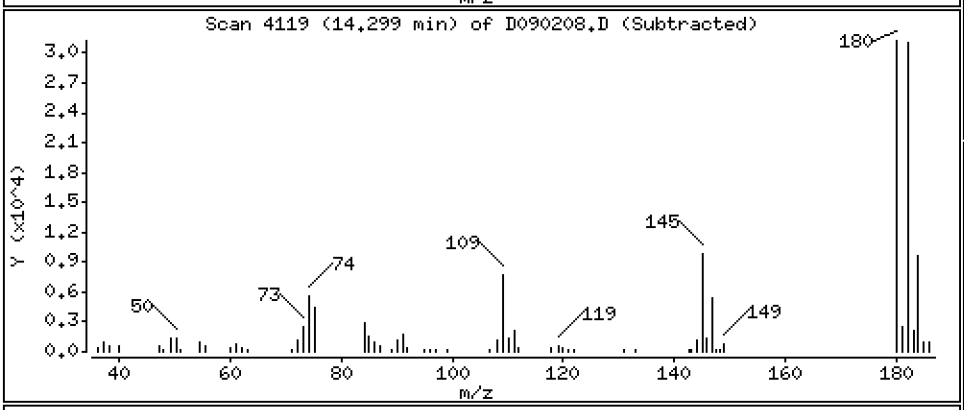
Purge Volume: 5.0 Operator: AP

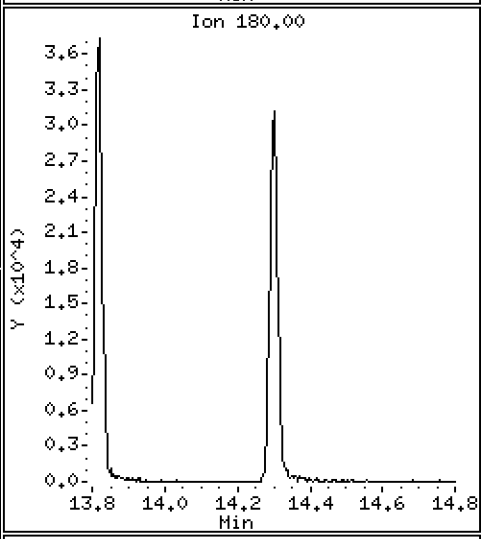
Column phase: DB624 Column diameter: 0.18

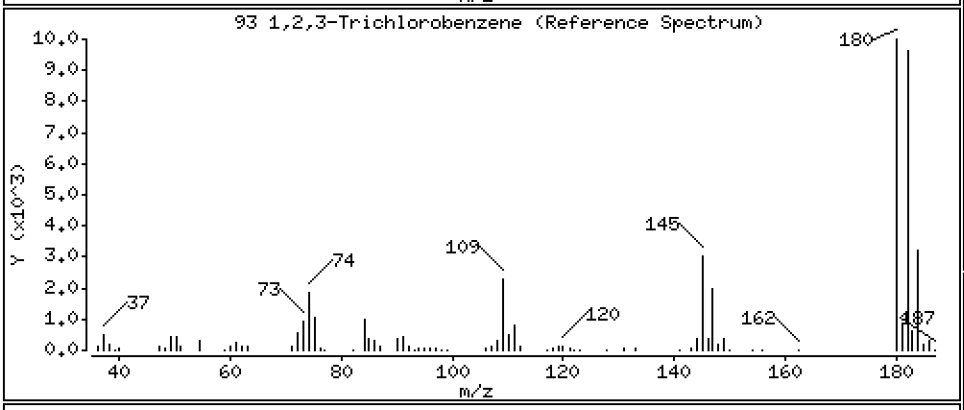
93 1,2,3-Trichlorobenzene Concentration: 15.35 ug/l Review Code:

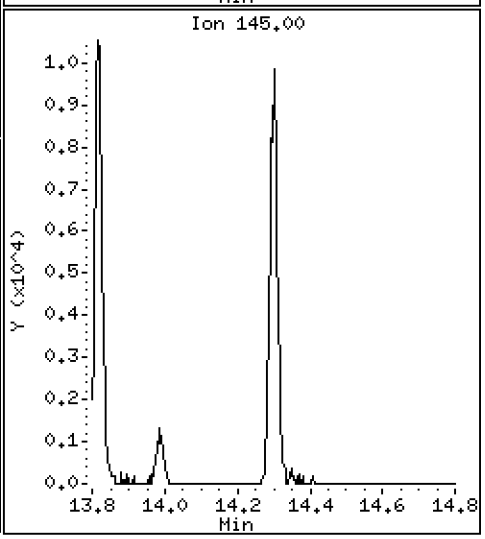


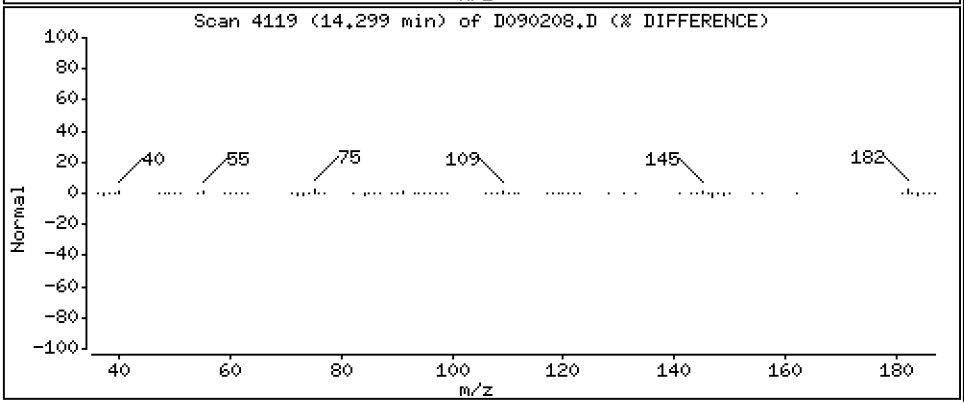












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 84

Date : 02-SEP-2018 16:18

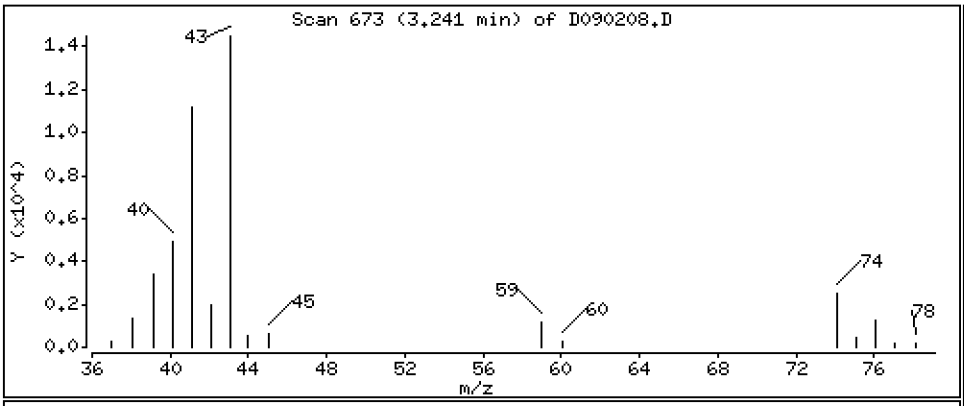
Client ID: HS18081428-01MS Instrument: VOA2.i

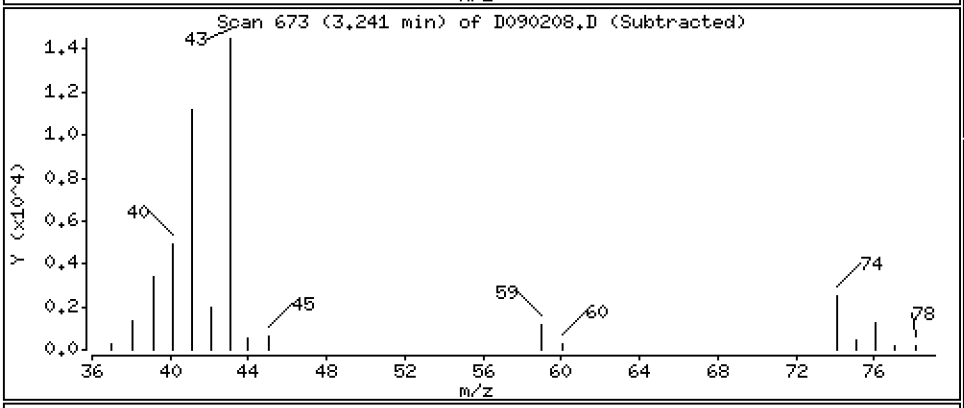
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

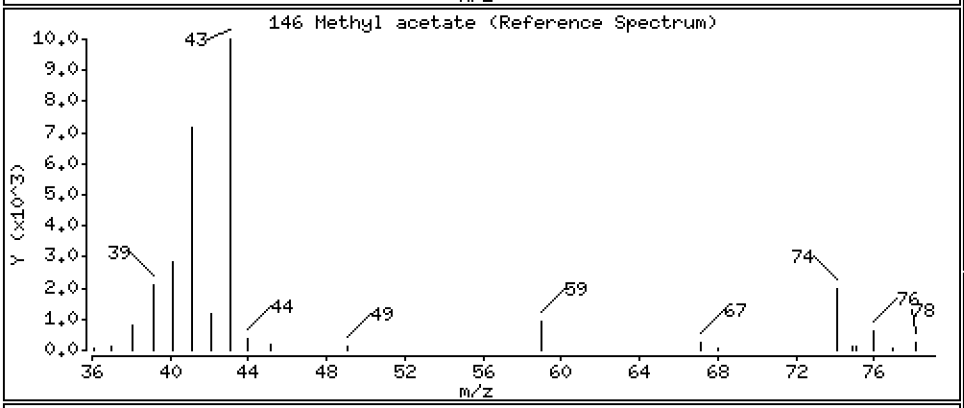
Purge Volume: 5.0 Operator: AP

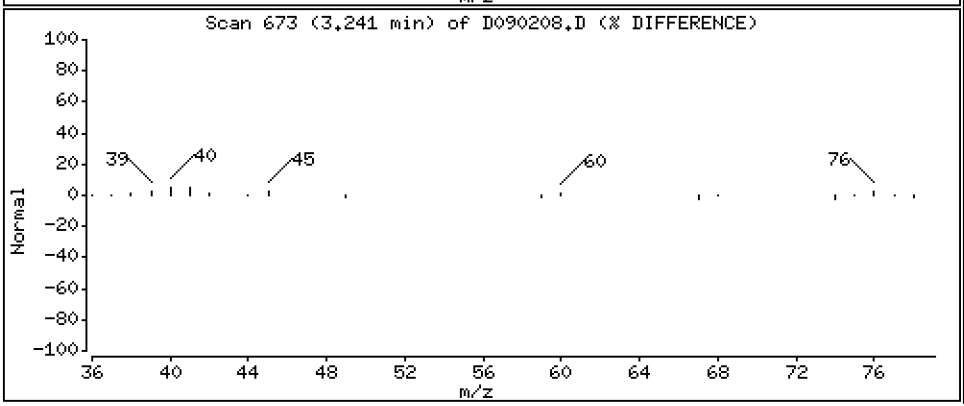
Column phase: DB624 Column diameter: 0.18

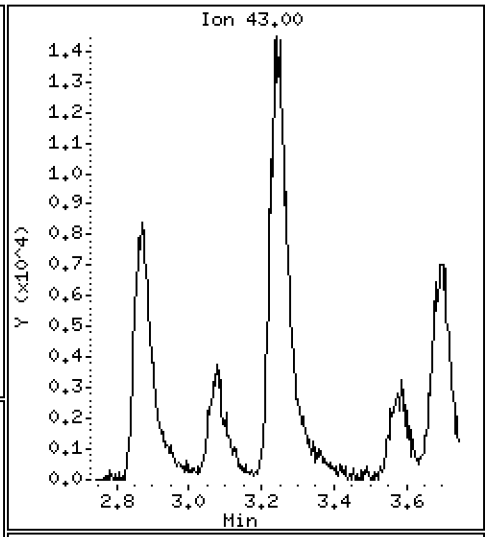
146 Methyl acetate Concentration: 14.18 ug/l Review Code:

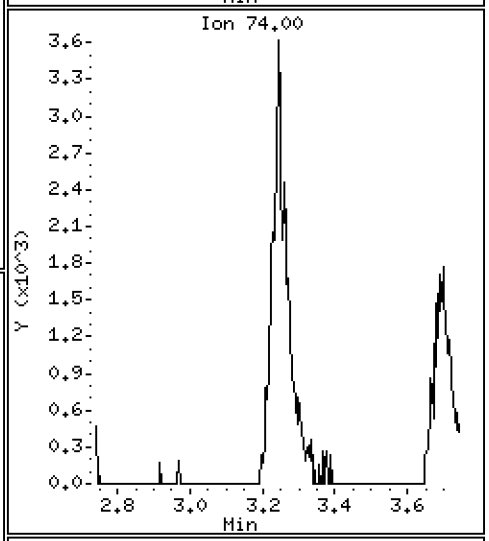


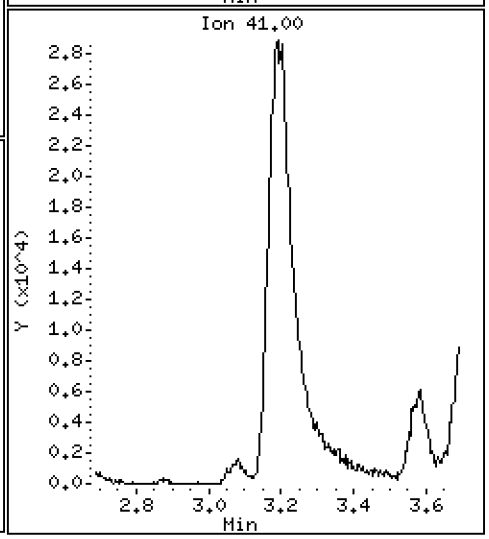












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 85

Date : 02-SEP-2018 16:18

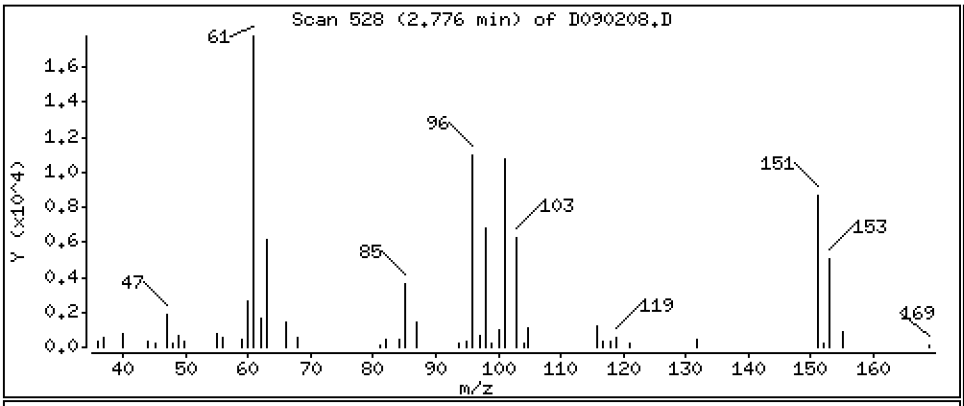
Client ID: HS18081428-01MS Instrument: VOA2.i

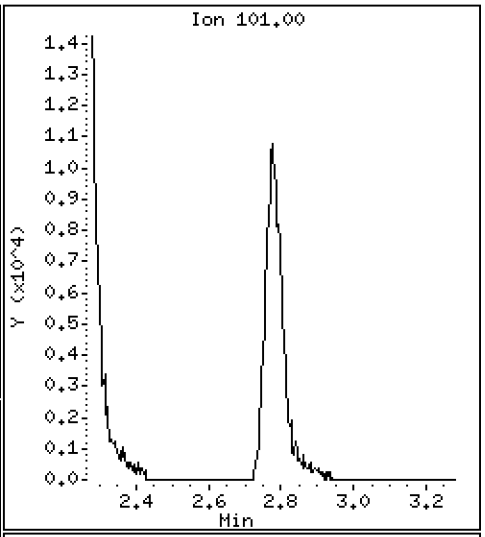
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

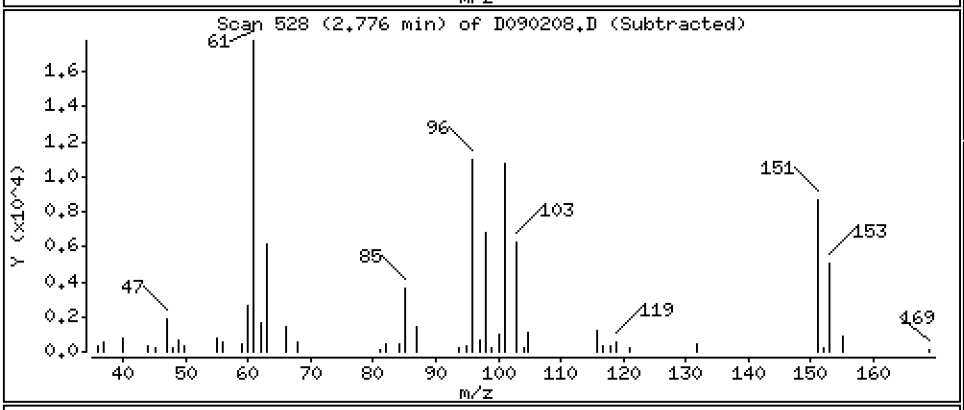
Purge Volume: 5.0 Operator: AP

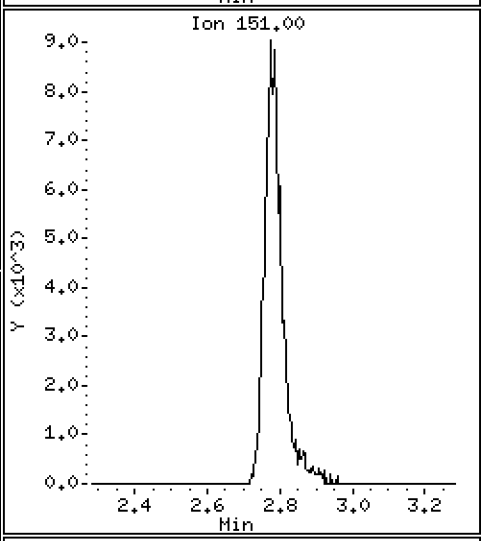
Column phase: DB624 Column diameter: 0.18

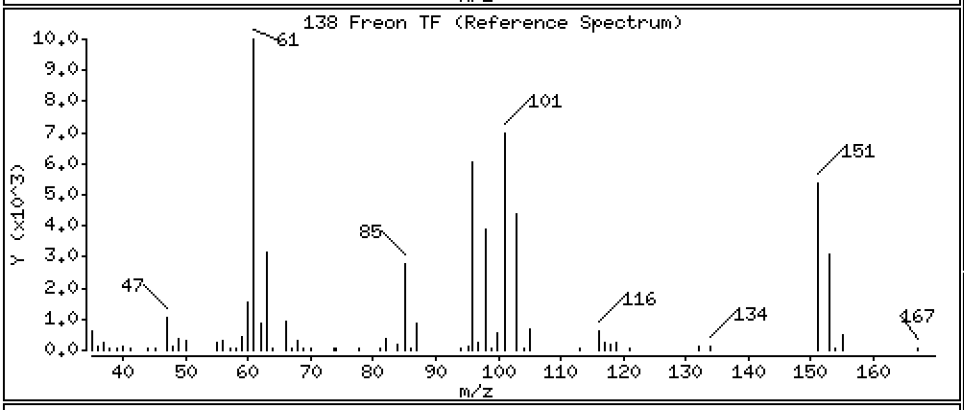
138 Freon TF Concentration: 14.40 ug/l Review Code:

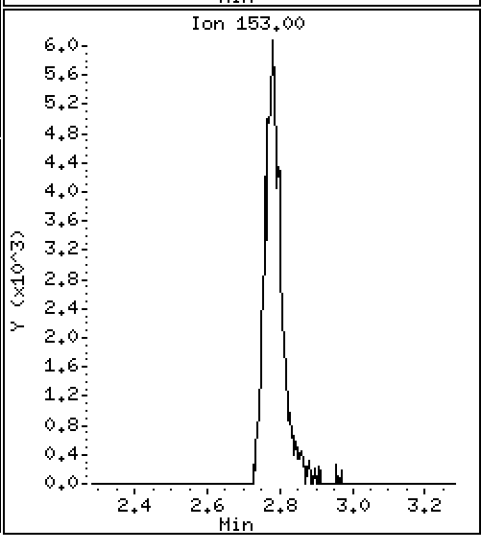


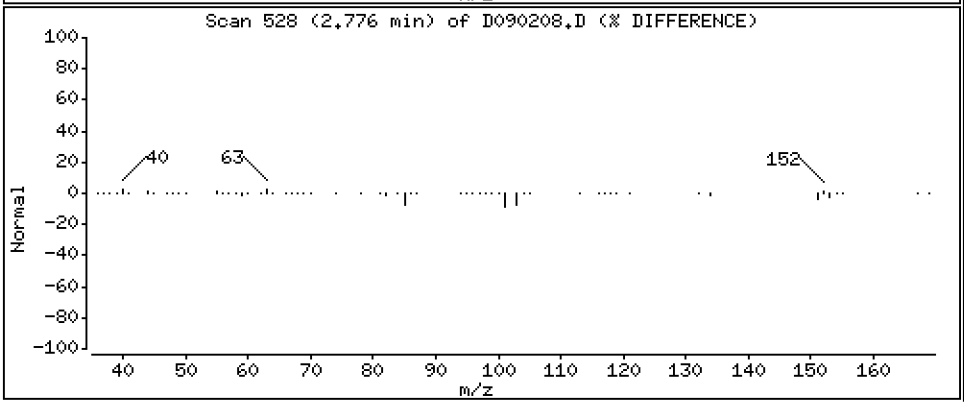












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 86

Date : 02-SEP-2018 16:18

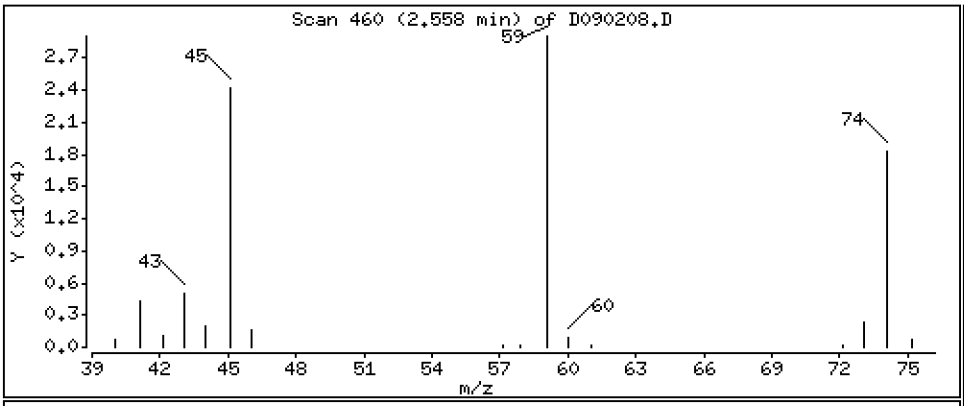
Client ID: HS18081428-01MS Instrument: VOA2.i

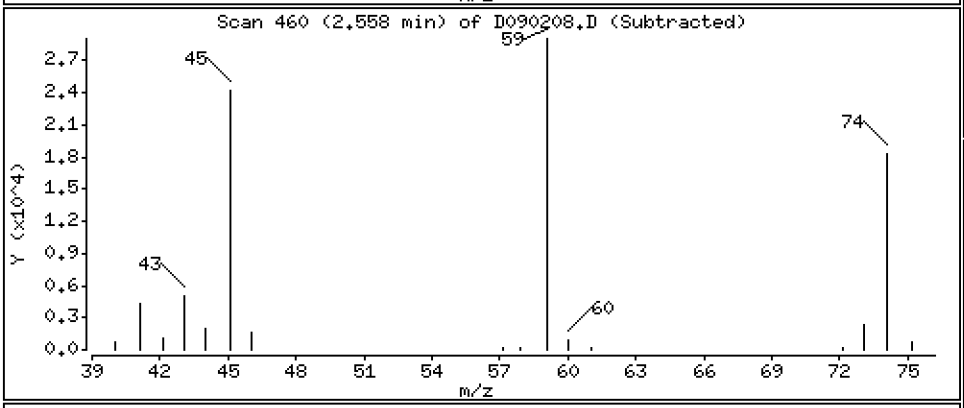
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

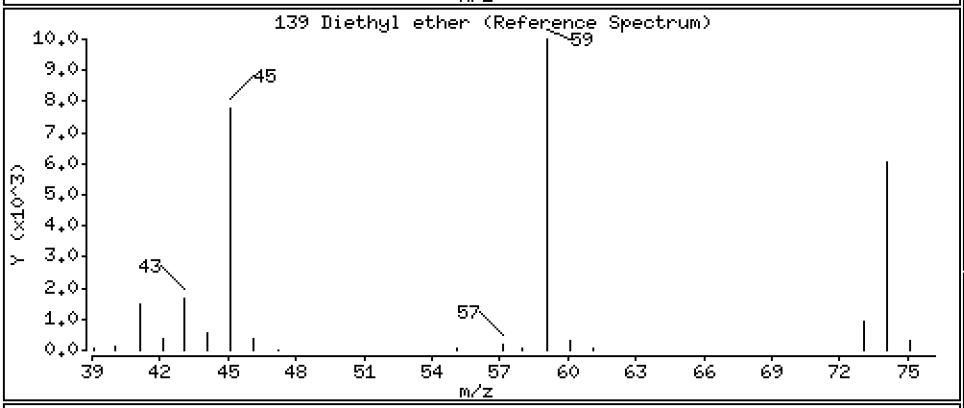
Purge Volume: 5.0 Operator: AP

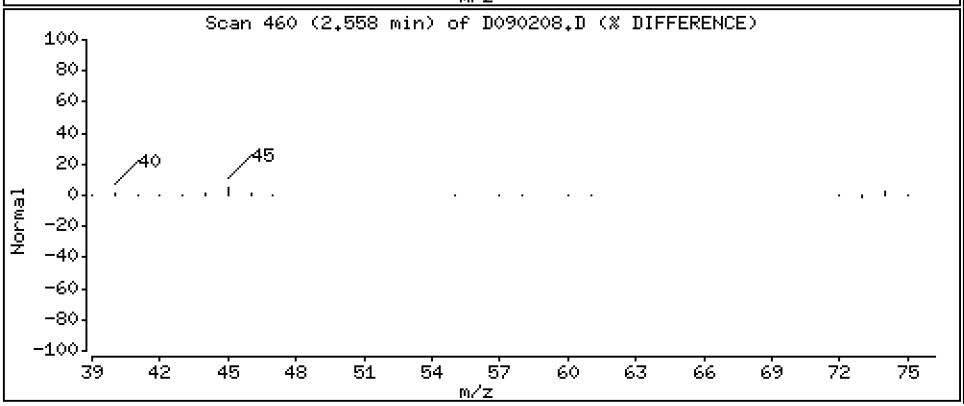
Column phase: DB624 Column diameter: 0.18

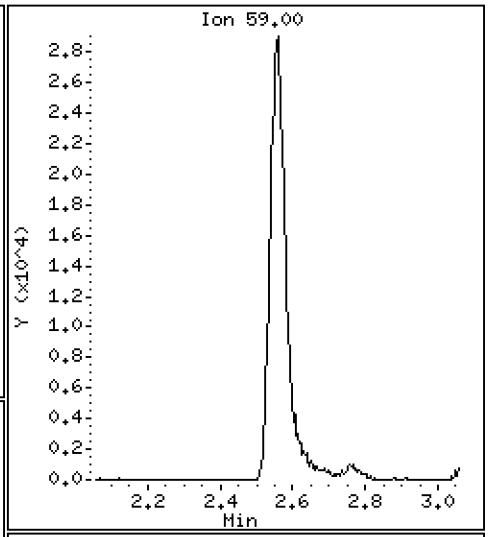
139 Diethyl ether Concentration: 16.41 ug/l Review Code:

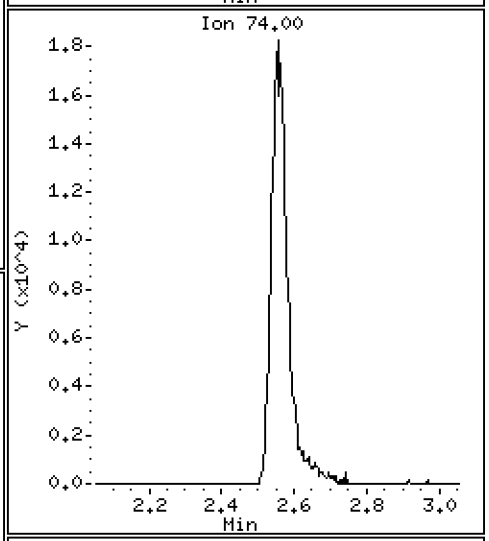


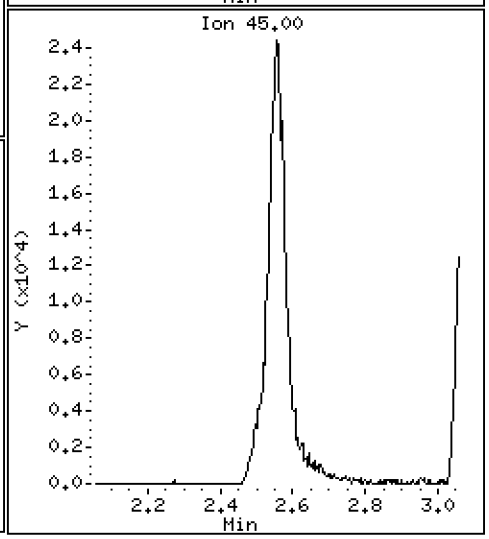












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 87

Date : 02-SEP-2018 16:18

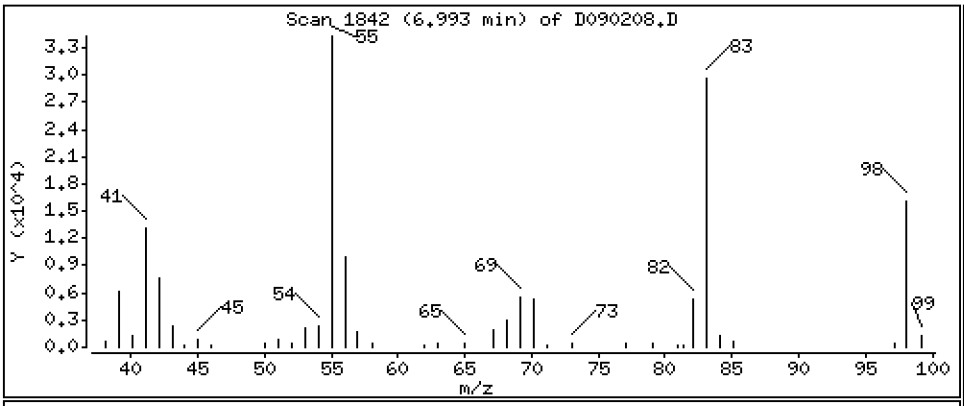
Client ID: HS18081428-01MS Instrument: VOA2.i

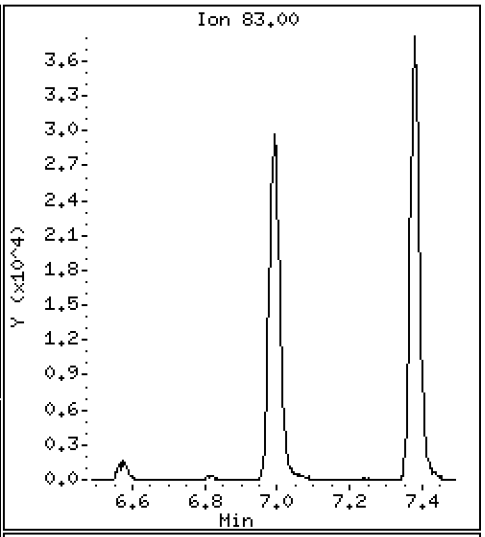
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

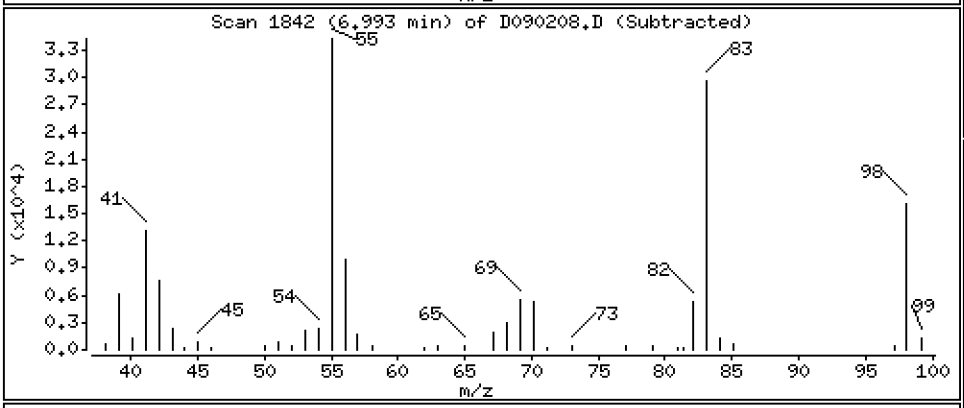
Purge Volume: 5.0 Operator: AP

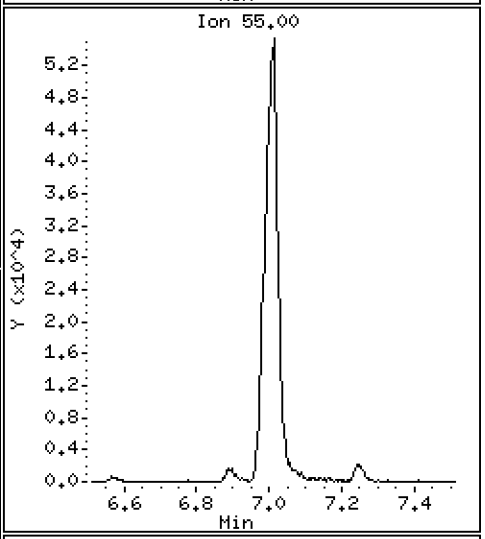
Column phase: DB624 Column diameter: 0.18

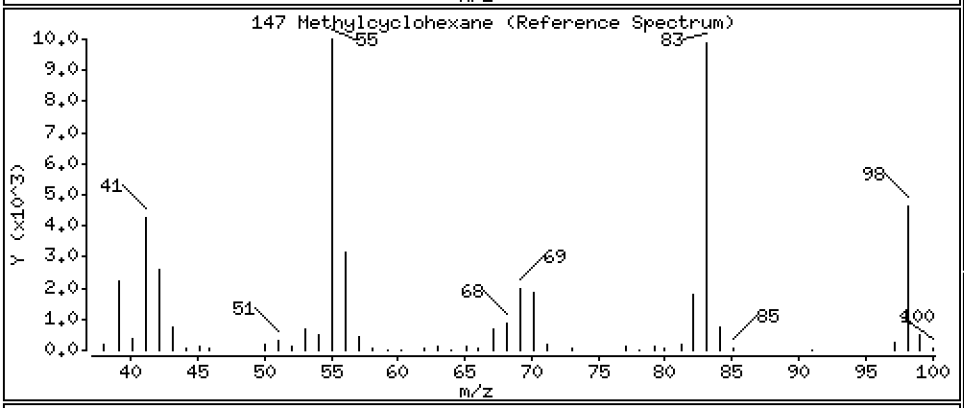
147 Methylcyclohexane Concentration: 15.70 ug/l Review Code:

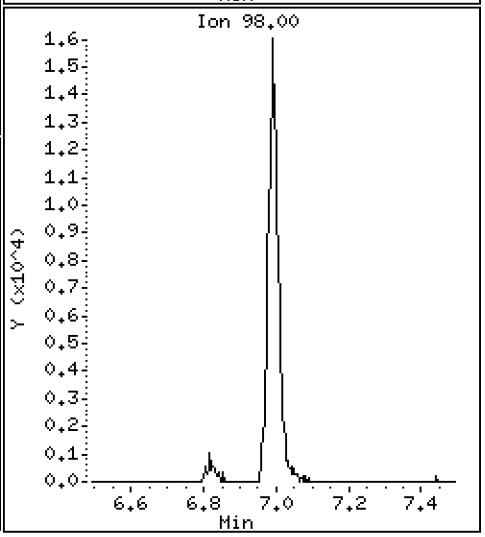


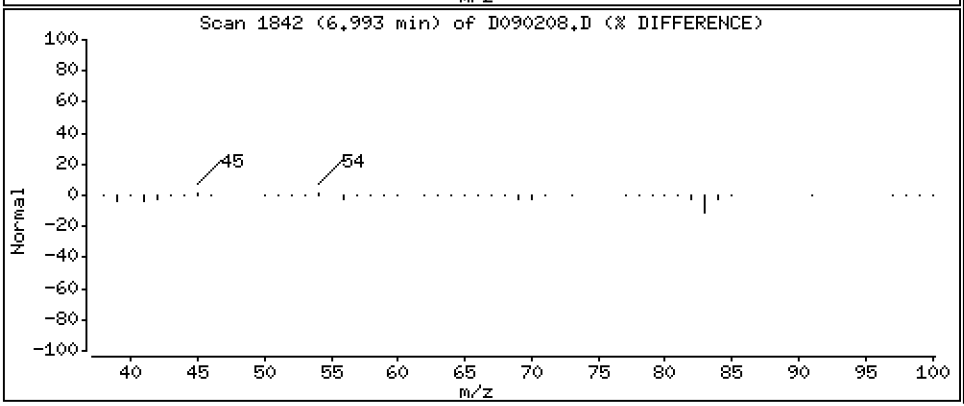












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 88

Date : 02-SEP-2018 16:18

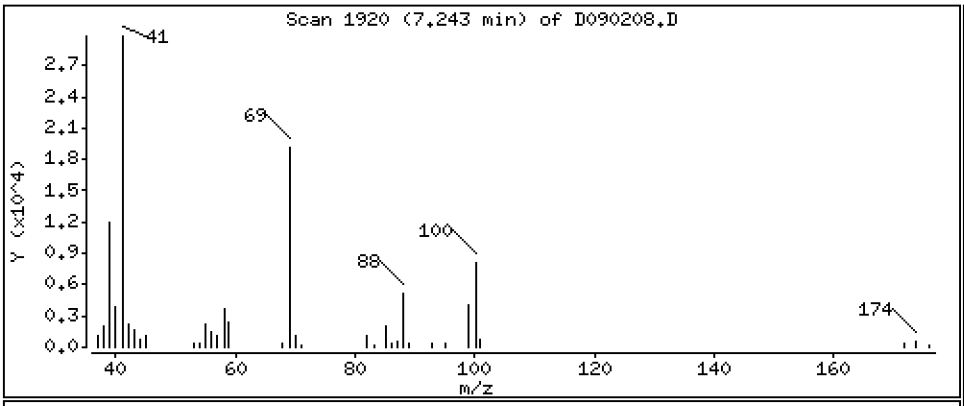
Client ID: HS18081428-01MS Instrument: VOA2.i

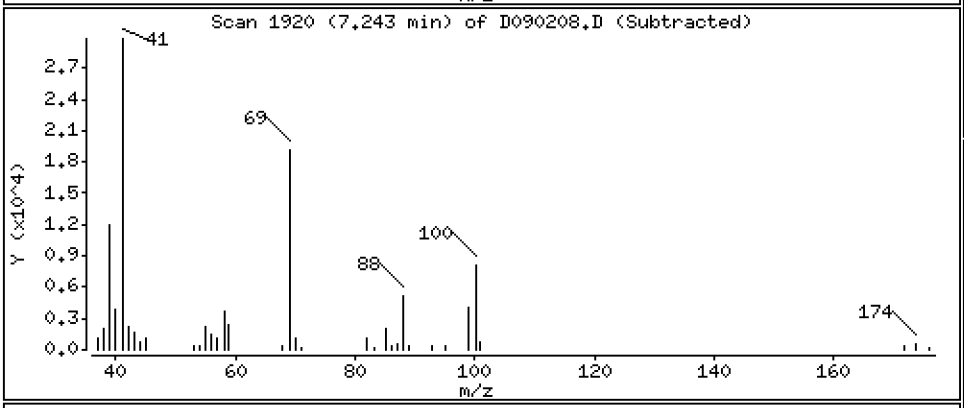
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

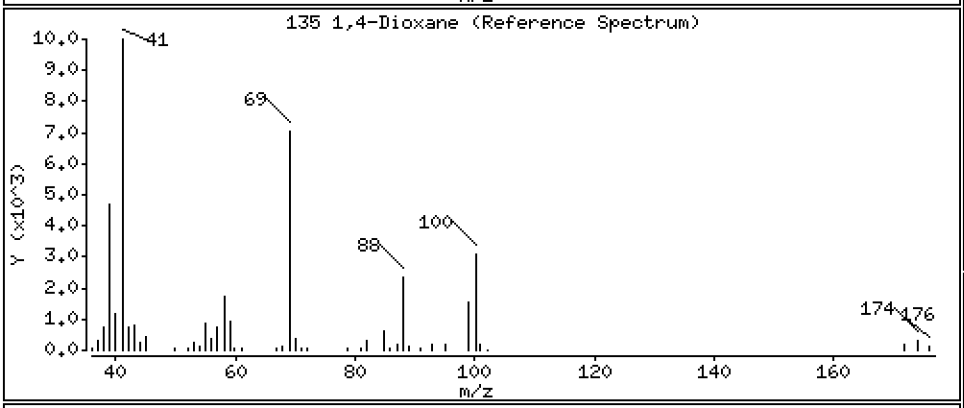
Purge Volume: 5.0 Operator: AP

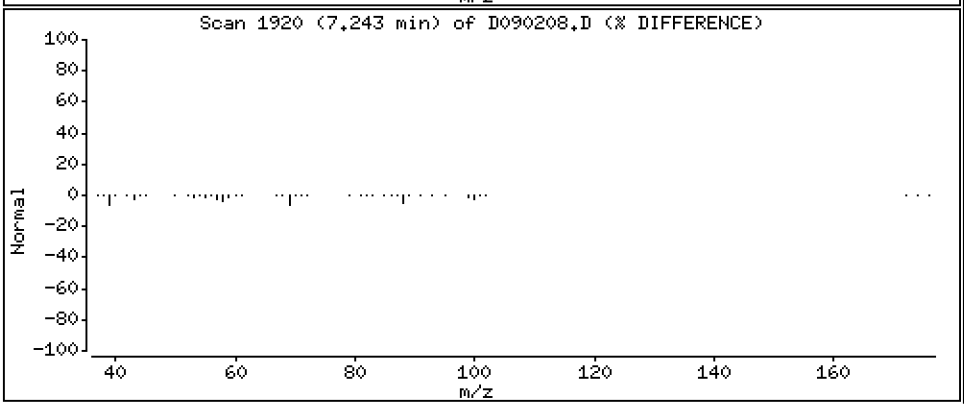
Column phase: DB624 Column diameter: 0.18

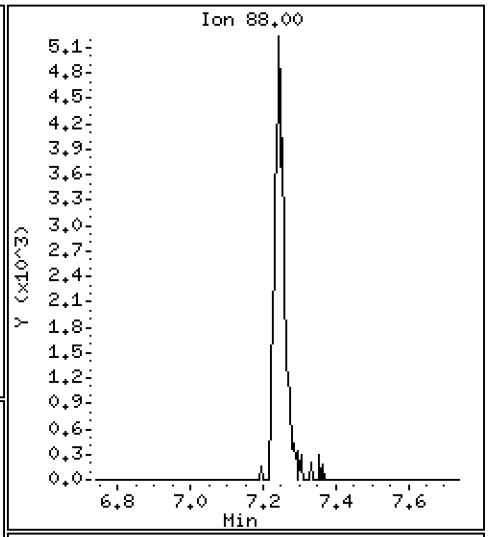
135 1,4-Dioxane Concentration: 292.75 ug/l Review Code:

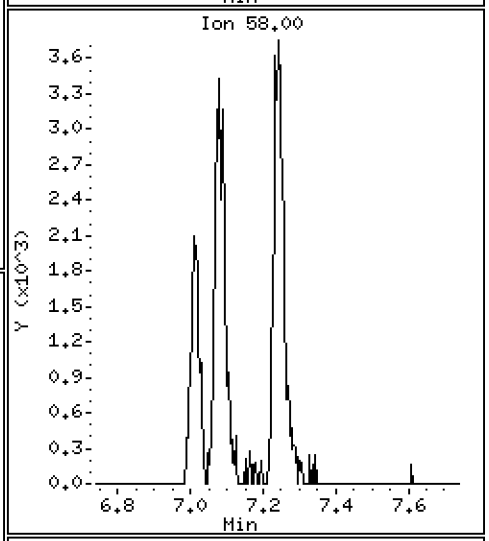


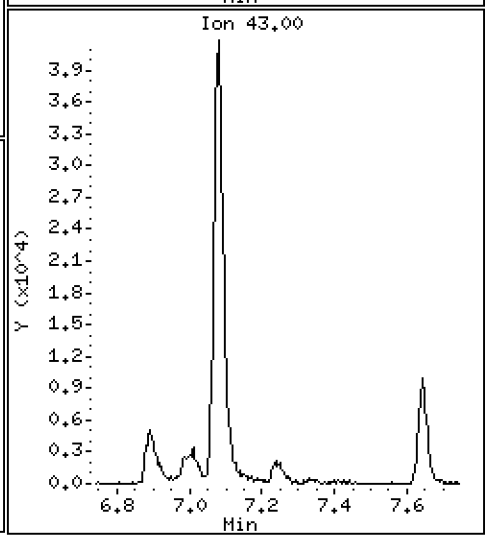












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 89

Date : 02-SEP-2018 16:18

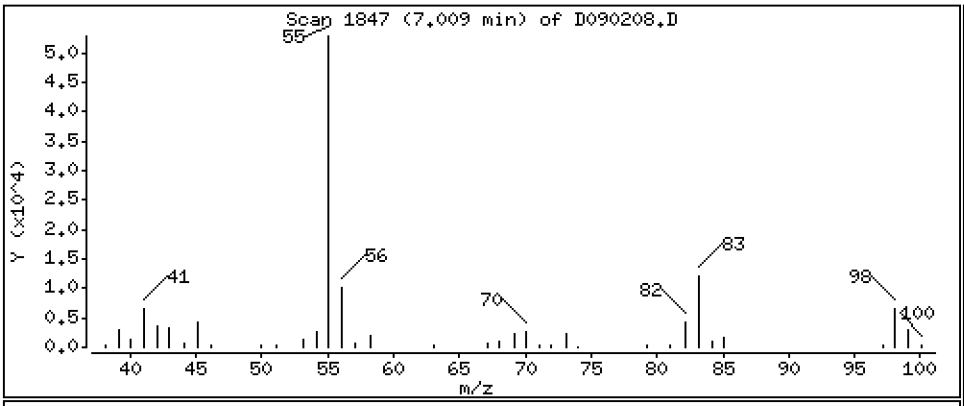
Client ID: HS18081428-01MS Instrument: VOA2.i

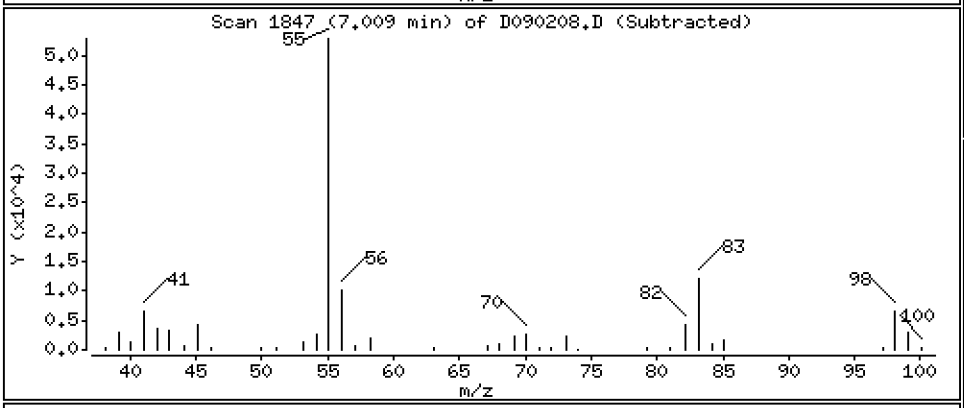
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

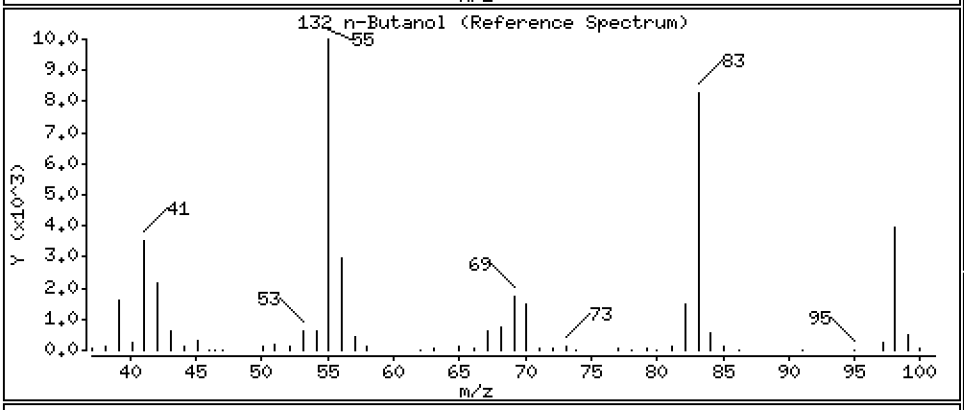
Purge Volume: 5.0 Operator: AP

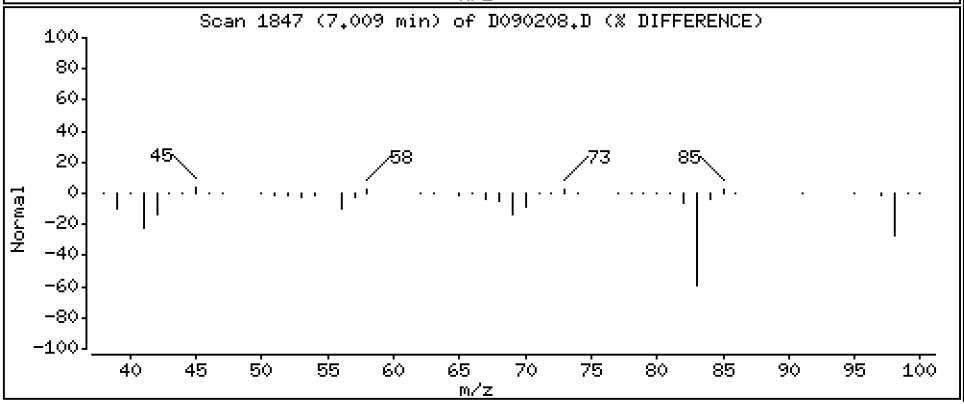
Column phase: DB624 Column diameter: 0.18

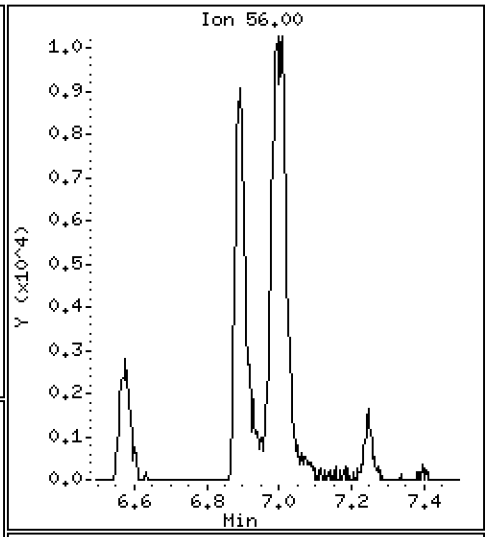
132 n-Butanol Concentration: 251.84 ug/l Review Code:

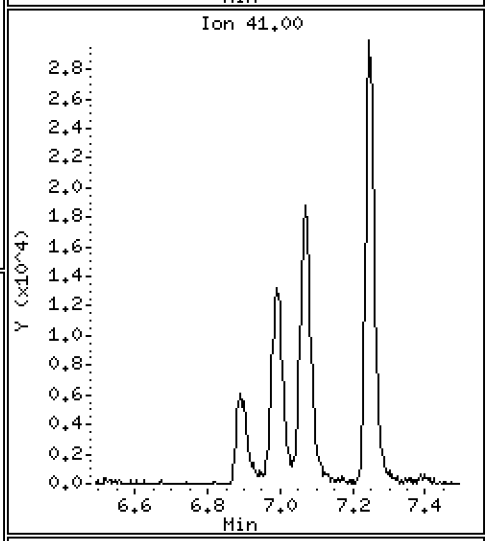


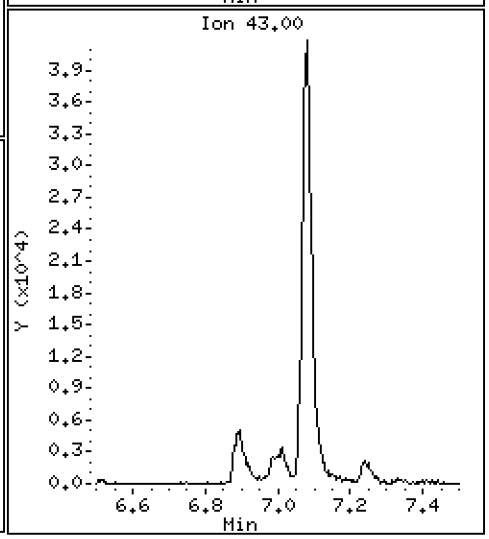












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 90

Date : 02-SEP-2018 16:18

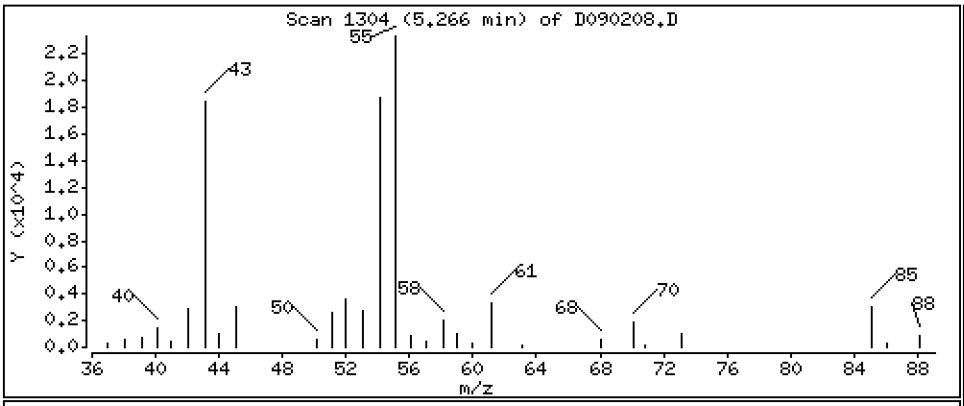
Client ID: HS18081428-01MS Instrument: VOA2.i

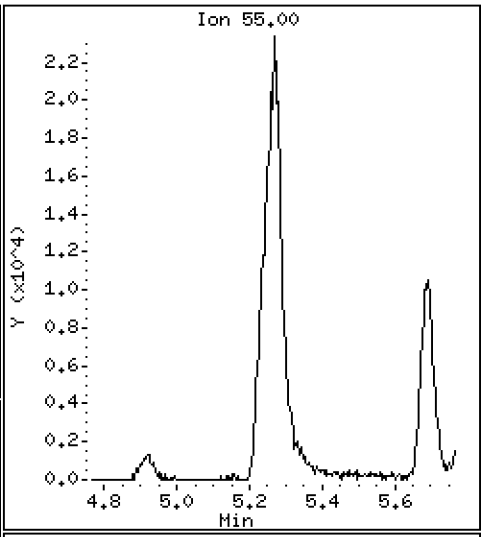
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

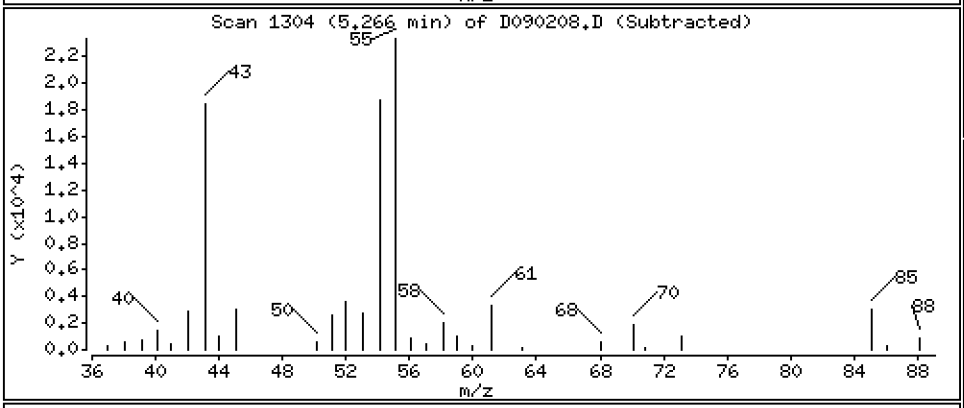
Purge Volume: 5.0 Operator: AP

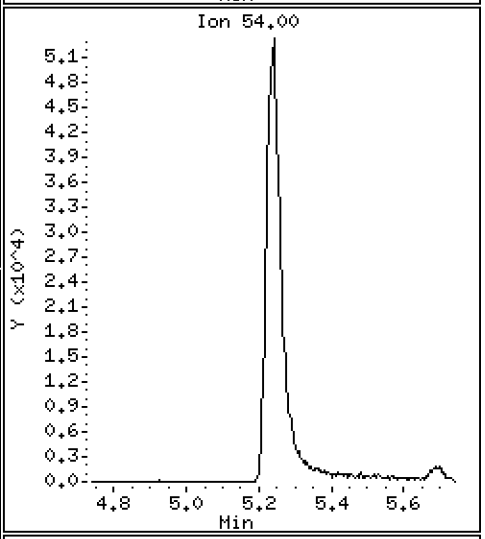
Column phase: DB624 Column diameter: 0.18

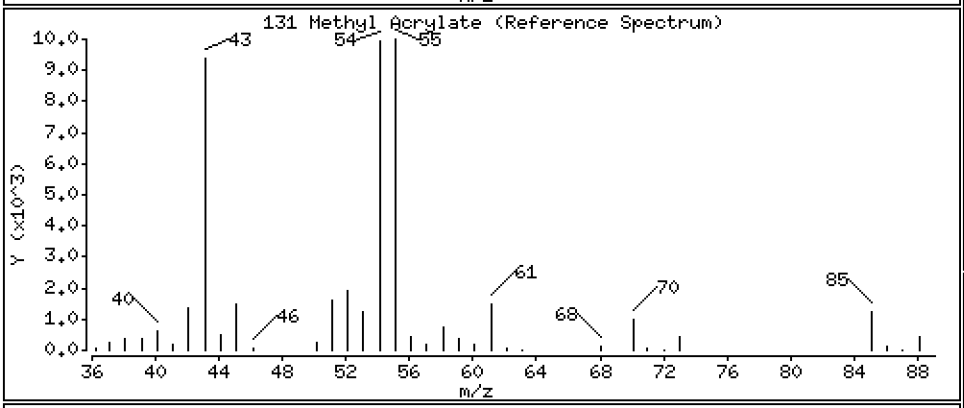
131 Methyl Acrylate Concentration: 15.06 ug/l Review Code:

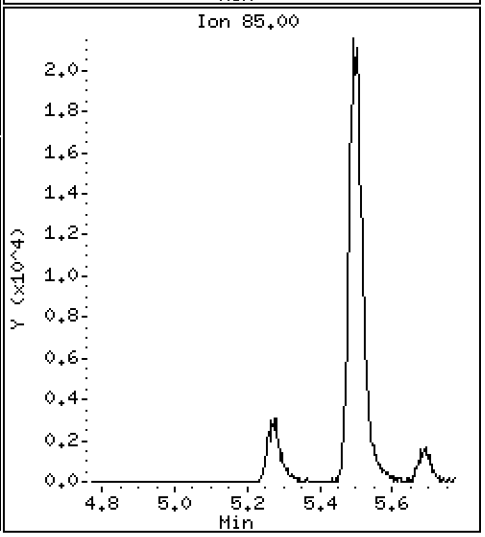


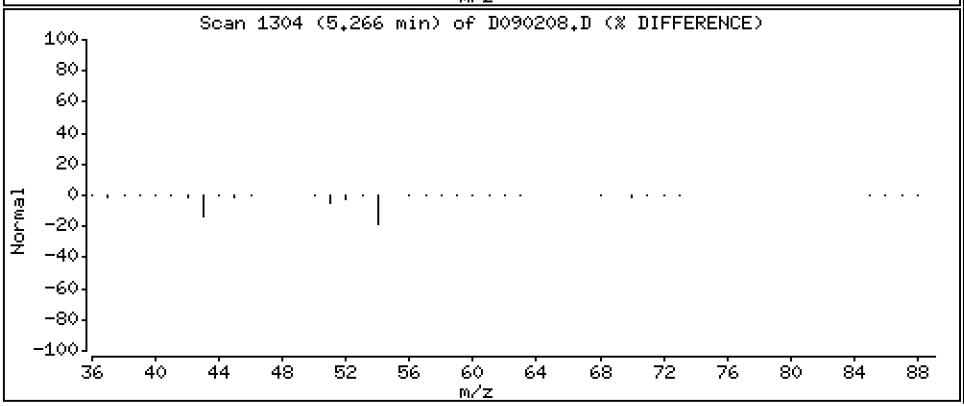












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 91

Date : 02-SEP-2018 16:18

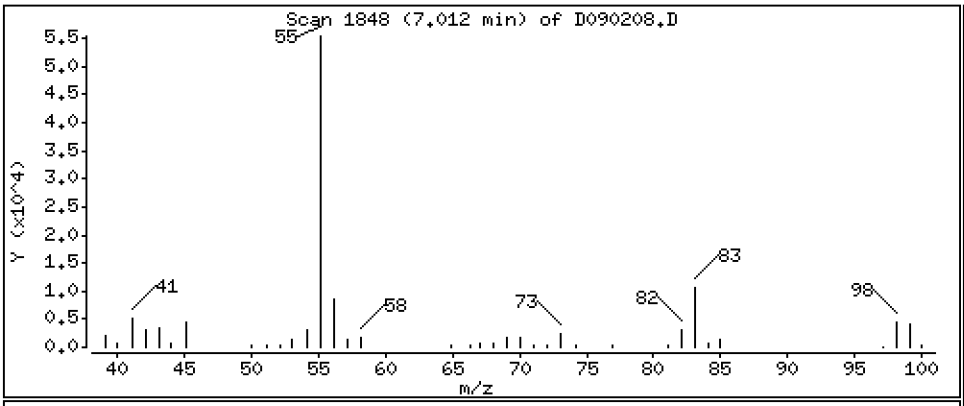
Client ID: HS18081428-01MS Instrument: VOA2.i

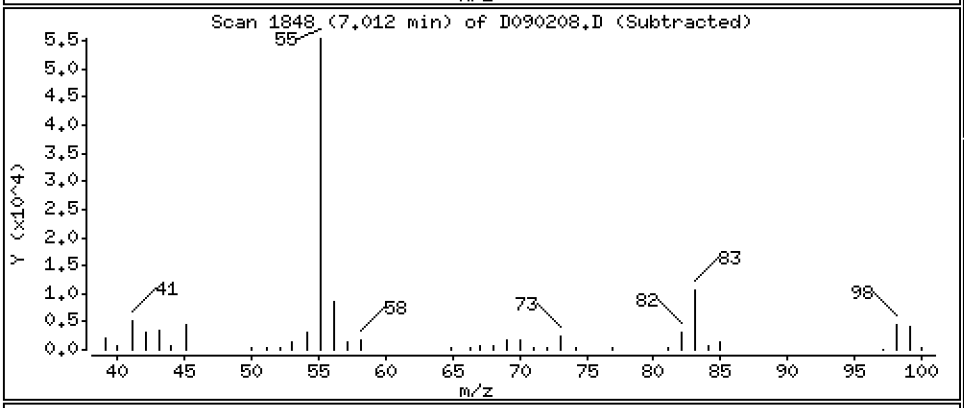
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

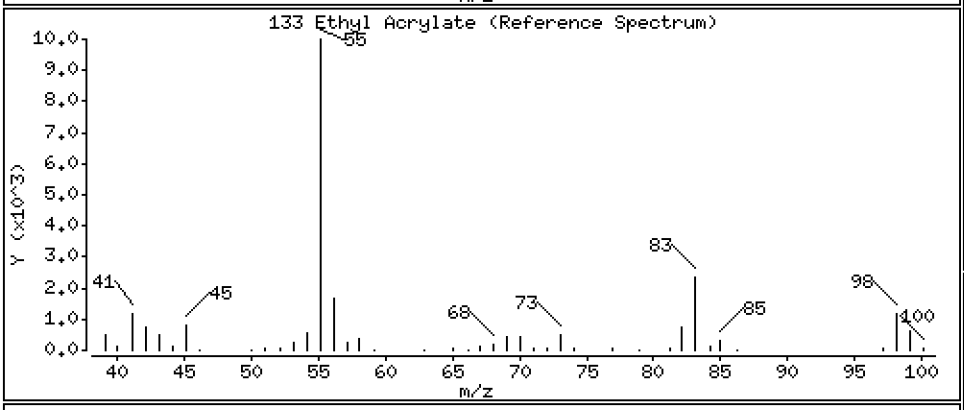
Purge Volume: 5.0 Operator: AP

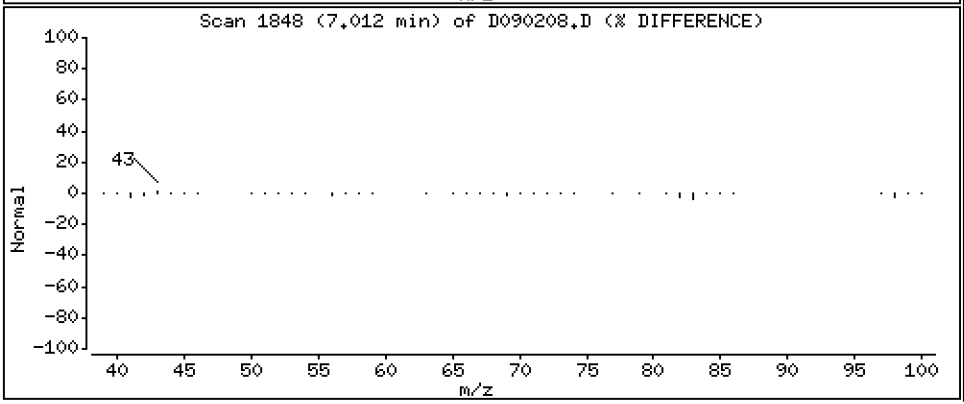
Column phase: DB624 Column diameter: 0.18

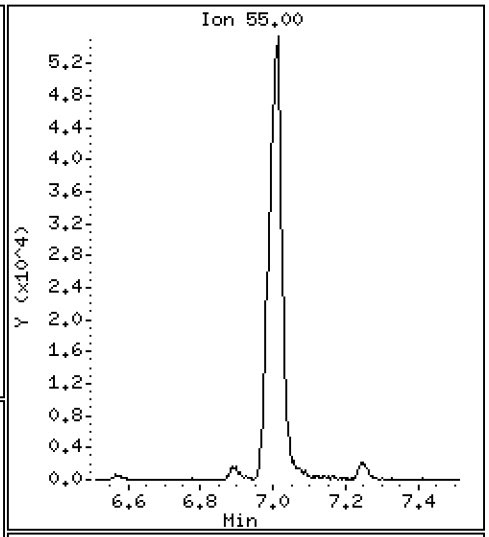
133 Ethyl Acrylate Concentration: 14.49 ug/l Review Code:

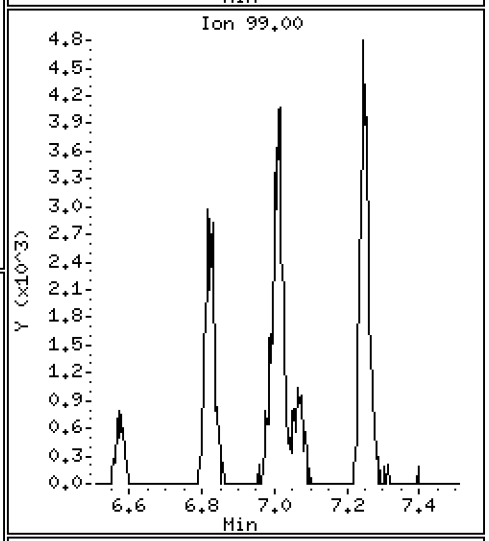


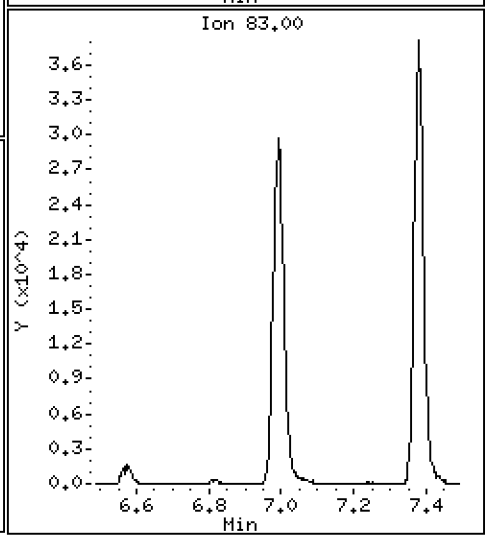












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 92

Date : 02-SEP-2018 16:18

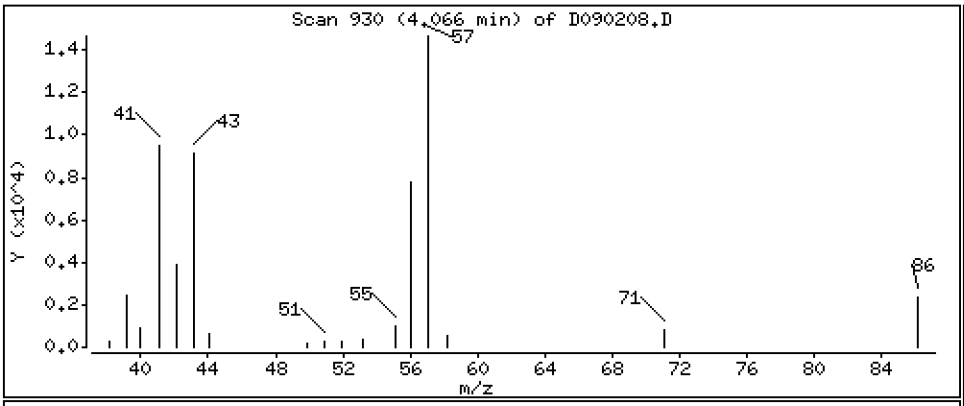
Client ID: HS18081428-01MS Instrument: VOA2.i

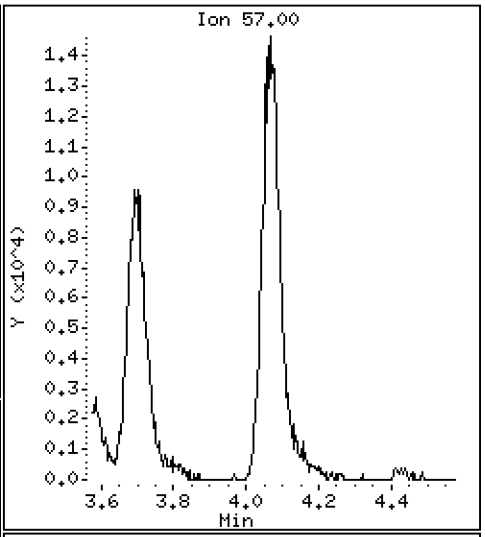
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

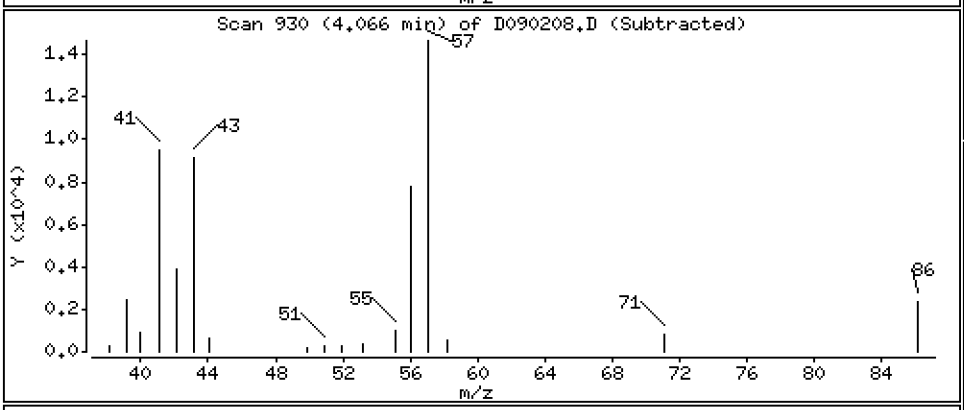
Purge Volume: 5.0 Operator: AP

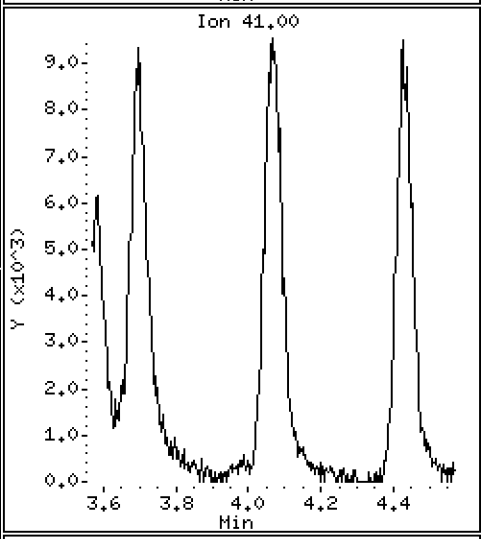
Column phase: DB624 Column diameter: 0.18

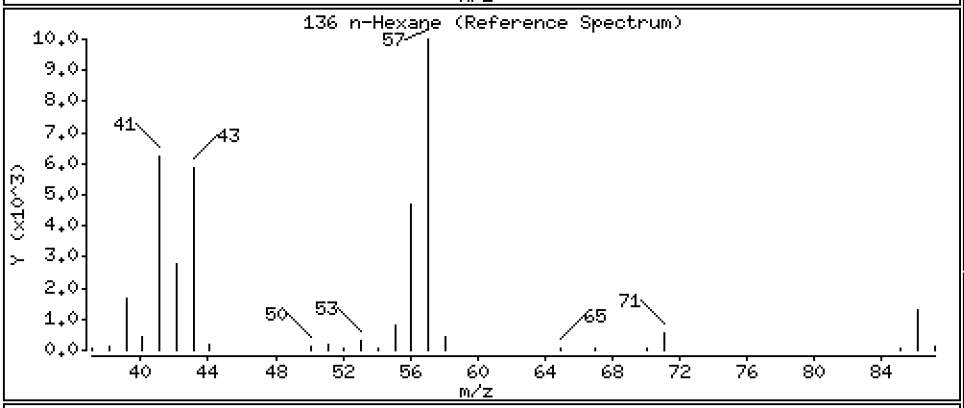
136 n-Hexane Concentration: 13.99 ug/l Review Code:

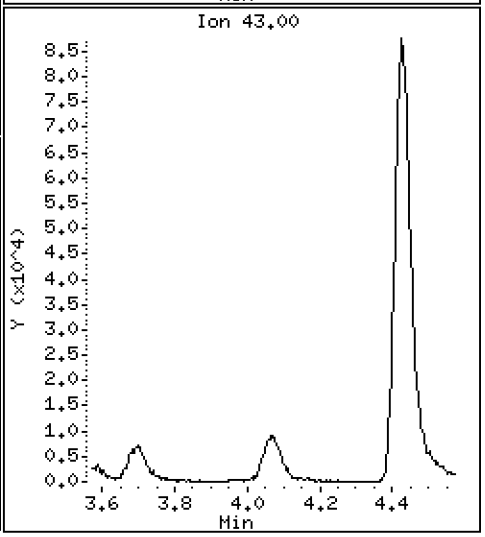


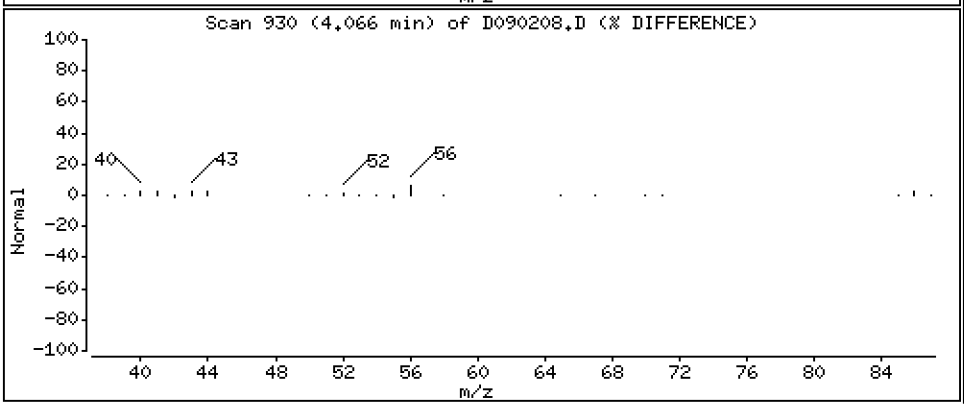












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 93

Date : 02-SEP-2018 16:18

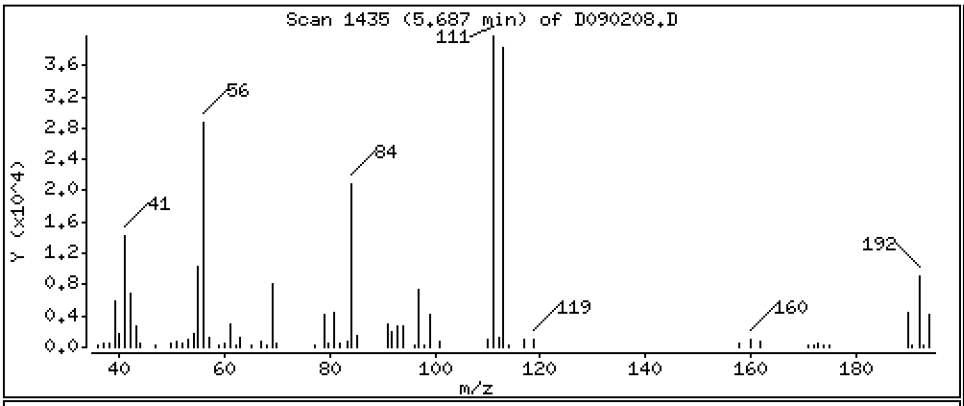
Client ID: HS18081428-01MS Instrument: VOA2.i

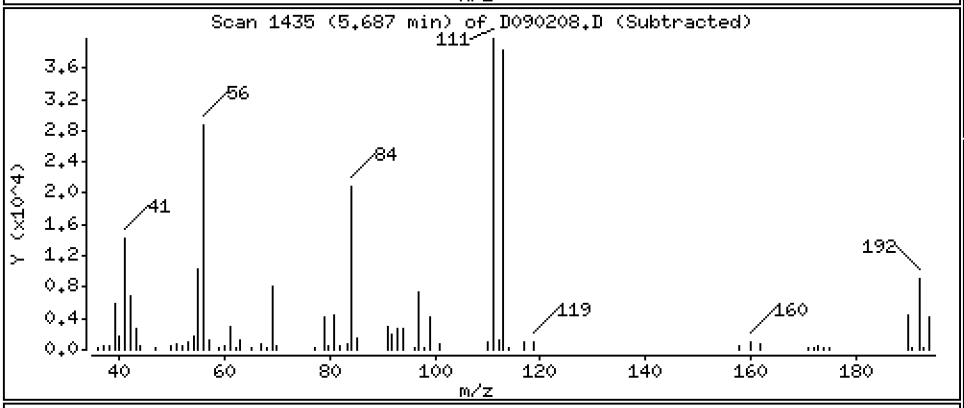
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

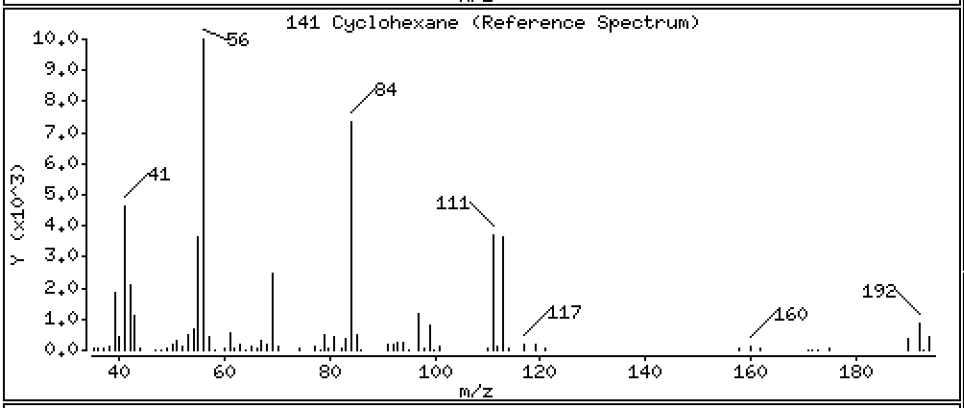
Purge Volume: 5.0 Operator: AP

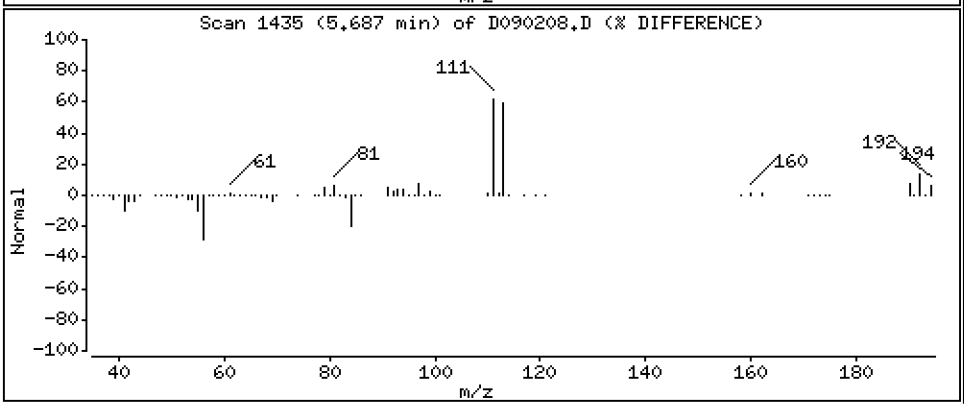
Column phase: DB624 Column diameter: 0.18

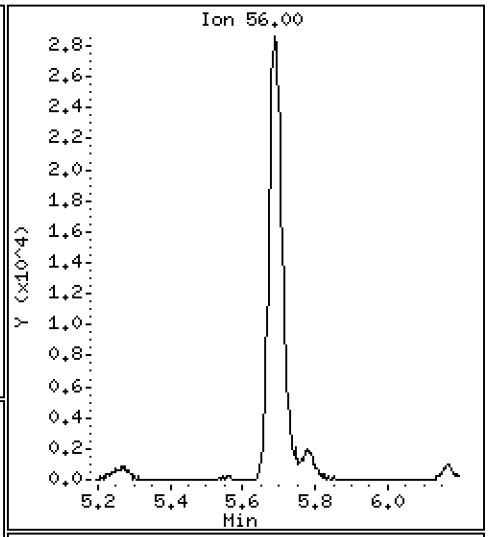
141 Cyclohexane Concentration: 13.41 ug/l Review Code:

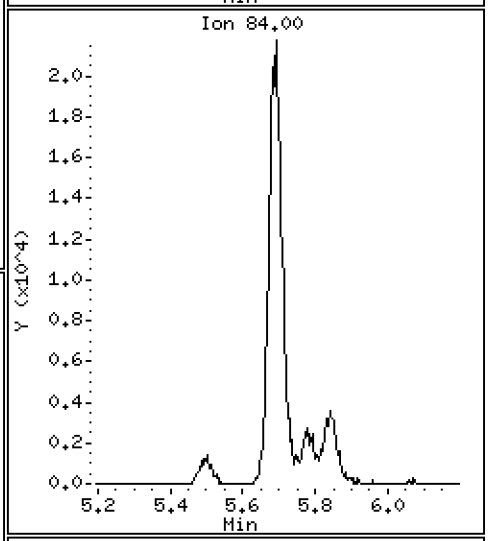


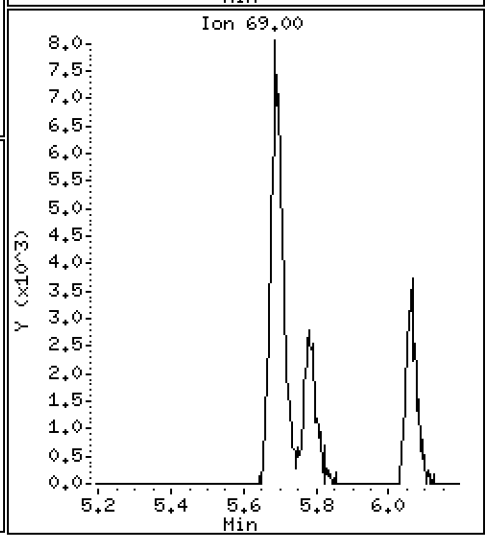












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 94

Date : 02-SEP-2018 16:18

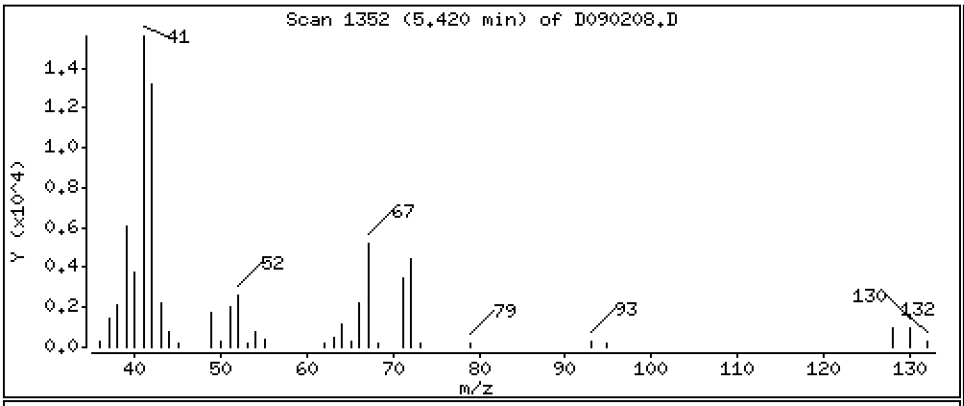
Client ID: HS18081428-01MS Instrument: VOA2.i

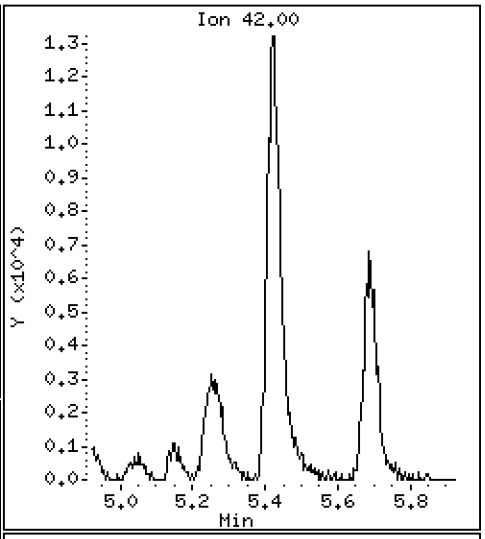
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

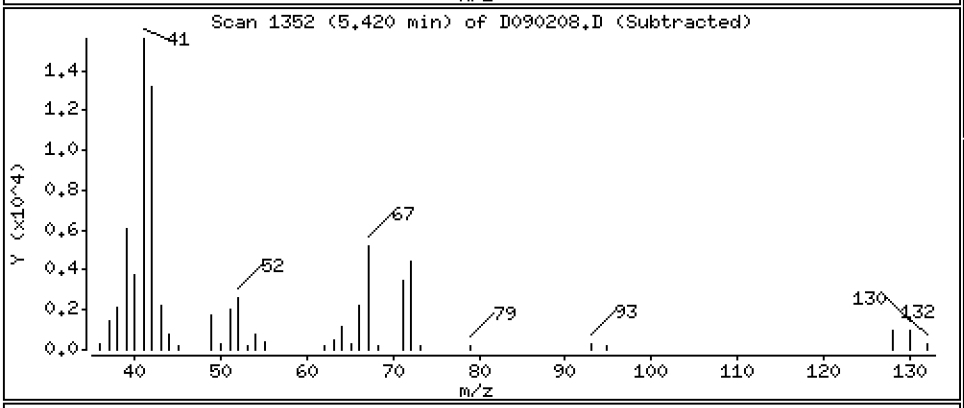
Purge Volume: 5.0 Operator: AP

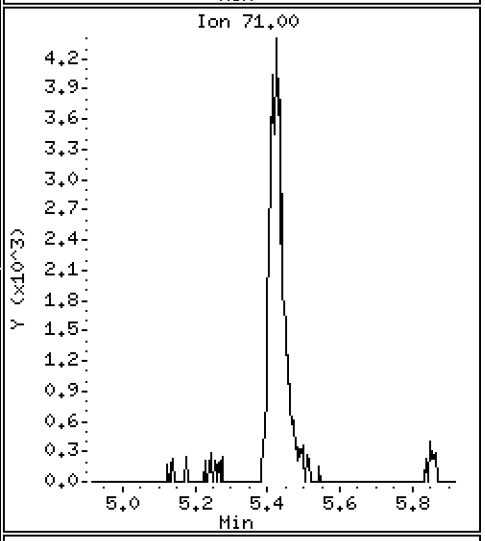
Column phase: DB624 Column diameter: 0.18

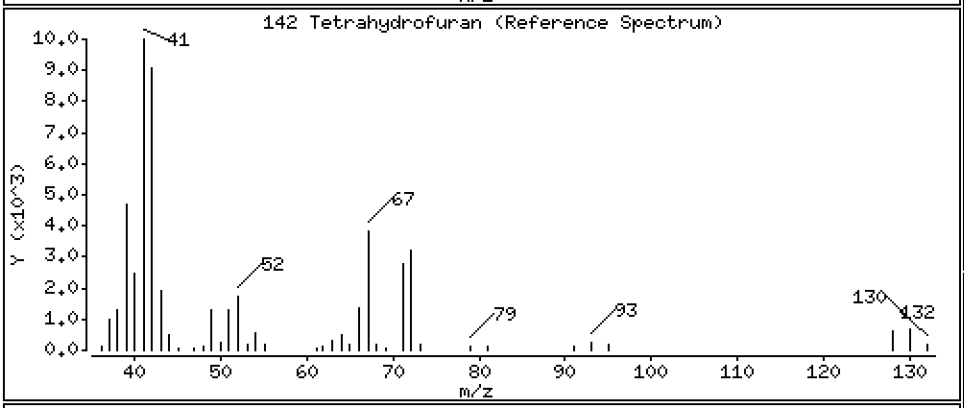
142 Tetrahydrofuran Concentration: 28.49 ug/l Review Code:

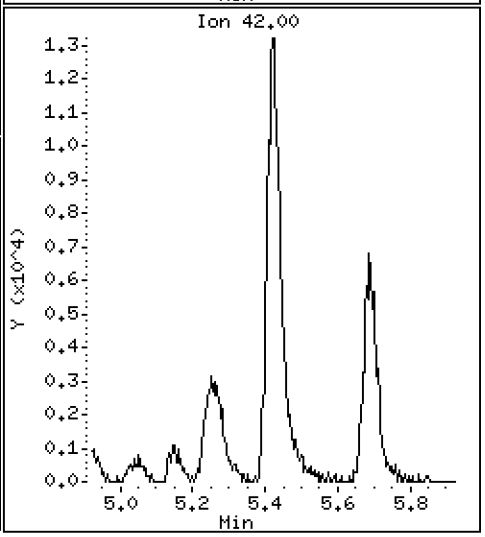


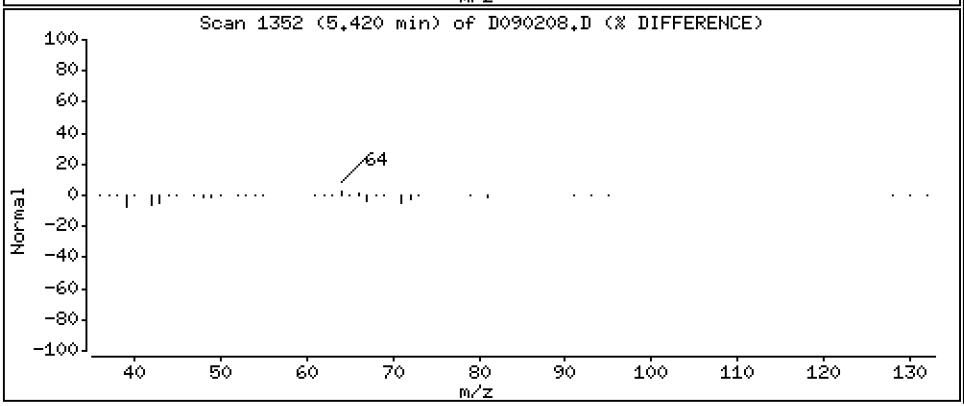












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 95

Date : 02-SEP-2018 16:18

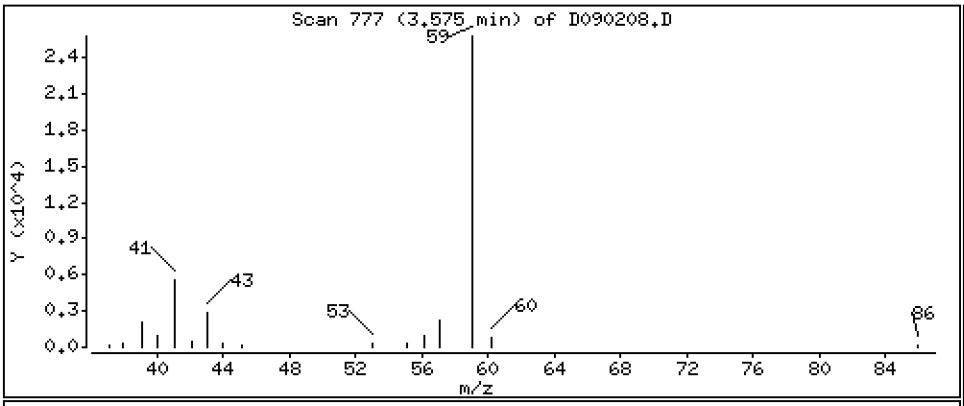
Client ID: HS18081428-01MS Instrument: VOA2.i

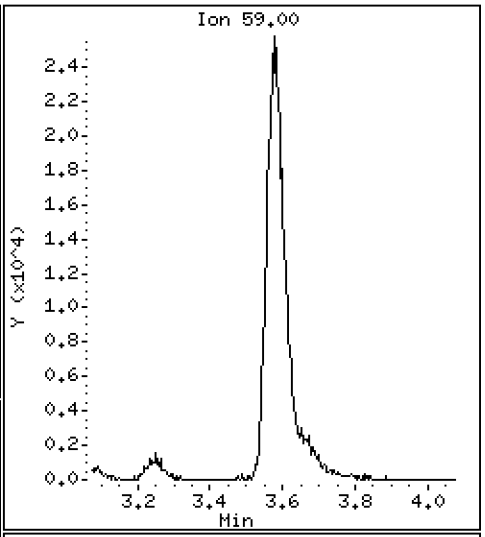
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

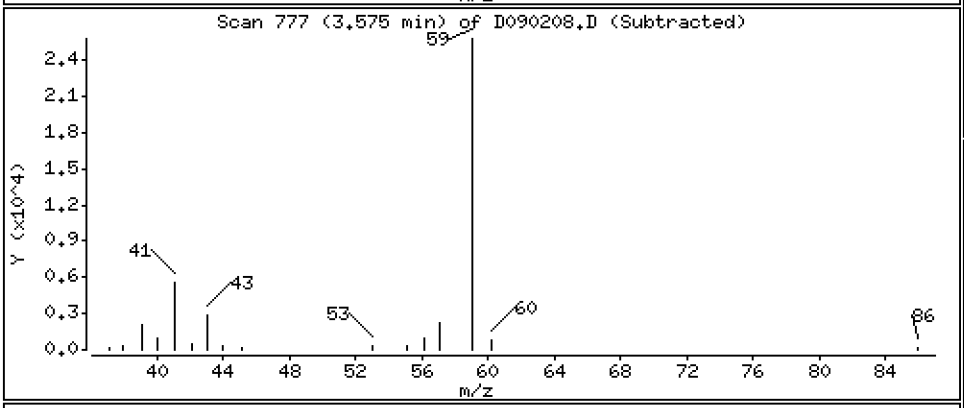
Purge Volume: 5.0 Operator: AP

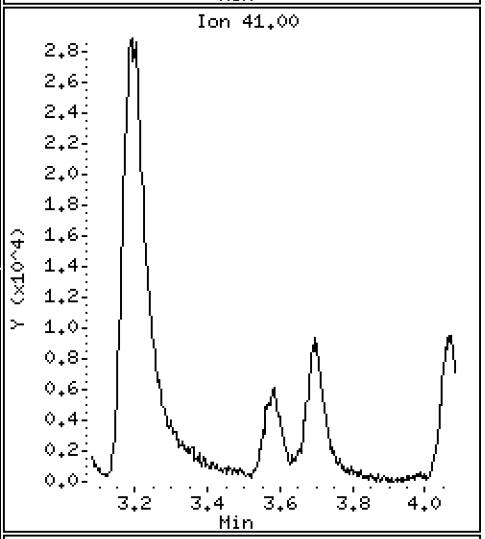
Column phase: DB624 Column diameter: 0.18

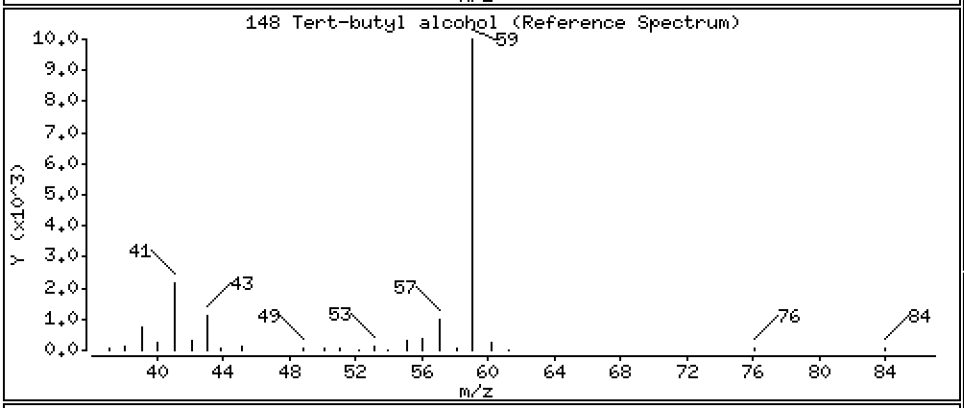
148 Tert-butyl alcohol Concentration: 275.56 ug/l Review Code:

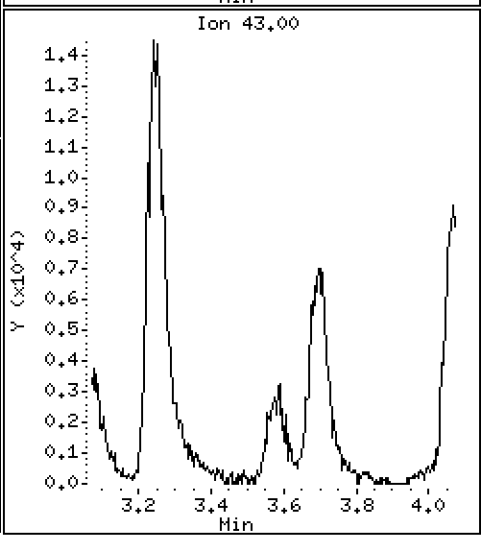


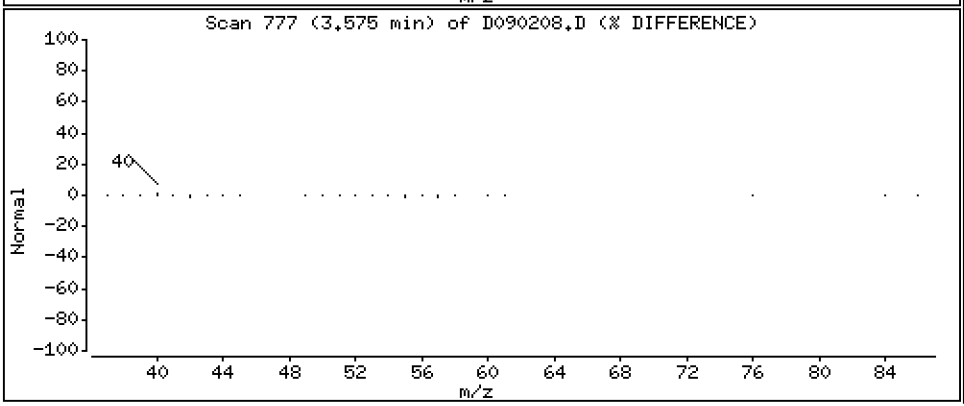












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 96

Date : 02-SEP-2018 16:18

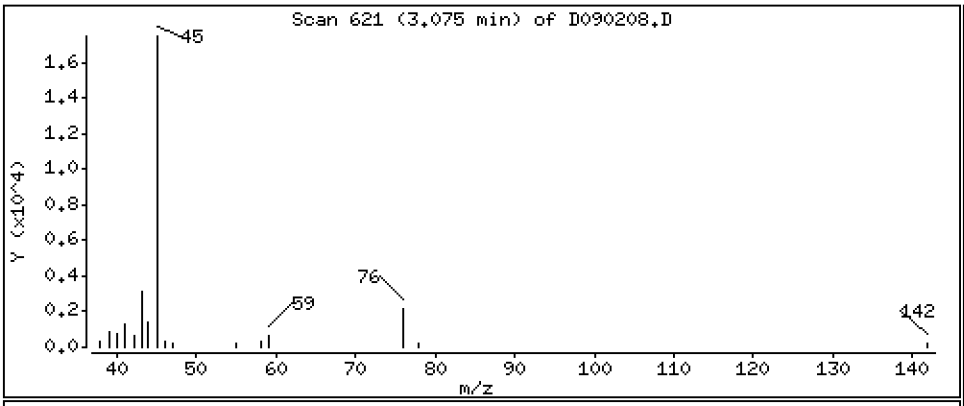
Client ID: HS18081428-01MS Instrument: VOA2.i

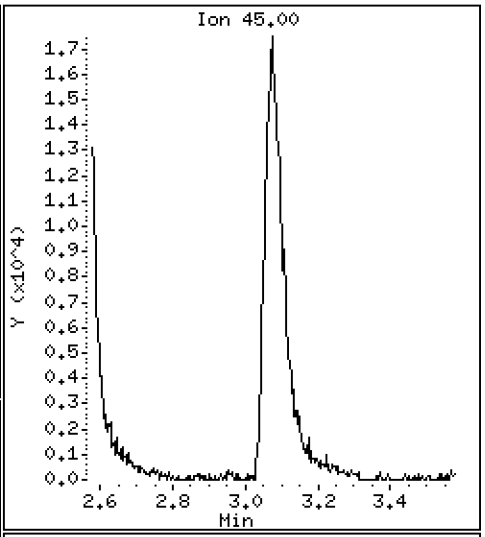
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

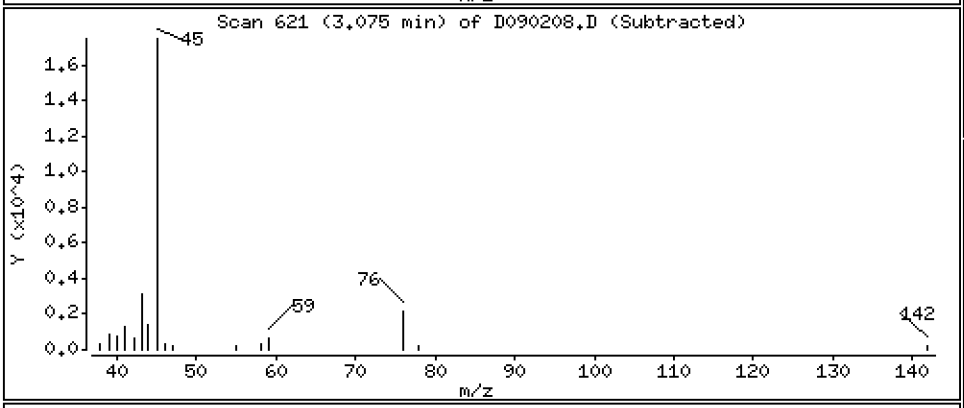
Purge Volume: 5.0 Operator: AP

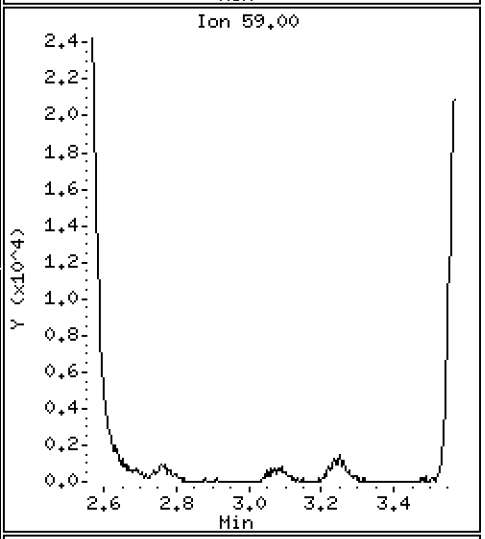
Column phase: DB624 Column diameter: 0.18

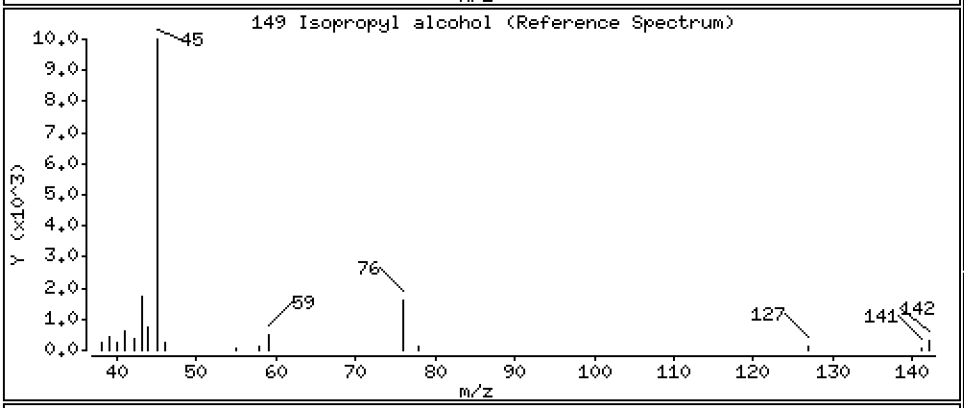
149 Isopropyl alcohol Concentration: 297.62 ug/l Review Code:

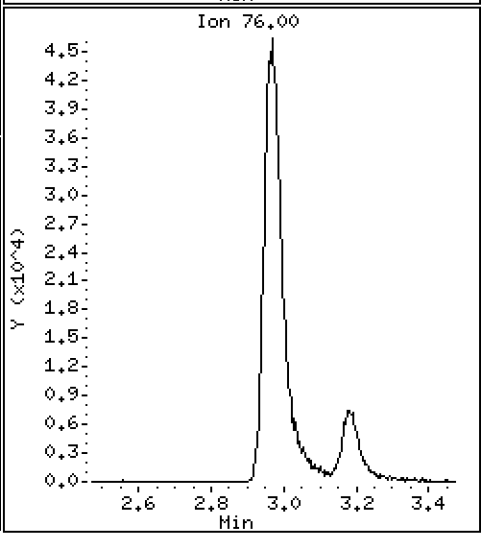


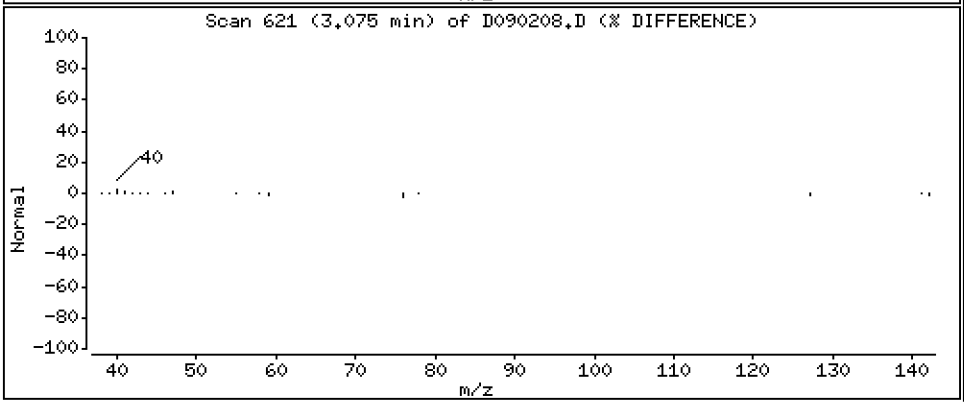












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 97

Date : 02-SEP-2018 16:18

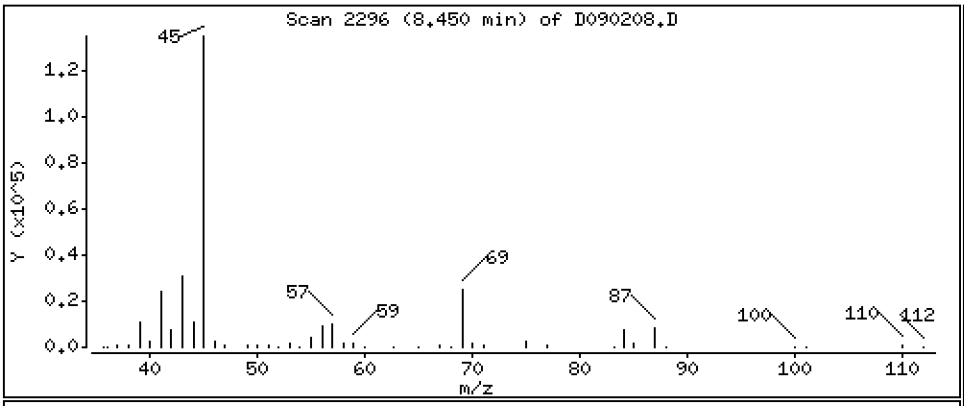
Client ID: HS18081428-01MS Instrument: VOA2.i

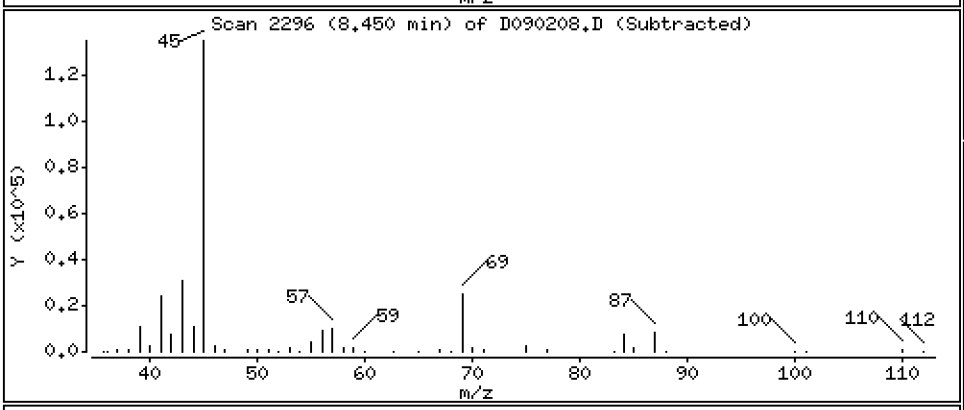
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

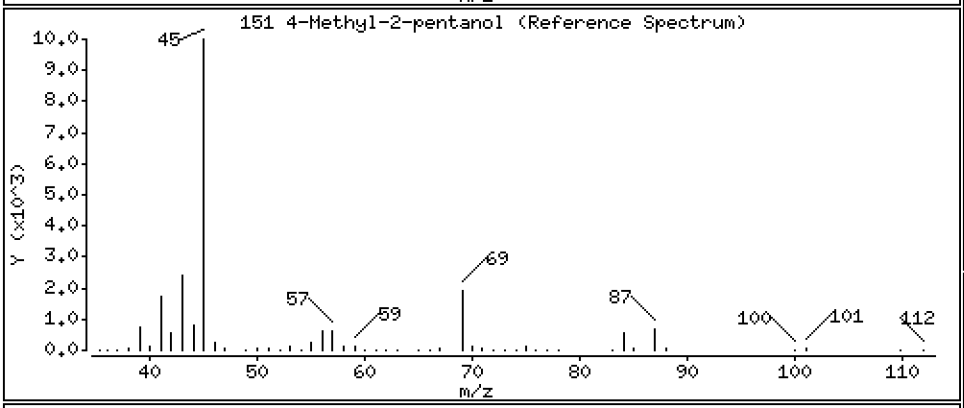
Purge Volume: 5.0 Operator: AP

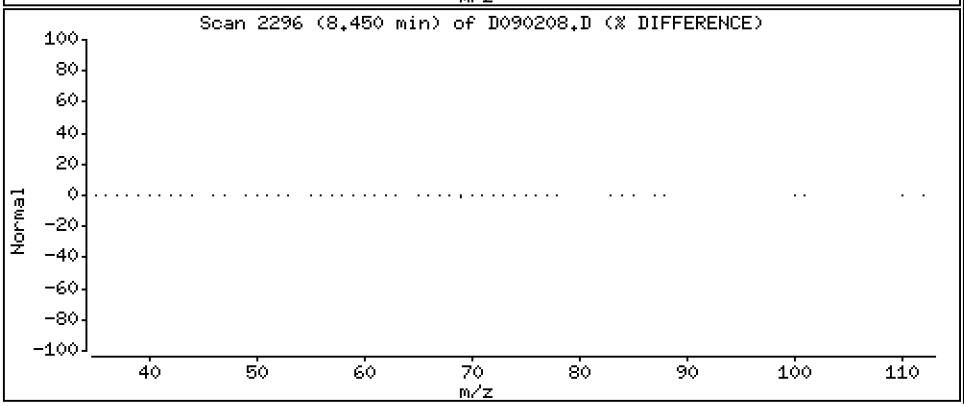
Column phase: DB624 Column diameter: 0.18

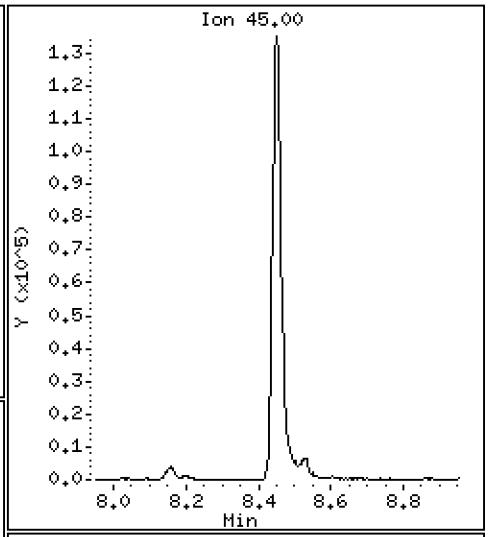
151 4-Methyl-2-pentanol Concentration: 322.64 ug/l Review Code:

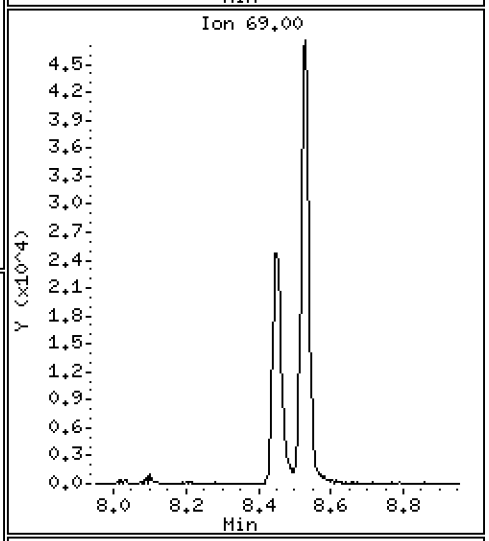


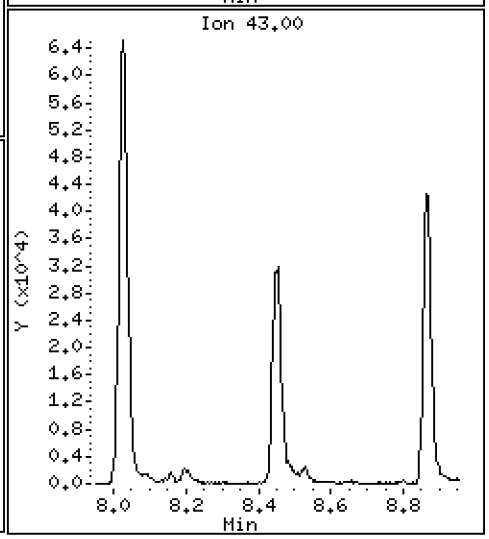












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 98

Date : 02-SEP-2018 16:18

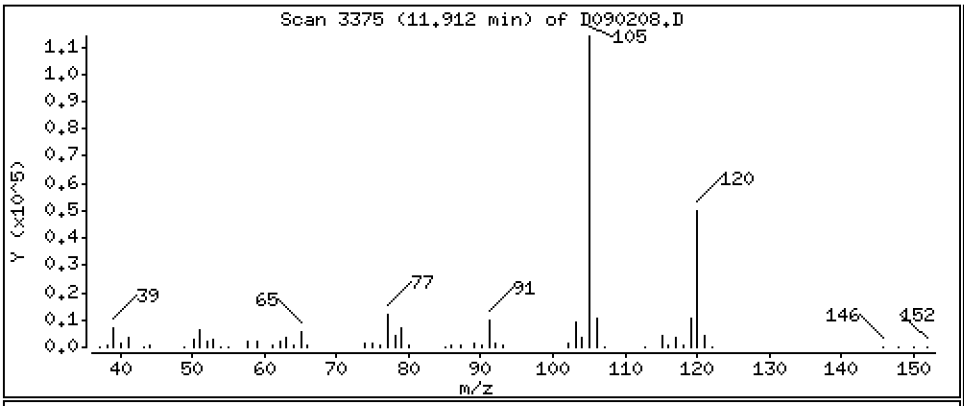
Client ID: HS18081428-01MS Instrument: VOA2.i

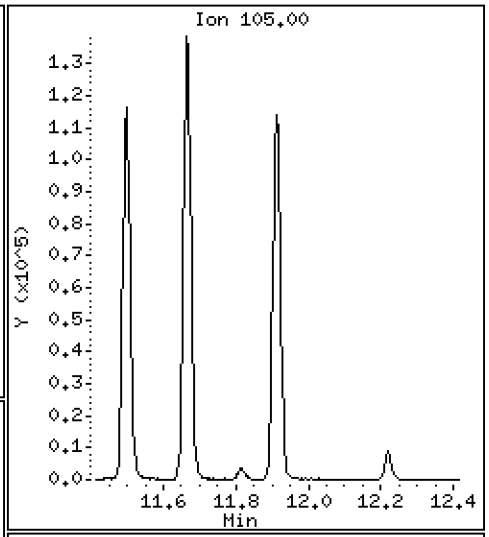
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

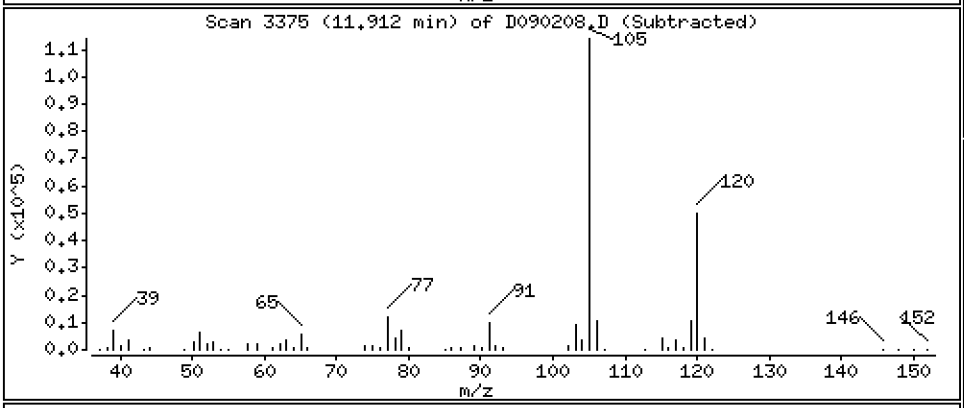
Purge Volume: 5.0 Operator: AP

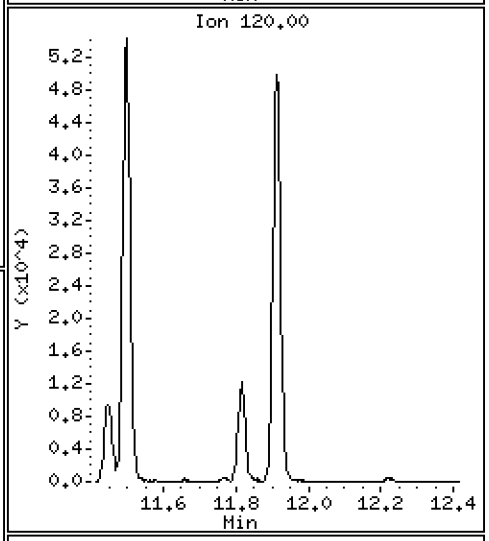
Column phase: DB624 Column diameter: 0.18

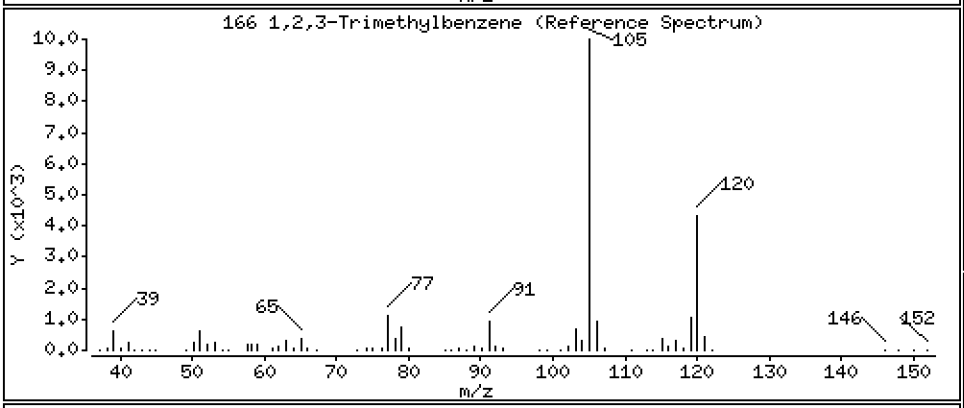
166 1,2,3-Trimethylbenzene Concentration: 16.97 ug/l Review Code:

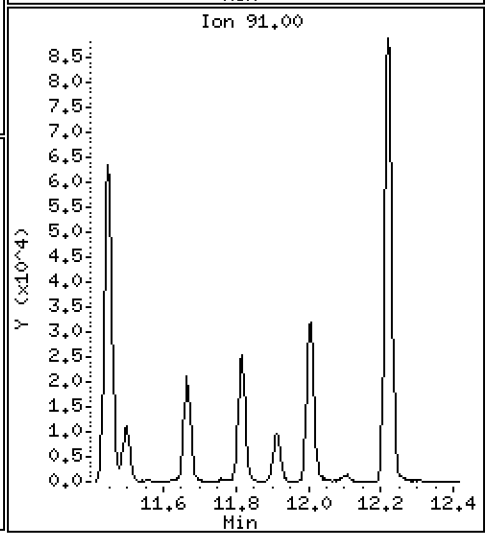


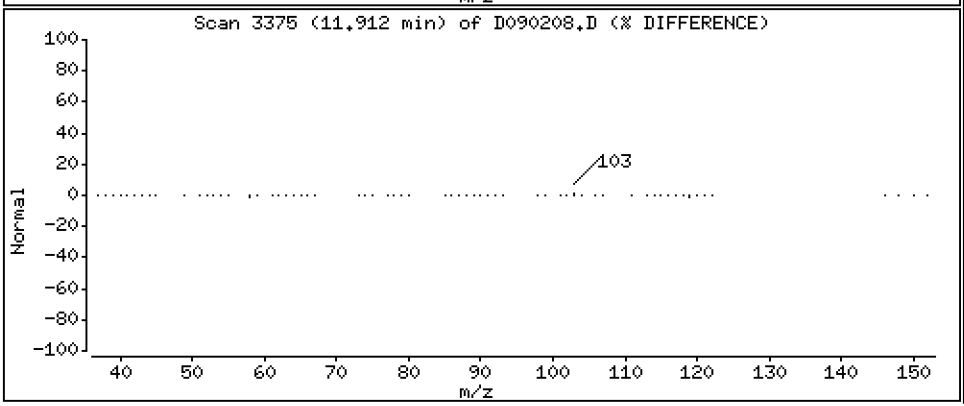












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 99

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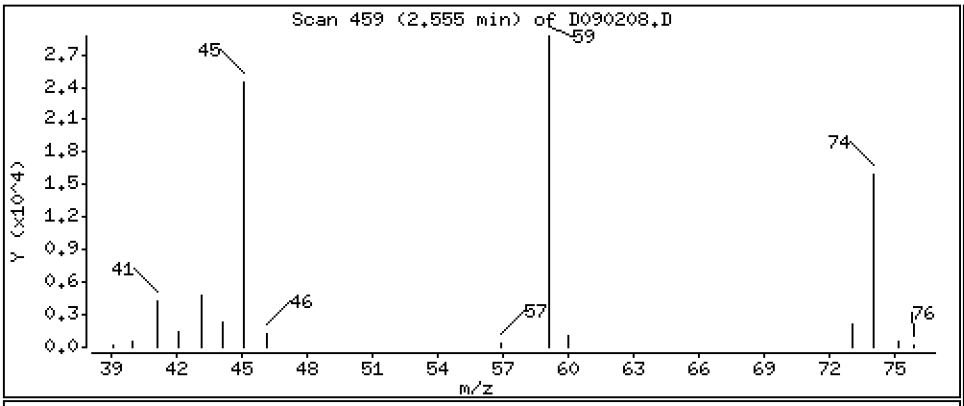
Client ID: HS18081428-01MS Instrument: VOA2.i

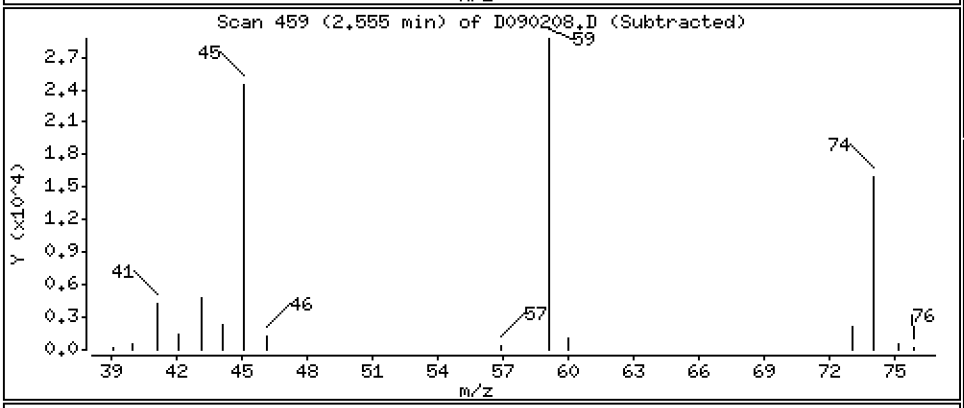
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

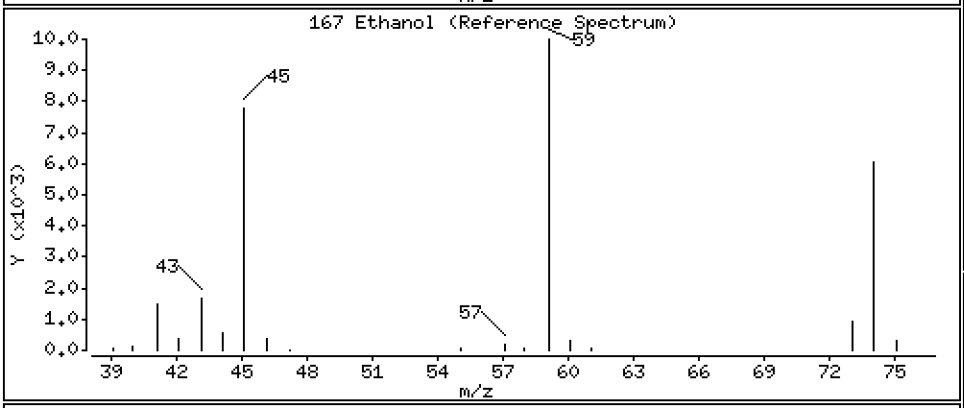
Purge Volume: 5.0 Operator: AP

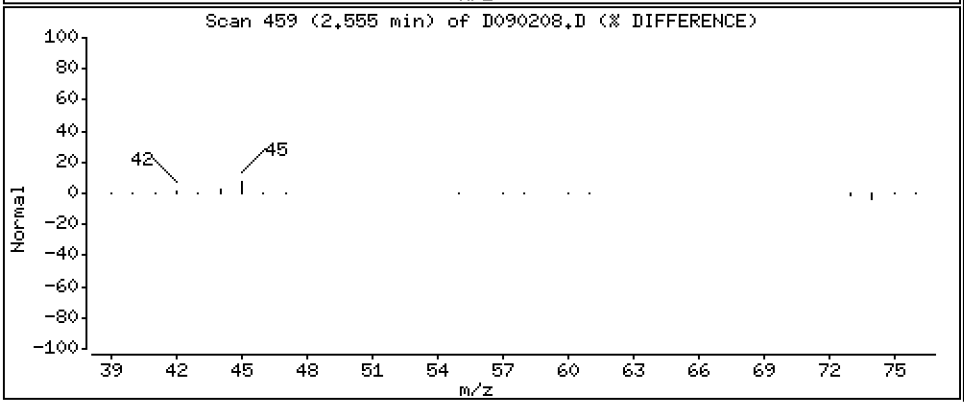
Column phase: DB624 Column diameter: 0.18

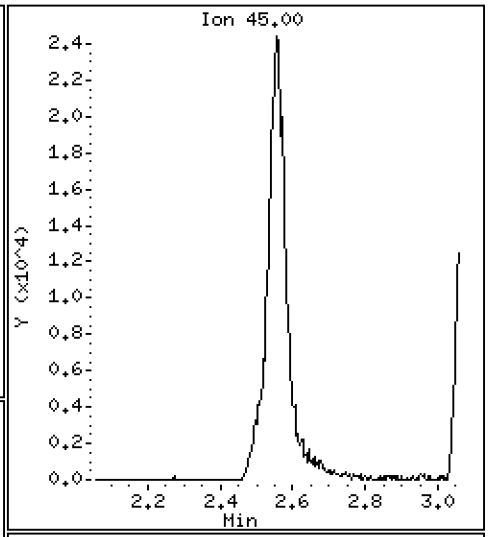
167 Ethanol Concentration: 305.99 ug/l Review Code:

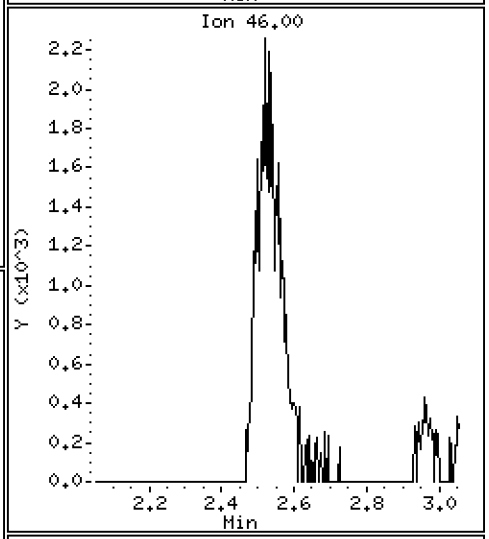


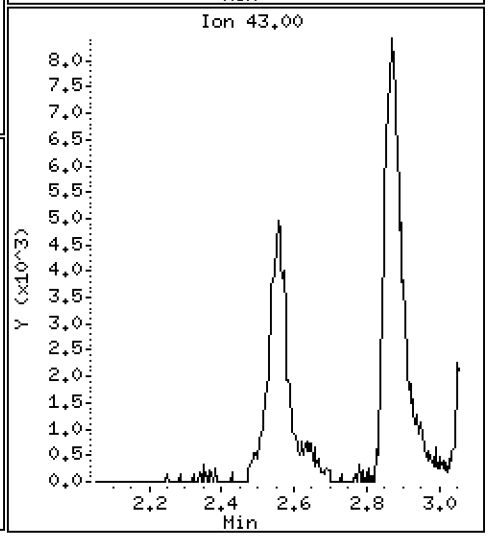












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 100

Date : 02-SEP-2018 16:18

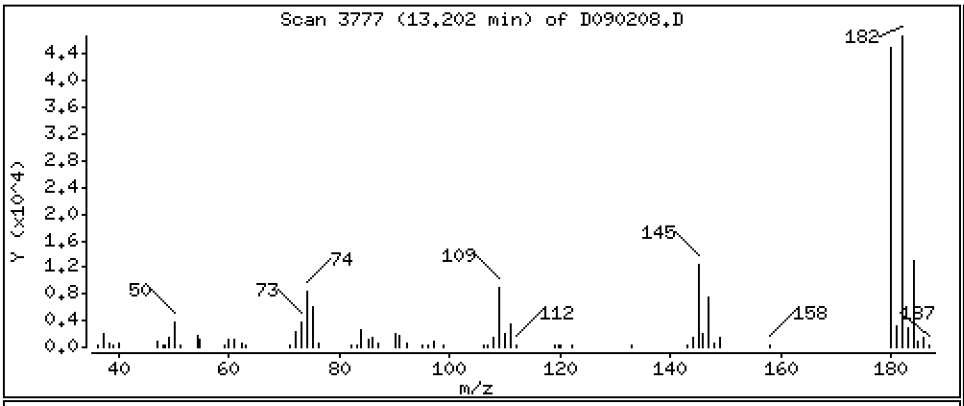
Client ID: HS18081428-01MS Instrument: VOA2.i

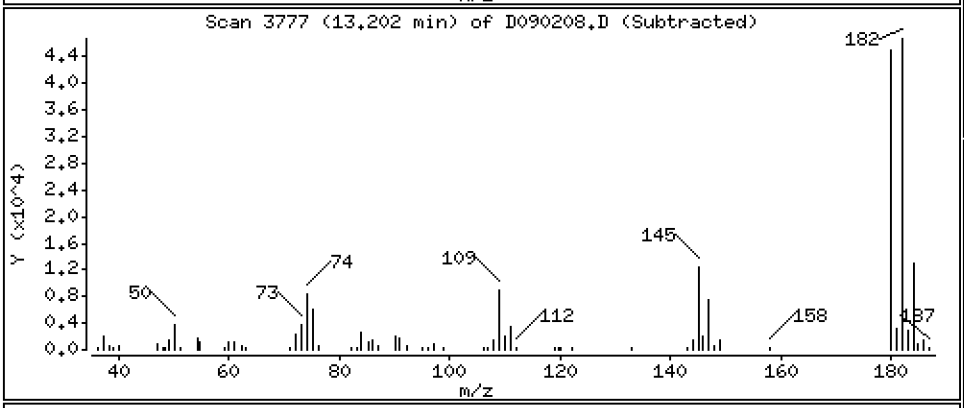
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

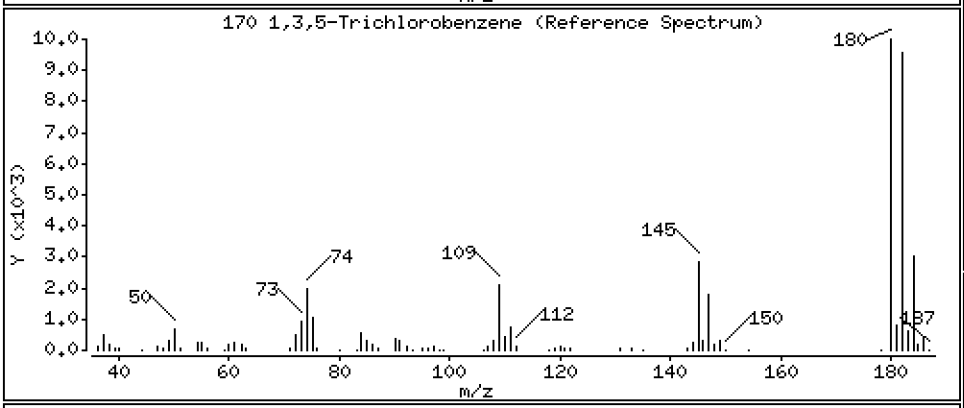
Purge Volume: 5.0 Operator: AP

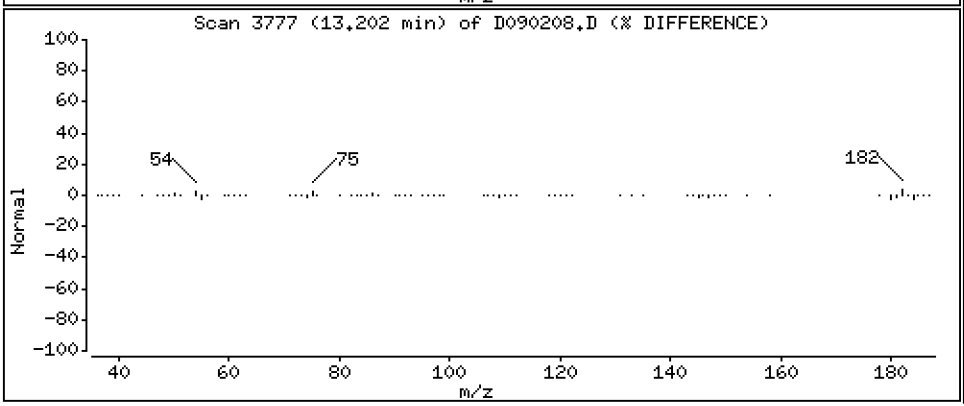
Column phase: DB624 Column diameter: 0.18

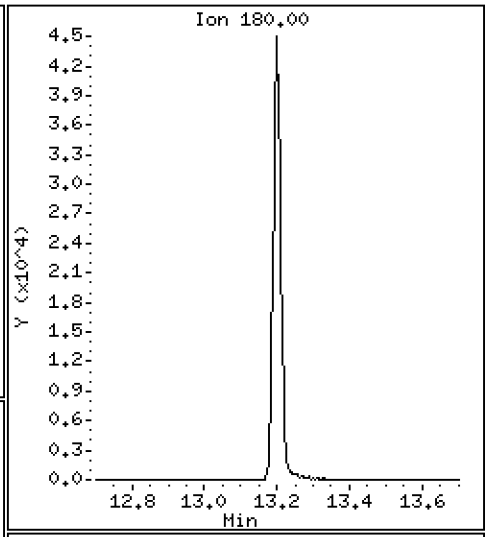
170 1,3,5-Trichlorobenzene Concentration: 16.39 ug/l Review Code:

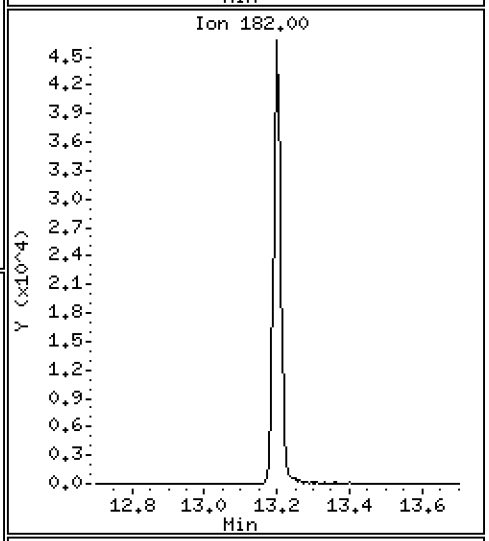


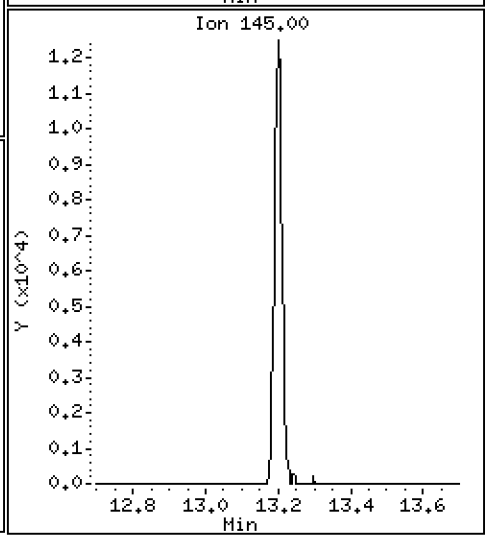












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Date : 02-SEP-2018 16:18

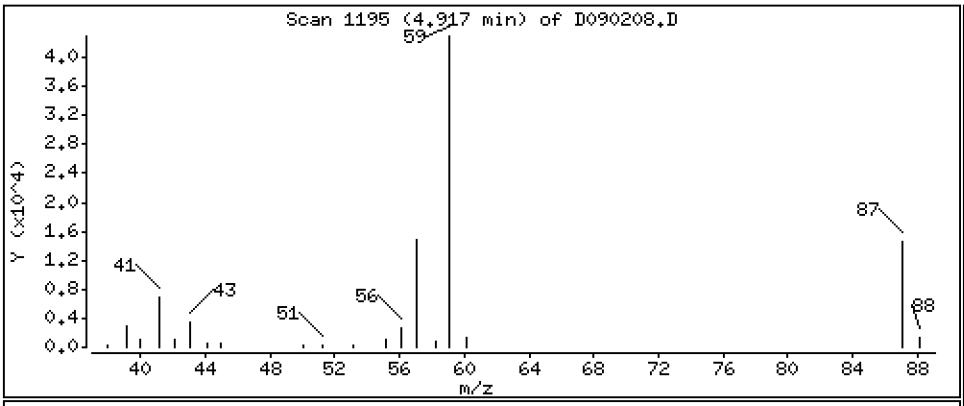
Client ID: HS18081428-01MS Instrument: VOA2.i

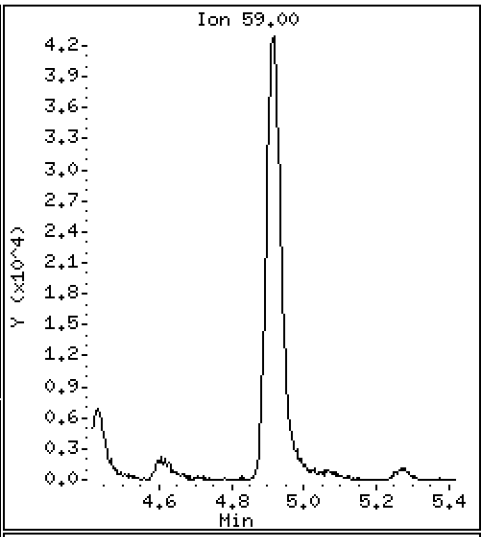
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

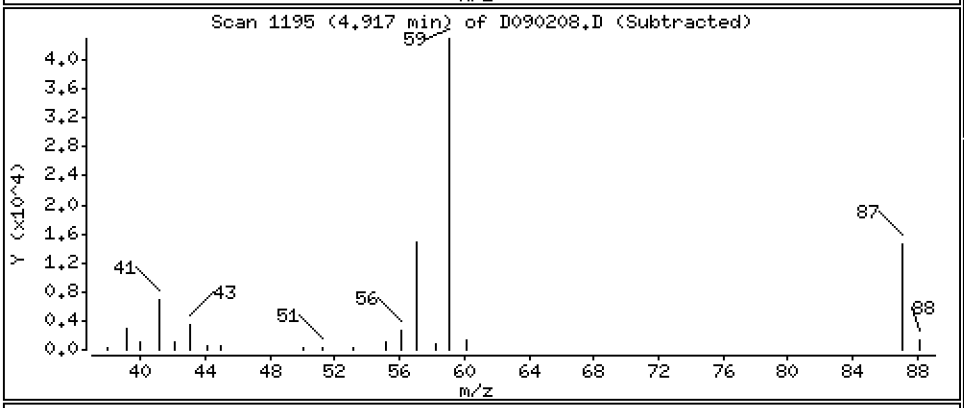
Purge Volume: 5.0 Operator: AP

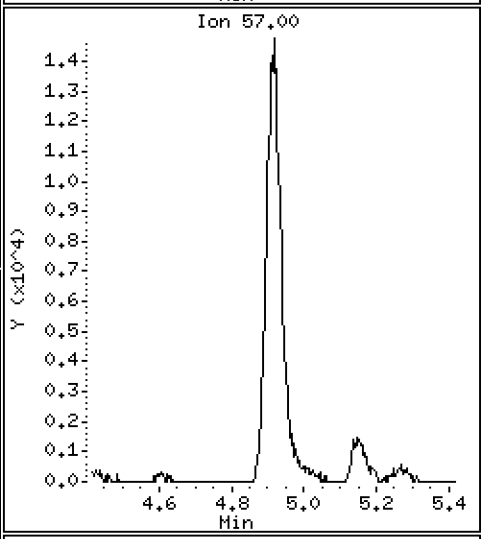
Column phase: DB624 Column diameter: 0.18

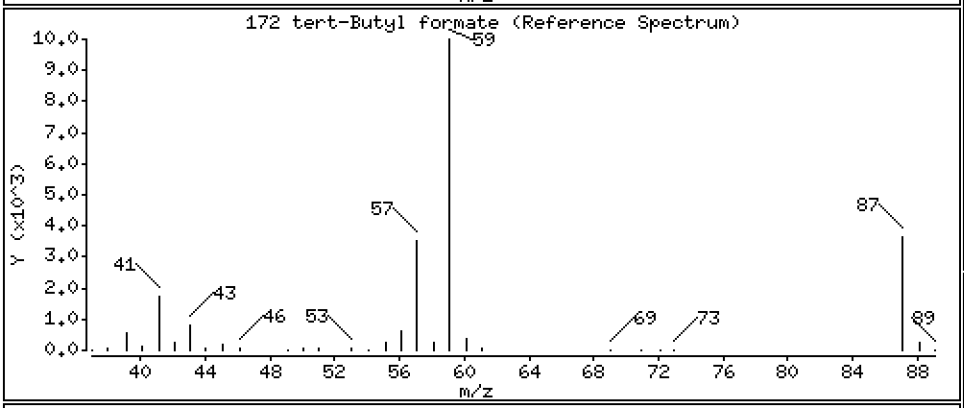
172 tert-Butyl formate Concentration: 32.18 ug/l Review Code:

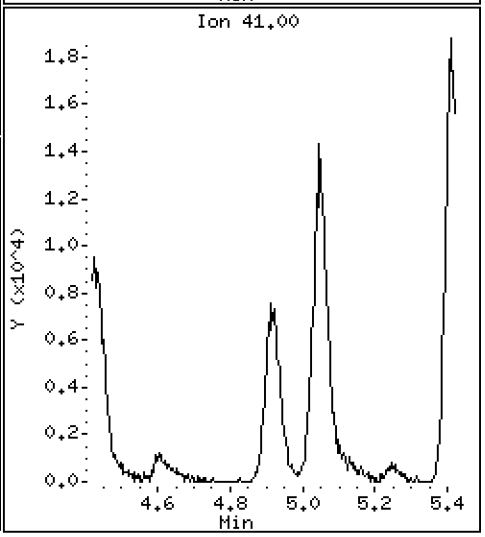


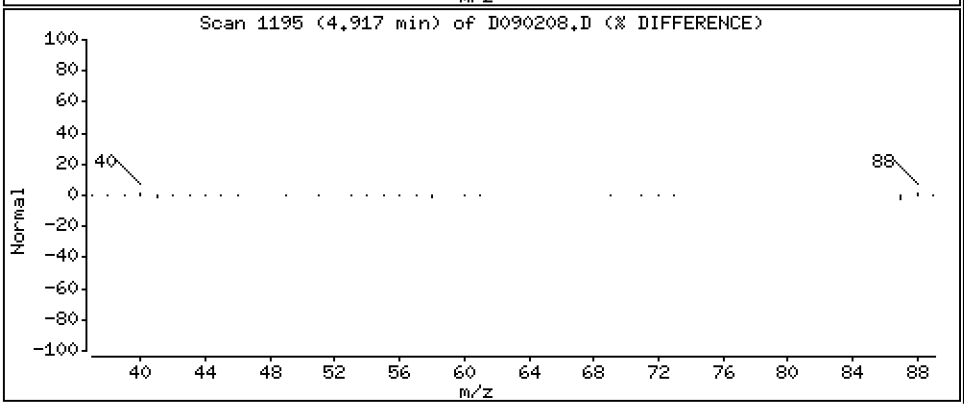












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Date : 02-SEP-2018 16:18

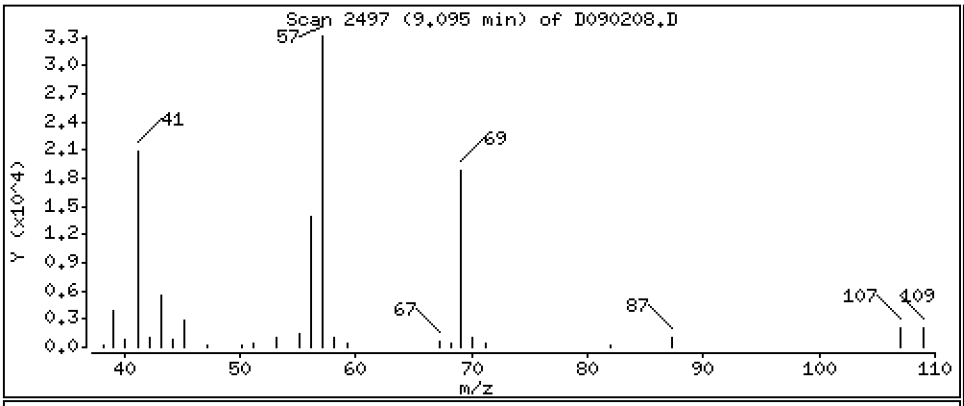
Client ID: HS18081428-01MS Instrument: VOA2.i

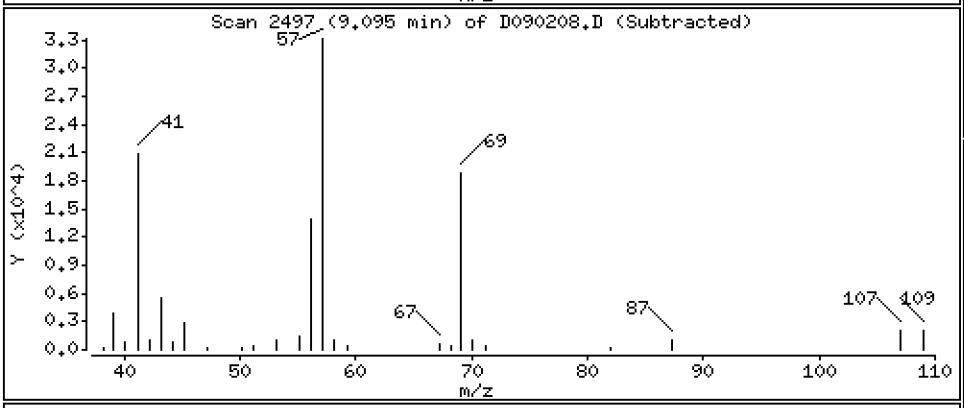
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

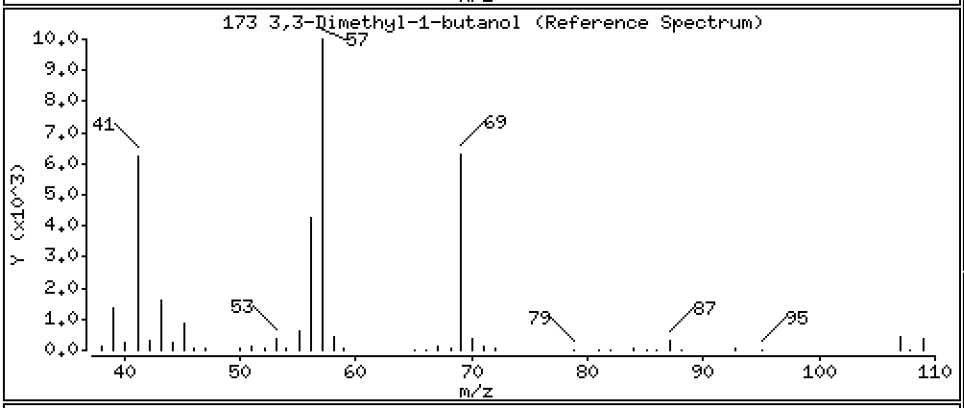
Purge Volume: 5.0 Operator: AP

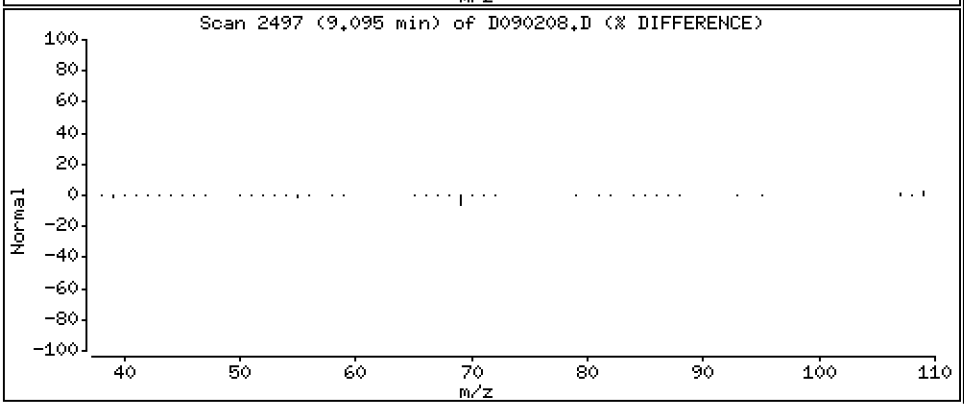
Column phase: DB624 Column diameter: 0.18

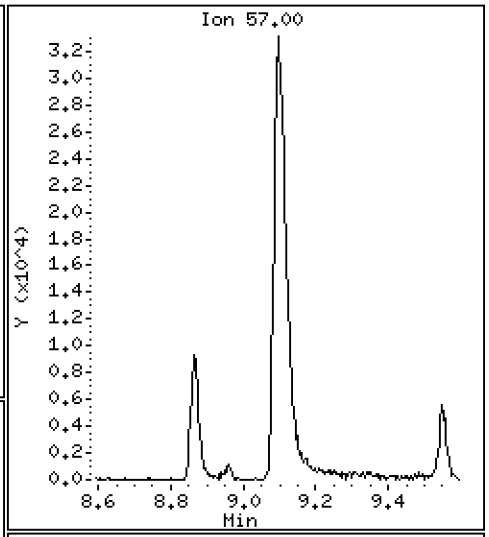
173 3,3-Dimethyl-1-butanol Concentration: 303.69 ug/l Review Code:

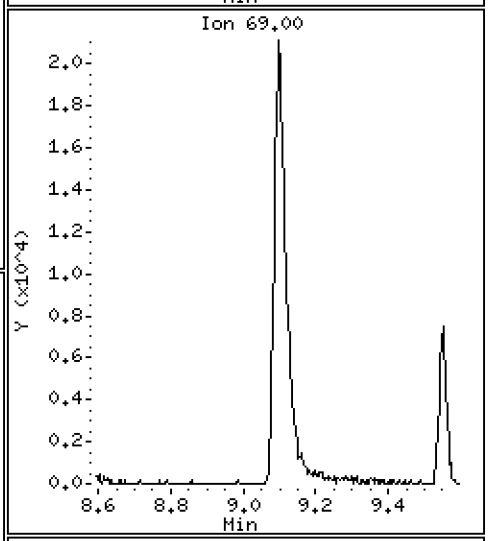


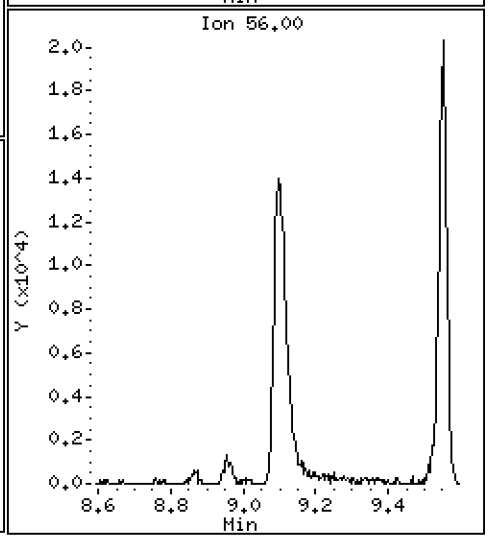












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Date : 02-SEP-2018 16:18

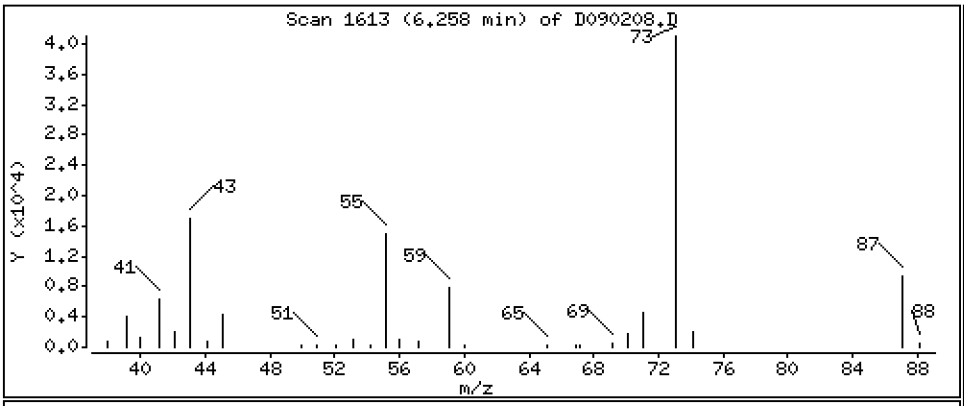
Client ID: HS18081428-01MS Instrument: VOA2.i

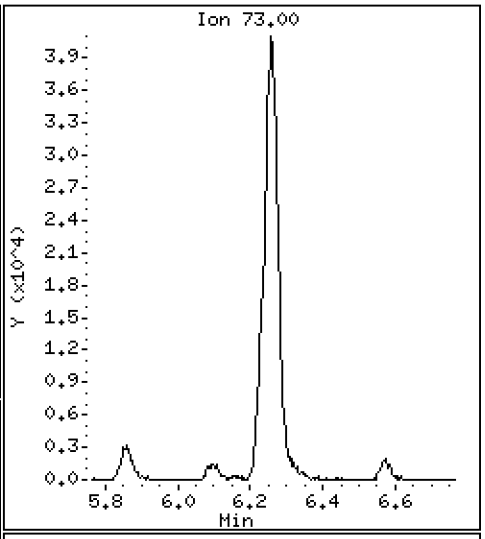
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

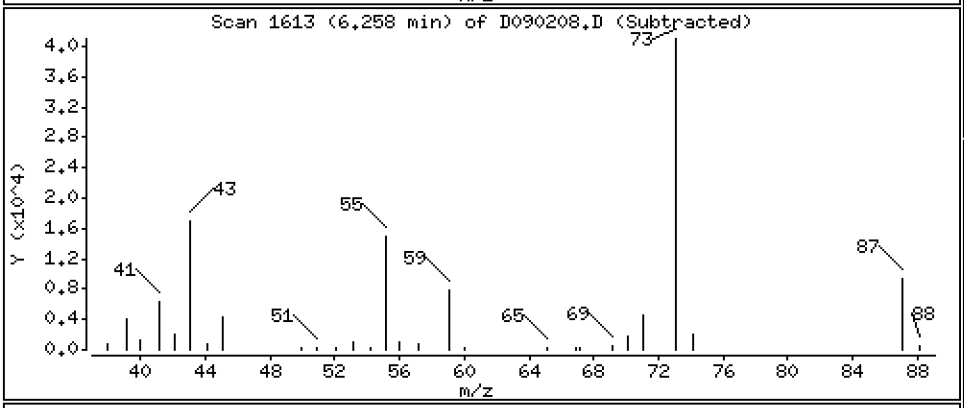
Purge Volume: 5.0 Operator: AP

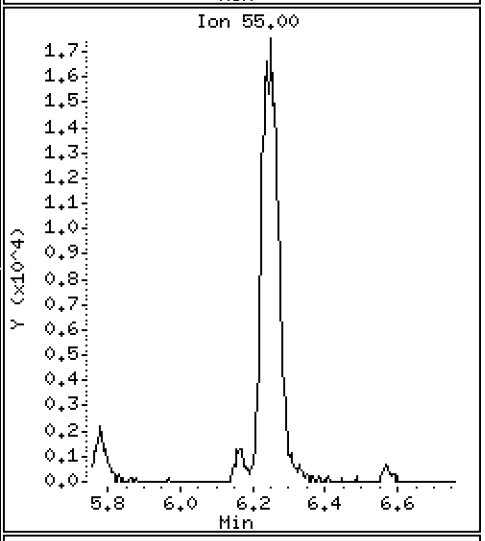
Column phase: DB624 Column diameter: 0.18

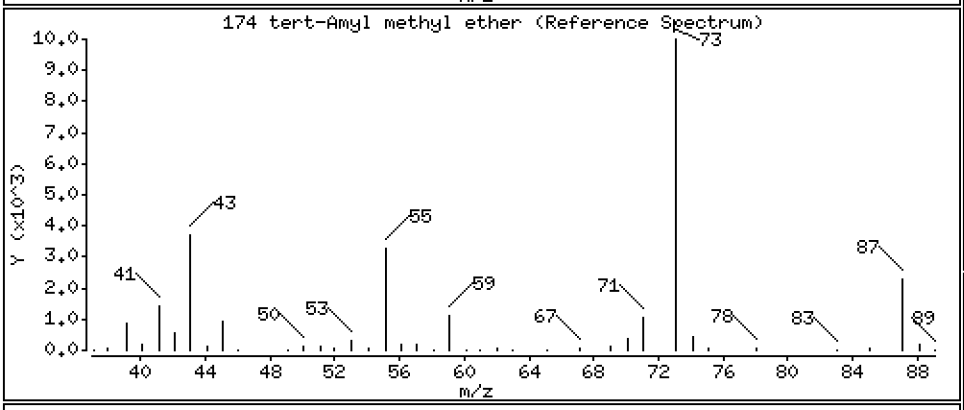
174 tert-Amyl methyl ether Concentration: 14.89 ug/l Review Code:

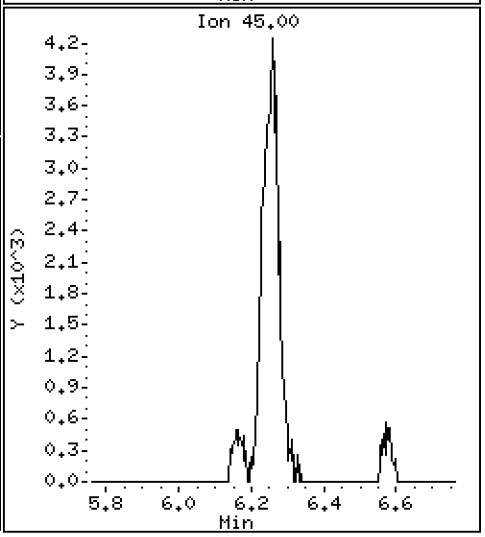


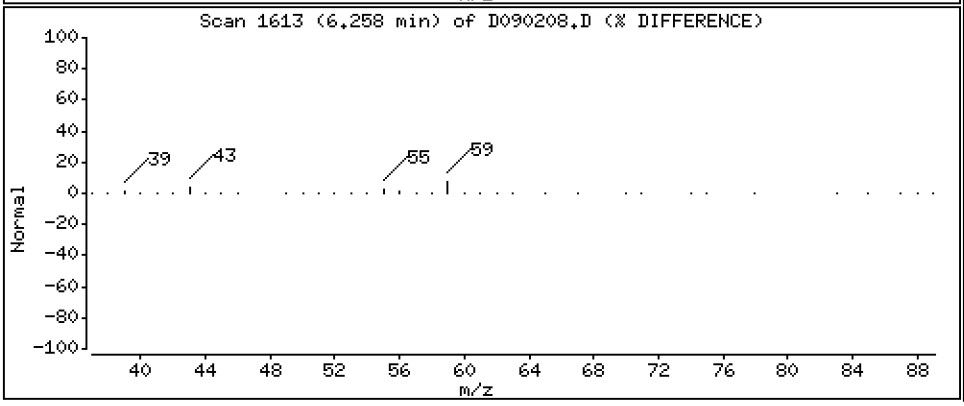












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Date : 02-SEP-2018 16:18

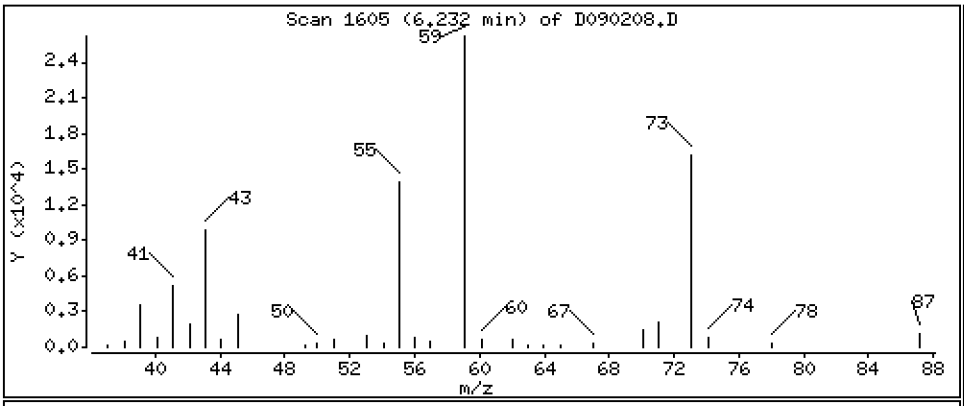
Client ID: HS18081428-01MS Instrument: VOA2.i

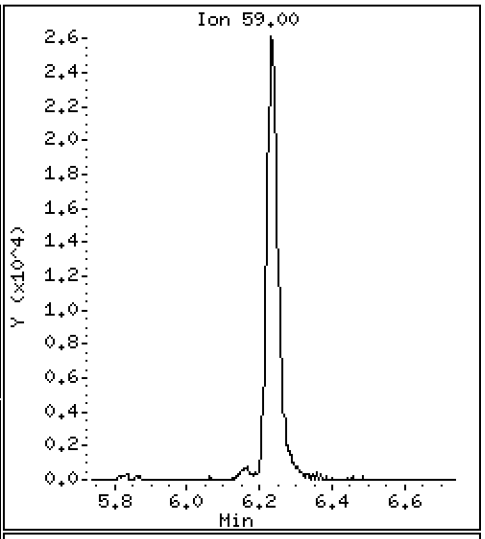
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

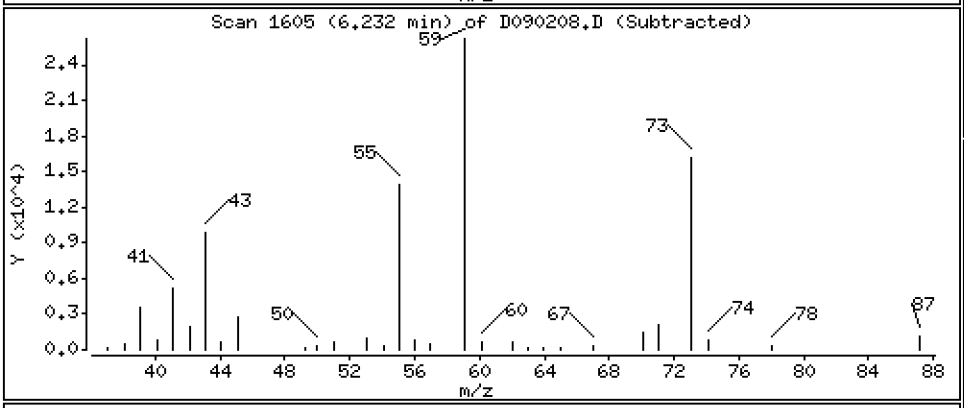
Purge Volume: 5.0 Operator: AP

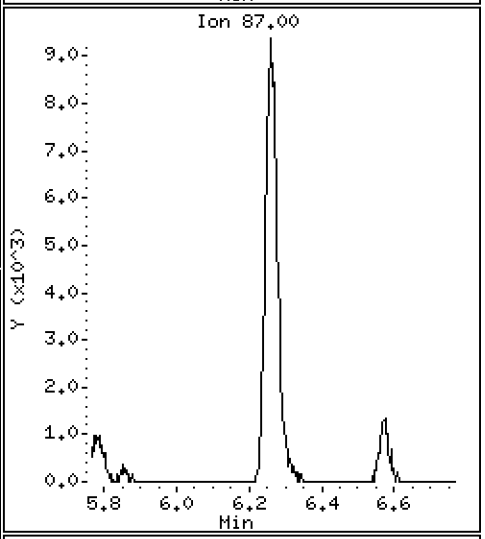
Column phase: DB624 Column diameter: 0.18

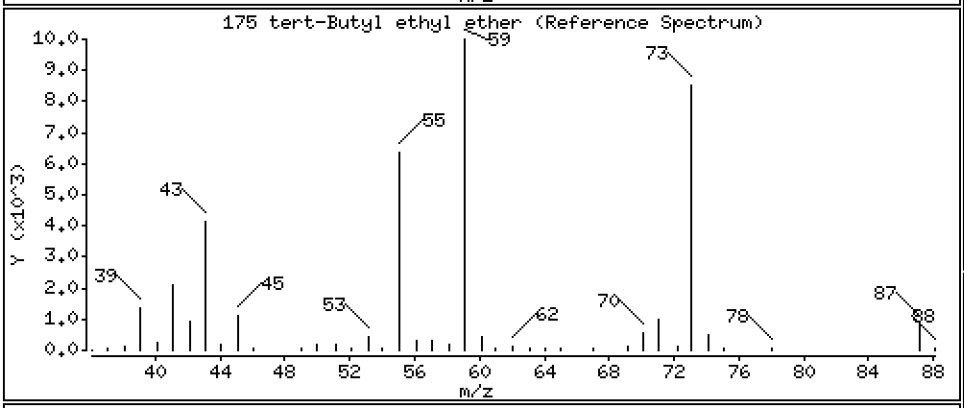
175 tert-Butyl ethyl ether Concentration: 13.56 ug/l Review Code:

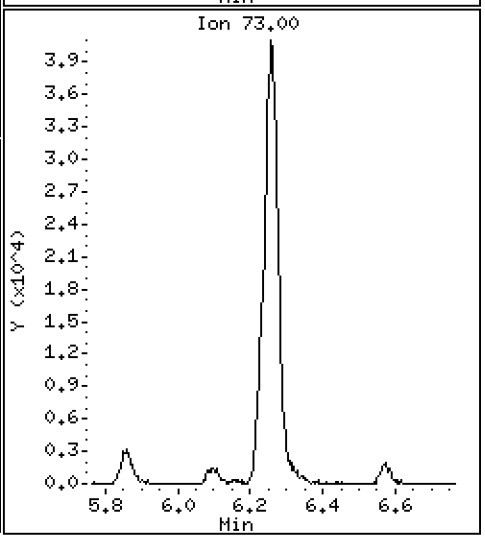


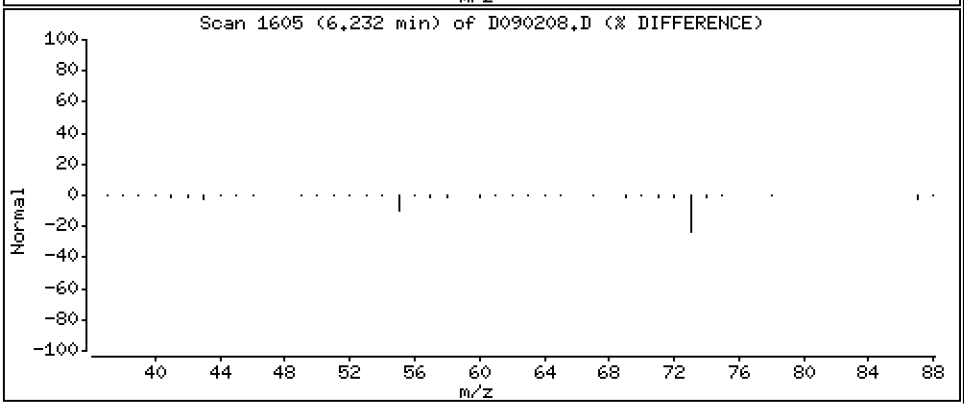












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 105

Date : 02-SEP-2018 16:18

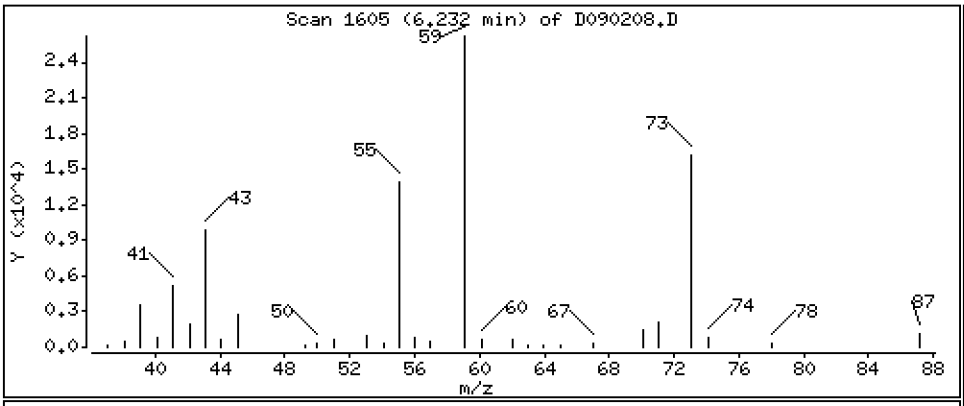
Client ID: HS18081428-01MS Instrument: VOA2.i

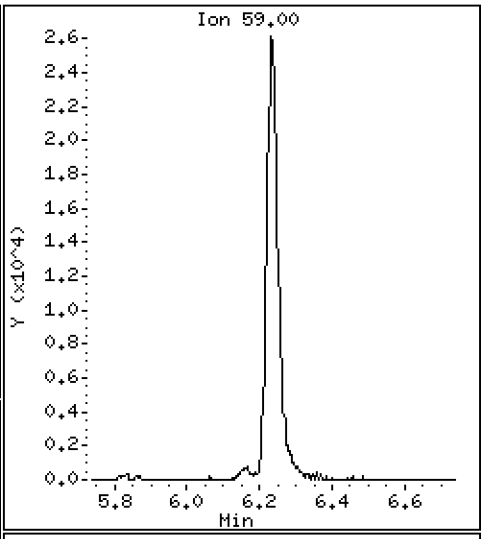
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

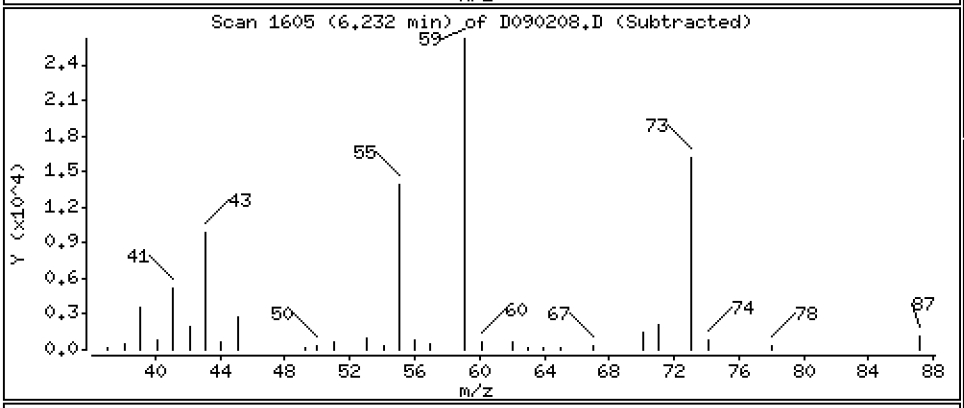
Purge Volume: 5.0 Operator: AP

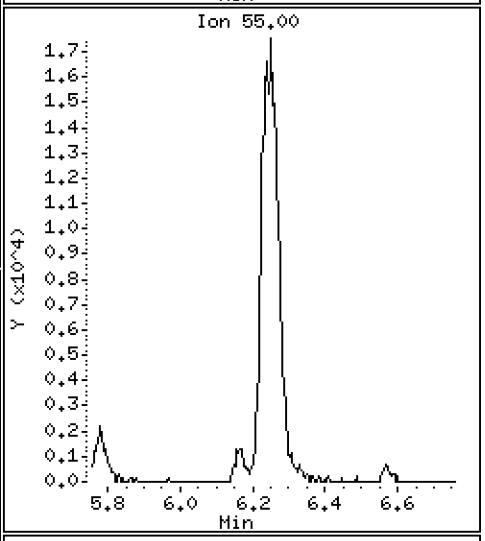
Column phase: DB624 Column diameter: 0.18

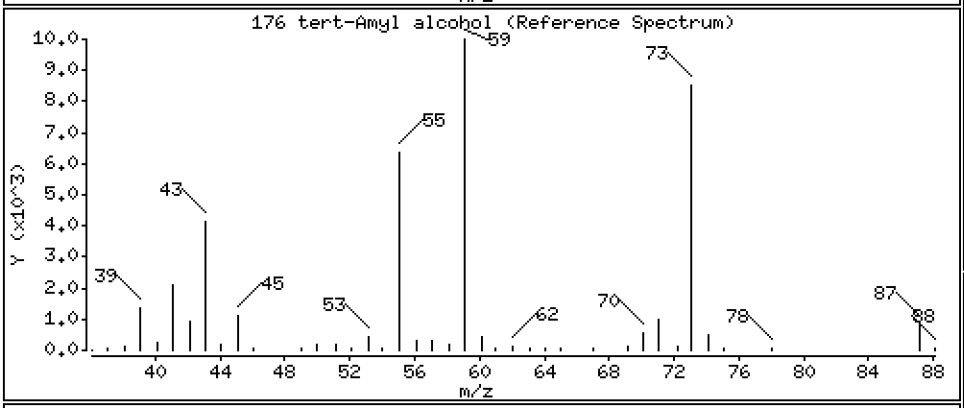
176 tert-Amyl alcohol Concentration: 271.30 ug/l Review Code:

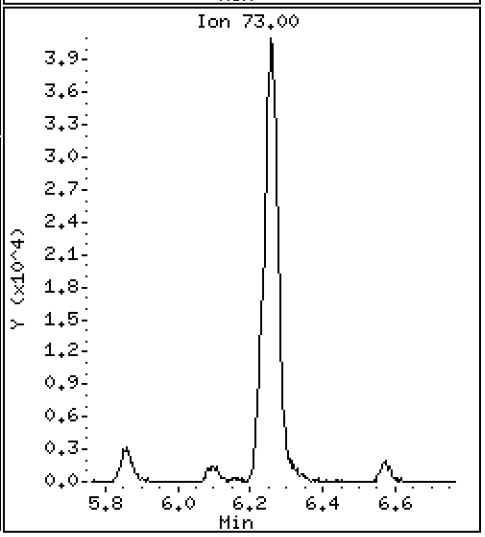


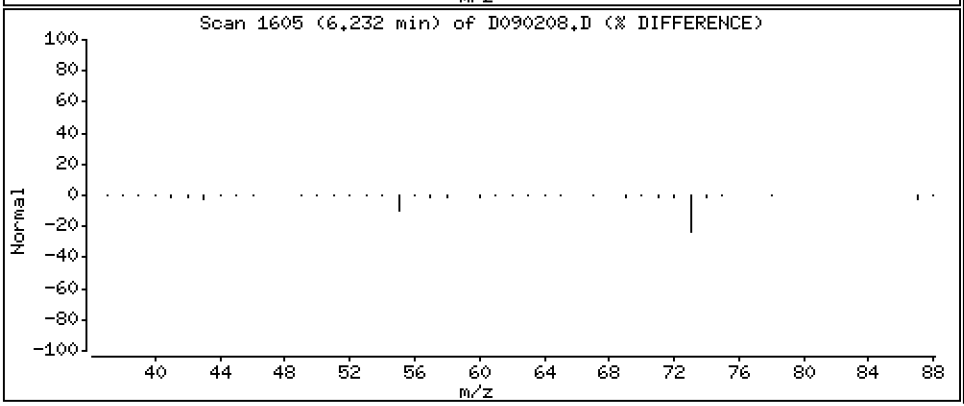












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 106

Date : 02-SEP-2018 16:18

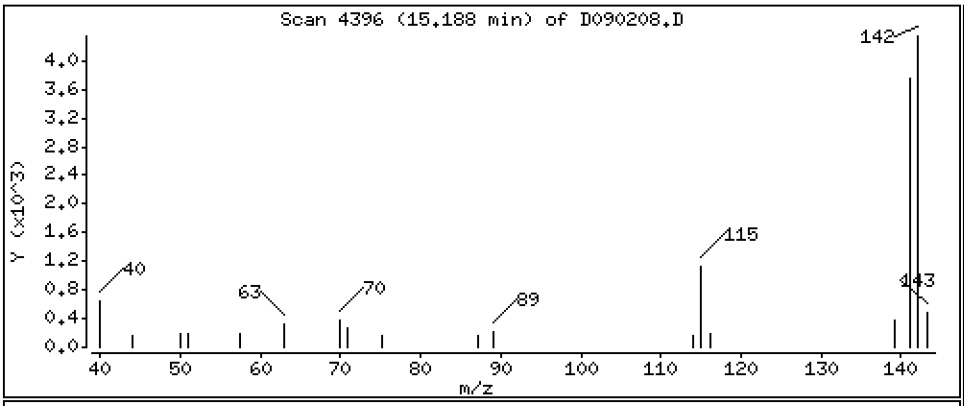
Client ID: HS18081428-01MS Instrument: VOA2.i

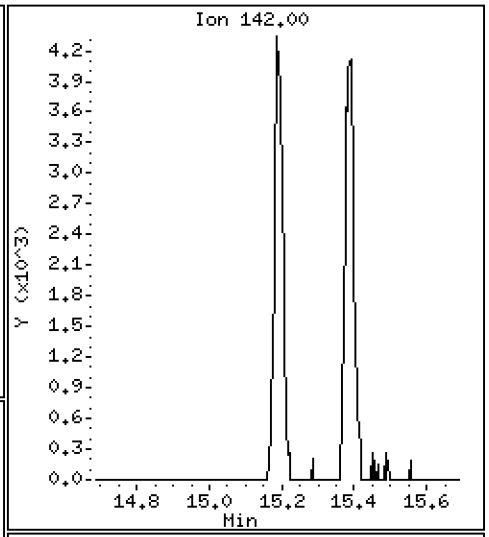
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

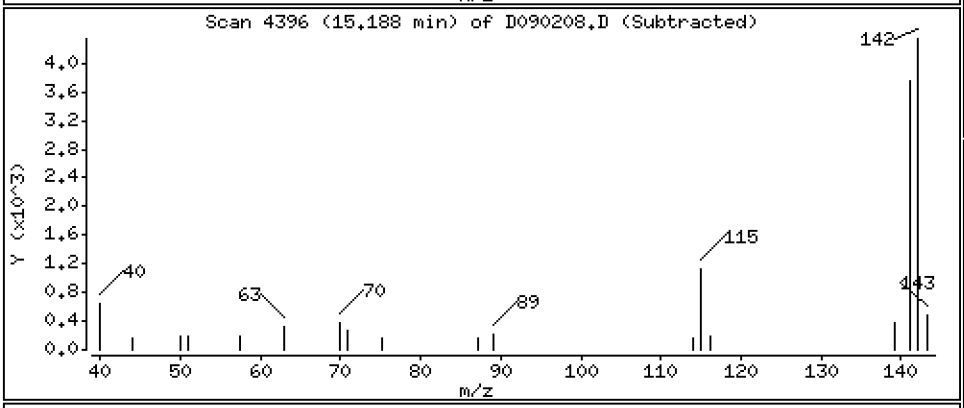
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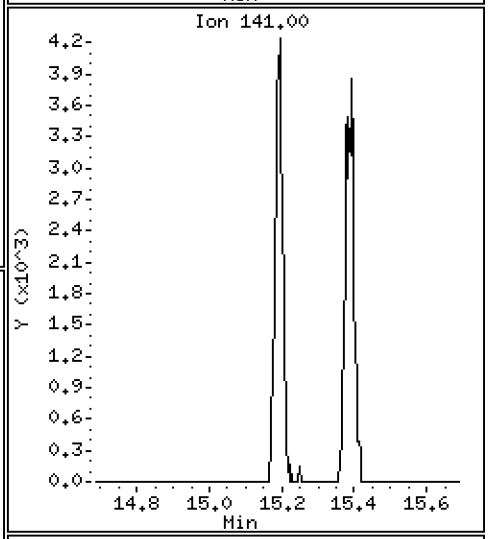
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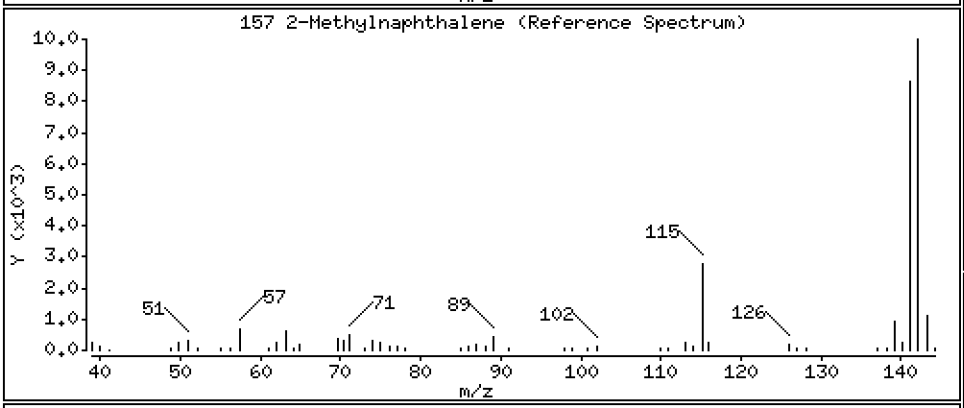
157 2-Methylnaphthalene Concentration: 7.58 ug/l Review Code:

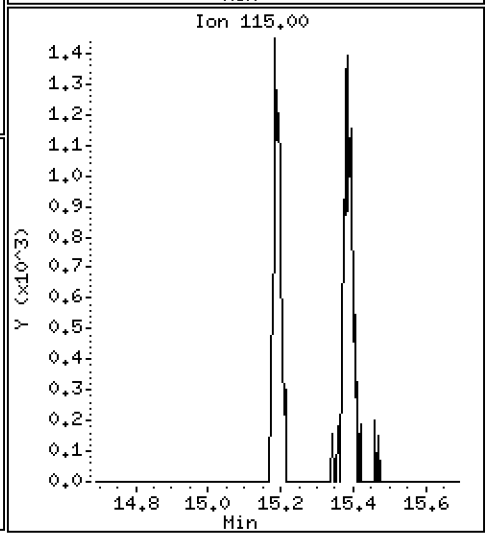


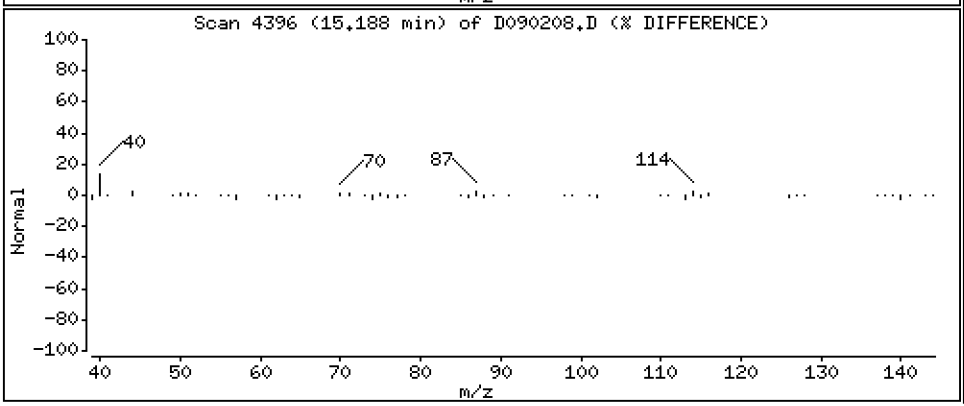












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 107

Date : 02-SEP-2018 16:18

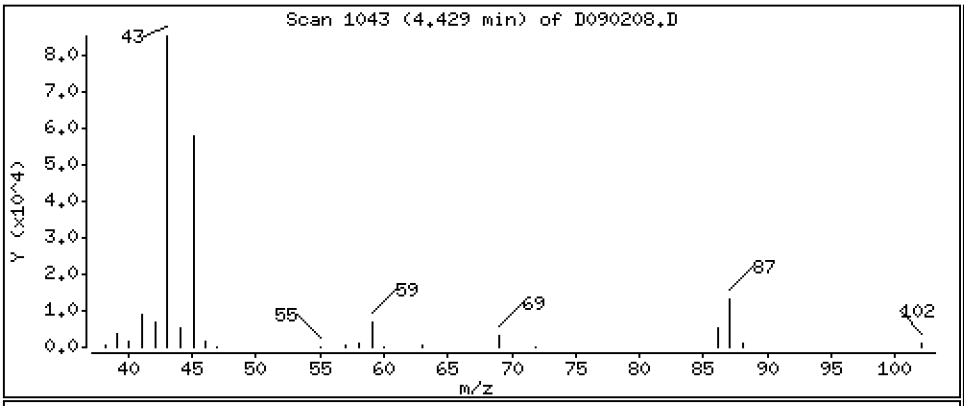
Client ID: HS18081428-01MS Instrument: VOA2.i

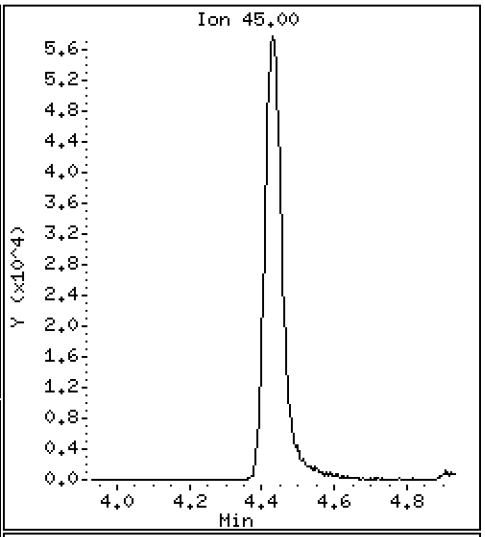
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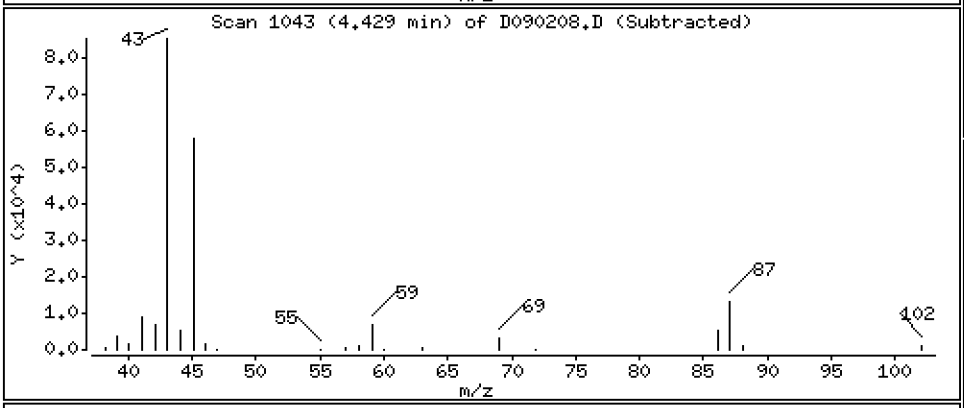
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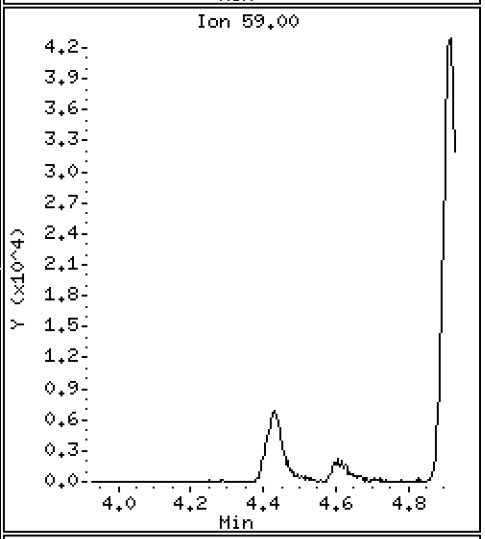
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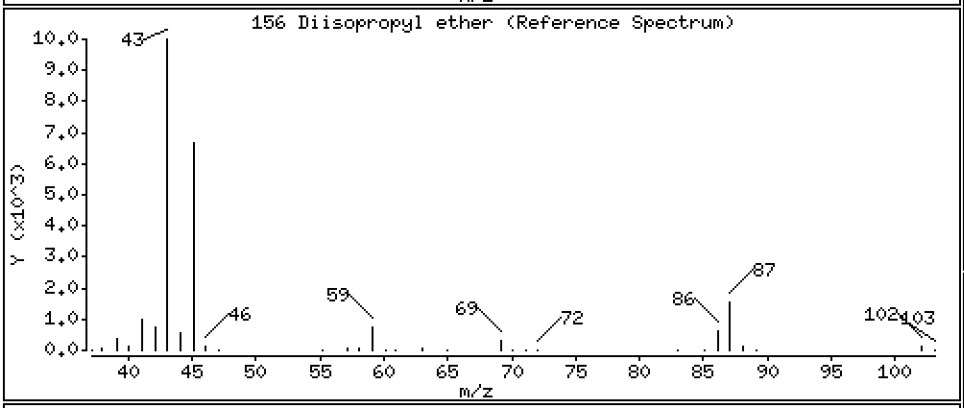
156 Diisopropyl ether Concentration: 16.44 ug/l Review Code:

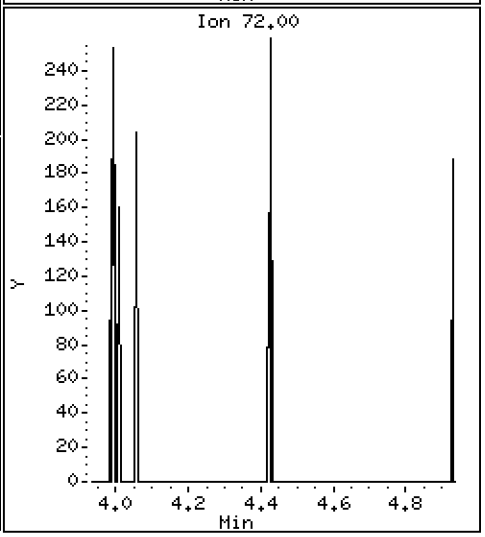


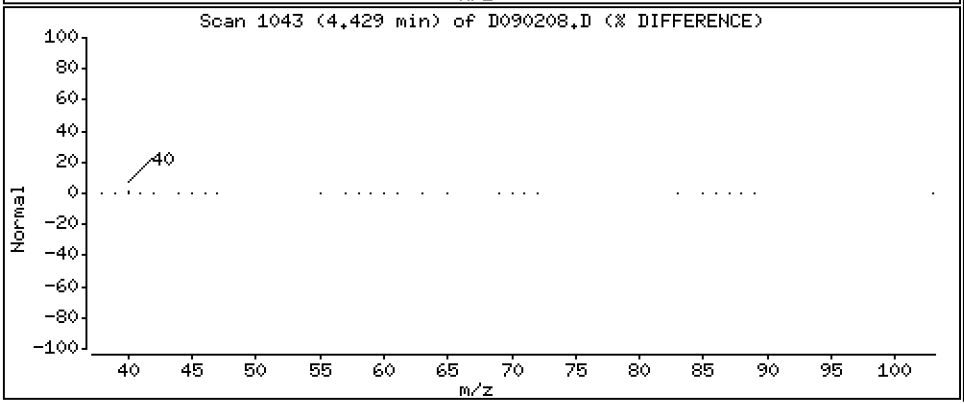












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 108

Date : 02-SEP-2018 16:18

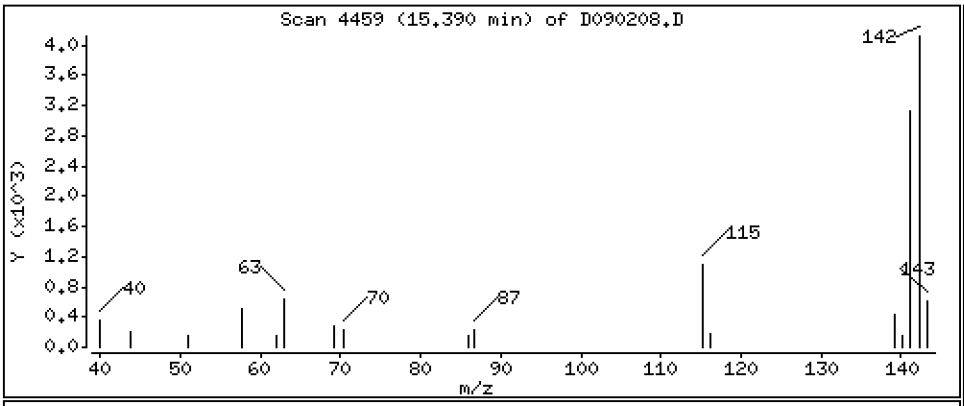
Client ID: HS18081428-01MS Instrument: VOA2.i

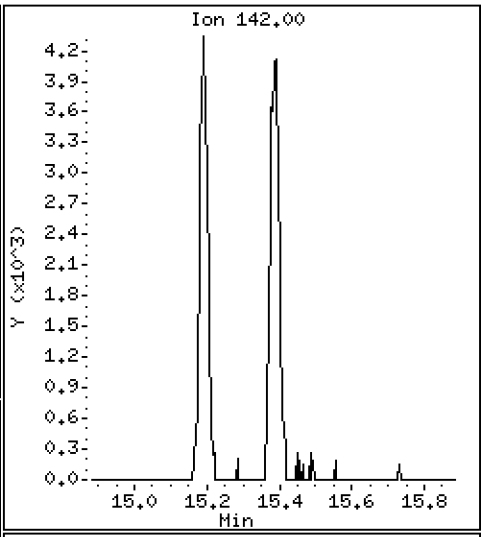
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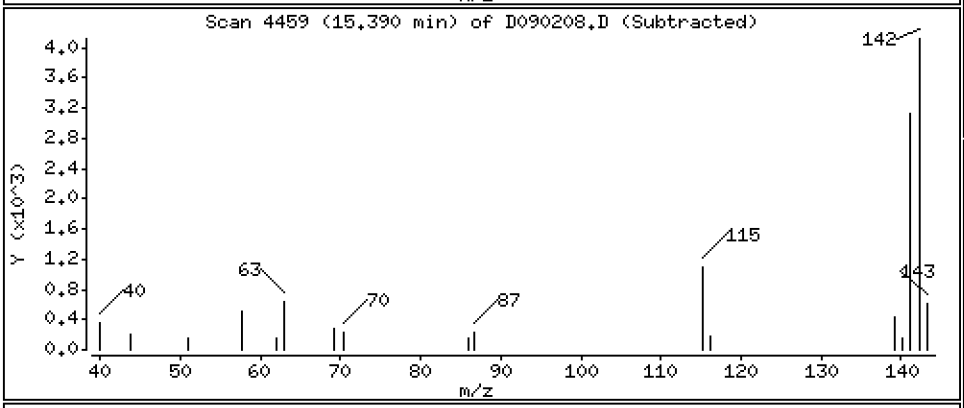
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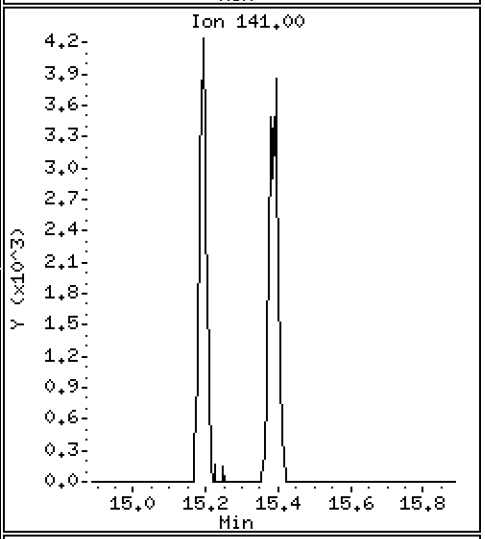
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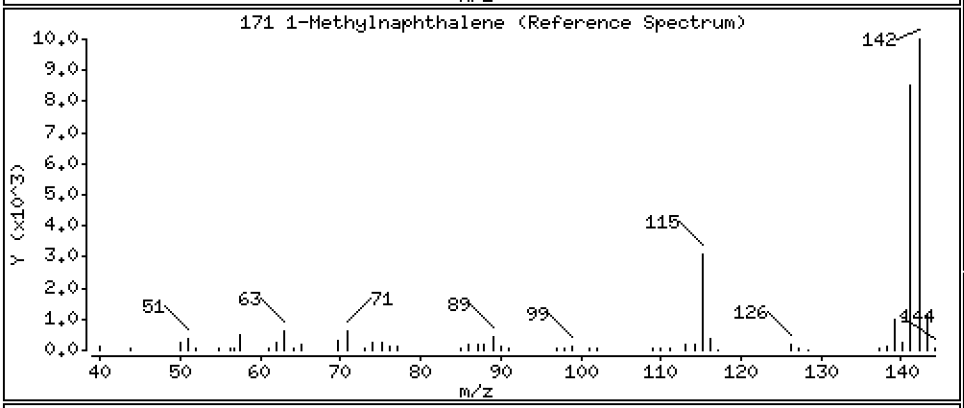
171 1-Methylnaphthalene Concentration: 7.00 ug/l Review Code:

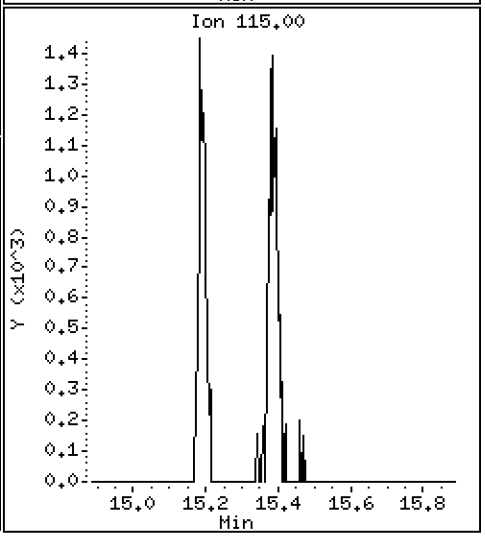


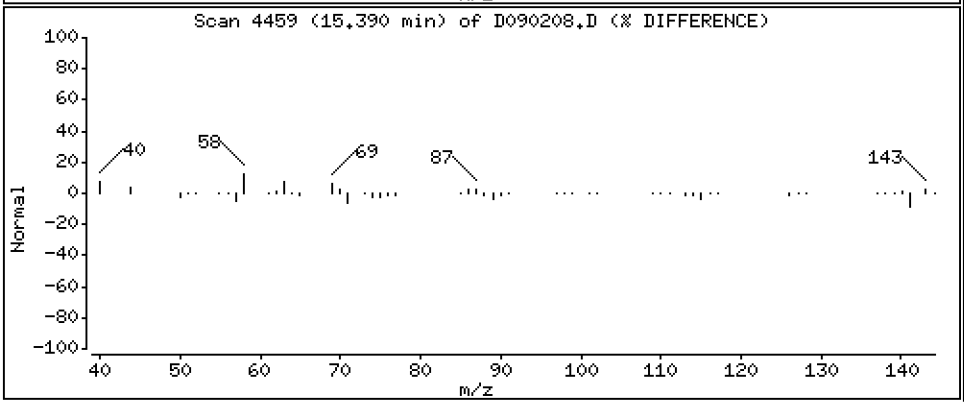












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090208.D Page 109

Date : 02-SEP-2018 16:18

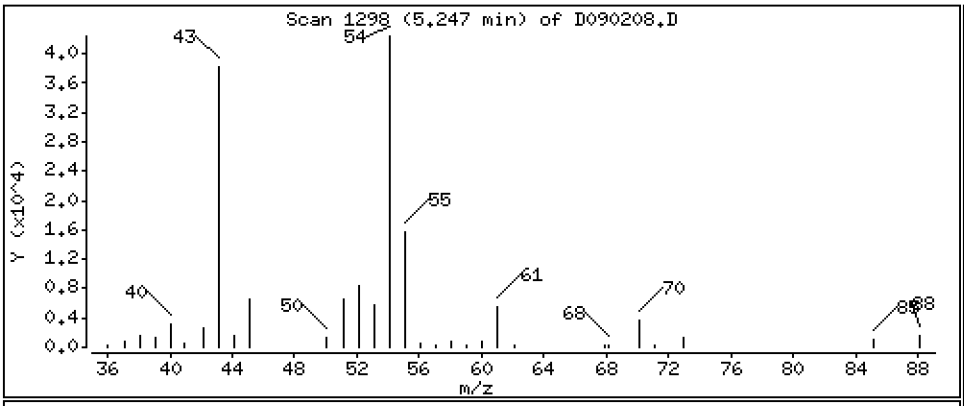
Client ID: HS18081428-01MS Instrument: VOA2.i

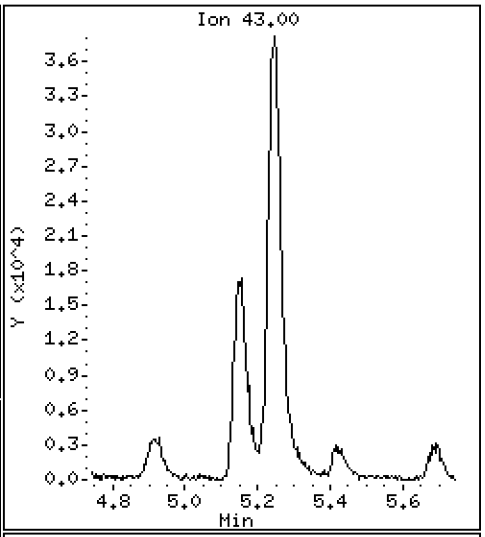
Sample Info: HS18081428-01MS;HS18081428-01MS;3;;MS

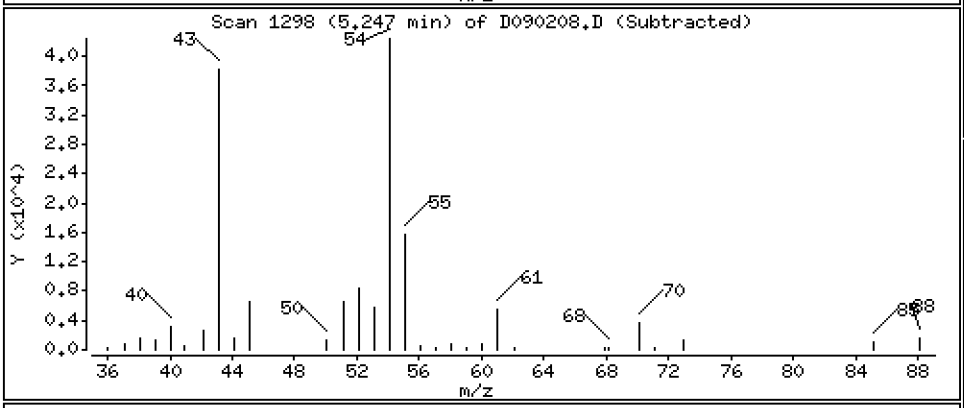
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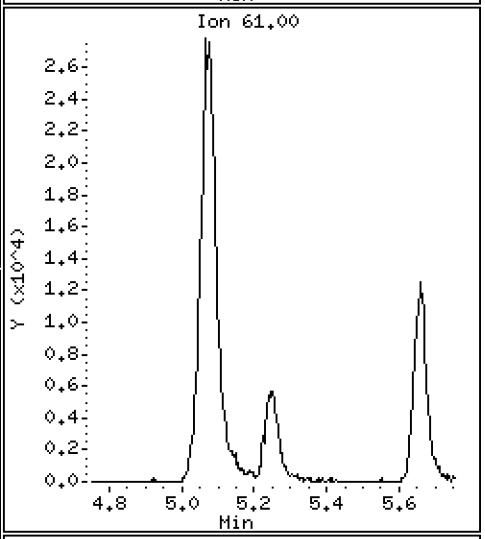
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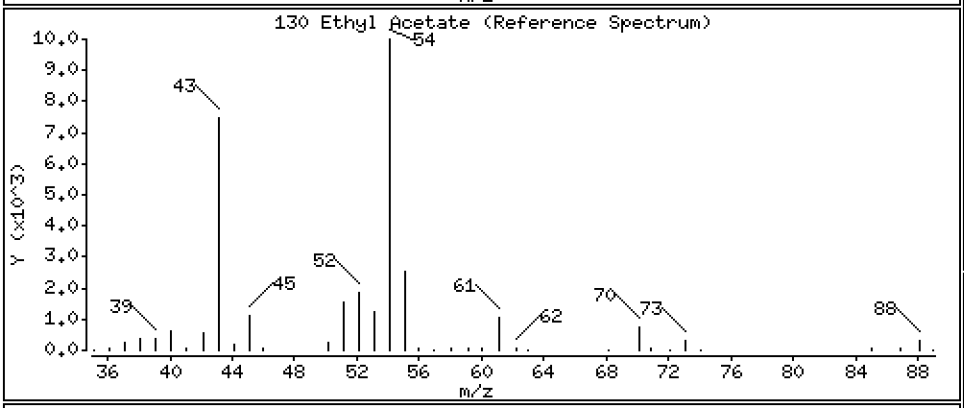
130 Ethyl Acetate Concentration: 14.04 ug/l Review Code:

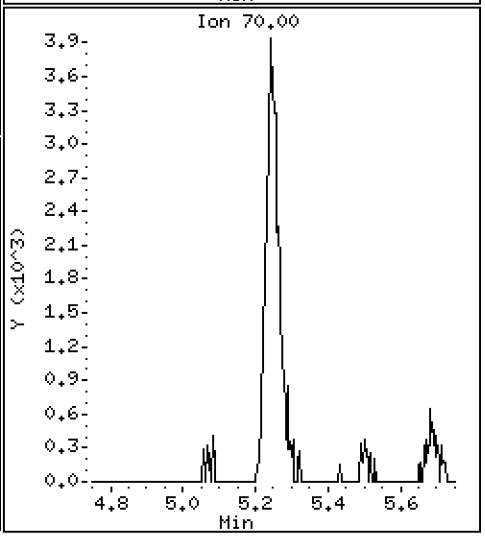


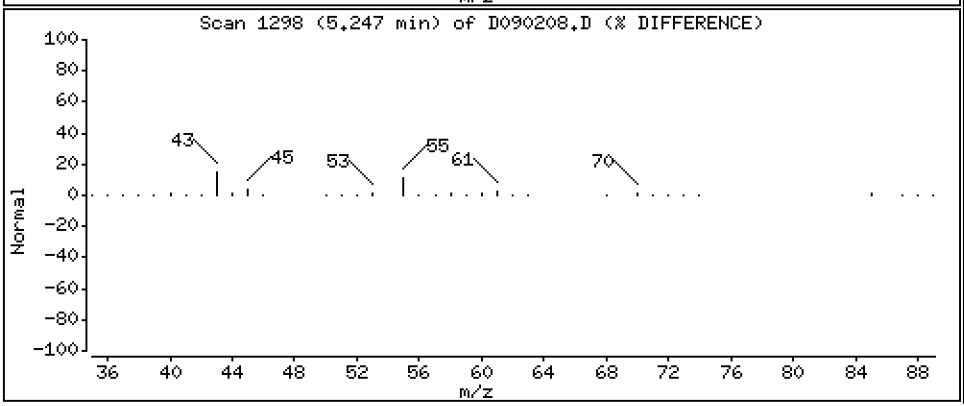












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 1
Report Date: 09-Oct-2018 14:40

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D
Lab Smp Id: HS18081428-01MSD Client Smp ID: HS18081428-01MSD
Inj Date : 02-SEP-2018 16:42
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-01MSD;HS18081428-01MSD;3;;MSD
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 8 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14
Processing Host: NAHSTWS003

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
Va	0.00000	
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	5.783	5.786	(1.000)	224889	50.0000	
2	Dichlorodifluoromethane	85	1.460	1.470	(0.253)	28447	12.8491	12.84
186	Isobutylene	56	1.666	1.672	(0.288)	26521	6.63774	6.63(AM)
3	Chloromethane	50	1.608	1.611	(0.278)	74406	13.4086	13.40
4	Propionitrile	54	5.237	5.240	(0.906)	157572	155.002	155.00
5	Vinyl Chloride	62	1.691	1.698	(0.293)	57138	15.3963	15.39
6	Bromomethane	94	1.958	1.967	(0.339)	38662	18.6513	18.65
7	Chloroethane	64	2.051	2.054	(0.355)	38406	16.1996	16.19
159	Dichlorofluoromethane	67	2.243	2.250	(0.388)	82995	15.0732	15.07
8	Trichlorofluoromethane	101	2.259	2.269	(0.391)	51448	14.1888	14.18
9	Acrolein	56	2.696	2.692	(0.466)	15428	21.0340	21.03
10	Acetone	43	2.869	2.872	(0.496)	29058	26.7834	26.78
11	1,1-Dichloroethene	96	2.753	2.766	(0.476)	40346	15.1803	15.18
12	Isobutyl Alcohol	74	6.152	6.164	(1.064)	3984	265.986	265.98(A)
13	Acetonitrile	39	3.177	3.180	(0.549)	51824	159.268	159.26
14	Allyl Chloride	41	3.193	3.190	(0.552)	143832	15.7528	15.75
15	Iodomethane	142	2.917	2.923	(0.504)	66860	28.4917	28.49
16	Acrylonitrile	53	3.700	3.713	(0.640)	41237	29.7558	29.75
17	Methylene Chloride	84	3.347	3.350	(0.579)	44618	13.7116	13.71
18	Methyl tert-butyl ether	73	3.690	3.703	(0.638)	127834	15.8002	15.80
19	Carbon Disulfide	76	2.959	2.972	(0.512)	162718	32.4482	32.44

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 2
Report Date: 09-Oct-2018 14:40

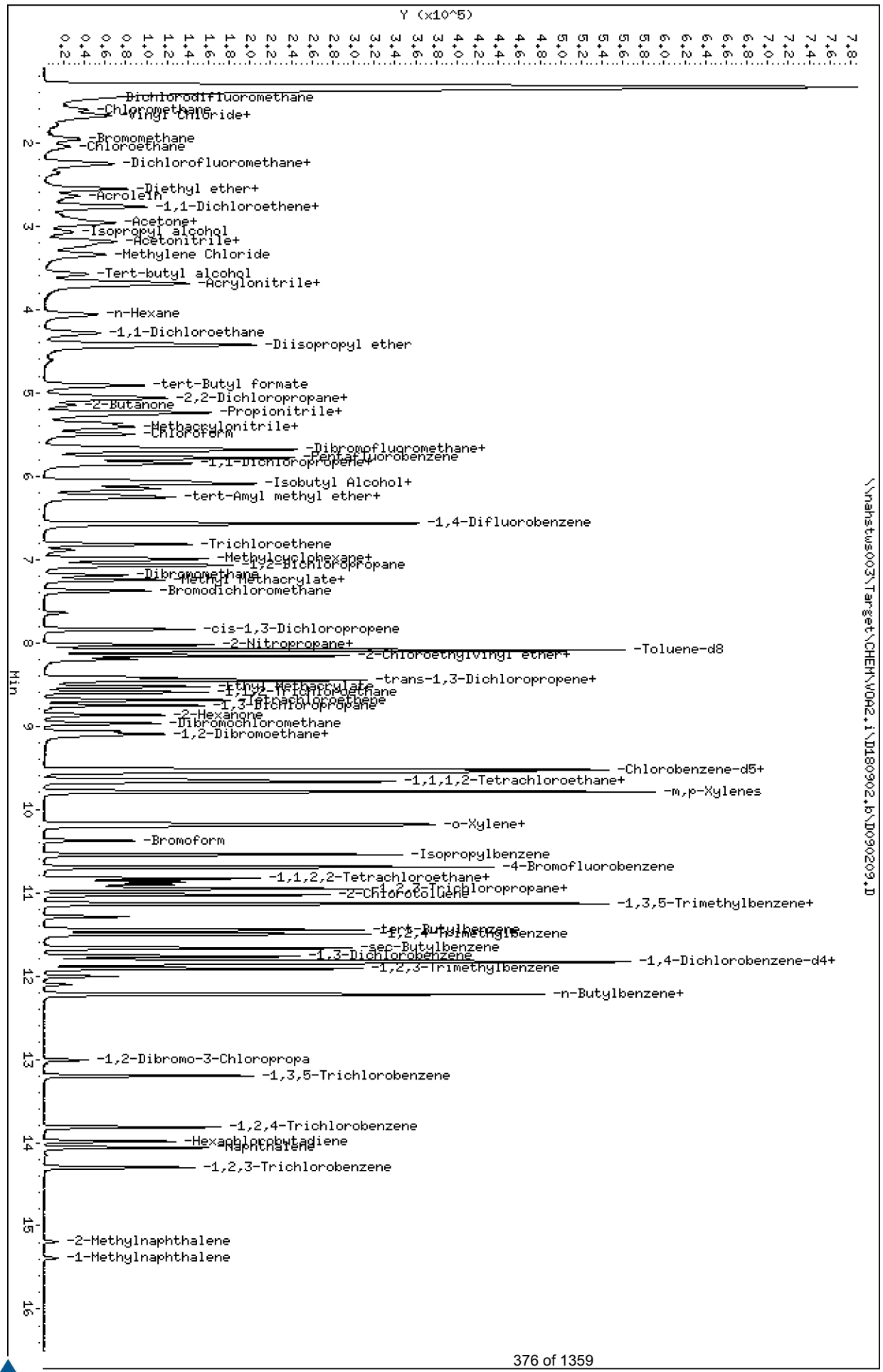
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
20	trans-1,2-Dichloroethene	96	3.674	3.677	(0.635)	47804	17.4427	17.44
21	Vinyl Acetate	43	5.243	5.243	(0.907)	107863	29.1866	29.18(M)
22	1,1-Dichloroethane	63	4.281	4.287	(0.740)	102364	16.2845	16.28
24	2-Butanone	43	5.141	5.147	(0.889)	44928	29.0941	29.09
25	Methacrylonitrile	41	5.407	5.407	(0.935)	53570	15.8498	15.84
26	2,2-Dichloropropane	77	5.041	5.051	(0.872)	64370	18.8157	18.81
27	cis-1,2-Dichloroethene	96	5.070	5.073	(0.877)	56738	17.1595	17.15
28	Chloroform	83	5.497	5.497	(0.951)	86859	16.4851	16.48
29	Bromochloromethane	128	5.372	5.372	(0.929)	27439	17.8121	17.81
$ 30	Dibromofluoromethane	113	5.683	5.689	(0.983)	93756	46.6316	46.63
31	1,1,1-Trichloroethane	97	5.651	5.661	(0.977)	71080	15.9933	15.99
32	1,1-Dichloropropene	75	5.853	5.860	(0.891)	58604	17.9901	17.99
33	1,2-Dichloroethane	62	6.145	6.148	(0.936)	64917	17.8281	17.82
34	Carbon Tetrachloride	117	5.837	5.837	(0.889)	55927	16.3809	16.38
$ 35	1,2-Dichloroethane-d4	65	6.062	6.062	(1.048)	106177	46.2856	46.28
* 36	1,4-Difluorobenzene	114	6.569	6.572	(1.000)	333482	50.0000	
37	Benzene	78	6.091	6.097	(0.927)	195541	17.1400	17.14
38	Trichloroethene	130	6.819	6.819	(1.038)	55217	18.1297	18.12
39	Bromodichloromethane	83	7.374	7.381	(1.123)	69071	17.9978	17.99
40	Methyl Methacrylate	41	7.246	7.249	(1.253)	53616	15.6753	15.67
41	2-Chloroethylvinyl ether	63	8.157	8.154	(1.242)	15758	34.0655	34.06
42	1,2-Dichloropropane	63	7.066	7.066	(1.076)	59873	18.0871	18.08(M)
43	2-Nitropropane	43	8.022	8.026	(1.387)	110367	15.3443	15.34
44	Dibromomethane	93	7.191	7.191	(1.095)	29369	17.9294	17.92
45	4-Methyl-2-Pentanone	43	8.022	8.026	(0.842)	110367	32.3180	32.31
46	cis-1,3-Dichloropropene	75	7.839	7.836	(1.193)	84270	19.6125	19.61
* 47	Chlorobenzene-d5	117	9.524	9.524	(1.000)	299849	50.0000	
$ 48	Toluene-d8	98	8.090	8.090	(0.849)	369590	44.5878	44.58
49	Ethyl Methacrylate	69	8.526	8.533	(1.298)	71043	17.1420	17.14
50	Toluene	91	8.157	8.157	(0.856)	203005	16.7822	16.78
51	trans-1,3-Dichloropropene	75	8.414	8.417	(1.281)	64696	19.4256	19.42
52	2-Hexanone	43	8.866	8.866	(0.931)	68216	30.7774	30.77
53	1,1,2-Trichloroethane	83	8.590	8.594	(0.902)	39764	17.2751	17.27
54	1,3-Dichloropropane	76	8.751	8.754	(0.919)	80111	17.6038	17.60
55	Dibromochloromethane	129	8.969	8.969	(0.942)	56716	17.6498	17.64
56	Tetrachloroethene	164	8.687	8.690	(0.912)	42991	17.6258	17.62
57	1,2-Dibromoethane	107	9.065	9.065	(0.952)	50337	18.1730	18.17
58	1-Chlorohexane	55	9.550	9.550	(1.454)	46496	16.8691	16.86
59	Chlorobenzene	112	9.550	9.553	(1.003)	133497	17.7940	17.79
60	1,1,1,2-Tetrachloroethane	131	9.643	9.643	(1.012)	53216	18.0658	18.06
61	Ethylbenzene	106	9.669	9.669	(1.015)	71119	18.5655	18.56
62	m,p-Xylenes	106	9.790	9.790	(1.028)	173305	37.4665	37.46
63	o-Xylene	106	10.176	10.176	(1.068)	91704	18.5141	18.51
64	Styrene	104	10.195	10.198	(1.070)	141893	17.7273	17.72
66	Bromoform	173	10.375	10.374	(1.089)	39601	17.6572	17.65
67	Isopropylbenzene	105	10.545	10.545	(1.107)	217276	16.8668	16.86
68	1,1,2,2-Tetrachloroethane	83	10.869	10.872	(0.918)	63712	15.0811	15.08
$ 69	4-Bromofluorobenzene	95	10.695	10.695	(1.123)	135111	50.8030	50.80
* 70	1,4-Dichlorobenzene-d4	152	11.835	11.835	(1.000)	132428	50.0000	
71	1,2,3-Trichloropropane	75	10.901	10.901	(0.921)	60231	15.1975	15.19
72	trans-1,4-Dichloro-2-butene	53	10.926	10.930	(1.147)	11688	15.0334	15.03
73	n-Propylbenzene	91	10.952	10.952	(0.925)	229859	16.8752	16.87
74	Bromobenzene	156	10.830	10.830	(0.915)	61361	17.1464	17.14
75	1,3,5-Trimethylbenzene	105	11.132	11.132	(0.941)	172889	15.7851	15.78

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 3
Report Date: 09-Oct-2018 14:40

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
76	2-Chlorotoluene	91	11.026	11.026	(0.932)	153405	17.2999	17.29
77	4-Chlorotoluene	91	11.138	11.138	(0.941)	162921	17.1319	17.13
78	tert-Butylbenzene	119	11.449	11.449	(0.967)	149956	17.1988	17.19
79	1,2,4-Trimethylbenzene	105	11.498	11.498	(0.972)	169815	16.5065	16.50
81	sec-Butylbenzene	105	11.664	11.668	(0.986)	201493	15.2587	15.25
82	p-Isopropyltoluene	119	11.815	11.815	(0.998)	163875	15.0002	15.00
83	1,3-Dichlorobenzene	146	11.764	11.764	(0.994)	102074	16.5854	16.58
84	1,4-Dichlorobenzene	146	11.854	11.857	(1.002)	93953	16.3480	16.34
87	n-Butylbenzene	91	12.220	12.220	(1.033)	123012	15.2198	15.21
88	1,2-Dichlorobenzene	146	12.220	12.223	(1.033)	100672	16.5831	16.58
89	1,2-Dibromo-3-Chloropropane	75	13.006	13.009	(1.099)	9251	13.9003	13.90
90	1,2,4-Trichlorobenzene	180	13.814	13.814	(1.167)	55448	16.3203	16.32
91	Hexachlorobutadiene	225	13.985	13.984	(1.182)	25528	15.8715	15.87
92	Naphthalene	128	14.062	14.058	(1.188)	126078	14.8214	14.82
93	1,2,3-Trichlorobenzene	182	14.302	14.299	(1.209)	46526	15.4473	15.44
146	Methyl acetate	43	3.238	3.244	(0.560)	48635	13.5759	13.57
138	Freon TF	101	2.773	2.779	(0.480)	31823	13.8606	13.86
139	Diethyl ether	59	2.548	2.558	(0.441)	80573	14.8982	14.89
147	Methylcyclohexane	83	6.992	6.989	(1.064)	58996	14.9580	14.95
135	1,4-Dioxane	88	7.239	7.239	(1.252)	8929	280.243	280.24
132	n-Butanol	56	6.996	6.995	(1.210)	30340	281.722	281.72
131	Methyl Acrylate	55	5.266	5.266	(0.911)	81874	15.2553	15.25
133	Ethyl Acrylate	55	7.008	7.012	(1.212)	138202	14.3228	14.32
136	n-Hexane	57	4.069	4.075	(0.704)	34313	9.43996	9.43
141	Cyclohexane	56	5.686	5.696	(0.983)	73126	12.9035	12.90
142	Tetrahydrofuran	42	5.423	5.423	(0.938)	36295	29.4676	29.46
148	Tert-butyl alcohol	59	3.581	3.575	(0.619)	86800	252.195	252.19
149	Isopropyl alcohol	45	3.068	3.077	(0.531)	65578	299.626	299.62(M)
151	4-Methyl-2-pentanol	45	8.449	8.452	(0.887)	232667	327.007	327.00
166	1,2,3-Trimethylbenzene	105	11.912	11.915	(1.007)	162851	16.7321	16.73
167	Ethanol	45	2.551	2.558	(0.441)	78177	282.699	282.69
170	1,3,5-Trichlorobenzene	180	13.202	13.202	(1.116)	66750	16.8971	16.89
172	tert-Butyl formate	59	4.910	4.916	(0.849)	128566	32.5469	32.54
173	3,3-Dimethyl-1-butanol	57	9.094	9.094	(0.955)	82084	311.580	311.58
174	tert-Amyl methyl ether	73	6.257	6.264	(1.082)	114848	15.0195	15.01
175	tert-Butyl ethyl ether	59	6.235	6.238	(1.078)	55023	13.2685	13.26
176	tert-Amyl alcohol	59	6.235	6.238	(1.078)	55023	265.371	265.37
157	2-Methylnaphthalene	142	15.185	15.188	(1.283)	7293	7.72392	7.72
156	Diisopropyl ether	45	4.425	4.432	(0.765)	197173	16.4129	16.41
171	1-Methylnaphthalene	142	15.387	15.384	(1.300)	8225	7.29091	7.29
130	Ethyl Acetate	43	5.243	5.243	(0.907)	104586	14.2352	14.23
M 94	1,2-Dichloroethylene (total)	96				104542	34.6022	34.60
M 95	Xylenes (total)	106				265009	55.9805	55.98

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D
Date : 02-SEP-2018 16:42
Client ID: HS18081428-01MSD
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

\\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 2

Date : 02-SEP-2018 16:42

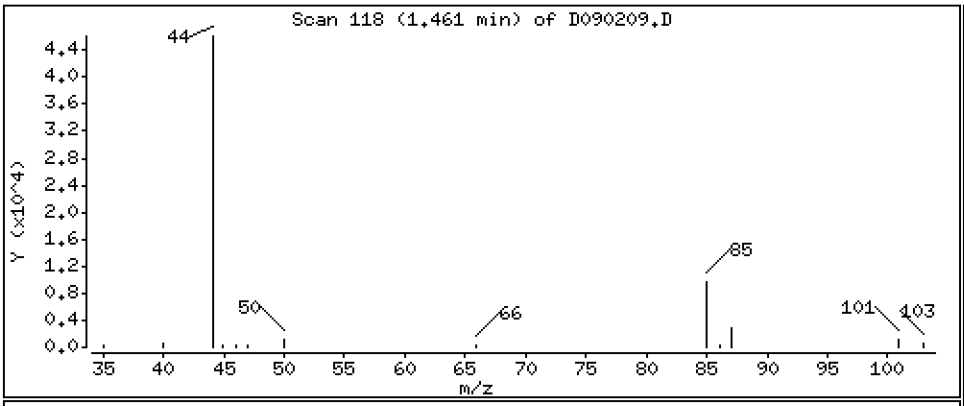
Client ID: HS18081428-01MSD Instrument: VOA2.i

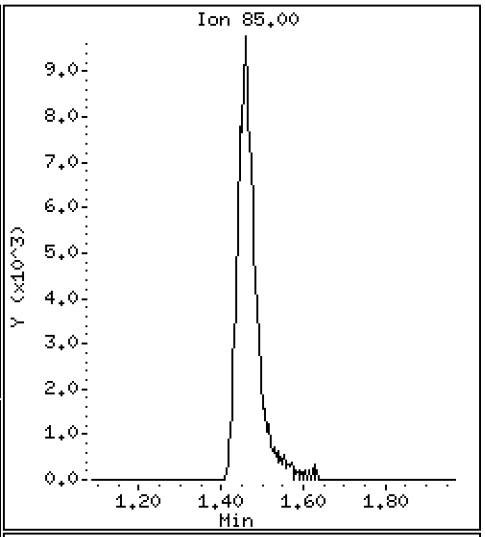
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

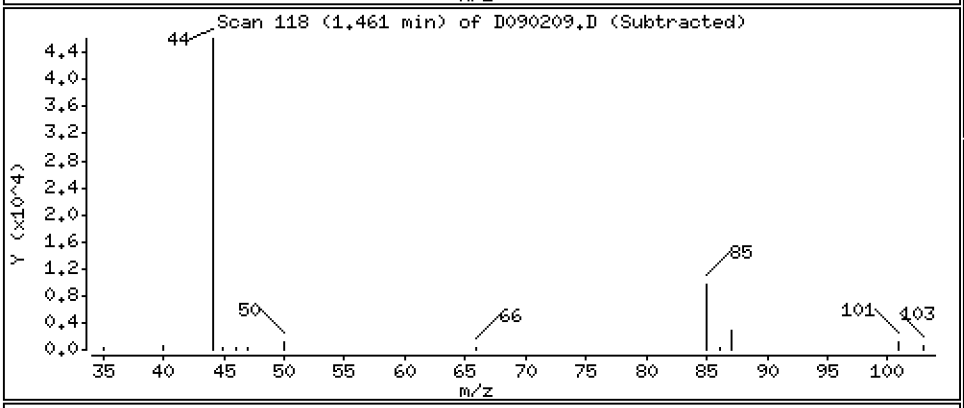
Purge Volume: 5.0 Operator: AP

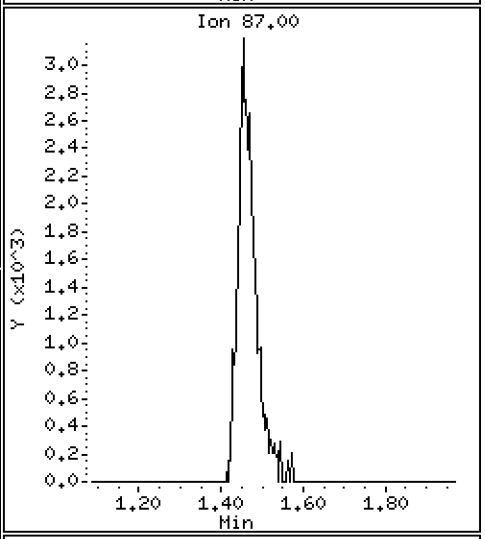
Column phase: DB624 Column diameter: 0.18

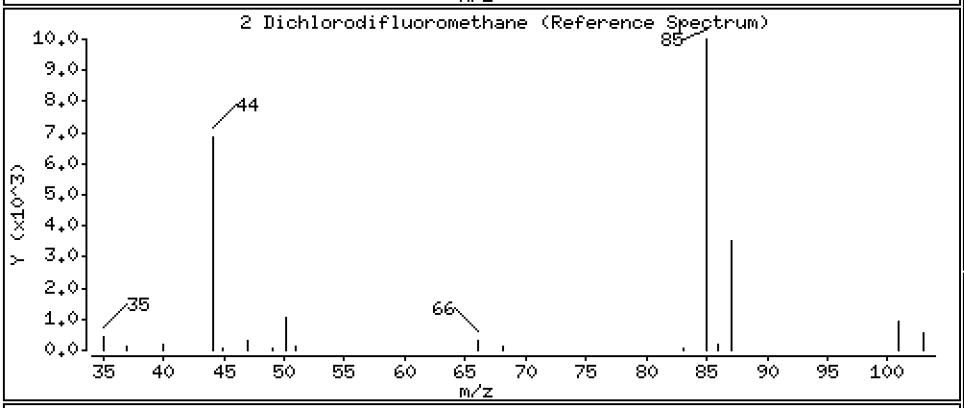
2 Dichlorodifluoromethane Concentration: 12.84 ug/l Review Code:

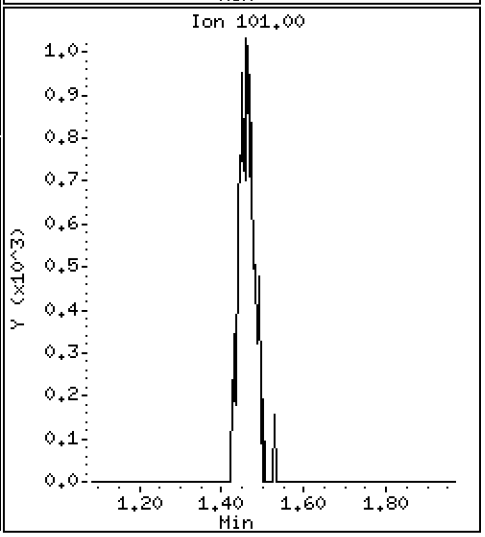


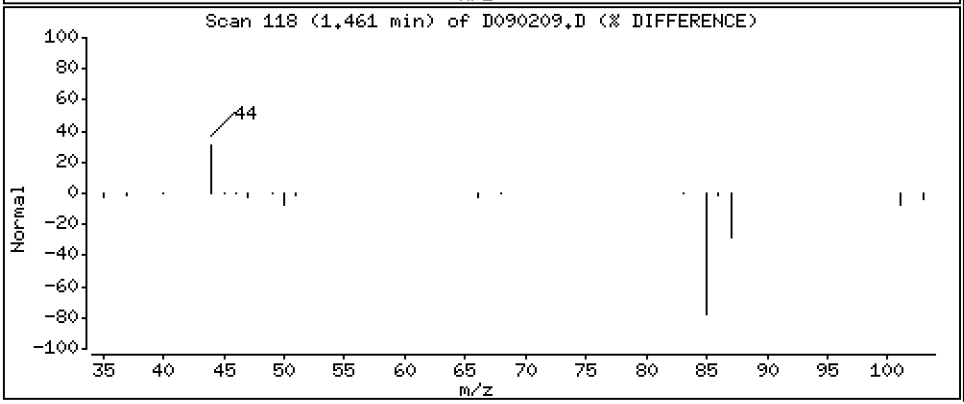












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 3

Date : 02-SEP-2018 16:42

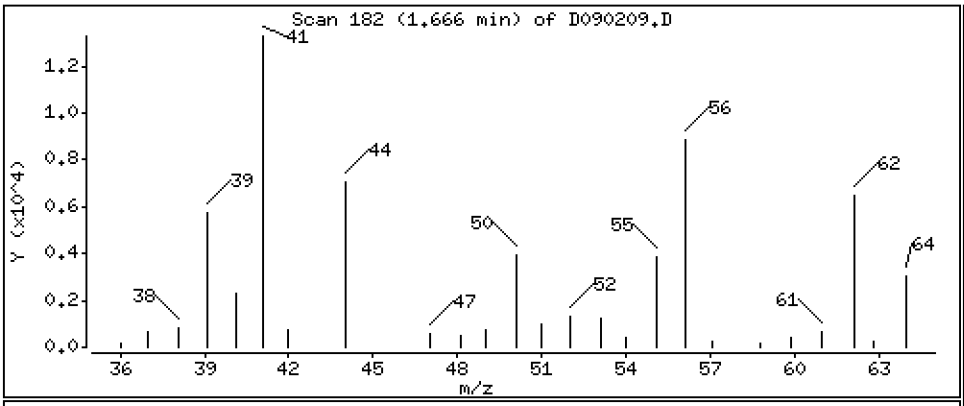
Client ID: HS18081428-01MSD Instrument: VOA2.i

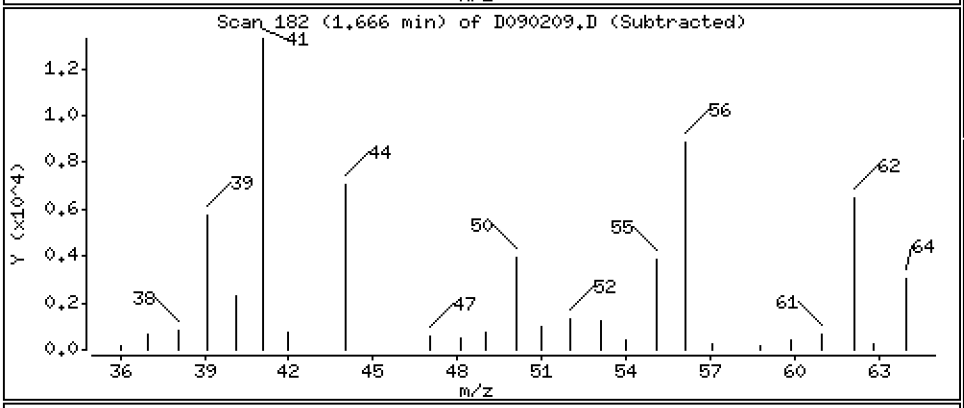
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

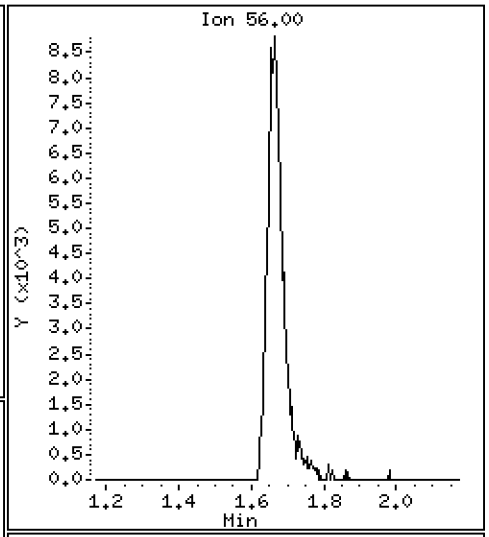
Purge Volume: 5.0 Operator: AP

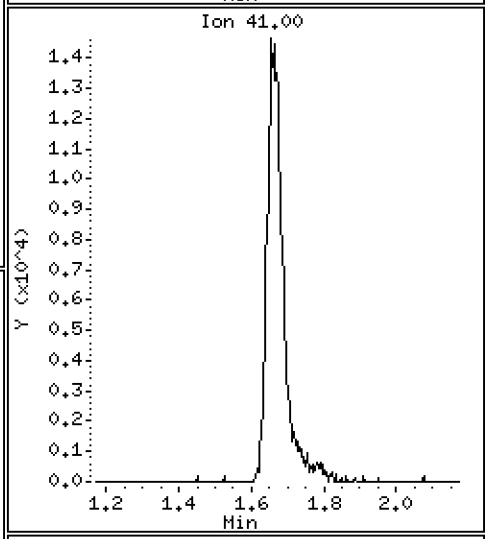
Column phase: DB624 Column diameter: 0.18

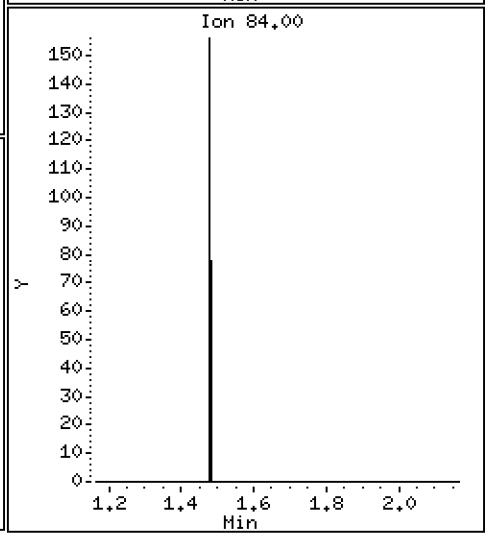
186 Isobutylene Concentration: 6.63 ug/l Review Code:











Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 4

Date : 02-SEP-2018 16:42

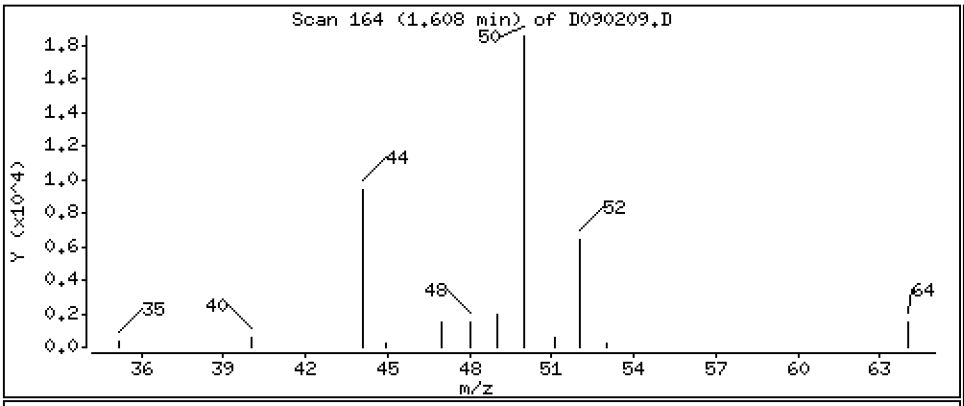
Client ID: HS18081428-01MSD Instrument: VOA2.i

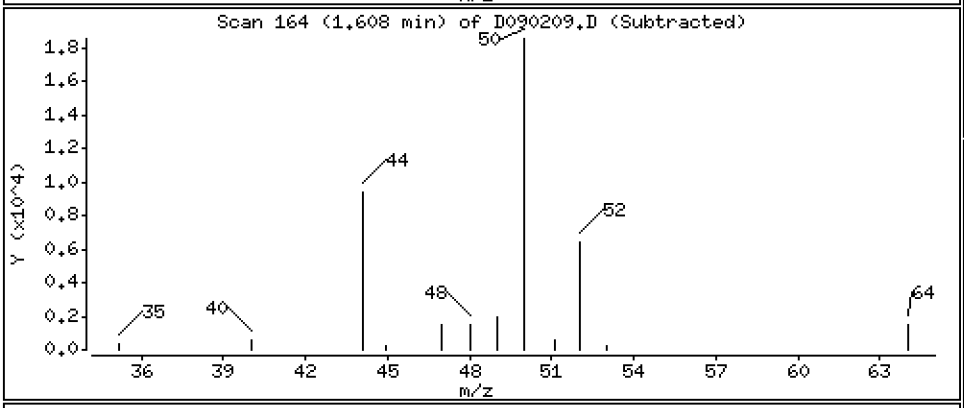
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

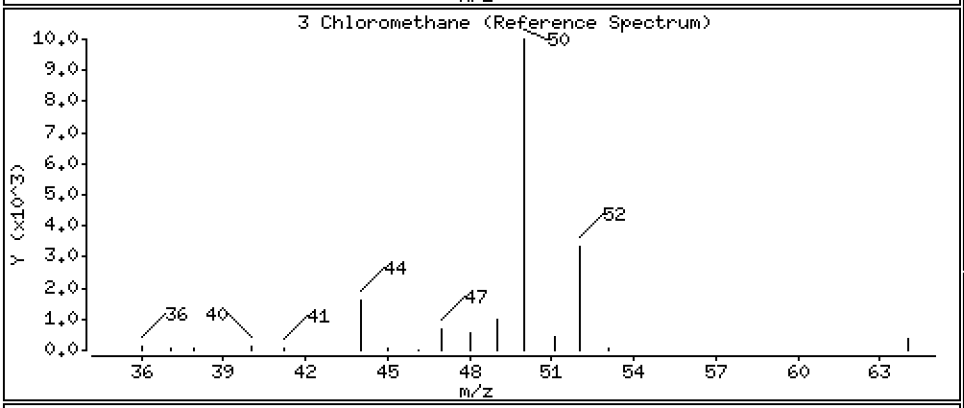
Purge Volume: 5.0 Operator: AP

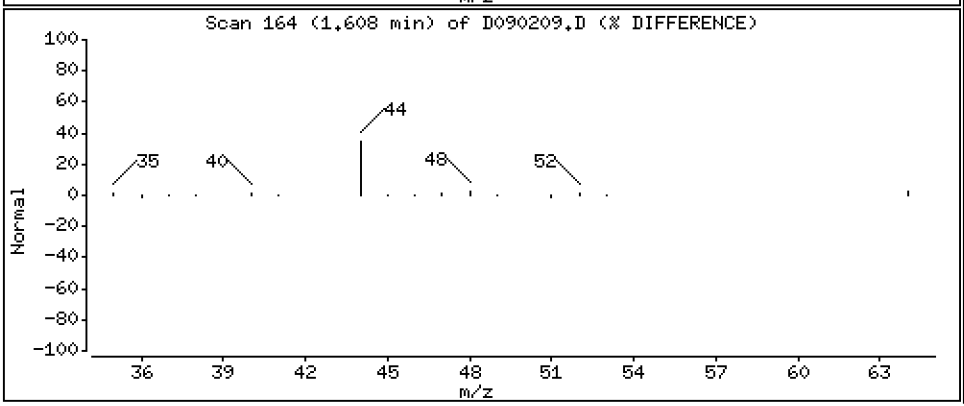
Column phase: DB624 Column diameter: 0.18

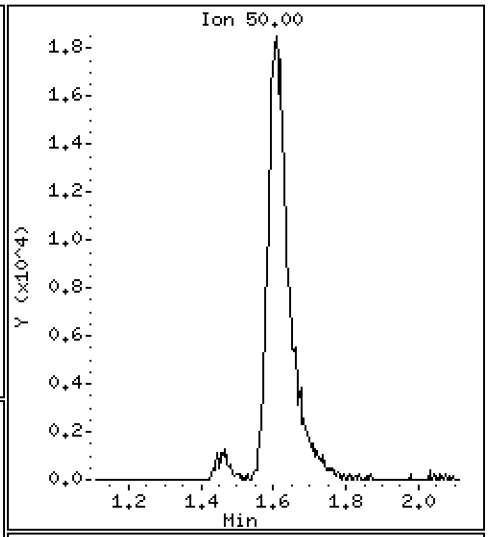
3 Chloromethane Concentration: 13.40 ug/l Review Code:

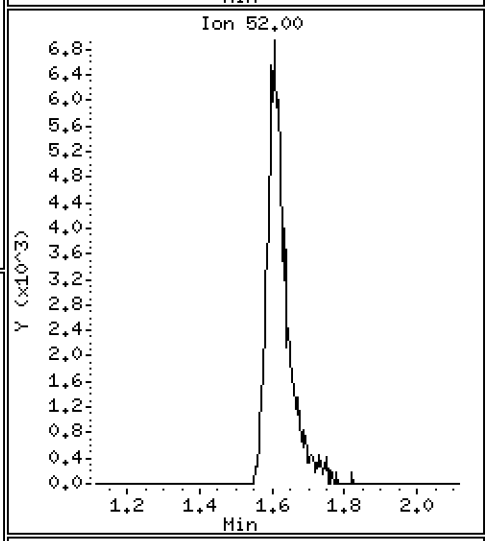


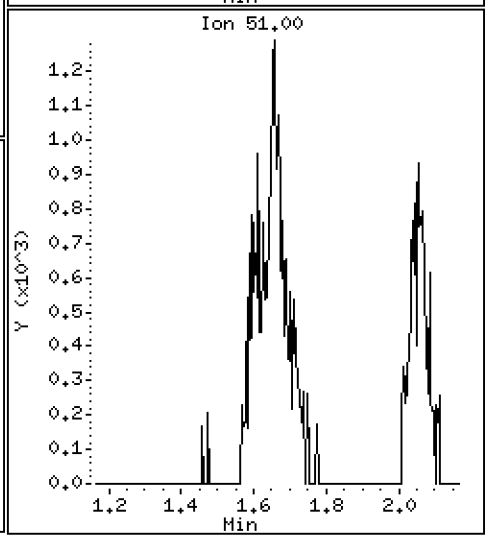












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 5

Date : 02-SEP-2018 16:42

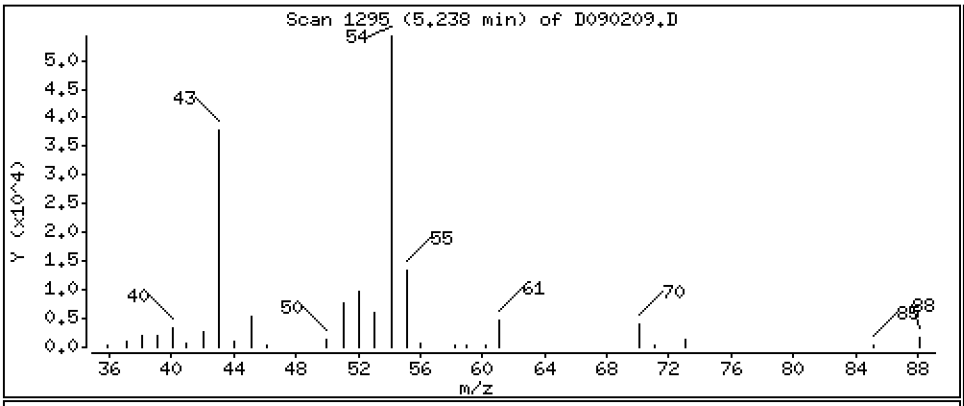
Client ID: HS18081428-01MSD Instrument: VOA2.i

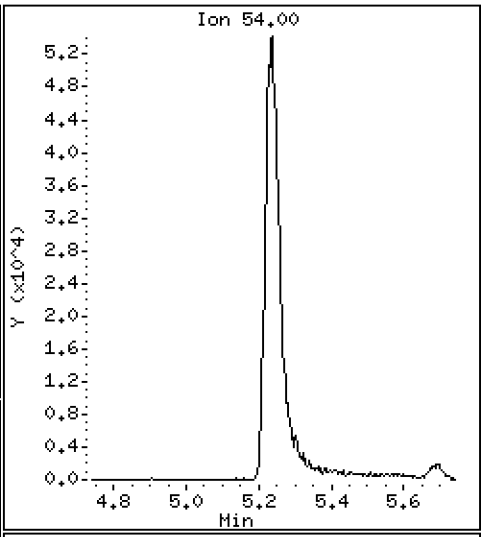
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

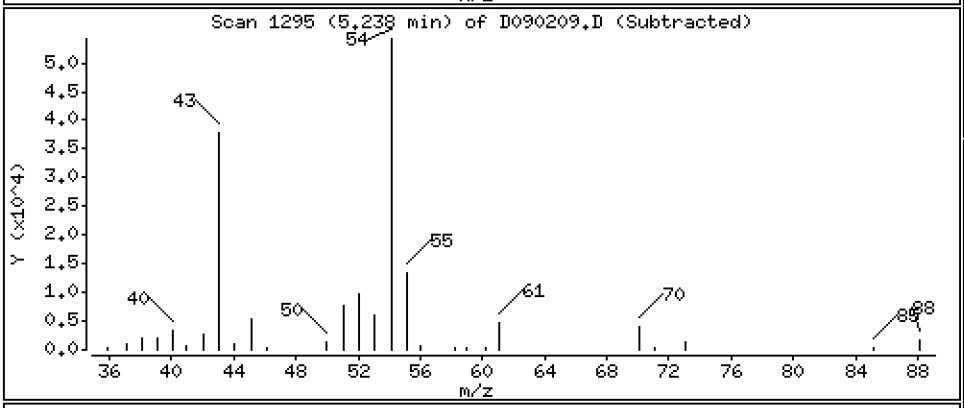
Purge Volume: 5.0 Operator: AP

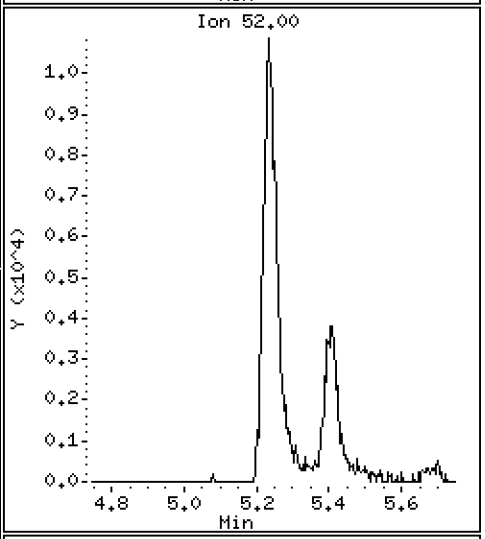
Column phase: DB624 Column diameter: 0.18

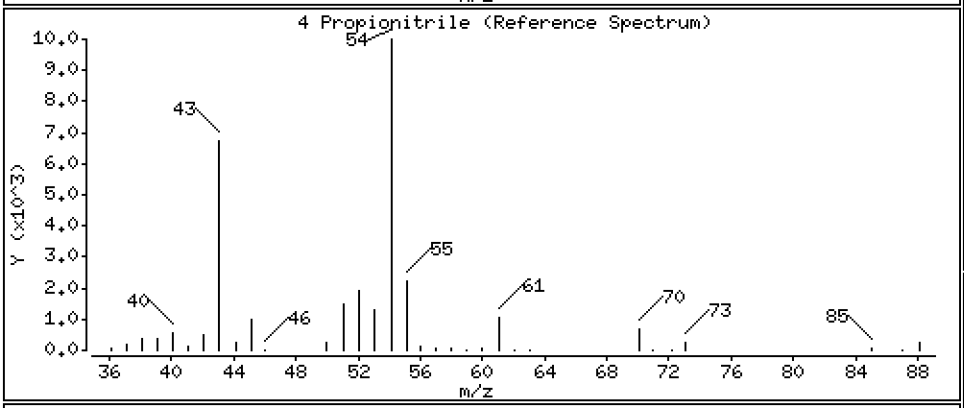
4 Propionitrile Concentration: 155.00 ug/l Review Code:

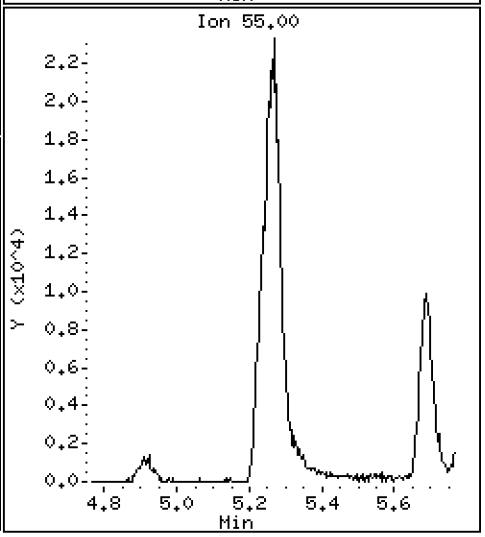


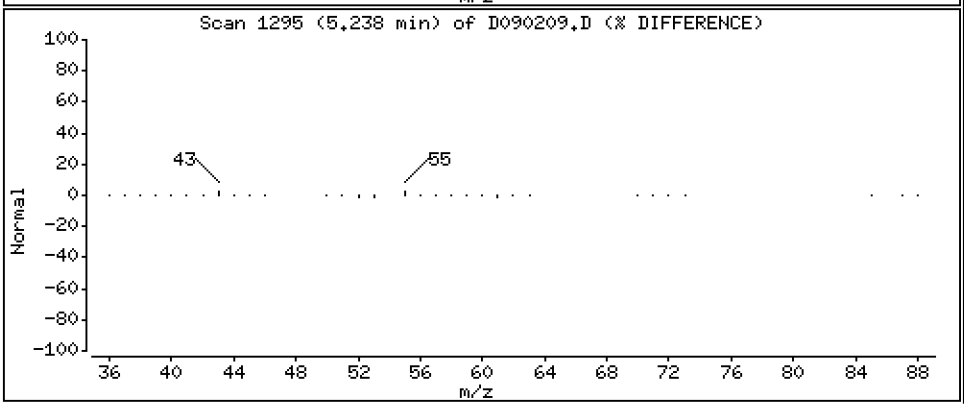












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 6

Date : 02-SEP-2018 16:42

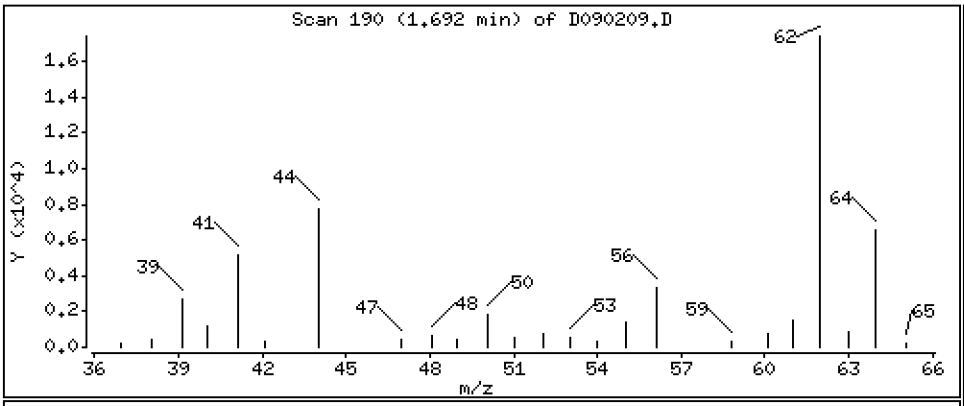
Client ID: HS18081428-01MSD Instrument: VOA2.i

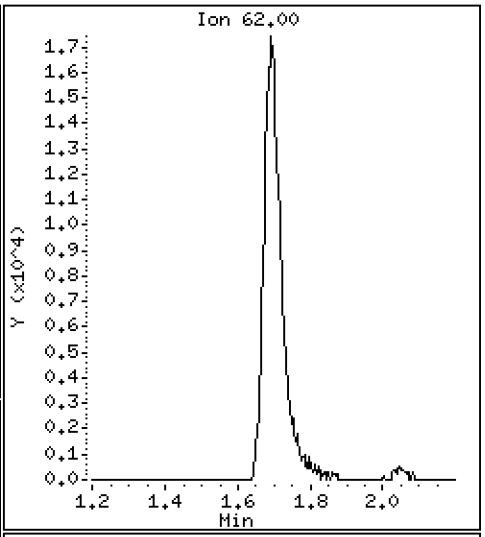
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

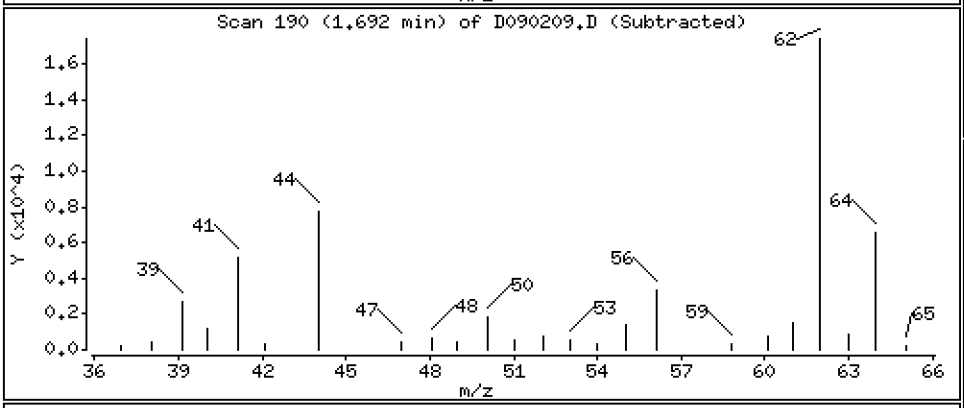
Purge Volume: 5.0 Operator: AP

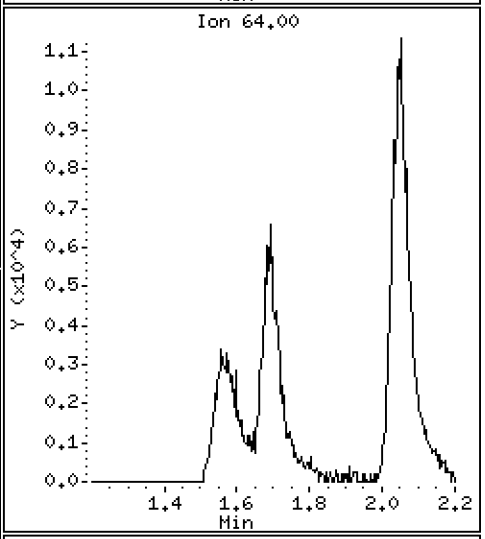
Column phase: DB624 Column diameter: 0.18

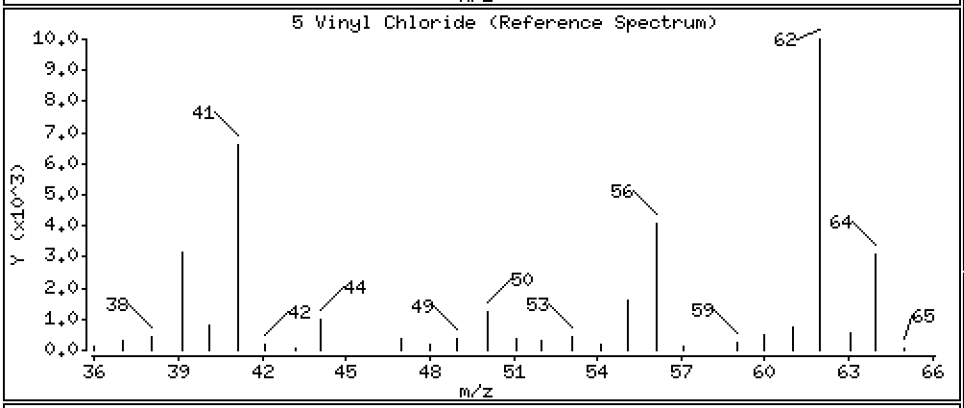
5 Vinyl Chloride Concentration: 15.39 ug/l Review Code:

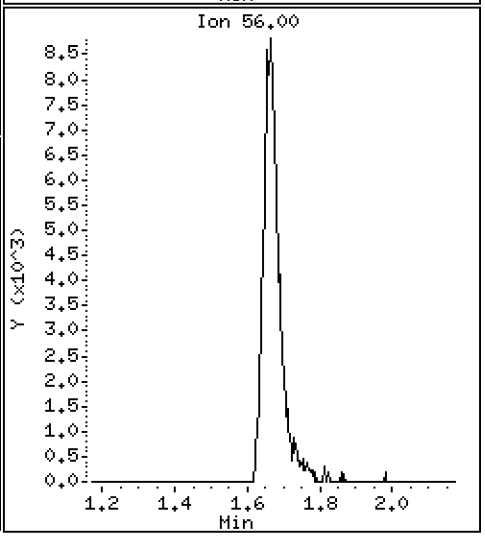


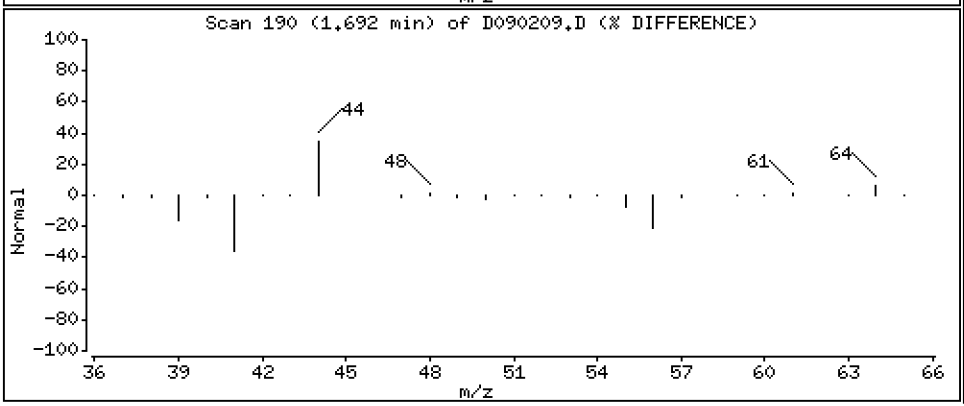












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 7

Date : 02-SEP-2018 16:42

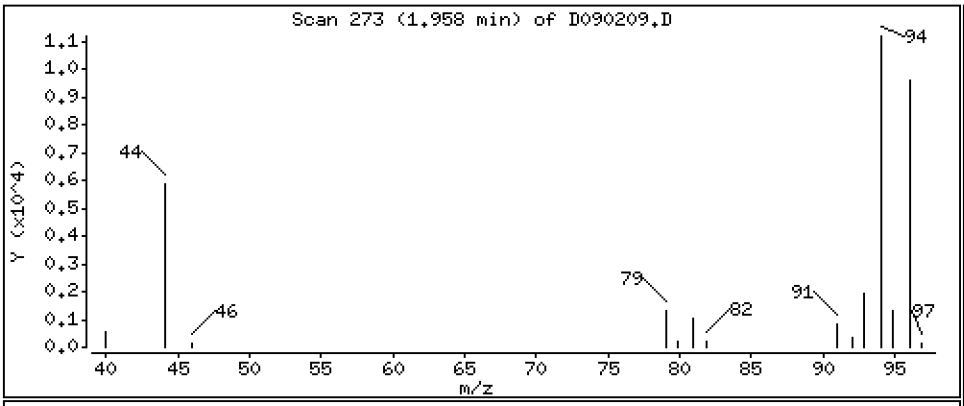
Client ID: HS18081428-01MSD Instrument: VOA2.i

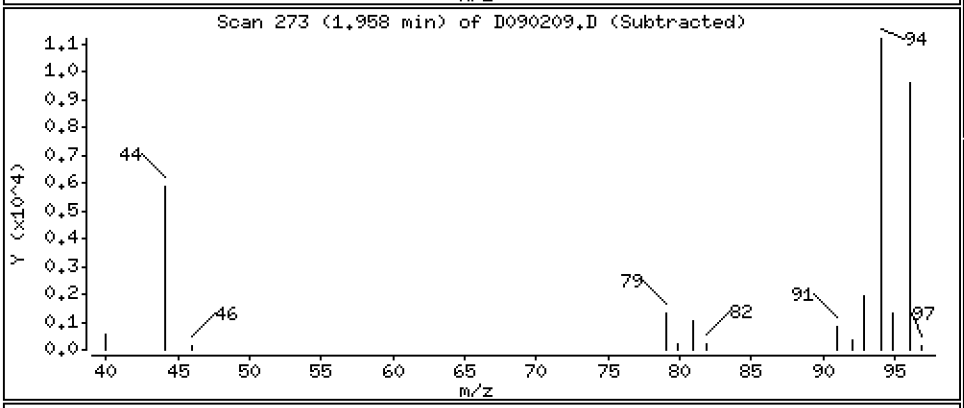
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

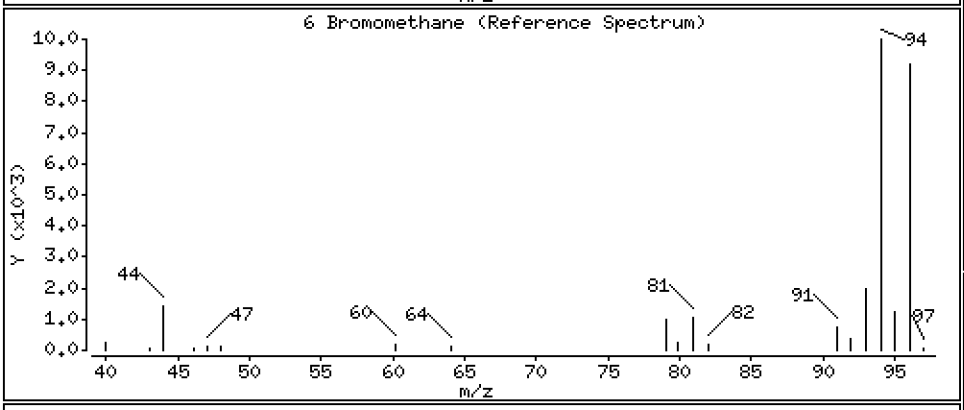
Purge Volume: 5.0 Operator: AP

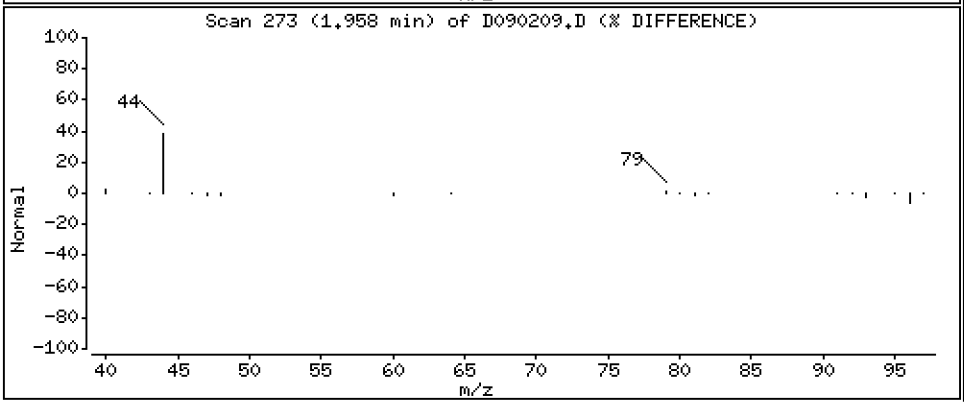
Column phase: DB624 Column diameter: 0.18

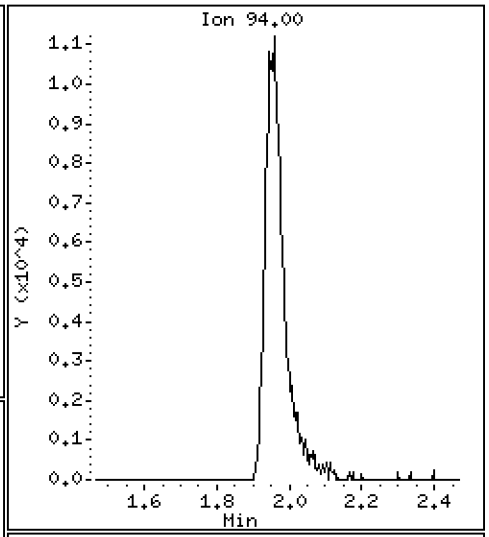
6 Bromomethane Concentration: 18.65 ug/l Review Code:

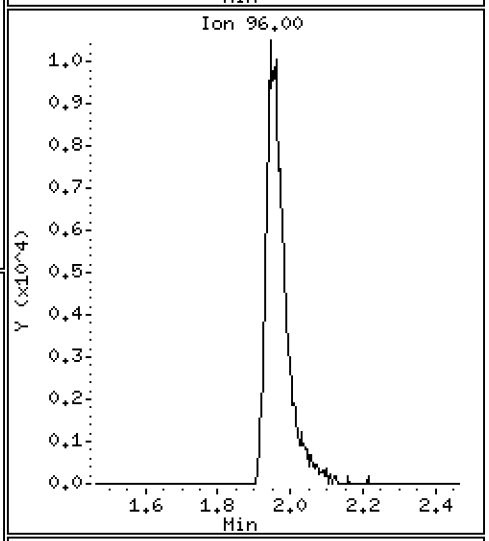


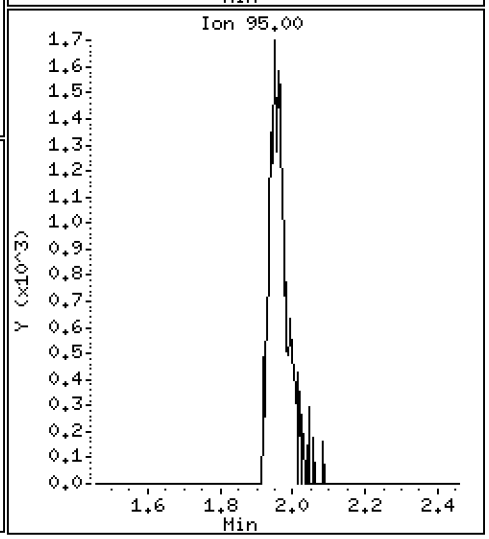












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 8

Date : 02-SEP-2018 16:42

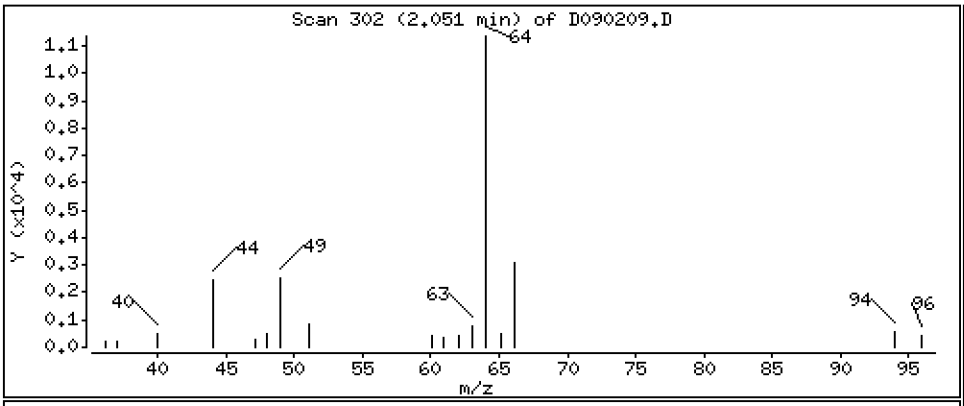
Client ID: HS18081428-01MSD Instrument: VOA2.i

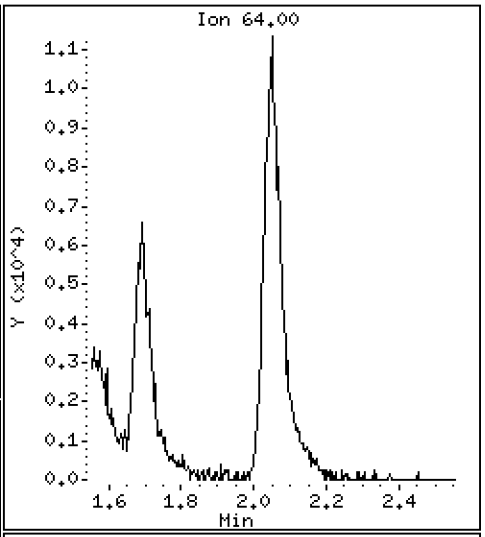
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

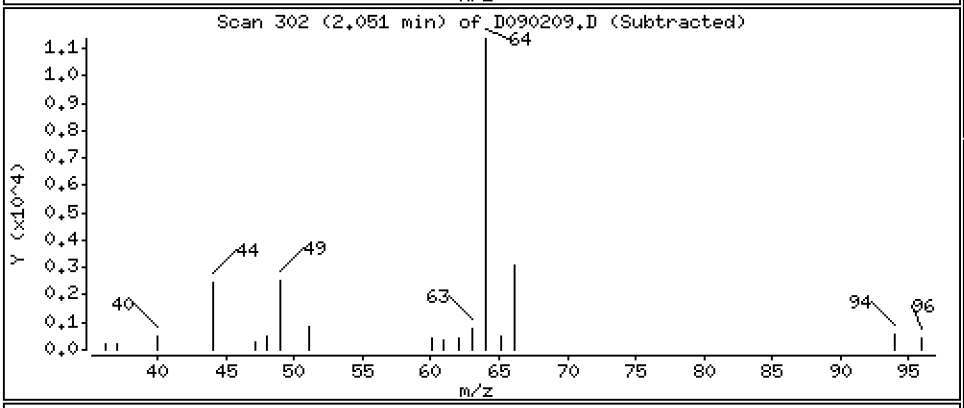
Purge Volume: 5.0 Operator: AP

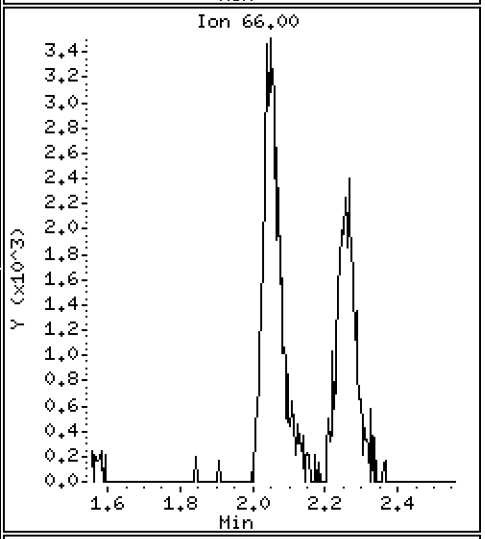
Column phase: DB624 Column diameter: 0.18

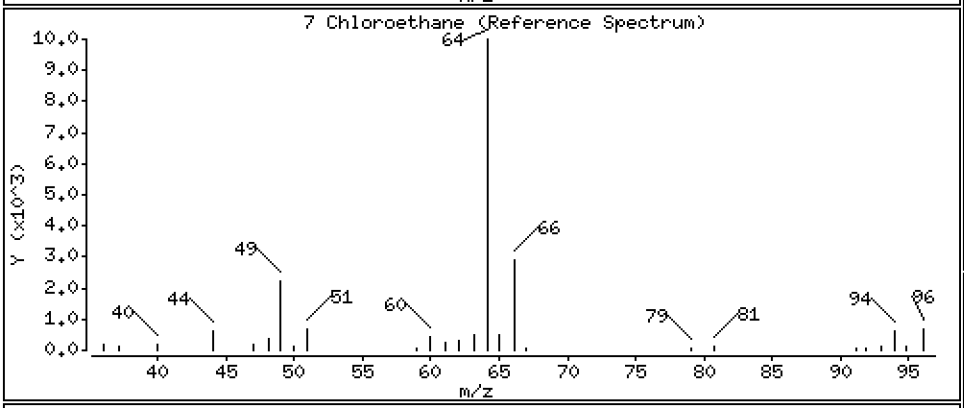
7 Chloroethane Concentration: 16.19 ug/l Review Code:

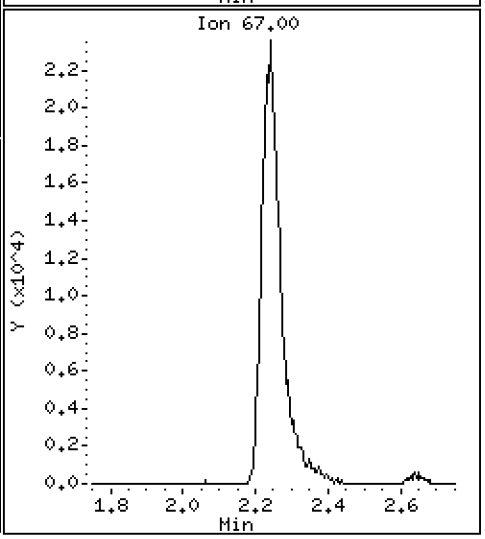


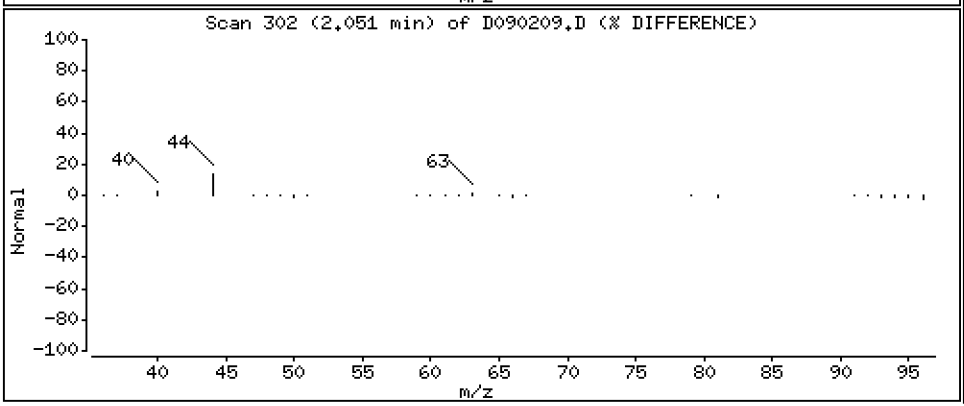












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 9

Date : 02-SEP-2018 16:42

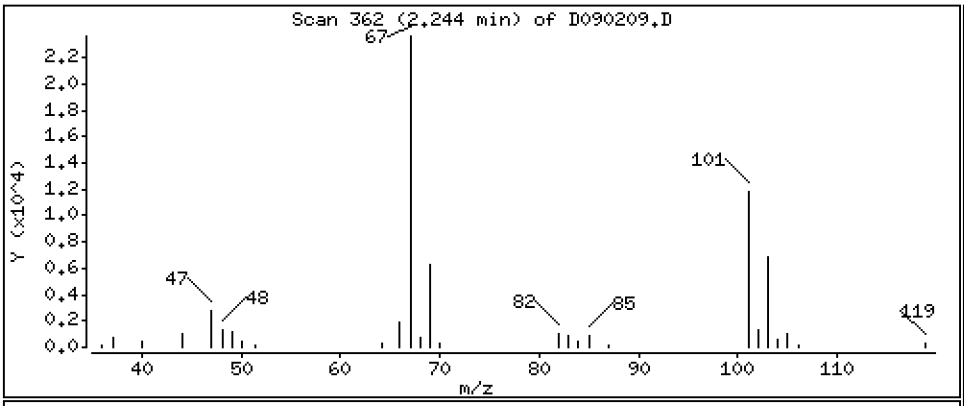
Client ID: HS18081428-01MSD Instrument: VOA2.i

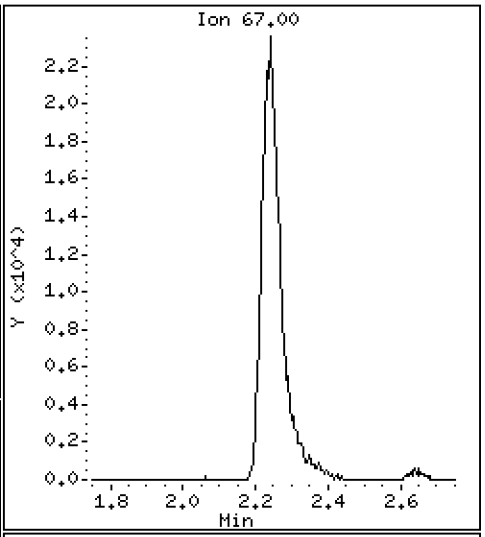
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

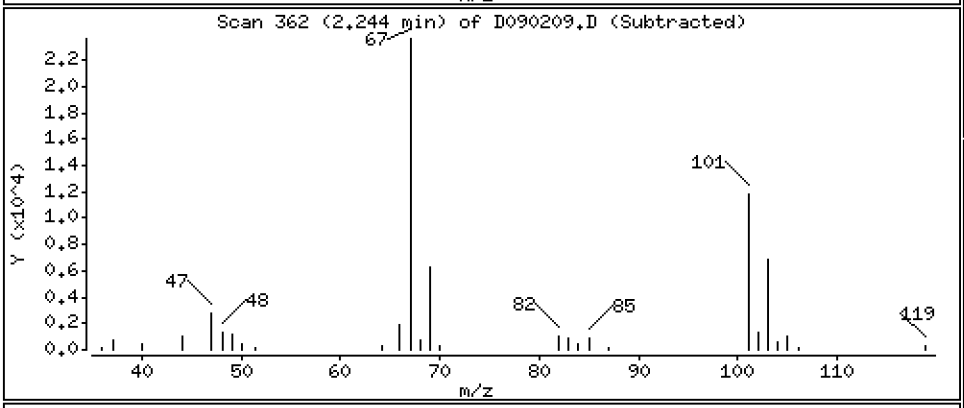
Purge Volume: 5.0 Operator: AP

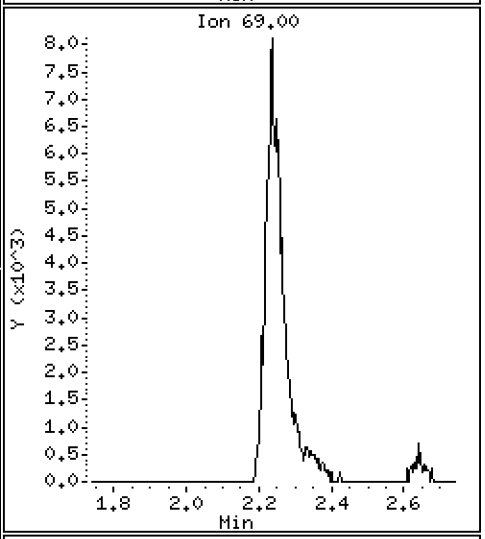
Column phase: DB624 Column diameter: 0.18

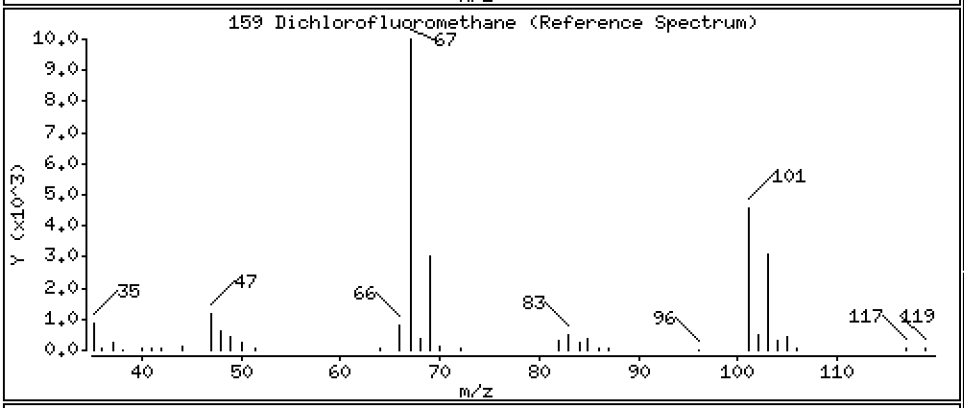
159 Dichlorofluoromethane Concentration: 15.07 ug/l Review Code:

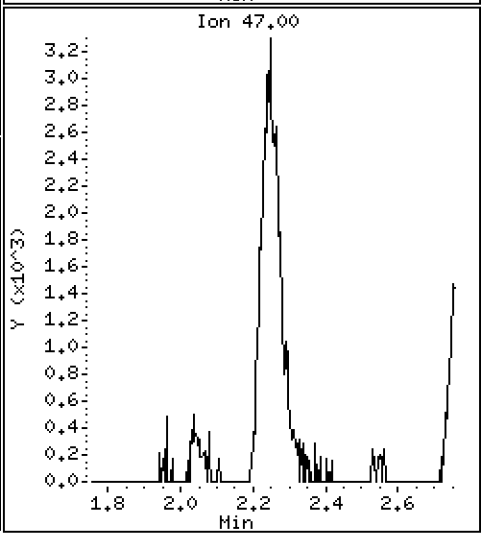


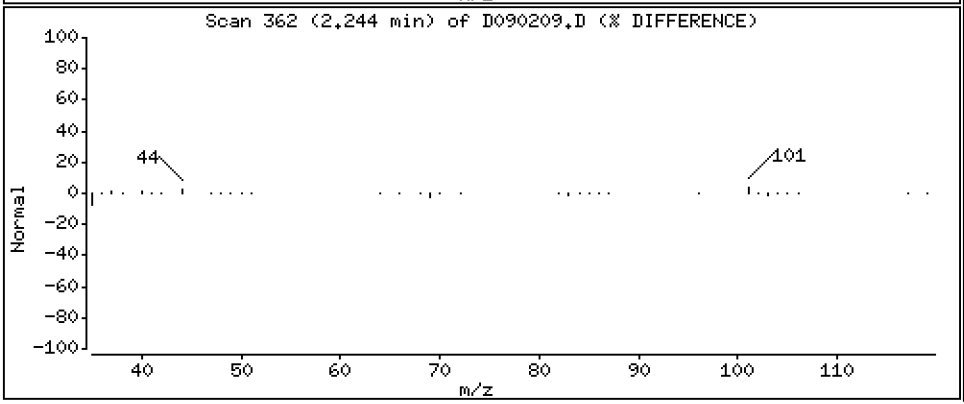












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 10

Date : 02-SEP-2018 16:42

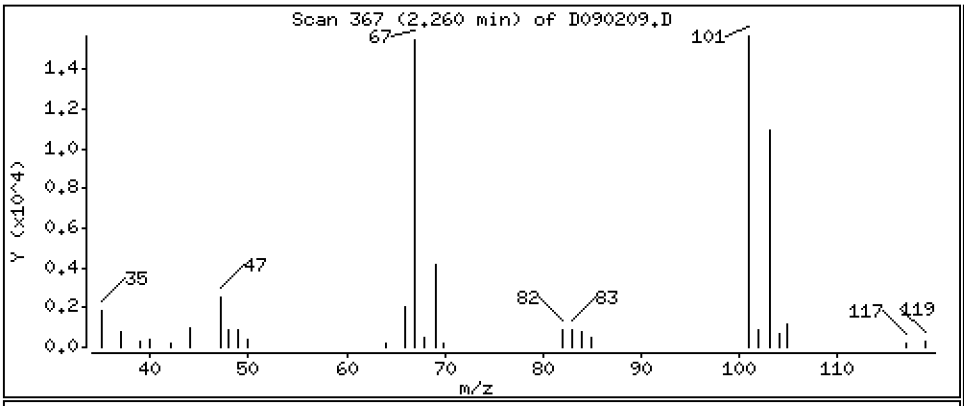
Client ID: HS18081428-01MSD Instrument: VOA2.i

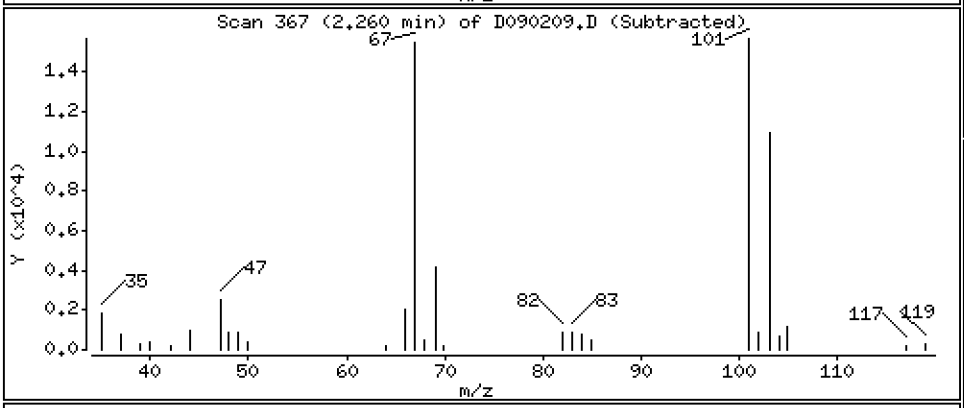
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

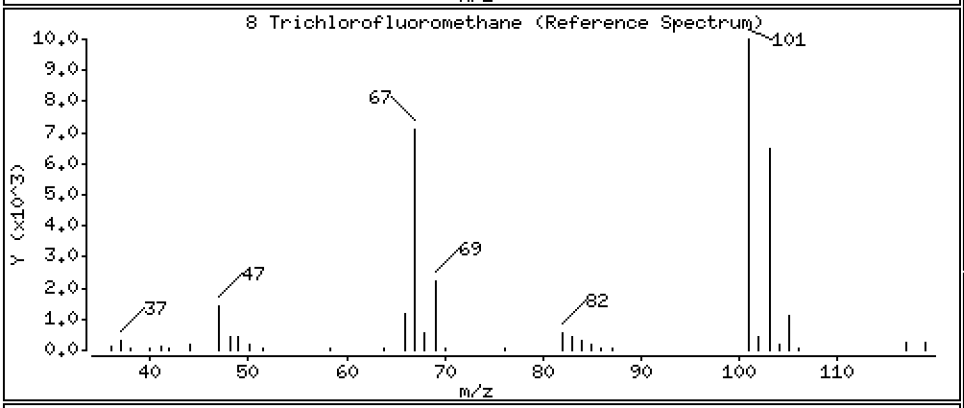
Purge Volume: 5.0 Operator: AP

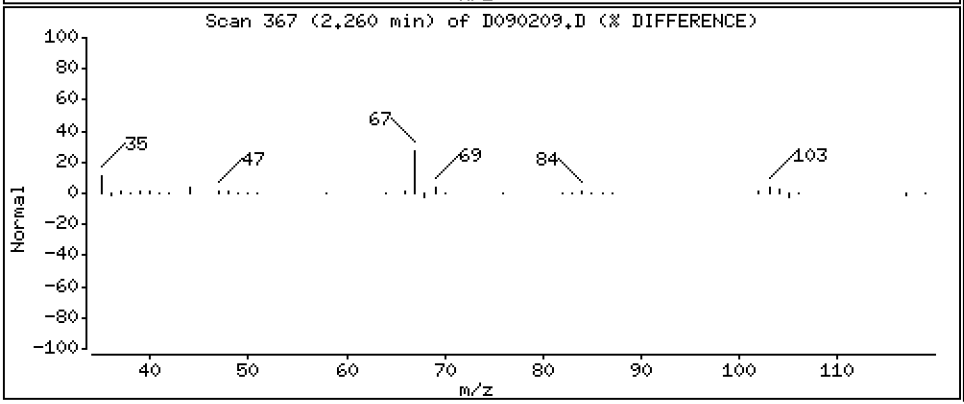
Column phase: DB624 Column diameter: 0.18

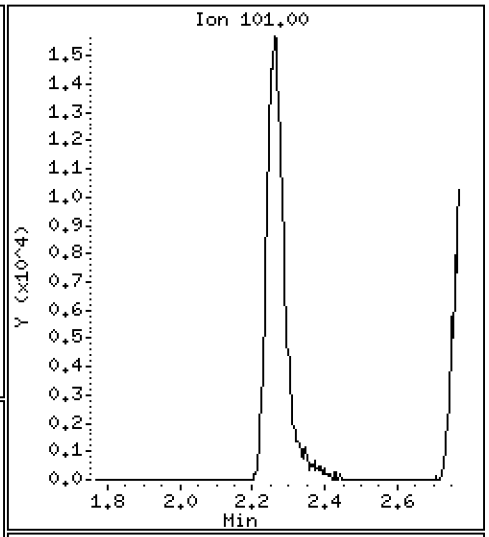
8 Trichlorofluoromethane Concentration: 14.18 ug/l Review Code:

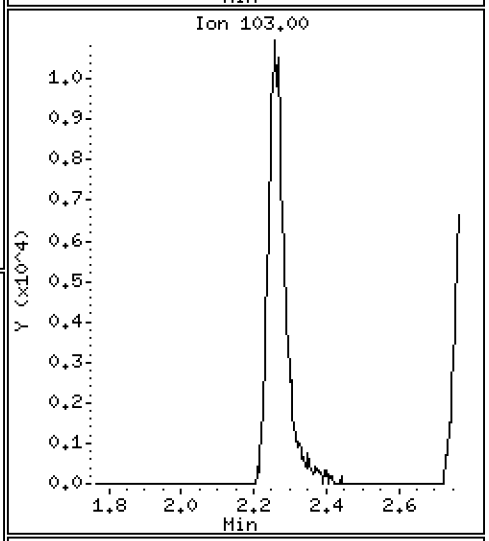


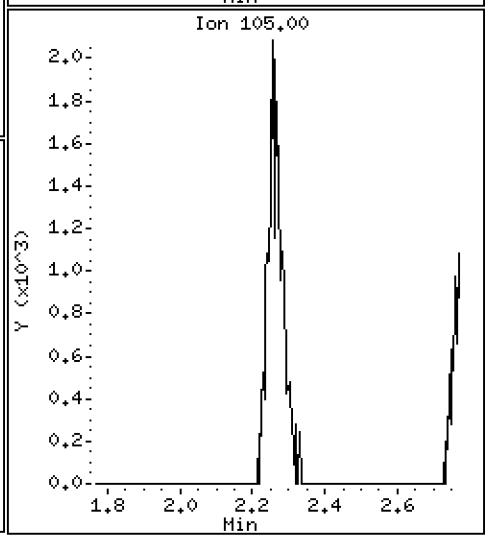












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 11

Date : 02-SEP-2018 16:42

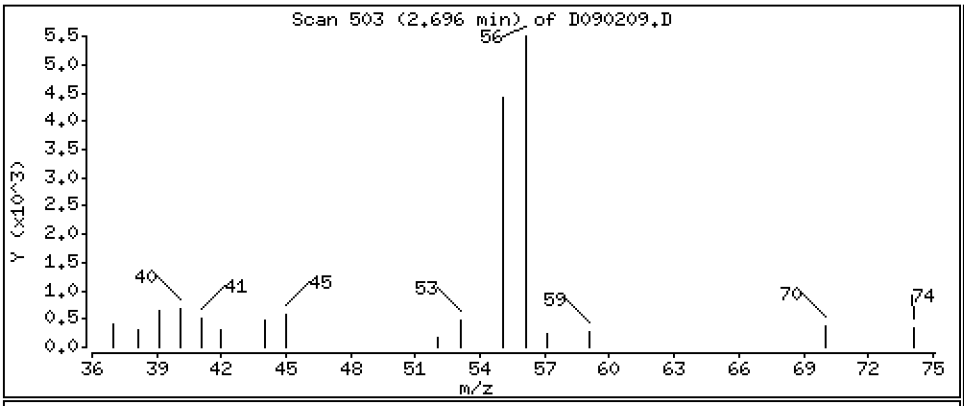
Client ID: HS18081428-01MSD Instrument: VOA2.i

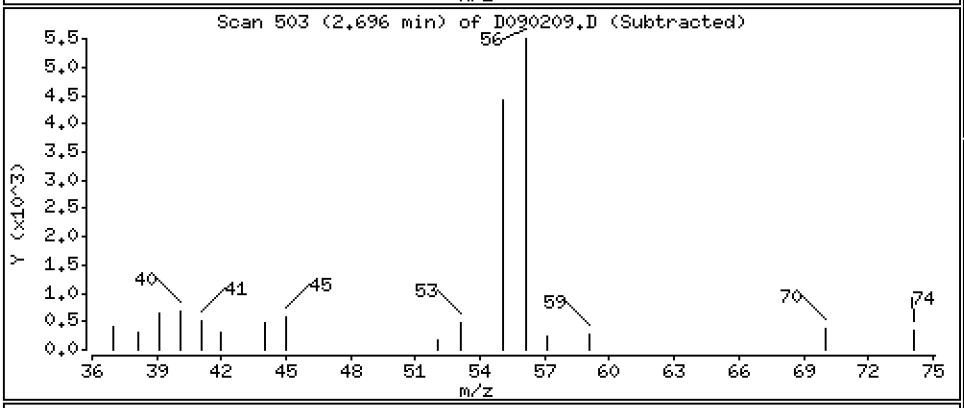
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

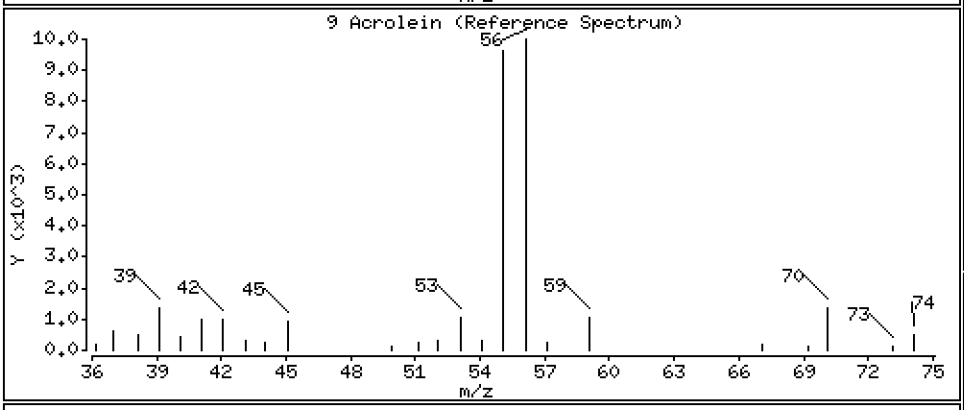
Purge Volume: 5.0 Operator: AP

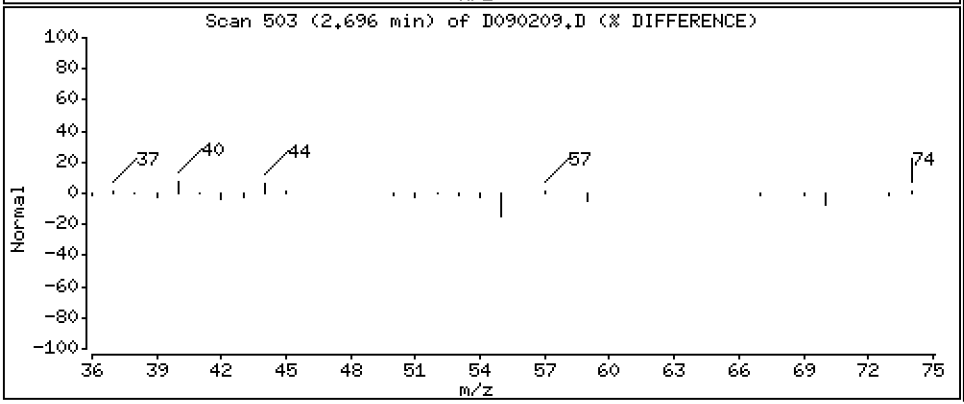
Column phase: DB624 Column diameter: 0.18

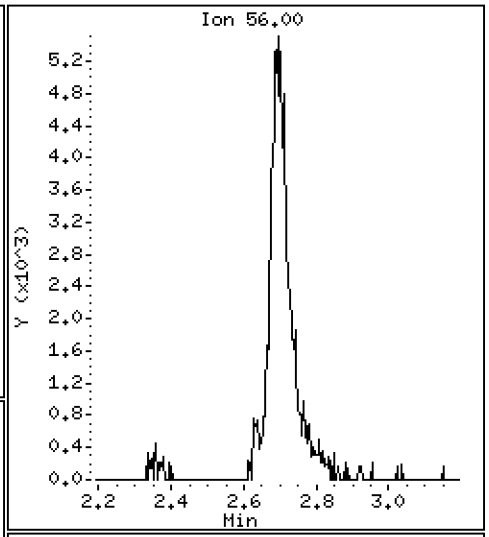
9 Acrolein Concentration: 21.03 ug/l Review Code:

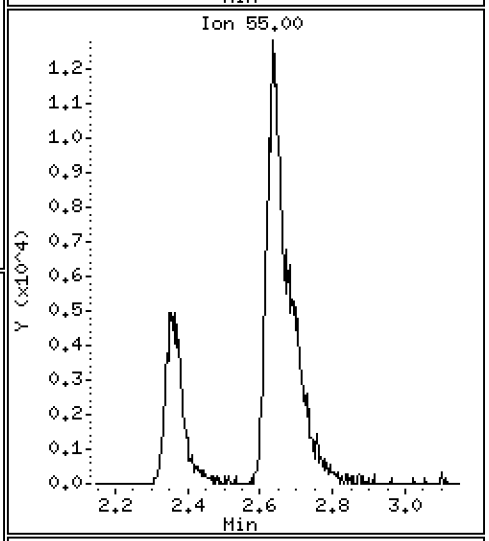


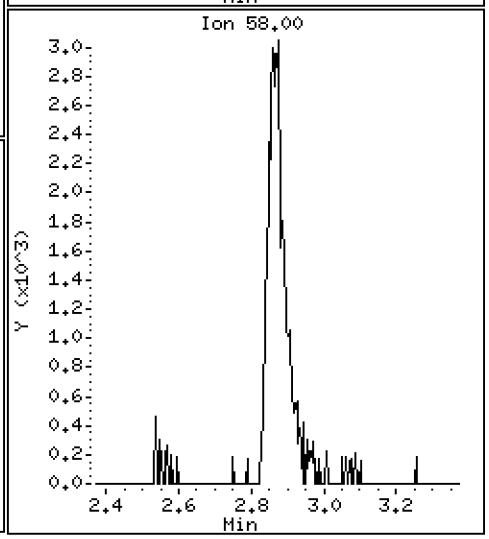












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Date : 02-SEP-2018 16:42

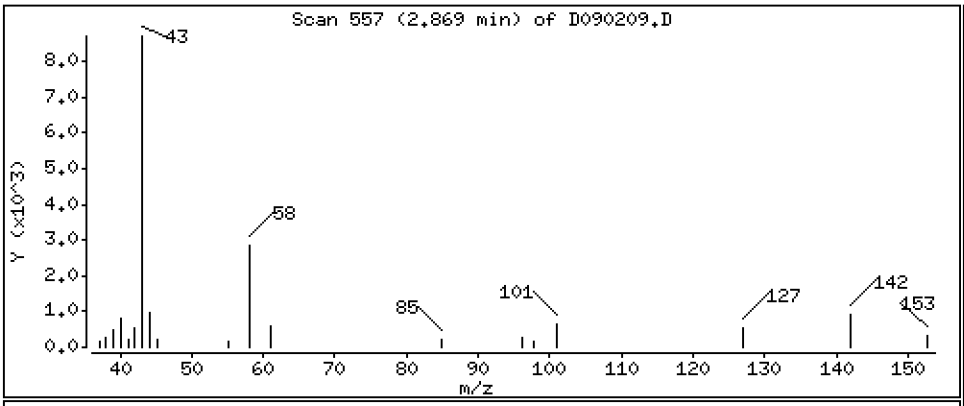
Client ID: HS18081428-01MSD Instrument: VOA2.i

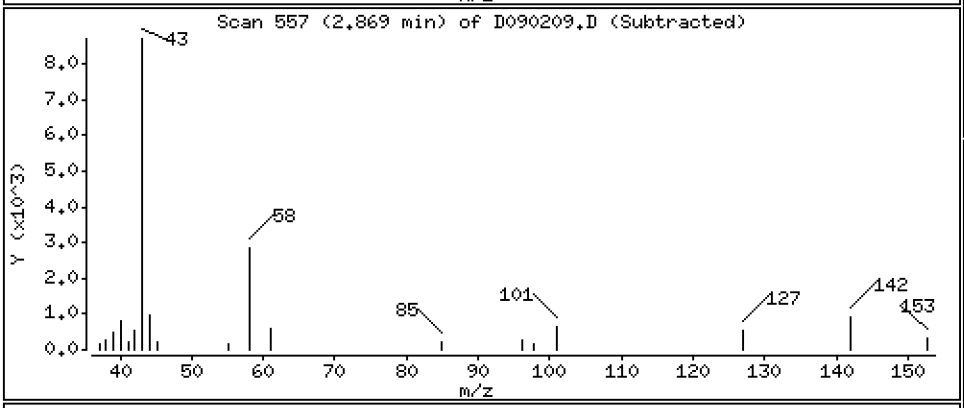
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

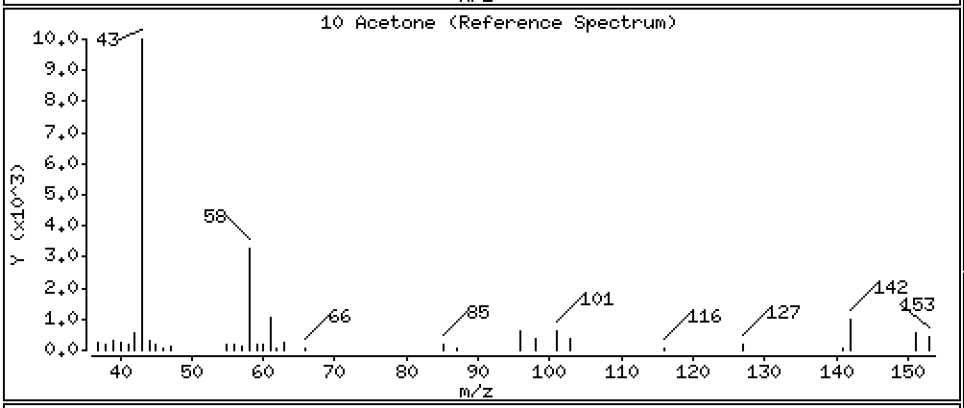
Purge Volume: 5.0 Operator: AP

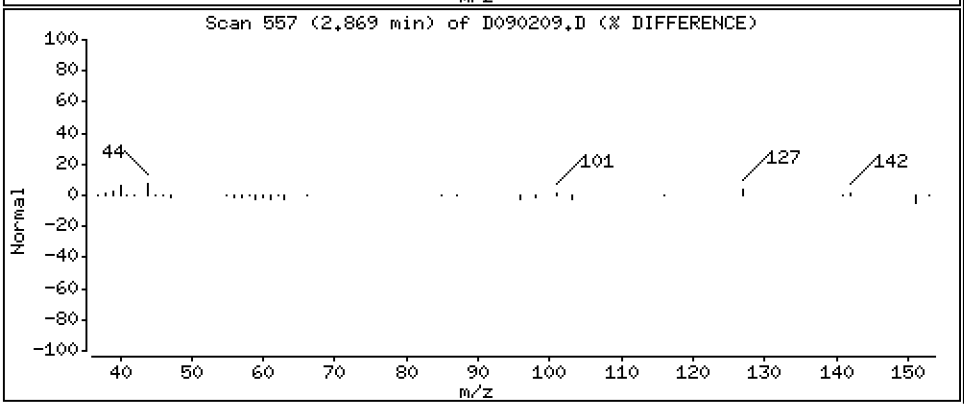
Column phase: DB624 Column diameter: 0.18

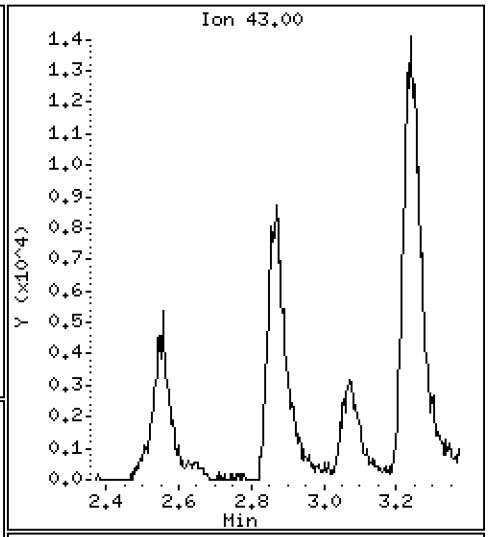
10 Acetone Concentration: 26.78 ug/l Review Code:

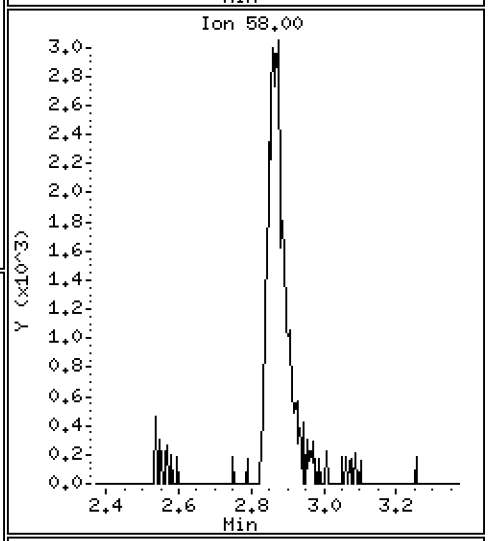


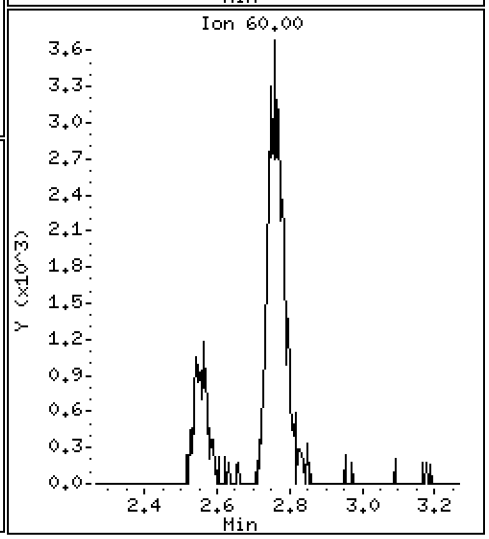












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 13

Date : 02-SEP-2018 16:42

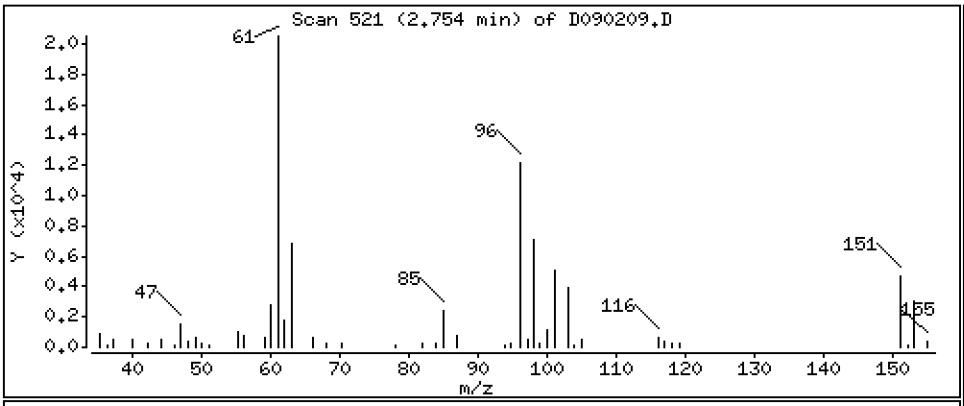
Client ID: HS18081428-01MSD Instrument: VOA2.i

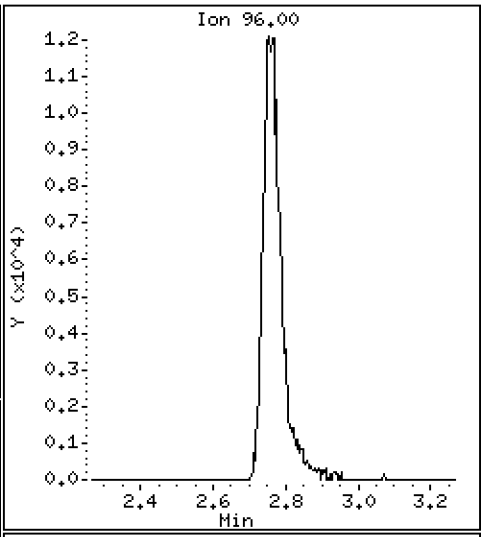
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

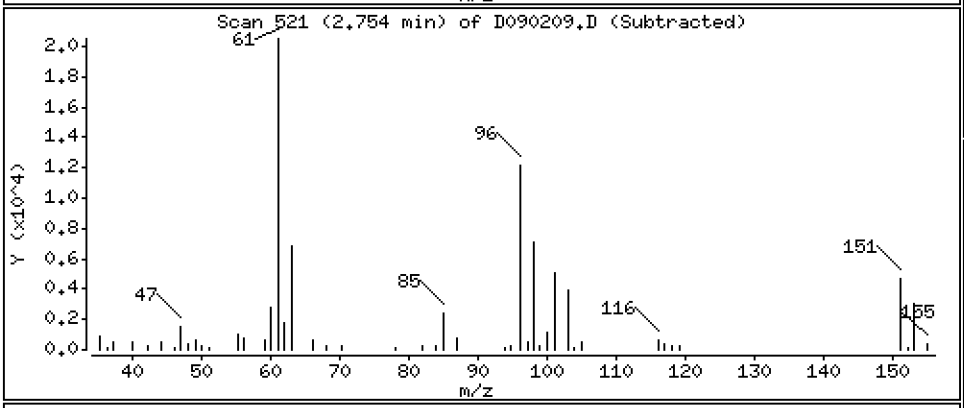
Purge Volume: 5.0 Operator: AP

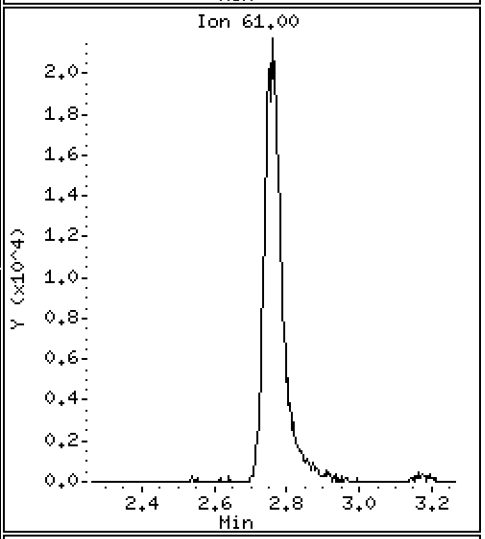
Column phase: DB624 Column diameter: 0.18

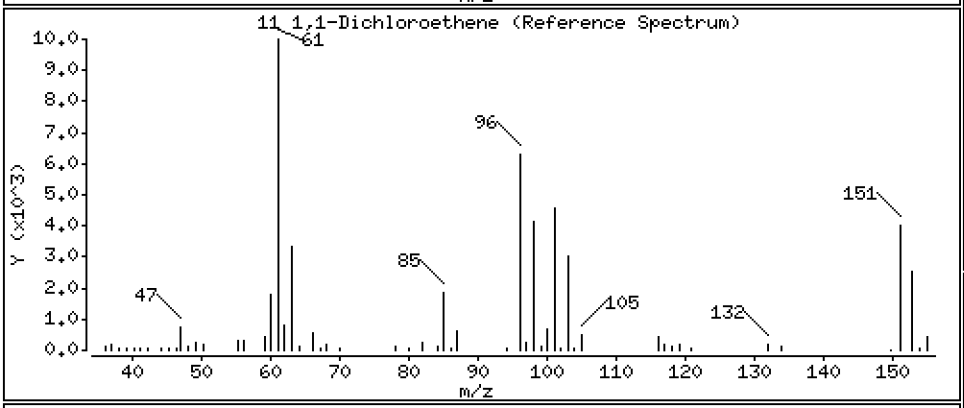
11 1,1-Dichloroethene Concentration: 15.18 ug/l Review Code:

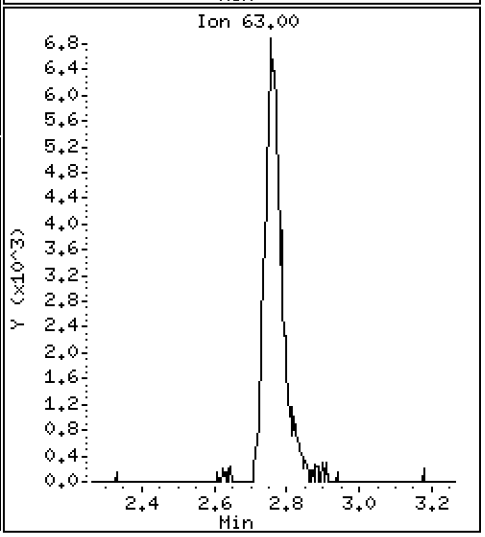


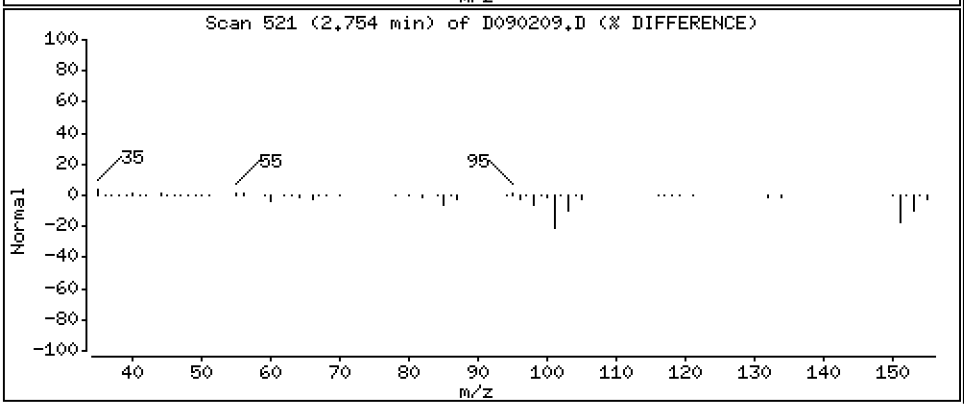












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 14

Date : 02-SEP-2018 16:42

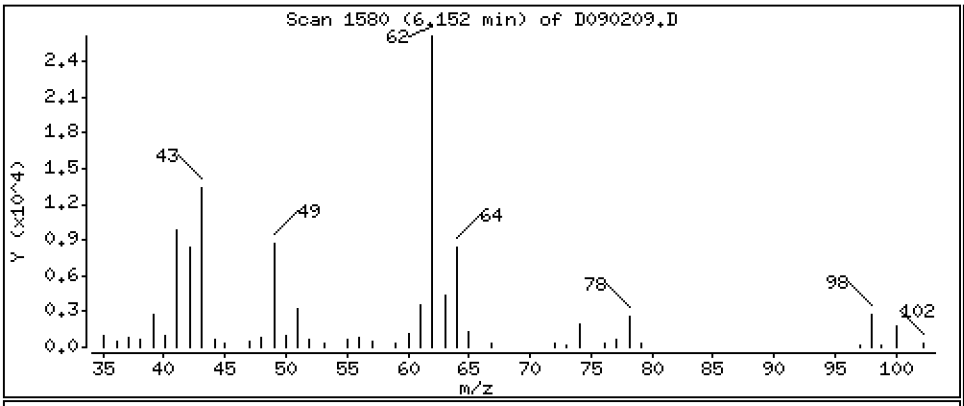
Client ID: HS18081428-01MSD Instrument: VOA2.i

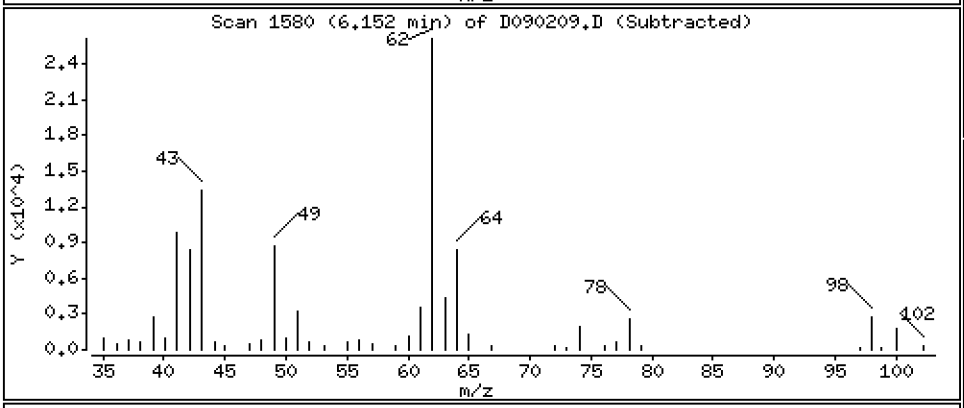
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

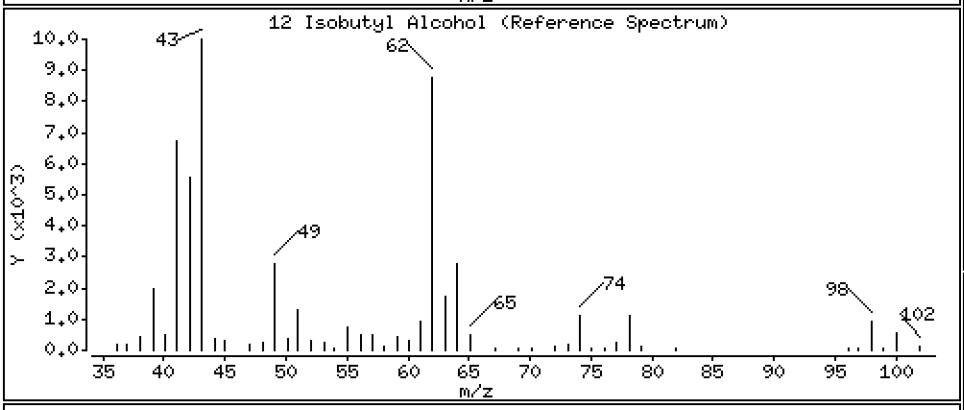
Purge Volume: 5.0 Operator: AP

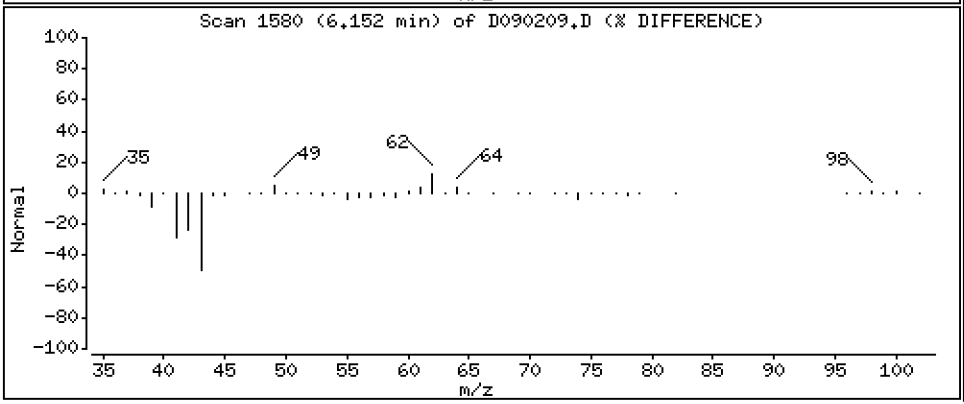
Column phase: DB624 Column diameter: 0.18

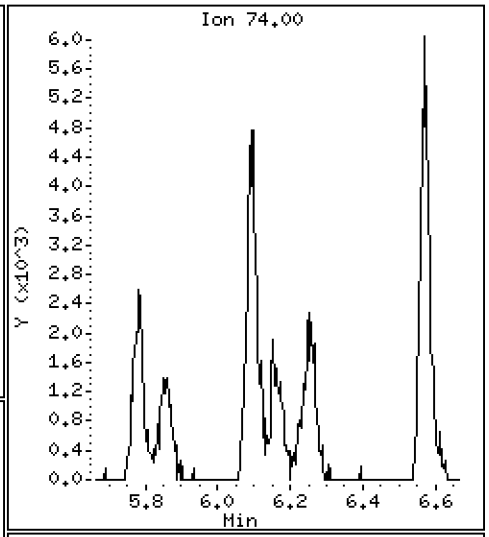
12 Isobutyl Alcohol Concentration: 265.98 ug/l Review Code:

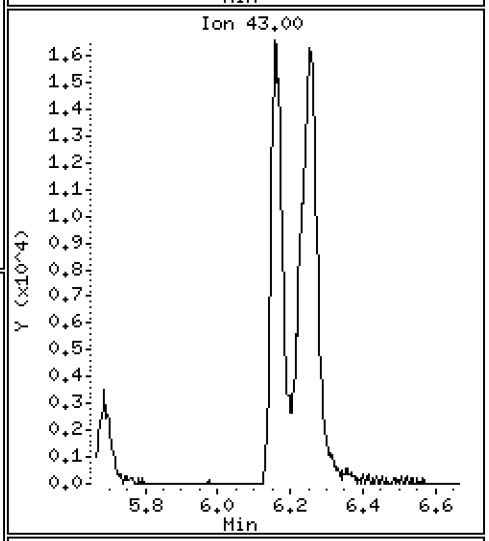


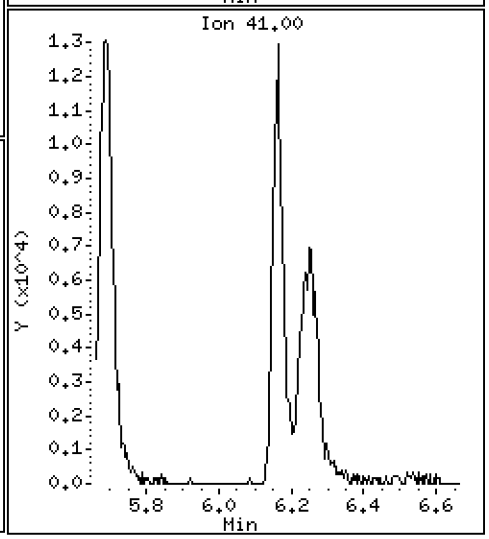












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 15

Date : 02-SEP-2018 16:42

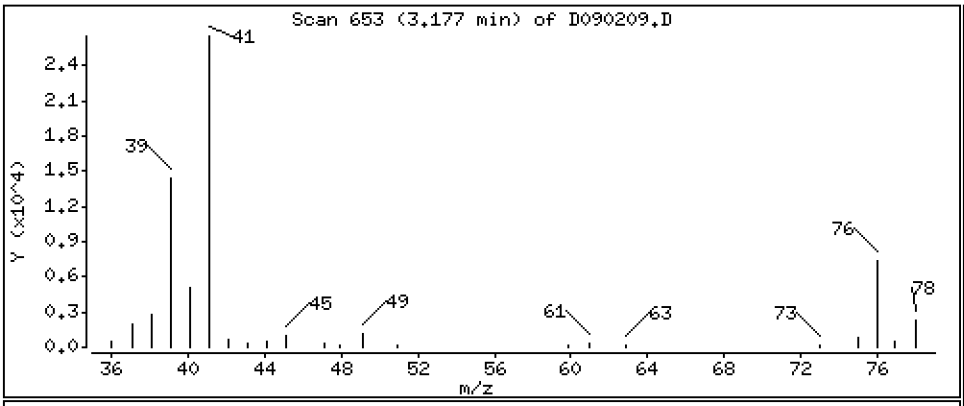
Client ID: HS18081428-01MSD Instrument: VOA2.i

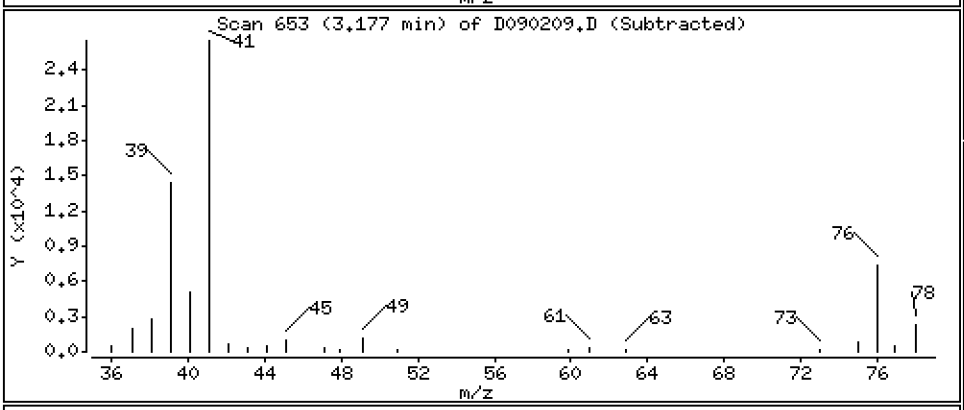
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

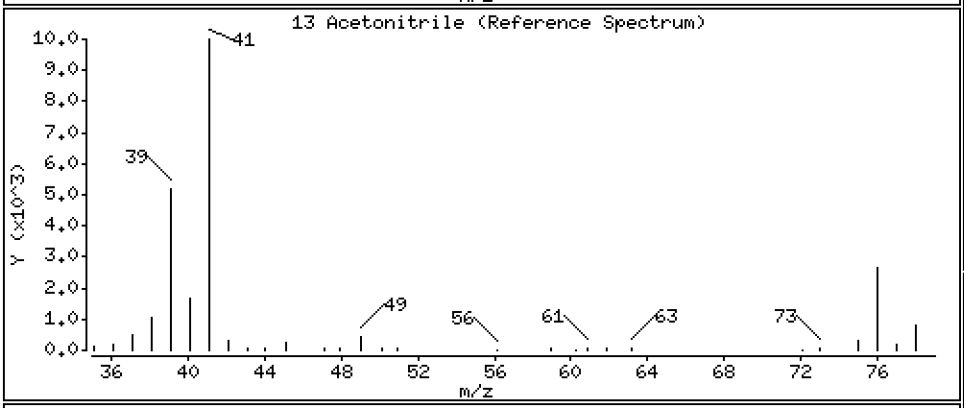
Purge Volume: 5.0 Operator: AP

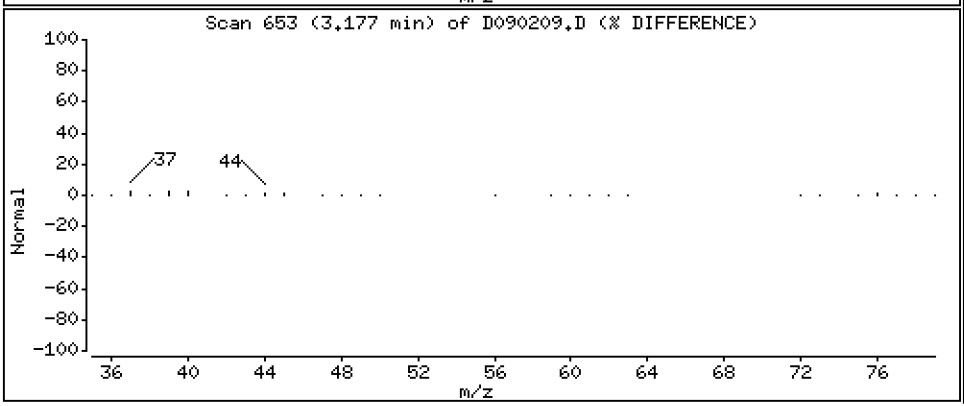
Column phase: DB624 Column diameter: 0.18

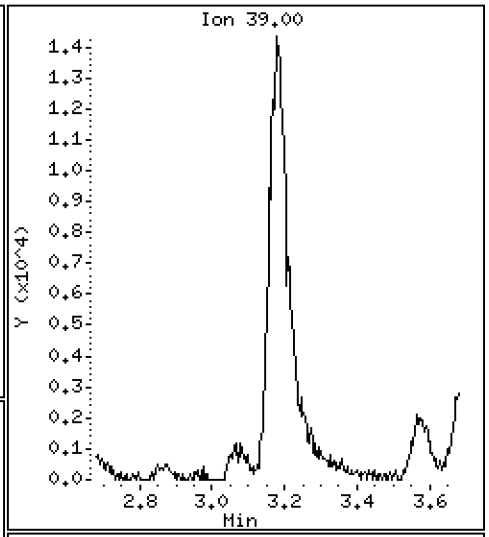
13 Acetonitrile Concentration: 159.26 ug/l Review Code:

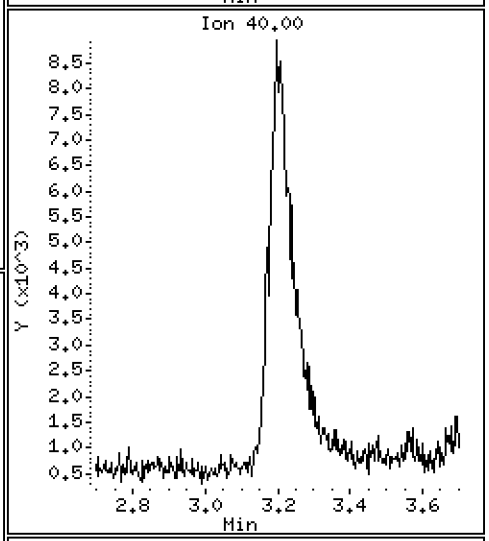


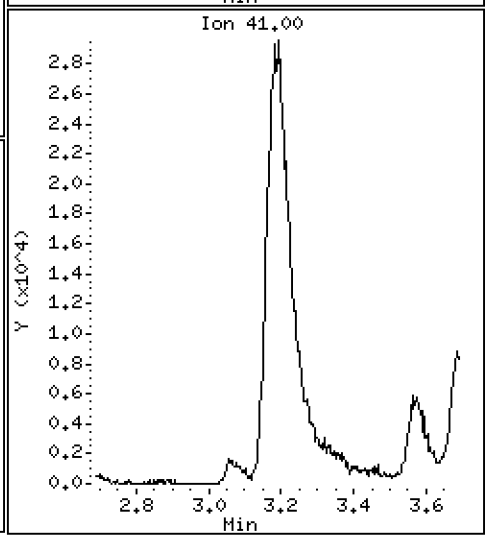












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 16

Date : 02-SEP-2018 16:42

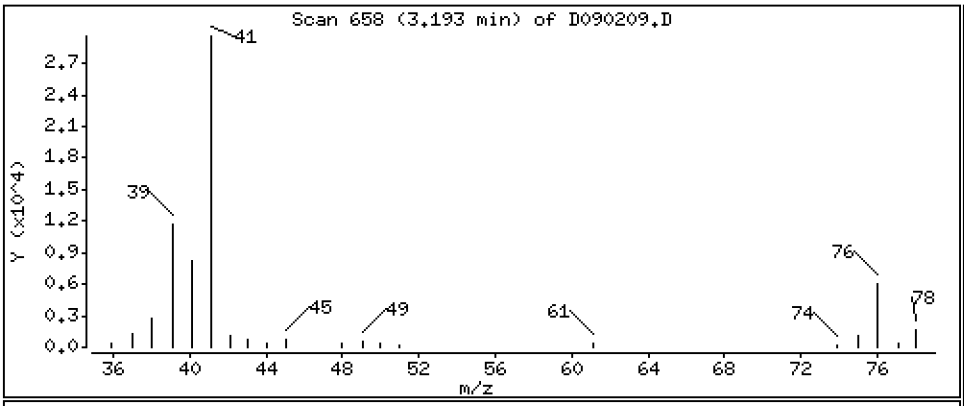
Client ID: HS18081428-01MSD Instrument: VOA2.i

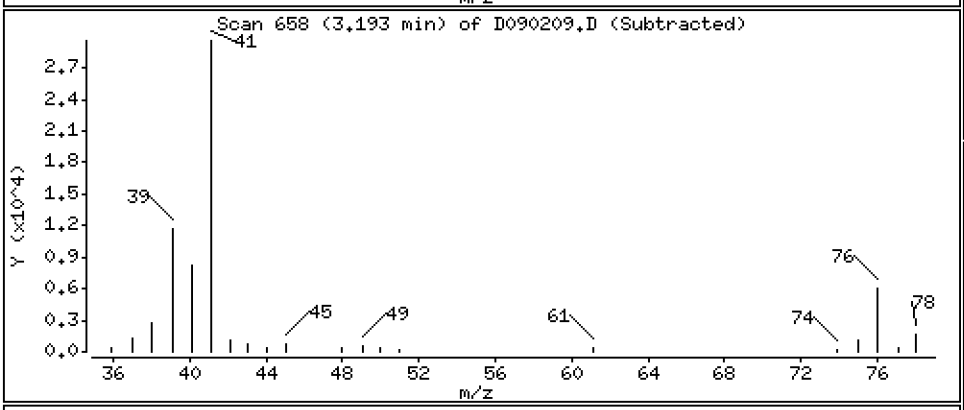
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

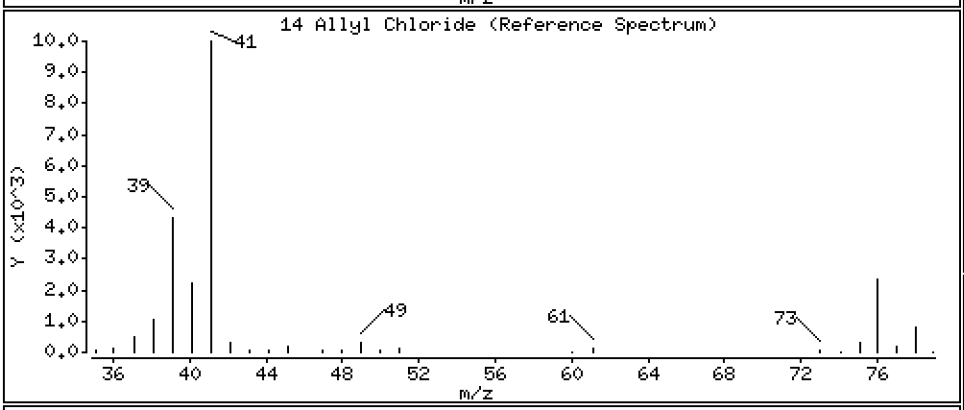
Purge Volume: 5.0 Operator: AP

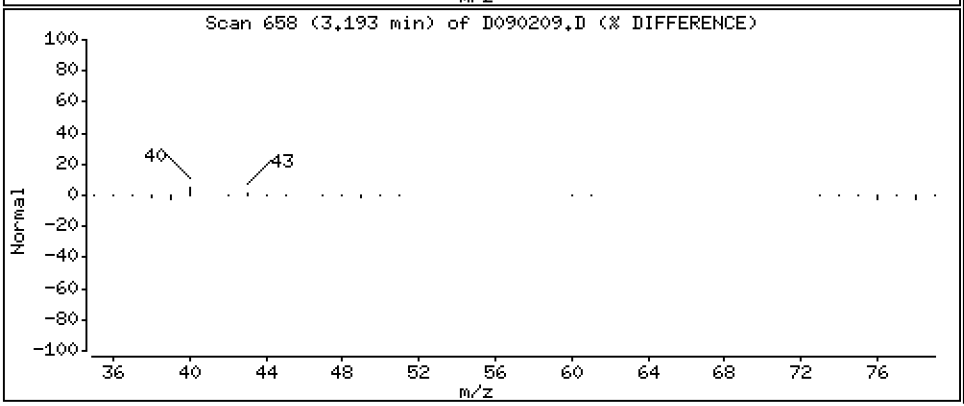
Column phase: DB624 Column diameter: 0.18

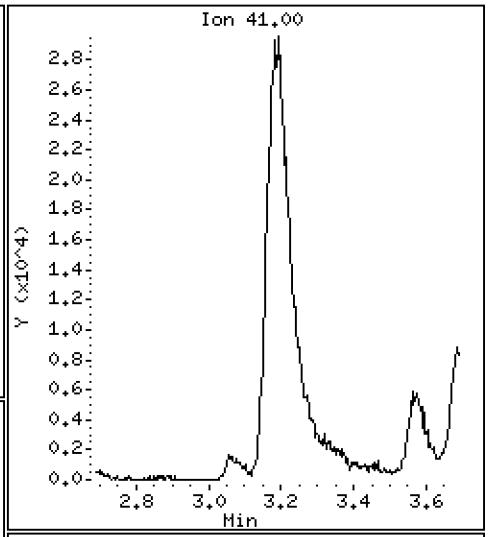
14 Allyl Chloride Concentration: 15.75 ug/l Review Code:

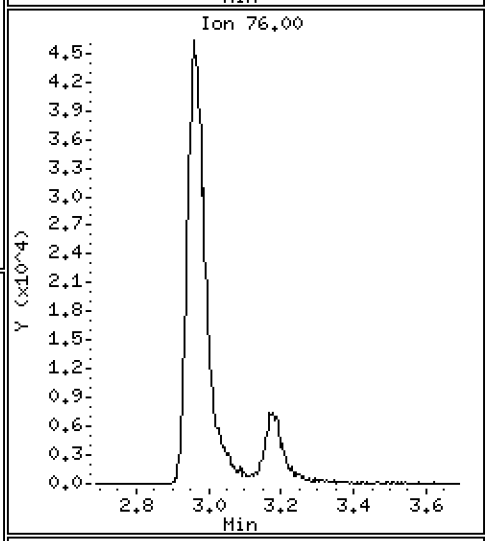


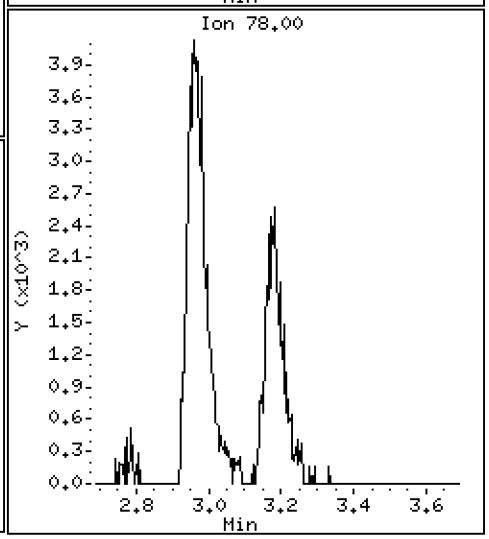












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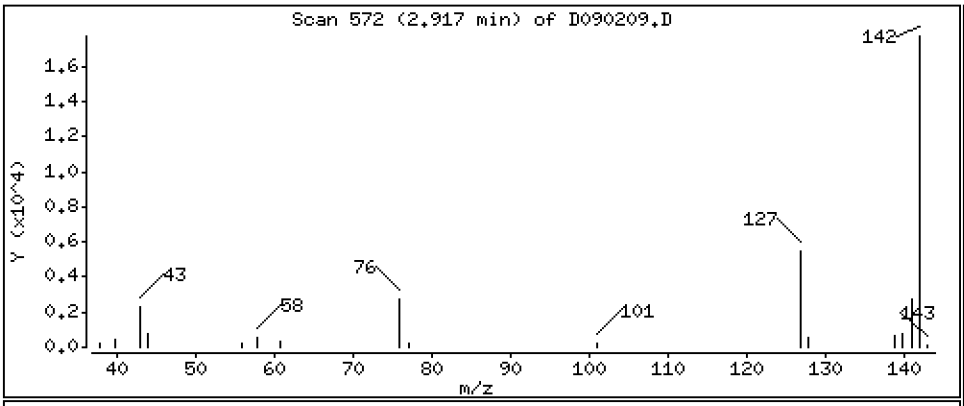
Client ID: HS18081428-01MSD Instrument: VOA2.i

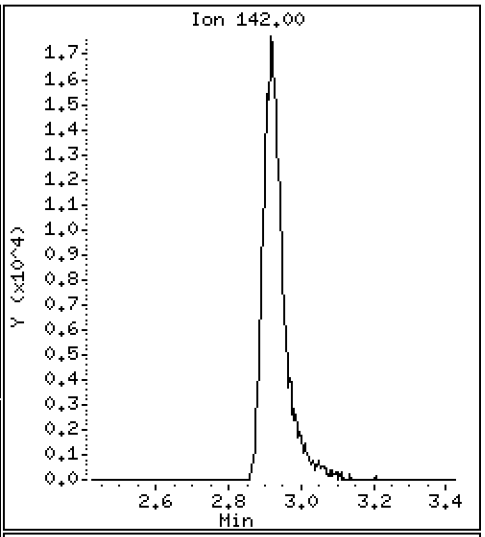
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

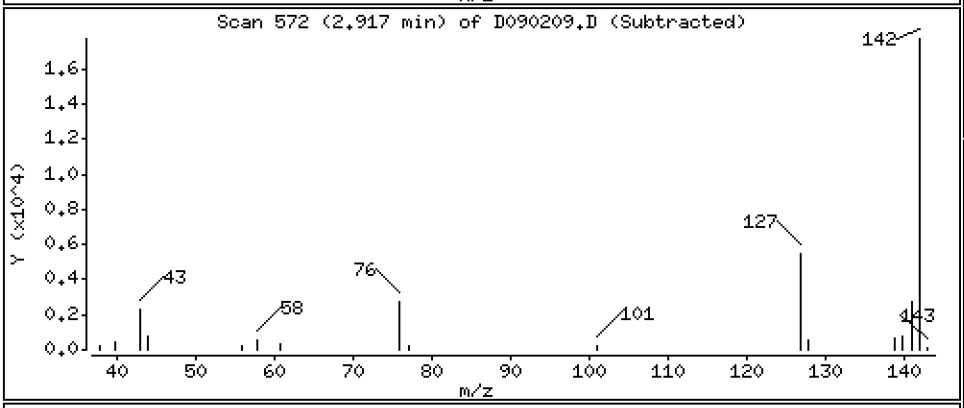
Purge Volume: 5.0 Operator: AP

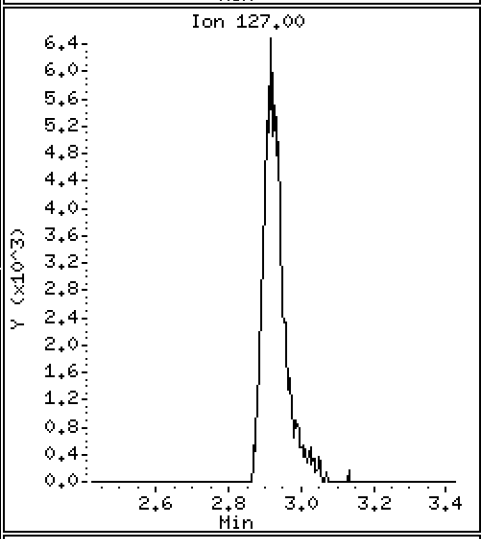
Column phase: DB624 Column diameter: 0.18

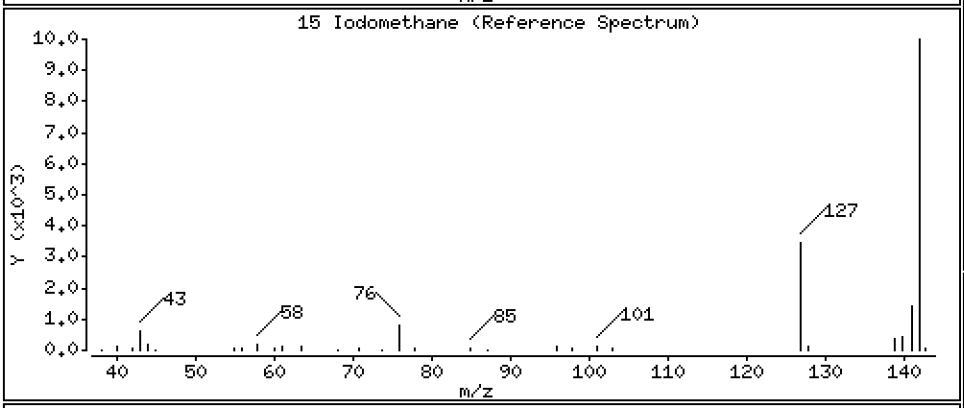
15 Iodomethane Concentration: 28.49 ug/l Review Code:

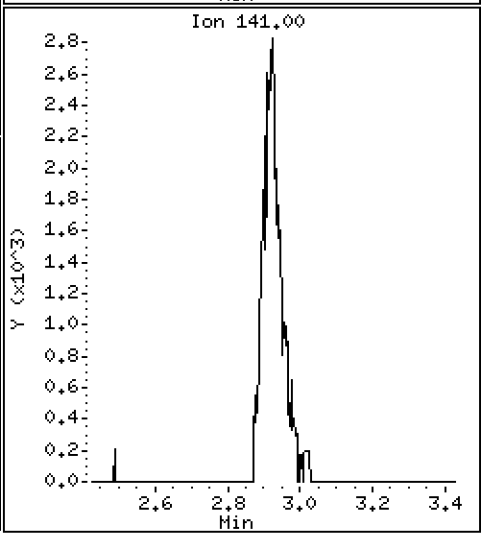


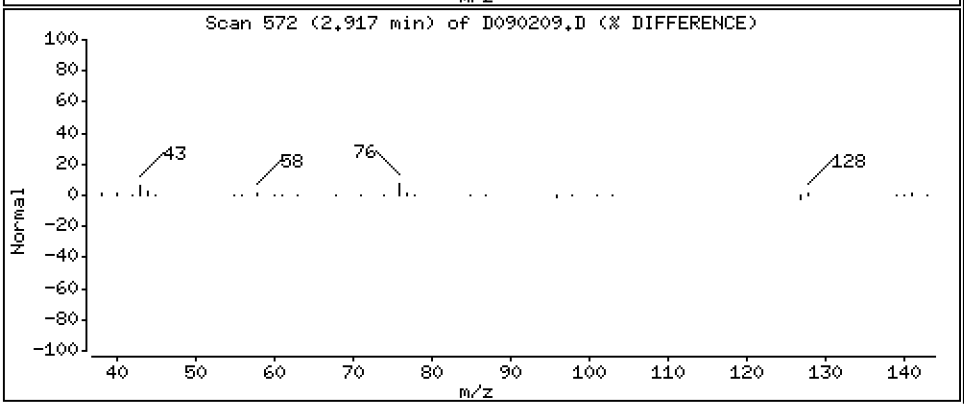












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Date : 02-SEP-2018 16:42

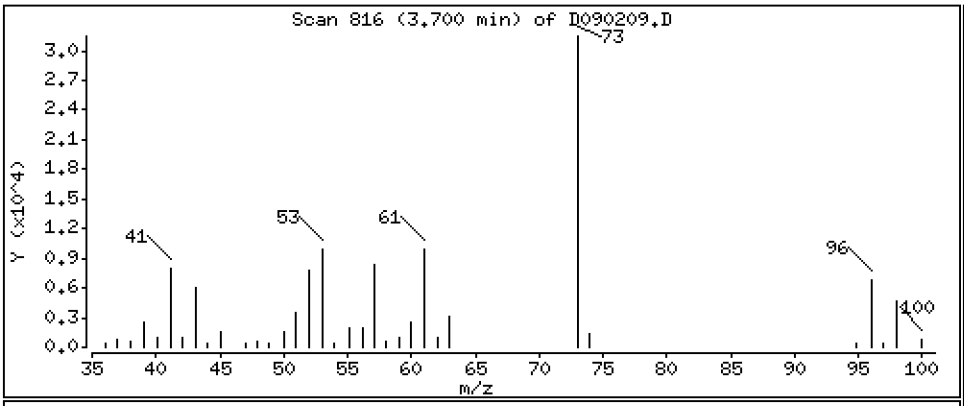
Client ID: HS18081428-01MSD Instrument: VOA2.i

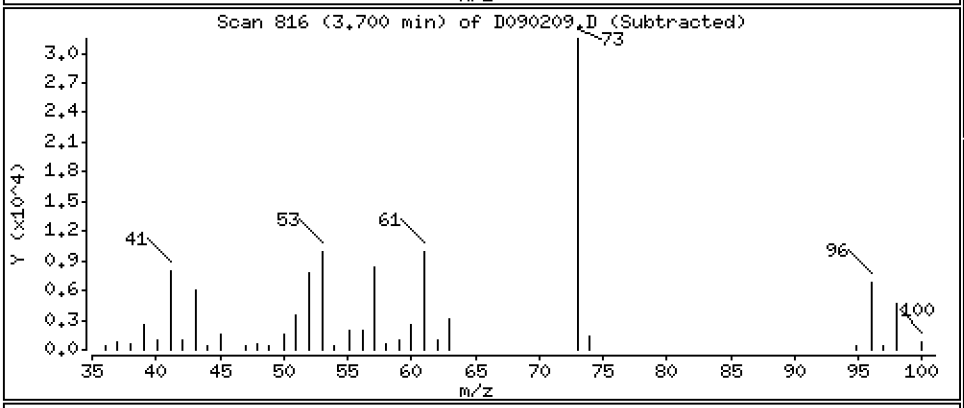
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

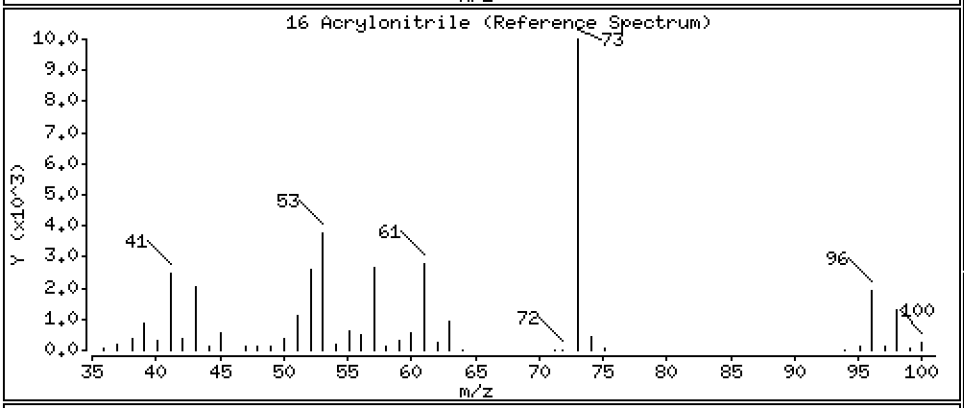
Purge Volume: 5.0 Operator: AP

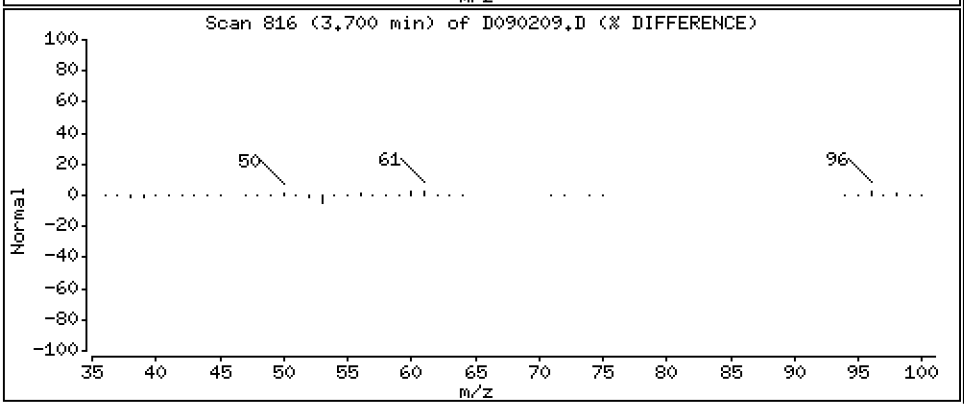
Column phase: DB624 Column diameter: 0.18

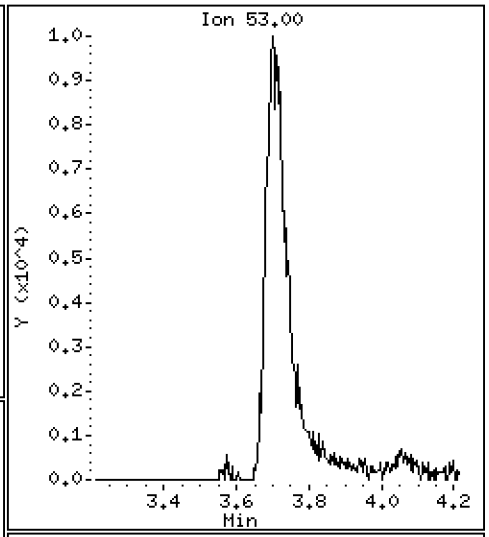
16 Acrylonitrile Concentration: 29.75 ug/l Review Code:

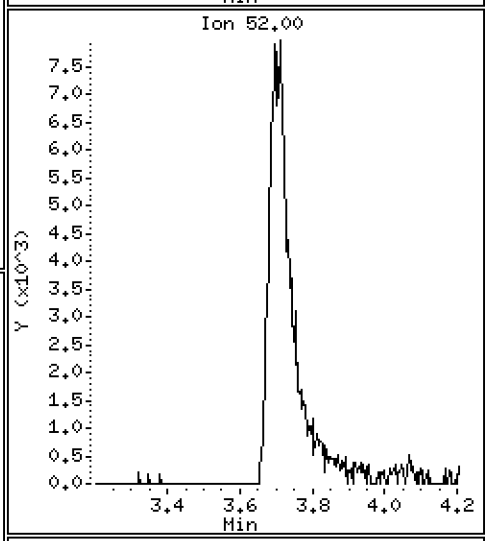


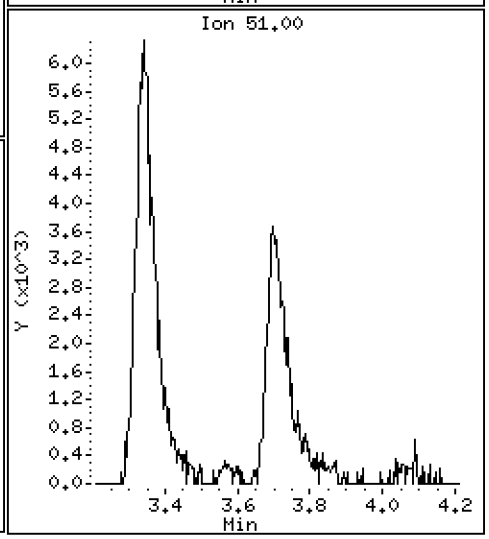












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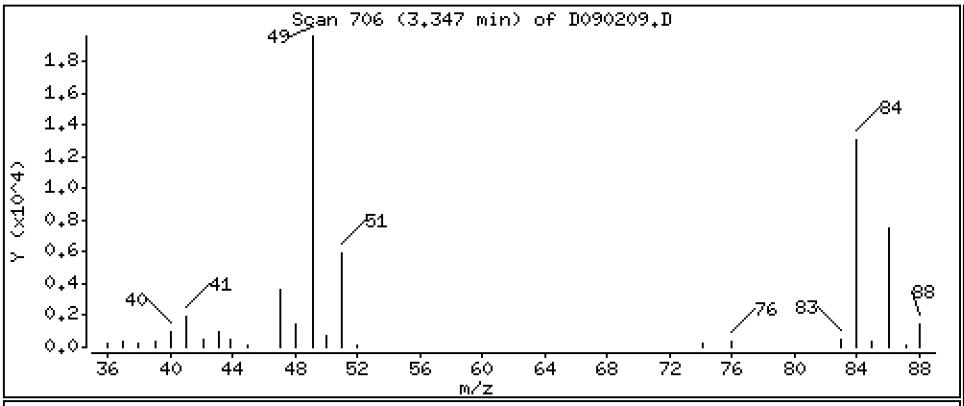
Client ID: HS18081428-01MSD Instrument: VOA2.i

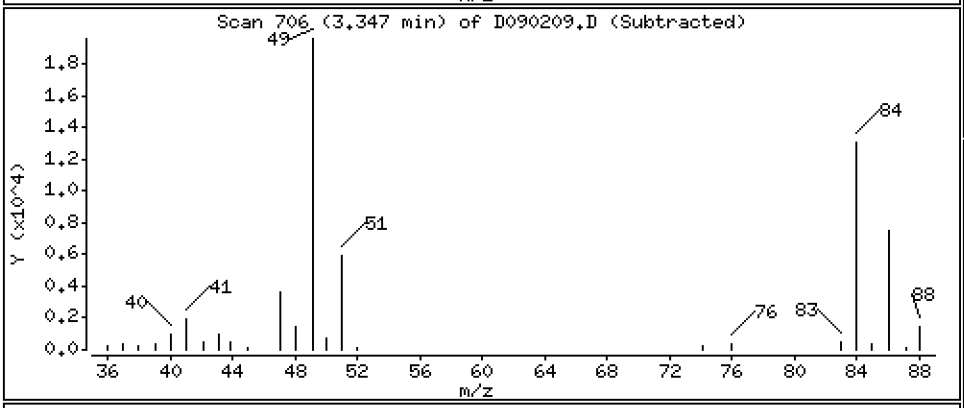
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

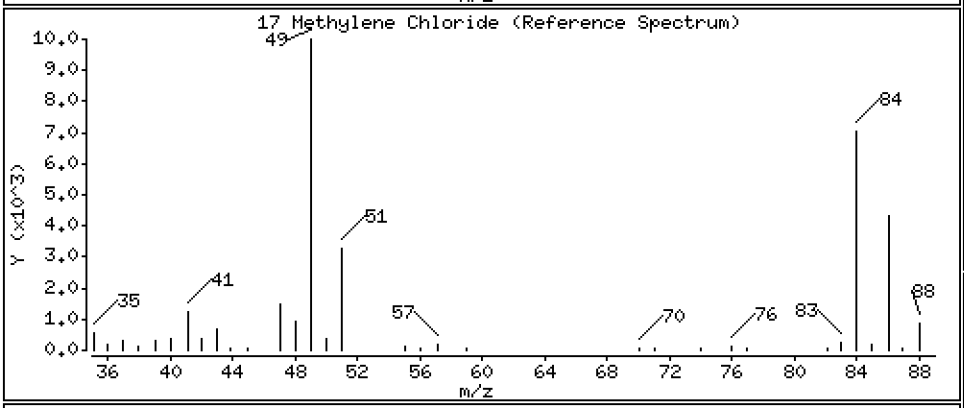
Purge Volume: 5.0 Operator: AP

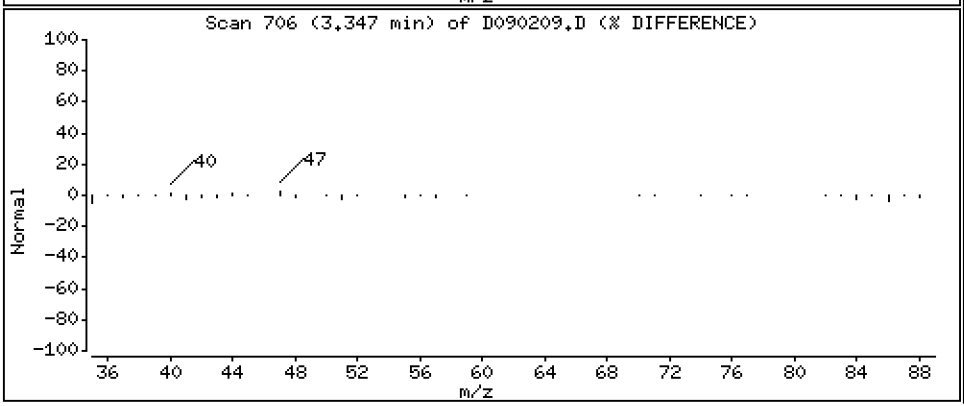
Column phase: DB624 Column diameter: 0.18

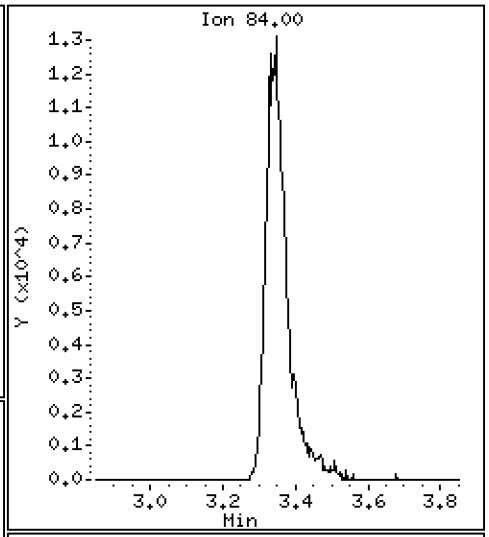
17 Methylene Chloride Concentration: 13.71 ug/l Review Code:

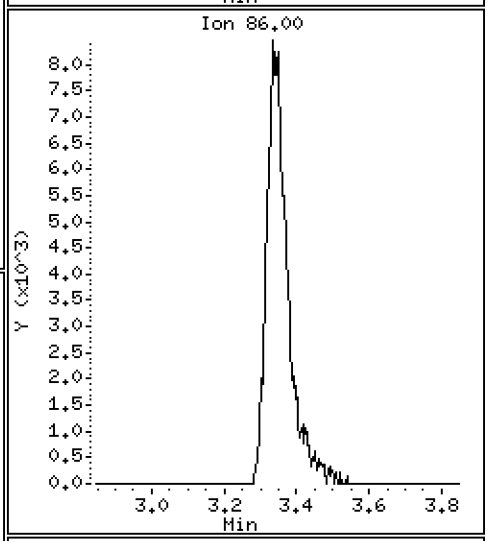


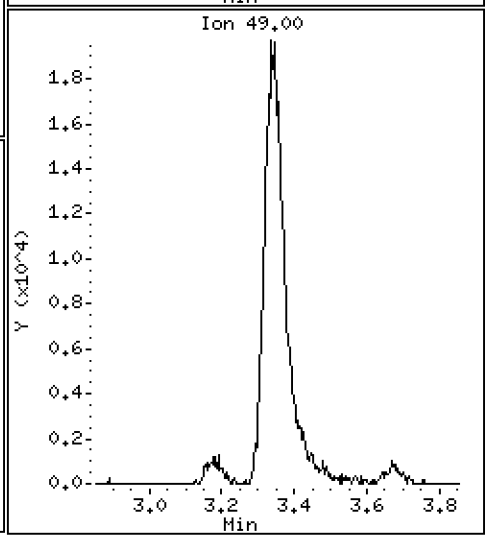












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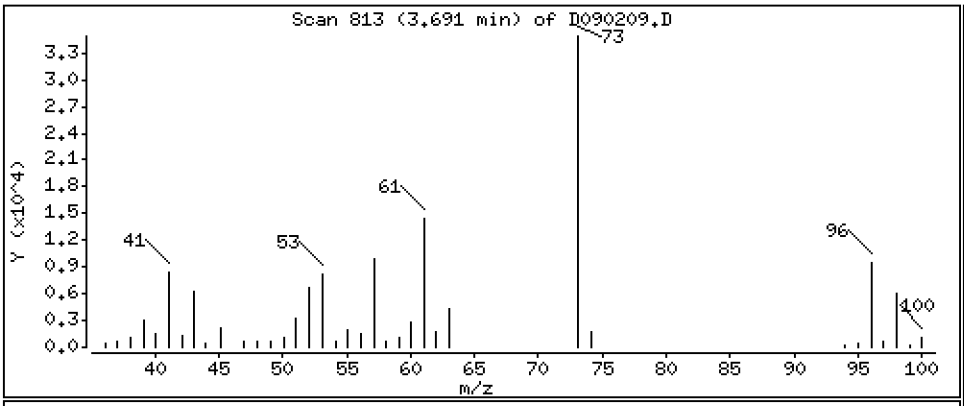
Client ID: HS18081428-01MSD Instrument: VOA2.i

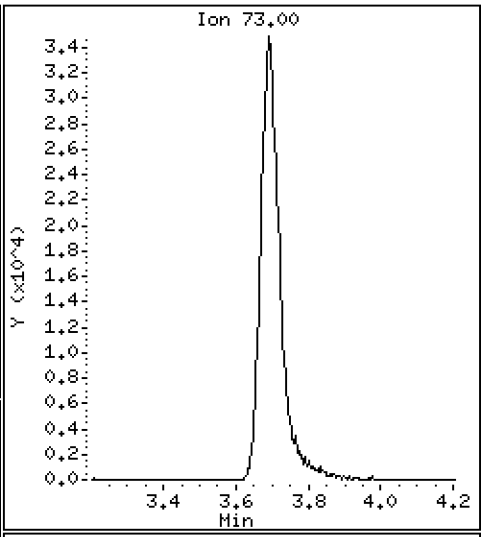
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

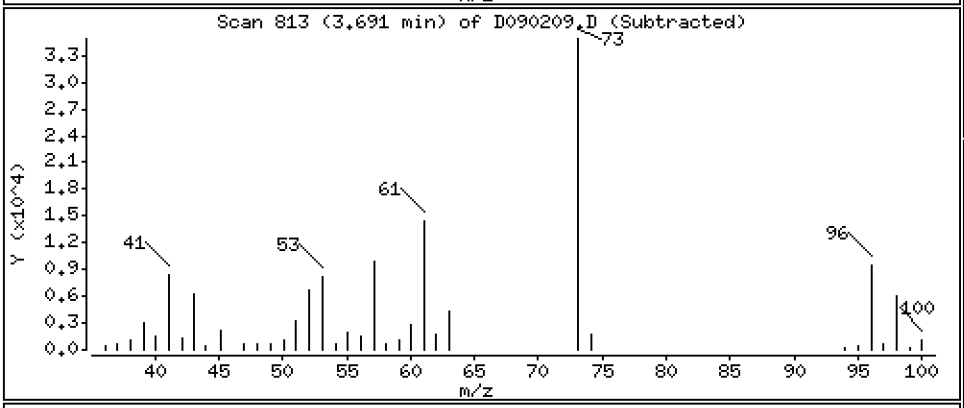
Purge Volume: 5.0 Operator: AP

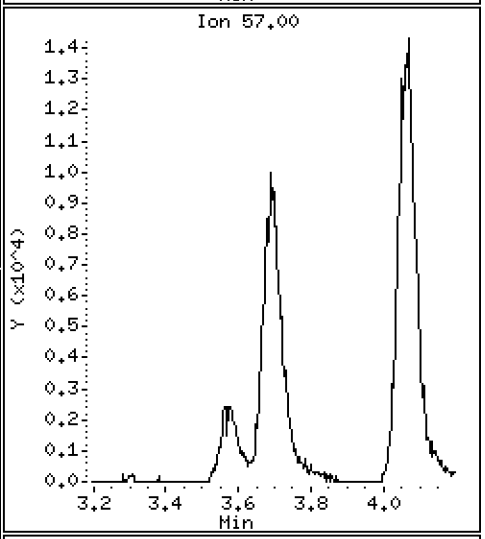
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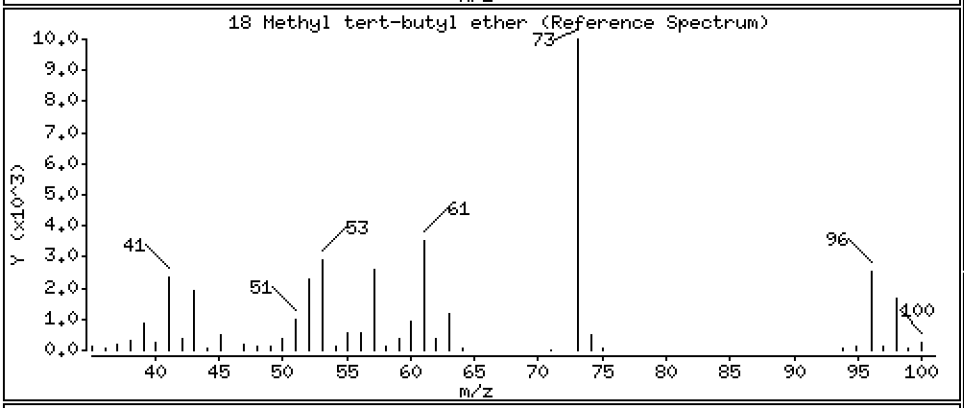
18 Methyl tert-butyl ether Concentration: 15.80 ug/l Review Code:

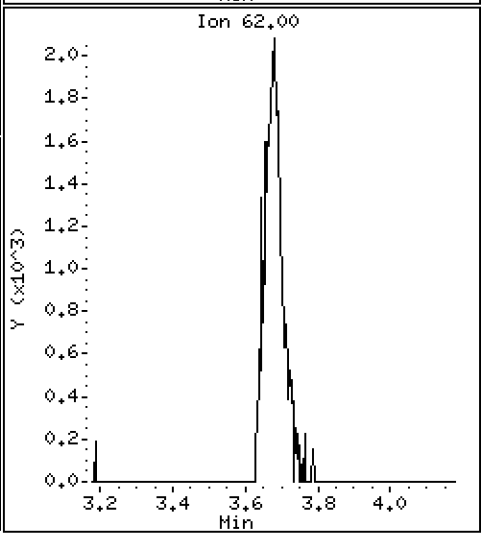


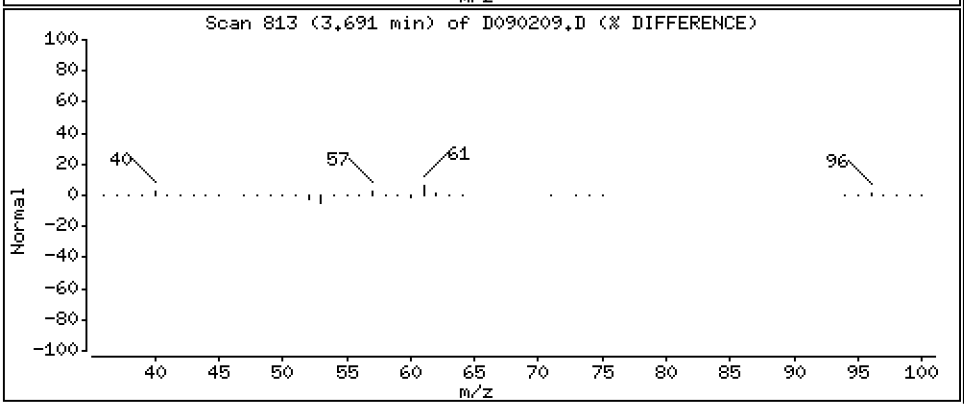












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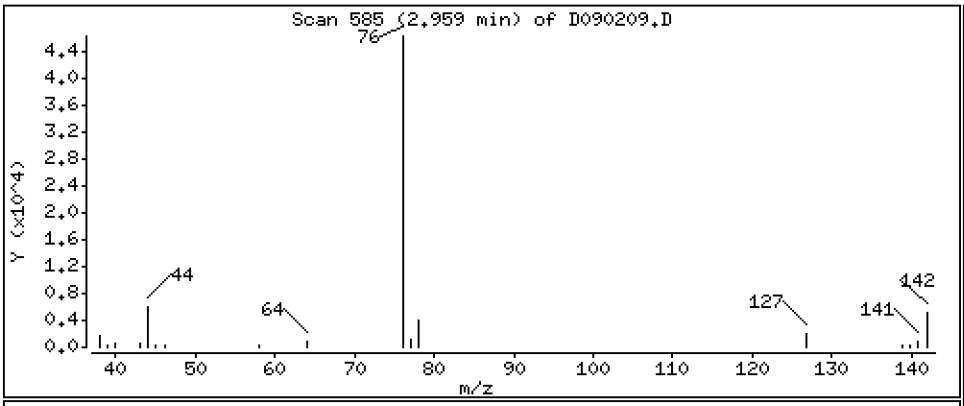
Client ID: HS18081428-01MSD Instrument: VOA2.i

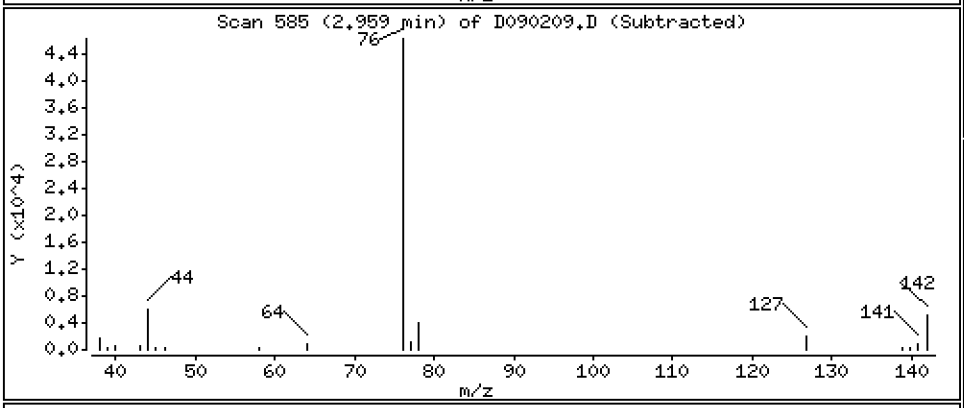
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

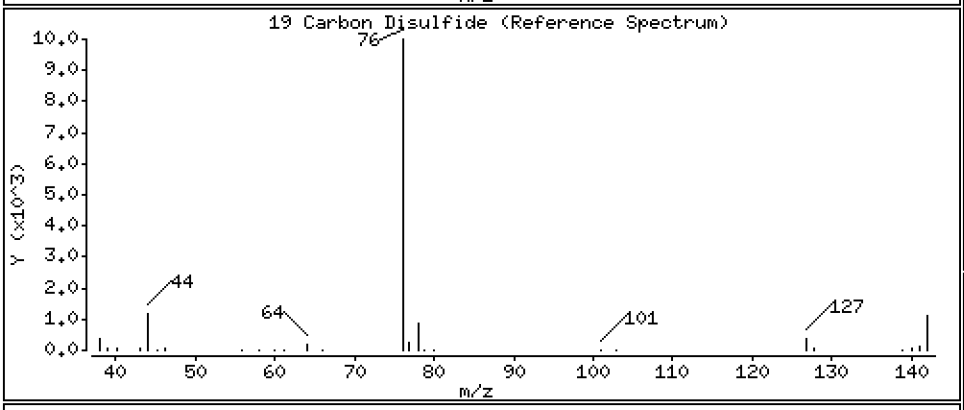
Purge Volume: 5.0 Operator: AP

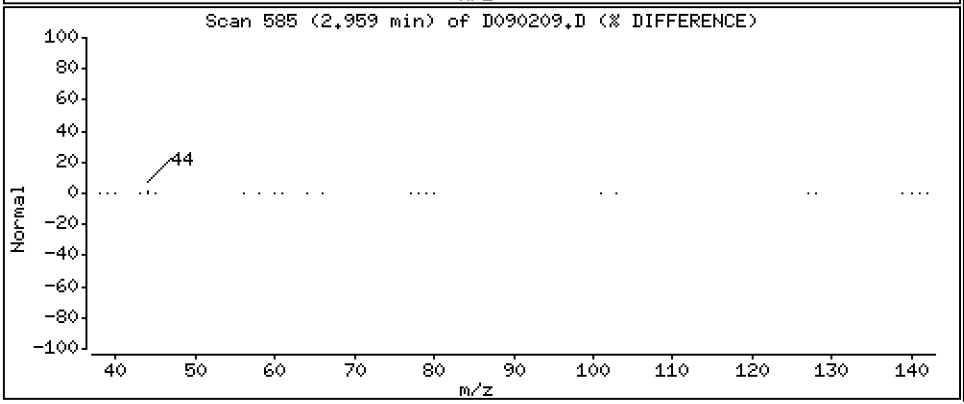
Column phase: DB624 Column diameter: 0.18

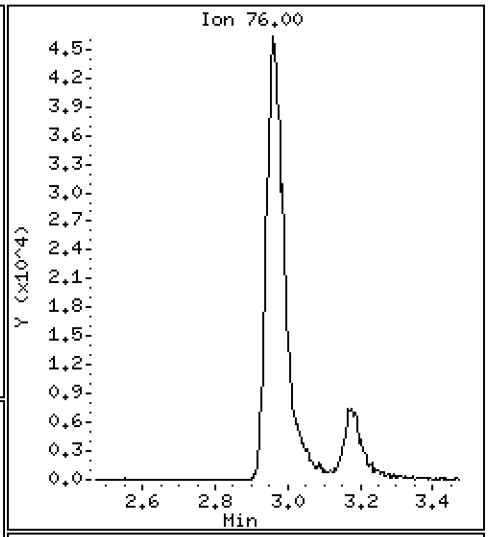
19 Carbon Disulfide Concentration: 32.44 ug/l Review Code:

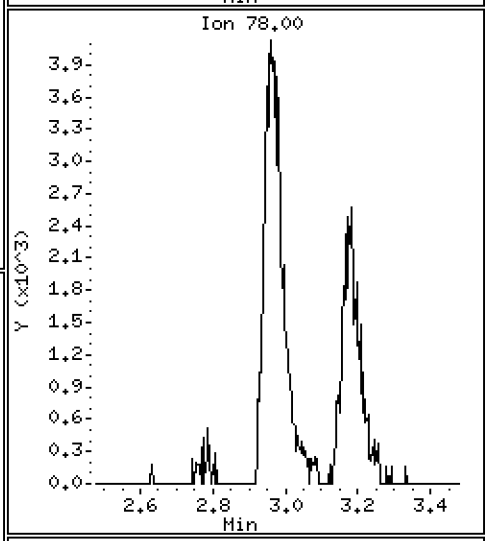


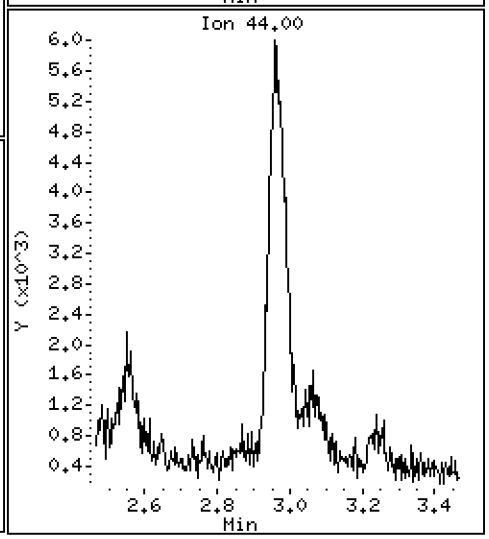












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Date : 02-SEP-2018 16:42

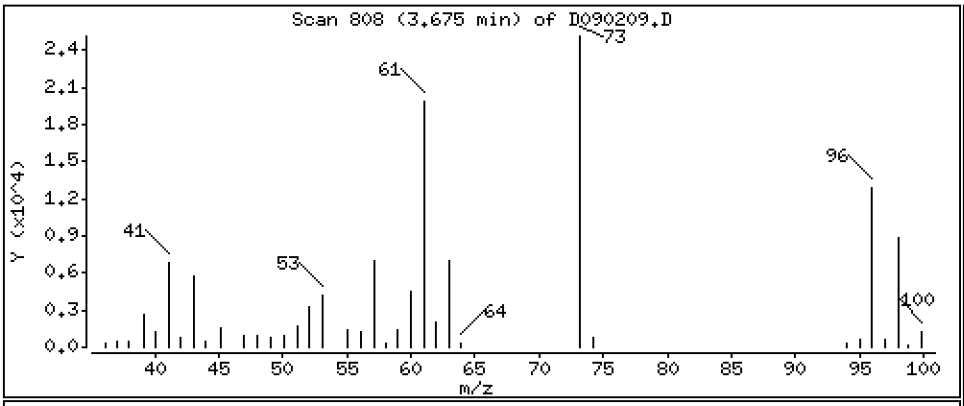
Client ID: HS18081428-01MSD Instrument: VOA2.i

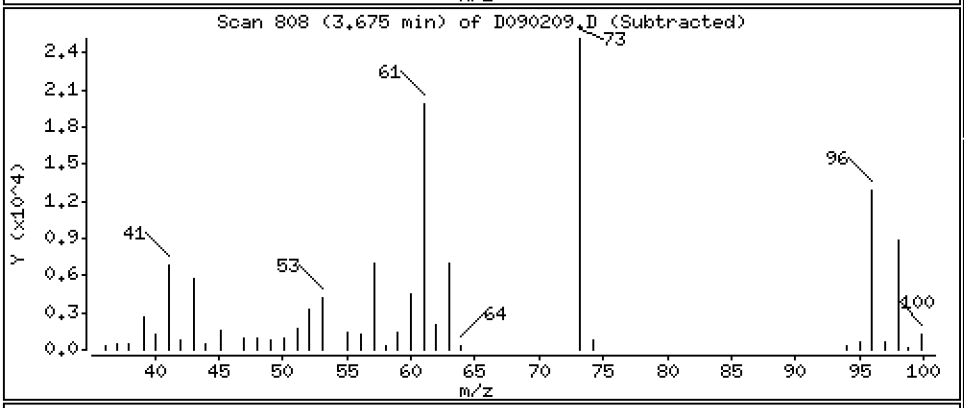
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

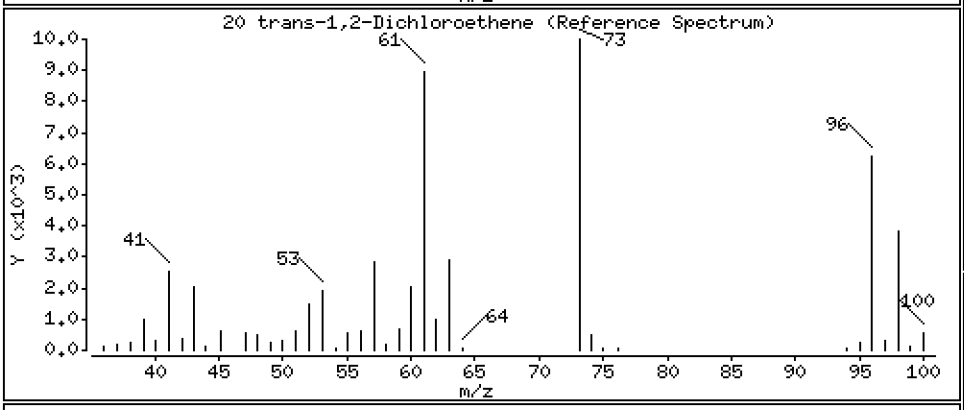
Purge Volume: 5.0 Operator: AP

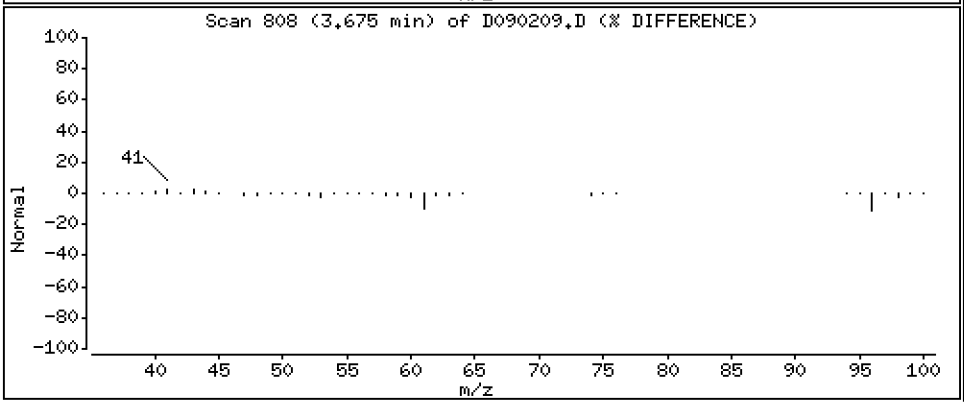
Column phase: DB624 Column diameter: 0.18

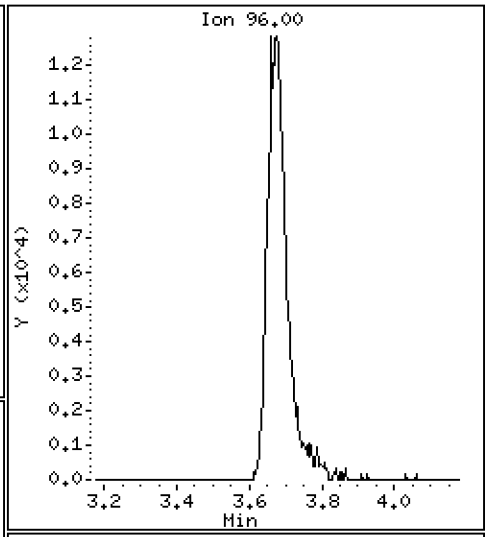
20 trans-1,2-Dichloroethene Concentration: 17.44 ug/l Review Code:

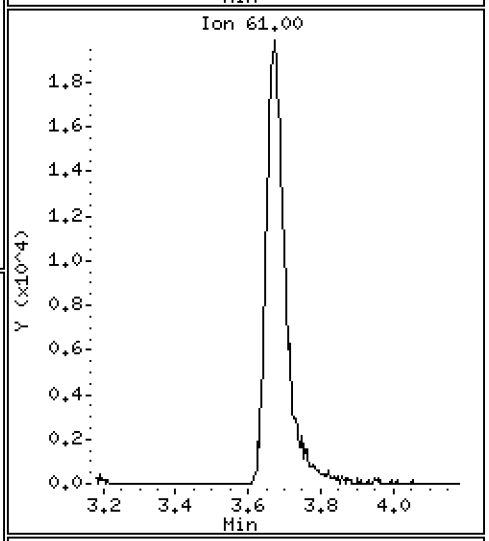


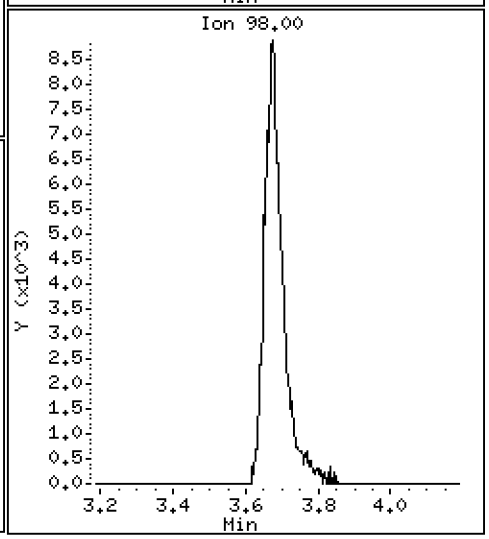












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Date : 02-SEP-2018 16:42

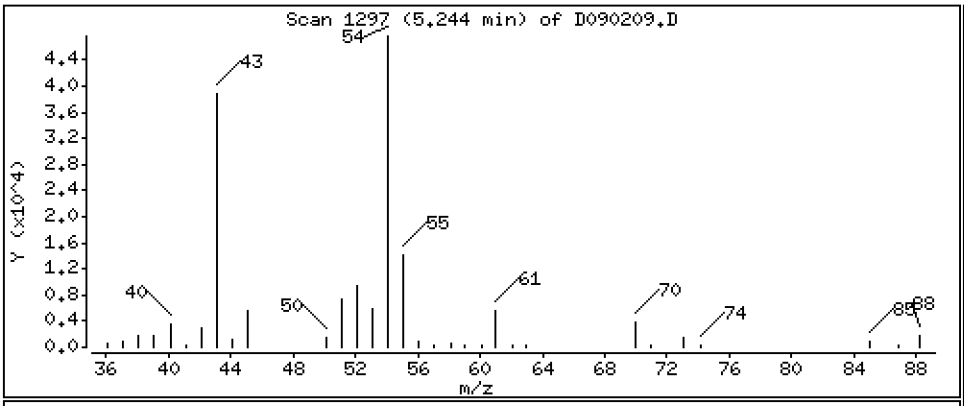
Client ID: HS18081428-01MSD Instrument: VOA2.i

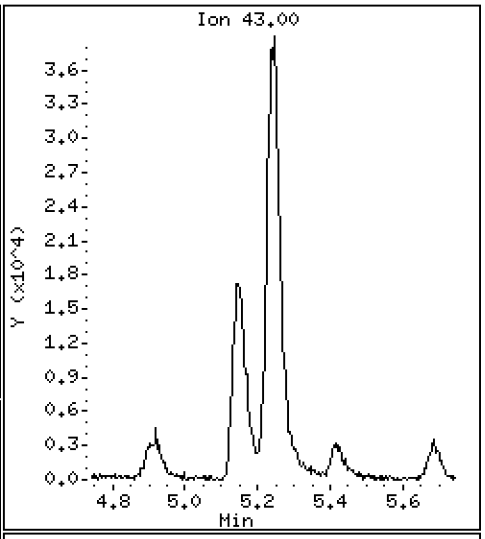
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

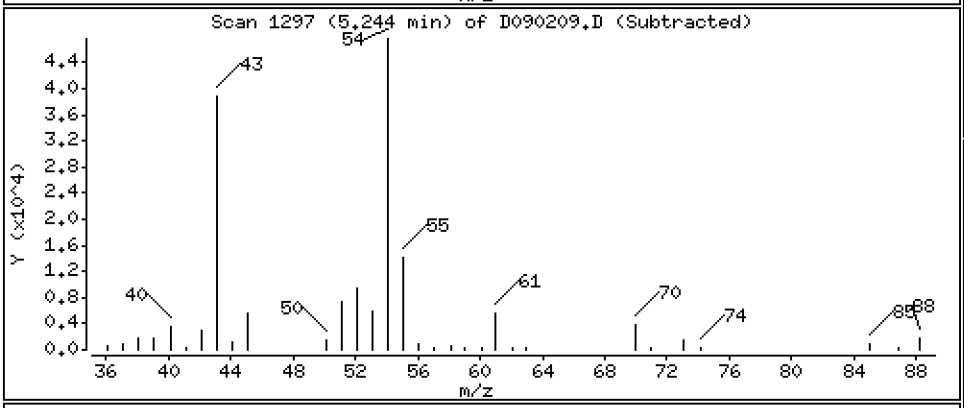
Purge Volume: 5.0 Operator: AP

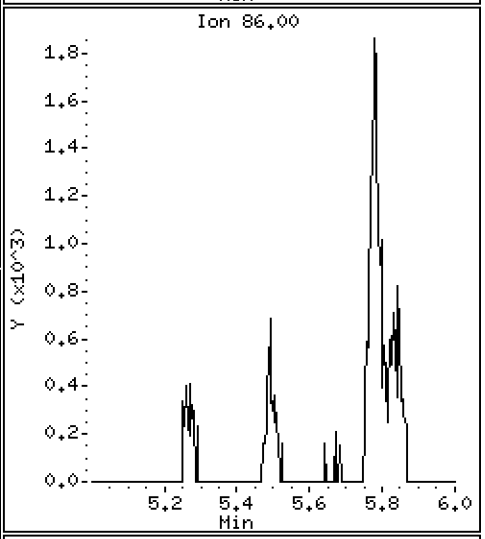
Column phase: DB624 Column diameter: 0.18

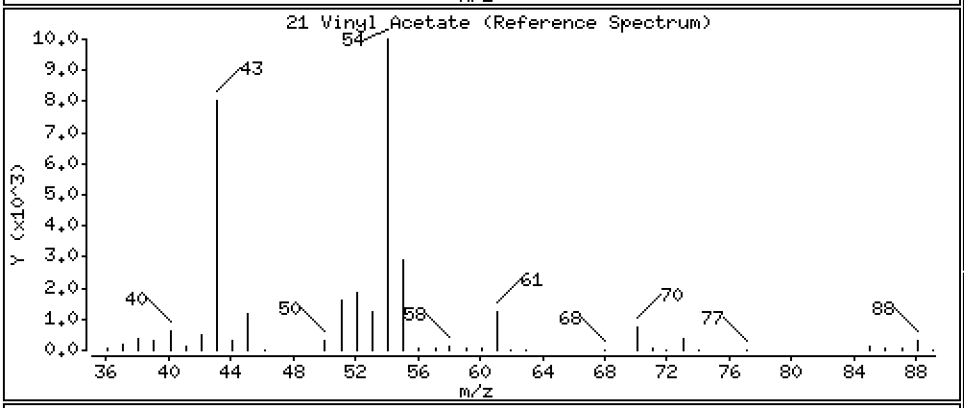
21 Vinyl Acetate Concentration: 29.18 ug/l Review Code:

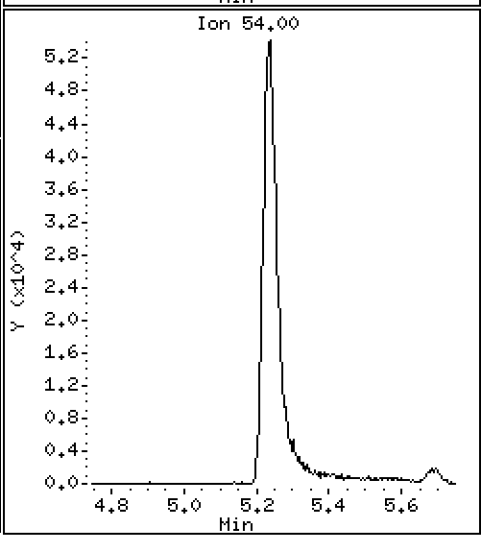


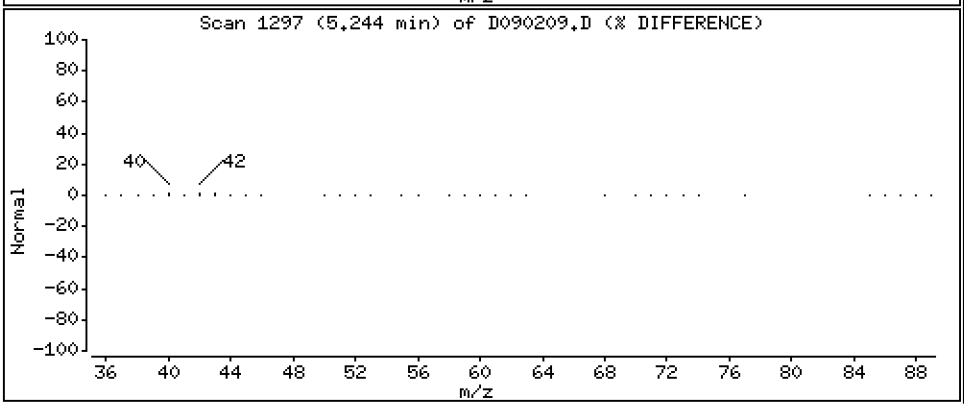












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 24

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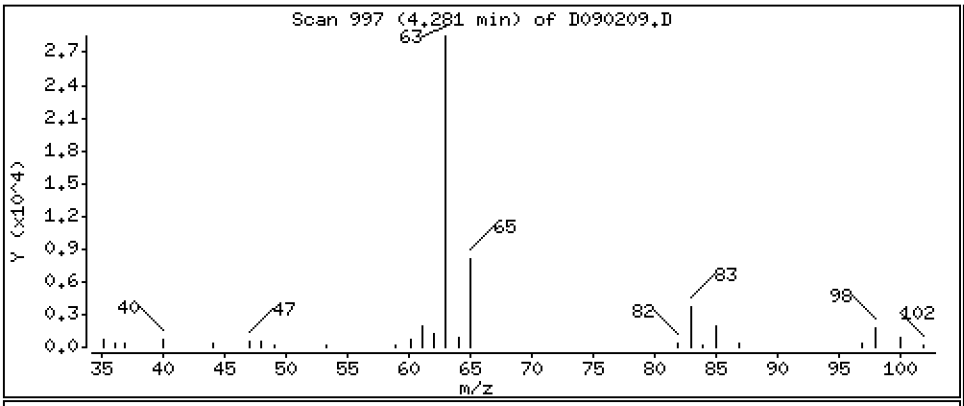
Client ID: HS18081428-01MSD Instrument: VOA2.i

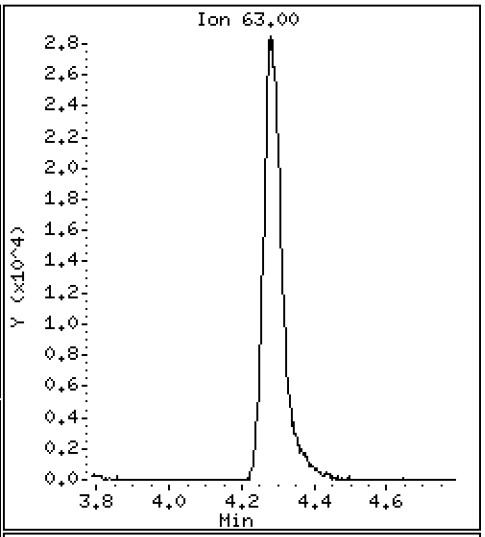
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

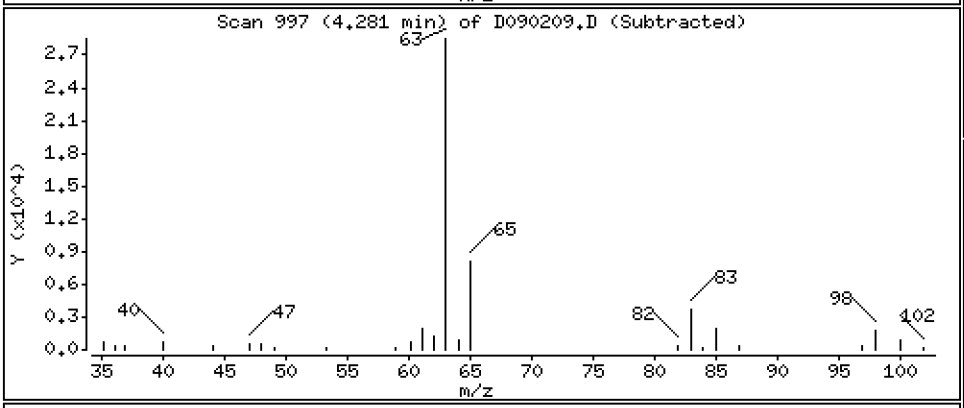
Purge Volume: 5.0 Operator: AP

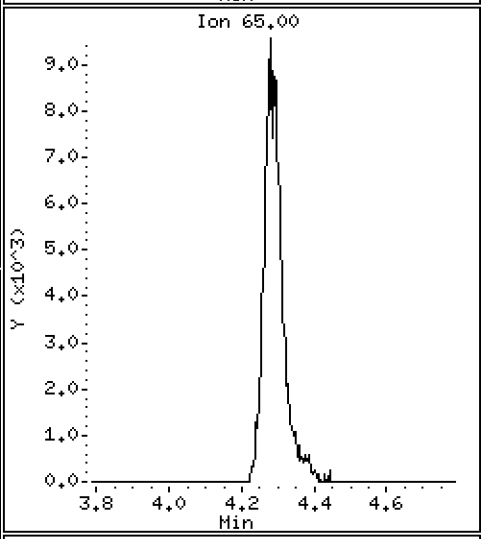
Column phase: DB624 Column diameter: 0.18

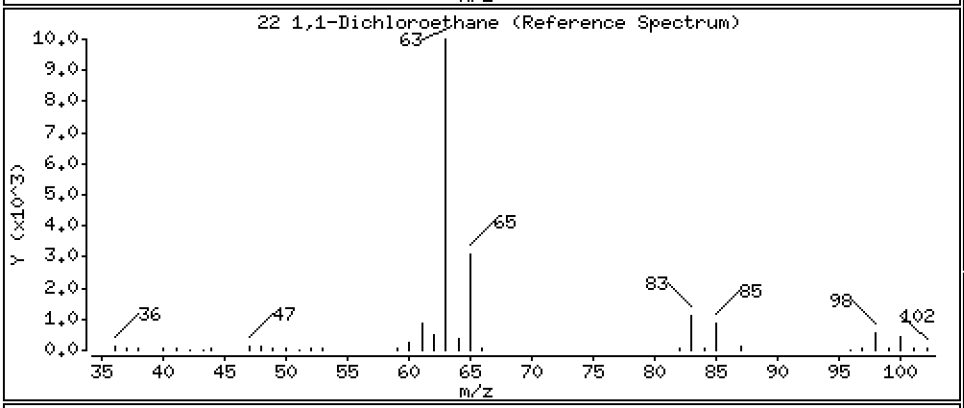
22 1,1-Dichloroethane Concentration: 16.28 ug/l Review Code:

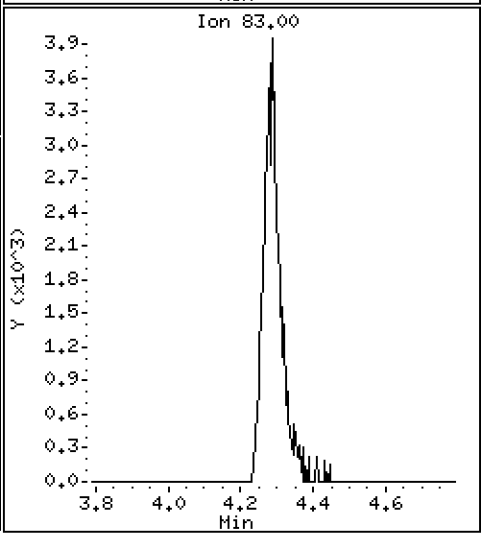


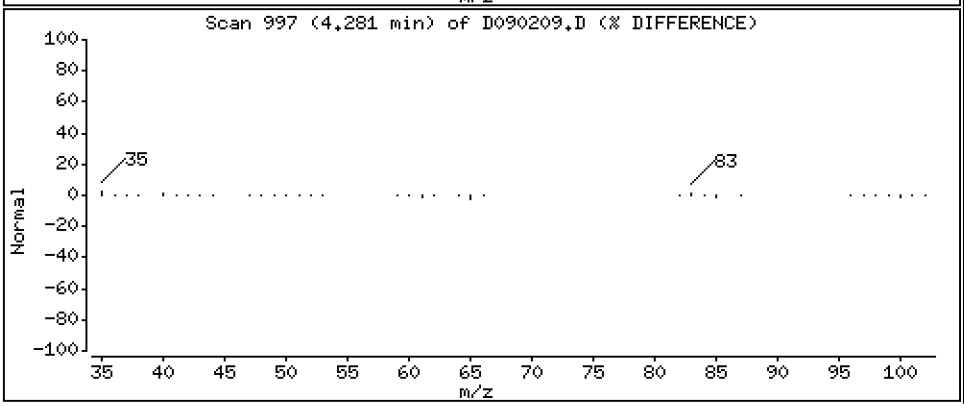












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 25

Date : 02-SEP-2018 16:42

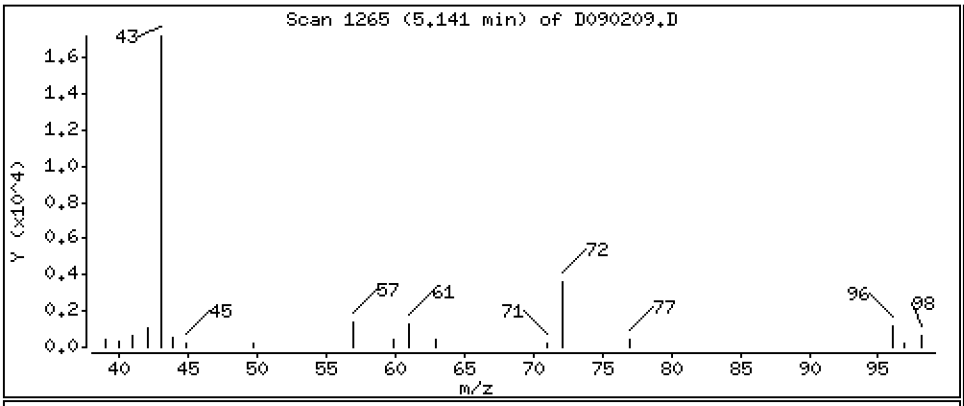
Client ID: HS18081428-01MSD Instrument: VOA2.i

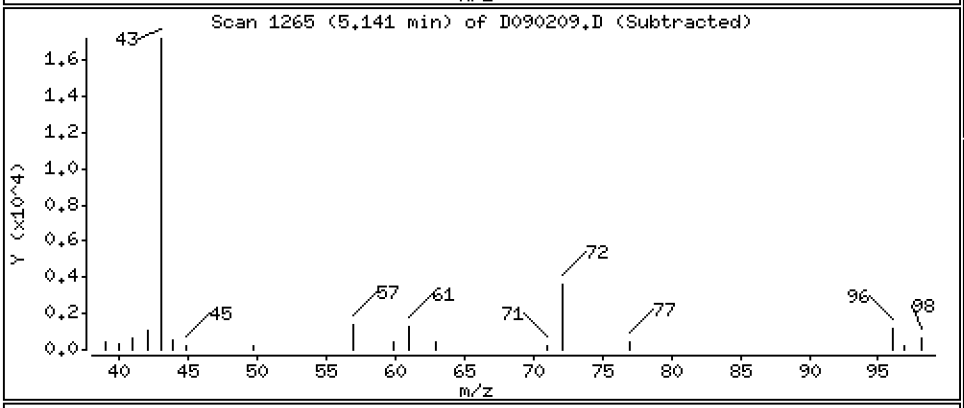
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

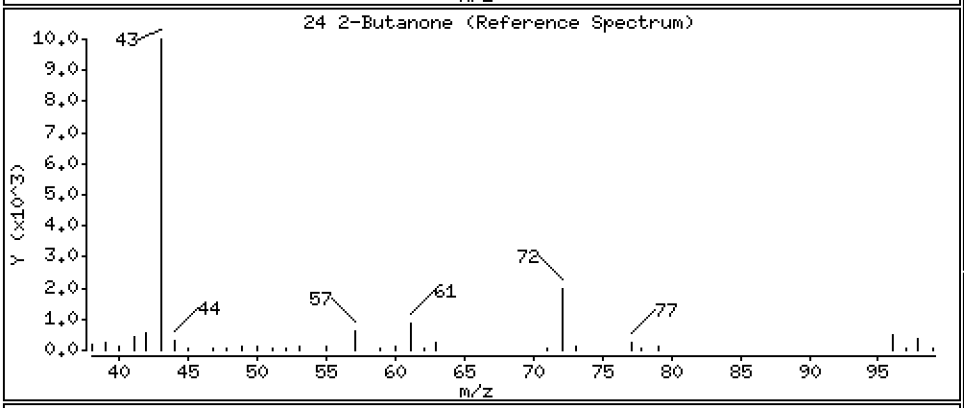
Purge Volume: 5.0 Operator: AP

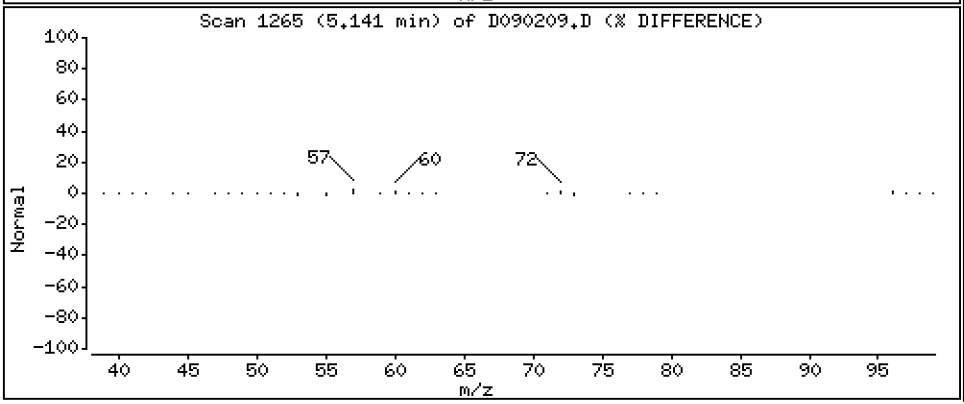
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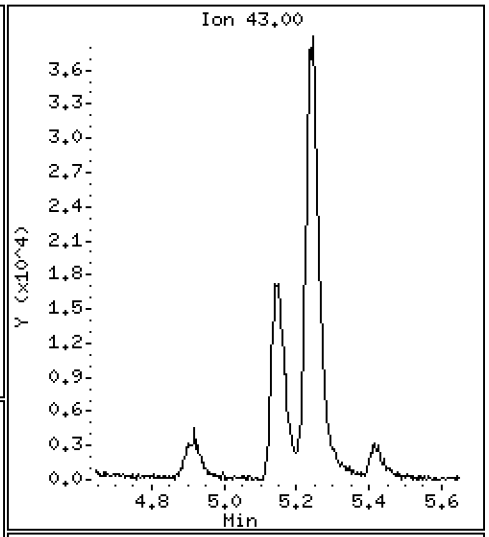
24 2-Butanone Concentration: 29.09 ug/l Review Code:

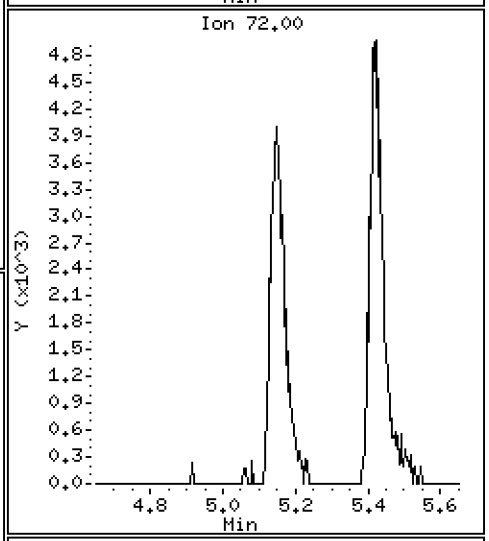


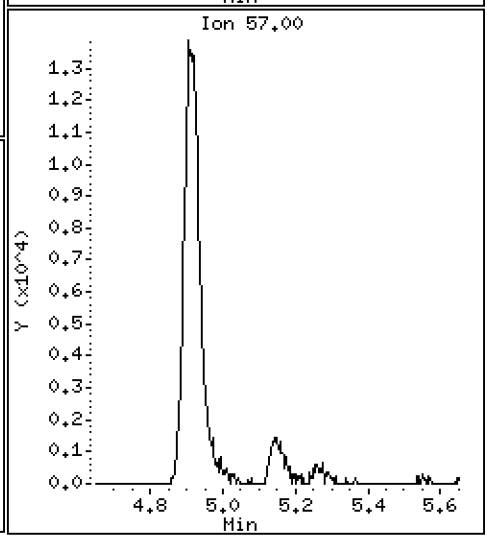












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 26

Date : 02-SEP-2018 16:42

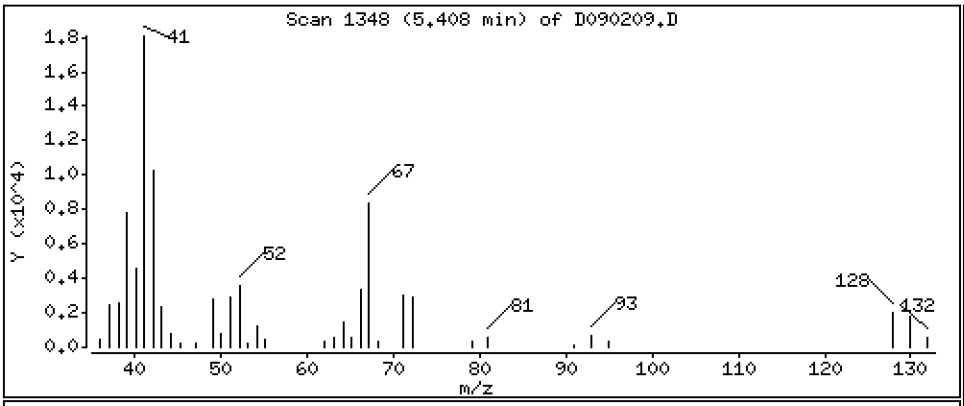
Client ID: HS18081428-01MSD Instrument: VOA2.i

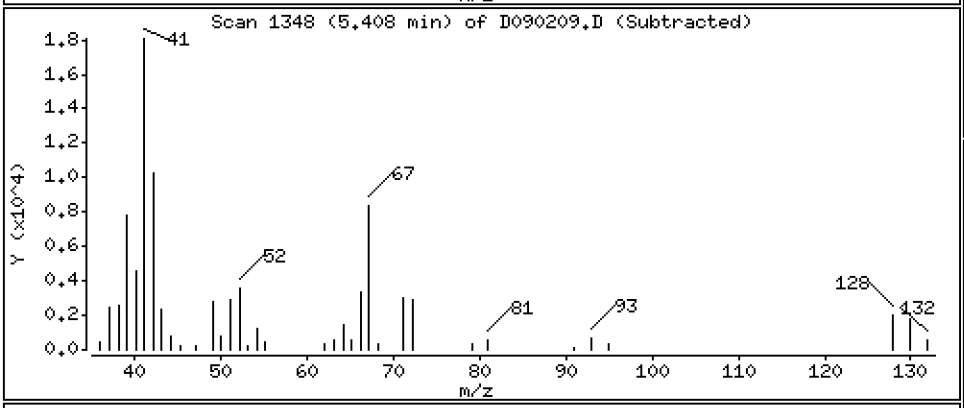
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

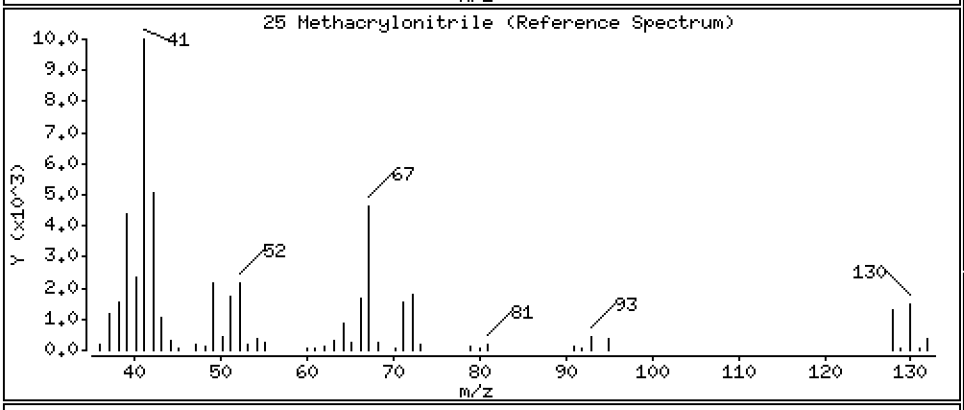
Purge Volume: 5.0 Operator: AP

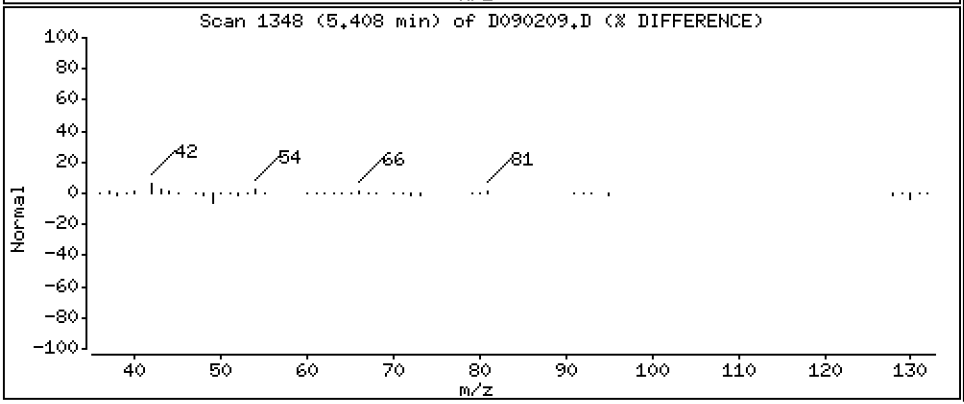
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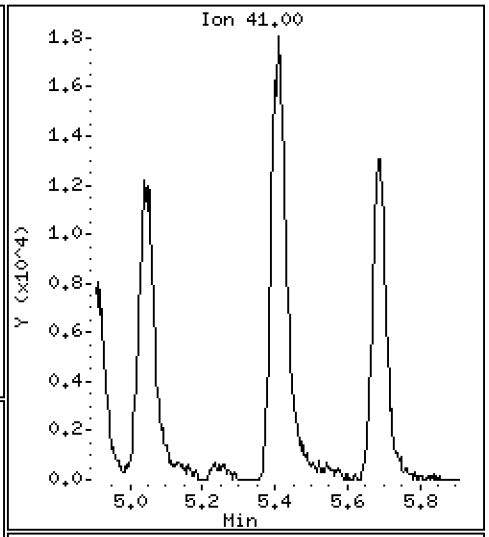
25 Methacrylonitrile Concentration: 15.84 ug/l Review Code:

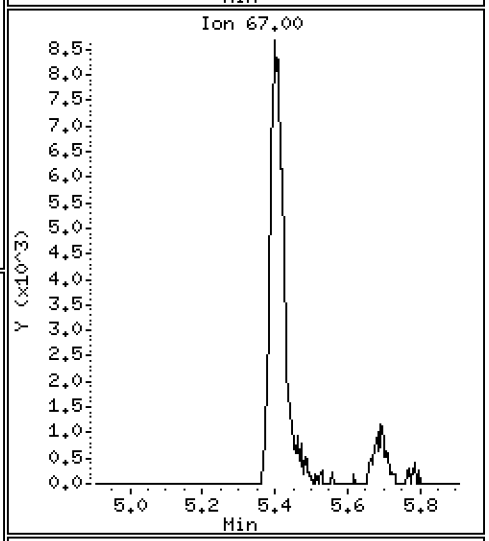


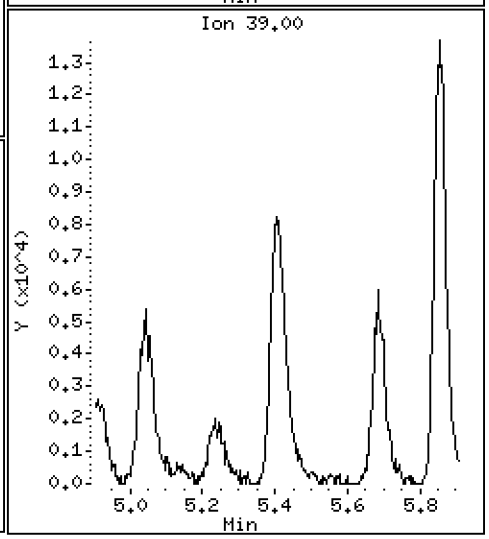












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 27

Date : 02-SEP-2018 16:42

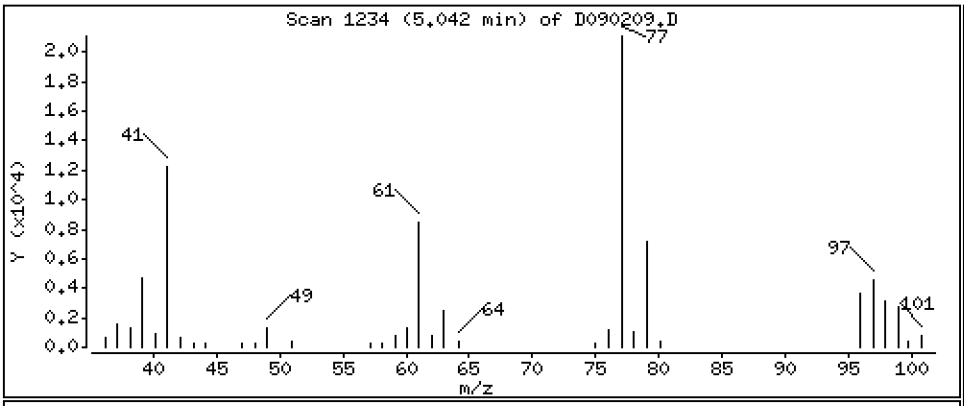
Client ID: HS18081428-01MSD Instrument: VOA2.i

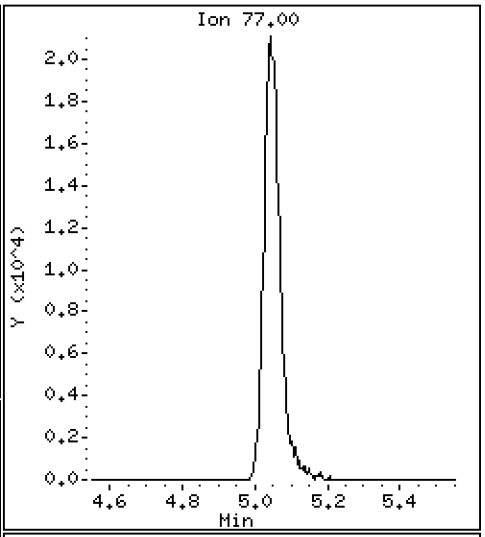
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

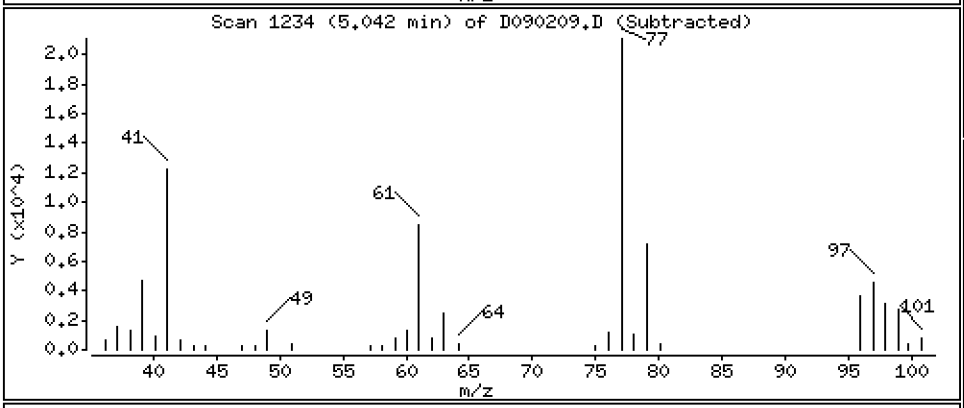
Purge Volume: 5.0 Operator: AP

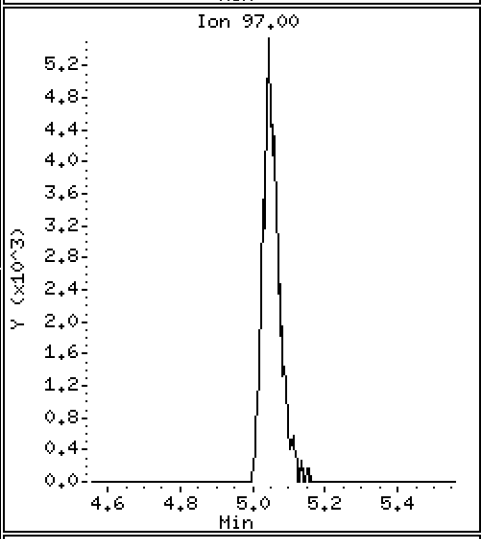
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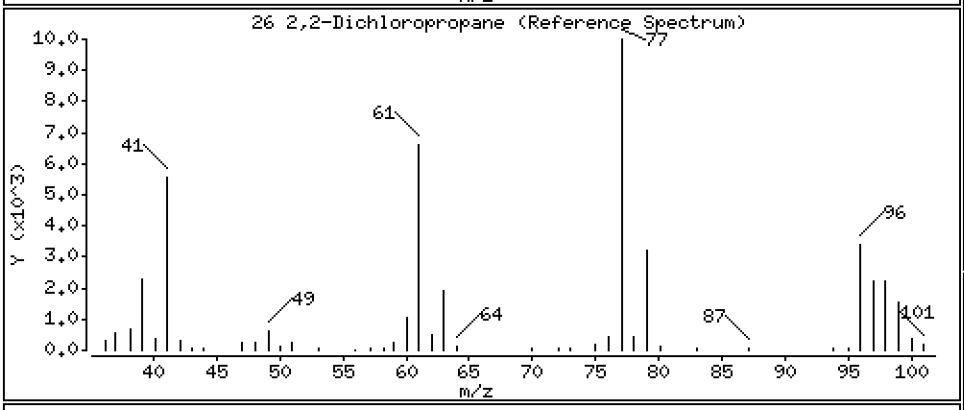
26 2,2-Dichloropropane Concentration: 18.81 ug/l Review Code:

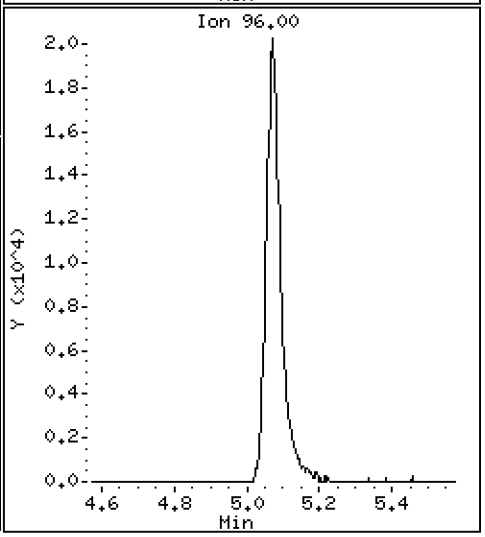


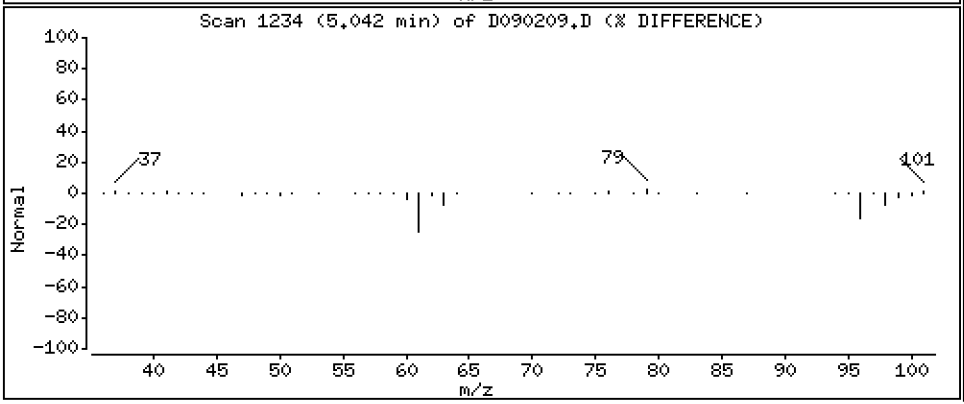












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 28

Date : 02-SEP-2018 16:42

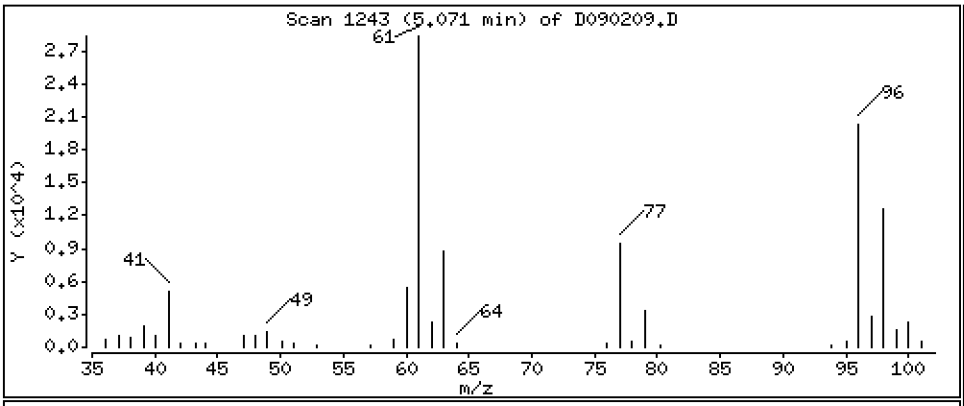
Client ID: HS18081428-01MSD Instrument: VOA2.i

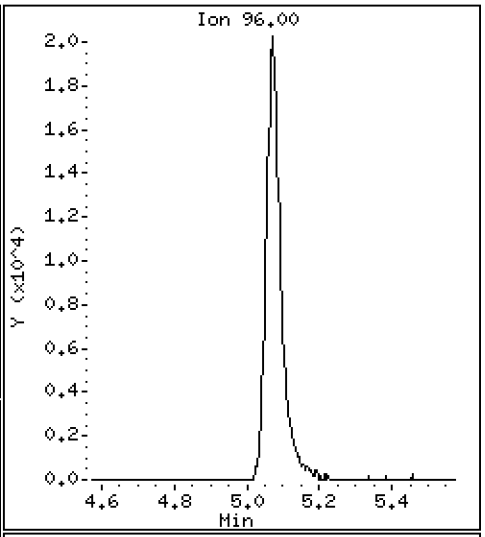
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

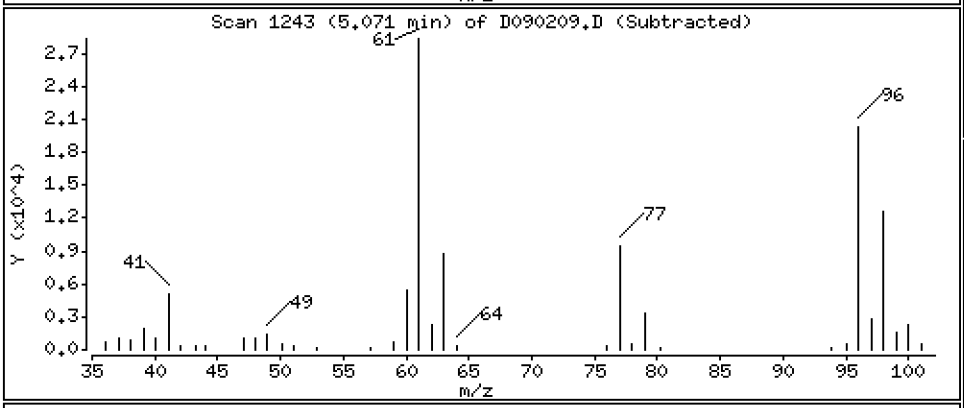
Purge Volume: 5.0 Operator: AP

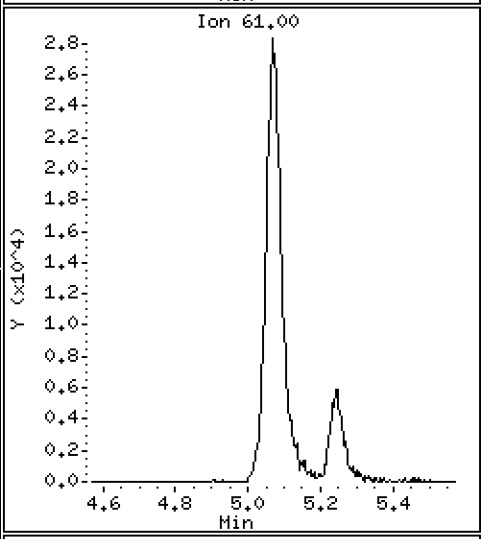
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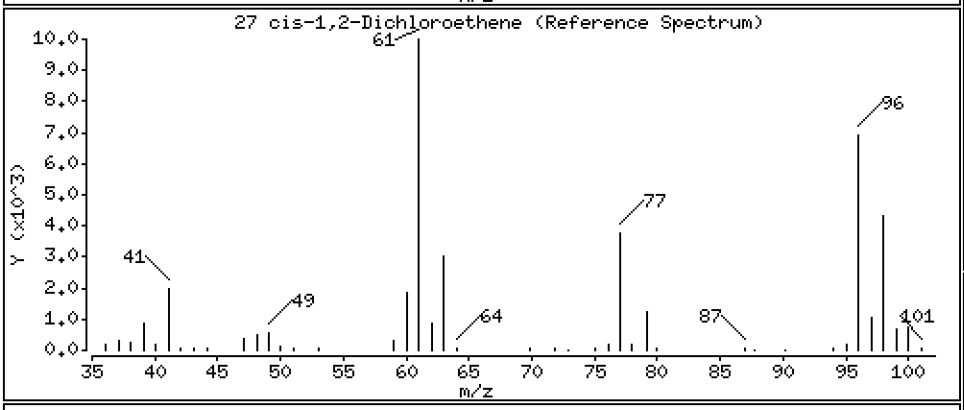
27 cis-1,2-Dichloroethene Concentration: 17.15 ug/l Review Code:

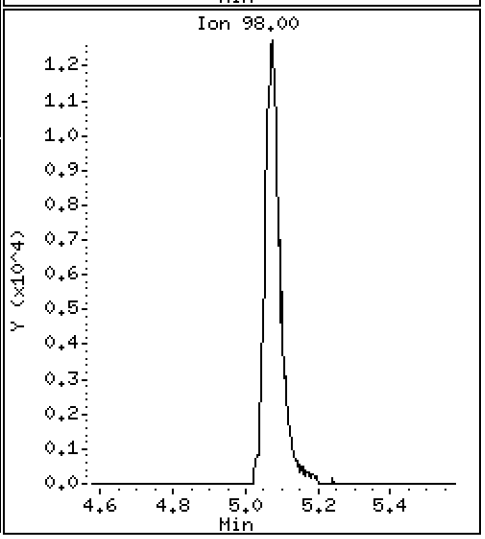


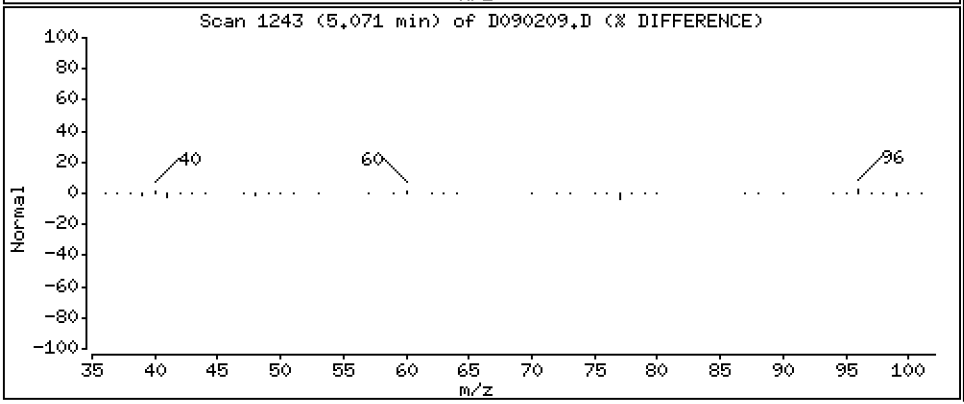












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 29

Date : 02-SEP-2018 16:42

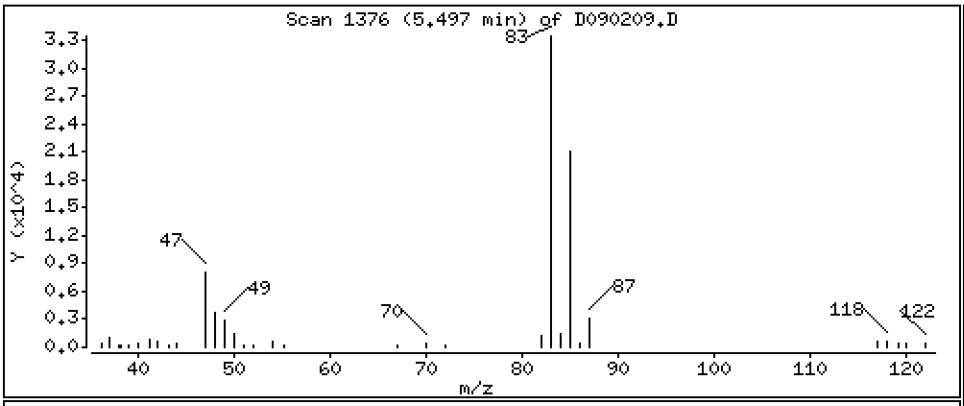
Client ID: HS18081428-01MSD Instrument: VOA2.i

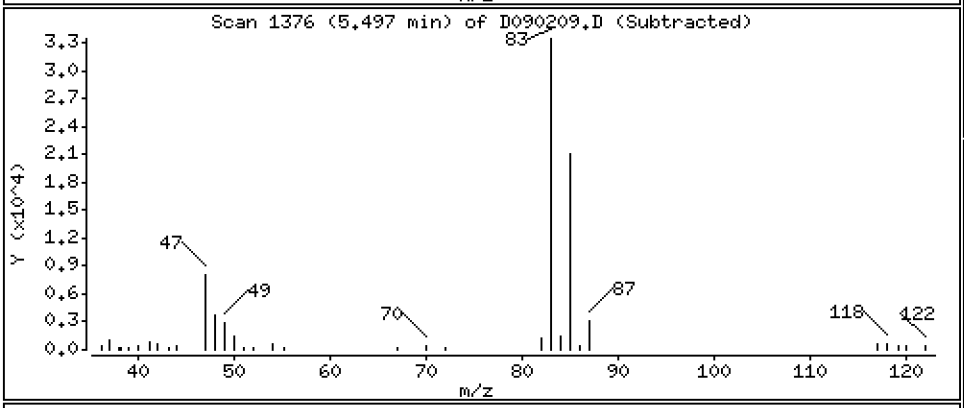
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

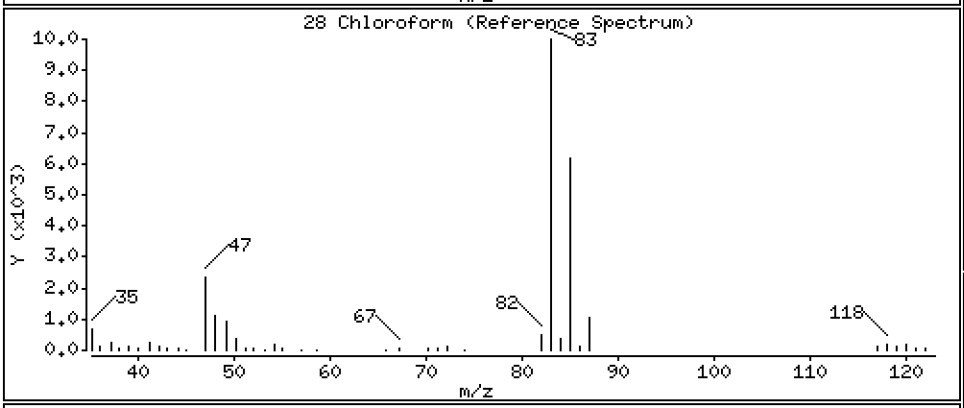
Purge Volume: 5.0 Operator: AP

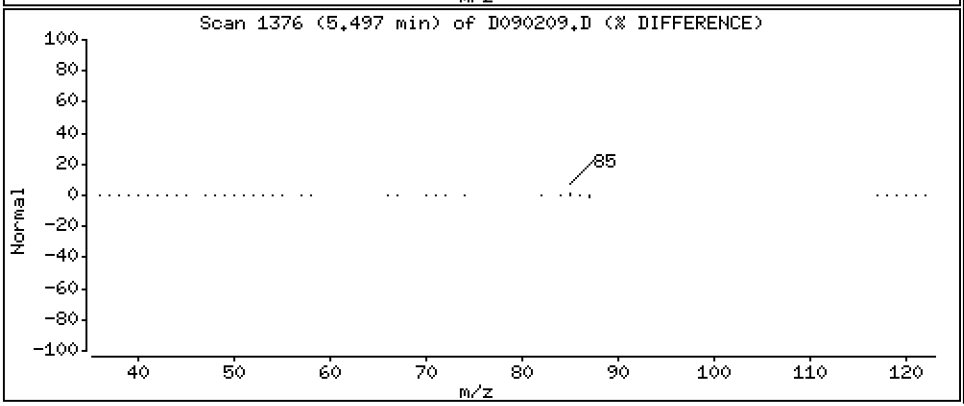
Column phase: DB624 Column diameter: 0.18

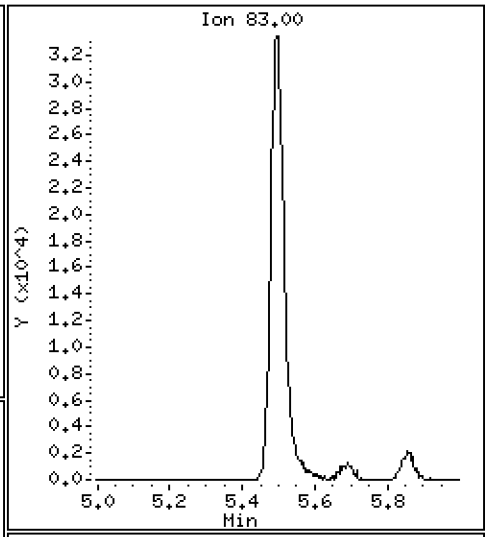
28 Chloroform Concentration: 16.48 ug/l Review Code:

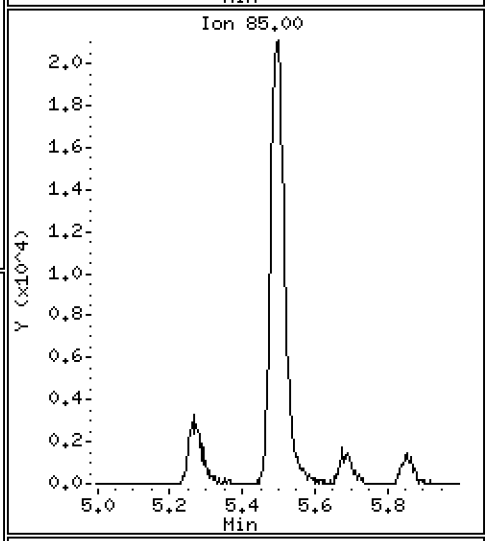


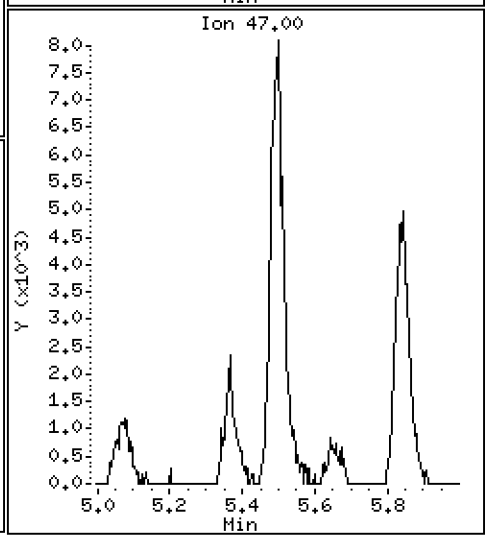












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 30

Date : 02-SEP-2018 16:42

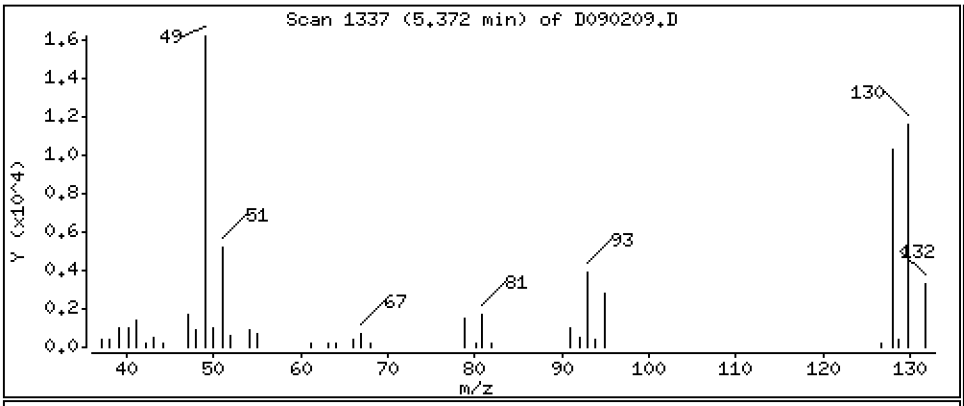
Client ID: HS18081428-01MSD Instrument: VOA2.i

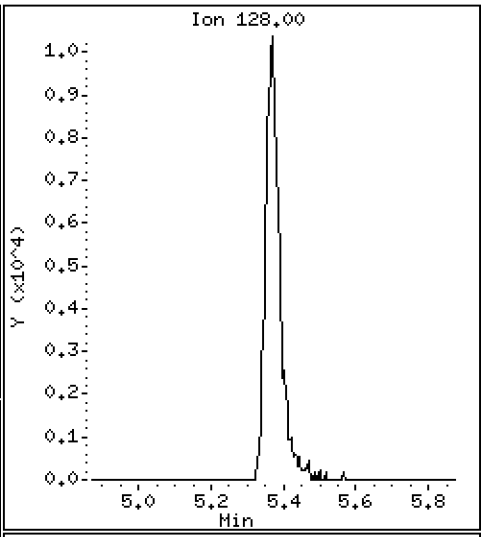
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

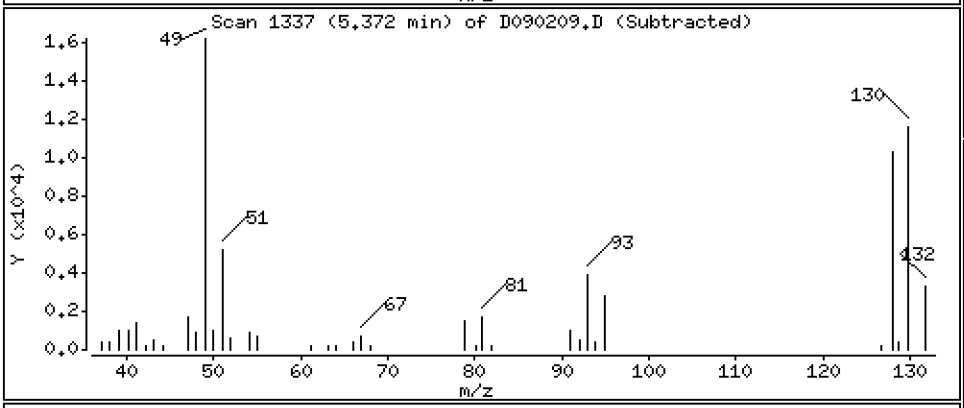
Purge Volume: 5.0 Operator: AP

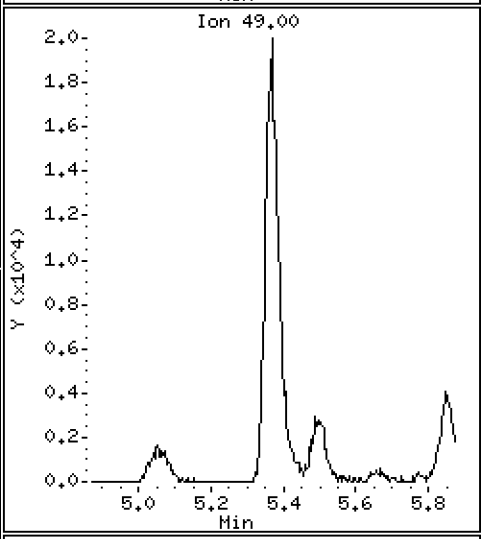
Column phase: DB624 Column diameter: 0.18

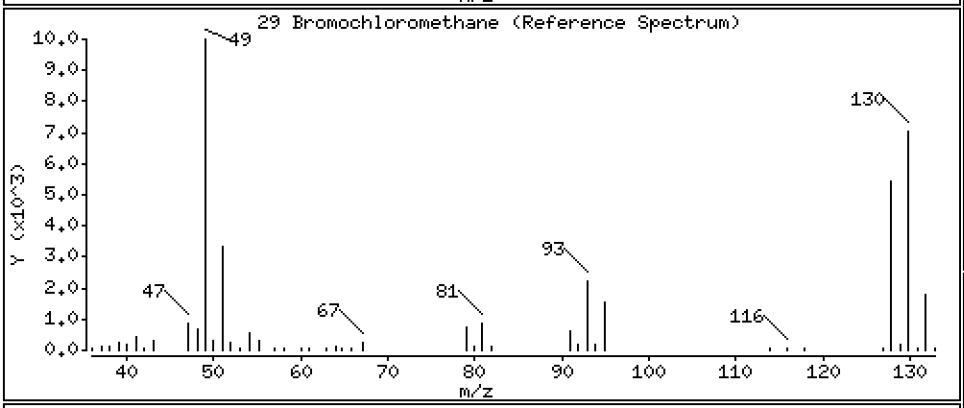
29 Bromochloromethane Concentration: 17.81 ug/l Review Code:

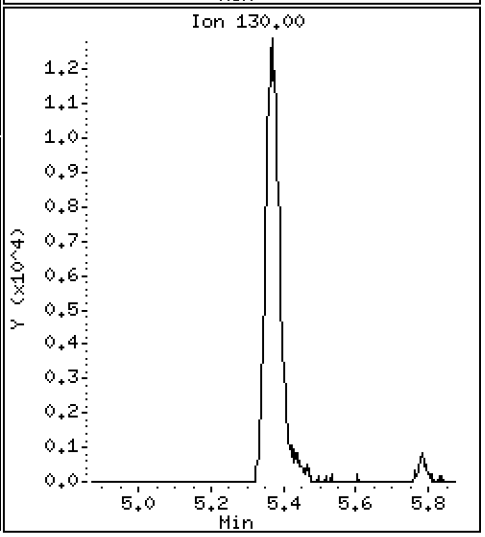


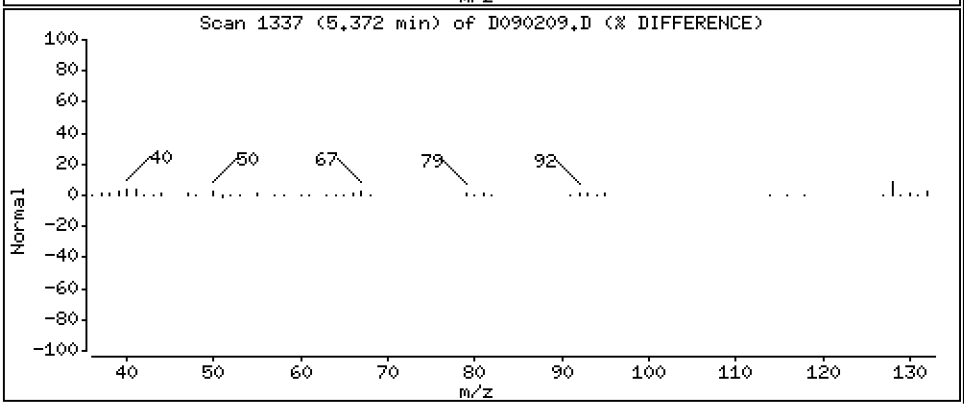












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 31

Date : 02-SEP-2018 16:42

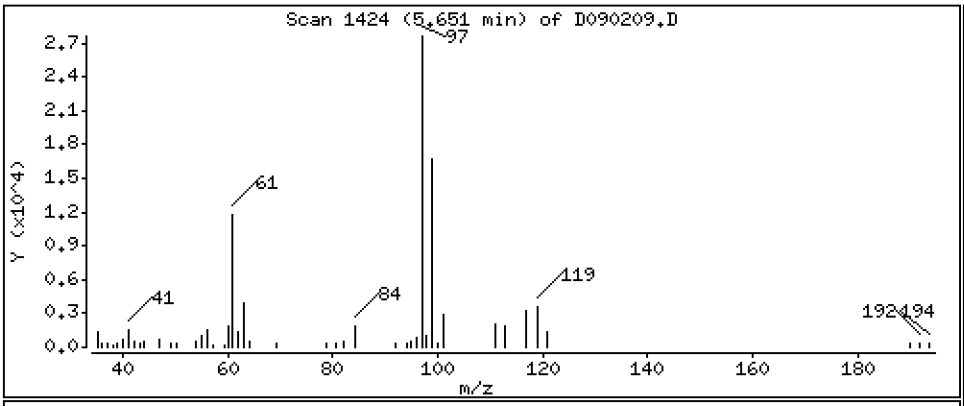
Client ID: HS18081428-01MSD Instrument: VOA2.i

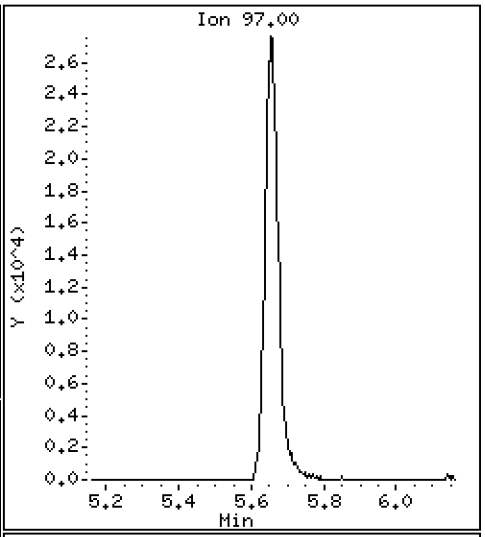
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

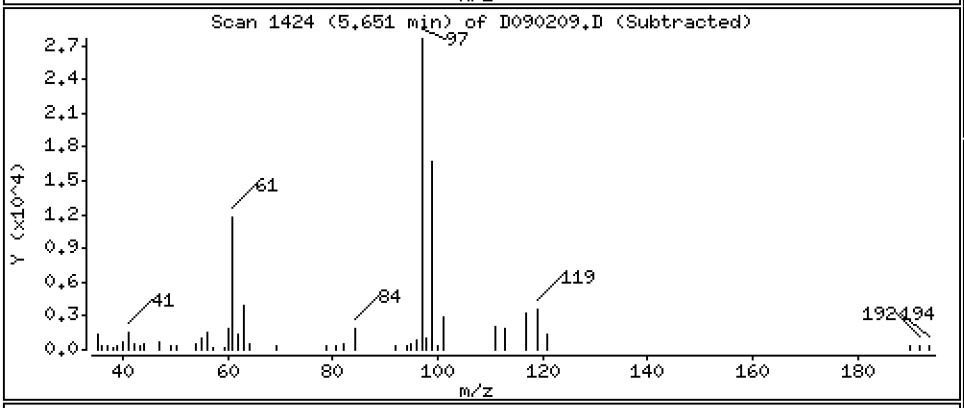
Purge Volume: 5.0 Operator: AP

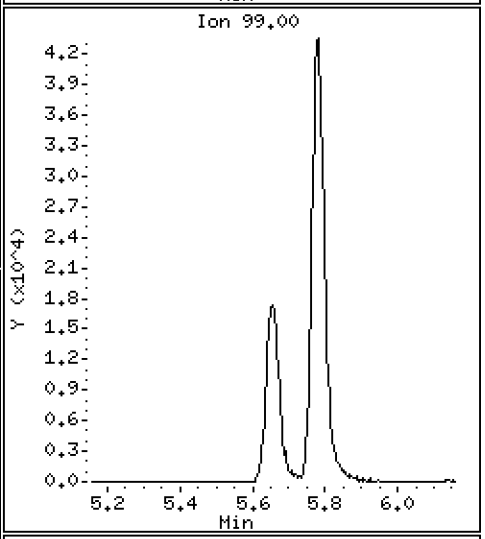
Column phase: DB624 Column diameter: 0.18

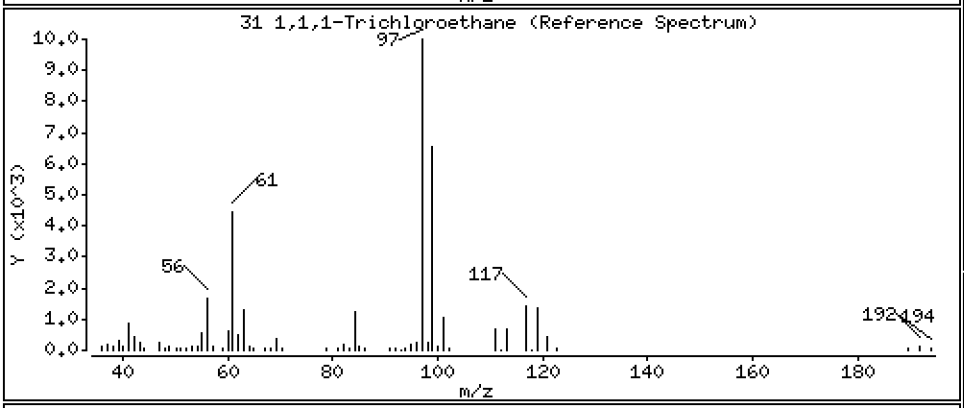
31 1,1,1-Trichloroethane Concentration: 15.99 ug/l Review Code:

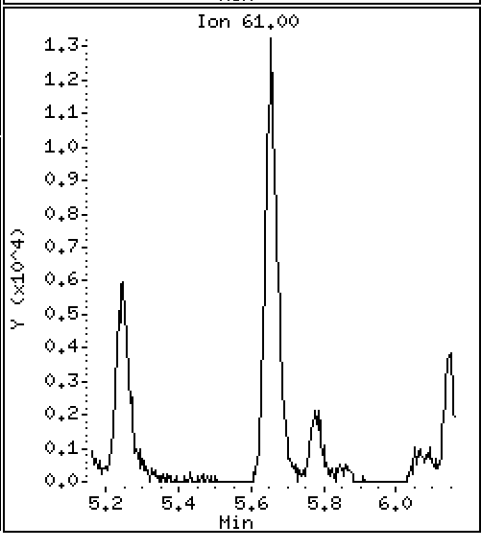


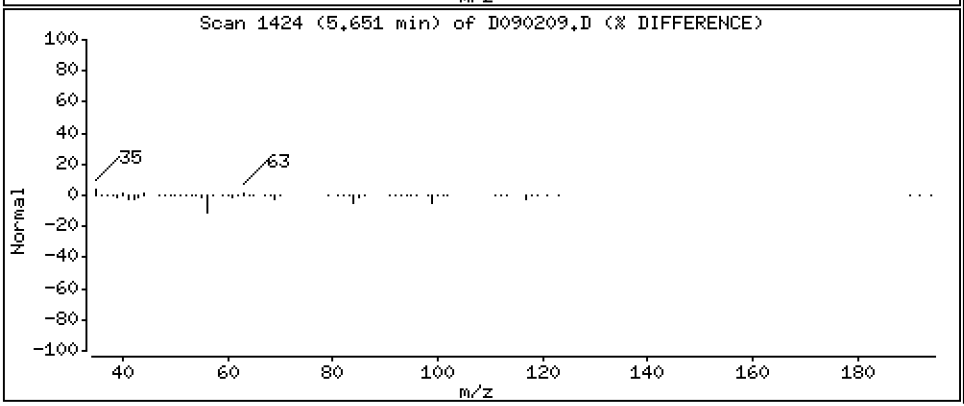












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 32

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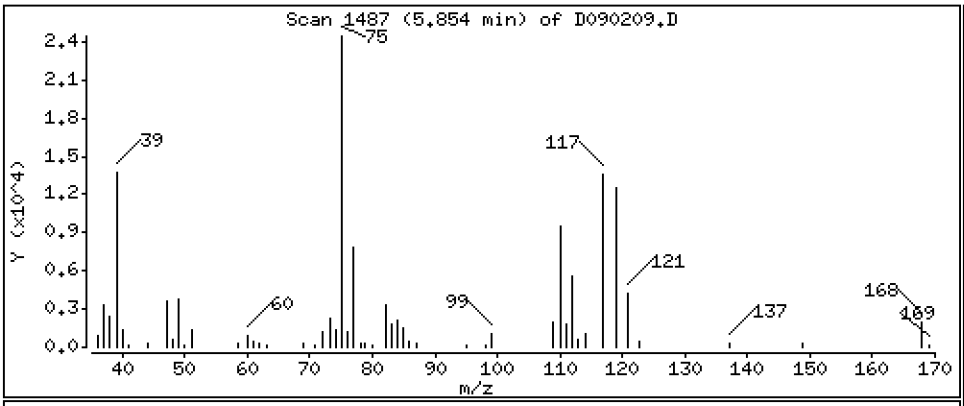
Client ID: HS18081428-01MSD Instrument: VOA2.i

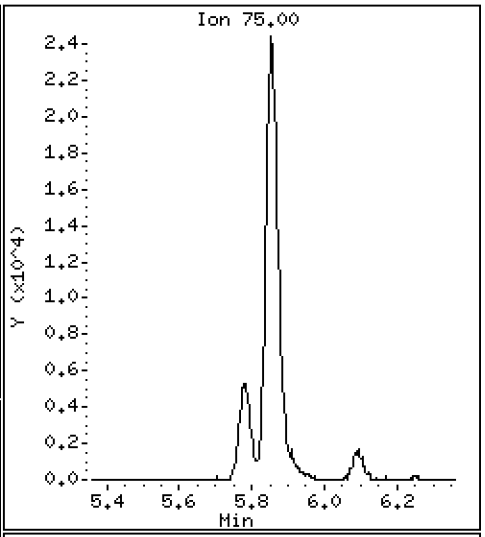
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

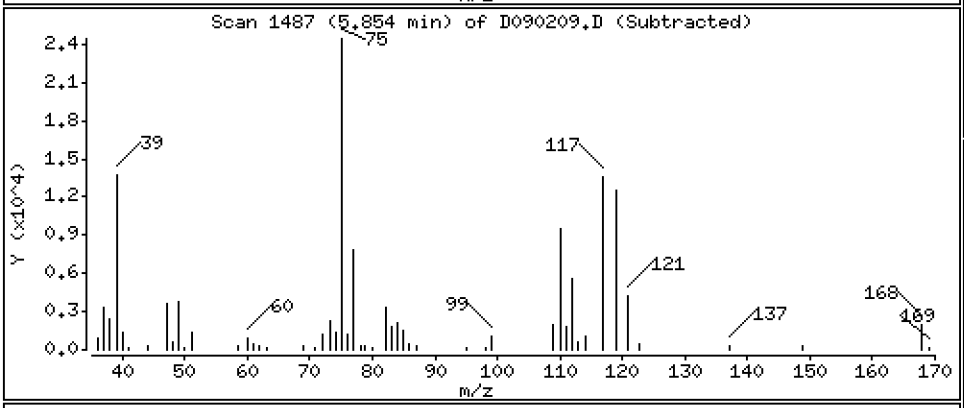
Purge Volume: 5.0 Operator: AP

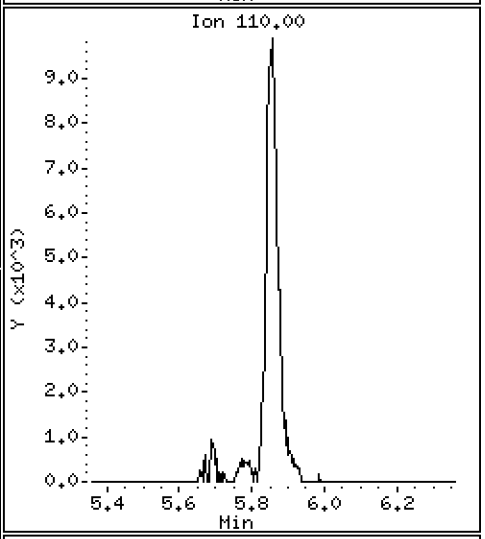
Column phase: DB624 Column diameter: 0.18

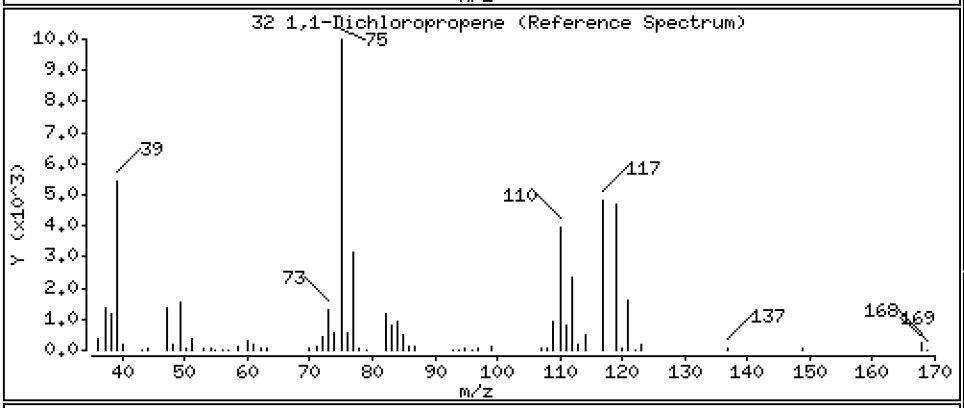
32 1,1-Dichloropropene Concentration: 17.99 ug/l Review Code:

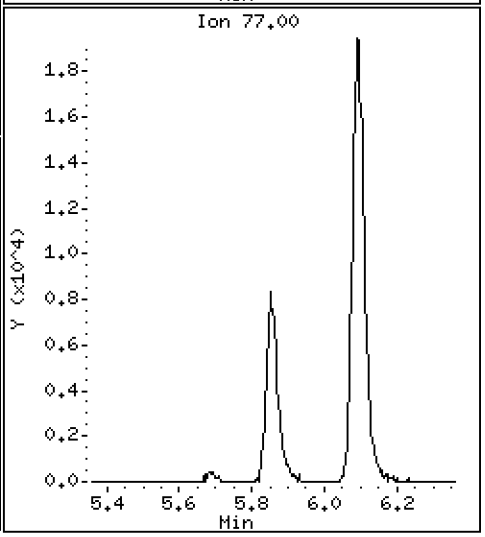


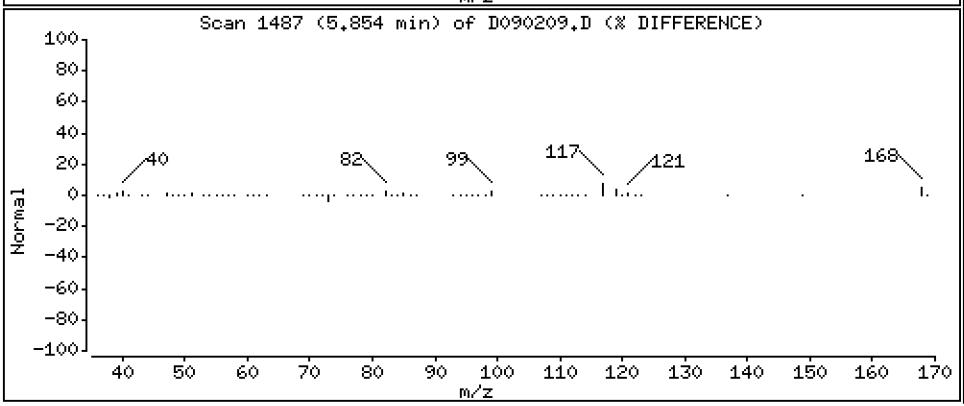












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 33

Date : 02-SEP-2018 16:42

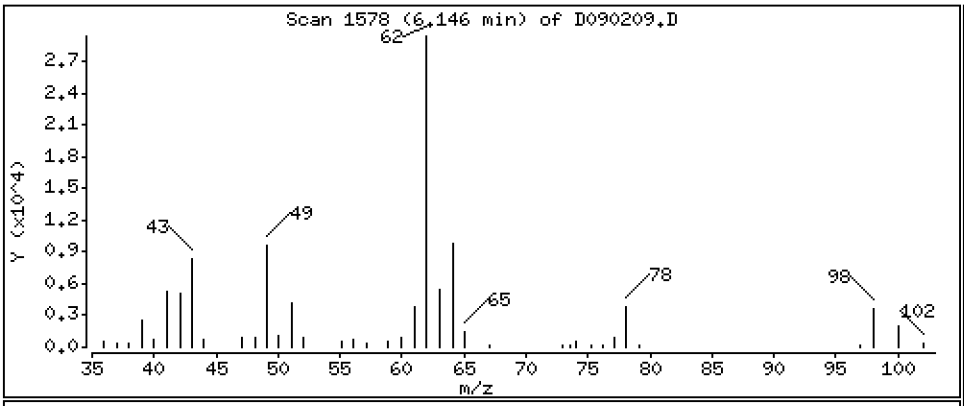
Client ID: HS18081428-01MSD Instrument: VOA2.i

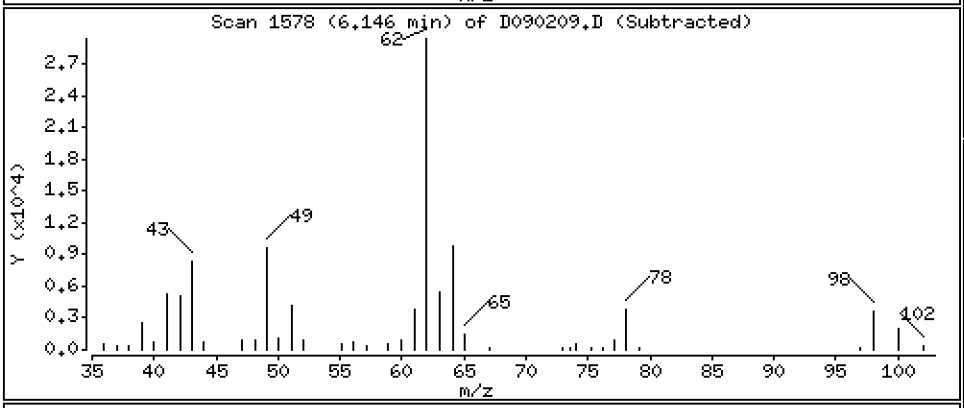
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

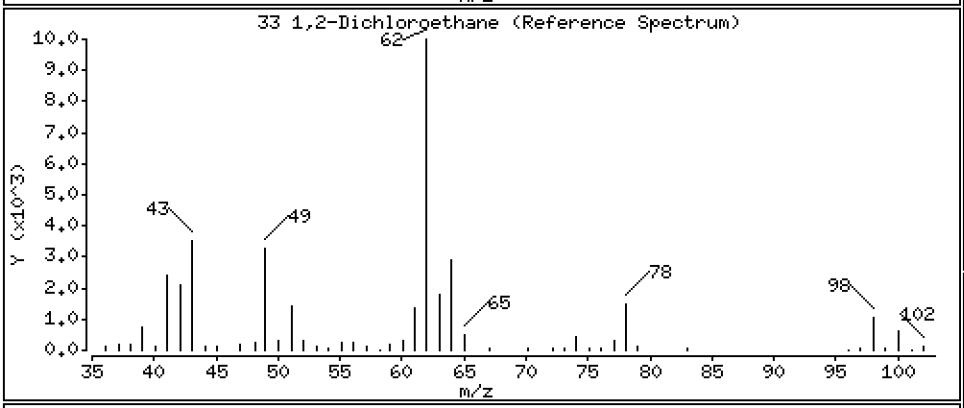
Purge Volume: 5.0 Operator: AP

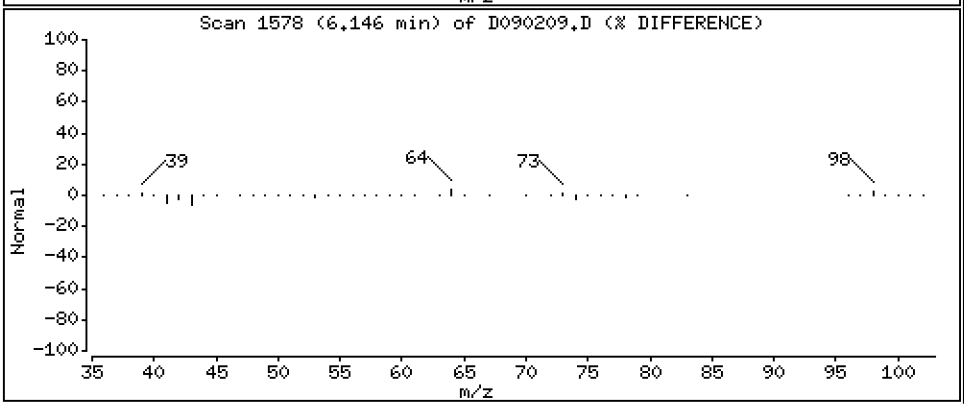
Column phase: DB624 Column diameter: 0.18

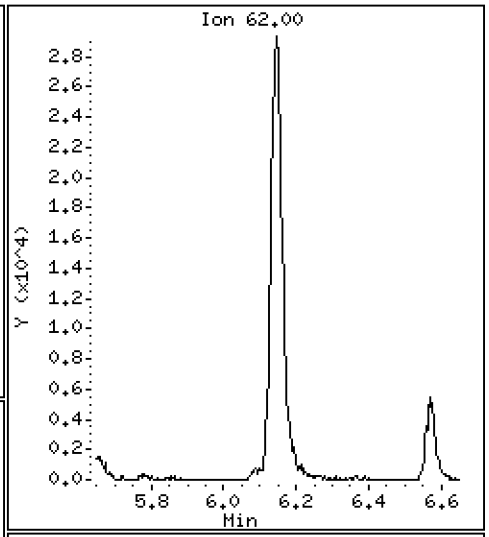
33 1,2-Dichloroethane Concentration: 17.82 ug/l Review Code:

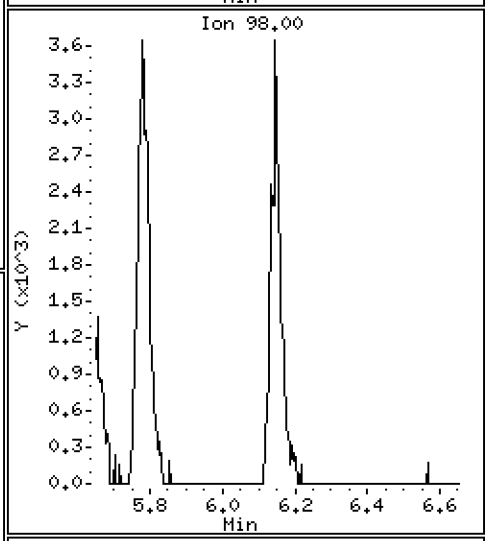


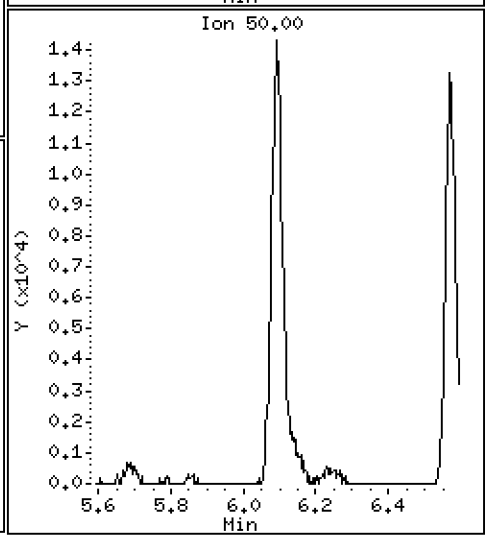












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 34

Date : 02-SEP-2018 16:42

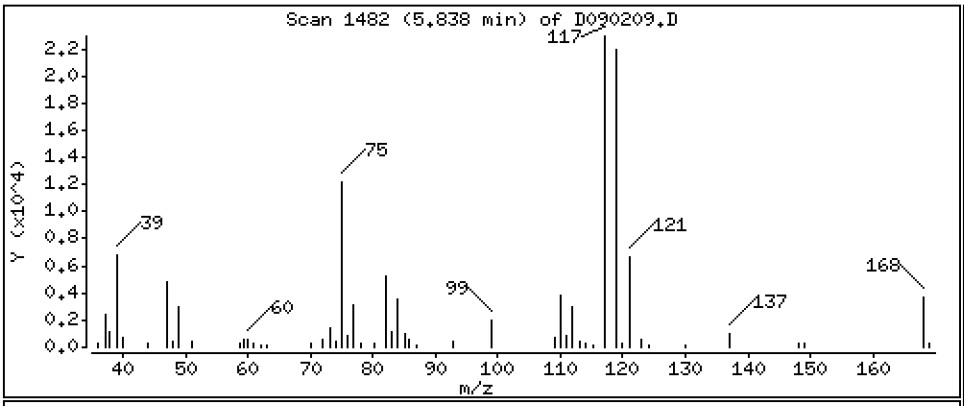
Client ID: HS18081428-01MSD Instrument: VOA2.i

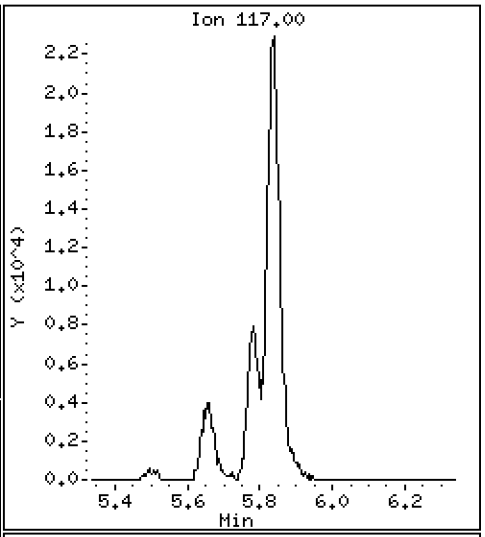
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

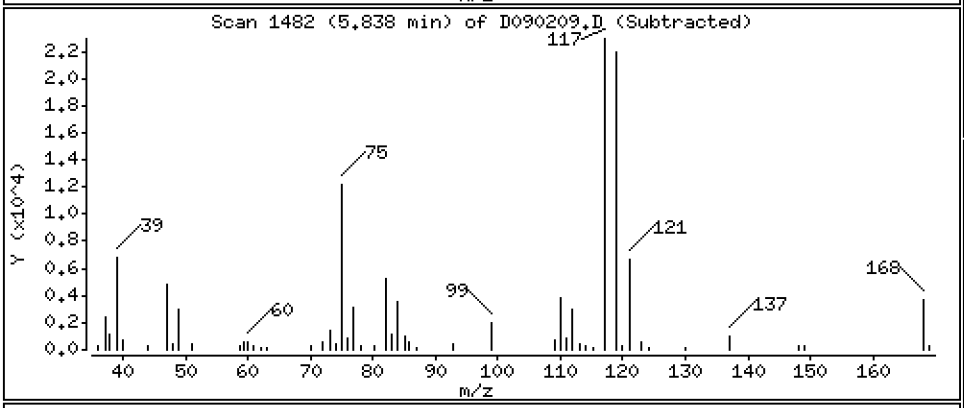
Purge Volume: 5.0 Operator: AP

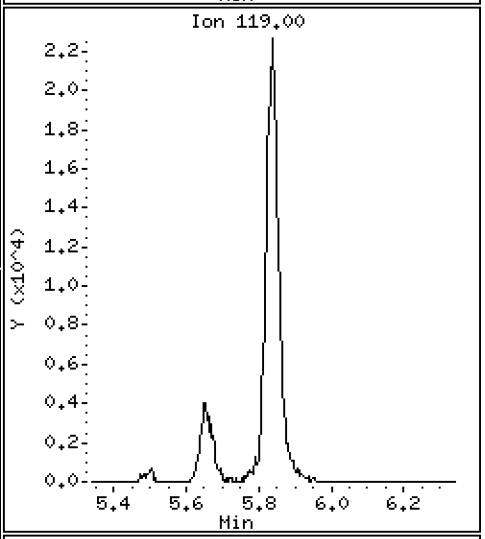
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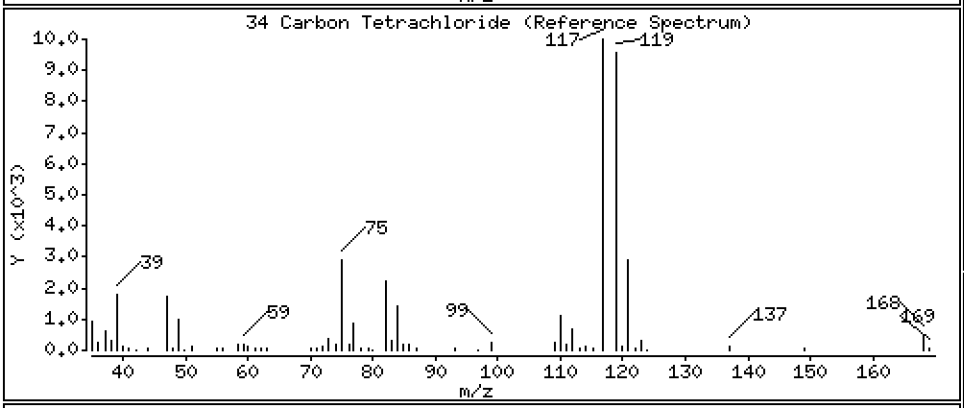
34 Carbon Tetrachloride Concentration: 16.38 ug/l Review Code:

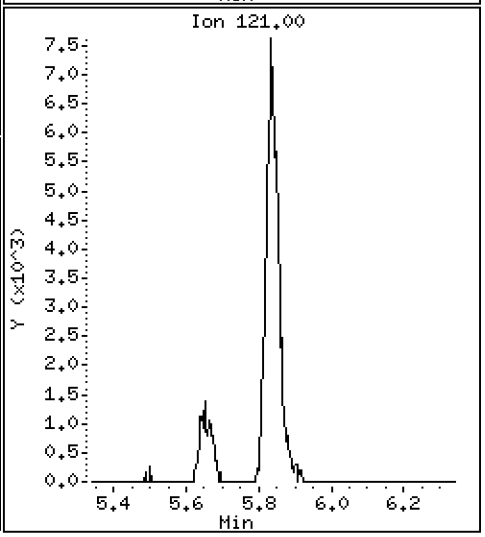


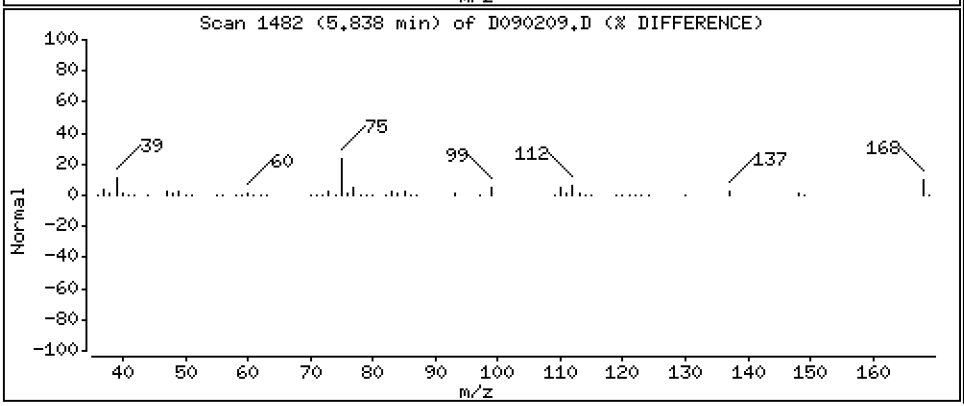












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Date : 02-SEP-2018 16:42

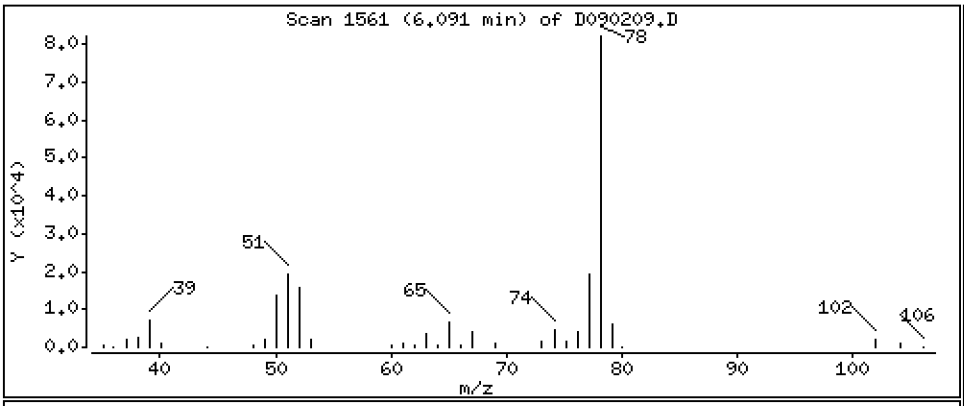
Client ID: HS18081428-01MSD Instrument: VOA2.i

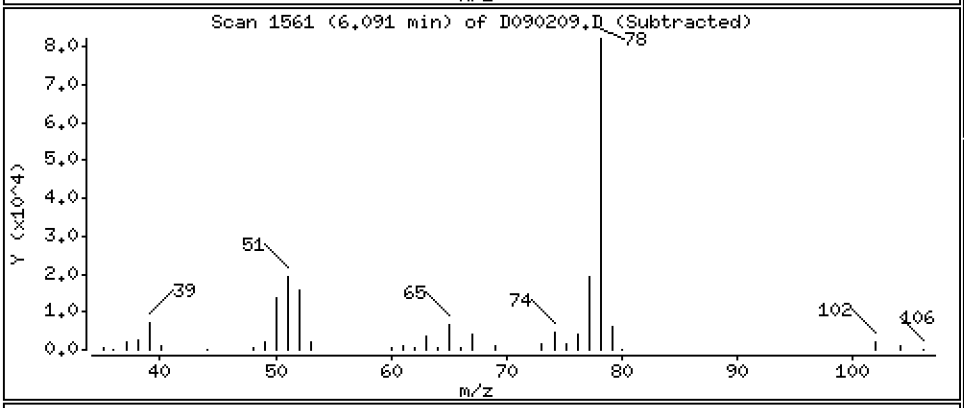
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

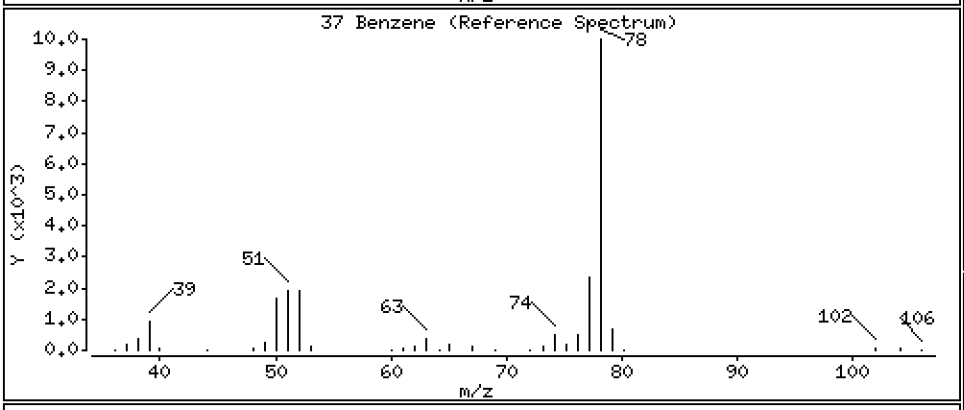
Purge Volume: 5.0 Operator: AP

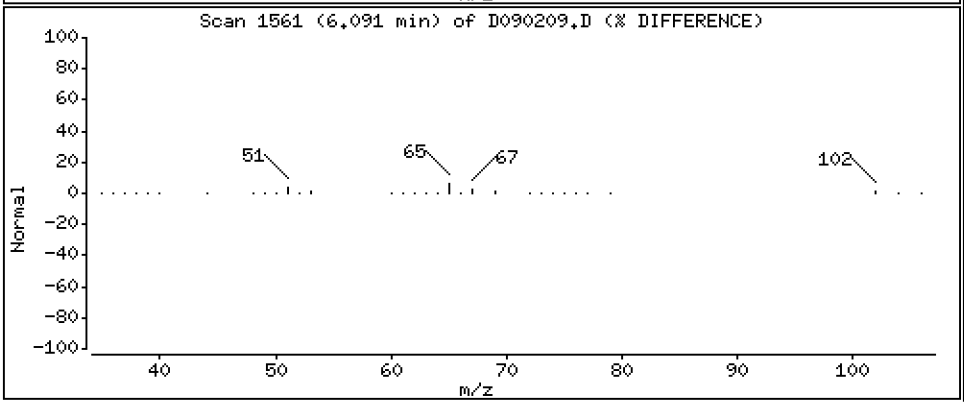
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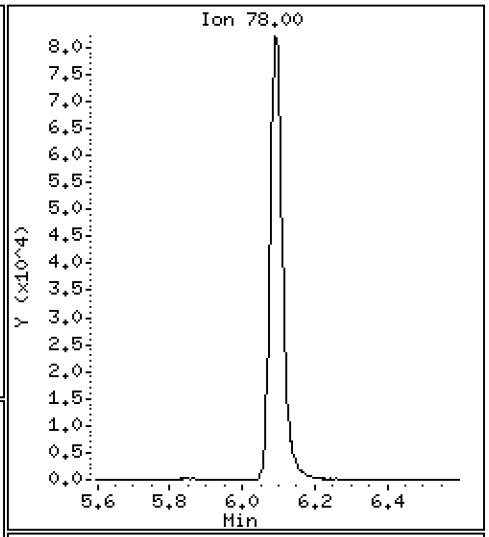
37 Benzene Concentration: 17.14 ug/l Review Code:

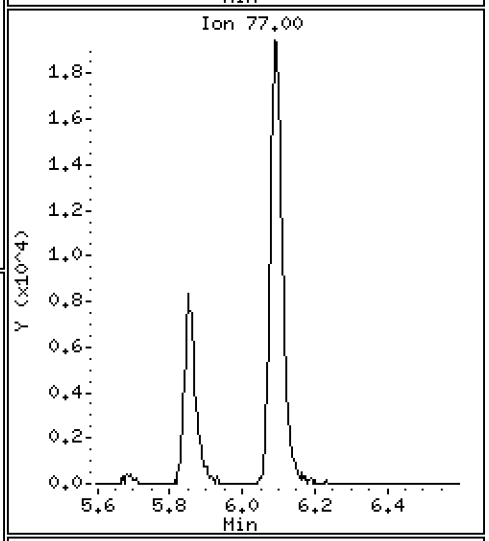


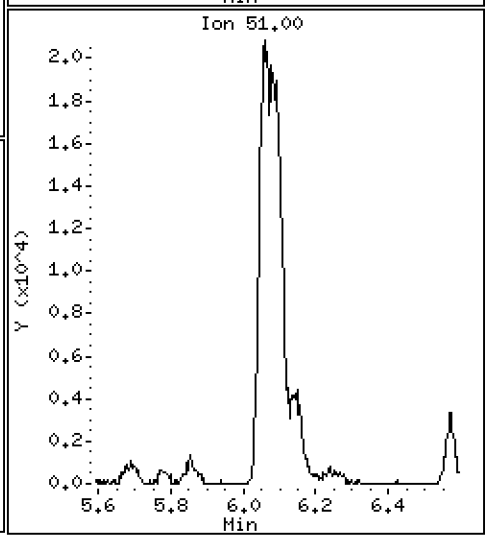












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Date : 02-SEP-2018 16:42

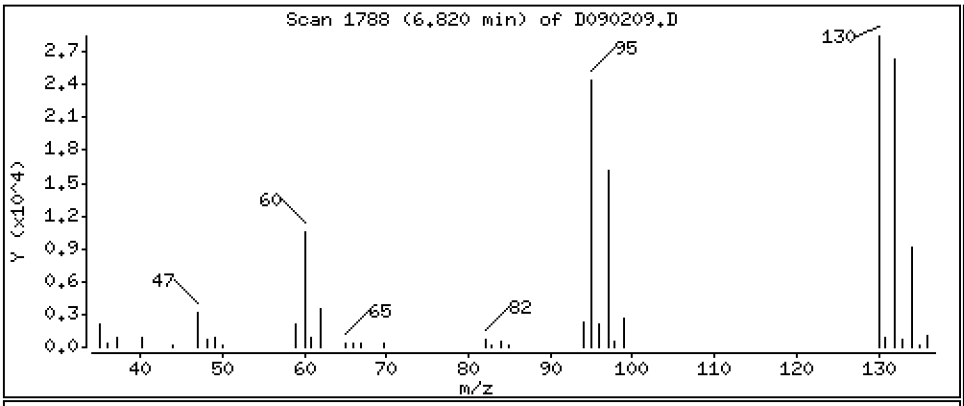
Client ID: HS18081428-01MSD Instrument: VOA2.i

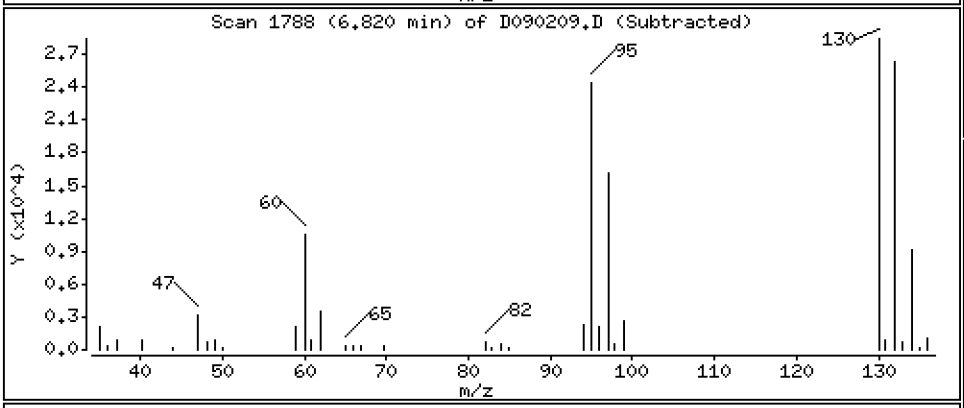
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

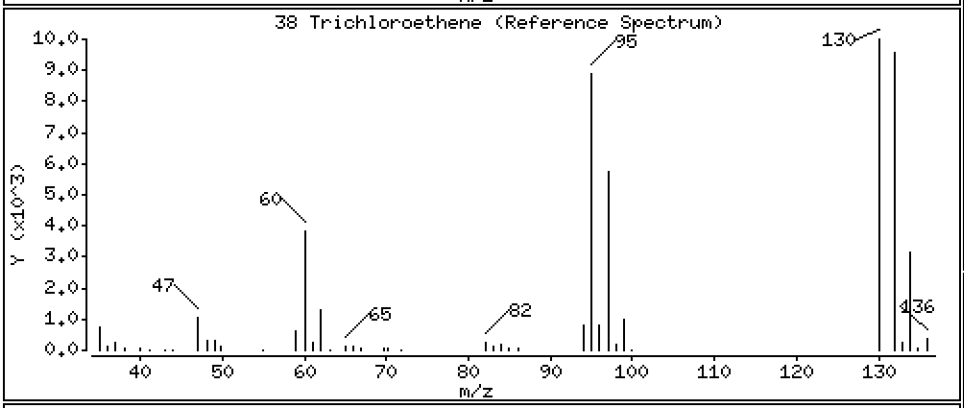
Purge Volume: 5.0 Operator: AP

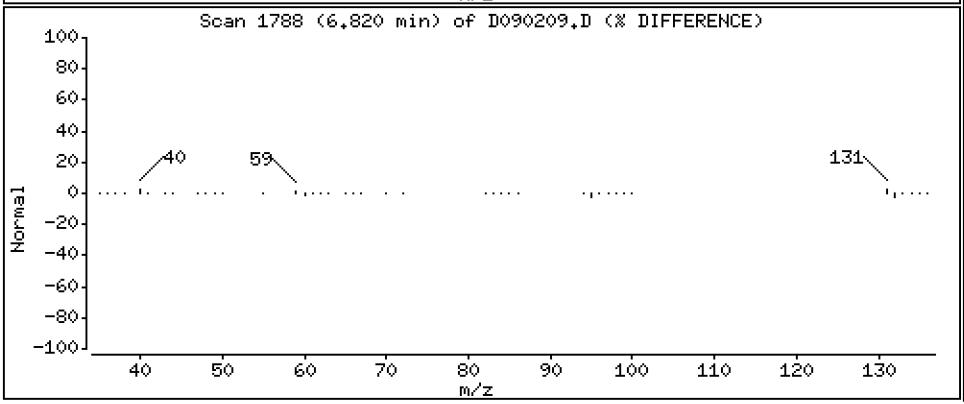
Column phase: DB624 Column diameter: 0.18

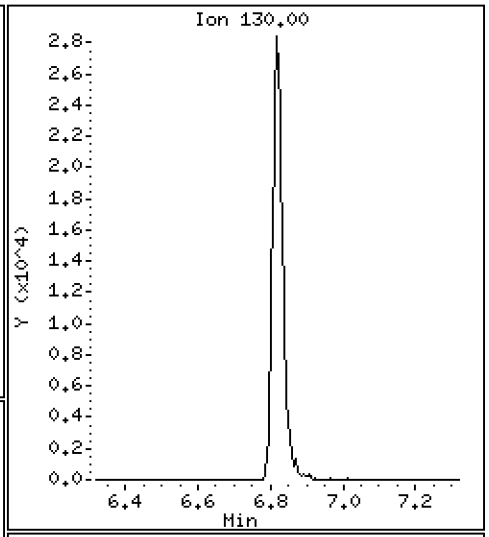
38 Trichloroethene Concentration: 18.12 ug/l Review Code:

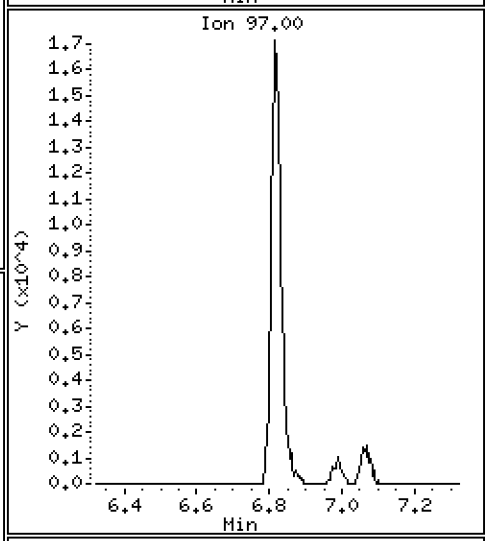


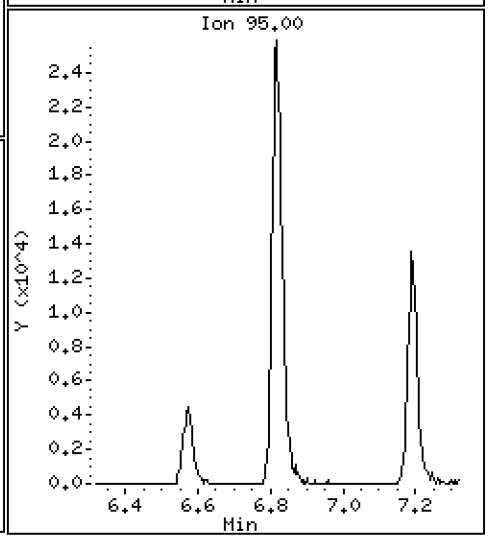












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 37

Date : 02-SEP-2018 16:42

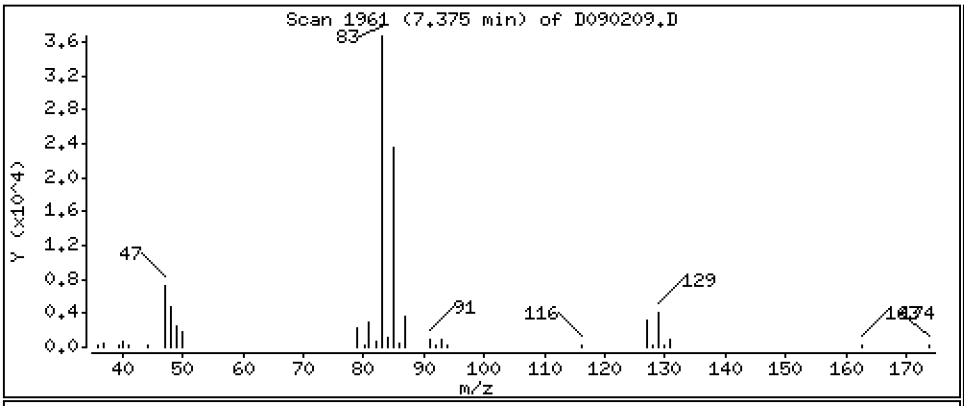
Client ID: HS18081428-01MSD Instrument: VOA2.i

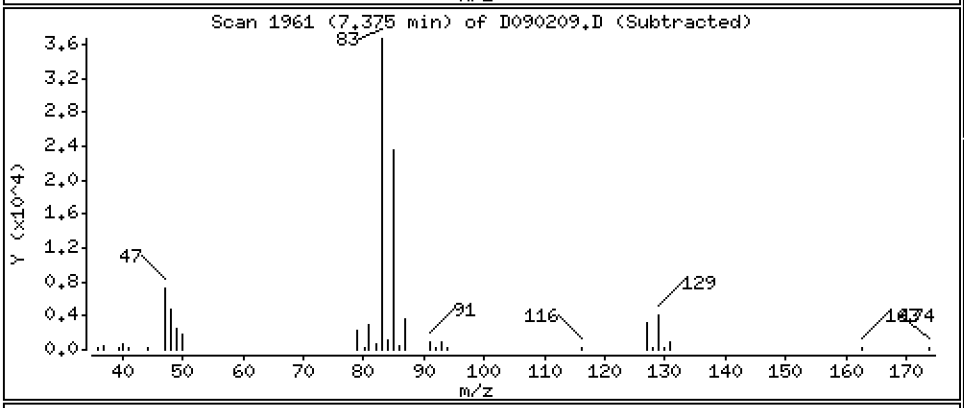
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

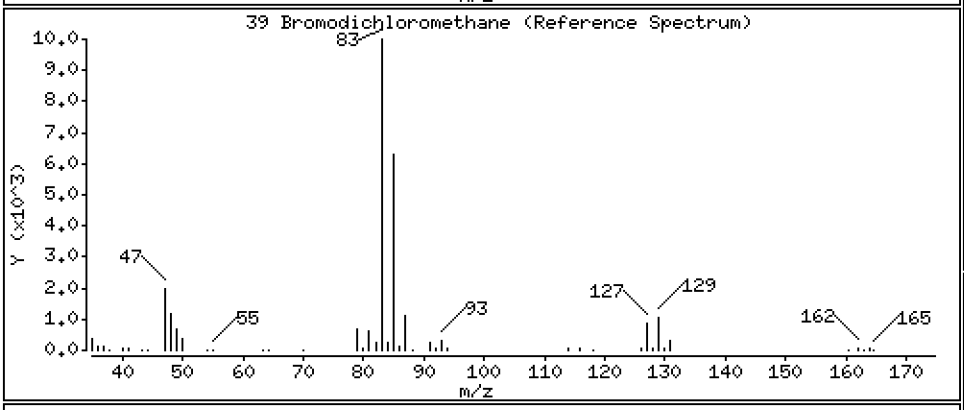
Purge Volume: 5.0 Operator: AP

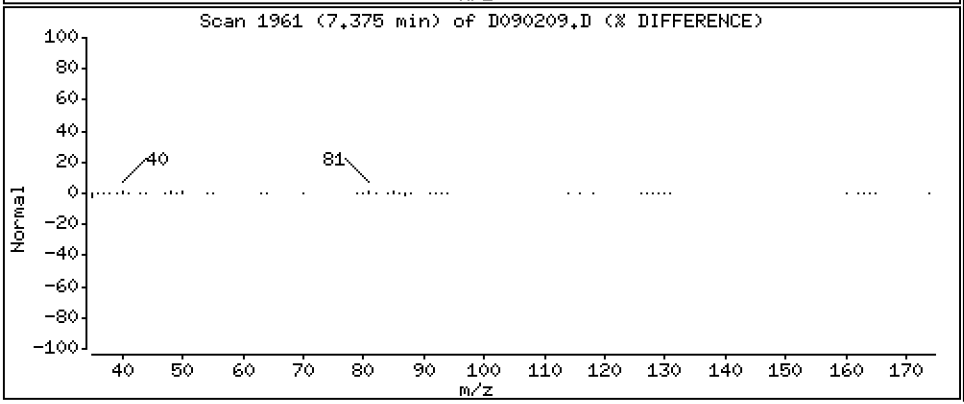
Column phase: DB624 Column diameter: 0.18

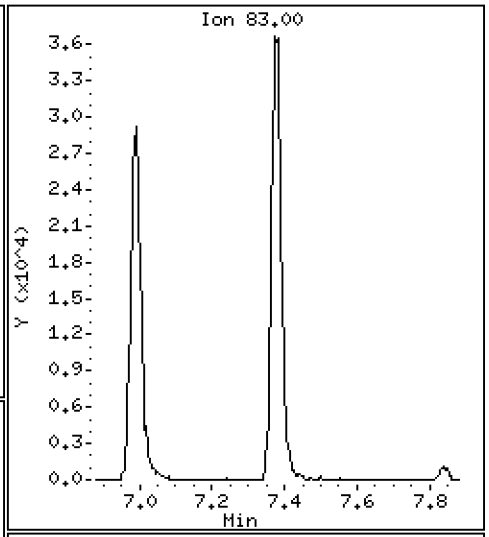
39 Bromodichloromethane Concentration: 17.99 ug/l Review Code:

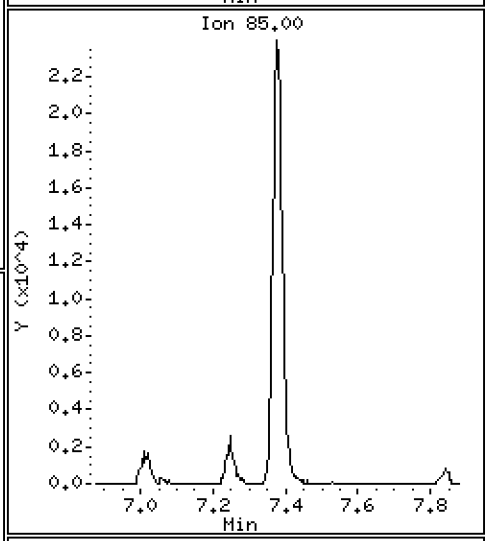


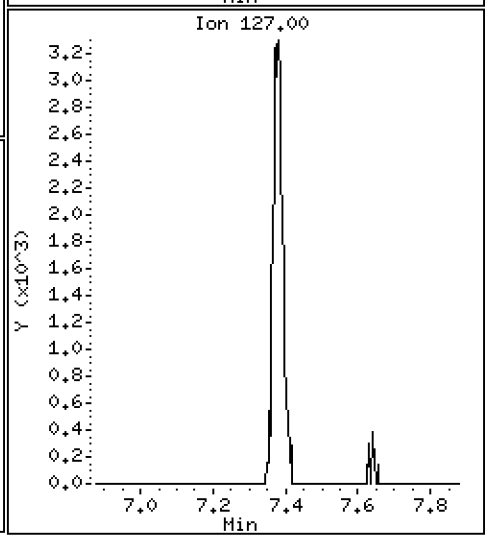












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 38

Date : 02-SEP-2018 16:42

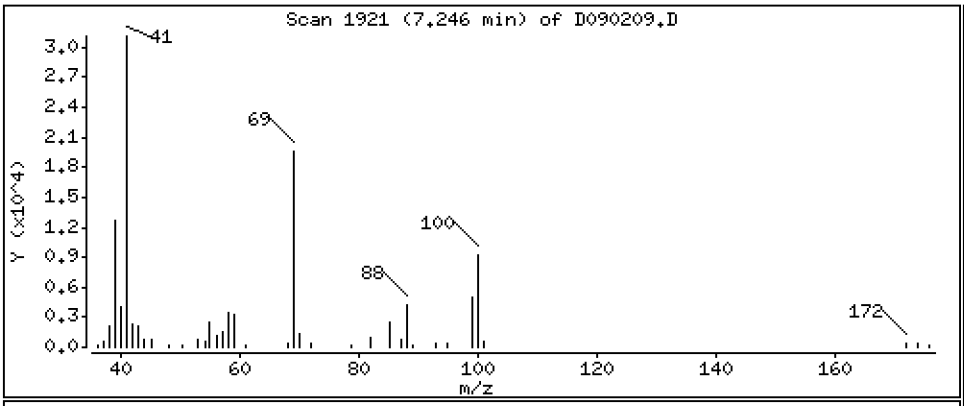
Client ID: HS18081428-01MSD Instrument: VOA2.i

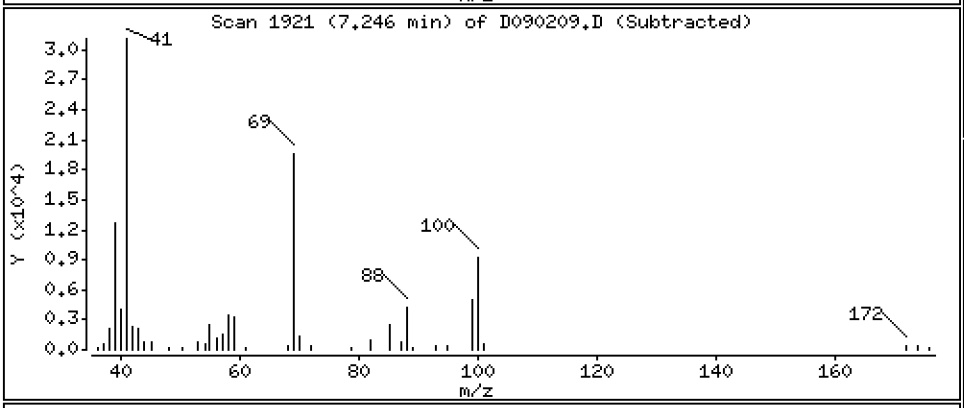
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

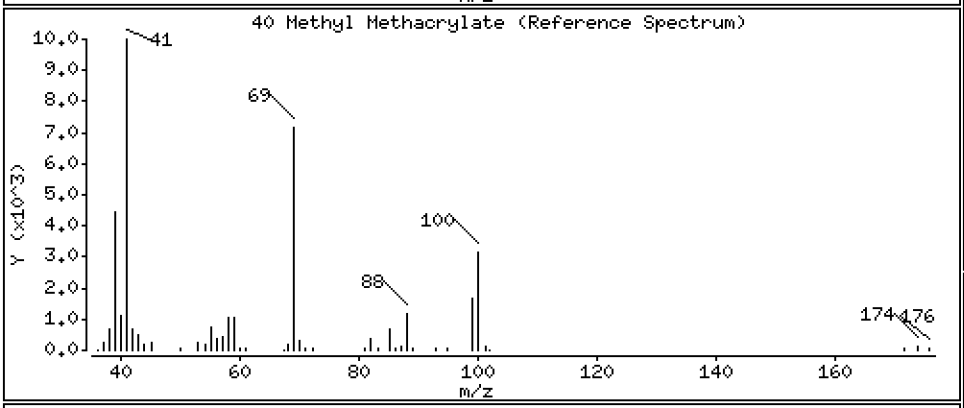
Purge Volume: 5.0 Operator: AP

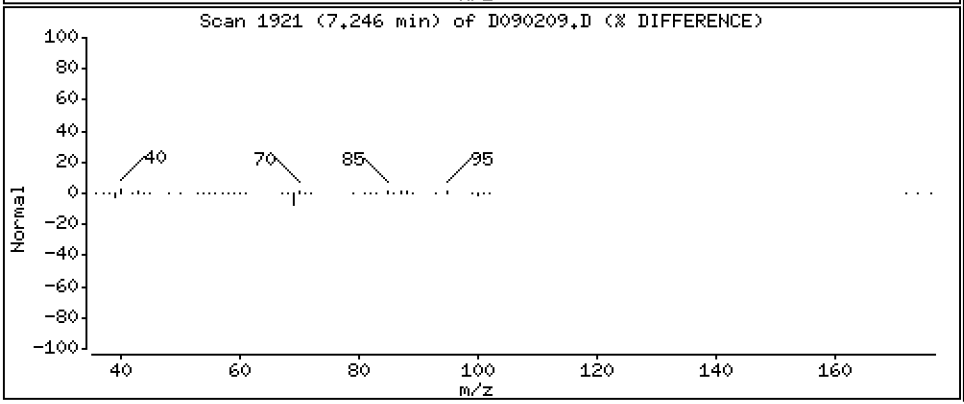
Column phase: DB624 Column diameter: 0.18

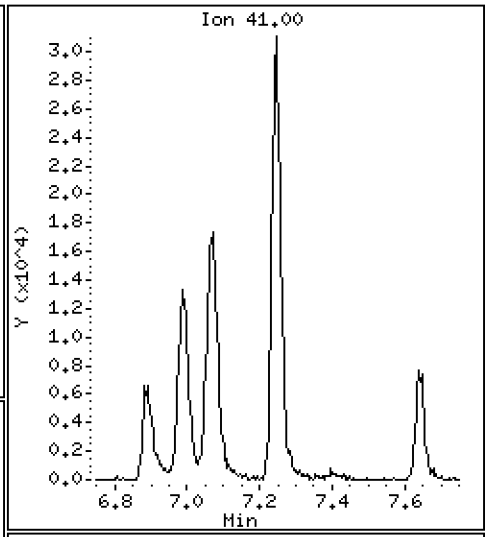
40 Methyl Methacrylate Concentration: 15.67 ug/l Review Code:

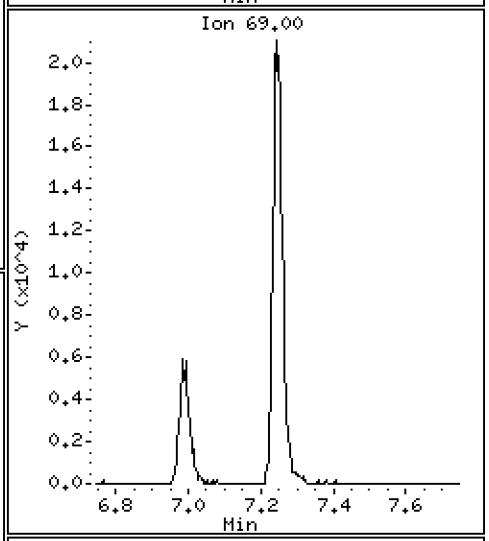


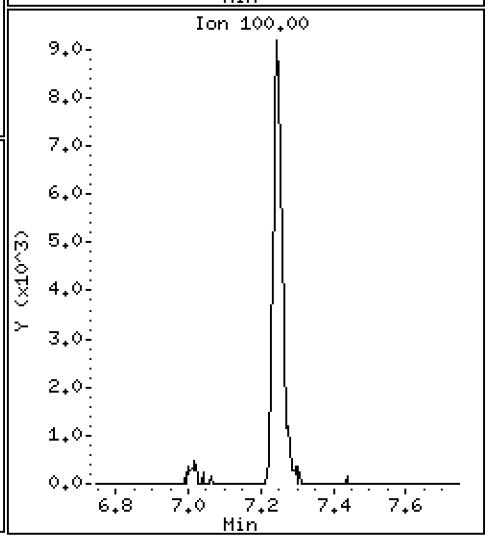












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 39

Date : 02-SEP-2018 16:42

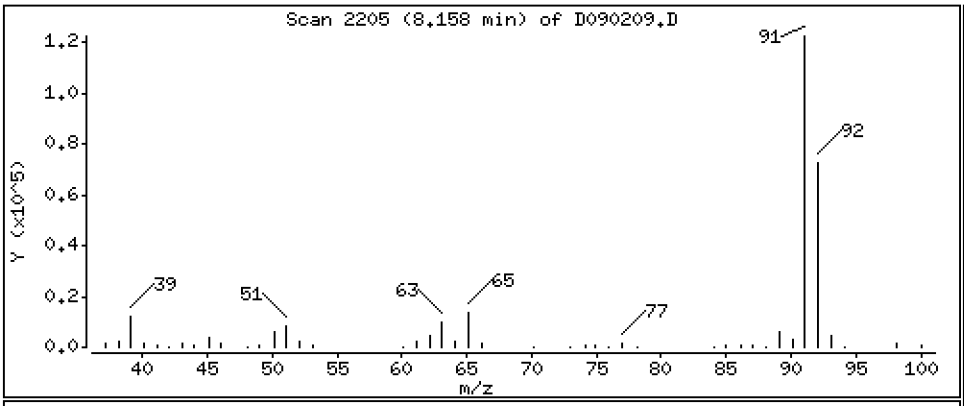
Client ID: HS18081428-01MSD Instrument: VOA2.i

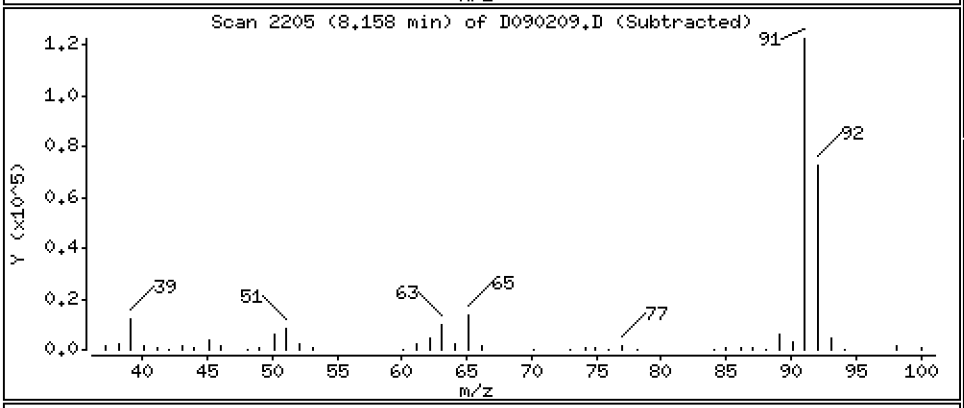
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

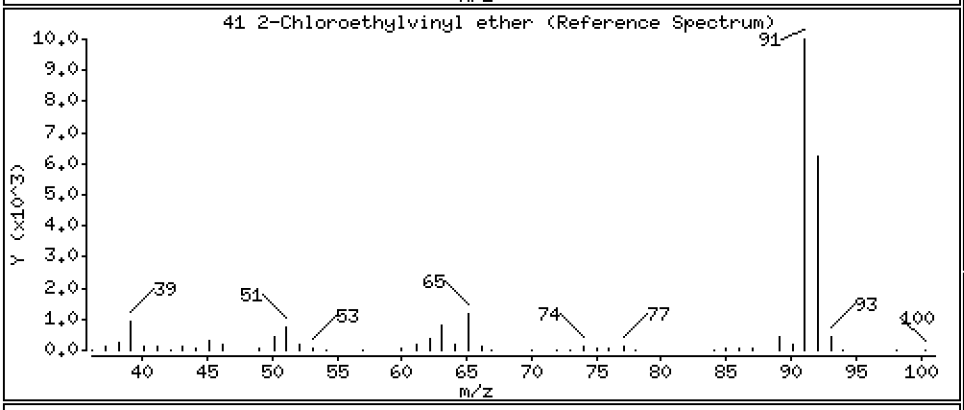
Purge Volume: 5.0 Operator: AP

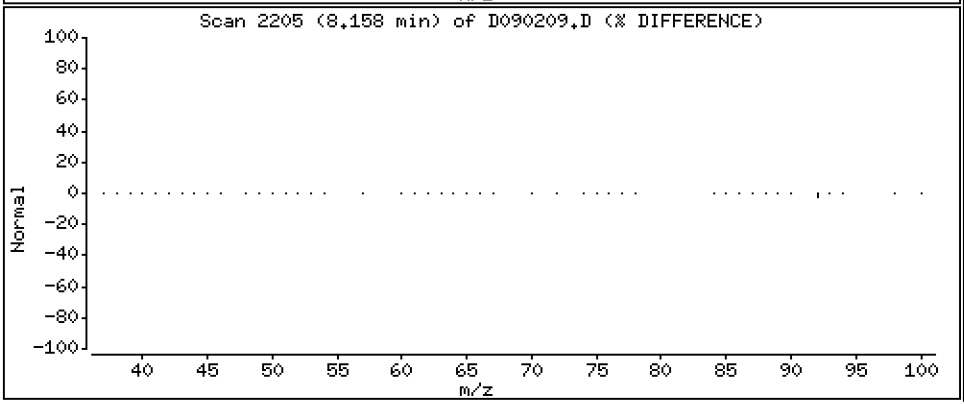
Column phase: DB624 Column diameter: 0.18

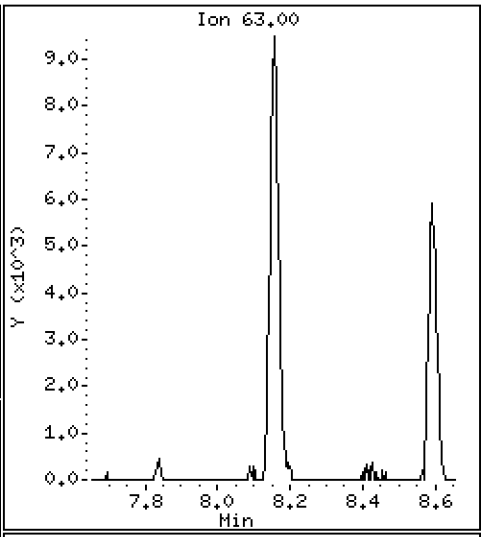
41 2-Chloroethylvinyl ether Concentration: 34.06 ug/l Review Code:

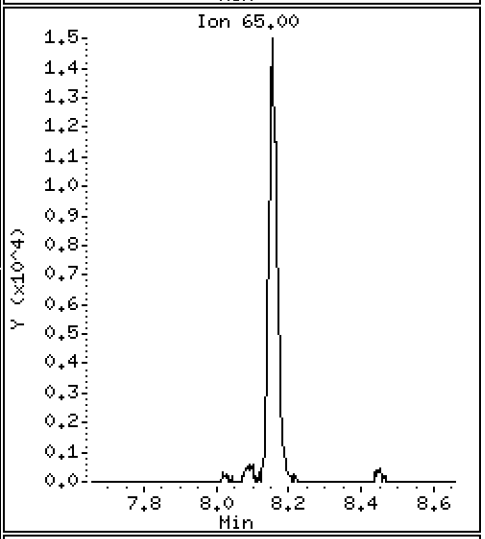


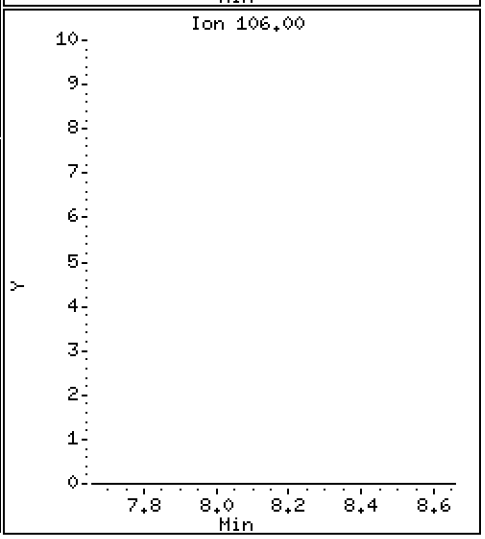












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 40

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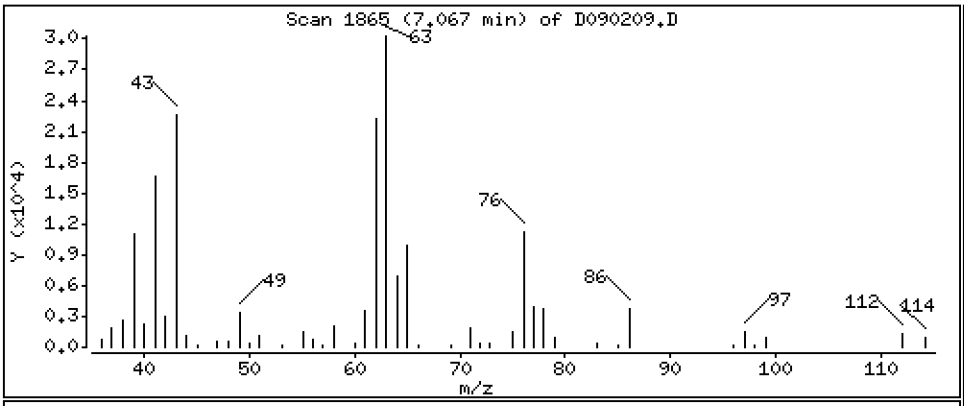
Client ID: HS18081428-01MSD Instrument: VOA2.i

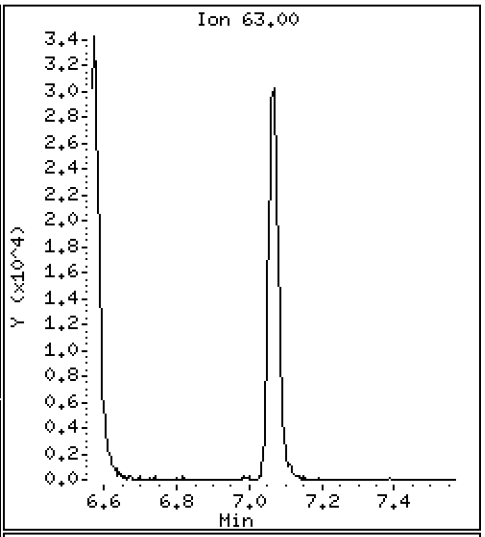
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

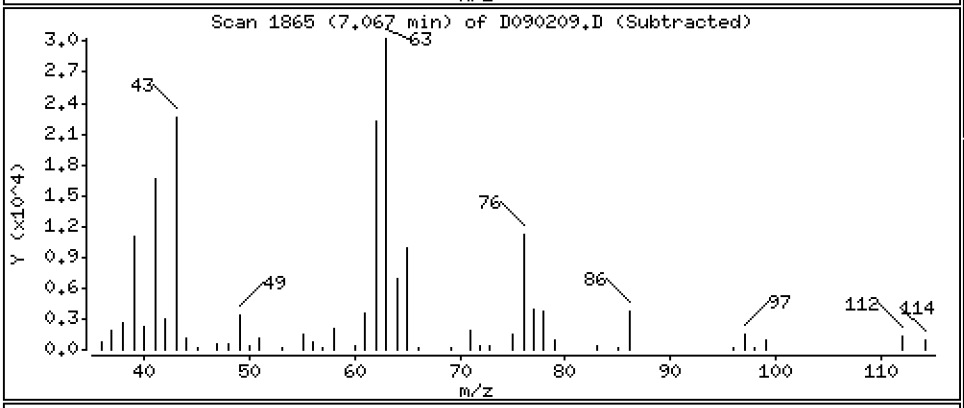
Purge Volume: 5.0 Operator: AP

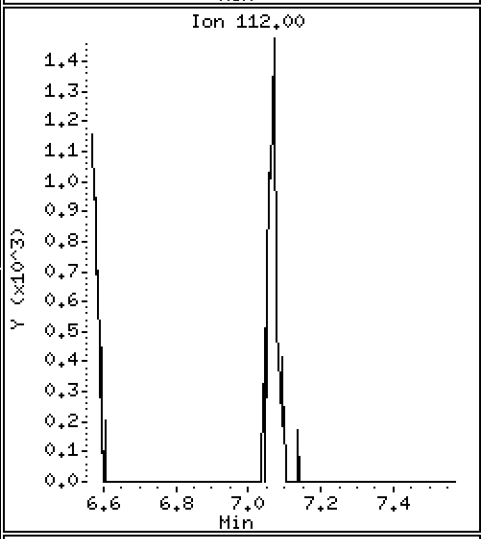
Column phase: DB624 Column diameter: 0.18

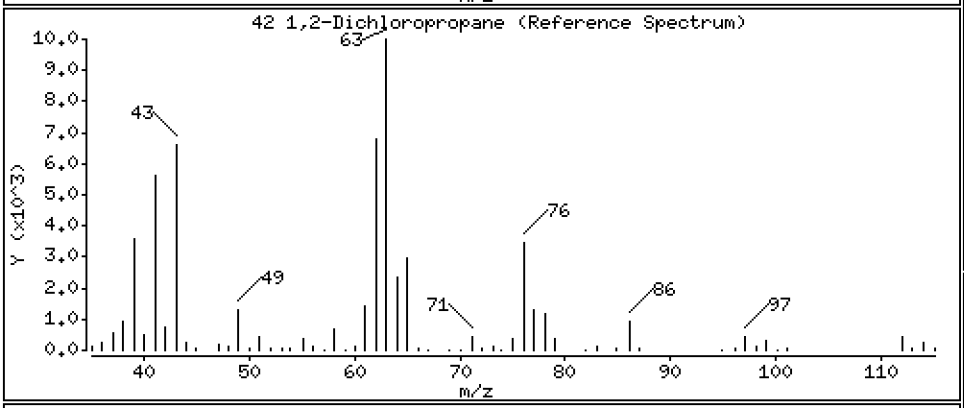
42 1,2-Dichloropropane Concentration: 18.08 ug/l Review Code:

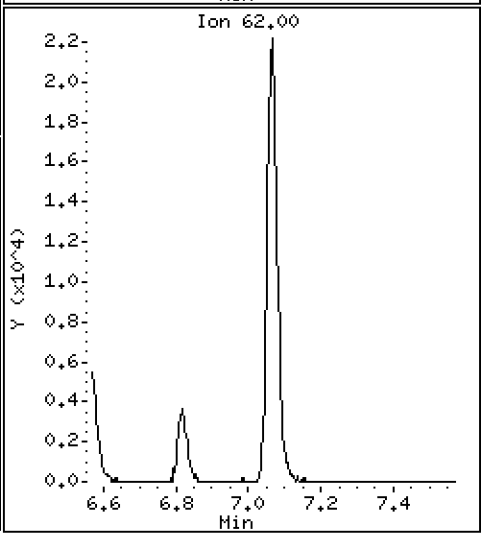


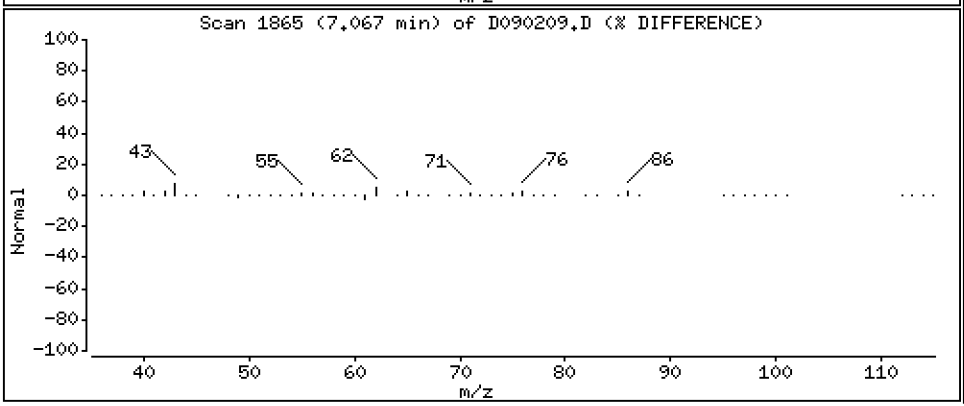












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Date : 02-SEP-2018 16:42

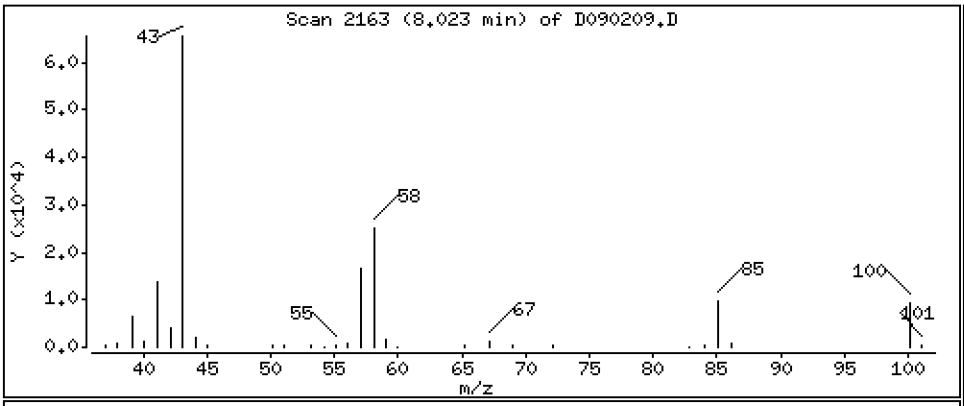
Client ID: HS18081428-01MSD Instrument: VOA2.i

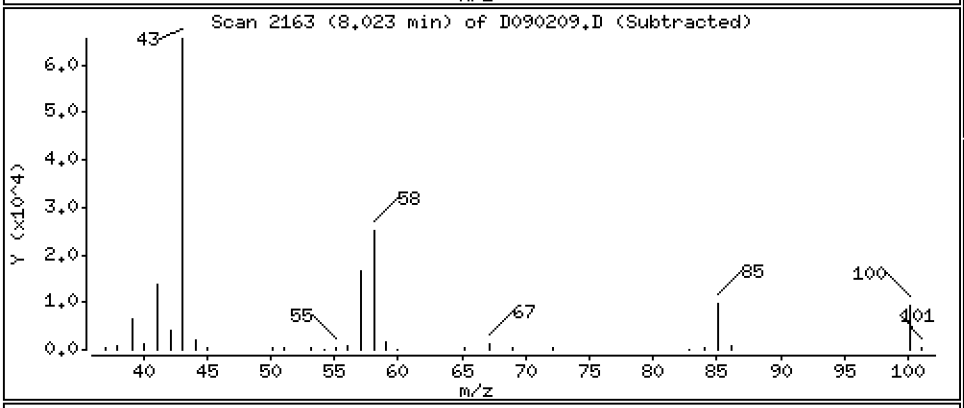
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

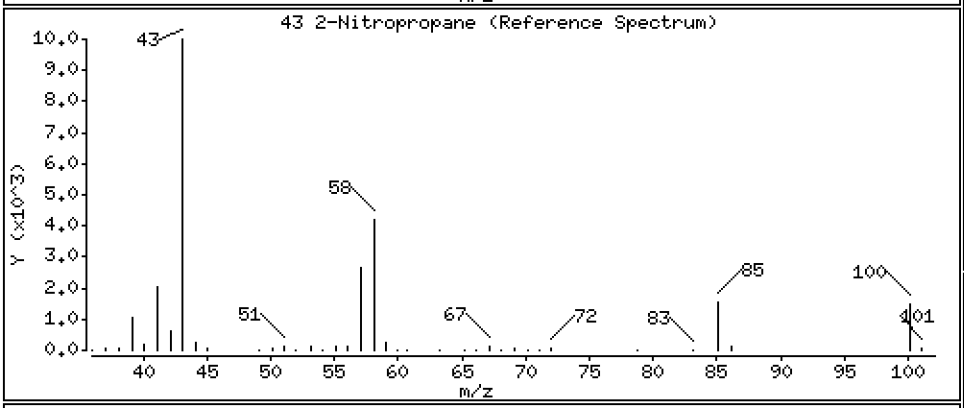
Purge Volume: 5.0 Operator: AP

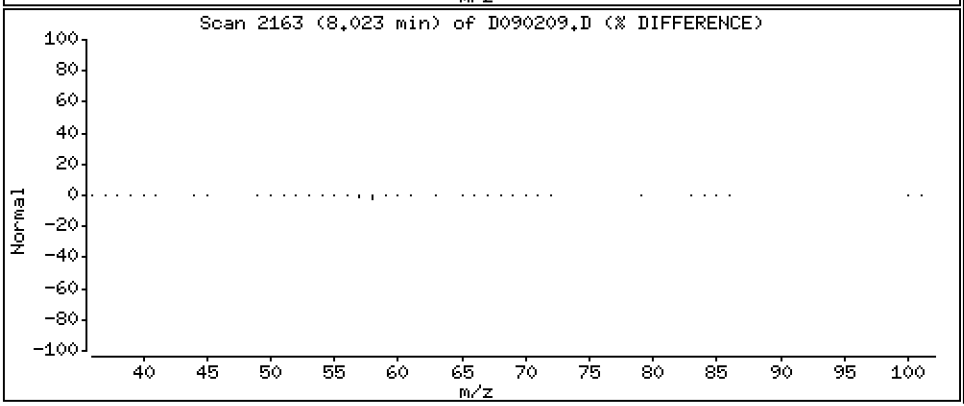
Column phase: DB624 Column diameter: 0.18

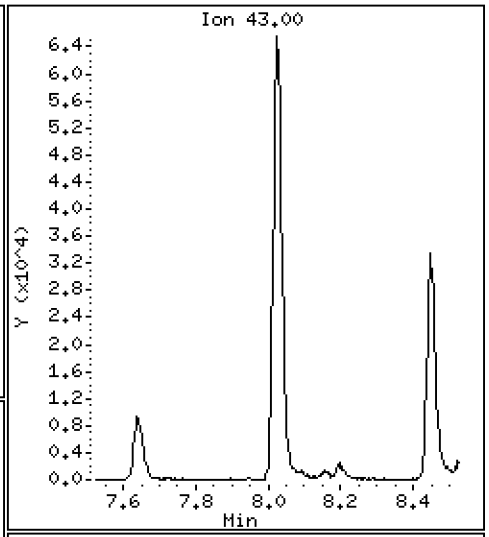
43 2-Nitropropane Concentration: 15.34 ug/l Review Code:

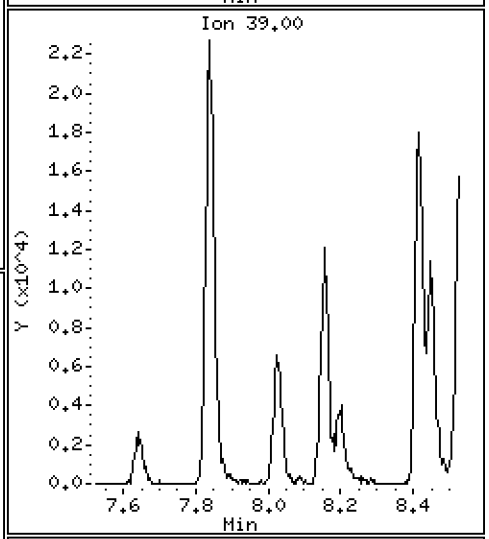


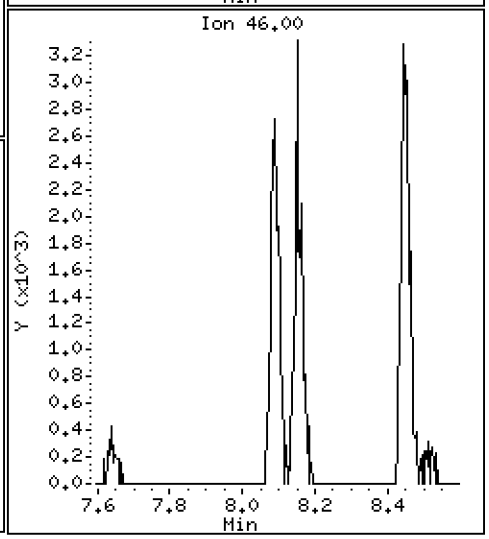












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Date : 02-SEP-2018 16:42

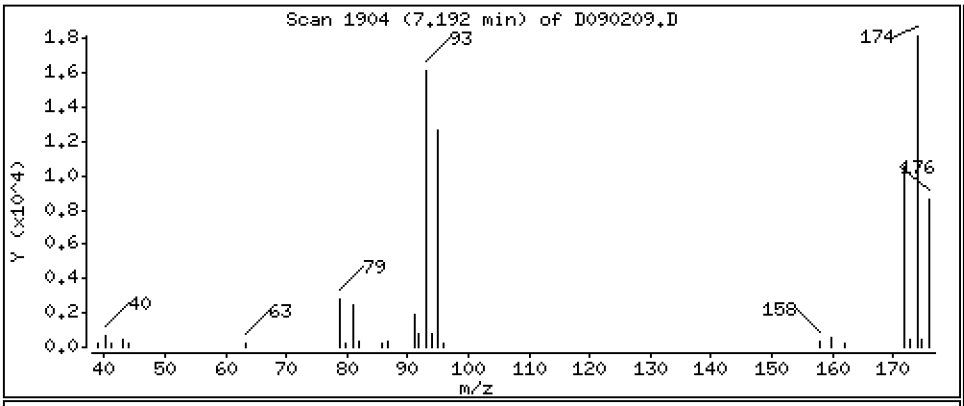
Client ID: HS18081428-01MSD Instrument: VOA2.i

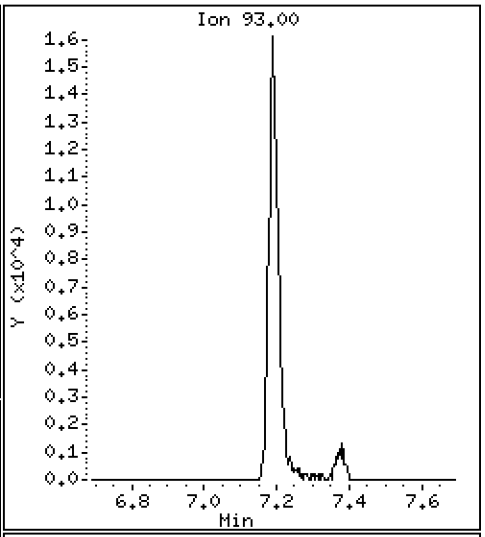
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

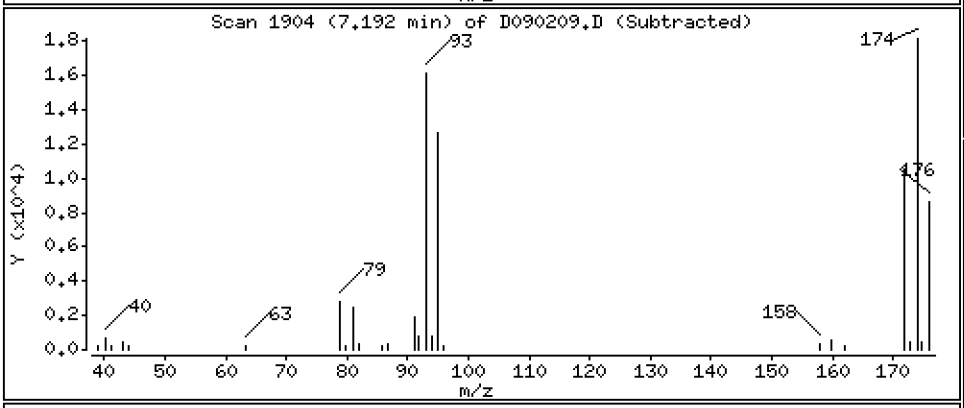
Purge Volume: 5.0 Operator: AP

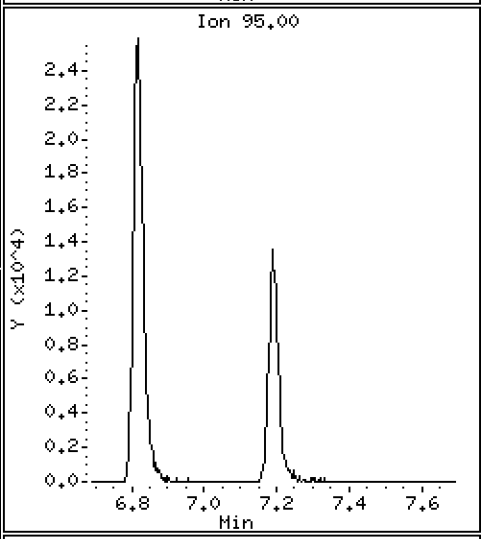
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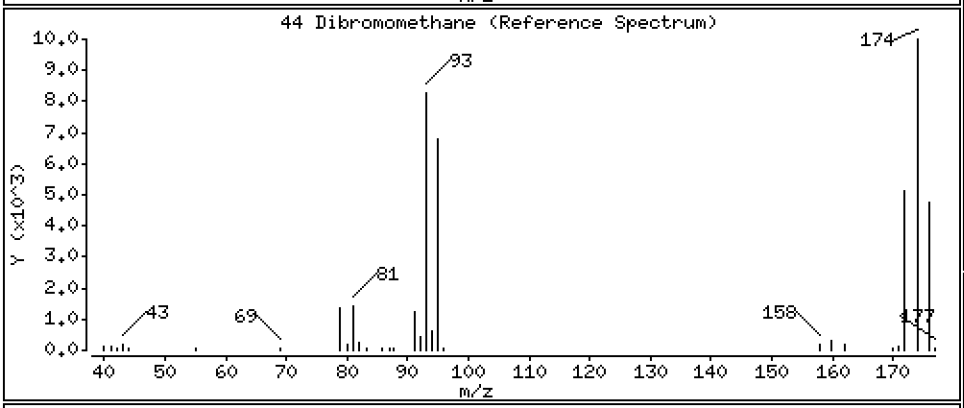
44 Dibromomethane Concentration: 17.92 ug/l Review Code:

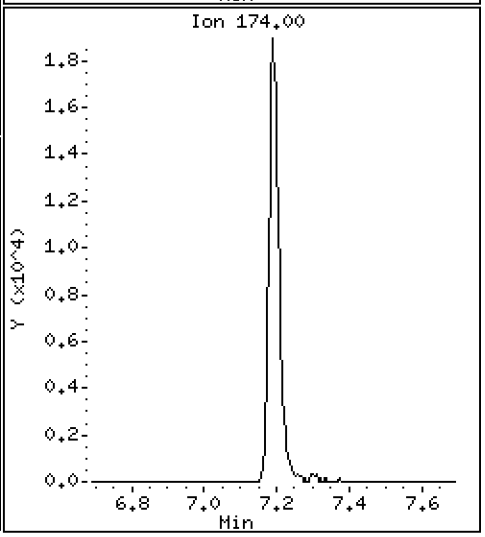


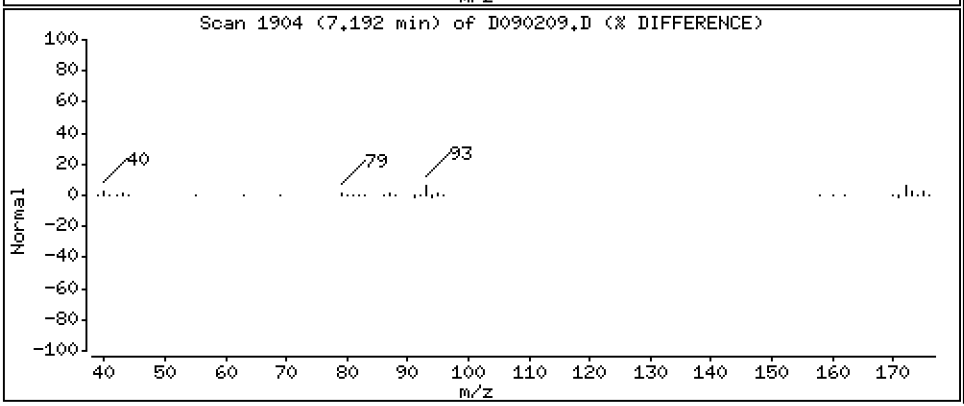












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Date : 02-SEP-2018 16:42

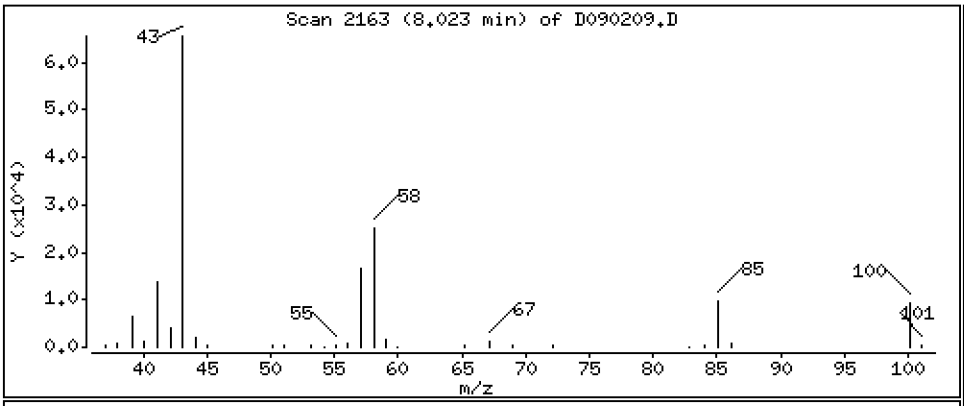
Client ID: HS18081428-01MSD Instrument: VOA2.i

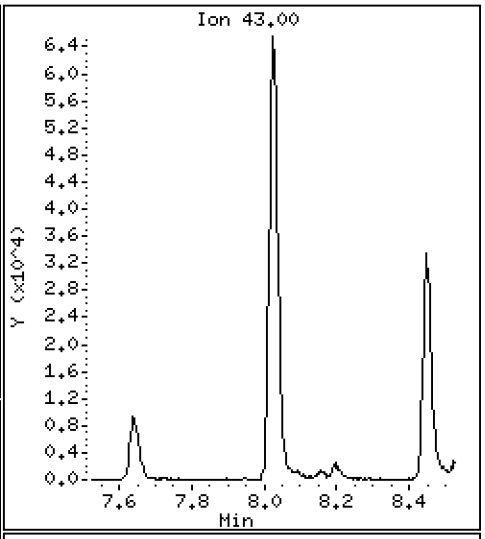
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

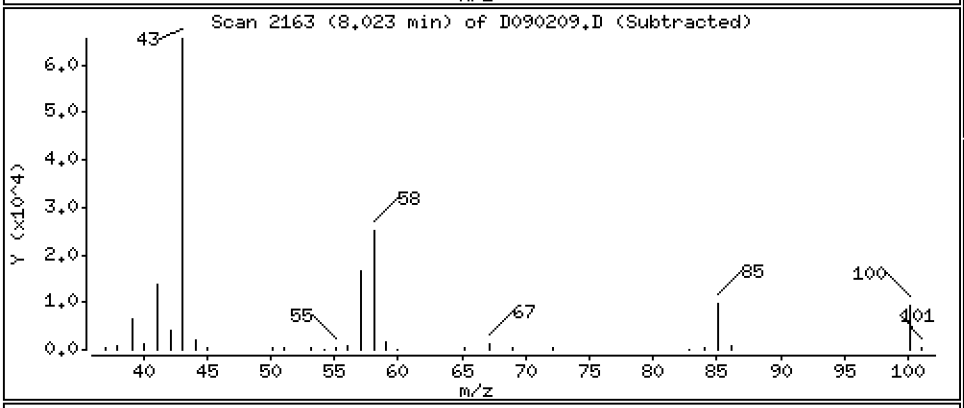
Purge Volume: 5.0 Operator: AP

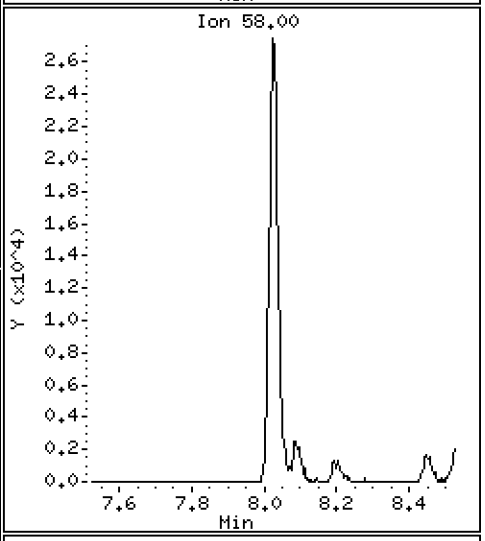
Column phase: DB624 Column diameter: 0.18

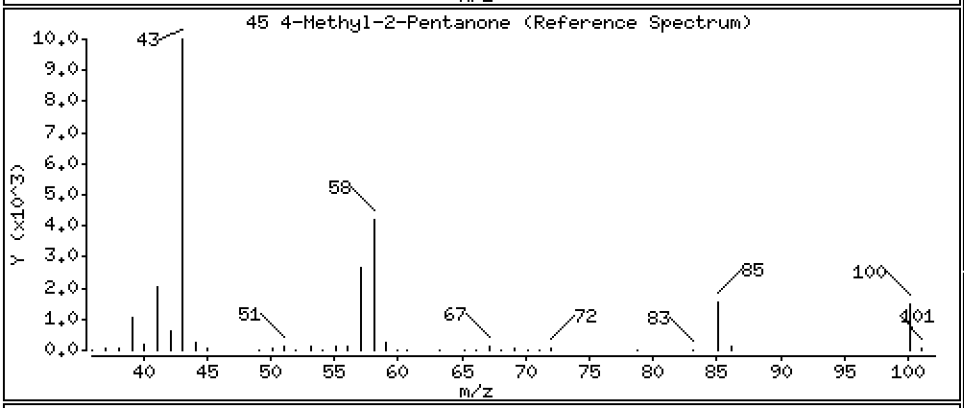
45 4-Methyl-2-Pentanone Concentration: 32.31 ug/l Review Code:

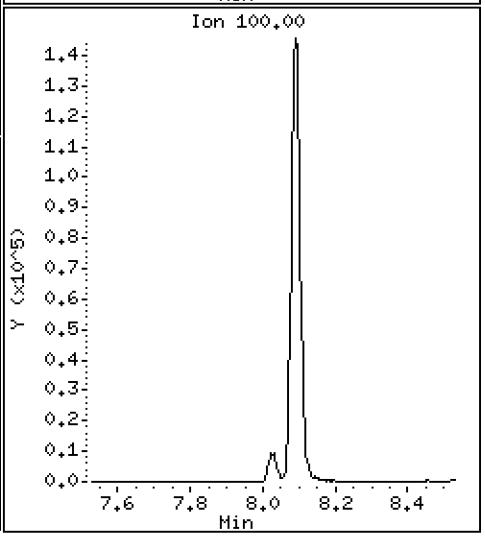


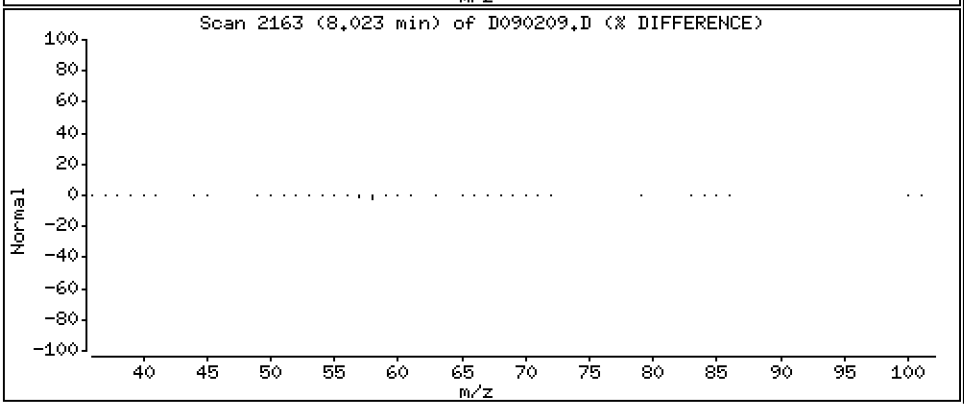












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 44

Date : 02-SEP-2018 16:42

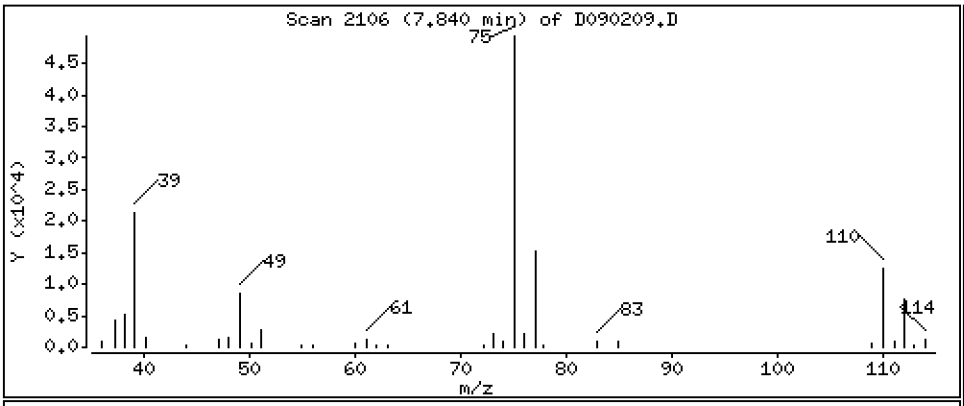
Client ID: HS18081428-01MSD Instrument: VOA2.i

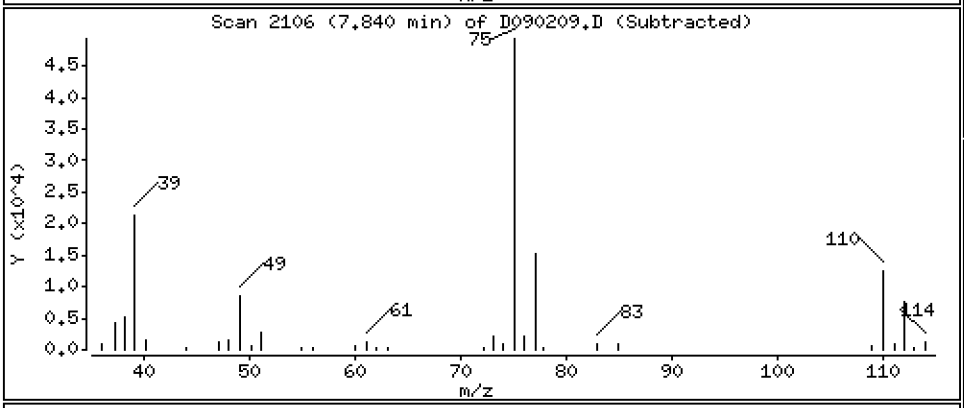
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

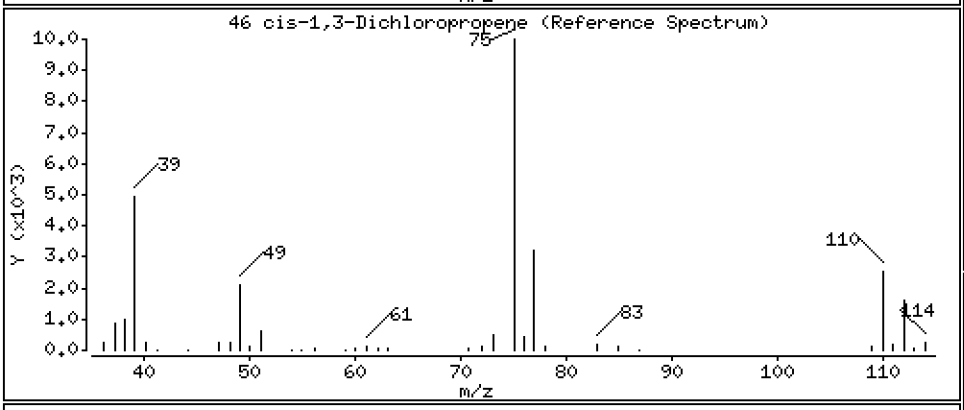
Purge Volume: 5.0 Operator: AP

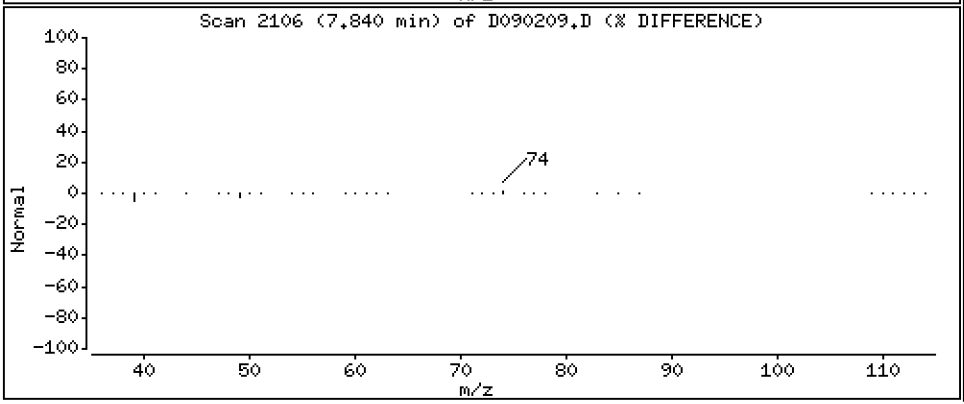
Column phase: DB624 Column diameter: 0.18

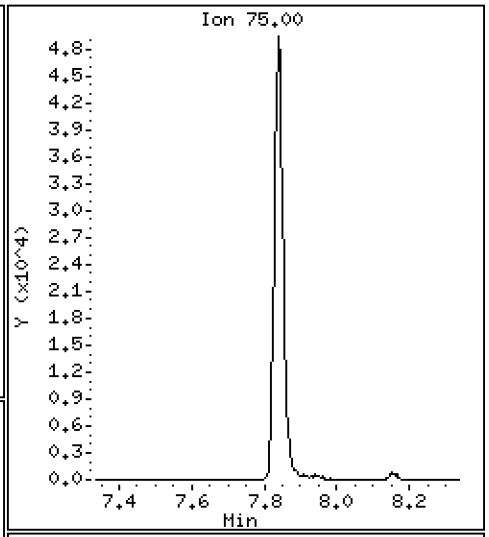
46 cis-1,3-Dichloropropene Concentration: 19.61 ug/l Review Code:

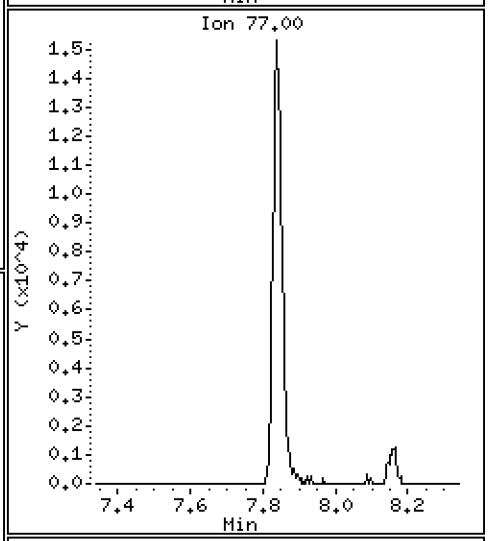


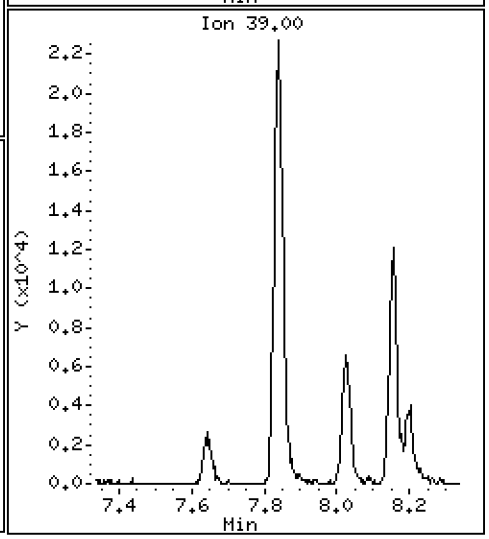












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 45

Date : 02-SEP-2018 16:42

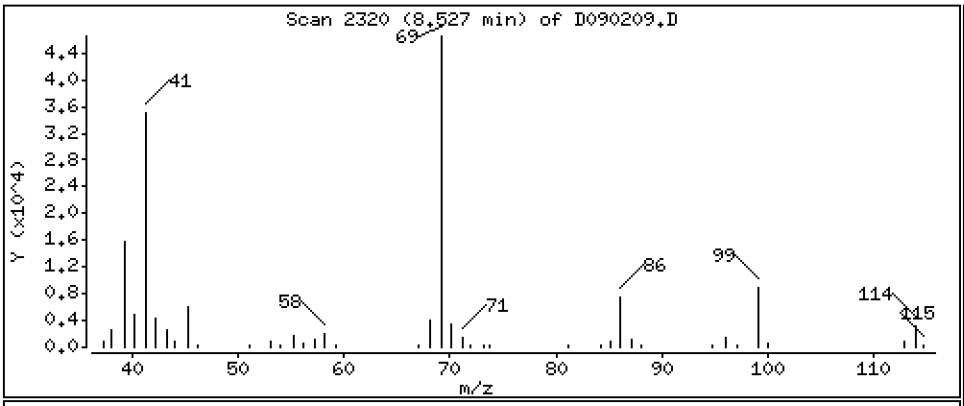
Client ID: HS18081428-01MSD Instrument: VOA2.i

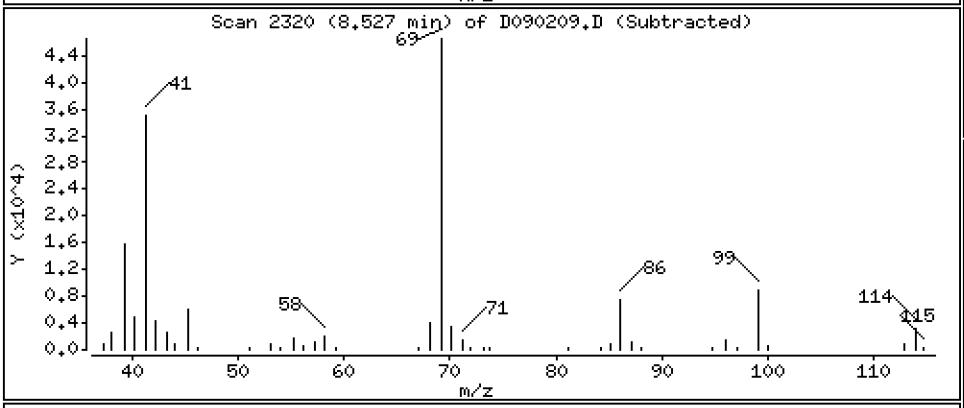
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

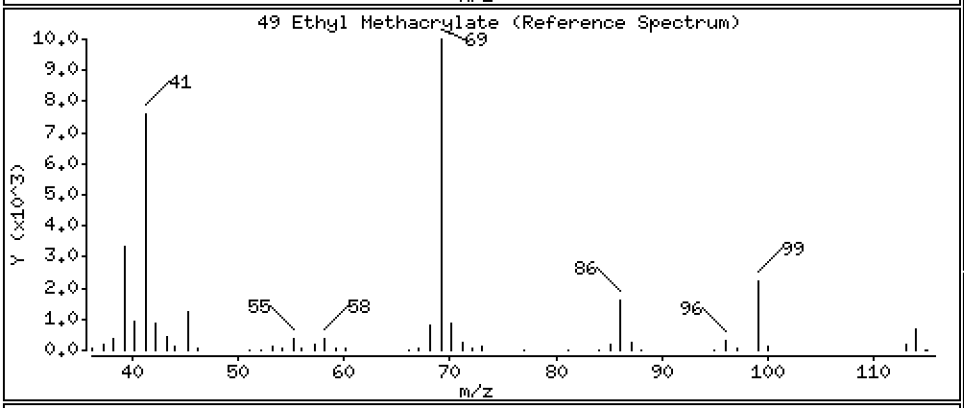
Purge Volume: 5.0 Operator: AP

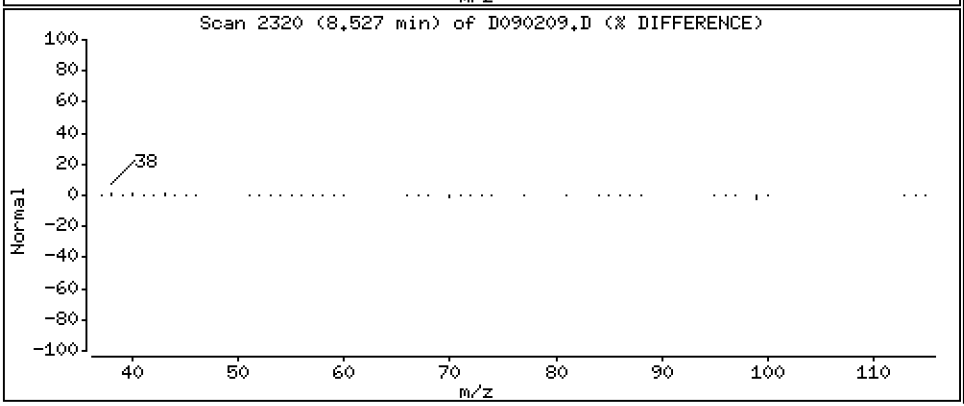
Column phase: DB624 Column diameter: 0.18

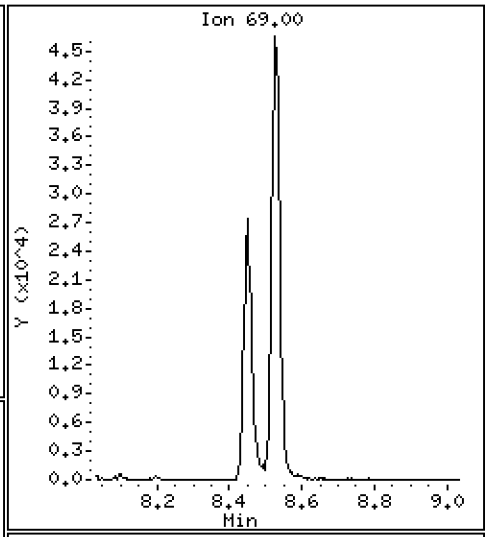
49 Ethyl Methacrylate Concentration: 17.14 ug/l Review Code:

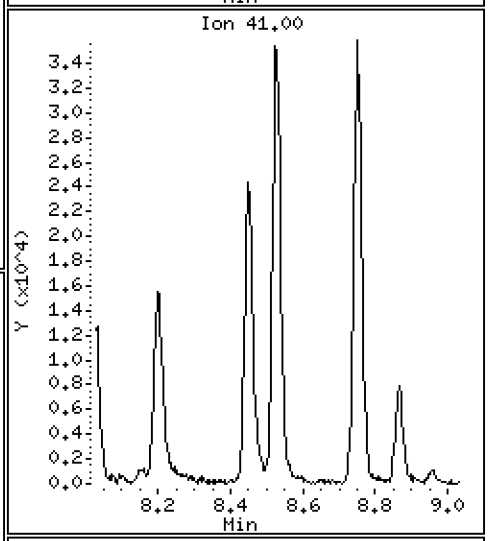


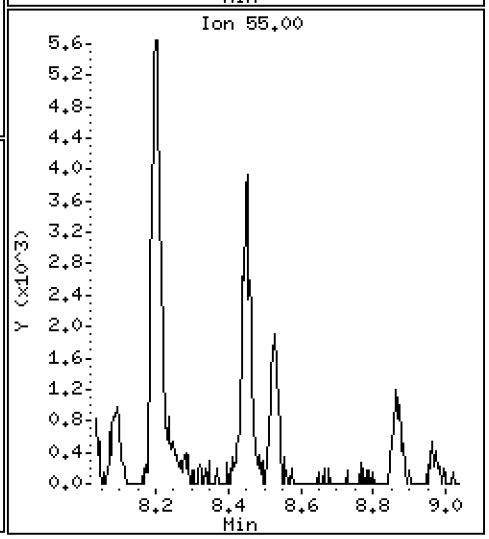












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 46

Date : 02-SEP-2018 16:42

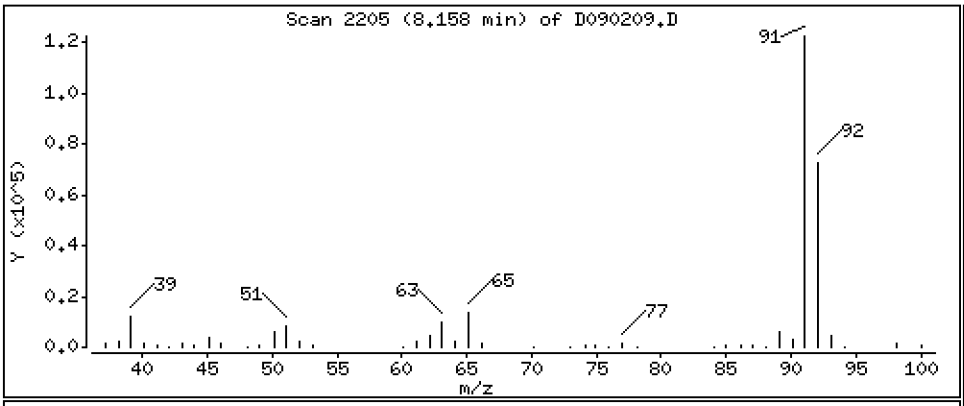
Client ID: HS18081428-01MSD Instrument: VOA2.i

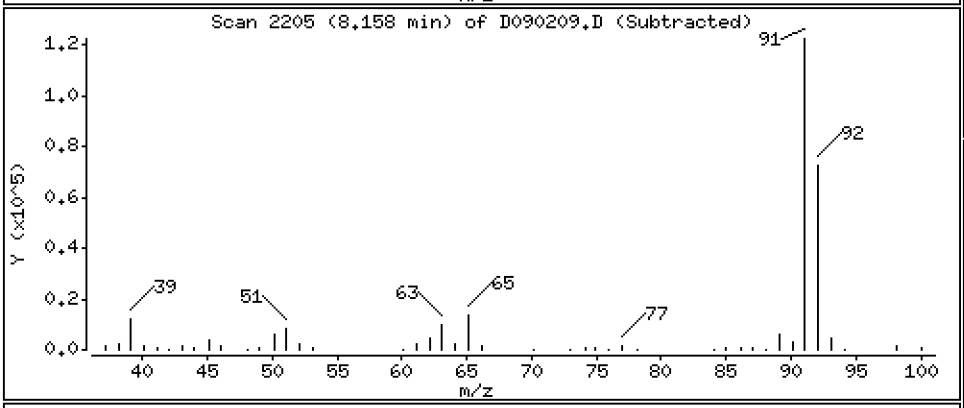
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

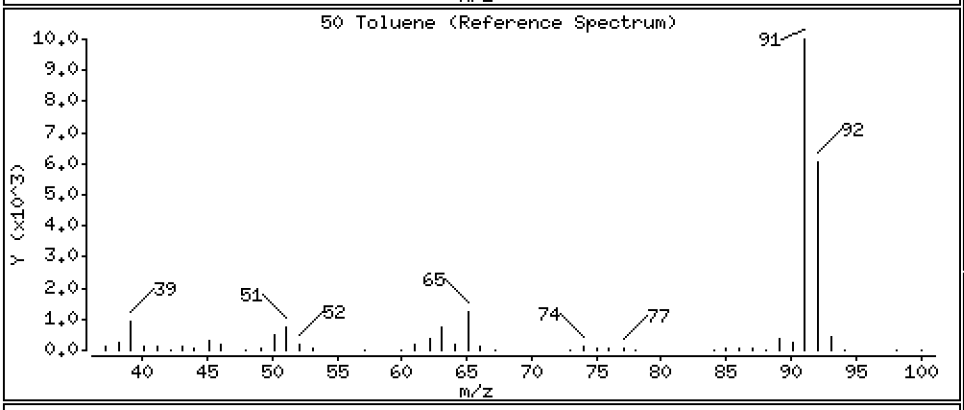
Purge Volume: 5.0 Operator: AP

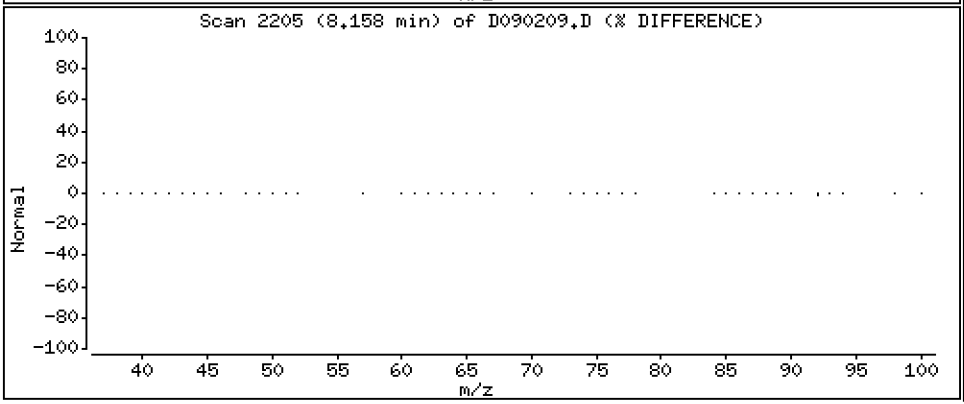
Column phase: DB624 Column diameter: 0.18

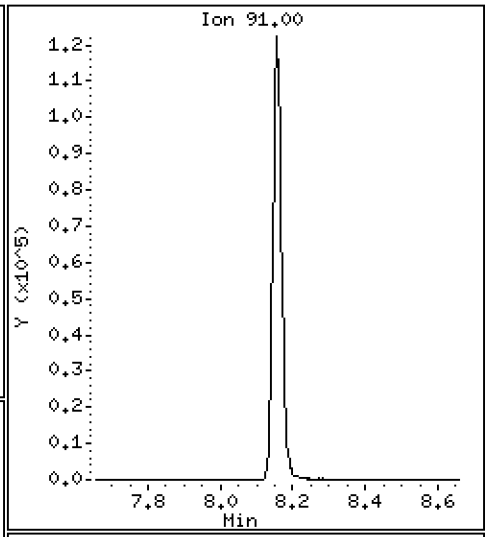
50 Toluene Concentration: 16.78 ug/l Review Code:

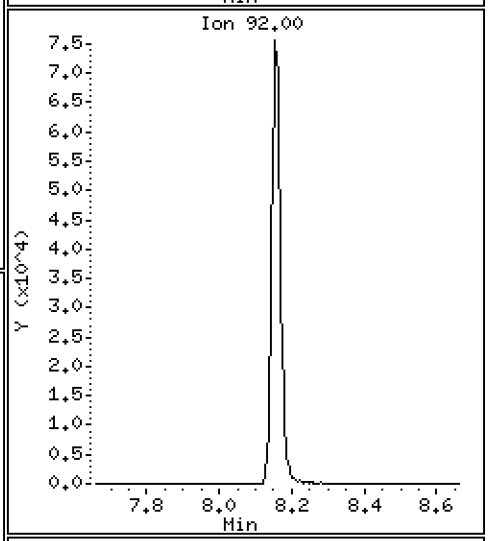


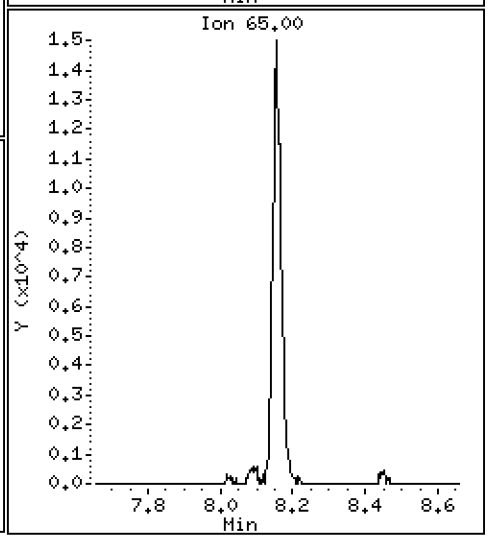












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 47

Date : 02-SEP-2018 16:42

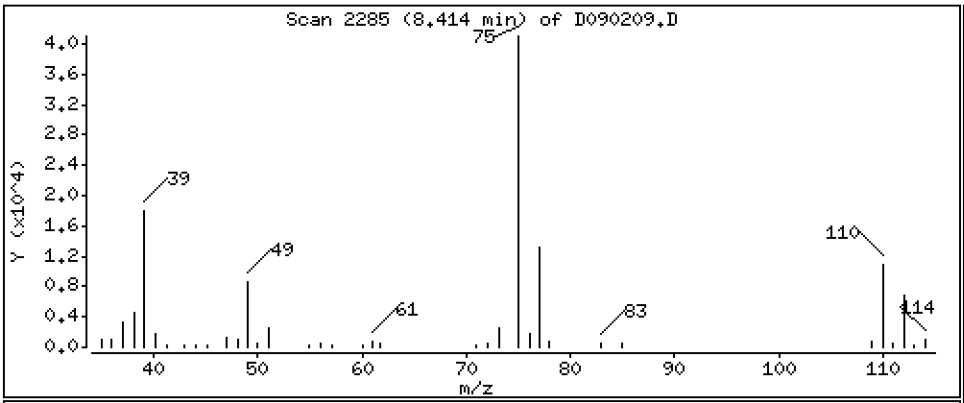
Client ID: HS18081428-01MSD Instrument: VOA2.i

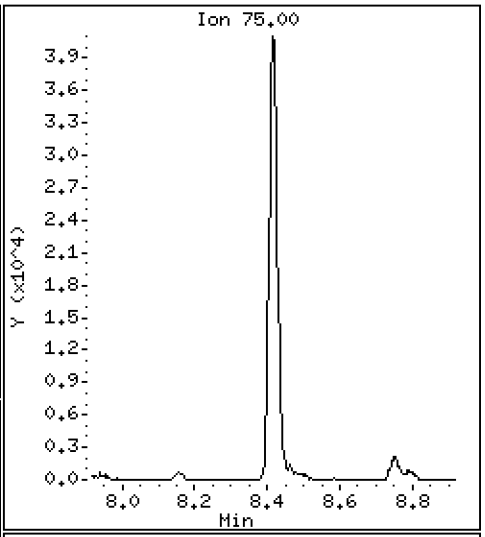
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

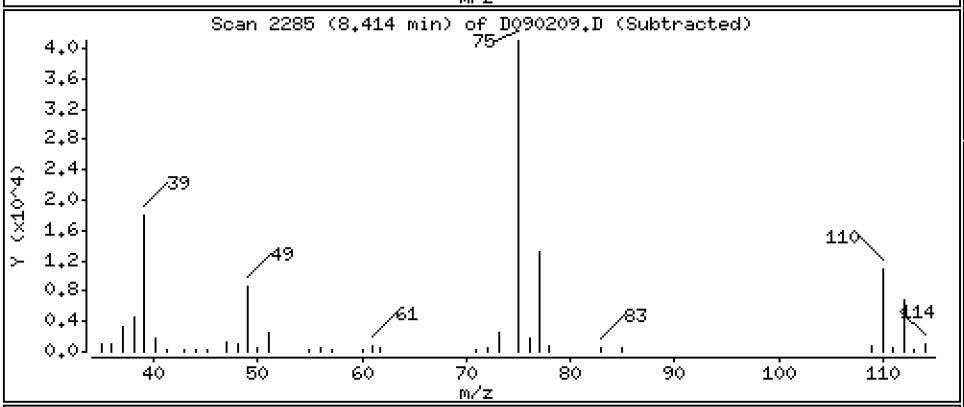
Purge Volume: 5.0 Operator: AP

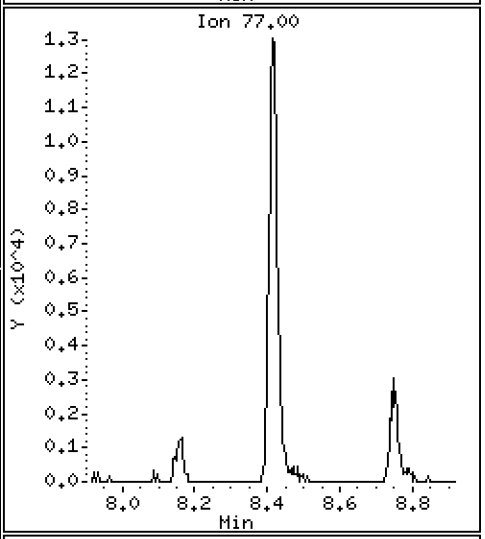
Column phase: DB624 Column diameter: 0.18

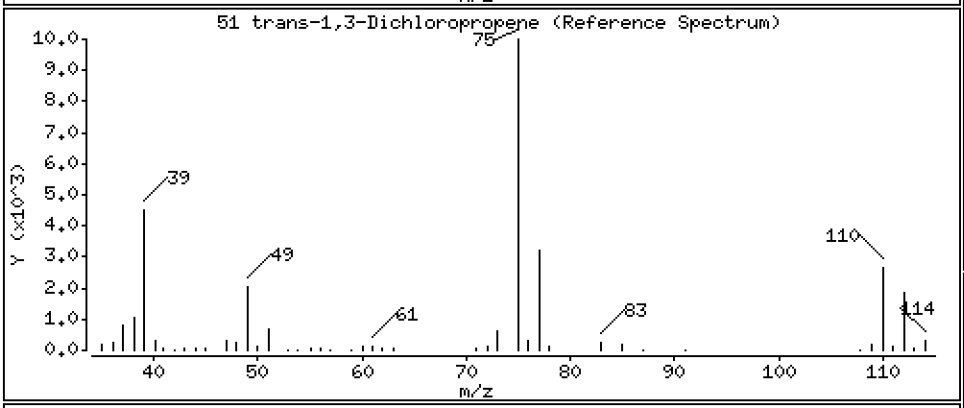
51 trans-1,3-Dichloropropene Concentration: 19.42 ug/l Review Code:

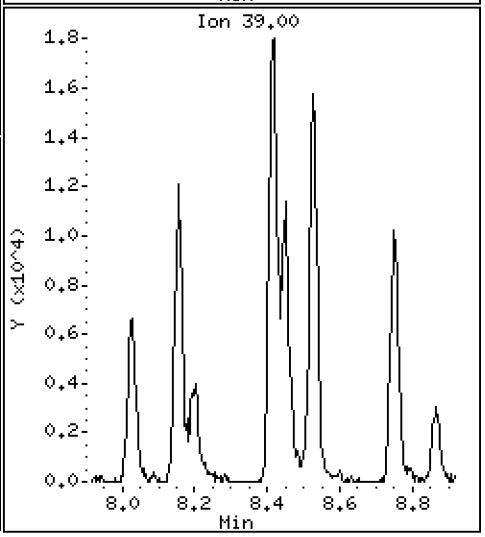


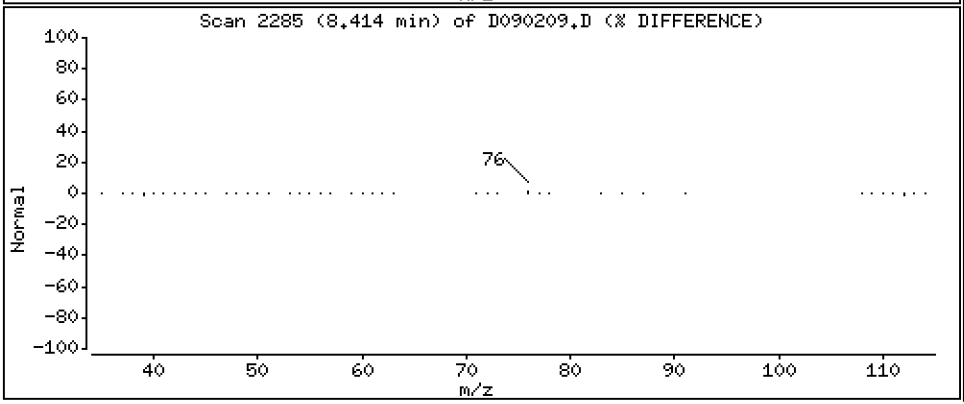












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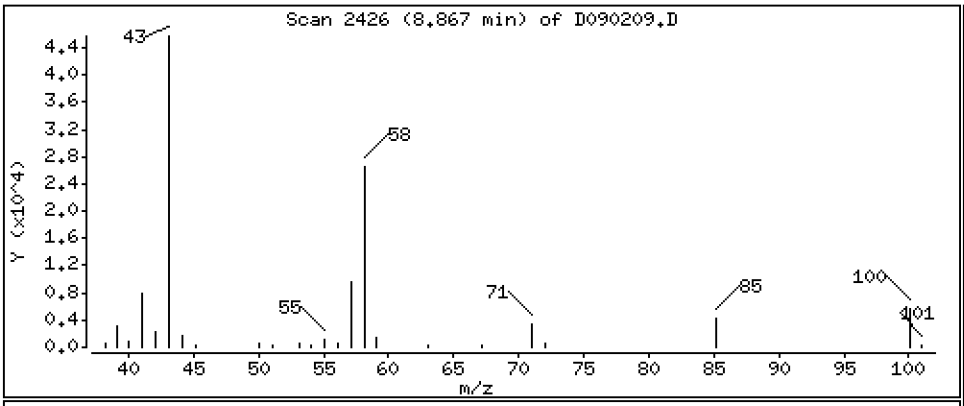
Client ID: HS18081428-01MSD Instrument: VOA2.i

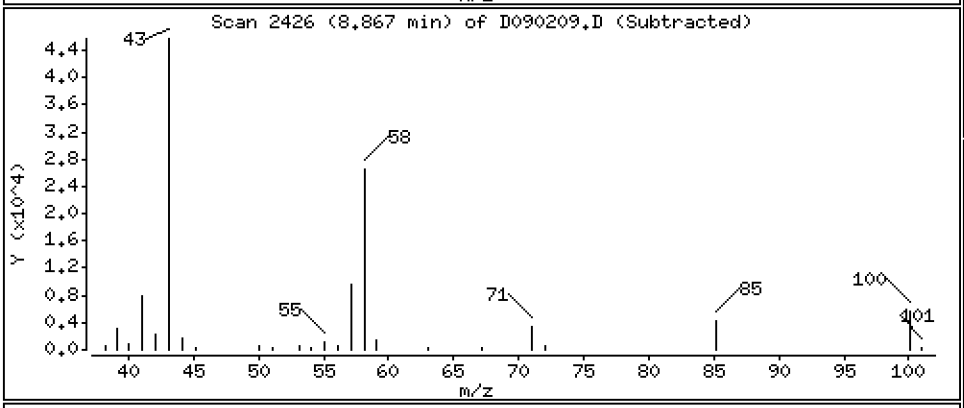
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

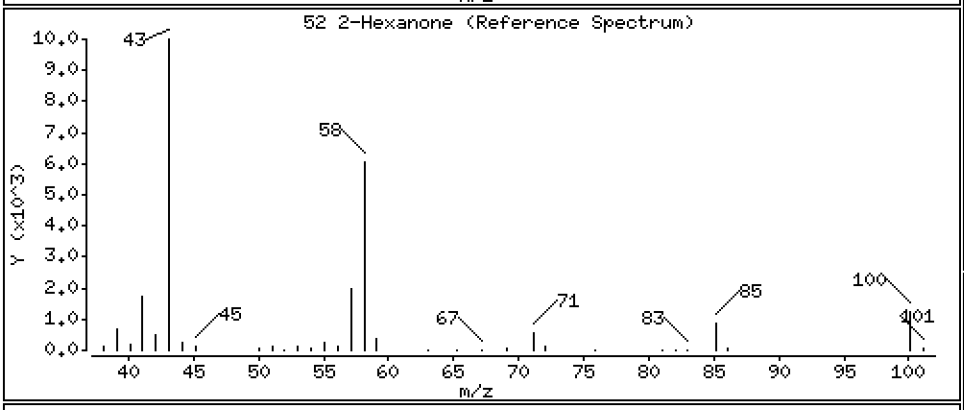
Purge Volume: 5.0 Operator: AP

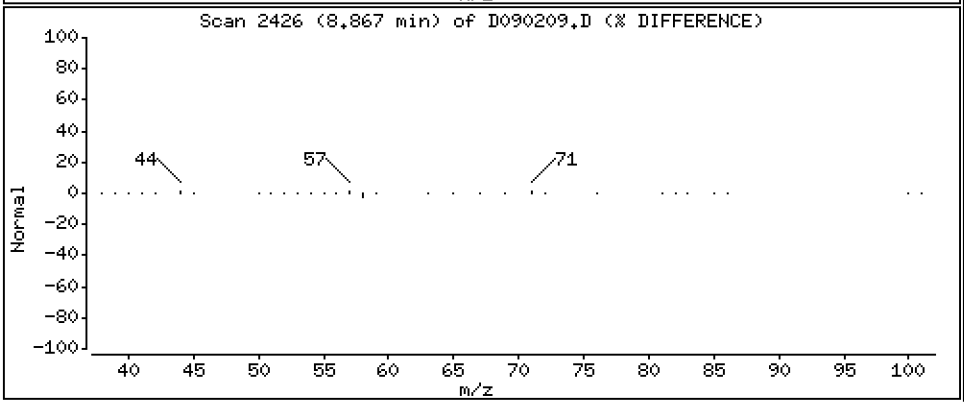
Column phase: DB624 Column diameter: 0.18

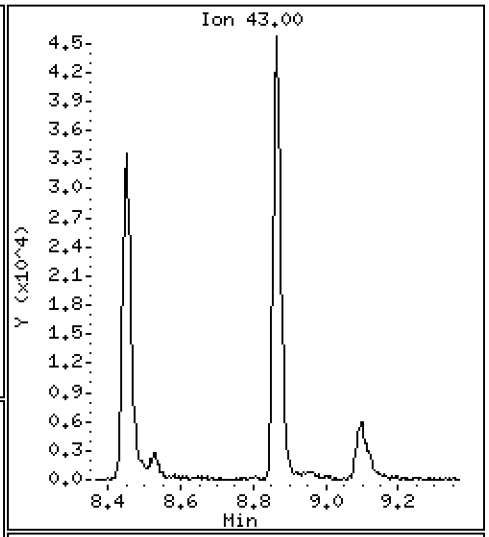
52 2-Hexanone Concentration: 30.77 ug/l Review Code:

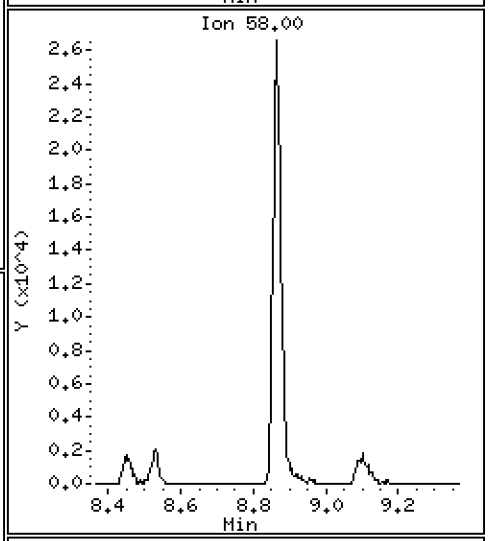


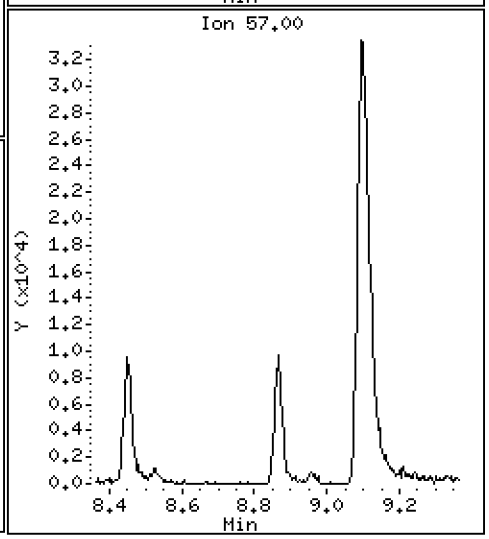












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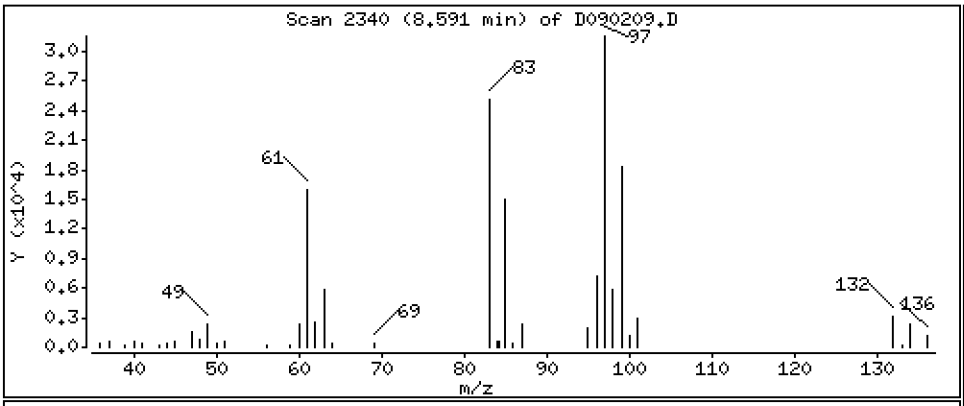
Client ID: HS18081428-01MSD Instrument: VOA2.i

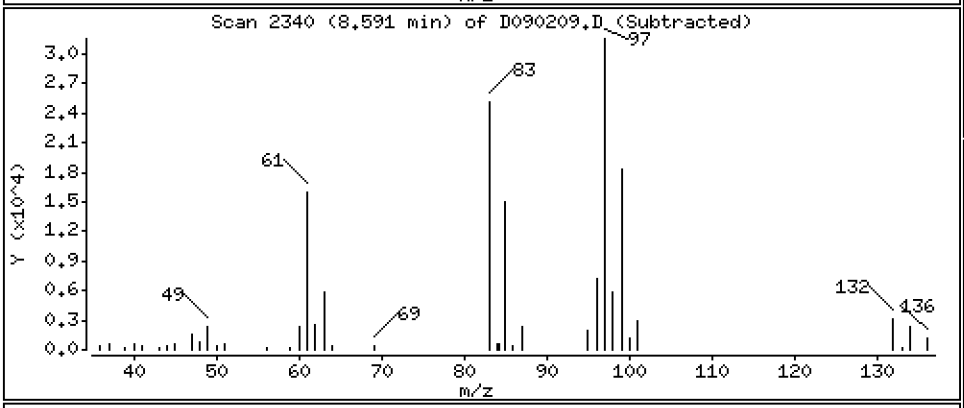
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

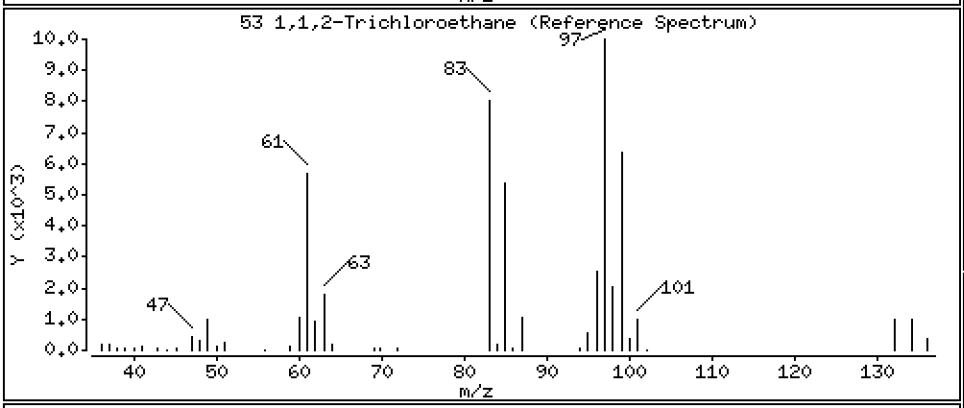
Purge Volume: 5.0 Operator: AP

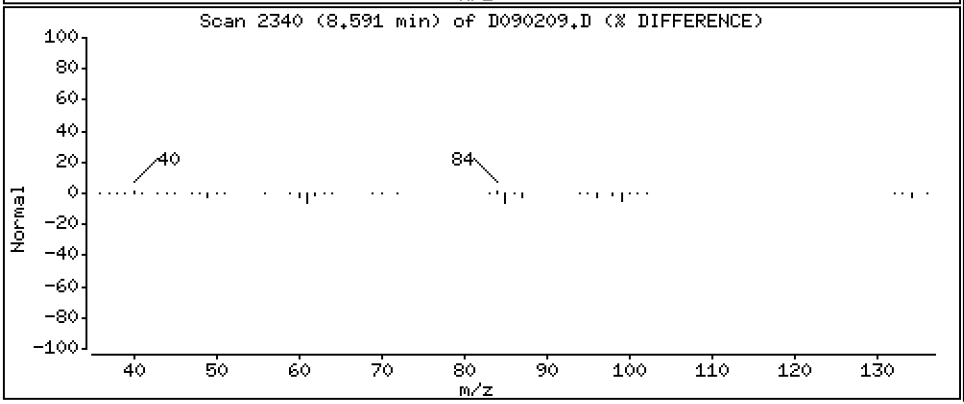
Column phase: DB624 Column diameter: 0.18

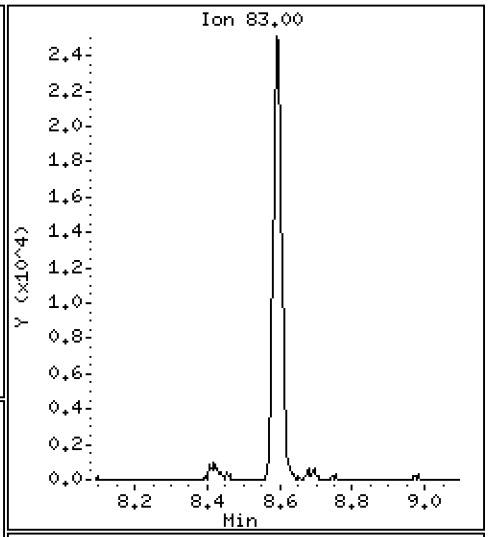
53 1,1,2-Trichloroethane Concentration: 17.27 ug/l Review Code:

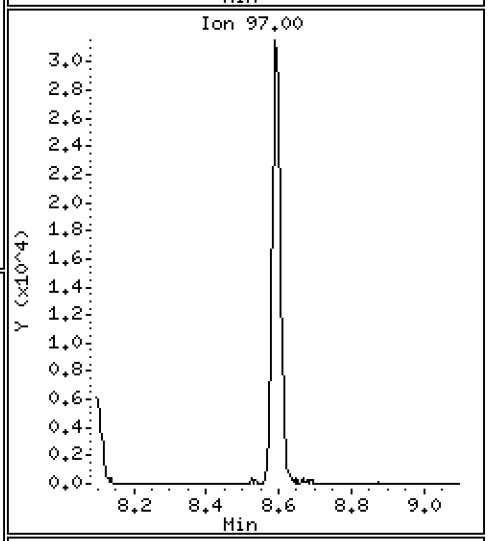


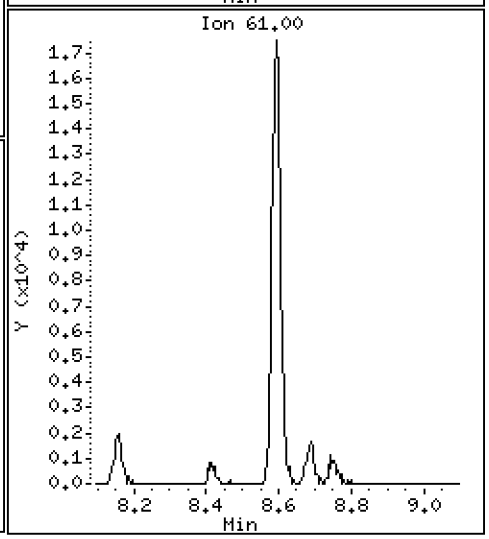












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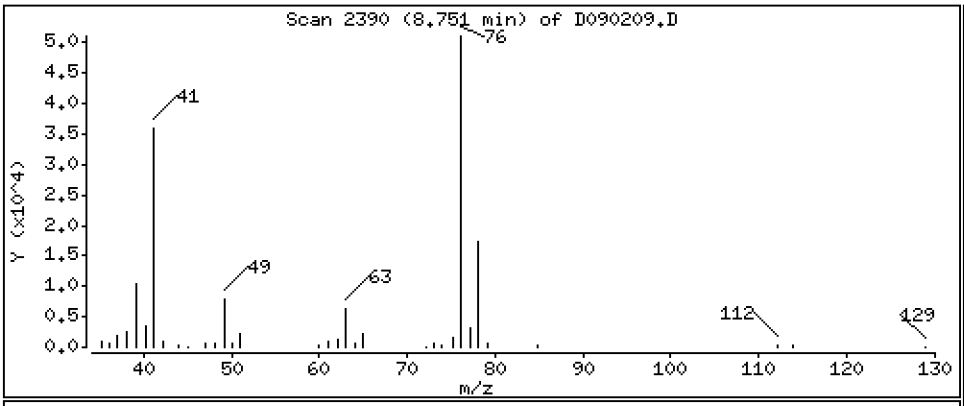
Client ID: HS18081428-01MSD Instrument: VOA2.i

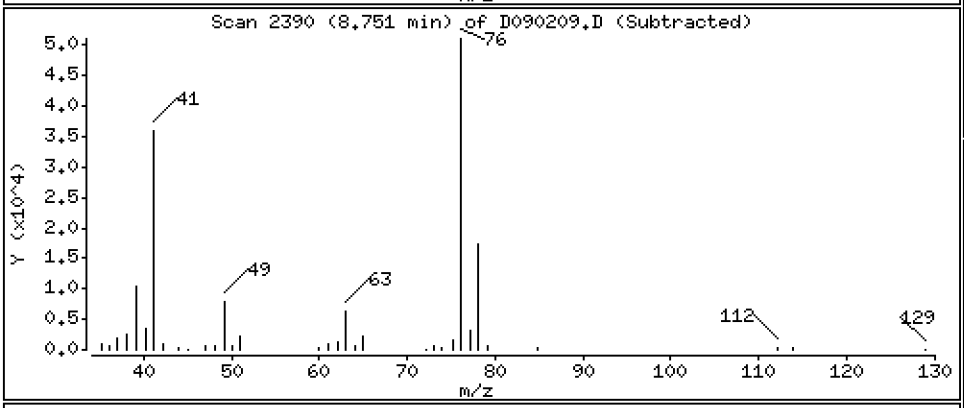
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

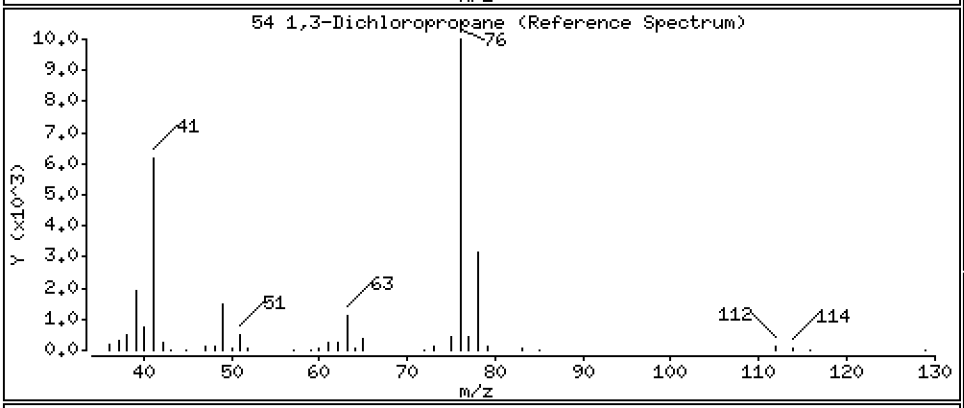
Purge Volume: 5.0 Operator: AP

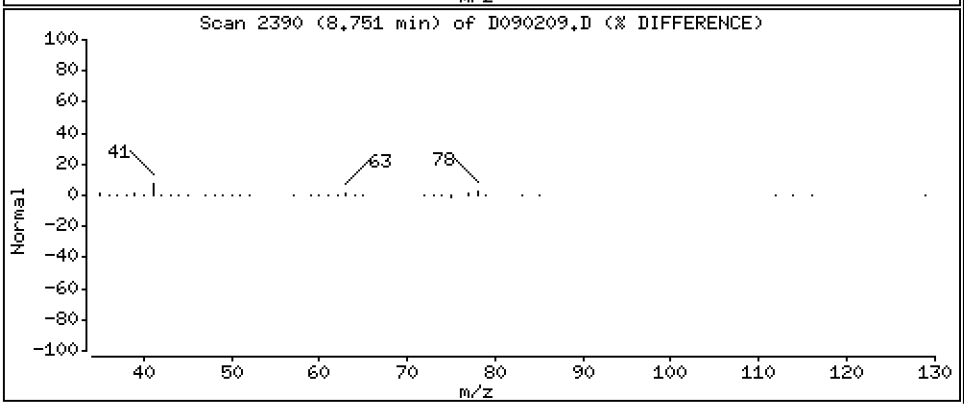
Column phase: DB624 Column diameter: 0.18

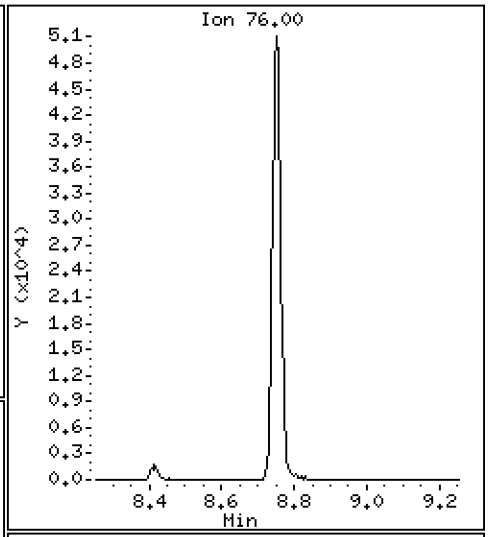
54 1,3-Dichloropropane Concentration: 17.60 ug/l Review Code:

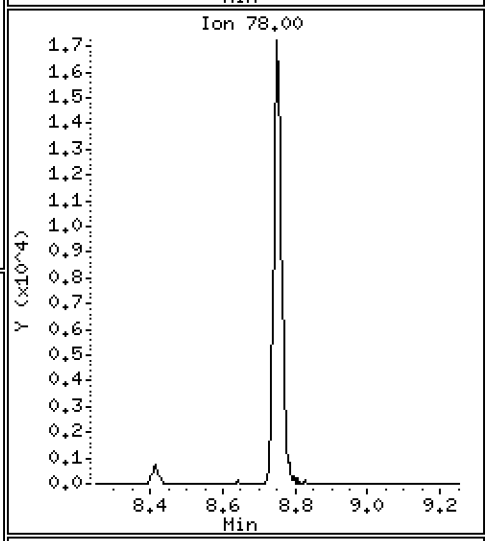


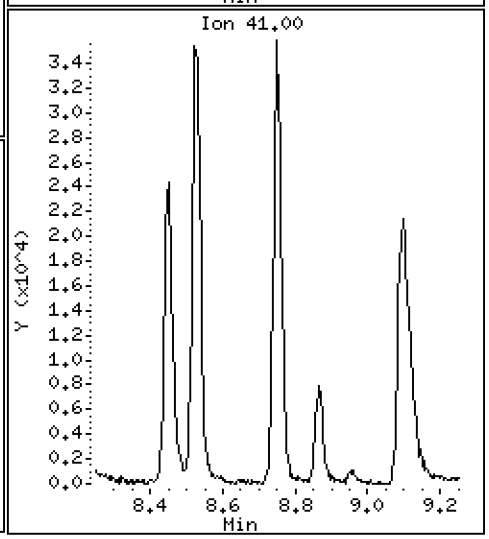












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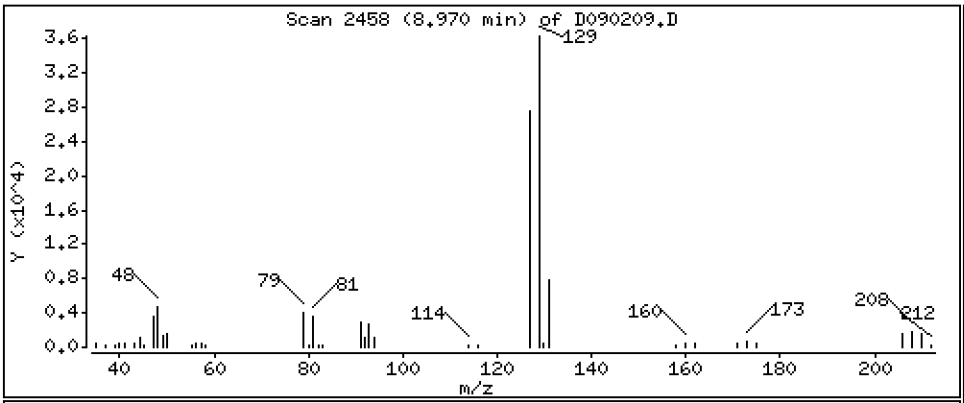
Client ID: HS18081428-01MSD Instrument: VOA2.i

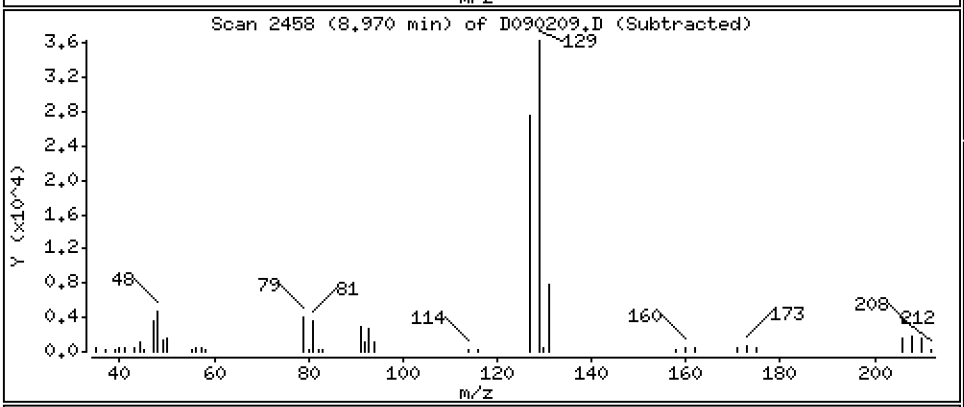
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

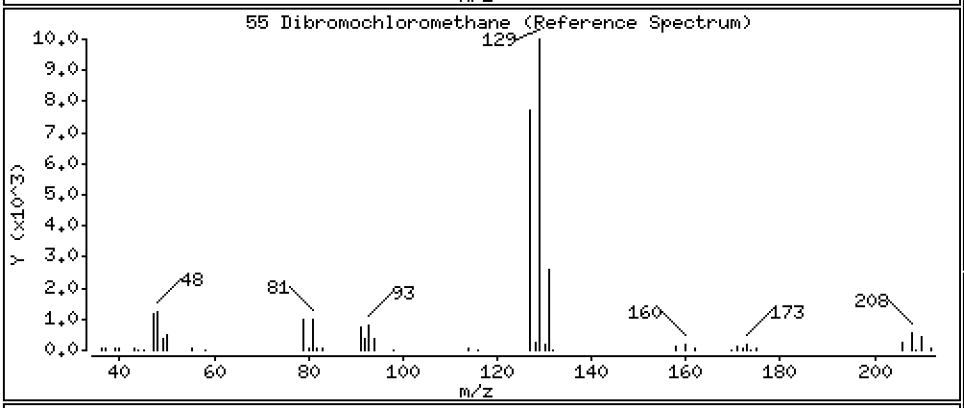
Purge Volume: 5.0 Operator: AP

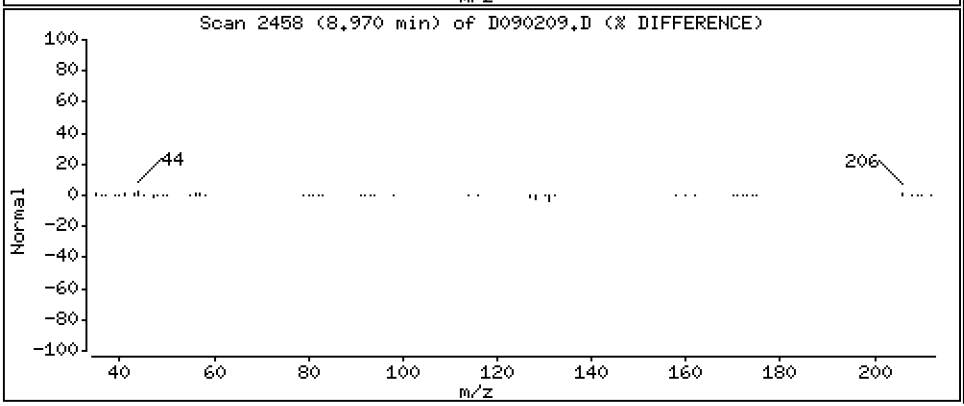
Column phase: DB624 Column diameter: 0.18

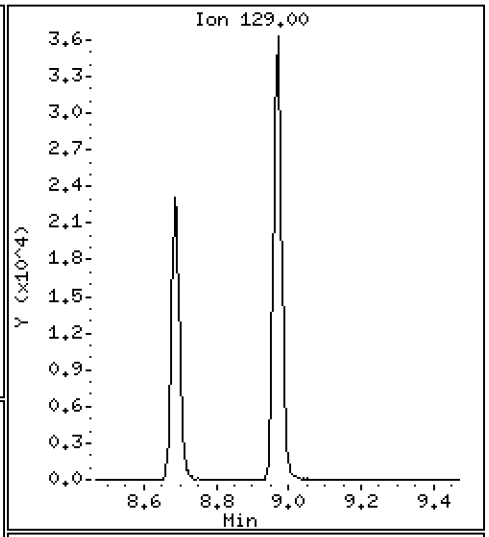
55 Dibromochloromethane Concentration: 17.64 ug/l Review Code:

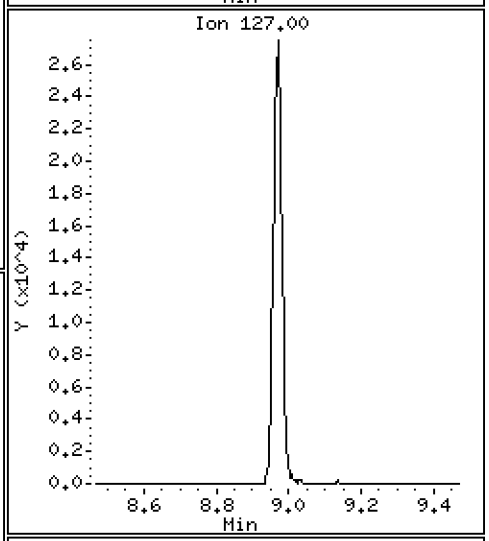


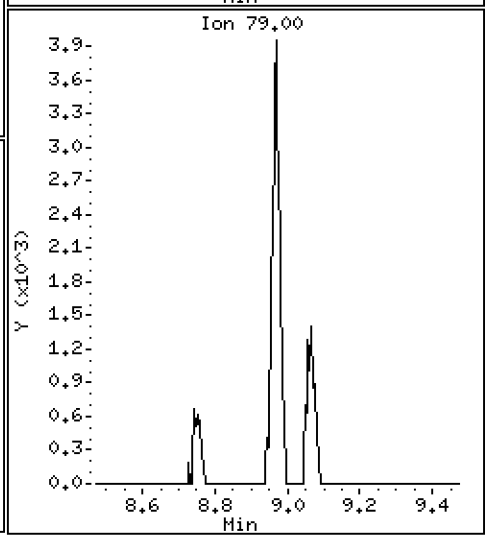












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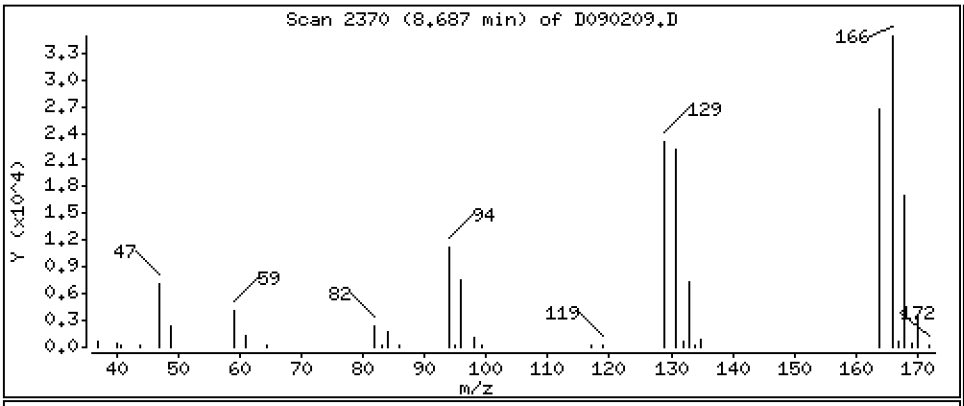
Client ID: HS18081428-01MSD Instrument: VOA2.i

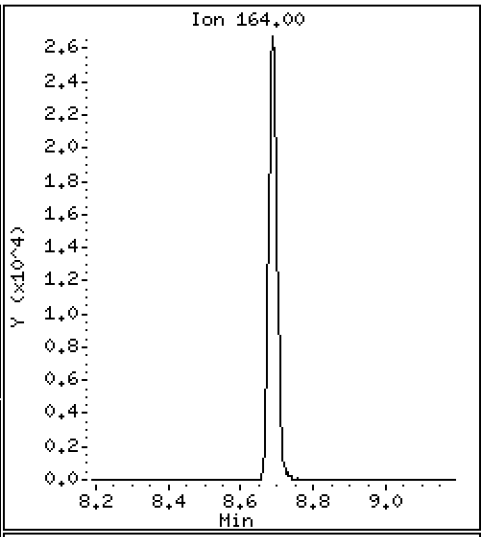
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

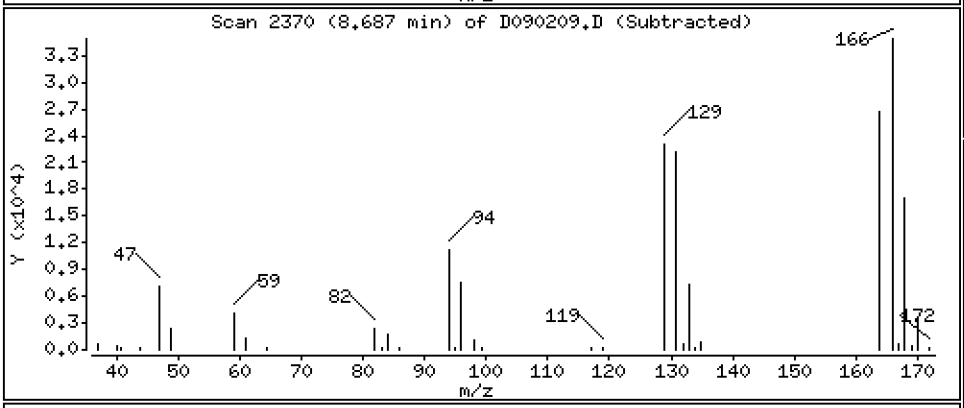
Purge Volume: 5.0 Operator: AP

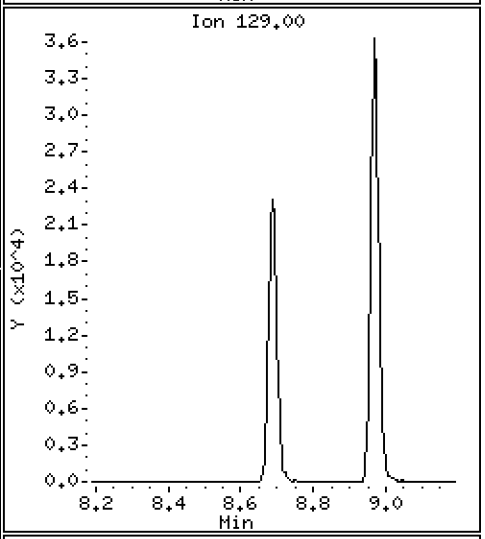
Column phase: DB624 Column diameter: 0.18

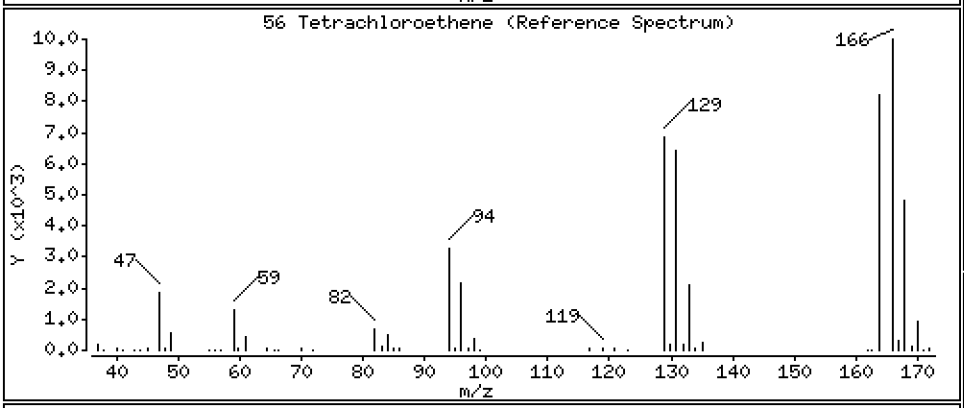
56 Tetrachloroethene Concentration: 17.62 ug/l Review Code:

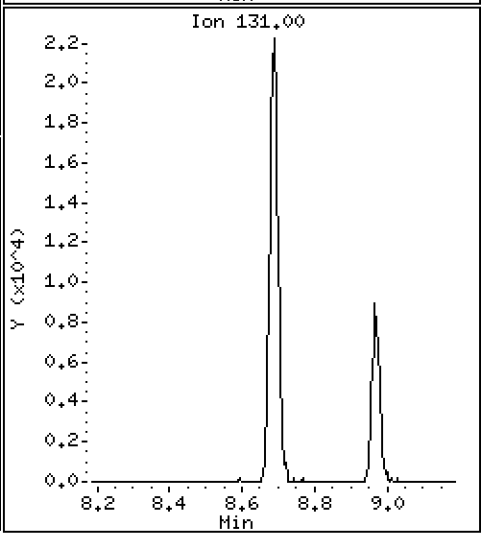


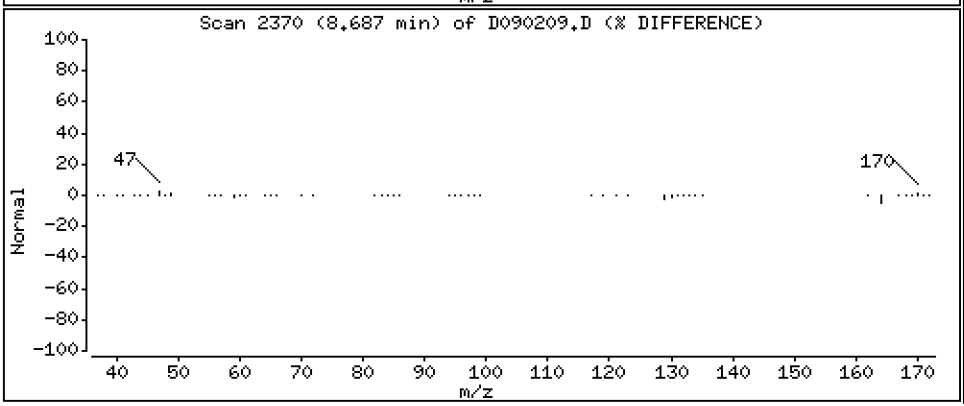












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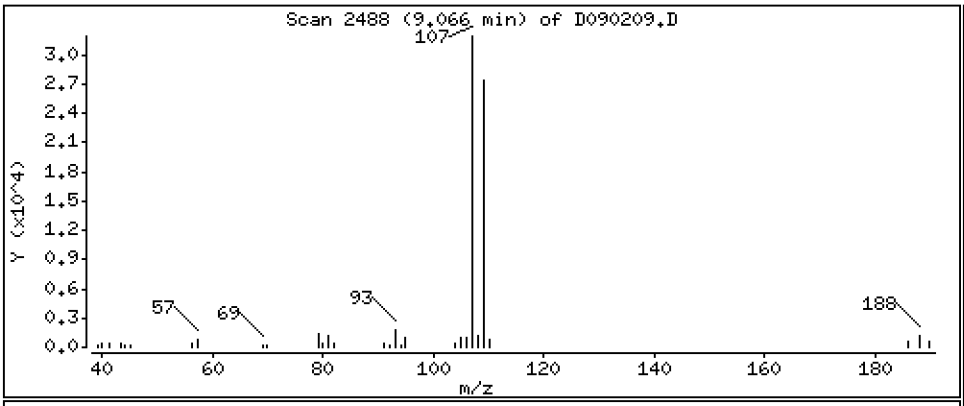
Client ID: HS18081428-01MSD Instrument: VOA2.i

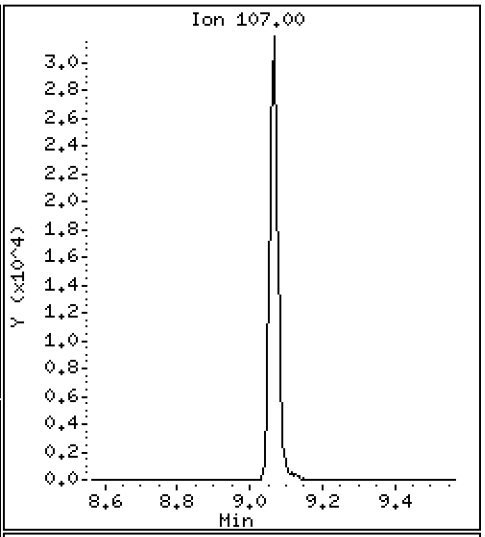
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

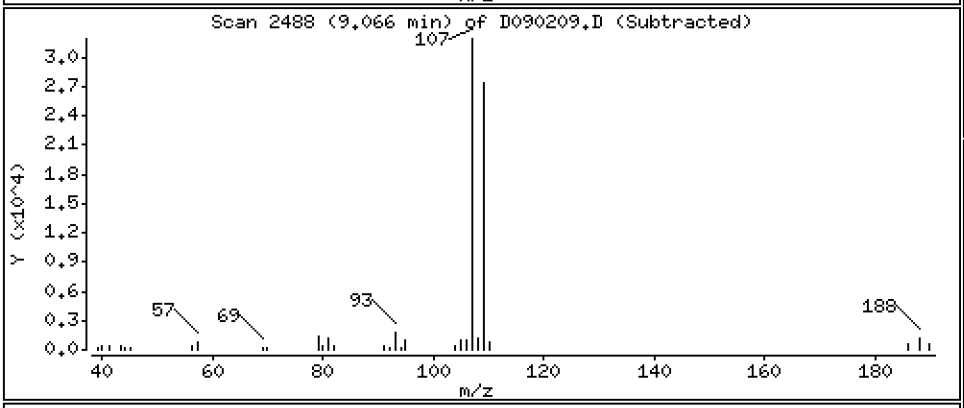
Purge Volume: 5.0 Operator: AP

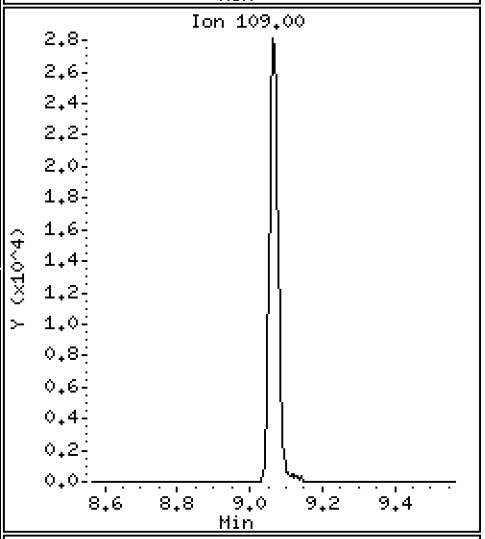
Column phase: DB624 Column diameter: 0.18

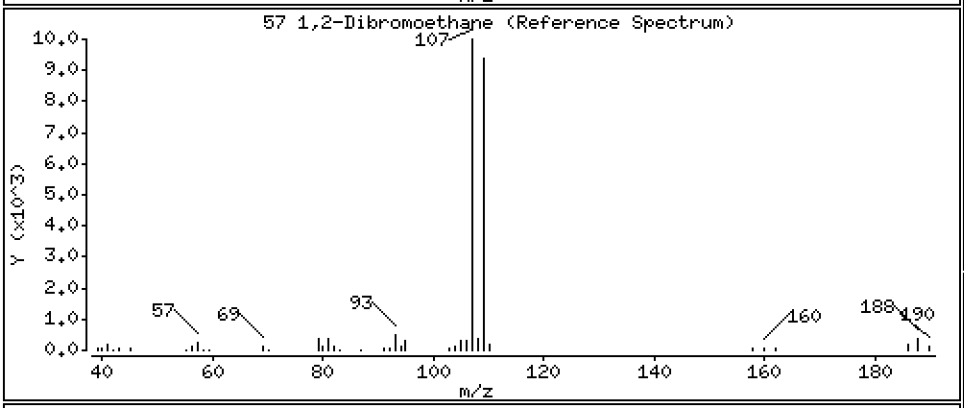
57 1,2-Dibromoethane Concentration: 18.17 ug/l Review Code:

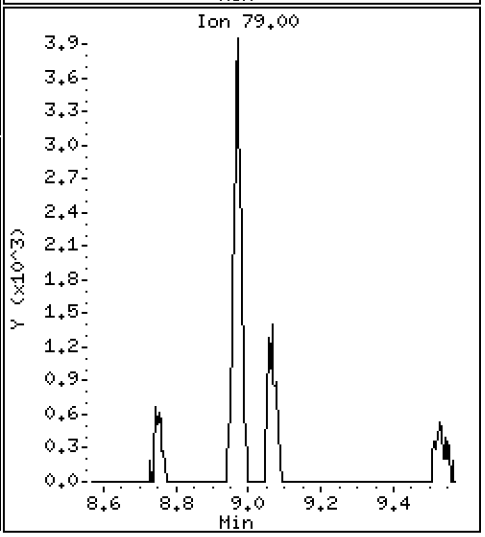


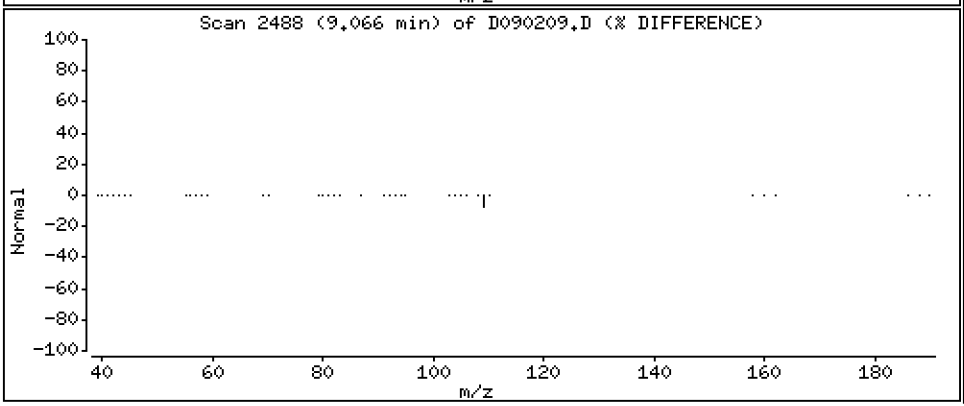












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Date : 02-SEP-2018 16:42

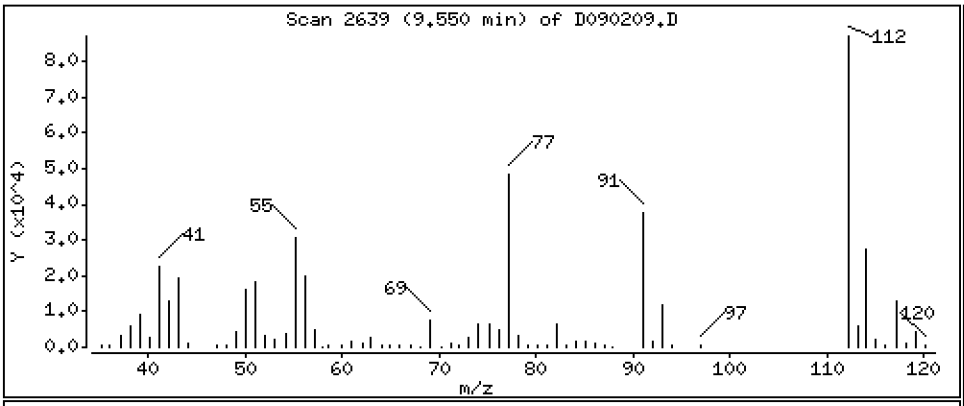
Client ID: HS18081428-01MSD Instrument: VOA2.i

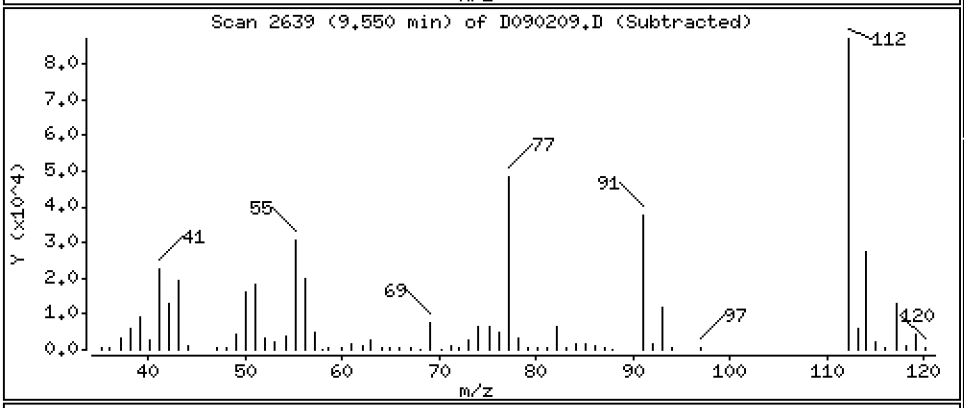
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

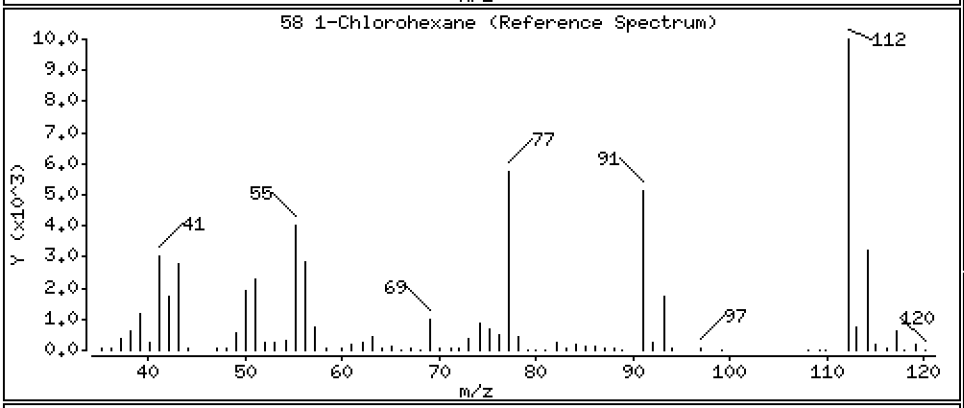
Purge Volume: 5.0 Operator: AP

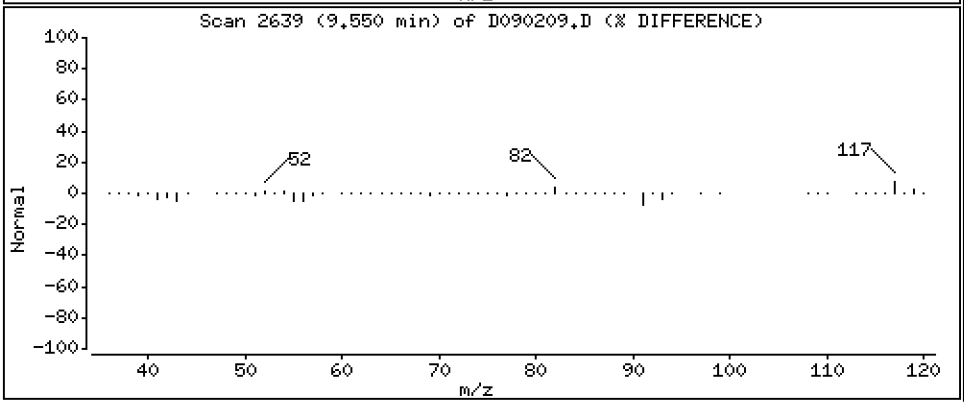
Column phase: DB624 Column diameter: 0.18

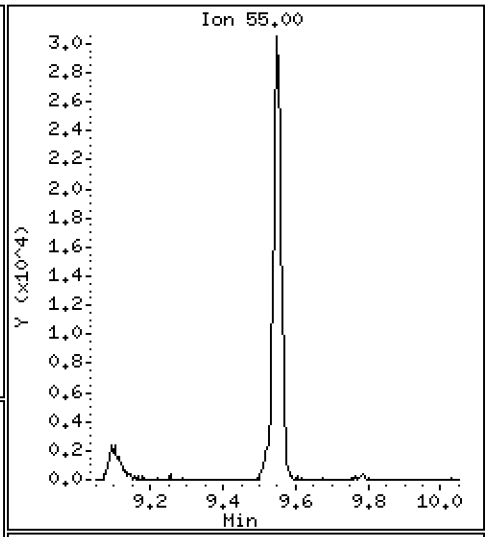
58 1-Chlorohexane Concentration: 16.86 ug/l Review Code:

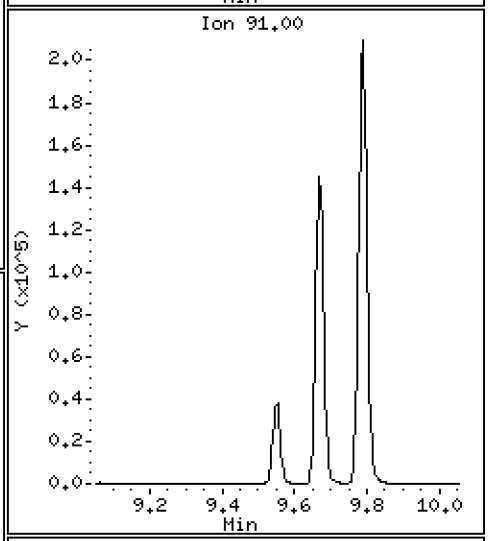


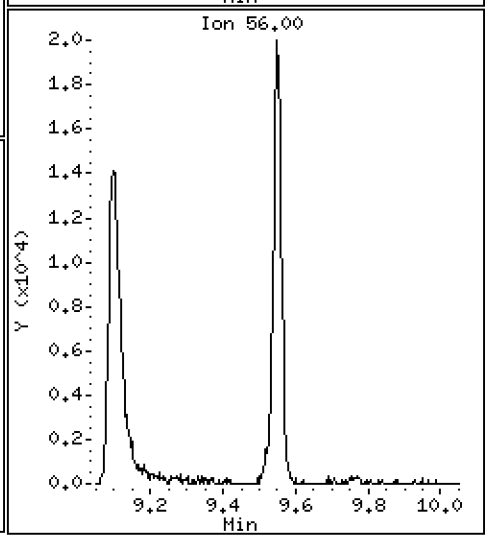












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 55

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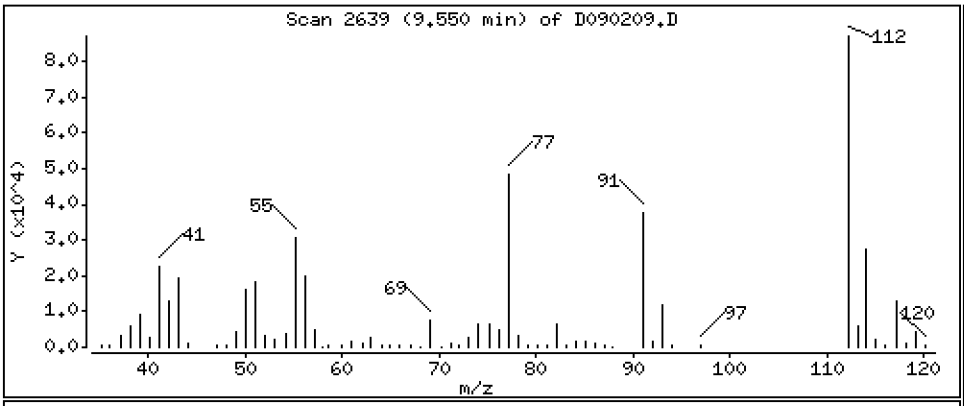
Client ID: HS18081428-01MSD Instrument: VOA2.i

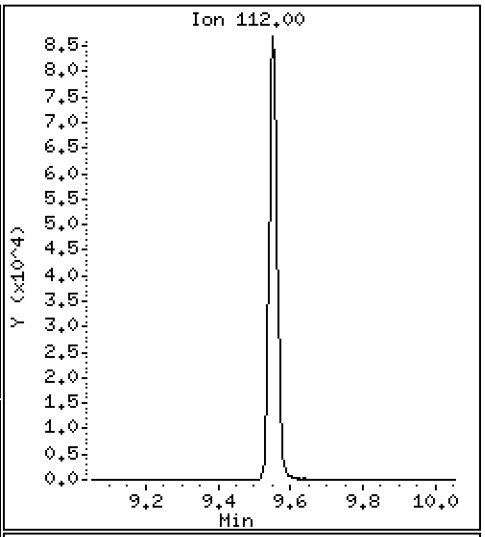
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

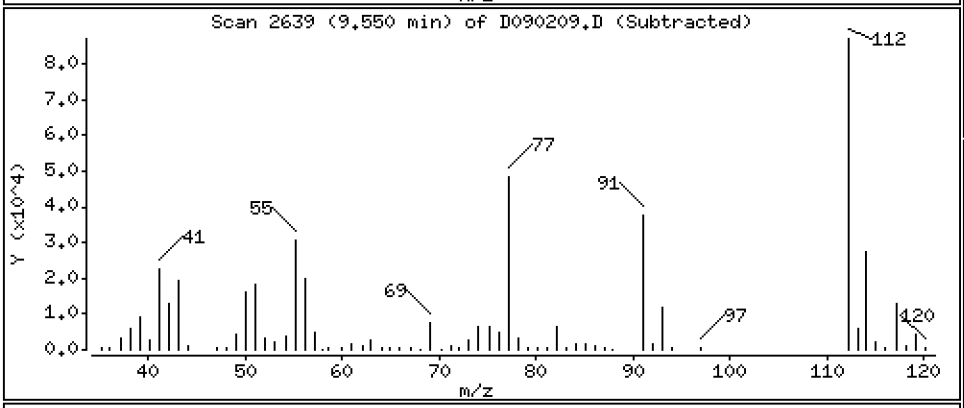
Purge Volume: 5.0 Operator: AP

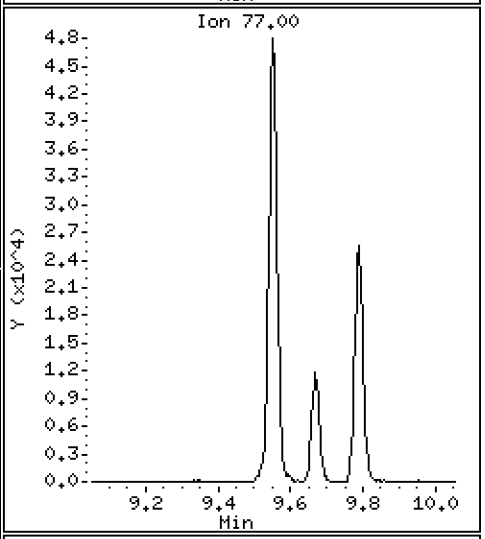
Column phase: DB624 Column diameter: 0.18

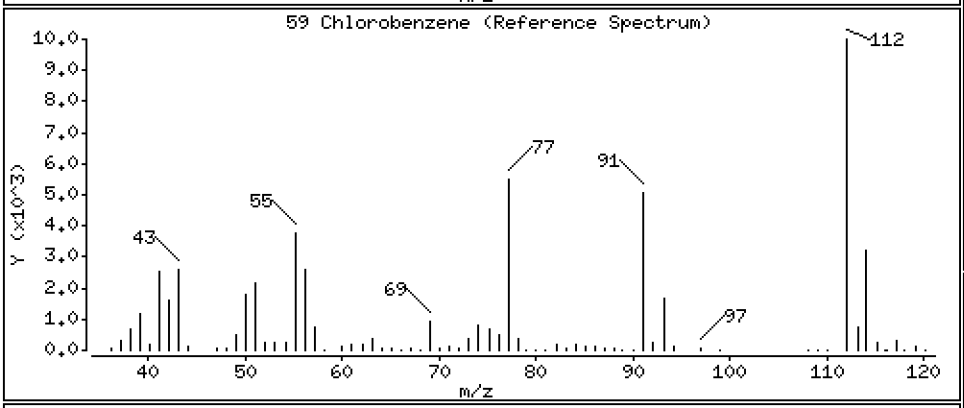
59 Chlorobenzene Concentration: 17.79 ug/l Review Code:

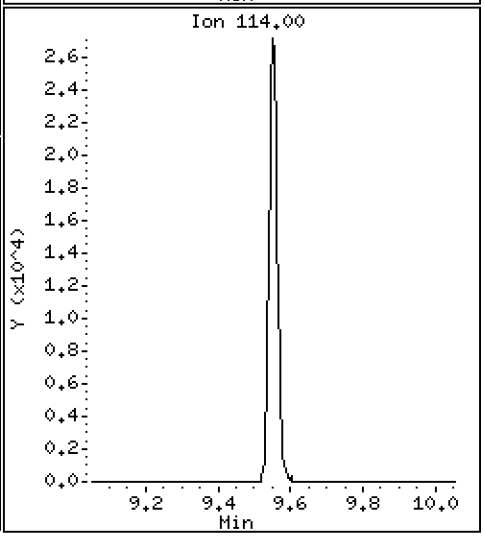


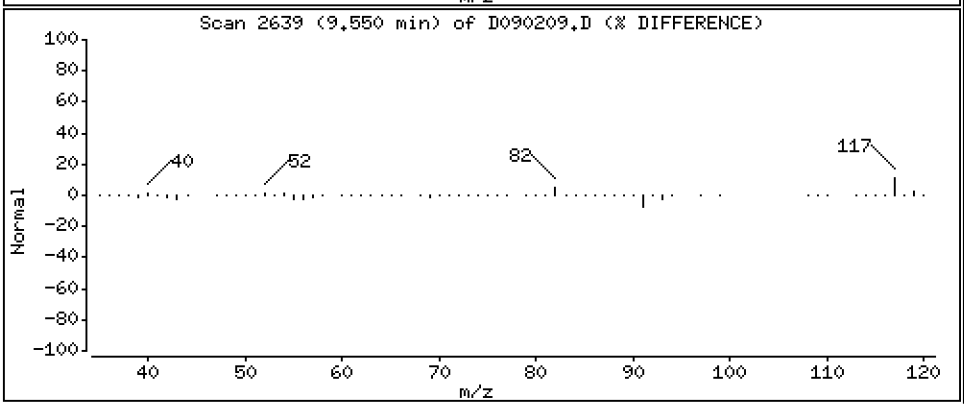












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 56

Date : 02-SEP-2018 16:42

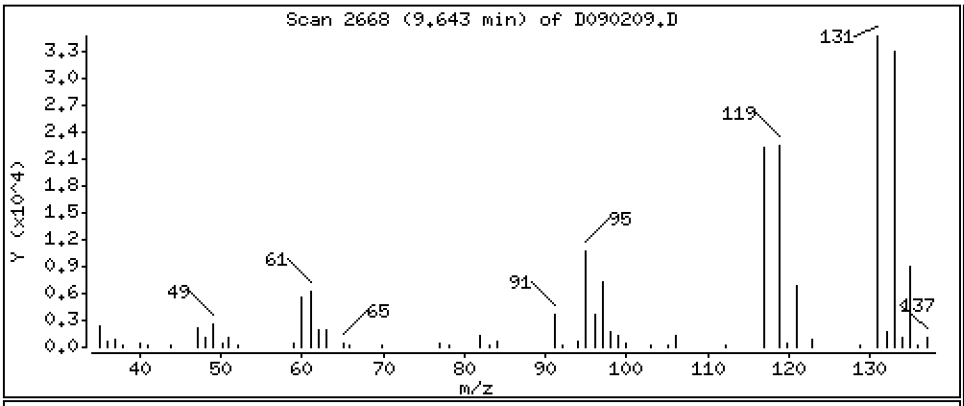
Client ID: HS18081428-01MSD Instrument: VOA2.i

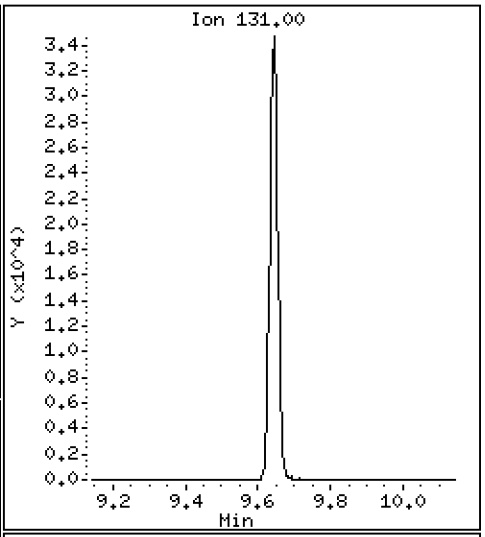
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

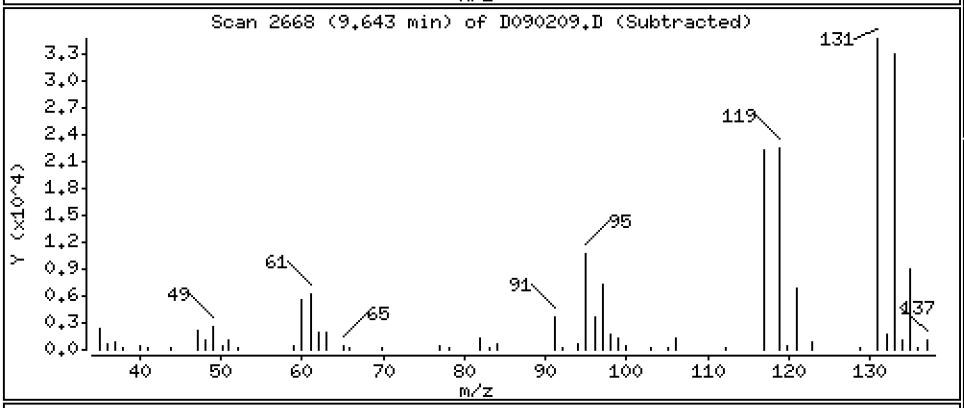
Purge Volume: 5.0 Operator: AP

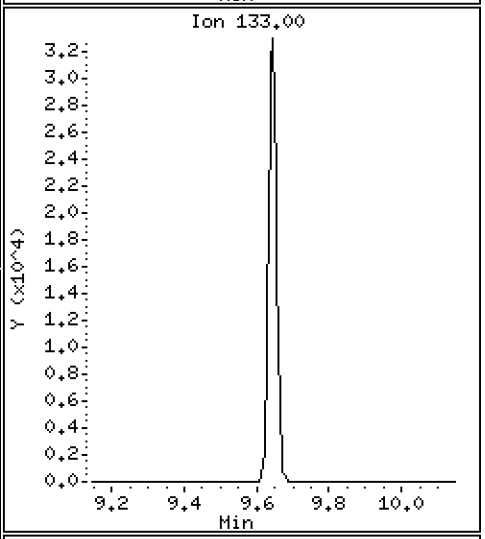
Column phase: DB624 Column diameter: 0.18

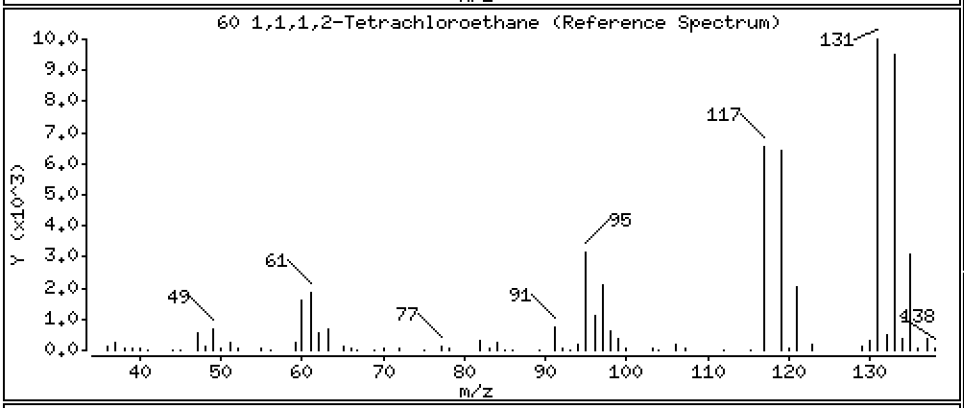
60 1,1,1,2-Tetrachloroethane Concentration: 18.06 ug/l Review Code:

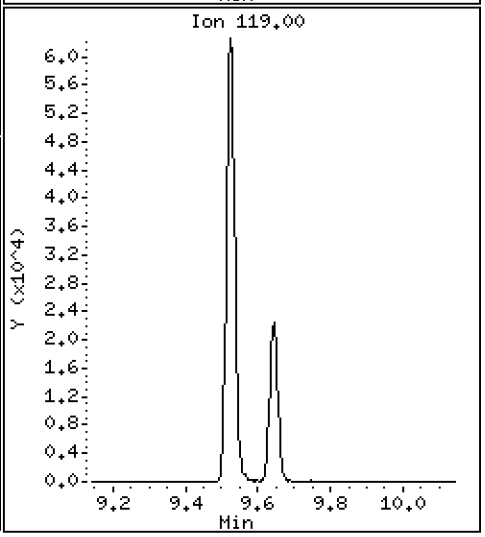


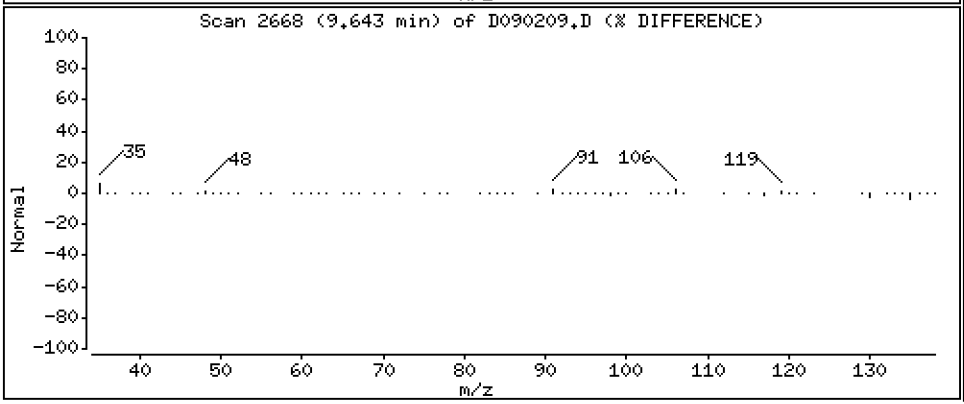












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 57

Date : 02-SEP-2018 16:42

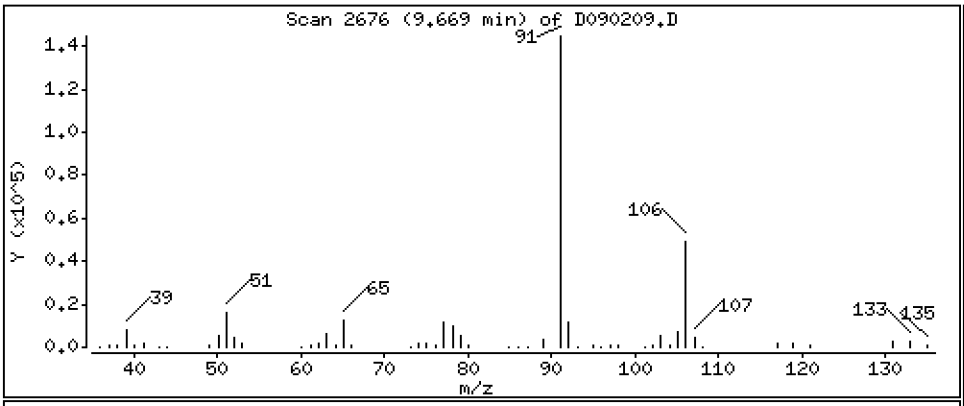
Client ID: HS18081428-01MSD Instrument: VOA2.i

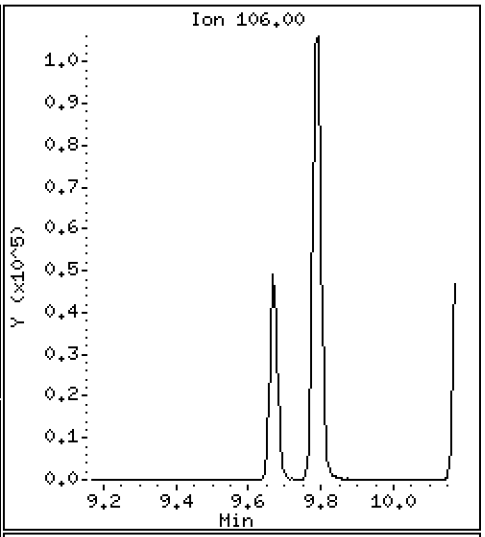
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

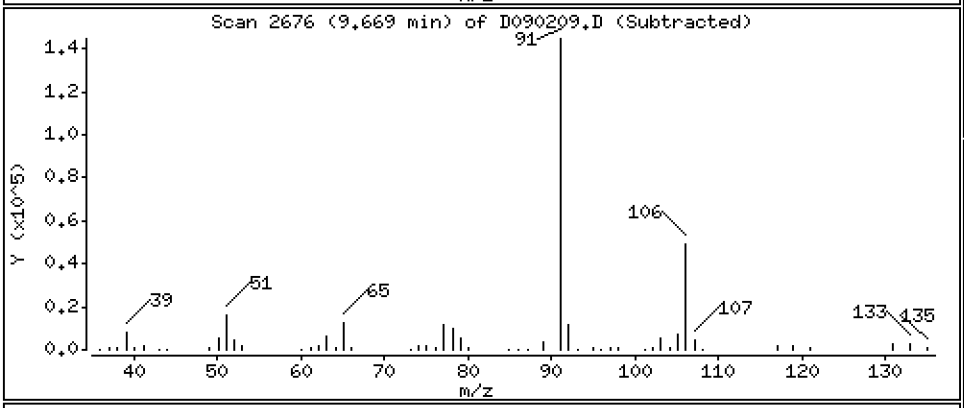
Purge Volume: 5.0 Operator: AP

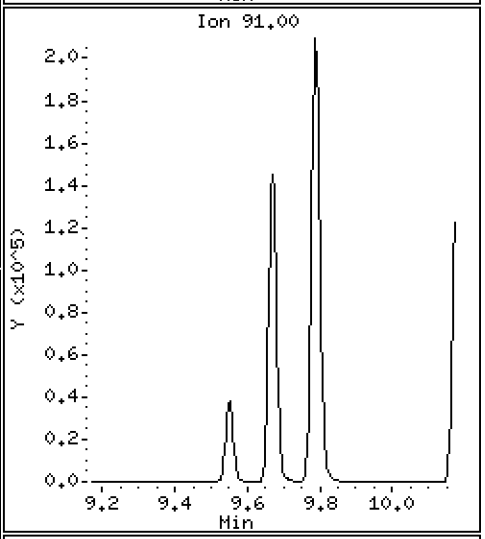
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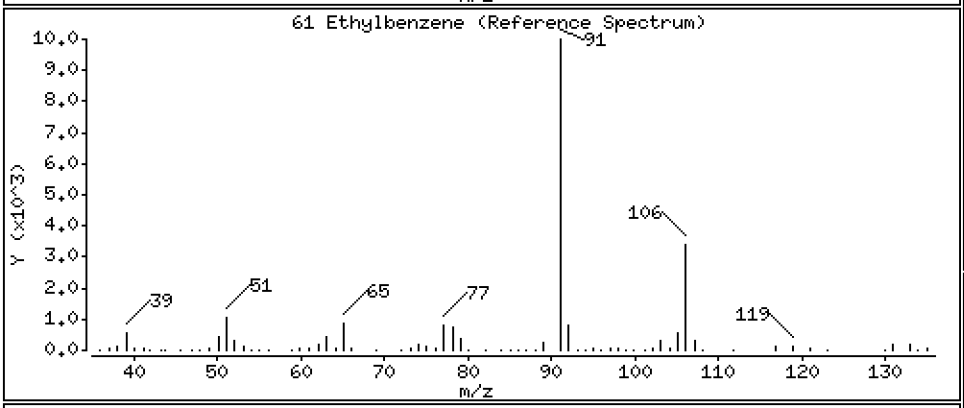
61 Ethylbenzene Concentration: 18.56 ug/l Review Code:

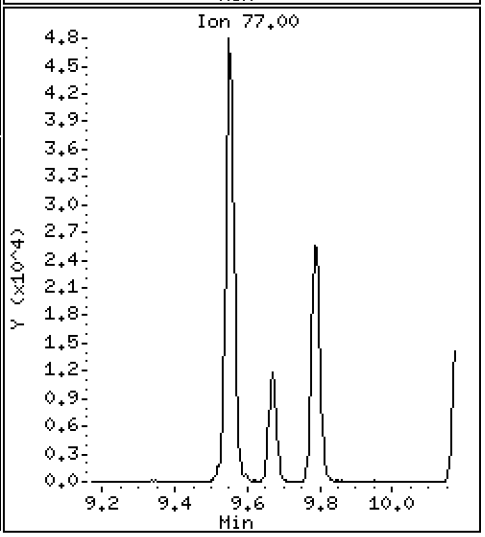


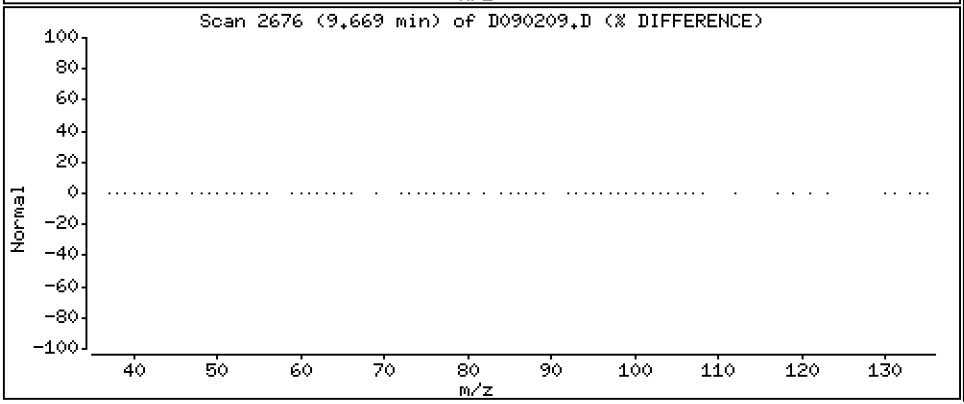












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 58

Date : 02-SEP-2018 16:42

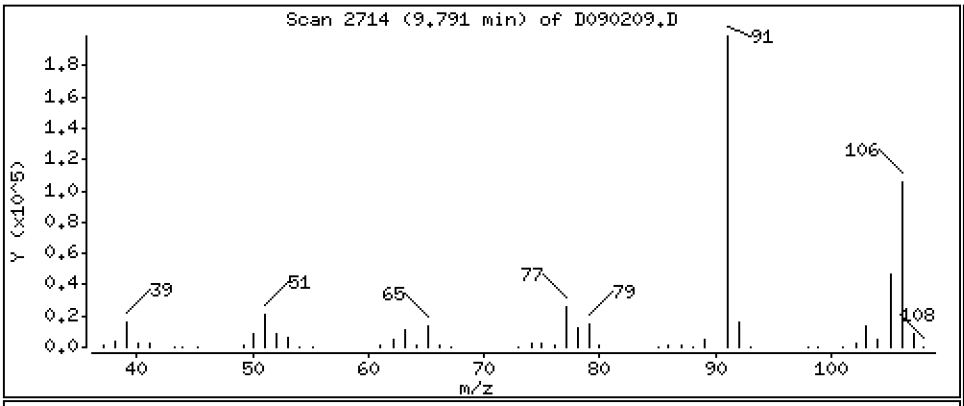
Client ID: HS18081428-01MSD Instrument: VOA2.i

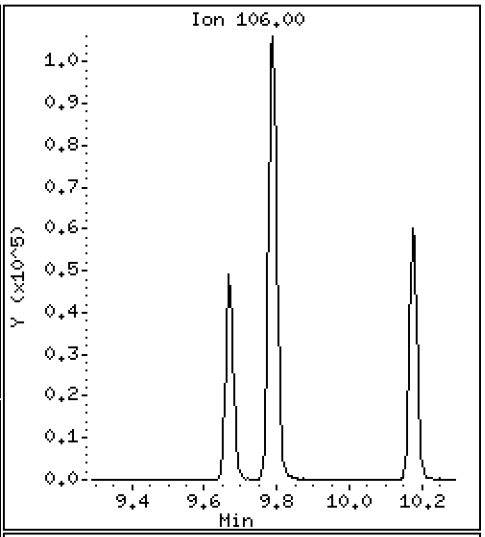
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

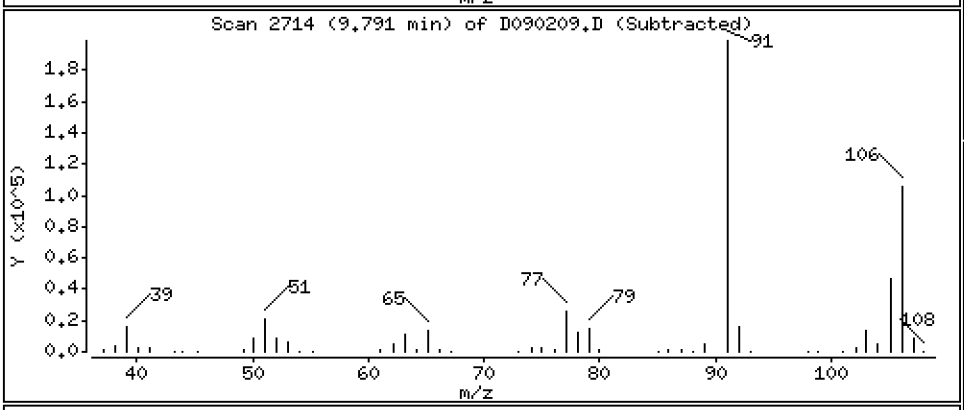
Purge Volume: 5.0 Operator: AP

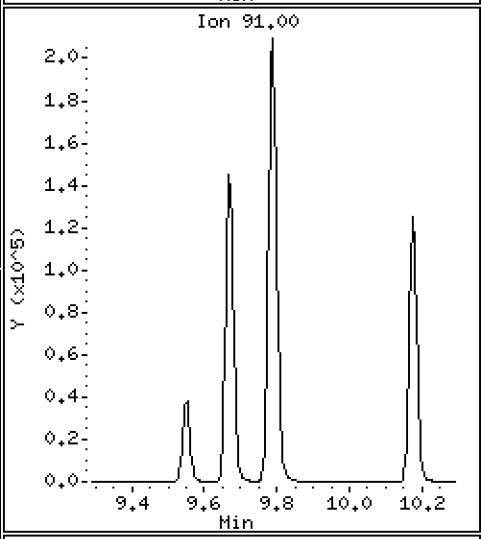
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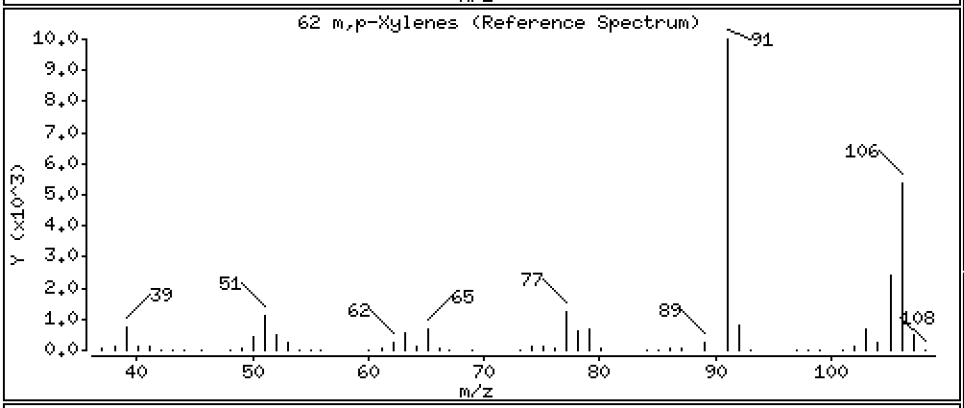
62 m,p-Xylenes Concentration: 37.46 ug/l Review Code:

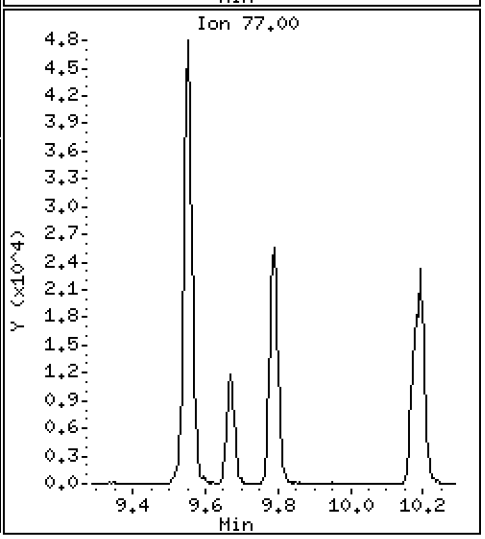


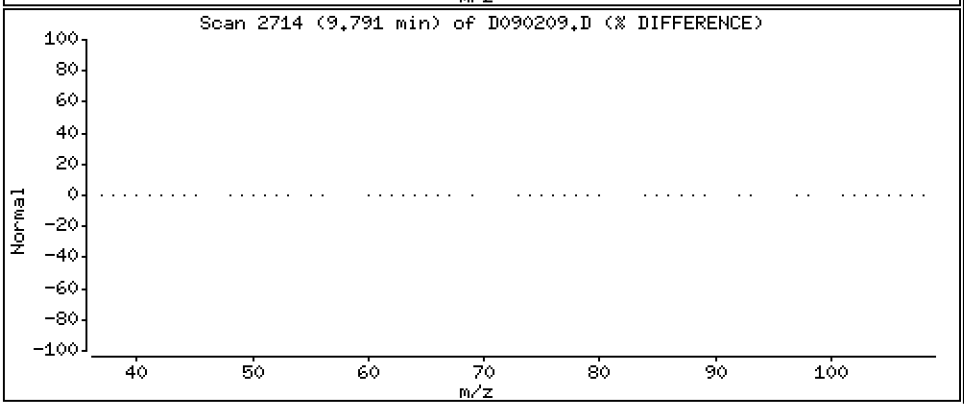












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 59

Date : 02-SEP-2018 16:42

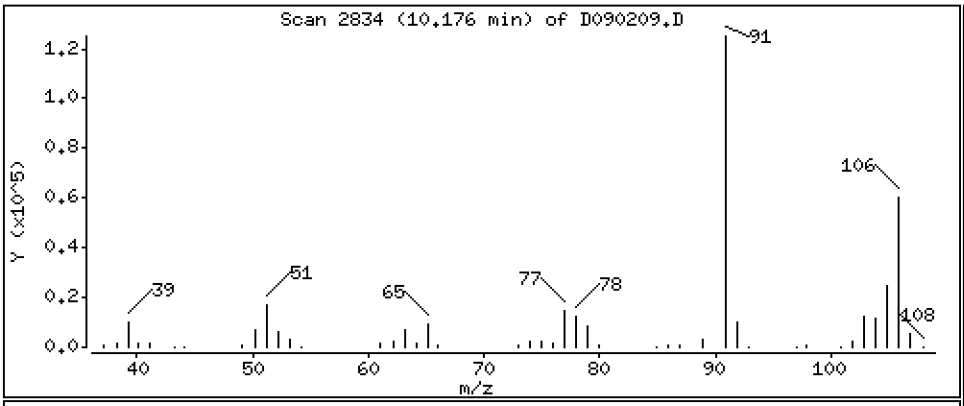
Client ID: HS18081428-01MSD Instrument: VOA2.i

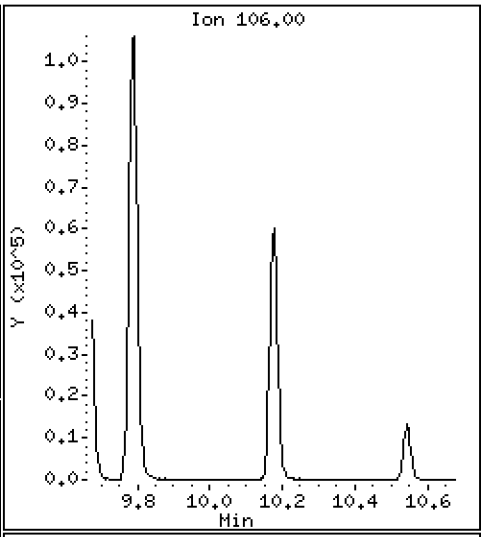
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

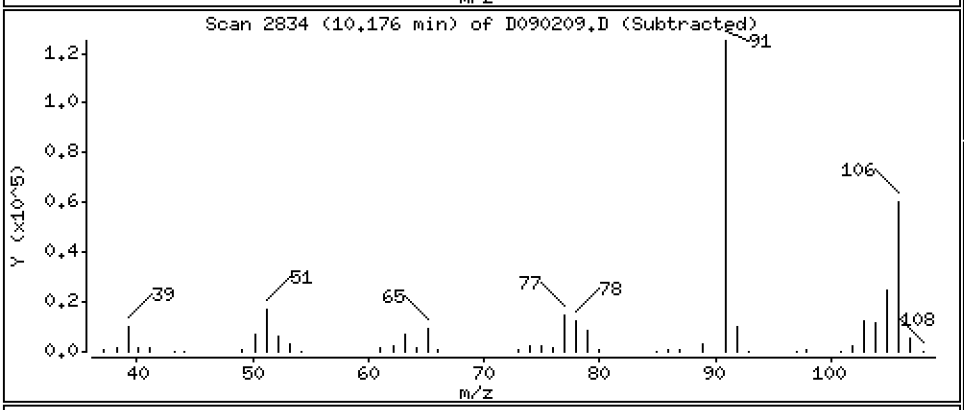
Purge Volume: 5.0 Operator: AP

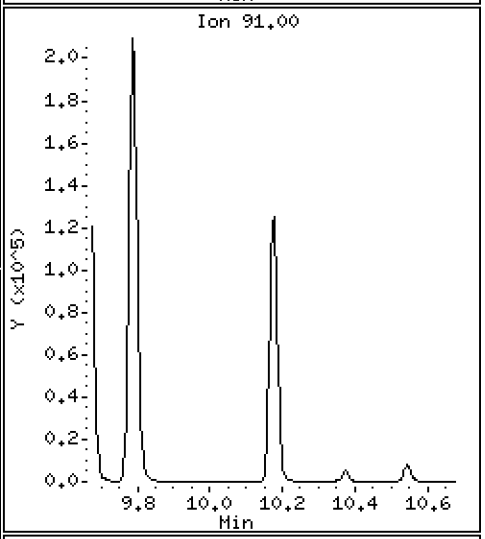
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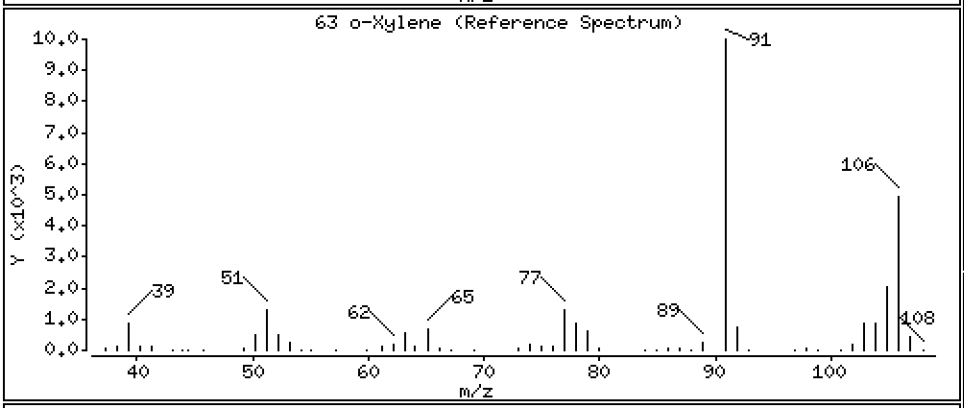
63 o-Xylene Concentration: 18.51 ug/l Review Code:

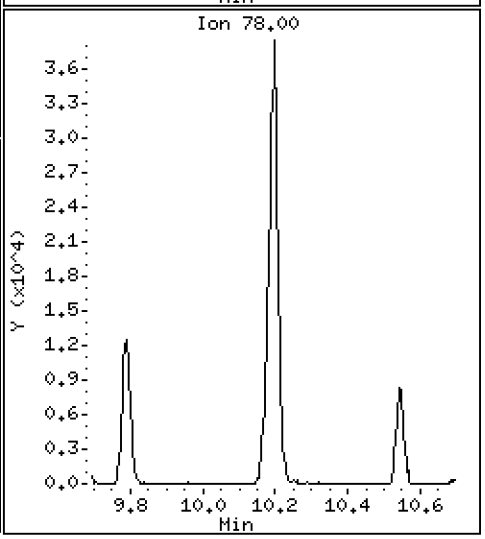


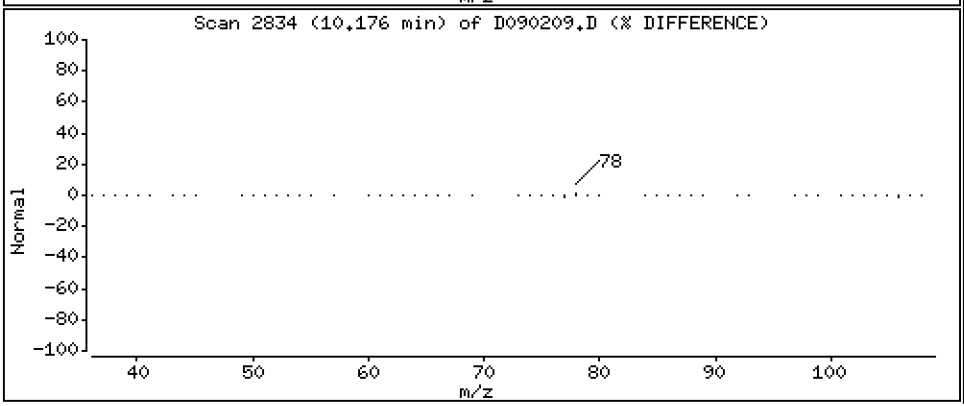












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 60

Date : 02-SEP-2018 16:42

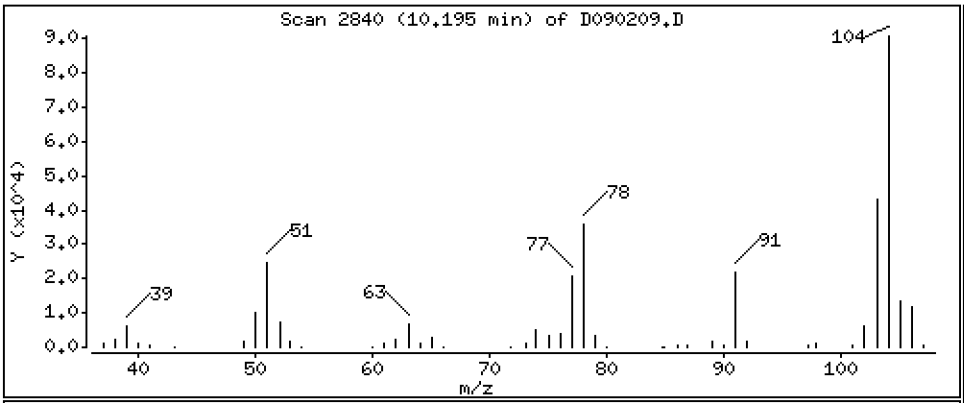
Client ID: HS18081428-01MSD Instrument: VOA2.i

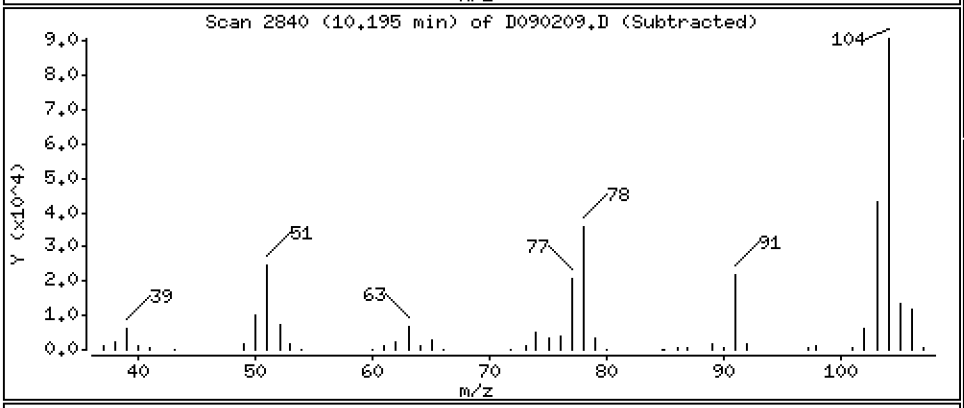
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

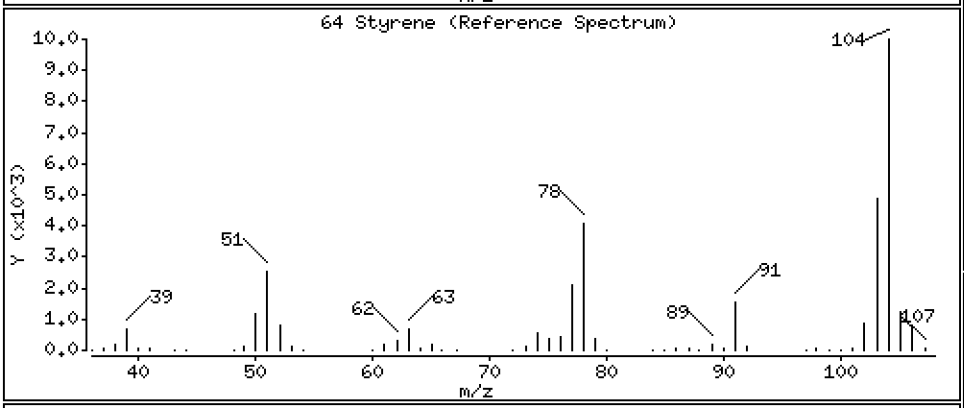
Purge Volume: 5.0 Operator: AP

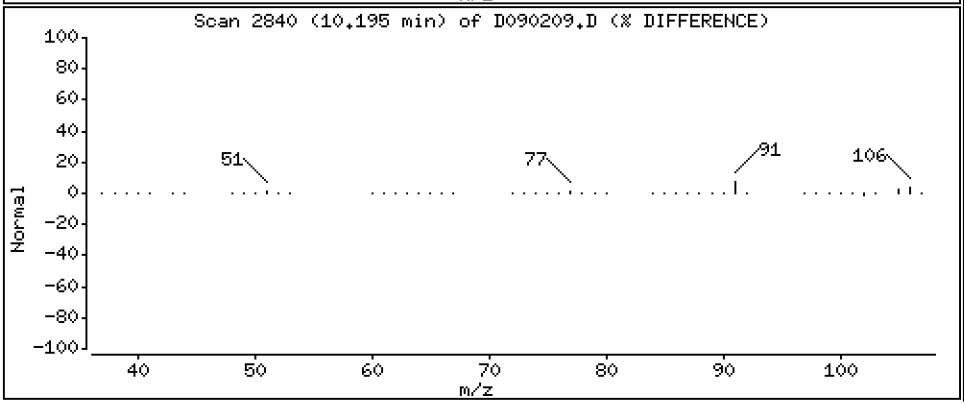
Column phase: DB624 Column diameter: 0.18

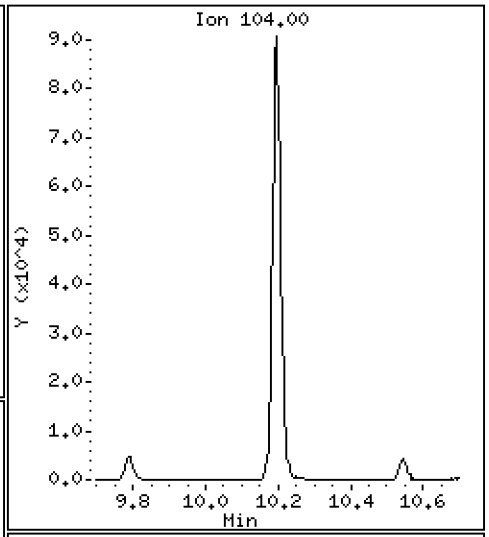
64 Styrene Concentration: 17.72 ug/l Review Code:

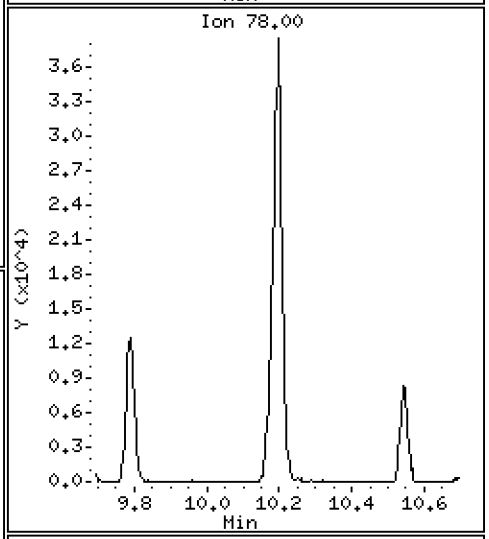


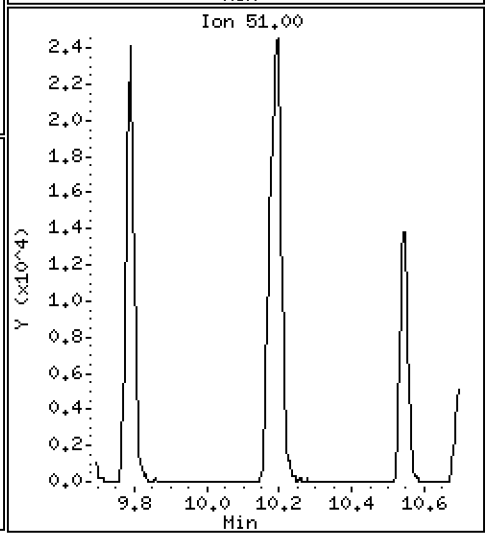












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 61

Date : 02-SEP-2018 16:42

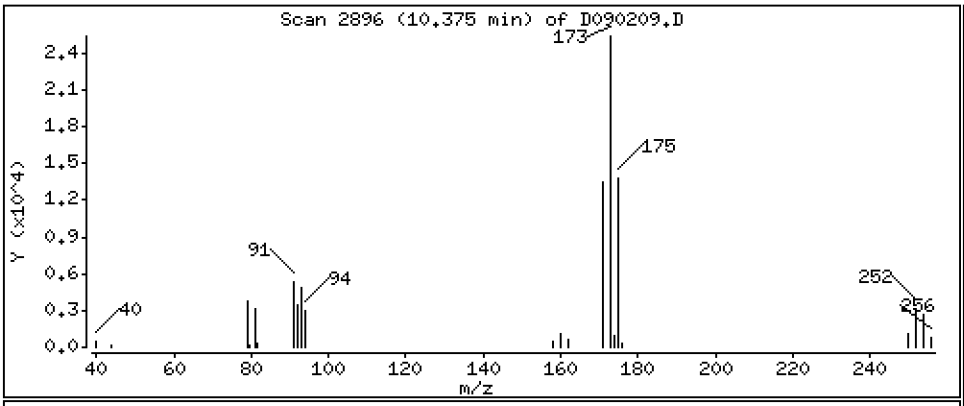
Client ID: HS18081428-01MSD Instrument: VOA2.i

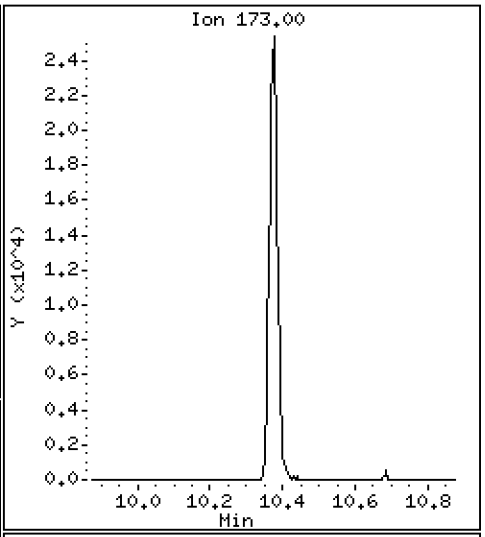
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

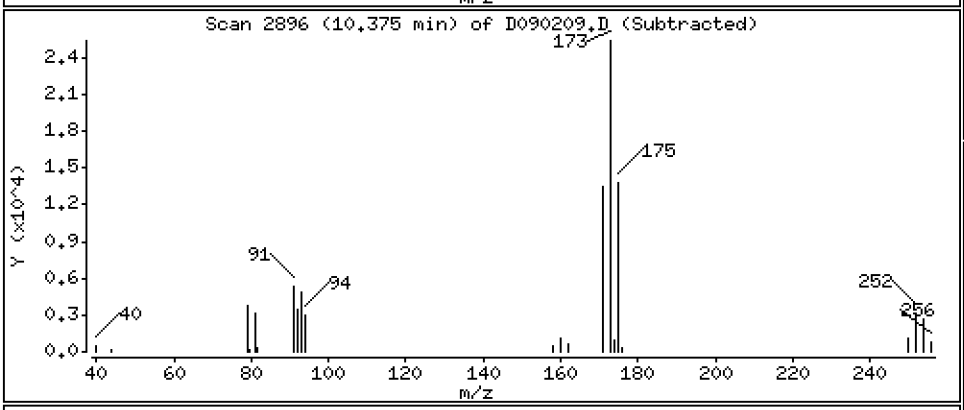
Purge Volume: 5.0 Operator: AP

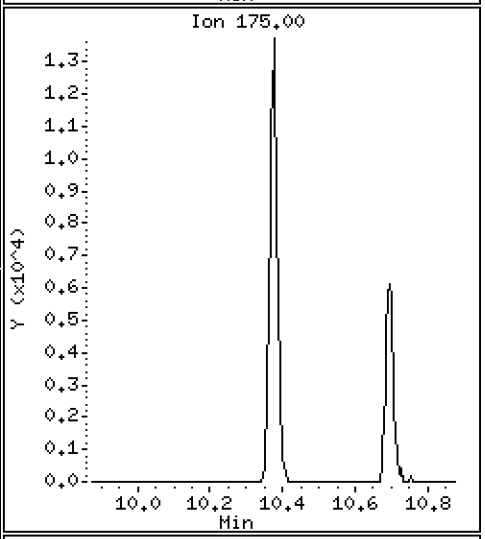
Column phase: DB624 Column diameter: 0.18

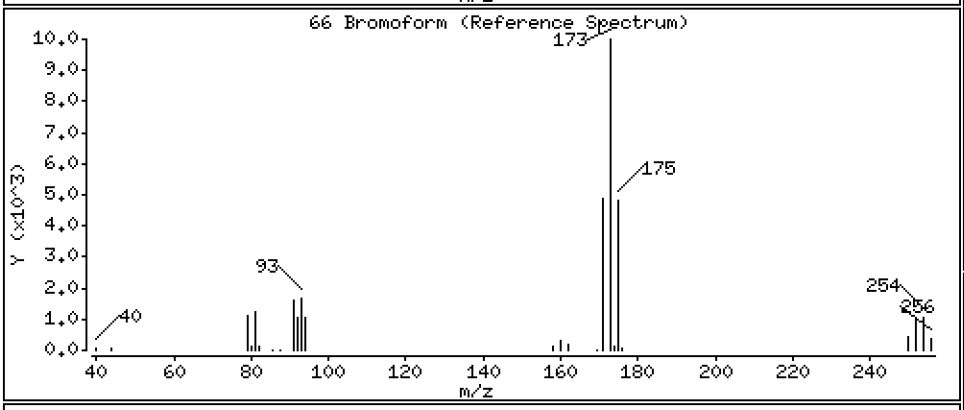
66 Bromoform Concentration: 17.65 ug/l Review Code:

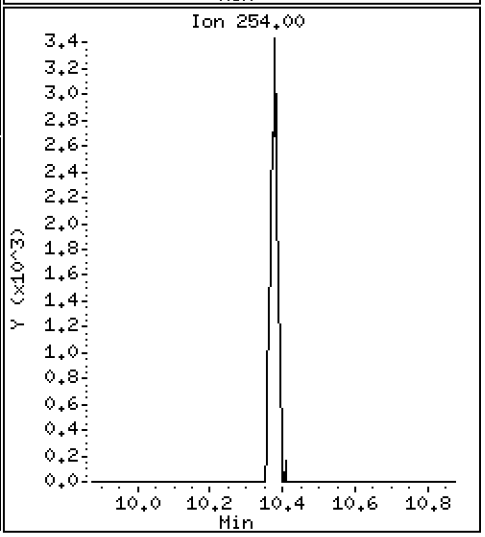


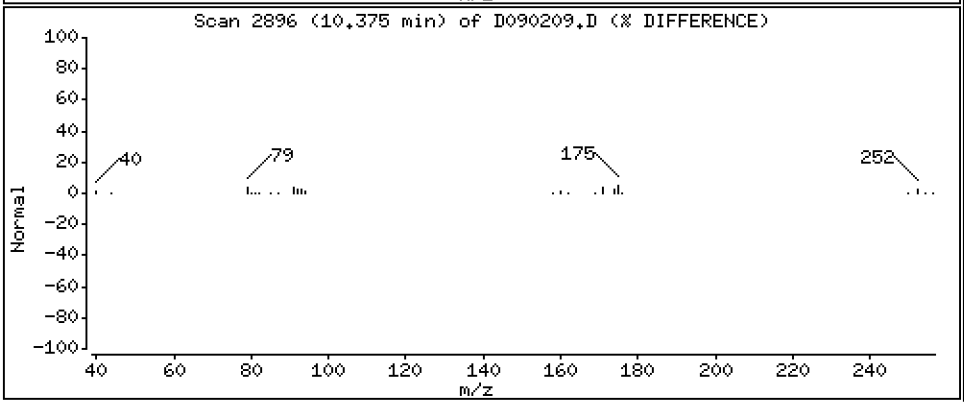












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 62

Date : 02-SEP-2018 16:42

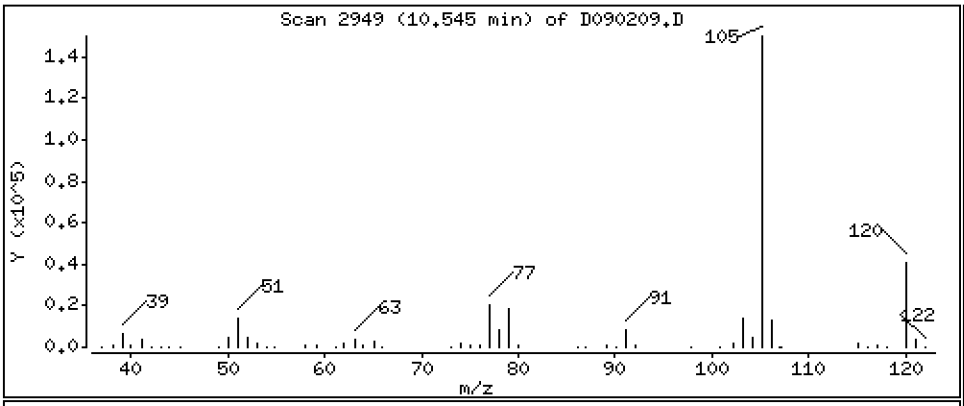
Client ID: HS18081428-01MSD Instrument: VOA2.i

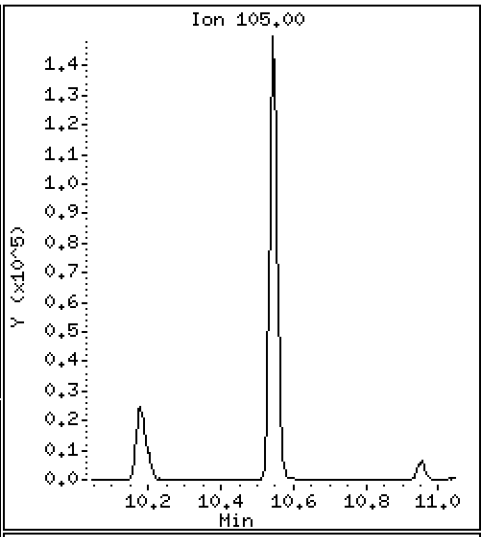
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

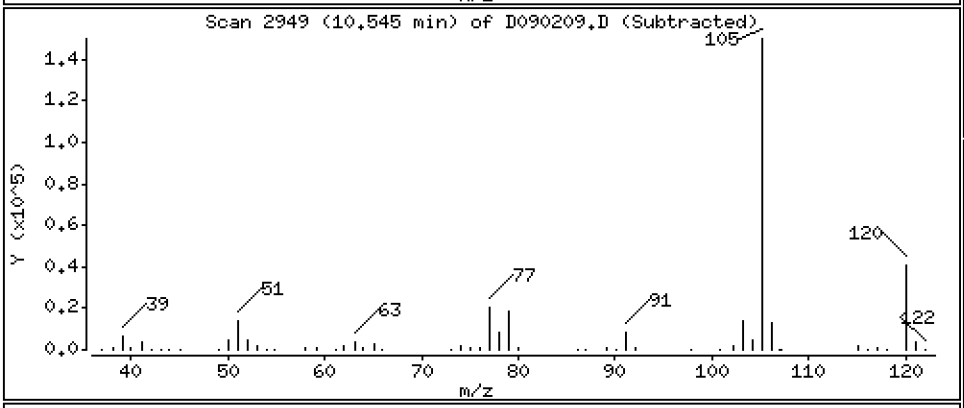
Purge Volume: 5.0 Operator: AP

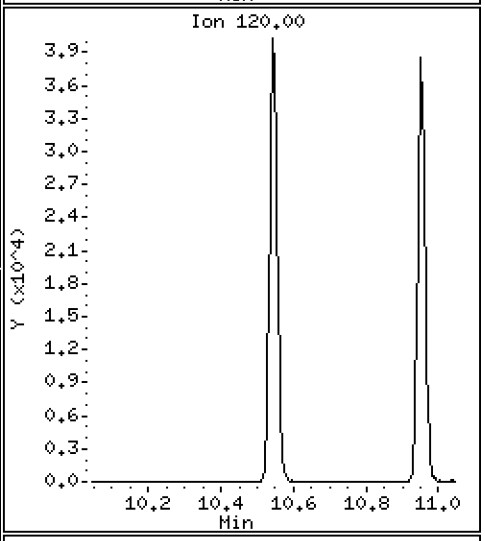
Column phase: DB624 Column diameter: 0.18

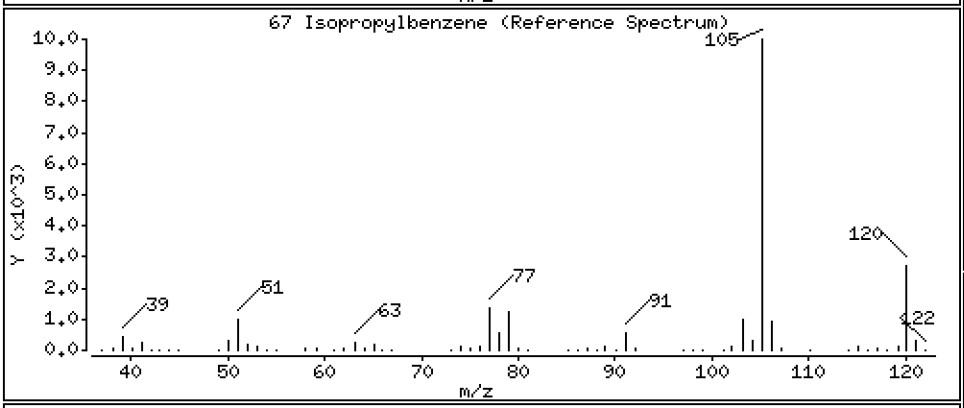
67 Isopropylbenzene Concentration: 16.86 ug/l Review Code:

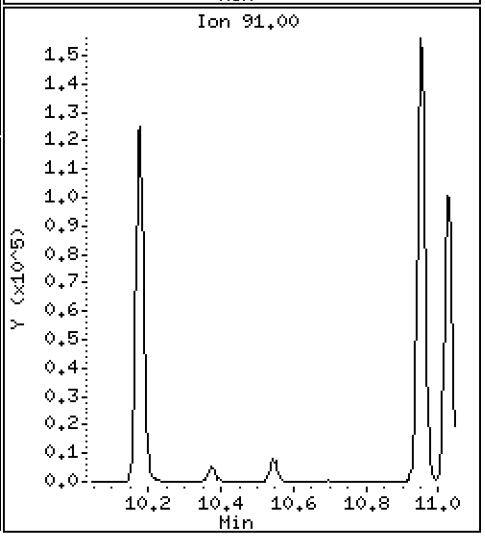


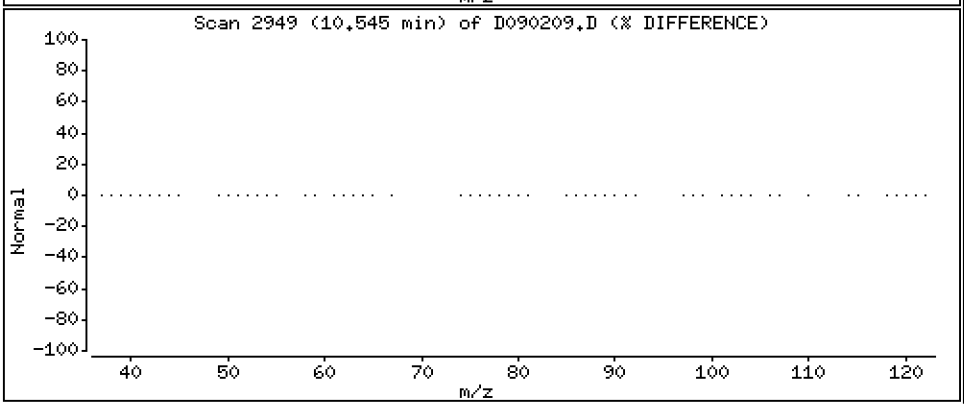












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 63

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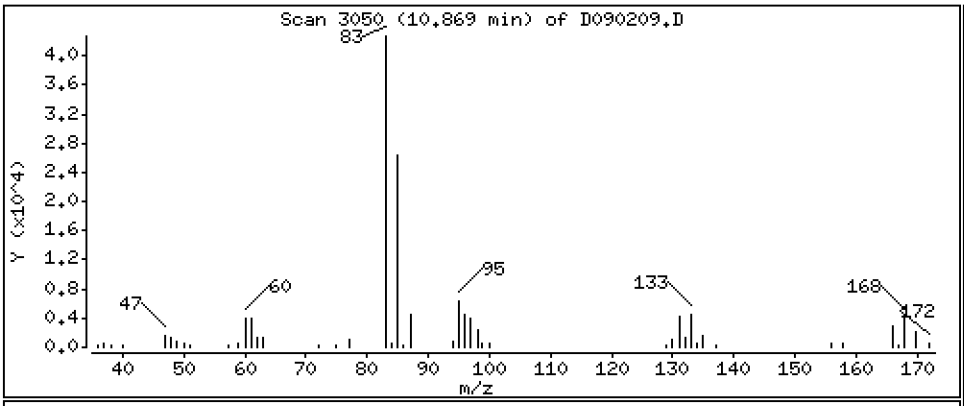
Client ID: HS18081428-01MSD Instrument: VOA2.i

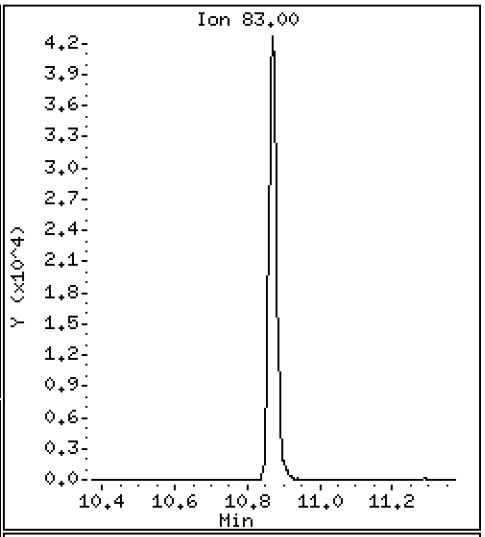
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

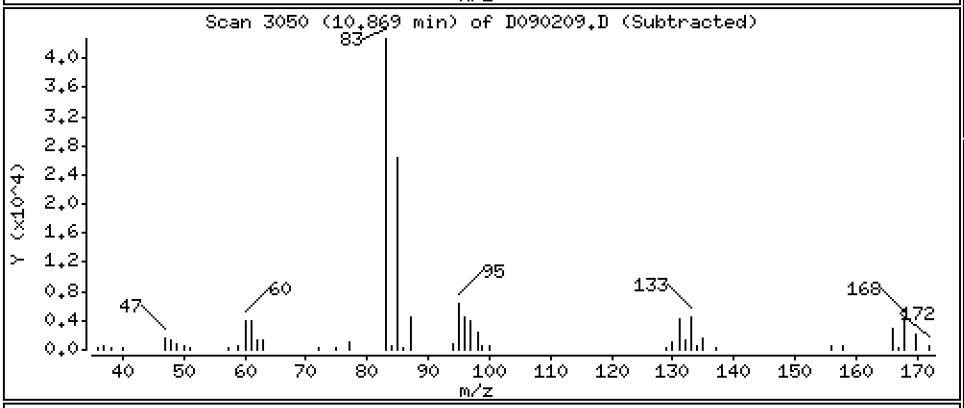
Purge Volume: 5.0 Operator: AP

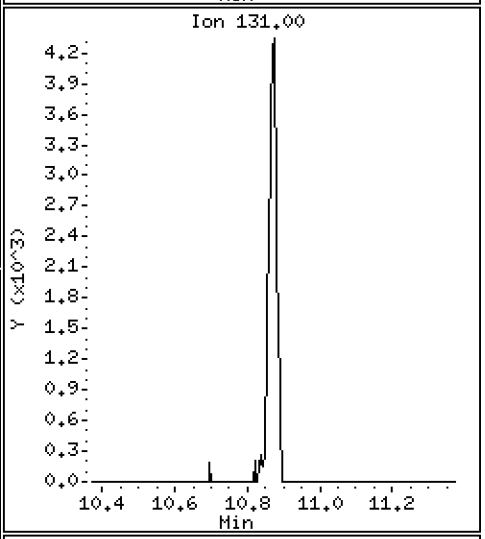
Column phase: DB624 Column diameter: 0.18

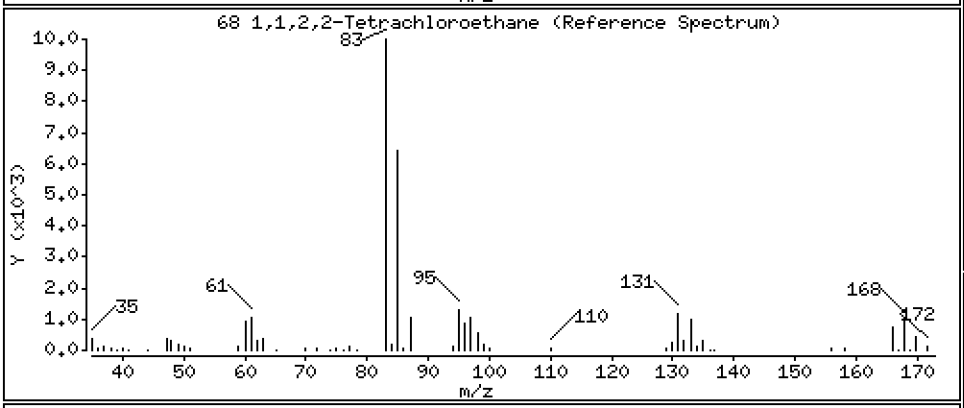
68 1,1,2,2-Tetrachloroethane Concentration: 15.08 ug/l Review Code:

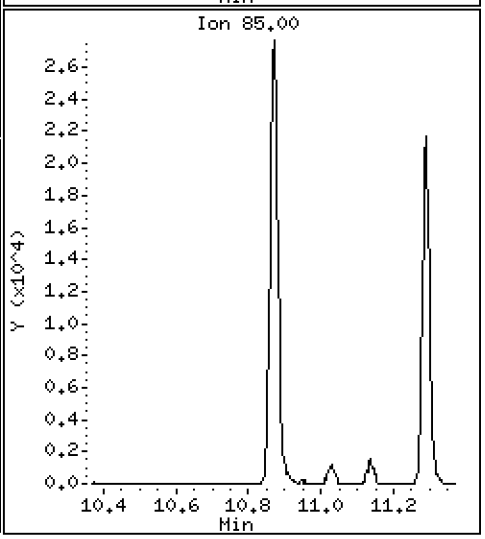


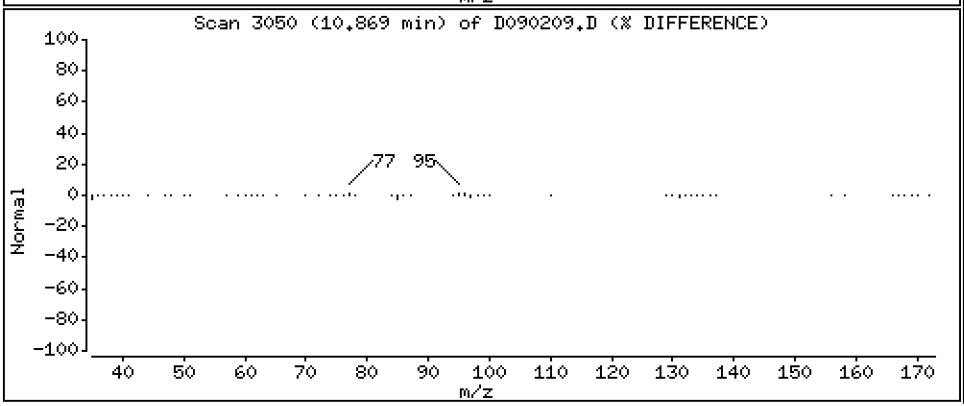












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 64

Date : 02-SEP-2018 16:42

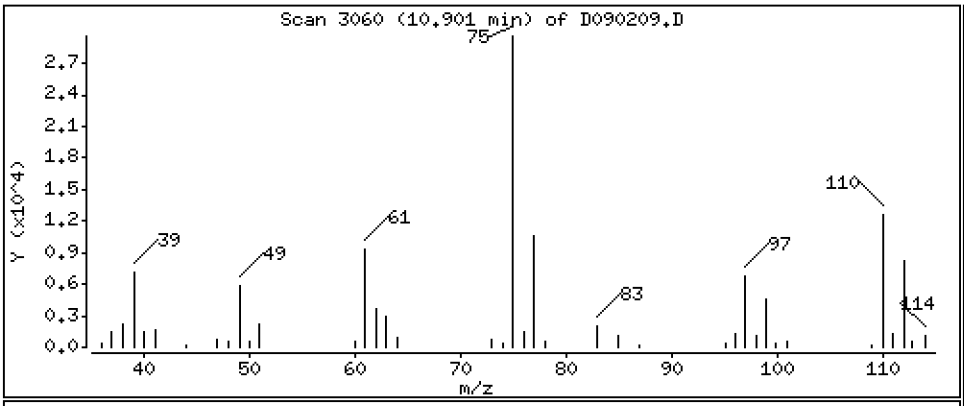
Client ID: HS18081428-01MSD Instrument: VOA2.i

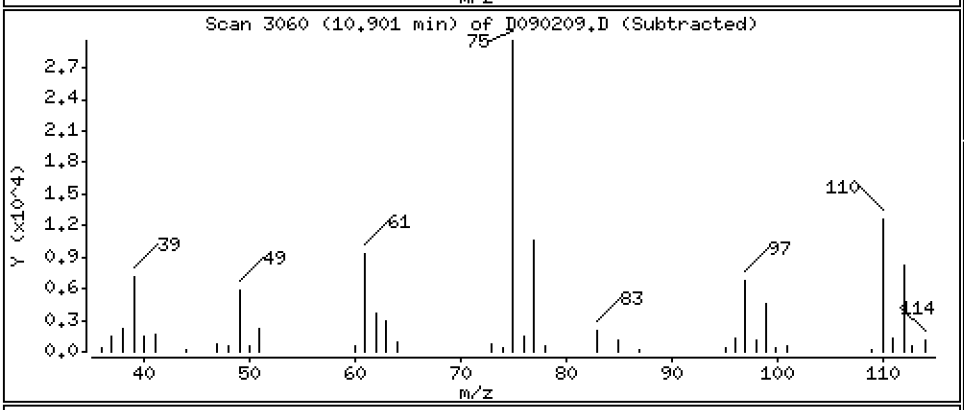
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

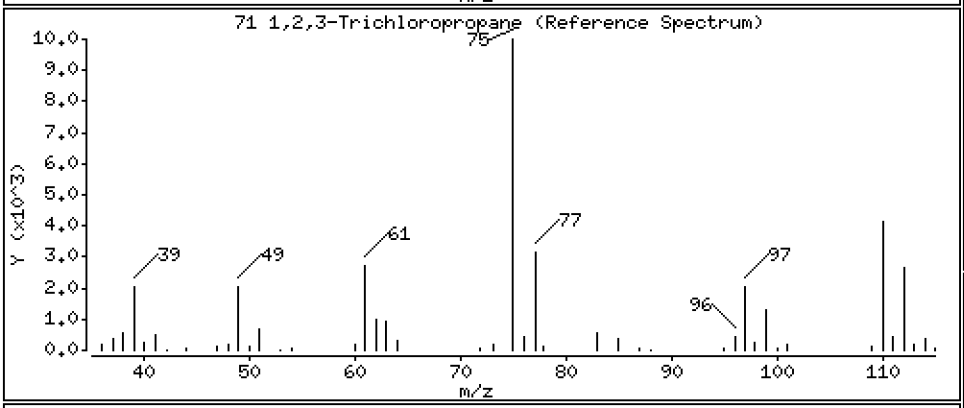
Purge Volume: 5.0 Operator: AP

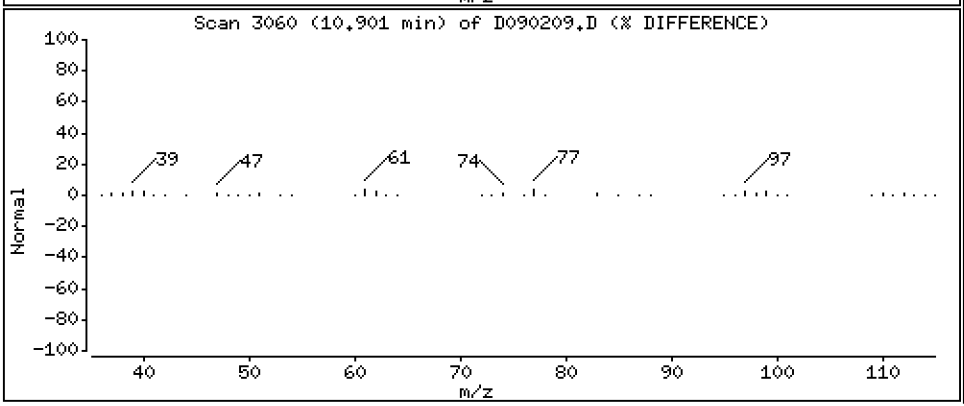
Column phase: DB624 Column diameter: 0.18

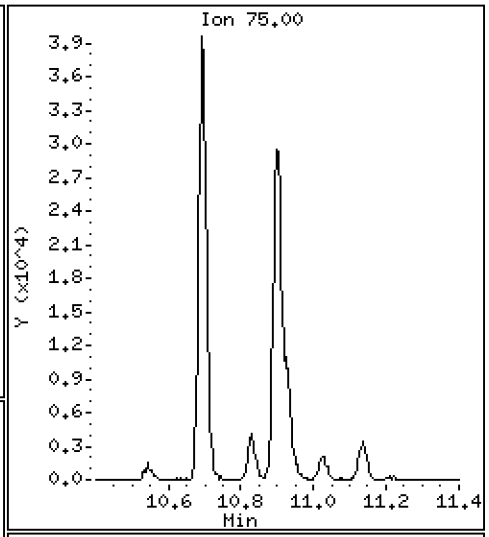
71 1,2,3-Trichloropropane Concentration: 15.19 ug/l Review Code:

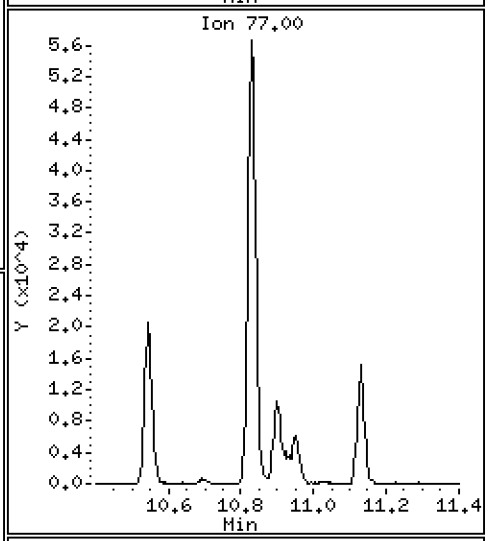


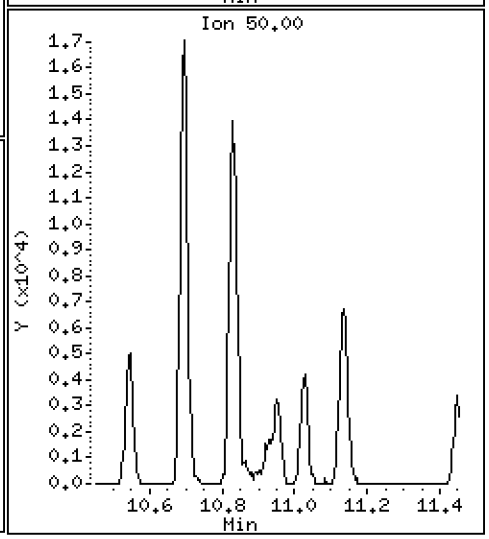












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 65

Date : 02-SEP-2018 16:42

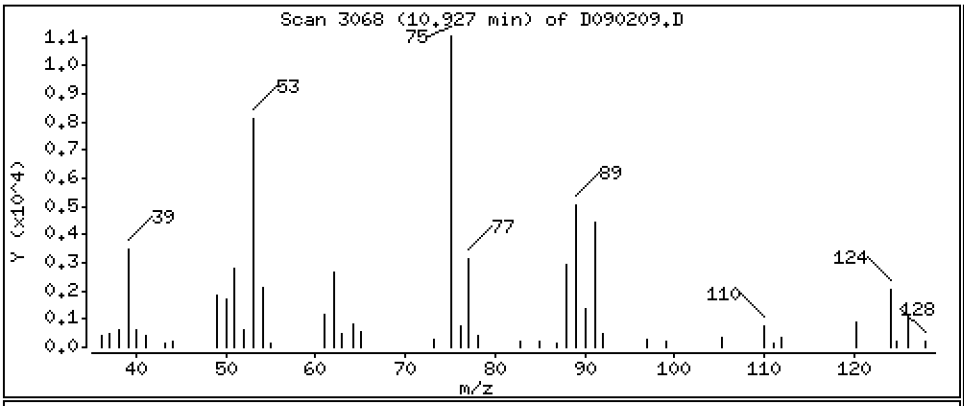
Client ID: HS18081428-01MSD Instrument: VOA2.i

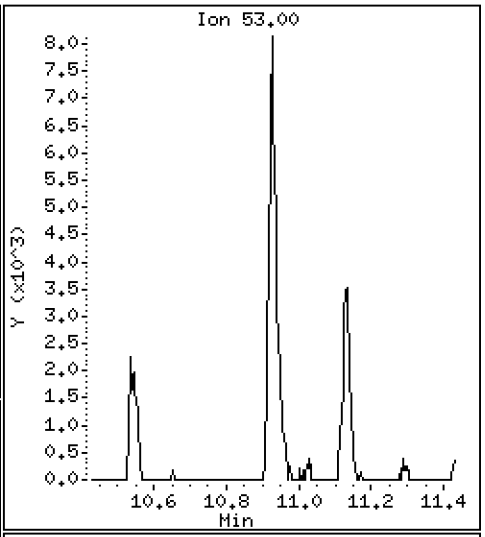
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

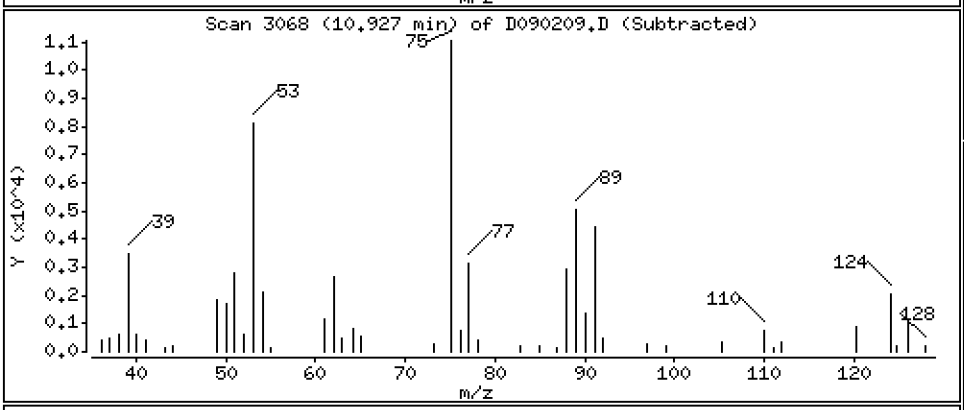
Purge Volume: 5.0 Operator: AP

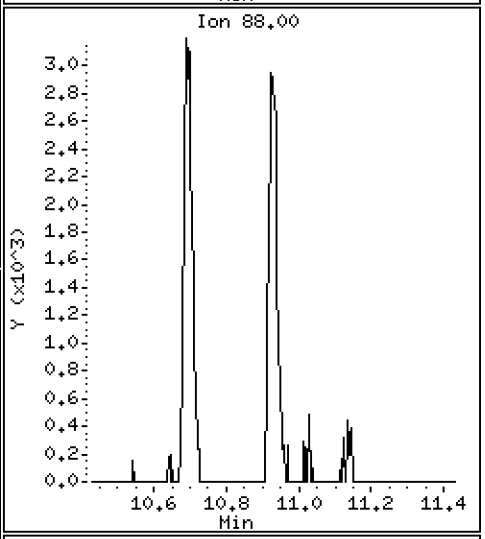
Column phase: DB624 Column diameter: 0.18

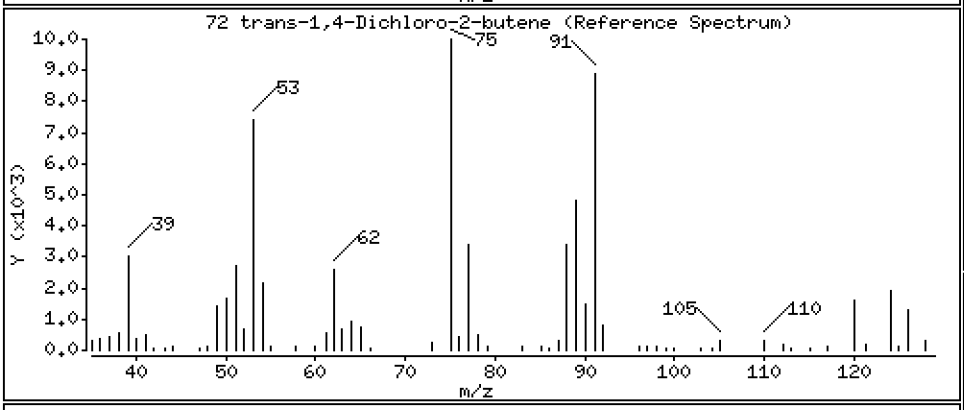
72 trans-1,4-Dichloro-2-butene Concentration: 15.03 ug/l Review Code:

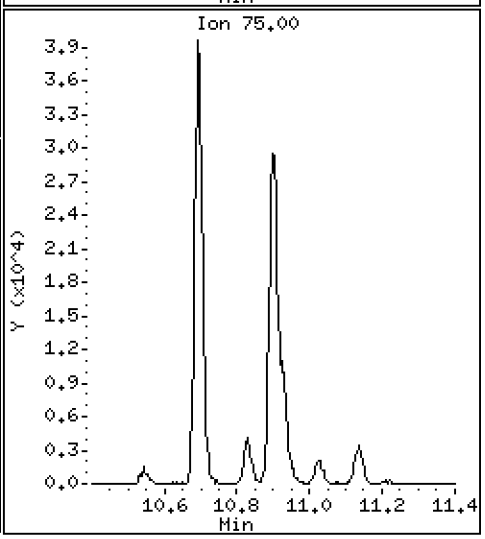


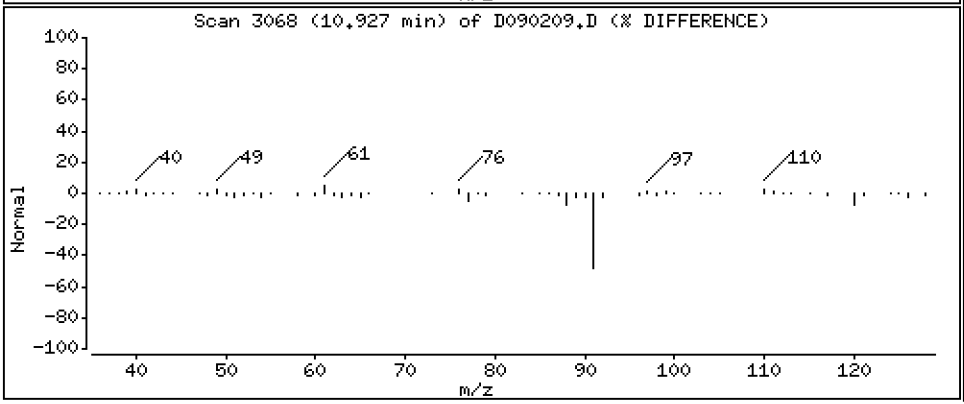












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Date : 02-SEP-2018 16:42

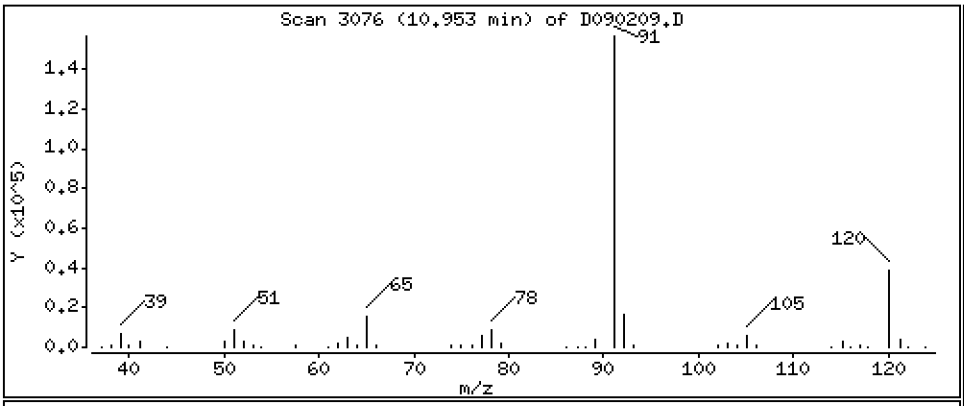
Client ID: HS18081428-01MSD Instrument: VOA2.i

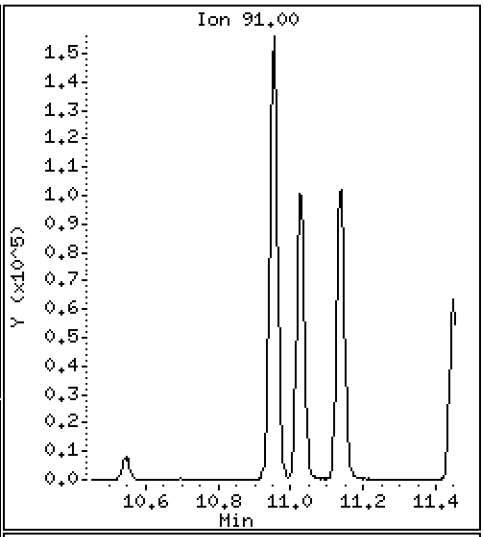
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

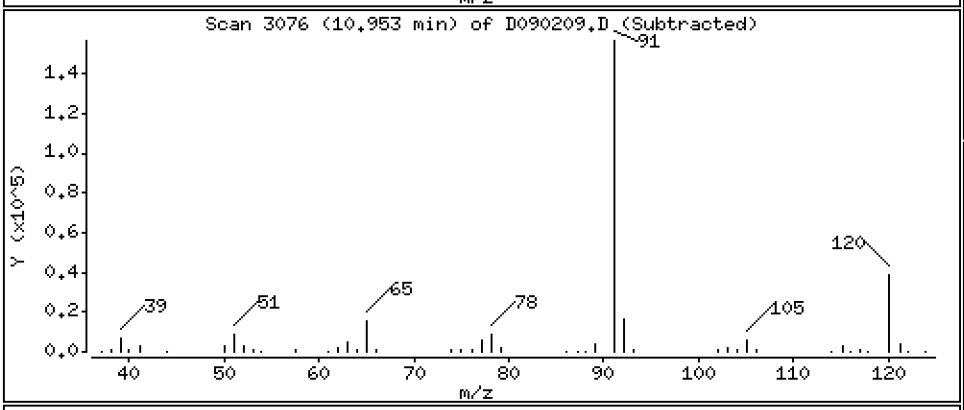
Purge Volume: 5.0 Operator: AP

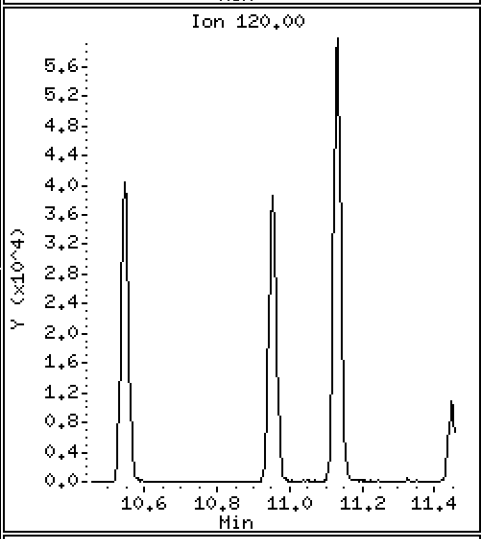
Column phase: DB624 Column diameter: 0.18

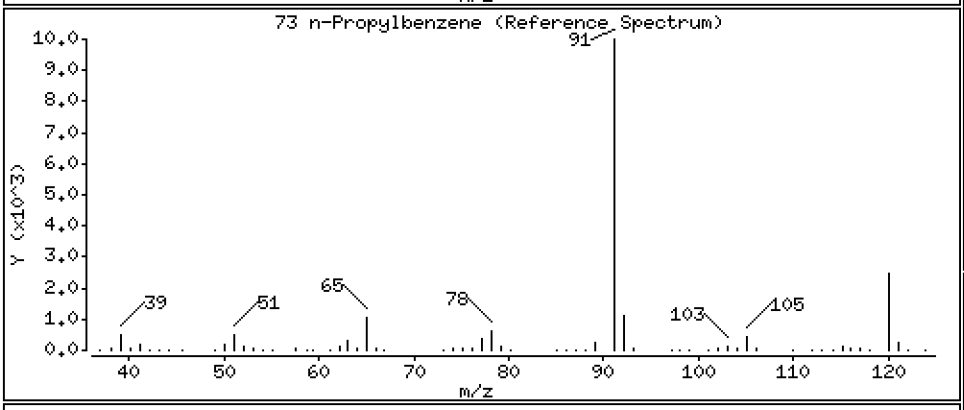
73 n-Propylbenzene Concentration: 16.87 ug/l Review Code:

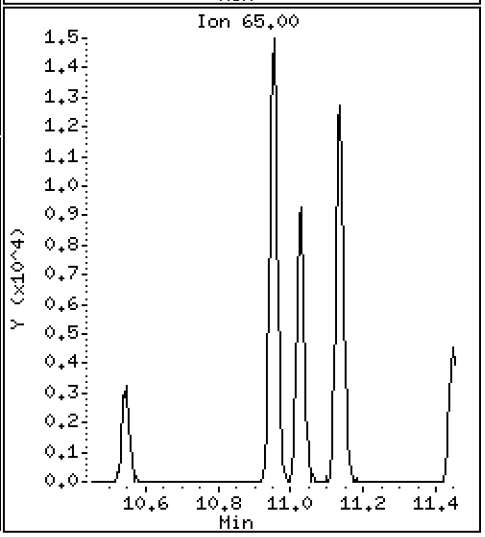


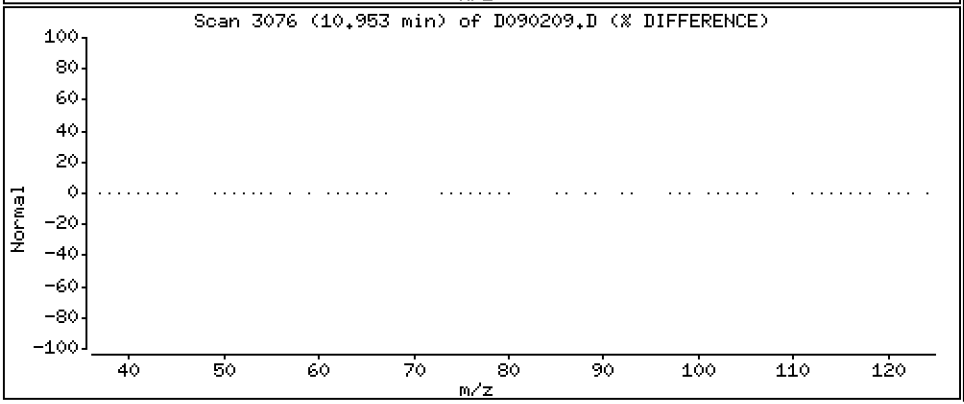












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Date : 02-SEP-2018 16:42

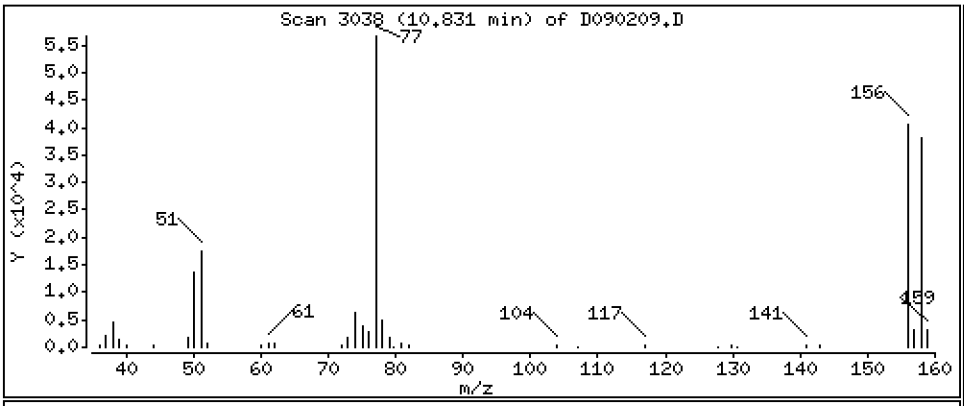
Client ID: HS18081428-01MSD Instrument: VOA2.i

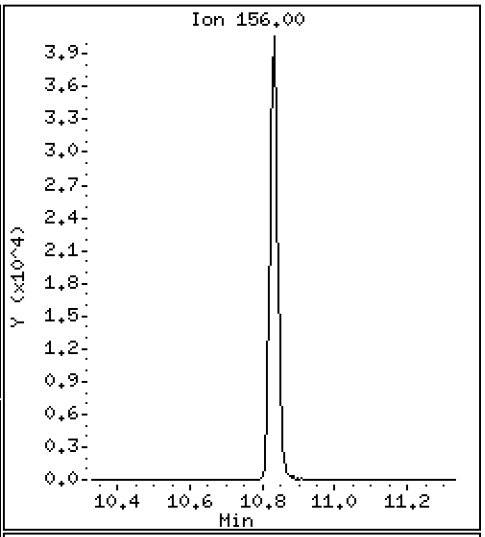
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

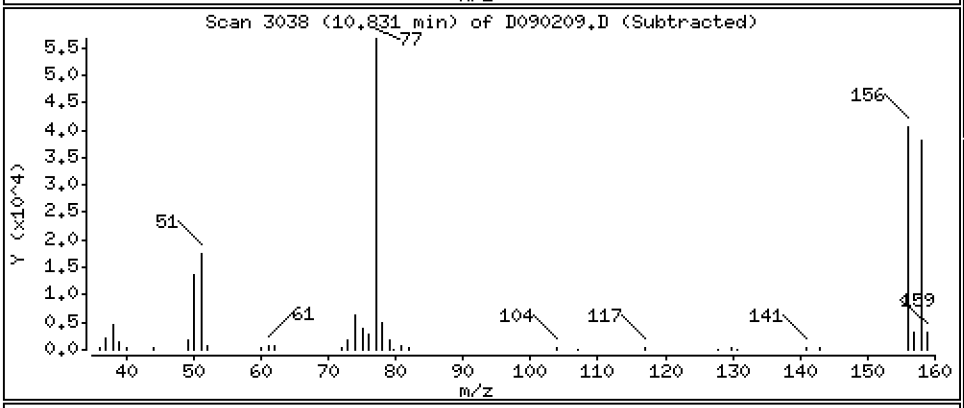
Purge Volume: 5.0 Operator: AP

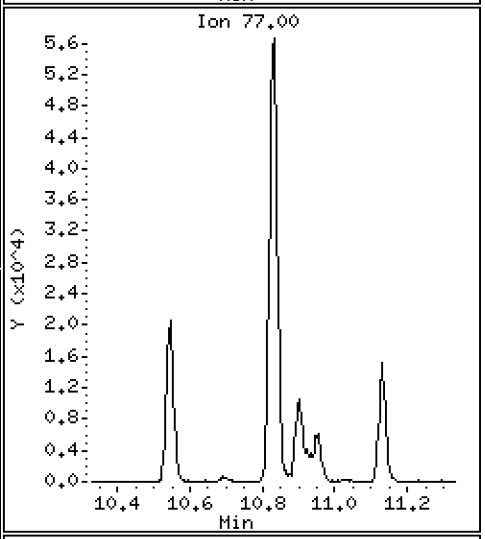
Column phase: DB624 Column diameter: 0.18

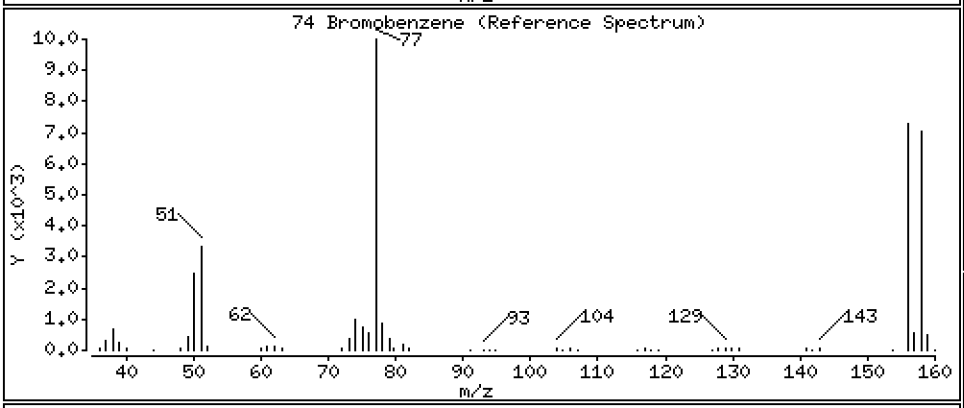
74 Bromobenzene Concentration: 17.14 ug/l Review Code:

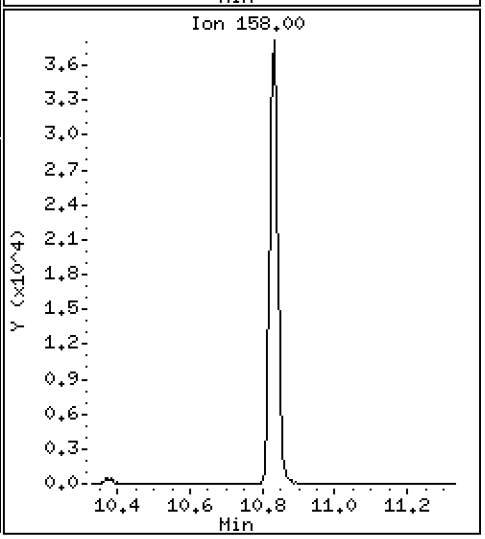


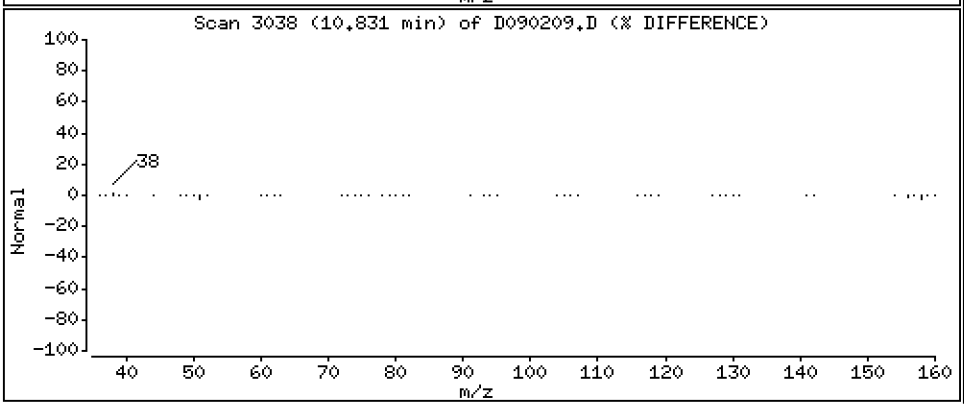












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 68

Date : 02-SEP-2018 16:42

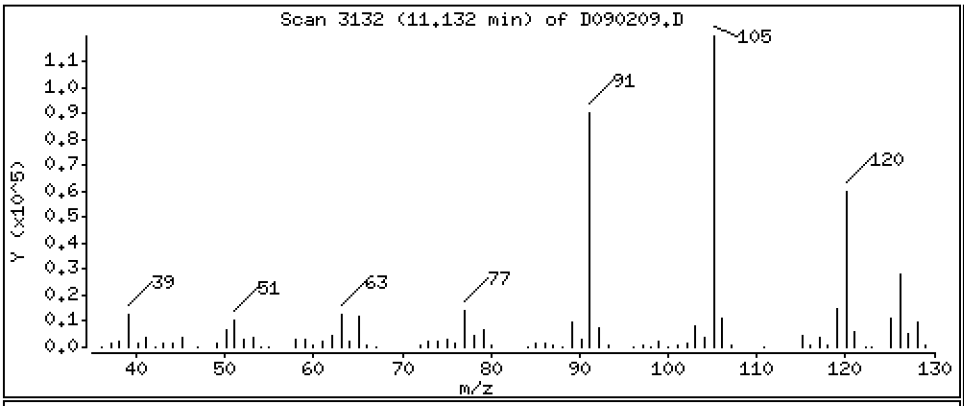
Client ID: HS18081428-01MSD Instrument: VOA2.i

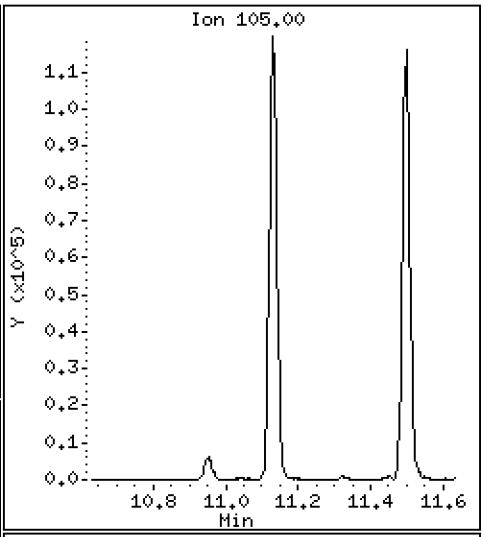
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

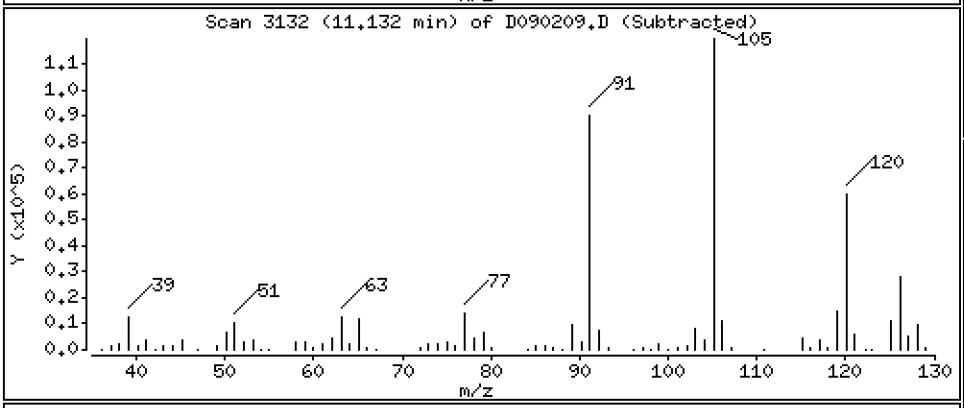
Purge Volume: 5.0 Operator: AP

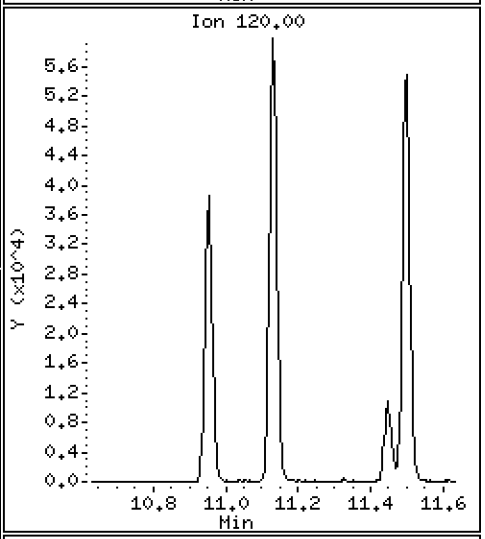
Column phase: DB624 Column diameter: 0.18

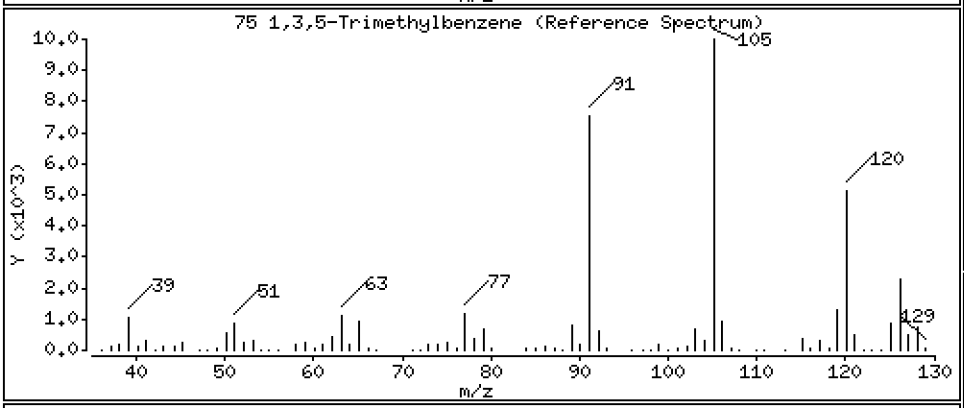
75 1,3,5-Trimethylbenzene Concentration: 15.78 ug/l Review Code:

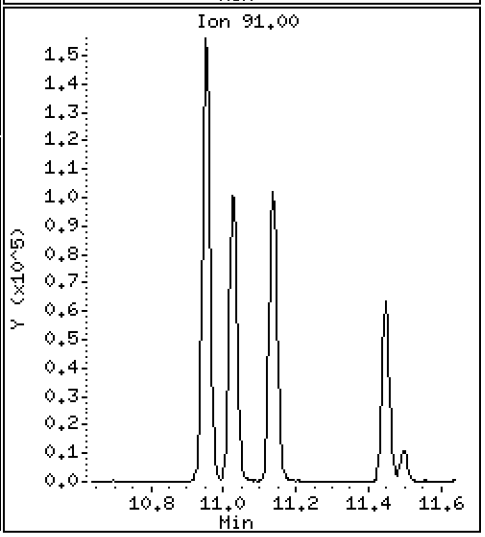


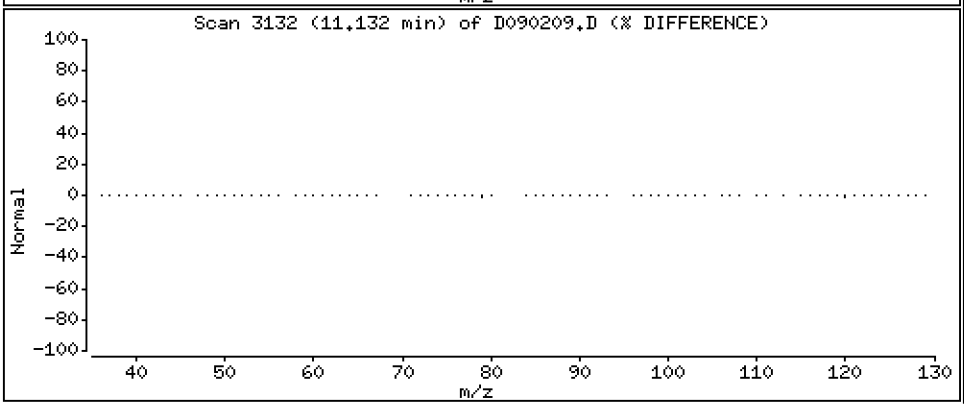












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 69

Date : 02-SEP-2018 16:42

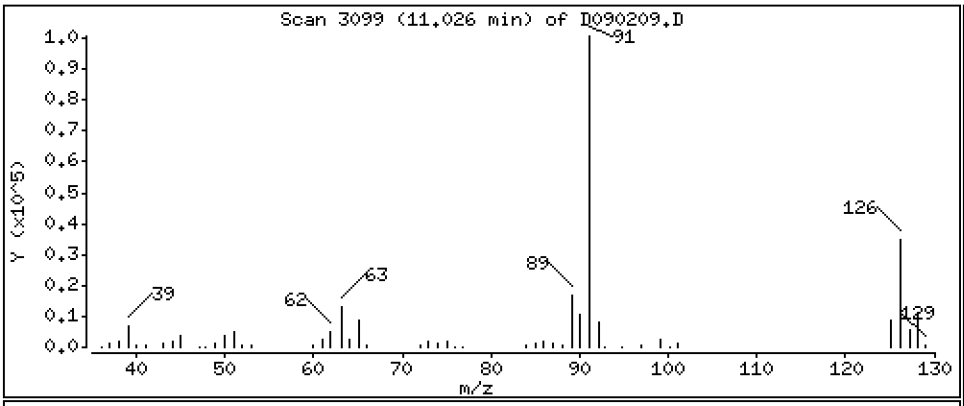
Client ID: HS18081428-01MSD Instrument: VOA2.i

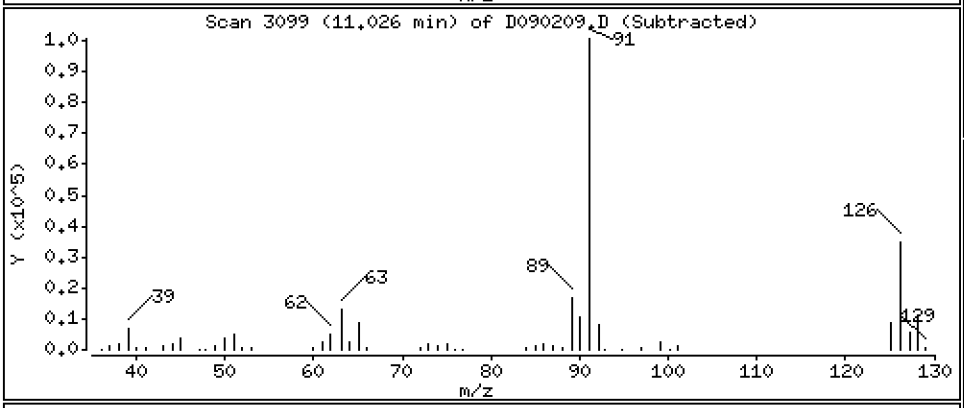
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

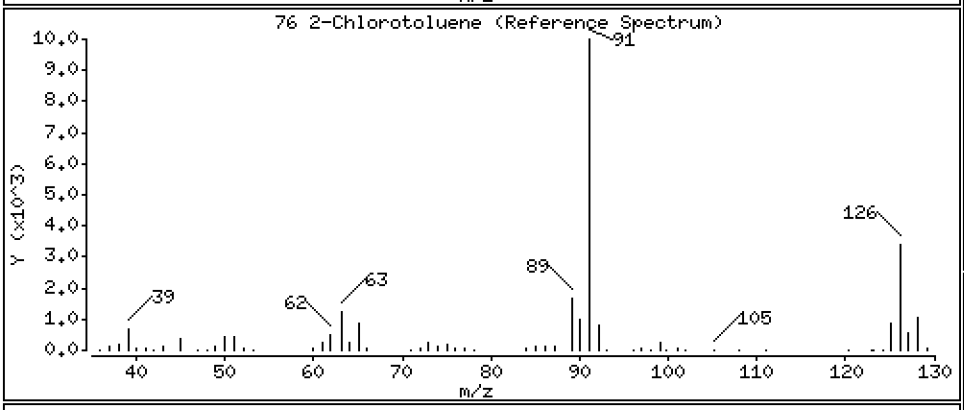
Purge Volume: 5.0 Operator: AP

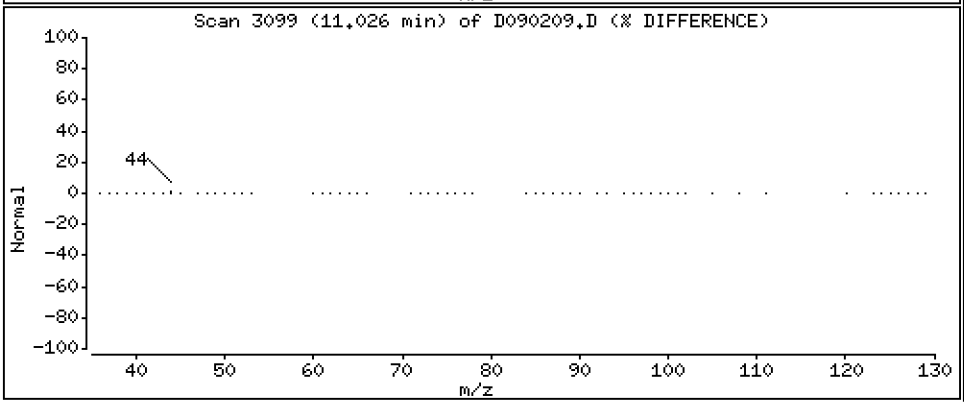
Column phase: DB624 Column diameter: 0.18

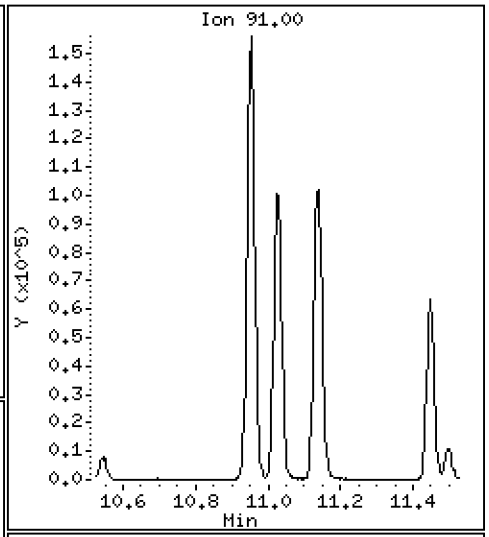
76 2-Chlorotoluene Concentration: 17.29 ug/l Review Code:

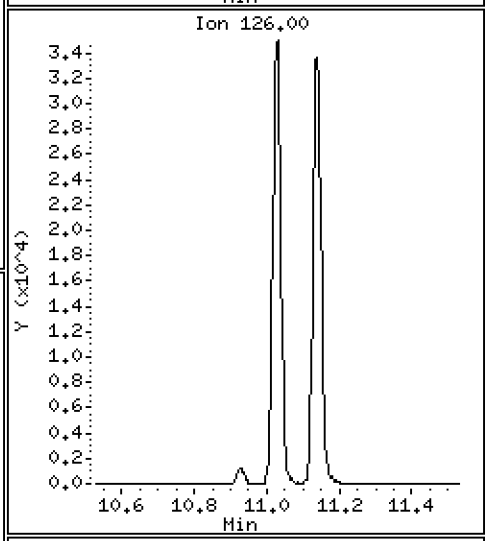


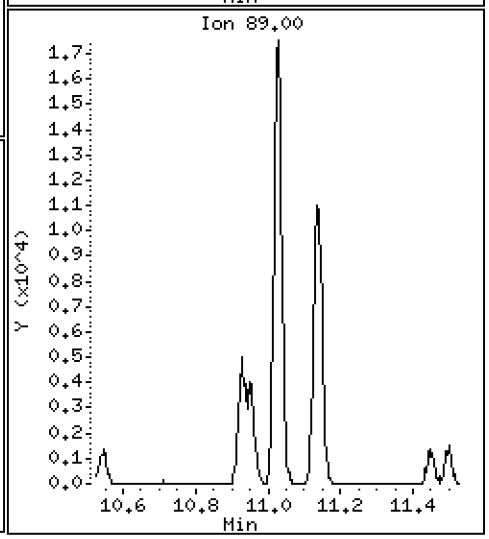












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 70

Date : 02-SEP-2018 16:42

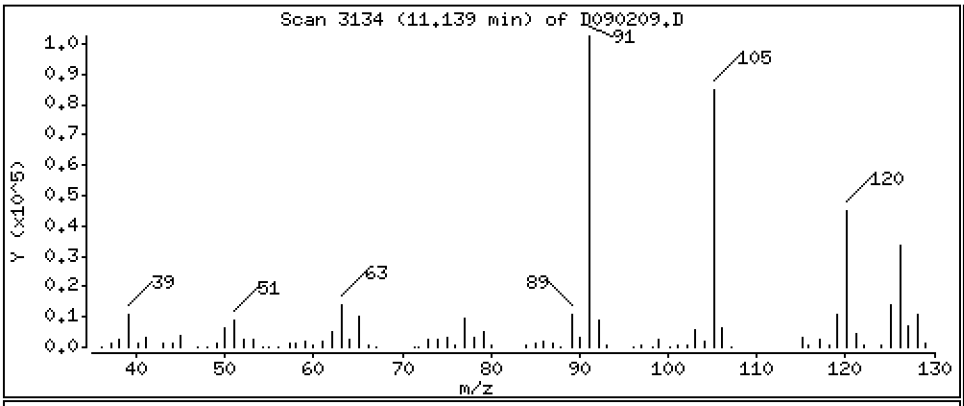
Client ID: HS18081428-01MSD Instrument: VOA2.i

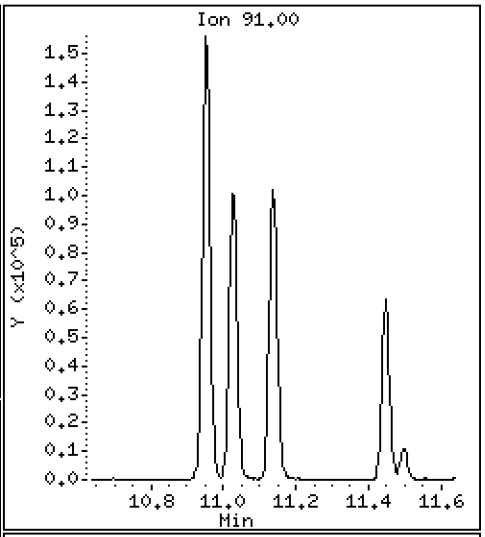
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

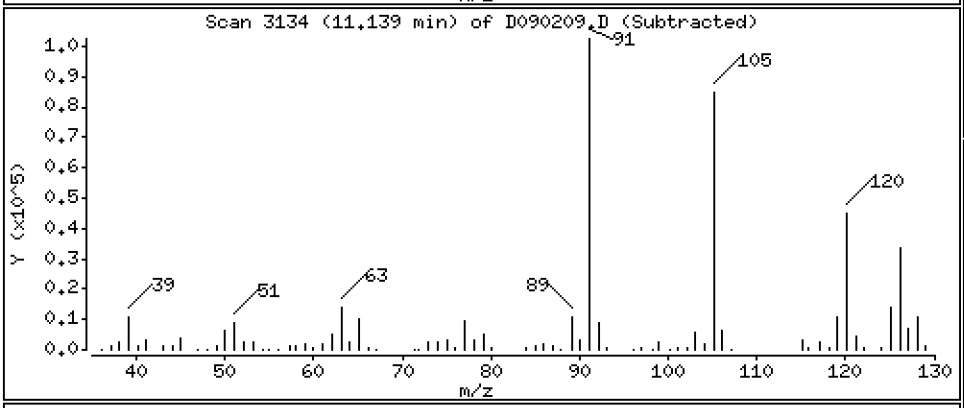
Purge Volume: 5.0 Operator: AP

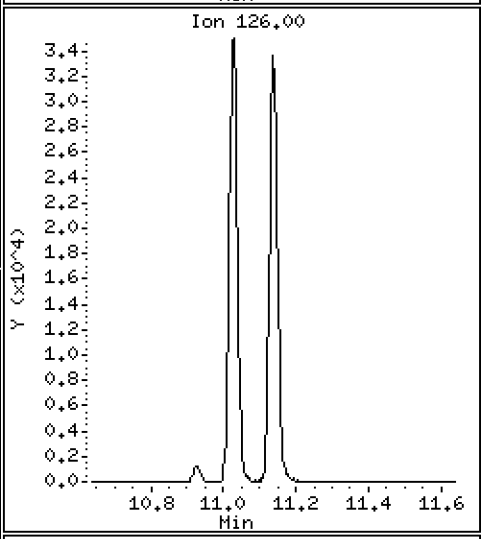
Column phase: DB624 Column diameter: 0.18

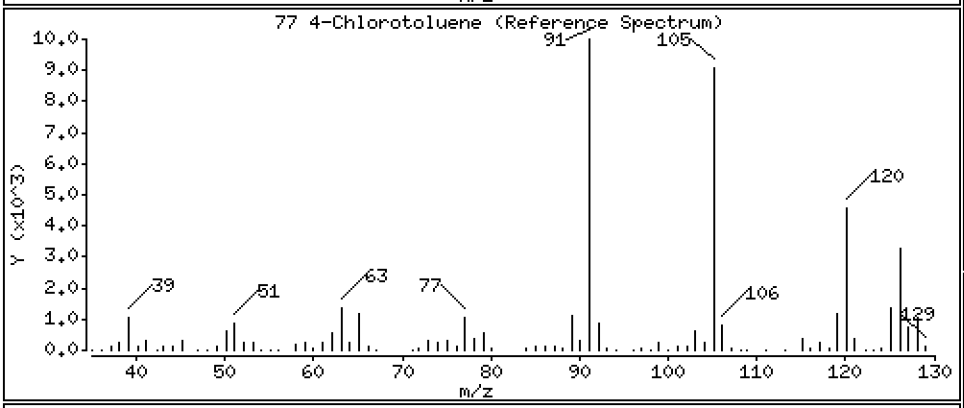
77 4-Chlorotoluene Concentration: 17.13 ug/l Review Code:

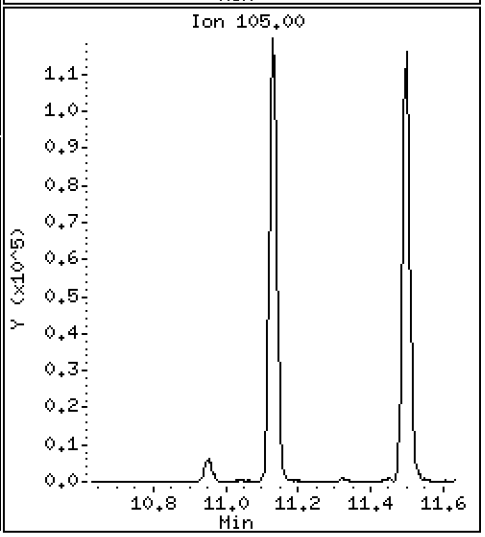


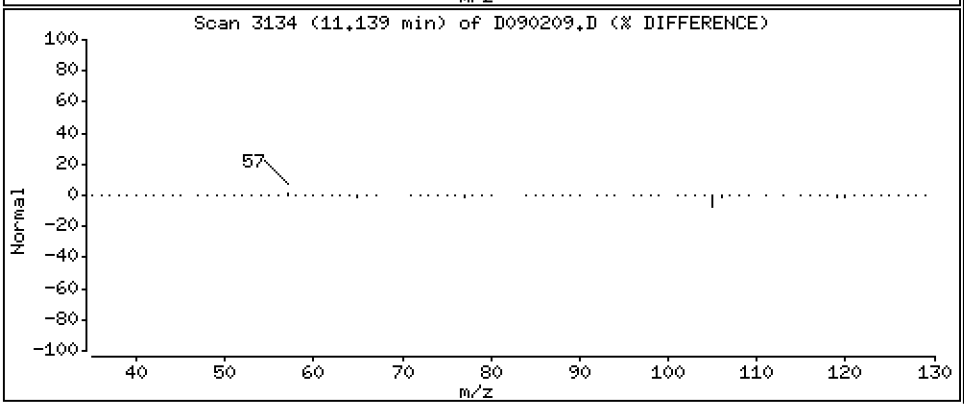












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 71

Date : 02-SEP-2018 16:42

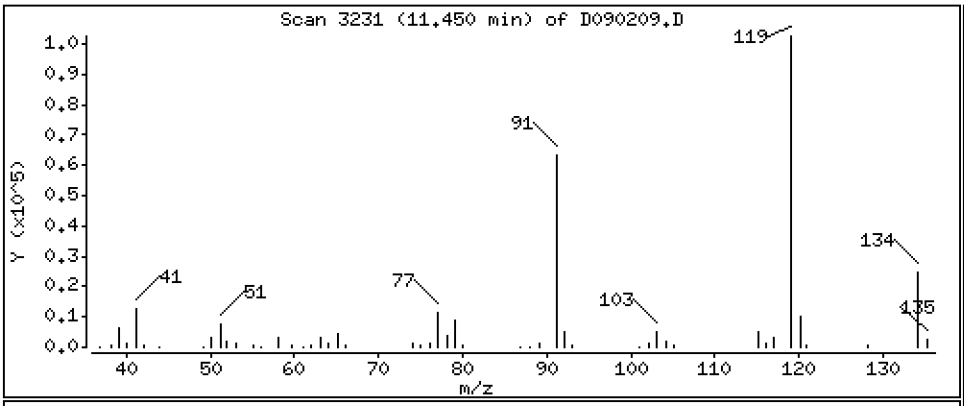
Client ID: HS18081428-01MSD Instrument: VOA2.i

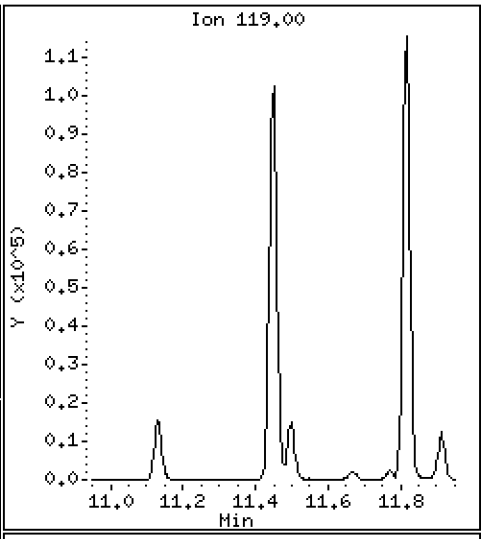
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

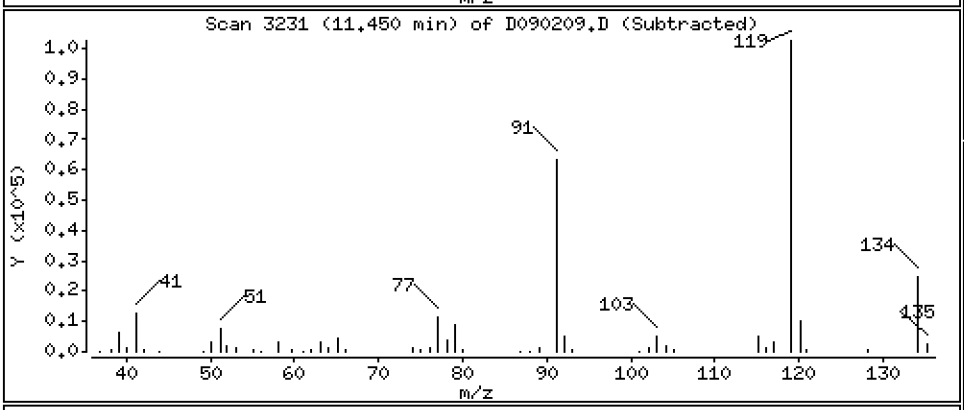
Purge Volume: 5.0 Operator: AP

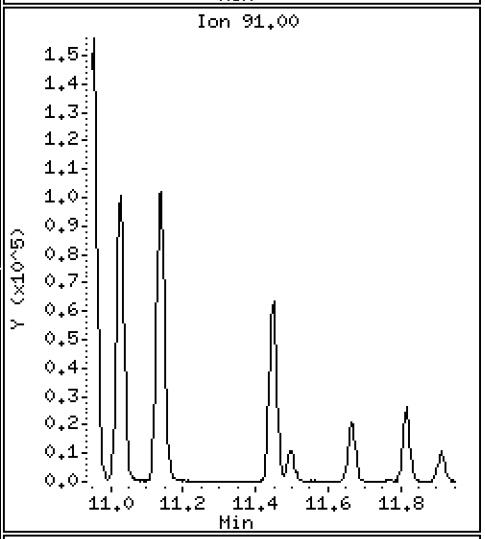
Column phase: DB624 Column diameter: 0.18

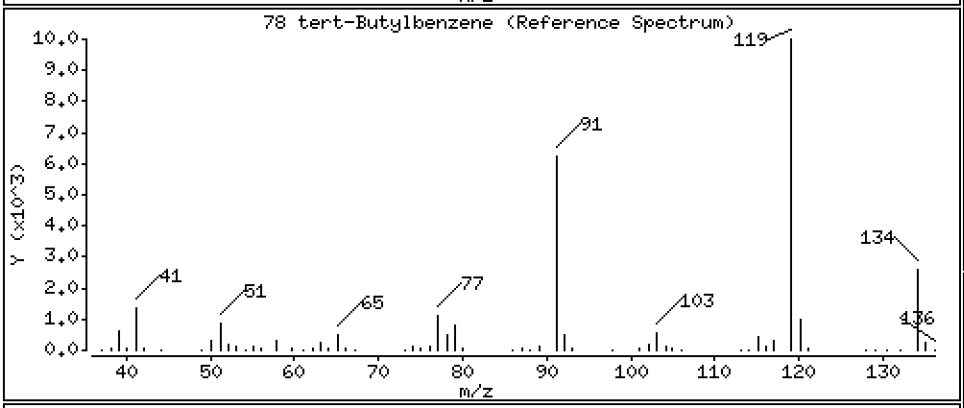
78 tert-Butylbenzene Concentration: 17.19 ug/l Review Code:

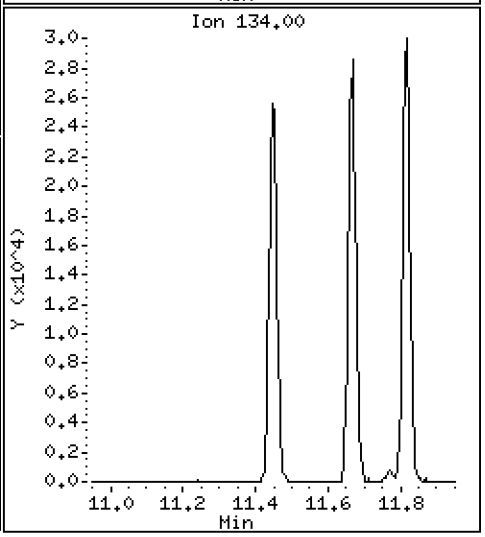


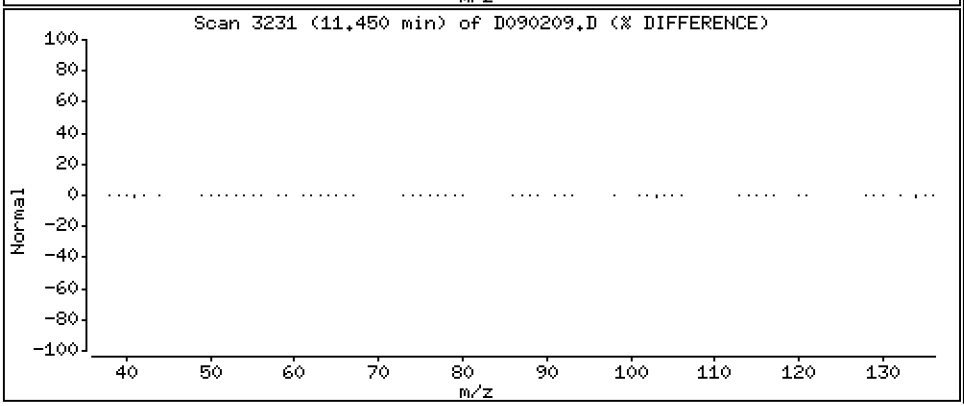












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 72

Date : 02-SEP-2018 16:42

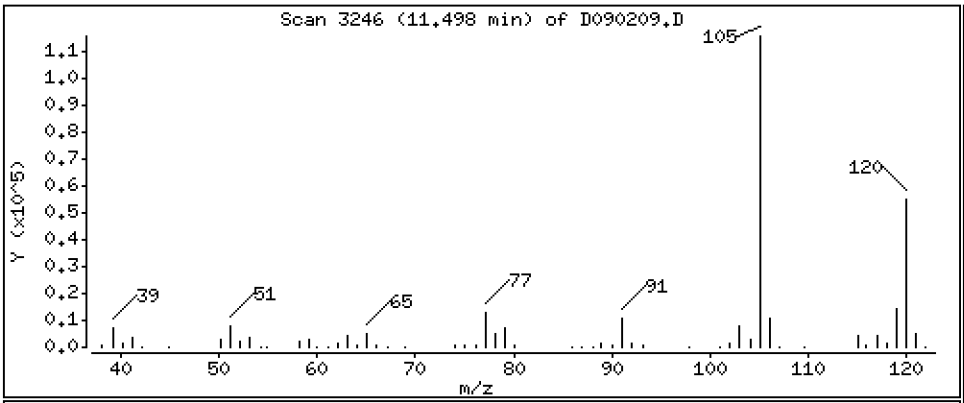
Client ID: HS18081428-01MSD Instrument: VOA2.i

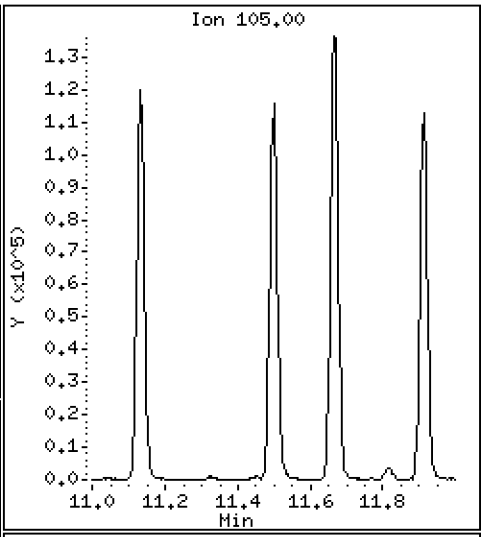
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

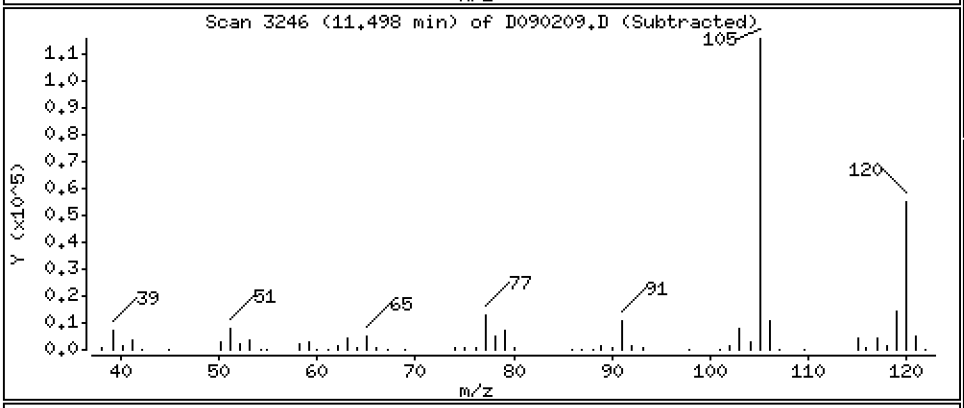
Purge Volume: 5.0 Operator: AP

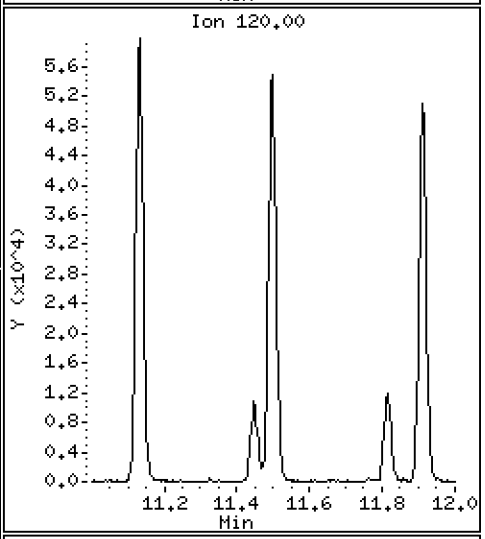
Column phase: DB624 Column diameter: 0.18

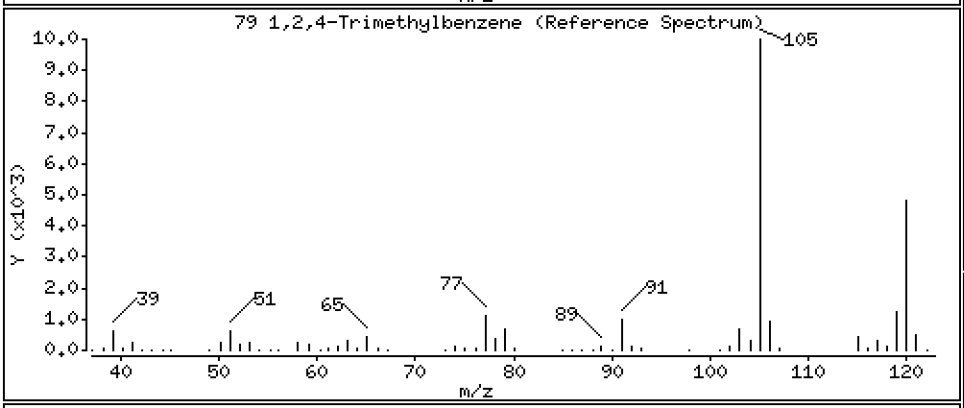
79 1,2,4-Trimethylbenzene Concentration: 16.50 ug/l Review Code:

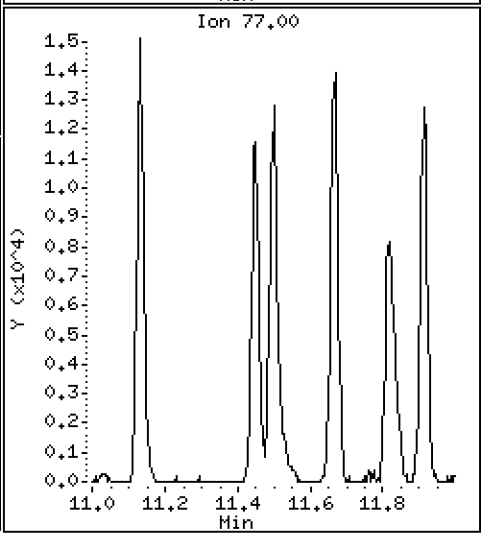


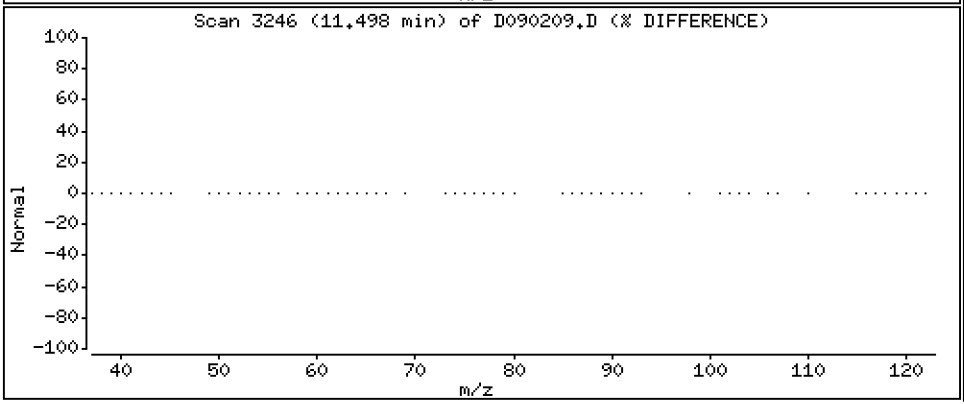












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 73

Date : 02-SEP-2018 16:42

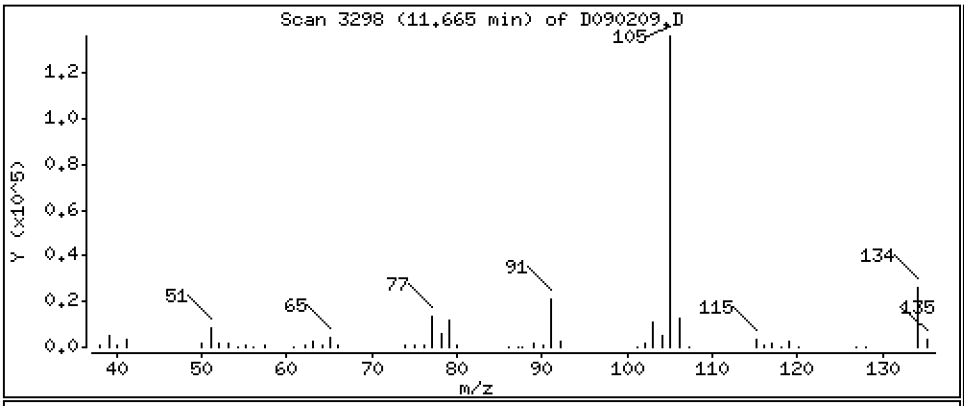
Client ID: HS18081428-01MSD Instrument: VOA2.i

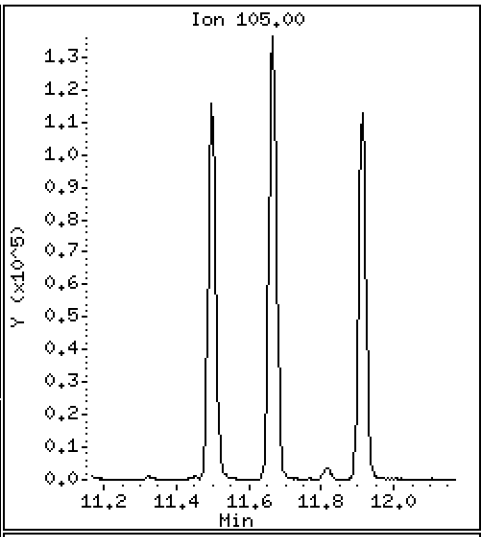
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

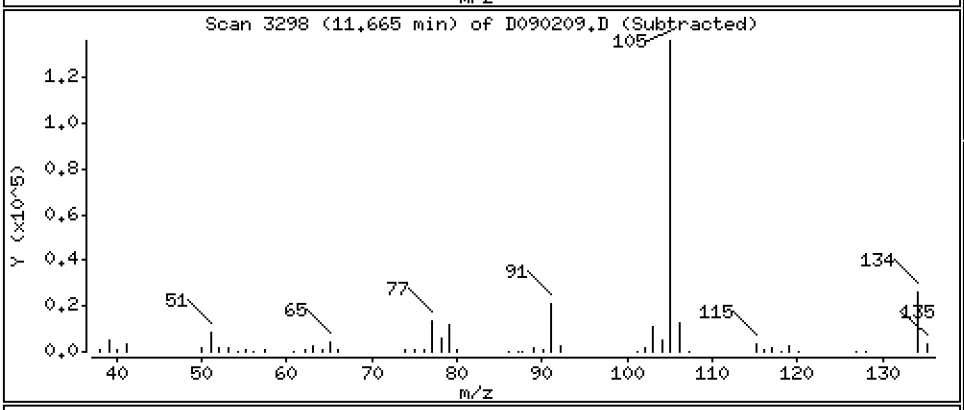
Purge Volume: 5.0 Operator: AP

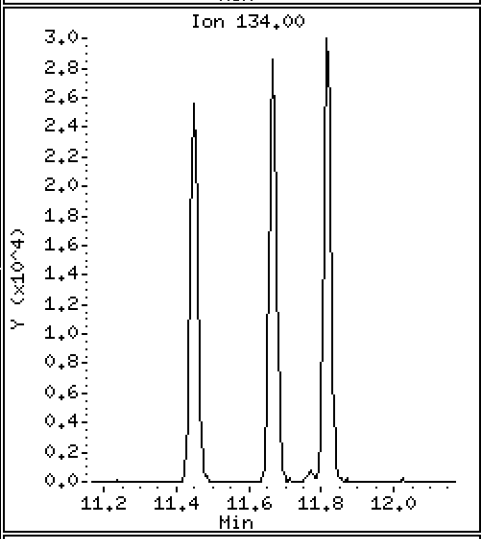
Column phase: DB624 Column diameter: 0.18

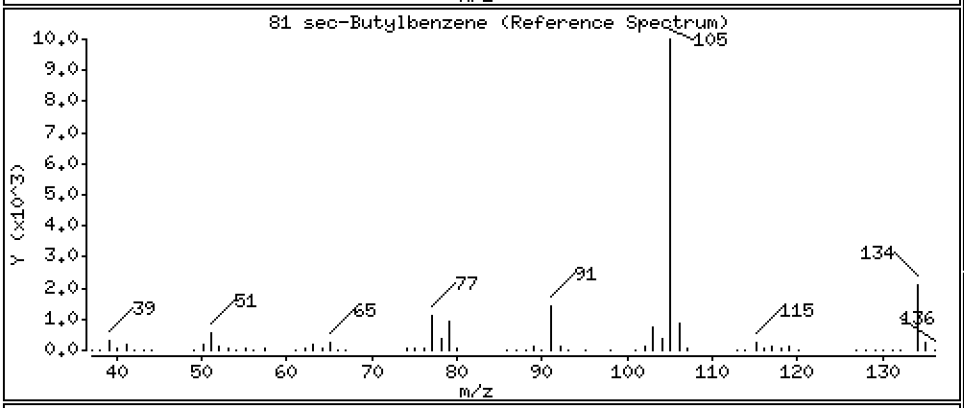
81 sec-Butylbenzene Concentration: 15.25 ug/l Review Code:

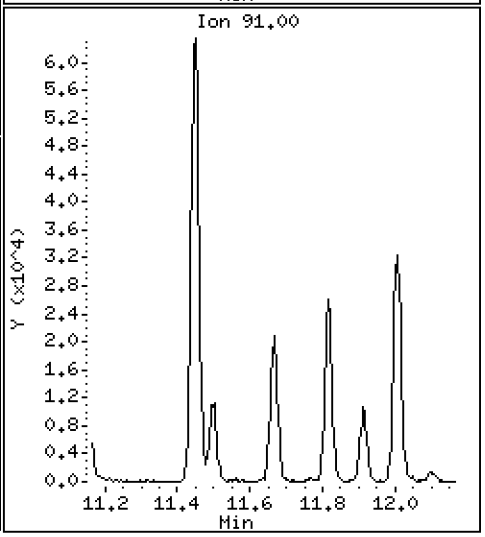


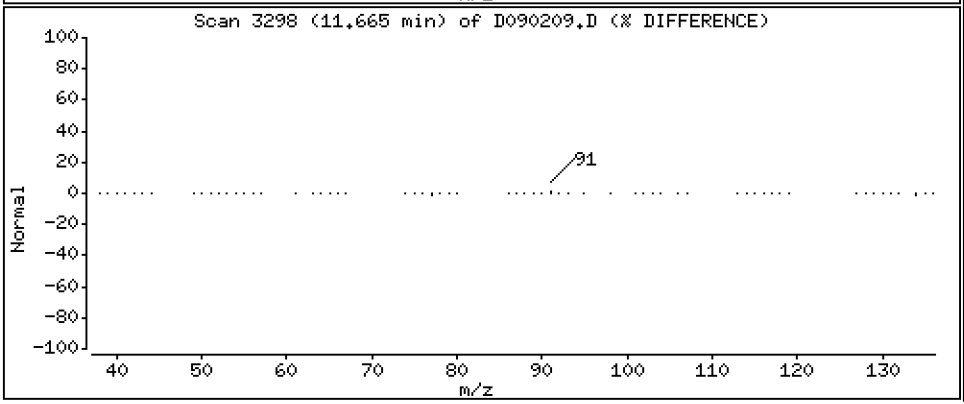












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 74

Date : 02-SEP-2018 16:42

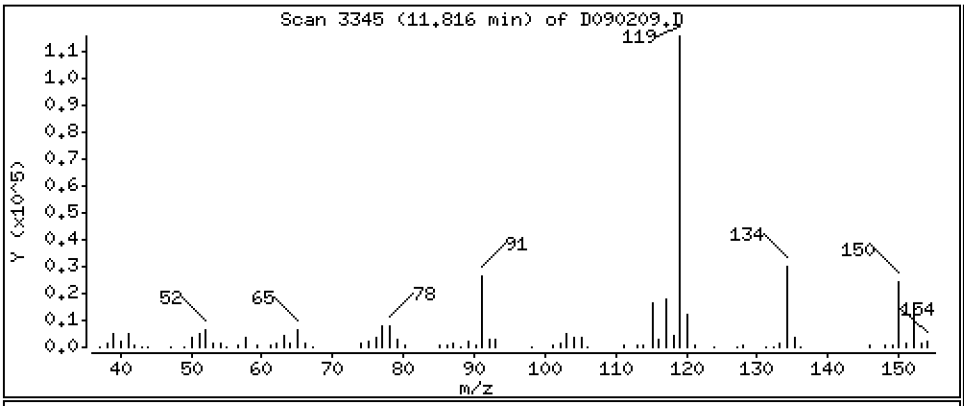
Client ID: HS18081428-01MSD Instrument: VOA2.i

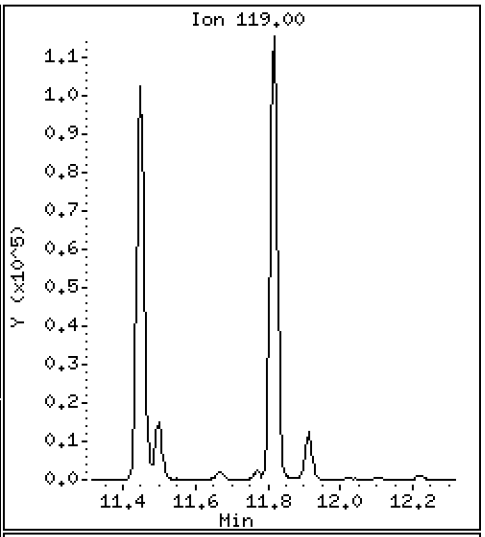
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

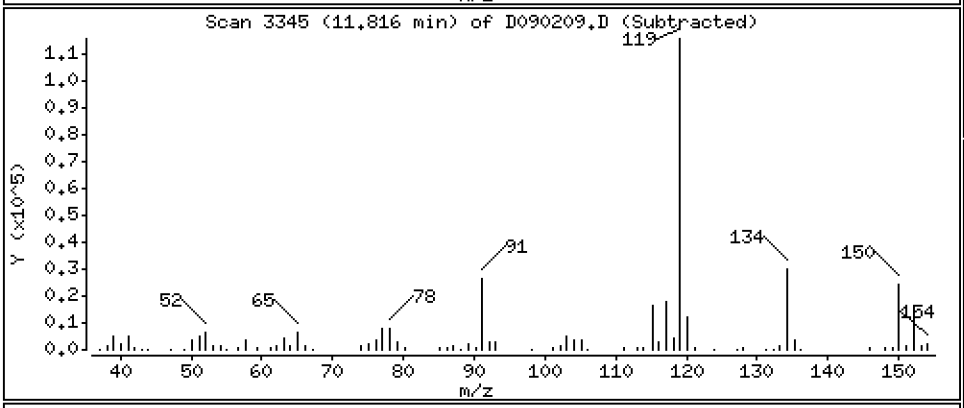
Purge Volume: 5.0 Operator: AP

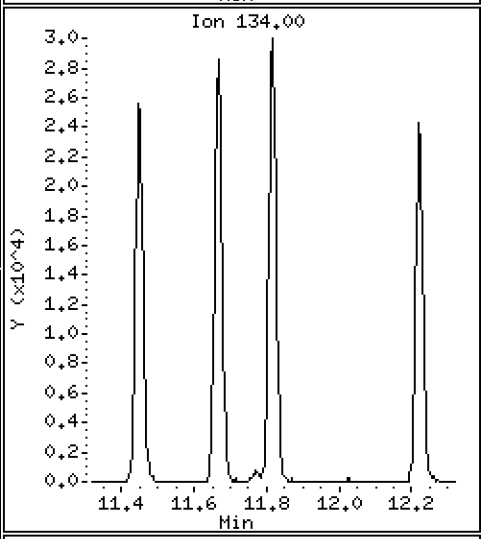
Column phase: DB624 Column diameter: 0.18

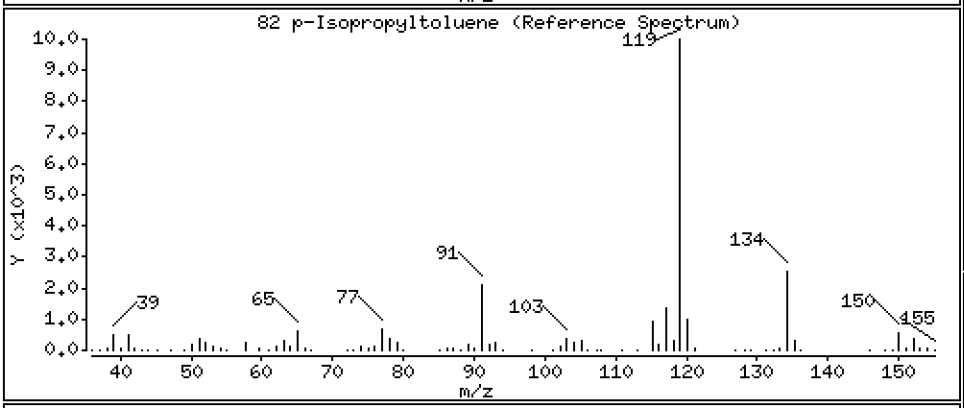
82 p-Isopropyltoluene Concentration: 15.00 ug/l Review Code:

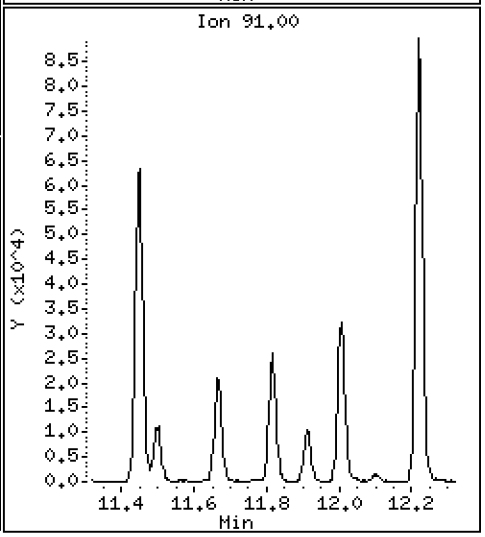


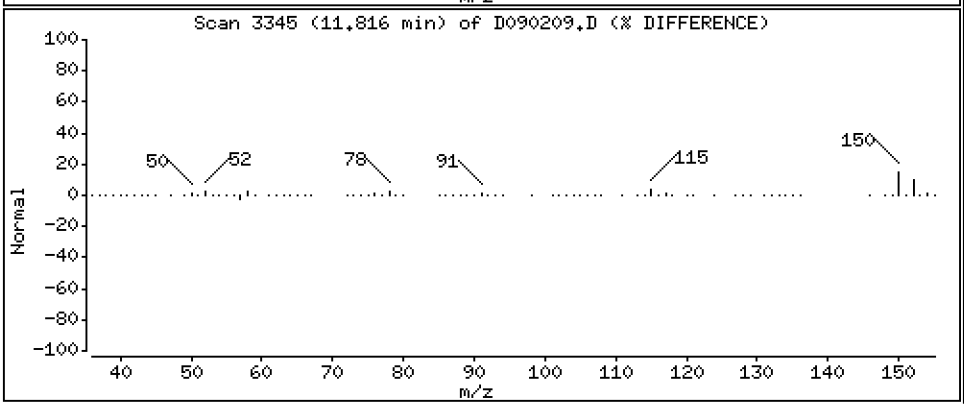












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Date : 02-SEP-2018 16:42

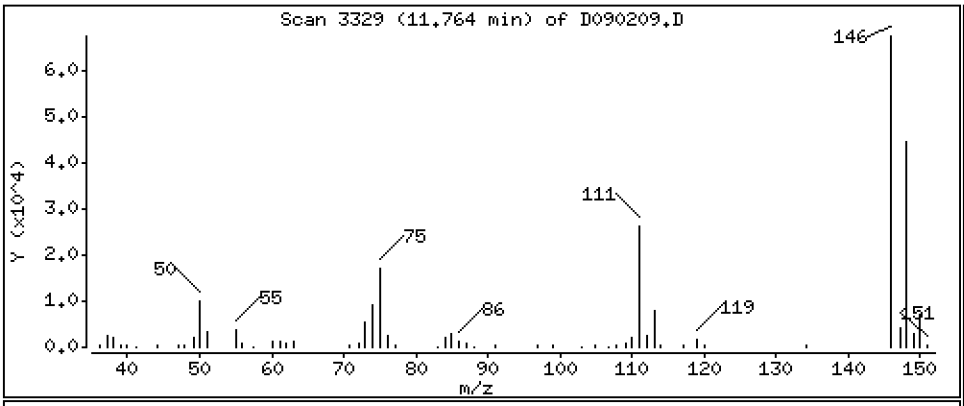
Client ID: HS18081428-01MSD Instrument: VOA2.i

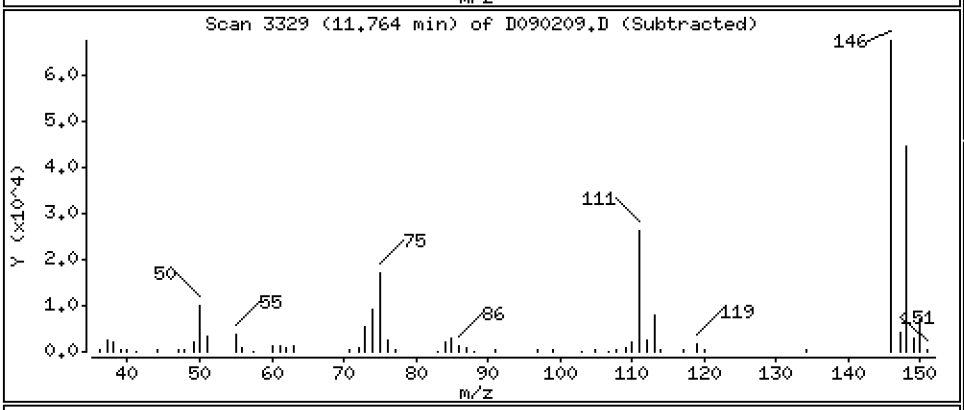
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

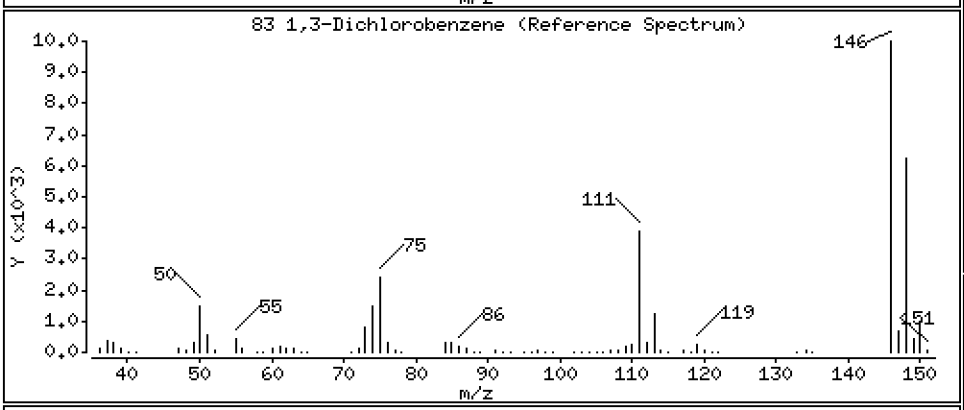
Purge Volume: 5.0 Operator: AP

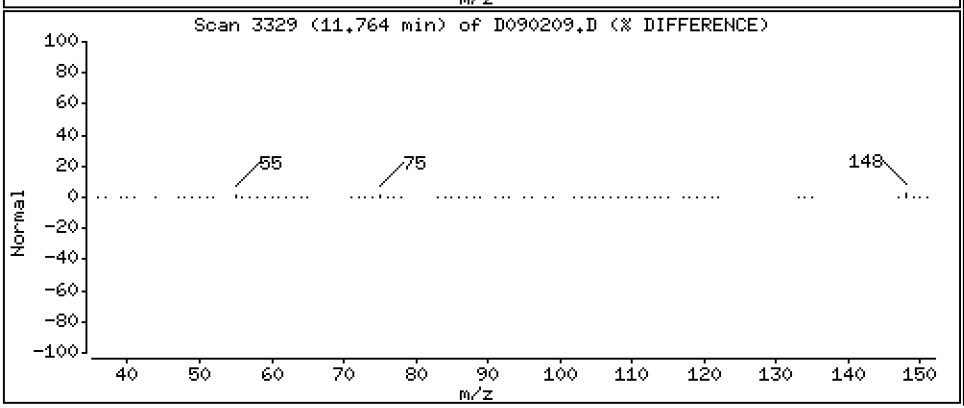
Column phase: DB624 Column diameter: 0.18

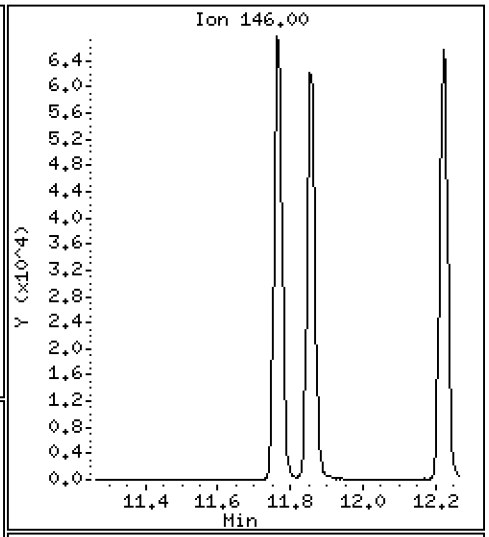
83 1,3-Dichlorobenzene Concentration: 16.58 ug/l Review Code:

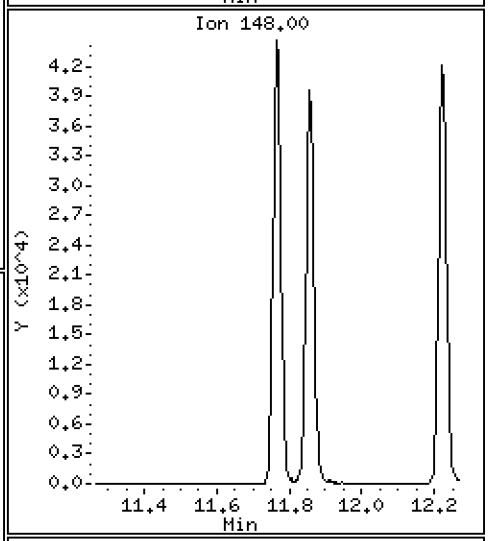


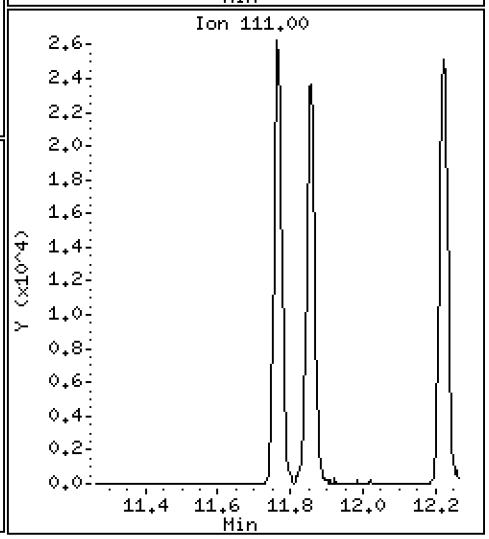












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 76

Date : 02-SEP-2018 16:42

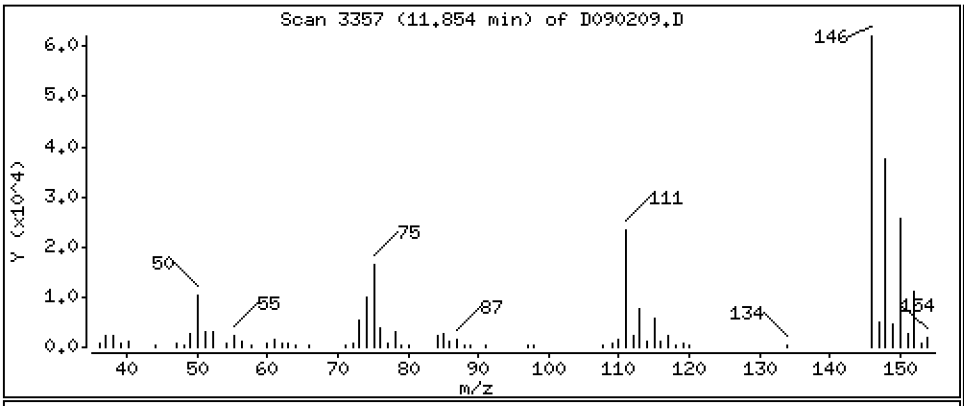
Client ID: HS18081428-01MSD Instrument: VOA2.i

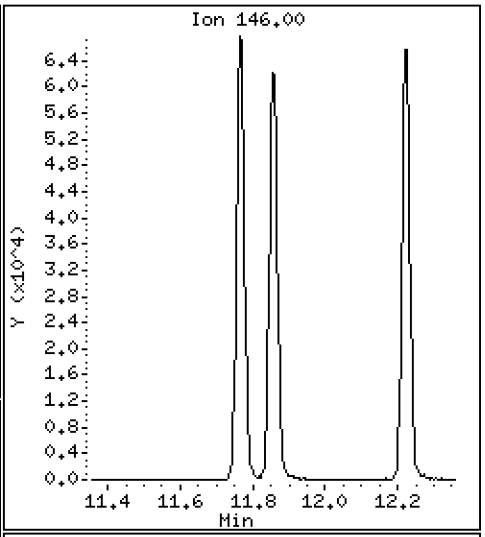
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

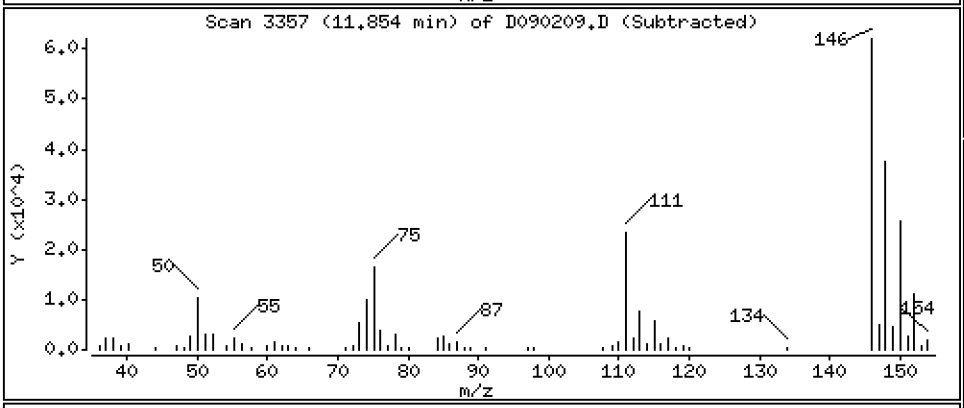
Purge Volume: 5.0 Operator: AP

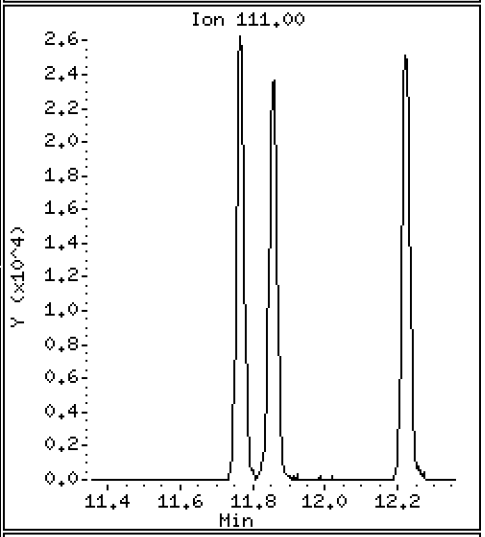
Column phase: DB624 Column diameter: 0.18

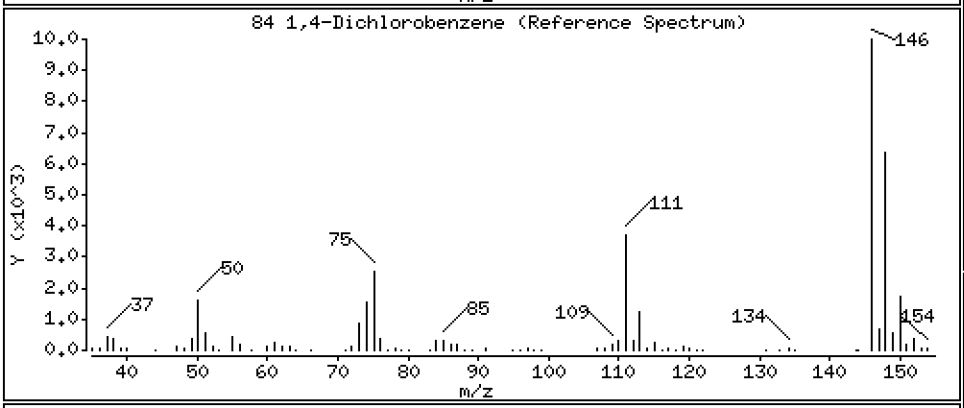
84 1,4-Dichlorobenzene Concentration: 16.34 ug/l Review Code:

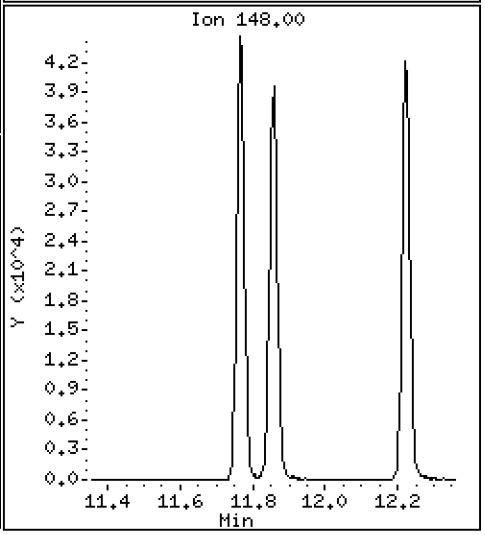


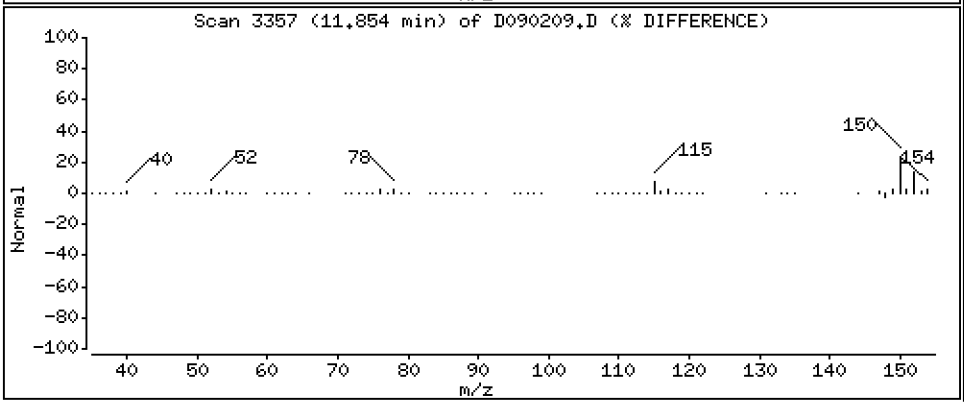












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 77

Date : 02-SEP-2018 16:42

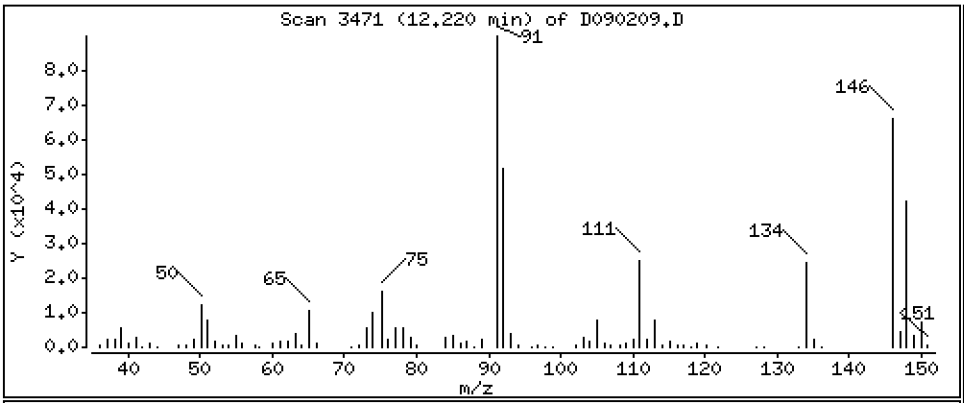
Client ID: HS18081428-01MSD Instrument: VOA2.i

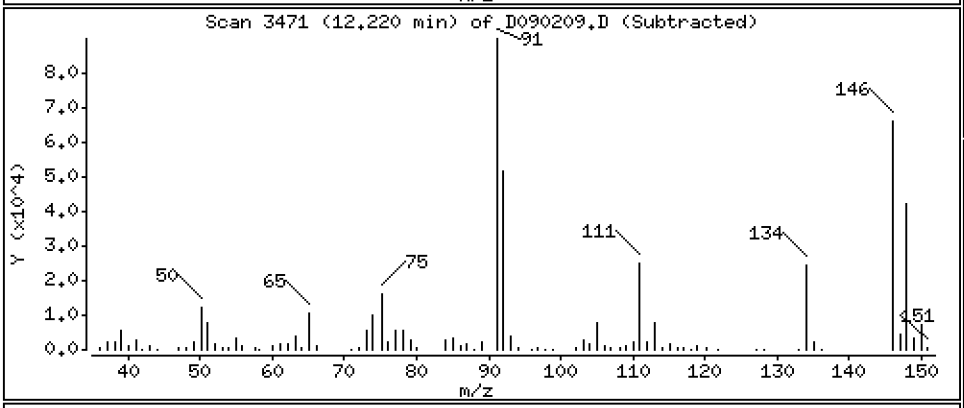
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

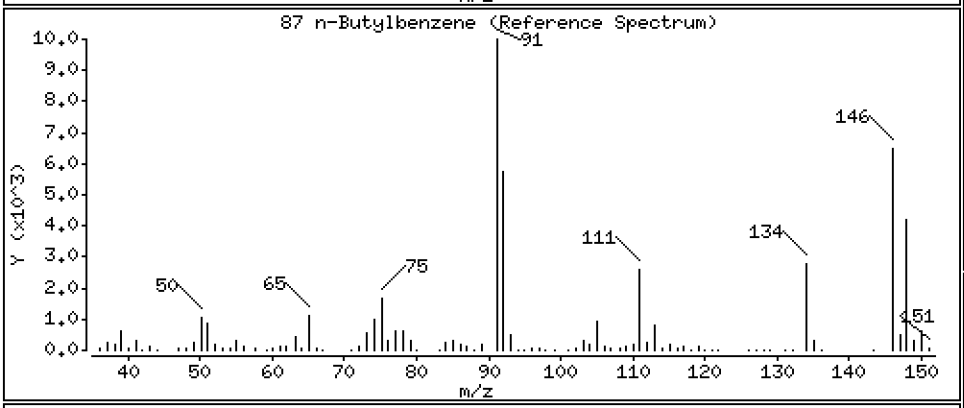
Purge Volume: 5.0 Operator: AP

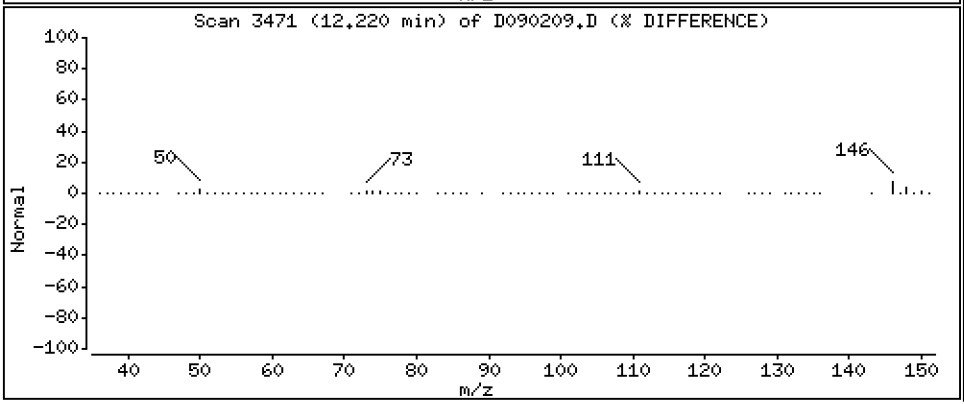
Column phase: DB624 Column diameter: 0.18

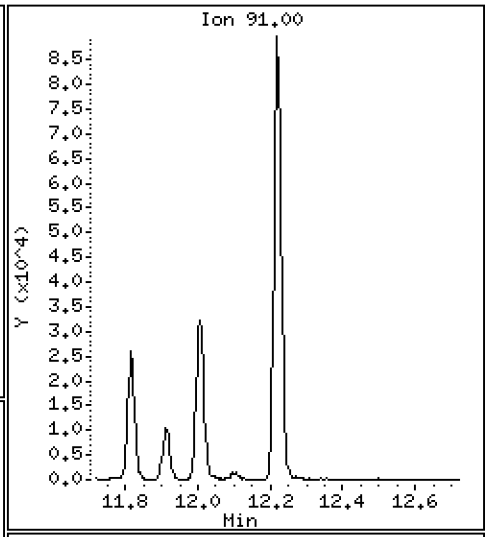
87 n-Butylbenzene Concentration: 15.21 ug/l Review Code:

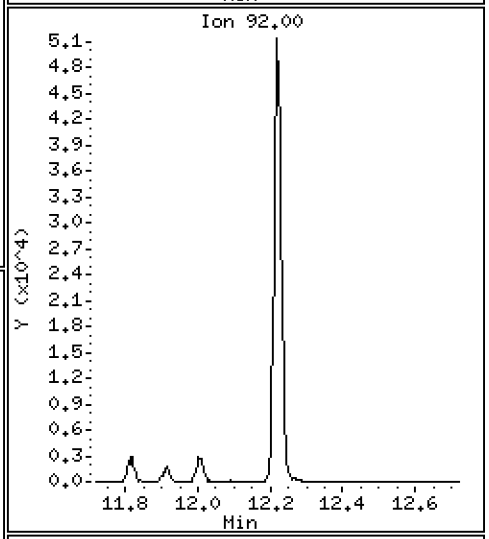


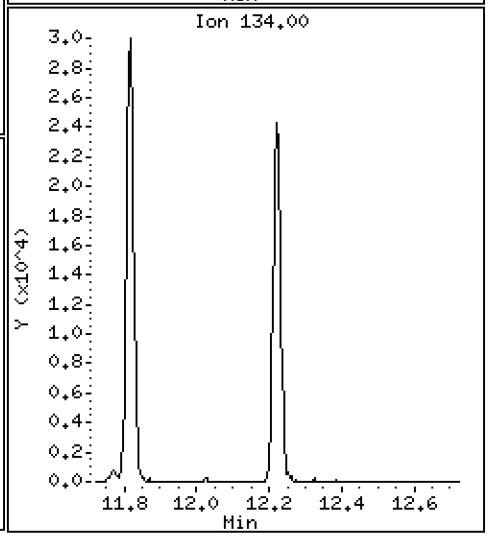












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 78

Date : 02-SEP-2018 16:42

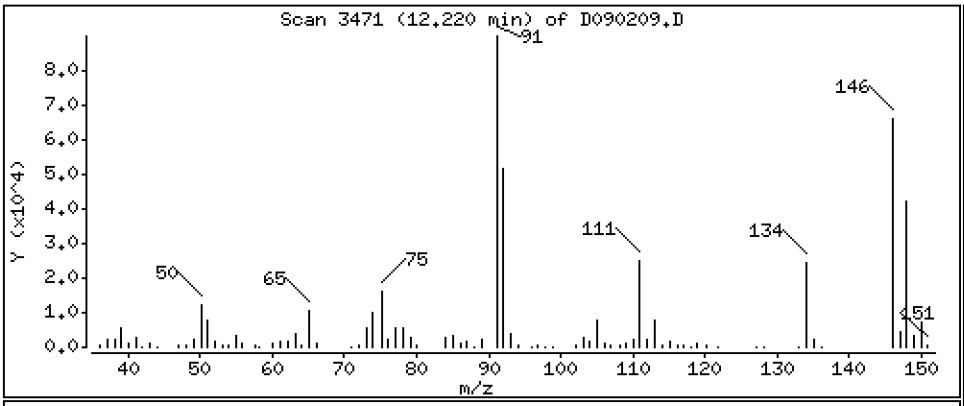
Client ID: HS18081428-01MSD Instrument: VOA2.i

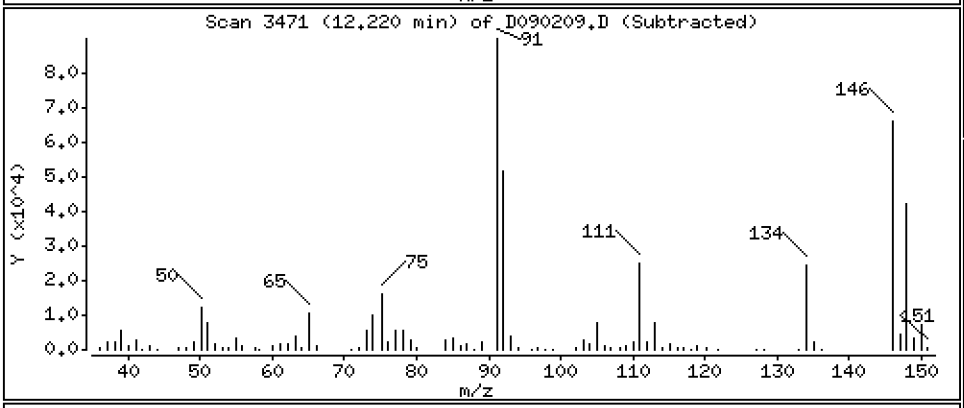
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

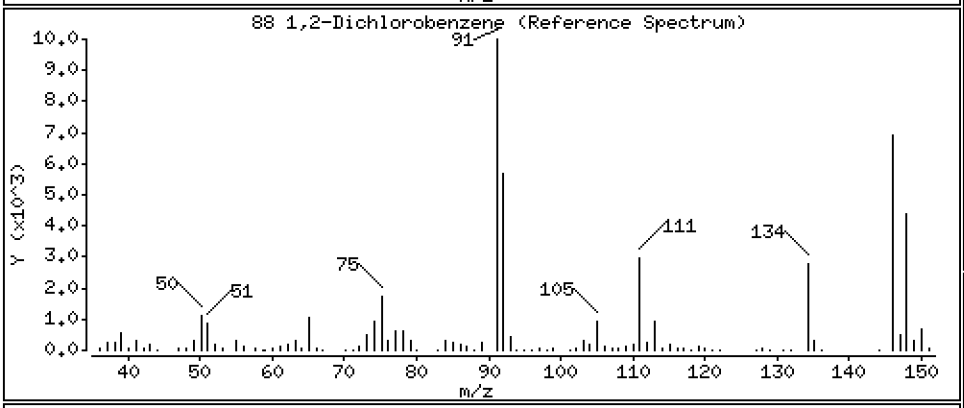
Purge Volume: 5.0 Operator: AP

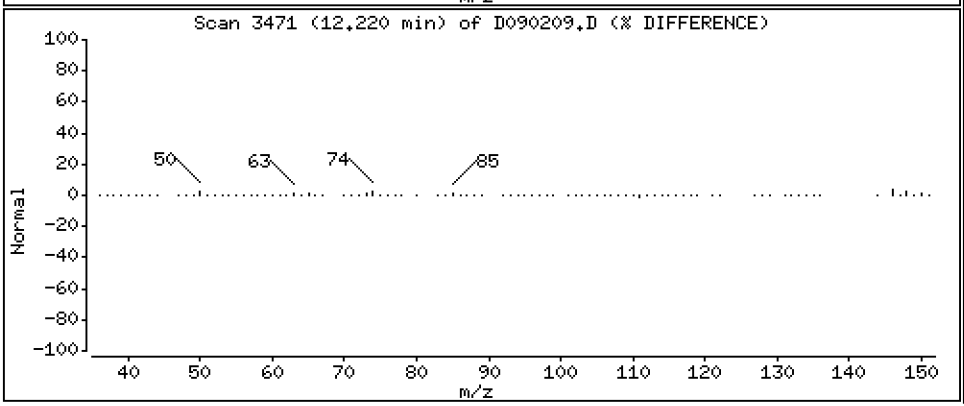
Column phase: DB624 Column diameter: 0.18

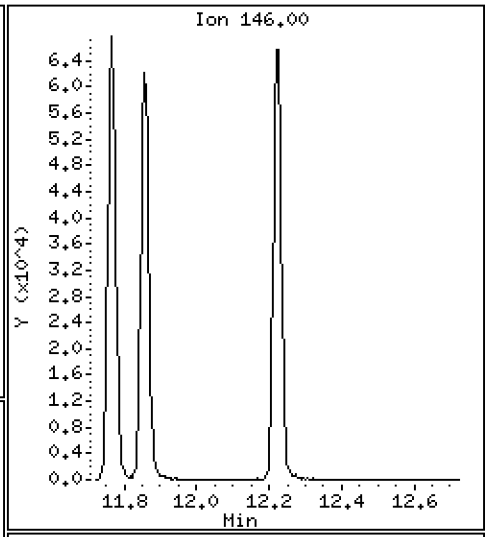
88 1,2-Dichlorobenzene Concentration: 16.58 ug/l Review Code:

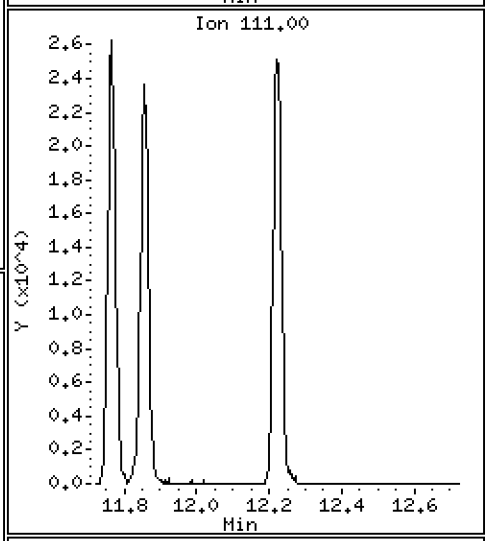


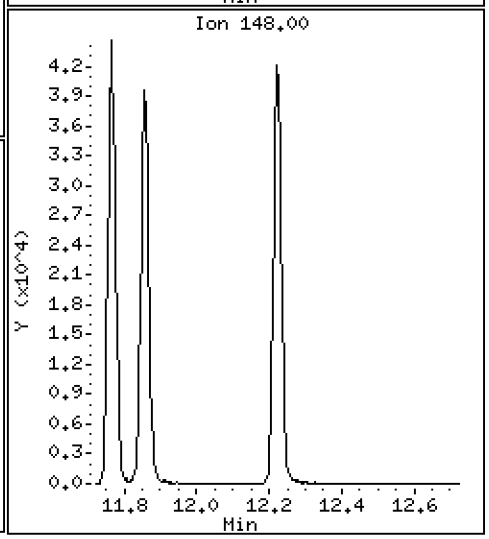












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 79

Date : 02-SEP-2018 16:42

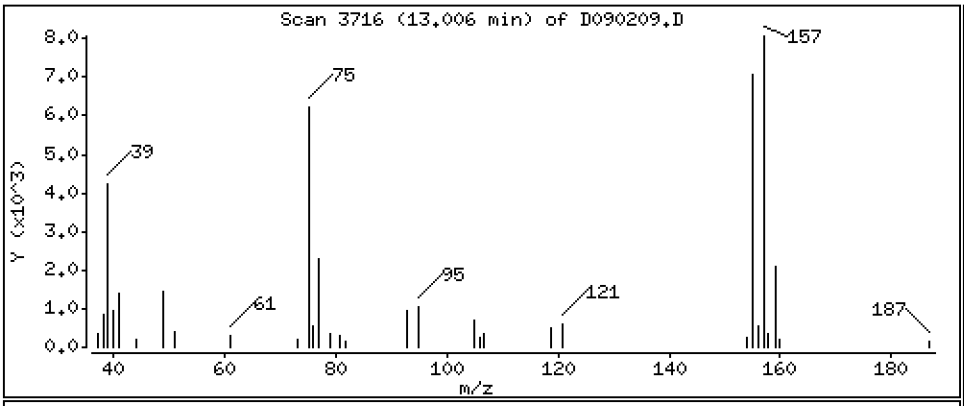
Client ID: HS18081428-01MSD Instrument: VOA2.i

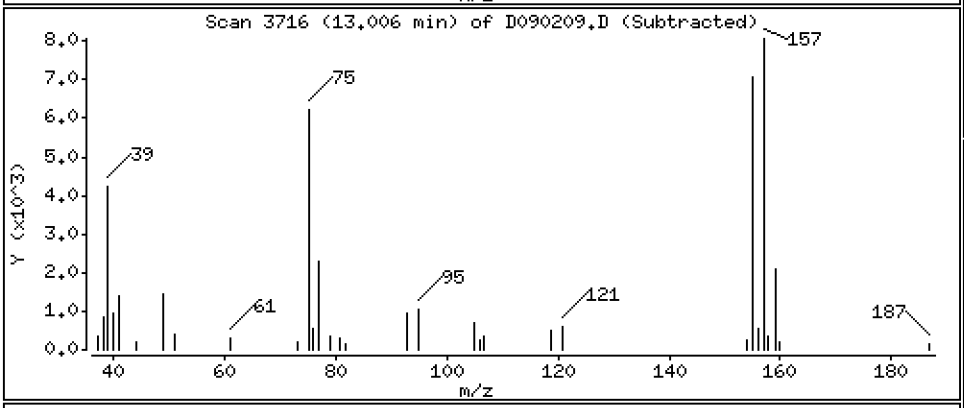
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

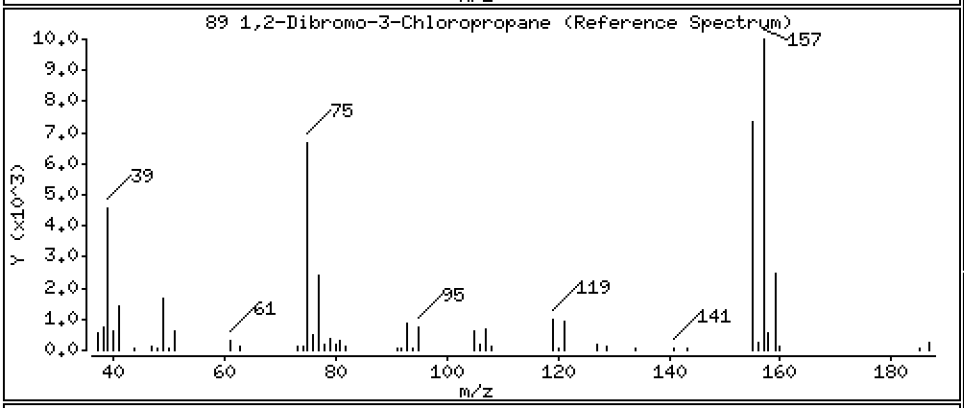
Purge Volume: 5.0 Operator: AP

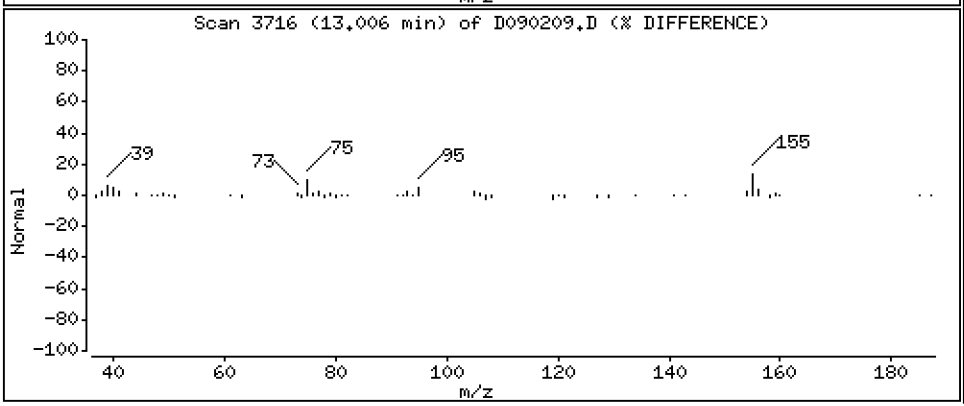
Column phase: DB624 Column diameter: 0.18

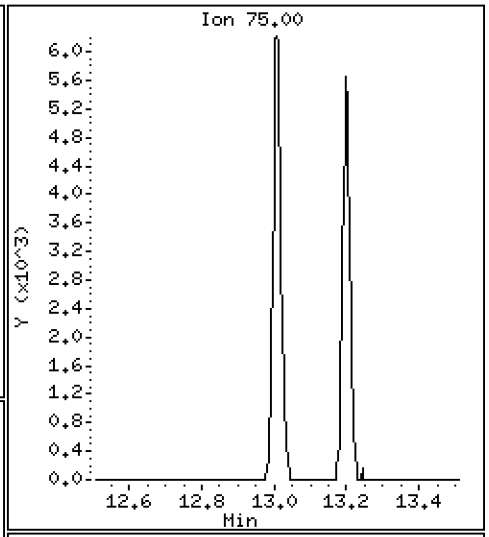
89 1,2-Dibromo-3-Chloropropane Concentration: 13.90 ug/l Review Code:

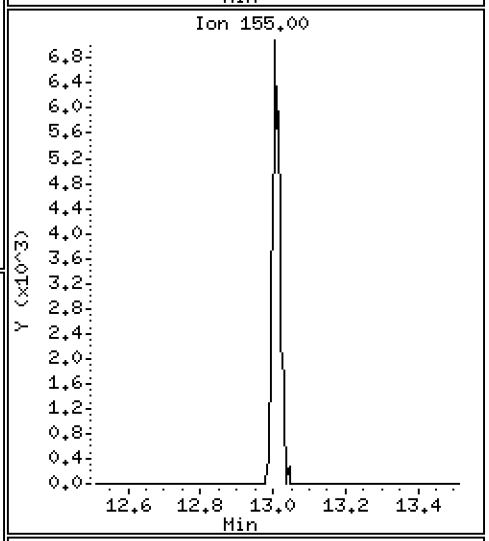


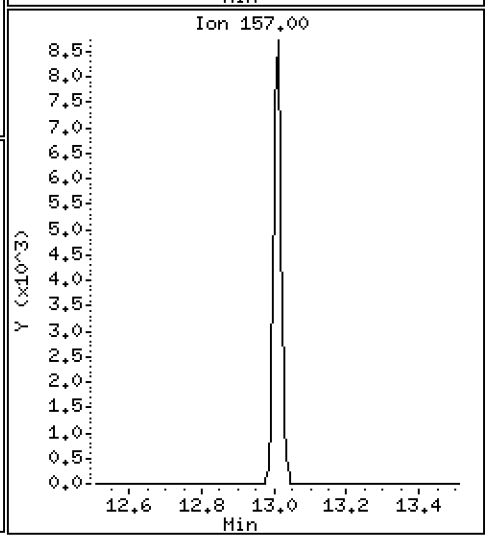












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 80

Date : 02-SEP-2018 16:42

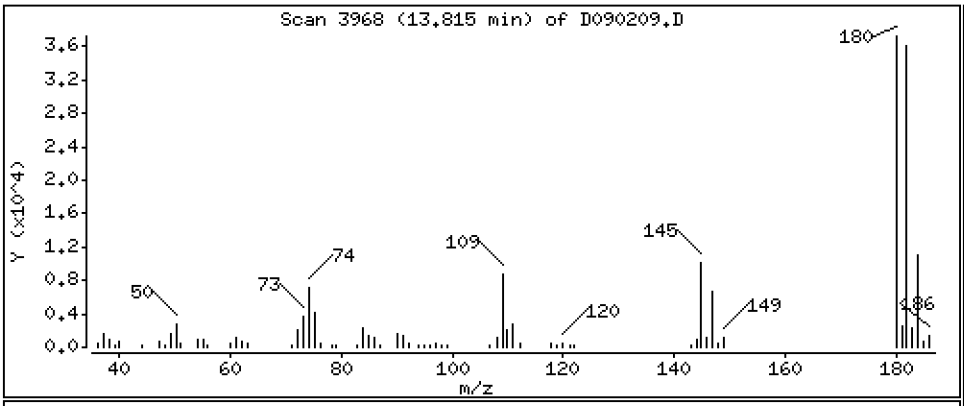
Client ID: HS18081428-01MSD Instrument: VOA2.i

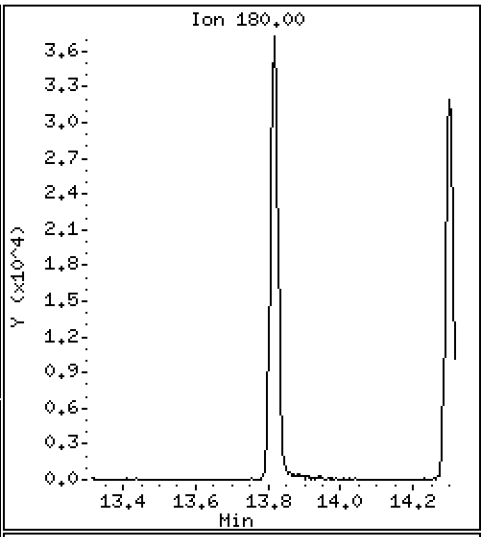
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

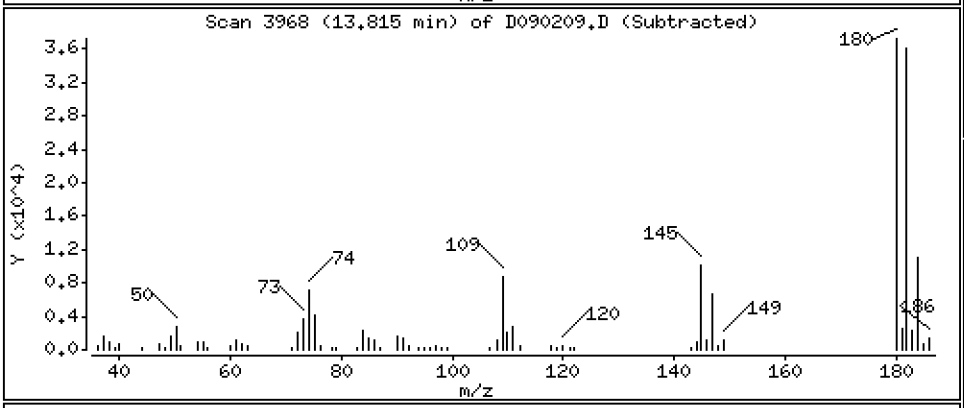
Purge Volume: 5.0 Operator: AP

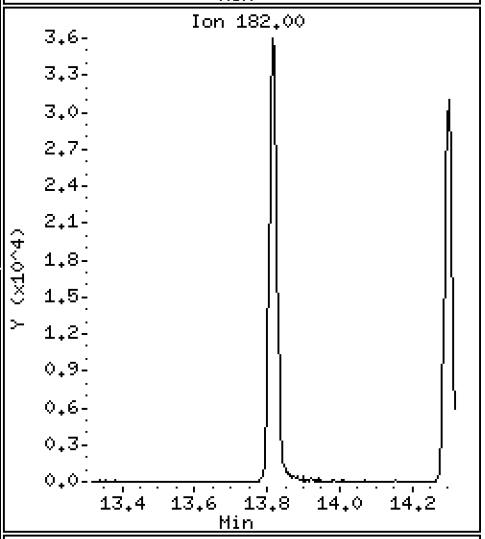
Column phase: DB624 Column diameter: 0.18

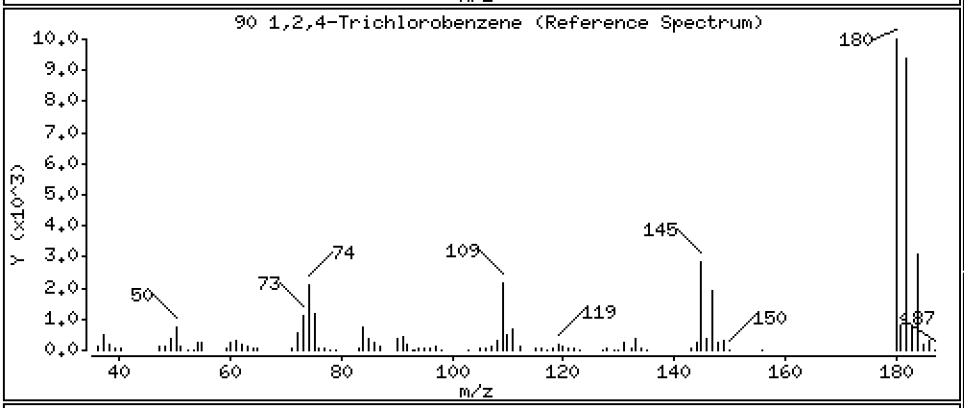
90 1,2,4-Trichlorobenzene Concentration: 16.32 ug/l Review Code:

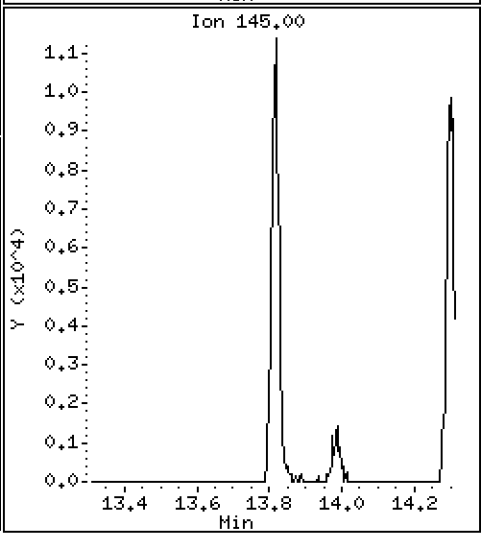


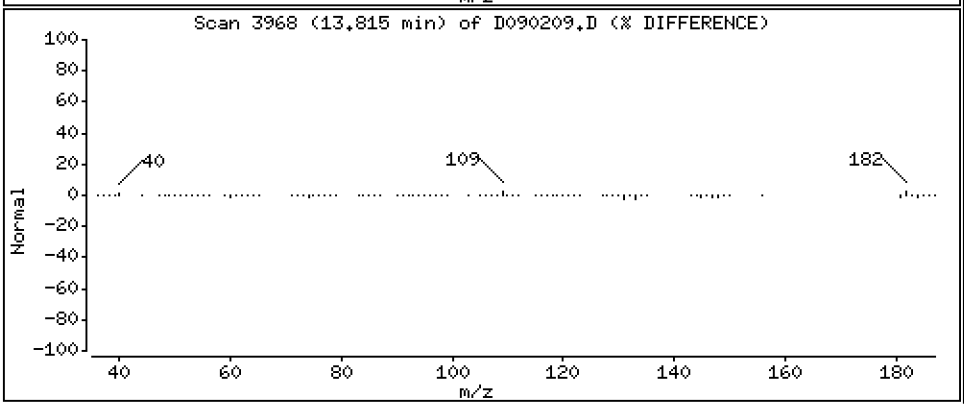












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Date : 02-SEP-2018 16:42

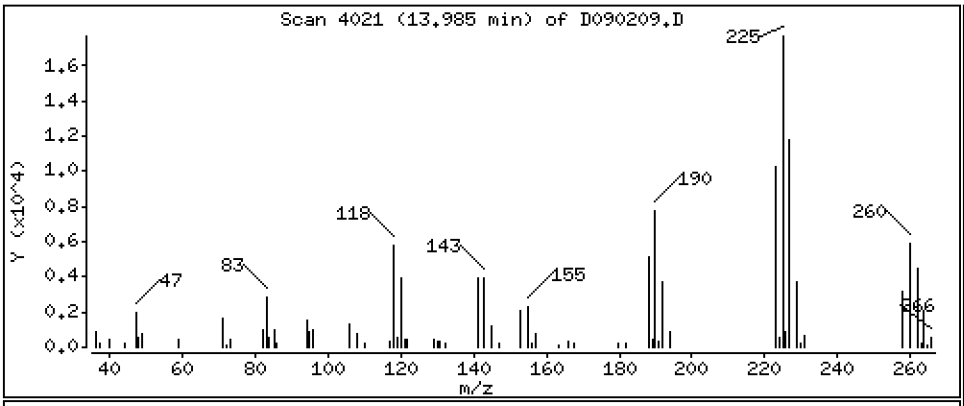
Client ID: HS18081428-01MSD Instrument: VOA2.i

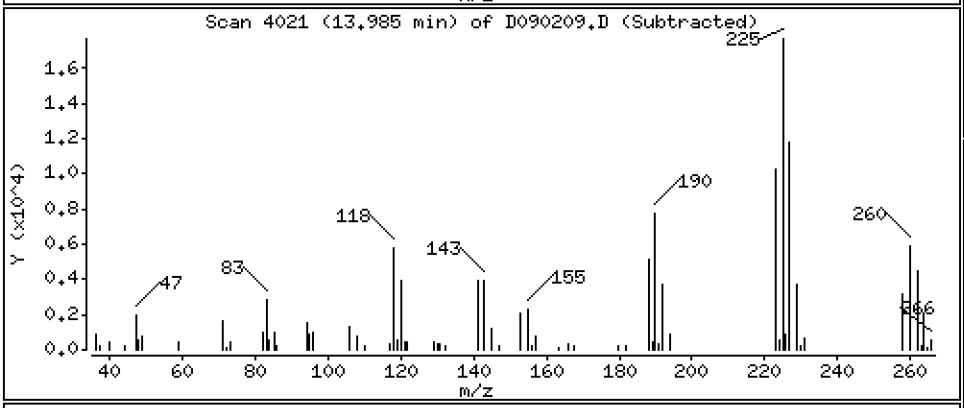
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

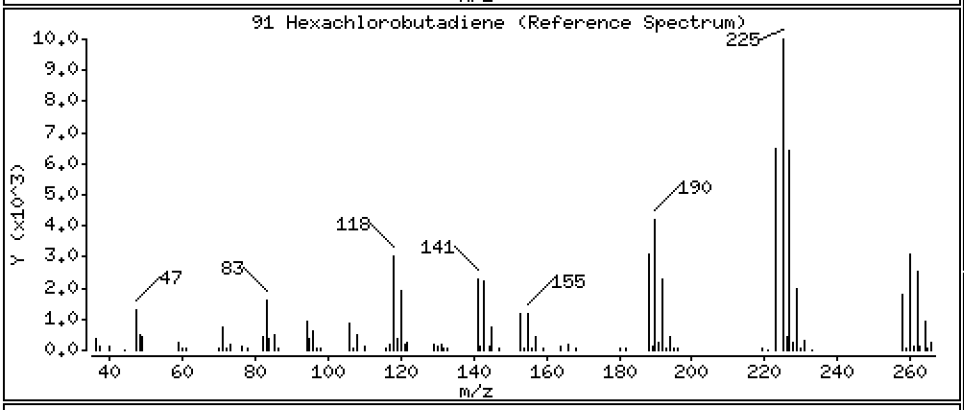
Purge Volume: 5.0 Operator: AP

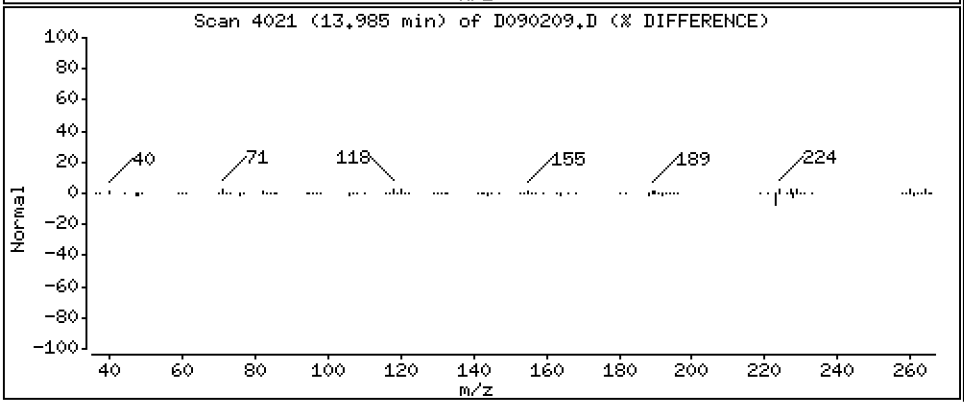
Column phase: DB624 Column diameter: 0.18

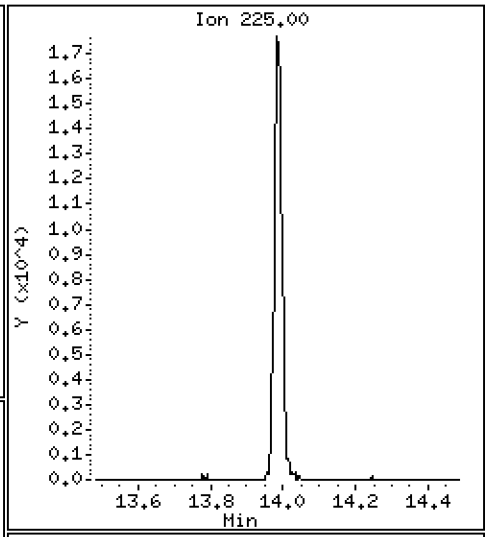
91 Hexachlorobutadiene Concentration: 15.87 ug/l Review Code:

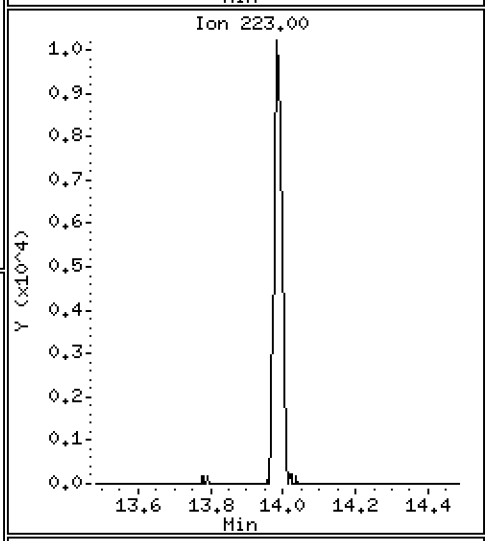


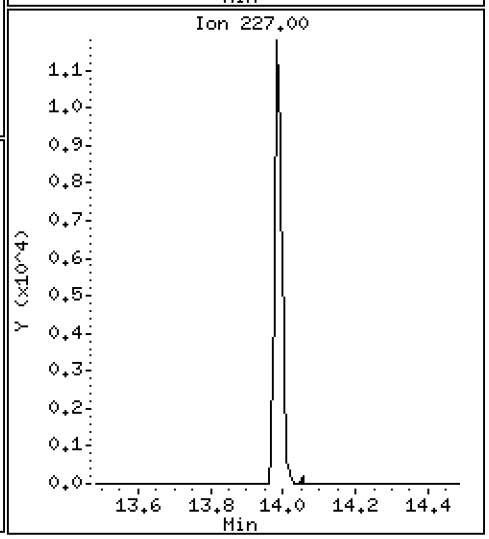












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Date : 02-SEP-2018 16:42

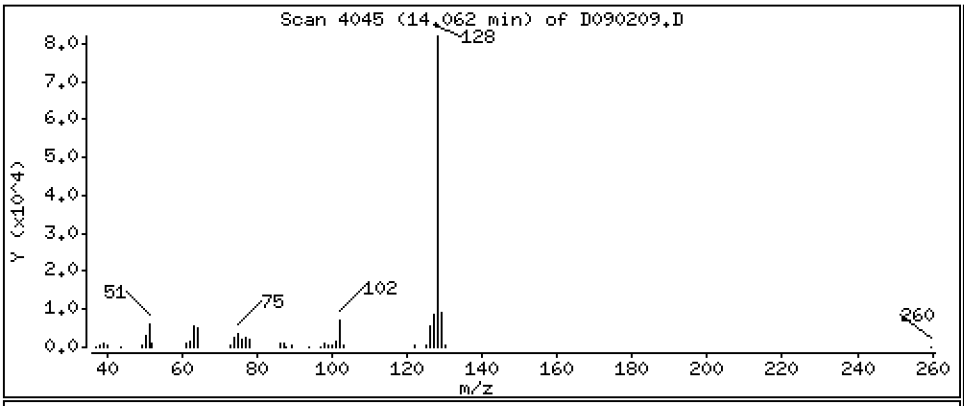
Client ID: HS18081428-01MSD Instrument: VOA2.i

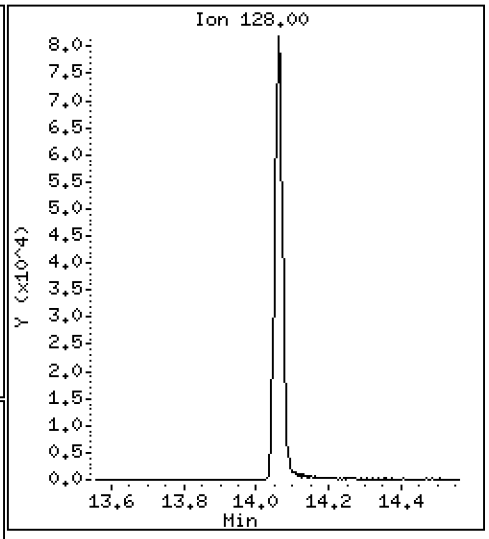
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

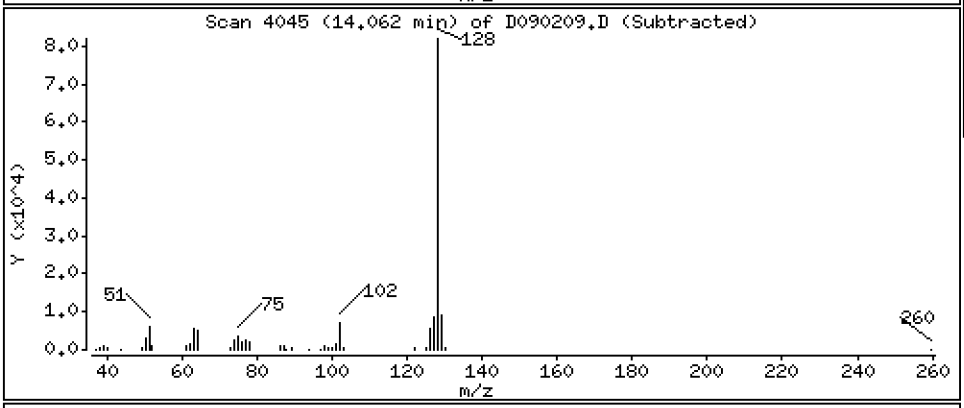
Purge Volume: 5.0 Operator: AP

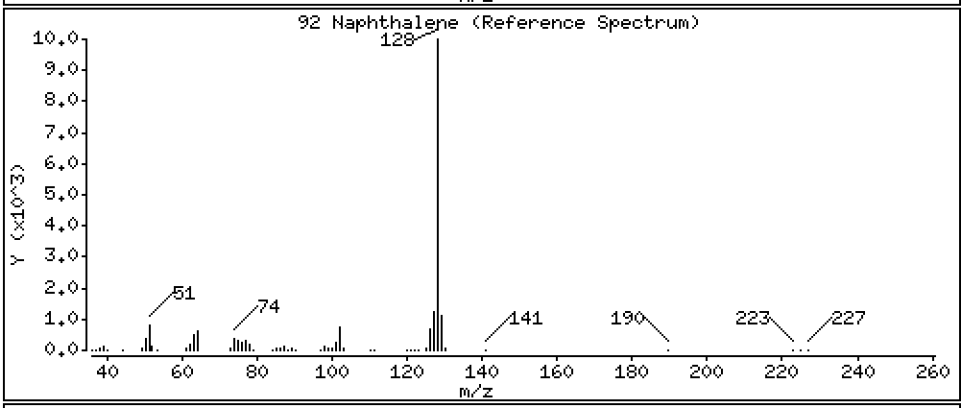
Column phase: DB624 Column diameter: 0.18

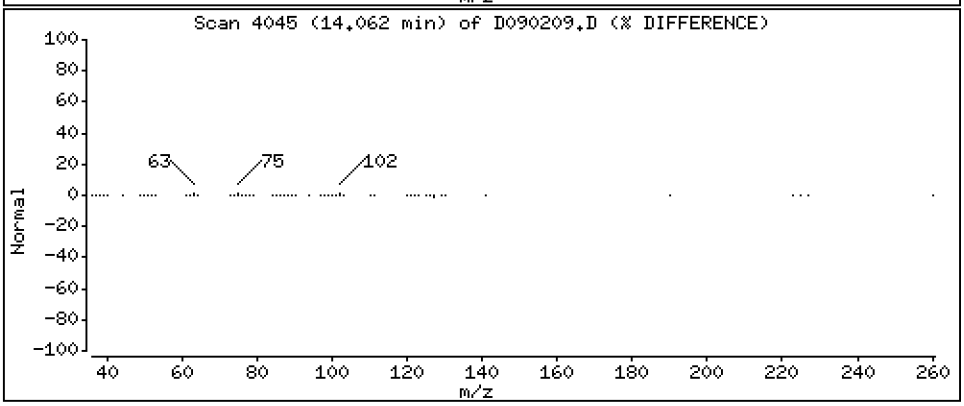
92 Naphthalene Concentration: 14.82 ug/l Review Code:











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Date : 02-SEP-2018 16:42

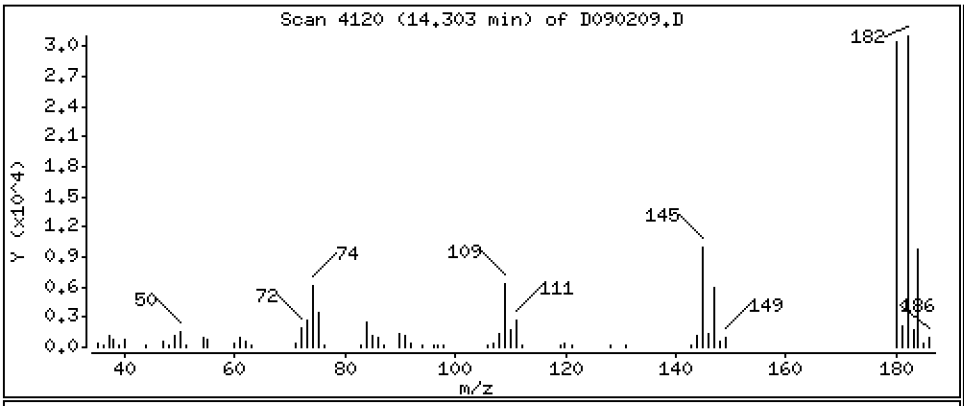
Client ID: HS18081428-01MSD Instrument: VOA2.i

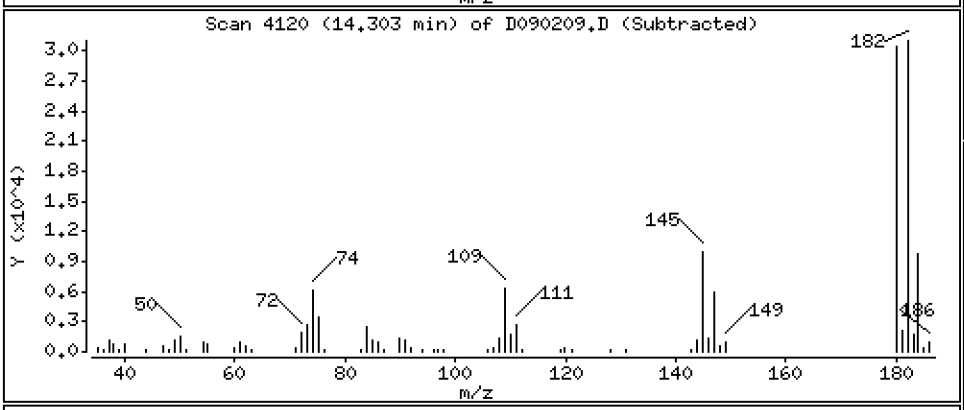
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

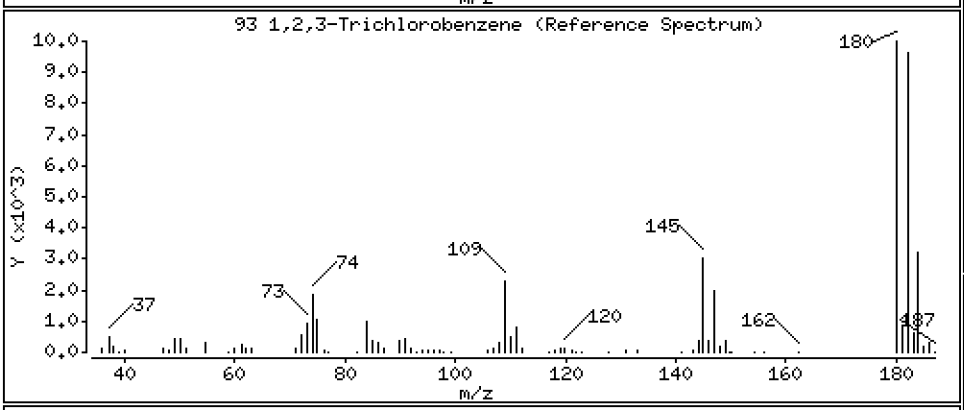
Purge Volume: 5.0 Operator: AP

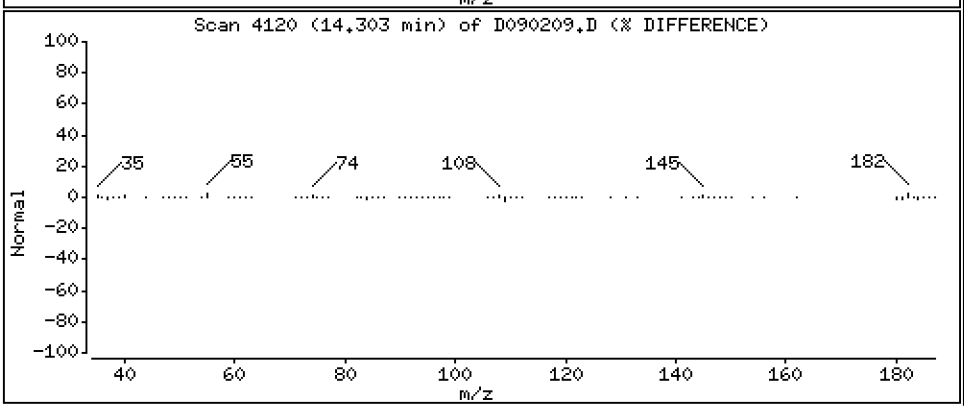
Column phase: DB624 Column diameter: 0.18

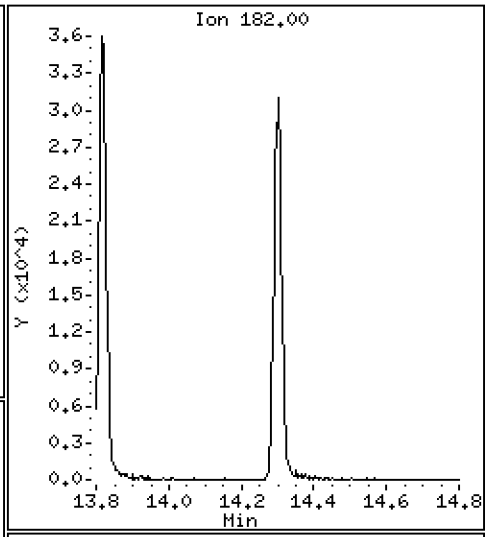
93 1,2,3-Trichlorobenzene Concentration: 15.44 ug/l Review Code:

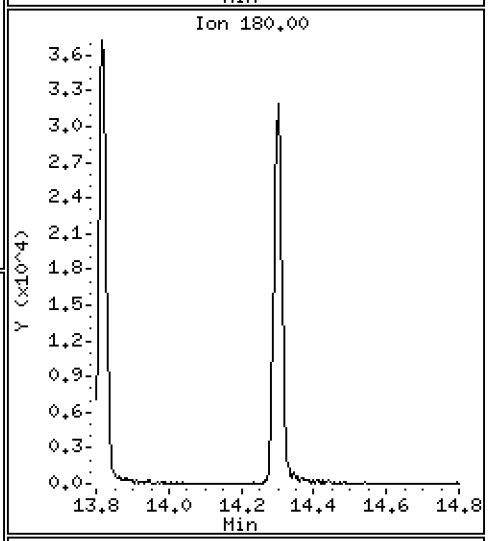


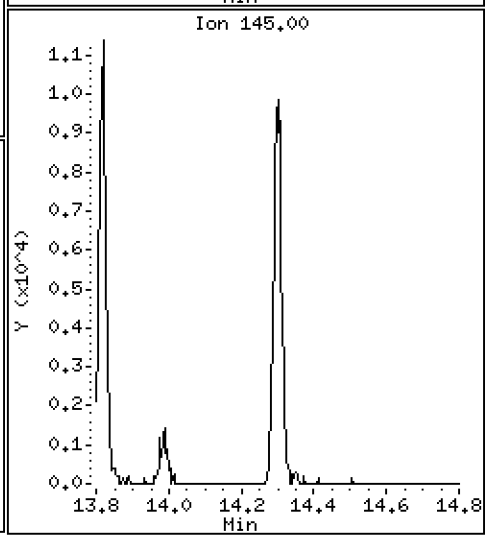












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 84

Date : 02-SEP-2018 16:42

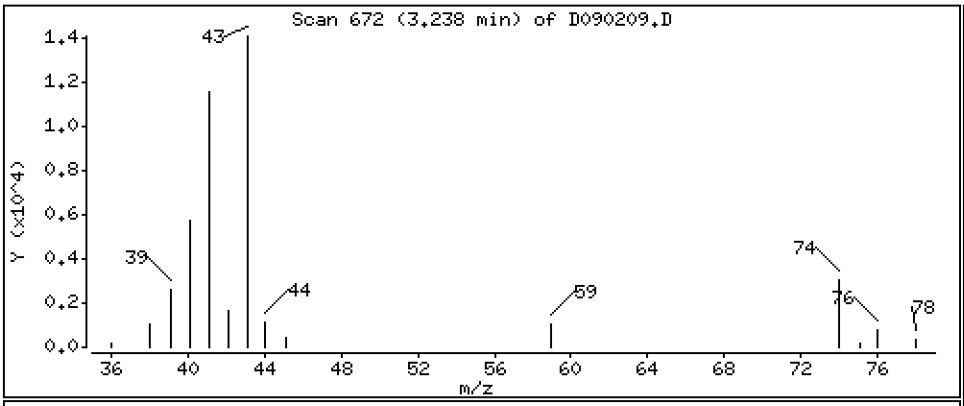
Client ID: HS18081428-01MSD Instrument: VOA2.i

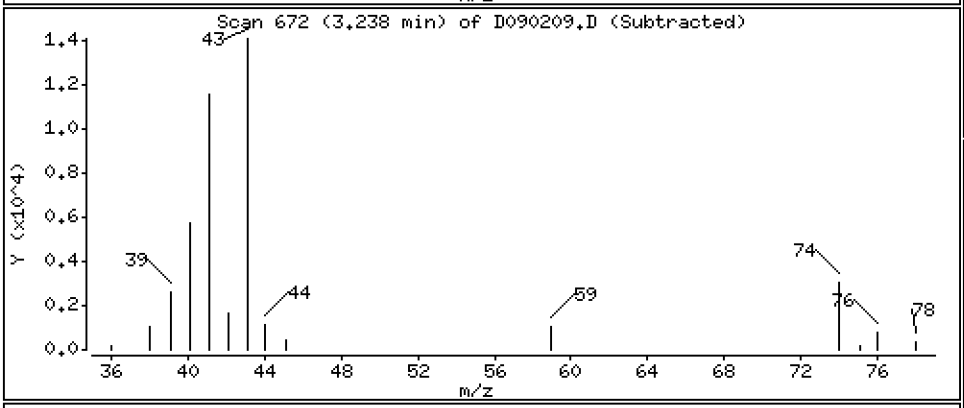
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

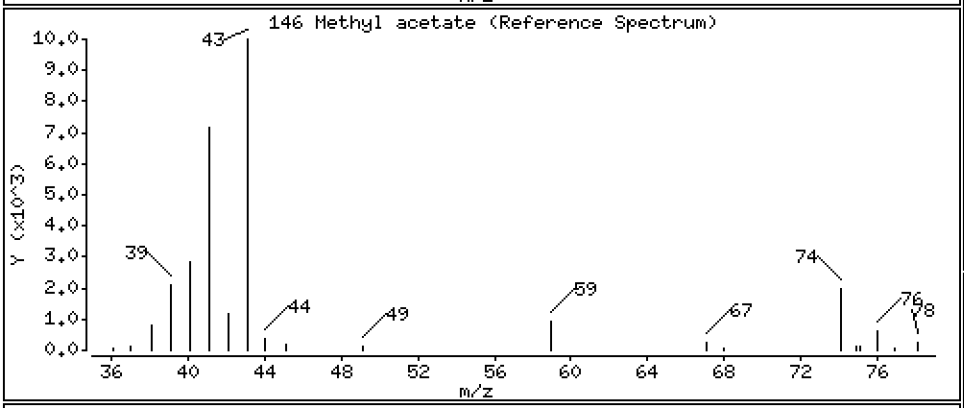
Purge Volume: 5.0 Operator: AP

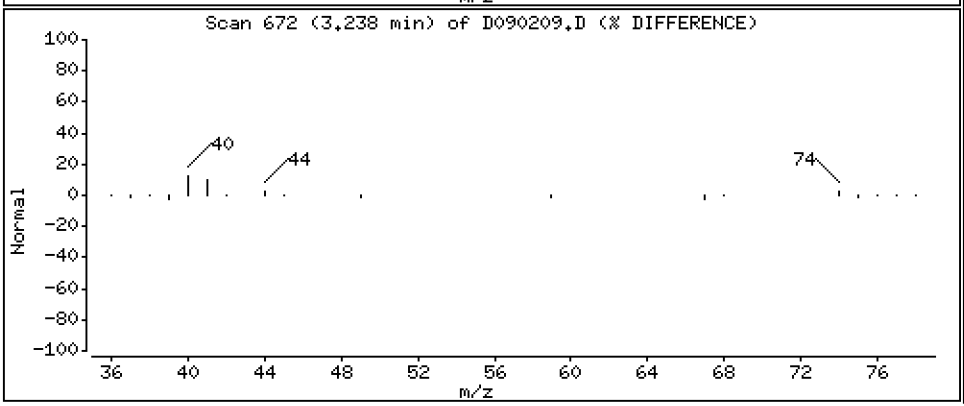
Column phase: DB624 Column diameter: 0.18

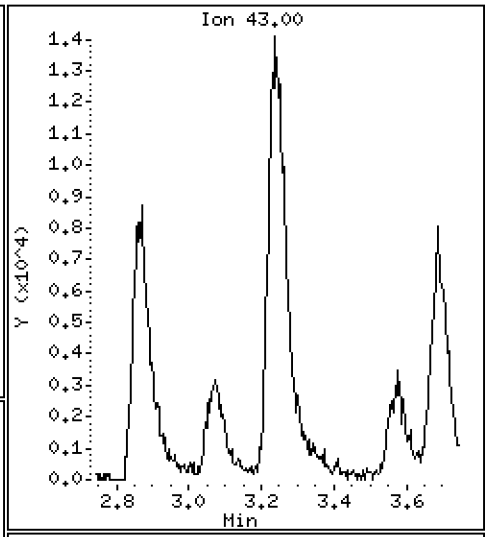
146 Methyl acetate Concentration: 13.57 ug/l Review Code:

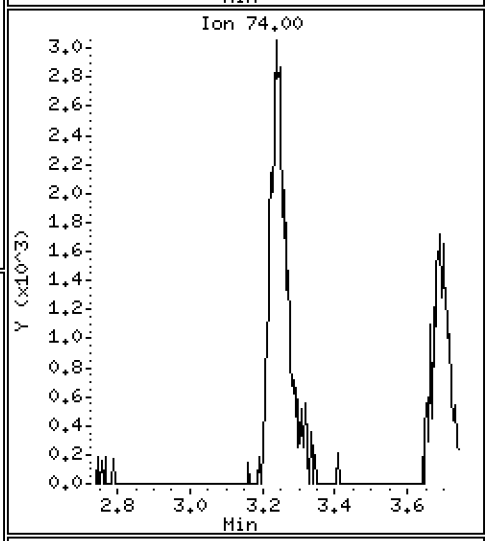


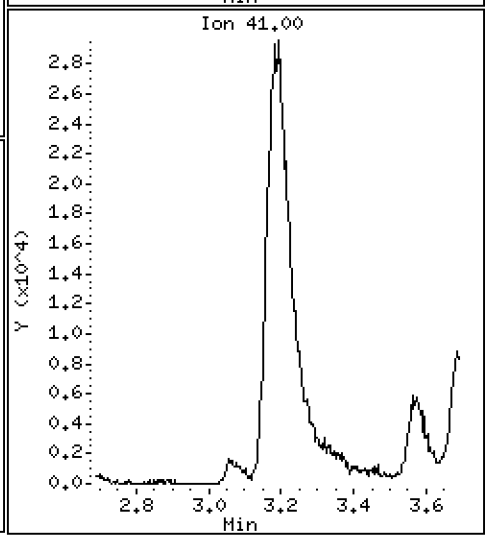












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 85

Date : 02-SEP-2018 16:42

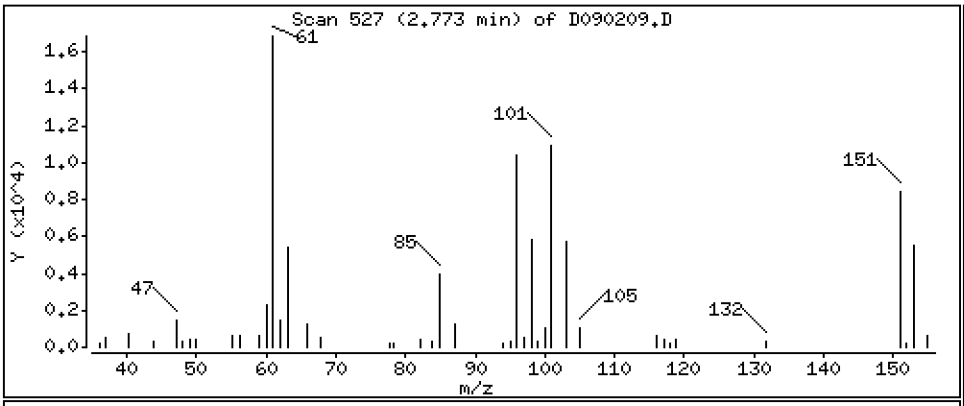
Client ID: HS18081428-01MSD Instrument: VOA2.i

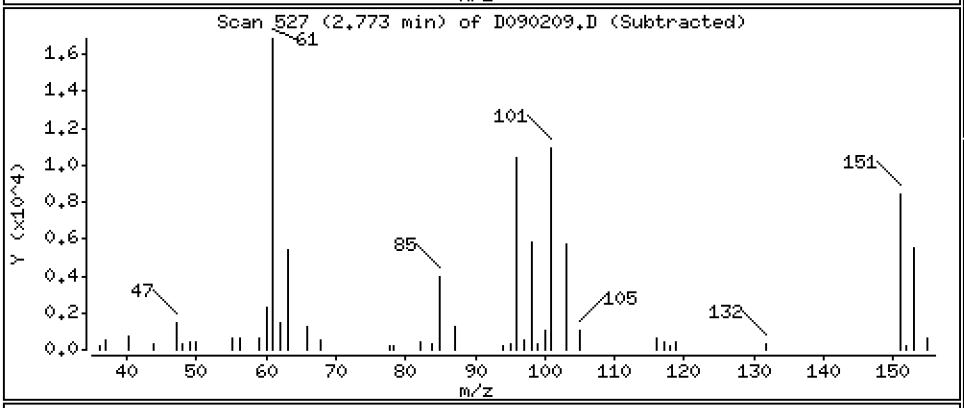
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

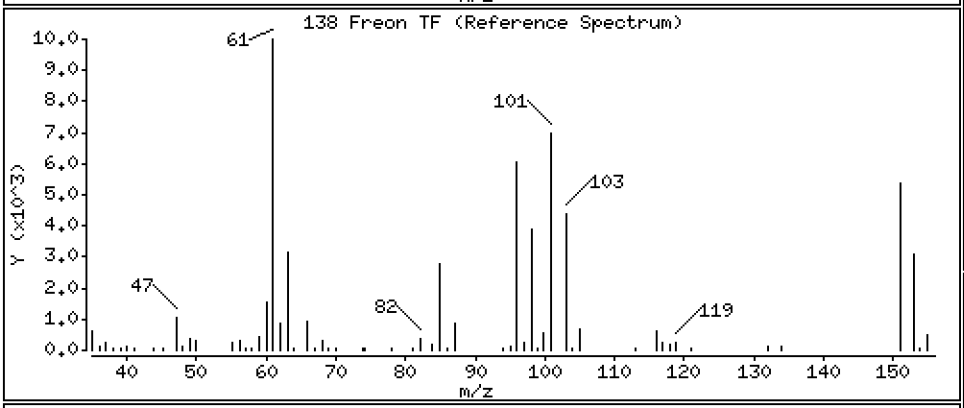
Purge Volume: 5.0 Operator: AP

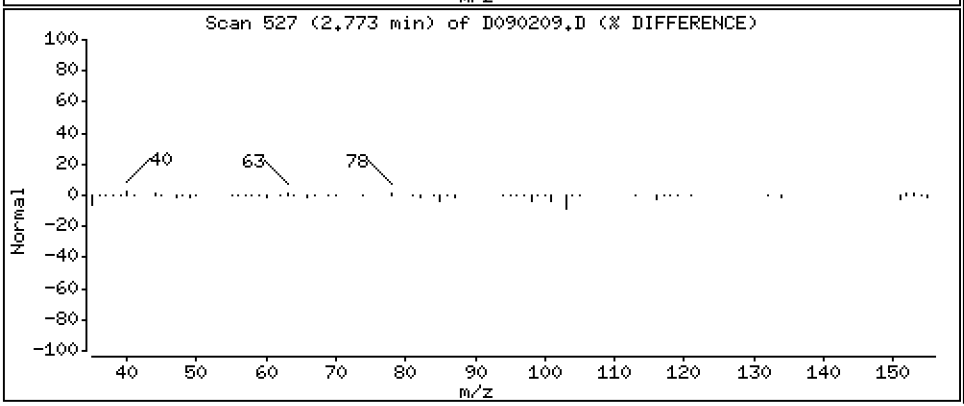
Column phase: DB624 Column diameter: 0.18

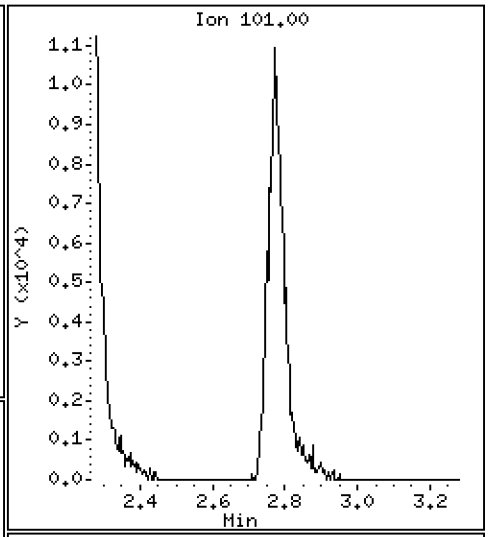
138 Freon TF Concentration: 13.86 ug/l Review Code:

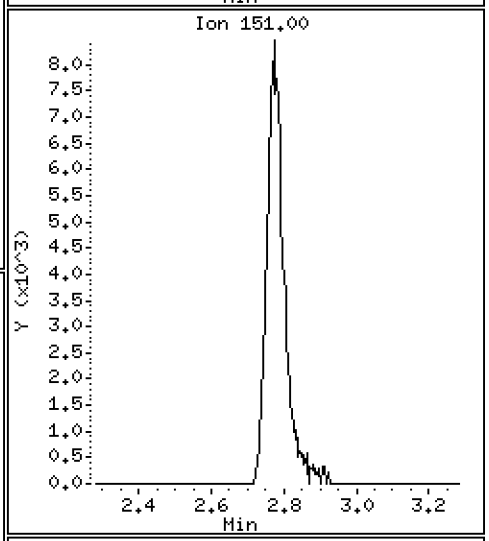


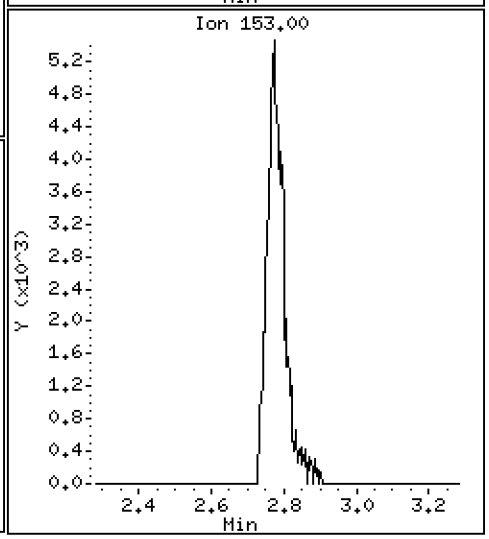












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 86

Date : 02-SEP-2018 16:42

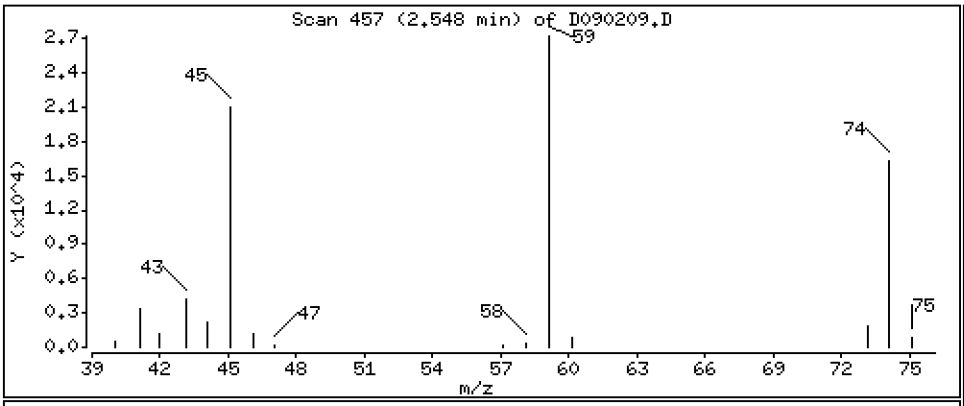
Client ID: HS18081428-01MSD Instrument: VOA2.i

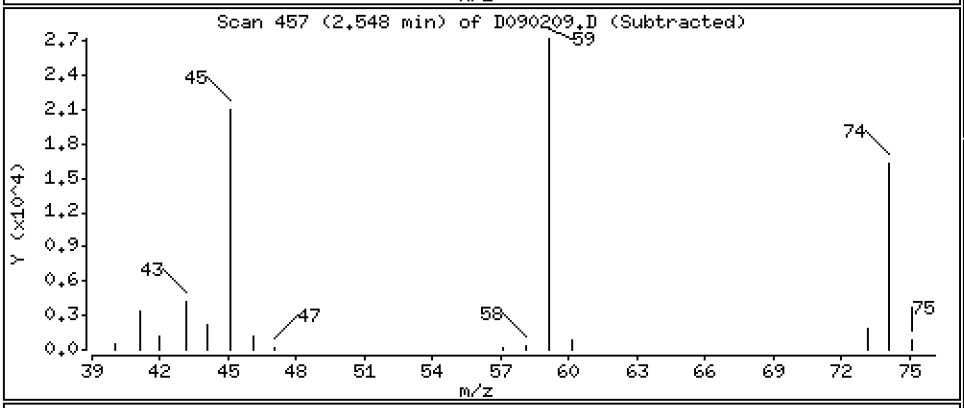
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

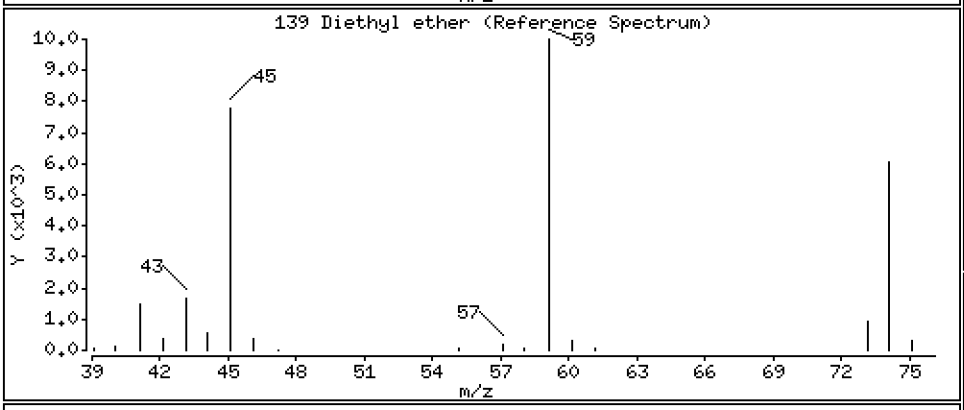
Purge Volume: 5.0 Operator: AP

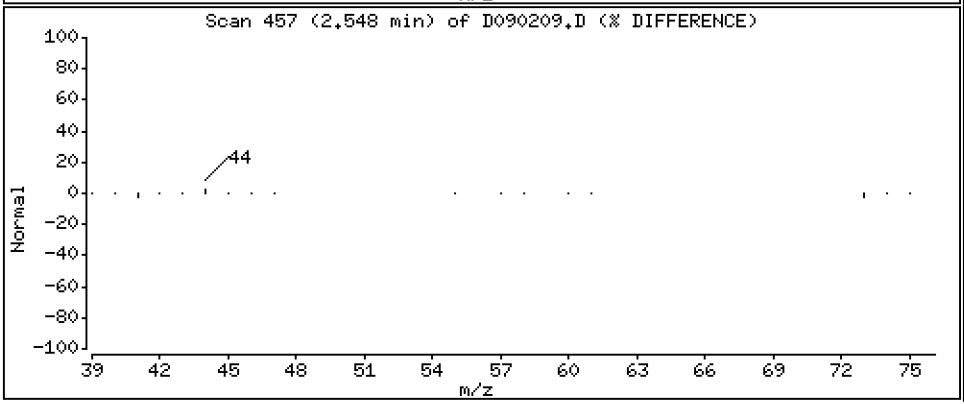
Column phase: DB624 Column diameter: 0.18

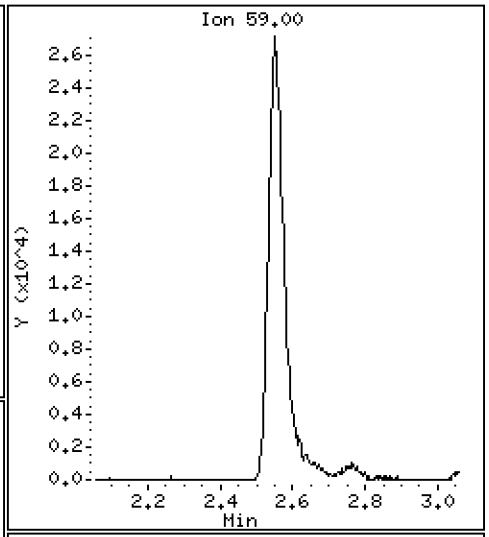
139 Diethyl ether Concentration: 14.89 ug/l Review Code:

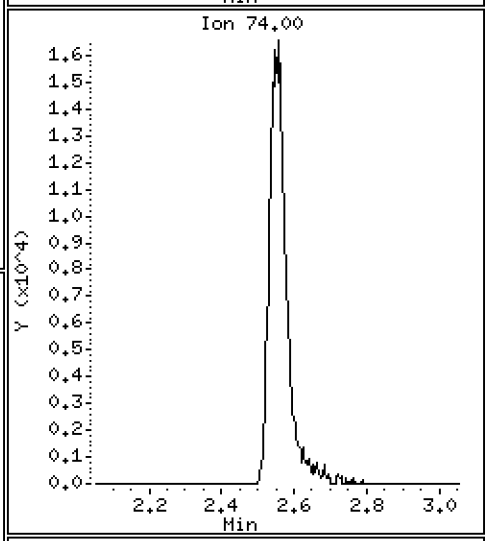


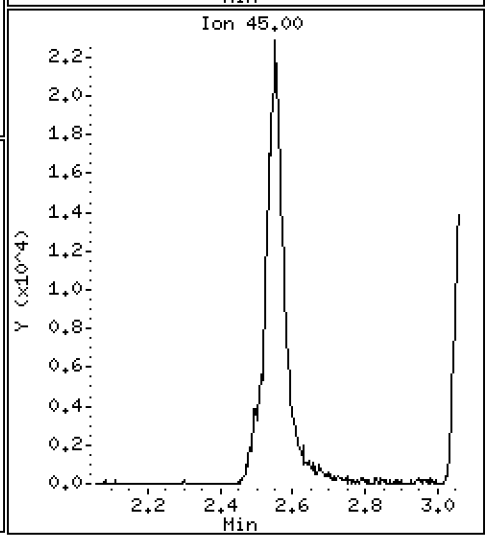












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 87

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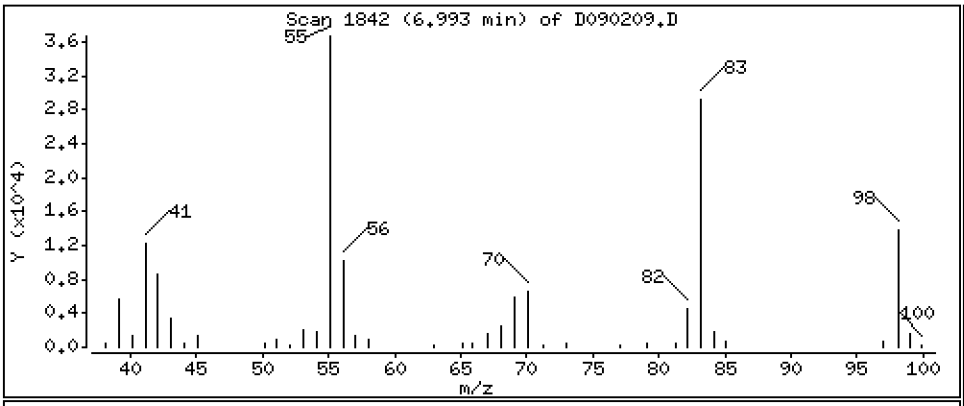
Client ID: HS18081428-01MSD Instrument: VOA2.i

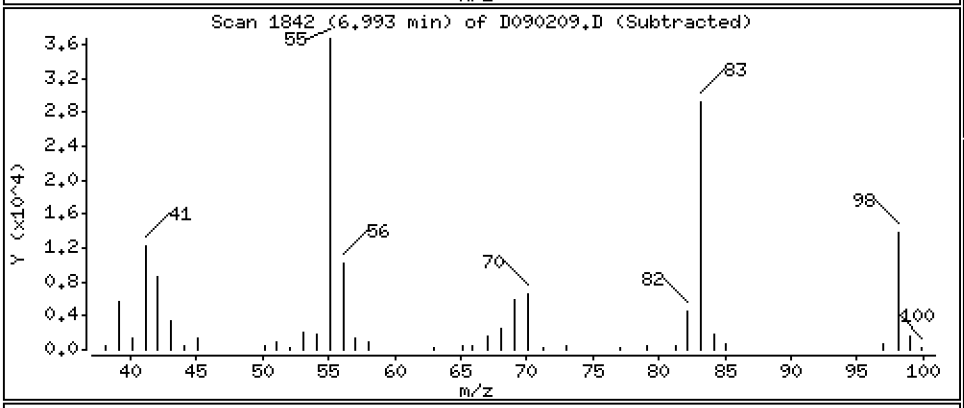
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

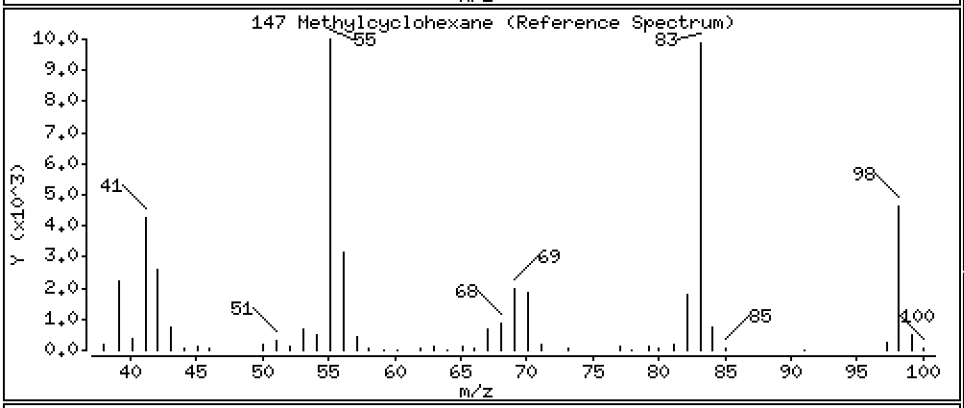
Purge Volume: 5.0 Operator: AP

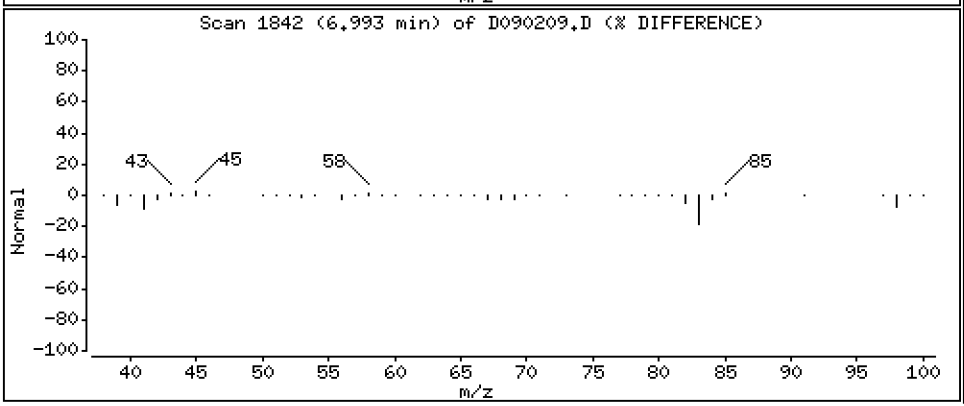
Column phase: DB624 Column diameter: 0.18

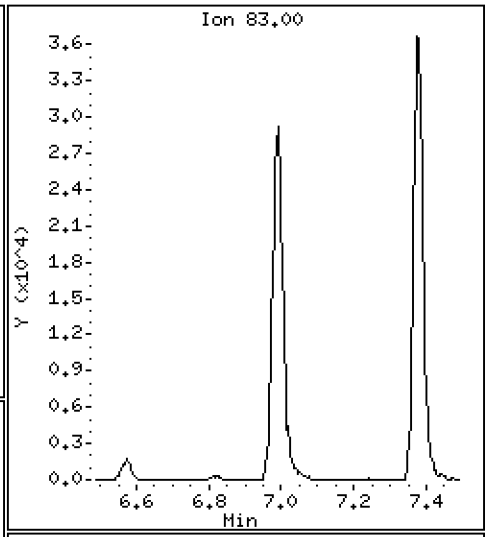
147 Methylcyclohexane Concentration: 14.95 ug/l Review Code:

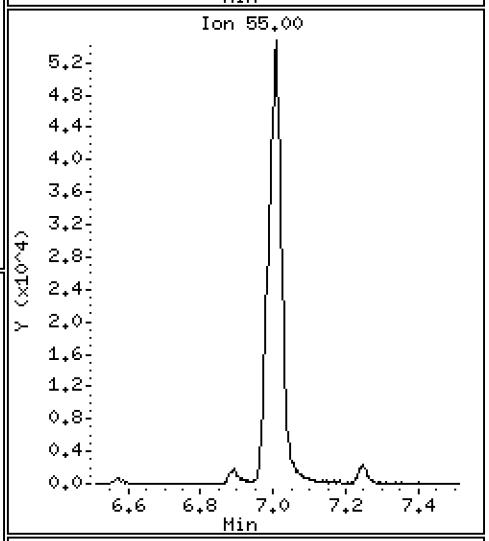


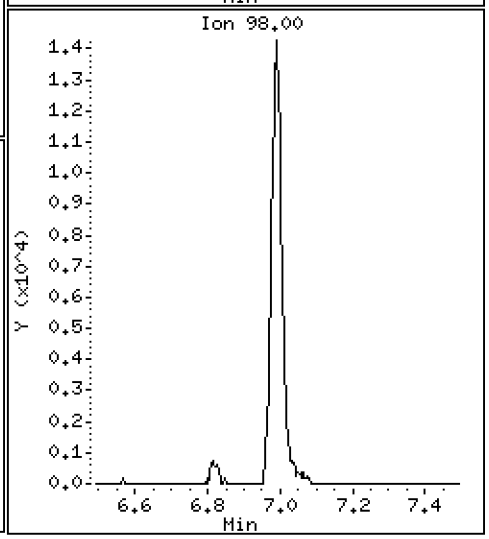












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Date : 02-SEP-2018 16:42

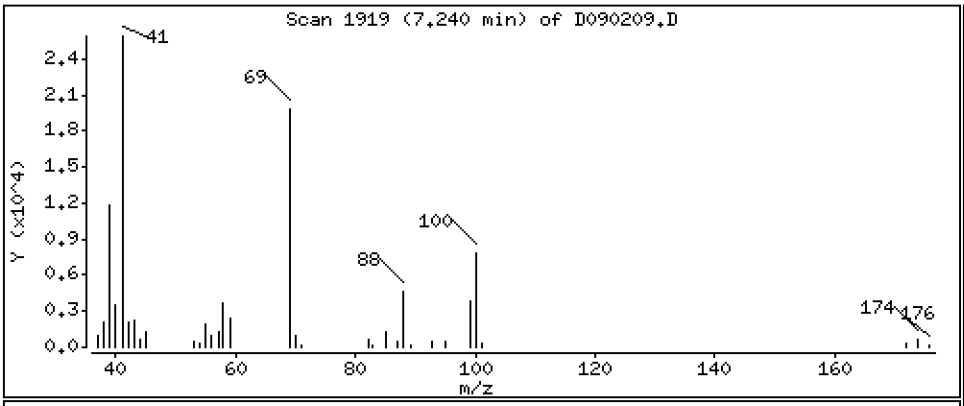
Client ID: HS18081428-01MSD Instrument: VOA2.i

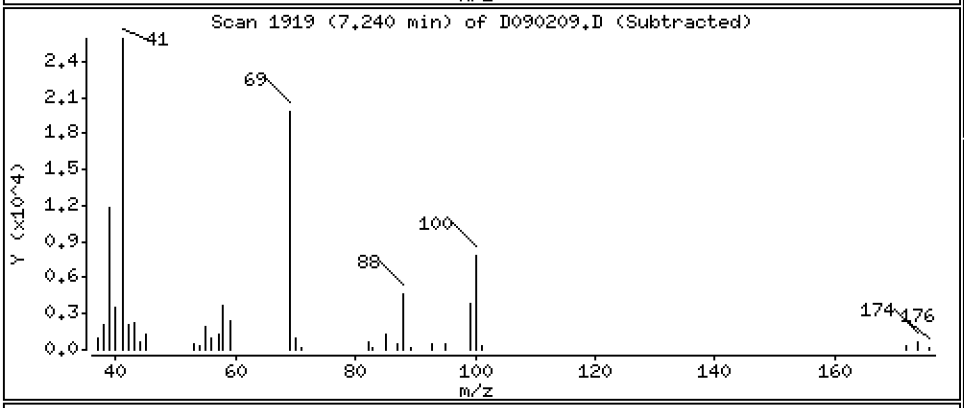
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

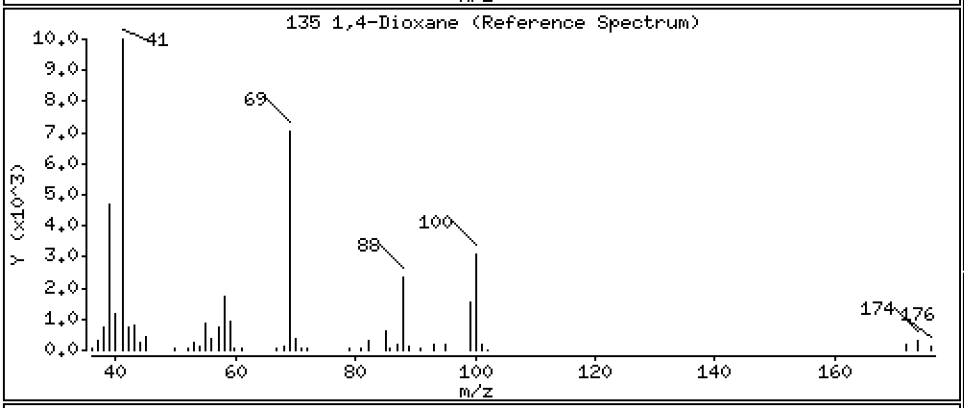
Purge Volume: 5.0 Operator: AP

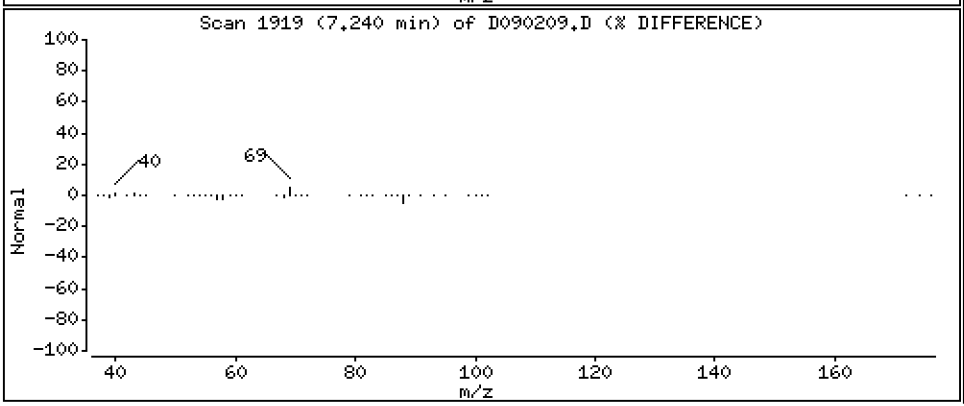
Column phase: DB624 Column diameter: 0.18

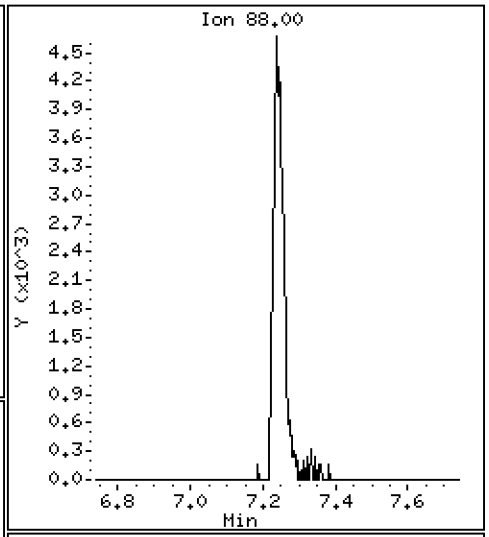
135 1,4-Dioxane Concentration: 280.24 ug/l Review Code:

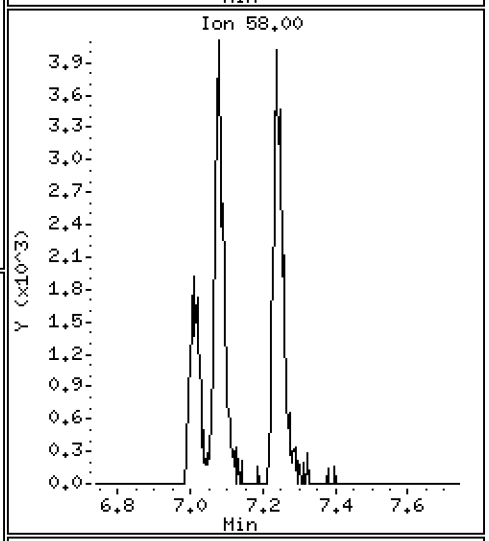


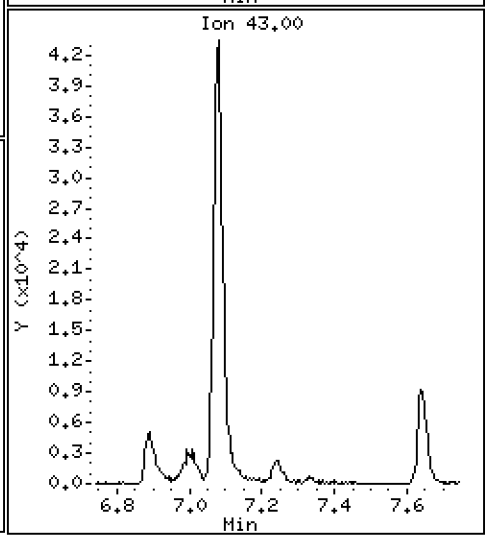












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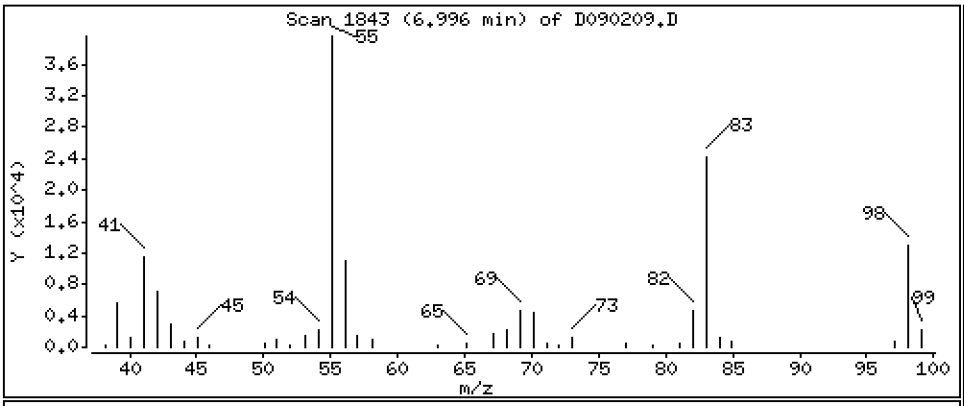
Client ID: HS18081428-01MSD Instrument: VOA2.i

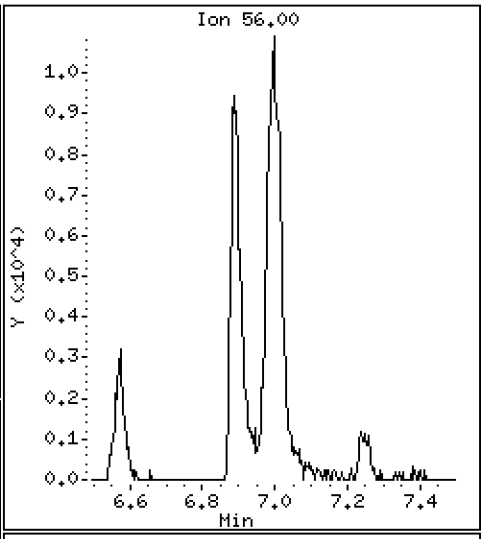
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

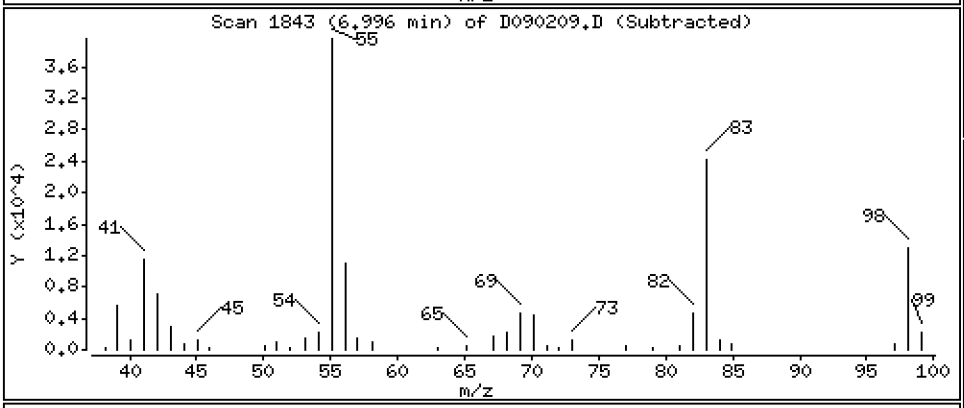
Purge Volume: 5.0 Operator: AP

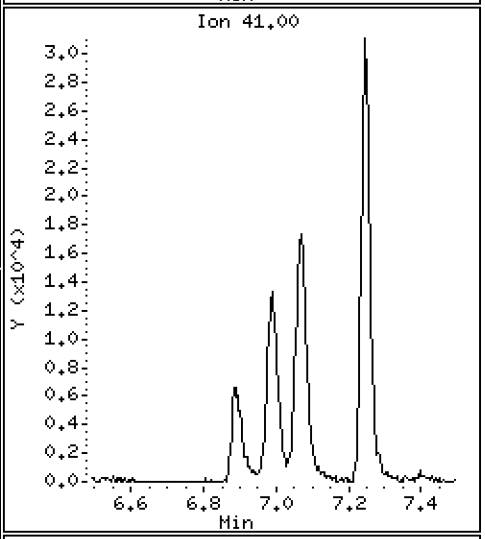
Column phase: DB624 Column diameter: 0.18

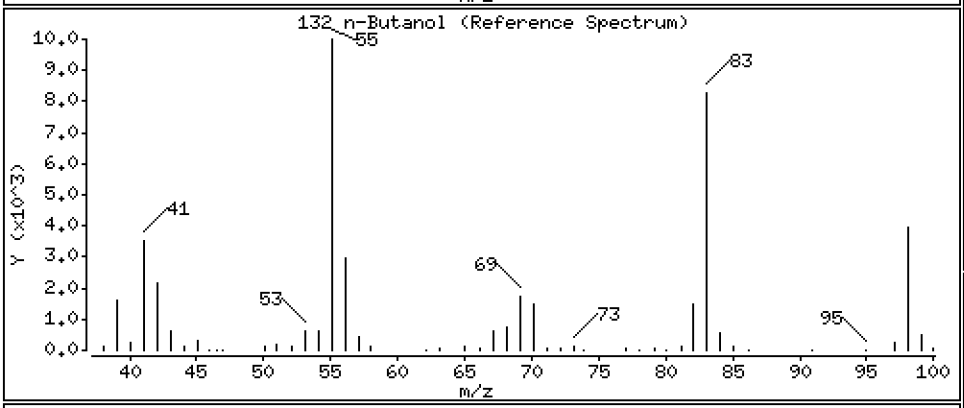
132 n-Butanol Concentration: 281.72 ug/l Review Code:

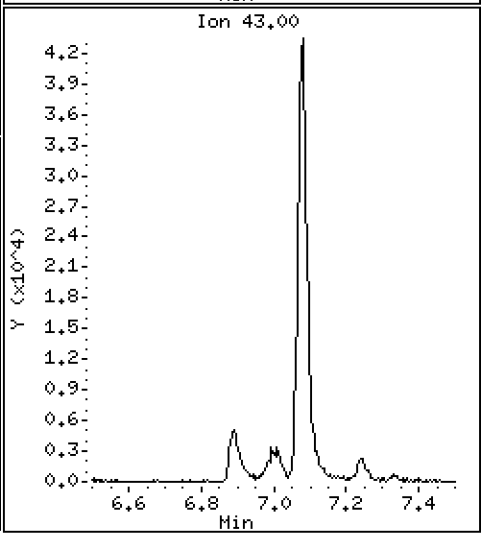


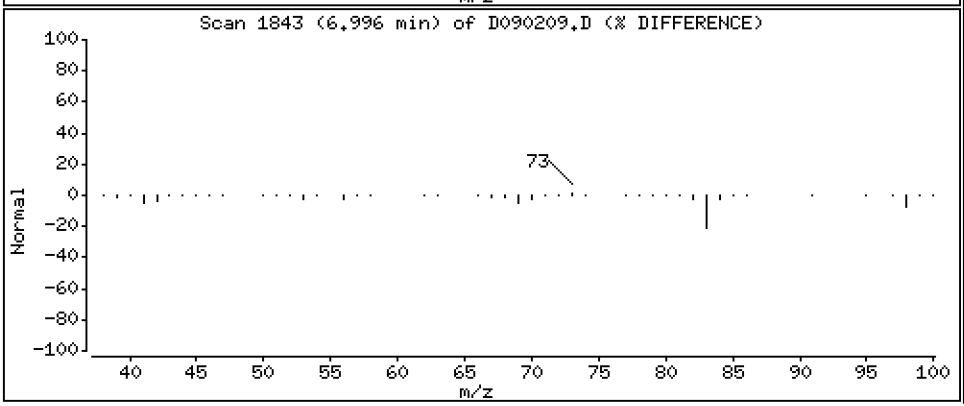












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Date : 02-SEP-2018 16:42

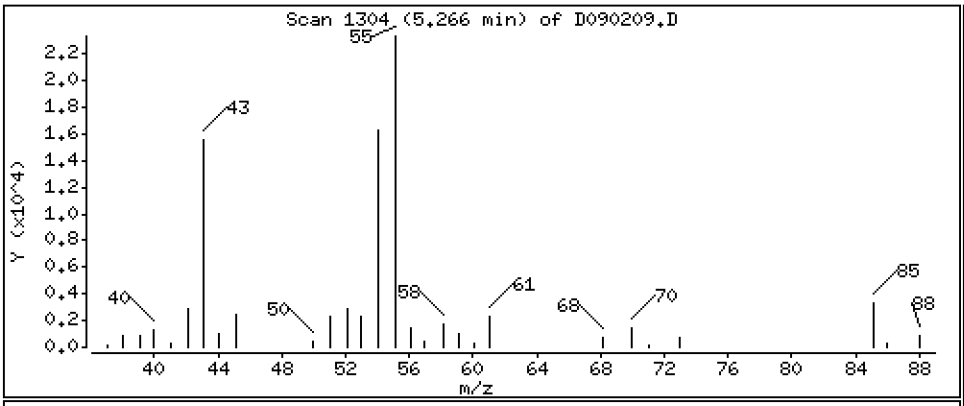
Client ID: HS18081428-01MSD Instrument: VOA2.i

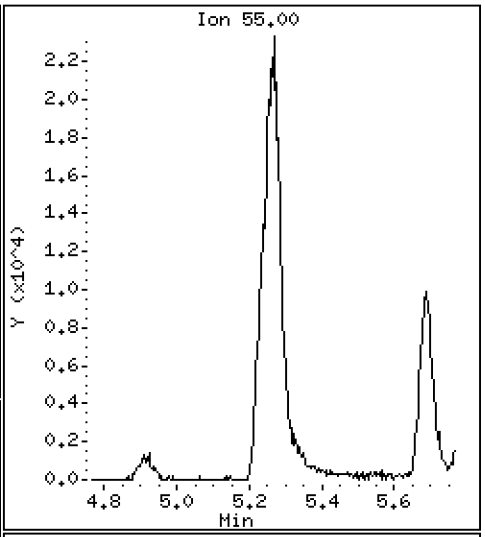
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

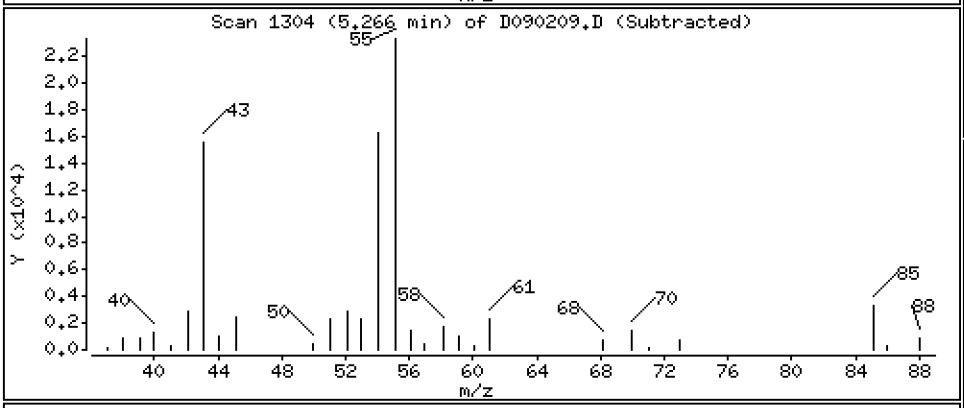
Purge Volume: 5.0 Operator: AP

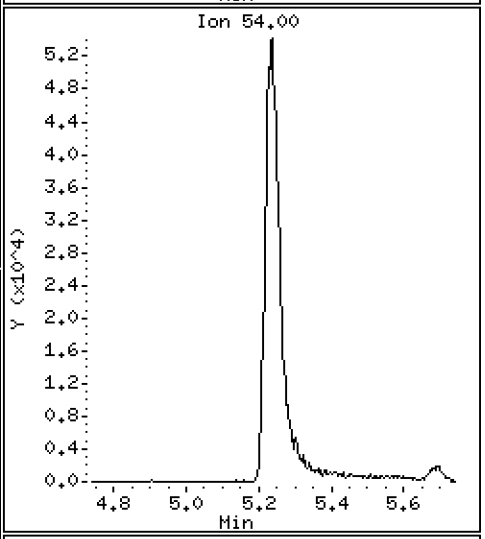
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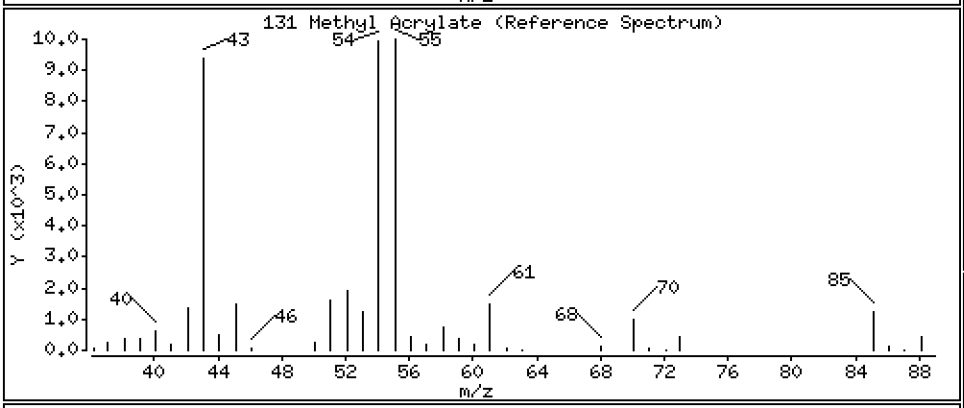
131 Methyl Acrylate Concentration: 15.25 ug/l Review Code:

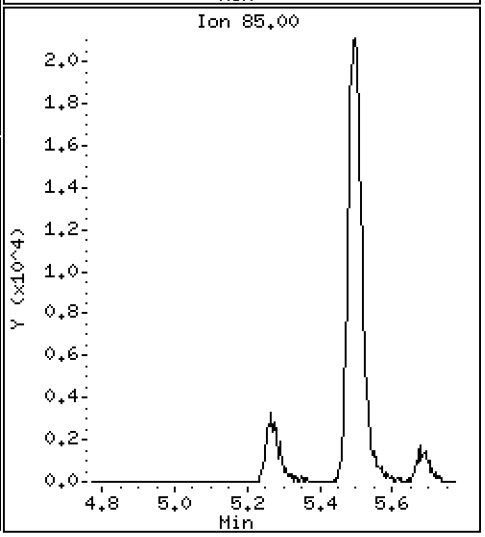


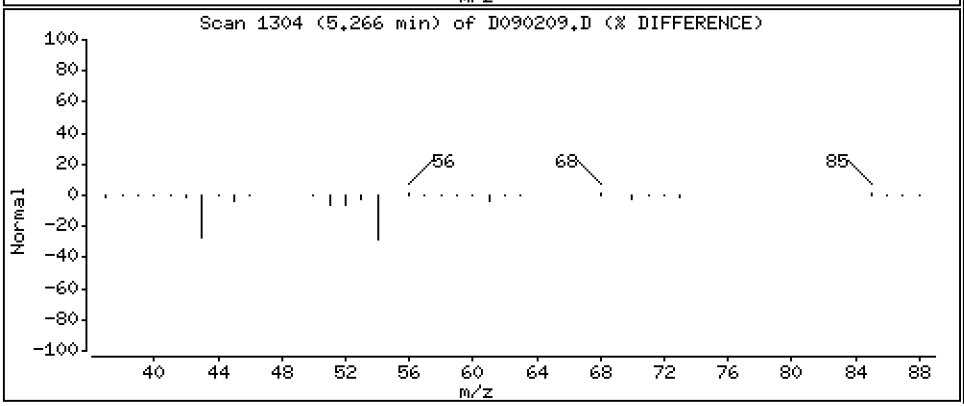












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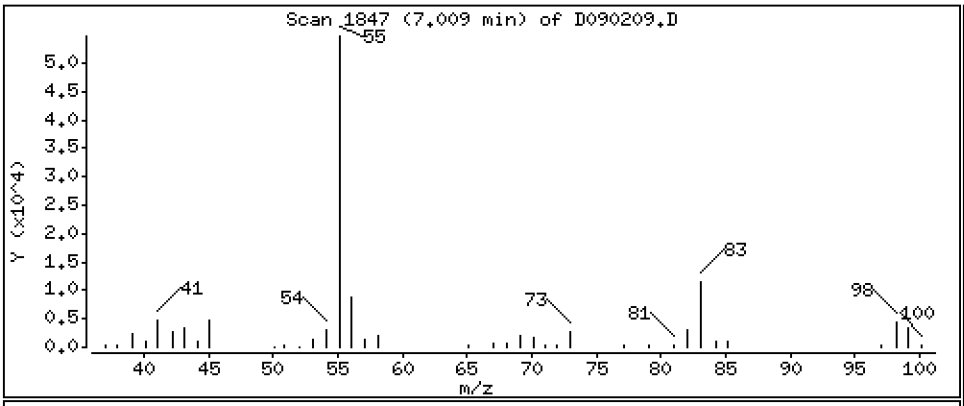
Client ID: HS18081428-01MSD Instrument: VOA2.i

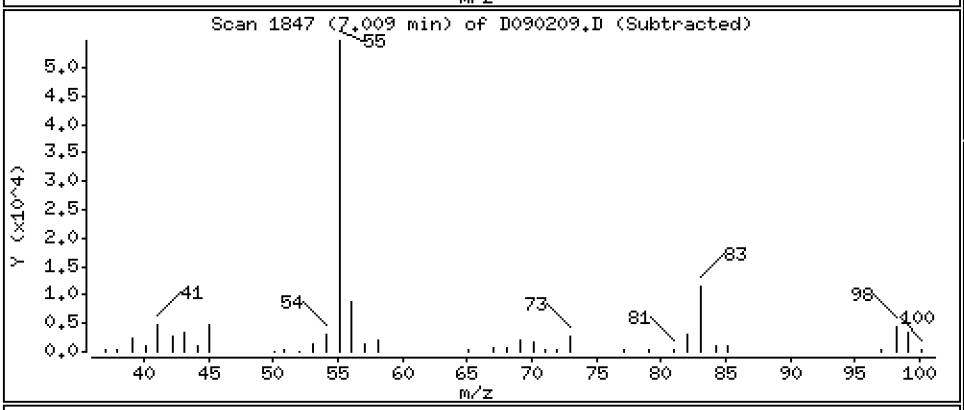
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

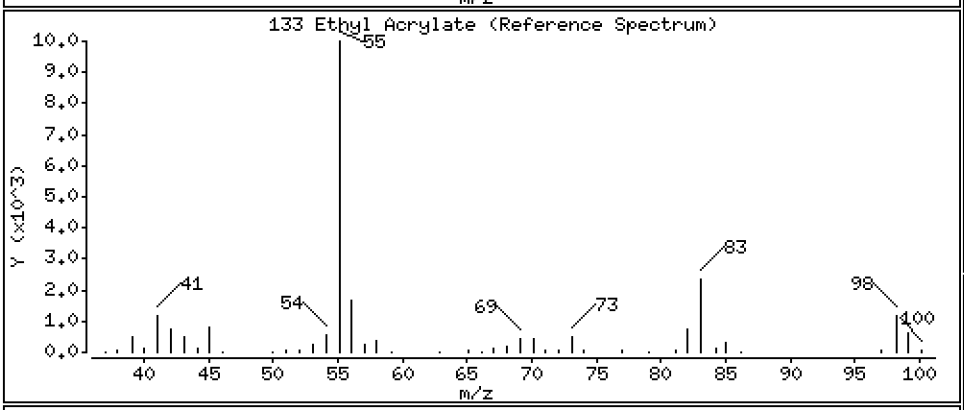
Purge Volume: 5.0 Operator: AP

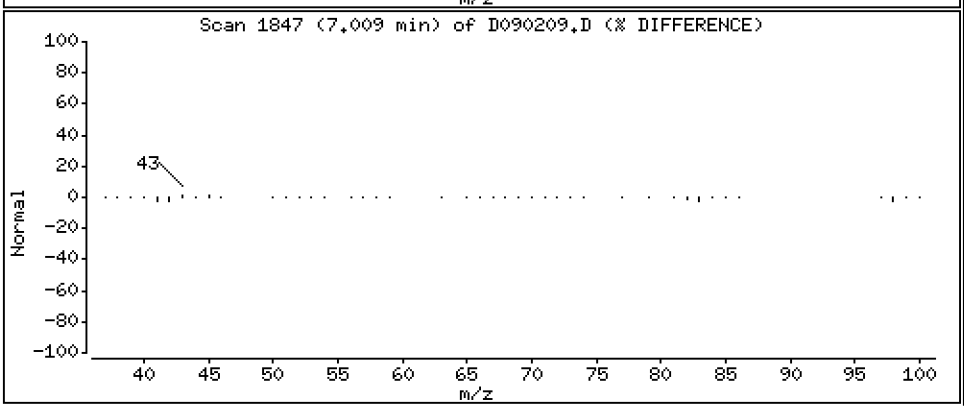
Column phase: DB624 Column diameter: 0.18

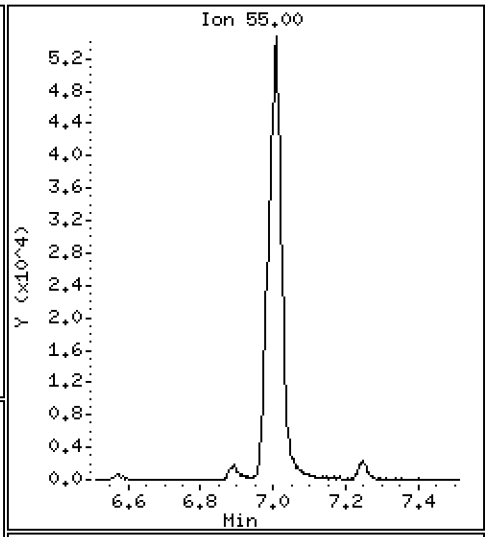
133 Ethyl Acrylate Concentration: 14.32 ug/l Review Code:

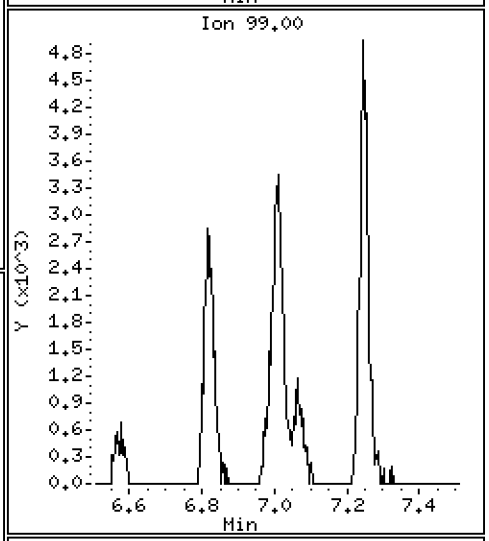


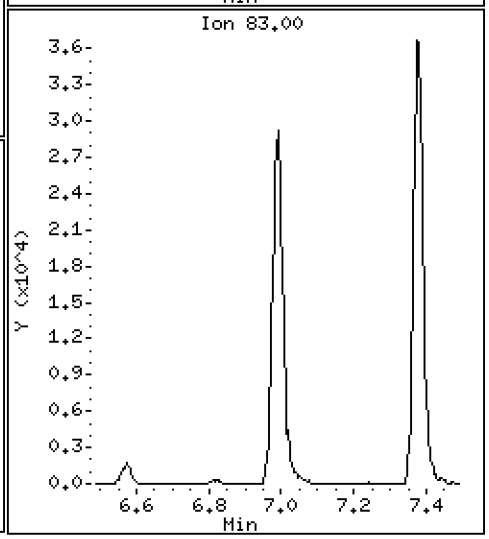












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Date : 02-SEP-2018 16:42

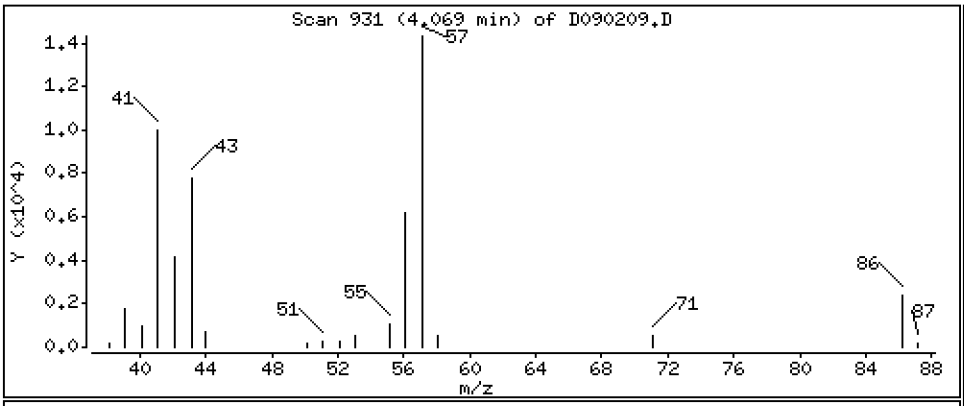
Client ID: HS18081428-01MSD Instrument: VOA2.i

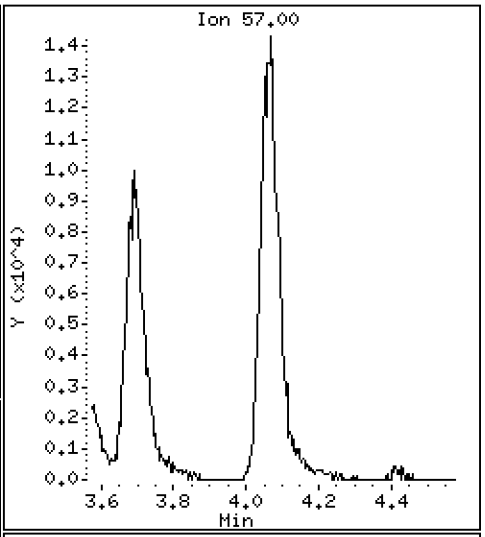
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

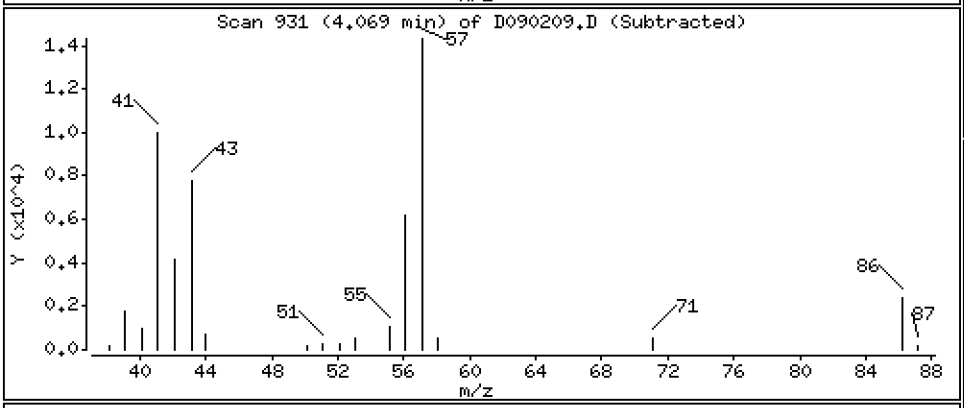
Purge Volume: 5.0 Operator: AP

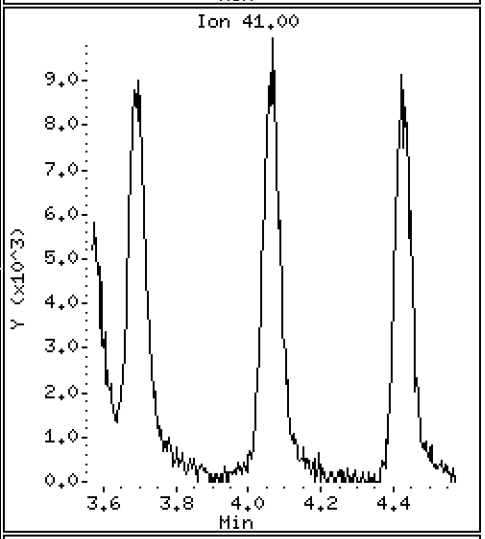
Column phase: DB624 Column diameter: 0.18

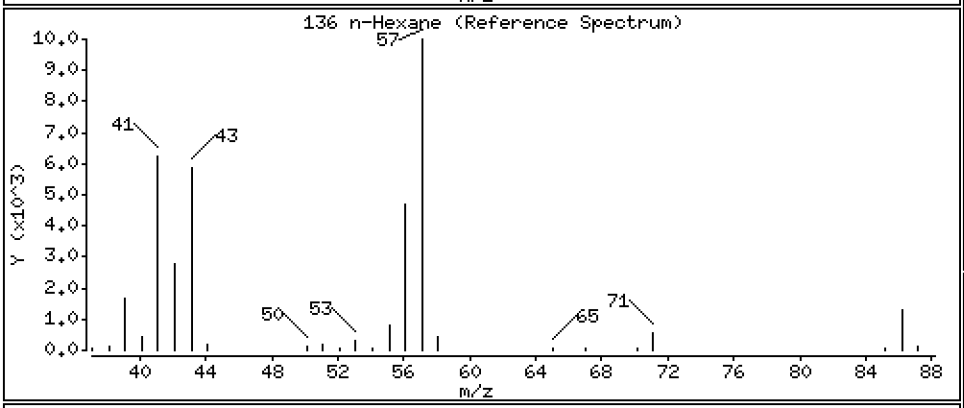
136 n-Hexane Concentration: 9.43 ug/l Review Code:

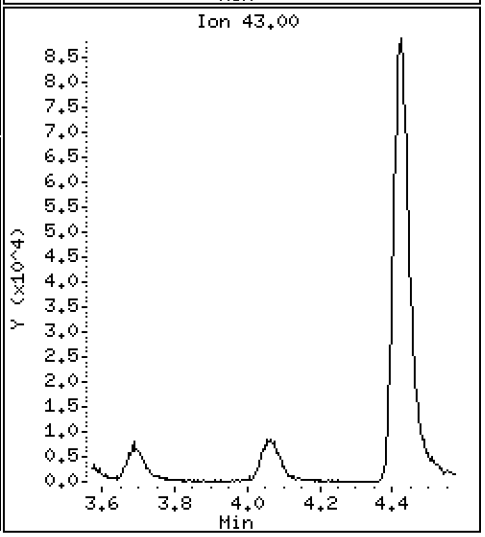


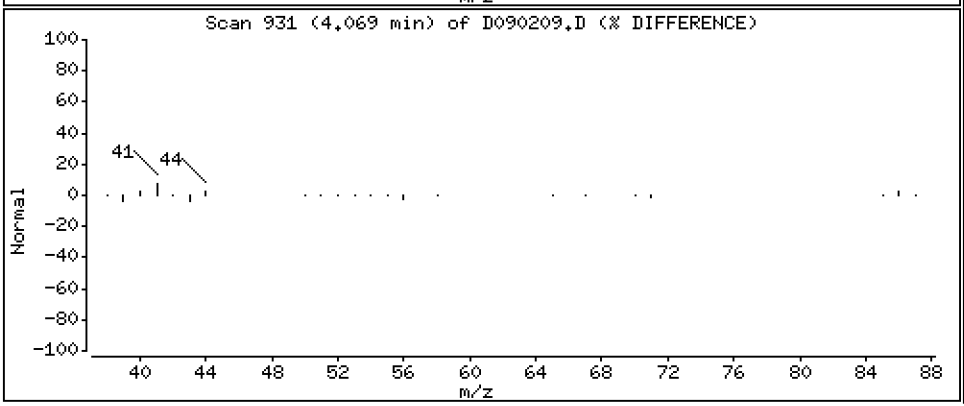












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Date : 02-SEP-2018 16:42

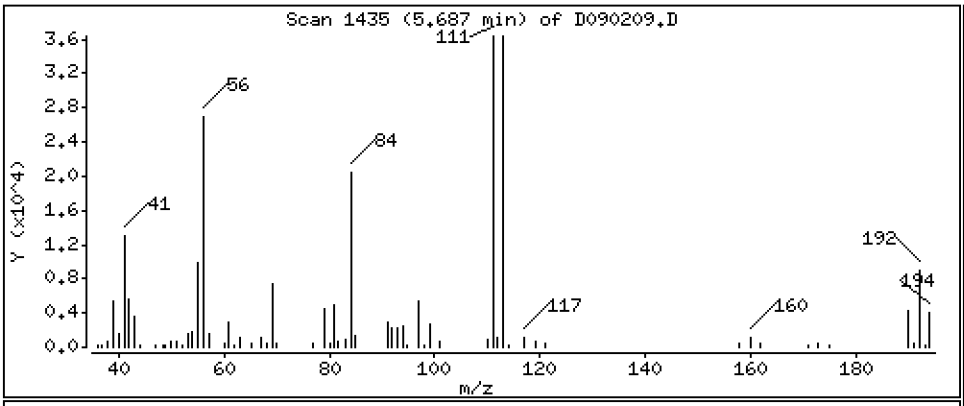
Client ID: HS18081428-01MSD Instrument: VOA2.i

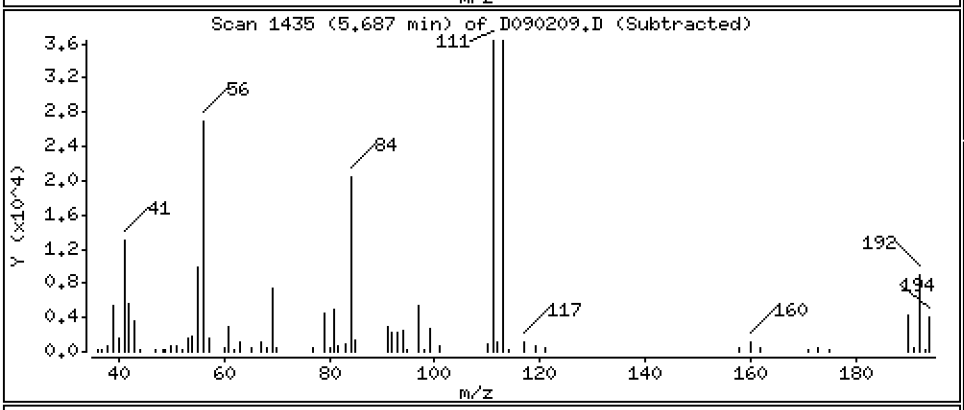
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

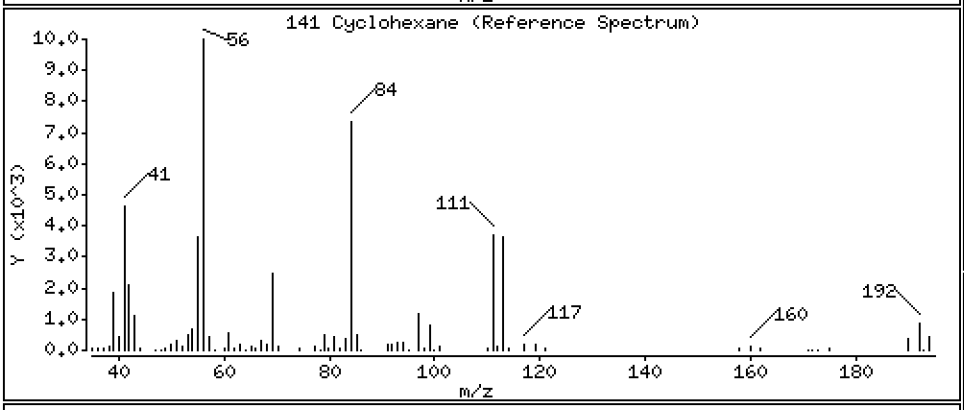
Purge Volume: 5.0 Operator: AP

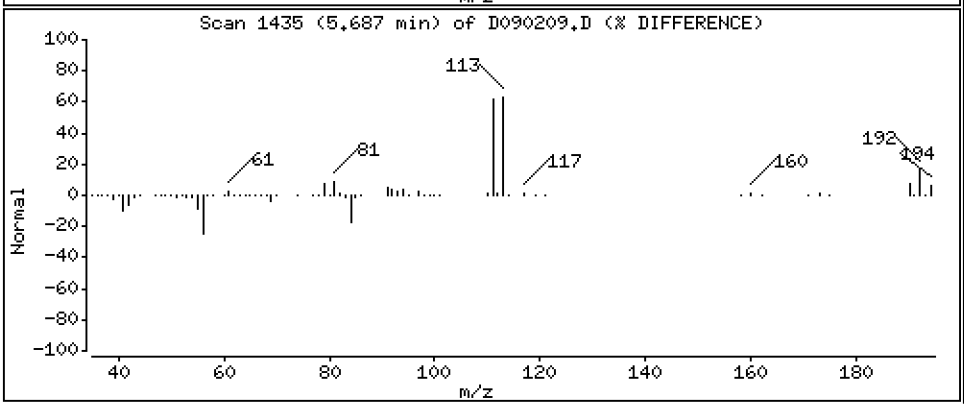
Column phase: DB624 Column diameter: 0.18

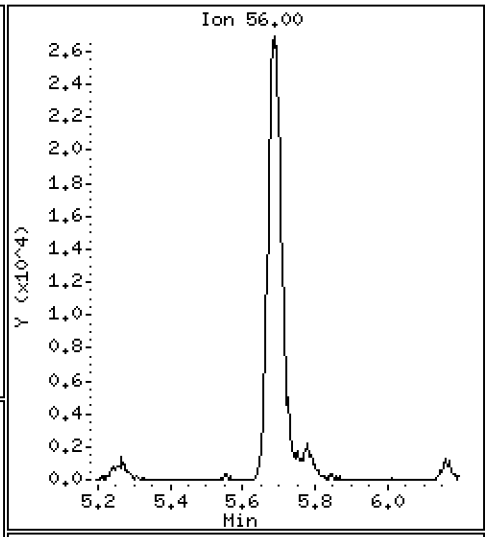
141 Cyclohexane Concentration: 12.90 ug/l Review Code:

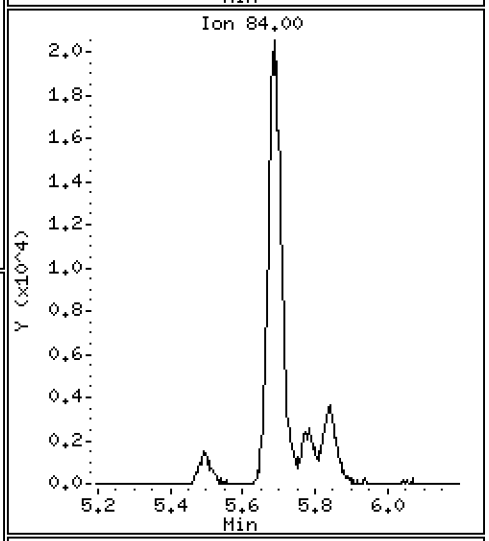


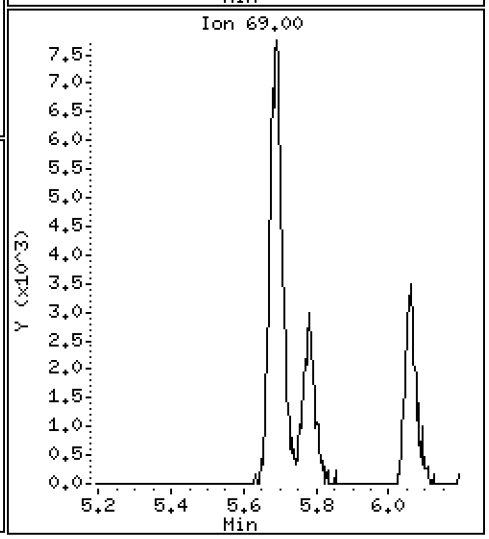












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 94

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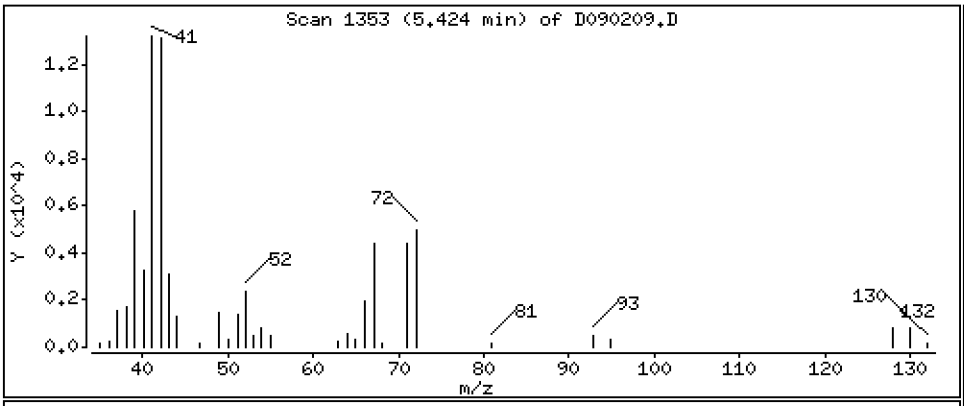
Client ID: HS18081428-01MSD Instrument: VOA2.i

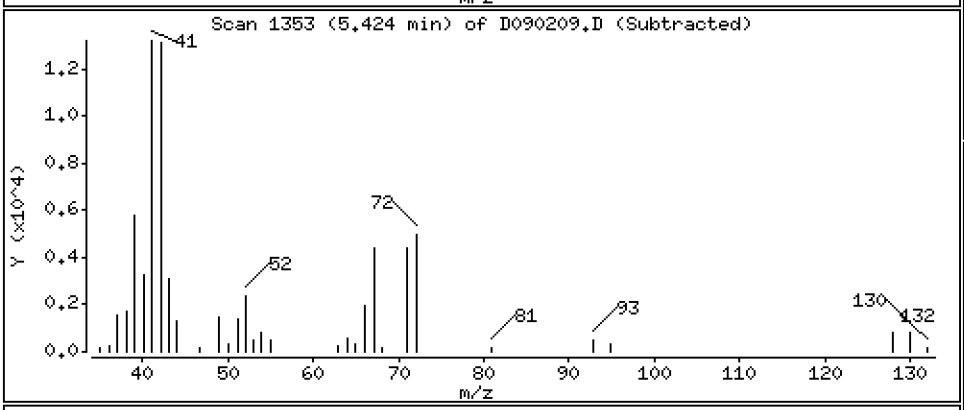
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

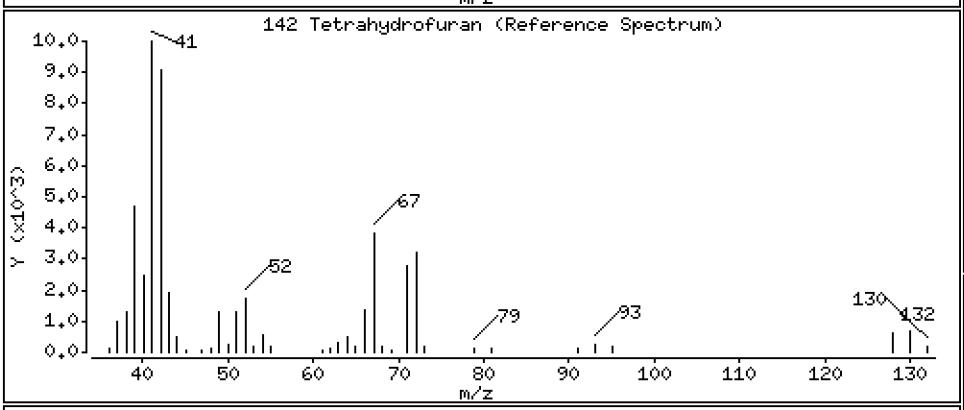
Purge Volume: 5.0 Operator: AP

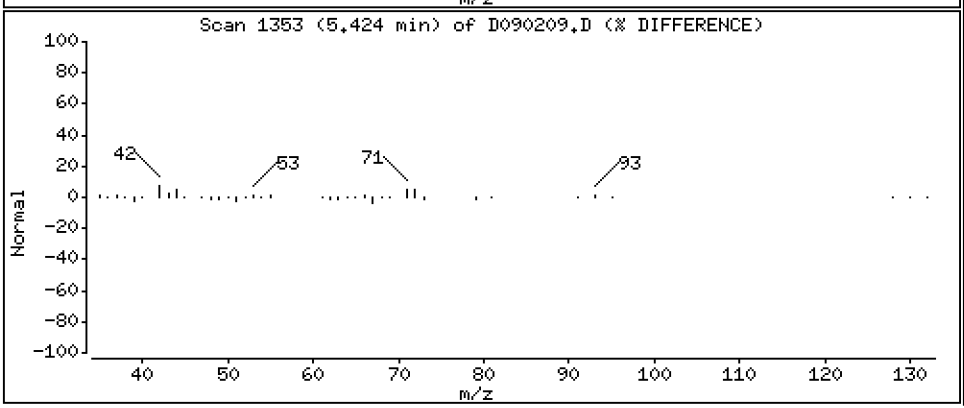
Column phase: DB624 Column diameter: 0.18

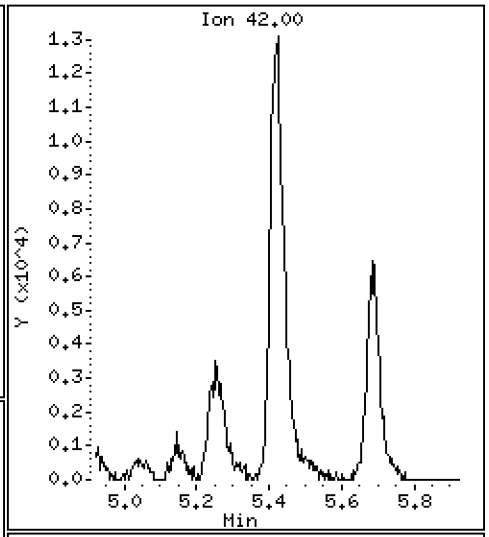
142 Tetrahydrofuran Concentration: 29.46 ug/l Review Code:

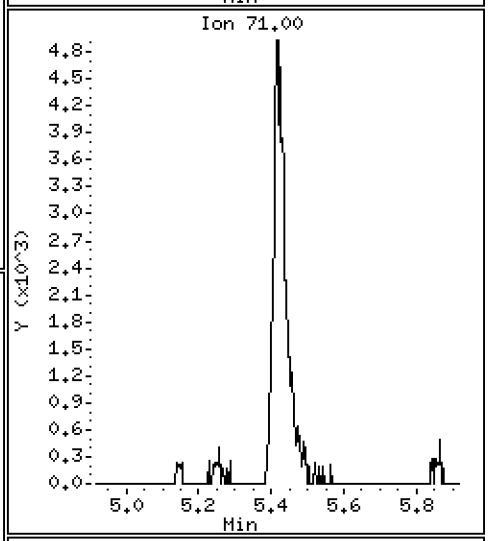


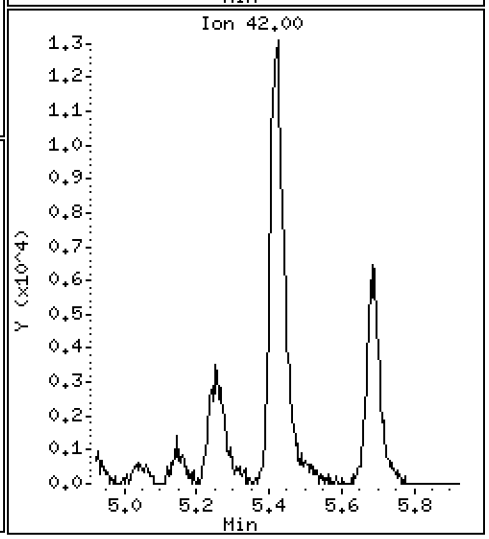












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 95

Date : 02-SEP-2018 16:42

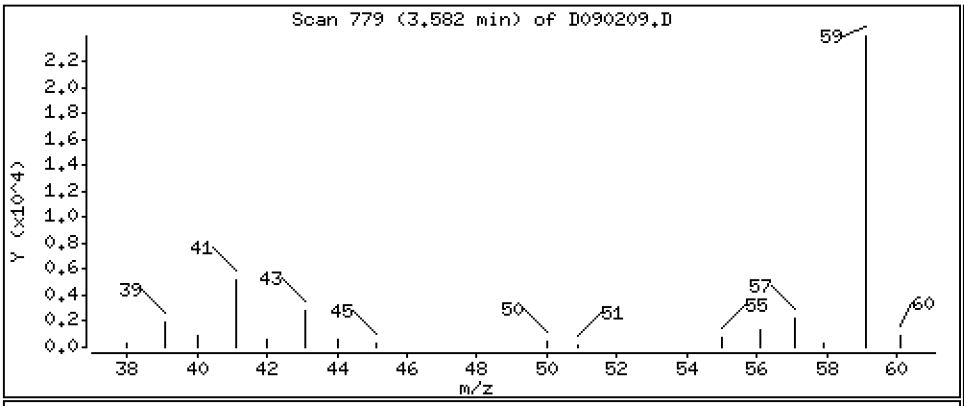
Client ID: HS18081428-01MSD Instrument: VOA2.i

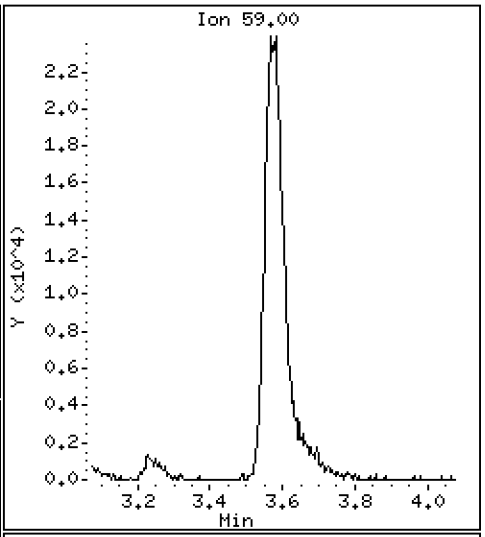
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

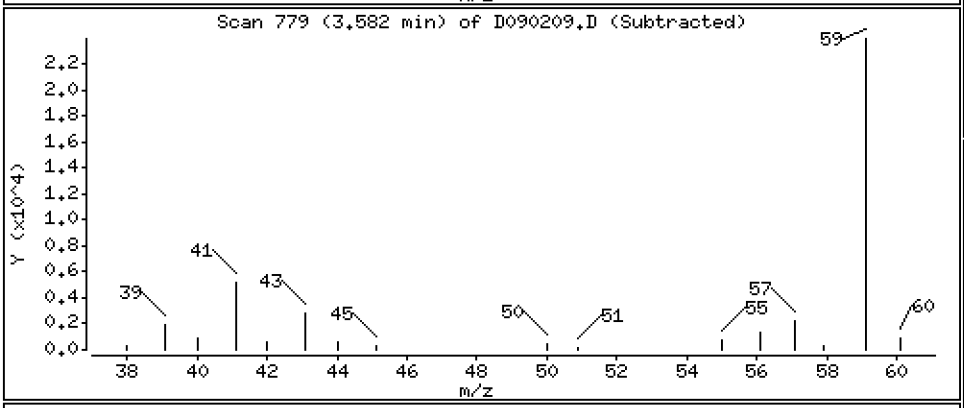
Purge Volume: 5.0 Operator: AP

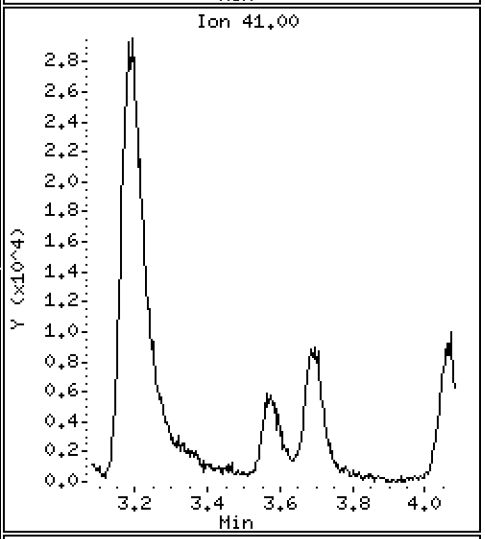
Column phase: DB624 Column diameter: 0.18

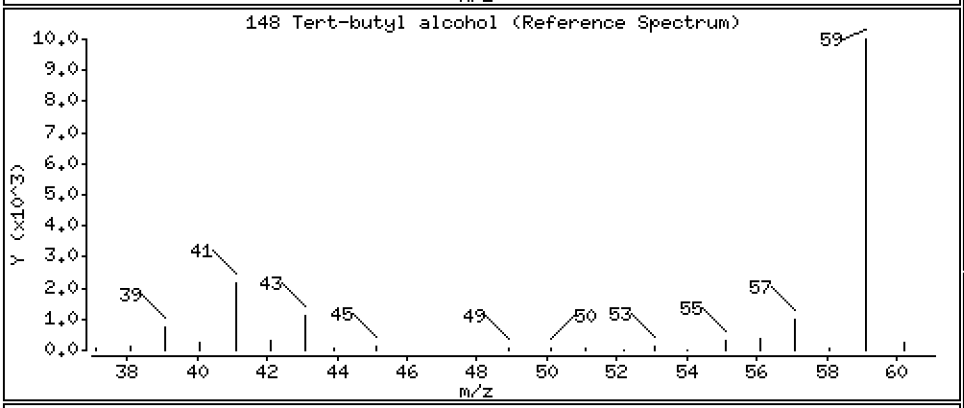
148 Tert-butyl alcohol Concentration: 252.19 ug/l Review Code:

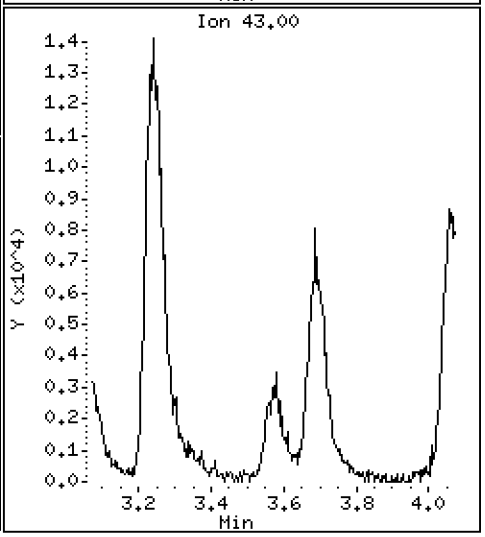


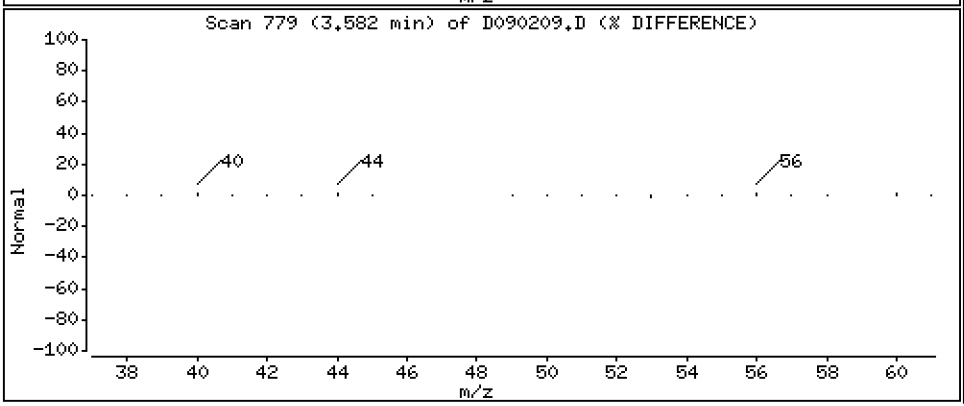












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 96

Date : 02-SEP-2018 16:42

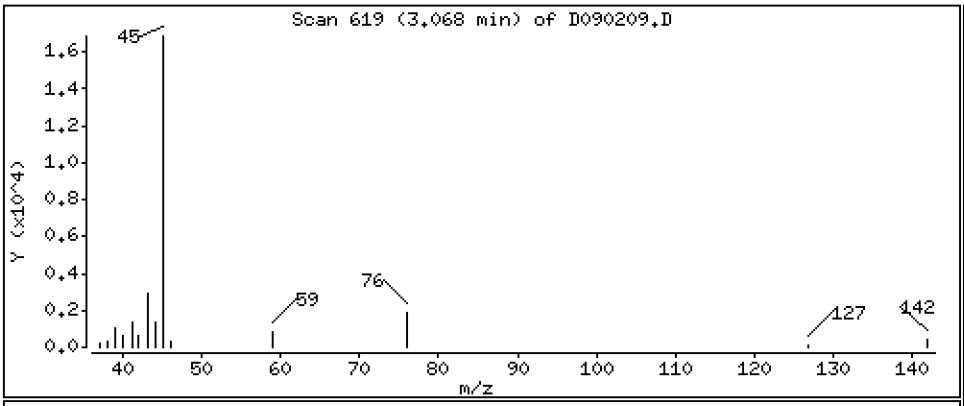
Client ID: HS18081428-01MSD Instrument: VOA2.i

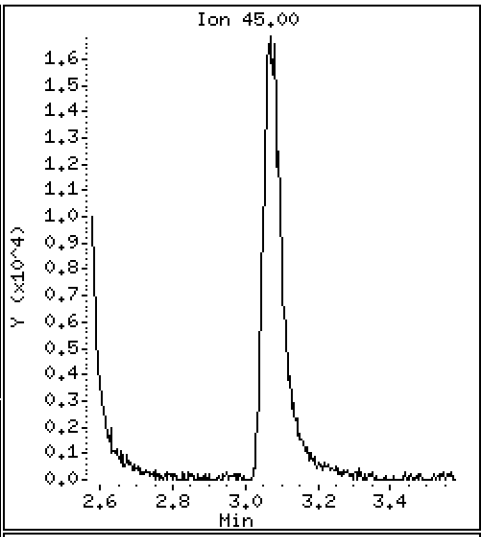
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

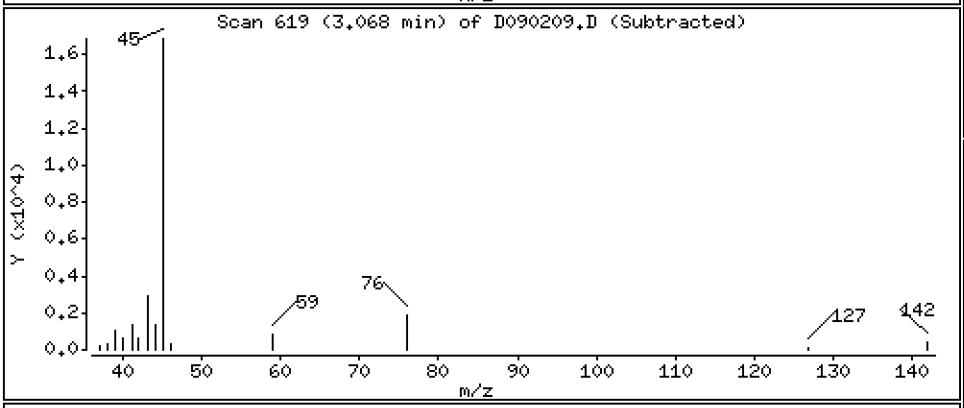
Purge Volume: 5.0 Operator: AP

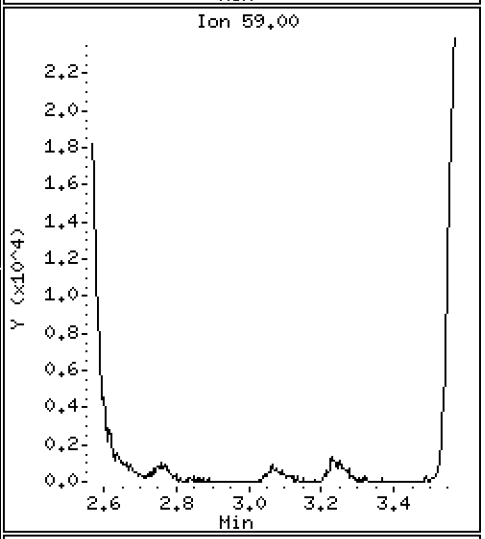
Column phase: DB624 Column diameter: 0.18

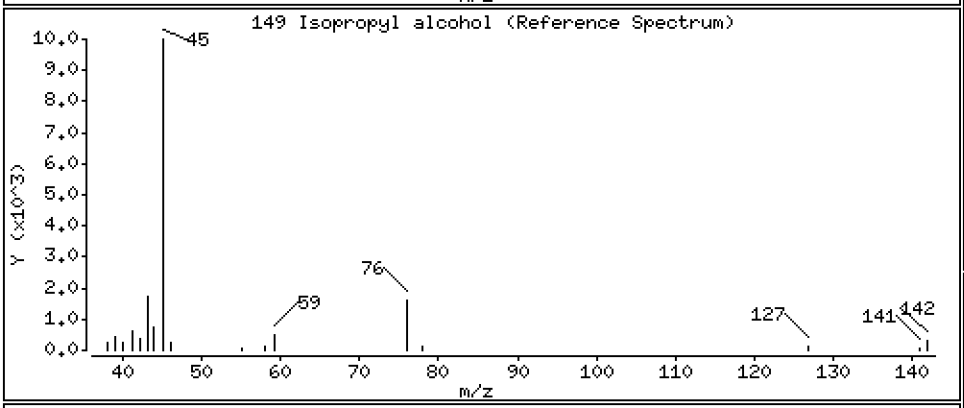
149 Isopropyl alcohol Concentration: 299.62 ug/l Review Code:

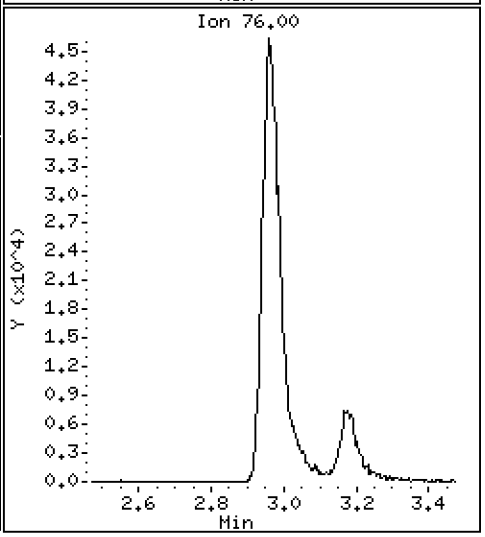


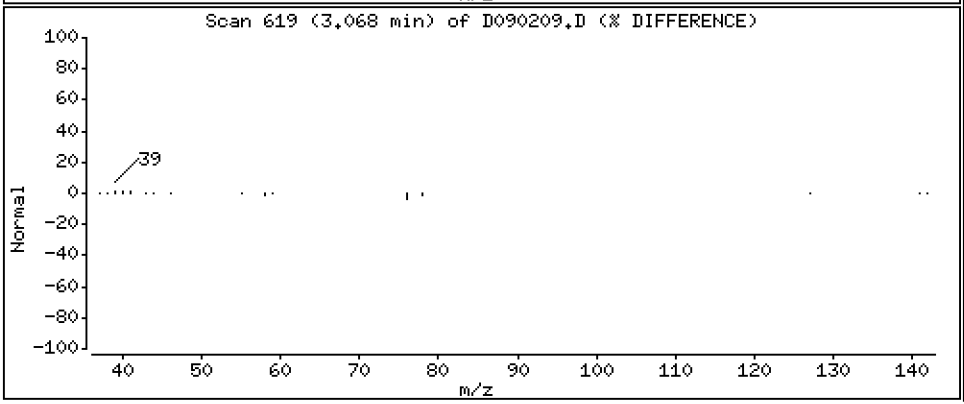












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Date : 02-SEP-2018 16:42

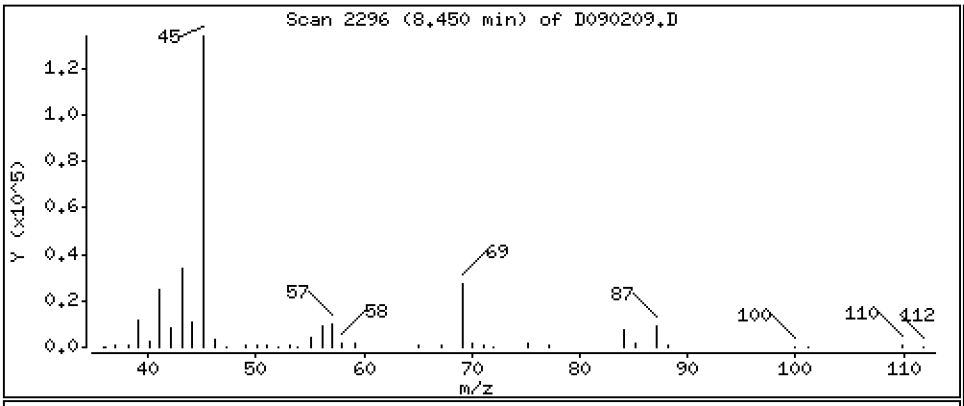
Client ID: HS18081428-01MSD Instrument: VOA2.i

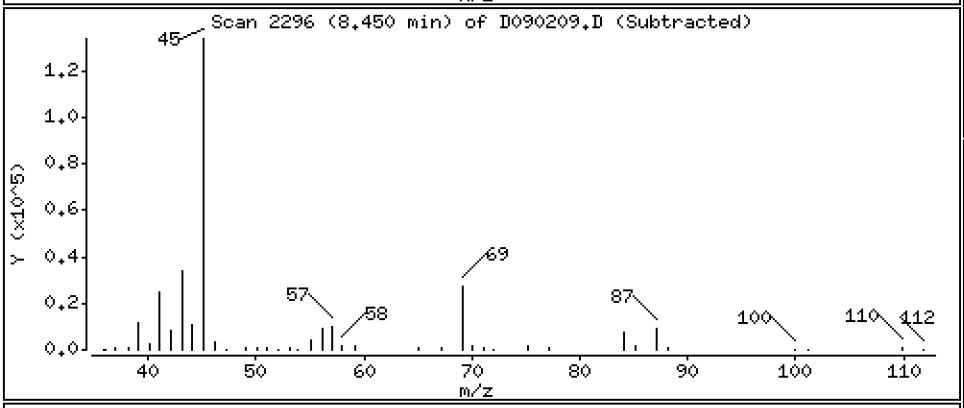
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

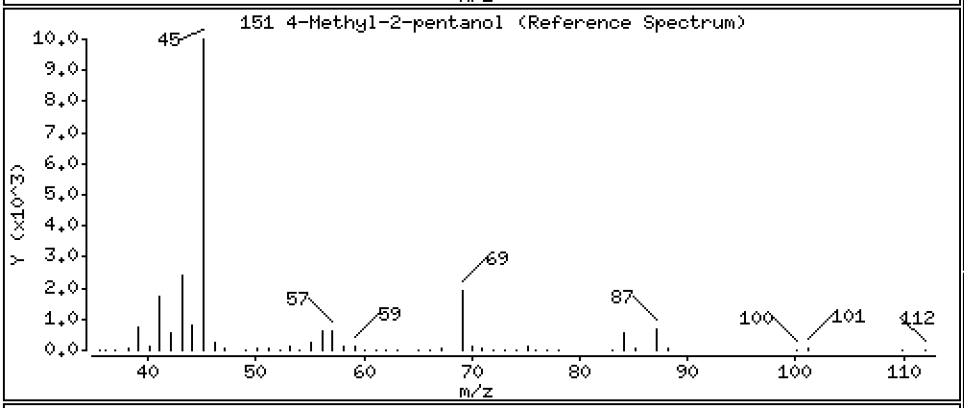
Purge Volume: 5.0 Operator: AP

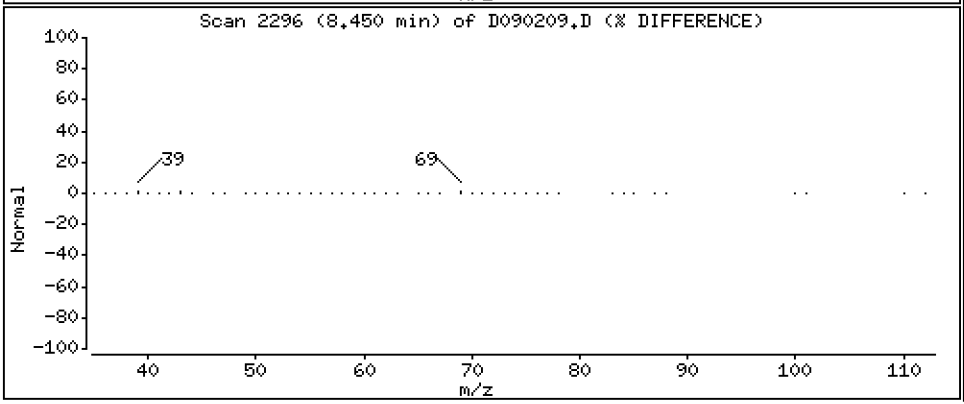
Column phase: DB624 Column diameter: 0.18

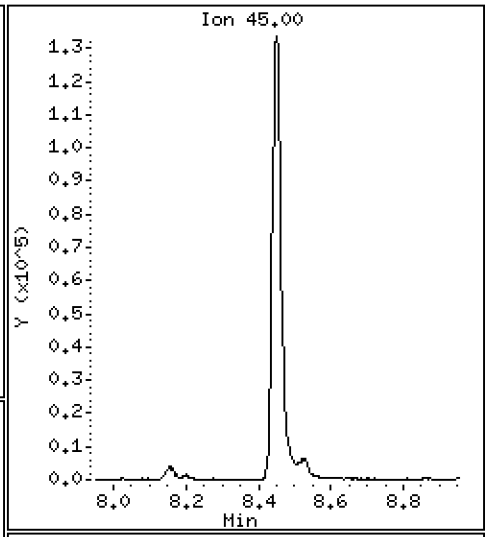
151 4-Methyl-2-pentanol Concentration: 327.00 ug/l Review Code:

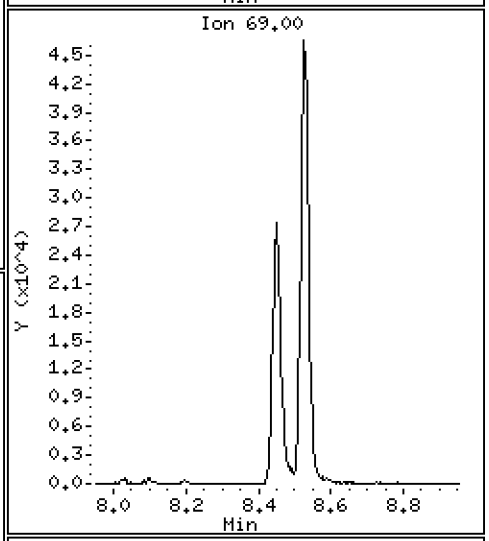


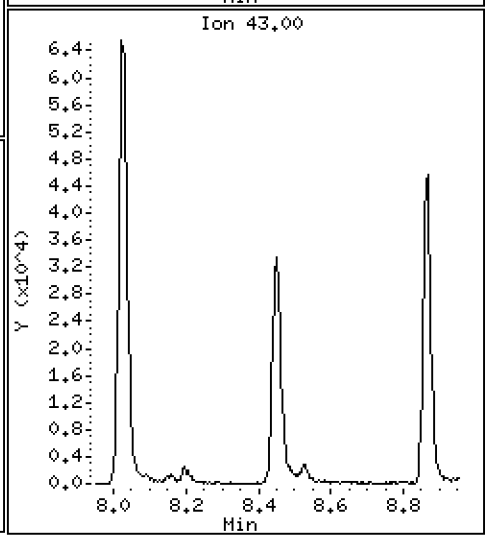












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Date : 02-SEP-2018 16:42

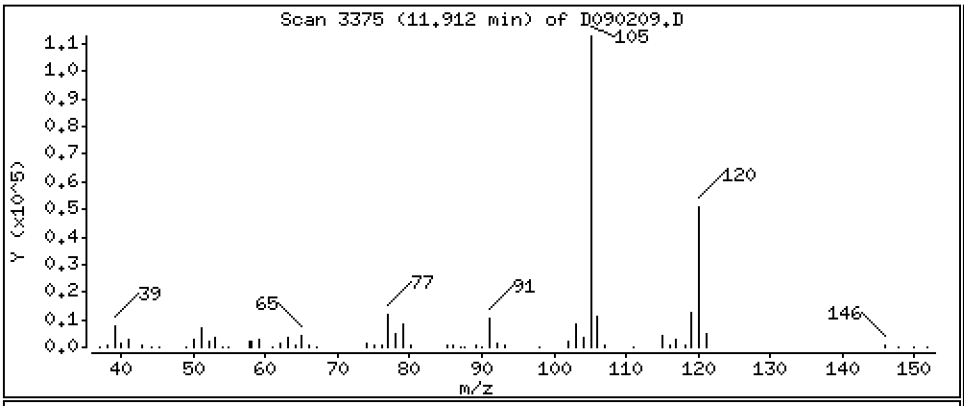
Client ID: HS18081428-01MSD Instrument: VOA2.i

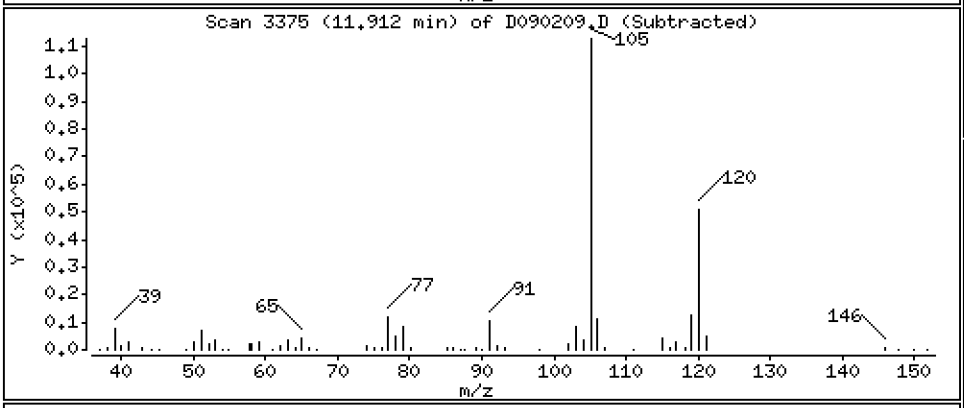
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

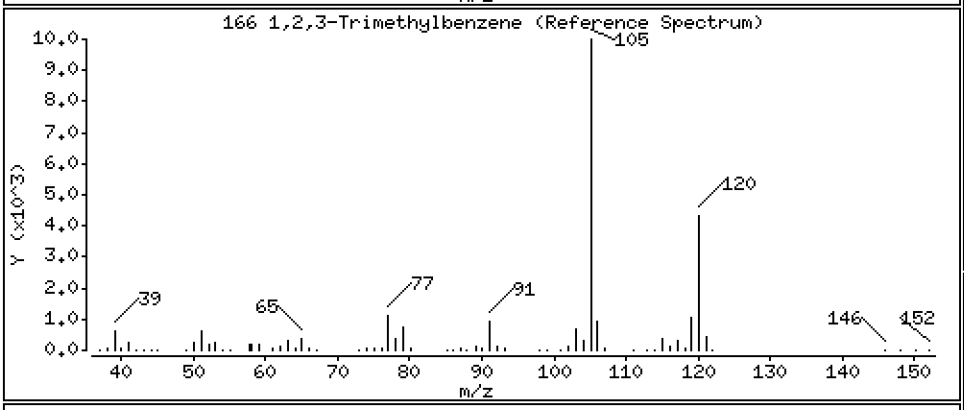
Purge Volume: 5.0 Operator: AP

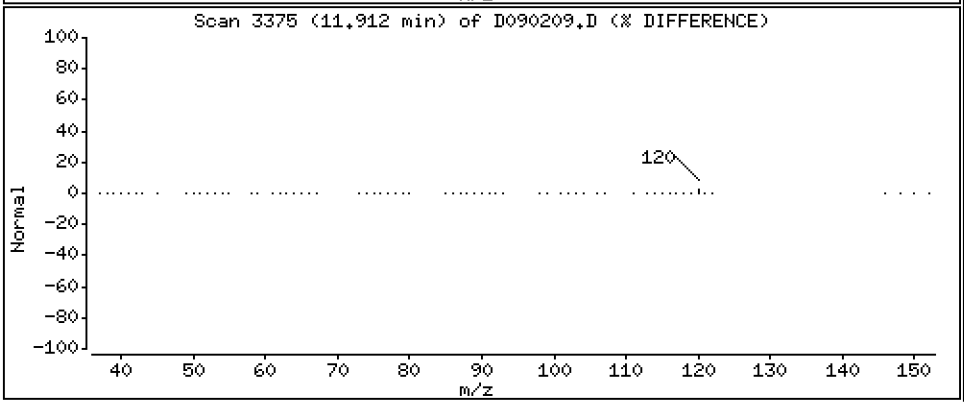
Column phase: DB624 Column diameter: 0.18

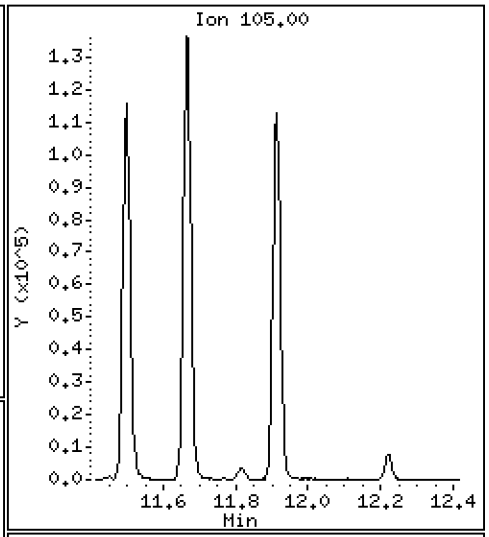
166 1,2,3-Trimethylbenzene Concentration: 16.73 ug/l Review Code:

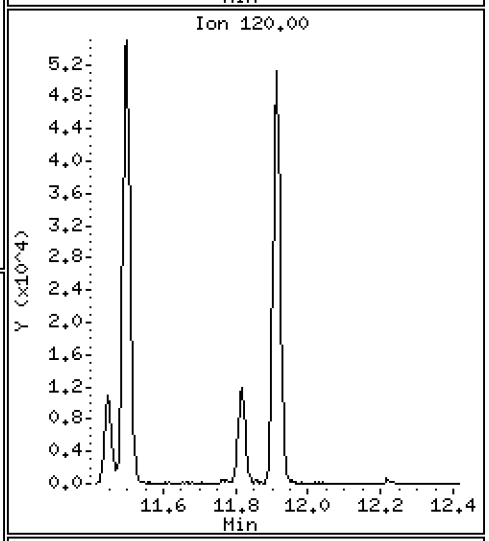


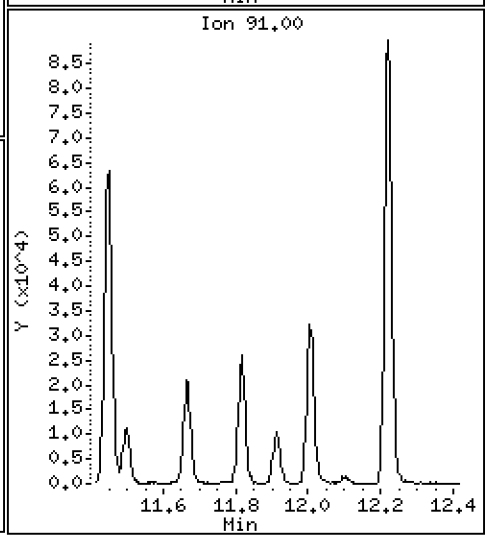












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 99

Date : 02-SEP-2018 16:42

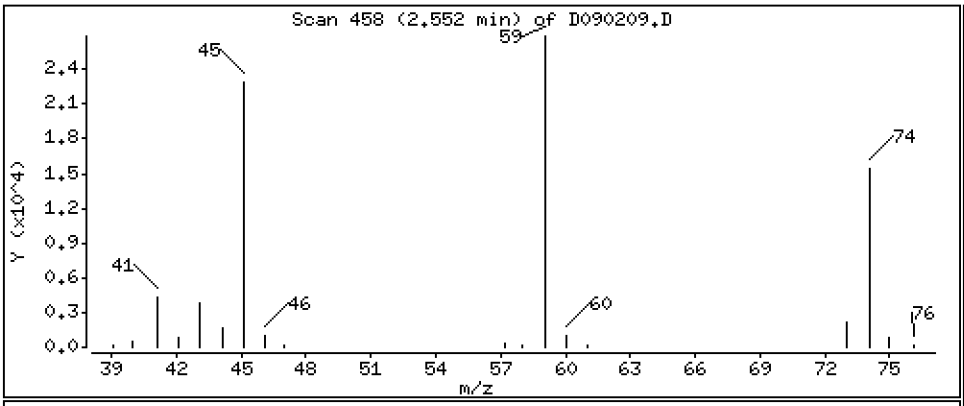
Client ID: HS18081428-01MSD Instrument: VOA2.i

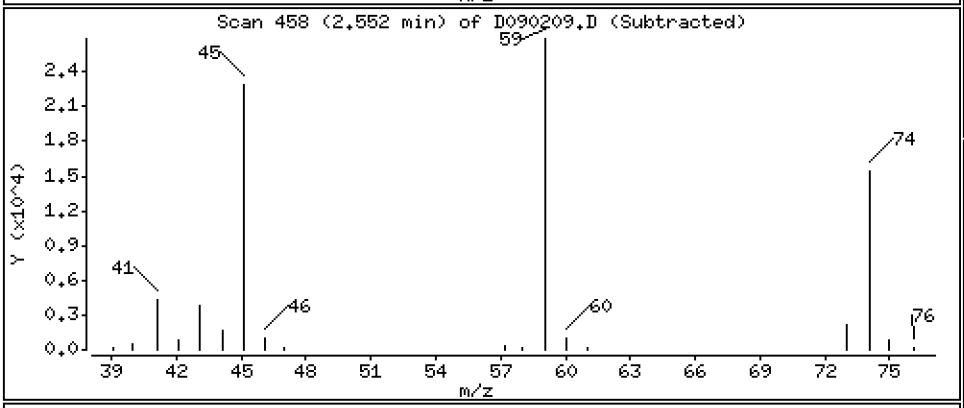
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

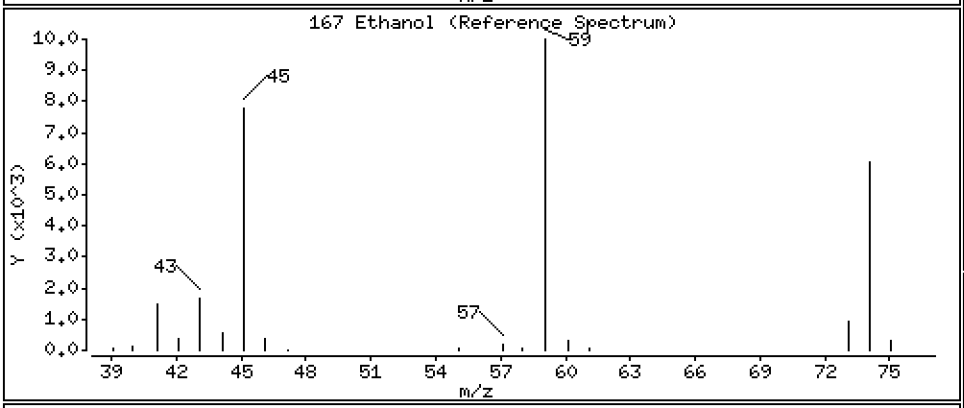
Purge Volume: 5.0 Operator: AP

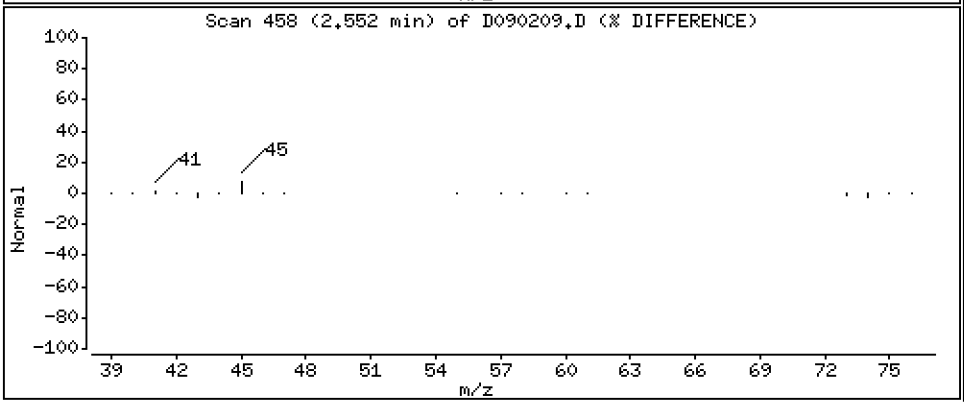
Column phase: DB624 Column diameter: 0.18

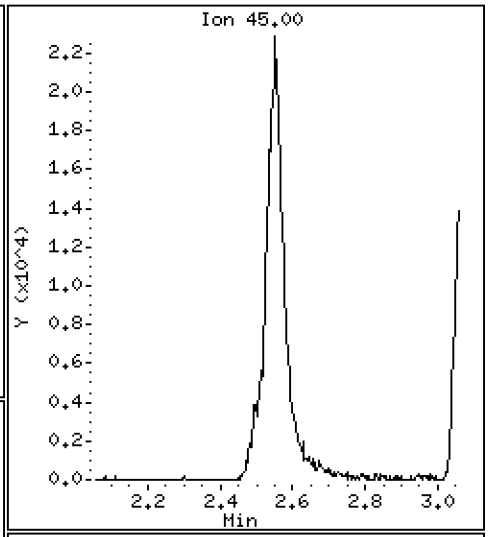
167 Ethanol Concentration: 282.69 ug/l Review Code:

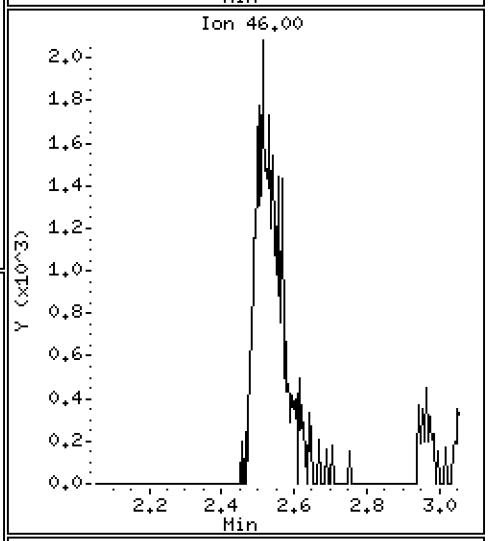


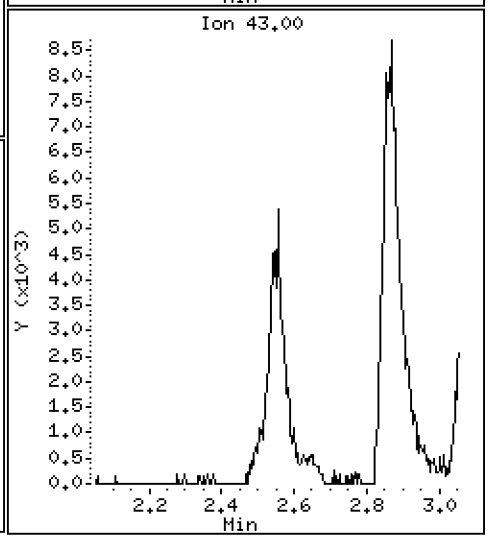












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 100

Date : 02-SEP-2018 16:42

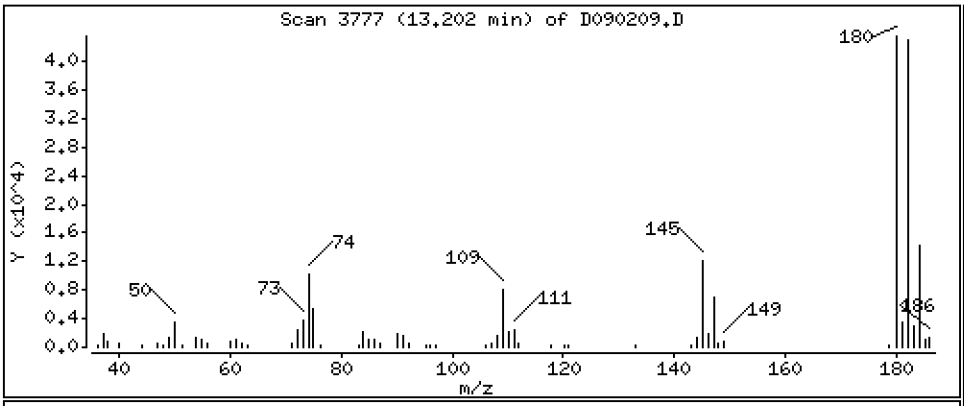
Client ID: HS18081428-01MSD Instrument: VOA2.i

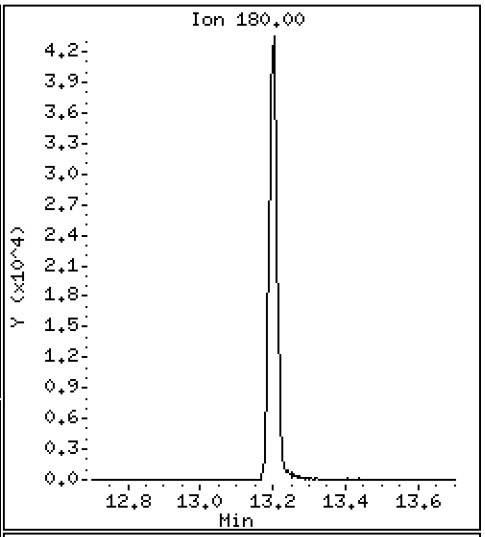
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

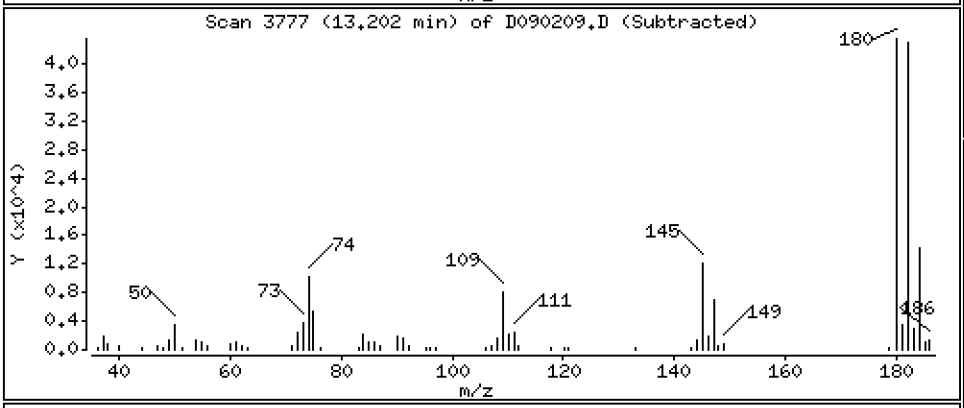
Purge Volume: 5.0 Operator: AP

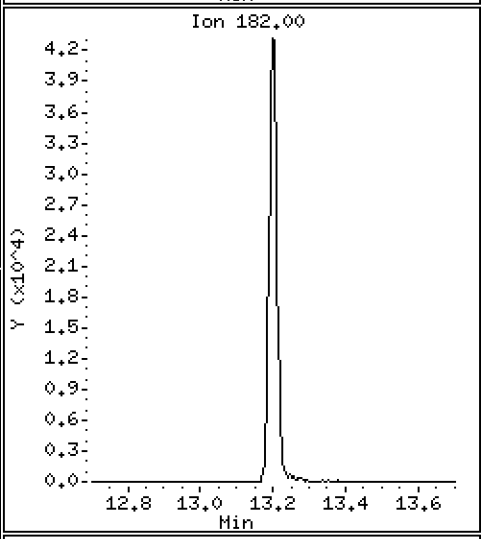
Column phase: DB624 Column diameter: 0.18

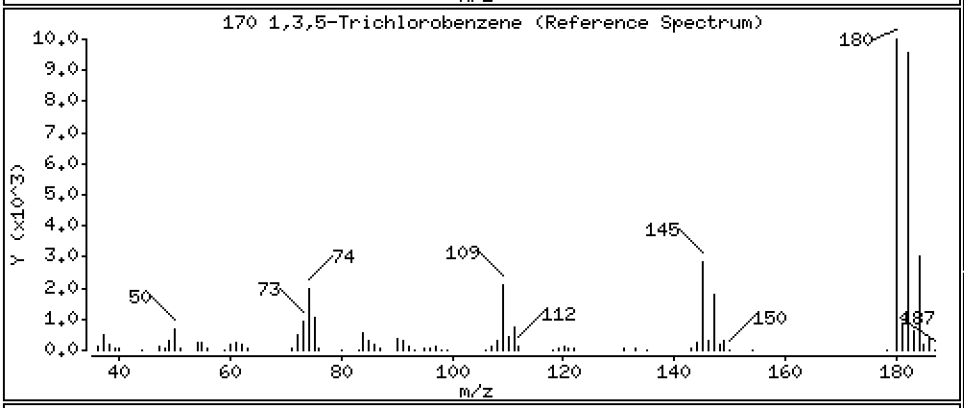
170 1,3,5-Trichlorobenzene Concentration: 16.89 ug/l Review Code:

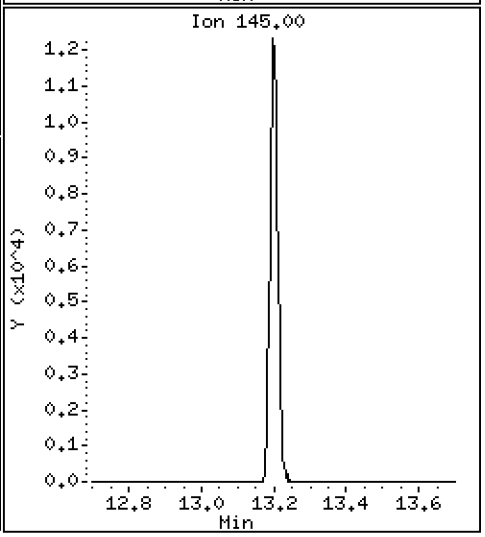


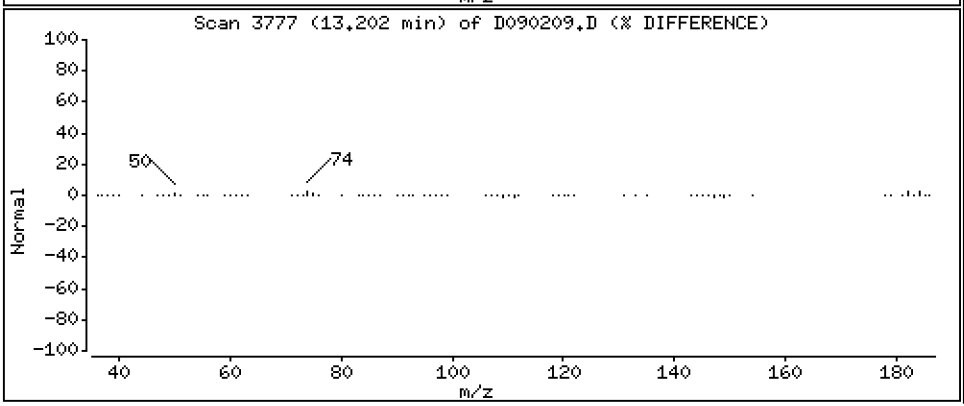












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 101

Date : 02-SEP-2018 16:42

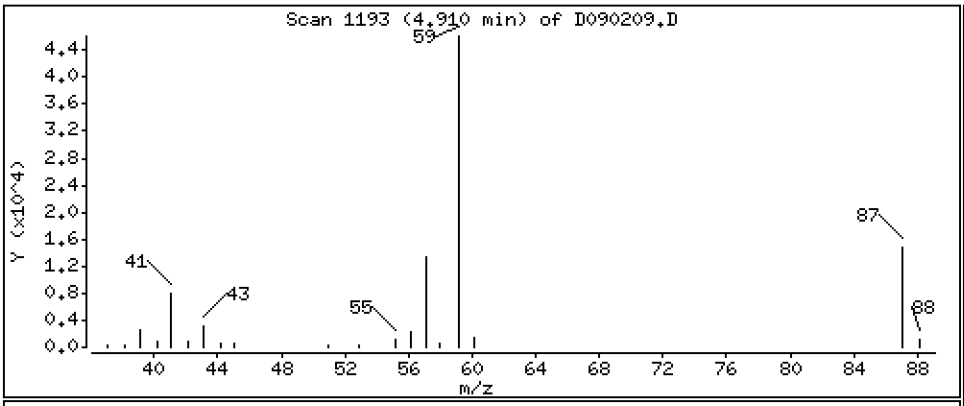
Client ID: HS18081428-01MSD Instrument: VOA2.i

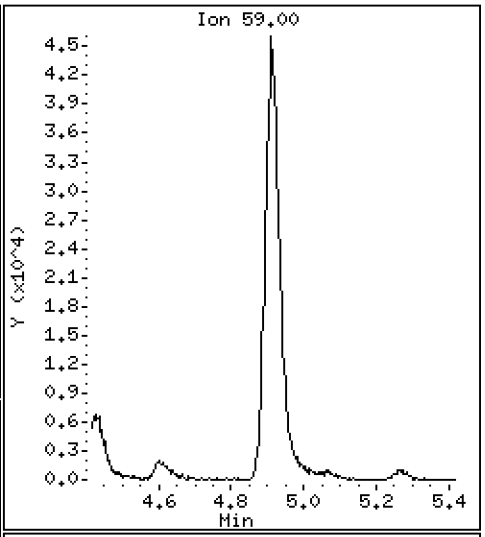
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

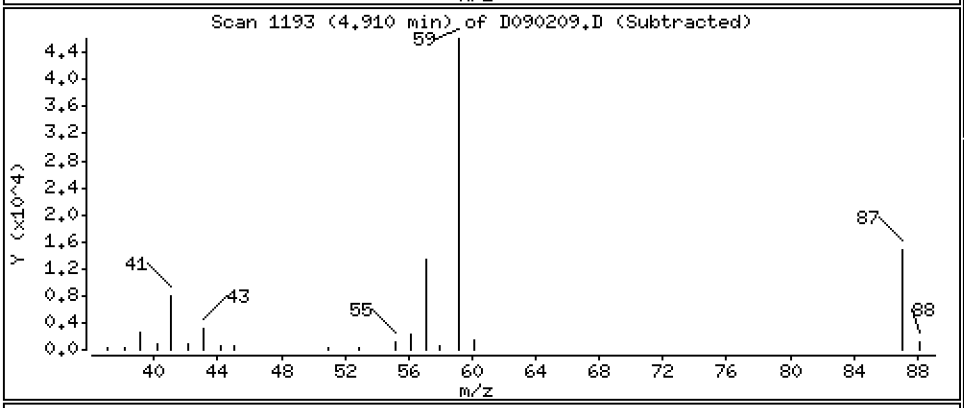
Purge Volume: 5.0 Operator: AP

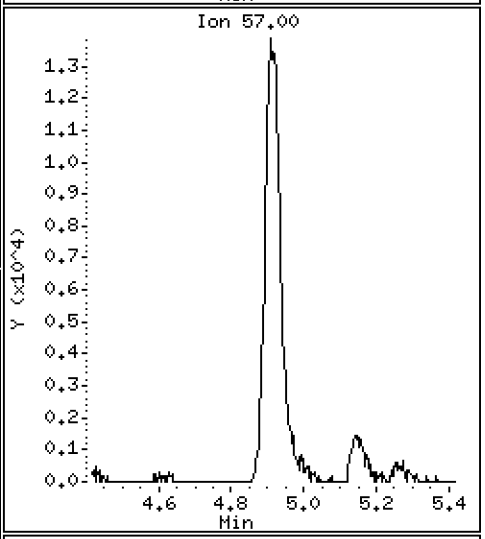
Column phase: DB624 Column diameter: 0.18

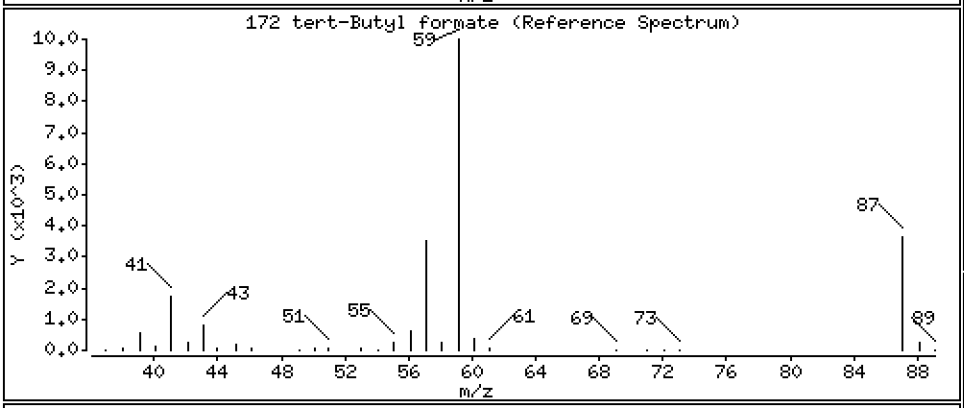
172 tert-Butyl formate Concentration: 32.54 ug/l Review Code:

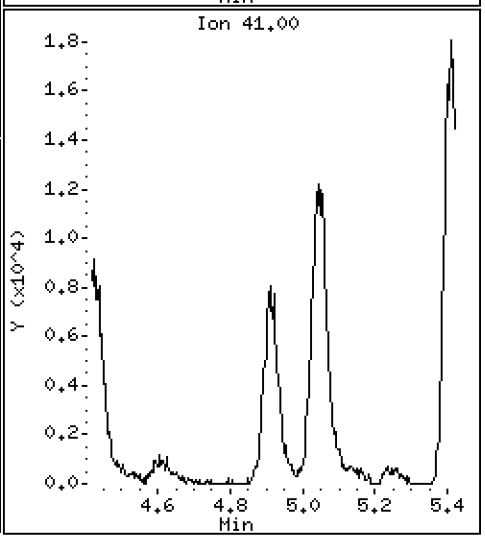


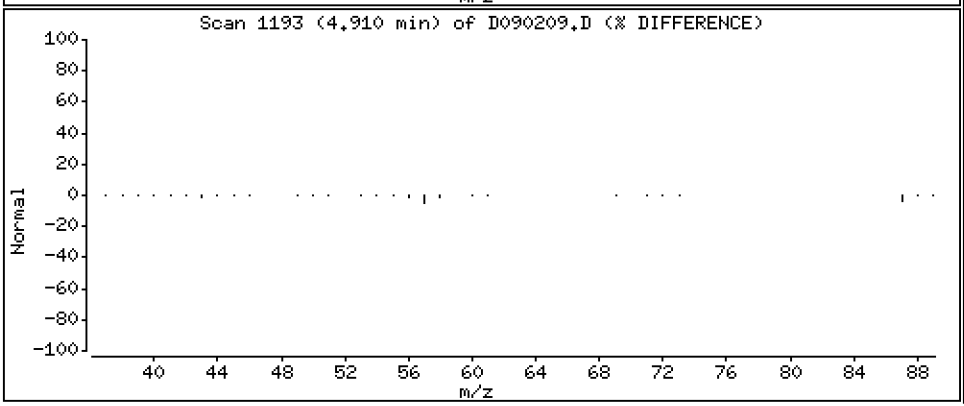












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 102

Date : 02-SEP-2018 16:42

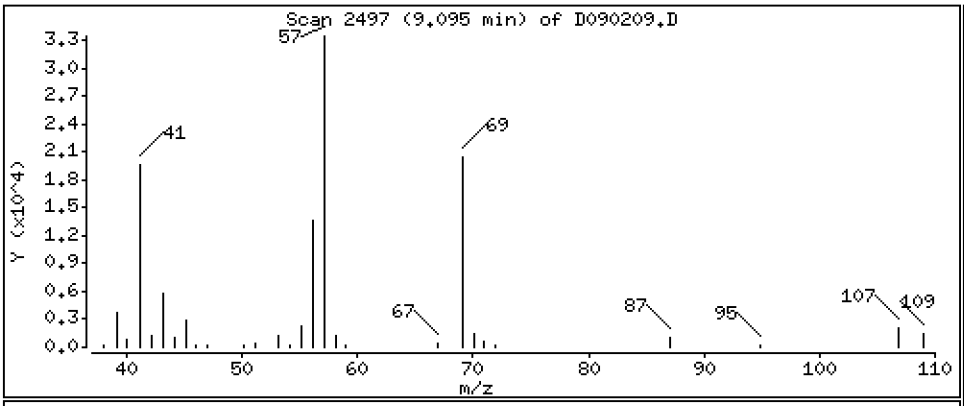
Client ID: HS18081428-01MSD Instrument: VOA2.i

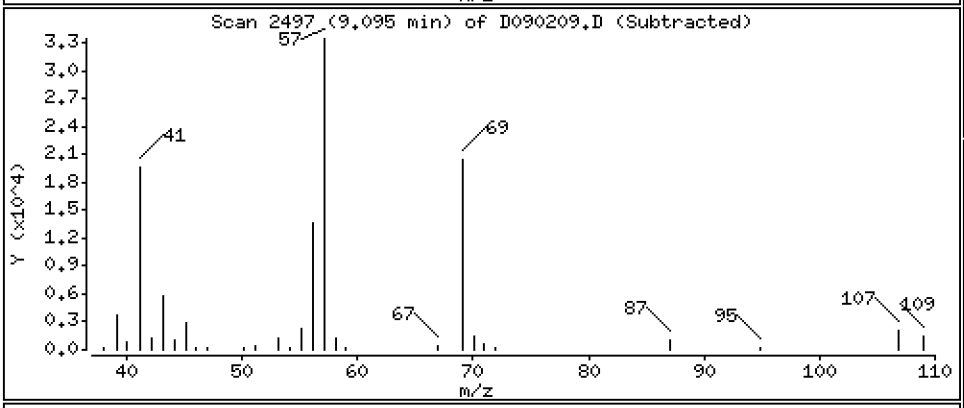
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

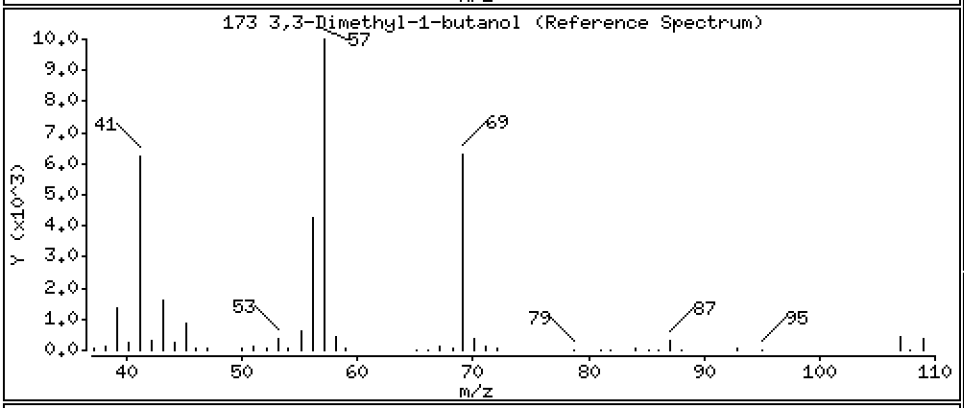
Purge Volume: 5.0 Operator: AP

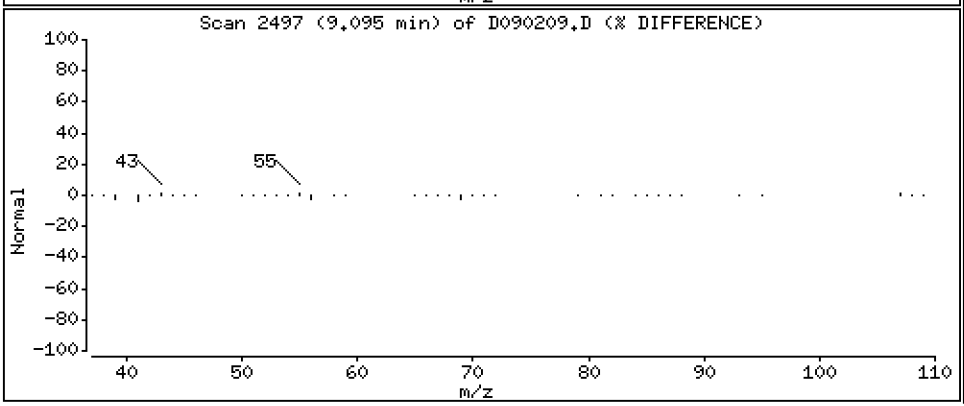
Column phase: DB624 Column diameter: 0.18

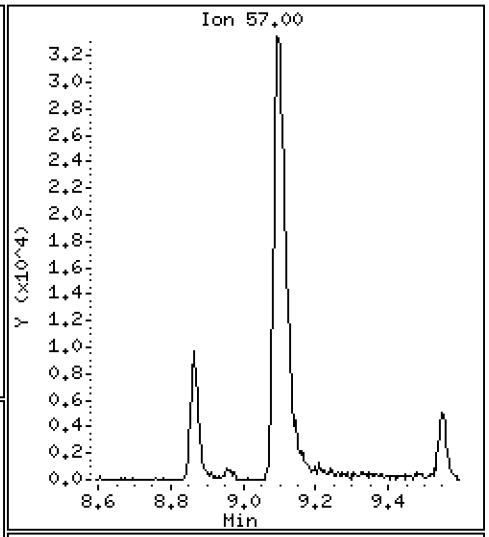
173 3,3-Dimethyl-1-butanol Concentration: 311.58 ug/l Review Code:

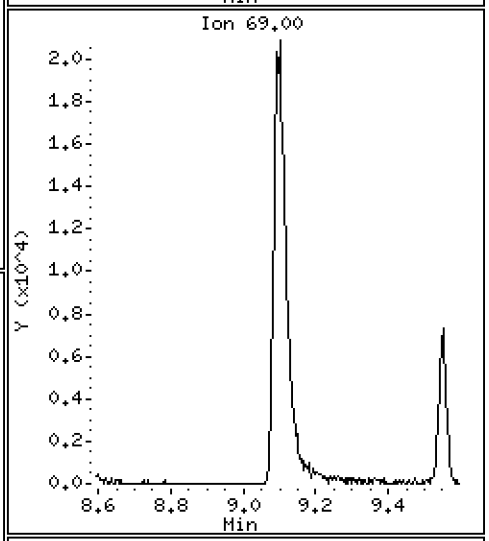


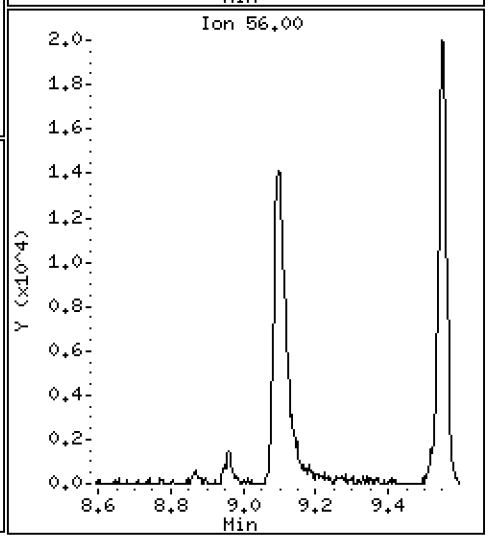












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 103

Date : 02-SEP-2018 16:42

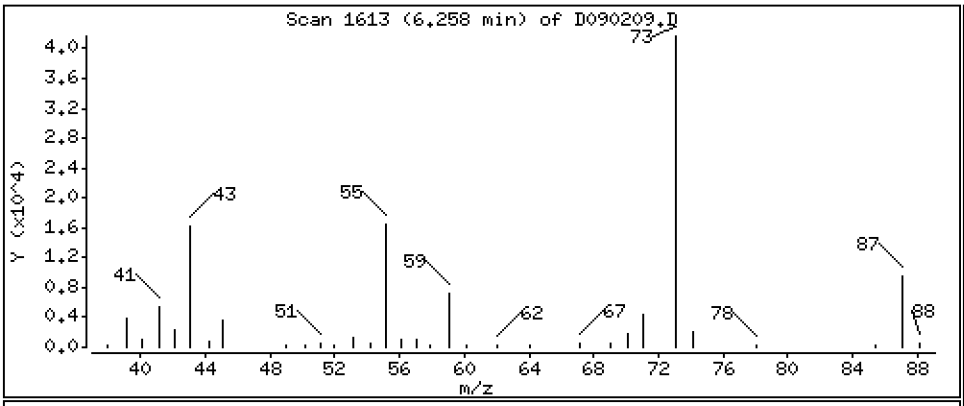
Client ID: HS18081428-01MSD Instrument: VOA2.i

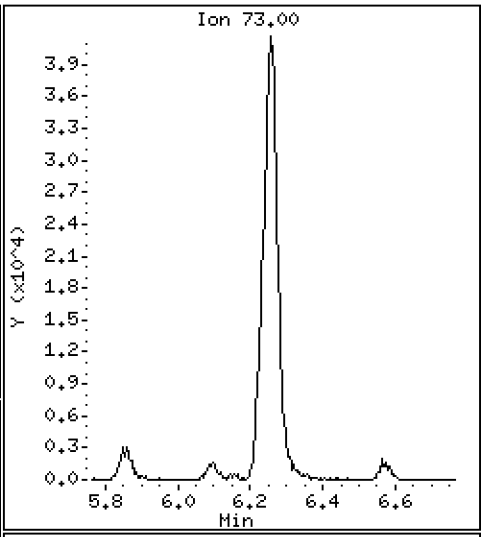
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

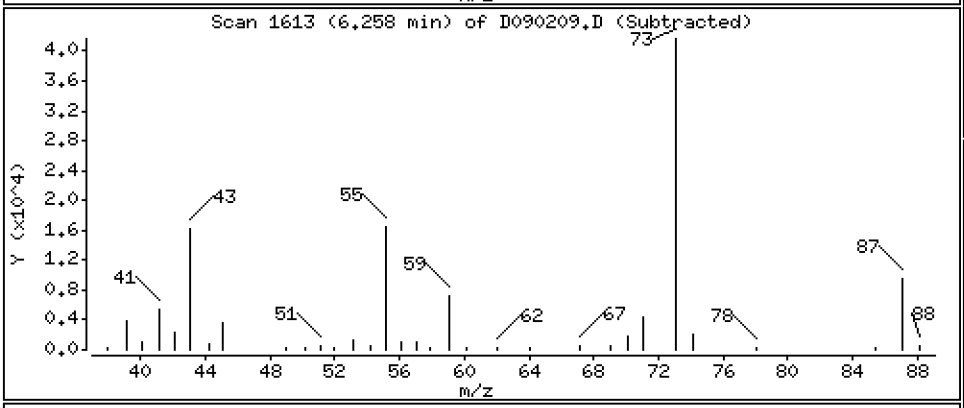
Purge Volume: 5.0 Operator: AP

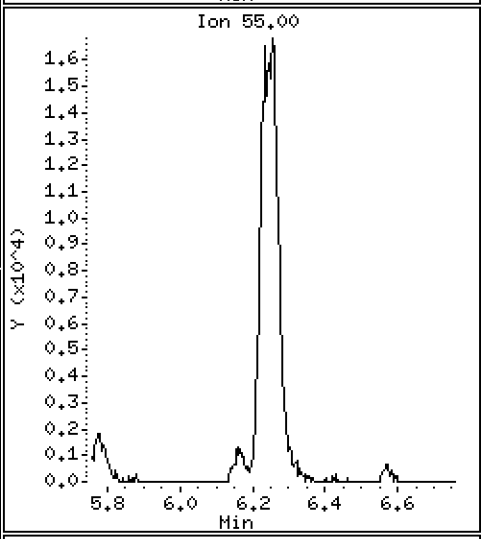
Column phase: DB624 Column diameter: 0.18

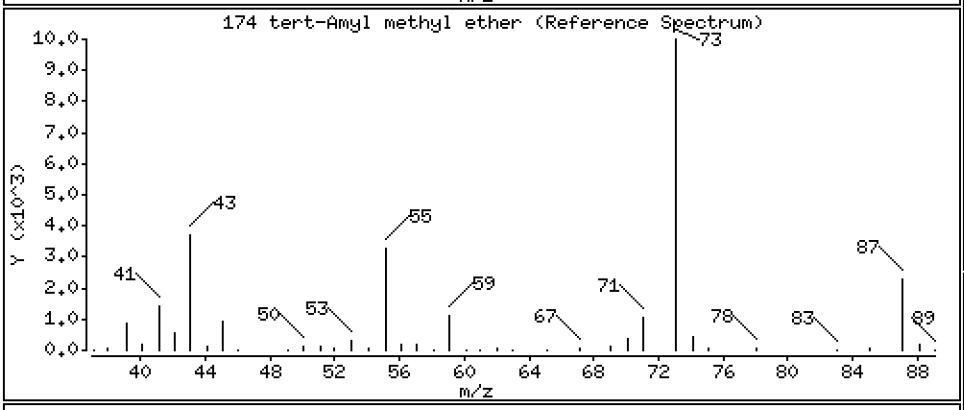
174 tert-Amyl methyl ether Concentration: 15.01 ug/l Review Code:

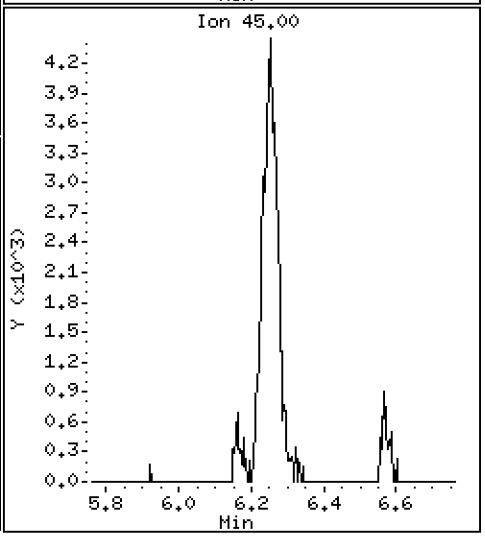


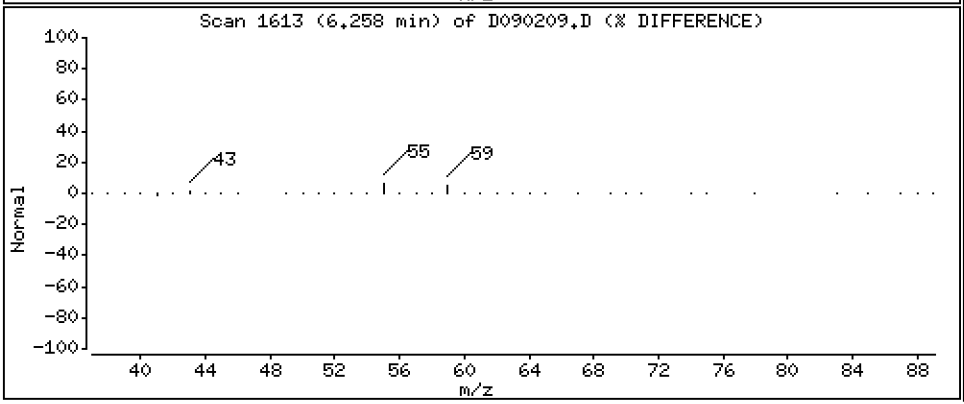












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 104

Date : 02-SEP-2018 16:42

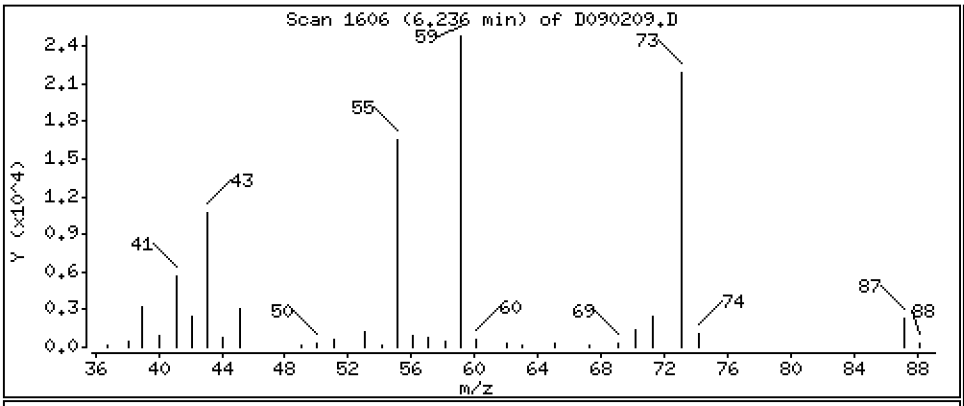
Client ID: HS18081428-01MSD Instrument: VOA2.i

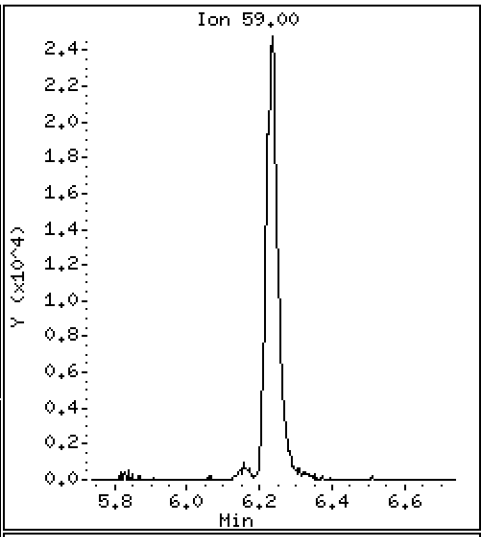
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

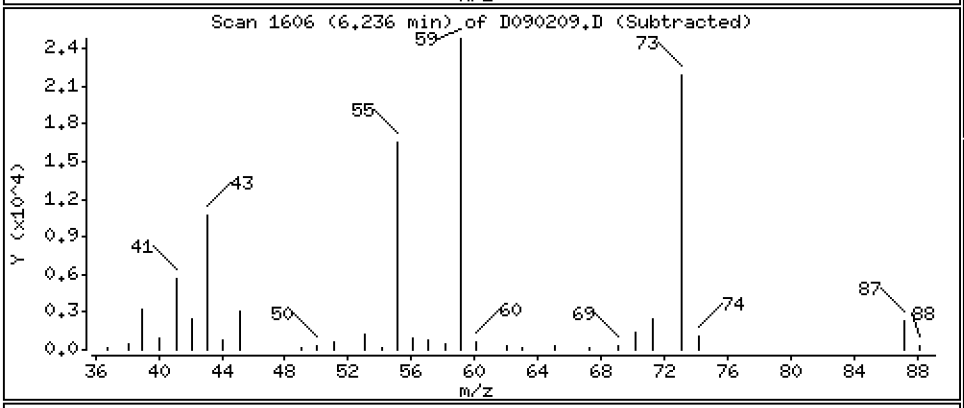
Purge Volume: 5.0 Operator: AP

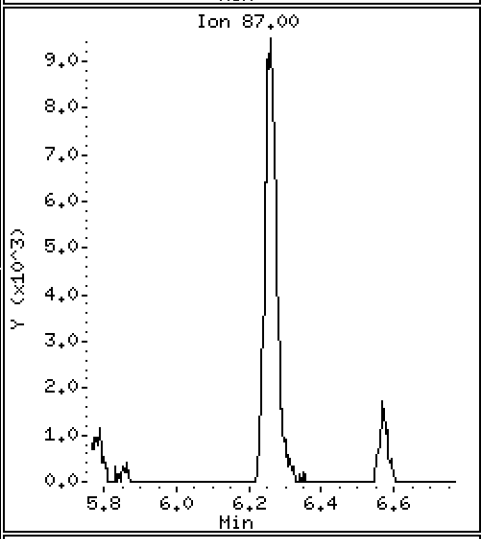
Column phase: DB624 Column diameter: 0.18

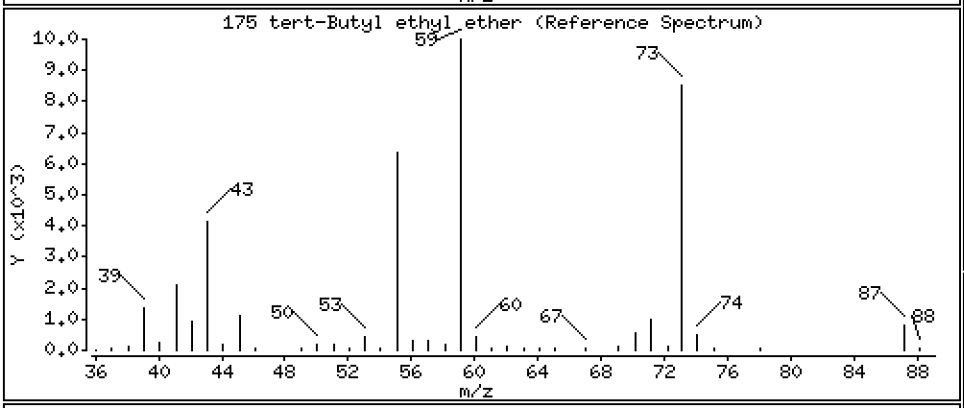
175 tert-Butyl ethyl ether Concentration: 13.26 ug/l Review Code:

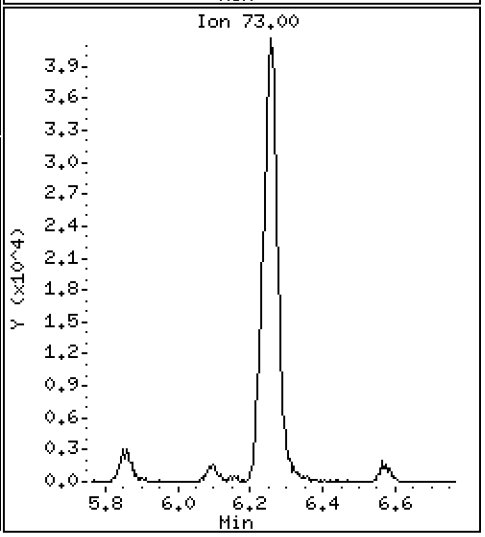


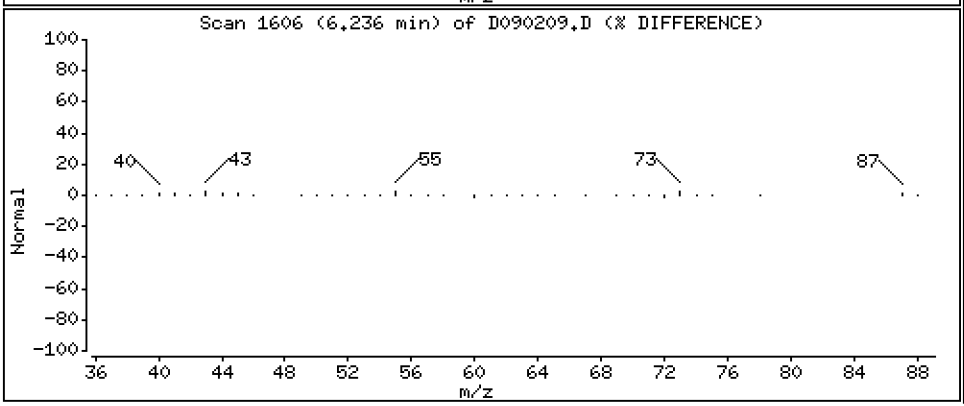












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 105

Date : 02-SEP-2018 16:42

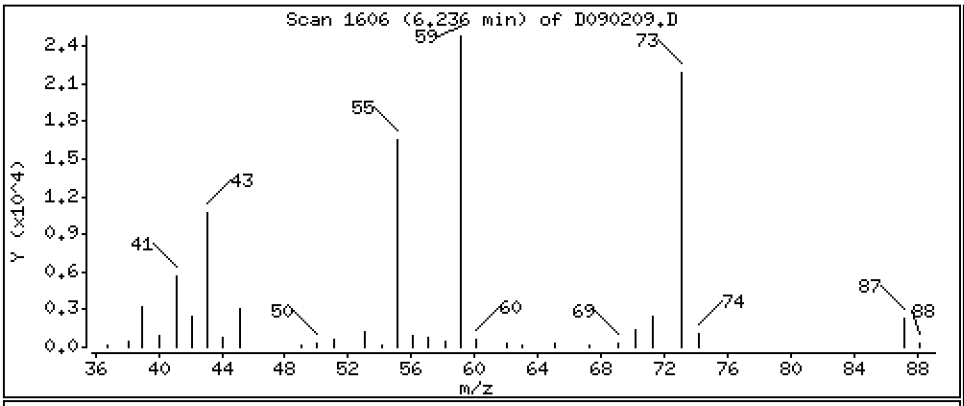
Client ID: HS18081428-01MSD Instrument: VOA2.i

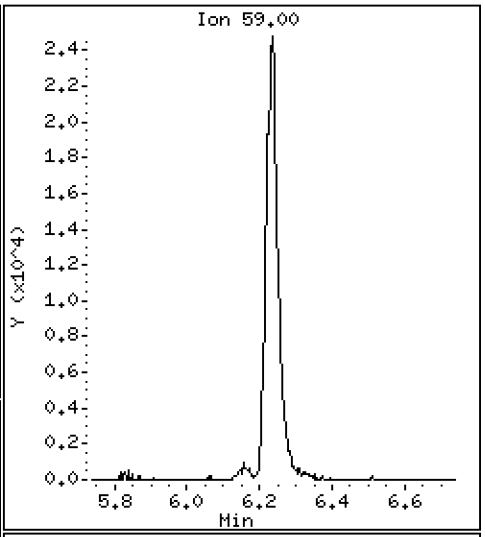
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

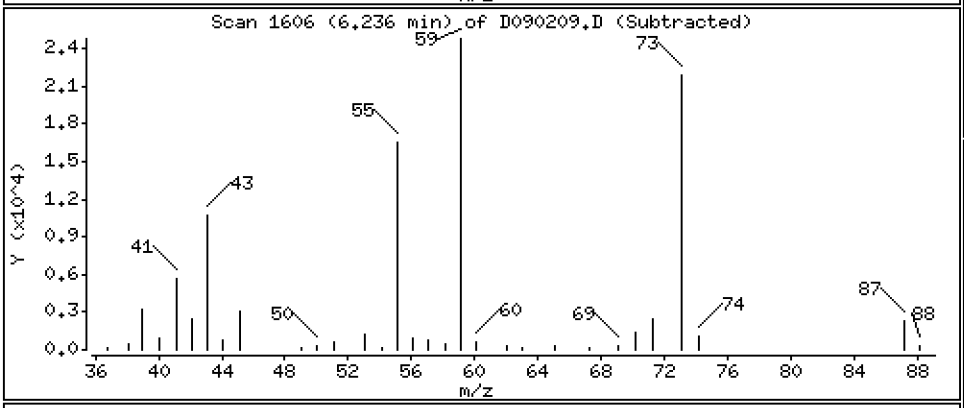
Purge Volume: 5.0 Operator: AP

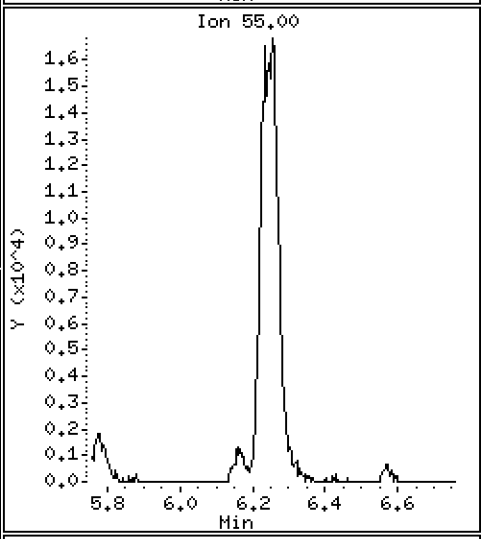
Column phase: DB624 Column diameter: 0.18

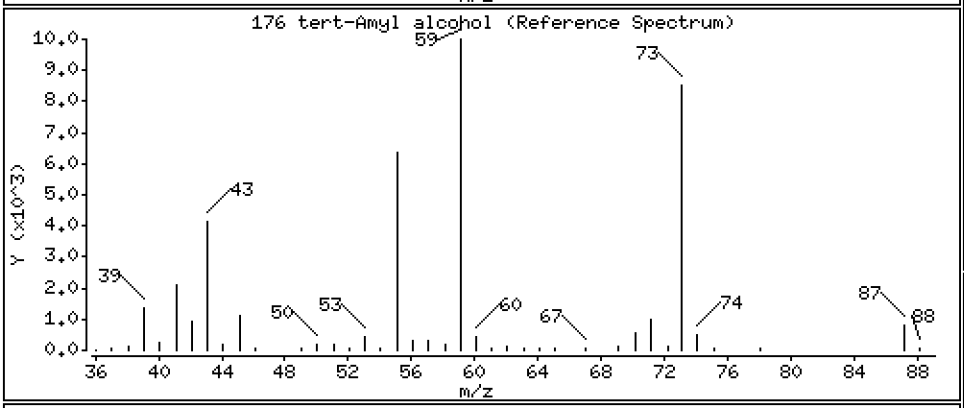
176 tert-Amyl alcohol Concentration: 265.37 ug/l Review Code:

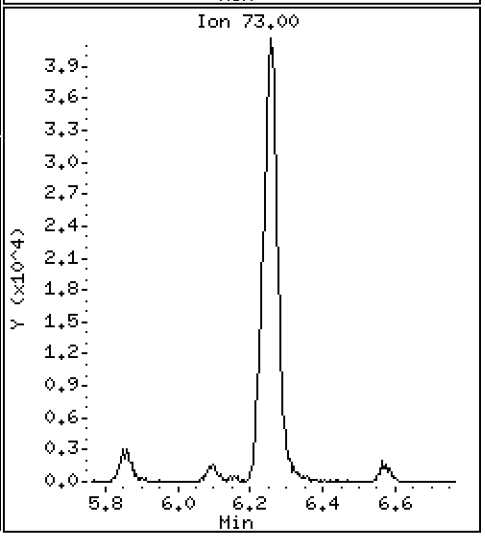


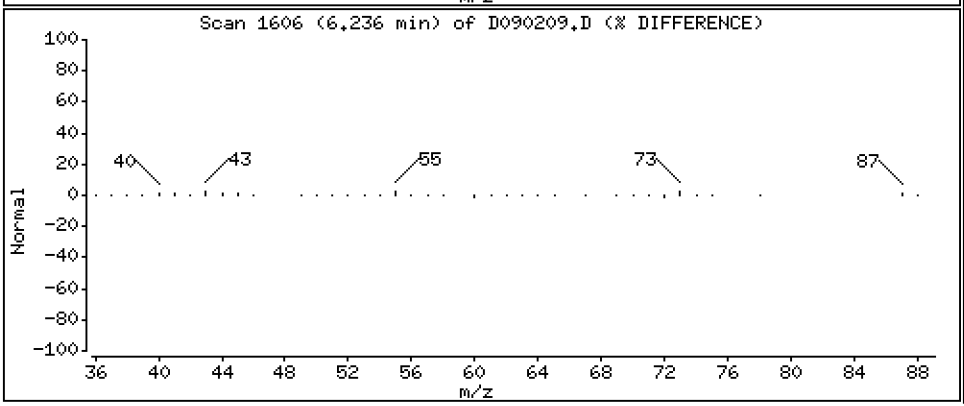












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 106

Date : 02-SEP-2018 16:42

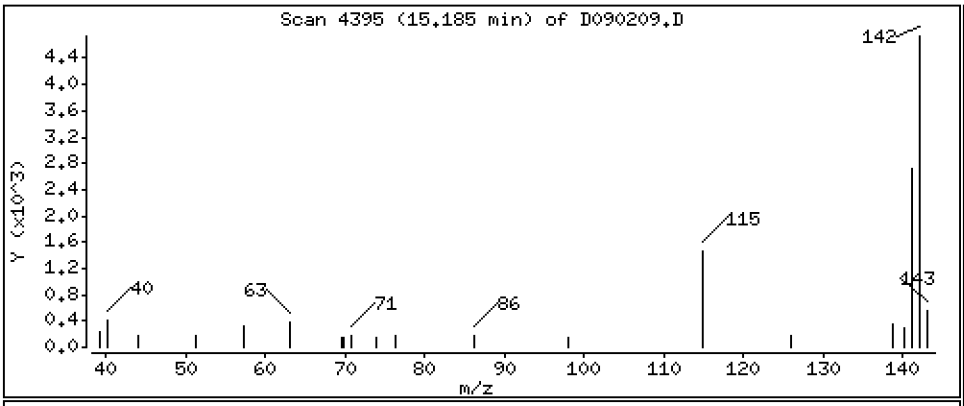
Client ID: HS18081428-01MSD Instrument: VOA2.i

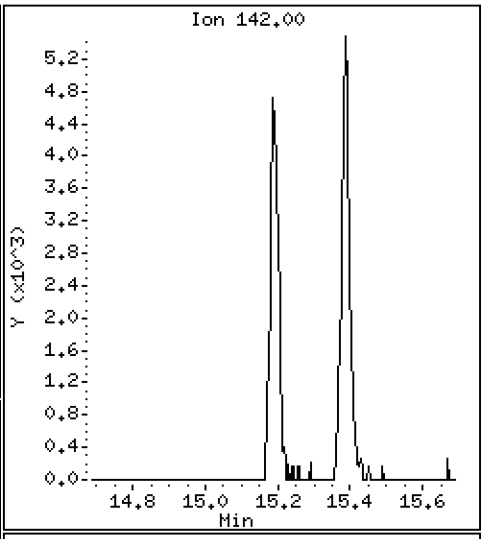
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

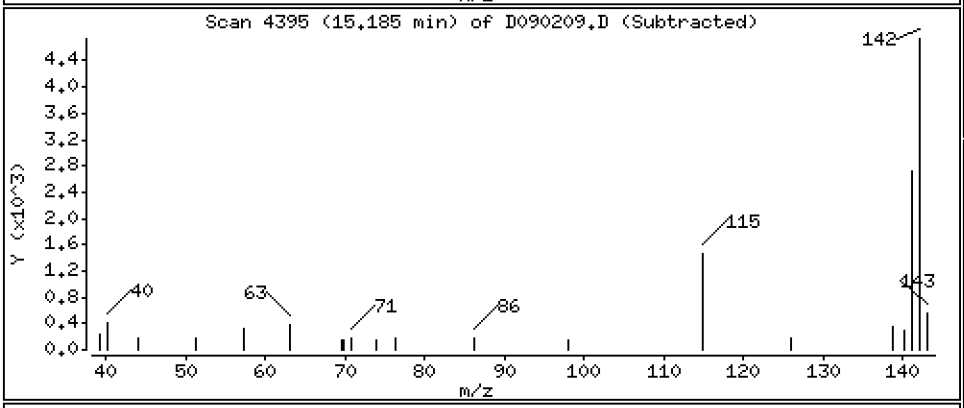
Purge Volume: 5.0 Operator: AP

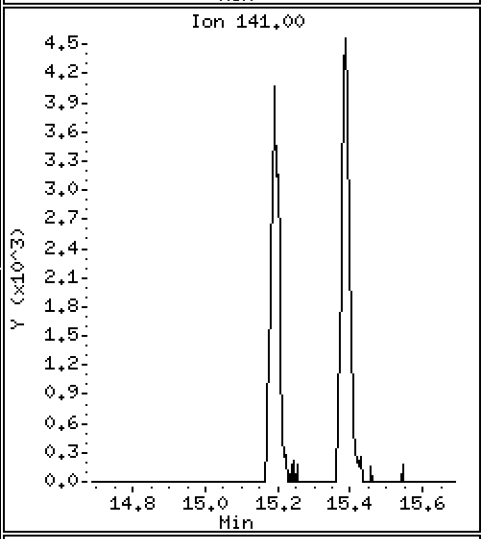
Column phase: DB624 Column diameter: 0.18

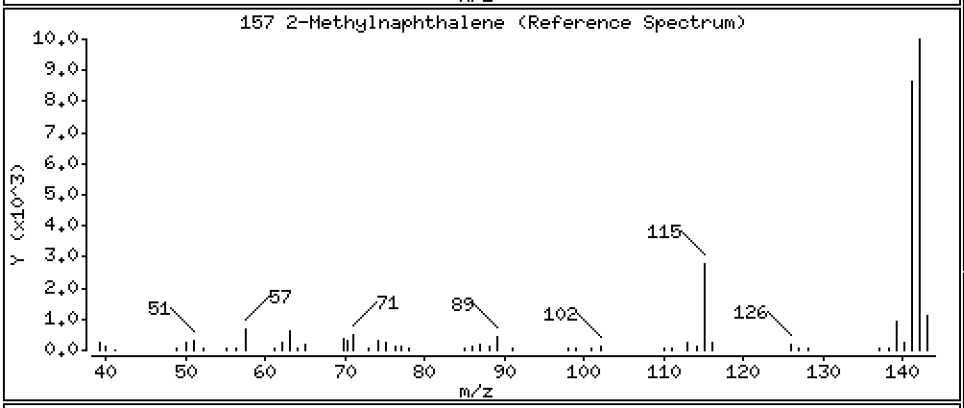
157 2-Methylnaphthalene Concentration: 7.72 ug/l Review Code:

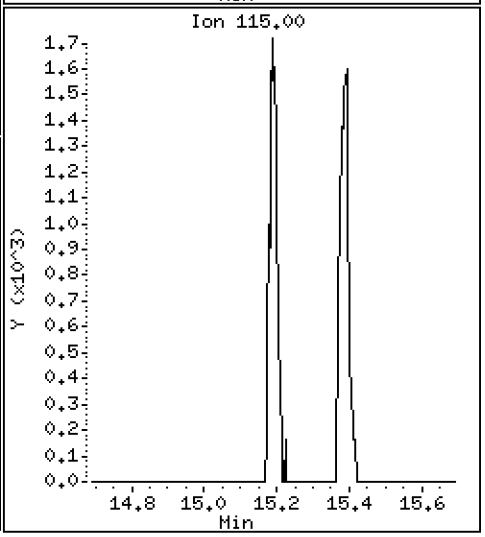


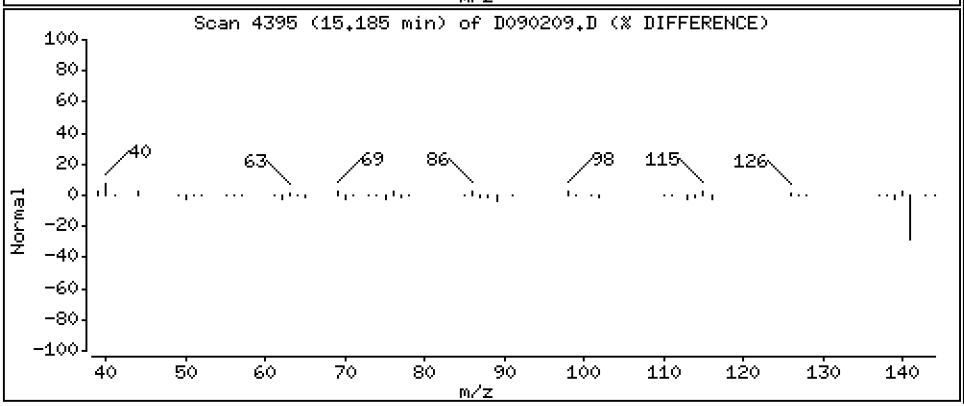












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 107

Date : 02-SEP-2018 16:42

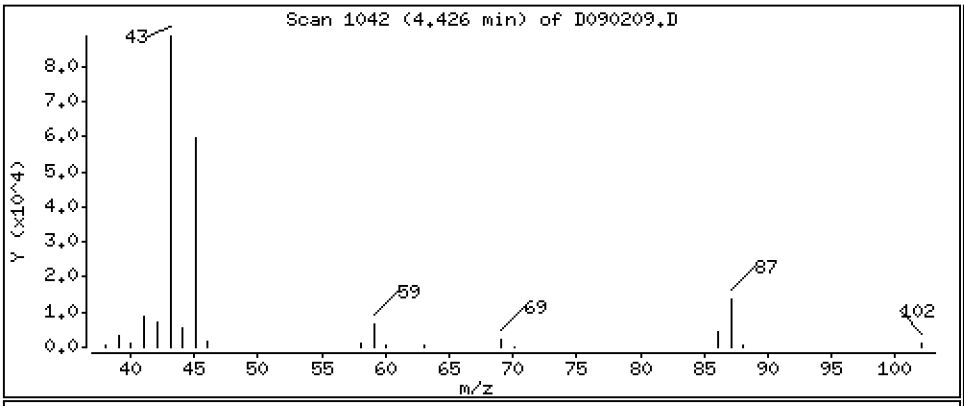
Client ID: HS18081428-01MSD Instrument: VOA2.i

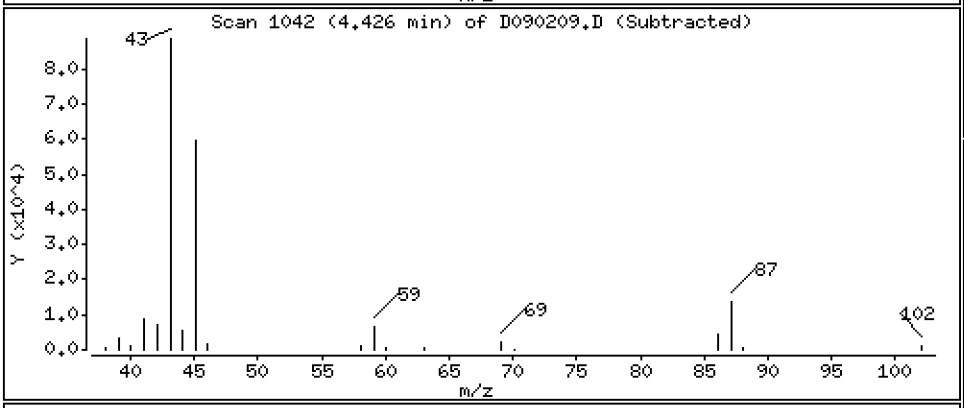
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

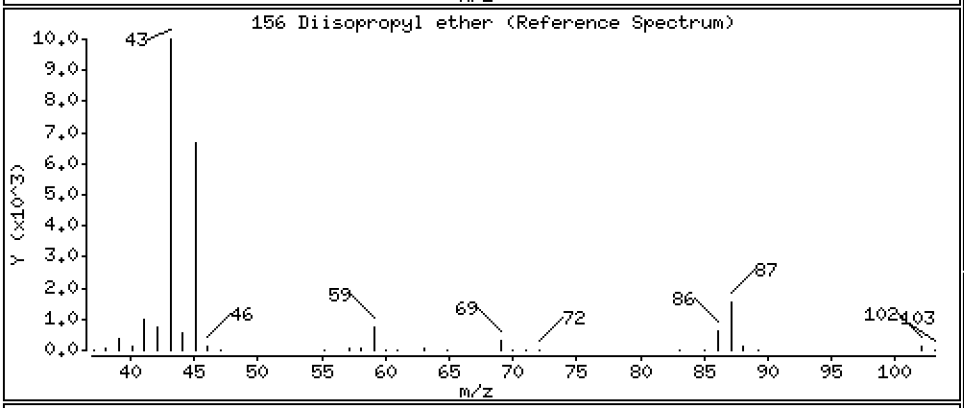
Purge Volume: 5.0 Operator: AP

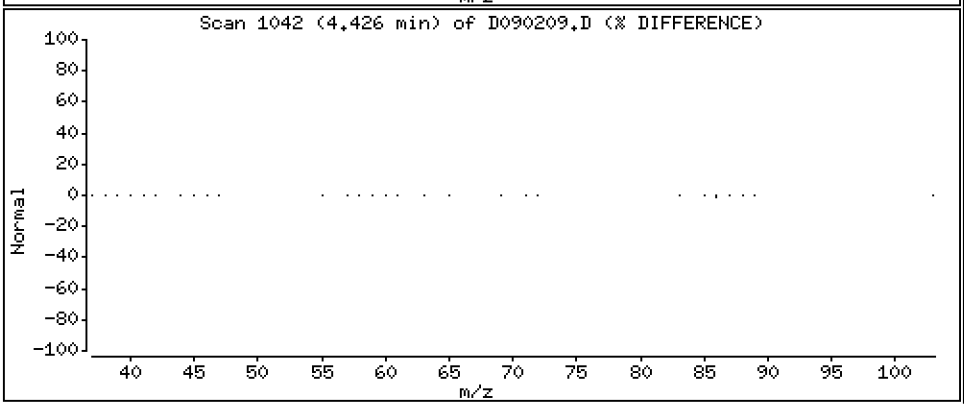
Column phase: DB624 Column diameter: 0.18

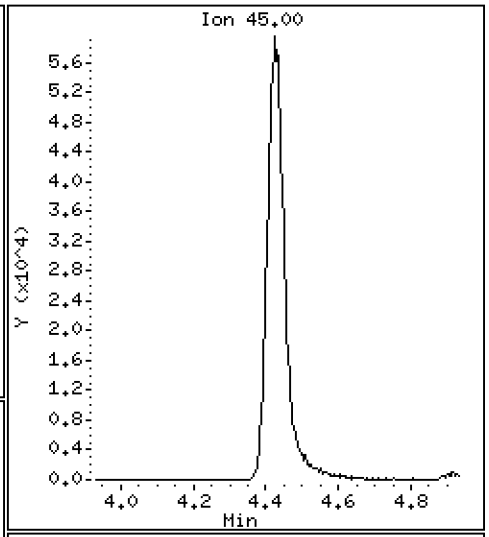
156 Diisopropyl ether Concentration: 16.41 ug/l Review Code:

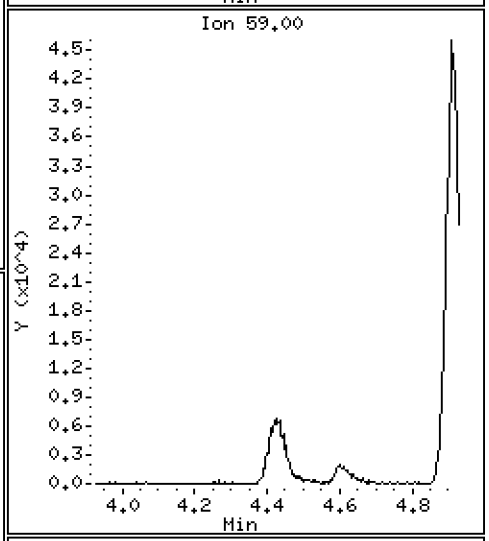


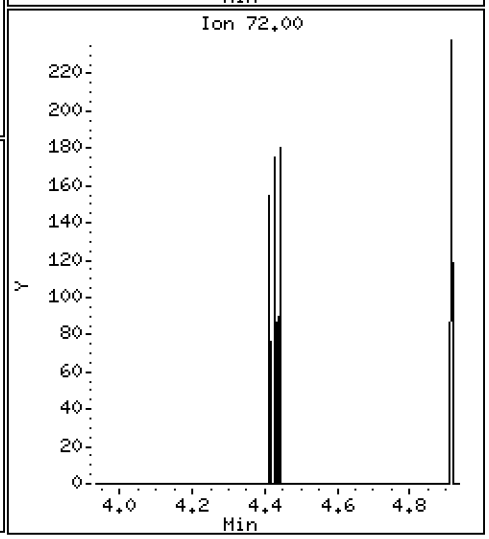












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 108

Date : 02-SEP-2018 16:42

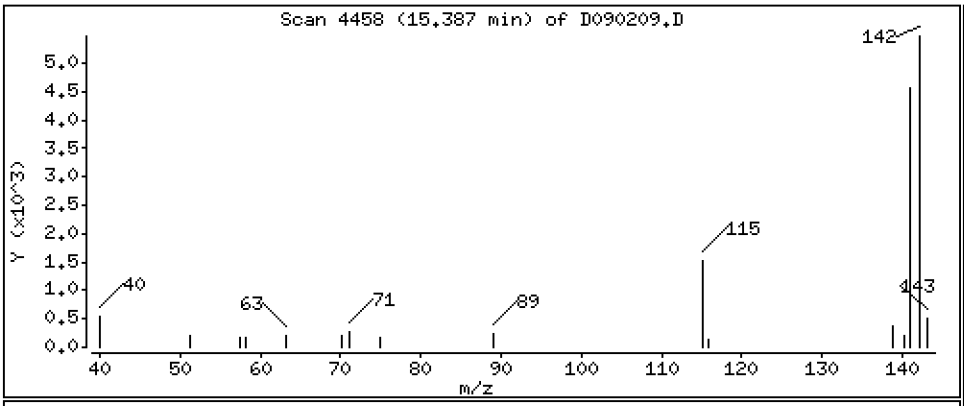
Client ID: HS18081428-01MSD Instrument: VOA2.i

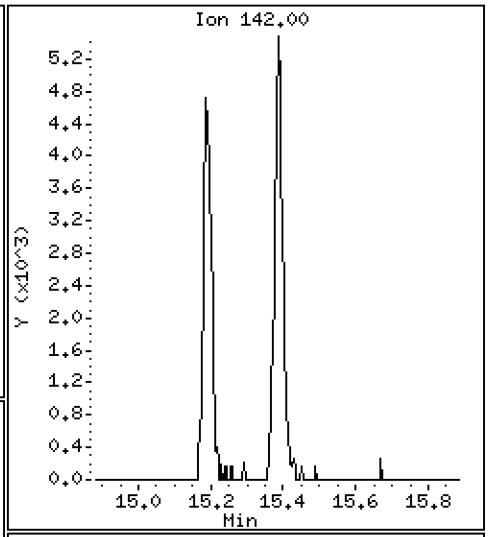
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

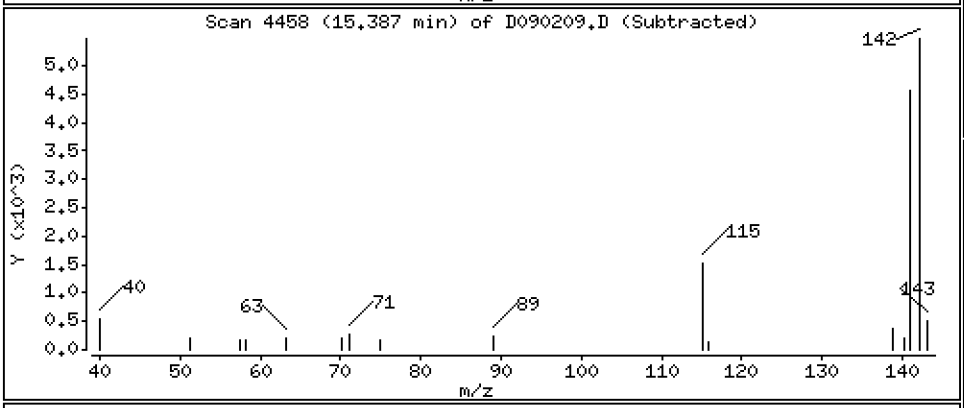
Purge Volume: 5.0 Operator: AP

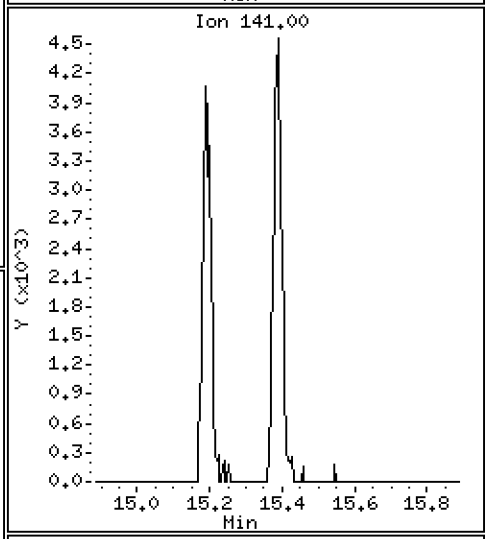
Column phase: DB624 Column diameter: 0.18

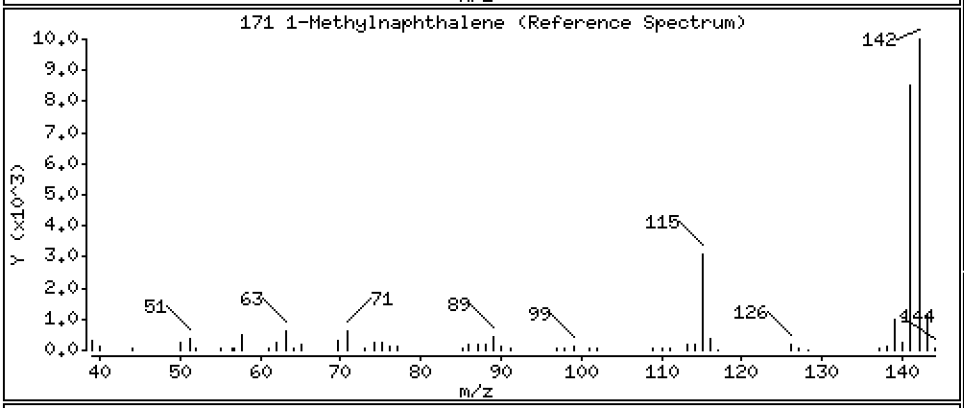
171 1-Methylnaphthalene Concentration: 7.29 ug/l Review Code:

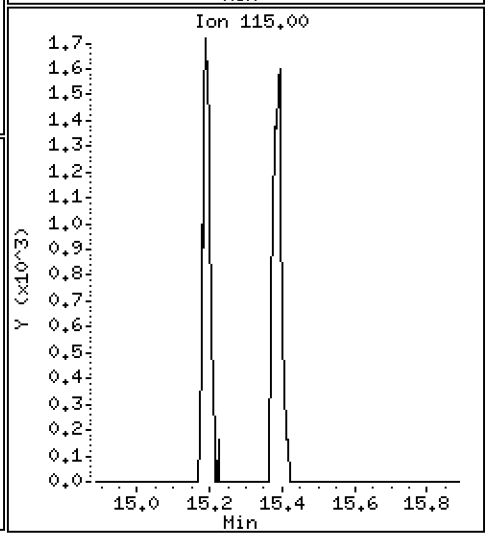


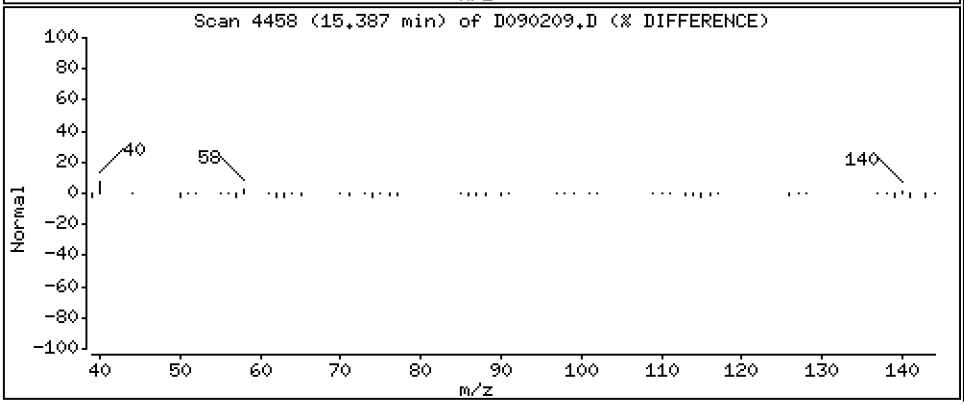












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090209.D Page 109

Date : 02-SEP-2018 16:42

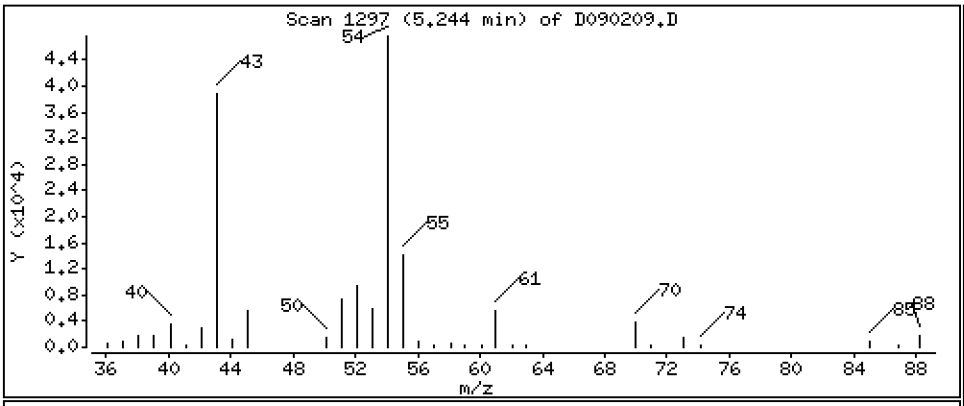
Client ID: HS18081428-01MSD Instrument: VOA2.i

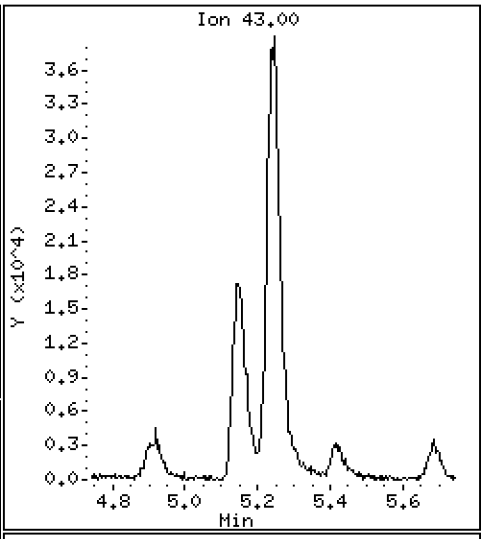
Sample Info: HS18081428-01MSD;HS18081428-01MSD;3;;MSD

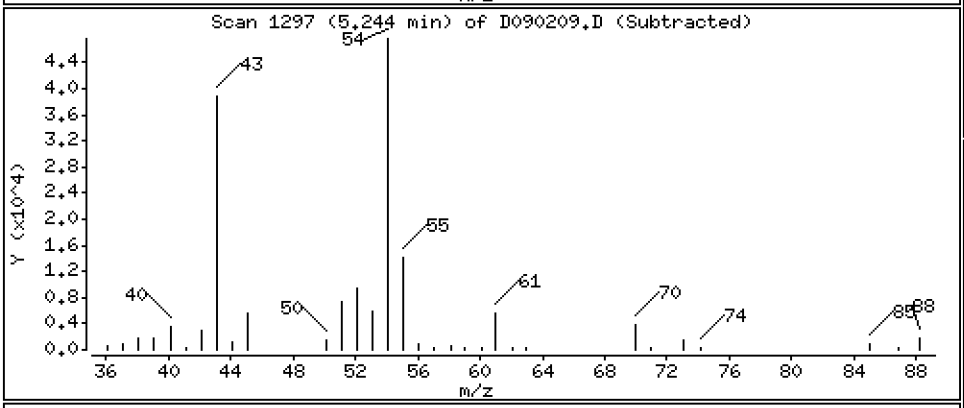
Purge Volume: 5.0 Operator: AP

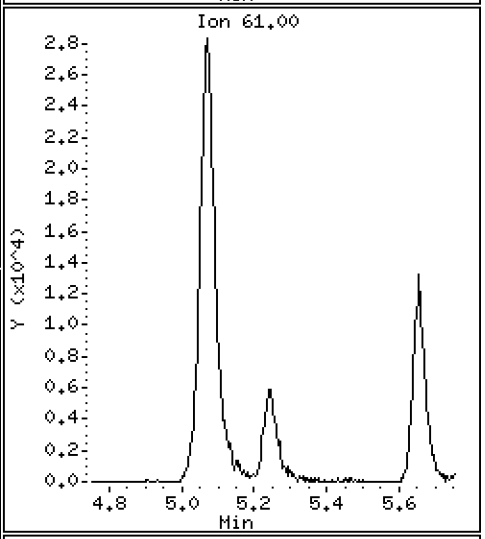
Column phase: DB624 Column diameter: 0.18

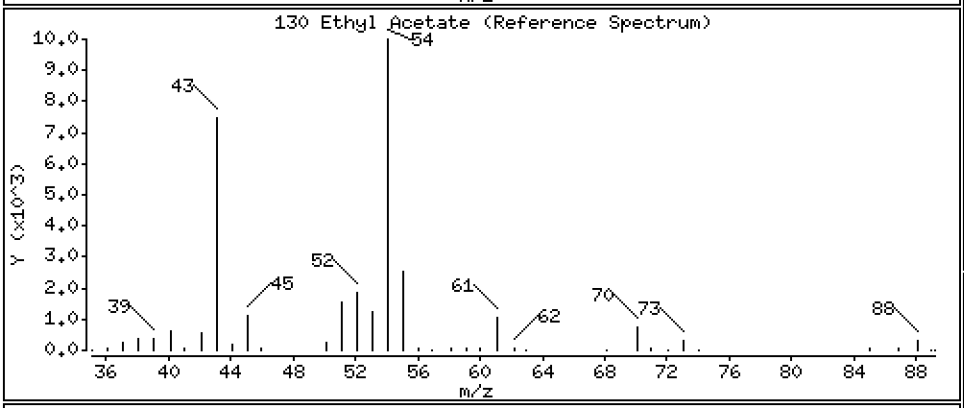
130 Ethyl Acetate Concentration: 14.23 ug/l Review Code:

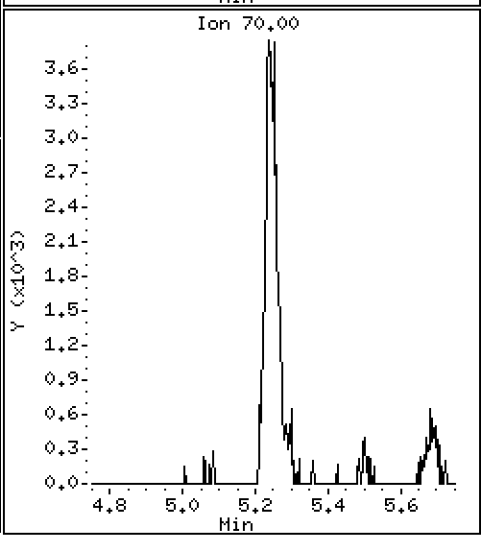


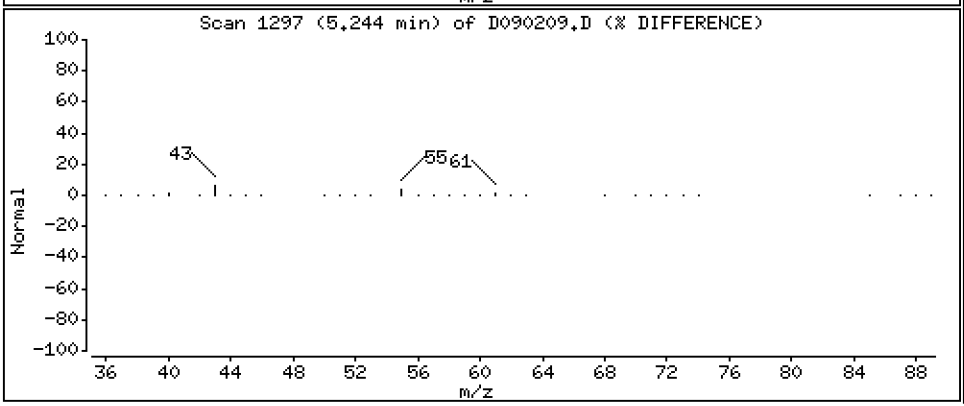












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090210.D Page 1
Report Date: 09-Oct-2018 14:40

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090210.D
Lab Smp Id: HS18081428-02 Client Smp ID: HS18081428-02
Inj Date : 02-SEP-2018 17:06
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-02;HS18081428-02;;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14
Processing Host: NAHSTWS003

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
Va	0.00000	
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	5.786	5.786	(1.000)	233873	50.0000	
$ 30 Dibromofluoromethane	113	5.689	5.689	(0.983)	100658	48.1413	48.14
$ 35 1,2-Dichloroethane-d4	65	6.062	6.062	(1.048)	102087	42.7931	42.79
* 36 1,4-Difluorobenzene	114	6.575	6.572	(1.000)	332937	50.0000	
* 47 Chlorobenzene-d5	117	9.524	9.524	(1.000)	299334	50.0000	
$ 48 Toluene-d8	98	8.093	8.090	(0.850)	374837	45.2986	45.29
$ 69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	129368	48.7273	48.72
* 70 1,4-Dichlorobenzene-d4	152	11.831	11.835	(1.000)	119573	50.0000	

00917236

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090210.D

Page 1

Date : 02-SEP-2018 17:06

Client ID: HS18081428-02

Instrument: VOA2.i

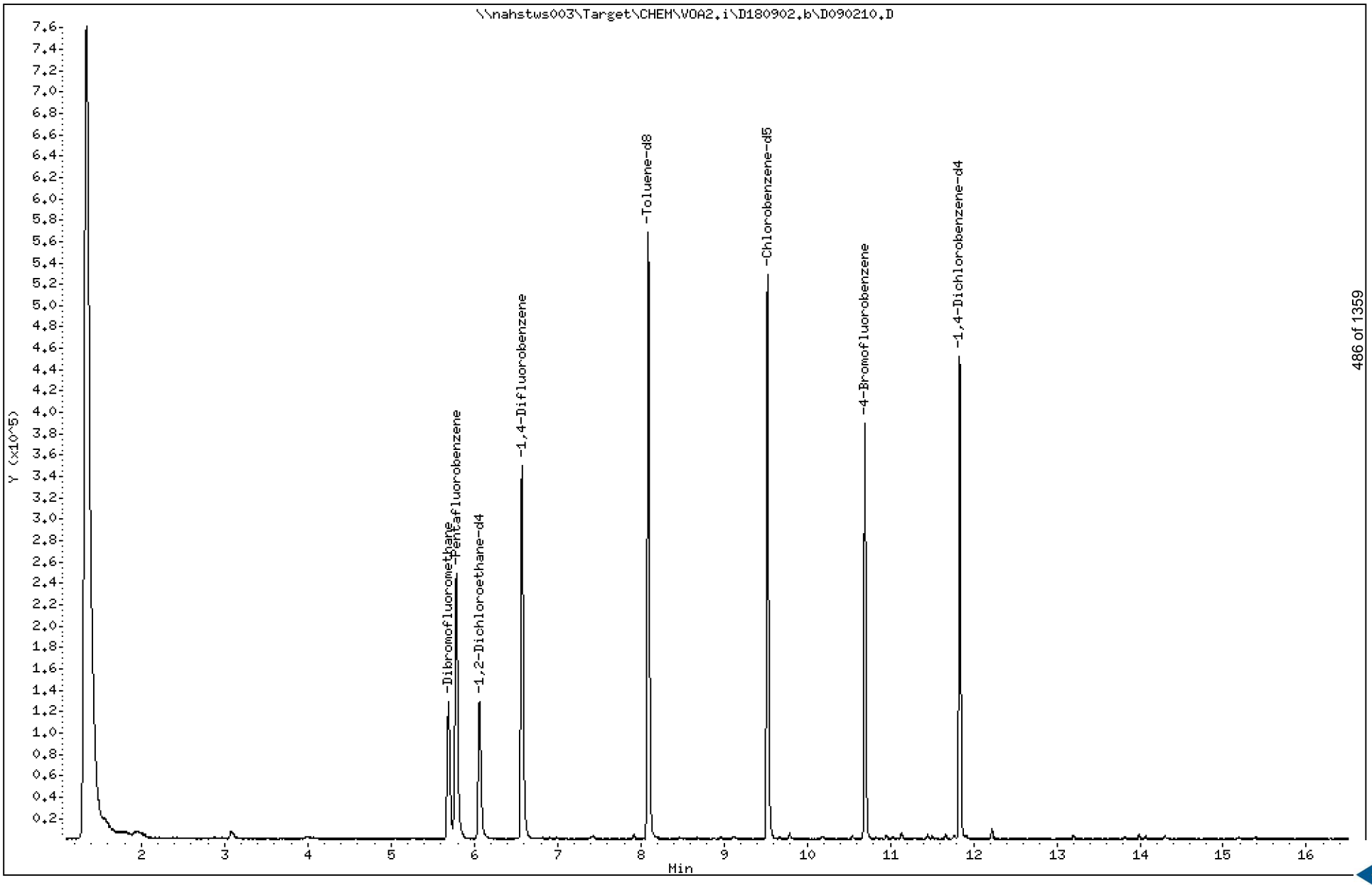
Sample Info: HS18081428-02;HS18081428-02;;;

Purge Volume: 5.0

Operator: AP

Column phase: DB624

Column diameter: 0.18



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090211.D Page 1
Report Date: 09-Oct-2018 14:40

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090211.D
Lab Smp Id: HS18081428-03 Client Smp ID: HS18081428-03
Inj Date : 02-SEP-2018 17:31
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-03;HS18081428-03;;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14
Processing Host: NAHSTWS003

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
Va	0.00000	
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	5.782	5.786	(1.000)	231831	50.0000	
$ 30 Dibromofluoromethane	113	5.689	5.689	(0.984)	97033	46.8164	46.81
$ 35 1,2-Dichloroethane-d4	65	6.062	6.062	(1.048)	105097	44.4429	44.44
* 36 1,4-Difluorobenzene	114	6.572	6.572	(1.000)	326060	50.0000	
* 47 Chlorobenzene-d5	117	9.524	9.524	(1.000)	294850	50.0000	
$ 48 Toluene-d8	98	8.093	8.090	(0.850)	369799	45.3694	45.36
$ 69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	125071	47.8252	47.82
* 70 1,4-Dichlorobenzene-d4	152	11.834	11.835	(1.000)	113860	50.0000	

00917238

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090211.D

Page 1

Date : 02-SEP-2018 17:31

Client ID: HS18081428-03

Instrument: VOA2.i

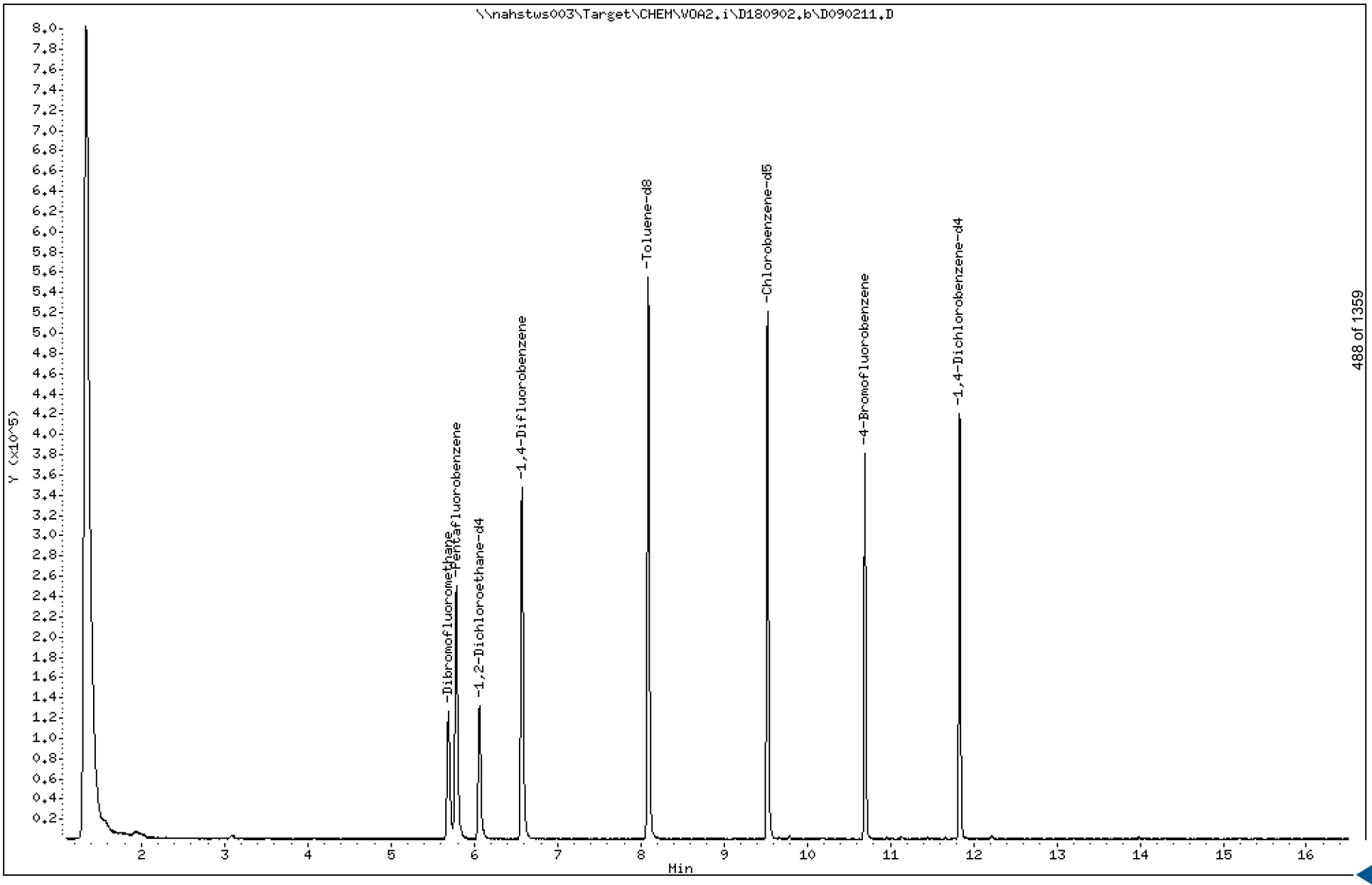
Sample Info: HS18081428-03;HS18081428-03;;;

Purge Volume: 5.0

Operator: AP

Column phase: DB624

Column diameter: 0.18



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090212.D Page 1
Report Date: 09-Oct-2018 14:40

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090212.D
Lab Smp Id: HS18081428-04 Client Smp ID: HS18081428-04
Inj Date : 02-SEP-2018 17:55
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-04;HS18081428-04;;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14
Processing Host: NAHSTWS003

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
Va	0.00000	
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	5.783	5.786	(1.000)	246722	50.0000	
$ 30 Dibromofluoromethane	113	5.689	5.689	(0.984)	103419	46.8859	46.88
$ 35 1,2-Dichloroethane-d4	65	6.058	6.062	(1.048)	111133	44.1590	44.15
* 36 1,4-Difluorobenzene	114	6.572	6.572	(1.000)	354123	50.0000	
* 47 Chlorobenzene-d5	117	9.524	9.524	(1.000)	312874	50.0000	
$ 48 Toluene-d8	98	8.090	8.090	(0.849)	401675	46.4413	46.44
$ 69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	135307	48.7587	48.75
* 70 1,4-Dichlorobenzene-d4	152	11.835	11.835	(1.000)	123946	50.0000	

00917240

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090212.D

Page 1

Date : 02-SEP-2018 17:55

Client ID: HS18081428-04

Instrument: VOA2.i

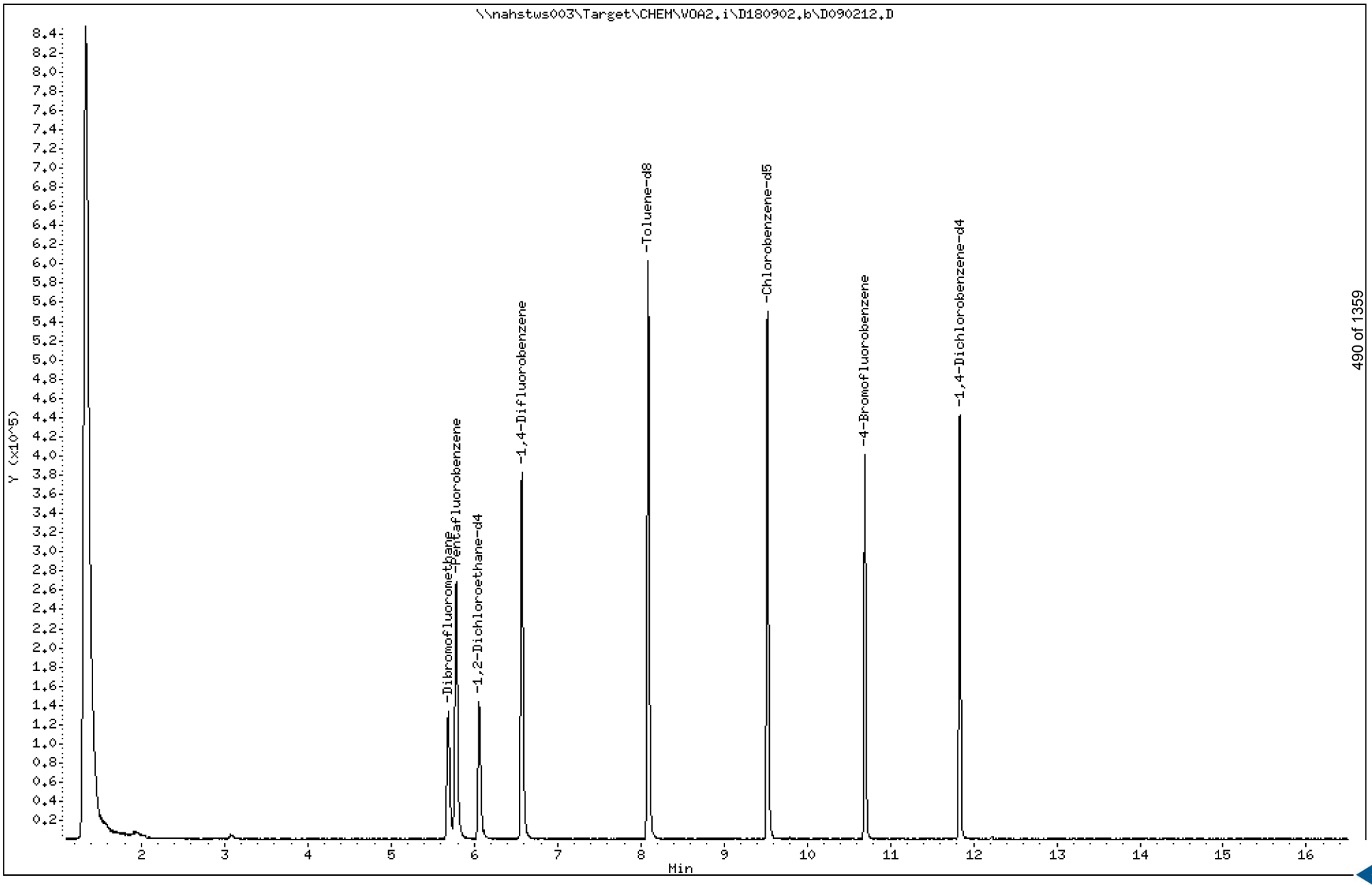
Sample Info: HS18081428-04;HS18081428-04;;;

Purge Volume: 5.0

Operator: AP

Column phase: DB624

Column diameter: 0.18



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090213.D Page 1
Report Date: 09-Oct-2018 14:40

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090213.D
Lab Smp Id: HS18081428-05 Client Smp ID: HS18081428-05
Inj Date : 02-SEP-2018 18:20
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-05;HS18081428-05;;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.789	5.786	(1.000)	244876	50.0000	
$ 30 Dibromofluoromethane	113	5.693	5.689	(0.983)	103346	47.2060	47.20
$ 35 1,2-Dichloroethane-d4	65	6.065	6.062	(1.048)	112329	44.9707	44.97
* 36 1,4-Difluorobenzene	114	6.575	6.572	(1.000)	352961	50.0000	
* 47 Chlorobenzene-d5	117	9.524	9.524	(1.000)	316441	50.0000	
$ 48 Toluene-d8	98	8.093	8.090	(0.850)	401574	45.9062	45.90
$ 69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	134259	47.8357	47.83
* 70 1,4-Dichlorobenzene-d4	152	11.834	11.835	(1.000)	120672	50.0000	

00917242

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090213.D

Page 1

Date : 02-SEP-2018 18:20

Client ID: HS18081428-05

Instrument: VOA2.i

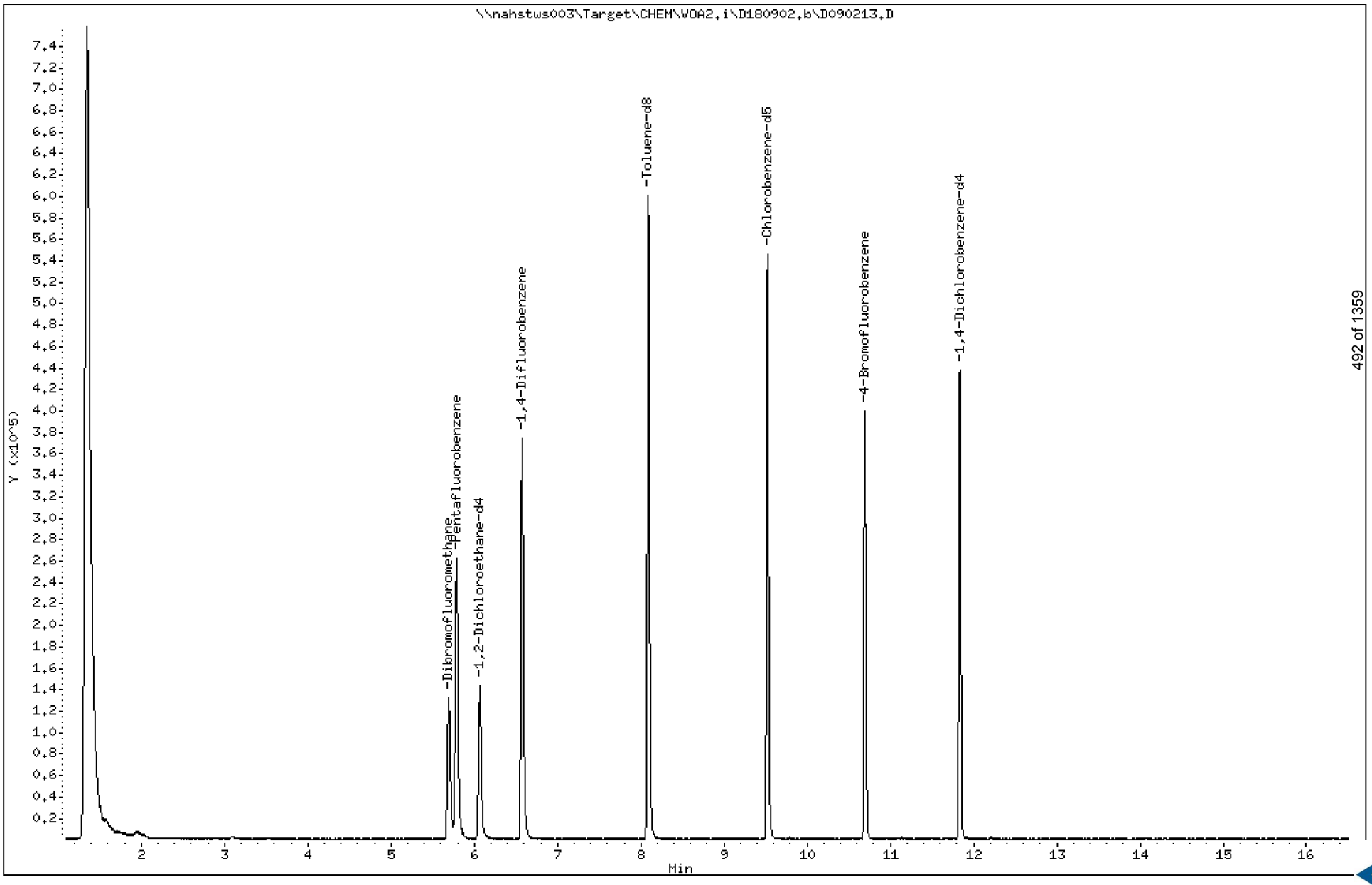
Sample Info: HS18081428-05;HS18081428-05;;;

Purge Volume: 5.0

Operator: AP

Column phase: DB624

Column diameter: 0.18



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090215.D Page 1
Report Date: 09-Oct-2018 14:40

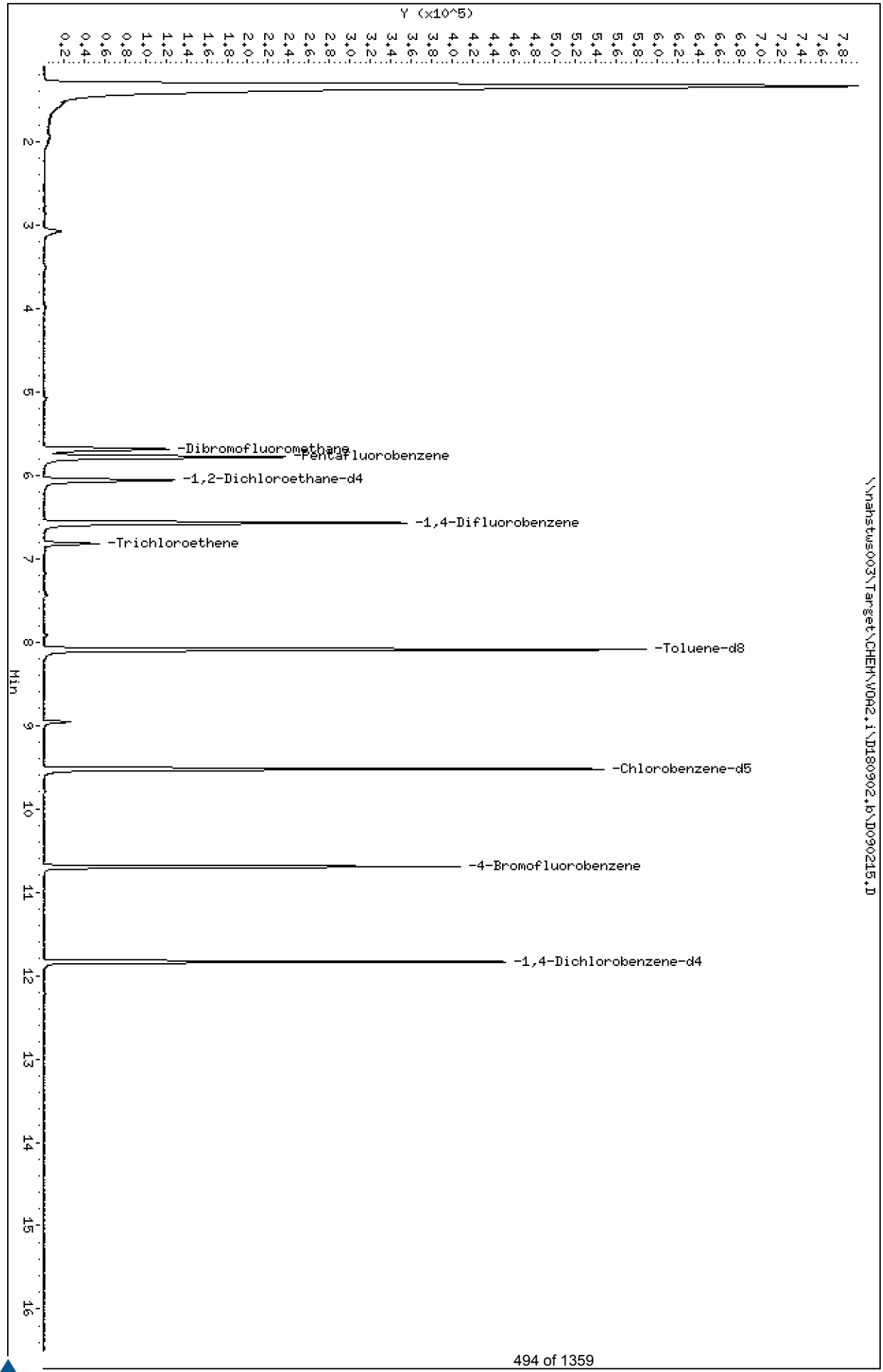
ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090215.D
Lab Smp Id: HS18081428-07 Client Smp ID: HS18081428-07
Inj Date : 02-SEP-2018 19:08
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-07;HS18081428-07;;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.783	5.786	(1.000)	220196	50.0000	
$ 30 Dibromofluoromethane	113	5.686	5.689	(0.983)	93951	47.7245	47.72
$ 35 1,2-Dichloroethane-d4	65	6.059	6.062	(1.048)	102891	45.8091	45.80
* 36 1,4-Difluorobenzene	114	6.572	6.572	(1.000)	326475	50.0000	
38 Trichloroethene	130	6.819	6.819	(1.038)	18968	6.36154	6.36
* 47 Chlorobenzene-d5	117	9.524	9.524	(1.000)	311444	50.0000	
$ 48 Toluene-d8	98	8.093	8.090	(0.850)	392483	45.5869	45.58
$ 69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	135992	49.2306	49.23
* 70 1,4-Dichlorobenzene-d4	152	11.831	11.835	(1.000)	124999	50.0000	



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090215.D
Date : 02-SEP-2018 19:08
Client ID: HS18081428-07
Sample Info: HS18081428-07;HS18081428-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090215.D Page 2

Date : 02-SEP-2018 19:08

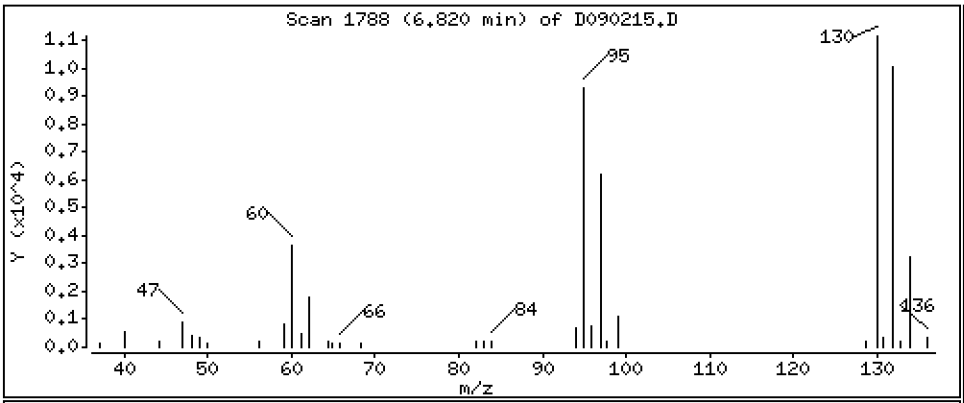
Client ID: HS18081428-07 Instrument: VOA2.i

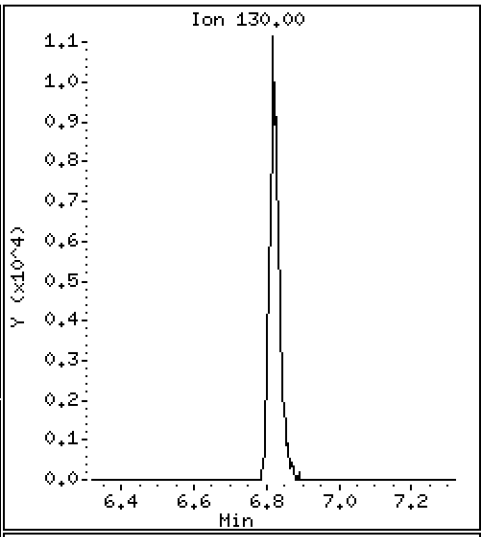
Sample Info: HS18081428-07;HS18081428-07;;;

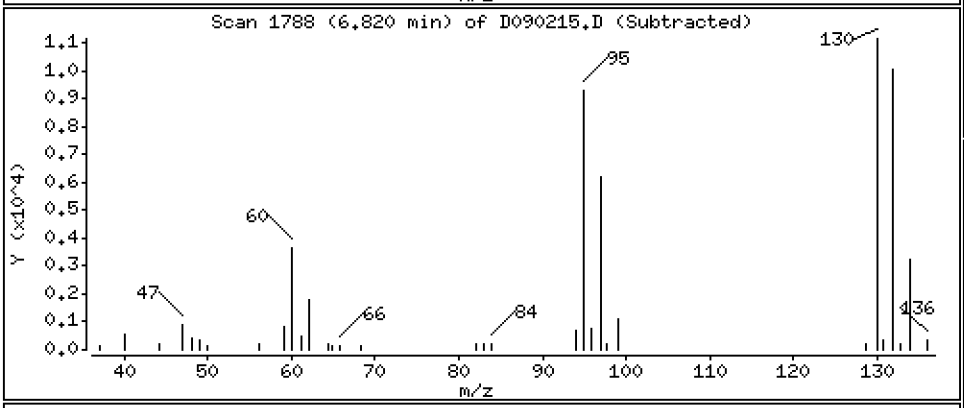
Purge Volume: 5.0 Operator: AP

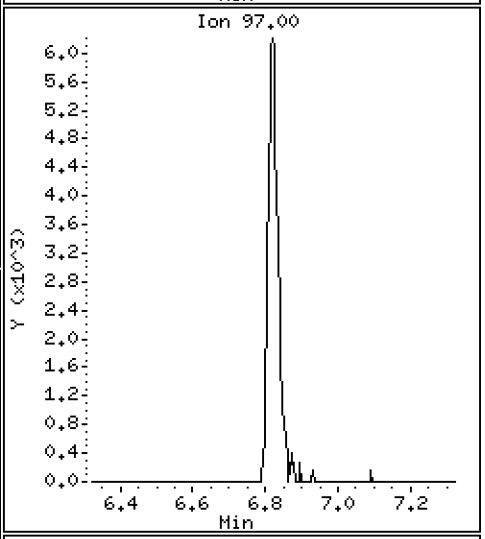
Column phase: DB624 Column diameter: 0.18

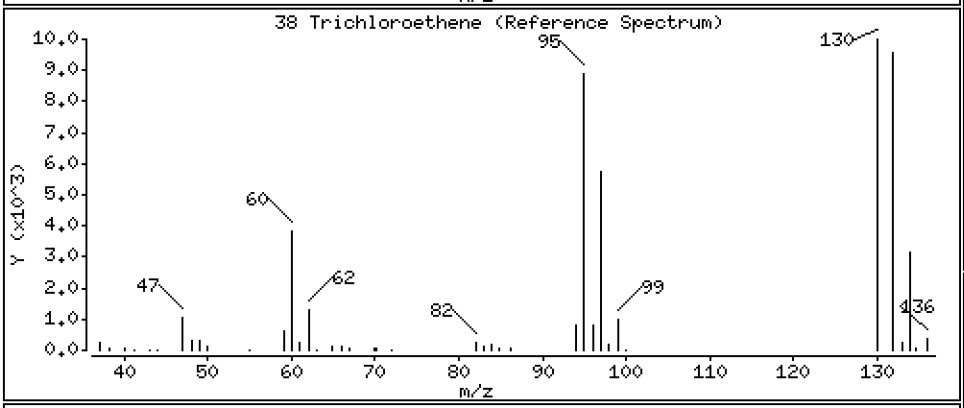
38 Trichloroethene Concentration: 6.36 ug/l Review Code:

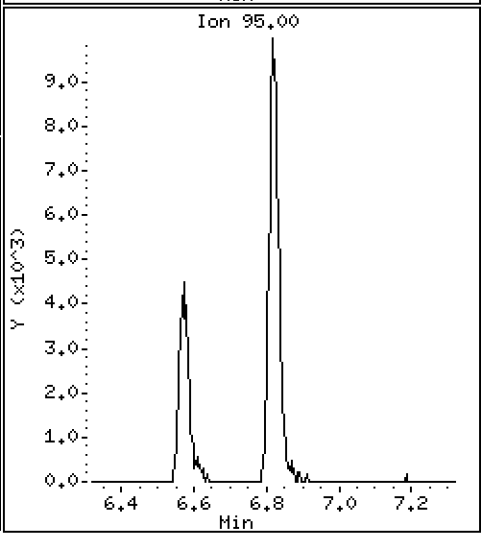


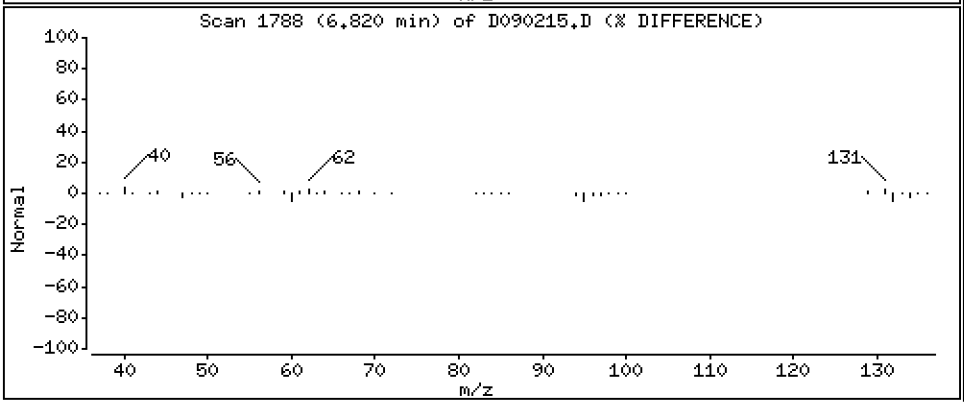












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090216.D Page 1
Report Date: 09-Oct-2018 14:41

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090216.D
Lab Smp Id: HS18081428-08 Client Smp ID: HS18081428-08
Inj Date : 02-SEP-2018 19:33
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-08;HS18081428-08;;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.786	5.786	(1.000)	244962	50.0000	
$ 30 Dibromofluoromethane	113	5.693	5.689	(0.984)	102285	46.7050	46.70
$ 35 1,2-Dichloroethane-d4	65	6.062	6.062	(1.048)	110143	44.0800	44.08
* 36 1,4-Difluorobenzene	114	6.575	6.572	(1.000)	349274	50.0000	
* 47 Chlorobenzene-d5	117	9.524	9.524	(1.000)	313044	50.0000	
$ 48 Toluene-d8	98	8.093	8.090	(0.850)	395467	45.6987	45.69
$ 69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	135986	48.9768	48.97
* 70 1,4-Dichlorobenzene-d4	152	11.834	11.835	(1.000)	125485	50.0000	

00917247

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090216.D

Page 1

Date : 02-SEP-2018 19:33

Client ID: HS18081428-08

Instrument: VOA2.i

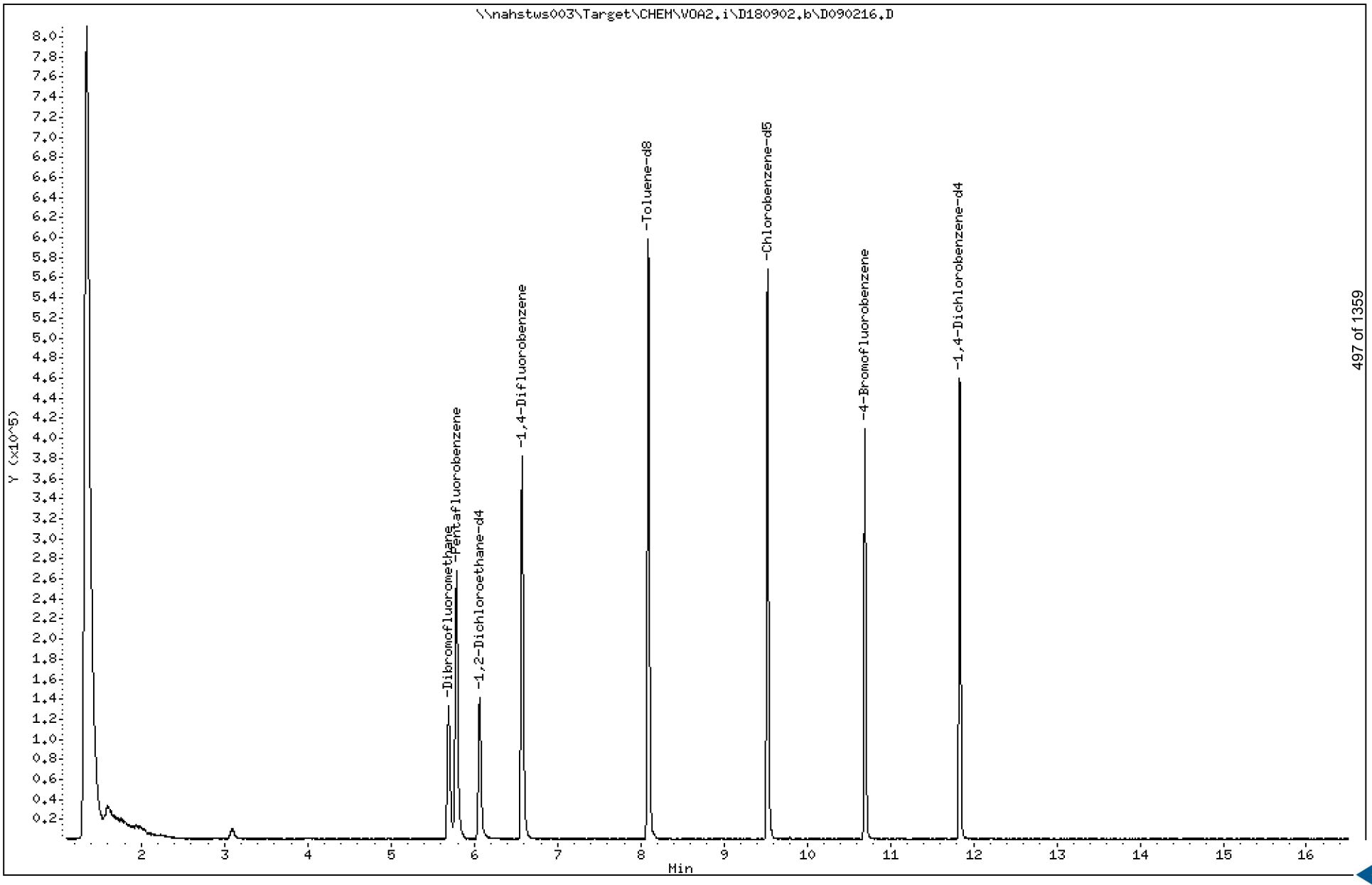
Sample Info: HS18081428-08;HS18081428-08;;;

Purge Volume: 5.0

Operator: AP

Column phase: DB624

Column diameter: 0.18



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090217.D Page 1
Report Date: 09-Oct-2018 14:41

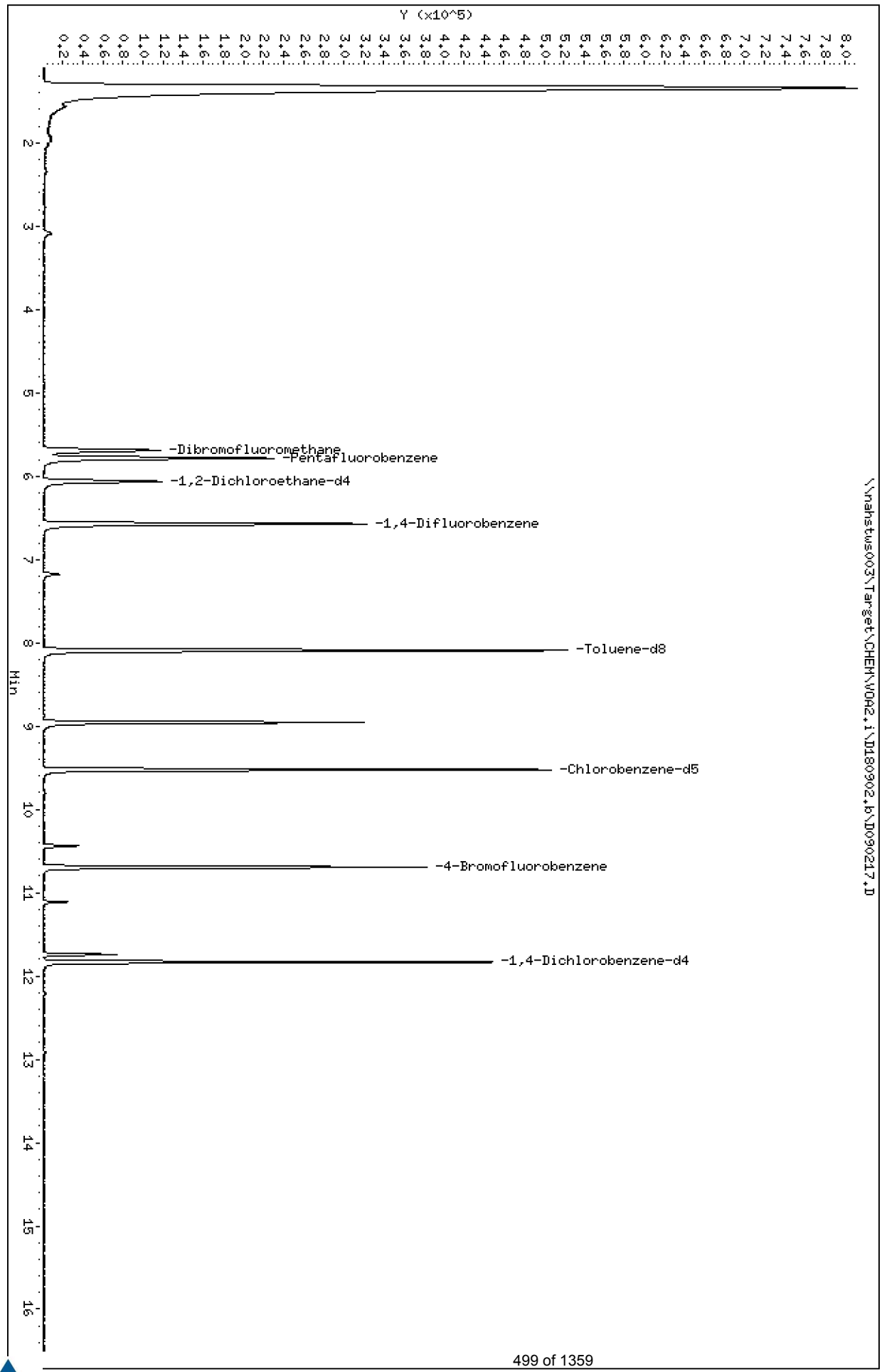
ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090217.D
Lab Smp Id: HS18081428-09 Client Smp ID: HS18081428-09
Inj Date : 02-SEP-2018 19:57
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-09;HS18081428-09;;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.786	5.786	(1.000)	208175	50.0000	
$ 30 Dibromofluoromethane	113	5.689	5.689	(0.983)	89289	47.9755	47.97
$ 35 1,2-Dichloroethane-d4	65	6.065	6.062	(1.048)	95471	44.9600	44.96
* 36 1,4-Difluorobenzene	114	6.575	6.572	(1.000)	297705	50.0000	
* 47 Chlorobenzene-d5	117	9.524	9.524	(1.000)	284671	50.0000	
$ 48 Toluene-d8	98	8.090	8.090	(0.849)	347631	44.1748	44.17
$ 69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	127745	50.5944	50.59
* 70 1,4-Dichlorobenzene-d4	152	11.831	11.835	(1.000)	121290	50.0000	



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090217.D
Date : 02-SEP-2018 19:57
Client ID: HS18081428-09
Sample Info: HS18081428-09;HS18081428-09;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090218.D Page 1
Report Date: 09-Oct-2018 14:41

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090218.D
Lab Smp Id: HS18081428-10 Client Smp ID: HS18081428-10
Inj Date : 02-SEP-2018 20:22
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-10;HS18081428-10;;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

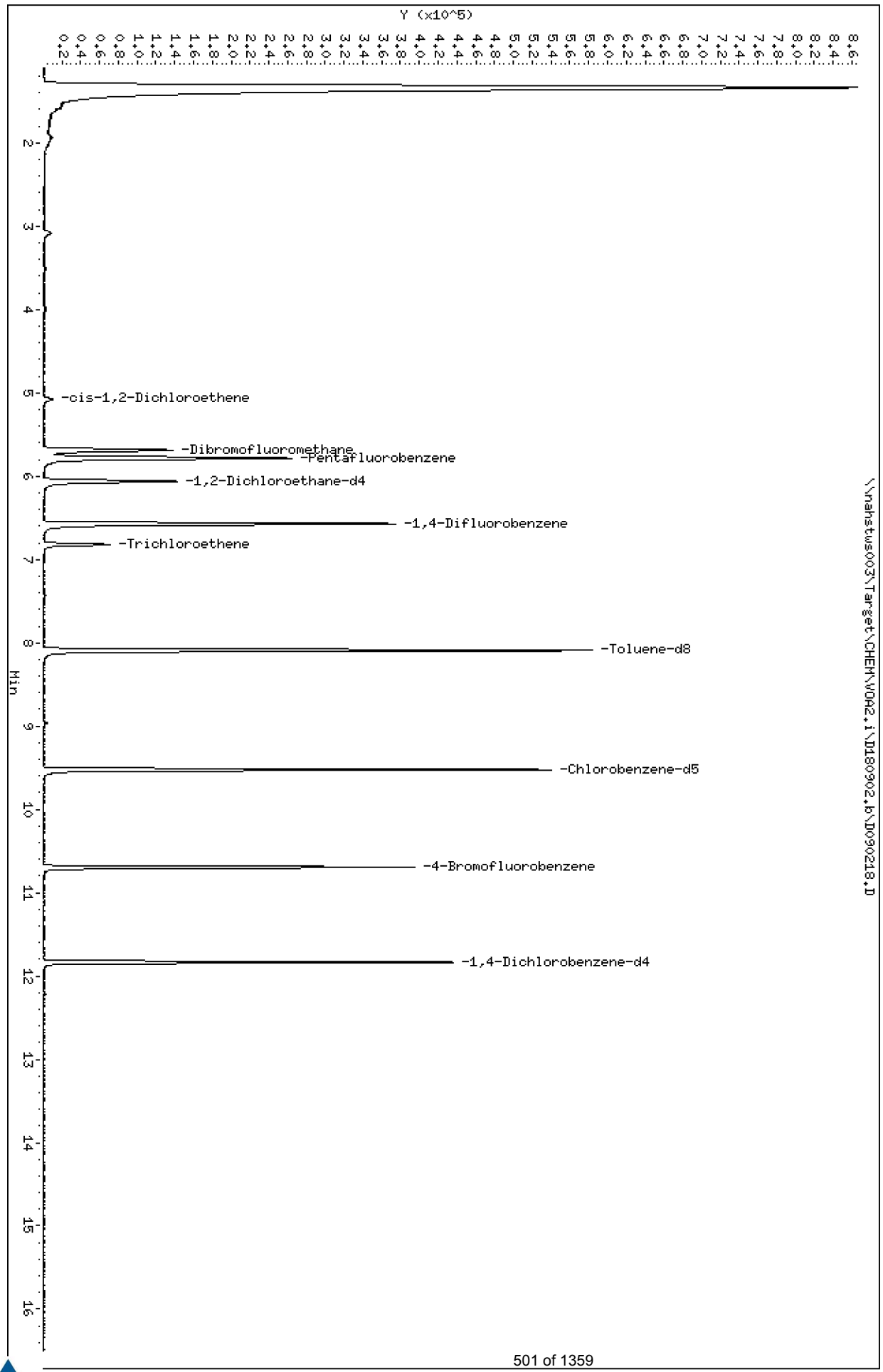
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Va	0.00000	
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	5.783	5.786	(1.000)	245144	50.0000	
	27 cis-1,2-Dichloroethene	96	5.077	5.073	(0.878)	6248	1.73348	1.73
$	30 Dibromofluoromethane	113	5.689	5.689	(0.984)	108008	49.2815	49.28
$	35 1,2-Dichloroethane-d4	65	6.062	6.062	(1.048)	111000	44.3900	44.39
*	36 1,4-Difluorobenzene	114	6.575	6.572	(1.000)	349098	50.0000	
	38 Trichloroethene	130	6.819	6.819	(1.037)	28149	8.82889	8.82
*	47 Chlorobenzene-d5	117	9.524	9.524	(1.000)	306802	50.0000	
$	48 Toluene-d8	98	8.090	8.090	(0.849)	391283	46.1351	46.13
$	69 4-Bromofluorobenzene	95	10.692	10.695	(1.123)	133415	49.0284	49.02
*	70 1,4-Dichlorobenzene-d4	152	11.835	11.835	(1.000)	119998	50.0000	
M	94 1,2-Dichloroethylene (total)	96				6248	1.73348	1.73(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090218.D
Date : 02-SEP-2018 20:22
Client ID: HS18081428-10
Sample Info: HS18081428-10;HS18081428-10;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA2.i
Operator: AP
Column diameter: 0.18

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090218.D Page 2

Date : 02-SEP-2018 20:22

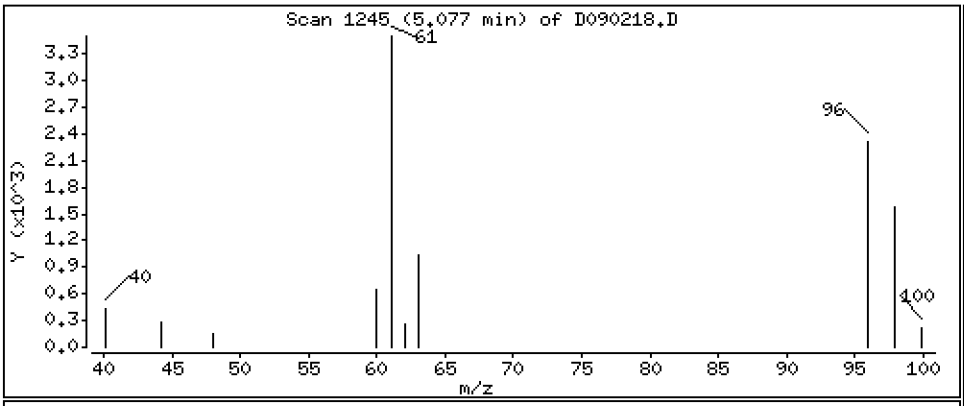
Client ID: HS18081428-10 Instrument: VOA2.i

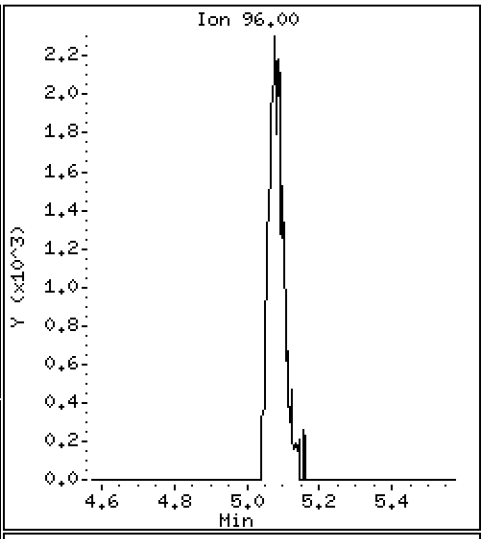
Sample Info: HS18081428-10;HS18081428-10;;;

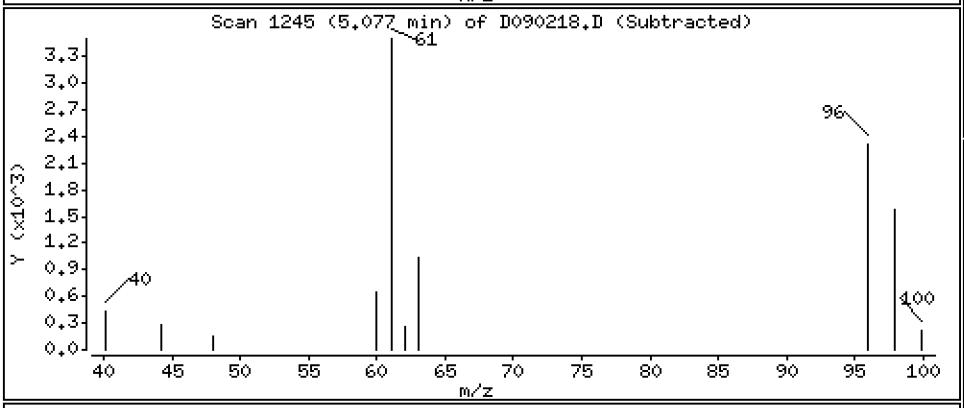
Purge Volume: 5.0 Operator: AP

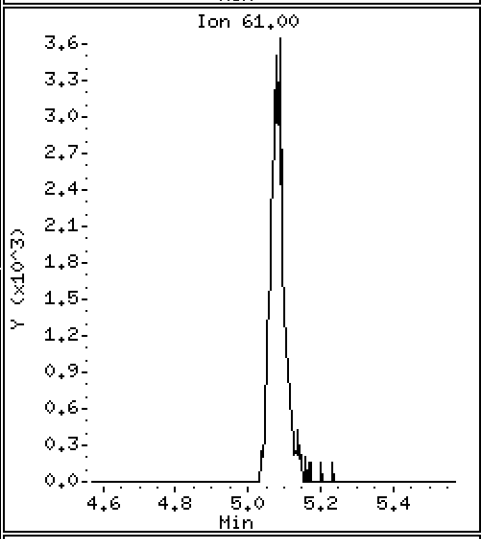
Column phase: DB624 Column diameter: 0.18

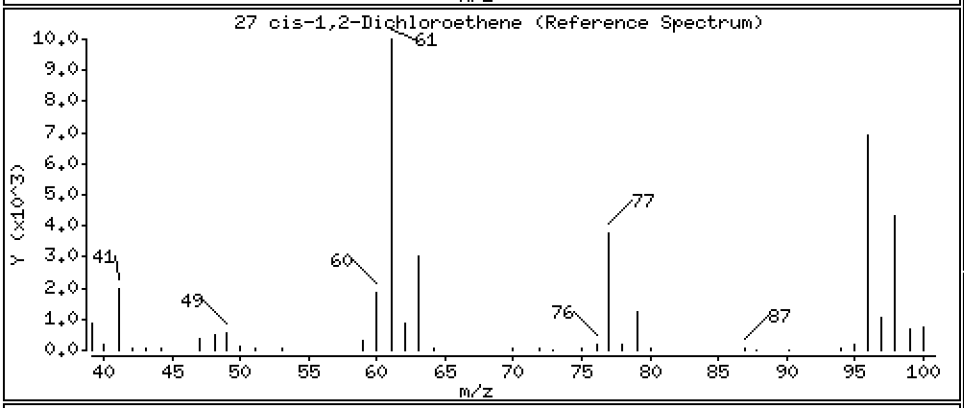
27 cis-1,2-Dichloroethene Concentration: 1.73 ug/l Review Code:

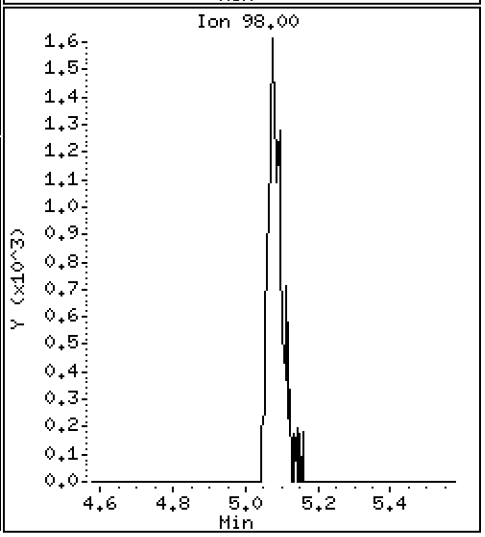


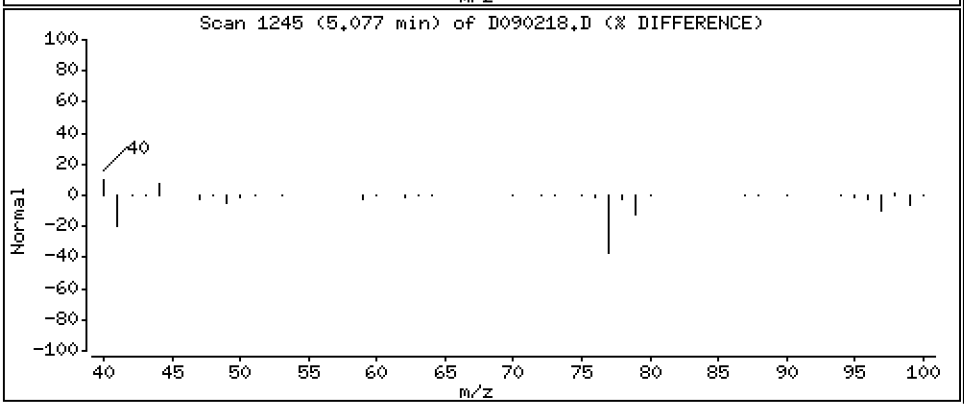












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090218.D Page 3

Date : 02-SEP-2018 20:22

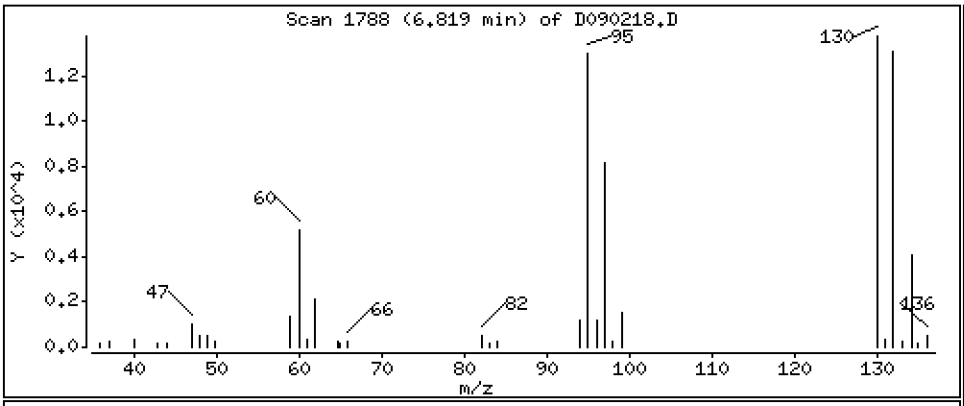
Client ID: HS18081428-10 Instrument: VOA2.i

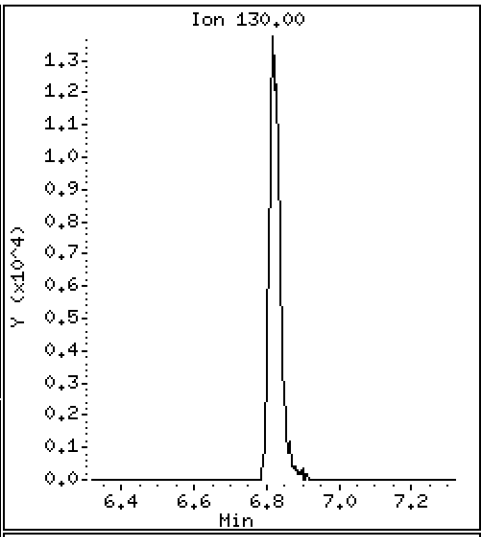
Sample Info: HS18081428-10;HS18081428-10;;;

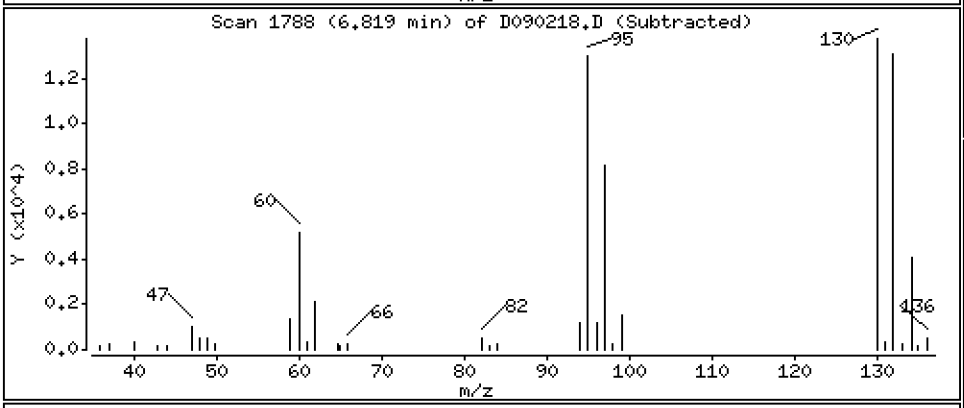
Purge Volume: 5.0 Operator: AP

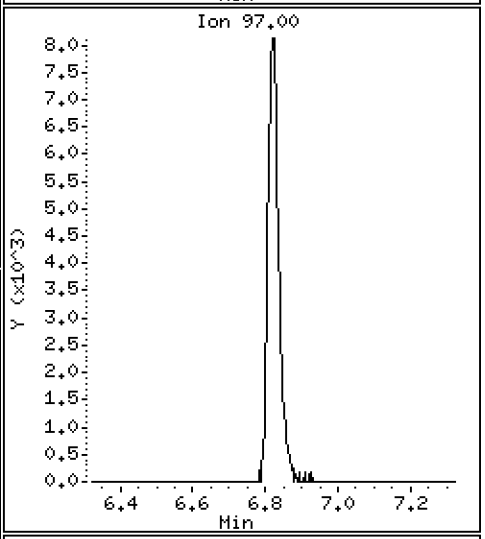
Column phase: DB624 Column diameter: 0.18

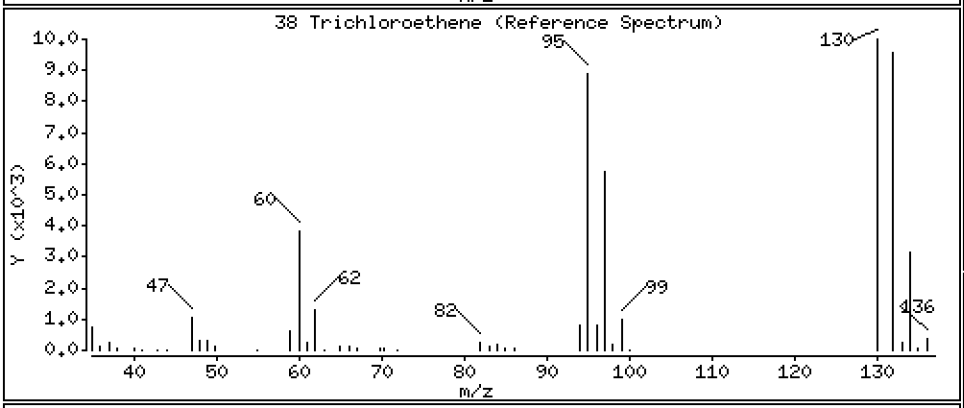
38 Trichloroethene Concentration: 8.82 ug/l Review Code:

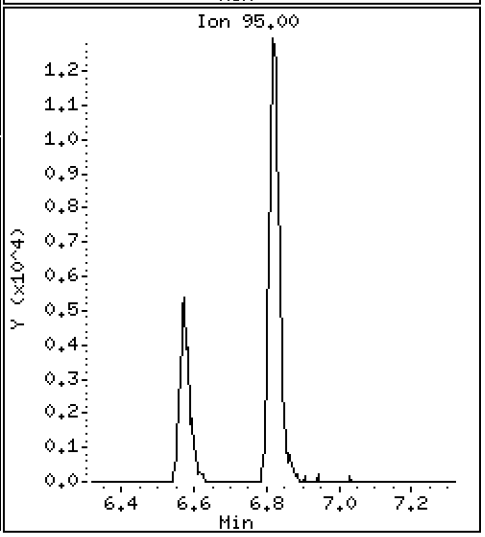


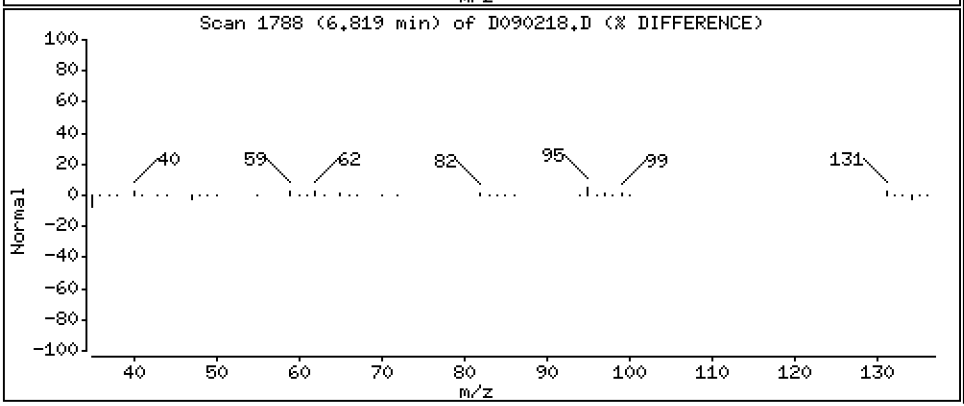












Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090219.D Page 1
Report Date: 09-Oct-2018 14:41

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090219.D
Lab Smp Id: HS18081428-11 Client Smp ID: HS18081428-11
Inj Date : 02-SEP-2018 20:46
Operator : AP Inst ID: VOA2.i
Smp Info : HS18081428-11;HS18081428-11;;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
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	5.782	5.786	(1.000)	244712	50.0000	
$ 30 Dibromofluoromethane	113	5.693	5.689	(0.984)	105931	48.4192	48.41
$ 35 1,2-Dichloroethane-d4	65	6.062	6.062	(1.048)	112040	44.8850	44.88
* 36 1,4-Difluorobenzene	114	6.575	6.572	(1.000)	346099	50.0000	
* 47 Chlorobenzene-d5	117	9.527	9.524	(1.000)	315013	50.0000	
$ 48 Toluene-d8	98	8.093	8.090	(0.849)	394508	45.3029	45.30
$ 69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	135910	48.6434	48.64
* 70 1,4-Dichlorobenzene-d4	152	11.834	11.835	(1.000)	125231	50.0000	

00917255

Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090219.D

Page 1

Date : 02-SEP-2018 20:46

Client ID: HS18081428-11

Instrument: VOA2.i

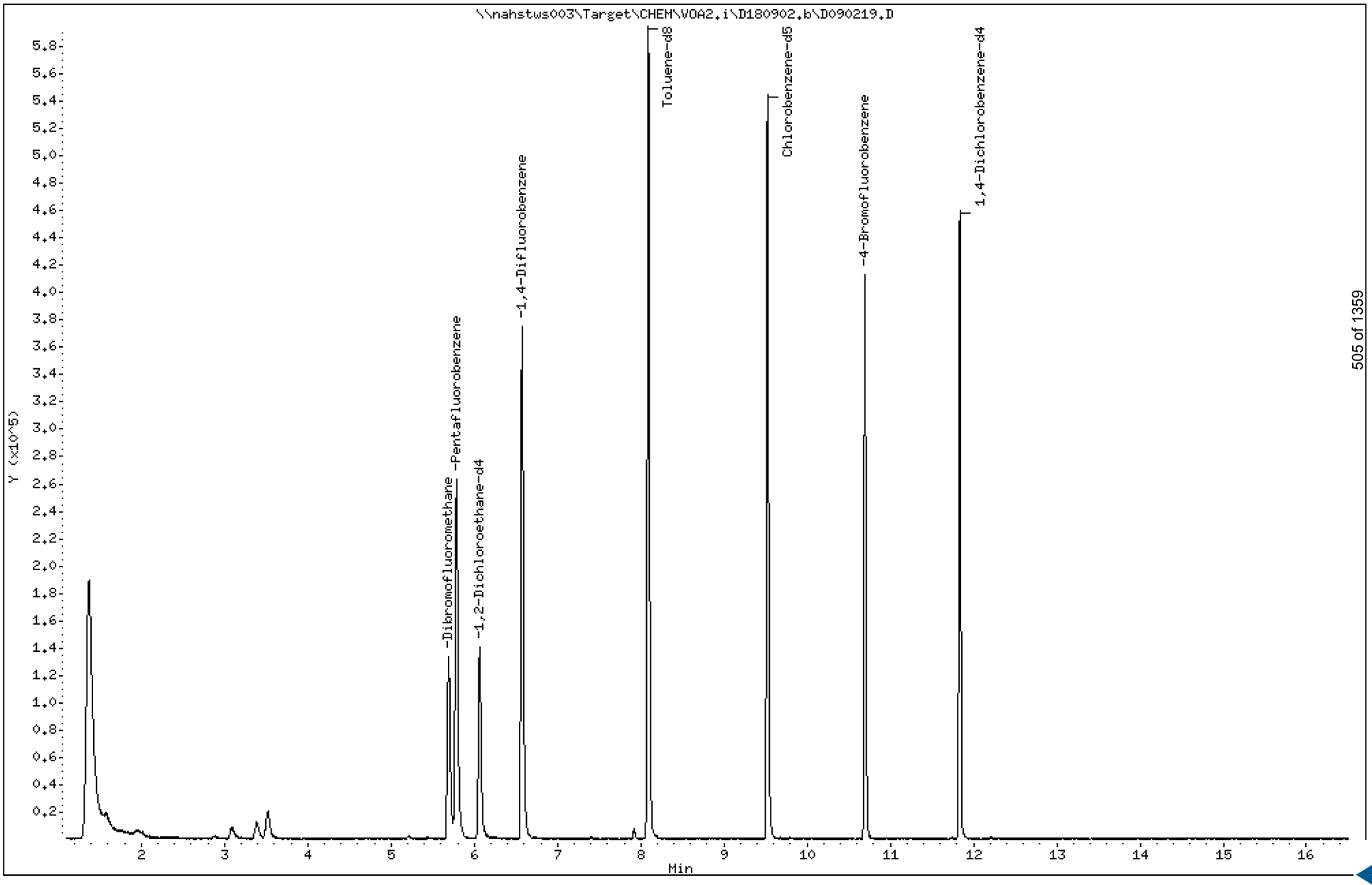
Sample Info: HS18081428-11;HS18081428-11;;;

Purge Volume: 5.0

Operator: AP

Column phase: DB624

Column diameter: 0.18



Data File: \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090228.D Page 1
Report Date: 09-Oct-2018 14:41

ALS Laboratory Group

Data file : \\nahstws003\Target\CHEM\VOA2.i\D180902.b\D090228.D
Lab Smp Id: CCV_END Client Smp ID: CCV_END
Inj Date : 03-SEP-2018 00:31
Operator : AP Inst ID: VOA2.i
Smp Info : CCV_END;CCV_END;2;;
Misc Info : HS15080001;WATER;0;1;
Comment   :
Method   : \\nahstws003\Target\chem\voa2.i\D180902.b\8260LL.m
Meth Date : 04-Sep-2018 10:02 VOA2.i Quant Type: ISTD
Cal Date : 03-AUG-2018 02:04 Cal File: E080211.D
Als bottle: 25 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 00000_8260-LLw.sub
Target Version: 4.14

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
Va	0.00000	
Cpnd Variable		Local Compound Variable

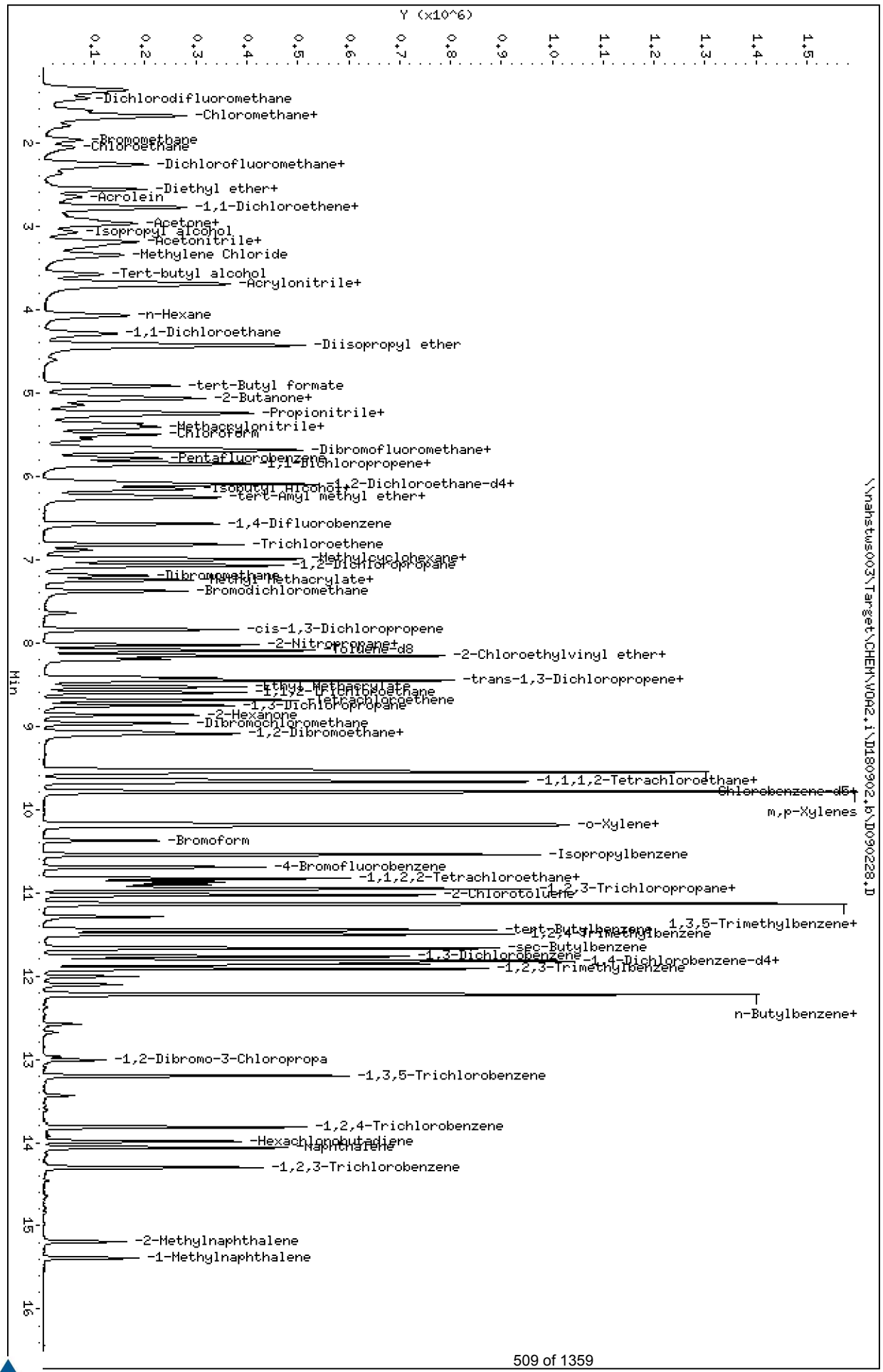
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1	Pentafluorobenzene	168	5.786	5.786	(1.000)	212135	50.0000	
2	Dichlorodifluoromethane	85	1.470	1.470	(0.254)	117122	50.0000	56.08
186	Isobutylene	56	1.672	1.672	(0.289)	146660	50.0000	38.91(AM)
3	Chloromethane	50	1.611	1.611	(0.278)	216299	50.0000	41.32
4	Propionitrile	54	5.240	5.240	(0.906)	404840	500.000	422.18
5	Vinyl Chloride	62	1.698	1.698	(0.293)	174896	50.0000	49.96
6	Bromomethane	94	1.967	1.967	(0.340)	98606	50.0000	56.57
7	Chloroethane	64	2.054	2.054	(0.355)	102680	50.0000	45.91
159	Dichlorofluoromethane	67	2.250	2.250	(0.389)	241797	50.0000	46.55
8	Trichlorofluoromethane	101	2.269	2.269	(0.392)	176452	50.0000	51.58
9	Acrolein	56	2.692	2.692	(0.465)	51838	100.000	77.44
10	Acetone	43	2.872	2.872	(0.496)	66669	100.000	70.29
11	1,1-Dichloroethene	96	2.766	2.766	(0.478)	113109	50.0000	45.11
12	Isobutyl Alcohol	74	6.164	6.164	(1.065)	10221	1000.00	725.90(A)
13	Acetonitrile	39	3.180	3.180	(0.550)	139256	500.000	444.54
14	Allyl Chloride	41	3.190	3.190	(0.551)	372169	50.0000	43.21
15	Iodomethane	142	2.923	2.923	(0.505)	207884	100.000	91.35
16	Acrylonitrile	53	3.713	3.713	(0.642)	103256	100.000	78.15
17	Methylene Chloride	84	3.350	3.350	(0.579)	126073	50.0000	44.24
18	Methyl tert-butyl ether	73	3.703	3.703	(0.640)	331900	50.0000	43.48
19	Carbon Disulfide	76	2.972	2.972	(0.514)	431798	100.000	91.28
20	trans-1,2-Dichloroethene	96	3.677	3.677	(0.636)	130515	50.0000	50.48

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	21 Vinyl Acetate	43	5.243	5.243	(0.906)	255911	100.000	73.41(M)
	22 1,1-Dichloroethane	63	4.287	4.287	(0.741)	269102	50.0000	45.38
	24 2-Butanone	43	5.147	5.147	(0.890)	117768	100.000	80.84
	25 Methacrylonitrile	41	5.407	5.407	(0.935)	133114	50.0000	41.75
	26 2,2-Dichloropropane	77	5.051	5.051	(0.873)	163955	50.0000	50.80
	27 cis-1,2-Dichloroethene	96	5.073	5.073	(0.877)	147038	50.0000	47.14
	28 Chloroform	83	5.497	5.497	(0.950)	228063	50.0000	45.88
	29 Bromochloromethane	128	5.372	5.372	(0.928)	72565	50.0000	49.93
$	30 Dibromofluoromethane	113	5.689	5.689	(0.983)	86065	50.0000	45.37
	31 1,1,1-Trichloroethane	97	5.661	5.661	(0.978)	202335	50.0000	48.26
	32 1,1-Dichloropropene	75	5.860	5.860	(0.892)	167813	50.0000	58.38
	33 1,2-Dichloroethane	62	6.148	6.148	(0.936)	165278	50.0000	47.65
	34 Carbon Tetrachloride	117	5.837	5.837	(0.888)	173932	50.0000	57.68
$	35 1,2-Dichloroethane-d4	65	6.062	6.062	(1.048)	99126	50.0000	45.80
*	36 1,4-Difluorobenzene	114	6.572	6.572	(1.000)	317665	50.0000	
	37 Benzene	78	6.097	6.097	(0.928)	546058	50.0000	50.24
	38 Trichloroethene	130	6.819	6.819	(1.038)	153792	50.0000	53.00
	39 Bromodichloromethane	83	7.381	7.381	(1.123)	183438	50.0000	50.17
	40 Methyl Methacrylate	41	7.249	7.249	(1.253)	133291	50.0000	41.31
	41 2-Chloroethylvinyl ether	63	8.154	8.154	(1.241)	42303	100.000	96.00(T)
	42 1,2-Dichloropropane	63	7.066	7.066	(1.075)	150748	50.0000	47.80
	43 2-Nitropropane	43	8.026	8.026	(1.387)	272223	50.0000	40.12
	44 Dibromomethane	93	7.191	7.191	(1.094)	78427	50.0000	50.26
	45 4-Methyl-2-Pentanone	43	8.026	8.026	(0.843)	272223	100.000	80.00
	46 cis-1,3-Dichloropropene	75	7.836	7.836	(1.192)	215480	50.0000	52.64
*	47 Chlorobenzene-d5	117	9.524	9.524	(1.000)	298774	50.0000	
$	48 Toluene-d8	98	8.090	8.090	(0.849)	354117	50.0000	42.87
	49 Ethyl Methacrylate	69	8.533	8.533	(1.298)	179703	50.0000	45.51
	50 Toluene	91	8.157	8.157	(0.856)	552324	50.0000	45.82
	51 trans-1,3-Dichloropropene	75	8.417	8.417	(1.281)	175933	50.0000	55.45
	52 2-Hexanone	43	8.866	8.866	(0.931)	175279	100.000	79.36
	53 1,1,2-Trichloroethane	83	8.594	8.594	(0.902)	100063	50.0000	43.62
	54 1,3-Dichloropropane	76	8.754	8.754	(0.919)	202445	50.0000	44.64
	55 Dibromochloromethane	129	8.969	8.969	(0.942)	150643	50.0000	47.04
	56 Tetrachloroethene	164	8.690	8.690	(0.912)	123216	50.0000	50.69
	57 1,2-Dibromoethane	107	9.065	9.065	(0.952)	132172	50.0000	47.88
	58 1-Chlorohexane	55	9.550	9.550	(1.453)	138200	50.0000	59.48
	59 Chlorobenzene	112	9.553	9.553	(1.003)	360501	50.0000	48.22
	60 1,1,1,2-Tetrachloroethane	131	9.643	9.643	(1.012)	142389	50.0000	48.51
	61 Ethylbenzene	106	9.669	9.669	(1.015)	199166	50.0000	56.44
	62 m,p-Xylenes	106	9.790	9.790	(1.028)	481446	100.000	116.93
	63 o-Xylene	106	10.176	10.176	(1.068)	253480	50.0000	56.24
	64 Styrene	104	10.198	10.198	(1.071)	401889	50.0000	50.39
	66 Bromoform	173	10.374	10.374	(1.089)	109214	50.0000	48.87
	67 Isopropylbenzene	105	10.545	10.545	(1.107)	632951	50.0000	49.31
	68 1,1,2,2-Tetrachloroethane	83	10.872	10.872	(0.919)	165449	50.0000	37.95
$	69 4-Bromofluorobenzene	95	10.695	10.695	(1.123)	138040	50.0000	52.09
*	70 1,4-Dichlorobenzene-d4	152	11.835	11.835	(1.000)	136656	50.0000	
	71 1,2,3-Trichloropropane	75	10.901	10.901	(0.921)	160597	50.0000	39.26
	72 trans-1,4-Dichloro-2-butene	53	10.930	10.930	(1.148)	33336	50.0000	42.31
	73 n-Propylbenzene	91	10.952	10.952	(0.925)	699008	50.0000	56.74
	74 Bromobenzene	156	10.830	10.830	(0.915)	170625	50.0000	46.20
	75 1,3,5-Trimethylbenzene	105	11.132	11.132	(0.941)	493492	50.0000	47.78
	76 2-Chlorotoluene	91	11.026	11.026	(0.932)	425596	50.0000	51.54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
77	4-Chlorotoluene	91	11.138	11.138	(0.941)	457767	50.0000	52.23
78	tert-Butylbenzene	119	11.449	11.449	(0.967)	441102	50.0000	55.15
79	1,2,4-Trimethylbenzene	105	11.498	11.498	(0.972)	494742	50.0000	52.75
81	sec-Butylbenzene	105	11.668	11.668	(0.986)	613514	50.0000	45.02
82	p-Isopropyltoluene	119	11.815	11.815	(0.998)	504466	50.0000	44.74
83	1,3-Dichlorobenzene	146	11.764	11.764	(0.994)	294720	50.0000	46.40
84	1,4-Dichlorobenzene	146	11.857	11.857	(1.002)	280767	50.0000	47.34
87	n-Butylbenzene	91	12.220	12.220	(1.033)	388587	50.0000	46.59
88	1,2-Dichlorobenzene	146	12.223	12.223	(1.033)	279039	50.0000	44.54
89	1,2-Dibromo-3-Chloropropane	75	13.009	13.009	(1.099)	26115	50.0000	38.65
90	1,2,4-Trichlorobenzene	180	13.814	13.814	(1.167)	165750	50.0000	47.62
91	Hexachlorobutadiene	225	13.984	13.984	(1.182)	77540	50.0000	46.71
92	Naphthalene	128	14.058	14.058	(1.188)	377536	50.0000	45.06
93	1,2,3-Trichlorobenzene	182	14.299	14.299	(1.208)	137099	50.0000	44.50
146	Methyl acetate	43	3.244	3.244	(0.561)	122937	50.0000	36.37
138	Freon TF	101	2.779	2.779	(0.480)	108020	50.0000	53.72
139	Diethyl ether	59	2.558	2.558	(0.442)	210538	50.0000	41.26
147	Methylcyclohexane	83	6.989	6.989	(1.063)	200951	50.0000	59.74
135	1,4-Dioxane	88	7.239	7.239	(1.251)	24441	1000.00	814.40
132	n-Butanol	56	6.995	6.995	(1.209)	89337	1000.00	939.33
131	Methyl Acrylate	55	5.266	5.266	(0.910)	209379	50.0000	42.94
133	Ethyl Acrylate	55	7.012	7.012	(1.212)	388248	50.0000	42.65
136	n-Hexane	57	4.075	4.075	(0.704)	158505	50.0000	46.22
141	Cyclohexane	56	5.696	5.696	(0.984)	247324	50.0000	46.26
142	Tetrahydrofuran	42	5.423	5.423	(0.937)	87012	100.000	74.89
148	Tert-butyl alcohol	59	3.575	3.575	(0.618)	257865	1000.00	792.79
149	Isopropyl alcohol	45	3.077	3.077	(0.532)	141856	1000.00	687.10
151	4-Methyl-2-pentanol	45	8.452	8.452	(0.887)	576375	1000.00	812.99
166	1,2,3-Trimethylbenzene	105	11.915	11.915	(1.007)	474617	50.0000	52.66
167	Ethanol	45	2.558	2.558	(0.442)	194558	1000.00	745.84
170	1,3,5-Trichlorobenzene	180	13.202	13.202	(1.116)	195032	50.0000	47.84
172	tert-Butyl formate	59	4.916	4.916	(0.850)	358679	100.000	96.25
173	3,3-Dimethyl-1-butanol	57	9.094	9.094	(0.955)	215423	1000.00	820.65
174	tert-Amyl methyl ether	73	6.264	6.264	(1.083)	332242	50.0000	46.06
175	tert-Butyl ethyl ether	59	6.238	6.238	(1.078)	152956	50.0000	39.10
176	tert-Amyl alcohol	59	6.238	6.238	(1.078)	152956	1000.00	782.04
157	2-Methylnaphthalene	142	15.188	15.188	(1.283)	81400	50.0000	30.21
156	Diisopropyl ether	45	4.432	4.432	(0.766)	497164	50.0000	43.87(T)
171	1-Methylnaphthalene	142	15.384	15.384	(1.300)	97106	50.0000	32.97
130	Ethyl Acetate	43	5.243	5.243	(0.906)	265648	50.0000	38.33
M 94	1,2-Dichloroethylene (total)	96				277553	100.000	97.62
M 95	Xylenes (total)	106				734926	150.000	173.17

QC Flag Legend

T - Target compound detected outside RT window.
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\nahstws003\Target\CHEM\WOA2.i\D180902.b\D090228.D
Date : 03-SEP-2018 00:31
Client ID: CCV_END
Sample Info: CCV_END;CCV_END;2;;
Purge Volume: 5.0
Column phase: DB624

\\nahstws003\Target\CHEM\WOA2.i\D180902.b\D090228.D

Instrument: WOA2.i
Operator: AP
Column diameter: 0.18

Metals Data Package

Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
ALS WO#HS18081428

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Instrument:ICPMS04

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		ArHe
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
111	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
135	Barium	Indium		Ar
203	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Instrument:ICPMS05

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
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24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		Ar
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
114	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
137	Barium	Indium		Ar
205	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Instrument:ICPMS04

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
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39	Potassium	Germanium		Ar
44	Calcium	Germanium		ArHe
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
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121	Antimony	Germanium		ArHe
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203	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Instrument:ICPMS05

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
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105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
114	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
137	Barium	Indium		Ar
205	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Instrument:ICPMS04

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
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51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
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105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
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203	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Instrument:ICPMS05

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
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27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
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51	Vanadium	Germanium		ArHe
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55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
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78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
114	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
137	Barium	Indium		Ar
205	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

ALS Houston, US

Date: 20-Sep-18

FORM 12 - PREPARATION LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428
Start Date: 30-Aug-2018 14:00 End Date: 30-Aug-2018 18:00

Batch ID: 132023
Prep Code: 3010A Diss
Method: SW3010A
Technician:

SampID	ClientID	Matrix	Init Wt	Init Vol	FinalVol (mL)	PrepFac
HS18081423-01MS				10	10	1
HS18081423-01MSD				10	10	1
HS18081423-01PDS				10	10	1
HS18081423-01SD				10	10	1
HS18081428-07	46WW05-180828	Groundwater		10	10	1
HS18081428-08	46WW16-180828	Groundwater		10	10	1
HS18081428-09	46WW09-180828	Groundwater		10	10	1
HS18081428-10	LHSMW19--180828	Groundwater		10	10	1
HS18081434-01MS				10	10	1
HS18081434-01MSD				10	10	1
HS18081434-01PDS				10	10	1
HS18081434-01SD				10	10	1
LCS-132023				10	10	1
MBLK-132023				10	10	1
MBLKF1-132023				10	10	1

FORM 12 - PREPARATION LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428
Start Date: 30-Aug-2018 11:00 End Date: 30-Aug-2018 15:00

Batch ID: 132005
Prep Code: 3010A
Method: SW3010A
Technician:

SampID	ClientID	Matrix	Init Wt	Init Vol	FinalVol (mL)	PrepFac
HS18081423-01MS				10	10	1
HS18081423-01MSD				10	10	1
HS18081423-01PDS				10	10	1
HS18081423-01SD				10	10	1
HS18081428-07	46WW05-180828	Groundwater		10	10	1
HS18081428-08	46WW16-180828	Groundwater		10	10	1
HS18081428-09	46WW09-180828	Groundwater		10	10	1
HS18081428-10	LHSMW19--180828	Groundwater		10	10	1
HS18081429-01MS				10	10	1
HS18081429-01MSD				10	10	1
HS18081429-01PDS				10	10	1
HS18081429-01SD				10	10	1
HS18081434-01MS				10	10	1
HS18081434-01MSD				10	10	1
HS18081434-01PDS				10	10	1
HS18081434-01SD				10	10	1
HS18081435-01MS				10	10	1
HS18081435-01MSD				10	10	1
HS18081435-01PDS				10	10	1
HS18081435-01SD				10	10	1
LCS-132005				10	10	1
MBLK-132005				10	10	1

FORM 13 - ANALYSIS RUN LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428
Start Date: 31-Aug-2018 End Date: 31-Aug-2018

Run ID:ICPMS04_322696
Instrument:ICPMS04
Method:

Sample No.	D/F	Time	FileID	Analytes
ICPMS04_322696_Tune	1	31-Aug-2018 00:00	ICPMS04_322696_Tune_1	
CAL BLK	1	31-Aug-2018 11:34	012CALB.d_4712116	FE MN
2/10/200	1	31-Aug-2018 11:37	013CALS.d_4712117	FE MN
5/25/500	1	31-Aug-2018 11:39	014CALS.d_4712118	FE MN
10/50/1000	1	31-Aug-2018 11:41	015CALS.d_4712119	FE MN
100/500/10K	1	31-Aug-2018 11:43	016CALS.d_4712120	FE MN
200/1000/20K	1	31-Aug-2018 11:45	017CALS.d_4712121	FE MN
ICV	1	31-Aug-2018 11:50	019_ICV.d_4712123	FE MN
LLICV2	1	31-Aug-2018 11:52	020SMPL.d_4712124	FE MN
LLICV5	1	31-Aug-2018 11:54	021LICV.d_4712125	FE MN
ICB	1	31-Aug-2018 11:57	022_ICB.d_4712126	FE MN
ICSA	1	31-Aug-2018 12:13	026ICSA.d_4712153	FE MN
ICSAB	1	31-Aug-2018 12:16	027ICSB.d_4712154	FE MN
CCV 1	1	31-Aug-2018 12:34	034_CCV.d_4712231	FE MN
CCB 1	1	31-Aug-2018 12:37	035_CCB.d_4712232	FE MN
CCV 2	1	31-Aug-2018 13:05	046_CCV.d_4712334	FE MN
CCB 2	1	31-Aug-2018 13:07	047_CCB.d_4712335	FE MN
CCV 3	1	31-Aug-2018 13:36	058_CCV.d_4712519	FE MN
CCB 3	1	31-Aug-2018 13:38	059_CCB.d_4712520	FE MN
CAL BLK	1	31-Aug-2018 14:48	089CALB.d_4713059	FE MN
2/10/200	1	31-Aug-2018 14:50	090CALS.d_4713060	FE MN
5/25/500	1	31-Aug-2018 14:53	091CALS.d_4713061	FE MN
10/50/1000	1	31-Aug-2018 14:55	092CALS.d_4713068	FE MN
100/500/10K	1	31-Aug-2018 14:57	093CALS.d_4713069	FE MN
200/1000/20K	1	31-Aug-2018 14:59	094CALS.d_4713070	FE MN
ICCV 4	1	31-Aug-2018 15:04	096_ICV.d_4713072	FE MN
LLCCV2	1	31-Aug-2018 15:06	097SMPL.d_4713073	FE MN
LLCCV5	1	31-Aug-2018 15:09	098LICV.d_4713074	FE MN
ICCB 4	1	31-Aug-2018 15:11	099_ICB.d_4713075	FE MN
CCV 5	1	31-Aug-2018 15:27	104_CCV.d_4713080	FE MN
CCB 5	1	31-Aug-2018 15:29	105_CCB.d_4713081	FE MN
MBLKF1-132023	1	31-Aug-2018 15:42	107SMPL.d_4713209	FE MN
MBLK-132023	1	31-Aug-2018 15:44	108SMPL.d_4713210	FE MN
LCS-132023	1	31-Aug-2018 15:47	109SMPL.d_4713211	FE MN
CCV 6	1	31-Aug-2018 16:03	116_CCV.d_4713218	FE MN
CCB 6	1	31-Aug-2018 16:05	117_CCB.d_4713219	FE MN
ZZZZZZSD	5	31-Aug-2018 16:16	120SMPL.d_4713401	FE MN
ZZZZZZSD	5	31-Aug-2018 16:16	120SMPL.d_4713489	
ZZZZZZMS	1	31-Aug-2018 16:19	121SMPL.d_4713402	FE MN
ZZZZZZMS	1	31-Aug-2018 16:19	121SMPL.d_4713490	
ZZZZZZMSD	1	31-Aug-2018 16:21	122SMPL.d_4713403	FE MN
ZZZZZZMSD	1	31-Aug-2018 16:21	122SMPL.d_4713491	
ZZZZZZPDS	1	31-Aug-2018 16:23	123SMPL.d_4713404	FE MN
ZZZZZZPDS	1	31-Aug-2018 16:23	123SMPL.d_4713492	
CCV 7	1	31-Aug-2018 16:30	126_CCV.d_4713407	FE MN
CCB 7	1	31-Aug-2018 16:32	127_CCB.d_4713408	FE MN
46WW05-180828	1	31-Aug-2018 17:09	133SMPL.d_4713554	FE
46WW16-180828	1	31-Aug-2018 17:11	134SMPL.d_4713555	FE MN
46WW09-180828	1	31-Aug-2018 17:13	135SMPL.d_4713556	FE
LHSMW19--180828	1	31-Aug-2018 17:16	136SMPL.d_4713557	FE MN
CCV 8	1	31-Aug-2018 17:20	138_CCV.d_4713559	FE MN

FORM 13 - ANALYSIS RUN LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428
Start Date: 31-Aug-2018 End Date: 31-Aug-2018

Run ID:ICPMS04_322696
Instrument:ICPMS04
Method:

Sample No.	D/F	Time	FileID	Analytes
CCB 8	1	31-Aug-2018 17:22	139_CCB.d_4713560	FE MN
46WW05-180828	100	31-Aug-2018 17:36	141SMPL.d_4713584	MN
46WW09-180828	20	31-Aug-2018 17:38	142SMPL.d_4713585	MN
CCV 9	1	31-Aug-2018 17:43	144_CCV.d_4713587	FE MN
CCB 9	1	31-Aug-2018 17:45	145_CCB.d_4713588	FE MN

FORM 13 - ANALYSIS RUN LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428
Start Date: 30-Aug-2018 End Date: 31-Aug-2018

Run ID:ICPMS05_322610
Instrument:ICPMS05
Method:

Sample No.	D/F	Time	FileID	Analytes
ICPMS05_322610_Tune	1	30-Aug-2018 00:00	ICPMS05_322610_Tune_1	
CAL BLK	1	30-Aug-2018 10:37	005CALB.d_4710250	FE
2/10/200	1	30-Aug-2018 10:39	006CALS.d_4710251	FE
5/25/500	1	30-Aug-2018 10:41	007CALS.d_4710252	FE
10/50/1000	1	30-Aug-2018 10:43	008CALS.d_4710253	FE
100/500/10K	1	30-Aug-2018 10:45	009CALS.d_4710254	FE
200/1000/20K	1	30-Aug-2018 10:47	010CALS.d_4710255	FE
ICV	1	30-Aug-2018 10:51	012_ICV.d_4710257	FE
LLICV2	1	30-Aug-2018 10:53	013SMPL.d_4710258	FE
LLICV5	1	30-Aug-2018 10:55	014LICV.d_4710259	FE
ICB	1	30-Aug-2018 10:57	015_ICB.d_4710260	FE
ICSA	1	30-Aug-2018 11:03	016ICSA.d_4710261	FE
ICSAB	1	30-Aug-2018 11:05	017ICSB.d_4710262	FE
CCV 1	1	30-Aug-2018 11:35	029_CCV.d_4710374	FE
CCB 1	1	30-Aug-2018 11:37	030_CCB.d_4710375	FE
CCV 2	1	30-Aug-2018 11:59	041_CCV.d_4710450	FE
CCB 2	1	30-Aug-2018 12:01	042_CCB.d_4710451	FE
CCV 3	1	30-Aug-2018 12:17	050_CCV.d_4710459	FE
CCB 3	1	30-Aug-2018 12:19	051_CCB.d_4710460	FE
CCV 4	1	30-Aug-2018 12:44	062_CCV.d_4710484	FE
CCB 4	1	30-Aug-2018 12:46	063_CCB.d_4710485	FE
CCV 5	1	30-Aug-2018 13:08	074_CCV.d_4710701	FE
CCB 5	1	30-Aug-2018 13:10	075_CCB.d_4710702	FE
CCV 6	1	30-Aug-2018 13:35	087_CCV.d_4710714	FE
CCB 6	1	30-Aug-2018 13:37	088_CCB.d_4710721	FE
CCV 7	1	30-Aug-2018 13:58	099_CCV.d_4710736	FE
CCB 7	1	30-Aug-2018 14:00	100_CCB.d_4710737	FE
CCB 8	1	30-Aug-2018 14:12	106_CCB.d_4710744	FE
CCV 8	1	30-Aug-2018 14:17	108_CCV.d_4710746	FE
CCV 9	1	30-Aug-2018 14:36	118_CCV.d_4710804	FE
CCB 9	1	30-Aug-2018 14:38	119_CCB.d_4710805	FE
CCB 10	1	30-Aug-2018 15:03	130_CCB.d_4710816	FE
CCV 10	1	30-Aug-2018 15:05	131_CCV.d_4710817	FE
CAL BLK	1	30-Aug-2018 21:36	137CALB.d_4711305	FE
2/10/200	1	30-Aug-2018 21:38	138CALS.d_4711306	FE
5/25/500	1	30-Aug-2018 21:40	139CALS.d_4711307	FE
10/50/1000	1	30-Aug-2018 21:42	140CALS.d_4711308	FE
100/500/10K	1	30-Aug-2018 21:44	141CALS.d_4711309	FE
200/1000/20K	1	30-Aug-2018 21:46	142CALS.d_4711310	FE
ICCV 11	1	30-Aug-2018 21:48	143_ICV.d_4711311	FE
LLCCV2	1	30-Aug-2018 21:50	144SMPL.d_4711312	FE
LLCCV5	1	30-Aug-2018 21:52	145LICV.d_4711313	FE
ICCB 11	1	30-Aug-2018 21:54	146_ICB.d_4711314	FE
CCV 12	1	30-Aug-2018 22:06	152_CCV.d_4711338	FE
CCB 12	1	30-Aug-2018 22:08	153_CCB.d_4711339	FE
CCB 13	1	30-Aug-2018 22:22	160_CCB.d_4711346	FE
CCV 13	1	30-Aug-2018 22:36	162_CCV.d_4711348	FE
CCV 14	1	30-Aug-2018 22:46	167_CCV.d_4711353	FE
CCB 14	1	30-Aug-2018 22:48	168_CCB.d_4711354	FE
CAL BLK	1	30-Aug-2018 22:56	172CALB.d_4711356	FE
2/10/200	1	30-Aug-2018 22:58	173CALS.d_4711357	FE

FORM 13 - ANALYSIS RUN LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428
Start Date: 30-Aug-2018 End Date: 31-Aug-2018

Run ID:ICPMS05_322610
Instrument:ICPMS05
Method:

Sample No.	D/F	Time	FileID	Analytes
5/25/500	1	30-Aug-2018 23:00	174CALS.d_4711358	FE
10/50/1000	1	30-Aug-2018 23:02	175CALS.d_4711359	FE
100/500/10K	1	30-Aug-2018 23:12	180CALS.d_4711360	FE
200/1000/20K	1	30-Aug-2018 23:14	181CALS.d_4711361	FE
ICCV 15	1	30-Aug-2018 23:16	182_ICV.d_4711362	FE
LLCCV2	1	30-Aug-2018 23:18	183SMPL.d_4711363	FE
LLCCV5	1	30-Aug-2018 23:20	184LICV.d_4711364	FE
ICCB 15	1	30-Aug-2018 23:22	185_ICB.d_4711365	FE
ICSA	1	30-Aug-2018 23:24	186ICSA.d_4711366	FE
ICSAB	1	30-Aug-2018 23:26	187ICSB.d_4711367	FE
MBLK-132005	1	30-Aug-2018 23:30	189SMPL.d_4711478	FE
LCS-132005	1	30-Aug-2018 23:32	190SMPL.d_4711479	FE
CCV 16	1	30-Aug-2018 23:42	195_CCV.d_4711484	FE
CCB 16	1	30-Aug-2018 23:44	196_CCB.d_4711485	FE
ZZZZZZSD	5	30-Aug-2018 23:48	198SMPL.d_4711487	FE
ZZZZZZSD	5	30-Aug-2018 23:48	198SMPL.d_4713133	
ZZZZZZSD	5	30-Aug-2018 23:48	198SMPL.d_4713148	
ZZZZZZSD	5	30-Aug-2018 23:48	198SMPL.d_4713163	
ZZZZZZMS	1	30-Aug-2018 23:50	199SMPL.d_4711488	FE
ZZZZZZMS	1	30-Aug-2018 23:50	199SMPL.d_4713134	
ZZZZZZMS	1	30-Aug-2018 23:50	199SMPL.d_4713149	
ZZZZZZMS	1	30-Aug-2018 23:50	199SMPL.d_4713164	
ZZZZZZMSD	1	30-Aug-2018 23:52	200SMPL.d_4711489	FE
ZZZZZZMSD	1	30-Aug-2018 23:52	200SMPL.d_4713135	
ZZZZZZMSD	1	30-Aug-2018 23:52	200SMPL.d_4713150	
ZZZZZZMSD	1	30-Aug-2018 23:52	200SMPL.d_4713165	
ZZZZZZPDS	1	30-Aug-2018 23:54	201SMPL.d_4711490	FE
ZZZZZZPDS	1	30-Aug-2018 23:54	201SMPL.d_4713136	
ZZZZZZPDS	1	30-Aug-2018 23:54	201SMPL.d_4713151	
ZZZZZZPDS	1	30-Aug-2018 23:54	201SMPL.d_4713166	
CCV 17	1	30-Aug-2018 23:58	203_CCV.d_4711492	FE
CCB 17	1	31-Aug-2018 00:00	204_CCB.d_4711493	FE
46WW05-180828	1	31-Aug-2018 00:02	205SMPL.d_4711494	FE
46WW16-180828	1	31-Aug-2018 00:04	206SMPL.d_4711495	FE
46WW09-180828	1	31-Aug-2018 00:06	207SMPL.d_4711496	FE
LHSMW19--180828	1	31-Aug-2018 00:08	208SMPL.d_4711497	FE
CCV 18	1	31-Aug-2018 00:18	213_CCV.d_4711502	FE
CCB 18	1	31-Aug-2018 00:20	214_CCB.d_4711503	FE
CCV 19	1	31-Aug-2018 00:38	223_CCV.d_4711512	FE
CCB 19	1	31-Aug-2018 00:40	224_CCB.d_4711513	FE
CCV 20	1	31-Aug-2018 00:56	232_CCV.d_4711521	FE
CCB 20	1	31-Aug-2018 00:58	233_CCB.d_4711522	FE
CCV 21	1	31-Aug-2018 01:12	240_CCV.d_4711529	FE
CCB 21	1	31-Aug-2018 01:14	241_CCB.d_4711530	FE
LLCCV5	1	31-Aug-2018 01:16	242LICV.d_4711531	FE
LLCCV2	1	31-Aug-2018 01:17	243SMPL.d_4711532	FE
ICSA	1	31-Aug-2018 01:19	244ICSA.d_4711533	FE
ICSAB	1	31-Aug-2018 01:22	245ICSB.d_4711534	FE

FORM 13 - ANALYSIS RUN LOG

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428
Start Date: 31-Aug-2018 End Date: 31-Aug-2018

Run ID:ICPMS05_322694
Instrument:ICPMS05
Method:

Sample No.	D/F	Time	FileID	Analytes
ICPMS05_322694_Tune	1	31-Aug-2018 00:00	ICPMS05_322694_Tune_1	

Form 2 - Initial and Continuing Calibration Verification

Client: Aptim Environmental & Infrastucture, Inc. Run ID: ICPMS04_322696

Project: LHAAP-46 501032 Instrument: ICPMS04

WorkOrder: HS18081428 Method: SW6020

ICV	Date: 31-Aug-2018 11:50		Seq: 4712123	ICV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	10133.889	101	90-110	
Manganese	100	96.495	97	90-110	

CCV1	Date: 31-Aug-2018 12:34		Seq: 4712231	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	10190.101	102	90-110	
Manganese	100	96.102	96	90-110	

CCV2	Date: 31-Aug-2018 13:05		Seq: 4712334	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	10136.349	101	90-110	
Manganese	100	92.103	92	90-110	

CCV3	Date: 31-Aug-2018 13:36		Seq: 4712519	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	10032.991	100	90-110	
Manganese	100	93.606	94	90-110	

ICCV4	Date: 31-Aug-2018 15:04		Seq: 4713072	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	10074.522	101	90-110	
Manganese	100	98.926	99	90-110	

CCV5	Date: 31-Aug-2018 15:27		Seq: 4713080	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9891.32	99	90-110	
Manganese	100	97.067	97	90-110	

CCV6	Date: 31-Aug-2018 16:03		Seq: 4713218	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9657.582	97	90-110	
Manganese	100	95.783	96	90-110	

CCV7	Date: 31-Aug-2018 16:30		Seq: 4713407	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9561.494	96	90-110	
Manganese	100	96.275	96	90-110	

CCV8	Date: 31-Aug-2018 17:20		Seq: 4713559	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9523.19	95	90-110	
Manganese	100	92.784	93	90-110	

CCV9	Date: 31-Aug-2018 17:43		Seq: 4713587	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9445.936	95	90-110	
Manganese	100	96.597	97	90-110	

Form 2 - Initial and Continuing Calibration Verification

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Run ID: ICPMS05_322610
Instrument: ICPMS05
Method: SW6020

ICV	Date: 30-Aug-2018 10:51		Seq: 4710257	ICV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9436.442	94	90-110	

CCV1	Date: 30-Aug-2018 11:35		Seq: 4710374	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9875.375	99	90-110	

CCV2	Date: 30-Aug-2018 11:59		Seq: 4710450	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9966.848	100	90-110	

CCV3	Date: 30-Aug-2018 12:17		Seq: 4710459	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	10088.909	101	90-110	

CCV4	Date: 30-Aug-2018 12:44		Seq: 4710484	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9950.129	100	90-110	

CCV5	Date: 30-Aug-2018 13:08		Seq: 4710701	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9813.449	98	90-110	

CCV6	Date: 30-Aug-2018 13:35		Seq: 4710714	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9882.745	99	90-110	

CCV7	Date: 30-Aug-2018 13:58		Seq: 4710736	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9913.954	99	90-110	

CCV8	Date: 30-Aug-2018 14:17		Seq: 4710746	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9740.308	97	90-110	

CCV9	Date: 30-Aug-2018 14:36		Seq: 4710804	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9734.921	97	90-110	

CCV10	Date: 30-Aug-2018 15:05		Seq: 4710817	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9471.25	95	90-110	

ICCV11	Date: 30-Aug-2018 21:48		Seq: 4711311	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9836.468	98	90-110	

CCV12	Date: 30-Aug-2018 22:06		Seq: 4711338	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9856.252	99	90-110	

CCV13	Date: 30-Aug-2018 22:36		Seq: 4711348	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Iron	10000	9971.006	100	90-110	

Form 2 - Initial and Continuing Calibration Verification

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Run ID: ICPMS05_322610
Instrument: ICPMS05
Method: SW6020

CCV14 Date: 30-Aug-2018 22:46 Seq: 4711353 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Iron	10000	9986.919	100	90-110	

ICCV15 Date: 30-Aug-2018 23:16 Seq: 4711362 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Iron	10000	9518.733	95	90-110	

CCV16 Date: 30-Aug-2018 23:42 Seq: 4711484 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Iron	10000	10050.686	101	90-110	

CCV17 Date: 30-Aug-2018 23:58 Seq: 4711492 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Iron	10000	9907.059	99	90-110	

CCV18 Date: 31-Aug-2018 00:18 Seq: 4711502 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Iron	10000	10030.643	100	90-110	

CCV19 Date: 31-Aug-2018 00:38 Seq: 4711512 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Iron	10000	9957.406	100	90-110	

CCV20 Date: 31-Aug-2018 00:56 Seq: 4711521 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Iron	10000	10120.217	101	90-110	

CCV21 Date: 31-Aug-2018 01:12 Seq: 4711529 CCV Units: ug/L

Analyte	True	Found	%R	Control Limits	Flag
Iron	10000	9755.801	98	90-110	

Form 3 - BLANKS

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Run ID: ICPMS04_322696
Instrument: ICPMS04
Method: SW6020

ICB	Date: 31-Aug-2018 11:57		Seq: 4712126	ICB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	
Manganese	5	0.7	5	U	

CCB1	Date: 31-Aug-2018 12:37		Seq: 4712232	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	
Manganese	5	0.7	5	U	

CCB2	Date: 31-Aug-2018 13:07		Seq: 4712335	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	
Manganese	5	0.7	5	U	

CCB3	Date: 31-Aug-2018 13:38		Seq: 4712520	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	
Manganese	5	0.7	5	U	

ICCB4	Date: 31-Aug-2018 15:11		Seq: 4713075	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	-15.28	12	200	J	
Manganese	5	0.7	5	U	

CCB5	Date: 31-Aug-2018 15:29		Seq: 4713081	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	-15.16	12	200	J	
Manganese	5	0.7	5	U	

MBLKF1-132023	Date: 31-Aug-2018 15:42		Seq: 4713209	MBLK	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	
Manganese	5	0.7	5	U	

MBLK-132023	Date: 31-Aug-2018 15:44		Seq: 4713210	MBLK	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	
Manganese	5	0.7	5	U	

CCB6	Date: 31-Aug-2018 16:05		Seq: 4713219	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	
Manganese	5	0.7	5	U	

CCB7	Date: 31-Aug-2018 16:32		Seq: 4713408	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	
Manganese	5	0.7	5	U	

CCB8	Date: 31-Aug-2018 17:22		Seq: 4713560	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	13.98	12	200	J	
Manganese	5	0.7	5	U	

CCB9	Date: 31-Aug-2018 17:45		Seq: 4713588	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

Form 3 - BLANKS

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Run ID: ICPMS04_322696
Instrument: ICPMS04
Method: SW6020

CCB9 | Date: 31-Aug-2018 17:45 | Seq: 4713588 | CCB | Units: ug/L

Analyte	Result	MDL	Report Limit	Qual
Manganese	5	0.7	5	U

Form 3 - BLANKS

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Run ID: ICPMS05_322610
Instrument: ICPMS05
Method: SW6020

ICB	Date: 30-Aug-2018 10:57		Seq: 4710260	ICB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB1	Date: 30-Aug-2018 11:37		Seq: 4710375	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB2	Date: 30-Aug-2018 12:01		Seq: 4710451	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB3	Date: 30-Aug-2018 12:19		Seq: 4710460	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB4	Date: 30-Aug-2018 12:46		Seq: 4710485	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB5	Date: 30-Aug-2018 13:10		Seq: 4710702	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB6	Date: 30-Aug-2018 13:37		Seq: 4710721	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB7	Date: 30-Aug-2018 14:00		Seq: 4710737	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB8	Date: 30-Aug-2018 14:12		Seq: 4710744	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB9	Date: 30-Aug-2018 14:38		Seq: 4710805	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB10	Date: 30-Aug-2018 15:03		Seq: 4710816	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

ICCB11	Date: 30-Aug-2018 21:54		Seq: 4711314	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB12	Date: 30-Aug-2018 22:08		Seq: 4711339	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB13	Date: 30-Aug-2018 22:22		Seq: 4711346	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB14	Date: 30-Aug-2018 22:48		Seq: 4711354	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

Form 3 - BLANKS

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Run ID: ICPMS05_322610
Instrument: ICPMS05
Method: SW6020

ICCB15	Date: 30-Aug-2018 23:22		Seq: 4711365	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

MBLK-132005	Date: 30-Aug-2018 23:30		Seq: 4711478	MBLK	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB16	Date: 30-Aug-2018 23:44		Seq: 4711485	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB17	Date: 31-Aug-2018 00:00		Seq: 4711493	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB18	Date: 31-Aug-2018 00:20		Seq: 4711503	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB19	Date: 31-Aug-2018 00:40		Seq: 4711513	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB20	Date: 31-Aug-2018 00:58		Seq: 4711522	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

CCB21	Date: 31-Aug-2018 01:14		Seq: 4711530	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Iron	200	12	200	U	

Form 4 - ICP Interference Check Sample

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Run ID: ICPMS04_322696
Instrument: ICPMS04
Method: SW6020

ICSA	Date: 31-Aug-2018 12:13	Seq: 4712153	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Iron	100000	97560	97.6	
Manganese		0.369	0	

ICSAB	Date: 31-Aug-2018 12:16	Seq: 4712154	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Iron	110000	105800	96.2	
Manganese	100	95.82	95.8	

Form 4 - ICP Interference Check Sample

Client: Aptim Environmental & Infrastucture, Inc.

Project: LHAAP-46 501032

WorkOrder: HS18081428

Run ID: ICPMS05_322610

Instrument: ICPMS05

Method: SW6020

ICSA	Date: 30-Aug-2018 11:03	Seq: 4710261	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Iron	100000	92920	92.9	
ICSAB	Date: 30-Aug-2018 11:05	Seq: 4710262	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Iron	110000	108900	99.0	
ICSA	Date: 30-Aug-2018 23:24	Seq: 4711366	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Iron	100000	98330	98.3	
ICSAB	Date: 30-Aug-2018 23:26	Seq: 4711367	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Iron	110000	109900	99.9	
ICSA	Date: 31-Aug-2018 01:19	Seq: 4711533	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Iron	100000	100200	100	
ICSAB	Date: 31-Aug-2018 01:22	Seq: 4711534	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Iron	110000	108900	99.0	

Form 5A - Matrix Spike/Matrix Spike Duplicate Recovery

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Date Analyzed: 31-Aug-2018 16:21
Date Extracted: 30-Aug-2018 14:00
Units: ug/L

Matrix Spike: HS18081423-01MS
Client Sample ID:

Analysis Method: SW6020

Analyte	Sample Result	MS Result	Spike Amount	% Rec	MSD Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Iron	15.04	4570	5000	91.1	4493	5000	89.5	75-125	1.70	20
Manganese	7.023	52.52	50.00	91.0	54.08	50.00	94.1	75-125	2.92	20

ALS Houston, US

Date: 20-Sep-18

Form 5A - Matrix Spike/Matrix Spike Duplicate Recovery

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Date Analyzed: 30-Aug-2018 23:52
Date Extracted: 30-Aug-2018 11:00
Units: ug/L

Matrix Spike: HS18081423-01MS
Client Sample ID:

Analysis Method: SW6020

Analyte	Sample Result	MS Result	Spike Amount	% Rec	MSD Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Iron	7584	12630	5000	101	13230	5000	113	80-120	4.65	20
Manganese	52.25	101.2	50.00	98.0	104.9	50.00	105	80-120	3.54	20

ALS Houston, US

Date: 20-Sep-18

Form 5B - Post Digest Sample Recovery

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Date Analyzed: 31-Aug-2018 16:23
Date Extracted: 30-Aug-2018 14:00
Units: ug/L

Lab Sample ID: HS18081423-01PDS
Client Sample ID:

Analysis Method: SW6020

Analyte	Sample Result	PDS Result	Spike Amount	% Rec	% Rec Limits
Iron	15.04	8905	10000	89	75-125
Manganese	7.023	94.19	100	87	75-125

ALS Houston, US

Date: 20-Sep-18

Form 5B - Post Digest Sample Recovery

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Date Analyzed: 30-Aug-2018 23:54
Date Extracted: 30-Aug-2018 11:00
Units: ug/L

Lab Sample ID: HS18081423-01PDS
Client Sample ID:

Analysis Method: SW6020

Analyte	Sample Result	PDS Result	Spike Amount	% Rec	% Rec Limits
Iron	7584	16910	10000	93	75-125
Manganese	52.25	145.8	100	94	75-125

ALS Houston, US

Date: 20-Sep-18

Form 7 - Laboratory Control Sample

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Date Analyzed: 31-Aug-2018 15:47
Date Extracted: 30-Aug-2018 14:00
Units: ug/L

Lab Sample ID: LCS-132023

Analysis Method: SW6020

Analyte	Spike Amount	LCS Result	% Rec	% Rec Limits
Iron	5000	4993	100	80-120
Manganese	50	47.65	95	80-120

ALS Houston, US

Date: 20-Sep-18

Form 7 - Laboratory Control Sample

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Date Analyzed: 30-Aug-2018 23:32
Date Extracted: 30-Aug-2018 11:00
Units: ug/L

Lab Sample ID: LCS-132005
Analysis Method: SW6020

Analyte	Spike Amount	LCS Result	% Rec	% Rec Limits
Iron	5000	4769	95	80-120
Manganese	50	48.84	98	80-120

ALS Houston, US

Date: 20-Sep-18

Form 8 - ICP Serial Dilutions

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Date Analyzed: 31-Aug-2018 16:16
Date Extracted: 30-Aug-2018 14:00
Units: ug/L

Lab Sample ID: HS18081423-01SD
Client Sample ID:

Analysis Method: SW6020

Analyte	Sample Result	C	SD Result	C	RPD	Q
Iron	15.04	J	91.09	J	506	
Manganese	7.023		6.494	J	8	

ALS Houston, US

Date: 20-Sep-18

Form 8 - ICP Serial Dilutions

Client: Aptim Environmental & Infrastucture, Inc.
Project: LHAAP-46 501032
WorkOrder: HS18081428

Date Analyzed: 30-Aug-2018 23:48
Date Extracted: 30-Aug-2018 11:00
Units: ug/L

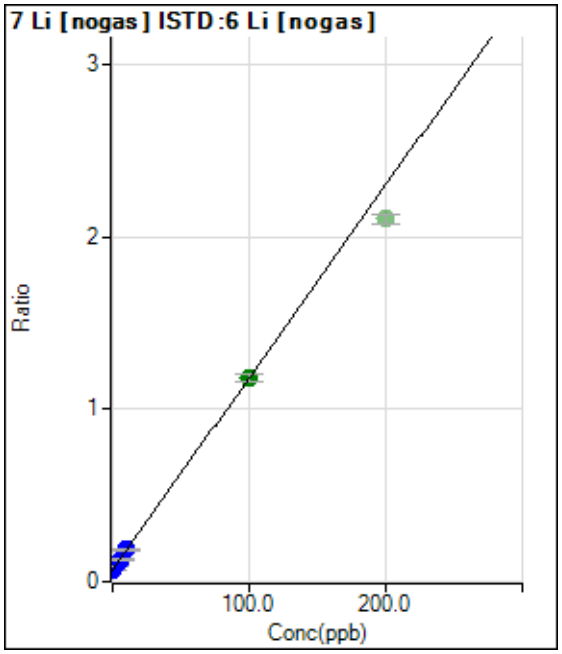
Lab Sample ID: HS18081423-01SD
Client Sample ID:

Analysis Method: SW6020

Analyte	Sample Result	C	SD Result	C	RPD	Q
Iron	7584		7674		1	
Manganese	52.25		53.76		3	

Batch Folder: C:\Agilent\ICPMH\1\DATA\083118A.b\
Analysis File: 083118A.batch.bin
DA Date-Time: 8/31/2018 3:06:08 PM
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

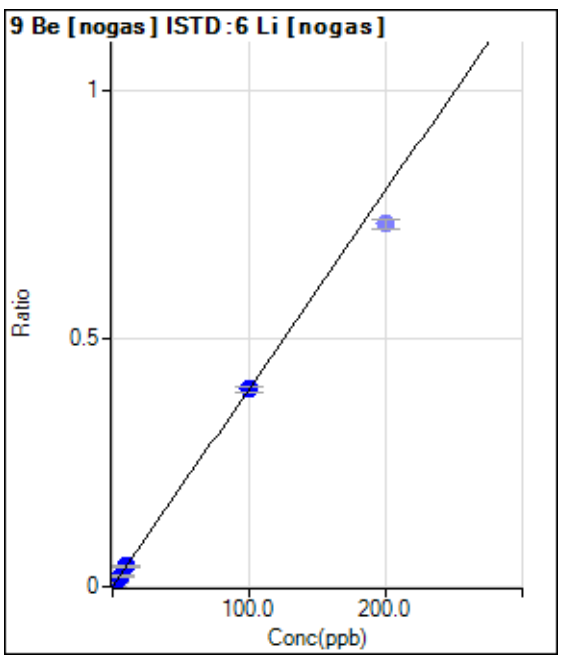
Level	Standard Data File	Sample Name	Acq. Date-Time
1	012CALB.d	CAL BLK	8/31/2018 11:34:46 AM
2	013CALS.d	2/10/200	8/31/2018 11:37:01 AM
3	014CALS.d	5/25/500	8/31/2018 11:39:16 AM
4	015CALS.d	10/50/1000	8/31/2018 11:41:30 AM
5	016CALS.d	100/500/10K	8/31/2018 11:43:44 AM
6	017CALS.d	200/1000/20K	8/31/2018 11:45:56 AM
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	66858.73	0.0674	P	2.7
2	☐	2.000	1.939	89351.17	0.0891	P	1.4
3	☐	5.000	5.424	124717.42	0.1280	P	1.8
4	☐	10.000	10.482	183644.77	0.1845	P	3.5
5	☐	100.000	99.932	1194738.99	1.1838	A	4.3
6	☑	200.000		2342492.21	2.1075	A	2.5
7	☐	1.000					

y = 0.0112 * x + 0.0674
R = 1.0000
DL = 0.4927
BEC = 6.036

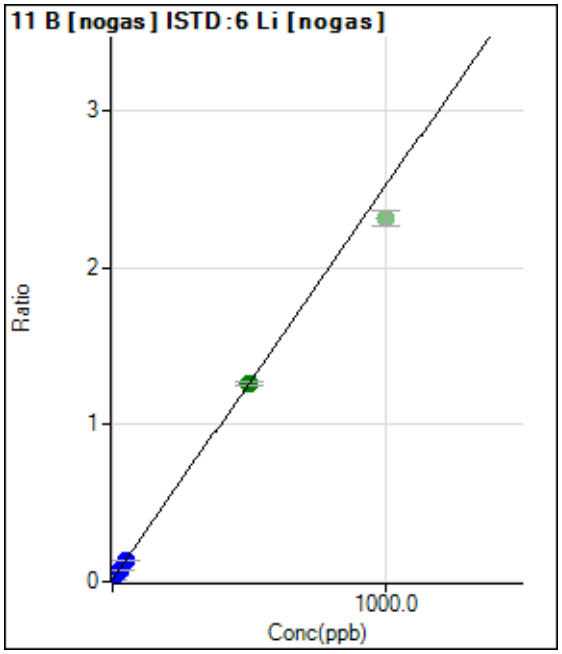
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40.00	0.0000	P	44.6
2	☐	2.000	2.028	8148.55	0.0081	P	1.8
3	☐	5.000	5.205	20247.90	0.0208	P	5.3
4	☐	10.000	10.270	40804.36	0.0410	P	2.0
5	☐	100.000	99.962	402442.45	0.3986	P	2.7
6	☑	200.000		812444.83	0.7310	P	2.7
7	☐	1.000					

y = 0.0040 * x + 4.0476E-005
R = 1.0000
DL = 0.01358
BEC = 0.01015

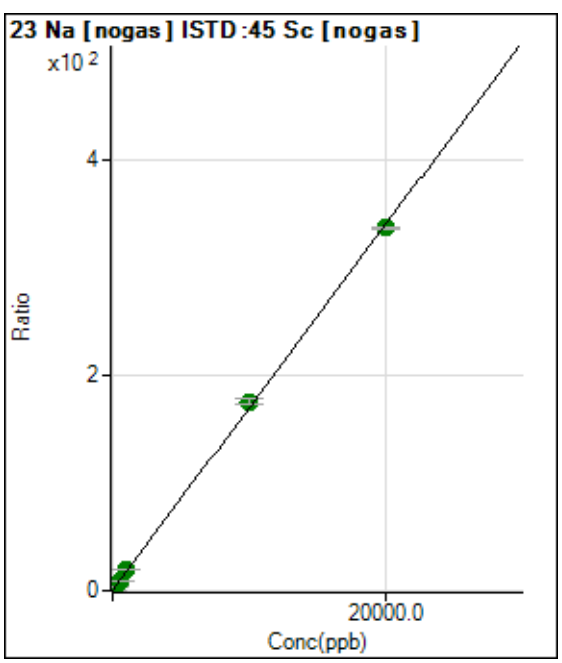
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	11877.25	0.0120	P	1.7
2	☐	10.000	9.403	35657.64	0.0356	P	3.0
3	☐	25.000	24.649	71874.21	0.0738	P	4.0
4	☐	50.000	50.259	137390.02	0.1380	P	2.9
5	☐	500.000	500.004	1278172.87	1.2660	A	2.3
6	☑	1000.000		2569491.42	2.3122	A	4.2
7	☐	5.000					

y = 0.0025 * x + 0.0120
R = 1.0000
DL = 0.246
BEC = 4.776

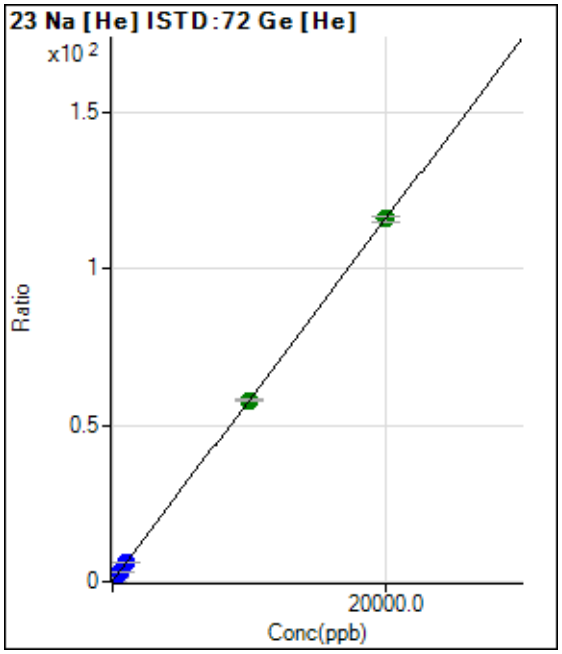
Weight: <None>
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	95730.83	0.2362	P	1.7
2	☐	200.000	216.219	1602337.18	3.9059	A	0.8
3	☐	500.000	520.507	3746515.19	9.0703	A	0.5
4	☐	1000.000	1096.899	7633965.28	18.8529	A	0.9
5	☐	10000.00	10330.016	71830128.69	175.558	A	2.9
6	☐	20000.00	19829.472	142944153.1	336.785	A	0.7
7	☐	100.000					

y = 0.0170 * x + 0.2362
R = 0.9998
DL = 0.7156
BEC = 13.92

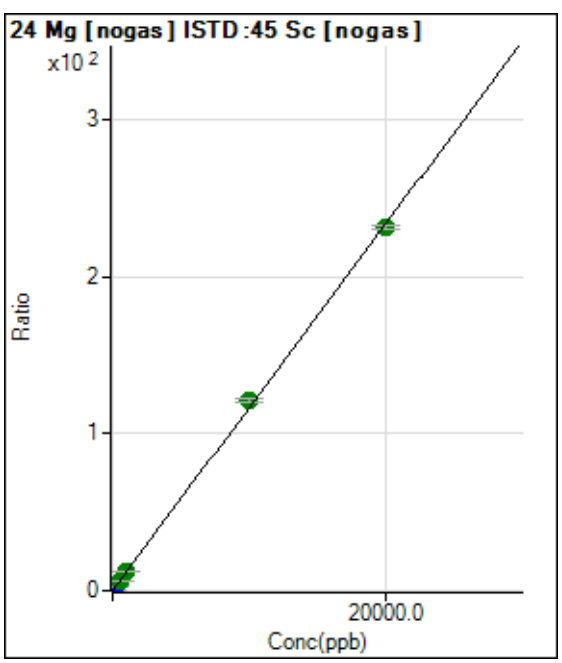
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15276.55	0.2183	P	5.9
2	☐	200.000	193.333	94395.48	1.3353	P	3.7
3	☐	500.000	488.683	215236.88	3.0417	P	1.3
4	☐	1000.000	1000.540	426316.83	5.9989	P	0.7
5	☐	10000.00	9965.140	3991287.13	57.7920	A	1.2
6	☐	20000.00	20017.752	7942666.55	115.871	A	1.3
7	☐	100.000					

y = 0.0058 * x + 0.2183
R = 1.0000
DL = 6.735
BEC = 37.78

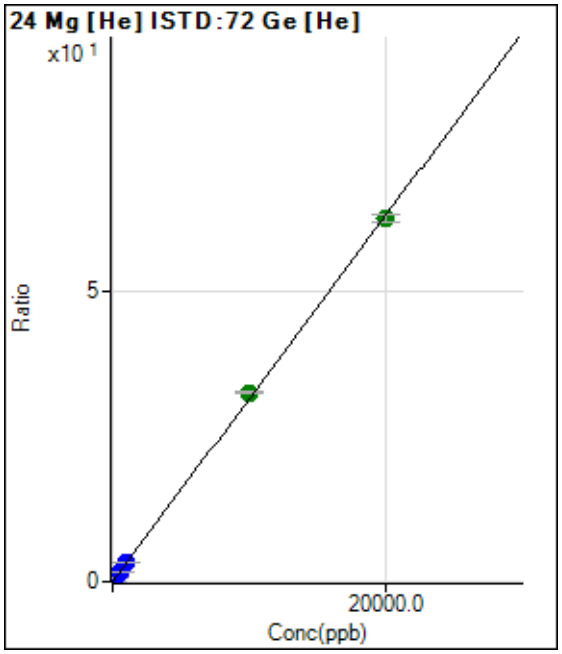
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8269.89	0.0204	P	3.6
2	☐	200.000	205.469	992205.39	2.4188	P	1.9
3	☐	500.000	528.521	2556597.58	6.1897	A	2.0
4	☐	1000.000	1090.469	5162655.06	12.7492	A	0.9
5	☐	10000.00	10378.727	49579629.23	121.168	A	2.6
6	☐	20000.00	19805.345	98129087.61	231.203	A	0.9
7	☐	100.000					

y = 0.0117 * x + 0.0204
R = 0.9997
DL = 0.1909
BEC = 1.748

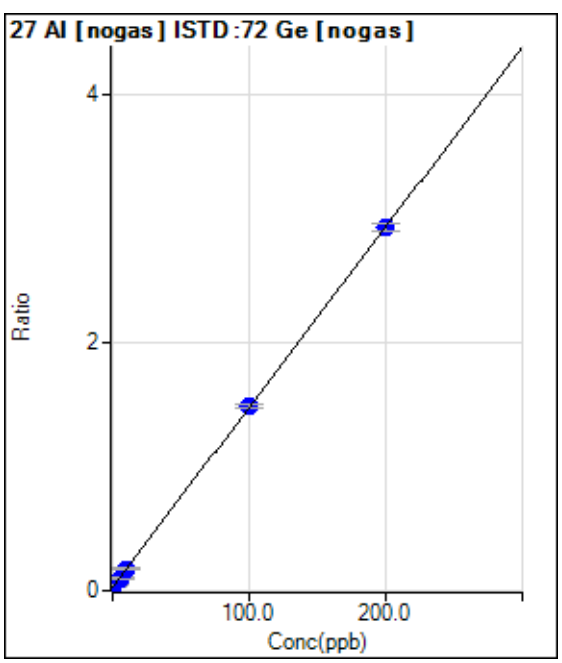
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	436.68	0.0062	P	9.7
2	☐	200.000	198.767	44824.69	0.6339	P	2.9
3	☐	500.000	500.376	112235.22	1.5862	P	1.9
4	☐	1000.000	1018.814	229074.06	3.2233	P	0.7
5	☐	10000.00	10334.430	2254106.89	32.6384	A	1.3
6	☐	20000.00	19831.847	4292382.86	62.6276	A	2.1
7	☐	100.000					

y = 0.0032 * x + 0.0062
R = 0.9998
DL = 0.5753
BEC = 1.976

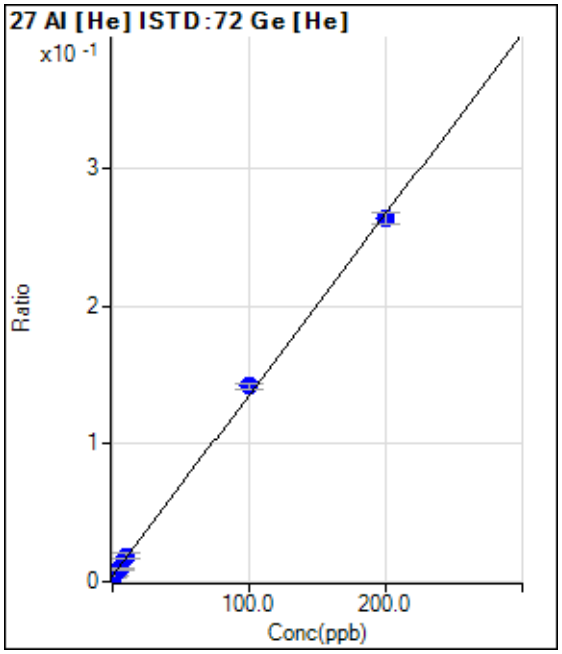
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9826.10	0.0258	P	1.7
2	☐	2.000	1.963	20518.26	0.0543	P	2.1
3	☐	5.000	5.132	38126.30	0.1003	P	1.5
4	☐	10.000	10.393	67339.50	0.1767	P	2.8
5	☐	100.000	100.722	543866.37	1.4877	P	2.2
6	☐	200.000	199.616	1069299.93	2.9230	P	2.1
7	☐	1.000					

y = 0.0145 * x + 0.0258
R = 1.0000
DL = 0.08959
BEC = 1.779

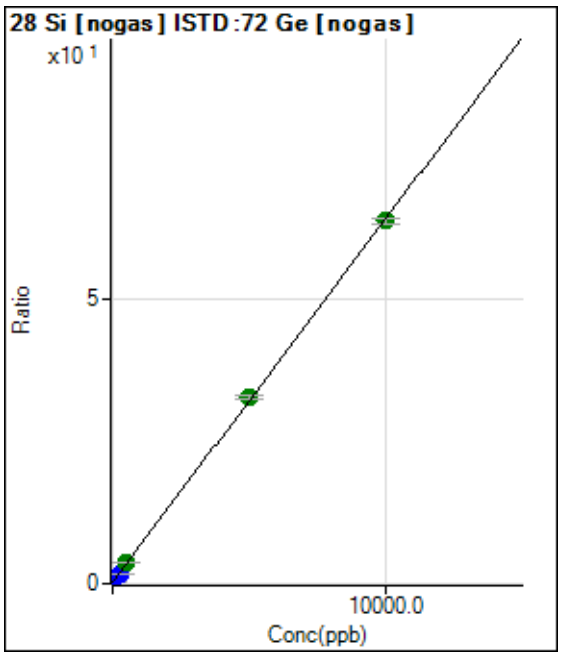
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-1.339	173.34	0.0025	P	19.0
2	☐	2.000	0.858	376.68	0.0053	P	35.4
3	☐	5.000	3.818	653.36	0.0092	P	14.1
4	☐	10.000	11.110	1336.75	0.0188	P	16.9
5	☐	100.000	105.136	9819.46	0.1422	P	2.9
6	☐	200.000	197.418	18042.44	0.2633	P	3.3
7	☐	1.000					

y = 0.0013 * x + 0.0042
R = 0.9994
DL = 1.073
BEC = 3.218

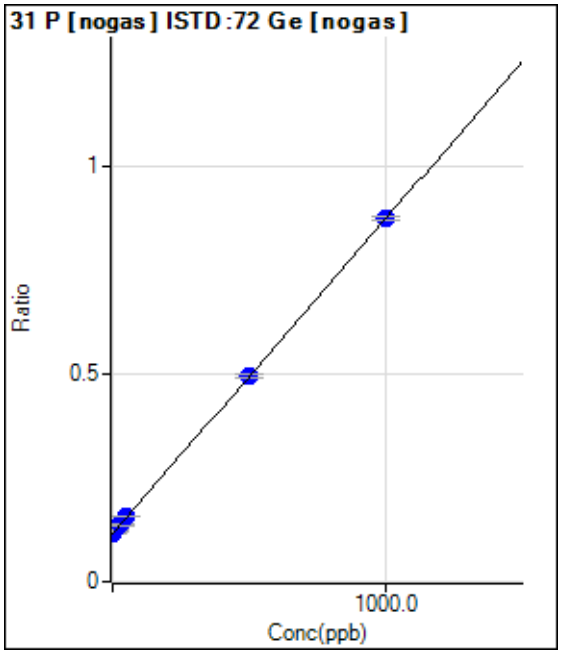
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	91624.93	0.2407	P	0.9
2	☐	100.000	99.129	329155.06	0.8713	P	0.6
3	☐	250.000	248.310	691863.71	1.8202	P	1.3
4	☐	500.000	536.904	1393660.76	3.6559	A	0.7
5	☐	5000.000	5096.174	11938872.32	32.6569	A	2.2
6	☐	10000.00	9950.119	23242978.82	63.5323	A	1.4
7	☐	50.000					

y = 0.0064 * x + 0.2407
R = 0.9999
DL = 1.046
BEC = 37.85

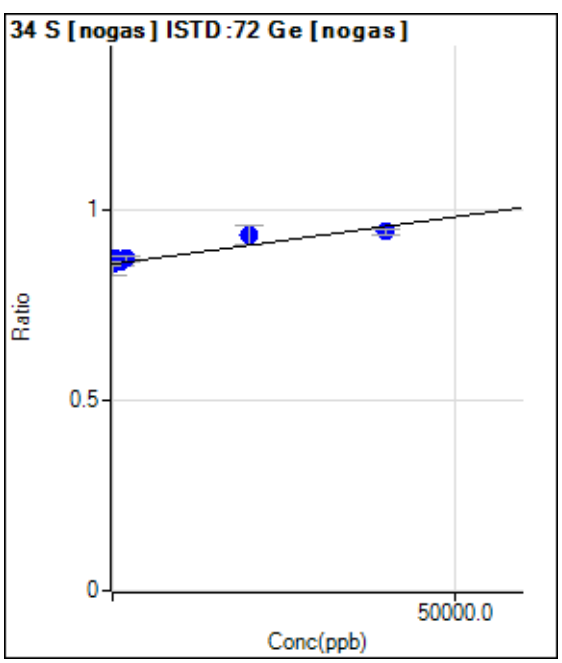
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	43859.25	0.1152	P	0.7
2	☐	10.000	10.475	46529.24	0.1232	P	1.5
3	☐	25.000	28.125	51896.68	0.1365	P	1.7
4	☐	50.000	55.587	59961.20	0.1573	P	1.9
5	☐	500.000	499.139	180234.79	0.4930	P	1.9
6	☐	1000.000	1000.068	319070.91	0.8721	P	0.9
7	☐	5.000					

y = 7.5682E-004 * x + 0.1152
R = 1.0000
DL = 3.182
BEC = 152.3

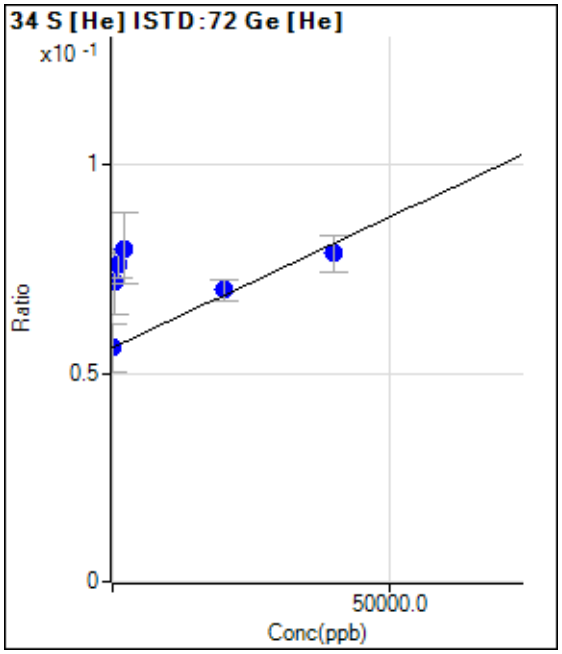
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	326709.89	0.8587	P	6.5
2	☐	400.000	5993.508	329976.82	0.8735	P	1.1
3	☐	1000.000	3120.371	329331.71	0.8664	P	2.6
4	☐	2000.000	5857.056	332863.17	0.8732	P	1.8
5	☐	20000.00	30724.721	341584.41	0.9347	P	5.7
6	☐	40000.00	34335.842	345305.78	0.9436	P	1.6
7	☐	200.000					

y = 2.4734E-006 * x + 0.8587
R = 0.9417
DL = 6.798E+04
BEC = 3.472E+05

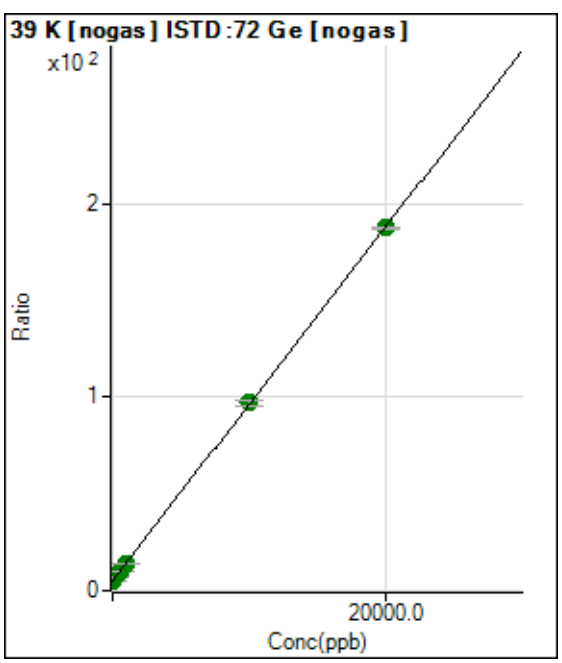
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3934.45	0.0561	P	20.3
2	☐	400.000	25409.981	5101.80	0.0720	P	21.8
3	☐	1000.000	31574.729	5368.65	0.0759	P	8.3
4	☐	2000.000	37883.998	5668.63	0.0798	P	21.3
5	☐	20000.00	22122.616	4834.97	0.0700	P	7.3
6	☐	40000.00	36130.024	5402.01	0.0787	P	11.1
7	☐	200.000					

y = 6.2697E-007 * x + 0.0561
R = 0.3411
DL = 5.457E+04
BEC = 8.947E+04

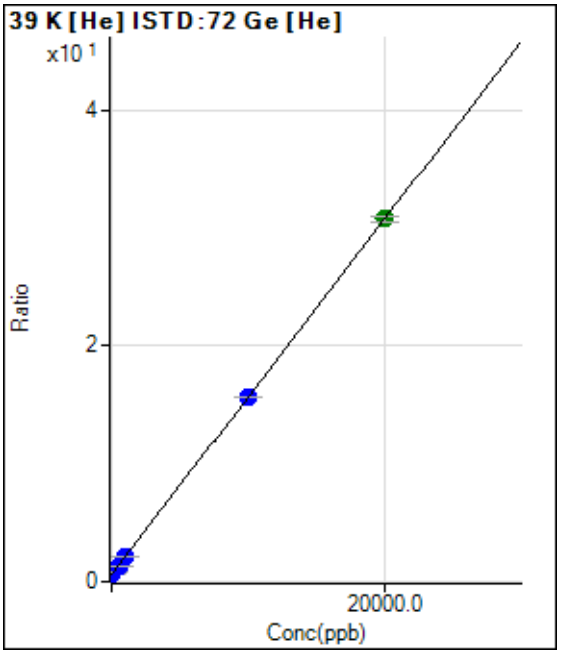
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1904180.38	5.0026	A	2.7
2	☐	200.000	196.193	2566902.40	6.7947	A	0.4
3	☐	500.000	493.054	3613316.62	9.5063	A	1.4
4	☐	1000.000	984.614	5335706.50	13.9963	A	1.4
5	☐	10000.00	10075.914	35473498.71	97.0389	A	2.6
6	☐	20000.00	19963.024	68545699.45	187.350	A	0.7
7	☐	100.000					

y = 0.0091 * x + 5.0026
R = 1.0000
DL = 44.05
BEC = 547.7

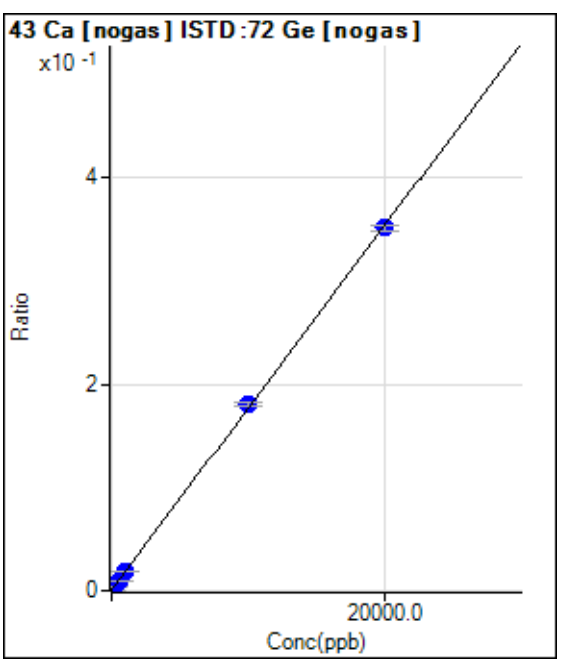
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	42048.76	0.6010	P	3.8
2	☐	200.000	197.897	63573.44	0.8991	P	2.8
3	☐	500.000	475.660	93225.85	1.3174	P	0.9
4	☐	1000.000	1003.426	150118.55	2.1124	P	1.2
5	☐	10000.00	9964.519	1078180.22	15.6101	P	0.5
6	☐	20000.00	20018.199	2108144.39	30.7534	A	1.4
7	☐	100.000					

y = 0.0015 * x + 0.6010
R = 1.0000
DL = 44.98
BEC = 399

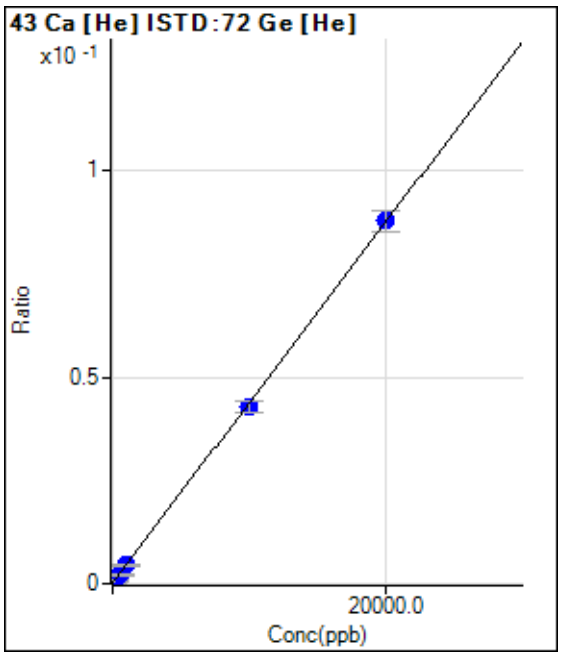
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	180.00	0.0005	P	14.9
2	☐	200.000	192.201	1460.09	0.0039	P	7.4
3	☐	500.000	468.505	3323.69	0.0087	P	5.4
4	☐	1000.000	1021.660	7054.87	0.0185	P	4.7
5	☐	10000.00	10232.086	66186.40	0.1810	P	2.2
6	☐	20000.00	19883.739	128545.59	0.3514	P	1.6
7	☐	100.000					

y = 1.7647E-005 * x + 4.7303E-004
R = 0.9999
DL = 11.99
BEC = 26.8

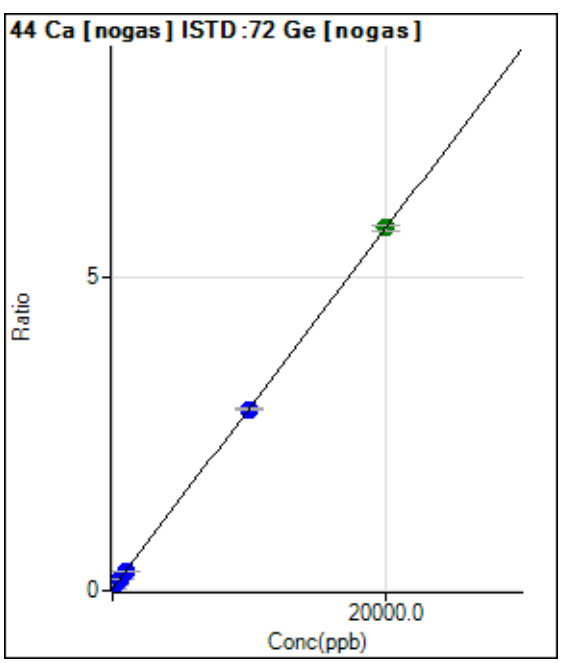
Weight: <None>
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6.67	0.0001	P	173.
2	☐	200.000	152.923	53.33	0.0008	P	77.3
3	☐	500.000	485.746	156.67	0.0022	P	19.7
4	☐	1000.000	999.443	316.68	0.0045	P	18.1
5	☐	10000.00	9810.029	2966.97	0.0430	P	5.9
6	☐	20000.00	20095.840	6024.42	0.0879	P	6.0
7	☐	100.000					

y = 4.3705E-006 * x + 9.1439E-005
R = 0.9999
DL = 108.7
BEC = 20.92

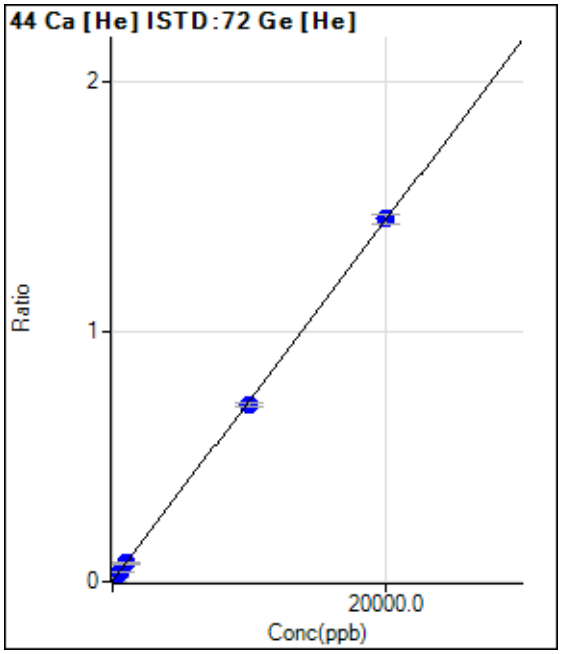
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	12281.05	0.0323	P	3.2
2	☐	200.000	196.520	33544.51	0.0888	P	2.8
3	☐	500.000	480.275	64778.38	0.1704	P	1.7
4	☐	1000.000	978.098	119548.94	0.3136	P	1.9
5	☐	10000.00	9933.122	1056538.55	2.8896	P	1.1
6	☐	20000.00	20035.062	2120392.52	5.7954	A	1.8
7	☐	100.000					

y = 2.8765E-004 * x + 0.0323
R = 1.0000
DL = 10.66
BEC = 112.2

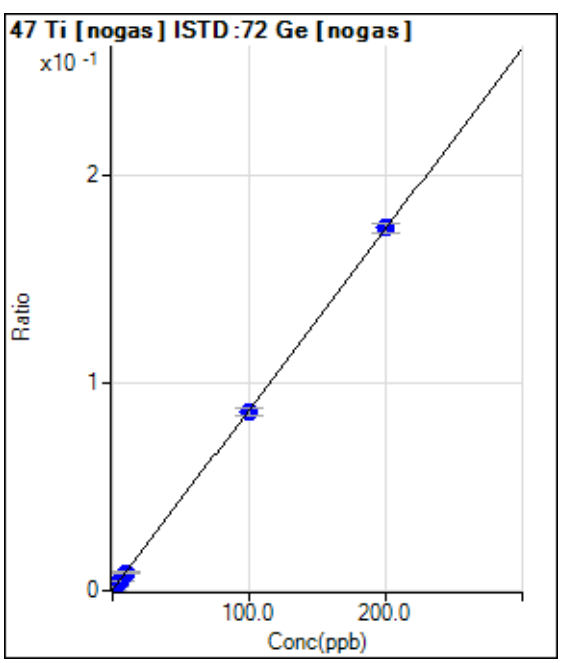
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	103.33	0.0015	P	24.0
2	☐	200.000	174.114	993.39	0.0141	P	13.8
3	☐	500.000	482.321	2570.24	0.0363	P	7.5
4	☐	1000.000	992.798	5200.85	0.0732	P	3.7
5	☐	10000.00	9810.431	49046.01	0.7102	P	2.0
6	☐	20000.00	20095.845	99601.11	1.4532	P	2.4
7	☐	100.000					

y = 7.2240E-005 * x + 0.0015
R = 0.9999
DL = 14.67
BEC = 20.41

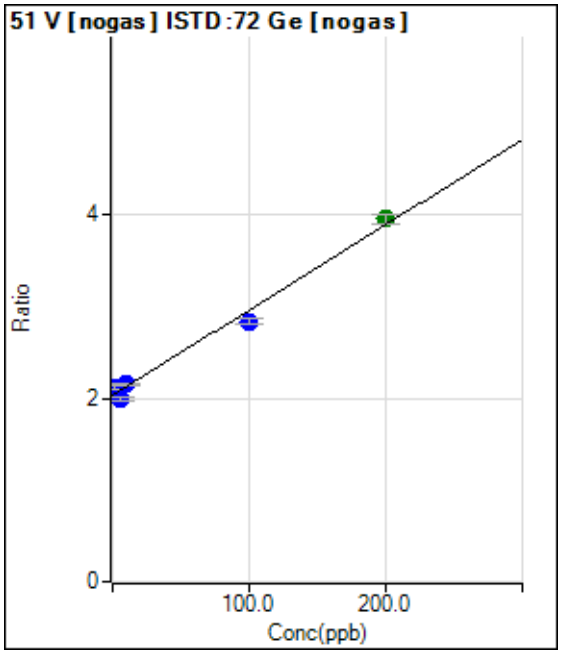
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	86.67	0.0002	P	16.5
2	☐	2.000	1.644	626.69	0.0017	P	7.4
3	☐	5.000	4.969	1730.12	0.0046	P	10.0
4	☐	10.000	9.748	3320.35	0.0087	P	4.6
5	☐	100.000	98.701	31477.63	0.0861	P	3.6
6	☐	200.000	200.666	63959.28	0.1748	P	2.5
7	☐	1.000					

y = 8.7019E-004 * x + 2.2741E-004
R = 1.0000
DL = 0.1292
BEC = 0.2613

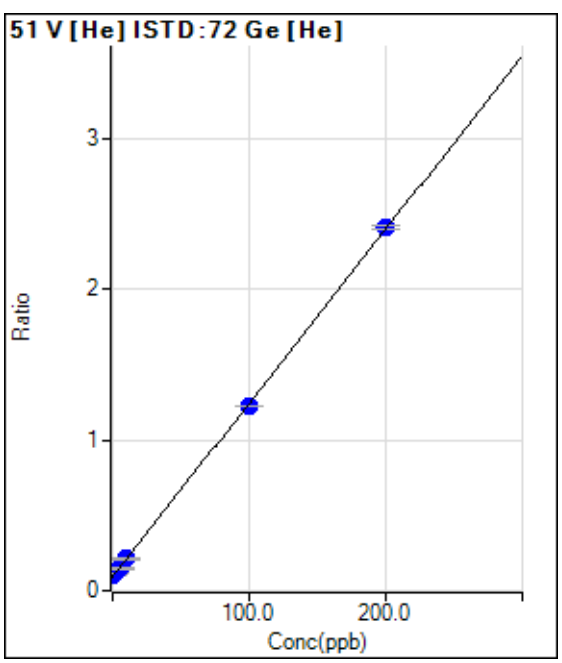
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	774836.23	2.0360	P	1.3
2	☐	2.000	8.927	800511.17	2.1191	P	2.4
3	☐	5.000	-4.677	757204.27	1.9924	P	2.3
4	☐	10.000	12.759	821411.10	2.1547	P	0.7
5	☐	100.000	86.584	1038981.96	2.8419	P	2.1
6	☐	200.000	206.743	1448692.97	3.9604	A	2.9
7	☐	1.000					

y = 0.0093 * x + 2.0360
R = 0.9947
DL = 8.472
BEC = 218.7

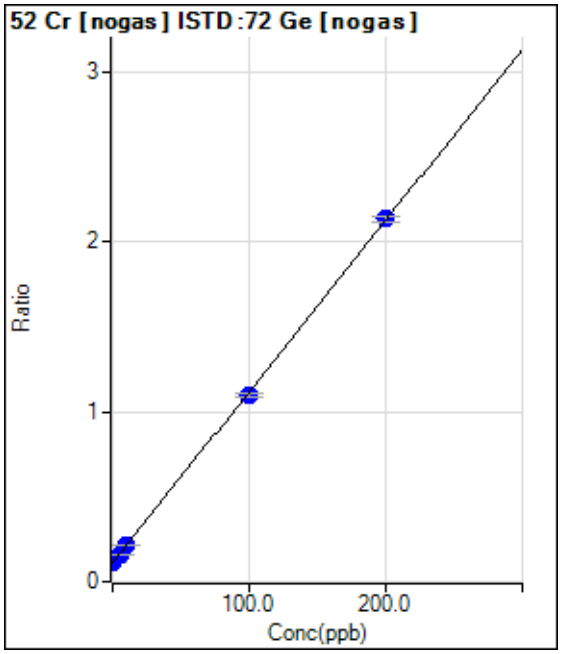
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.543	6869.32	0.0982	P	3.4
2	☐	2.000	2.355	8415.30	0.1190	P	3.2
3	☐	5.000	4.768	10385.64	0.1468	P	2.4
4	☐	10.000	10.313	14965.51	0.2106	P	2.6
5	☐	100.000	98.069	84262.18	1.2201	P	0.5
6	☐	200.000	200.952	164767.10	2.4036	P	1.0
7	☐	1.000					

y = 0.0115 * x + 0.0919
R = 0.9999
DL = 0.8678
BEC = 7.992

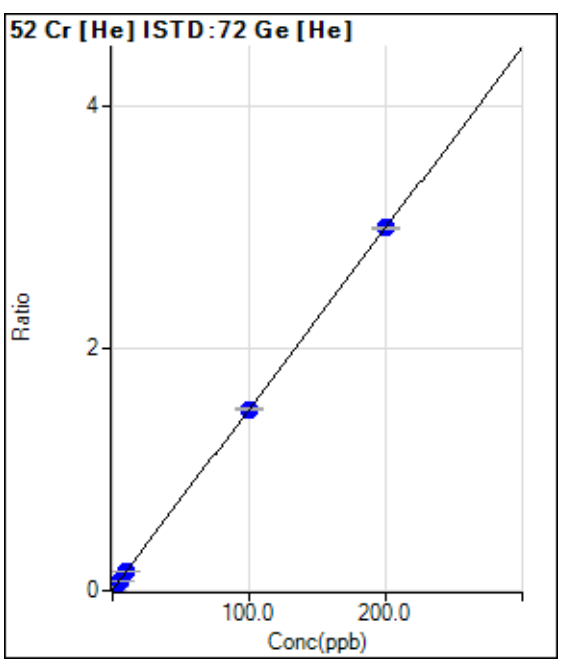
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	42346.47	0.1112	P	2.1
2	☐	2.000	2.003	49635.06	0.1314	P	1.2
3	☐	5.000	4.371	58995.70	0.1552	P	0.8
4	☐	10.000	10.186	81455.83	0.2137	P	2.3
5	☐	100.000	98.030	401124.32	1.0972	P	2.0
6	☐	200.000	200.992	780265.74	2.1328	P	1.6
7	☐	1.000					

y = 0.0101 * x + 0.1112
R = 0.9999
DL = 0.6872
BEC = 11.06

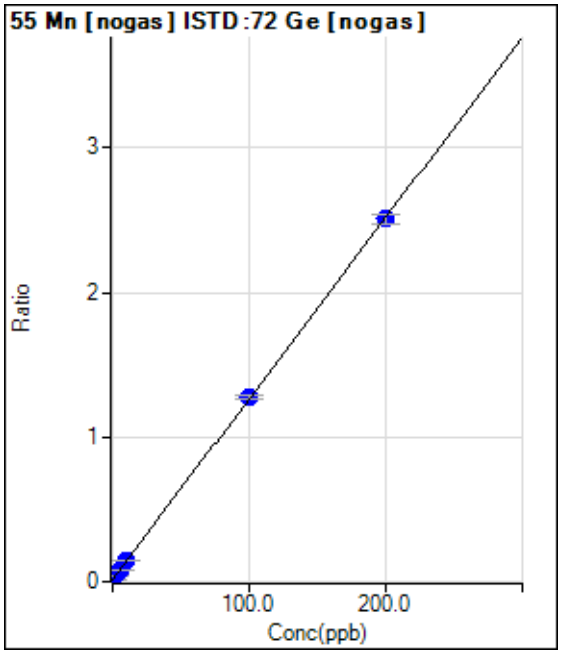
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	480.01	0.0069	P	24.7
2	☐	2.000	2.034	2633.58	0.0372	P	4.9
3	☐	5.000	5.000	5767.69	0.0815	P	1.8
4	☐	10.000	10.272	11387.12	0.1602	P	3.3
5	☐	100.000	99.685	103236.68	1.4948	P	1.2
6	☐	200.000	200.144	205281.21	2.9942	P	0.6
7	☐	1.000					

y = 0.0149 * x + 0.0069
R = 1.0000
DL = 0.341
BEC = 0.4604

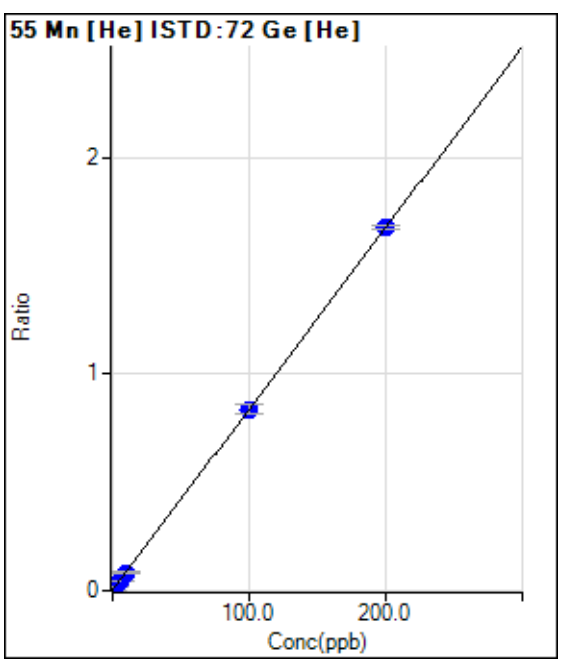
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5500.96	0.0145	P	3.3
2	☐	2.000	2.003	14919.71	0.0395	P	2.3
3	☐	5.000	5.091	29691.43	0.0781	P	1.7
4	☐	10.000	10.212	54198.19	0.1422	P	3.3
5	☐	100.000	100.947	466859.94	1.2769	P	1.6
6	☐	200.000	199.514	918163.94	2.5096	P	2.9
7	☐	1.000					

y = 0.0125 * x + 0.0145
R = 1.0000
DL = 0.114
BEC = 1.156

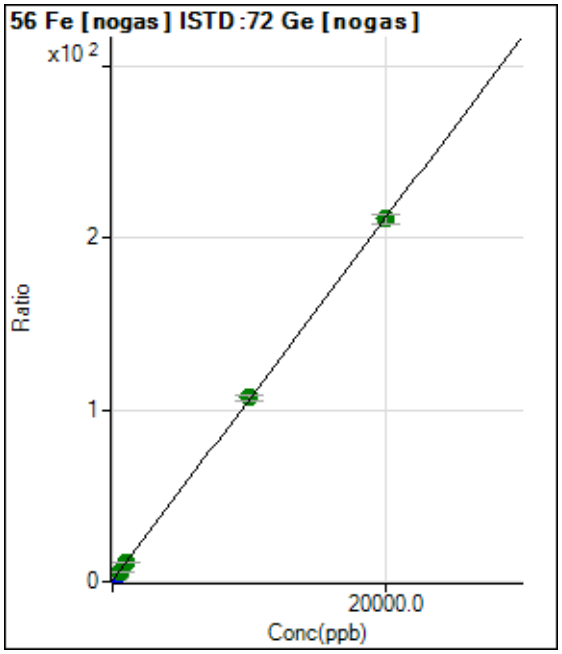
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	113.33	0.0016	P	48.7
2	☐	2.000	2.060	1333.41	0.0189	P	12.4
3	☐	5.000	4.964	3056.98	0.0432	P	7.5
4	☐	10.000	9.791	5941.09	0.0836	P	5.8
5	☐	100.000	99.926	57873.59	0.8381	P	5.1
6	☐	200.000	200.048	114906.52	1.6763	P	1.0
7	☐	1.000					

y = 0.0084 * x + 0.0016
R = 1.0000
DL = 0.2857
BEC = 0.1956

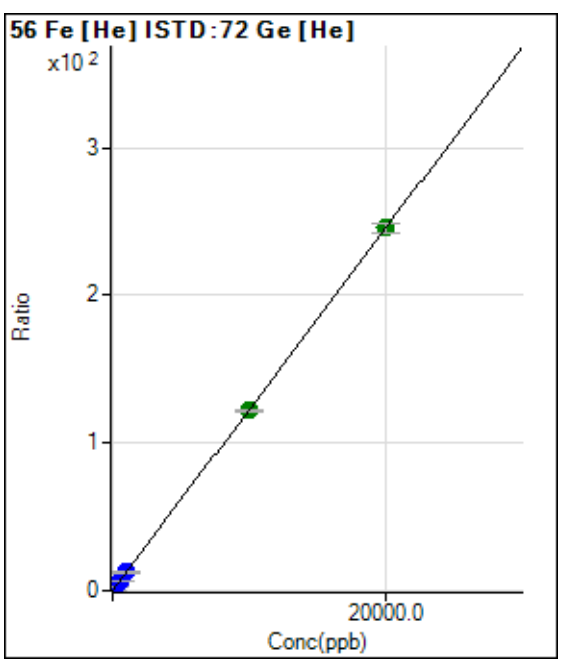
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	223179.95	0.5865	P	3.6
2	☐	200.000	201.066	1022240.97	2.7061	P	2.1
3	☐	500.000	516.972	2294338.14	6.0364	A	0.8
4	☐	1000.000	1027.202	4351653.09	11.4152	A	1.0
5	☐	10000.00	10079.573	39059693.58	106.844	A	2.3
6	☐	20000.00	19958.418	77182468.39	210.985	A	2.8
7	☐	100.000					

y = 0.0105 * x + 0.5865
R = 1.0000
DL = 5.954
BEC = 55.64

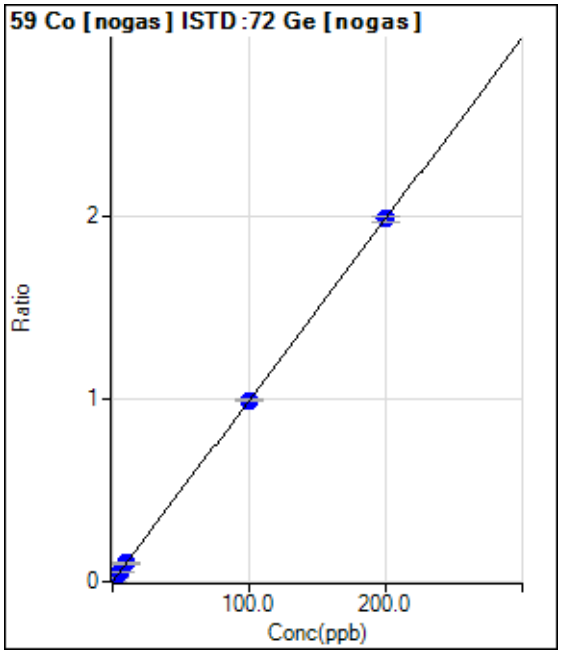
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1923.48	0.0275	P	8.1
2	☐	200.000	200.440	175697.41	2.4851	P	2.9
3	☐	500.000	495.013	431420.49	6.0968	P	1.0
4	☐	1000.000	1009.282	881344.55	12.4022	P	1.3
5	☐	10000.00	9934.883	8415079.66	121.838	A	0.6
6	☐	20000.00	20032.215	16834717.25	245.640	A	2.7
7	☐	100.000					

y = 0.0123 * x + 0.0275
R = 1.0000
DL = 0.546
BEC = 2.243

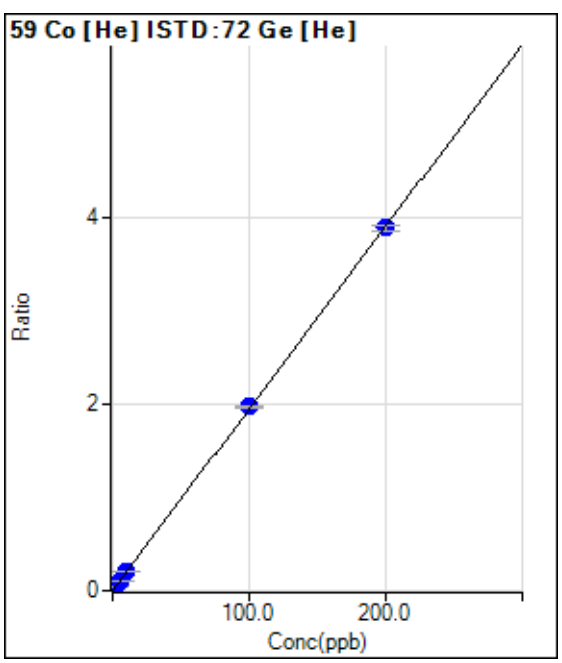
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	83.33	0.0002	P	29.0
2	☐	2.000	1.956	7414.97	0.0196	P	0.7
3	☐	5.000	4.960	18790.15	0.0494	P	2.8
4	☐	10.000	10.095	38264.33	0.1004	P	4.8
5	☐	100.000	99.966	362810.33	0.9922	P	1.0
6	☐	200.000	200.014	726240.43	1.9851	P	1.3
7	☐	1.000					

y = 0.0099 * x + 2.1851E-004
R = 1.0000
DL = 0.01918
BEC = 0.02202

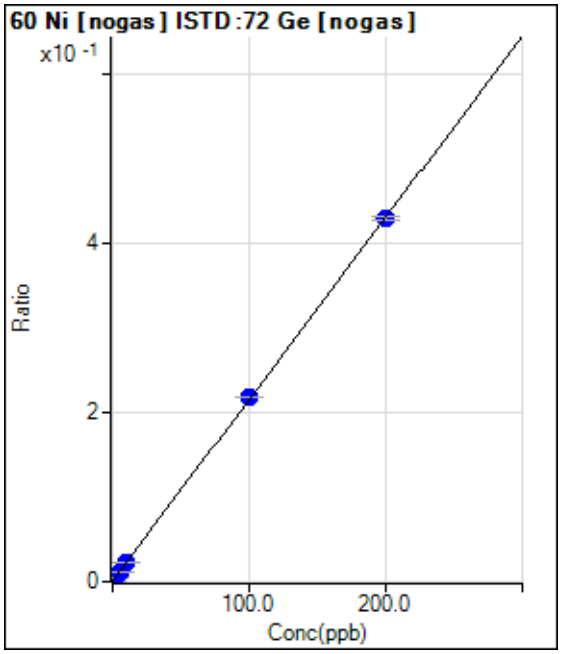
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	2.000	2.014	2766.94	0.0392	P	16.2
3	☐	5.000	5.103	7028.16	0.0993	P	2.2
4	☐	10.000	10.574	14626.18	0.2058	P	2.1
5	☐	100.000	101.143	135962.01	1.9686	P	0.8
6	☐	200.000	199.397	266003.99	3.8810	P	1.9
7	☐	1.000					

y = 0.0195 * x + 0.0000E+000
R = 1.0000
DL = 0
BEC = 0

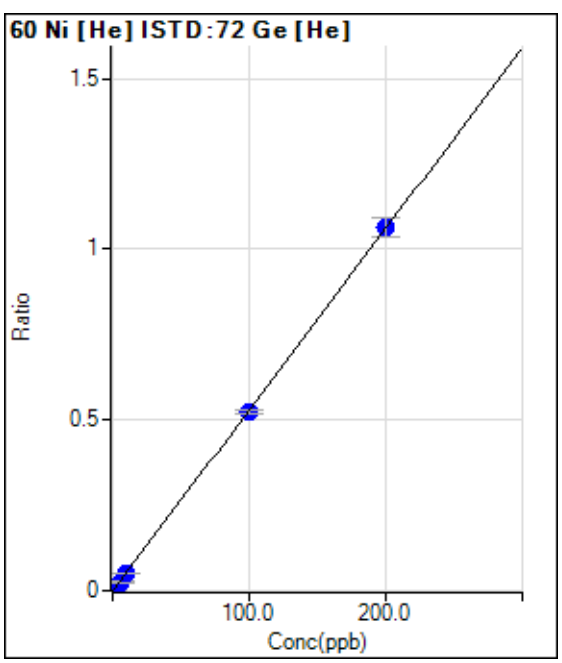
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.281	46.67	0.0001	P	53.1
2	☐	2.000	1.555	1536.77	0.0041	P	11.1
3	☐	5.000	4.953	4320.58	0.0114	P	4.8
4	☐	10.000	10.145	8585.53	0.0225	P	1.7
5	☐	100.000	101.258	79806.63	0.2182	P	0.4
6	☐	200.000	199.369	156965.83	0.4290	P	0.9
7	☐	1.000					

y = 0.0021 * x + 7.2678E-004
R = 1.0000
DL = 0.0906
BEC = 0.3383

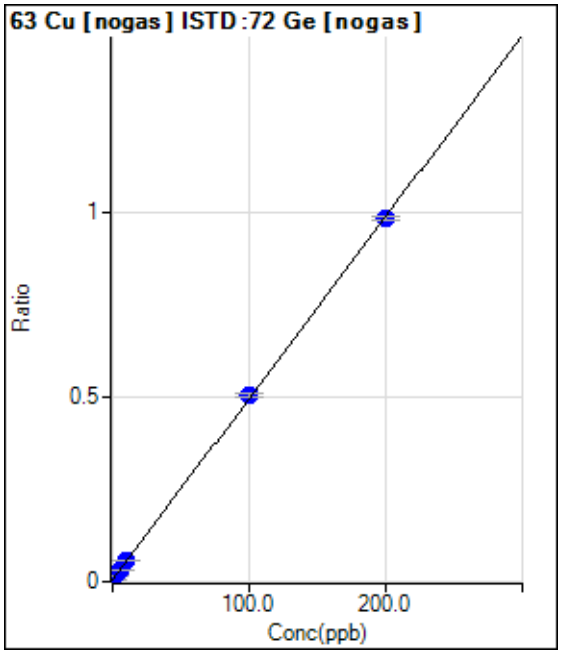
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.312	36.67	0.0005	P	38.7
2	☐	2.000	2.264	770.03	0.0109	P	26.2
3	☐	5.000	4.949	1776.79	0.0251	P	3.0
4	☐	10.000	10.007	3690.44	0.0519	P	2.6
5	☐	100.000	98.940	36160.17	0.5235	P	1.7
6	☐	200.000	200.528	72773.82	1.0622	P	5.2
7	☐	1.000					

y = 0.0053 * x - 0.0011
R = 1.0000
DL = 0.1136
BEC = -0.2137

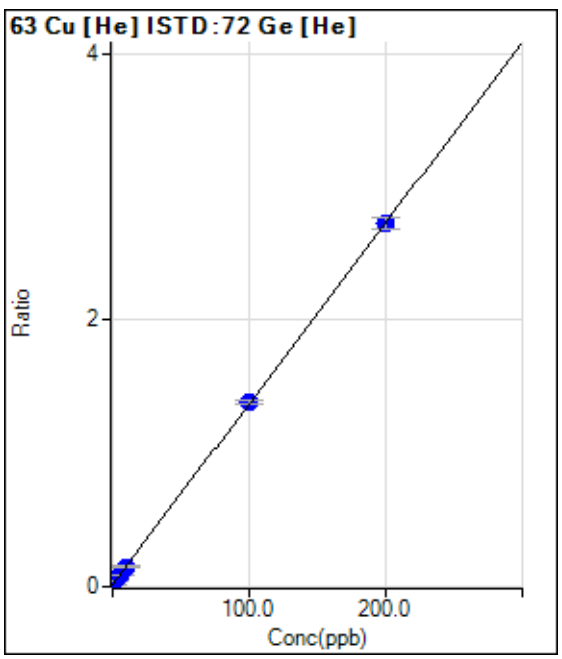
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1826.79	0.0048	P	4.2
2	☐	2.000	1.880	5304.23	0.0140	P	6.1
3	☐	5.000	5.292	11717.36	0.0308	P	1.6
4	☐	10.000	10.572	21646.71	0.0568	P	4.5
5	☐	100.000	102.050	185255.06	0.5067	P	2.1
6	☐	200.000	198.940	359716.63	0.9832	P	1.0
7	☐	1.000					

y = 0.0049 * x + 0.0048
R = 0.9999
DL = 0.1244
BEC = 0.9757

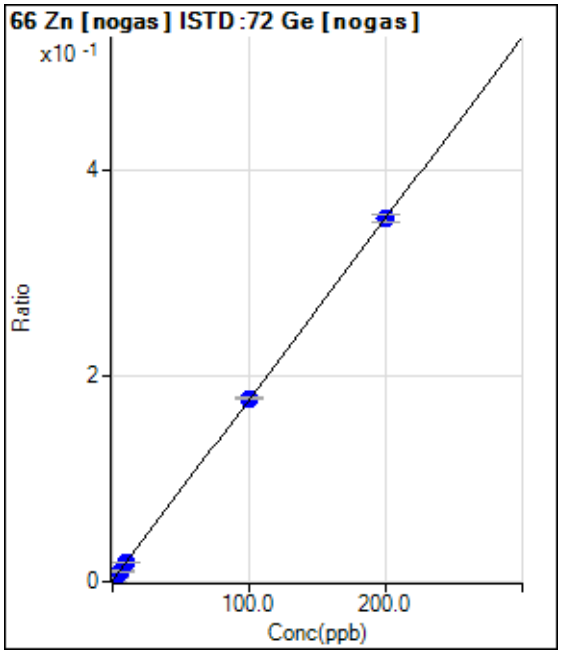
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.078	1066.72	0.0153	P	8.5
2	☐	2.000	2.019	3086.99	0.0437	P	8.3
3	☐	5.000	4.814	5771.04	0.0816	P	4.0
4	☐	10.000	9.820	10616.63	0.1494	P	3.9
5	☐	100.000	100.824	95469.73	1.3825	P	1.9
6	☐	200.000	199.602	186463.39	2.7209	P	3.2
7	☐	1.000					

y = 0.0135 * x + 0.0163
R = 1.0000
DL = 0.2865
BEC = 1.205

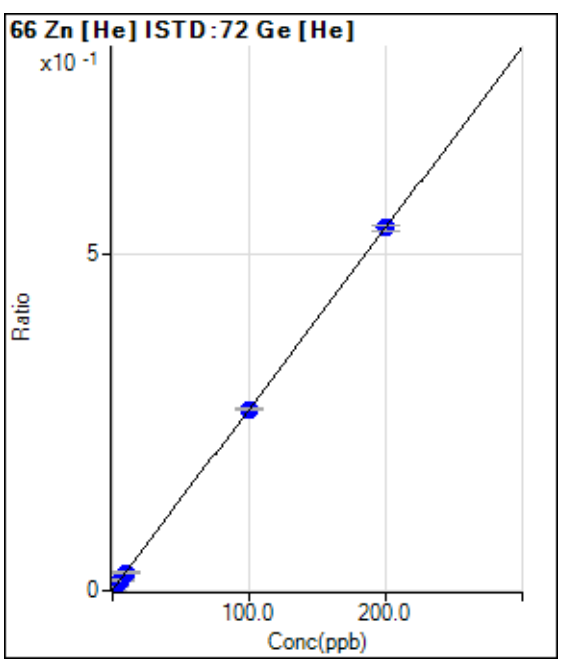
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.204	213.34	0.0006	P	6.7
2	☐	2.000	1.779	1530.10	0.0041	P	7.9
3	☐	5.000	5.244	3857.17	0.0101	P	3.3
4	☐	10.000	9.872	6974.83	0.0183	P	3.9
5	☐	100.000	100.612	65078.41	0.1780	P	1.0
6	☐	200.000	199.696	128910.45	0.3524	P	2.0
7	☐	1.000					

y = 0.0018 * x + 9.2054E-004
R = 1.0000
DL = 0.06371
BEC = 0.5231

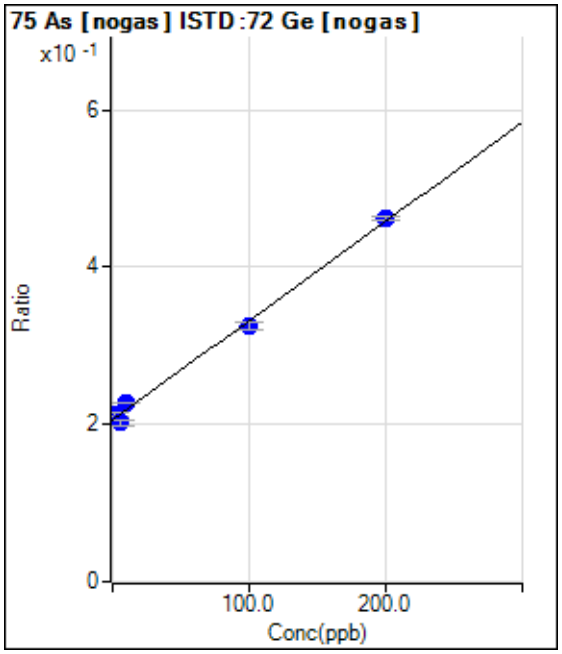
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.070	53.33	0.0008	P	71.6
2	☐	2.000	2.185	483.35	0.0068	P	6.4
3	☐	5.000	5.322	1080.05	0.0153	P	14.4
4	☐	10.000	9.559	1893.48	0.0266	P	6.2
5	☐	100.000	99.984	18610.01	0.2695	P	1.4
6	☐	200.000	200.020	36895.04	0.5381	P	1.5
7	☐	1.000					

y = 0.0027 * x + 9.6243E-004
R = 1.0000
DL = 0.6195
BEC = 0.3584

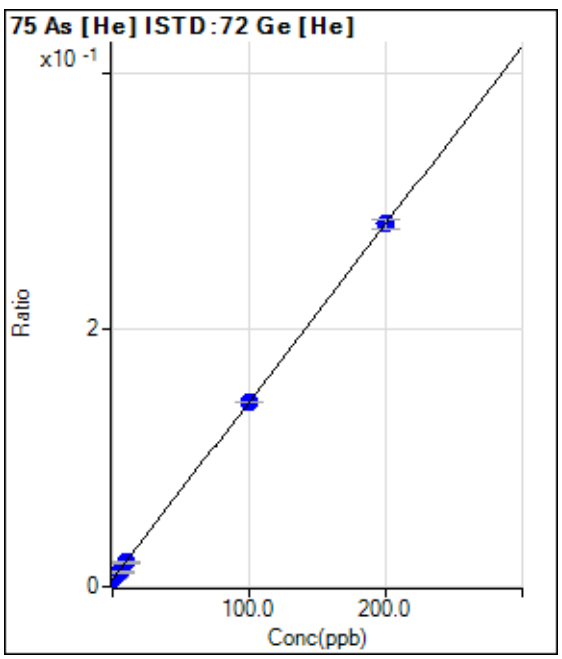
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.833	78841.06	0.2072	P	2.4
2	☐	2.000	5.188	80340.87	0.2127	P	2.3
3	☐	5.000	-2.916	76931.90	0.2024	P	3.3
4	☐	10.000	16.572	86545.49	0.2270	P	0.5
5	☐	100.000	94.971	119132.35	0.3259	P	3.0
6	☐	200.000	202.352	168798.24	0.4613	P	1.2
7	☐	1.000					

y = 0.0013 * x + 0.2061
R = 0.9978
DL = 11.76
BEC = 163.4

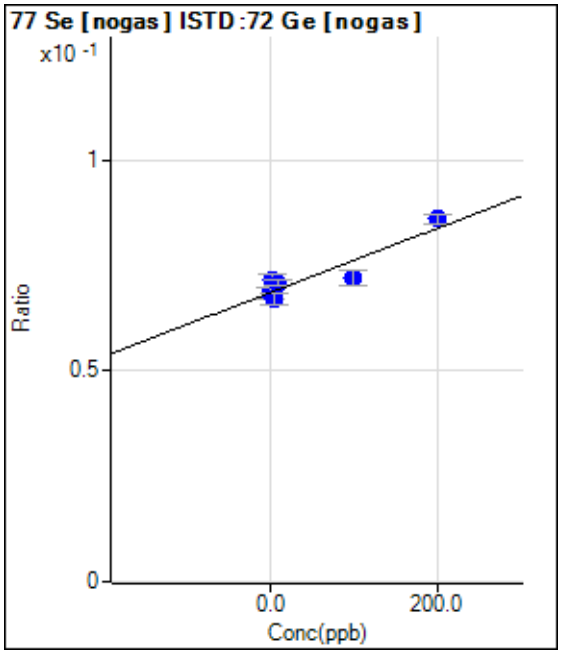
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	398.90	0.0057	P	6.7
2	☐	2.000	1.321	531.12	0.0075	P	15.2
3	☐	5.000	4.153	808.91	0.0114	P	8.7
4	☐	10.000	9.680	1355.61	0.0191	P	9.2
5	☐	100.000	99.760	9926.15	0.1437	P	0.9
6	☐	200.000	200.164	19369.49	0.2826	P	2.3
7	☐	1.000					

y = 0.0014 * x + 0.0057
R = 1.0000
DL = 0.8301
BEC = 4.113

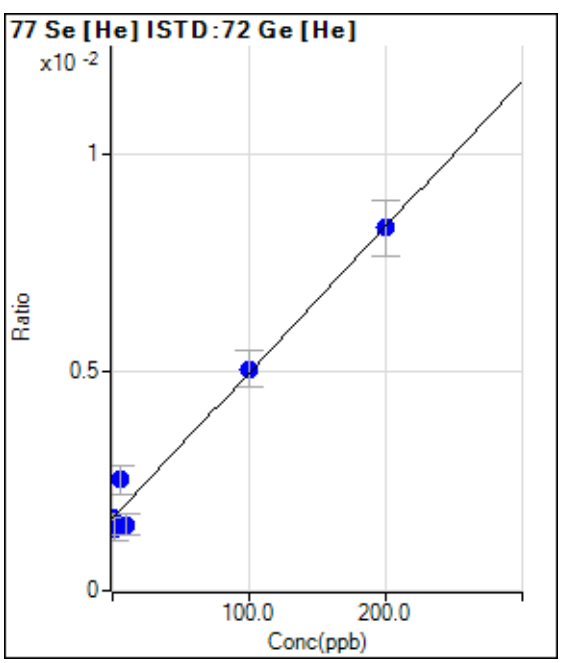
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26110.15	0.0686	P	4.0
2	☐	2.000	36.719	26978.08	0.0714	P	4.3
3	☐	5.000	-20.837	25452.58	0.0670	P	3.8
4	☐	10.000	29.004	26991.62	0.0708	P	1.7
5	☐	100.000	43.349	26276.98	0.0719	P	4.9
6	☐	200.000	227.674	31492.29	0.0861	P	2.6
7	☐	1.000					

y = 7.6807E-005 * x + 0.0686
R = 0.9185
DL = 107.6
BEC = 892.8

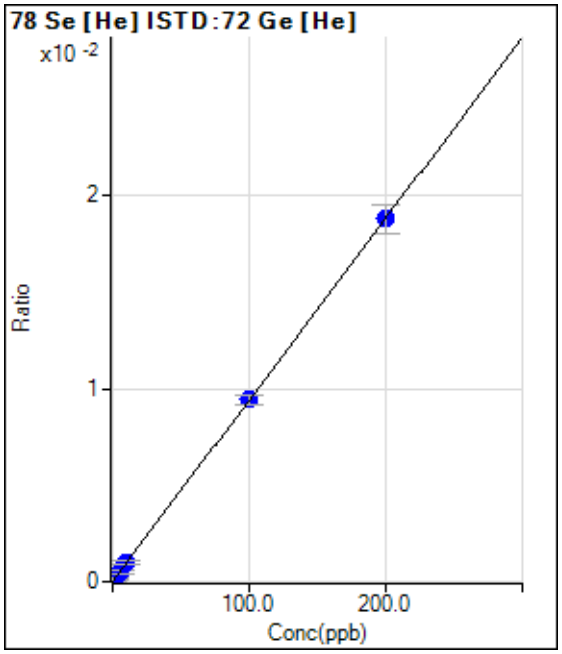
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.437	116.67	0.0017	P	11.9
2	☐	2.000	-7.166	100.00	0.0014	P	35.1
3	☐	5.000	26.784	180.00	0.0025	P	25.9
4	☐	10.000	-4.570	106.67	0.0015	P	32.1
5	☐	100.000	102.478	350.01	0.0051	P	16.6
6	☐	200.000	199.037	570.02	0.0083	P	15.1
7	☐	1.000					

y = 3.3419E-005 * x + 0.0017
R = 0.9885
DL = 17.77
BEC = 49.39

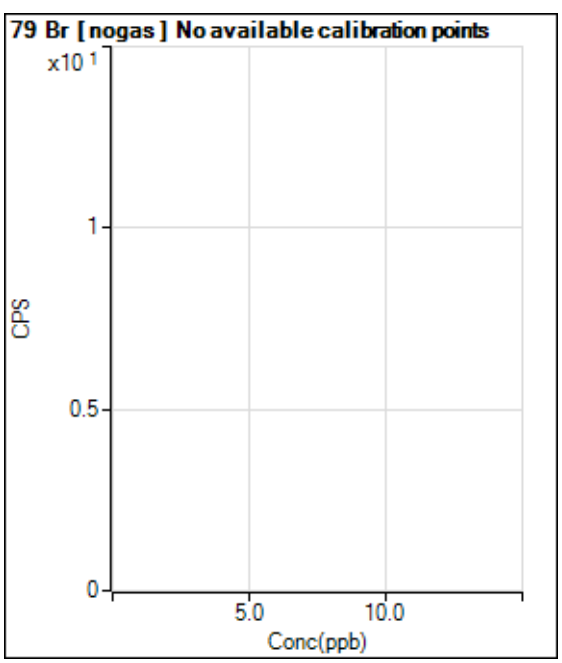
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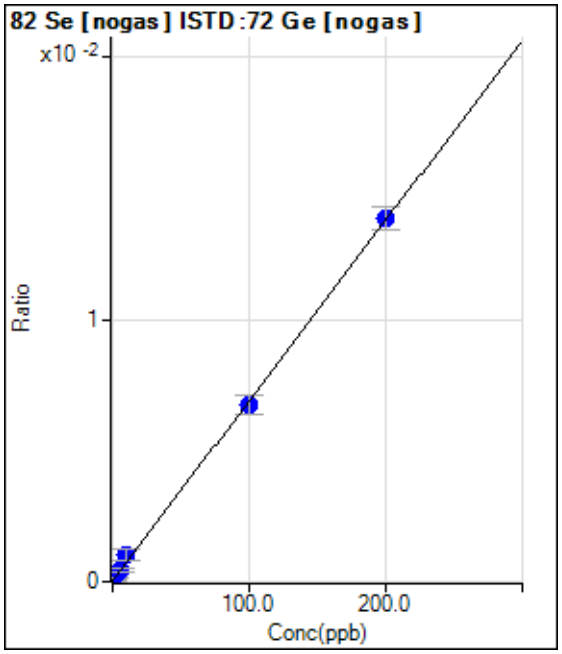
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.67	0.0000	P	173.
2	☐	2.000	1.393	10.00	0.0001	P	52.5
3	☐	5.000	4.702	32.00	0.0005	P	43.7
4	☐	10.000	10.276	69.33	0.0010	P	17.3
5	☐	100.000	100.140	650.68	0.0094	P	5.1
6	☐	200.000	199.930	1288.72	0.0188	P	7.6
7	☐	1.000					

y = 9.4022E-005 * x + 9.8666E-006
R = 1.0000
DL = 0.5453
BEC = 0.1049

Weight: <None>
Min Conc: <None>



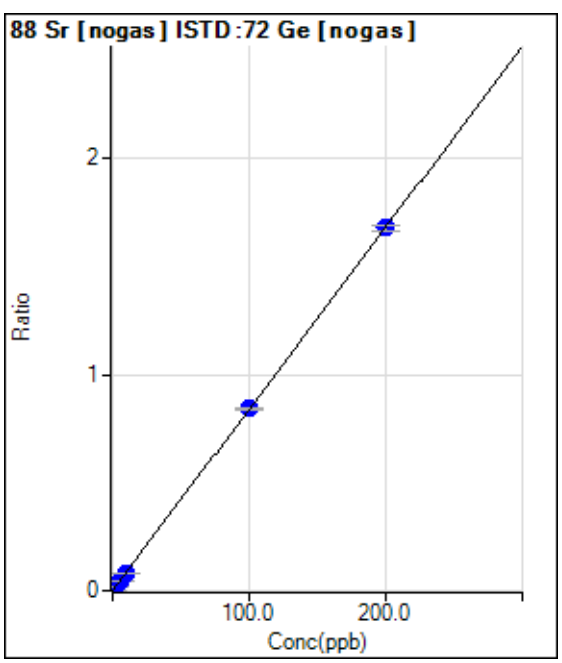
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13.33	0.0000	P	86.6
2	☐	2.000	2.694	83.33	0.0002	P	41.8
3	☐	5.000	5.865	166.67	0.0004	P	21.7
4	☐	10.000	14.397	390.01	0.0010	P	42.7
5	☐	100.000	97.515	2456.89	0.0067	P	11.1
6	☐	200.000	200.994	5060.81	0.0138	P	6.3
7	☐	1.000					

y = 6.8642E-005 * x + 3.5295E-005
R = 0.9997
DL = 1.336
BEC = 0.5142

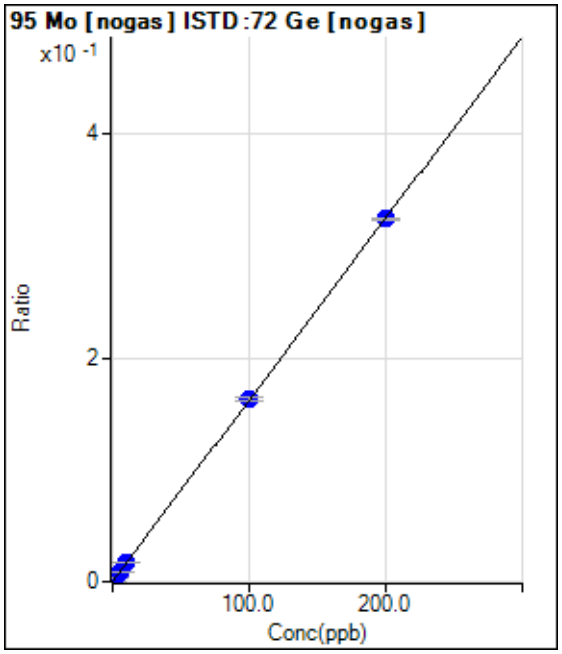
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	123.33	0.0003	P	49.8
2	☐	2.000	2.013	6514.70	0.0172	P	6.4
3	☐	5.000	4.871	15684.00	0.0413	P	2.5
4	☐	10.000	9.799	31515.12	0.0827	P	2.8
5	☐	100.000	100.223	308081.50	0.8426	P	1.7
6	☐	200.000	199.902	614748.95	1.6804	P	1.7
7	☐	1.000					

y = 0.0084 * x + 3.2546E-004
R = 1.0000
DL = 0.05787
BEC = 0.03872

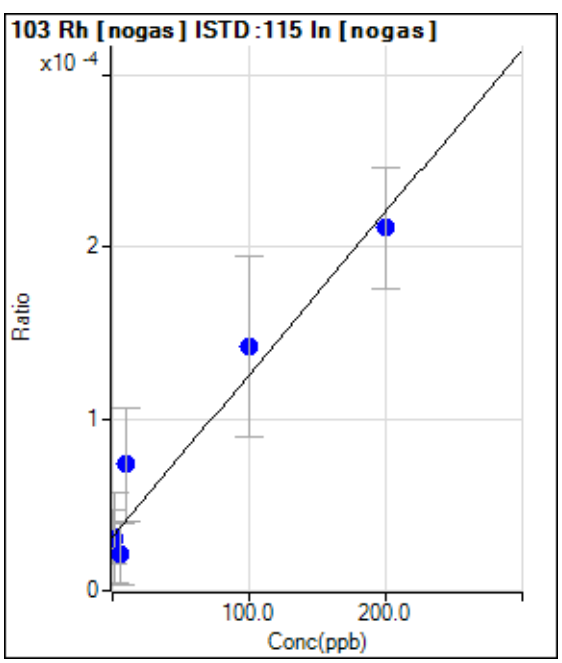
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6.67	0.0000	P	173.
2	☐	2.000	2.143	1320.08	0.0035	P	8.0
3	☐	5.000	5.074	3133.68	0.0082	P	7.5
4	☐	10.000	10.515	6508.00	0.0171	P	3.0
5	☐	100.000	100.338	59508.05	0.1628	P	2.0
6	☐	200.000	199.802	118582.99	0.3241	P	0.5
7	☐	1.000					

y = 0.0016 * x + 1.7586E-005
R = 1.0000
DL = 0.05633
BEC = 0.01084

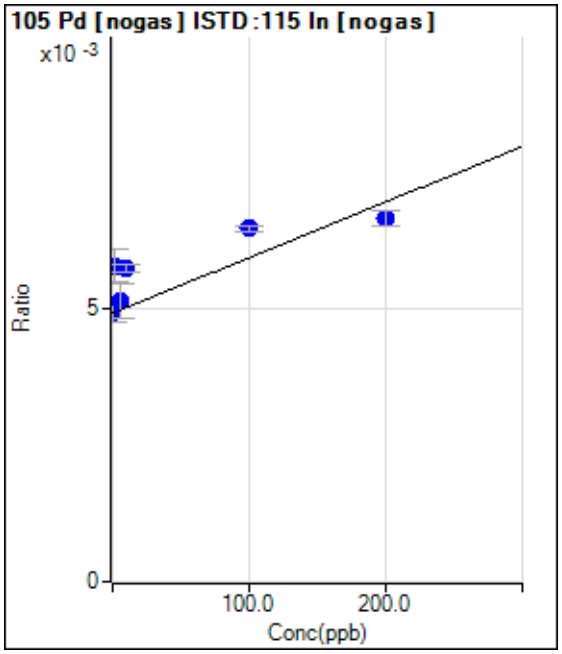
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10.00	0.0000	P	100.
2	☐	2.000	-0.485	10.00	0.0000	P	173.
3	☐	5.000	-10.806	6.67	0.0000	P	173.
4	☐	10.000	44.647	23.33	0.0001	P	88.9
5	☐	100.000	117.017	43.33	0.0001	P	74.2
6	☐	200.000	190.179	63.33	0.0002	P	33.1
7	☐	1.000					

y = 9.4476E-007 * x + 3.1194E-005
R = 0.9736
DL = 99.07
BEC = 33.02

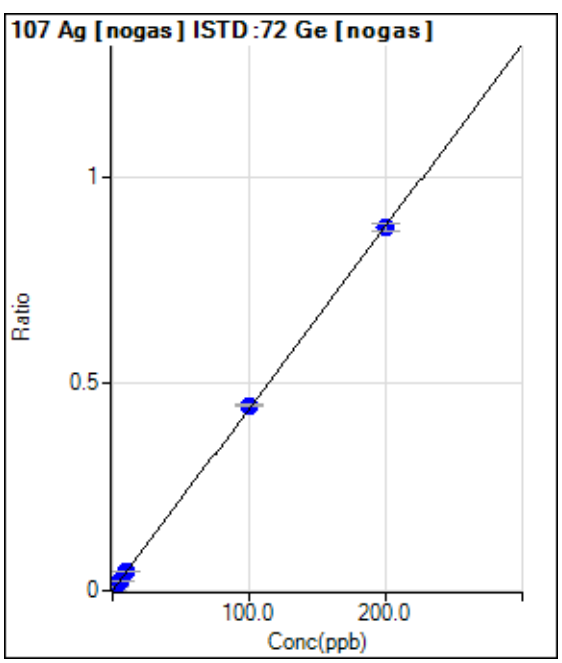
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1566.77	0.0049	P	7.1
2	☐	2.000	85.763	1856.80	0.0058	P	10.3
3	☐	5.000	21.342	1613.44	0.0051	P	12.1
4	☐	10.000	80.229	1813.48	0.0057	P	2.5
5	☐	100.000	151.591	1966.83	0.0064	P	1.5
6	☐	200.000	169.447	1990.15	0.0066	P	4.4
7	☐	1.000					

y = 1.0148E-005 * x + 0.0049
R = 0.8423
DL = 103.1
BEC = 483

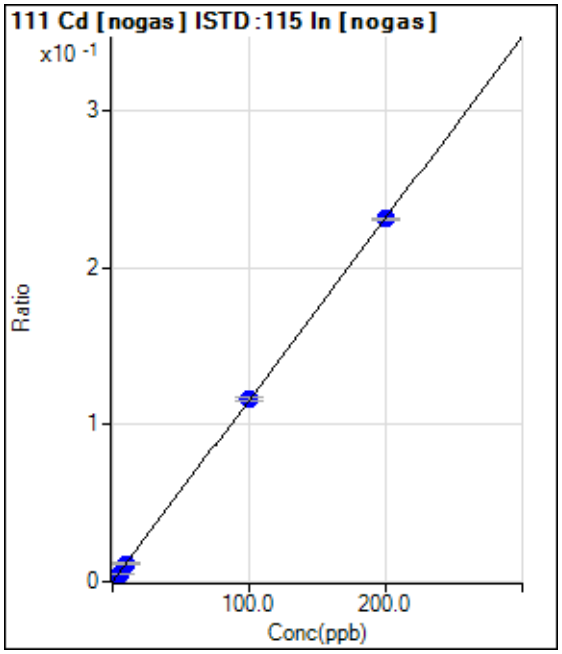
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13.33	0.0000	P	43.7
2	☐	2.000	2.014	3360.40	0.0089	P	4.9
3	☐	5.000	4.913	8228.83	0.0216	P	5.2
4	☐	10.000	10.567	17736.03	0.0465	P	2.0
5	☐	100.000	101.544	163383.74	0.4468	P	1.1
6	☐	200.000	199.202	320631.17	0.8765	P	2.3
7	☐	1.000					

y = 0.0044 * x + 3.5069E-005
R = 1.0000
DL = 0.01045
BEC = 0.007971

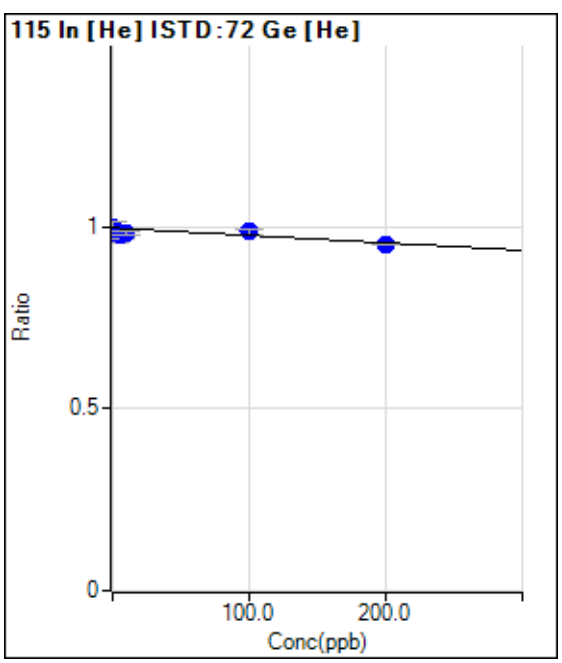
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.
2	☐	2.000	1.995	746.70	0.0023	P	13.6
3	☐	5.000	4.602	1686.78	0.0053	P	1.6
4	☐	10.000	10.033	3690.48	0.0116	P	8.8
5	☐	100.000	100.734	35647.23	0.1167	P	2.2
6	☐	200.000	199.641	69546.53	0.2313	P	0.4
7	☐	1.000					

y = 0.0012 * x + 1.0394E-005
R = 1.0000
DL = 0.04662
BEC = 0.008972

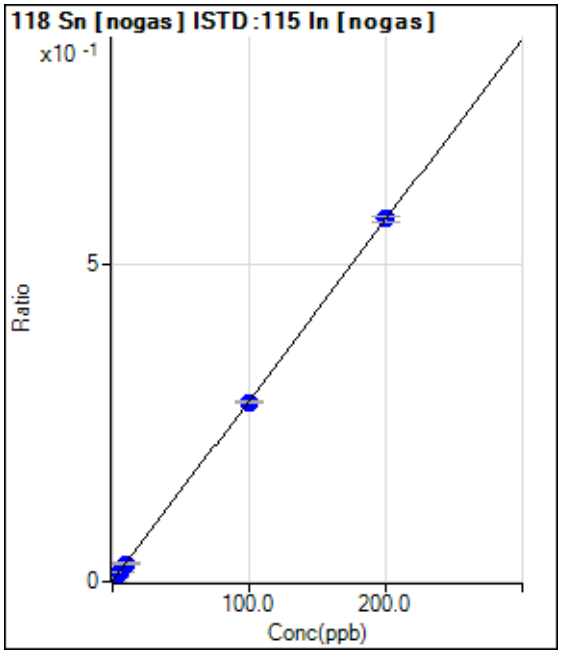
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	69727.96	0.9965	P	3.5
2	☐	2.000	83.876	69229.96	0.9793	P	4.3
3	☐	5.000	102.632	69022.19	0.9755	P	2.3
4	☐	10.000	69.995	69805.17	0.9822	P	1.1
5	☐	100.000	48.924	68141.78	0.9865	P	1.6
6	☐	200.000	219.279	65230.26	0.9516	P	0.6
7	☐	1.000					

y = -2.0494E-004 * x + 0.9965
R = -0.7456
DL = -509.9
BEC = -4862

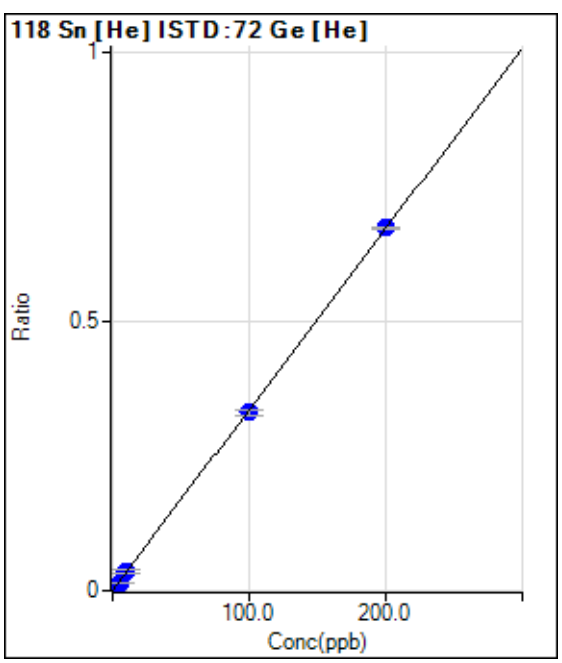
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	160.00	0.0005	P	55.1
2	☐	2.000	1.841	1853.47	0.0058	P	4.7
3	☐	5.000	4.958	4630.72	0.0147	P	2.7
4	☐	10.000	9.908	9139.27	0.0288	P	1.9
5	☐	100.000	98.957	86483.75	0.2832	P	1.0
6	☐	200.000	200.529	172405.07	0.5734	P	1.9
7	☐	1.000					

y = 0.0029 * x + 5.0163E-004
R = 1.0000
DL = 0.2902
BEC = 0.1756

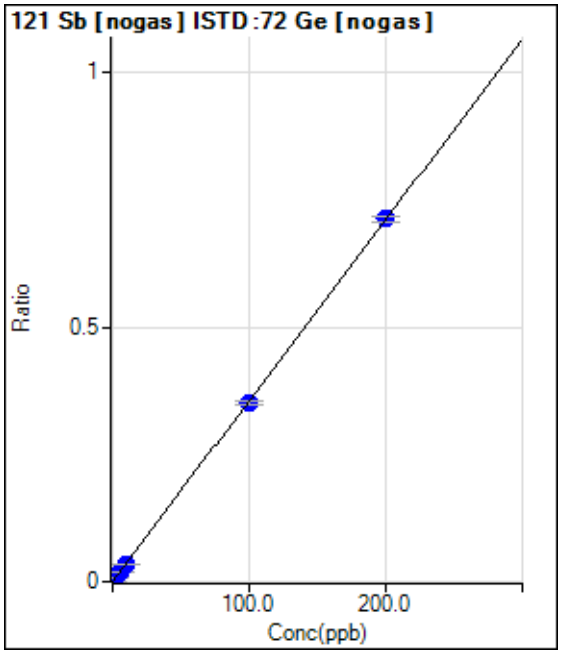
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26.67	0.0004	P	108.
2	☐	2.000	1.625	413.35	0.0058	P	8.0
3	☐	5.000	4.447	1083.39	0.0153	P	9.6
4	☐	10.000	10.568	2546.91	0.0359	P	12.0
5	☐	100.000	98.684	22905.70	0.3317	P	3.0
6	☐	200.000	200.647	46205.97	0.6740	P	0.7
7	☐	1.000					

y = 0.0034 * x + 3.8238E-004
R = 1.0000
DL = 0.3712
BEC = 0.1139

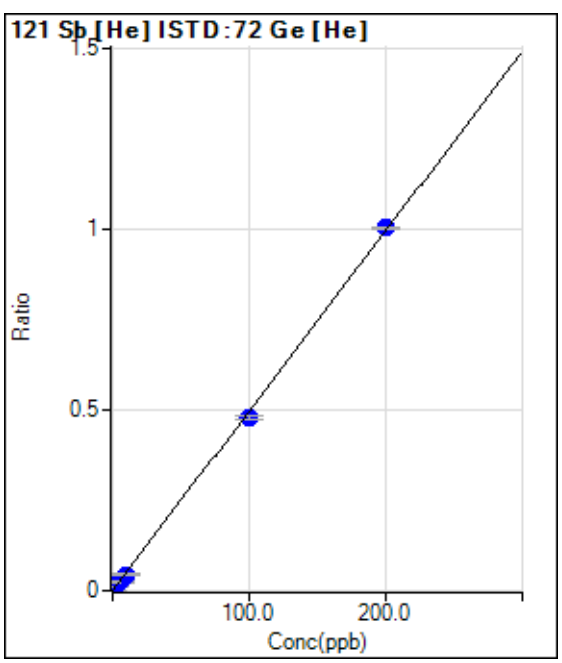
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	86.67	0.0002	P	16.9
2	☐	2.000	2.016	2790.27	0.0074	P	3.6
3	☐	5.000	4.833	6611.40	0.0174	P	3.3
4	☐	10.000	9.265	12628.20	0.0331	P	3.6
5	☐	100.000	98.734	128276.01	0.3509	P	2.0
6	☐	200.000	200.674	260818.15	0.7129	P	1.8
7	☐	1.000					

y = 0.0036 * x + 2.2753E-004
R = 1.0000
DL = 0.03247
BEC = 0.06407

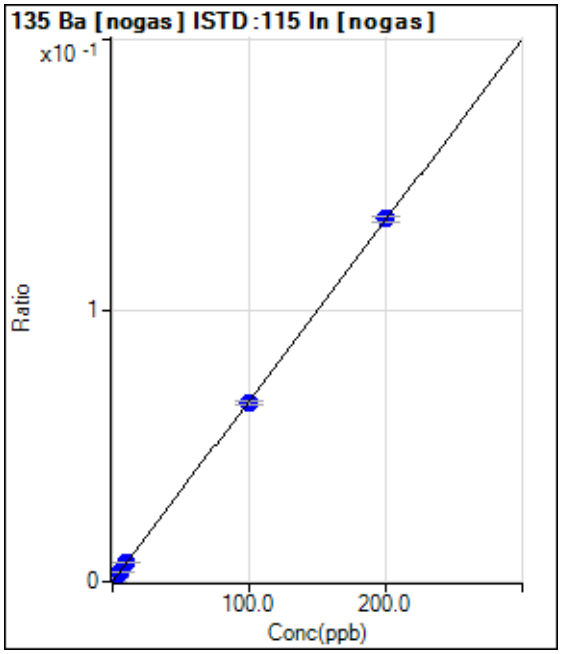
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10.00	0.0001	P	99.0
2	☐	2.000	2.190	780.03	0.0110	P	18.3
3	☐	5.000	4.796	1700.12	0.0240	P	3.1
4	☐	10.000	8.925	3167.03	0.0446	P	10.1
5	☐	100.000	96.543	33205.85	0.4808	P	2.6
6	☐	200.000	201.786	68888.83	1.0049	P	0.4
7	☐	1.000					

y = 0.0050 * x + 1.4511E-004
R = 0.9998
DL = 0.08657
BEC = 0.02914

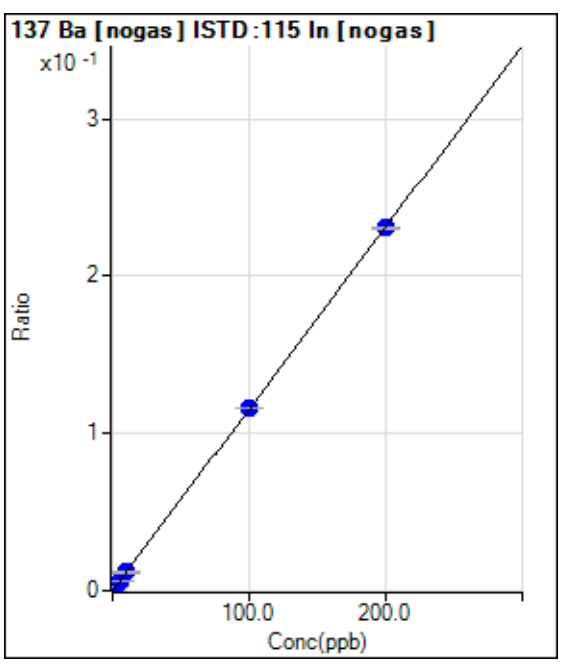
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16.67	0.0001	P	34.2
2	☐	2.000	2.011	446.68	0.0014	P	17.5
3	☐	5.000	5.096	1086.72	0.0034	P	9.8
4	☐	10.000	10.297	2190.18	0.0069	P	4.0
5	☐	100.000	98.477	20018.83	0.0656	P	2.3
6	☐	200.000	200.744	40164.68	0.1336	P	1.4
7	☐	1.000					

y = 6.6523E-004 * x + 5.2083E-005
R = 1.0000
DL = 0.08044
BEC = 0.07829

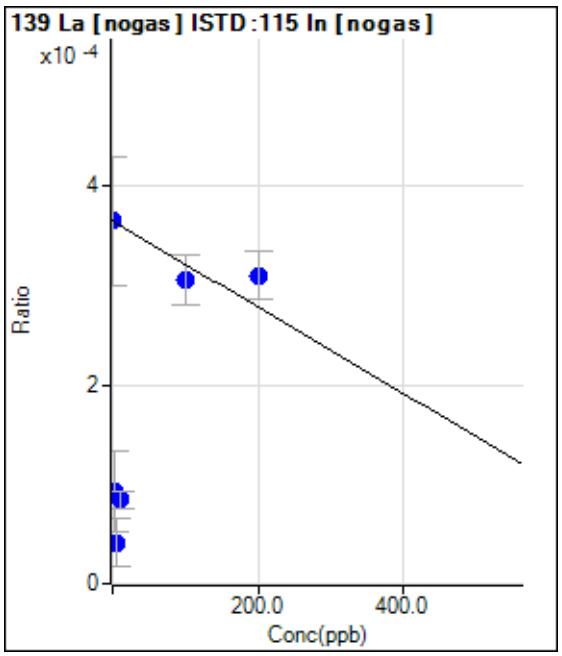
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	23.33	0.0001	P	107.
2	☐	2.000	2.012	770.03	0.0024	P	18.0
3	☐	5.000	5.051	1863.47	0.0059	P	7.5
4	☐	10.000	10.280	3787.17	0.0119	P	7.0
5	☐	100.000	100.604	35494.45	0.1162	P	0.6
6	☐	200.000	199.683	69345.57	0.2306	P	0.4
7	☐	1.000					

y = 0.0012 * x + 7.2772E-005
R = 1.0000
DL = 0.2039
BEC = 0.06303

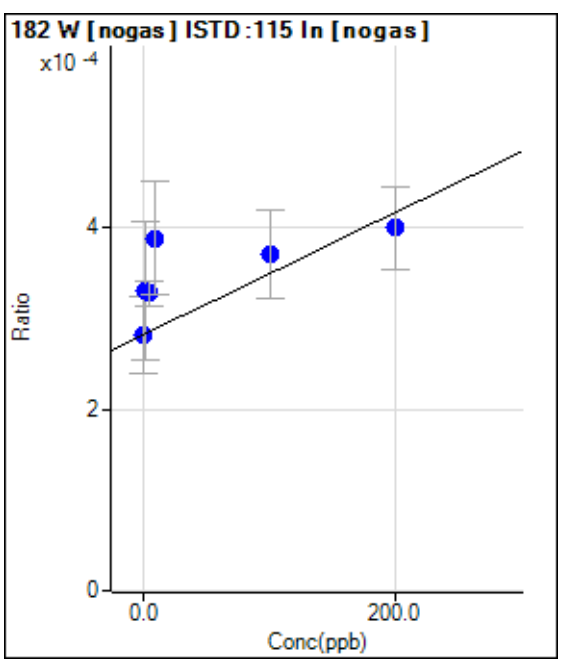
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	116.67	0.0004	P	35.3
2	☐	2.000	626.054	30.00	0.0001	P	87.2
3	☐	5.000	744.130	13.33	0.0000	P	114.
4	☐	10.000	645.830	26.67	0.0001	P	22.5
5	☐	100.000	136.071	93.33	0.0003	P	16.0
6	☐	200.000	125.454	93.33	0.0003	P	15.5
7	☐	1.000					

y = -4.3420E-007 * x + 3.6459E-004
R = 0.5265
DL = -889.5
BEC = -839.7

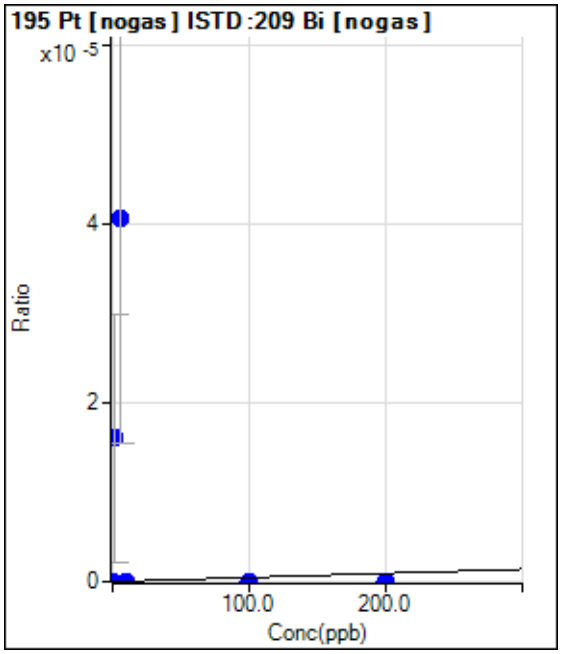
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	90.00	0.0003	P	29.7
2	☐	2.000	73.117	106.67	0.0003	P	46.0
3	☐	5.000	67.722	103.33	0.0003	P	8.1
4	☐	10.000	157.654	123.34	0.0004	P	32.2
5	☐	100.000	131.913	113.33	0.0004	P	26.6
6	☐	200.000	174.382	120.00	0.0004	P	22.9
7	☐	1.000					

y = 6.7557E-007 * x + 2.8181E-004
R = 0.6763
DL = 372.1
BEC = 417.1

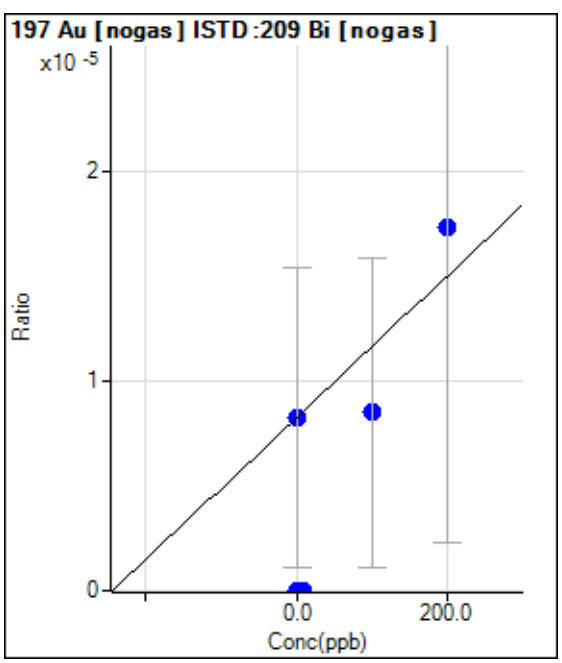
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	2.000	3424.576	6.67	0.0000	P	173.
3	☐	5.000	8655.970	16.67	0.0000	P	123.
4	☐	10.000	0.000	0.00	0.0000	P	
5	☐	100.000	0.000	0.00	0.0000	P	
6	☐	200.000	0.000	0.00	0.0000	P	
7	☐	1.000					

y = 4.6867E-009 * x + 0.0000E+000
R = -0.4077
DL = 0
BEC = 0

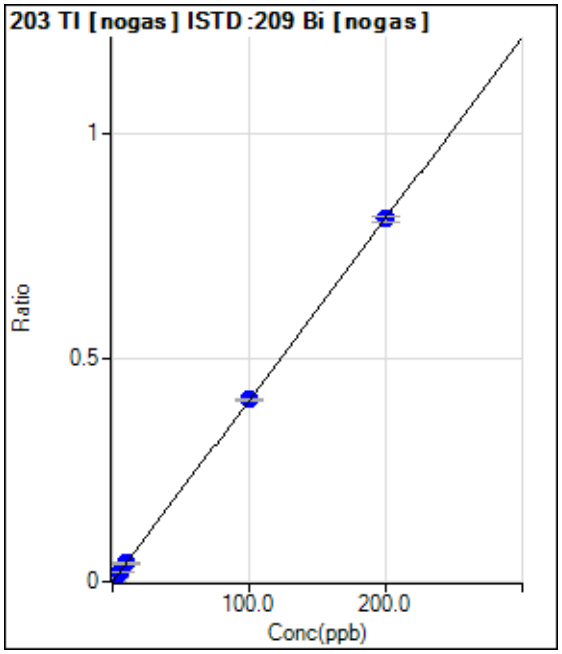
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.
2	☐	2.000	-244.179	0.00	0.0000	P	
3	☐	5.000	-244.179	0.00	0.0000	P	
4	☐	10.000	-244.179	0.00	0.0000	P	
5	☐	100.000	7.183	3.33	0.0000	P	173.
6	☐	200.000	267.809	6.67	0.0000	P	173.
7	☐	1.000					

y = 3.3779E-008 * x + 8.2482E-006
R = 0.8755
DL = 1269
BEC = 244.2

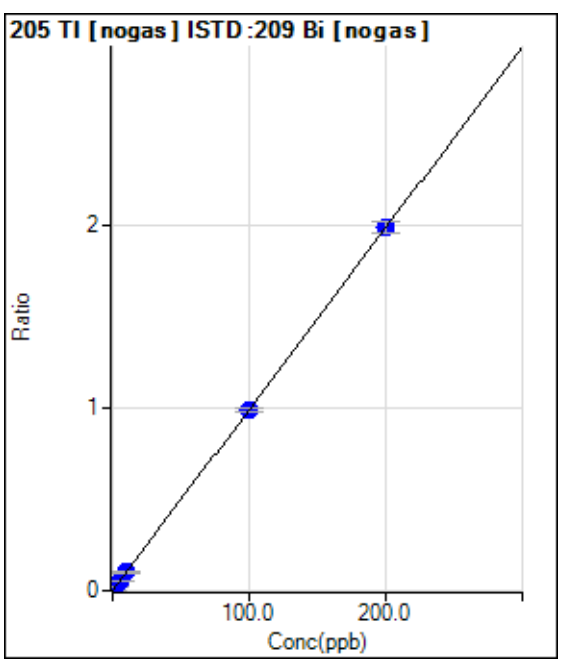
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.
2	☐	2.000	1.847	3090.37	0.0075	P	3.8
3	☐	5.000	4.993	8288.97	0.0202	P	4.3
4	☐	10.000	10.098	16605.54	0.0409	P	5.1
5	☐	100.000	100.211	158088.30	0.4061	P	0.7
6	☐	200.000	199.891	309510.11	0.8100	P	1.8
7	☐	1.000					

y = 0.0041 * x + 8.0208E-006
R = 1.0000
DL = 0.01028
BEC = 0.001979

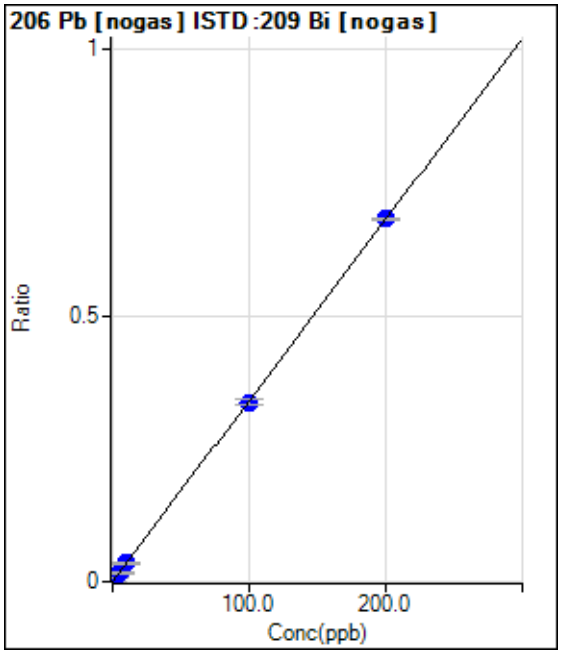
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10.00	0.0000	P	173.
2	☐	2.000	1.843	7525.26	0.0183	P	7.3
3	☐	5.000	5.004	20286.58	0.0496	P	2.8
4	☐	10.000	10.097	40551.97	0.1000	P	4.6
5	☐	100.000	99.655	383929.58	0.9863	P	1.6
6	☐	200.000	200.169	756856.39	1.9811	P	3.1
7	☐	1.000					

y = 0.0099 * x + 2.4063E-005
R = 1.0000
DL = 0.01263
BEC = 0.002431

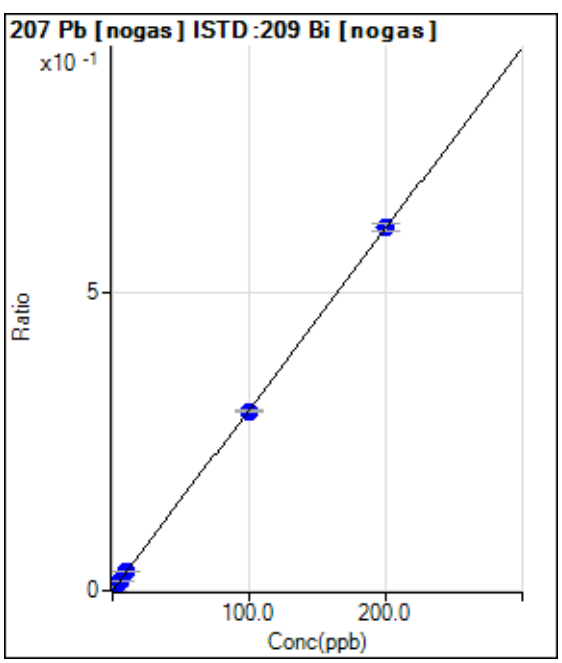
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	23.33	0.0001	P	25.5
2	☐	2.000	2.025	2866.98	0.0069	P	8.8
3	☐	5.000	4.999	6985.02	0.0171	P	9.7
4	☐	10.000	10.120	14003.04	0.0345	P	2.4
5	☐	100.000	99.157	131409.73	0.3376	P	2.5
6	☐	200.000	200.416	260738.23	0.6823	P	0.8
7	☐	1.000					

y = 0.0034 * x + 5.7377E-005
R = 1.0000
DL = 0.01289
BEC = 0.01685

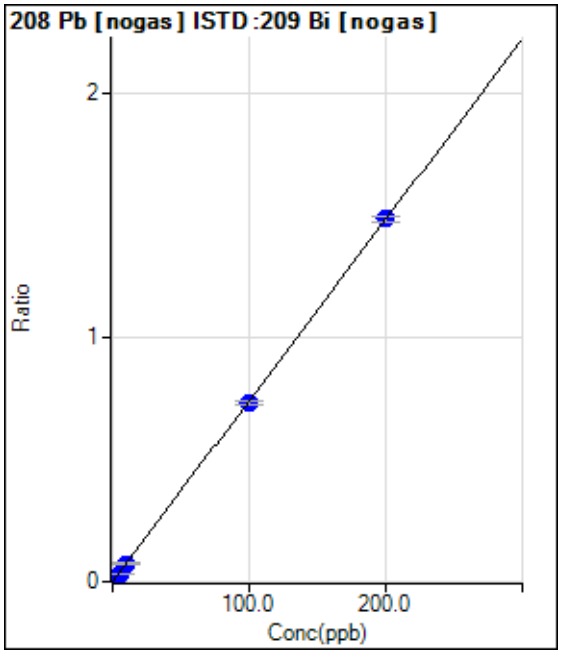
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.
2	☐	2.000	1.944	2436.90	0.0059	P	4.6
3	☐	5.000	5.027	6254.69	0.0153	P	5.1
4	☐	10.000	10.199	12578.60	0.0310	P	0.7
5	☐	100.000	99.233	117368.28	0.3015	P	1.0
6	☐	200.000	200.373	232594.20	0.6088	P	2.1
7	☐	1.000					

y = 0.0030 * x + 8.2482E-006
R = 1.0000
DL = 0.01411
BEC = 0.002715

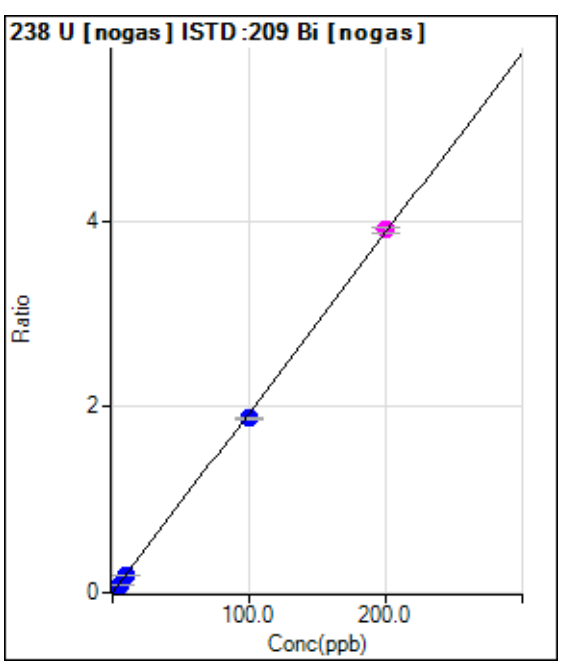
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40.00	0.0001	P	66.4
2	☐	2.000	1.952	5987.91	0.0145	P	6.3
3	☐	5.000	4.693	14246.58	0.0348	P	3.2
4	☐	10.000	9.942	29875.07	0.0736	P	3.8
5	☐	100.000	98.965	284868.65	0.7318	P	1.6
6	☐	200.000	200.528	566557.79	1.4827	P	1.5
7	☐	1.000					

y = 0.0074 * x + 9.8124E-005
R = 1.0000
DL = 0.02645
BEC = 0.01327

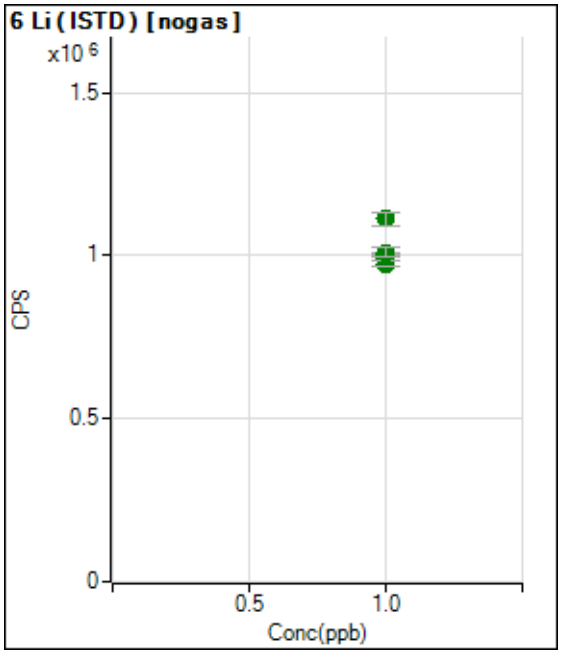
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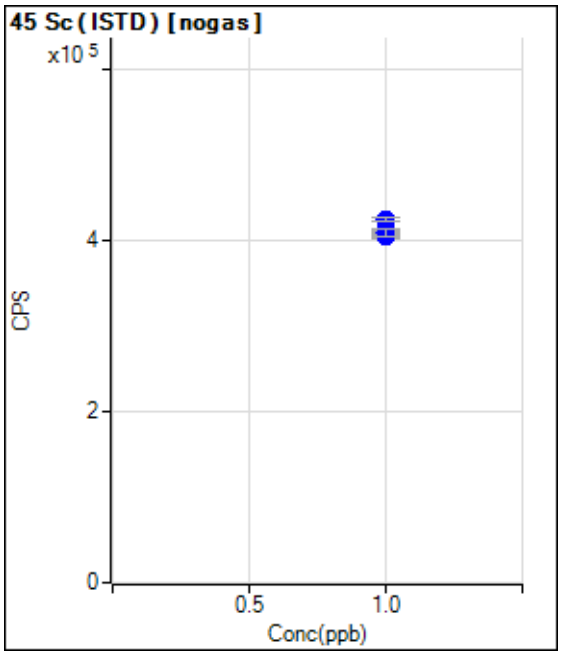
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1	☐	0.000	0.000	16.67	0.0000	P	92.5
2	☐	2.000	1.880	15020.79	0.0364	P	2.7
3	☐	5.000	4.642	36800.68	0.0899	P	2.3
4	☐	10.000	9.571	75184.12	0.1853	P	1.6
5	☐	100.000	96.842	729572.44	1.8742	P	0.7
6	☐	200.000	201.611	1491053.21	3.9017	M	1.6
7	☐	1.000					

y = 0.0194 * x + 4.0927E-005
R = 0.9998
DL = 0.005867
BEC = 0.002115

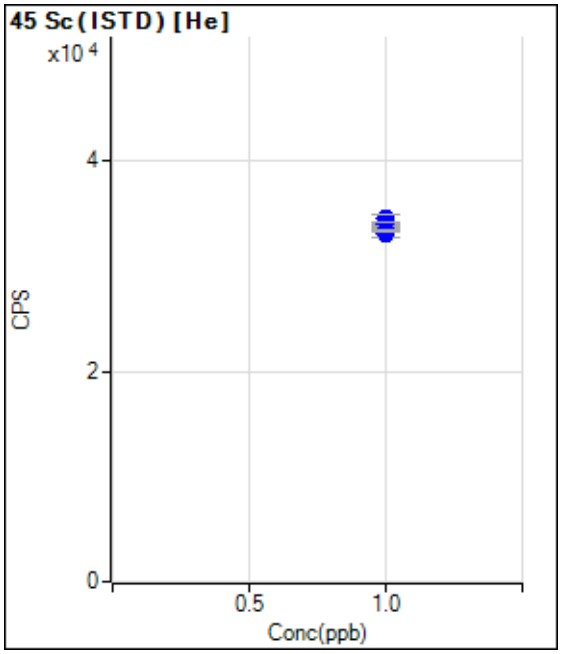
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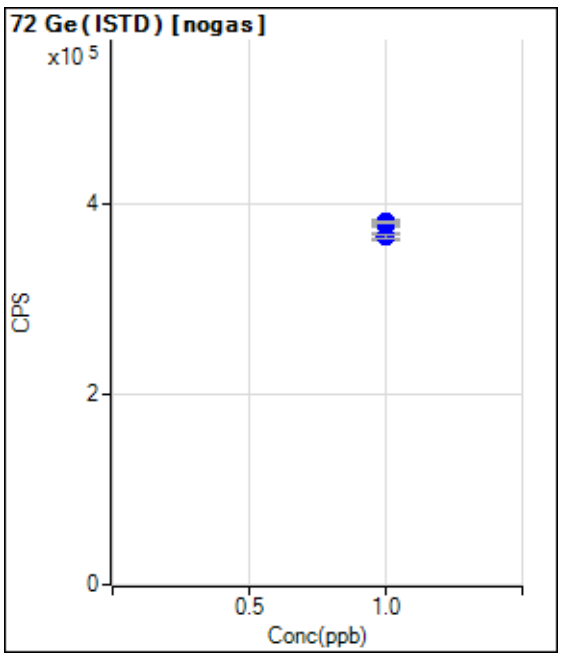
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2	☐	1.000		1002848.92		A	1.0
3	☐	1.000		974428.11		A	2.0
4	☐	1.000		995755.30		A	2.2
5	☐	1.000		1009901.34		A	2.7
6	☐	1.000		1112152.33		A	3.6
7	☐	1.000					



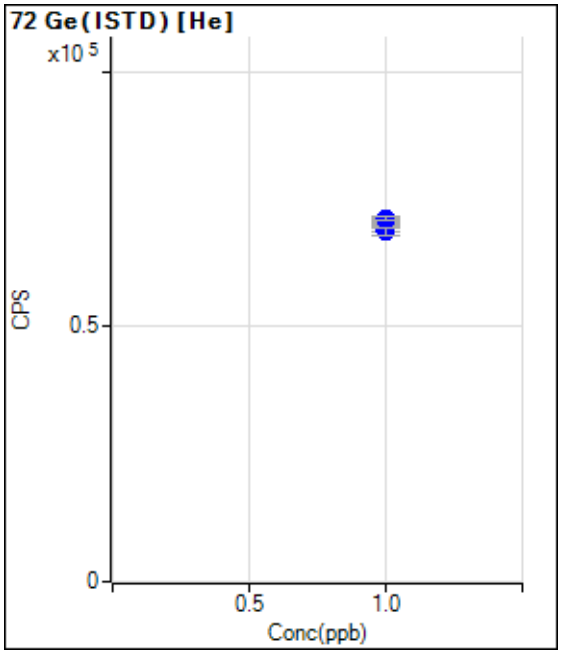
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1	☐	1.000		405319.24		P	1.0
2	☐	1.000		410224.68		P	0.5
3	☐	1.000		413055.59		P	0.4
4	☐	1.000		404930.49		P	0.5
5	☐	1.000		409331.91		P	2.3
6	☐	1.000		424457.96		P	1.2
7	☐	1.000					



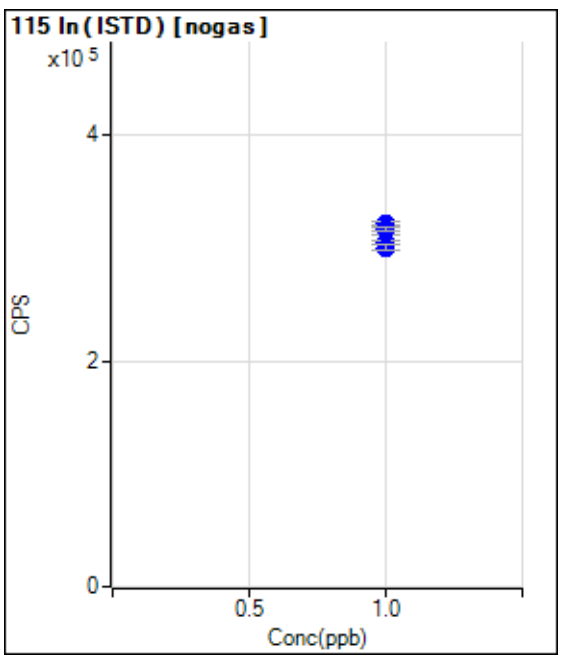
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1	☐	1.000		33708.23		P	2.9
2	☐	1.000		33895.30		P	1.0
3	☐	1.000		34502.98		P	2.2
4	☐	1.000		34035.48		P	1.4
5	☐	1.000		33060.43		P	1.6
6	☐	1.000		33360.81		P	0.9
7	☐	1.000					



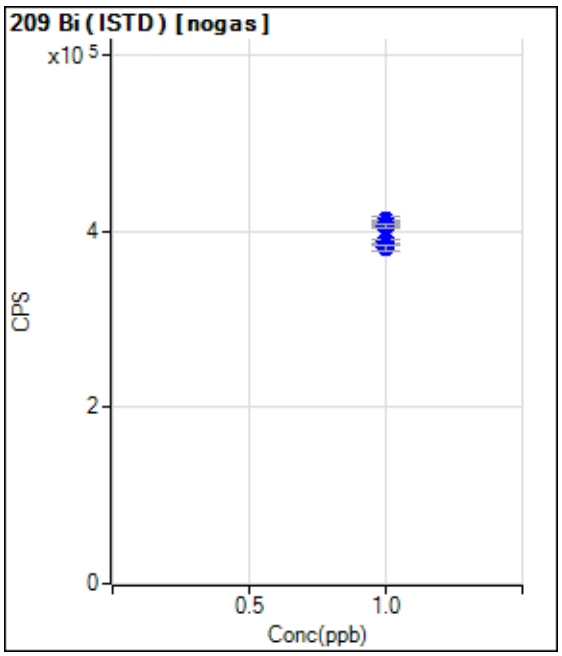
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2	☐	1.000		377789.28		P	0.8
3	☐	1.000		380103.08		P	1.1
4	☐	1.000		381214.39		P	0.7
5	☐	1.000		365690.72		P	2.1
6	☐	1.000		365892.39		P	1.4
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		70027.60		P	3.8
2	☐	1.000		70727.18		P	2.0
3	☐	1.000		70760.28		P	0.6
4	☐	1.000		71068.62		P	0.9
5	☐	1.000		69066.78		P	1.4
6	☐	1.000		68555.59		P	1.8
7	☐	1.000					



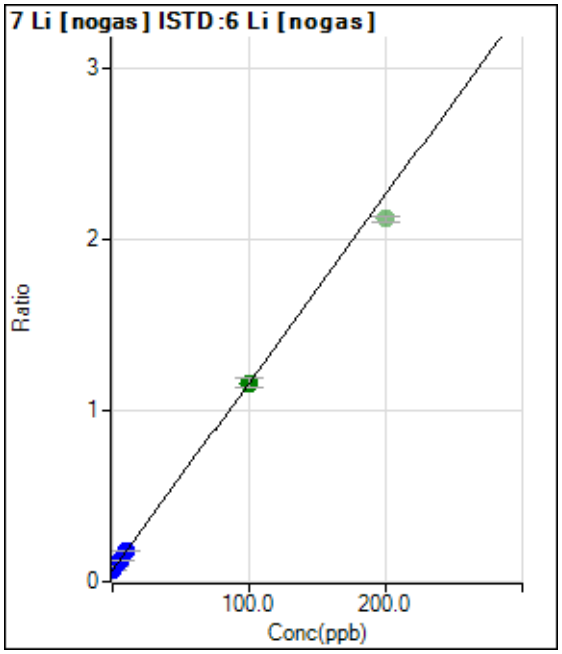
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1	☐	1.000		319603.43		P	0.5
2	☐	1.000		321698.92		P	1.0
3	☐	1.000		315870.87		P	2.5
4	☐	1.000		317278.06		P	1.0
5	☐	1.000		305387.57		P	1.1
6	☐	1.000		300682.16		P	1.3
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		407183.56		P	1.8
2	☐	1.000		412330.68		P	2.1
3	☐	1.000		409528.69		P	1.8
4	☐	1.000		405838.98		P	1.0
5	☐	1.000		389290.01		P	0.7
6	☐	1.000		382157.53		P	1.6
7	☐	1.000					

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Analysis File: 083118A.batch.bin
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Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

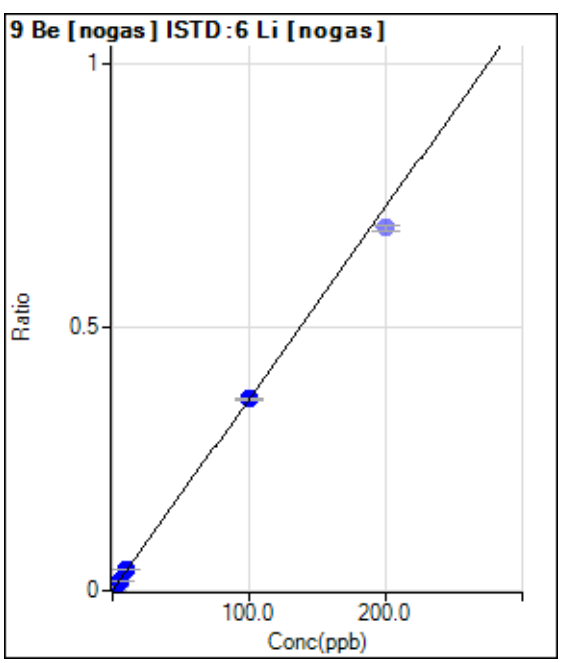
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2	090CALS.d	2/10/200	8/31/2018 2:50:48 PM
3	091CALS.d	5/25/500	8/31/2018 2:53:03 PM
4	092CALS.d	10/50/1000	8/31/2018 2:55:18 PM
5	093CALS.d	100/500/10K	8/31/2018 2:57:33 PM
6	094CALS.d	200/1000/20K	8/31/2018 2:59:47 PM
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	60407.03	0.0654	P	0.5
2	☐	2.000	2.146	81199.77	0.0889	P	8.1
3	☐	5.000	5.302	113036.77	0.1235	P	0.7
4	☐	10.000	10.590	168467.20	0.1814	P	0.5
5	☐	100.000	99.923	1147238.52	1.1601	A	5.1
6	☑	200.000		2213209.60	2.1171	A	1.5
7	☐	1.000					

y = 0.0110 * x + 0.0654
R = 1.0000
DL = 0.09529
BEC = 5.967

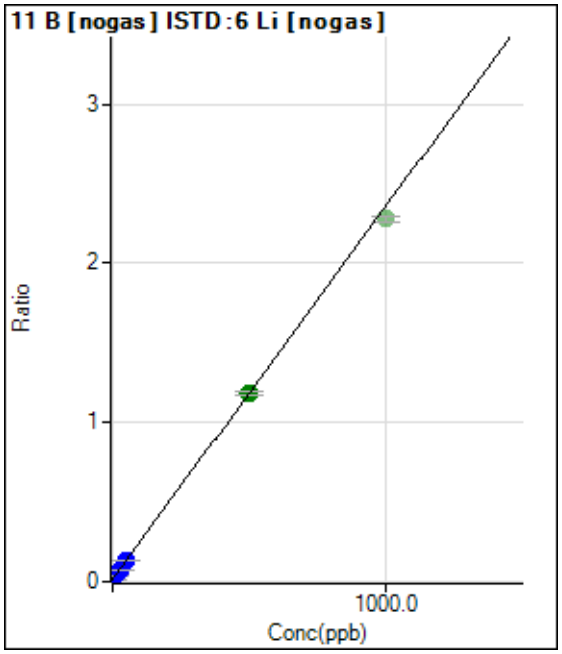
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2	☐	2.000	2.196	7208.21	0.0080	P	21.1
3	☐	5.000	5.417	18035.58	0.0197	P	2.5
4	☐	10.000	11.024	37217.15	0.0401	P	0.9
5	☐	100.000	99.873	359066.76	0.3629	P	1.5
6	☑	200.000		718687.41	0.6875	P	1.7
7	☐	1.000					

y = 0.0036 * x + 2.1691E-005
R = 1.0000
DL = 0.01551
BEC = 0.00597

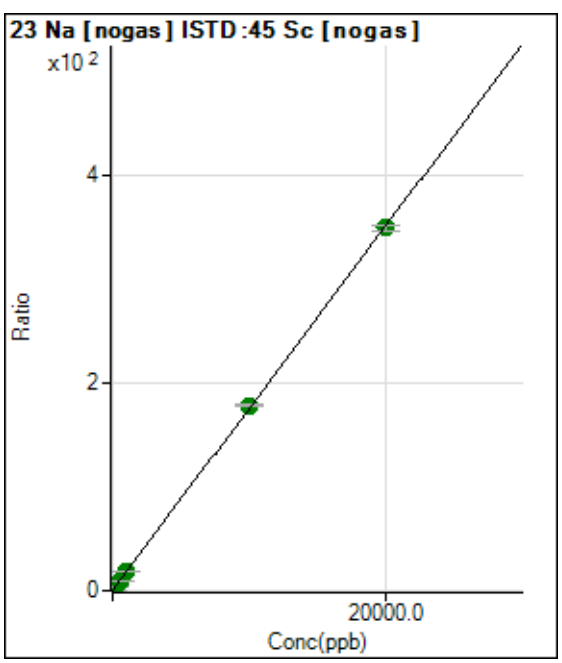
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13541.74	0.0147	P	1.5
2	☐	10.000	10.587	35577.40	0.0394	P	18.6
3	☐	25.000	26.138	69448.44	0.0759	P	1.9
4	☐	50.000	52.522	127819.04	0.1376	P	0.9
5	☐	500.000	499.679	1172150.06	1.1846	A	2.5
6	☑	1000.000		2383513.97	2.2799	A	1.9
7	☐	5.000					

y = 0.0023 * x + 0.0147
R = 1.0000
DL = 0.2793
BEC = 6.259

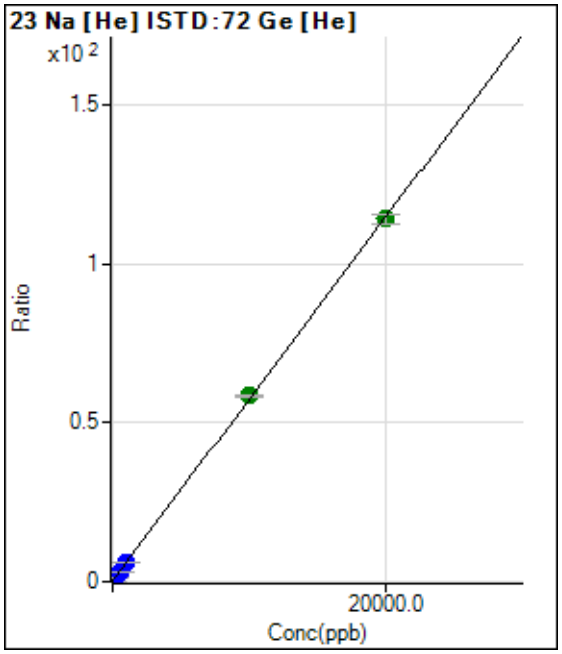
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	106893.54	0.2785	P	4.1
2	☐	200.000	227.831	1531652.67	4.2702	A	23.4
3	☐	500.000	535.316	3709093.57	9.6576	A	2.6
4	☐	1000.000	1074.044	7347068.39	19.0964	A	0.8
5	☐	10000.00	10164.886	69205528.63	178.373	A	1.2
6	☐	20000.00	19912.694	139922115.6	349.161	A	1.9
7	☐	100.000					

y = 0.0175 * x + 0.2785
R = 1.0000
DL = 1.951
BEC = 15.89

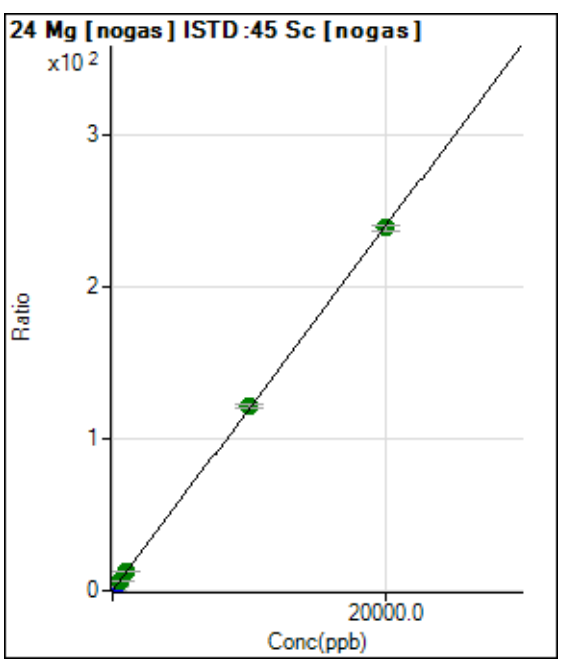
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16961.37	0.2578	P	1.8
2	☐	200.000	197.034	91926.17	1.3834	P	1.0
3	☐	500.000	493.062	204486.71	3.0745	P	2.0
4	☐	1000.000	1015.463	406776.95	6.0588	P	2.8
5	☐	10000.00	10165.624	3748685.15	58.3306	A	1.3
6	☐	20000.00	19916.618	7468693.22	114.034	A	2.9
7	☐	100.000					

y = 0.0057 * x + 0.2578
R = 1.0000
DL = 2.479
BEC = 45.12

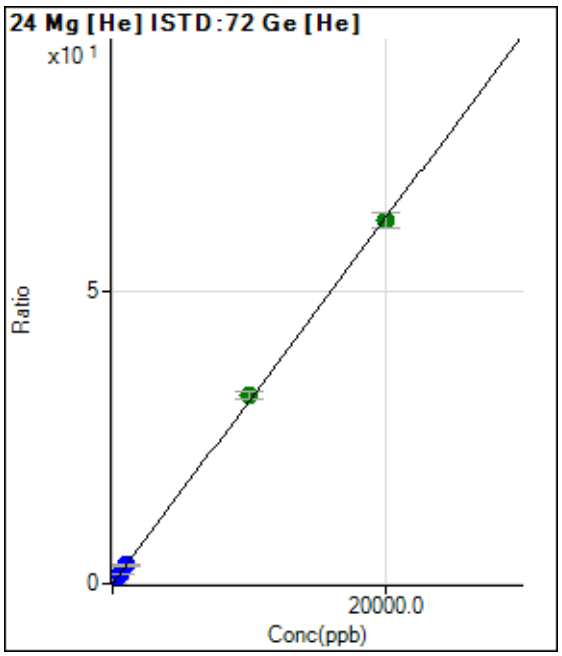
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7202.80	0.0187	P	17.4
2	☐	200.000	223.954	967354.68	2.7009	P	24.4
3	☐	500.000	539.164	2487516.53	6.4760	A	1.2
4	☐	1000.000	1080.989	4987861.18	12.9651	A	2.0
5	☐	10000.00	10148.310	47162971.88	121.559	A	1.8
6	☐	20000.00	19920.577	95613783.39	238.595	A	1.7
7	☐	100.000					

y = 0.0120 * x + 0.0187
R = 1.0000
DL = 0.8167
BEC = 1.565

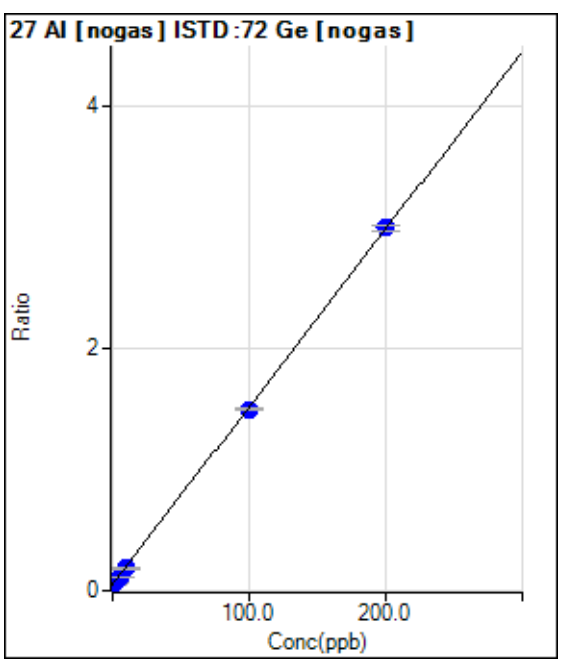
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	346.68	0.0053	P	23.5
2	☐	200.000	200.567	42081.51	0.6333	P	1.1
3	☐	500.000	496.239	103689.84	1.5590	P	2.1
4	☐	1000.000	1001.696	210945.55	3.1416	P	0.9
5	☐	10000.00	10299.771	2073302.31	32.2539	A	3.4
6	☐	20000.00	19850.118	4070525.15	62.1561	A	4.1
7	☐	100.000					

y = 0.0031 * x + 0.0053
R = 0.9998
DL = 1.188
BEC = 1.688

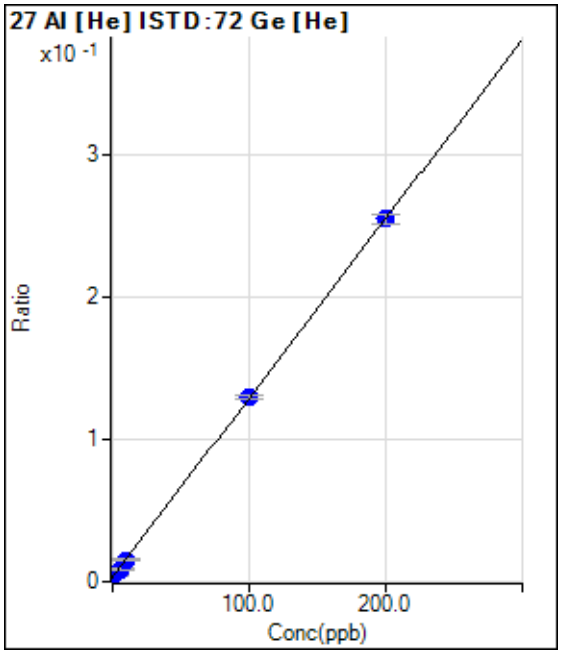
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18666.47	0.0526	P	0.5
2	☐	2.000	0.767	22237.71	0.0639	P	8.1
3	☐	5.000	3.682	37792.36	0.1067	P	2.5
4	☐	10.000	8.925	64445.87	0.1837	P	1.4
5	☐	100.000	98.725	514211.11	1.5025	P	1.3
6	☐	200.000	200.736	1023887.22	3.0007	P	1.5
7	☐	1.000					

y = 0.0147 * x + 0.0526
R = 1.0000
DL = 0.05696
BEC = 3.583

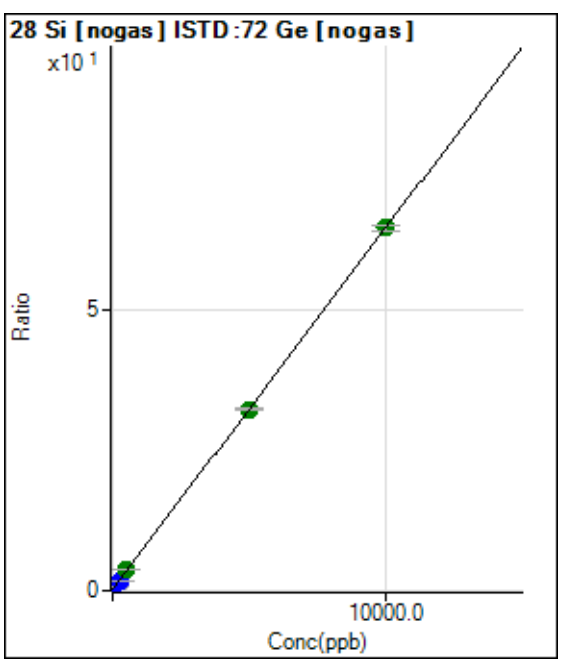
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	1.665	346.68	0.0053	P	22.2
2	☐	2.000	1.373	326.68	0.0049	P	21.1
3	☐	5.000	4.305	573.36	0.0086	P	15.4
4	☐	10.000	9.543	1020.05	0.0152	P	8.1
5	☐	100.000	100.135	8295.33	0.1291	P	2.2
6	☐	200.000	199.979	16684.55	0.2547	P	2.9
7	☐	1.000					

y = 0.0013 * x + 0.0032
R = 0.9999
DL = 2.803
BEC = 2.543

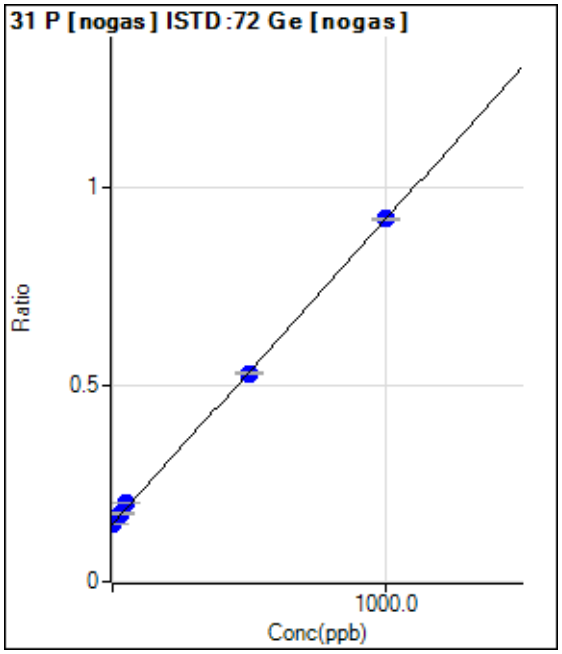
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	72432.94	0.2042	P	2.0
2	☐	100.000	103.373	297022.89	0.8692	P	17.3
3	☐	250.000	249.394	640486.76	1.8085	P	1.2
4	☐	500.000	535.365	1279898.05	3.6480	A	2.0
5	☐	5000.000	4987.179	11049071.50	32.2847	A	0.8
6	☐	10000.00	10004.623	22027156.34	64.5600	A	1.4
7	☐	50.000					

y = 0.0064 * x + 0.2042
R = 1.0000
DL = 1.903
BEC = 31.74

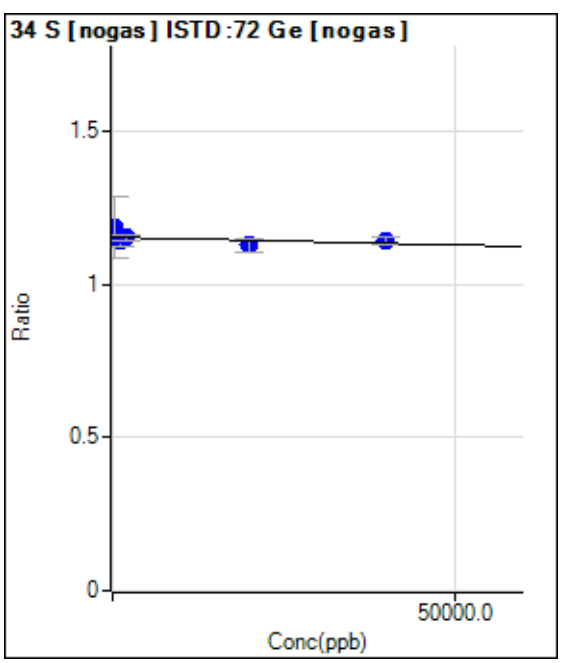
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	52120.36	0.1469	P	1.1
2	☐	10.000	18.946	55346.80	0.1616	P	15.6
3	☐	25.000	34.310	61452.51	0.1735	P	0.8
4	☐	50.000	70.240	70631.81	0.2013	P	1.4
5	☐	500.000	494.777	181431.48	0.5301	P	1.1
6	☐	1000.000	1001.277	314749.60	0.9224	P	0.3
7	☐	5.000					

y = 7.7449E-004 * x + 0.1469
R = 0.9998
DL = 6.257
BEC = 189.7

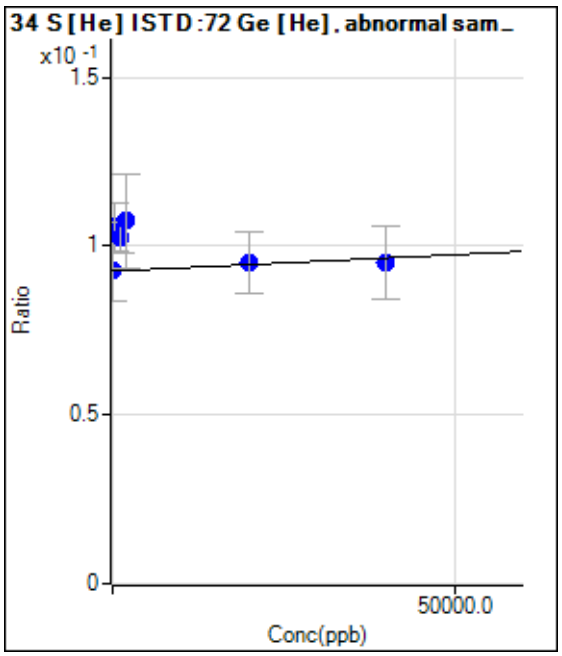
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	409516.24	1.1545	P	3.2
2	☐	400.000	-60652.81	405186.27	1.1848	P	17.0
3	☐	1000.000	28047.016	403893.85	1.1405	P	2.4
4	☐	2000.000	4149.225	404376.73	1.1524	P	1.8
5	☐	20000.00	54092.827	385846.15	1.1274	P	3.6
6	☐	40000.00	22780.478	390001.08	1.1431	P	2.1
7	☐	200.000					

y = -4.9984E-007 * x + 1.1545
R = -0.4708
DL = -2.23E+05
BEC = -2.31E+06

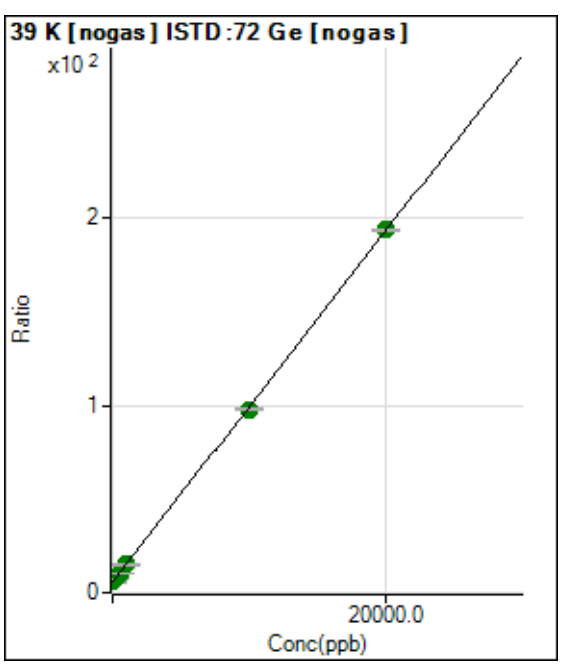
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6069.11	0.0926	P	19.4
2	☐	400.000	135241.96	7036.08	0.1058	P	13.5
3	☐	1000.000	104256.72	6836.57	0.1027	P	8.8
4	☐	2000.000	152365.19	7202.96	0.1074	P	25.9
5	☐	20000.00	26229.674	6102.56	0.0951	P	19.3
6	☐	40000.00	25437.066	6235.48	0.0950	P	22.4
7	☐	200.000					

y = 9.7657E-008 * x + 0.0926
R = -0.5073
DL = 5.508E+05
BEC = 9.477E+05

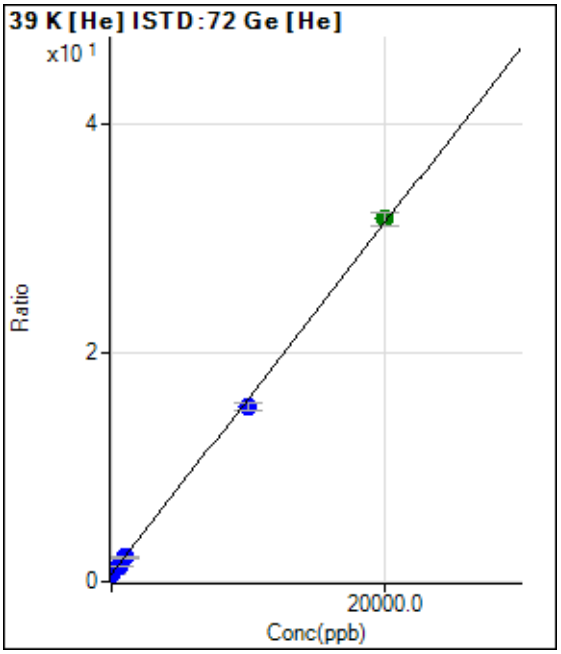
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2014812.48	5.6801	A	1.2
2	☐	200.000	215.484	2637260.34	7.6990	A	15.3
3	☐	500.000	484.281	3618599.04	10.2175	A	1.7
4	☐	1000.000	987.105	5237510.01	14.9287	A	0.7
5	☐	10000.00	9858.619	33556978.88	98.0497	A	0.7
6	☐	20000.00	20071.574	66106041.06	193.739	A	0.4
7	☐	100.000					

y = 0.0094 * x + 5.6801
R = 1.0000
DL = 21.19
BEC = 606.2

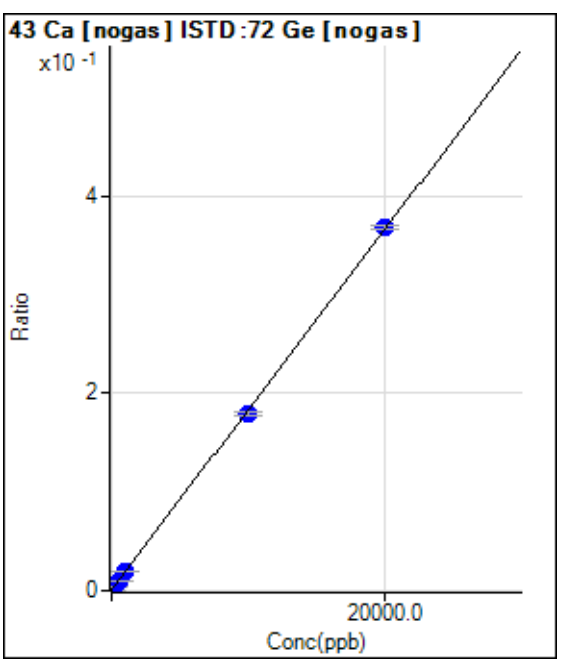
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	43355.19	0.6596	P	5.7
2	☐	200.000	192.462	63416.08	0.9543	P	1.2
3	☐	500.000	474.667	92207.09	1.3863	P	1.4
4	☐	1000.000	945.722	141497.56	2.1074	P	1.7
5	☐	10000.00	9526.359	979113.76	15.2429	P	3.7
6	☐	20000.00	20240.243	2072403.25	31.6441	A	4.0
7	☐	100.000					

y = 0.0015 * x + 0.6596
R = 0.9996
DL = 74.05
BEC = 430.9

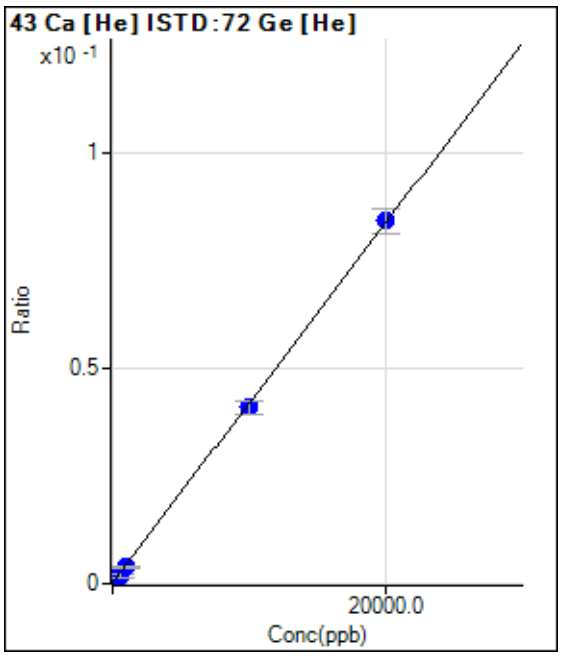
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	286.68	0.0008	P	8.7
2	☐	200.000	189.096	1456.76	0.0043	P	20.0
3	☐	500.000	460.377	3263.69	0.0092	P	0.9
4	☐	1000.000	993.400	6648.01	0.0189	P	1.5
5	☐	10000.00	9788.563	61450.52	0.1796	P	3.0
6	☐	20000.00	20107.148	125551.70	0.3680	P	1.2
7	☐	100.000					

y = 1.8261E-005 * x + 8.0817E-004
R = 0.9999
DL = 11.61
BEC = 44.26

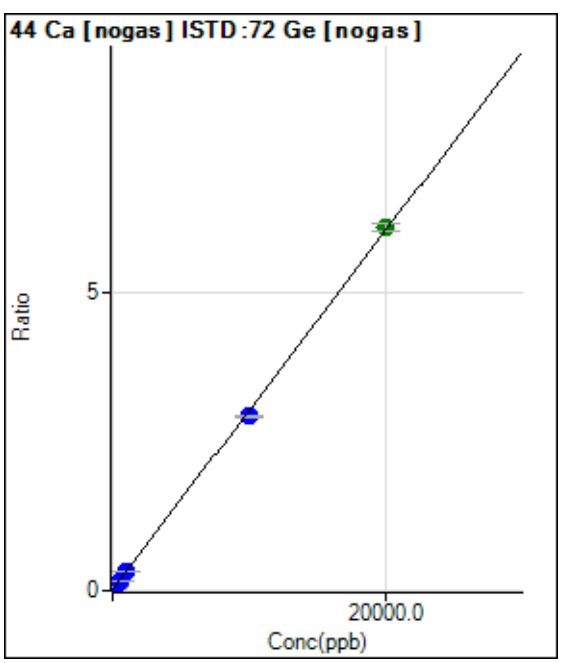
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13.33	0.0002	P	44.1
2	☐	200.000	227.168	76.67	0.0012	P	13.6
3	☐	500.000	395.283	123.33	0.0019	P	46.4
4	☐	1000.000	889.622	263.34	0.0039	P	10.9
5	☐	10000.00	9755.035	2630.25	0.0410	P	7.0
6	☐	20000.00	20130.348	5520.94	0.0843	P	7.2
7	☐	100.000					

y = 4.1779E-006 * x + 2.0314E-004
R = 0.9999
DL = 64.33
BEC = 48.62

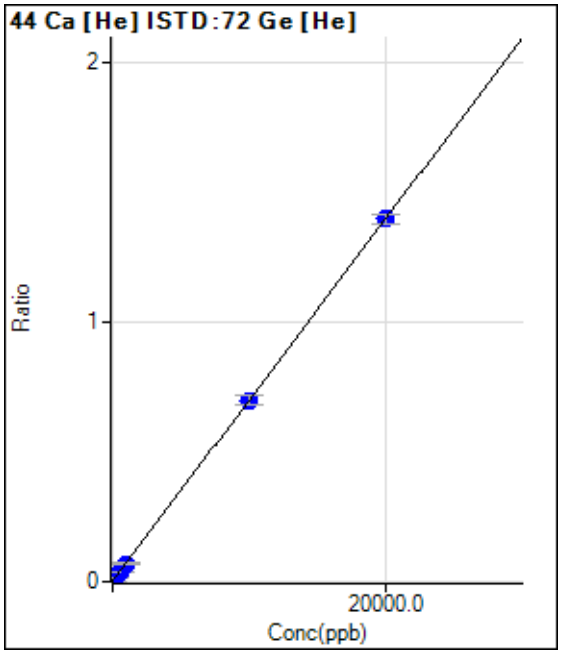
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6481.29	0.0183	P	2.3
2	☐	200.000	203.234	27100.58	0.0793	P	16.8
3	☐	500.000	468.543	56266.64	0.1589	P	2.3
4	☐	1000.000	974.307	108990.47	0.3107	P	2.2
5	☐	10000.00	9675.337	1000011.10	2.9220	P	0.9
6	☐	20000.00	20164.370	2071034.50	6.0698	A	2.0
7	☐	100.000					

y = 3.0011E-004 * x + 0.0183
R = 0.9998
DL = 4.127
BEC = 60.88

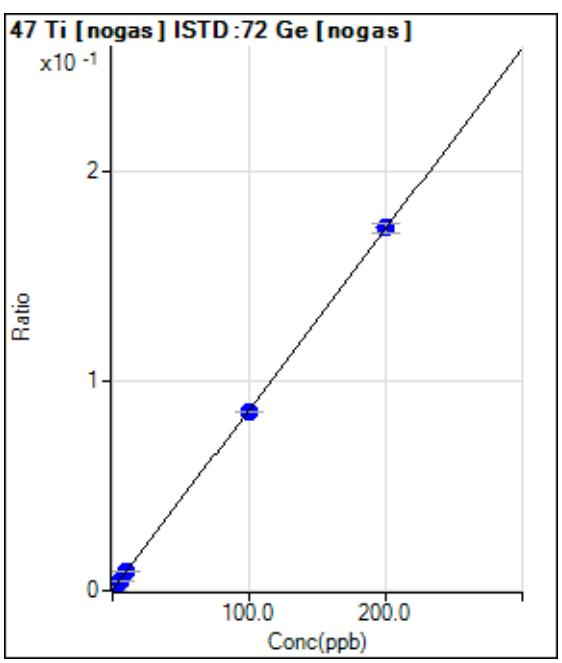
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	96.67	0.0015	P	59.3
2	☐	200.000	218.409	1110.05	0.0167	P	3.1
3	☐	500.000	499.020	2410.20	0.0363	P	8.9
4	☐	1000.000	985.584	4710.69	0.0702	P	4.7
5	☐	10000.00	9988.260	44788.79	0.6974	P	5.5
6	☐	20000.00	20006.431	91395.01	1.3954	P	2.5
7	☐	100.000					

y = 6.9674E-005 * x + 0.0015
R = 1.0000
DL = 37.87
BEC = 21.28

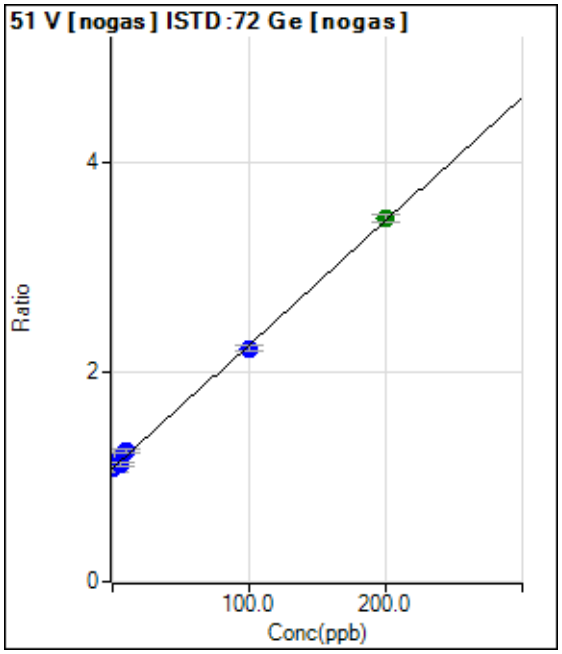
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	86.67	0.0002	P	54.6
2	☐	2.000	1.829	630.03	0.0018	P	6.9
3	☐	5.000	4.905	1583.43	0.0045	P	6.2
4	☐	10.000	10.244	3183.68	0.0091	P	4.7
5	☐	100.000	98.672	29193.69	0.0853	P	0.4
6	☐	200.000	200.656	59102.61	0.1732	P	2.7
7	☐	1.000					

y = 8.6201E-004 * x + 2.4434E-004
R = 1.0000
DL = 0.4639
BEC = 0.2835

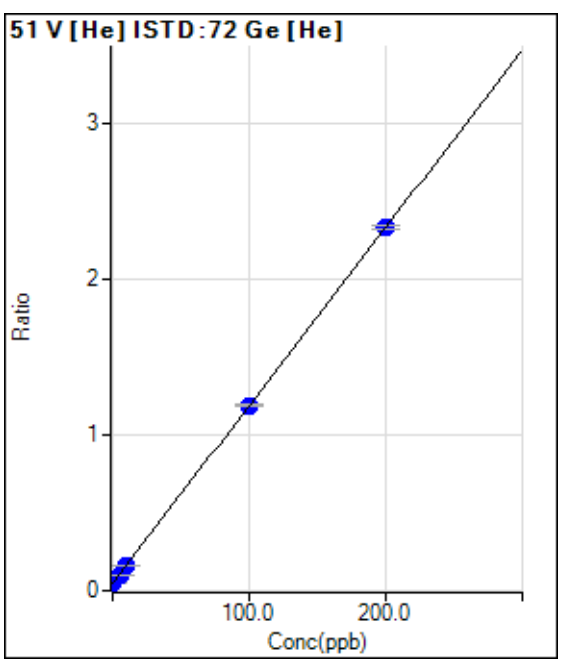
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	384401.16	1.0837	P	2.4
2	☐	2.000	6.165	394751.49	1.1566	P	18.6
3	☐	5.000	3.484	398367.15	1.1249	P	3.5
4	☐	10.000	14.211	439067.03	1.2516	P	2.3
5	☐	100.000	96.581	761518.85	2.2252	P	2.4
6	☐	200.000	201.495	1182234.82	3.4651	A	2.0
7	☐	1.000					

y = 0.0118 * x + 1.0837
R = 0.9993
DL = 6.632
BEC = 91.69

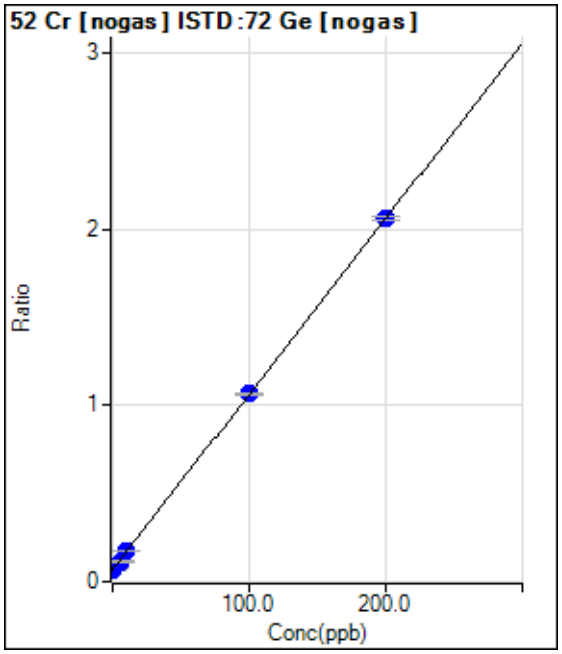
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.048	3168.29	0.0482	P	4.5
2	☐	2.000	1.954	4649.28	0.0700	P	1.4
3	☐	5.000	4.727	6758.60	0.1016	P	3.1
4	☐	10.000	10.229	11041.36	0.1644	P	0.8
5	☐	100.000	100.092	76502.35	1.1906	P	0.4
6	☐	200.000	199.950	152678.37	2.3308	P	1.2
7	☐	1.000					

y = 0.0114 * x + 0.0476
R = 1.0000
DL = 0.5668
BEC = 4.172

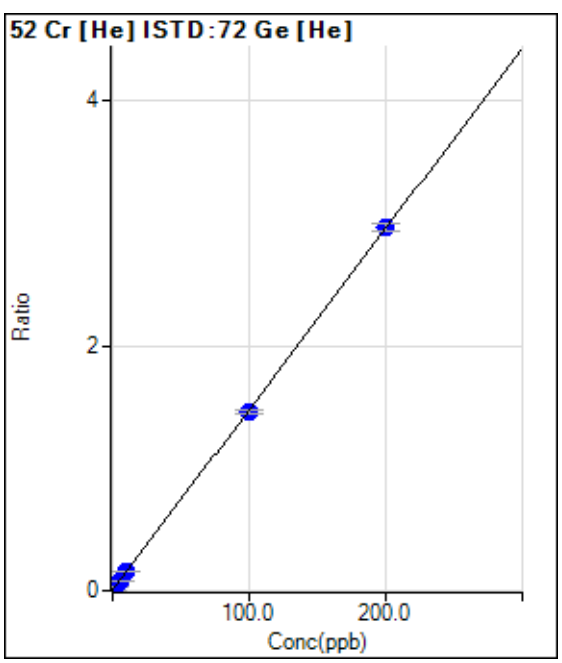
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	24196.47	0.0682	P	2.8
2	☐	2.000	2.231	30839.86	0.0904	P	19.1
3	☐	5.000	4.652	40555.56	0.1145	P	3.1
4	☐	10.000	10.726	61377.23	0.1750	P	3.3
5	☐	100.000	100.025	364140.45	1.0640	P	1.0
6	☐	200.000	199.957	702495.09	2.0588	P	1.1
7	☐	1.000					

y = 0.0100 * x + 0.0682
R = 1.0000
DL = 0.5722
BEC = 6.852

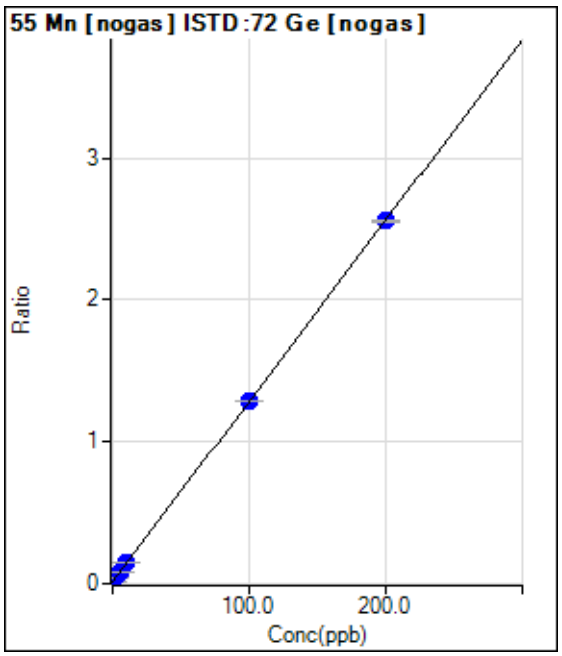
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	336.68	0.0051	P	7.5
2	☐	2.000	1.898	2196.85	0.0331	P	18.2
3	☐	5.000	4.974	5214.19	0.0784	P	5.7
4	☐	10.000	10.378	10609.95	0.1581	P	5.2
5	☐	100.000	98.919	93989.50	1.4629	P	1.7
6	☐	200.000	200.523	193932.04	2.9603	P	2.2
7	☐	1.000					

y = 0.0147 * x + 0.0051
R = 1.0000
DL = 0.07758
BEC = 0.3469

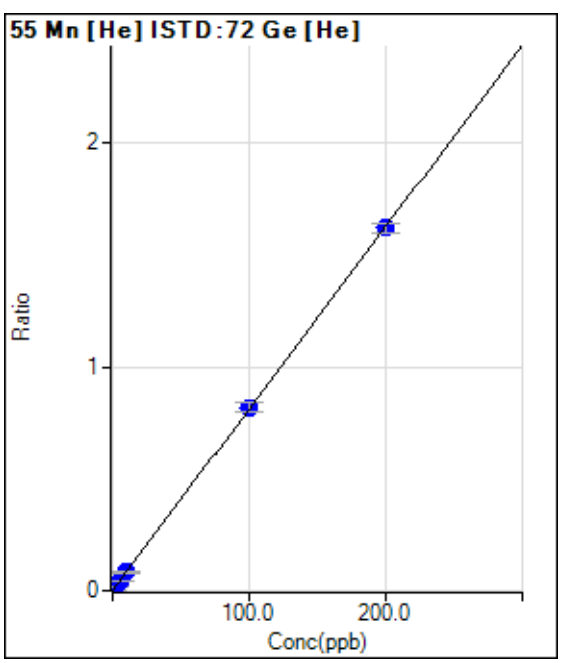
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5100.83	0.0144	P	4.6
2	☐	2.000	2.111	14129.04	0.0412	P	15.1
3	☐	5.000	4.966	27451.24	0.0775	P	1.3
4	☐	10.000	10.362	51239.43	0.1461	P	4.5
5	☐	100.000	100.154	440609.46	1.2874	P	0.9
6	☐	200.000	199.905	871900.09	2.5553	P	0.8
7	☐	1.000					

y = 0.0127 * x + 0.0144
R = 1.0000
DL = 0.1545
BEC = 1.131

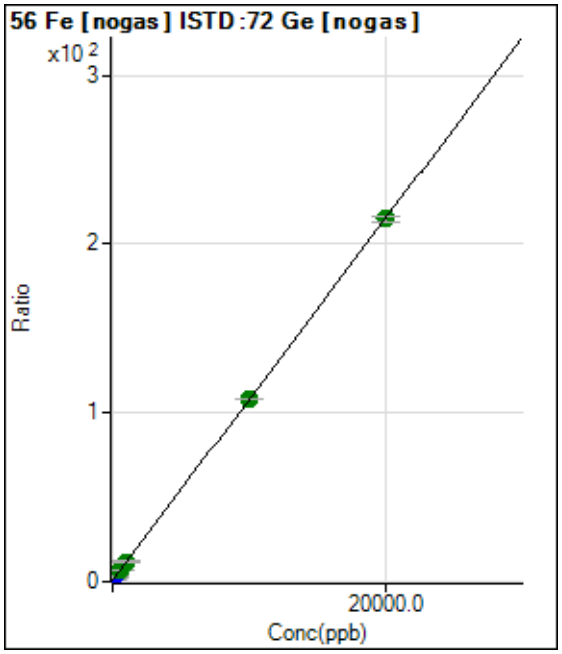
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	53.33	0.0008	P	62.5
2	☐	2.000	2.051	1160.06	0.0175	P	15.4
3	☐	5.000	4.981	2746.93	0.0413	P	8.2
4	☐	10.000	9.991	5507.62	0.0820	P	4.0
5	☐	100.000	100.936	52733.97	0.8210	P	5.0
6	☐	200.000	199.532	106267.91	1.6222	P	2.4
7	☐	1.000					

y = 0.0081 * x + 8.1681E-004
R = 1.0000
DL = 0.1886
BEC = 0.1005

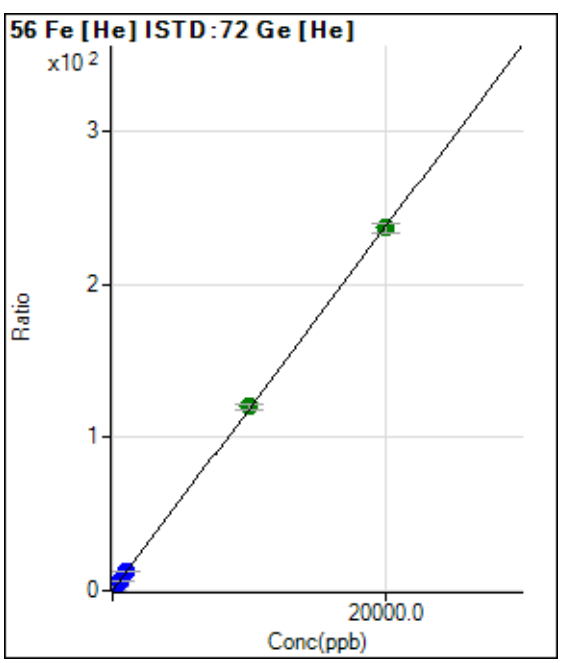
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	261080.37	0.7360	P	1.7
2	☐	200.000	214.321	1037897.16	3.0337	P	16.4
3	☐	500.000	526.145	2258015.61	6.3766	A	3.2
4	☐	1000.000	1041.698	4175059.86	11.9037	A	3.7
5	☐	10000.00	10037.000	37078409.16	108.339	A	0.5
6	☐	20000.00	19978.618	73332057.89	214.919	A	1.3
7	☐	100.000					

y = 0.0107 * x + 0.7360
R = 1.0000
DL = 3.466
BEC = 68.66

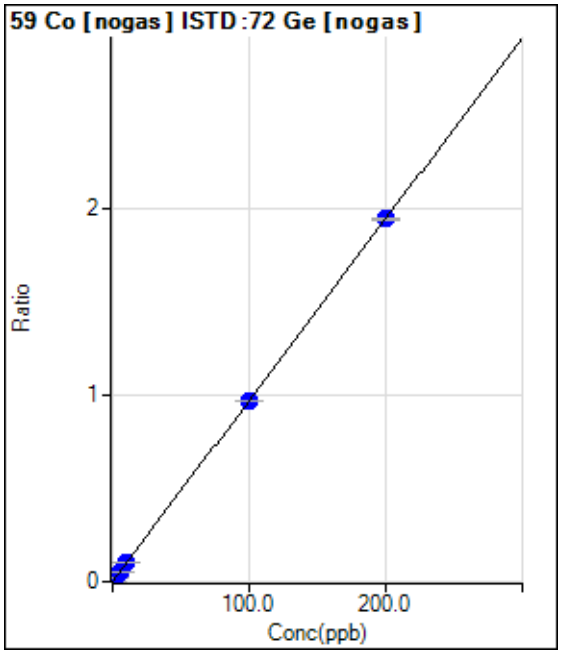
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1900.14	0.0289	P	10.4
2	☐	200.000	201.654	160934.21	2.4222	P	2.7
3	☐	500.000	504.307	400044.31	6.0141	P	1.4
4	☐	1000.000	1025.323	819070.41	12.1976	P	0.9
5	☐	10000.00	10101.864	7702903.64	119.919	A	4.0
6	☐	20000.00	19947.678	15512531.44	236.770	A	2.6
7	☐	100.000					

y = 0.0119 * x + 0.0289
R = 1.0000
DL = 0.7625
BEC = 2.437

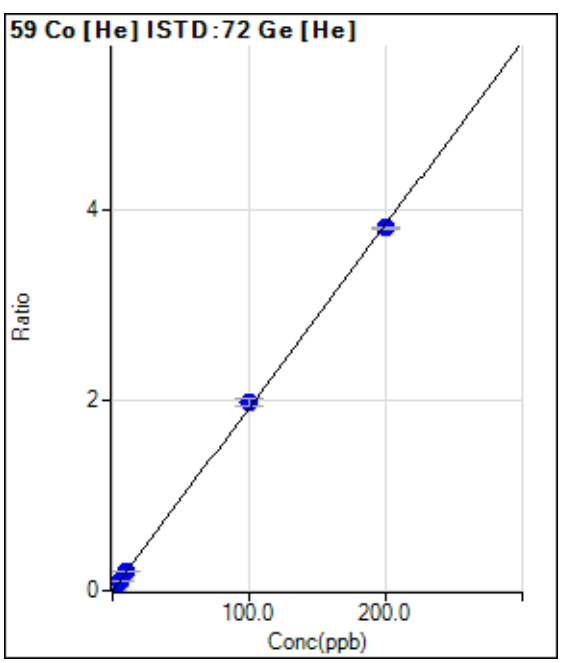
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	63.33	0.0002	P	9.1
2	☐	2.000	2.119	7088.18	0.0208	P	21.2
3	☐	5.000	5.282	18282.87	0.0516	P	1.0
4	☐	10.000	10.318	35311.65	0.1007	P	2.6
5	☐	100.000	99.687	332329.02	0.9711	P	1.0
6	☐	200.000	200.132	665103.38	1.9493	P	0.9
7	☐	1.000					

y = 0.0097 * x + 1.7855E-004
R = 1.0000
DL = 0.005026
BEC = 0.01833

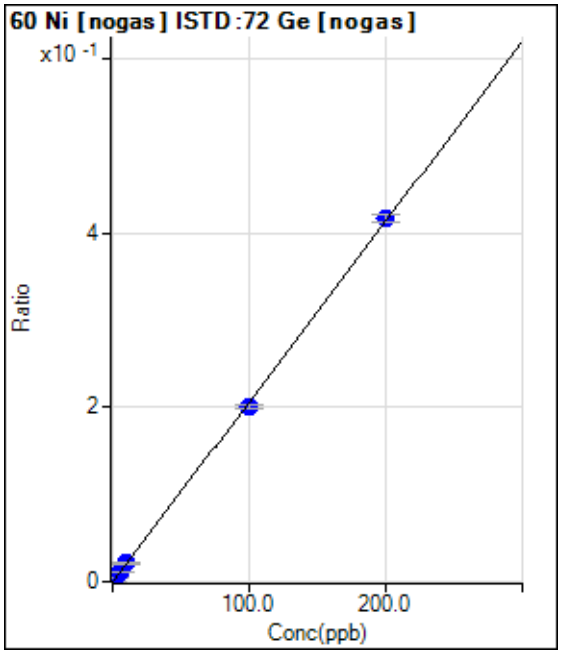
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20.00	0.0003	P	130.
2	☐	2.000	1.984	2556.89	0.0385	P	11.1
3	☐	5.000	5.325	6834.76	0.1027	P	4.4
4	☐	10.000	10.249	13261.76	0.1975	P	1.3
5	☐	100.000	103.300	127680.63	1.9877	P	3.9
6	☐	200.000	198.329	249964.78	3.8159	P	0.8
7	☐	1.000					

y = 0.0192 * x + 2.9724E-004
R = 0.9998
DL = 0.06048
BEC = 0.01545

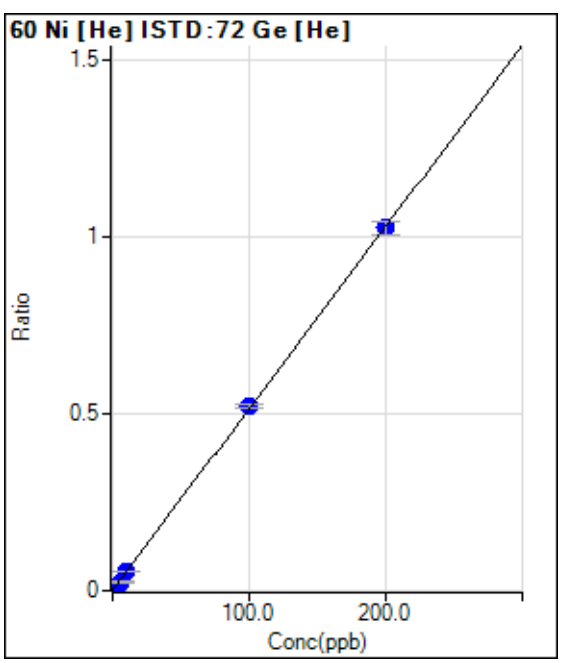
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.296	33.33	0.0001	P	75.5
2	☐	2.000	2.538	1603.44	0.0047	P	28.9
3	☐	5.000	5.208	3633.79	0.0103	P	2.8
4	☐	10.000	10.490	7431.66	0.0212	P	3.8
5	☐	100.000	97.006	68520.39	0.2002	P	1.9
6	☐	200.000	201.462	142053.41	0.4164	P	2.3
7	☐	1.000					

y = 0.0021 * x - 5.1880E-004
R = 0.9998
DL = 0.1028
BEC = -0.2507

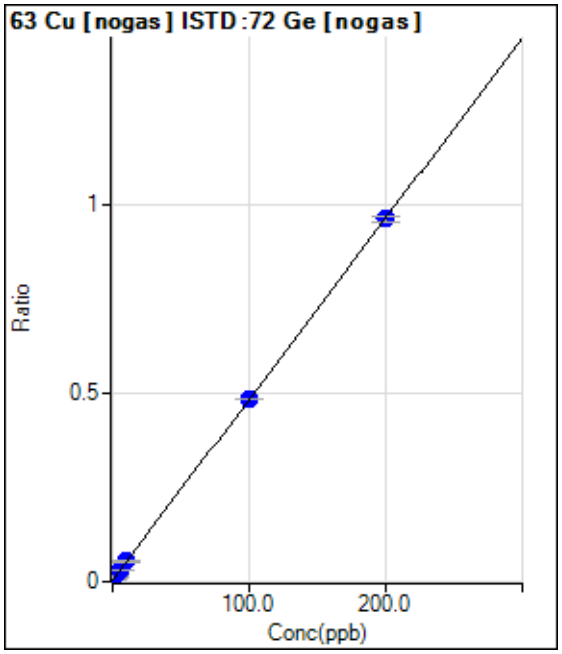
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.152	26.67	0.0004	P	114.
2	☐	2.000	1.877	720.03	0.0108	P	7.6
3	☐	5.000	4.520	1623.43	0.0244	P	9.6
4	☐	10.000	10.221	3603.76	0.0537	P	4.4
5	☐	100.000	101.061	33418.04	0.5202	P	2.2
6	☐	200.000	199.472	67172.67	1.0255	P	3.9
7	☐	1.000					

y = 0.0051 * x + 0.0012
R = 1.0000
DL = 0.2732
BEC = 0.2315

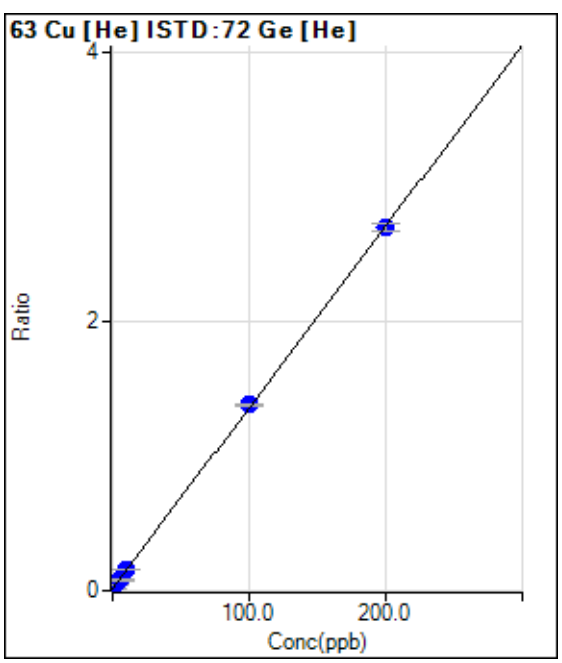
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1400.08	0.0039	P	2.6
2	☐	2.000	2.088	4767.39	0.0139	P	17.6
3	☐	5.000	5.288	10366.47	0.0293	P	0.2
4	☐	10.000	10.543	19097.06	0.0544	P	4.7
5	☐	100.000	100.172	165515.68	0.4836	P	0.8
6	☐	200.000	199.879	327902.35	0.9611	P	1.4
7	☐	1.000					

y = 0.0048 * x + 0.0039
R = 1.0000
DL = 0.06465
BEC = 0.8243

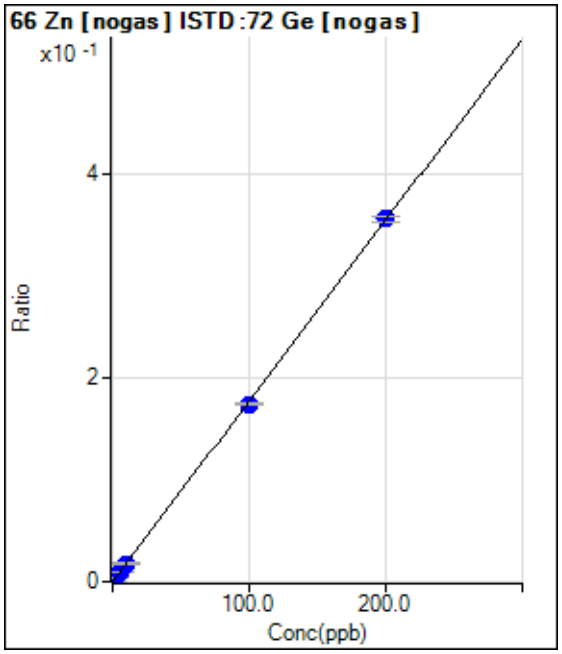
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.433	600.02	0.0091	P	17.1
2	☐	2.000	1.745	2560.23	0.0385	P	6.7
3	☐	5.000	4.799	5294.22	0.0796	P	9.0
4	☐	10.000	10.151	10189.70	0.1518	P	0.7
5	☐	100.000	101.475	88822.93	1.3822	P	1.7
6	☐	200.000	199.262	176825.75	2.6996	P	2.0
7	☐	1.000					

y = 0.0135 * x + 0.0150
R = 1.0000
DL = 0.3483
BEC = 1.112

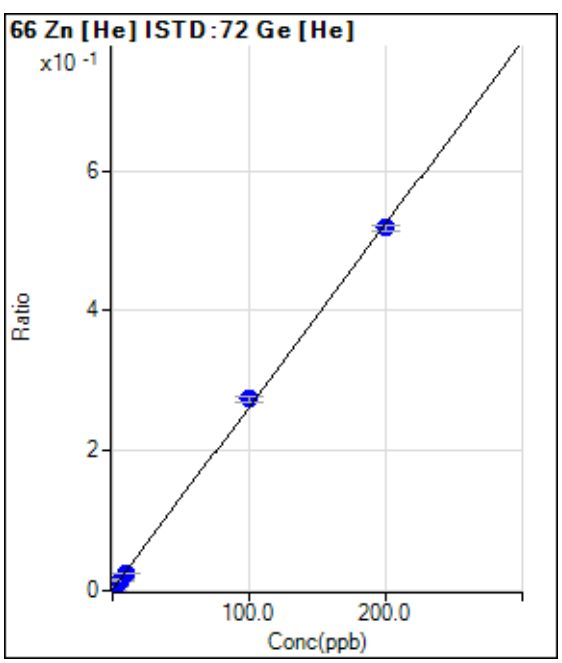
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.124	86.67	0.0002	P	17.6
2	☐	2.000	2.414	1460.09	0.0043	P	25.4
3	☐	5.000	5.383	3393.72	0.0096	P	9.7
4	☐	10.000	9.878	6161.21	0.0176	P	6.4
5	☐	100.000	98.418	59823.26	0.1748	P	0.7
6	☐	200.000	200.784	121666.37	0.3566	P	1.3
7	☐	1.000					

y = 0.0018 * x + 2.4228E-005
R = 0.9999
DL = 0.07262
BEC = 0.01364

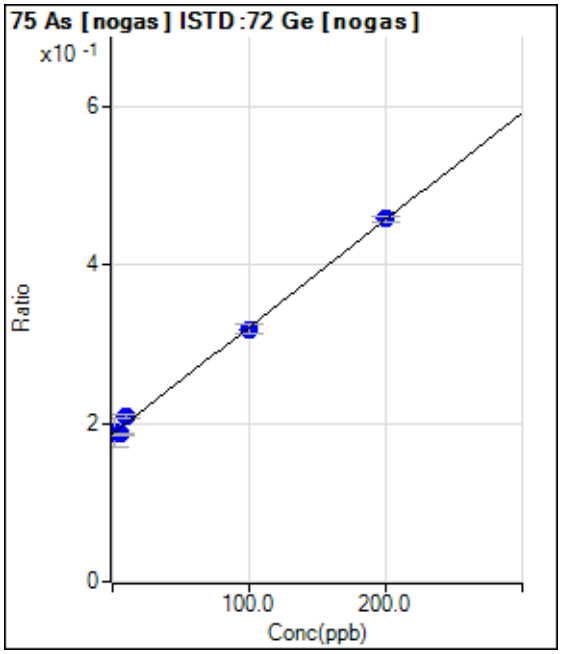
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.494	20.00	0.0003	P	131.
2	☐	2.000	1.694	400.01	0.0060	P	2.6
3	☐	5.000	4.764	933.38	0.0140	P	19.5
4	☐	10.000	8.858	1660.12	0.0247	P	4.7
5	☐	100.000	104.223	17585.53	0.2738	P	3.2
6	☐	200.000	197.954	33965.95	0.5185	P	1.6
7	☐	1.000					

y = 0.0026 * x + 0.0016
R = 0.9996
DL = 0.4652
BEC = 0.6114

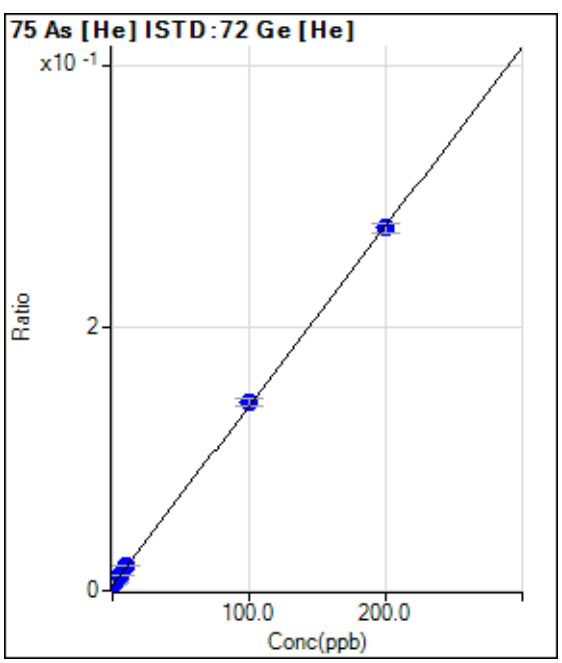
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.029	65990.99	0.1860	P	5.4
2	☐	2.000	1.857	64287.66	0.1886	P	19.5
3	☐	5.000	-0.205	65799.74	0.1858	P	2.2
4	☐	10.000	16.493	73095.83	0.2084	P	2.0
5	☐	100.000	98.152	109086.61	0.3188	P	3.5
6	☐	200.000	200.731	156097.97	0.4574	P	1.6
7	☐	1.000					

y = 0.0014 * x + 0.1861
R = 0.9989
DL = 22.42
BEC = 137.6

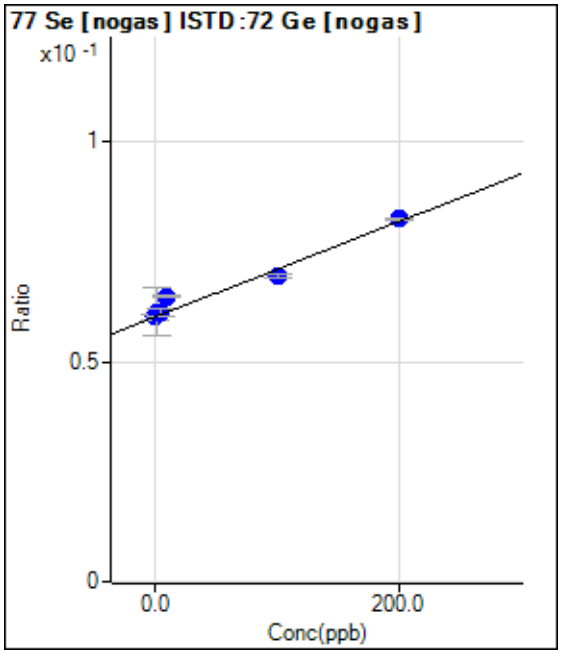
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	275.56	0.0042	P	4.2
2	☐	2.000	1.716	434.45	0.0065	P	8.2
3	☐	5.000	5.547	783.35	0.0118	P	7.7
4	☐	10.000	10.834	1275.61	0.0190	P	5.6
5	☐	100.000	101.620	9190.20	0.1431	P	4.0
6	☐	200.000	199.137	18100.35	0.2764	P	2.7
7	☐	1.000					

y = 0.0014 * x + 0.0042
R = 0.9999
DL = 0.3886
BEC = 3.065

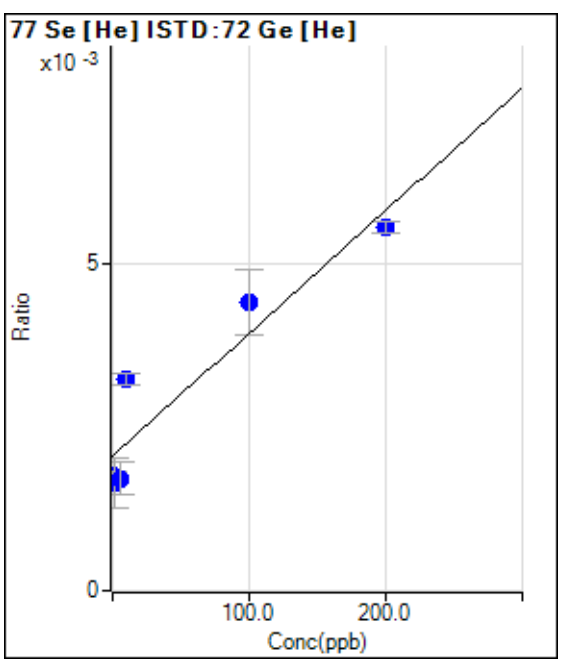
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21356.94	0.0602	P	2.3
2	☐	2.000	9.419	20909.75	0.0612	P	17.9
3	☐	5.000	10.077	21714.17	0.0613	P	2.8
4	☐	10.000	43.218	22772.28	0.0649	P	1.3
5	☐	100.000	86.712	23833.64	0.0696	P	1.2
6	☐	200.000	204.782	28143.29	0.0825	P	0.5
7	☐	1.000					

y = 1.0875E-004 * x + 0.0602
R = 0.9829
DL = 38.88
BEC = 553.6

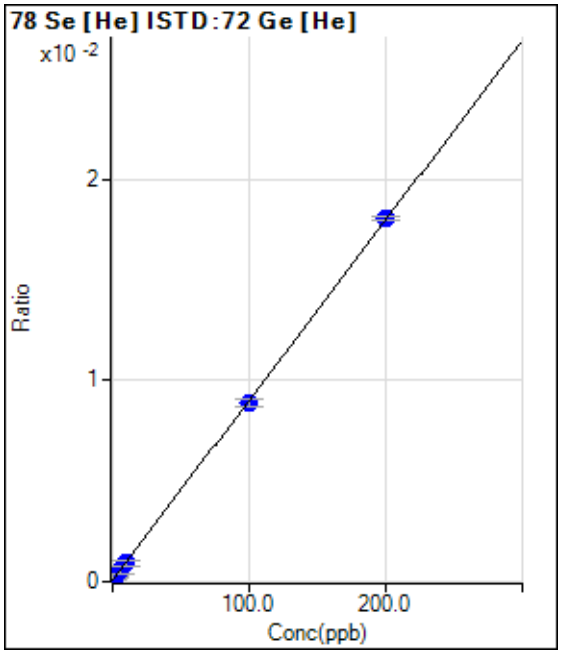
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-15.348	116.67	0.0018	P	5.2
2	☐	2.000	-21.568	110.00	0.0017	P	46.1
3	☐	5.000	-18.947	113.33	0.0017	P	29.2
4	☐	10.000	62.178	216.68	0.0032	P	5.9
5	☐	100.000	124.920	283.34	0.0044	P	23.0
6	☐	200.000	185.765	363.34	0.0055	P	3.2
7	☐	1.000					

y = 1.8753E-005 * x + 0.0021
R = 0.9337
DL = 14.73
BEC = 109.9

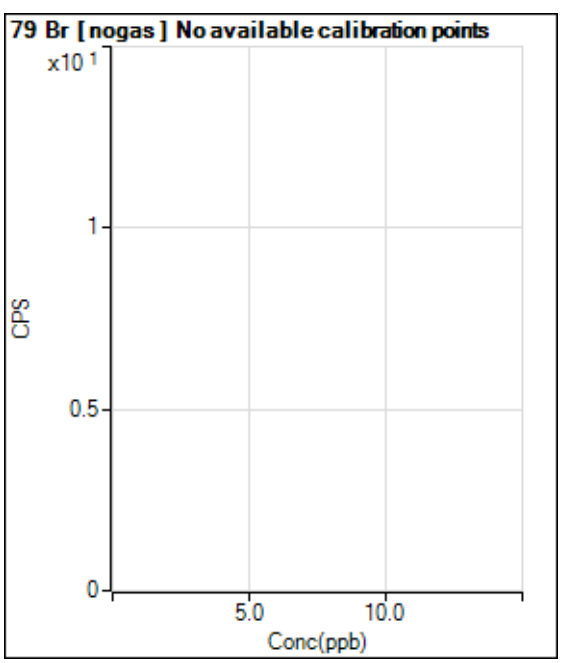
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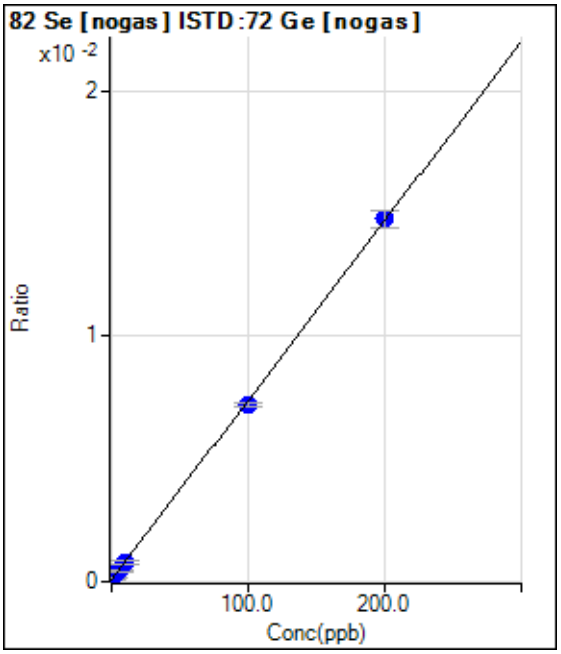
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4.67	0.0001	P	51.0
2	☐	2.000	1.650	14.67	0.0002	P	68.7
3	☐	5.000	5.495	37.33	0.0006	P	57.1
4	☐	10.000	9.376	61.33	0.0009	P	39.7
5	☐	100.000	98.421	570.68	0.0089	P	4.9
6	☐	200.000	200.812	1182.71	0.0181	P	1.1
7	☐	1.000					

y = 8.9542E-005 * x + 7.1614E-005
R = 0.9999
DL = 1.224
BEC = 0.7998

Weight: <None>
Min Conc: <None>



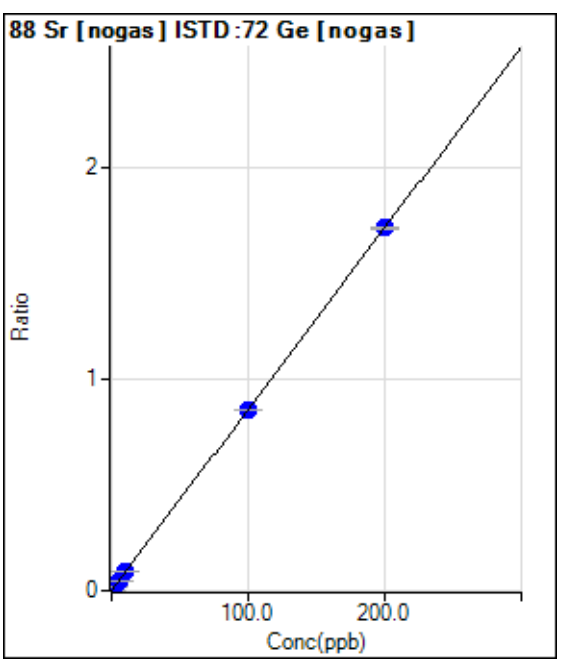
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26.67	0.0001	P	94.4
2	☐	2.000	2.227	86.67	0.0002	P	48.2
3	☐	5.000	5.020	156.67	0.0004	P	26.7
4	☐	10.000	9.998	283.34	0.0008	P	15.9
5	☐	100.000	97.730	2473.56	0.0072	P	2.7
6	☐	200.000	201.132	5047.49	0.0148	P	4.9
7	☐	1.000					

y = 7.3181E-005 * x + 7.5175E-005
R = 0.9999
DL = 2.909
BEC = 1.027

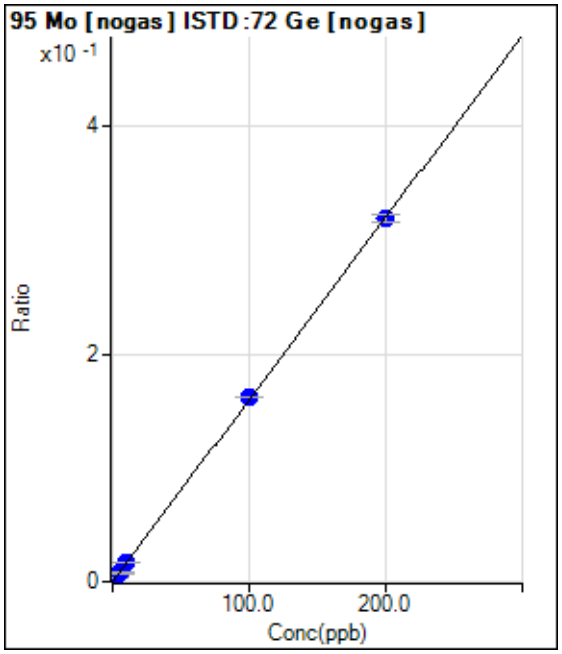
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	296.68	0.0008	P	11.9
2	☐	2.000	2.046	6264.60	0.0184	P	20.0
3	☐	5.000	5.054	15633.92	0.0442	P	5.4
4	☐	10.000	10.111	30703.72	0.0875	P	1.9
5	☐	100.000	99.673	292691.74	0.8552	P	1.0
6	☐	200.000	200.156	585703.08	1.7166	P	0.5
7	☐	1.000					

y = 0.0086 * x + 8.3640E-004
R = 1.0000
DL = 0.03476
BEC = 0.09757

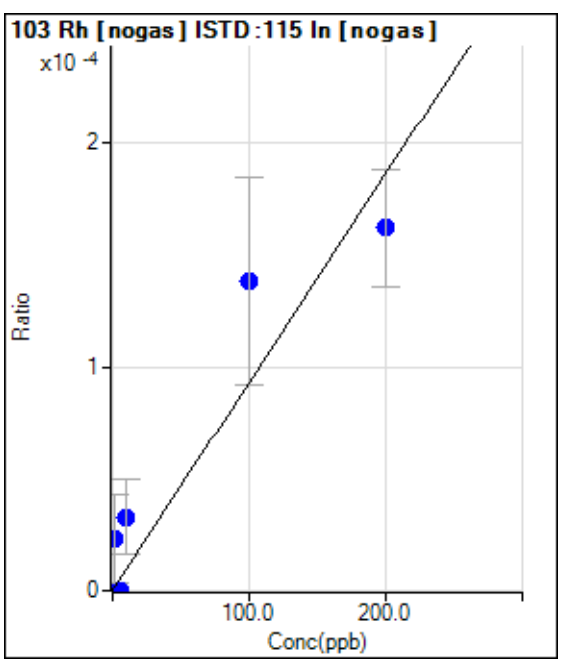
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	2.000	1.873	1040.06	0.0030	P	3.1
3	☐	5.000	4.800	2720.26	0.0077	P	4.3
4	☐	10.000	10.524	5907.79	0.0168	P	3.6
5	☐	100.000	101.263	55431.70	0.1620	P	0.7
6	☐	200.000	199.348	108793.90	0.3189	P	2.1
7	☐	1.000					

y = 0.0016 * x + 0.0000E+000
R = 1.0000
DL = 0
BEC = 0

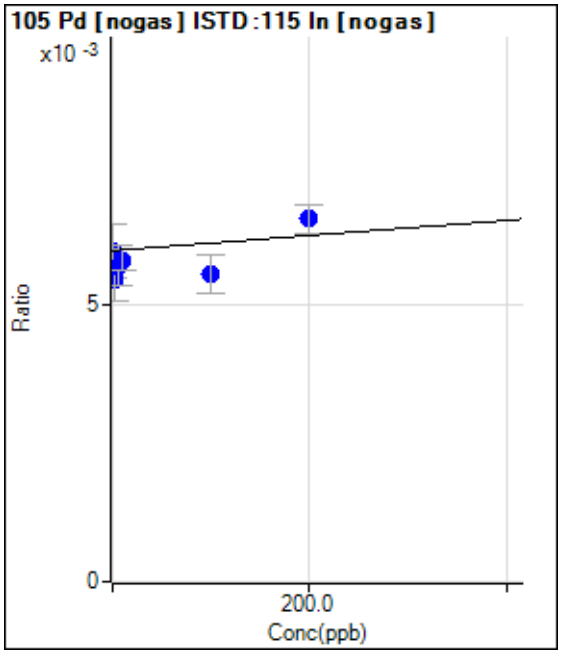
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	2.000	24.754	6.67	0.0000	P	173.
3	☐	5.000	0.000	0.00	0.0000	P	
4	☐	10.000	35.488	10.00	0.0000	P	100.
5	☐	100.000	148.809	40.00	0.0001	P	66.9
6	☐	200.000	174.219	46.67	0.0002	P	32.4
7	☐	1.000					

y = 9.3037E-007 * x + 0.0000E+000
R = 0.9460
DL = 0
BEC = 0

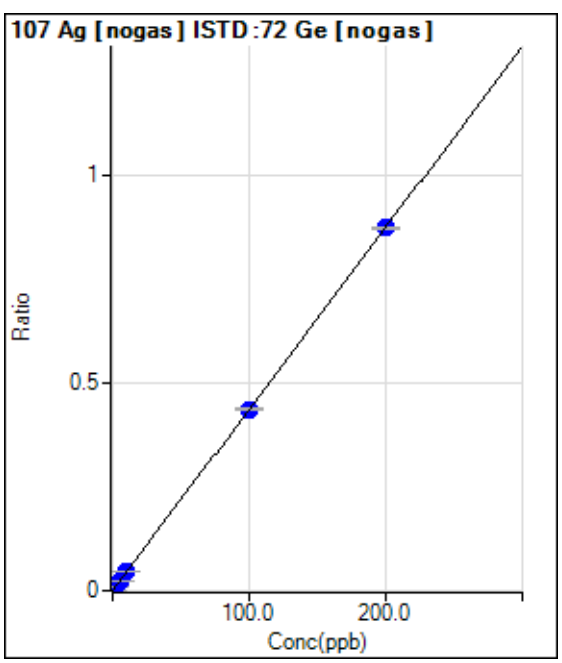
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1796.80	0.0060	P	16.2
2	☐	2.000	-398.266	1613.45	0.0054	P	13.2
3	☐	5.000	-198.536	1733.45	0.0057	P	12.5
4	☐	10.000	-122.120	1760.14	0.0058	P	6.2
5	☐	100.000	-305.525	1610.10	0.0056	P	12.3
6	☐	200.000	418.460	1886.80	0.0066	P	8.1
7	☐	1.000					

y = 1.3659E-006 * x + 0.0060
R = 0.6936
DL = 2130
BEC = 4383

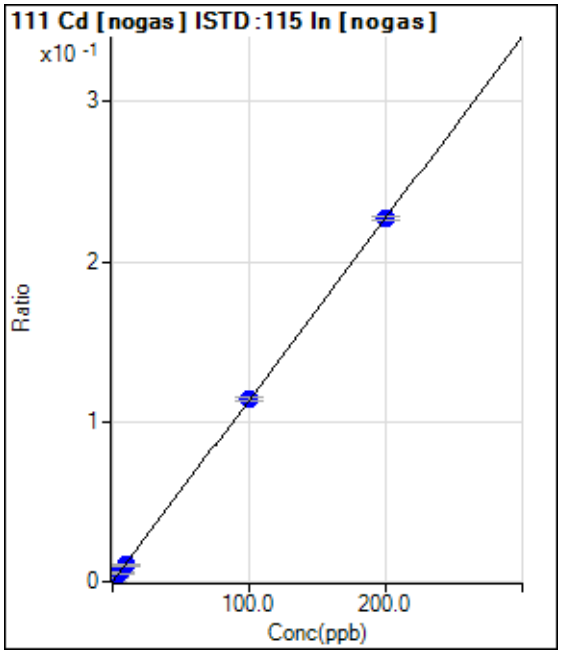
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10.00	0.0000	P	100.
2	☐	2.000	2.099	3140.36	0.0092	P	18.2
3	☐	5.000	4.997	7728.53	0.0218	P	7.9
4	☐	10.000	10.397	15920.89	0.0454	P	2.4
5	☐	100.000	100.066	149382.16	0.4365	P	1.7
6	☐	200.000	199.946	297563.01	0.8721	P	0.7
7	☐	1.000					

y = 0.0044 * x + 2.8198E-005
R = 1.0000
DL = 0.0194
BEC = 0.006465

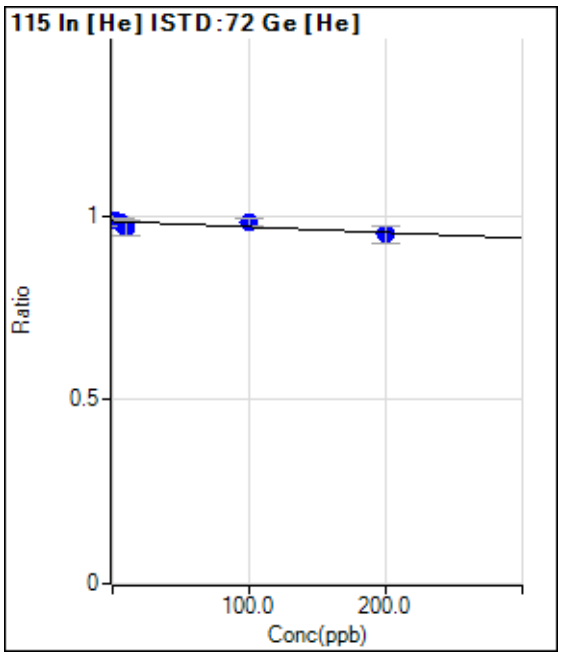
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.
2	☐	2.000	2.440	790.03	0.0028	P	27.9
3	☐	5.000	4.781	1653.45	0.0054	P	14.8
4	☐	10.000	9.248	3180.37	0.0105	P	5.9
5	☐	100.000	100.794	33142.18	0.1145	P	1.6
6	☐	200.000	199.642	65260.07	0.2268	P	1.2
7	☐	1.000					

y = 0.0011 * x + 1.1085E-005
R = 1.0000
DL = 0.0507
BEC = 0.009757

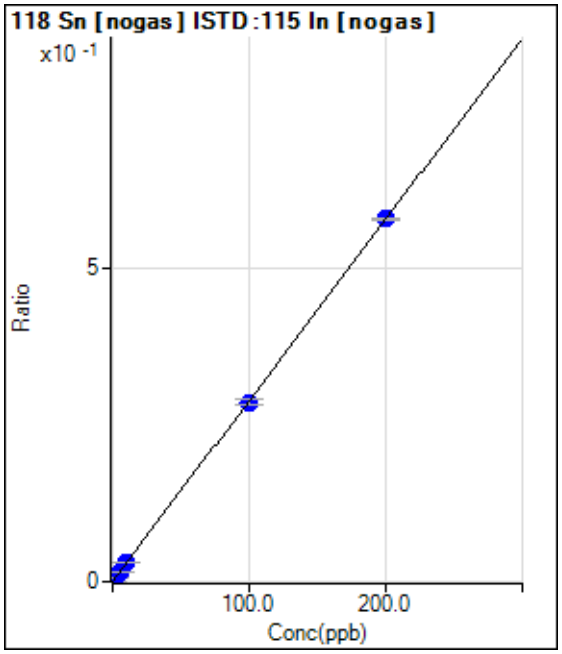
Weight: <None>
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	64752.59	0.9845	P	2.1
2	☐	2.000	-5.060	65465.05	0.9852	P	2.0
3	☐	5.000	29.098	65183.81	0.9800	P	2.0
4	☐	10.000	123.977	64825.69	0.9654	P	4.0
5	☐	100.000	20.589	63045.57	0.9813	P	2.1
6	☐	200.000	233.475	62153.02	0.9485	P	4.7
7	☐	1.000					

y = -1.5399E-004 * x + 0.9845
R = -0.7517
DL = -409.1
BEC = -6393

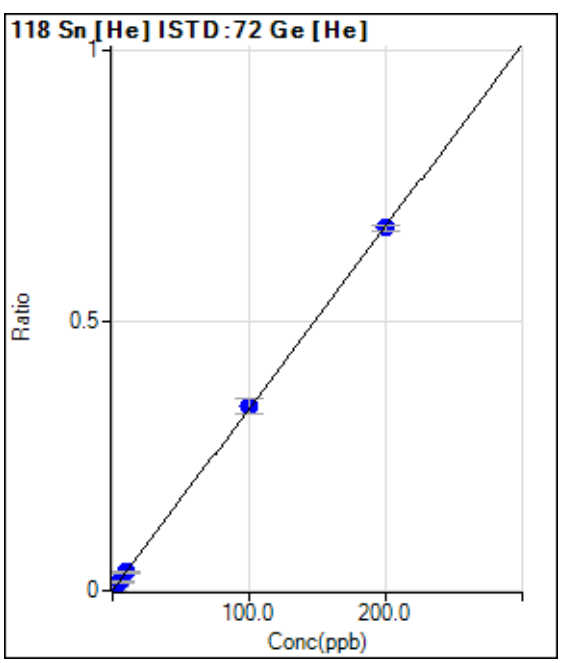
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	93.33	0.0003	P	72.2
2	☐	2.000	2.304	1986.83	0.0070	P	24.7
3	☐	5.000	5.325	4762.43	0.0157	P	8.3
4	☐	10.000	10.146	8952.49	0.0296	P	1.0
5	☐	100.000	99.211	82963.21	0.2867	P	2.4
6	☐	200.000	200.376	166528.54	0.5788	P	0.6
7	☐	1.000					

y = 0.0029 * x + 3.1212E-004
R = 1.0000
DL = 0.2341
BEC = 0.1081

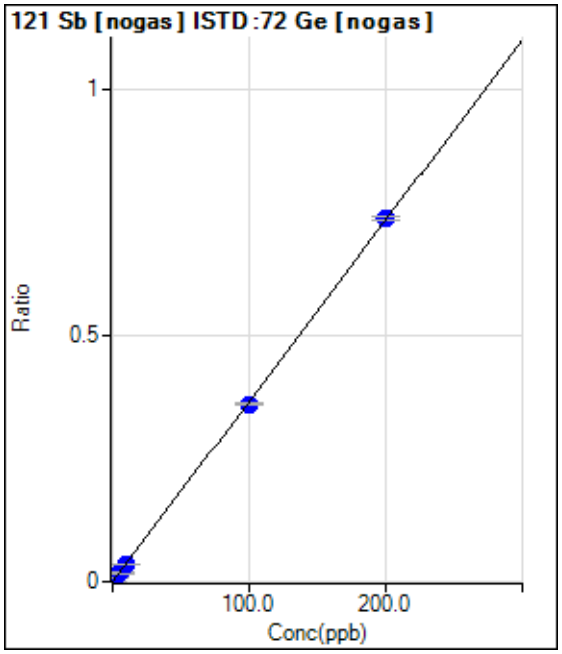
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20.00	0.0003	P	47.8
2	☐	2.000	1.875	440.01	0.0066	P	18.7
3	☐	5.000	5.018	1146.73	0.0172	P	14.5
4	☐	10.000	10.120	2310.20	0.0344	P	12.1
5	☐	100.000	101.448	21984.66	0.3424	P	8.8
6	☐	200.000	199.271	44040.20	0.6723	P	1.8
7	☐	1.000					

y = 0.0034 * x + 3.0212E-004
R = 1.0000
DL = 0.1285
BEC = 0.08959

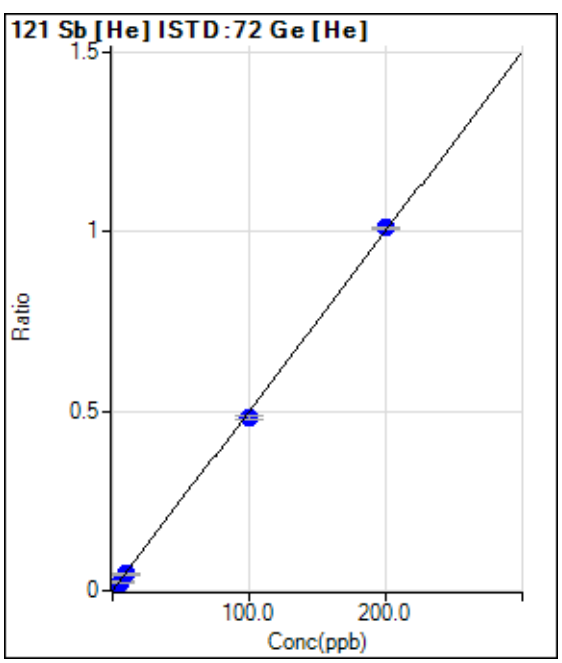
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	60.00	0.0002	P	28.9
2	☐	2.000	1.975	2556.91	0.0074	P	8.4
3	☐	5.000	4.802	6284.60	0.0177	P	4.2
4	☐	10.000	9.846	12698.27	0.0362	P	2.0
5	☐	100.000	98.040	122840.81	0.3589	P	1.1
6	☐	200.000	200.993	251011.92	0.7357	P	0.9
7	☐	1.000					

y = 0.0037 * x + 1.6914E-004
R = 0.9999
DL = 0.04001
BEC = 0.04622

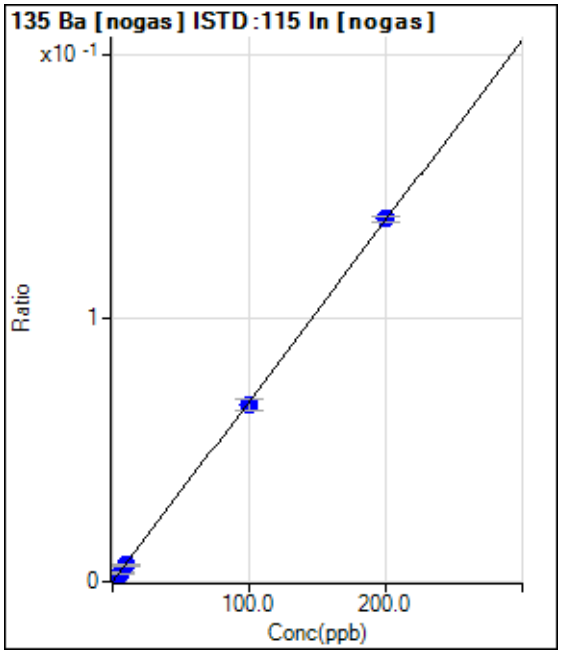
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30.00	0.0005	P	57.6
2	☐	2.000	1.632	573.35	0.0086	P	7.7
3	☐	5.000	4.688	1590.10	0.0239	P	10.2
4	☐	10.000	9.412	3193.69	0.0476	P	10.9
5	☐	100.000	96.152	30954.98	0.4817	P	2.2
6	☐	200.000	201.965	66254.82	1.0113	P	0.4
7	☐	1.000					

y = 0.0050 * x + 4.5503E-004
R = 0.9998
DL = 0.157
BEC = 0.09091

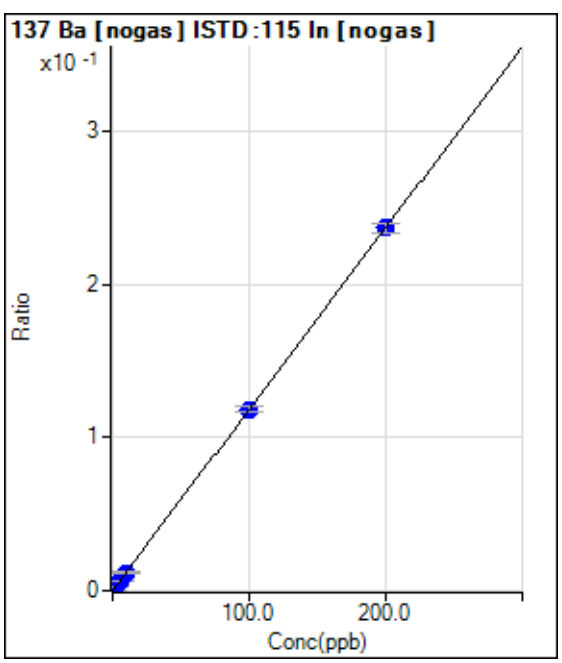
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10.00	0.0000	P	99.6
2	☐	2.000	1.915	383.34	0.0013	P	26.5
3	☐	5.000	4.560	956.72	0.0032	P	9.8
4	☐	10.000	9.351	1943.48	0.0064	P	10.8
5	☐	100.000	98.127	19424.78	0.0671	P	6.1
6	☐	200.000	200.981	39553.31	0.1375	P	1.7
7	☐	1.000					

y = 6.8385E-004 * x + 3.3375E-005
R = 0.9999
DL = 0.1459
BEC = 0.0488

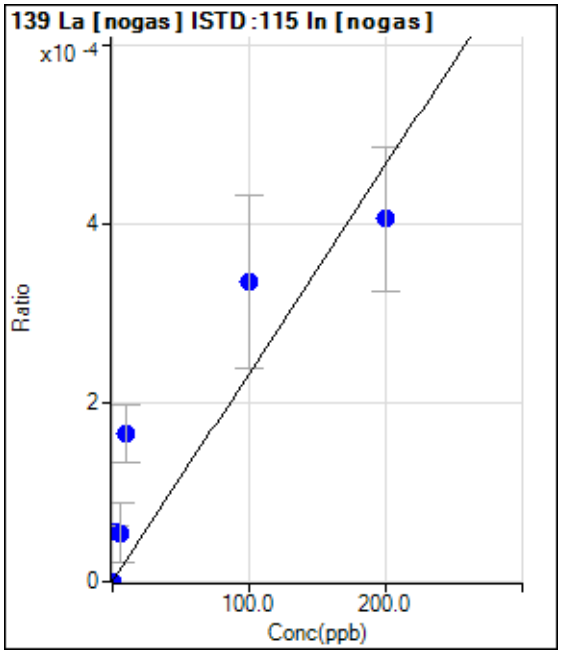
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20.00	0.0001	P	49.4
2	☐	2.000	2.268	783.37	0.0028	P	26.7
3	☐	5.000	4.949	1800.13	0.0059	P	4.5
4	☐	10.000	9.851	3550.44	0.0117	P	8.0
5	☐	100.000	99.835	34245.14	0.1184	P	3.4
6	☐	200.000	200.088	68244.64	0.2372	P	2.5
7	☐	1.000					

y = 0.0012 * x + 6.6441E-005
R = 1.0000
DL = 0.083
BEC = 0.05606

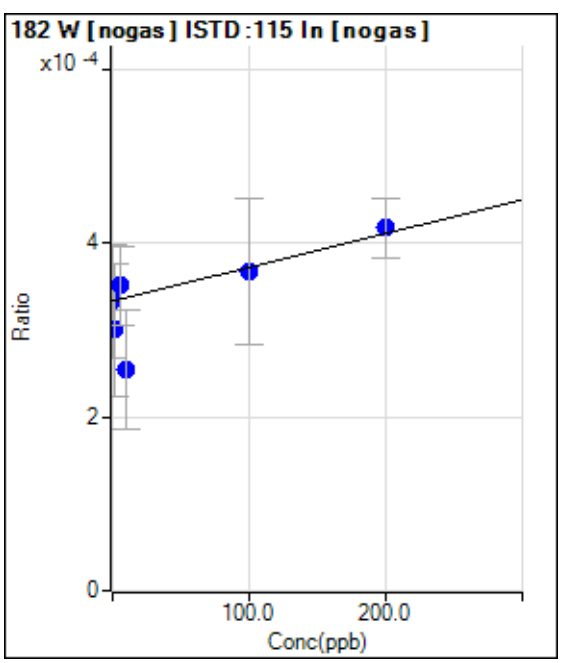
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	2.000	23.879	16.67	0.0001	P	23.9
3	☐	5.000	23.343	16.67	0.0001	P	124.
4	☐	10.000	71.013	50.00	0.0002	P	39.8
5	☐	100.000	144.028	96.67	0.0003	P	57.8
6	☐	200.000	174.258	116.67	0.0004	P	39.7
7	☐	1.000					

y = 2.3276E-006 * x + 0.0000E+000
R = 0.9275
DL = 0
BEC = 0

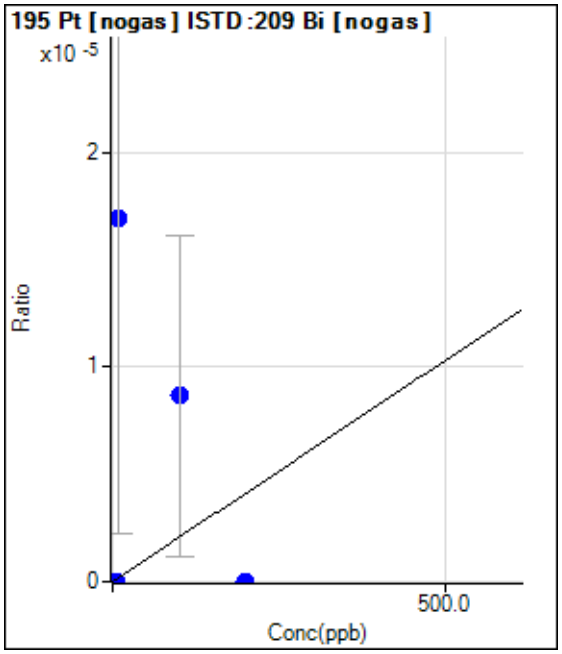
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	100.00	0.0003	P	39.6
2	☐	2.000	-84.331	93.33	0.0003	P	50.6
3	☐	5.000	46.020	106.67	0.0004	P	25.6
4	☐	10.000	-204.092	76.67	0.0003	P	54.2
5	☐	100.000	88.569	106.67	0.0004	P	45.7
6	☐	200.000	216.258	120.00	0.0004	P	16.5
7	☐	1.000					

y = 3.8886E-007 * x + 3.3287E-004
R = 0.7916
DL = 1016
BEC = 856

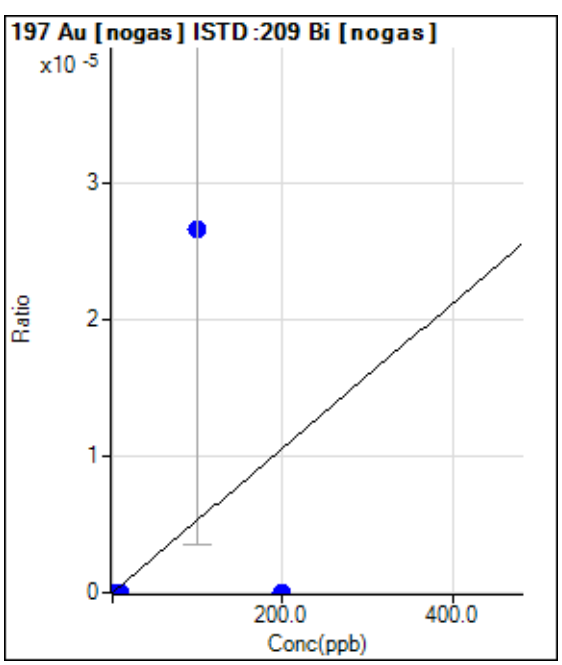
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	2.000	0.000	0.00	0.0000	P	
3	☐	5.000	0.000	0.00	0.0000	P	
4	☐	10.000	819.178	6.67	0.0000	P	173.
5	☐	100.000	419.372	3.33	0.0000	P	173.
6	☐	200.000	0.000	0.00	0.0000	P	
7	☐	1.000					

y = 2.0633E-008 * x + 0.0000E+000
R = -0.1090
DL = 0
BEC = 0

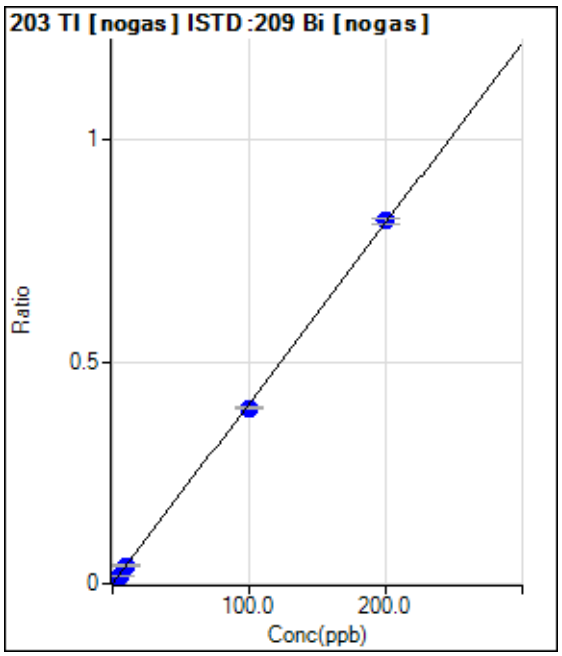
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	2.000	0.000	0.00	0.0000	P	
3	☐	5.000	0.000	0.00	0.0000	P	
4	☐	10.000	0.000	0.00	0.0000	P	
5	☐	100.000	501.290	10.00	0.0000	P	173.
6	☐	200.000	0.000	0.00	0.0000	P	
7	☐	1.000					

y = 5.3070E-008 * x + 0.0000E+000
R = 0.2828
DL = 0
BEC = 0

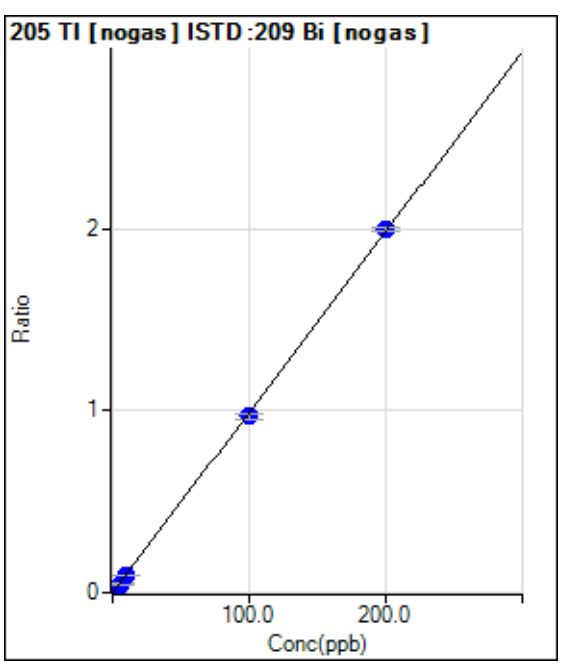
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6.67	0.0000	P	86.6
2	☐	2.000	2.022	3097.04	0.0082	P	21.4
3	☐	5.000	4.717	7648.61	0.0192	P	1.8
4	☐	10.000	9.914	16004.95	0.0403	P	5.1
5	☐	100.000	97.407	149007.85	0.3958	P	1.6
6	☐	200.000	201.308	305039.45	0.8181	P	1.5
7	☐	1.000					

y = 0.0041 * x + 1.6525E-005
R = 0.9999
DL = 0.01057
BEC = 0.004067

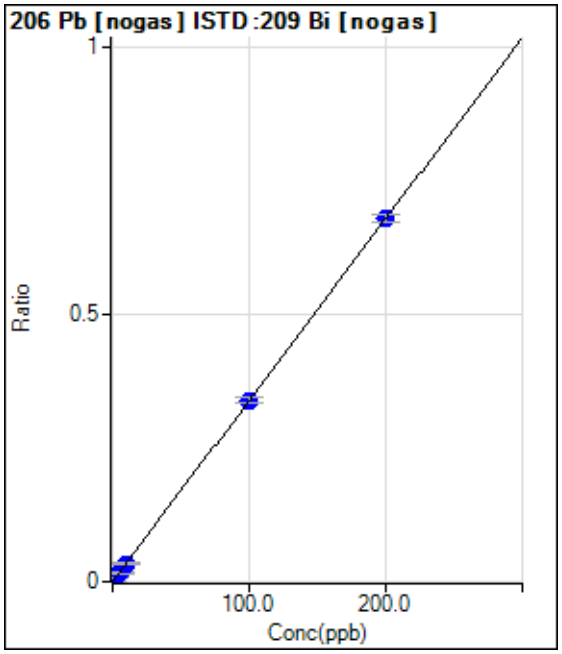
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6.67	0.0000	P	86.6
2	☐	2.000	2.091	7858.75	0.0207	P	16.2
3	☐	5.000	4.761	18801.32	0.0472	P	3.4
4	☐	10.000	9.633	37898.54	0.0954	P	2.1
5	☐	100.000	97.606	363806.52	0.9668	P	3.6
6	☐	200.000	201.220	743086.11	1.9931	P	1.1
7	☐	1.000					

y = 0.0099 * x + 1.6458E-005
R = 0.9999
DL = 0.004317
BEC = 0.001662

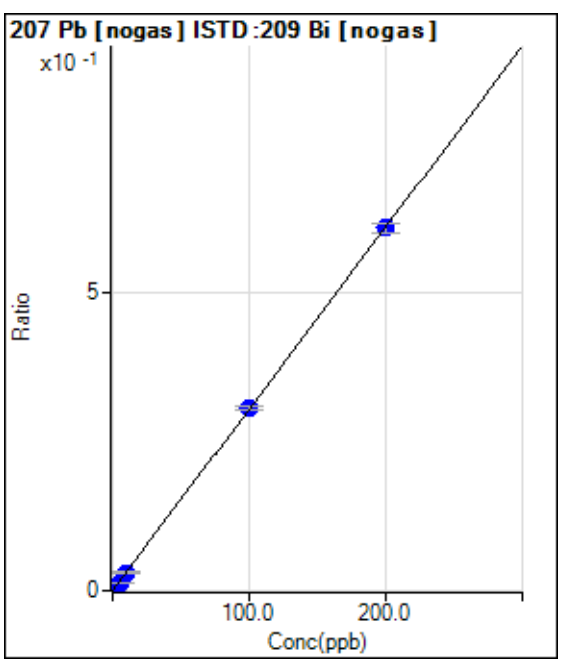
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6.67	0.0000	P	86.6
2	☐	2.000	2.107	2696.96	0.0072	P	23.1
3	☐	5.000	4.850	6564.83	0.0165	P	9.8
4	☐	10.000	10.063	13582.76	0.0342	P	0.9
5	☐	100.000	99.811	127605.94	0.3390	P	3.3
6	☐	200.000	200.094	253380.63	0.6796	P	2.2
7	☐	1.000					

y = 0.0034 * x + 1.6458E-005
R = 1.0000
DL = 0.01259
BEC = 0.004846

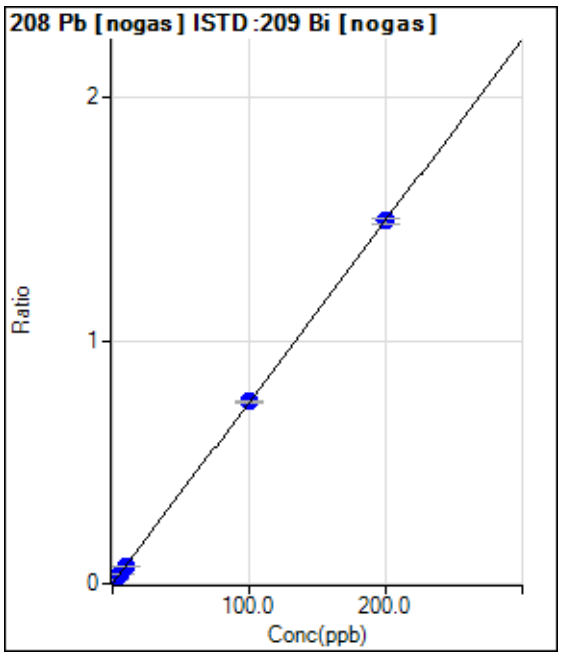
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13.33	0.0000	P	173.
2	☐	2.000	2.165	2506.90	0.0066	P	18.0
3	☐	5.000	4.692	5717.81	0.0143	P	1.6
4	☐	10.000	9.925	12021.42	0.0303	P	6.6
5	☐	100.000	100.522	115329.10	0.3064	P	1.8
6	☐	200.000	199.749	226967.82	0.6088	P	2.3
7	☐	1.000					

y = 0.0030 * x + 3.3447E-005
R = 1.0000
DL = 0.05703
BEC = 0.01097

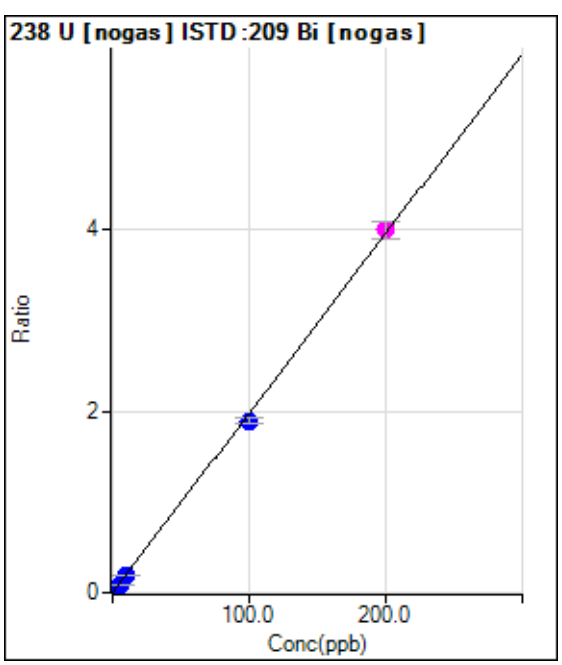
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	2.000	2.104	5907.90	0.0157	P	22.4
3	☐	5.000	4.933	14693.65	0.0369	P	2.5
4	☐	10.000	9.932	29480.87	0.0742	P	1.0
5	☐	100.000	100.158	281704.52	0.7484	P	1.8
6	☐	200.000	199.925	556980.79	1.4939	P	1.4
7	☐	1.000					

y = 0.0075 * x + 0.0000E+000
R = 1.0000
DL = 0
BEC = 0

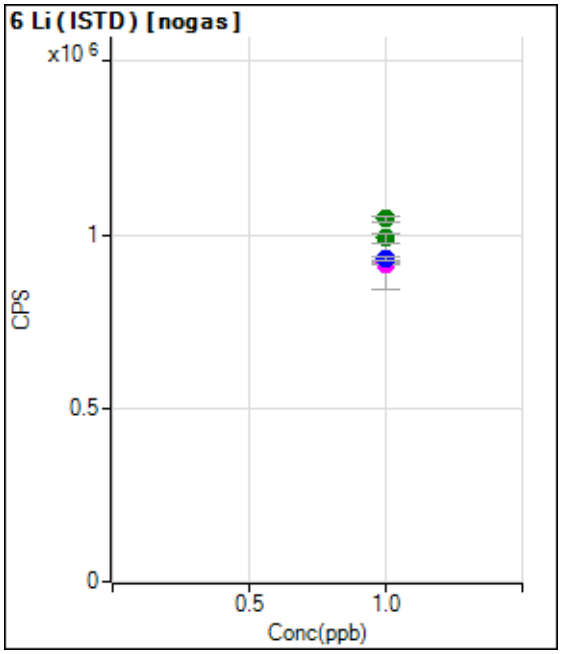
Weight: <None>
Min Conc: <None>



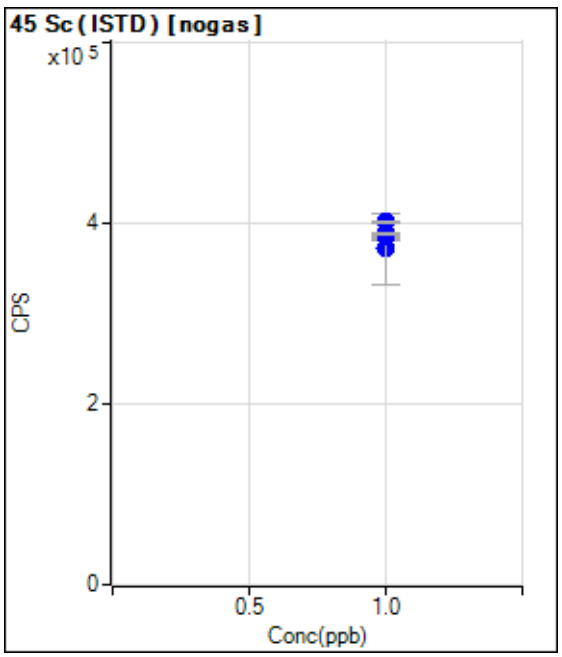
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	0.00	0.0000	P	
2	☐	2.000	1.939	14386.95	0.0383	P	23.7
3	☐	5.000	4.582	36122.12	0.0906	P	2.6
4	☐	10.000	9.387	73733.98	0.1857	P	2.5
5	☐	100.000	95.775	712916.19	1.8943	P	3.0
6	☐	200.000	202.154	1490501.44	3.9984	M	4.7
7	☐	1.000					

y = 0.0198 * x + 0.0000E+000
R = 0.9997
DL = 0
BEC = 0

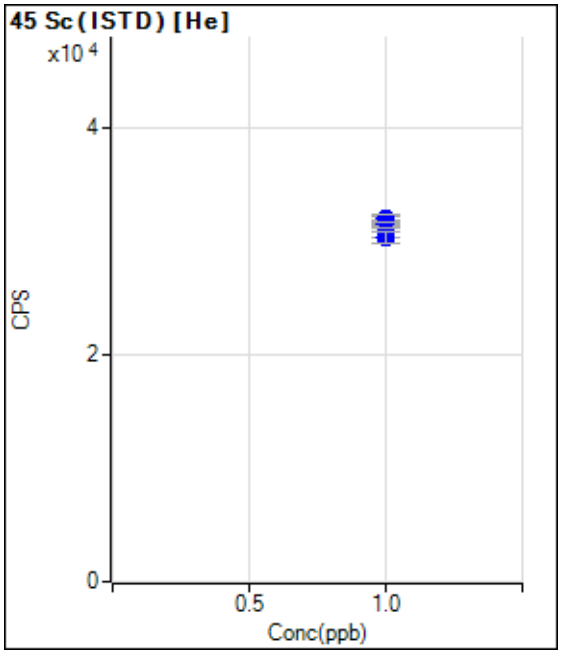
Weight: <None>
Min Conc: <None>



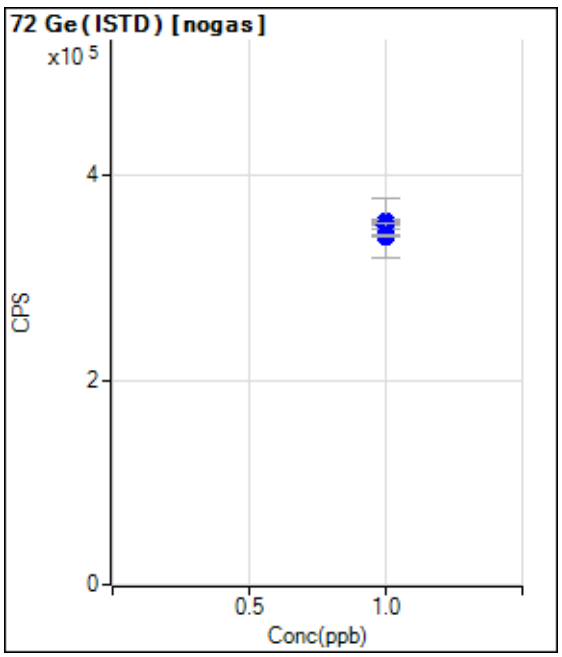
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		924026.18		P	0.4
2	☐	1.000		921749.65		M	17.5
3	☐	1.000		915549.86		M	0.4
4	☐	1.000		928744.02		P	1.1
5	☐	1.000		989772.07		A	2.8
6	☐	1.000		1045596.88		A	1.9
7	☐	1.000					



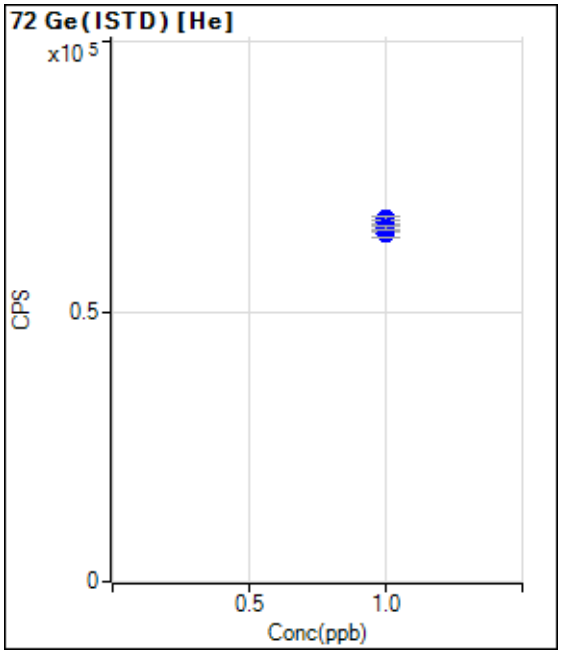
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		383957.67		P	1.0
2	☐	1.000		371089.51		P	21.5
3	☐	1.000		384150.20		P	1.6
4	☐	1.000		384747.34		P	0.6
5	☐	1.000		387988.14		P	0.2
6	☐	1.000		400754.39		P	0.8
7	☐	1.000					



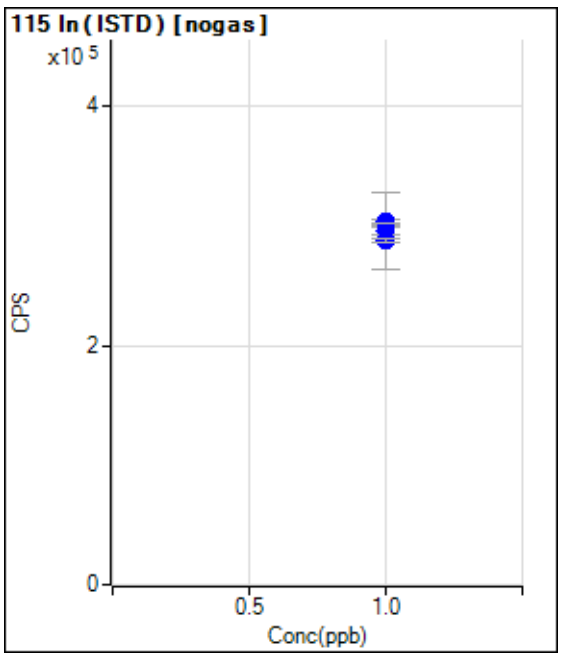
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		31717.99		P	2.7
2	☐	1.000		31354.16		P	3.3
3	☐	1.000		31931.86		P	2.9
4	☐	1.000		31514.28		P	1.0
5	☐	1.000		30726.24		P	2.6
6	☐	1.000		30272.21		P	3.7
7	☐	1.000					



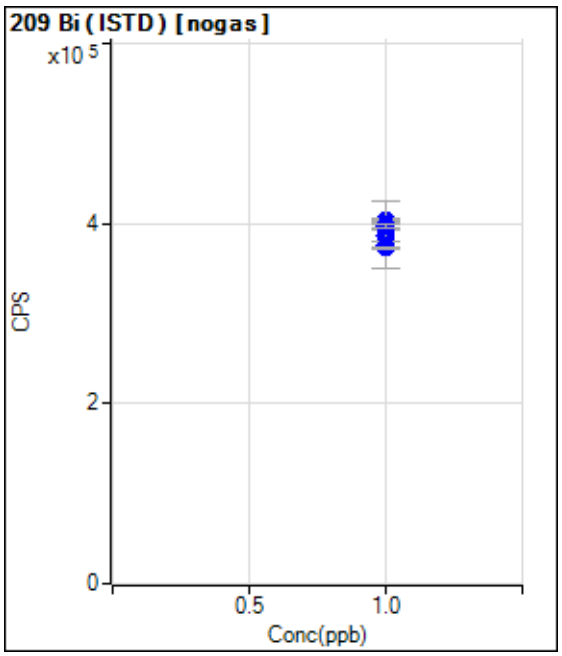
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		354716.99		P	0.0
2	☐	1.000		348323.85		P	16.5
3	☐	1.000		354195.06		P	1.2
4	☐	1.000		350858.50		P	1.4
5	☐	1.000		342242.83		P	0.3
6	☐	1.000		341215.54		P	0.9
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		65798.24		P	2.9
2	☐	1.000		66457.22		P	1.4
3	☐	1.000		66520.93		P	1.2
4	☐	1.000		67149.82		P	1.0
5	☐	1.000		64259.58		P	1.6
6	☐	1.000		65510.47		P	1.3
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		300202.12		P	0.8
2	☐	1.000		295827.77		P	21.8
3	☐	1.000		303399.90		P	1.3
4	☐	1.000		302406.41		P	0.3
5	☐	1.000		289383.29		P	2.1
6	☐	1.000		287716.80		P	0.7
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		402946.91		P	1.2
2	☐	1.000		386951.05		P	19.4
3	☐	1.000		398804.07		P	2.7
4	☐	1.000		397221.20		P	1.4
5	☐	1.000		376503.74		P	2.2
6	☐	1.000		372866.73		P	1.0
7	☐	1.000					

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	012CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T11:34:46-05:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	40	108.25
B	11	1	nogas	11877	0.00
Na	23	1	nogas	95731	0.00
Mg	24	1	nogas	8270	0.03
Al	27	1	nogas	9826	0.02
P	31	1	nogas	43859	0.00
K	39	1	nogas	1904180	0.00
Ca	43	1	nogas	180	8.17
Ca	44	1	nogas	12281	0.02
Ti	47	1	nogas	87	20.34
V	51	1	nogas	774836	0.00
Cr	52	1	nogas	42346	0.01
Mn	55	1	nogas	5501	0.07
Fe	56	1	nogas	223180	0.00
Co	59	1	nogas	83	36.24
Ni	60	1	nogas	47	115.56
Cu	63	1	nogas	1827	0.28
Zn	66	1	nogas	213	2.54
As	75	1	nogas	78841	0.00
Se	77	1	nogas	26110	0.02
Se	82	1	nogas	13	649.52
Sr	88	1	nogas	123	39.63
Mo	95	1	nogas	7	2598.08
Ag	107	1	nogas	13	324.76
Cd	111	1	nogas	3	5196.15
Sn	118	1	nogas	160	34.05
Sb	121	1	nogas	87	20.34
Ba	137	1	nogas	23	462.23
Tl	205	1	nogas	10	1732.05
Pb	208	1	nogas	40	165.36
Li	7	1	nogas	66859	0.00
Si	28	1	nogas	91625	0.00
La	139	1	nogas	117	30.59
Na	23	2	He	15277	0.04
Mg	24	2	He	437	2.12
Al	27	2	He	173	12.60
K	39	2	He	42049	0.00
Ca	43	2	He	7	2598.08
Ca	44	2	He	103	23.57
V	51	2	He	6869	0.01
Cr	52	2	He	480	4.93
Mn	55	2	He	113	39.95

Calibration Blank Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	2	He	1923	0.31
Ni	60	2	He	37	113.62
Cu	63	2	He	1067	0.48
Zn	66	2	He	53	133.10
As	75	2	He	399	2.45
Sb	121	2	He	10	1000.00

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Ge	72	1	nogas	380614	1.34
In	115	1	nogas	319603	0.54
Li	6	1	nogas	991703	1.54
Bi	209	1	nogas	407184	1.81
Ge	72	2	He	70028	3.85

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	013CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T11:37:01-05:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	012CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	8149	0.01
B	11	1	nogas	35658	0.01
Na	23	1	nogas	1602337	0.00
Mg	24	1	nogas	992205	0.00
Al	27	1	nogas	20518	0.01
P	31	1	nogas	46529	0.00
K	39	1	nogas	2566902	0.00
Ca	43	1	nogas	1460	0.51
Ca	44	1	nogas	33545	0.01
Ti	47	1	nogas	627	1.28
V	51	1	nogas	800511	0.00
Cr	52	1	nogas	49635	0.00
Mn	55	1	nogas	14920	0.01
Fe	56	1	nogas	1022241	0.00
Co	59	1	nogas	7415	0.01
Ni	60	1	nogas	1537	0.73
Cu	63	1	nogas	5304	0.10
Zn	66	1	nogas	1530	0.46
As	75	1	nogas	80341	0.00
Se	77	1	nogas	26978	0.02
Se	82	1	nogas	83	50.57
Sr	88	1	nogas	6515	0.09
Mo	95	1	nogas	1320	0.65
Ag	107	1	nogas	3360	0.15
Cd	111	1	nogas	747	1.80
Sn	118	1	nogas	1853	0.26
Sb	121	1	nogas	2790	0.11
Ba	137	1	nogas	770	2.27
Tl	205	1	nogas	7525	0.08
Pb	208	1	nogas	5988	0.07
Si	28	1	nogas	329155	0.00
La	139	1	nogas	30	293.97
Na	23	2	He	94395	0.00
Mg	24	2	He	44825	0.01
Al	27	2	He	377	9.06
K	39	2	He	63573	0.00
Ca	43	2	He	53	142.08
Ca	44	2	He	993	1.34
V	51	2	He	8415	0.02
Cr	52	2	He	2634	0.23

Calibration Standard Report

Mn	55	2	He	1333	0.79
Fe	56	2	He	175697	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Co	59	2	He	2767	0.52
Ni	60	2	He	770	3.53
Cu	63	2	He	3087	0.22
Zn	66	2	He	483	1.62
As	75	2	He	531	2.71
Sb	121	2	He	780	2.14
Se	78	2	He	10	529.15

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	377789	0.77	380614	99.26	70	125	
In	115	1	nogas	321699	1.01	319603	100.66	70	125	
Li	6	1	nogas	1002849	0.97	991703	101.12	70	125	
Bi	209	1	nogas	412331	2.06	407184	101.26	70	125	
Ge	72	2	He	70727	1.95	70028	101.00	70	125	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	014CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T11:39:16-05:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	012CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	20248	0.02
B	11	1	nogas	71874	0.00
Na	23	1	nogas	3746515	0.00
Mg	24	1	nogas	2556598	0.00
Al	27	1	nogas	38126	0.00
P	31	1	nogas	51897	0.01
K	39	1	nogas	3613317	0.00
Ca	43	1	nogas	3324	0.19
Ca	44	1	nogas	64778	0.00
Ti	47	1	nogas	1730	0.59
V	51	1	nogas	757204	0.00
Cr	52	1	nogas	58996	0.00
Mn	55	1	nogas	29691	0.00
Fe	56	1	nogas	2294338	0.00
Co	59	1	nogas	18790	0.01
Ni	60	1	nogas	4321	0.11
Cu	63	1	nogas	11717	0.02
Zn	66	1	nogas	3857	0.07
As	75	1	nogas	76932	0.00
Se	77	1	nogas	25453	0.01
Se	82	1	nogas	167	13.63
Sr	88	1	nogas	15684	0.01
Mo	95	1	nogas	3134	0.21
Ag	107	1	nogas	8229	0.06
Cd	111	1	nogas	1687	0.05
Sn	118	1	nogas	4631	0.00
Sb	121	1	nogas	6611	0.06
Ba	137	1	nogas	1863	0.32
Tl	205	1	nogas	20287	0.01
Pb	208	1	nogas	14247	0.02
Si	28	1	nogas	691864	0.00
La	139	1	nogas	13	859.23
Na	23	2	He	215237	0.00
Mg	24	2	He	112235	0.00
Al	27	2	He	653	2.18
K	39	2	He	93226	0.00
Ca	43	2	He	157	12.45
Ca	44	2	He	2570	0.31
V	51	2	He	10386	0.02
Cr	52	2	He	5768	0.04

Calibration Standard Report

Mn	55	2	He	3057	0.26
Fe	56	2	He	431420	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Co	59	2	He	7028	0.03
Ni	60	2	He	1777	0.19
Cu	63	2	He	5771	0.07
Zn	66	2	He	1080	1.38
As	75	2	He	809	1.01
Sb	121	2	He	1700	0.22
Se	78	2	He	32	136.72

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	380103	1.05	380614	99.87	70	125	
In	115	1	nogas	315871	2.47	319603	98.83	70	125	
Li	6	1	nogas	974428	2.04	991703	98.26	70	125	
Bi	209	1	nogas	409529	1.81	407184	100.58	70	125	
Ge	72	2	He	70760	0.55	70028	101.05	70	125	

Calibration Standard Report

Sample Table

Sample Name	10/50/1000
Data File Name	015CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T11:41:30-05:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	012CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	40804	0.00
B	11	1	nogas	137390	0.00
Na	23	1	nogas	7633965	0.00
Mg	24	1	nogas	5162655	0.00
Al	27	1	nogas	67340	0.00
P	31	1	nogas	59961	0.00
K	39	1	nogas	5335707	0.00
Ca	43	1	nogas	7055	0.08
Ca	44	1	nogas	119549	0.00
Ti	47	1	nogas	3320	0.14
V	51	1	nogas	821411	0.00
Cr	52	1	nogas	81456	0.00
Mn	55	1	nogas	54198	0.01
Fe	56	1	nogas	4351653	0.00
Co	59	1	nogas	38264	0.01
Ni	60	1	nogas	8586	0.02
Cu	63	1	nogas	21647	0.02
Zn	66	1	nogas	6975	0.06
As	75	1	nogas	86545	0.00
Se	77	1	nogas	26992	0.01
Se	82	1	nogas	390	10.86
Sr	88	1	nogas	31515	0.01
Mo	95	1	nogas	6508	0.03
Ag	107	1	nogas	17736	0.01
Cd	111	1	nogas	3690	0.23
Sn	118	1	nogas	9139	0.01
Sb	121	1	nogas	12628	0.02
Ba	137	1	nogas	3787	0.16
Tl	205	1	nogas	40552	0.01
Pb	208	1	nogas	29875	0.01
Si	28	1	nogas	1393661	0.00
La	139	1	nogas	27	81.19
Na	23	2	He	426317	0.00
Mg	24	2	He	229074	0.00
Al	27	2	He	1337	1.29
K	39	2	He	150119	0.00
Ca	43	2	He	317	5.49
Ca	44	2	He	5201	0.06
V	51	2	He	14966	0.02
Cr	52	2	He	11387	0.04

Calibration Standard Report

Mn	55	2	He	5941	0.10
Fe	56	2	He	881345	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Co	59	2	He	14626	0.01
Ni	60	2	He	3690	0.07
Cu	63	2	He	10617	0.04
Zn	66	2	He	1893	0.37
As	75	2	He	1356	0.64
Sb	121	2	He	3167	0.30
Se	78	2	He	69	24.38

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	381214	0.71	380614	100.16	70	125	
In	115	1	nogas	317278	1.04	319603	99.27	70	125	
Li	6	1	nogas	995755	2.25	991703	100.41	70	125	
Bi	209	1	nogas	405839	1.02	407184	99.67	70	125	
Ge	72	2	He	71069	0.95	70028	101.49	70	125	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	016CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T11:43:44-05:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	012CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	402442	0.00
B	11	1	nogas	1278173	0.00
Na	23	1	nogas	71830129	0.00
Mg	24	1	nogas	49579629	0.00
Al	27	1	nogas	543866	0.00
P	31	1	nogas	180235	0.00
K	39	1	nogas	35473499	0.00
Ca	43	1	nogas	66186	0.00
Ca	44	1	nogas	1056539	0.00
Ti	47	1	nogas	31478	0.01
V	51	1	nogas	1038982	0.00
Cr	52	1	nogas	401124	0.00
Mn	55	1	nogas	466860	0.00
Fe	56	1	nogas	39059694	0.00
Co	59	1	nogas	362810	0.00
Ni	60	1	nogas	79807	0.00
Cu	63	1	nogas	185255	0.00
Zn	66	1	nogas	65078	0.00
As	75	1	nogas	119132	0.00
Se	77	1	nogas	26277	0.01
Se	82	1	nogas	2457	0.37
Sr	88	1	nogas	308082	0.00
Mo	95	1	nogas	59508	0.00
Ag	107	1	nogas	163384	0.00
Cd	111	1	nogas	35647	0.01
Sn	118	1	nogas	86484	0.00
Sb	121	1	nogas	128276	0.00
Ba	137	1	nogas	35494	0.00
Tl	205	1	nogas	383930	0.00
Pb	208	1	nogas	284869	0.00
Si	28	1	nogas	11938872	0.00
La	139	1	nogas	93	17.54
Na	23	2	He	3991287	0.00
Mg	24	2	He	2254107	0.00
Al	27	2	He	9819	0.03
K	39	2	He	1078180	0.00
Ca	43	2	He	2967	0.19
Ca	44	2	He	49046	0.00
V	51	2	He	84262	0.00
Cr	52	2	He	103237	0.00

Calibration Standard Report

Mn	55	2	He	57874	0.01
Fe	56	2	He	8415080	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Co	59	2	He	135962	0.00
Ni	60	2	He	36160	0.01
Cu	63	2	He	95470	0.00
Zn	66	2	He	18610	0.00
As	75	2	He	9926	0.02
Sb	121	2	He	33206	0.01
Se	78	2	He	651	0.56

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	365691	2.08	380614	96.08	70	125	
In	115	1	nogas	305388	1.15	319603	95.55	70	125	
Li	6	1	nogas	1009901	2.71	991703	101.84	70	125	
Bi	209	1	nogas	389290	0.74	407184	95.61	70	125	
Ge	72	2	He	69067	1.36	70028	98.63	70	125	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	017CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T11:45:56-05:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	012CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	812445	0.00
B	11	1	nogas	2569491	0.00
Na	23	1	nogas	142944153	0.00
Mg	24	1	nogas	98129088	0.00
Al	27	1	nogas	1069300	0.00
P	31	1	nogas	319071	0.00
K	39	1	nogas	68545699	0.00
Ca	43	1	nogas	128546	0.00
Ca	44	1	nogas	2120393	0.00
Ti	47	1	nogas	63959	0.00
V	51	1	nogas	1448693	0.00
Cr	52	1	nogas	780266	0.00
Mn	55	1	nogas	918164	0.00
Fe	56	1	nogas	77182468	0.00
Co	59	1	nogas	726240	0.00
Ni	60	1	nogas	156966	0.00
Cu	63	1	nogas	359717	0.00
Zn	66	1	nogas	128910	0.00
As	75	1	nogas	168798	0.00
Se	77	1	nogas	31492	0.01
Se	82	1	nogas	5061	0.12
Sr	88	1	nogas	614749	0.00
Mo	95	1	nogas	118583	0.00
Ag	107	1	nogas	320631	0.00
Cd	111	1	nogas	69547	0.00
Sn	118	1	nogas	172405	0.00
Sb	121	1	nogas	260818	0.00
Ba	137	1	nogas	69346	0.00
Tl	205	1	nogas	756856	0.00
Pb	208	1	nogas	566558	0.00
Si	28	1	nogas	23242979	0.00
La	139	1	nogas	93	17.54
Na	23	2	He	7942667	0.00
Mg	24	2	He	4292383	0.00
Al	27	2	He	18042	0.01
K	39	2	He	2108144	0.00
Ca	43	2	He	6024	0.08
Ca	44	2	He	99601	0.00
V	51	2	He	164767	0.00
Cr	52	2	He	205281	0.00

Calibration Standard Report

Mn	55	2	He	114907	0.00
Fe	56	2	He	16834717	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Co	59	2	He	266004	0.00
Ni	60	2	He	72774	0.00
Cu	63	2	He	186463	0.00
Zn	66	2	He	36895	0.01
As	75	2	He	19369	0.00
Sb	121	2	He	68889	0.00
Se	78	2	He	1289	0.52

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	365892	1.42	380614	96.13	70	125	
In	115	1	nogas	300682	1.34	319603	94.08	70	125	
Li	6	1	nogas	1112152	3.60	991703	112.15	70	125	
Bi	209	1	nogas	382158	1.63	407184	93.85	70	125	
Ge	72	2	He	68556	1.78	70028	97.90	70	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	019_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T11:50:26-05:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	012CALB.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
Be	9	1	nogas	108.881	0.763	407850	1.24	100	108.9	90	110	
B	11	1	nogas	537.325	0.143	1278531	0.63	500	107.5	90	110	
Na	23	1	nogas	10492.895	0.507	71540745	0.76	10000	104.9	90	110	
Mg	24	1	nogas	10559.274	0.171	49456889	0.71	10000	105.6	90	110	
Al	27	1	nogas	100.262	2.443	544303	0.91	100	100.3	90	110	
P	31	1	nogas	501.887	3.202	181958	1.49	500	100.4	90	110	
K	39	1	nogas	10098.816	1.193	35746280	0.89	10000	101.0	90	110	
Ca	43	1	nogas	10058.848	0.690	65427	1.22	10000	100.6	90	110	
Ca	44	1	nogas	9763.481	1.827	1044126	0.66	10000	97.6	90	110	
Ti	47	1	nogas	99.202	4.081	31805	2.64	100	99.2	90	110	
V	51	1	nogas	19.154	36.316	814077	3.80	100	19.2	90	110	ICV Main CR1 Failed
Cr	52	1	nogas	95.850	1.765	395258	1.72	100	95.8	90	110	
Mn	55	1	nogas	101.356	1.331	471234	0.26	100	101.4	90	110	
Fe	56	1	nogas	10133.889	1.150	39483264	0.51	10000	101.3	90	110	
Co	59	1	nogas	101.619	0.818	370770	1.01	100	101.6	90	110	
Ni	60	1	nogas	102.633	1.078	81307	0.43	100	102.6	90	110	
Cu	63	1	nogas	102.424	2.085	186927	2.00	100	102.4	90	110	
Zn	66	1	nogas	96.874	0.694	63014	2.18	100	96.9	90	110	
As	75	1	nogas	54.588	12.462	101099	4.19	100	54.6	90	110	ICV Main CR1 Failed
Se	77	1	nogas	-186.800	-16.018	19942	5.60	100	-186.8	90	110	ICV Main CR1 Failed
Se	82	1	nogas	113.430	5.718	2874	4.21	100	113.4	90	110	ICV Main CR1 Failed
Sr	88	1	nogas	99.364	2.048	307060	1.06	100	99.4	90	110	
Mo	95	1	nogas	99.045	4.070	59044	2.74	100	99.0	90	110	
Ag	107	1	nogas	97.112	1.853	157057	0.61	100	97.1	90	110	
Cd	111	1	nogas	99.493	1.197	36185	0.93	100	99.5	90	110	
Sn	118	1	nogas	99.060	2.456	88987	2.05	100	99.1	90	110	
Sb	121	1	nogas	96.944	2.025	126621	0.53	100	96.9	90	110	
Ba	137	1	nogas	101.797	2.762	36914	2.40	100	101.8	90	110	
Tl	205	1	nogas	102.438	0.340	400274	1.83	100	102.4	90	110	
Pb	208	1	nogas	98.353	3.878	287020	2.55	100	98.4	90	110	
U	238	1	nogas	96.882	0.854	740168	1.15	100	96.9	90	110	
Li	7	1	nogas	112.345	1.396	1243278	1.72	100	112.3	90	110	ICV Main CR1 Failed
Si	28	1	nogas	580.597	2.234	1445852	0.97	5000	11.6	90	110	ICV Main CR1 Failed
Ba	135	1	nogas	99.034	0.856	20696	0.99	100	99.0	90	110	
La	139	1	nogas	375.252	29.442	63	24.12	100	375.3	90	110	ICV Main CR1 Failed
Au	197	1	nogas	-244.179	0.000	0	#DIV/0!	100	-244.2	90	110	ICV Main CR1 Failed
Tl	203	1	nogas	102.090	1.637	163316	1.41	100	102.1	90	110	
Na	23	2	He	9573.545	0.660	3896036	0.48	10000	95.7	90	110	
Mg	24	2	He	9743.453	1.517	2158917	0.71	10000	97.4	90	110	
Al	27	2	He	96.670	3.180	9196	2.57	100	96.7	90	110	
K	39	2	He	9775.549	1.759	1075170	0.57	10000	97.8	90	110	
Ca	43	2	He	9808.251	4.864	3014	4.42	10000	98.1	90	110	
Ca	44	2	He	9557.182	2.342	48538	1.46	10000	95.6	90	110	
V	51	2	He	93.312	1.069	81762	0.89	100	93.3	90	110	
Cr	52	2	He	95.622	1.800	100612	0.70	100	95.6	90	110	
Mn	55	2	He	96.495	2.884	56797	3.35	100	96.5	90	110	
Fe	56	2	He	9595.846	0.909	8256551	0.33	10000	96.0	90	110	
Co	59	2	He	97.290	0.412	132862	0.84	100	97.3	90	110	
Ni	60	2	He	94.387	4.168	35028	3.23	100	94.4	90	110	
Cu	63	2	He	96.666	2.870	93031	1.96	100	96.7	90	110	
Zn	66	2	He	91.896	2.524	17385	3.13	100	91.9	90	110	
As	75	2	He	97.376	3.201	9849	1.98	100	97.4	90	110	
Sn	118	2	He	99.374	5.847	23426	4.81	100	99.4	90	110	
Sb	121	2	He	93.486	3.166	32675	3.84	100	93.5	90	110	
Se	78	2	He	100.204	5.431	662	6.59	100	100.2	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	367612	1.50	380614	96.58	70	125	
In	115	1	nogas	313901	0.44	319603	98.22	70	125	
Li	6	1	nogas	1006317	0.54	991703	101.47	70	125	

Initial Calibration Verification (ICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Bi	209	1	nogas	394793	1.55	407184	96.96	70	125	
Ge	72	2	He	70165	1.13	70028	100.20	70	125	

Sample Report

Sample Table

Sample Name	LLICV2
Data File Name	020SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T11:52:40-05:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	012CALB.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
Be	9	1	nogas	2.183	2.183	4.07	7912	0.03	2000	
B	11	1	nogas	21.400	21.400	3.47	60163	0.04	2000	
Na	23	1	nogas	223.660	223.660	2.08	1618688	0.01	200000	
Mg	24	1	nogas	210.043	210.043	0.38	992461	0.02	200000	
Al	27	1	nogas	2.057	2.057	2.69	20805	0.01	2000	
K	39	1	nogas	239.206	239.206	2.33	2686185	0.01	200000	
Ca	43	1	nogas	211.316	211.316	14.76	1570	13.46	200000	
Ca	44	1	nogas	187.363	187.363	5.08	32205	0.58	200000	
Ti	47	1	nogas	1.542	1.542	25.67	587	0.26	2000	
V	51	1	nogas	-101.231	-101.231	-4.09	408735	-0.02	2000	
Cr	52	1	nogas	-2.978	-2.978	-8.70	30383	-0.01	2000	
Mn	55	1	nogas	1.875	1.875	3.52	14166	0.01	2000	
Fe	56	1	nogas	202.300	202.300	3.14	1016204	0.02	200000	
Co	59	1	nogas	2.146	2.146	5.64	8042	0.03	2000	
Ni	60	1	nogas	1.746	1.746	9.99	1673	0.10	2000	
Cu	63	1	nogas	2.311	2.311	8.37	6041	0.04	2000	
Zn	66	1	nogas	1.723	1.723	19.73	1477	0.12	2000	
As	75	1	nogas	-47.152	-47.152	-8.26	54811	-0.09	2000	
Se	77	1	nogas	-267.976	-267.976	-10.72	17936	-1.49	2000	
Se	82	1	nogas	4.291	4.291	28.85	123	3.48	2000	
Sr	88	1	nogas	1.963	1.963	5.21	6288	0.03	2000	
Mo	95	1	nogas	2.162	2.162	9.44	1317	0.16	2000	
Ag	107	1	nogas	2.007	2.007	5.00	3314	0.06	2000	
Cd	111	1	nogas	1.556	1.556	6.59	570	0.27	2000	
Sn	118	1	nogas	2.265	2.265	13.11	2190	0.10	2000	
Sb	121	1	nogas	1.953	1.953	6.03	2677	0.07	2000	
Ba	137	1	nogas	1.888	1.888	21.46	707	0.27	2000	
Tl	205	1	nogas	2.029	2.029	6.43	8136	0.02	2000	
Pb	208	1	nogas	2.030	2.030	2.92	6121	0.03	2000	
U	238	1	nogas	1.878	1.878	4.55	14737	0.01	2000	
Si	28	1	nogas	108.932	108.932	0.48	348931	0.03	2000	
La	139	1	nogas	666.113	666.113	36.16	23	2854.77	2000	
Au	197	1	nogas	-244.179	-244.179	0.00	0	#DIV/0!	2000	
Na	23	2	He	196.063	196.063	1.37	97699	0.20	200000	
Mg	24	2	He	185.550	185.550	1.32	42823	0.43	200000	
Al	27	2	He	0.890	0.890	118.47	390	0.23	2000	
K	39	2	He	205.663	205.663	4.65	65858	0.31	200000	
Ca	43	2	He	222.462	222.462	72.59	77	290.17	200000	
Ca	44	2	He	189.551	189.551	9.76	1097	17.28	200000	
V	51	2	He	-1.121	-1.121	-18.42	5716	-0.02	2000	
Cr	52	2	He	2.008	2.008	12.22	2665	0.08	2000	
Mn	55	2	He	1.859	1.859	9.45	1243	0.15	2000	

Sample Report

Fe	56	2	He	193.078	193.078	1.69	173171	0.11	200000	
Co	59	2	He	2.008	2.008	7.76	2827	0.07	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ni	60	2	He	2.474	2.474	4.24	867	0.29	2000	
Cu	63	2	He	2.146	2.146	5.98	3284	0.07	2000	
Zn	66	2	He	1.545	1.545	26.55	370	0.42	2000	
As	75	2	He	0.485	0.485	33.15	460	0.11	2000	
Sb	121	2	He	1.654	1.654	20.99	607	0.27	2000	
Se	78	2	He	2.649	2.649	67.71	19	14.19	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	373733	0.31	380614	98.19	70	125	
In	115	1	nogas	314539	1.85	319603	98.42	70	125	
Li	6	1	nogas	968847	1.68	991703	97.70	70	125	
Bi	209	1	nogas	405117	2.22	407184	99.49	70	125	
Ge	72	2	He	72316	0.77	70028	103.27	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICV5
Data File Name	021LICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T11:54:56-05:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	012CALB.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
Be	9	1	nogas	5.114	3.615	20385	4.63	5	102.3	70	130	
B	11	1	nogas	30.500	3.921	88233	2.98	25	122.0	70	130	
Na	23	1	nogas	539.774	1.336	3830237	1.75	500	108.0	70	130	
Mg	24	1	nogas	538.326	0.754	2569566	1.67	500	107.7	70	130	
Al	27	1	nogas	5.241	2.633	38895	2.45	5	104.8	70	130	
P	31	1	nogas	35.685	15.398	54291	2.13	25	142.7	70	130	LLICV Main CR1 Failed
K	39	1	nogas	511.666	2.132	3693604	0.12	500	102.3	70	130	
Ca	43	1	nogas	458.382	8.309	3270	8.82	500	91.7	70	130	
Ca	44	1	nogas	479.507	1.817	64976	1.87	500	95.9	70	130	
Ti	47	1	nogas	4.806	1.475	1683	2.09	5	96.1	70	130	
V	51	1	nogas	-76.837	-3.098	504156	1.65	5	-1536.7	70	130	LLICV Main CR1 Failed
Cr	52	1	nogas	0.937	4.416	46065	1.32	5	18.7	70	130	LLICV Main CR1 Failed
Mn	55	1	nogas	5.012	2.923	29444	2.48	5	100.2	70	130	
Fe	56	1	nogas	518.016	0.690	2308518	0.95	500	103.6	70	130	
Co	59	1	nogas	5.147	1.718	19581	0.93	5	102.9	70	130	
Ni	60	1	nogas	4.788	9.842	4204	9.48	5	95.8	70	130	
Cu	63	1	nogas	5.074	4.715	11360	4.90	5	101.5	70	130	
Zn	66	1	nogas	5.040	1.249	3737	1.52	5	100.8	70	130	
As	75	1	nogas	-34.027	-12.171	62292	2.50	5	-680.5	70	130	LLICV Main CR1 Failed
Se	77	1	nogas	-239.286	-9.822	19161	3.42	5	-4785.7	70	130	LLICV Main CR1 Failed
Se	82	1	nogas	5.992	59.310	170	53.91	5	119.8	70	130	
Sr	88	1	nogas	5.015	2.802	16214	2.65	5	100.3	70	130	
Mo	95	1	nogas	5.216	1.198	3237	2.19	5	104.3	70	130	
Ag	107	1	nogas	4.979	1.862	8376	1.23	5	99.6	70	130	
Cd	111	1	nogas	4.862	14.723	1797	14.19	5	97.2	70	130	
Sn	118	1	nogas	4.832	4.050	4557	3.43	5	96.6	70	130	
Sb	121	1	nogas	4.657	4.604	6401	5.02	5	93.1	70	130	
Ba	137	1	nogas	4.795	3.296	1787	3.37	5	95.9	70	130	
Tl	205	1	nogas	4.743	5.024	19502	4.85	5	94.9	70	130	
Pb	208	1	nogas	4.960	4.560	15264	3.78	5	99.2	70	130	
U	238	1	nogas	4.708	5.399	37843	4.61	5	94.2	70	130	
Li	7	1	nogas	5.089	4.391	123952	1.88	5	101.8	70	130	
Si	28	1	nogas	250.753	0.475	700770	0.75	25	1003.0	70	130	LLICV Main CR1 Failed
La	139	1	nogas	646.706	25.843	27	86.60	5	12934.1	70	130	LLICV Main CR1 Failed
Au	197	1	nogas	-6.252	-6591.798	3	173.21	5	-125.0	70	130	LLICV Main CR1 Failed
Na	23	2	He	491.064	3.887	216925	1.03	500	98.2	70	130	
Mg	24	2	He	490.654	4.166	110428	1.57	500	98.1	70	130	
Al	27	2	He	4.480	45.404	720	28.70	5	89.6	70	130	
K	39	2	He	491.508	6.017	95236	1.14	500	98.3	70	130	
Ca	43	2	He	417.559	36.519	137	36.83	500	83.5	70	130	
Ca	44	2	He	445.769	7.221	2390	5.24	500	89.2	70	130	
V	51	2	He	2.427	10.664	8514	3.19	5	48.5	70	130	LLICV Main CR1 Failed
Cr	52	2	He	5.102	4.119	5894	1.19	5	102.0	70	130	
Mn	55	2	He	5.330	6.907	3284	5.53	5	106.6	70	130	
Fe	56	2	He	492.940	3.807	431036	1.21	500	98.6	70	130	
Co	59	2	He	5.092	2.656	7041	4.18	5	101.8	70	130	
Ni	60	2	He	5.495	16.461	1990	17.67	5	109.9	70	130	
Cu	63	2	He	5.005	4.230	5978	4.63	5	100.1	70	130	
Zn	66	2	He	4.587	4.090	943	3.72	5	91.7	70	130	
As	75	2	He	2.910	29.569	690	12.14	5	58.2	70	130	LLICV Main CR1 Failed
Sb	121	2	He	4.579	1.373	1630	2.67	5	91.6	70	130	
Se	78	2	He	5.567	21.437	38	22.94	5	111.3	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	381746	1.09	380614	100.30	70	125	
In	115	1	nogas	318574	0.52	319603	99.68	70	125	
Li	6	1	nogas	997403	1.18	991703	100.57	70	125	
Bi	209	1	nogas	415240	0.82	407184	101.98	70	125	
Ge	72	2	He	71041	2.61	70028	101.45	70	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	022_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T11:57:10-05:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	012CALB.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
Be	9	1	nogas	0.011	56.4	87	29.0	1	
B	11	1	nogas	4.694	1.4	24089	1.3	10	
Na	23	1	nogas	2.262	9.8	113804	0.4	100	
Mg	24	1	nogas	0.097	129.9	8938	8.6	100	
Al	27	1	nogas	0.784	13.6	14260	4.3	5	
P	31	1	nogas	4.792	84.9	45553	2.2	10	
K	39	1	nogas	14.594	76.1	1968360	1.6	100	
Ca	43	1	nogas	5.222	69.2	217	11.6	100	
Ca	44	1	nogas	-17.616	-27.6	10427	4.8	100	
Ti	47	1	nogas	0.059	207.9	107	37.9	2.5	
V	51	1	nogas	-59.732	-2.2	567220	0.8	2.5	
Cr	52	1	nogas	-3.050	-3.0	30880	1.0	2.5	
Mn	55	1	nogas	-0.071	-38.4	5198	2.4	2.5	
Fe	56	1	nogas	-3.514	-59.4	210599	3.8	100	
Co	59	1	nogas	-0.004	-328.6	70	65.5	2.5	
Ni	60	1	nogas	-0.269	-9.4	57	36.7	2.5	
Cu	63	1	nogas	0.247	41.2	2304	8.0	2.5	
Zn	66	1	nogas	0.070	125.9	400	15.2	2.5	
As	75	1	nogas	-27.069	-11.3	65919	2.6	2.5	
Se	77	1	nogas	-167.734	-17.7	21344	3.8	2.5	
Se	82	1	nogas	2.020	21.9	67	17.3	2.5	
Sr	88	1	nogas	0.037	56.0	243	27.4	2.5	
Mo	95	1	nogas	0.005	307.3	10	100.0	2.5	
Ag	107	1	nogas	0.002	357.8	17	69.3	2.5	
Cd	111	1	nogas	-0.009	0.0	0	#DIV/0!	1	
Sn	118	1	nogas	-0.035	-57.2	130	13.3	5	
Sb	121	1	nogas	0.169	7.1	317	4.8	2.5	
Ba	137	1	nogas	-0.009	-578.0	20	100.0	2.5	
Tl	205	1	nogas	0.009	57.0	47	44.6	1	
Pb	208	1	nogas	0.016	68.8	90	38.5	2.5	
U	238	1	nogas	0.005	14.6	57	10.2	2.5	
Si	28	1	nogas	2.537	57.2	98452	3.6	5	
La	139	1	nogas	720.705	5.8	17	34.6	2.5	ICB Main CR1 Failed
Au	197	1	nogas	-244.179	0.0	0	#DIV/0!	2.5	
Na	23	2	He	-0.135	-760.7	15870	1.5	100	
Mg	24	2	He	0.193	164.1	500	15.1	100	
Al	27	2	He	-0.643	-75.2	247	19.2	5	
K	39	2	He	-3.436	-447.1	43465	2.3	100	
Ca	43	2	He	-20.922	0.0	0	#DIV/0!	100	
Ca	44	2	He	1.127	527.9	113	27.0	100	
V	51	2	He	-1.759	-10.7	5233	3.4	2.5	
Cr	52	2	He	0.056	170.7	563	19.8	2.5	
Mn	55	2	He	-0.131	-32.3	40	66.1	2.5	
Fe	56	2	He	0.400	50.4	2364	6.5	100	
Co	59	2	He	0.007	1.6	10	0.0	2.5	
Ni	60	2	He	0.257	20.9	17	124.9	2.5	

Initial Calibration Blank (ICB) Report

Cu	63	2	He	0.100	293.6	1293	23.9	2.5	
Zn	66	2	He	0.269	73.2	123	32.8	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
As	75	2	He	-1.614	-13.9	252	8.8	2.5	
Sb	121	2	He	0.118	82.0	53	65.8	2.5	
Se	78	2	He	0.472	121.7	4	100.0	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	383275	0.37	380614	100.70	70	125	
In	115	1	nogas	323162	0.81	319603	101.11	70	125	
Li	6	1	nogas	1014161	0.79	991703	102.26	70	125	
Bi	209	1	nogas	418055	2.26	407184	102.67	70	125	
Ge	72	2	He	72982	1.62	70028	104.22	70	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	026ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T12:13:43-05:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	012CALB.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
Be	9	1	nogas	-0.001	-125.8	33	17.3	0	ICSA Main CR1 Failed
B	11	1	nogas	2.034	11.1	15880	4.0	0	ICSA Main CR1 Failed
Na	23	1	nogas	104838.831	0.2	679551749	2.9	0	
Mg	24	1	nogas	103783.143	2.2	462420644	0.9	0	
Al	27	1	nogas	92462.250	2.5	476678393	1.8	0	
P	31	1	nogas	87130.823	1.8	23464443	1.1	0	
K	39	1	nogas	98600.383	1.2	321704707	0.5	0	
Ca	43	1	nogas	97681.001	2.4	612480	1.8	0	
Ca	44	1	nogas	94243.263	3.7	9640392	3.2	0	
Ti	47	1	nogas	2139.938	3.5	661481	2.8	0	
V	51	1	nogas	-109.947	-2.9	359651	2.5	0	ICSA Main CR1 Failed
Cr	52	1	nogas	-4.463	-5.2	23569	2.8	0	ICSA Main CR1 Failed
Mn	55	1	nogas	0.250	65.1	6241	11.2	0	ICSA Main CR1 Failed
Fe	56	1	nogas	97560.055	1.6	365550550	1.4	0	
Co	59	1	nogas	0.493	3.5	1817	2.7	0	ICSA Main CR1 Failed
Ni	60	1	nogas	2.298	19.0	2010	16.0	0	ICSA Main CR1 Failed
Cu	63	1	nogas	1.911	15.1	5041	9.4	0	ICSA Main CR1 Failed
Zn	66	1	nogas	3.943	15.2	2790	12.7	0	ICSA Main CR1 Failed
As	75	1	nogas	-41.880	-3.6	54460	1.6	0	ICSA Main CR1 Failed
Se	77	1	nogas	-236.569	-2.2	17906	1.2	0	ICSA Main CR1 Failed
Se	82	1	nogas	1.123	62.0	40	43.3	0	ICSA Main CR1 Failed
Sr	88	1	nogas	0.916	8.7	2850	7.6	0	ICSA Main CR1 Failed
Mo	95	1	nogas	1974.182	1.6	1137508	1.2	0	
Ag	107	1	nogas	0.035	46.9	67	37.7	0	ICSA Main CR1 Failed
Cd	111	1	nogas	3.349	8.1	1103	7.9	0	
Sn	118	1	nogas	0.055	47.7	187	11.2	0	ICSA Main CR1 Failed
Sb	121	1	nogas	0.245	25.1	390	20.0	0	ICSA Main CR1 Failed
Ba	137	1	nogas	0.069	50.6	43	26.6	0	ICSA Main CR1 Failed
Tl	205	1	nogas	0.001	253.1	13	86.6	0	ICSA Main CR1 Failed
Pb	208	1	nogas	0.098	17.1	297	15.9	0	ICSA Main CR1 Failed
Si	28	1	nogas	64.561	2.1	231393	0.8	0	
La	139	1	nogas	514.787	27.4	40	43.3	0	
Na	23	2	He	97394.500	2.8	38537950	1.7	0	
Mg	24	2	He	96431.458	2.6	20848361	2.2	0	
Al	27	2	He	93694.296	2.8	8417370	1.6	0	
K	39	2	He	100577.651	2.6	10412433	1.1	0	
Ca	43	2	He	96259.713	4.1	28810	3.7	0	
Ca	44	2	He	96352.673	4.5	476407	1.2	0	
V	51	2	He	-3.257	-5.1	3728	0.3	0	ICSA Main CR1 Failed
Cr	52	2	He	0.121	59.5	593	11.5	0	ICSA Main CR1 Failed
Mn	55	2	He	0.369	5.7	323	1.8	0	ICSA Main CR1 Failed
Fe	56	2	He	96985.236	3.9	81383574	0.5	0	
Co	59	2	He	0.038	123.6	50	121.7	0	ICSA Main CR1 Failed
Ni	60	2	He	0.527	14.1	113	20.4	0	ICSA Main CR1 Failed
Cu	63	2	He	0.935	4.9	1987	5.0	0	ICSA Main CR1 Failed
Zn	66	2	He	0.462	59.4	150	30.6	0	ICSA Main CR1 Failed
As	75	2	He	-1.149	-36.1	280	10.6	0	ICSA Main CR1 Failed
Sb	121	2	He	0.238	79.5	90	67.6	0	ICSA Main CR1 Failed
Se	78	2	He	0.109	339.2	1	173.2	0	ICSA Main CR1 Failed

Interference Check Solution A (ICS-A) Report

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	355242	0.75	380614	93.33	70	125	
In	115	1	nogas	283649	0.34	319603	88.75	70	125	
Li	6	1	nogas	929672	1.39	991703	93.74	70	125	
Bi	209	1	nogas	360959	1.71	407184	88.65	70	125	
Ge	72	2	He	68498	3.39	70028	97.82	70	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	027ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T12:16:03-05:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	012CALB.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
Be	9	1	nogas	91.829	3.408	387655	0.33	100	91.8	80	120	
B	11	1	nogas	463.187	5.866	1242469	4.93	100	463.2	80	120	
Na	23	1	nogas	116131.582	1.974	791498684	1.57	100	116131.6	80	120	
Mg	24	1	nogas	112832.694	0.975	528851928	0.30	100	112832.7	80	120	
Al	27	1	nogas	92468.297	0.582	494353766	0.90	100	92468.3	80	120	ICSB Main CR1 Failed
K	39	1	nogas	107708.760	0.937	364236450	1.14	100	107708.8	80	120	
Ca	43	1	nogas	106752.841	0.269	694094	0.14	100	106752.8	80	120	
Ca	44	1	nogas	102088.299	0.331	10828683	0.64	100	102088.3	80	120	ICSB Main CR1 Failed
Ti	47	1	nogas	2214.135	1.523	709795	1.86	100	2214.1	80	120	ICSB Main CR1 Failed
V	51	1	nogas	20.788	14.570	821193	1.16	100	20.8	80	120	ICSB Main CR1 Failed
Cr	52	1	nogas	90.565	2.086	376483	1.78	100	90.6	80	120	
Mn	55	1	nogas	96.070	1.626	447866	1.31	100	96.1	80	120	
Fe	56	1	nogas	105816.181	1.680	411087251	1.40	100	105816.2	80	120	
Co	59	1	nogas	96.025	0.480	351082	0.82	100	96.0	80	120	
Ni	60	1	nogas	94.748	1.656	75241	1.99	100	94.7	80	120	
Cu	63	1	nogas	94.403	1.060	172784	1.14	100	94.4	80	120	
Zn	66	1	nogas	96.258	1.176	62737	1.45	100	96.3	80	120	
As	75	1	nogas	68.509	4.985	107748	1.47	100	68.5	80	120	
Se	77	1	nogas	-94.382	-20.627	22588	2.28	100	-94.4	80	120	ICSB Main CR1 Failed
Se	82	1	nogas	112.341	8.287	2854	8.41	100	112.3	80	120	
Sr	88	1	nogas	97.636	0.798	302373	0.78	100	97.6	80	120	
Mo	95	1	nogas	2054.520	0.654	1227498	0.36	100	2054.5	80	120	
Ag	107	1	nogas	92.961	1.061	150669	1.21	100	93.0	80	120	
Cd	111	1	nogas	100.344	2.793	34739	2.49	100	100.3	80	120	
Sn	118	1	nogas	97.637	2.277	83493	1.73	100	97.6	80	120	
Sb	121	1	nogas	96.085	0.753	125776	1.04	100	96.1	80	120	
Ba	137	1	nogas	99.396	0.907	34315	1.49	100	99.4	80	120	
Tl	205	1	nogas	97.699	2.244	359540	1.72	100	97.7	80	120	
Pb	208	1	nogas	98.855	1.735	271802	0.84	100	98.9	80	120	
U	238	1	nogas	100.893	0.928	726112	1.61	100	100.9	80	120	
Si	28	1	nogas	5019.173	0.335	11848426	0.33	100	5019.2	80	120	ICSB Main CR1 Failed
La	139	1	nogas	-108.552	-565.132	123	65.04	100	-108.6	80	120	ICSB Main CR1 Failed
Na	23	2	He	106915.824	1.036	42651603	0.35	100	106915.8	80	120	
Mg	24	2	He	105158.623	0.652	22920289	0.26	100	105158.6	80	120	
Al	27	2	He	91820.549	2.247	8316865	1.87	100	91820.5	80	120	ICSB Main CR1 Failed
K	39	2	He	107690.735	0.578	11238175	0.63	100	107690.7	80	120	ICSB Main CR1 Failed
Ca	43	2	He	103080.107	1.834	31104	1.97	100	103080.1	80	120	ICSB Main CR1 Failed
Ca	44	2	He	103418.396	0.583	515801	1.03	100	103418.4	80	120	ICSB Main CR1 Failed
V	51	2	He	97.020	0.664	83382	0.18	100	97.0	80	120	
Cr	52	2	He	96.384	0.975	99777	1.15	100	96.4	80	120	
Mn	55	2	He	95.821	0.784	55482	0.93	100	95.8	80	120	
Fe	56	2	He	104261.581	0.793	88242995	1.18	100	104261.6	80	120	ICSB Main CR1 Failed
Co	59	2	He	97.613	1.200	131152	1.89	100	97.6	80	120	
Ni	60	2	He	96.915	4.145	35402	4.92	100	96.9	80	120	
Cu	63	2	He	97.676	0.683	92482	0.23	100	97.7	80	120	
Zn	66	2	He	93.983	1.942	17489	1.91	100	94.0	80	120	
As	75	2	He	96.063	4.170	9565	3.32	100	96.1	80	120	
Sb	121	2	He	93.775	1.283	32241	1.55	100	93.8	80	120	
Se	78	2	He	97.582	3.984	634	4.14	100	97.6	80	120	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	368341	0.34	380614	96.78	70	125	
In	115	1	nogas	298811	0.59	319603	93.49	70	125	
Li	6	1	nogas	1059295	3.06	991703	106.82	70	125	
Bi	209	1	nogas	371880	1.41	407184	91.33	70	125	
Ge	72	2	He	69027	0.79	70028	98.57	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	034_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T12:34:49-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	012CALB.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
Be	9	1	nogas	89.693	1.820	391130	1.81	100	89.7	90	110	CCV Main CR1-2 Failed
B	11	1	nogas	463.077	2.650	1283008	2.15	500	92.6	90	110	
Na	23	1	nogas	10427.008	1.145	75404483	0.74	10000	104.3	90	110	
Mg	24	1	nogas	10423.404	1.257	51780950	0.60	10000	104.2	90	110	
Al	27	1	nogas	105.154	0.349	576650	0.82	100	105.2	90	110	
P	31	1	nogas	503.991	0.800	184532	0.25	500	100.8	90	110	
K	39	1	nogas	10203.495	1.360	36486235	0.82	10000	102.0	90	110	
Ca	43	1	nogas	10255.815	1.181	67422	1.21	10000	102.6	90	110	
Ca	44	1	nogas	10021.939	0.548	1083098	0.42	10000	100.2	90	110	
Ti	47	1	nogas	99.172	4.307	32152	4.72	100	99.2	90	110	
V	51	1	nogas	90.682	5.170	1070081	1.52	100	90.7	90	110	
Cr	52	1	nogas	98.944	1.588	411098	1.90	100	98.9	90	110	
Mn	55	1	nogas	102.433	0.373	481346	0.44	100	102.4	90	110	
Fe	56	1	nogas	10190.101	0.282	40130998	0.71	10000	101.9	90	110	
Co	59	1	nogas	98.991	0.518	365074	0.60	100	99.0	90	110	
Ni	60	1	nogas	96.385	1.678	77196	1.18	100	96.4	90	110	
Cu	63	1	nogas	98.373	2.079	181534	1.67	100	98.4	90	110	
Zn	66	1	nogas	96.762	1.410	63610	1.17	100	96.8	90	110	
As	75	1	nogas	108.961	11.121	127638	4.36	100	109.0	90	110	
Se	77	1	nogas	94.353	43.050	28170	3.91	100	94.4	90	110	
Se	82	1	nogas	92.201	14.793	2364	14.23	100	92.2	90	110	
Sr	88	1	nogas	99.771	0.847	311667	0.37	100	99.8	90	110	
Mo	95	1	nogas	97.179	1.111	58572	0.70	100	97.2	90	110	
Ag	107	1	nogas	98.886	0.639	161670	1.10	100	98.9	90	110	
Cd	111	1	nogas	98.302	1.395	35096	1.90	100	98.3	90	110	
Sn	118	1	nogas	99.744	1.971	87951	1.40	100	99.7	90	110	
Sb	121	1	nogas	98.041	1.150	129445	0.68	100	98.0	90	110	
Ba	137	1	nogas	100.082	1.221	35628	1.42	100	100.1	90	110	
Tl	205	1	nogas	97.690	3.860	373392	1.26	100	97.7	90	110	
Pb	208	1	nogas	98.509	2.124	281410	1.28	100	98.5	90	110	
U	238	1	nogas	97.354	4.580	727516	1.92	100	97.4	90	110	
Li	7	1	nogas	98.120	1.005	1272461	1.94	100	98.1	90	110	
Si	28	1	nogas	5041.079	0.191	12003382	0.34	5000	100.8	90	110	
Ba	135	1	nogas	103.574	1.486	21247	2.00	100	103.6	90	110	
La	139	1	nogas	291.158	40.094	73	20.83	100	291.2	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	254.394	339.456	7	173.21	100	254.4	90	110	CCV Main CR1-2 Failed
Tl	203	1	nogas	97.373	3.409	152403	0.87	100	97.4	90	110	
Na	23	2	He	9878.927	2.005	4042227	2.34	10000	98.8	90	110	
Mg	24	2	He	9961.345	1.933	2219525	2.04	10000	99.6	90	110	
Al	27	2	He	97.778	6.362	9353	6.79	100	97.8	90	110	
K	39	2	He	9419.183	1.233	1043280	0.42	10000	94.2	90	110	
Ca	43	2	He	9035.617	8.051	2794	8.80	10000	90.4	90	110	
Ca	44	2	He	9466.145	2.670	48355	3.40	10000	94.7	90	110	
V	51	2	He	98.523	0.839	86445	1.08	100	98.5	90	110	
Cr	52	2	He	96.339	2.163	101929	2.03	100	96.3	90	110	
Mn	55	2	He	96.102	0.636	56873	1.09	100	96.1	90	110	
Fe	56	2	He	9629.179	1.202	8330948	0.91	10000	96.3	90	110	
Co	59	2	He	99.915	0.400	137197	0.42	100	99.9	90	110	
Ni	60	2	He	101.559	2.219	37917	2.99	100	101.6	90	110	
Cu	63	2	He	101.545	1.769	98231	2.44	100	101.5	90	110	
Zn	66	2	He	95.387	1.651	18139	0.89	100	95.4	90	110	
As	75	2	He	98.709	1.559	10036	1.89	100	98.7	90	110	
Sb	121	2	He	95.049	1.174	33400	1.43	100	95.0	90	110	
Se	78	2	He	84.833	5.689	563	5.34	100	84.8	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
Ge	72	1	nogas	371549	0.49	380614	97.62	70	125	
In	115	1	nogas	308127	0.67	319603	96.41	70	125	
Li	6	1	nogas	1093605	1.79	991703	110.28	70	125	
Bi	209	1	nogas	386452	2.66	407184	94.91	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	70550	0.76	70028	100.75	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	035_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T12:37:02-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	012CALB.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
Be	9	1	nogas	0.032	20.9	170	15.6	1	
B	11	1	nogas	6.144	21.1	27444	12.1	10	
Na	23	1	nogas	19.851	11.4	243790	4.5	100	
Mg	24	1	nogas	3.445	22.1	25756	12.5	100	
Al	27	1	nogas	4.657	1.8	35848	0.6	5	
P	31	1	nogas	20.237	13.1	50105	1.1	10	CCB Main CR1 Failed
K	39	1	nogas	39.769	18.0	2059816	2.5	100	
Ca	43	1	nogas	45.614	34.9	490	21.3	100	
Ca	44	1	nogas	-1.823	-79.4	12188	2.4	100	
Ti	47	1	nogas	0.298	50.4	187	26.4	2.5	
V	51	1	nogas	-14.411	-32.1	729857	1.2	2.5	
Cr	52	1	nogas	0.231	326.2	43570	5.5	2.5	
Mn	55	1	nogas	0.327	22.0	7115	4.1	2.5	
Fe	56	1	nogas	6.747	46.7	252488	5.8	100	
Co	59	1	nogas	0.015	92.4	140	37.8	2.5	
Ni	60	1	nogas	-0.197	-17.2	117	24.7	2.5	
Cu	63	1	nogas	0.078	121.9	1990	9.6	2.5	
Zn	66	1	nogas	-0.133	-24.5	263	7.9	2.5	
As	75	1	nogas	23.901	42.6	90645	4.1	2.5	CCB Main CR1 Failed
Se	77	1	nogas	109.733	17.8	29552	0.9	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.377	212.0	23	89.2	2.5	
Sr	88	1	nogas	0.124	21.2	523	15.4	2.5	
Mo	95	1	nogas	0.112	57.1	77	52.7	2.5	
Ag	107	1	nogas	0.028	36.4	60	28.9	2.5	
Cd	111	1	nogas	0.019	257.1	10	173.2	1	
Sn	118	1	nogas	0.123	94.0	273	36.6	5	
Sb	121	1	nogas	0.280	16.0	470	14.0	2.5	
Ba	137	1	nogas	0.090	90.8	57	50.9	2.5	
Tl	205	1	nogas	0.061	59.2	257	55.3	1	
Pb	208	1	nogas	0.044	55.3	173	41.7	2.5	
U	238	1	nogas	0.038	69.6	317	64.1	2.5	
Si	28	1	nogas	3.347	10.1	100569	0.5	5	
La	139	1	nogas	839.685	0.0	0	#DIV/0!	2.5	CCB Main CR1 Failed
Au	197	1	nogas	-244.179	0.0	0	#DIV/0!	2.5	
Na	23	2	He	30.598	0.8	28649	1.0	100	
Mg	24	2	He	2.984	20.8	1137	13.5	100	
Al	27	2	He	3.269	21.3	617	9.5	5	
K	39	2	He	30.329	24.4	46894	2.1	100	
Ca	43	2	He	-20.922	0.0	0	#DIV/0!	100	
Ca	44	2	He	36.123	31.7	297	21.7	100	
V	51	2	He	-0.301	-20.4	6416	1.0	2.5	
Cr	52	2	He	0.035	264.0	537	18.9	2.5	
Mn	55	2	He	-0.053	-50.1	87	17.6	2.5	
Fe	56	2	He	3.671	4.9	5258	2.5	100	
Co	59	2	He	0.012	67.9	17	69.3	2.5	
Ni	60	2	He	0.361	33.3	57	81.5	2.5	
Cu	63	2	He	0.129	69.2	1310	5.8	2.5	
Zn	66	2	He	0.086	240.3	87	46.6	2.5	

Continuing Calibration Blank (CCB) Report

As	75	2	He	-0.038	-375.7	409	4.9	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	0.331	24.2	130	23.1	2.5	
Se	78	2	He	0.968	33.4	7	31.5	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	383837	1.28	380614	100.85	70	125	
In	115	1	nogas	322443	2.29	319603	100.89	70	125	
Li	6	1	nogas	1001937	0.95	991703	101.03	70	125	
Bi	209	1	nogas	410875	1.67	407184	100.91	70	125	
Ge	72	2	He	72517	1.36	70028	103.56	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	046_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T13:05:05-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	012CALB.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
Be	9	1	nogas	93.321	1.466	341943	0.66	100	93.3	90	110	
B	11	1	nogas	491.289	0.818	1143196	0.34	500	98.3	90	110	
Na	23	1	nogas	10337.444	1.112	66858058	0.71	10000	103.4	90	110	
Mg	24	1	nogas	10357.475	2.659	46014195	2.10	10000	103.6	90	110	
Al	27	1	nogas	103.766	0.466	518414	0.48	100	103.8	90	110	
P	31	1	nogas	507.223	1.466	168904	0.46	500	101.4	90	110	
K	39	1	nogas	10154.493	1.088	33081868	0.20	10000	101.5	90	110	
Ca	43	1	nogas	10237.999	1.872	61303	1.62	10000	102.4	90	110	
Ca	44	1	nogas	9943.192	0.991	978898	1.29	10000	99.4	90	110	
Ti	47	1	nogas	95.402	1.244	28172	1.36	100	95.4	90	110	
V	51	1	nogas	-11.694	-19.247	652163	0.87	100	-11.7	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	90.892	2.364	346989	1.37	100	90.9	90	110	
Mn	55	1	nogas	101.214	1.494	433247	0.62	100	101.2	90	110	
Fe	56	1	nogas	10136.349	1.312	36359691	0.84	10000	101.4	90	110	
Co	59	1	nogas	97.866	1.159	328735	0.65	100	97.9	90	110	
Ni	60	1	nogas	97.356	1.139	71020	0.42	100	97.4	90	110	
Cu	63	1	nogas	99.045	0.906	166474	0.71	100	99.0	90	110	
Zn	66	1	nogas	98.017	1.077	58693	1.97	100	98.0	90	110	
As	75	1	nogas	106.362	3.945	115167	2.46	100	106.4	90	110	
Se	77	1	nogas	102.268	23.578	25866	2.58	100	102.3	90	110	
Se	82	1	nogas	111.158	6.952	2594	6.41	100	111.2	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	100.052	1.517	284671	0.94	100	100.1	90	110	
Mo	95	1	nogas	94.964	1.663	52138	2.12	100	95.0	90	110	
Ag	107	1	nogas	97.922	1.480	145819	1.59	100	97.9	90	110	
Cd	111	1	nogas	96.183	4.358	31823	4.26	100	96.2	90	110	
Sn	118	1	nogas	99.452	3.744	81255	2.22	100	99.5	90	110	
Sb	121	1	nogas	101.370	2.801	121908	2.75	100	101.4	90	110	
Ba	137	1	nogas	101.831	4.661	33584	3.31	100	101.8	90	110	
Tl	205	1	nogas	98.822	1.526	356174	0.71	100	98.8	90	110	
Pb	208	1	nogas	98.683	1.499	265744	1.19	100	98.7	90	110	
U	238	1	nogas	99.147	0.961	698783	0.88	100	99.1	90	110	
Li	7	1	nogas	99.126	0.520	1079489	0.67	100	99.1	90	110	
Si	28	1	nogas	4951.857	0.535	10741201	0.65	5000	99.0	90	110	
Ba	135	1	nogas	101.625	4.072	19315	2.83	100	101.6	90	110	
La	139	1	nogas	-43.268	-1014.927	110	50.62	100	-43.3	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	301.457	313.501	7	173.21	100	301.5	90	110	CCV Main CR1-2 Failed
Tl	203	1	nogas	99.214	1.004	146424	0.97	100	99.2	90	110	
Na	23	2	He	9617.809	2.659	3634881	1.80	10000	96.2	90	110	
Mg	24	2	He	9732.388	2.696	2003545	3.79	10000	97.3	90	110	
Al	27	2	He	92.930	2.273	8222	2.15	100	92.9	90	110	
K	39	2	He	9303.990	4.464	951868	1.05	10000	93.0	90	110	
Ca	43	2	He	9082.872	7.487	2594	7.87	10000	90.8	90	110	
Ca	44	2	He	9273.313	4.511	43729	2.36	10000	92.7	90	110	
V	51	2	He	93.824	3.371	76312	2.07	100	93.8	90	110	
Cr	52	2	He	95.102	4.091	92922	2.63	100	95.1	90	110	
Mn	55	2	He	92.103	6.221	50314	3.94	100	92.1	90	110	
Fe	56	2	He	9341.697	5.686	7459163	2.39	10000	93.4	90	110	
Co	59	2	He	99.272	5.768	125793	2.18	100	99.3	90	110	
Ni	60	2	He	99.789	4.751	34383	1.20	100	99.8	90	110	
Cu	63	2	He	101.282	3.530	90470	1.93	100	101.3	90	110	
Zn	66	2	He	94.753	1.756	16655	4.36	100	94.8	90	110	
As	75	2	He	95.327	3.007	8968	4.13	100	95.3	90	110	
Sb	121	2	He	95.651	3.672	31035	1.70	100	95.7	90	110	
Se	78	2	He	88.579	3.430	543	3.13	100	88.6	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
Ge	72	1	nogas	338432	0.93	380614	88.92	70	125	
In	115	1	nogas	285587	1.49	319603	89.36	70	125	
Li	6	1	nogas	918882	0.83	991703	92.66	70	125	
Bi	209	1	nogas	364193	0.84	407184	89.44	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	65196	3.70	70028	93.10	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	047_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T13:07:19-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	012CALB.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
Be	9	1	nogas	0.034	12.6	157	9.8	1	
B	11	1	nogas	8.042	12.7	28796	6.5	10	
Na	23	1	nogas	14.879	19.4	186290	7.5	100	
Mg	24	1	nogas	2.636	35.4	19482	19.0	100	
Al	27	1	nogas	5.464	5.6	36951	3.6	5	CCB Main CR1 Failed
P	31	1	nogas	35.090	13.3	49848	2.7	10	CCB Main CR1 Failed
K	39	1	nogas	70.722	11.1	1985642	0.6	100	
Ca	43	1	nogas	29.585	70.8	350	37.5	100	
Ca	44	1	nogas	-9.986	-13.1	10336	1.8	100	
Ti	47	1	nogas	-0.011	-629.3	77	27.2	2.5	
V	51	1	nogas	-140.815	-1.0	254925	1.5	2.5	
Cr	52	1	nogas	-7.342	-2.7	13145	4.6	2.5	
Mn	55	1	nogas	0.029	301.9	5208	6.7	2.5	
Fe	56	1	nogas	7.684	10.3	234683	1.8	100	
Co	59	1	nogas	0.003	462.3	87	52.0	2.5	
Ni	60	1	nogas	-0.241	-17.0	73	41.7	2.5	
Cu	63	1	nogas	1.255	8.2	3857	5.3	2.5	
Zn	66	1	nogas	0.016	971.3	333	28.4	2.5	
As	75	1	nogas	-13.327	-41.4	66551	3.7	2.5	
Se	77	1	nogas	-35.137	-61.5	23156	1.8	2.5	
Se	82	1	nogas	1.000	167.0	37	110.2	2.5	
Sr	88	1	nogas	0.078	18.6	343	11.8	2.5	
Mo	95	1	nogas	0.094	66.5	60	60.1	2.5	
Ag	107	1	nogas	0.018	95.0	40	66.1	2.5	
Cd	111	1	nogas	0.048	101.5	20	86.6	1	
Sn	118	1	nogas	0.054	62.2	197	15.5	5	
Sb	121	1	nogas	0.102	81.1	207	49.4	2.5	
Ba	137	1	nogas	0.004	1375.0	23	89.2	2.5	
Tl	205	1	nogas	0.057	102.8	233	99.1	1	
Pb	208	1	nogas	0.081	59.7	277	51.9	2.5	
U	238	1	nogas	0.032	56.3	260	53.4	2.5	
Si	28	1	nogas	6.199	20.6	98483	2.4	5	CCB Main CR1 Failed
La	139	1	nogas	684.890	19.6	20	86.6	2.5	CCB Main CR1 Failed
Au	197	1	nogas	-244.179	0.0	0	#DIV/0!	2.5	
Na	23	2	He	19.762	11.6	22164	1.3	100	
Mg	24	2	He	2.313	16.8	903	9.2	100	
Al	27	2	He	3.648	27.6	600	13.0	5	
K	39	2	He	59.013	37.2	45982	2.0	100	
Ca	43	2	He	36.622	198.9	17	124.9	100	
Ca	44	2	He	33.605	13.7	260	6.7	100	
V	51	2	He	-5.002	-1.8	2295	4.3	2.5	
Cr	52	2	He	-0.105	-19.3	353	4.3	2.5	
Mn	55	2	He	0.056	95.9	140	18.9	2.5	
Fe	56	2	He	7.449	3.8	7932	5.6	100	
Co	59	2	He	0.034	94.6	43	93.3	2.5	
Ni	60	2	He	0.318	10.8	37	31.5	2.5	
Cu	63	2	He	1.012	11.2	2003	5.4	2.5	
Zn	66	2	He	0.052	143.5	73	15.7	2.5	

Continuing Calibration Blank (CCB) Report

As	75	2	He	-0.361	-63.0	347	8.8	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	0.172	62.6	67	52.7	2.5	
Se	78	2	He	0.209	147.7	2	100.0	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	351552	0.74	380614	92.36	70	125	
In	115	1	nogas	299352	1.14	319603	93.66	70	125	
Li	6	1	nogas	896366	1.44	991703	90.39	70	125	
Bi	209	1	nogas	394717	0.74	407184	96.94	70	125	
Ge	72	2	He	66715	2.92	70028	95.27	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	058_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T13:36:28-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	012CALB.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
Be	9	1	nogas	91.061	1.843	359445	1.87	100	91.1	90	110	
B	11	1	nogas	497.839	3.102	1247600	2.45	500	99.6	90	110	
Na	23	1	nogas	10281.226	0.896	70079827	1.49	10000	102.8	90	110	
Mg	24	1	nogas	10217.007	0.795	47838714	1.00	10000	102.2	90	110	
Al	27	1	nogas	102.535	0.399	527378	1.13	100	102.5	90	110	
P	31	1	nogas	530.865	1.837	180085	1.43	500	106.2	90	110	
K	39	1	nogas	10179.205	2.987	34123724	1.66	10000	101.8	90	110	
Ca	43	1	nogas	10320.514	1.503	63601	0.32	10000	103.2	90	110	
Ca	44	1	nogas	10125.859	1.375	1025758	0.22	10000	101.3	90	110	
Ti	47	1	nogas	97.003	2.349	29478	1.15	100	97.0	90	110	
V	51	1	nogas	-4.039	-45.158	696096	1.23	100	-4.0	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	92.008	1.477	361069	0.82	100	92.0	90	110	
Mn	55	1	nogas	101.571	1.735	447467	0.51	100	101.6	90	110	
Fe	56	1	nogas	10032.991	2.016	37041163	0.79	10000	100.3	90	110	
Co	59	1	nogas	97.003	1.950	335350	0.99	100	97.0	90	110	
Ni	60	1	nogas	95.404	0.822	71642	1.25	100	95.4	90	110	
Cu	63	1	nogas	96.345	2.456	166703	1.62	100	96.3	90	110	
Zn	66	1	nogas	95.901	1.526	59104	0.90	100	95.9	90	110	
As	75	1	nogas	90.775	14.786	111659	4.88	100	90.8	90	110	
Se	77	1	nogas	93.347	42.400	26387	4.51	100	93.3	90	110	
Se	82	1	nogas	101.683	4.085	2444	4.18	100	101.7	90	110	
Sr	88	1	nogas	100.999	1.996	295759	0.94	100	101.0	90	110	
Mo	95	1	nogas	99.585	1.502	56268	0.27	100	99.6	90	110	
Ag	107	1	nogas	98.092	1.554	150333	0.47	100	98.1	90	110	
Cd	111	1	nogas	97.498	1.414	33353	2.01	100	97.5	90	110	
Sn	118	1	nogas	97.584	2.266	82454	2.26	100	97.6	90	110	
Sb	121	1	nogas	100.444	1.729	124322	0.94	100	100.4	90	110	
Ba	137	1	nogas	102.722	2.071	35033	1.43	100	102.7	90	110	
Tl	205	1	nogas	97.953	2.429	368270	1.29	100	98.0	90	110	
Pb	208	1	nogas	98.492	1.609	276689	1.12	100	98.5	90	110	
U	238	1	nogas	97.069	0.924	713689	0.30	100	97.1	90	110	
Li	7	1	nogas	98.792	3.548	1159057	3.04	100	98.8	90	110	
Si	28	1	nogas	4984.579	1.065	11127631	0.53	5000	99.7	90	110	
Ba	135	1	nogas	99.829	0.985	19622	1.35	100	99.8	90	110	
La	139	1	nogas	-201.197	-100.223	133	18.87	100	-201.2	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	282.661	322.830	7	173.21	100	282.7	90	110	CCV Main CR1-2 Failed
Tl	203	1	nogas	97.429	0.957	150004	0.89	100	97.4	90	110	
Na	23	2	He	9748.624	0.966	3789295	1.60	10000	97.5	90	110	
Mg	24	2	He	9760.372	3.181	2065307	1.77	10000	97.6	90	110	
Al	27	2	He	95.204	0.711	8655	1.23	100	95.2	90	110	
K	39	2	He	9274.609	1.281	976449	1.03	10000	92.7	90	110	
Ca	43	2	He	10296.990	6.282	3024	7.47	10000	103.0	90	110	
Ca	44	2	He	9084.223	1.110	44077	1.18	10000	90.8	90	110	
V	51	2	He	94.425	1.833	78947	0.42	100	94.4	90	110	
Cr	52	2	He	94.310	2.412	94781	1.13	100	94.3	90	110	
Mn	55	2	He	93.606	1.745	52627	2.37	100	93.6	90	110	
Fe	56	2	He	9331.886	0.524	7669976	1.46	10000	93.3	90	110	
Co	59	2	He	96.832	1.781	126320	2.73	100	96.8	90	110	
Ni	60	2	He	97.042	3.421	34407	3.34	100	97.0	90	110	
Cu	63	2	He	100.215	1.951	92083	0.55	100	100.2	90	110	
Zn	66	2	He	94.537	1.448	17082	2.67	100	94.5	90	110	
As	75	2	He	93.559	2.590	9057	3.19	100	93.6	90	110	
Sb	121	2	He	96.479	1.343	32208	2.49	100	96.5	90	110	
Se	78	2	He	91.690	10.953	578	9.98	100	91.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	348342	1.23	380614	91.52	70	125	
In	115	1	nogas	295230	0.65	319603	92.37	70	125	
Li	6	1	nogas	989817	0.61	991703	99.81	70	125	
Bi	209	1	nogas	379942	1.22	407184	93.31	70	125	

Ge	72	2	He	67019	1.40	70028	95.70	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	059_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T13:38:42-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	012CALB.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
Be	9	1	nogas	0.054	12.9	237	10.6	1	
B	11	1	nogas	9.618	9.6	33527	5.7	10	
Na	23	1	nogas	30.846	11.6	301233	6.1	100	
Mg	24	1	nogas	2.465	9.2	19513	4.6	100	
Al	27	1	nogas	4.475	6.8	32148	3.9	5	
P	31	1	nogas	49.922	7.5	54213	1.8	10	CCB Main CR1 Failed
K	39	1	nogas	98.240	11.5	2090487	2.2	100	
Ca	43	1	nogas	15.287	59.0	263	21.9	100	
Ca	44	1	nogas	-14.818	-11.8	9926	2.8	100	
Ti	47	1	nogas	-0.033	-434.8	70	62.3	2.5	
V	51	1	nogas	-135.486	-1.9	274506	3.1	2.5	
Cr	52	1	nogas	-7.244	-3.6	13602	6.9	2.5	
Mn	55	1	nogas	0.043	132.4	5311	4.0	2.5	
Fe	56	1	nogas	8.942	15.5	241214	2.2	100	
Co	59	1	nogas	0.022	54.8	153	26.4	2.5	
Ni	60	1	nogas	-0.172	-38.4	127	40.5	2.5	
Cu	63	1	nogas	0.630	8.8	2797	3.1	2.5	
Zn	66	1	nogas	-0.042	-154.0	300	14.5	2.5	
As	75	1	nogas	-24.106	-10.8	62251	0.9	2.5	
Se	77	1	nogas	-140.303	-22.4	20476	3.8	2.5	
Se	82	1	nogas	0.581	146.2	27	78.1	2.5	
Sr	88	1	nogas	0.143	29.3	543	23.9	2.5	
Mo	95	1	nogas	0.140	78.3	87	73.3	2.5	
Ag	107	1	nogas	0.020	18.0	43	13.3	2.5	
Cd	111	1	nogas	-0.009	0.0	0	#DIV/0!	1	
Sn	118	1	nogas	0.109	39.7	247	14.2	5	
Sb	121	1	nogas	0.270	14.8	420	12.6	2.5	
Ba	137	1	nogas	0.080	96.5	50	52.9	2.5	
Tl	205	1	nogas	0.048	41.5	200	39.7	1	
Pb	208	1	nogas	0.066	18.6	233	15.1	2.5	
U	238	1	nogas	0.031	40.8	260	37.9	2.5	
Si	28	1	nogas	10.380	12.7	108678	2.2	5	CCB Main CR1 Failed
La	139	1	nogas	712.617	22.4	17	124.9	2.5	CCB Main CR1 Failed
Au	197	1	nogas	250.761	341.9	7	173.2	2.5	CCB Main CR1 Failed
Na	23	2	He	43.930	3.5	31808	1.4	100	
Mg	24	2	He	1.940	5.6	833	3.5	100	
Al	27	2	He	4.704	22.3	700	12.5	5	
K	39	2	He	77.743	24.9	48378	3.6	100	
Ca	43	2	He	1.850	1065.9	7	86.6	100	
Ca	44	2	He	29.015	57.7	240	33.1	100	
V	51	2	He	-5.017	-0.2	2306	0.9	2.5	
Cr	52	2	He	-0.093	-65.2	370	16.9	2.5	
Mn	55	2	He	0.065	46.0	147	10.4	2.5	
Fe	56	2	He	3.884	13.7	5061	8.4	100	
Co	59	2	He	0.028	62.9	37	63.0	2.5	
Ni	60	2	He	0.261	16.5	17	91.7	2.5	
Cu	63	2	He	0.486	38.5	1543	11.0	2.5	
Zn	66	2	He	-0.007	-2807.5	63	55.5	2.5	

Continuing Calibration Blank (CCB) Report

As	75	2	He	-0.858	-55.9	303	14.3	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Sb	121	2	He	0.358	35.1	130	33.5	2.5	
Se	78	2	He	1.052	16.6	7	15.7	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	354316	1.06	380614	93.09	70	125	
In	115	1	nogas	304167	0.98	319603	95.17	70	125	
Li	6	1	nogas	929004	0.72	991703	93.68	70	125	
Bi	209	1	nogas	400778	1.18	407184	98.43	70	125	
Ge	72	2	He	67381	1.06	70028	96.22	70	125	

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	089CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T14:48:32-05:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	20	433.01
B	11	1	nogas	13542	0.01
Na	23	1	nogas	106894	0.00
Mg	24	1	nogas	7203	0.25
Al	27	1	nogas	18666	0.00
P	31	1	nogas	52120	0.00
K	39	1	nogas	2014812	0.00
Ca	43	1	nogas	287	3.06
Ca	44	1	nogas	6481	0.04
Ti	47	1	nogas	87	62.92
V	51	1	nogas	384401	0.00
Cr	52	1	nogas	24196	0.01
Mn	55	1	nogas	5101	0.09
Fe	56	1	nogas	261080	0.00
Co	59	1	nogas	63	14.39
Ni	60	1	nogas	33	226.50
Cu	63	1	nogas	1400	0.18
Zn	66	1	nogas	87	20.34
As	75	1	nogas	65991	0.01
Se	77	1	nogas	21357	0.01
Se	82	1	nogas	27	353.90
Sr	88	1	nogas	297	3.99
Ag	107	1	nogas	10	1000.00
Cd	111	1	nogas	3	5196.15
Sn	118	1	nogas	93	76.43
Sb	121	1	nogas	60	48.11
Ba	137	1	nogas	20	250.00
Tl	205	1	nogas	7	1299.04
Li	7	1	nogas	60407	0.00
Si	28	1	nogas	72433	0.00
Na	23	2	He	16961	0.02
Mg	24	2	He	347	6.35
Al	27	2	He	347	5.66
K	39	2	He	43355	0.01
Ca	43	2	He	13	324.76
Ca	44	2	He	97	58.94
V	51	2	He	3168	0.05
Cr	52	2	He	337	2.84
Mn	55	2	He	53	113.01
Fe	56	2	He	1900	0.44
Co	59	2	He	20	661.44
Ni	60	2	He	27	429.62

Calibration Blank Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Cu	63	2	He	600	2.47
Zn	66	2	He	20	661.44
As	75	2	He	276	1.54
Sb	121	2	He	30	192.45
Se	78	2	He	5	1060.44

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Ge	72	1	nogas	354717	0.04
In	115	1	nogas	300202	0.84
Li	6	1	nogas	924026	0.37
Bi	209	1	nogas	402947	1.22
Ge	72	2	He	65798	2.93

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	090CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T14:50:48-05:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	089CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	7208	0.09
B	11	1	nogas	35577	0.01
Na	23	1	nogas	1531653	0.00
Mg	24	1	nogas	967355	0.00
Al	27	1	nogas	22238	0.08
P	31	1	nogas	55347	0.00
K	39	1	nogas	2637260	0.00
Ca	43	1	nogas	1457	0.64
Ca	44	1	nogas	27101	0.00
Ti	47	1	nogas	630	1.82
V	51	1	nogas	394751	0.00
Cr	52	1	nogas	30840	0.02
Mn	55	1	nogas	14129	0.03
Fe	56	1	nogas	1037897	0.00
Co	59	1	nogas	7088	0.07
Ni	60	1	nogas	1603	0.92
Cu	63	1	nogas	4767	0.14
Zn	66	1	nogas	1460	0.59
As	75	1	nogas	64288	0.01
Se	77	1	nogas	20910	0.01
Se	82	1	nogas	87	73.33
Sr	88	1	nogas	6265	0.06
Mo	95	1	nogas	1040	1.30
Ag	107	1	nogas	3140	0.19
Cd	111	1	nogas	790	1.12
Sn	118	1	nogas	1987	0.16
Sb	121	1	nogas	2557	0.45
Ba	137	1	nogas	783	0.90
Tl	205	1	nogas	7859	0.09
Pb	208	1	nogas	5908	0.06
Si	28	1	nogas	297023	0.00
La	139	1	nogas	17	207.85
Na	23	2	He	91926	0.00
Mg	24	2	He	42082	0.00
Al	27	2	He	327	6.10
K	39	2	He	63416	0.00
Ca	43	2	He	77	19.65
Ca	44	2	He	1110	0.37
V	51	2	He	4649	0.05
Cr	52	2	He	2197	0.79

Calibration Standard Report

Mn	55	2	He	1160	1.22
Fe	56	2	He	160934	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Co	59	2	He	2557	0.46
Ni	60	2	He	720	1.20
Cu	63	2	He	2560	0.32
Zn	66	2	He	400	0.62
As	75	2	He	434	2.05
Sb	121	2	He	573	1.44
Se	78	2	He	15	477.11

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	348324	16.48	354717	98.20	70	125	
In	115	1	nogas	295828	21.77	300202	98.54	70	125	
Li	6	1	nogas	921750	17.48	924026	99.75	70	125	
Bi	209	1	nogas	386951	19.42	402947	96.03	70	125	
Ge	72	2	He	66457	1.37	65798	101.00	70	125	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	091CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T14:53:03-05:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	089CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	18036	0.01
B	11	1	nogas	69448	0.00
Na	23	1	nogas	3709094	0.00
Mg	24	1	nogas	2487517	0.00
Al	27	1	nogas	37792	0.01
P	31	1	nogas	61453	0.00
K	39	1	nogas	3618599	0.00
Ca	43	1	nogas	3264	0.01
Ca	44	1	nogas	56267	0.00
Ti	47	1	nogas	1583	0.33
V	51	1	nogas	398367	0.00
Cr	52	1	nogas	40556	0.00
Mn	55	1	nogas	27451	0.01
Fe	56	1	nogas	2258016	0.00
Co	59	1	nogas	18283	0.00
Ni	60	1	nogas	3634	0.09
Cu	63	1	nogas	10366	0.01
Zn	66	1	nogas	3394	0.28
As	75	1	nogas	65800	0.00
Se	77	1	nogas	21714	0.01
Se	82	1	nogas	157	16.96
Sr	88	1	nogas	15634	0.03
Mo	95	1	nogas	2720	0.20
Ag	107	1	nogas	7729	0.10
Cd	111	1	nogas	1653	0.97
Sn	118	1	nogas	4762	0.20
Sb	121	1	nogas	6285	0.07
Ba	137	1	nogas	1800	0.30
Tl	205	1	nogas	18801	0.00
Pb	208	1	nogas	14694	0.00
Si	28	1	nogas	640487	0.00
La	139	1	nogas	17	749.40
Na	23	2	He	204487	0.00
Mg	24	2	He	103690	0.00
Al	27	2	He	573	2.88
K	39	2	He	92207	0.00
Ca	43	2	He	123	37.38
Ca	44	2	He	2410	0.34
V	51	2	He	6759	0.04
Cr	52	2	He	5214	0.09

Calibration Standard Report

Mn	55	2	He	2747	0.30
Fe	56	2	He	400044	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Co	59	2	He	6835	0.07
Ni	60	2	He	1623	0.61
Cu	63	2	He	5294	0.15
Zn	66	2	He	933	2.06
As	75	2	He	783	1.10
Sb	121	2	He	1590	0.57
Se	78	2	He	37	150.73

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	354195	1.22	354717	99.85	70	125	
In	115	1	nogas	303400	1.35	300202	101.07	70	125	
Li	6	1	nogas	915550	0.35	924026	99.08	70	125	
Bi	209	1	nogas	398804	2.65	402947	98.97	70	125	
Ge	72	2	He	66521	1.16	65798	101.10	70	125	

Calibration Standard Report

Sample Table

Sample Name	10/50/1000
Data File Name	092CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T14:55:18-05:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	089CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	37217	0.00
B	11	1	nogas	127819	0.00
Na	23	1	nogas	7347068	0.00
Mg	24	1	nogas	4987861	0.00
Al	27	1	nogas	64446	0.00
P	31	1	nogas	70632	0.00
K	39	1	nogas	5237510	0.00
Ca	43	1	nogas	6648	0.03
Ca	44	1	nogas	108990	0.00
Ti	47	1	nogas	3184	0.15
V	51	1	nogas	439067	0.00
Cr	52	1	nogas	61377	0.00
Mn	55	1	nogas	51239	0.01
Fe	56	1	nogas	4175060	0.00
Co	59	1	nogas	35312	0.00
Ni	60	1	nogas	7432	0.03
Cu	63	1	nogas	19097	0.02
Zn	66	1	nogas	6161	0.10
As	75	1	nogas	73096	0.00
Se	77	1	nogas	22772	0.01
Se	82	1	nogas	283	5.89
Sr	88	1	nogas	30704	0.01
Mo	95	1	nogas	5908	0.08
Ag	107	1	nogas	15921	0.02
Cd	111	1	nogas	3180	0.17
Sn	118	1	nogas	8952	0.02
Sb	121	1	nogas	12698	0.00
Ba	137	1	nogas	3550	0.22
Tl	205	1	nogas	37899	0.00
Pb	208	1	nogas	29481	0.01
Si	28	1	nogas	1279898	0.00
La	139	1	nogas	50	80.00
Na	23	2	He	406777	0.00
Mg	24	2	He	210946	0.00
Al	27	2	He	1020	0.73
K	39	2	He	141498	0.00
Ca	43	2	He	263	4.41
Ca	44	2	He	4711	0.10
V	51	2	He	11041	0.00
Cr	52	2	He	10610	0.04

Calibration Standard Report

Mn	55	2	He	5508	0.09
Fe	56	2	He	819070	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Co	59	2	He	13262	0.02
Ni	60	2	He	3604	0.10
Cu	63	2	He	10190	0.01
Zn	66	2	He	1660	0.25
As	75	2	He	1276	0.45
Sb	121	2	He	3194	0.34
Se	78	2	He	61	66.48

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	350858	1.44	354717	98.91	70	125	
In	115	1	nogas	302406	0.35	300202	100.73	70	125	
Li	6	1	nogas	928744	1.11	924026	100.51	70	125	
Bi	209	1	nogas	397221	1.35	402947	98.58	70	125	
Ge	72	2	He	67150	0.96	65798	102.05	70	125	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	093CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T14:57:33-05:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	089CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	359067	0.00
B	11	1	nogas	1172150	0.00
Na	23	1	nogas	69205529	0.00
Mg	24	1	nogas	47162972	0.00
Al	27	1	nogas	514211	0.00
P	31	1	nogas	181431	0.00
K	39	1	nogas	33556979	0.00
Ca	43	1	nogas	61451	0.00
Ca	44	1	nogas	1000011	0.00
Ti	47	1	nogas	29194	0.00
V	51	1	nogas	761519	0.00
Cr	52	1	nogas	364140	0.00
Mn	55	1	nogas	440609	0.00
Fe	56	1	nogas	37078409	0.00
Co	59	1	nogas	332329	0.00
Ni	60	1	nogas	68520	0.00
Cu	63	1	nogas	165516	0.00
Zn	66	1	nogas	59823	0.00
As	75	1	nogas	109087	0.00
Se	77	1	nogas	23834	0.01
Se	82	1	nogas	2474	0.12
Sr	88	1	nogas	292692	0.00
Mo	95	1	nogas	55432	0.00
Ag	107	1	nogas	149382	0.00
Cd	111	1	nogas	33142	0.01
Sn	118	1	nogas	82963	0.00
Sb	121	1	nogas	122841	0.00
Ba	137	1	nogas	34245	0.00
Tl	205	1	nogas	363807	0.00
Pb	208	1	nogas	281705	0.00
Si	28	1	nogas	11049072	0.00
La	139	1	nogas	97	58.94
Na	23	2	He	3748685	0.00
Mg	24	2	He	2073302	0.00
Al	27	2	He	8295	0.02
K	39	2	He	979114	0.00
Ca	43	2	He	2630	0.21
Ca	44	2	He	44789	0.01
V	51	2	He	76502	0.00
Cr	52	2	He	93990	0.00

Calibration Standard Report

Mn	55	2	He	52734	0.01
Fe	56	2	He	7702904	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Co	59	2	He	127681	0.00
Ni	60	2	He	33418	0.00
Cu	63	2	He	88823	0.00
Zn	66	2	He	17586	0.01
As	75	2	He	9190	0.03
Sb	121	2	He	30955	0.01
Se	78	2	He	571	0.66

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	342243	0.30	354717	96.48	70	125	
In	115	1	nogas	289383	2.15	300202	96.40	70	125	
Li	6	1	nogas	989772	2.77	924026	107.12	70	125	
Bi	209	1	nogas	376504	2.24	402947	93.44	70	125	
Ge	72	2	He	64260	1.60	65798	97.66	70	125	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	094CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T14:59:47-05:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	089CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	718687	0.00
B	11	1	nogas	2383514	0.00
Na	23	1	nogas	139922116	0.00
Mg	24	1	nogas	95613783	0.00
Al	27	1	nogas	1023887	0.00
P	31	1	nogas	314750	0.00
K	39	1	nogas	66106041	0.00
Ca	43	1	nogas	125552	0.00
Ca	44	1	nogas	2071035	0.00
Ti	47	1	nogas	59103	0.00
V	51	1	nogas	1182235	0.00
Cr	52	1	nogas	702495	0.00
Mn	55	1	nogas	871900	0.00
Fe	56	1	nogas	73332058	0.00
Co	59	1	nogas	665103	0.00
Ni	60	1	nogas	142053	0.00
Cu	63	1	nogas	327902	0.00
Zn	66	1	nogas	121666	0.00
As	75	1	nogas	156098	0.00
Se	77	1	nogas	28143	0.00
Se	82	1	nogas	5047	0.09
Sr	88	1	nogas	585703	0.00
Mo	95	1	nogas	108794	0.00
Ag	107	1	nogas	297563	0.00
Cd	111	1	nogas	65260	0.00
Sn	118	1	nogas	166529	0.00
Sb	121	1	nogas	251012	0.00
Ba	137	1	nogas	68245	0.00
Tl	205	1	nogas	743086	0.00
Pb	208	1	nogas	556981	0.00
Si	28	1	nogas	22027156	0.00
La	139	1	nogas	117	33.93
Na	23	2	He	7468693	0.00
Mg	24	2	He	4070525	0.00
Al	27	2	He	16685	0.02
K	39	2	He	2072403	0.00
Ca	43	2	He	5521	0.12
Ca	44	2	He	91395	0.00
V	51	2	He	152678	0.00
Cr	52	2	He	193932	0.00

Calibration Standard Report

Mn	55	2	He	106268	0.00
Fe	56	2	He	15512531	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Co	59	2	He	249965	0.00
Ni	60	2	He	67173	0.01
Cu	63	2	He	176826	0.00
Zn	66	2	He	33966	0.00
As	75	2	He	18100	0.01
Sb	121	2	He	66255	0.00
Se	78	2	He	1183	0.18

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	341216	0.91	354717	96.19	70	125	
In	115	1	nogas	287717	0.71	300202	95.84	70	125	
Li	6	1	nogas	1045597	1.92	924026	113.16	70	125	
Bi	209	1	nogas	372867	1.00	402947	92.53	70	125	
Ge	72	2	He	65510	1.26	65798	99.56	70	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICCV
Data File Name	096_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T15:04:40-05:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	108.274	1.541	370275	1.10	100	108.3	90	110	
B	11	1	nogas	531.059	1.285	1205653	1.20	500	106.2	90	110	
Na	23	1	nogas	10336.806	0.993	69923306	0.90	10000	103.4	90	110	
Mg	24	1	nogas	10421.743	0.851	48123329	0.96	10000	104.2	90	110	
Al	27	1	nogas	100.168	0.906	530002	1.43	100	100.2	90	110	
P	31	1	nogas	495.008	0.663	184455	0.26	500	99.0	90	110	
K	39	1	nogas	10054.395	0.135	34742437	0.60	10000	100.5	90	110	
Ca	43	1	nogas	9778.923	0.603	62393	0.92	10000	97.8	90	110	
Ca	44	1	nogas	9580.808	2.178	1006406	1.75	10000	95.8	90	110	
Ti	47	1	nogas	100.768	4.608	30292	3.96	100	100.8	90	110	
V	51	1	nogas	69.815	5.173	663904	1.89	100	69.8	90	110	ICV Main CR1 Failed
Cr	52	1	nogas	99.263	1.468	367423	0.66	100	99.3	90	110	
Mn	55	1	nogas	102.138	0.928	456582	1.42	100	102.1	90	110	
Fe	56	1	nogas	10074.522	0.497	37823725	0.99	10000	100.7	90	110	
Co	59	1	nogas	102.597	0.812	347610	0.65	100	102.6	90	110	
Ni	60	1	nogas	104.403	2.358	74960	1.89	100	104.4	90	110	
Cu	63	1	nogas	102.011	0.887	171272	0.47	100	102.0	90	110	
Zn	66	1	nogas	96.226	0.401	59445	0.32	100	96.2	90	110	
As	75	1	nogas	66.964	7.384	96200	1.83	100	67.0	90	110	ICV Main CR1 Failed
Se	77	1	nogas	-34.796	-27.859	19625	1.55	100	-34.8	90	110	ICV Main CR1 Failed
Se	82	1	nogas	97.368	8.999	2504	8.23	100	97.4	90	110	
Sr	88	1	nogas	100.378	0.688	299568	0.08	100	100.4	90	110	
Mo	95	1	nogas	100.073	1.121	55672	0.64	100	100.1	90	110	
Ag	107	1	nogas	95.542	0.913	144948	0.43	100	95.5	90	110	
Cd	111	1	nogas	102.130	2.234	34398	2.37	100	102.1	90	110	
Sn	118	1	nogas	99.426	2.670	85174	2.56	100	99.4	90	110	
Sb	121	1	nogas	97.053	2.346	123593	2.54	100	97.1	90	110	
Ba	137	1	nogas	101.386	1.762	35638	1.39	100	101.4	90	110	
Tl	205	1	nogas	101.621	0.329	393306	0.87	100	101.6	90	110	
Pb	208	1	nogas	99.571	0.465	290720	0.71	100	99.6	90	110	
U	238	1	nogas	94.348	1.100	729161	1.00	100	94.3	90	110	
Li	7	1	nogas	107.113	4.132	1159684	3.00	100	107.1	90	110	
Si	28	1	nogas	578.441	1.082	1365201	0.55	5000	11.6	90	110	ICV Main CR1 Failed
Ba	135	1	nogas	99.844	1.003	20249	0.98	100	99.8	90	110	
La	139	1	nogas	67.662	68.844	47	68.88	100	67.7	90	110	ICV Main CR1 Failed
Au	197	1	nogas	321.466	173.205	7	173.21	100	321.5	90	110	ICV Main CR1 Failed
Tl	203	1	nogas	101.461	1.266	161111	1.39	100	101.5	90	110	
Na	23	2	He	9697.583	3.081	3707555	1.39	10000	97.0	90	110	
Mg	24	2	He	9812.215	2.401	2047051	0.82	10000	98.1	90	110	
Al	27	2	He	97.995	1.145	8425	2.83	100	98.0	90	110	
K	39	2	He	9481.228	2.125	1010911	0.20	10000	94.8	90	110	
Ca	43	2	He	10577.599	4.413	2957	2.73	10000	105.8	90	110	
Ca	44	2	He	10002.428	4.665	46520	3.51	10000	100.0	90	110	
V	51	2	He	97.858	2.654	77613	0.79	100	97.9	90	110	
Cr	52	2	He	98.374	5.064	96892	3.22	100	98.4	90	110	
Mn	55	2	He	98.926	2.046	53613	1.53	100	98.9	90	110	
Fe	56	2	He	9731.426	1.787	7697054	1.39	10000	97.3	90	110	
Co	59	2	He	98.369	2.717	126095	1.39	100	98.4	90	110	
Ni	60	2	He	101.132	2.466	34677	0.63	100	101.1	90	110	
Cu	63	2	He	98.565	0.771	89486	1.48	100	98.6	90	110	
Zn	66	2	He	94.789	2.160	16605	3.81	100	94.8	90	110	
As	75	2	He	99.370	6.385	9326	5.51	100	99.4	90	110	
Sn	118	2	He	100.480	2.945	22592	1.14	100	100.5	90	110	
Sb	121	2	He	91.334	3.772	30501	4.90	100	91.3	90	110	
Se	78	2	He	98.713	8.183	594	9.04	100	98.7	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	347830	0.72	354717	98.06	70	125	
In	115	1	nogas	296425	0.38	300202	98.74	70	125	
Li	6	1	nogas	983616	1.10	924026	106.45	70	125	

Initial Calibration Verification (ICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Bi	209	1	nogas	390747	0.74	402947	96.97	70	125	
Ge	72	2	He	66638	1.82	65798	101.28	70	125	

Sample Report

Sample Table

Sample Name	LLCCV2
Data File Name	097SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T15:06:54-05:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	2.072	2.072	1.98	7001	0.03	2000	
B	11	1	nogas	19.206	19.206	6.60	55308	0.03	2000	
Na	23	1	nogas	231.338	231.338	1.74	1658300	0.01	200000	
Mg	24	1	nogas	213.851	213.851	3.15	987490	0.02	200000	
Al	27	1	nogas	0.202	0.202	31.92	19931	0.00	2000	
K	39	1	nogas	208.078	208.078	4.35	2735309	0.01	200000	
Ca	43	1	nogas	175.127	175.127	8.42	1437	12.19	200000	
Ca	44	1	nogas	178.509	178.509	2.41	25755	0.69	200000	
Ti	47	1	nogas	1.861	1.861	16.71	663	0.28	2000	
V	51	1	nogas	-25.100	-25.100	-5.67	282129	-0.01	2000	
Cr	52	1	nogas	-0.179	-0.179	-125.13	23813	0.00	2000	
Mn	55	1	nogas	1.977	1.977	2.77	14163	0.01	2000	
Fe	56	1	nogas	178.157	178.157	2.02	948607	0.02	200000	
Co	59	1	nogas	2.025	2.025	6.73	7135	0.03	2000	
Ni	60	1	nogas	2.485	2.485	11.24	1657	0.15	2000	
Cu	63	1	nogas	2.201	2.201	4.28	5194	0.04	2000	
Zn	66	1	nogas	2.475	2.475	10.87	1583	0.16	2000	
As	75	1	nogas	-28.003	-28.003	-10.31	53131	-0.05	2000	
Se	77	1	nogas	-104.233	-104.233	-3.01	17523	-0.59	2000	
Se	82	1	nogas	2.288	2.288	70.71	87	2.64	2000	
Sr	88	1	nogas	1.957	1.957	2.75	6315	0.03	2000	
Mo	95	1	nogas	1.977	1.977	5.47	1133	0.17	2000	
Ag	107	1	nogas	2.071	2.071	10.98	3247	0.06	2000	
Cd	111	1	nogas	2.298	2.298	7.06	793	0.29	2000	
Sn	118	1	nogas	2.067	2.067	3.79	1900	0.11	2000	
Sb	121	1	nogas	1.798	1.798	7.47	2420	0.07	2000	
Ba	137	1	nogas	1.876	1.876	29.27	693	0.27	2000	
Tl	205	1	nogas	1.970	1.970	2.56	7872	0.03	2000	
Pb	208	1	nogas	2.085	2.085	4.74	6278	0.03	2000	
U	238	1	nogas	1.822	1.822	1.64	14527	0.01	2000	
Si	28	1	nogas	106.828	106.828	1.49	319557	0.03	2000	
La	139	1	nogas	28.380	28.380	49.83	20	141.90	2000	
Au	197	1	nogas	313.755	313.755	173.21	7	4706.32	2000	
Na	23	2	He	203.402	203.402	2.47	96312	0.21	200000	
Mg	24	2	He	192.562	192.562	2.35	41263	0.47	200000	
Al	27	2	He	2.763	2.763	44.38	453	0.61	2000	
K	39	2	He	209.509	209.509	3.08	66511	0.32	200000	
Ca	43	2	He	176.476	176.476	104.83	63	278.65	200000	
Ca	44	2	He	181.657	181.657	9.78	960	18.92	200000	
V	51	2	He	1.125	1.125	23.14	4104	0.03	2000	
Cr	52	2	He	1.836	1.836	10.44	2184	0.08	2000	
Mn	55	2	He	2.092	2.092	9.48	1210	0.17	2000	

Sample Report

Fe	56	2	He	197.130	197.130	1.97	160673	0.12	200000	
Co	59	2	He	1.890	1.890	4.42	2487	0.08	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ni	60	2	He	1.939	1.939	8.58	757	0.26	2000	
Cu	63	2	He	1.767	1.767	17.10	2630	0.07	2000	
Zn	66	2	He	1.839	1.839	28.76	433	0.42	2000	
As	75	2	He	1.804	1.804	35.96	451	0.40	2000	
Sb	121	2	He	2.127	2.127	17.59	753	0.28	2000	
Se	78	2	He	1.605	1.605	70.14	15	10.94	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	358524	1.14	354717	101.07	70	125	
In	115	1	nogas	302596	0.20	300202	100.80	70	125	
Li	6	1	nogas	927611	0.66	924026	100.39	70	125	
Bi	209	1	nogas	403144	1.27	402947	100.05	70	125	
Ge	72	2	He	67849	1.36	65798	103.12	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLCCV5
Data File Name	098LICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T15:09:10-05:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	5.255	3.019	18119	1.80	5	105.1	70	130	
B	11	1	nogas	30.357	2.207	81276	0.88	25	121.4	70	130	
Na	23	1	nogas	501.095	0.974	3649441	0.91	500	100.2	70	130	
Mg	24	1	nogas	514.728	1.877	2491115	1.33	500	102.9	70	130	
Al	27	1	nogas	3.415	3.433	37198	1.84	5	68.3	70	130	LLICV Main CR1 Failed
P	31	1	nogas	31.912	9.342	62121	1.10	25	127.6	70	130	
K	39	1	nogas	468.883	4.227	3645715	2.02	500	93.8	70	130	
Ca	43	1	nogas	473.300	1.006	3420	0.51	500	94.7	70	130	
Ca	44	1	nogas	467.559	2.342	57394	1.71	500	93.5	70	130	
Ti	47	1	nogas	4.536	11.099	1503	10.31	5	90.7	70	130	
V	51	1	nogas	-18.768	-12.829	311901	2.97	5	-375.4	70	130	LLICV Main CR1 Failed
Cr	52	1	nogas	2.956	7.806	35335	2.05	5	59.1	70	130	LLICV Main CR1 Failed
Mn	55	1	nogas	4.759	5.671	27097	4.86	5	95.2	70	130	
Fe	56	1	nogas	498.235	0.069	2199514	0.45	500	99.6	70	130	
Co	59	1	nogas	5.007	4.204	17712	3.70	5	100.1	70	130	
Ni	60	1	nogas	5.170	10.083	3684	10.54	5	103.4	70	130	
Cu	63	1	nogas	4.767	2.225	9689	1.98	5	95.3	70	130	
Zn	66	1	nogas	4.882	5.416	3147	5.90	5	97.6	70	130	
As	75	1	nogas	-20.438	-25.510	57340	4.22	5	-408.8	70	130	LLICV Main CR1 Failed
Se	77	1	nogas	-90.673	-31.821	18220	6.07	5	-1813.5	70	130	LLICV Main CR1 Failed
Se	82	1	nogas	3.629	11.635	123	9.36	5	72.6	70	130	
Sr	88	1	nogas	4.970	1.677	15721	1.82	5	99.4	70	130	
Mo	95	1	nogas	4.989	9.215	2887	8.79	5	99.8	70	130	
Ag	107	1	nogas	4.998	3.870	7899	3.55	5	100.0	70	130	
Cd	111	1	nogas	4.425	9.061	1587	8.32	5	88.5	70	130	
Sn	118	1	nogas	4.649	0.358	4327	1.70	5	93.0	70	130	
Sb	121	1	nogas	4.702	3.111	6288	2.89	5	94.0	70	130	
Ba	137	1	nogas	4.653	6.795	1760	8.60	5	93.1	70	130	
Tl	205	1	nogas	4.796	2.465	19669	1.72	5	95.9	70	130	
Pb	208	1	nogas	4.882	1.843	15101	1.42	5	97.6	70	130	
U	238	1	nogas	4.391	2.551	35945	1.84	5	87.8	70	130	
Li	7	1	nogas	5.439	4.306	118456	0.56	5	108.8	70	130	
Si	28	1	nogas	244.809	2.006	643819	1.67	25	979.2	70	130	LLICV Main CR1 Failed
La	139	1	nogas	22.376	123.783	17	124.90	5	447.5	70	130	LLICV Main CR1 Failed
Au	197	1	nogas	0.000	#DIV/0!	0	#DIV/0!	5	0.0	70	130	LLICV Main CR1 Failed
Na	23	2	He	487.936	2.535	207878	1.02	500	97.6	70	130	
Mg	24	2	He	488.330	0.481	104754	1.27	500	97.7	70	130	
Al	27	2	He	4.342	34.440	590	20.34	5	86.8	70	130	
K	39	2	He	474.073	4.834	94579	2.18	500	94.8	70	130	
Ca	43	2	He	442.177	20.809	140	18.90	500	88.4	70	130	
Ca	44	2	He	480.482	5.753	2387	5.58	500	96.1	70	130	
V	51	2	He	3.822	5.788	6231	1.22	5	76.4	70	130	
Cr	52	2	He	4.792	7.136	5167	4.98	5	95.8	70	130	
Mn	55	2	He	5.026	10.154	2844	9.86	5	100.5	70	130	
Fe	56	2	He	494.949	0.648	403056	1.64	500	99.0	70	130	
Co	59	2	He	5.117	5.374	6738	4.09	5	102.3	70	130	
Ni	60	2	He	4.621	7.650	1700	5.61	5	92.4	70	130	
Cu	63	2	He	4.680	6.031	5331	6.49	5	93.6	70	130	
Zn	66	2	He	4.770	6.780	960	7.51	5	95.4	70	130	
As	75	2	He	4.544	8.684	710	5.29	5	90.9	70	130	
Sb	121	2	He	4.995	7.005	1737	5.22	5	99.9	70	130	
Se	78	2	He	5.077	20.598	36	19.25	5	101.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	361916	0.51	354717	102.03	70	125	
In	115	1	nogas	315077	1.93	300202	104.95	70	125	
Li	6	1	nogas	948281	2.50	924026	102.62	70	125	
Bi	209	1	nogas	413974	0.79	402947	102.74	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Ge	72	2	He	68281	1.74	65798	103.77	70	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICCB
Data File Name	099_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T15:11:26-05:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	0.014	9.8	67	8.7	1	
B	11	1	nogas	3.574	13.6	21633	2.6	10	
Na	23	1	nogas	3.536	23.6	131459	4.0	100	
Mg	24	1	nogas	0.403	25.3	9104	4.8	100	
Al	27	1	nogas	-0.042	-155.2	18506	3.4	5	
P	31	1	nogas	5.303	61.1	53728	0.9	10	
K	39	1	nogas	-2.152	-510.7	2013246	0.3	100	
Ca	43	1	nogas	-11.402	-145.9	213	50.1	100	
Ca	44	1	nogas	2.497	110.2	6765	3.2	100	
Ti	47	1	nogas	0.051	505.0	103	78.2	2.5	
V	51	1	nogas	-17.339	-9.3	312611	2.1	2.5	
Cr	52	1	nogas	-1.374	-4.0	19404	2.2	2.5	
Mn	55	1	nogas	-0.043	-152.1	4917	4.9	2.5	
Fe	56	1	nogas	-15.277	-10.0	203545	2.0	100	
Co	59	1	nogas	0.006	151.1	83	36.7	2.5	
Ni	60	1	nogas	0.328	21.1	57	88.8	2.5	
Cu	63	1	nogas	-0.036	-202.1	1343	10.9	2.5	
Zn	66	1	nogas	0.145	22.4	100	20.0	2.5	
As	75	1	nogas	-18.587	-16.3	57272	3.9	2.5	
Se	77	1	nogas	-65.024	-24.2	18911	4.8	2.5	
Se	82	1	nogas	0.389	472.4	37	128.9	2.5	
Sr	88	1	nogas	0.002	1697.7	303	38.1	2.5	
Mo	95	1	nogas	0.006	173.2	3	173.2	2.5	
Ag	107	1	nogas	0.006	101.0	20	50.0	2.5	
Cd	111	1	nogas	-0.010	0.0	0	#DIV/0!	1	
Sn	118	1	nogas	0.064	44.5	153	16.4	5	
Sb	121	1	nogas	0.036	151.8	107	65.8	2.5	
Ba	137	1	nogas	-0.010	-300.5	17	69.3	2.5	
Tl	205	1	nogas	0.002	170.7	13	86.6	1	
Pb	208	1	nogas	0.036	20.7	110	18.2	2.5	
U	238	1	nogas	0.004	85.5	30	88.2	2.5	
Si	28	1	nogas	2.371	37.5	78056	1.4	5	
La	139	1	nogas	0.000	#DIV/0!	0	#DIV/0!	2.5	
Au	197	1	nogas	150.035	173.2	3	173.2	2.5	ICB Main CR1 Failed
Na	23	2	He	3.445	244.3	18446	4.5	100	
Mg	24	2	He	0.311	374.9	400	41.6	100	
Al	27	2	He	2.359	74.0	403	20.0	5	
K	39	2	He	21.984	330.4	46149	0.7	100	
Ca	43	2	He	-28.020	-127.4	7	173.2	100	
Ca	44	2	He	5.995	160.6	133	48.8	100	
V	51	2	He	-0.625	-78.4	2703	3.1	2.5	
Cr	52	2	He	-0.003	-1239.1	340	10.2	2.5	
Mn	55	2	He	-0.011	-482.0	47	49.5	2.5	
Fe	56	2	He	0.568	85.5	2374	1.0	100	

Initial Calibration Blank (ICB) Report

Co	59	2	He	0.018	153.2	40	66.1	2.5	
Ni	60	2	He	-0.134	-14.4	33	17.3	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Cu	63	2	He	-0.454	-34.7	587	14.5	2.5	
Zn	66	2	He	-0.334	-92.7	43	104.1	2.5	
As	75	2	He	0.022	2750.8	280	7.1	2.5	
Sb	121	2	He	0.029	262.0	40	66.1	2.5	
Se	78	2	He	-0.260	-49.3	3	34.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	355771	1.58	354717	100.30	70	125	
In	115	1	nogas	308074	1.28	300202	102.62	70	125	
Li	6	1	nogas	940443	2.94	924026	101.78	70	125	
Bi	209	1	nogas	405583	2.86	402947	100.65	70	125	
Ge	72	2	He	67694	15.70	65798	102.88	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	104_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T15:27:18-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	100.553	2.614	362896	0.67	100	100.6	90	110	
B	11	1	nogas	506.540	2.264	1192887	2.05	500	101.3	90	110	
Na	23	1	nogas	9977.296	1.392	69550754	1.00	10000	99.8	90	110	
Mg	24	1	nogas	10031.672	1.360	47732829	1.03	10000	100.3	90	110	
Al	27	1	nogas	99.535	1.388	536292	1.48	100	99.5	90	110	
P	31	1	nogas	490.281	2.673	186510	2.33	500	98.1	90	110	
K	39	1	nogas	9795.757	1.743	34511645	1.25	10000	98.0	90	110	
Ca	43	1	nogas	9704.983	1.370	63042	1.04	10000	97.0	90	110	
Ca	44	1	nogas	9457.109	0.790	1011527	0.59	10000	94.6	90	110	
Ti	47	1	nogas	98.783	3.342	30242	3.56	100	98.8	90	110	
V	51	1	nogas	91.744	2.034	767719	0.59	100	91.7	90	110	
Cr	52	1	nogas	98.350	0.717	370872	0.54	100	98.4	90	110	
Mn	55	1	nogas	98.952	0.973	450480	0.56	100	99.0	90	110	
Fe	56	1	nogas	9891.320	1.211	37811575	1.01	10000	98.9	90	110	
Co	59	1	nogas	98.714	1.081	340507	0.66	100	98.7	90	110	
Ni	60	1	nogas	99.649	2.723	72834	2.39	100	99.6	90	110	
Cu	63	1	nogas	98.719	1.769	168791	1.55	100	98.7	90	110	
Zn	66	1	nogas	96.187	3.260	60492	2.84	100	96.2	90	110	
As	75	1	nogas	101.424	1.661	114445	0.29	100	101.4	90	110	
Se	77	1	nogas	86.909	6.013	24668	0.89	100	86.9	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	100.080	1.097	2620	1.38	100	100.1	90	110	
Sr	88	1	nogas	97.588	1.429	296517	1.12	100	97.6	90	110	
Mo	95	1	nogas	98.408	0.340	55739	0.49	100	98.4	90	110	
Ag	107	1	nogas	98.820	1.567	152641	1.71	100	98.8	90	110	
Cd	111	1	nogas	97.105	1.584	33436	1.51	100	97.1	90	110	
Sn	118	1	nogas	96.262	1.399	84313	1.51	100	96.3	90	110	
Sb	121	1	nogas	94.667	2.406	122727	1.98	100	94.7	90	110	
Ba	137	1	nogas	95.481	2.046	34315	2.03	100	95.5	90	110	
Tl	205	1	nogas	97.895	2.507	378499	0.53	100	97.9	90	110	
Pb	208	1	nogas	97.068	0.982	283190	1.26	100	97.1	90	110	
U	238	1	nogas	94.365	1.670	728689	1.39	100	94.4	90	110	
Li	7	1	nogas	99.605	0.423	1149284	1.79	100	99.6	90	110	
Si	28	1	nogas	4890.681	1.449	11213138	1.65	5000	97.8	90	110	
Ba	135	1	nogas	96.888	1.034	20089	0.81	100	96.9	90	110	
La	139	1	nogas	118.134	24.973	83	24.98	100	118.1	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	975.922	101.189	20	100.00	100	975.9	90	110	CCV Main CR1-2 Failed
Tl	203	1	nogas	98.329	1.737	156006	1.41	100	98.3	90	110	
Na	23	2	He	9608.580	2.054	3735720	1.66	10000	96.1	90	110	
Mg	24	2	He	9875.578	0.833	2094959	0.41	10000	98.8	90	110	
Al	27	2	He	102.440	3.709	8946	4.78	100	102.4	90	110	
K	39	2	He	9204.691	0.570	999318	1.63	10000	92.0	90	110	
Ca	43	2	He	9009.577	3.808	2564	3.60	10000	90.1	90	110	
Ca	44	2	He	9620.638	2.531	45518	3.47	10000	96.2	90	110	
V	51	2	He	97.464	0.736	78619	0.96	100	97.5	90	110	
Cr	52	2	He	94.736	1.600	94925	1.53	100	94.7	90	110	
Mn	55	2	He	97.067	1.301	53489	1.59	100	97.1	90	110	
Fe	56	2	He	9764.302	0.655	7852529	1.23	10000	97.6	90	110	
Co	59	2	He	98.671	1.903	128604	0.91	100	98.7	90	110	
Ni	60	2	He	96.942	1.720	33802	0.87	100	96.9	90	110	
Cu	63	2	He	97.492	0.740	89998	1.25	100	97.5	90	110	
Zn	66	2	He	93.665	3.387	16675	2.64	100	93.7	90	110	
As	75	2	He	99.333	2.684	9479	1.50	100	99.3	90	110	
Sb	121	2	He	93.070	4.085	31600	5.23	100	93.1	90	110	
Se	78	2	He	82.719	14.803	507	14.78	100	82.7	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
Ge	72	1	nogas	354123	0.42	354717	99.83	70	125	
In	115	1	nogas	303051	0.22	300202	100.95	70	125	
Li	6	1	nogas	993654	1.94	924026	107.54	70	125	
Bi	209	1	nogas	390477	1.95	402947	96.91	70	125	

Ge	72	2	He	67746	1.19	65798	102.96	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	105_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T15:29:31-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	0.032	44.5	130	35.3	1	
B	11	1	nogas	7.621	24.2	30913	10.3	10	
Na	23	1	nogas	14.646	23.9	213832	8.1	100	
Mg	24	1	nogas	1.094	23.8	12740	7.6	100	
Al	27	1	nogas	-0.493	-13.4	16591	2.0	5	
P	31	1	nogas	2.171	119.0	54340	2.3	10	
K	39	1	nogas	4.105	603.5	2089548	0.5	100	
Ca	43	1	nogas	-17.789	-30.4	177	19.9	100	
Ca	44	1	nogas	-1.701	-112.6	6491	0.8	100	
Ti	47	1	nogas	0.033	246.8	100	26.5	2.5	
V	51	1	nogas	-9.415	-16.2	355516	1.9	2.5	
Cr	52	1	nogas	-1.156	-33.8	20705	3.5	2.5	
Mn	55	1	nogas	-0.025	-335.1	5138	5.4	2.5	
Fe	56	1	nogas	-15.155	-16.9	209682	4.5	100	
Co	59	1	nogas	0.021	58.0	140	28.6	2.5	
Ni	60	1	nogas	0.349	22.7	73	78.7	2.5	
Cu	63	1	nogas	0.146	64.3	1700	11.5	2.5	
Zn	66	1	nogas	0.105	44.8	77	37.7	2.5	
As	75	1	nogas	-9.676	-34.7	63235	1.1	2.5	
Se	77	1	nogas	-30.814	-67.2	20789	4.3	2.5	
Se	82	1	nogas	-0.900	-24.5	3	173.2	2.5	
Sr	88	1	nogas	-0.006	-393.0	287	29.7	2.5	
Mo	95	1	nogas	0.075	37.6	43	35.3	2.5	
Ag	107	1	nogas	0.027	25.5	53	21.7	2.5	
Cd	111	1	nogas	0.008	393.2	7	173.2	1	
Sn	118	1	nogas	0.155	21.9	240	8.3	5	
Sb	121	1	nogas	0.070	79.7	153	45.8	2.5	
Ba	137	1	nogas	0.060	116.8	43	58.1	2.5	
Tl	205	1	nogas	0.039	97.0	167	93.4	1	
Pb	208	1	nogas	0.066	27.8	210	31.2	2.5	
U	238	1	nogas	0.028	44.5	233	43.1	2.5	
Si	28	1	nogas	11.699	24.6	102054	3.4	5	CCB Main CR1 Failed
La	139	1	nogas	9.288	173.2	7	173.2	2.5	CCB Main CR1 Failed
Au	197	1	nogas	154.708	173.2	3	173.2	2.5	CCB Main CR1 Failed
Na	23	2	He	17.219	14.5	23465	3.0	100	
Mg	24	2	He	0.639	54.8	480	15.0	100	
Al	27	2	He	1.204	79.1	310	24.4	5	
K	39	2	He	47.310	28.7	48244	2.8	100	
Ca	43	2	He	12.053	459.5	17	91.7	100	
Ca	44	2	He	-6.758	-19.5	67	8.7	100	
V	51	2	He	-0.225	-24.7	2971	2.4	2.5	
Cr	52	2	He	0.017	155.0	353	7.1	2.5	
Mn	55	2	He	-0.038	-54.8	33	34.6	2.5	
Fe	56	2	He	0.780	38.9	2517	9.8	100	
Co	59	2	He	0.011	151.0	33	62.4	2.5	
Ni	60	2	He	-0.192	-8.7	13	43.3	2.5	

Continuing Calibration Blank (CCB) Report

Cu	63	2	He	-0.125	-119.2	877	15.3	2.5	
Zn	66	2	He	-0.282	-23.3	57	20.4	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
As	75	2	He	0.241	49.0	298	3.4	2.5	
Sb	121	2	He	0.060	98.3	50	40.0	2.5	
Se	78	2	He	-0.346	-113.5	3	86.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	365761	3.65	354717	103.11	70	125	
In	115	1	nogas	317207	5.28	300202	105.66	70	125	
Li	6	1	nogas	953792	3.15	924026	103.22	70	125	
Bi	209	1	nogas	420630	3.98	402947	104.39	70	125	
Ge	72	2	He	65905	1.05	65798	100.16	70	125	

Sample Report

Sample Table

Sample Name	MBLKF1-132023
Data File Name	107SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T15:42:42-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	0.000	0.000	1532.12	23	0.00	2000	
B	11	1	nogas	0.490	0.490	111.27	15810	0.00	2000	
Na	23	1	nogas	21.479	21.479	4.50	267383	0.01	200000	
Mg	24	1	nogas	13.487	13.487	2.10	73589	0.02	200000	
Al	27	1	nogas	2.818	2.818	7.13	35384	0.01	2000	
K	39	1	nogas	8.450	8.450	125.18	2167772	0.00	200000	
Ca	43	1	nogas	-10.780	-10.780	-94.91	230	-4.69	200000	
Ca	44	1	nogas	-1.646	-1.646	-225.01	6695	-0.02	200000	
Ti	47	1	nogas	0.004	0.004	1112.05	93	0.00	2000	
V	51	1	nogas	9.396	9.396	8.99	449736	0.00	2000	
Cr	52	1	nogas	0.872	0.872	32.36	28940	0.00	2000	
Mn	55	1	nogas	0.296	0.296	22.06	6828	0.00	2000	
Fe	56	1	nogas	-9.690	-9.690	-21.90	238004	0.00	200000	
Co	59	1	nogas	0.006	0.006	84.94	90	0.01	2000	
Ni	60	1	nogas	0.362	0.362	8.88	87	0.42	2000	
Cu	63	1	nogas	-0.098	-0.098	-66.55	1310	-0.01	2000	
Zn	66	1	nogas	2.349	2.349	5.52	1580	0.15	2000	
As	75	1	nogas	5.841	5.841	97.92	73000	0.01	2000	
Se	77	1	nogas	78.512	78.512	30.83	25880	0.30	2000	
Se	82	1	nogas	0.184	0.184	229.98	33	0.55	2000	
Sr	88	1	nogas	-0.014	-0.014	-60.21	270	-0.01	2000	
Mo	95	1	nogas	0.017	0.017	99.43	10	0.17	2000	
Ag	107	1	nogas	0.002	0.002	210.53	13	0.01	2000	
Cd	111	1	nogas	0.018	0.018	156.69	10	0.18	2000	
Sn	118	1	nogas	0.084	0.084	90.40	180	0.05	2000	
Sb	121	1	nogas	0.092	0.092	57.90	190	0.05	2000	
Ba	137	1	nogas	0.196	0.196	62.61	97	0.20	2000	
Tl	205	1	nogas	0.004	0.004	94.76	23	0.02	2000	
Pb	208	1	nogas	0.008	0.008	57.71	27	0.03	2000	
U	238	1	nogas	0.001	0.001	99.44	10	0.01	2000	
Si	28	1	nogas	78.779	78.779	3.01	267626	0.03	2000	
La	139	1	nogas	13.325	13.325	100.69	10	133.25	2000	
Au	197	1	nogas	0.000	0.000	#DIV/0!	0	#DIV/0!	2000	
Na	23	2	He	20.505	20.505	7.20	26493	0.08	200000	
Mg	24	2	He	12.267	12.267	2.71	3087	0.40	200000	
Al	27	2	He	3.720	3.720	56.96	557	0.67	2000	
K	39	2	He	10.385	10.385	89.13	47733	0.02	200000	
Ca	43	2	He	-48.623	-48.623	0.00	0	#DIV/0!	200000	
Ca	44	2	He	3.754	3.754	316.37	123	3.04	200000	
V	51	2	He	0.484	0.484	16.51	3758	0.01	2000	

Sample Report

Cr	52	2	He	0.056	0.056	80.78	420	0.01	2000	
Mn	55	2	He	0.550	0.550	14.74	373	0.15	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Fe	56	2	He	0.619	0.619	18.25	2564	0.02	200000	
Co	59	2	He	0.007	0.007	220.93	30	0.02	2000	
Ni	60	2	He	-0.085	-0.085	-131.73	53	-0.16	2000	
Cu	63	2	He	-0.327	-0.327	-36.56	747	-0.04	2000	
Zn	66	2	He	1.412	1.412	3.03	373	0.38	2000	
As	75	2	He	-0.086	-0.086	-379.77	288	-0.03	2000	
Sb	121	2	He	0.032	0.032	208.94	43	0.07	2000	
Se	78	2	He	0.149	0.149	8.03	6	2.48	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	376439	0.93	354717	106.12	70	125	
In	115	1	nogas	324054	1.06	300202	107.95	70	125	
Li	6	1	nogas	1000299	0.43	924026	108.25	70	125	
Bi	209	1	nogas	428808	0.85	402947	106.42	70	125	
Ge	72	2	He	70666	1.26	65798	107.40	70	125	

Sample Report

Sample Table

Sample Name	MBLK-132023
Data File Name	108SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T15:44:56-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	0.005	0.005	146.28	40	0.01	2000	
B	11	1	nogas	-0.158	-0.158	-306.73	14266	0.00	2000	
Na	23	1	nogas	5.566	5.566	15.26	153045	0.00	200000	
Mg	24	1	nogas	13.480	13.480	5.41	73324	0.02	200000	
Al	27	1	nogas	2.638	2.638	9.48	34636	0.01	2000	
K	39	1	nogas	-9.249	-9.249	-95.34	2120371	0.00	200000	
Ca	43	1	nogas	-1.425	-1.425	-648.31	297	-0.48	200000	
Ca	44	1	nogas	-7.290	-7.290	-33.41	6098	-0.12	200000	
Ti	47	1	nogas	-0.028	-0.028	-332.08	83	-0.03	2000	
V	51	1	nogas	6.469	6.469	32.43	439806	0.00	2000	
Cr	52	1	nogas	0.609	0.609	30.38	28156	0.00	2000	
Mn	55	1	nogas	0.082	0.082	62.54	5848	0.00	2000	
Fe	56	1	nogas	-8.917	-8.917	-16.46	242779	0.00	200000	
Co	59	1	nogas	0.002	0.002	544.05	73	0.00	2000	
Ni	60	1	nogas	0.387	0.387	13.33	107	0.36	2000	
Cu	63	1	nogas	-0.183	-0.183	-27.96	1163	-0.02	2000	
Zn	66	1	nogas	1.303	1.303	22.61	887	0.15	2000	
As	75	1	nogas	5.516	5.516	48.40	73371	0.01	2000	
Se	77	1	nogas	43.636	43.636	29.19	24625	0.18	2000	
Se	82	1	nogas	0.653	0.653	276.88	47	1.40	2000	
Sr	88	1	nogas	-0.048	-0.048	-18.89	160	-0.03	2000	
Mo	95	1	nogas	0.011	0.011	173.21	7	0.17	2000	
Ag	107	1	nogas	0.006	0.006	107.39	20	0.03	2000	
Cd	111	1	nogas	0.018	0.018	155.87	10	0.18	2000	
Sn	118	1	nogas	0.022	0.022	310.43	120	0.02	2000	
Sb	121	1	nogas	0.074	0.074	27.62	167	0.04	2000	
Ba	137	1	nogas	0.040	0.040	164.03	37	0.11	2000	
Tl	205	1	nogas	0.001	0.001	337.27	10	0.01	2000	
Pb	208	1	nogas	0.009	0.009	0.71	30	0.03	2000	
U	238	1	nogas	0.000	0.000	173.21	3	0.01	2000	
Si	28	1	nogas	75.042	75.042	2.67	260402	0.03	2000	
La	139	1	nogas	13.471	13.471	100.77	10	134.71	2000	
Au	197	1	nogas	0.000	0.000	#DIV/0!	0	#DIV/0!	2000	
Na	23	2	He	6.246	6.246	26.28	20609	0.03	200000	
Mg	24	2	He	11.278	11.278	4.20	2850	0.40	200000	
Al	27	2	He	3.385	3.385	12.53	523	0.65	2000	
K	39	2	He	4.621	4.621	124.69	46814	0.01	200000	
Ca	43	2	He	-37.367	-37.367	-52.18	3	-1121.01	200000	
Ca	44	2	He	-2.194	-2.194	-61.25	93	-2.35	200000	
V	51	2	He	0.498	0.498	14.06	3744	0.01	2000	
Cr	52	2	He	0.066	0.066	126.71	427	0.02	2000	
Mn	55	2	He	0.379	0.379	7.53	273	0.14	2000	

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Fe	56	2	He	1.527	1.527	9.47	3304	0.05	200000	
Co	59	2	He	0.009	0.009	122.69	33	0.03	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ni	60	2	He	-0.194	-0.194	-8.43	13	-1.46	2000	
Cu	63	2	He	-0.454	-0.454	-35.35	623	-0.07	2000	
Zn	66	2	He	0.534	0.534	27.51	210	0.25	2000	
As	75	2	He	0.132	0.132	230.10	307	0.04	2000	
Sb	121	2	He	0.042	0.042	206.95	47	0.09	2000	
Se	78	2	He	-0.483	-0.483	-65.29	2	-24.13	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	379099	0.39	354717	106.87	70	125	
In	115	1	nogas	319963	1.15	300202	106.58	70	125	
Li	6	1	nogas	1000645	3.85	924026	108.29	70	125	
Bi	209	1	nogas	428488	0.71	402947	106.34	70	125	
Ge	72	2	He	70212	0.94	65798	106.71	70	125	

Sample Report

Sample Table

Sample Name	LCS-132023
Data File Name	109SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T15:47:11-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	52.580	52.580	13.91	187439	0.03	2000	
B	11	1	nogas	498.775	498.775	13.38	1160873	0.04	2000	
Na	23	1	nogas	5154.311	5154.311	19.48	34815206	0.01	200000	
Mg	24	1	nogas	5281.867	5281.867	20.51	24294054	0.02	200000	
Al	27	1	nogas	99.164	99.164	18.03	526790	0.02	2000	
K	39	1	nogas	4942.451	4942.451	17.22	18185761	0.03	200000	
Ca	43	1	nogas	4862.904	4862.904	20.46	31214	15.58	200000	
Ca	44	1	nogas	4842.079	4842.079	16.89	514050	0.94	200000	
Ti	47	1	nogas	145.711	145.711	17.43	43933	0.33	2000	
V	51	1	nogas	55.483	55.483	43.39	607871	0.01	2000	
Cr	52	1	nogas	50.545	50.545	18.78	199651	0.03	2000	
Mn	55	1	nogas	49.334	49.334	16.06	224292	0.02	2000	
Fe	56	1	nogas	4992.510	4992.510	17.25	18950681	0.03	200000	
Co	59	1	nogas	50.146	50.146	18.24	170429	0.03	2000	
Ni	60	1	nogas	51.464	51.464	18.29	36965	0.14	2000	
Cu	63	1	nogas	52.110	52.110	16.18	88611	0.06	2000	
Zn	66	1	nogas	50.657	50.657	17.72	31405	0.16	2000	
As	75	1	nogas	57.016	57.016	53.80	92009	0.06	2000	
Se	77	1	nogas	87.533	87.533	137.45	24311	0.36	2000	
Se	82	1	nogas	57.602	57.602	10.45	1513	3.81	2000	
Sr	88	1	nogas	100.251	100.251	16.44	300575	0.03	2000	
Mo	95	1	nogas	49.982	49.982	19.30	27859	0.18	2000	
Ag	107	1	nogas	46.943	46.943	16.07	71577	0.07	2000	
Cd	111	1	nogas	51.836	51.836	21.67	17165	0.30	2000	
Sn	118	1	nogas	97.735	97.735	19.56	82498	0.12	2000	
Sb	121	1	nogas	47.892	47.892	15.93	61327	0.08	2000	
Ba	137	1	nogas	50.979	50.979	22.54	17599	0.29	2000	
Tl	205	1	nogas	48.850	48.850	18.55	184464	0.03	2000	
Pb	208	1	nogas	48.909	48.909	17.82	139456	0.04	2000	
U	238	1	nogas	93.150	93.150	18.36	702546	0.01	2000	
Si	28	1	nogas	4952.820	4952.820	16.41	11206114	0.04	2000	>LDR
La	139	1	nogas	56.241	56.241	27.25	40	140.60	2000	
Au	197	1	nogas	0.000	0.000	#DIV/0!	0	#DIV/0!	2000	
Na	23	2	He	4888.384	4888.384	0.98	1951419	0.25	200000	
Mg	24	2	He	4791.140	4791.140	1.01	1039021	0.46	200000	
Al	27	2	He	103.268	103.268	1.10	9212	1.12	2000	
K	39	2	He	4489.285	4489.285	1.74	521472	0.86	200000	
Ca	43	2	He	4895.472	4895.472	7.31	1430	342.32	200000	
Ca	44	2	He	4807.173	4807.173	1.57	23292	20.64	200000	
V	51	2	He	47.443	47.443	0.82	40807	0.12	2000	
Cr	52	2	He	45.771	45.771	4.19	47051	0.10	2000	
Mn	55	2	He	47.646	47.646	1.58	26864	0.18	2000	
Fe	56	2	He	4858.537	4858.537	1.27	3994287	0.12	200000	
Co	59	2	He	49.439	49.439	1.43	65874	0.08	2000	

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Ni	60	2	He	48.531	48.531	2.71	17339	0.28	2000	
Cu	63	2	He	48.876	48.876	2.89	46634	0.10	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	45.790	45.790	4.89	8389	0.55	2000	
As	75	2	He	50.189	50.189	4.25	5040	1.00	2000	
Sb	121	2	He	45.980	45.980	4.09	15964	0.29	2000	
Se	78	2	He	49.627	49.627	15.22	313	15.87	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	354864	14.01	354717	100.04	70	125	
In	115	1	nogas	298957	17.83	300202	99.59	70	125	
Li	6	1	nogas	991985	11.84	924026	107.35	70	125	
Bi	209	1	nogas	388983	16.12	402947	96.53	70	125	
Ge	72	2	He	69238	0.47	65798	105.23	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	116_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:03:03-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	101.042	1.226	378613	0.24	100	101.0	90	110	
B	11	1	nogas	509.193	0.476	1244779	0.81	500	101.8	90	110	
Na	23	1	nogas	9834.763	2.780	72895225	1.68	10000	98.3	90	110	
Mg	24	1	nogas	9910.533	1.552	50143910	0.70	10000	99.1	90	110	
Al	27	1	nogas	97.563	1.180	565153	0.46	100	97.6	90	110	
P	31	1	nogas	462.293	0.879	192133	0.85	500	92.5	90	110	
K	39	1	nogas	9638.114	2.529	36515762	1.68	10000	96.4	90	110	
Ca	43	1	nogas	9787.897	2.677	68304	2.02	10000	97.9	90	110	
Ca	44	1	nogas	9373.563	0.546	1077261	0.25	10000	93.7	90	110	
Ti	47	1	nogas	98.133	0.754	32279	1.30	100	98.1	90	110	
V	51	1	nogas	115.065	3.276	929722	1.70	100	115.1	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	99.118	1.076	401385	1.11	100	99.1	90	110	
Mn	55	1	nogas	97.099	0.607	475053	0.67	100	97.1	90	110	
Fe	56	1	nogas	9657.582	0.969	39672248	0.87	10000	96.6	90	110	
Co	59	1	nogas	96.775	0.619	358679	1.14	100	96.8	90	110	
Ni	60	1	nogas	97.944	1.448	76920	1.94	100	97.9	90	110	
Cu	63	1	nogas	98.029	1.058	180094	0.64	100	98.0	90	110	
Zn	66	1	nogas	92.808	0.790	62720	1.48	100	92.8	90	110	
As	75	1	nogas	113.410	7.851	129151	4.23	100	113.4	90	110	CCV Main CR1-2 Failed
Se	77	1	nogas	142.874	6.196	28821	1.89	100	142.9	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	91.759	0.320	2584	0.97	100	91.8	90	110	
Sr	88	1	nogas	99.023	1.671	323295	2.22	100	99.0	90	110	
Mo	95	1	nogas	99.811	0.791	60742	1.17	100	99.8	90	110	
Ag	107	1	nogas	98.784	1.165	163942	1.45	100	98.8	90	110	
Cd	111	1	nogas	99.118	3.742	36399	2.26	100	99.1	90	110	
Sn	118	1	nogas	98.590	3.264	92096	1.91	100	98.6	90	110	
Sb	121	1	nogas	96.584	0.432	134538	0.56	100	96.6	90	110	
Ba	137	1	nogas	103.918	1.016	39844	1.93	100	103.9	90	110	
Tl	205	1	nogas	96.188	2.701	409776	1.01	100	96.2	90	110	
Pb	208	1	nogas	97.082	1.580	312068	1.40	100	97.1	90	110	
U	238	1	nogas	92.781	3.122	789226	0.98	100	92.8	90	110	
Li	7	1	nogas	99.991	1.918	1197201	0.90	100	100.0	90	110	
Si	28	1	nogas	4895.828	0.655	12059732	0.07	5000	97.9	90	110	
Ba	135	1	nogas	101.898	1.341	22542	2.39	100	101.9	90	110	
La	139	1	nogas	128.460	5.976	97	5.97	100	128.5	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	737.273	91.228	17	91.65	100	737.3	90	110	CCV Main CR1-2 Failed
Tl	203	1	nogas	97.170	2.774	169834	0.62	100	97.2	90	110	
Na	23	2	He	9414.105	2.113	3939069	2.24	10000	94.1	90	110	
Mg	24	2	He	9438.402	1.945	2154775	2.72	10000	94.4	90	110	
Al	27	2	He	94.052	8.164	8846	5.94	100	94.1	90	110	
K	39	2	He	9166.471	4.098	1070523	1.76	10000	91.7	90	110	
Ca	43	2	He	9681.073	2.537	2964	3.41	10000	96.8	90	110	
Ca	44	2	He	9545.226	2.944	48575	1.27	10000	95.5	90	110	
V	51	2	He	95.935	2.702	83307	0.73	100	95.9	90	110	
Cr	52	2	He	91.817	3.712	98970	1.45	100	91.8	90	110	
Mn	55	2	He	95.783	2.974	56780	0.85	100	95.8	90	110	
Fe	56	2	He	9443.411	4.125	8169015	2.69	10000	94.4	90	110	
Co	59	2	He	94.695	3.120	132782	1.10	100	94.7	90	110	
Ni	60	2	He	93.535	2.214	35095	0.45	100	93.5	90	110	
Cu	63	2	He	93.062	1.081	92490	1.36	100	93.1	90	110	
Zn	66	2	He	91.884	4.871	17599	3.20	100	91.9	90	110	
As	75	2	He	95.091	5.026	9775	3.42	100	95.1	90	110	
Sb	121	2	He	93.554	2.255	34161	0.23	100	93.6	90	110	
Se	78	2	He	97.416	5.479	641	3.42	100	97.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	380479	0.70	354717	107.26	70	125	
In	115	1	nogas	323324	1.63	300202	107.70	70	125	
Li	6	1	nogas	1031425	1.24	924026	111.62	70	125	
Bi	209	1	nogas	430265	2.22	402947	106.78	70	125	

Ge	72	2	He	72906	2.21	65798	110.80	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	117_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:05:17-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	0.022	66.3	100	52.9	1	
B	11	1	nogas	10.265	12.2	37795	7.3	10	CCB Main CR1 Failed
Na	23	1	nogas	30.612	8.9	338123	5.5	100	
Mg	24	1	nogas	3.368	18.0	24522	12.3	100	
Al	27	1	nogas	-0.565	-7.8	17235	1.4	5	
P	31	1	nogas	-10.473	-26.2	53976	1.4	10	
K	39	1	nogas	-18.024	-43.4	2142780	1.0	100	
Ca	43	1	nogas	-11.866	-51.5	230	19.0	100	
Ca	44	1	nogas	-1.002	-191.9	6988	3.7	100	
Ti	47	1	nogas	-0.045	-351.8	80	66.1	2.5	
V	51	1	nogas	0.749	342.4	424837	3.2	2.5	
Cr	52	1	nogas	-1.073	-32.1	22371	6.0	2.5	
Mn	55	1	nogas	0.127	17.7	6221	2.2	2.5	
Fe	56	1	nogas	1.092	216.4	290709	3.1	100	
Co	59	1	nogas	0.012	85.6	117	34.6	2.5	
Ni	60	1	nogas	0.383	15.2	107	44.3	2.5	
Cu	63	1	nogas	-0.054	-154.3	1433	10.5	2.5	
Zn	66	1	nogas	0.150	30.5	113	28.4	2.5	
As	75	1	nogas	-10.309	-30.1	66928	2.2	2.5	
Se	77	1	nogas	-18.080	-188.9	22649	6.7	2.5	
Se	82	1	nogas	0.968	128.4	57	62.0	2.5	
Sr	88	1	nogas	0.028	38.2	420	8.2	2.5	
Mo	95	1	nogas	0.059	87.8	37	87.7	2.5	
Ag	107	1	nogas	0.003	362.8	17	124.9	2.5	
Cd	111	1	nogas	0.026	158.6	13	114.6	1	
Sn	118	1	nogas	0.194	54.4	290	35.0	5	
Sb	121	1	nogas	0.024	116.2	100	40.0	2.5	
Ba	137	1	nogas	0.012	808.7	27	142.0	2.5	
Tl	205	1	nogas	0.059	44.3	270	43.7	1	
Pb	208	1	nogas	0.047	9.3	157	9.8	2.5	
U	238	1	nogas	0.022	46.9	193	47.8	2.5	
Si	28	1	nogas	9.347	16.4	102774	3.7	5	CCB Main CR1 Failed
La	139	1	nogas	21.598	35.0	17	34.6	2.5	CCB Main CR1 Failed
Au	197	1	nogas	0.000	#DIV/0!	0	#DIV/0!	2.5	
Na	23	2	He	28.182	4.8	30469	2.5	100	
Mg	24	2	He	2.721	25.9	1003	15.3	100	
Al	27	2	He	0.344	288.7	263	33.2	5	
K	39	2	He	18.366	57.2	50042	3.3	100	
Ca	43	2	He	-15.469	-213.9	10	100.0	100	
Ca	44	2	He	25.367	25.3	237	14.8	100	
V	51	2	He	0.629	28.7	3987	2.6	2.5	
Cr	52	2	He	0.035	41.5	410	4.9	2.5	
Mn	55	2	He	0.052	85.5	90	29.4	2.5	
Fe	56	2	He	1.039	17.3	3000	4.0	100	
Co	59	2	He	0.001	341.7	23	24.7	2.5	
Ni	60	2	He	-0.196	-8.0	13	43.3	2.5	

Continuing Calibration Blank (CCB) Report

Cu	63	2	He	-0.429	-15.9	670	10.3	2.5	
Zn	66	2	He	-0.489	-12.3	23	49.5	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
As	75	2	He	-0.258	-79.2	279	5.9	2.5	
Sb	121	2	He	0.110	11.6	73	7.9	2.5	
Se	78	2	He	0.121	11.4	6	0.0	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	388819	0.48	354717	109.61	70	125	
In	115	1	nogas	331890	0.50	300202	110.56	70	125	
Li	6	1	nogas	977064	1.45	924026	105.74	70	125	
Bi	209	1	nogas	450611	0.81	402947	111.83	70	125	
Ge	72	2	He	72755	1.51	65798	110.57	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01SD
Data File Name	120SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:16:56-05:00
Sample Type	Sample
Dilution	5
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	-0.001	-0.003	-1071.61	20	0.00	2000	
B	11	1	nogas	9.889	49.444	1.73	37949	0.03	2000	
Na	23	1	nogas	10570.891	52854.454	0.90	79280379	0.01	200000	
Mg	24	1	nogas	4197.302	20986.508	0.64	21493614	0.02	200000	
Al	27	1	nogas	1.211	6.055	12.91	27764	0.00	2000	
K	39	1	nogas	153.178	765.888	10.22	2805971	0.01	200000	
Ca	43	1	nogas	14534.460	72672.301	0.56	104997	13.84	200000	
Ca	44	1	nogas	14287.939	71439.693	0.95	1698345	0.84	200000	
Ti	47	1	nogas	0.993	4.965	26.64	433	0.23	2000	
V	51	1	nogas	52.937	264.685	7.16	674295	0.01	2000	
Cr	52	1	nogas	4.681	23.407	2.67	45283	0.01	2000	
Mn	55	1	nogas	1.544	7.718	2.46	13409	0.01	2000	
Fe	56	1	nogas	18.218	91.088	9.69	367280	0.00	200000	
Co	59	1	nogas	0.160	0.802	21.31	687	0.02	2000	
Ni	60	1	nogas	170.103	850.517	1.70	138614	0.12	2000	
Cu	63	1	nogas	0.044	0.220	62.63	1640	0.00	2000	
Zn	66	1	nogas	0.944	4.719	16.33	670	0.14	2000	
As	75	1	nogas	19.181	95.906	37.91	83616	0.02	2000	
Se	77	1	nogas	95.195	475.973	27.74	27830	0.34	2000	
Se	82	1	nogas	0.589	2.944	66.98	47	1.26	2000	
Sr	88	1	nogas	37.973	189.866	0.83	128708	0.03	2000	
Mo	95	1	nogas	0.444	2.218	8.64	280	0.16	2000	
Ag	107	1	nogas	0.003	0.016	102.41	17	0.02	2000	
Cd	111	1	nogas	0.008	0.039	195.79	7	0.12	2000	
Sn	118	1	nogas	0.050	0.251	60.16	153	0.03	2000	
Sb	121	1	nogas	0.035	0.174	99.31	117	0.03	2000	
Ba	137	1	nogas	70.636	353.182	0.80	28127	0.25	2000	
Tl	205	1	nogas	0.004	0.022	57.18	27	0.02	2000	
Pb	208	1	nogas	0.011	0.055	56.67	37	0.03	2000	
U	238	1	nogas	0.268	1.338	7.68	2367	0.01	2000	
Si	28	1	nogas	3001.269	15006.343	0.81	7694691	0.04	2000	>LDR
La	139	1	nogas	8.546	42.729	86.60	7	128.19	2000	
Au	197	1	nogas	280.704	1403.522	173.21	7	4210.57	2000	
Na	23	2	He	10201.324	51006.620	1.92	4325430	0.24	200000	
Mg	24	2	He	4041.713	20208.566	2.85	935410	0.43	200000	
Al	27	2	He	2.978	14.892	33.41	513	0.58	2000	
K	39	2	He	166.577	832.886	2.99	67598	0.25	200000	
Ca	43	2	He	14279.677	71398.383	10.15	4421	323.02	200000	
Ca	44	2	He	14677.065	73385.324	2.18	75677	19.39	200000	
V	51	2	He	2.657	13.284	4.24	5763	0.05	2000	
Cr	52	2	He	0.923	4.616	8.39	1383	0.07	2000	
Mn	55	2	He	1.299	6.494	13.79	840	0.15	2000	
Fe	56	2	He	1.685	8.424	11.68	3614	0.05	200000	
Co	59	2	He	0.128	0.638	32.79	203	0.06	2000	

Sample Report

Ni	60	2	He	171.244	856.222	3.41	65061	0.26	2000	
Cu	63	2	He	-0.506	-2.530	-6.88	603	-0.08	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	0.027	0.137	276.23	123	0.02	2000	
As	75	2	He	-0.261	-1.304	-57.01	283	-0.09	2000	
Sb	121	2	He	-0.019	-0.093	-173.27	27	-0.07	2000	
Se	78	2	He	0.611	3.055	29.17	9	6.55	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	394414	1.02	354717	111.19	70	125	
In	115	1	nogas	335693	0.43	300202	111.82	70	125	
Li	6	1	nogas	1003703	1.42	924026	108.62	70	125	
Bi	209	1	nogas	447432	2.06	402947	111.04	70	125	
Ge	72	2	He	73903	1.15	65798	112.32	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01SD
Data File Name	120SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:16:56-05:00
Sample Type	Sample
Dilution	5
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	-0.001	-0.003	-1071.61	20	0.00	2000	
B	11	1	nogas	9.889	49.444	1.73	37949	0.03	2000	
Na	23	1	nogas	10570.891	52854.454	0.90	79280379	0.01	200000	
Mg	24	1	nogas	4197.302	20986.508	0.64	21493614	0.02	200000	
Al	27	1	nogas	1.211	6.055	12.91	27764	0.00	2000	
K	39	1	nogas	153.178	765.888	10.22	2805971	0.01	200000	
Ca	43	1	nogas	14534.460	72672.301	0.56	104997	13.84	200000	
Ca	44	1	nogas	14287.939	71439.693	0.95	1698345	0.84	200000	
Ti	47	1	nogas	0.993	4.965	26.64	433	0.23	2000	
V	51	1	nogas	52.937	264.685	7.16	674295	0.01	2000	
Cr	52	1	nogas	4.681	23.407	2.67	45283	0.01	2000	
Mn	55	1	nogas	1.544	7.718	2.46	13409	0.01	2000	
Fe	56	1	nogas	18.218	91.088	9.69	367280	0.00	200000	
Co	59	1	nogas	0.160	0.802	21.31	687	0.02	2000	
Ni	60	1	nogas	170.103	850.517	1.70	138614	0.12	2000	
Cu	63	1	nogas	0.044	0.220	62.63	1640	0.00	2000	
Zn	66	1	nogas	0.944	4.719	16.33	670	0.14	2000	
As	75	1	nogas	19.181	95.906	37.91	83616	0.02	2000	
Se	77	1	nogas	95.195	475.973	27.74	27830	0.34	2000	
Se	82	1	nogas	0.589	2.944	66.98	47	1.26	2000	
Sr	88	1	nogas	37.973	189.866	0.83	128708	0.03	2000	
Mo	95	1	nogas	0.444	2.218	8.64	280	0.16	2000	
Ag	107	1	nogas	0.003	0.016	102.41	17	0.02	2000	
Cd	111	1	nogas	0.008	0.039	195.79	7	0.12	2000	
Sn	118	1	nogas	0.050	0.251	60.16	153	0.03	2000	
Sb	121	1	nogas	0.035	0.174	99.31	117	0.03	2000	
Ba	137	1	nogas	70.636	353.182	0.80	28127	0.25	2000	
Tl	205	1	nogas	0.004	0.022	57.18	27	0.02	2000	
Pb	208	1	nogas	0.011	0.055	56.67	37	0.03	2000	
U	238	1	nogas	0.268	1.338	7.68	2367	0.01	2000	
Si	28	1	nogas	3001.269	15006.343	0.81	7694691	0.04	2000	>LDR
La	139	1	nogas	8.546	42.729	86.60	7	128.19	2000	
Au	197	1	nogas	280.704	1403.522	173.21	7	4210.57	2000	
Na	23	2	He	10201.324	51006.620	1.92	4325430	0.24	200000	
Mg	24	2	He	4041.713	20208.566	2.85	935410	0.43	200000	
Al	27	2	He	2.978	14.892	33.41	513	0.58	2000	
K	39	2	He	166.577	832.886	2.99	67598	0.25	200000	
Ca	43	2	He	14279.677	71398.383	10.15	4421	323.02	200000	
Ca	44	2	He	14677.065	73385.324	2.18	75677	19.39	200000	
V	51	2	He	2.657	13.284	4.24	5763	0.05	2000	
Cr	52	2	He	0.923	4.616	8.39	1383	0.07	2000	
Mn	55	2	He	1.299	6.494	13.79	840	0.15	2000	
Fe	56	2	He	1.685	8.424	11.68	3614	0.05	200000	
Co	59	2	He	0.128	0.638	32.79	203	0.06	2000	

Sample Report

Ni	60	2	He	171.244	856.222	3.41	65061	0.26	2000	
Cu	63	2	He	-0.506	-2.530	-6.88	603	-0.08	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	0.027	0.137	276.23	123	0.02	2000	
As	75	2	He	-0.261	-1.304	-57.01	283	-0.09	2000	
Sb	121	2	He	-0.019	-0.093	-173.27	27	-0.07	2000	
Se	78	2	He	0.611	3.055	29.17	9	6.55	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	394414	1.02	354717	111.19	70	125	
In	115	1	nogas	335693	0.43	300202	111.82	70	125	
Li	6	1	nogas	1003703	1.42	924026	108.62	70	125	
Bi	209	1	nogas	447432	2.06	402947	111.04	70	125	
Ge	72	2	He	73903	1.15	65798	112.32	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MS
Data File Name	121SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:19:11-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	50.821	50.821	3.56	192434	0.03	2000	
B	11	1	nogas	539.048	539.048	2.46	1330921	0.04	2000	
Na	23	1	nogas	51402.284	51402.284	1.16	418550243	0.01	200000	
Mg	24	1	nogas	22909.861	22909.861	1.35	127489307	0.02	200000	
Al	27	1	nogas	91.248	91.248	0.92	538921	0.02	2000	
K	39	1	nogas	5365.455	5365.455	1.13	21650321	0.02	200000	
Ca	43	1	nogas	75152.456	75152.456	1.57	531282	14.15	200000	
Ca	44	1	nogas	72529.070	72529.070	0.73	8429724	0.86	200000	
Ti	47	1	nogas	143.181	143.181	2.47	47846	0.30	2000	
V	51	1	nogas	79.500	79.500	4.92	782804	0.01	2000	
Cr	52	1	nogas	52.461	52.461	0.69	228478	0.02	2000	
Mn	55	1	nogas	51.749	51.749	1.12	260057	0.02	2000	
Fe	56	1	nogas	4569.525	4569.525	2.26	19238437	0.02	200000	
Co	59	1	nogas	45.752	45.752	3.41	172486	0.03	2000	
Ni	60	1	nogas	850.842	850.842	1.76	680979	0.12	2000	
Cu	63	1	nogas	46.181	46.181	0.50	87091	0.05	2000	
Zn	66	1	nogas	45.538	45.538	2.63	31294	0.15	2000	
As	75	1	nogas	75.243	75.243	3.56	111367	0.07	2000	
Se	77	1	nogas	187.549	187.549	10.55	31182	0.60	2000	
Se	82	1	nogas	49.981	49.981	8.60	1443	3.46	2000	
Sr	88	1	nogas	280.756	280.756	1.58	931424	0.03	2000	
Mo	95	1	nogas	50.291	50.291	2.11	31125	0.16	2000	
Ag	107	1	nogas	44.021	44.021	2.76	74286	0.06	2000	
Cd	111	1	nogas	48.370	48.370	0.55	17789	0.27	2000	
Sn	118	1	nogas	95.354	95.354	0.75	89194	0.11	2000	
Sb	121	1	nogas	46.869	46.869	1.08	66429	0.07	2000	
Ba	137	1	nogas	414.186	414.186	2.54	158881	0.26	2000	
Tl	205	1	nogas	47.207	47.207	1.82	197777	0.02	2000	
Pb	208	1	nogas	47.027	47.027	2.34	148633	0.03	2000	
U	238	1	nogas	91.971	91.971	2.72	769357	0.01	2000	
Si	28	1	nogas	19137.248	19137.248	0.64	47709538	0.04	2000	>LDR
La	139	1	nogas	92.680	92.680	86.30	70	132.40	2000	
Au	197	1	nogas	298.933	298.933	173.21	7	4484.00	2000	
Na	23	2	He	52731.810	52731.810	3.01	22198776	0.24	200000	
Mg	24	2	He	23928.437	23928.437	2.66	5516672	0.43	200000	
Al	27	2	He	97.757	97.757	4.63	9286	1.05	2000	
K	39	2	He	5345.007	5345.007	2.71	651031	0.82	200000	
Ca	43	2	He	78329.029	78329.029	2.01	24113	324.84	200000	
Ca	44	2	He	76947.335	76947.335	1.06	394915	19.48	200000	
V	51	2	He	49.789	49.789	1.96	45372	0.11	2000	
Cr	52	2	He	49.748	49.748	0.96	54372	0.09	2000	
Mn	55	2	He	52.522	52.522	2.82	31491	0.17	2000	
Fe	56	2	He	4666.937	4666.937	2.12	4081288	0.11	200000	
Co	59	2	He	47.251	47.251	0.93	66978	0.07	2000	

Sample Report

Ni	60	2	He	855.859	855.859	2.26	323706	0.26	2000	
Cu	63	2	He	44.699	44.699	1.16	45454	0.10	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	44.875	44.875	4.21	8746	0.51	2000	
As	75	2	He	48.490	48.490	4.00	5189	0.93	2000	
Sb	121	2	He	45.306	45.306	2.82	16732	0.27	2000	
Se	78	2	He	48.274	48.274	10.29	323	14.93	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	386937	1.17	354717	109.08	70	125	
In	115	1	nogas	323668	1.28	300202	107.82	70	125	
Li	6	1	nogas	1043086	4.16	924026	112.88	70	125	
Bi	209	1	nogas	423036	1.34	402947	104.99	70	125	
Ge	72	2	He	73649	1.59	65798	111.93	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MS
Data File Name	121SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:19:11-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	50.821	50.821	3.56	192434	0.03	2000	
B	11	1	nogas	539.048	539.048	2.46	1330921	0.04	2000	
Na	23	1	nogas	51402.284	51402.284	1.16	418550243	0.01	200000	
Mg	24	1	nogas	22909.861	22909.861	1.35	127489307	0.02	200000	
Al	27	1	nogas	91.248	91.248	0.92	538921	0.02	2000	
K	39	1	nogas	5365.455	5365.455	1.13	21650321	0.02	200000	
Ca	43	1	nogas	75152.456	75152.456	1.57	531282	14.15	200000	
Ca	44	1	nogas	72529.070	72529.070	0.73	8429724	0.86	200000	
Ti	47	1	nogas	143.181	143.181	2.47	47846	0.30	2000	
V	51	1	nogas	79.500	79.500	4.92	782804	0.01	2000	
Cr	52	1	nogas	52.461	52.461	0.69	228478	0.02	2000	
Mn	55	1	nogas	51.749	51.749	1.12	260057	0.02	2000	
Fe	56	1	nogas	4569.525	4569.525	2.26	19238437	0.02	200000	
Co	59	1	nogas	45.752	45.752	3.41	172486	0.03	2000	
Ni	60	1	nogas	850.842	850.842	1.76	680979	0.12	2000	
Cu	63	1	nogas	46.181	46.181	0.50	87091	0.05	2000	
Zn	66	1	nogas	45.538	45.538	2.63	31294	0.15	2000	
As	75	1	nogas	75.243	75.243	3.56	111367	0.07	2000	
Se	77	1	nogas	187.549	187.549	10.55	31182	0.60	2000	
Se	82	1	nogas	49.981	49.981	8.60	1443	3.46	2000	
Sr	88	1	nogas	280.756	280.756	1.58	931424	0.03	2000	
Mo	95	1	nogas	50.291	50.291	2.11	31125	0.16	2000	
Ag	107	1	nogas	44.021	44.021	2.76	74286	0.06	2000	
Cd	111	1	nogas	48.370	48.370	0.55	17789	0.27	2000	
Sn	118	1	nogas	95.354	95.354	0.75	89194	0.11	2000	
Sb	121	1	nogas	46.869	46.869	1.08	66429	0.07	2000	
Ba	137	1	nogas	414.186	414.186	2.54	158881	0.26	2000	
Tl	205	1	nogas	47.207	47.207	1.82	197777	0.02	2000	
Pb	208	1	nogas	47.027	47.027	2.34	148633	0.03	2000	
U	238	1	nogas	91.971	91.971	2.72	769357	0.01	2000	
Si	28	1	nogas	19137.248	19137.248	0.64	47709538	0.04	2000	>LDR
La	139	1	nogas	92.680	92.680	86.30	70	132.40	2000	
Au	197	1	nogas	298.933	298.933	173.21	7	4484.00	2000	
Na	23	2	He	52731.810	52731.810	3.01	22198776	0.24	200000	
Mg	24	2	He	23928.437	23928.437	2.66	5516672	0.43	200000	
Al	27	2	He	97.757	97.757	4.63	9286	1.05	2000	
K	39	2	He	5345.007	5345.007	2.71	651031	0.82	200000	
Ca	43	2	He	78329.029	78329.029	2.01	24113	324.84	200000	
Ca	44	2	He	76947.335	76947.335	1.06	394915	19.48	200000	
V	51	2	He	49.789	49.789	1.96	45372	0.11	2000	
Cr	52	2	He	49.748	49.748	0.96	54372	0.09	2000	
Mn	55	2	He	52.522	52.522	2.82	31491	0.17	2000	
Fe	56	2	He	4666.937	4666.937	2.12	4081288	0.11	200000	
Co	59	2	He	47.251	47.251	0.93	66978	0.07	2000	

Sample Report

Ni	60	2	He	855.859	855.859	2.26	323706	0.26	2000	
Cu	63	2	He	44.699	44.699	1.16	45454	0.10	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	44.875	44.875	4.21	8746	0.51	2000	
As	75	2	He	48.490	48.490	4.00	5189	0.93	2000	
Sb	121	2	He	45.306	45.306	2.82	16732	0.27	2000	
Se	78	2	He	48.274	48.274	10.29	323	14.93	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	386937	1.17	354717	109.08	70	125	
In	115	1	nogas	323668	1.28	300202	107.82	70	125	
Li	6	1	nogas	1043086	4.16	924026	112.88	70	125	
Bi	209	1	nogas	423036	1.34	402947	104.99	70	125	
Ge	72	2	He	73649	1.59	65798	111.93	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MSD
Data File Name	122SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:21:26-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	50.991	50.991	2.67	187696	0.03	2000	
B	11	1	nogas	540.986	540.986	1.86	1298342	0.04	2000	
Na	23	1	nogas	51158.699	51158.699	1.04	415162268	0.01	200000	
Mg	24	1	nogas	23049.207	23049.207	0.95	127829761	0.02	200000	
Al	27	1	nogas	90.378	90.378	0.90	533535	0.02	2000	
K	39	1	nogas	5367.691	5367.691	2.59	21636849	0.02	200000	
Ca	43	1	nogas	76447.938	76447.938	2.33	539953	14.16	200000	
Ca	44	1	nogas	73523.445	73523.445	1.41	8537605	0.86	200000	
Ti	47	1	nogas	141.231	141.231	0.85	47162	0.30	2000	
V	51	1	nogas	69.150	69.150	8.95	734754	0.01	2000	
Cr	52	1	nogas	50.489	50.489	0.88	220715	0.02	2000	
Mn	55	1	nogas	51.103	51.103	0.42	256700	0.02	2000	
Fe	56	1	nogas	4492.514	4492.514	1.79	18904237	0.02	200000	
Co	59	1	nogas	45.239	45.239	1.76	170395	0.03	2000	
Ni	60	1	nogas	863.004	863.004	2.66	690114	0.13	2000	
Cu	63	1	nogas	45.449	45.449	5.37	85631	0.05	2000	
Zn	66	1	nogas	44.310	44.310	2.19	30429	0.15	2000	
As	75	1	nogas	65.653	65.653	12.50	106224	0.06	2000	
Se	77	1	nogas	147.126	147.126	6.20	29462	0.50	2000	
Se	82	1	nogas	49.879	49.879	3.75	1440	3.46	2000	
Sr	88	1	nogas	284.652	284.652	1.64	943621	0.03	2000	
Mo	95	1	nogas	49.135	49.135	1.38	30387	0.16	2000	
Ag	107	1	nogas	43.059	43.059	0.93	72619	0.06	2000	
Cd	111	1	nogas	49.397	49.397	1.80	18096	0.27	2000	
Sn	118	1	nogas	96.384	96.384	2.07	89760	0.11	2000	
Sb	121	1	nogas	46.999	46.999	0.82	66566	0.07	2000	
Ba	137	1	nogas	426.495	426.495	2.92	162914	0.26	2000	
Tl	205	1	nogas	47.196	47.196	2.28	196288	0.02	2000	
Pb	208	1	nogas	46.071	46.071	0.28	144565	0.03	2000	
U	238	1	nogas	92.638	92.638	0.98	769429	0.01	2000	
Si	28	1	nogas	19190.107	19190.107	1.68	47800183	0.04	2000	>LDR
La	139	1	nogas	35.182	35.182	76.22	27	131.93	2000	
Au	197	1	nogas	744.421	744.421	91.78	17	4466.53	2000	
Na	23	2	He	53519.747	53519.747	2.82	22123198	0.24	200000	
Mg	24	2	He	23981.969	23981.969	1.30	5430745	0.44	200000	
Al	27	2	He	91.056	91.056	2.37	8515	1.07	2000	
K	39	2	He	5359.474	5359.474	2.61	640910	0.84	200000	
Ca	43	2	He	80446.647	80446.647	3.76	24310	330.92	200000	
Ca	44	2	He	81076.813	81076.813	4.48	408401	19.85	200000	
V	51	2	He	49.424	49.424	2.46	44252	0.11	2000	
Cr	52	2	He	49.274	49.274	2.71	52877	0.09	2000	
Mn	55	2	He	54.081	54.081	5.13	31819	0.17	2000	
Fe	56	2	He	4719.595	4719.595	3.67	4051091	0.12	200000	
Co	59	2	He	47.496	47.496	5.53	66055	0.07	2000	

Sample Report

Ni	60	2	He	889.669	889.669	5.44	330257	0.27	2000	
Cu	63	2	He	44.291	44.291	4.39	44235	0.10	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	44.881	44.881	1.88	8596	0.52	2000	
As	75	2	He	50.486	50.486	2.52	5292	0.95	2000	
Sb	121	2	He	46.508	46.508	4.03	16865	0.28	2000	
Se	78	2	He	47.014	47.014	8.27	310	15.17	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	386646	1.42	354717	109.00	70	125	
In	115	1	nogas	322317	2.03	300202	107.37	70	125	
Li	6	1	nogas	1013473	2.31	924026	109.68	70	125	
Bi	209	1	nogas	419934	0.93	402947	104.22	70	125	
Ge	72	2	He	72337	2.84	65798	109.94	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MSD
Data File Name	122SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:21:26-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	50.991	50.991	2.67	187696	0.03	2000	
B	11	1	nogas	540.986	540.986	1.86	1298342	0.04	2000	
Na	23	1	nogas	51158.699	51158.699	1.04	415162268	0.01	200000	
Mg	24	1	nogas	23049.207	23049.207	0.95	127829761	0.02	200000	
Al	27	1	nogas	90.378	90.378	0.90	533535	0.02	2000	
K	39	1	nogas	5367.691	5367.691	2.59	21636849	0.02	200000	
Ca	43	1	nogas	76447.938	76447.938	2.33	539953	14.16	200000	
Ca	44	1	nogas	73523.445	73523.445	1.41	8537605	0.86	200000	
Ti	47	1	nogas	141.231	141.231	0.85	47162	0.30	2000	
V	51	1	nogas	69.150	69.150	8.95	734754	0.01	2000	
Cr	52	1	nogas	50.489	50.489	0.88	220715	0.02	2000	
Mn	55	1	nogas	51.103	51.103	0.42	256700	0.02	2000	
Fe	56	1	nogas	4492.514	4492.514	1.79	18904237	0.02	200000	
Co	59	1	nogas	45.239	45.239	1.76	170395	0.03	2000	
Ni	60	1	nogas	863.004	863.004	2.66	690114	0.13	2000	
Cu	63	1	nogas	45.449	45.449	5.37	85631	0.05	2000	
Zn	66	1	nogas	44.310	44.310	2.19	30429	0.15	2000	
As	75	1	nogas	65.653	65.653	12.50	106224	0.06	2000	
Se	77	1	nogas	147.126	147.126	6.20	29462	0.50	2000	
Se	82	1	nogas	49.879	49.879	3.75	1440	3.46	2000	
Sr	88	1	nogas	284.652	284.652	1.64	943621	0.03	2000	
Mo	95	1	nogas	49.135	49.135	1.38	30387	0.16	2000	
Ag	107	1	nogas	43.059	43.059	0.93	72619	0.06	2000	
Cd	111	1	nogas	49.397	49.397	1.80	18096	0.27	2000	
Sn	118	1	nogas	96.384	96.384	2.07	89760	0.11	2000	
Sb	121	1	nogas	46.999	46.999	0.82	66566	0.07	2000	
Ba	137	1	nogas	426.495	426.495	2.92	162914	0.26	2000	
Tl	205	1	nogas	47.196	47.196	2.28	196288	0.02	2000	
Pb	208	1	nogas	46.071	46.071	0.28	144565	0.03	2000	
U	238	1	nogas	92.638	92.638	0.98	769429	0.01	2000	
Si	28	1	nogas	19190.107	19190.107	1.68	47800183	0.04	2000	>LDR
La	139	1	nogas	35.182	35.182	76.22	27	131.93	2000	
Au	197	1	nogas	744.421	744.421	91.78	17	4466.53	2000	
Na	23	2	He	53519.747	53519.747	2.82	22123198	0.24	200000	
Mg	24	2	He	23981.969	23981.969	1.30	5430745	0.44	200000	
Al	27	2	He	91.056	91.056	2.37	8515	1.07	2000	
K	39	2	He	5359.474	5359.474	2.61	640910	0.84	200000	
Ca	43	2	He	80446.647	80446.647	3.76	24310	330.92	200000	
Ca	44	2	He	81076.813	81076.813	4.48	408401	19.85	200000	
V	51	2	He	49.424	49.424	2.46	44252	0.11	2000	
Cr	52	2	He	49.274	49.274	2.71	52877	0.09	2000	
Mn	55	2	He	54.081	54.081	5.13	31819	0.17	2000	
Fe	56	2	He	4719.595	4719.595	3.67	4051091	0.12	200000	
Co	59	2	He	47.496	47.496	5.53	66055	0.07	2000	

Sample Report

Ni	60	2	He	889.669	889.669	5.44	330257	0.27	2000	
Cu	63	2	He	44.291	44.291	4.39	44235	0.10	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	44.881	44.881	1.88	8596	0.52	2000	
As	75	2	He	50.486	50.486	2.52	5292	0.95	2000	
Sb	121	2	He	46.508	46.508	4.03	16865	0.28	2000	
Se	78	2	He	47.014	47.014	8.27	310	15.17	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	386646	1.42	354717	109.00	70	125	
In	115	1	nogas	322317	2.03	300202	107.37	70	125	
Li	6	1	nogas	1013473	2.31	924026	109.68	70	125	
Bi	209	1	nogas	419934	0.93	402947	104.22	70	125	
Ge	72	2	He	72337	2.84	65798	109.94	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01PDS
Data File Name	123SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:23:41-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	101.497	101.497	2.86	371709	0.03	2000	
B	11	1	nogas	40.858	40.858	7.04	111161	0.04	2000	
Na	23	1	nogas	53366.174	53366.174	1.86	416699726	0.01	200000	
Mg	24	1	nogas	26400.043	26400.043	0.82	140888907	0.02	200000	
Al	27	1	nogas	88.494	88.494	1.21	511871	0.02	2000	
K	39	1	nogas	9806.209	9806.209	1.99	36927902	0.03	200000	
Ca	43	1	nogas	76800.048	76800.048	2.56	531125	14.46	200000	
Ca	44	1	nogas	74277.195	74277.195	3.03	8444056	0.88	200000	
Ti	47	1	nogas	179.674	179.674	0.60	58722	0.31	2000	
V	51	1	nogas	86.388	86.388	2.45	796699	0.01	2000	
Cr	52	1	nogas	94.961	94.961	1.15	383677	0.02	2000	
Mn	55	1	nogas	94.339	94.339	0.58	459372	0.02	2000	
Fe	56	1	nogas	8904.937	8904.937	2.24	36414125	0.02	200000	
Co	59	1	nogas	87.966	87.966	2.24	324342	0.03	2000	
Ni	60	1	nogas	856.616	856.616	2.05	670764	0.13	2000	
Cu	63	1	nogas	89.968	89.968	1.90	164561	0.05	2000	
Zn	66	1	nogas	88.628	88.628	1.14	59589	0.15	2000	
As	75	1	nogas	88.788	88.788	5.38	115863	0.08	2000	
Se	77	1	nogas	88.513	88.513	23.78	26434	0.33	2000	
Se	82	1	nogas	96.081	96.081	11.20	2690	3.57	2000	
Sr	88	1	nogas	271.017	271.017	2.35	879637	0.03	2000	
Mo	95	1	nogas	95.436	95.436	2.07	57779	0.17	2000	
Ag	107	1	nogas	87.852	87.852	0.49	145066	0.06	2000	
Cd	111	1	nogas	95.328	95.328	0.47	34812	0.27	2000	
Sn	118	1	nogas	92.231	92.231	1.75	85677	0.11	2000	
Sb	121	1	nogas	86.029	86.029	1.60	119229	0.07	2000	
Ba	137	1	nogas	453.478	453.478	1.25	172748	0.26	2000	
Tl	205	1	nogas	92.529	92.529	1.97	383647	0.02	2000	
Pb	208	1	nogas	91.704	91.704	1.72	286848	0.03	2000	
U	238	1	nogas	88.113	88.113	1.38	729681	0.01	2000	
Si	28	1	nogas	14254.718	14254.718	0.77	34787763	0.04	2000	>LDR
La	139	1	nogas	80.332	80.332	29.50	60	133.89	2000	
Au	197	1	nogas	301.528	301.528	173.21	7	4522.92	2000	
Na	23	2	He	53667.624	53667.624	1.82	22321094	0.24	200000	
Mg	24	2	He	26572.700	26572.700	2.31	6052803	0.44	200000	
Al	27	2	He	91.656	91.656	1.86	8619	1.06	2000	
K	39	2	He	9471.187	9471.187	0.69	1102874	0.86	200000	
Ca	43	2	He	77680.857	77680.857	1.70	23626	328.80	200000	
Ca	44	2	He	78728.444	78728.444	0.93	399174	19.72	200000	
V	51	2	He	90.548	90.548	1.69	78681	0.12	2000	
Cr	52	2	He	90.681	90.681	1.24	97591	0.09	2000	
Mn	55	2	He	94.188	94.188	1.18	55740	0.17	2000	
Fe	56	2	He	8806.325	8806.325	0.56	7605847	0.12	200000	
Co	59	2	He	89.072	89.072	1.10	124689	0.07	2000	

Sample Report

Ni	60	2	He	844.665	844.665	2.11	315617	0.27	2000	
Cu	63	2	He	85.955	85.955	3.96	85319	0.10	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	85.285	85.285	3.96	16318	0.52	2000	
As	75	2	He	92.812	92.812	3.30	9531	0.97	2000	
Sb	121	2	He	81.123	81.123	2.12	29573	0.27	2000	
Se	78	2	He	95.033	95.033	6.42	624	15.23	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	378559	0.93	354717	106.72	70	125	
In	115	1	nogas	321404	1.46	300202	107.06	70	125	
Li	6	1	nogas	1008547	3.12	924026	109.15	70	125	
Bi	209	1	nogas	418670	1.21	402947	103.90	70	125	
Ge	72	2	He	72755	1.23	65798	110.57	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01PDS
Data File Name	123SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:23:41-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	101.497	101.497	2.86	371709	0.03	2000	
B	11	1	nogas	40.858	40.858	7.04	111161	0.04	2000	
Na	23	1	nogas	53366.174	53366.174	1.86	416699726	0.01	200000	
Mg	24	1	nogas	26400.043	26400.043	0.82	140888907	0.02	200000	
Al	27	1	nogas	88.494	88.494	1.21	511871	0.02	2000	
K	39	1	nogas	9806.209	9806.209	1.99	36927902	0.03	200000	
Ca	43	1	nogas	76800.048	76800.048	2.56	531125	14.46	200000	
Ca	44	1	nogas	74277.195	74277.195	3.03	8444056	0.88	200000	
Ti	47	1	nogas	179.674	179.674	0.60	58722	0.31	2000	
V	51	1	nogas	86.388	86.388	2.45	796699	0.01	2000	
Cr	52	1	nogas	94.961	94.961	1.15	383677	0.02	2000	
Mn	55	1	nogas	94.339	94.339	0.58	459372	0.02	2000	
Fe	56	1	nogas	8904.937	8904.937	2.24	36414125	0.02	200000	
Co	59	1	nogas	87.966	87.966	2.24	324342	0.03	2000	
Ni	60	1	nogas	856.616	856.616	2.05	670764	0.13	2000	
Cu	63	1	nogas	89.968	89.968	1.90	164561	0.05	2000	
Zn	66	1	nogas	88.628	88.628	1.14	59589	0.15	2000	
As	75	1	nogas	88.788	88.788	5.38	115863	0.08	2000	
Se	77	1	nogas	88.513	88.513	23.78	26434	0.33	2000	
Se	82	1	nogas	96.081	96.081	11.20	2690	3.57	2000	
Sr	88	1	nogas	271.017	271.017	2.35	879637	0.03	2000	
Mo	95	1	nogas	95.436	95.436	2.07	57779	0.17	2000	
Ag	107	1	nogas	87.852	87.852	0.49	145066	0.06	2000	
Cd	111	1	nogas	95.328	95.328	0.47	34812	0.27	2000	
Sn	118	1	nogas	92.231	92.231	1.75	85677	0.11	2000	
Sb	121	1	nogas	86.029	86.029	1.60	119229	0.07	2000	
Ba	137	1	nogas	453.478	453.478	1.25	172748	0.26	2000	
Tl	205	1	nogas	92.529	92.529	1.97	383647	0.02	2000	
Pb	208	1	nogas	91.704	91.704	1.72	286848	0.03	2000	
U	238	1	nogas	88.113	88.113	1.38	729681	0.01	2000	
Si	28	1	nogas	14254.718	14254.718	0.77	34787763	0.04	2000	>LDR
La	139	1	nogas	80.332	80.332	29.50	60	133.89	2000	
Au	197	1	nogas	301.528	301.528	173.21	7	4522.92	2000	
Na	23	2	He	53667.624	53667.624	1.82	22321094	0.24	200000	
Mg	24	2	He	26572.700	26572.700	2.31	6052803	0.44	200000	
Al	27	2	He	91.656	91.656	1.86	8619	1.06	2000	
K	39	2	He	9471.187	9471.187	0.69	1102874	0.86	200000	
Ca	43	2	He	77680.857	77680.857	1.70	23626	328.80	200000	
Ca	44	2	He	78728.444	78728.444	0.93	399174	19.72	200000	
V	51	2	He	90.548	90.548	1.69	78681	0.12	2000	
Cr	52	2	He	90.681	90.681	1.24	97591	0.09	2000	
Mn	55	2	He	94.188	94.188	1.18	55740	0.17	2000	
Fe	56	2	He	8806.325	8806.325	0.56	7605847	0.12	200000	
Co	59	2	He	89.072	89.072	1.10	124689	0.07	2000	

Sample Report

Ni	60	2	He	844.665	844.665	2.11	315617	0.27	2000	
Cu	63	2	He	85.955	85.955	3.96	85319	0.10	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	85.285	85.285	3.96	16318	0.52	2000	
As	75	2	He	92.812	92.812	3.30	9531	0.97	2000	
Sb	121	2	He	81.123	81.123	2.12	29573	0.27	2000	
Se	78	2	He	95.033	95.033	6.42	624	15.23	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	378559	0.93	354717	106.72	70	125	
In	115	1	nogas	321404	1.46	300202	107.06	70	125	
Li	6	1	nogas	1008547	3.12	924026	109.15	70	125	
Bi	209	1	nogas	418670	1.21	402947	103.90	70	125	
Ge	72	2	He	72755	1.23	65798	110.57	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	126_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:30:24-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	99.541	3.824	365114	1.73	100	99.5	90	110	
B	11	1	nogas	501.324	1.860	1200254	1.51	500	100.3	90	110	
Na	23	1	nogas	9768.028	0.137	70423391	0.51	10000	97.7	90	110	
Mg	24	1	nogas	9808.047	0.344	48264431	0.13	10000	98.1	90	110	
Al	27	1	nogas	97.583	2.031	547853	1.77	100	97.6	90	110	
P	31	1	nogas	474.643	2.724	189729	1.56	500	94.9	90	110	
K	39	1	nogas	9733.259	1.428	35721679	1.01	10000	97.3	90	110	
Ca	43	1	nogas	9576.539	1.115	64782	0.75	10000	95.8	90	110	
Ca	44	1	nogas	9338.347	1.544	1040142	1.17	10000	93.4	90	110	
Ti	47	1	nogas	96.439	4.185	30743	4.00	100	96.4	90	110	
V	51	1	nogas	109.490	3.113	876805	1.84	100	109.5	90	110	
Cr	52	1	nogas	96.803	1.464	380510	1.18	100	96.8	90	110	
Mn	55	1	nogas	95.932	1.425	454931	1.13	100	95.9	90	110	
Fe	56	1	nogas	9561.494	1.226	38069162	0.85	10000	95.6	90	110	
Co	59	1	nogas	96.093	1.027	345161	0.65	100	96.1	90	110	
Ni	60	1	nogas	97.974	1.694	74567	1.52	100	98.0	90	110	
Cu	63	1	nogas	98.033	1.221	174553	0.93	100	98.0	90	110	
Zn	66	1	nogas	94.115	2.484	61640	2.47	100	94.1	90	110	
As	75	1	nogas	107.893	4.681	122404	2.34	100	107.9	90	110	
Se	77	1	nogas	139.086	8.445	27780	1.75	100	139.1	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	100.051	11.658	2727	11.21	100	100.1	90	110	
Sr	88	1	nogas	98.342	0.250	311159	0.40	100	98.3	90	110	
Mo	95	1	nogas	99.103	1.484	58451	1.52	100	99.1	90	110	
Ag	107	1	nogas	99.876	1.378	160640	1.24	100	99.9	90	110	
Cd	111	1	nogas	96.363	3.557	34298	2.15	100	96.4	90	110	
Sn	118	1	nogas	97.189	1.693	88005	0.97	100	97.2	90	110	
Sb	121	1	nogas	98.260	1.773	132650	1.62	100	98.3	90	110	
Ba	137	1	nogas	101.121	3.499	37569	2.85	100	101.1	90	110	
Tl	205	1	nogas	93.717	6.492	396846	0.93	100	93.7	90	110	
Pb	208	1	nogas	94.408	5.652	301682	0.25	100	94.4	90	110	
U	238	1	nogas	92.011	5.741	778247	0.59	100	92.0	90	110	
Li	7	1	nogas	97.564	2.910	1145296	0.57	100	97.6	90	110	
Si	28	1	nogas	4819.259	2.472	11506235	2.22	5000	96.4	90	110	
Ba	135	1	nogas	100.501	2.873	21541	1.44	100	100.5	90	110	
La	139	1	nogas	169.450	21.857	123	20.40	100	169.5	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	295.151	173.205	7	173.21	100	295.2	90	110	CCV Main CR1-2 Failed
Tl	203	1	nogas	94.086	5.410	163526	0.26	100	94.1	90	110	
Na	23	2	He	9536.651	0.865	3830174	1.67	10000	95.4	90	110	
Mg	24	2	He	9661.969	3.185	2116966	3.02	10000	96.6	90	110	
Al	27	2	He	100.211	3.209	9039	2.25	100	100.2	90	110	
K	39	2	He	9242.524	1.768	1036077	1.20	10000	92.4	90	110	
Ca	43	2	He	9301.626	2.558	2734	3.11	10000	93.0	90	110	
Ca	44	2	He	10120.496	0.840	49441	0.79	10000	101.2	90	110	
V	51	2	He	97.000	2.031	80827	1.48	100	97.0	90	110	
Cr	52	2	He	94.504	2.321	97797	1.63	100	94.5	90	110	
Mn	55	2	He	96.275	2.206	54790	1.43	100	96.3	90	110	
Fe	56	2	He	9595.081	1.339	7969329	0.45	10000	96.0	90	110	
Co	59	2	He	96.762	1.512	130264	0.62	100	96.8	90	110	
Ni	60	2	He	96.757	3.264	34854	3.87	100	96.8	90	110	
Cu	63	2	He	92.890	1.069	88618	1.53	100	92.9	90	110	
Zn	66	2	He	92.263	1.390	16968	0.66	100	92.3	90	110	
As	75	2	He	97.776	4.574	9642	3.73	100	97.8	90	110	
Sb	121	2	He	98.239	1.588	34435	0.98	100	98.2	90	110	
Se	78	2	He	95.002	6.602	600	5.78	100	95.0	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	368751	0.39	354717	103.96	70	125	
In	115	1	nogas	313352	1.42	300202	104.38	70	125	
Li	6	1	nogas	1010111	2.19	924026	109.32	70	125	
Bi	209	1	nogas	428572	5.72	402947	106.36	70	125	

Ge	72	2	He	69971	0.91	65798	106.34	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	127_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T16:32:38-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	0.030	49.3	123	40.0	1	
B	11	1	nogas	8.397	17.2	32385	9.0	10	
Na	23	1	nogas	28.177	3.7	312980	2.8	100	
Mg	24	1	nogas	1.841	43.1	16545	23.7	100	
Al	27	1	nogas	-0.590	-7.4	16694	2.9	5	
P	31	1	nogas	1.919	187.2	56350	0.7	10	
K	39	1	nogas	-5.722	-199.2	2136122	0.7	100	
Ca	43	1	nogas	-8.135	-94.9	250	20.0	100	
Ca	44	1	nogas	-2.828	-104.5	6618	6.2	100	
Ti	47	1	nogas	0.062	167.1	113	31.0	2.5	
V	51	1	nogas	6.266	73.3	439440	3.4	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	-0.137	-235.6	25375	3.8	2.5	
Mn	55	1	nogas	0.077	25.4	5831	1.2	2.5	
Fe	56	1	nogas	-7.881	-3.4	247397	1.1	100	
Co	59	1	nogas	0.023	46.0	153	26.4	2.5	
Ni	60	1	nogas	0.403	9.0	120	25.0	2.5	
Cu	63	1	nogas	-0.069	-90.8	1373	8.0	2.5	
Zn	66	1	nogas	0.189	23.4	137	22.4	2.5	
As	75	1	nogas	-4.111	-111.1	68526	2.2	2.5	
Se	77	1	nogas	7.020	216.1	23156	3.8	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.043	2191.4	30	88.2	2.5	
Sr	88	1	nogas	0.016	145.2	370	21.5	2.5	
Mo	95	1	nogas	0.099	33.0	60	33.3	2.5	
Ag	107	1	nogas	0.010	129.9	27	78.1	2.5	
Cd	111	1	nogas	-0.001	-2125.7	3	173.2	1	
Sn	118	1	nogas	0.149	25.8	243	14.4	5	
Sb	121	1	nogas	0.186	41.3	323	34.2	2.5	
Ba	137	1	nogas	0.132	21.5	73	15.7	2.5	
Tl	205	1	nogas	0.070	81.9	307	79.6	1	
Pb	208	1	nogas	0.039	52.7	127	52.6	2.5	
U	238	1	nogas	0.021	64.5	180	64.1	2.5	
Si	28	1	nogas	12.574	12.1	108250	3.7	5	CCB Main CR1 Failed
La	139	1	nogas	4.403	173.2	3	173.2	2.5	CCB Main CR1 Failed
Au	197	1	nogas	143.970	173.2	3	173.2	2.5	CCB Main CR1 Failed
Na	23	2	He	22.203	9.3	27534	2.7	100	
Mg	24	2	He	1.911	1.3	807	1.4	100	
Al	27	2	He	0.231	239.9	250	20.8	5	
K	39	2	He	16.825	82.7	49076	3.8	100	
Ca	43	2	He	-15.049	-386.4	10	173.2	100	
Ca	44	2	He	4.094	196.1	127	31.9	100	
V	51	2	He	0.837	11.6	4095	1.6	2.5	
Cr	52	2	He	0.007	1231.2	373	24.2	2.5	
Mn	55	2	He	0.014	604.3	67	75.5	2.5	
Fe	56	2	He	0.588	16.5	2570	3.1	100	
Co	59	2	He	0.014	54.5	40	25.0	2.5	
Ni	60	2	He	-0.186	-16.6	17	69.3	2.5	

Continuing Calibration Blank (CCB) Report

Cu	63	2	He	-0.493	-12.1	597	9.2	2.5	
Zn	66	2	He	-0.308	-36.7	57	36.7	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
As	75	2	He	0.276	258.2	327	20.8	2.5	
Sb	121	2	He	0.263	33.1	127	24.1	2.5	
Se	78	2	He	-0.385	-93.5	3	86.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	379726	1.52	354717	107.05	70	125	
In	115	1	nogas	327998	0.97	300202	109.26	70	125	
Li	6	1	nogas	944253	1.11	924026	102.19	70	125	
Bi	209	1	nogas	435914	0.43	402947	108.18	70	125	
Ge	72	2	He	71594	0.72	65798	108.81	70	125	

Sample Report

Sample Table

Sample Name	HS18081428-07
Data File Name	133SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T17:09:21-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	2.498	2.498	4.66	11641	0.02	2000	
B	11	1	nogas	186.157	186.157	1.89	576477	0.03	2000	
Na	23	1	nogas	OR	OR	#VALUE!	OR	#VALUE!	200000	>LDR
Mg	24	1	nogas	338023.389	338023.389	1.19	1734854172	0.02	200000	>LDR
Al	27	1	nogas	4972.638	4972.638	1.58	23631659	0.02	2000	>LDR
K	39	1	nogas	13552.000	13552.000	4.46	42880592	0.03	200000	
Ca	43	1	nogas	422585.382	422585.382	2.43	2495183	16.94	200000	>LDR
Ca	44	1	nogas	407725.864	407725.864	4.41	39558884	1.03	200000	>LDR
Ti	47	1	nogas	57.702	57.702	4.32	16171	0.36	2000	
V	51	1	nogas	31.054	31.054	10.26	469058	0.01	2000	
Cr	52	1	nogas	8.414	8.414	2.17	49147	0.02	2000	
Mn	55	1	nogas	13151.425	13151.425	2.61	54050036	0.02	2000	>LDR
Fe	56	1	nogas	10736.077	10736.077	2.06	37452207	0.03	200000	
Co	59	1	nogas	373.855	373.855	2.73	1177225	0.03	2000	
Ni	60	1	nogas	1029.331	1029.331	1.86	688608	0.15	2000	
Cu	63	1	nogas	11.664	11.664	4.72	19334	0.06	2000	
Zn	66	1	nogas	1187.880	1187.880	1.67	682121	0.17	2000	
As	75	1	nogas	7.260	7.260	47.24	63370	0.01	2000	
Se	77	1	nogas	45.014	45.014	84.23	21066	0.21	2000	
Se	82	1	nogas	8.411	8.411	3.00	223	3.77	2000	
Sr	88	1	nogas	4754.842	4754.842	1.76	13181620	0.04	2000	>LDR
Mo	95	1	nogas	0.382	0.382	45.56	197	0.19	2000	
Ag	107	1	nogas	0.043	0.043	47.71	70	0.06	2000	
Cd	111	1	nogas	30.633	30.633	0.68	9826	0.31	2000	
Sn	118	1	nogas	0.190	0.190	41.37	243	0.08	2000	
Sb	121	1	nogas	0.593	0.593	2.60	757	0.08	2000	
Ba	137	1	nogas	22.369	22.369	5.57	7498	0.30	2000	
Tl	205	1	nogas	0.800	0.800	2.53	2904	0.03	2000	
Pb	208	1	nogas	3.988	3.988	6.90	10894	0.04	2000	
U	238	1	nogas	0.761	0.761	3.42	5498	0.01	2000	
Si	28	1	nogas	28785.774	28785.774	1.07	59942941	0.05	2000	>LDR
La	139	1	nogas	338121.990	338121.990	2.90	222084	152.25	2000	>LDR
Au	197	1	nogas	345.508	345.508	173.21	7	5182.62	2000	
Na	23	2	He	698394.586	698394.586	2.67	262443803	0.27	200000	>LDR
Mg	24	2	He	371860.076	371860.076	2.89	76586541	0.49	200000	>LDR
Al	27	2	He	4968.934	4968.934	2.62	411172	1.21	2000	>LDR
K	39	2	He	13216.599	13216.599	1.37	1374443	0.96	200000	
Ca	43	2	He	432616.105	432616.105	2.74	118902	363.84	200000	>LDR
Ca	44	2	He	438452.954	438452.954	1.75	2009813	21.82	200000	>LDR
V	51	2	He	7.035	7.035	5.67	8417	0.08	2000	
Cr	52	2	He	7.191	7.191	7.49	7302	0.10	2000	
Mn	55	2	He	13058.048	13058.048	1.78	6980132	0.19	2000	>LDR
Fe	56	2	He	10260.344	10260.344	2.34	8012017	0.13	200000	
Co	59	2	He	368.486	368.486	1.82	466372	0.08	2000	
Ni	60	2	He	1000.392	1000.392	2.90	337963	0.30	2000	
Cu	63	2	He	8.628	8.628	5.66	8629	0.10	2000	

Sample Report

Zn	66	2	He	1158.581	1158.581	3.17	199091	0.58	2000	
As	75	2	He	2.225	2.225	6.86	476	0.47	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Sb	121	2	He	0.517	0.517	7.85	200	0.26	2000	
Se	78	2	He	3.935	3.935	37.36	28	14.05	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	323406	1.79	354717	91.17	70	125	
In	115	1	nogas	282239	1.24	300202	94.02	70	125	
Li	6	1	nogas	1279682	0.85	924026	138.49	70	125	ISTD Failed
Bi	209	1	nogas	365491	0.61	402947	90.70	70	125	
Ge	72	2	He	65798	2.15	65798	100.00	70	125	

Sample Report

Sample Table

Sample Name	HS18081428-08
Data File Name	134SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T17:11:36-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	0.053	0.053	22.60	220	0.02	2000	
B	11	1	nogas	89.449	89.449	3.17	229663	0.04	2000	
Na	23	1	nogas	159581.470	159581.470	0.74	1198215627	0.01	200000	
Mg	24	1	nogas	102870.048	102870.048	1.12	527953912	0.02	200000	
Al	27	1	nogas	54.540	54.540	9.29	300481	0.02	2000	
K	39	1	nogas	65125.915	65125.915	0.99	216776855	0.03	200000	
Ca	43	1	nogas	171335.627	171335.627	0.63	1101583	15.55	200000	
Ca	44	1	nogas	165198.837	165198.837	0.95	17457738	0.95	200000	
Ti	47	1	nogas	7.801	7.801	12.58	2454	0.32	2000	
V	51	1	nogas	3.599	3.599	74.66	396447	0.00	2000	
Cr	52	1	nogas	40.105	40.105	1.99	164536	0.02	2000	
Mn	55	1	nogas	1696.942	1696.942	0.71	7597276	0.02	2000	
Fe	56	1	nogas	24422.449	24422.449	0.99	92417400	0.03	200000	
Co	59	1	nogas	0.844	0.844	5.28	2957	0.03	2000	
Ni	60	1	nogas	7.941	7.941	2.71	5601	0.14	2000	
Cu	63	1	nogas	1.638	1.638	3.90	4151	0.04	2000	
Zn	66	1	nogas	7.740	7.740	6.15	4847	0.16	2000	
As	75	1	nogas	1.609	1.609	413.11	66264	0.00	2000	
Se	77	1	nogas	2.140	2.140	2411.91	21277	0.01	2000	
Se	82	1	nogas	4.670	4.670	10.81	147	3.18	2000	
Sr	88	1	nogas	3040.499	3040.499	1.60	9173675	0.03	2000	>LDR
Mo	95	1	nogas	0.652	0.652	14.03	367	0.18	2000	
Ag	107	1	nogas	0.009	0.009	41.76	23	0.04	2000	
Cd	111	1	nogas	0.029	0.029	115.34	13	0.22	2000	
Sn	118	1	nogas	0.132	0.132	100.79	207	0.06	2000	
Sb	121	1	nogas	0.311	0.311	5.18	460	0.07	2000	
Ba	137	1	nogas	61.403	61.403	2.82	21731	0.28	2000	
Tl	205	1	nogas	0.003	0.003	148.45	17	0.02	2000	
Pb	208	1	nogas	0.135	0.135	21.88	390	0.03	2000	
U	238	1	nogas	0.033	0.033	41.97	253	0.01	2000	
Si	28	1	nogas	19842.816	19842.816	1.66	44998666	0.04	2000	>LDR
La	139	1	nogas	340.700	340.700	15.55	237	143.95	2000	
Au	197	1	nogas	0.000	0.000	#DIV/0!	0	#DIV/0!	2000	
Na	23	2	He	160072.655	160072.655	0.53	62925186	0.25	200000	
Mg	24	2	He	104080.951	104080.951	0.21	22418277	0.46	200000	
Al	27	2	He	53.300	53.300	10.83	4828	1.10	2000	
K	39	2	He	64048.369	64048.369	4.92	6788447	0.94	200000	
Ca	43	2	He	181133.729	181133.729	3.10	52068	347.88	200000	>LDR
Ca	44	2	He	174570.128	174570.128	1.25	836816	20.86	200000	
V	51	2	He	0.404	0.404	24.61	3595	0.01	2000	
Cr	52	2	He	40.383	40.383	4.28	41291	0.10	2000	
Mn	55	2	He	1670.484	1670.484	1.82	933770	0.18	2000	
Fe	56	2	He	23358.138	23358.138	1.49	19071005	0.12	200000	
Co	59	2	He	0.103	0.103	41.51	157	0.07	2000	

Sample Report

Ni	60	2	He	1.418	1.418	21.06	583	0.24	2000	
Cu	63	2	He	-0.059	-0.059	-114.25	977	-0.01	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	1.764	1.764	8.95	427	0.41	2000	
As	75	2	He	0.208	0.208	96.41	308	0.07	2000	
Sb	121	2	He	0.268	0.268	45.18	123	0.22	2000	
Se	78	2	He	0.713	0.713	93.18	9	7.64	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	352005	0.98	354717	99.24	70	125	
In	115	1	nogas	298325	0.81	300202	99.37	70	125	
Li	6	1	nogas	1025410	2.79	924026	110.97	70	125	
Bi	209	1	nogas	386777	0.23	402947	95.99	70	125	
Ge	72	2	He	68793	0.91	65798	104.55	70	125	

Sample Report

Sample Table

Sample Name	HS18081428-09
Data File Name	135SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T17:13:52-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.134	0.134	14.43	607	0.02	2000	
B	11	1	nogas	122.768	122.768	1.38	360650	0.03	2000	
Na	23	1	nogas	349144.670	349144.670	1.23	2508077589	0.01	200000	>LDR
Mg	24	1	nogas	341046.922	341046.922	2.24	1674400204	0.02	200000	>LDR
Al	27	1	nogas	1478.090	1478.090	3.06	7439101	0.02	2000	
K	39	1	nogas	9592.171	9592.171	2.37	32669155	0.03	200000	
Ca	43	1	nogas	342413.854	342413.854	2.75	2137961	16.02	200000	>LDR
Ca	44	1	nogas	324462.867	324462.867	1.54	33300856	0.97	200000	>LDR
Ti	47	1	nogas	52.221	52.221	2.60	15480	0.34	2000	
V	51	1	nogas	61.530	61.530	11.59	619088	0.01	2000	
Cr	52	1	nogas	10.111	10.111	6.89	57729	0.02	2000	
Mn	55	1	nogas	3028.012	3028.012	2.76	13163635	0.02	2000	>LDR
Fe	56	1	nogas	2362.594	2362.594	2.67	8911268	0.03	200000	
Co	59	1	nogas	34.155	34.155	2.05	113801	0.03	2000	
Ni	60	1	nogas	56.003	56.003	3.40	39447	0.14	2000	
Cu	63	1	nogas	5.545	5.545	3.51	10427	0.05	2000	
Zn	66	1	nogas	87.546	87.546	3.55	53159	0.16	2000	
As	75	1	nogas	46.445	46.445	18.82	85068	0.05	2000	
Se	77	1	nogas	212.074	212.074	18.57	28470	0.74	2000	
Se	82	1	nogas	10.865	10.865	34.86	297	3.66	2000	
Sr	88	1	nogas	6264.420	6264.420	1.44	18360919	0.03	2000	>LDR
Mo	95	1	nogas	0.408	0.408	2.73	223	0.18	2000	
Ag	107	1	nogas	0.056	0.056	33.34	93	0.06	2000	
Cd	111	1	nogas	3.944	3.944	3.52	1320	0.30	2000	
Sn	118	1	nogas	0.489	0.489	39.66	507	0.10	2000	
Sb	121	1	nogas	0.473	0.473	23.36	650	0.07	2000	
Ba	137	1	nogas	47.896	47.896	3.70	16702	0.29	2000	
Tl	205	1	nogas	0.121	0.121	9.08	453	0.03	2000	
Pb	208	1	nogas	1.438	1.438	3.96	4021	0.04	2000	
U	238	1	nogas	0.839	0.839	8.88	6208	0.01	2000	
Si	28	1	nogas	16330.552	16330.552	1.77	35986811	0.05	2000	>LDR
La	139	1	nogas	15777.650	15777.650	6.26	10790	146.22	2000	>LDR
Au	197	1	nogas	496.935	496.935	98.77	10	4969.35	2000	
Na	23	2	He	332626.458	332626.458	2.15	131136448	0.25	200000	>LDR
Mg	24	2	He	324978.990	324978.990	2.25	70211084	0.46	200000	>LDR
Al	27	2	He	1401.919	1401.919	1.82	121857	1.15	2000	
K	39	2	He	9073.698	9073.698	1.40	1003975	0.90	200000	
Ca	43	2	He	346191.975	346191.975	1.97	99815	346.83	200000	>LDR
Ca	44	2	He	346503.189	346503.189	1.80	1665961	20.80	200000	>LDR
V	51	2	He	7.177	7.177	2.35	8942	0.08	2000	
Cr	52	2	He	6.210	6.210	2.40	6668	0.09	2000	
Mn	55	2	He	3004.101	3004.101	1.96	1684527	0.18	2000	>LDR
Fe	56	2	He	2255.999	2255.999	1.19	1849513	0.12	200000	
Co	59	2	He	32.784	32.784	3.56	43539	0.08	2000	

Sample Report

Ni	60	2	He	44.436	44.436	3.10	15827	0.28	2000	
Cu	63	2	He	3.180	3.180	3.84	3991	0.08	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	68.466	68.466	3.43	12448	0.55	2000	
As	75	2	He	2.261	2.261	8.50	502	0.45	2000	
Sb	121	2	He	0.199	0.199	67.07	100	0.20	2000	
Se	78	2	He	1.684	1.684	87.09	15	10.98	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	341969	1.47	354717	96.41	70	125	
In	115	1	nogas	293873	0.73	300202	97.89	70	125	
Li	6	1	nogas	1193797	1.24	924026	129.20	70	125	ISTD Failed
Bi	209	1	nogas	373950	2.34	402947	92.80	70	125	
Ge	72	2	He	69004	0.30	65798	104.87	70	125	

Sample Report

Sample Table

Sample Name	HS18081428-10
Data File Name	136SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T17:16:08-05:00
Sample Type	Sample
Dilution	1
Comment	DISS B132023
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	0.028	0.028	50.99	117	0.02	2000	
B	11	1	nogas	32.092	32.092	0.24	85153	0.04	2000	
Na	23	1	nogas	198810.550	198810.550	0.63	1525793501	0.01	200000	>LDR
Mg	24	1	nogas	98425.120	98425.120	0.61	516313195	0.02	200000	
Al	27	1	nogas	87.168	87.168	2.53	482562	0.02	2000	
K	39	1	nogas	3473.539	3473.539	0.63	13840731	0.03	200000	
Ca	43	1	nogas	155736.335	155736.335	0.43	1030045	15.12	200000	
Ca	44	1	nogas	149101.983	149101.983	0.47	16208939	0.92	200000	
Ti	47	1	nogas	7.695	7.695	5.16	2490	0.31	2000	
V	51	1	nogas	90.646	90.646	5.45	780502	0.01	2000	
Cr	52	1	nogas	23.449	23.449	2.56	109230	0.02	2000	
Mn	55	1	nogas	71.344	71.344	1.79	333523	0.02	2000	
Fe	56	1	nogas	529.080	529.080	1.37	2320134	0.02	200000	
Co	59	1	nogas	1.149	1.149	1.76	4117	0.03	2000	
Ni	60	1	nogas	77.808	77.808	1.53	58107	0.13	2000	
Cu	63	1	nogas	3.894	3.894	5.57	8179	0.05	2000	
Zn	66	1	nogas	10.876	10.876	1.85	7001	0.16	2000	
As	75	1	nogas	90.364	90.364	7.92	111624	0.08	2000	
Se	77	1	nogas	400.931	400.931	11.28	37598	1.07	2000	
Se	82	1	nogas	6.026	6.026	30.60	187	3.23	2000	
Sr	88	1	nogas	2679.236	2679.236	1.91	8315814	0.03	2000	>LDR
Mo	95	1	nogas	5.087	5.087	2.19	2947	0.17	2000	
Ag	107	1	nogas	0.036	0.036	18.91	67	0.05	2000	
Cd	111	1	nogas	0.540	0.540	27.74	190	0.28	2000	
Sn	118	1	nogas	0.124	0.124	70.38	203	0.06	2000	
Sb	121	1	nogas	0.384	0.384	17.44	570	0.07	2000	
Ba	137	1	nogas	31.943	31.943	4.76	11524	0.28	2000	
Tl	205	1	nogas	0.007	0.007	112.13	33	0.02	2000	
Pb	208	1	nogas	0.178	0.178	15.02	503	0.04	2000	
U	238	1	nogas	2.676	2.676	2.51	20050	0.01	2000	
Si	28	1	nogas	19251.147	19251.147	1.38	44911396	0.04	2000	>LDR
La	139	1	nogas	2394.179	2394.179	2.92	1693	141.38	2000	>LDR
Au	197	1	nogas	0.000	0.000	#DIV/0!	0	#DIV/0!	2000	
Na	23	2	He	202280.775	202280.775	4.20	80474215	0.25	200000	>LDR
Mg	24	2	He	100211.955	100211.955	3.92	21847493	0.46	200000	
Al	27	2	He	83.363	83.363	11.89	7515	1.11	2000	
K	39	2	He	3398.299	3398.299	1.76	408282	0.83	200000	
Ca	43	2	He	159472.243	159472.243	1.77	46426	343.50	200000	
Ca	44	2	He	157636.185	157636.185	2.55	764962	20.61	200000	
V	51	2	He	4.611	4.611	7.81	6983	0.07	2000	
Cr	52	2	He	16.282	16.282	3.17	17065	0.10	2000	
Mn	55	2	He	71.925	71.925	3.07	40763	0.18	2000	
Fe	56	2	He	424.275	424.275	1.95	352711	0.12	200000	
Co	59	2	He	0.369	0.369	25.41	513	0.07	2000	

Sample Report

Ni	60	2	He	73.417	73.417	6.33	26323	0.28	2000	
Cu	63	2	He	2.017	2.017	7.19	2937	0.07	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	5.625	5.625	13.91	1133	0.50	2000	
As	75	2	He	1.334	1.334	88.67	419	0.32	2000	
Sb	121	2	He	0.376	0.376	36.13	163	0.23	2000	
Se	78	2	He	1.246	1.246	93.21	13	9.84	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	362097	1.26	354717	102.08	70	125	
In	115	1	nogas	303876	0.33	300202	101.22	70	125	
Li	6	1	nogas	948266	0.59	924026	102.62	70	125	
Bi	209	1	nogas	378835	1.14	402947	94.02	70	125	
Ge	72	2	He	69667	2.30	65798	105.88	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	138_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T17:20:43-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	98.880	1.069	339080	1.49	100	98.9	90	110	
B	11	1	nogas	517.667	1.564	1157839	1.91	500	103.5	90	110	
Na	23	1	nogas	10177.585	2.201	71230491	1.05	10000	101.8	90	110	
Mg	24	1	nogas	10034.694	2.657	47938375	1.66	10000	100.3	90	110	
Al	27	1	nogas	97.264	3.456	540302	2.87	100	97.3	90	110	
P	31	1	nogas	453.406	3.115	181702	0.83	500	90.7	90	110	
K	39	1	nogas	9674.502	2.303	35138617	0.68	10000	96.7	90	110	
Ca	43	1	nogas	9627.660	4.535	64403	2.09	10000	96.3	90	110	
Ca	44	1	nogas	9401.285	2.136	1035908	0.49	10000	94.0	90	110	
Ti	47	1	nogas	96.219	3.000	30342	1.25	100	96.2	90	110	
V	51	1	nogas	181.618	7.589	1179613	7.23	100	181.6	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	101.456	1.320	393431	2.25	100	101.5	90	110	
Mn	55	1	nogas	95.389	1.736	447626	2.02	100	95.4	90	110	
Fe	56	1	nogas	9523.190	1.360	37516844	1.23	10000	95.2	90	110	
Co	59	1	nogas	93.276	2.950	331459	2.20	100	93.3	90	110	
Ni	60	1	nogas	93.614	2.551	70475	0.99	100	93.6	90	110	
Cu	63	1	nogas	94.551	0.463	166646	2.01	100	94.6	90	110	
Zn	66	1	nogas	94.237	1.328	61081	2.95	100	94.2	90	110	
As	75	1	nogas	159.439	3.666	146564	3.39	100	159.4	90	110	CCV Main CR1-2 Failed
Se	77	1	nogas	343.183	6.071	35577	0.34	100	343.2	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	97.418	6.539	2630	7.97	100	97.4	90	110	
Sr	88	1	nogas	99.978	3.768	312852	1.46	100	100.0	90	110	
Mo	95	1	nogas	95.022	2.639	55438	0.27	100	95.0	90	110	
Ag	107	1	nogas	97.153	1.453	154669	3.72	100	97.2	90	110	
Cd	111	1	nogas	98.532	2.704	34562	2.51	100	98.5	90	110	
Sn	118	1	nogas	99.823	0.537	89067	1.19	100	99.8	90	110	
Sb	121	1	nogas	96.393	1.927	128754	1.77	100	96.4	90	110	
Ba	137	1	nogas	101.799	1.176	37268	0.48	100	101.8	90	110	
Tl	205	1	nogas	97.774	3.958	391823	0.78	100	97.8	90	110	
Pb	208	1	nogas	97.370	1.430	294528	1.77	100	97.4	90	110	
U	238	1	nogas	94.075	2.766	753027	0.88	100	94.1	90	110	
Li	7	1	nogas	105.441	0.661	1151984	0.62	100	105.4	90	110	
Si	28	1	nogas	4761.429	0.926	11250124	1.88	5000	95.2	90	110	
Ba	135	1	nogas	101.153	1.476	21367	2.02	100	101.2	90	110	
La	139	1	nogas	163.072	53.116	117	52.37	100	163.1	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	311.819	86.727	7	86.60	100	311.8	90	110	CCV Main CR1-2 Failed
Tl	203	1	nogas	96.627	3.089	158904	0.84	100	96.6	90	110	
Na	23	2	He	9392.624	2.955	3778184	1.19	10000	93.9	90	110	
Mg	24	2	He	9375.351	3.482	2057415	2.17	10000	93.8	90	110	
Al	27	2	He	98.609	6.220	8909	3.82	100	98.6	90	110	
K	39	2	He	8937.044	3.061	1004958	1.10	10000	89.4	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	8959.537	3.982	2637	1.71	10000	89.6	90	110	CCV Main CR1-2 Failed
Ca	44	2	He	9253.675	2.822	45287	1.28	10000	92.5	90	110	
V	51	2	He	97.698	3.911	81501	1.31	100	97.7	90	110	
Cr	52	2	He	91.345	1.369	94730	2.42	100	91.3	90	110	
Mn	55	2	He	92.784	5.191	52884	3.94	100	92.8	90	110	
Fe	56	2	He	9115.118	3.838	7582459	2.39	10000	91.2	90	110	
Co	59	2	He	93.029	4.062	125414	1.61	100	93.0	90	110	
Ni	60	2	He	91.654	2.437	33071	1.55	100	91.7	90	110	
Cu	63	2	He	89.747	3.009	85782	0.84	100	89.7	90	110	CCV Main CR1-2 Failed
Zn	66	2	He	93.556	5.301	17225	2.88	100	93.6	90	110	
As	75	2	He	96.183	8.116	9504	7.02	100	96.2	90	110	
Sb	121	2	He	92.902	2.352	32622	1.37	100	92.9	90	110	
Se	78	2	He	93.286	8.955	590	7.34	100	93.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	364916	2.43	354717	102.88	70	125	
In	115	1	nogas	308741	1.28	300202	102.84	70	125	
Li	6	1	nogas	943801	0.47	924026	102.14	70	125	
Bi	209	1	nogas	404929	3.16	402947	100.49	70	125	

Ge	72	2	He	70107	2.39	65798	106.55	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	139_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T17:22:57-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	0.041	34.7	150	29.1	1	
B	11	1	nogas	5.878	18.9	25127	7.7	10	
Na	23	1	nogas	170.402	1.3	1283937	0.4	100	CCB Main CR1 Failed
Mg	24	1	nogas	14.918	4.0	77644	2.6	100	
Al	27	1	nogas	-0.391	-34.6	16972	3.9	5	
P	31	1	nogas	-1.059	-380.6	52906	2.7	10	
K	39	1	nogas	39.313	28.0	2189733	1.2	100	
Ca	43	1	nogas	0.608	921.6	297	12.8	100	
Ca	44	1	nogas	6.578	35.3	7332	4.3	100	
Ti	47	1	nogas	0.241	62.1	163	27.6	2.5	
V	51	1	nogas	32.585	3.2	531832	1.8	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	1.894	18.3	31521	3.5	2.5	
Mn	55	1	nogas	0.290	9.6	6541	1.1	2.5	
Fe	56	1	nogas	13.983	18.9	320789	3.7	100	
Co	59	1	nogas	0.035	46.7	187	29.5	2.5	
Ni	60	1	nogas	0.692	17.1	330	25.9	2.5	
Cu	63	1	nogas	0.141	64.0	1673	9.3	2.5	
Zn	66	1	nogas	0.811	15.3	530	14.2	2.5	
As	75	1	nogas	16.228	35.1	75302	3.1	2.5	CCB Main CR1 Failed
Se	77	1	nogas	84.349	23.8	25116	2.2	2.5	CCB Main CR1 Failed
Se	82	1	nogas	1.747	56.1	73	34.3	2.5	
Sr	88	1	nogas	0.188	9.3	887	5.6	2.5	
Mo	95	1	nogas	0.105	132.8	60	132.3	2.5	
Ag	107	1	nogas	0.004	325.1	17	124.9	2.5	
Cd	111	1	nogas	0.008	372.6	7	173.2	1	
Sn	118	1	nogas	0.183	40.3	267	26.6	5	
Sb	121	1	nogas	0.125	12.4	227	9.2	2.5	
Ba	137	1	nogas	0.140	44.8	73	31.5	2.5	
Tl	205	1	nogas	0.054	71.9	237	71.9	1	
Pb	208	1	nogas	0.043	15.0	137	15.2	2.5	
U	238	1	nogas	0.021	60.8	180	63.1	2.5	
Si	28	1	nogas	10.623	11.6	98655	1.9	5	CCB Main CR1 Failed
La	139	1	nogas	8.898	173.2	7	173.2	2.5	CCB Main CR1 Failed
Au	197	1	nogas	0.000	#DIV/0!	0	#DIV/0!	2.5	
Na	23	2	He	170.812	3.5	85654	3.5	100	CCB Main CR1 Failed
Mg	24	2	He	14.695	5.2	3560	3.9	100	
Al	27	2	He	0.317	192.5	250	22.3	5	
K	39	2	He	59.285	6.8	52098	1.3	100	
Ca	43	2	He	-2.359	-1698.7	13	86.6	100	
Ca	44	2	He	11.734	73.3	160	27.2	100	
V	51	2	He	1.956	10.1	4857	2.2	2.5	
Cr	52	2	He	0.057	132.1	413	19.6	2.5	
Mn	55	2	He	0.225	61.4	183	41.7	2.5	
Fe	56	2	He	1.378	24.2	3144	8.9	100	
Co	59	2	He	0.012	127.8	37	56.8	2.5	
Ni	60	2	He	-0.129	-32.5	37	41.7	2.5	

Continuing Calibration Blank (CCB) Report

Cu	63	2	He	-0.400	-14.2	667	8.8	2.5	
Zn	66	2	He	-0.463	-27.7	27	86.6	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
As	75	2	He	0.212	94.7	311	7.3	2.5	
Sb	121	2	He	0.015	302.6	37	41.7	2.5	
Se	78	2	He	0.805	66.6	10	34.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	362065	0.97	354717	102.07	70	125	
In	115	1	nogas	316496	1.52	300202	105.43	70	125	
Li	6	1	nogas	885009	1.56	924026	95.78	70	125	
Bi	209	1	nogas	428261	2.38	402947	106.28	70	125	
Ge	72	2	He	69429	1.13	65798	105.52	70	125	

Sample Report

Sample Table

Sample Name	HS18081428-07
Data File Name	141SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T17:36:15-05:00
Sample Type	Sample
Dilution	100
Comment	DISS B132023Mn
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	0.040	4.020	19.29	150	0.03	2000	
B	11	1	nogas	2.586	258.642	12.35	18509	0.01	2000	
Na	23	1	nogas	7668.165	766816.503	2.12	52940053	0.01	200000	
Mg	24	1	nogas	4128.423	412842.301	1.18	19451658	0.02	200000	
Al	27	1	nogas	48.540	4853.953	2.38	281686	0.02	2000	
K	39	1	nogas	151.521	15152.078	8.67	2612485	0.01	200000	
Ca	43	1	nogas	4240.320	424031.992	2.28	28790	14.73	200000	
Ca	44	1	nogas	4028.903	402890.277	2.93	451623	0.89	200000	
Ti	47	1	nogas	0.662	66.225	20.58	300	0.22	2000	
V	51	1	nogas	55.375	5537.527	4.97	639592	0.01	2000	
Cr	52	1	nogas	4.090	408.964	6.18	40081	0.01	2000	
Mn	55	1	nogas	135.101	13510.096	1.48	637189	0.02	2000	
Fe	56	1	nogas	139.490	13948.961	2.86	821112	0.02	200000	
Co	59	1	nogas	3.833	383.318	2.75	13802	0.03	2000	
Ni	60	1	nogas	11.396	1139.608	5.83	8485	0.13	2000	
Cu	63	1	nogas	0.046	4.597	24.42	1533	0.00	2000	
Zn	66	1	nogas	12.956	1295.629	1.34	8475	0.15	2000	
As	75	1	nogas	24.227	2422.691	29.04	80512	0.03	2000	
Se	77	1	nogas	112.854	11285.401	10.37	26671	0.42	2000	
Se	82	1	nogas	0.954	95.419	23.86	53	1.79	2000	
Sr	88	1	nogas	47.146	4714.620	1.08	149022	0.03	2000	
Mo	95	1	nogas	0.011	1.129	86.60	7	0.17	2000	
Ag	107	1	nogas	0.006	0.596	179.55	20	0.03	2000	
Cd	111	1	nogas	0.355	35.458	48.53	130	0.27	2000	
Sn	118	1	nogas	0.002	0.201	3341.06	100	0.00	2000	
Sb	121	1	nogas	0.013	1.318	55.51	80	0.02	2000	
Ba	137	1	nogas	0.185	18.483	100.70	90	0.21	2000	
Tl	205	1	nogas	0.009	0.867	42.27	43	0.02	2000	
Pb	208	1	nogas	0.042	4.211	10.25	133	0.03	2000	
U	238	1	nogas	0.013	1.276	36.05	107	0.01	2000	
Si	28	1	nogas	264.804	26480.359	1.26	701976	0.04	2000	
La	139	1	nogas	3287.025	328702.524	9.17	2407	136.57	2000	>LDR
Au	197	1	nogas	0.000	0.000	#DIV/0!	0	#DIV/0!	2000	
Na	23	2	He	7025.229	702522.851	2.33	2891404	0.24	200000	
Mg	24	2	He	3723.938	372393.814	1.53	835182	0.45	200000	
Al	27	2	He	47.240	4723.976	8.89	4484	1.05	2000	
K	39	2	He	140.274	14027.370	14.92	62580	0.22	200000	
Ca	43	2	He	4010.538	401053.789	12.90	1213	330.52	200000	
Ca	44	2	He	4060.247	406024.738	6.71	20345	19.96	200000	
V	51	2	He	2.680	267.975	13.34	5604	0.05	2000	
Cr	52	2	He	0.198	19.756	61.96	573	0.03	2000	
Mn	55	2	He	129.274	12927.387	3.26	75247	0.17	2000	
Fe	56	2	He	104.378	10437.823	2.67	90772	0.11	200000	
Co	59	2	He	3.840	383.956	10.15	5304	0.07	2000	

Sample Report

Ni	60	2	He	10.704	1070.433	2.16	4021	0.27	2000	
Cu	63	2	He	-0.514	-51.369	-11.91	577	-0.09	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	11.751	1175.145	5.22	2314	0.51	2000	
As	75	2	He	0.229	22.873	47.50	322	0.07	2000	
Sb	121	2	He	-0.063	-6.284	-44.28	10	-0.63	2000	
Se	78	2	He	0.858	85.760	180.04	11	8.04	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	367996	0.65	354717	103.74	70	125	
In	115	1	nogas	314484	0.52	300202	104.76	70	125	
Li	6	1	nogas	893525	1.23	924026	96.70	70	125	
Bi	209	1	nogas	423417	1.36	402947	105.08	70	125	
Ge	72	2	He	71611	2.25	65798	108.83	70	125	

Sample Report

Sample Table

Sample Name	HS18081428-09
Data File Name	142SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T17:38:31-05:00
Sample Type	Sample
Dilution	20
Comment	DISS B132023Mn
ISTD Ref FileName	089CALB.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
Be	9	1	nogas	0.010	0.207	62.51	53	0.02	2000	
B	11	1	nogas	7.762	155.246	8.69	29624	0.03	2000	
Na	23	1	nogas	18610.908	372218.163	1.74	126982795	0.01	200000	
Mg	24	1	nogas	18519.653	370393.053	1.20	86312346	0.02	200000	
Al	27	1	nogas	71.012	1420.243	1.92	405631	0.02	2000	
K	39	1	nogas	500.052	10001.032	1.69	3838349	0.01	200000	
Ca	43	1	nogas	16647.621	332952.417	0.45	112870	14.75	200000	
Ca	44	1	nogas	16377.274	327545.478	0.78	1826761	0.90	200000	
Ti	47	1	nogas	2.798	55.967	7.63	983	0.28	2000	
V	51	1	nogas	55.685	1113.702	11.60	644934	0.01	2000	
Cr	52	1	nogas	3.892	77.832	6.35	39600	0.01	2000	
Mn	55	1	nogas	153.153	3063.056	1.73	726145	0.02	2000	
Fe	56	1	nogas	143.978	2879.567	1.49	844112	0.02	200000	
Co	59	1	nogas	1.771	35.420	7.22	6451	0.03	2000	
Ni	60	1	nogas	3.000	60.001	5.40	2107	0.14	2000	
Cu	63	1	nogas	0.181	3.621	106.99	1783	0.01	2000	
Zn	66	1	nogas	5.586	111.718	7.21	3684	0.15	2000	
As	75	1	nogas	25.107	502.143	41.37	81444	0.03	2000	
Se	77	1	nogas	106.554	2131.087	12.14	26585	0.40	2000	
Se	82	1	nogas	0.940	18.802	81.71	53	1.76	2000	
Sr	88	1	nogas	303.326	6066.524	0.76	963129	0.03	2000	
Mo	95	1	nogas	0.034	0.677	132.78	20	0.17	2000	
Ag	107	1	nogas	0.004	0.076	336.81	17	0.02	2000	
Cd	111	1	nogas	0.267	5.335	65.57	97	0.28	2000	
Sn	118	1	nogas	0.091	1.816	84.50	177	0.05	2000	
Sb	121	1	nogas	0.038	0.750	64.68	113	0.03	2000	
Ba	137	1	nogas	2.240	44.801	18.09	840	0.27	2000	
Tl	205	1	nogas	0.007	0.148	83.92	37	0.02	2000	
Pb	208	1	nogas	0.067	1.334	23.48	203	0.03	2000	
U	238	1	nogas	0.043	0.850	15.14	343	0.01	2000	
Si	28	1	nogas	788.385	15767.703	1.61	1953504	0.04	2000	
La	139	1	nogas	701.856	14037.115	14.41	503	139.44	2000	
Au	197	1	nogas	0.000	0.000	#DIV/0!	0	#DIV/0!	2000	
Na	23	2	He	17832.273	356645.464	4.12	6976372	0.26	200000	
Mg	24	2	He	17822.263	356445.270	4.58	3811690	0.47	200000	
Al	27	2	He	76.707	1534.137	3.32	6808	1.13	2000	
K	39	2	He	532.489	10649.785	10.05	100712	0.53	200000	
Ca	43	2	He	18666.746	373334.926	4.80	5351	348.85	200000	
Ca	44	2	He	17974.937	359498.738	5.86	85628	20.99	200000	
V	51	2	He	3.293	65.850	7.69	5824	0.06	2000	
Cr	52	2	He	0.376	7.526	47.14	727	0.05	2000	
Mn	55	2	He	160.684	3213.678	4.46	89253	0.18	2000	
Fe	56	2	He	114.483	2289.655	3.78	94791	0.12	200000	
Co	59	2	He	1.794	35.883	3.02	2380	0.08	2000	

Sample Report

Ni	60	2	He	2.233	44.663	16.20	863	0.26	2000	
Cu	63	2	He	-0.247	-4.944	-2.26	797	-0.03	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Zn	66	2	He	3.990	79.809	21.57	820	0.49	2000	
As	75	2	He	0.266	5.319	232.38	311	0.09	2000	
Sb	121	2	He	-0.003	-0.069	-830.57	30	-0.01	2000	
Se	78	2	He	0.611	12.225	134.20	9	7.05	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	370302	0.87	354717	104.39	70	125	
In	115	1	nogas	308364	0.87	300202	102.72	70	125	
Li	6	1	nogas	902876	1.99	924026	97.71	70	125	
Bi	209	1	nogas	408520	1.14	402947	101.38	70	125	
Ge	72	2	He	68365	3.15	65798	103.90	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	144_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T17:43:00-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	99.025	1.942	345635	0.30	100	99.0	90	110	
B	11	1	nogas	494.239	3.063	1125615	0.85	500	98.8	90	110	
Na	23	1	nogas	9939.449	1.239	69476983	0.61	10000	99.4	90	110	
Mg	24	1	nogas	9914.306	1.632	47301974	0.79	10000	99.1	90	110	
Al	27	1	nogas	97.598	1.247	536555	1.35	100	97.6	90	110	
P	31	1	nogas	490.543	1.791	190232	1.00	500	98.1	90	110	
K	39	1	nogas	9592.794	1.549	34502455	0.72	10000	95.9	90	110	
Ca	43	1	nogas	9338.593	1.772	61871	2.35	10000	93.4	90	110	
Ca	44	1	nogas	9307.058	2.070	1015050	1.15	10000	93.1	90	110	
Ti	47	1	nogas	96.255	0.535	30049	1.15	100	96.3	90	110	
V	51	1	nogas	142.707	2.327	1000304	1.38	100	142.7	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	98.506	1.718	378745	2.10	100	98.5	90	110	
Mn	55	1	nogas	95.745	1.174	444641	1.66	100	95.7	90	110	
Fe	56	1	nogas	9445.936	1.767	36831155	1.82	10000	94.5	90	110	
Co	59	1	nogas	93.256	2.064	327968	0.72	100	93.3	90	110	
Ni	60	1	nogas	94.299	1.034	70270	0.75	100	94.3	90	110	
Cu	63	1	nogas	94.617	1.763	165002	0.31	100	94.6	90	110	
Zn	66	1	nogas	93.240	2.586	59800	2.92	100	93.2	90	110	
As	75	1	nogas	131.298	2.528	131276	1.16	100	131.3	90	110	CCV Main CR1-2 Failed
Se	77	1	nogas	246.604	10.793	31426	3.63	100	246.6	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	100.143	6.445	2674	6.55	100	100.1	90	110	
Sr	88	1	nogas	98.324	1.101	304619	0.60	100	98.3	90	110	
Mo	95	1	nogas	96.361	2.148	55646	1.06	100	96.4	90	110	
Ag	107	1	nogas	98.003	2.251	154330	1.09	100	98.0	90	110	
Cd	111	1	nogas	95.785	1.539	33643	2.41	100	95.8	90	110	
Sn	118	1	nogas	98.566	0.556	88049	0.92	100	98.6	90	110	
Sb	121	1	nogas	97.324	2.597	128643	1.93	100	97.3	90	110	
Ba	137	1	nogas	102.303	1.611	37495	0.66	100	102.3	90	110	
Tl	205	1	nogas	96.090	2.712	387073	0.22	100	96.1	90	110	
Pb	208	1	nogas	95.793	3.021	291090	0.73	100	95.8	90	110	
U	238	1	nogas	92.502	2.459	744112	0.43	100	92.5	90	110	
Li	7	1	nogas	98.985	5.845	1104055	3.37	100	99.0	90	110	
Si	28	1	nogas	4795.964	1.885	11212045	0.71	5000	95.9	90	110	
Ba	135	1	nogas	96.551	2.434	20416	1.64	100	96.6	90	110	
La	139	1	nogas	139.316	72.815	100	72.11	100	139.3	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	626.903	86.625	13	86.60	100	626.9	90	110	CCV Main CR1-2 Failed
Tl	203	1	nogas	93.913	4.533	155163	2.08	100	93.9	90	110	
Na	23	2	He	9444.932	3.761	3706497	1.99	10000	94.4	90	110	
Mg	24	2	He	9572.328	2.531	2049762	1.13	10000	95.7	90	110	
Al	27	2	He	98.771	1.945	8716	3.61	100	98.8	90	110	
K	39	2	He	9202.427	2.167	1008491	1.46	10000	92.0	90	110	
Ca	43	2	He	9979.440	6.465	2864	4.77	10000	99.8	90	110	
Ca	44	2	He	9512.959	2.382	45424	0.75	10000	95.1	90	110	
V	51	2	He	99.096	3.448	80622	1.55	100	99.1	90	110	
Cr	52	2	He	93.774	2.489	94871	2.88	100	93.8	90	110	
Mn	55	2	He	96.597	1.662	53734	0.14	100	96.6	90	110	
Fe	56	2	He	9190.830	1.178	7461894	1.14	10000	91.9	90	110	
Co	59	2	He	93.164	1.952	122592	1.29	100	93.2	90	110	
Ni	60	2	He	92.284	1.825	32490	0.94	100	92.3	90	110	
Cu	63	2	He	91.578	2.038	85396	0.21	100	91.6	90	110	
Zn	66	2	He	89.462	2.890	16084	2.09	100	89.5	90	110	CCV Main CR1-2 Failed
As	75	2	He	94.258	2.427	9097	2.22	100	94.3	90	110	
Sb	121	2	He	95.625	2.731	32758	1.00	100	95.6	90	110	
Se	78	2	He	89.604	16.290	553	15.78	100	89.6	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
Ge	72	1	nogas	361103	1.44	354717	101.80	70	125	
In	115	1	nogas	309097	0.98	300202	102.96	70	125	
Li	6	1	nogas	960946	2.22	924026	104.00	70	125	
Bi	209	1	nogas	406903	2.89	402947	100.98	70	125	

Ge	72	2	He	68398	1.78	65798	103.95	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	145_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T17:45:14-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	089CALB.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
Be	9	1	nogas	0.040	61.9	150	52.1	1	
B	11	1	nogas	6.693	17.9	27654	7.6	10	
Na	23	1	nogas	66.779	0.9	575344	1.4	100	
Mg	24	1	nogas	4.688	13.6	29730	9.3	100	
Al	27	1	nogas	-0.568	-10.4	16264	2.7	5	
P	31	1	nogas	15.806	12.4	58463	1.7	10	CCB Main CR1 Failed
K	39	1	nogas	26.170	25.1	2176257	1.8	100	
Ca	43	1	nogas	-2.440	-689.5	280	39.8	100	
Ca	44	1	nogas	-1.521	-205.7	6541	4.6	100	
Ti	47	1	nogas	0.105	150.6	123	41.6	2.5	
V	51	1	nogas	21.886	7.0	493036	2.1	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.823	10.5	28062	1.9	2.5	
Mn	55	1	nogas	0.225	54.4	6331	8.9	2.5	
Fe	56	1	nogas	8.784	6.4	304912	1.4	100	
Co	59	1	nogas	0.023	40.8	147	21.9	2.5	
Ni	60	1	nogas	0.479	7.8	173	16.7	2.5	
Cu	63	1	nogas	-0.058	-94.7	1347	6.5	2.5	
Zn	66	1	nogas	0.370	36.6	250	34.9	2.5	
As	75	1	nogas	8.448	47.3	72533	2.8	2.5	CCB Main CR1 Failed
Se	77	1	nogas	42.757	63.0	23824	5.0	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.092	703.9	30	57.7	2.5	
Sr	88	1	nogas	0.144	22.3	760	13.7	2.5	
Mo	95	1	nogas	0.119	52.0	70	51.5	2.5	
Ag	107	1	nogas	0.016	42.7	37	31.5	2.5	
Cd	111	1	nogas	-0.001	-3162.5	3	173.2	1	
Sn	118	1	nogas	0.071	119.4	163	46.4	5	
Sb	121	1	nogas	0.135	52.0	243	38.2	2.5	
Ba	137	1	nogas	0.165	63.8	83	48.5	2.5	
Tl	205	1	nogas	0.111	27.9	483	29.9	1	
Pb	208	1	nogas	0.039	50.3	127	52.6	2.5	
U	238	1	nogas	0.033	50.0	280	51.9	2.5	
Si	28	1	nogas	8.262	24.1	94491	4.3	5	CCB Main CR1 Failed
La	139	1	nogas	22.499	91.9	17	91.7	2.5	CCB Main CR1 Failed
Au	197	1	nogas	0.000	#DIV/0!	0	#DIV/0!	2.5	
Na	23	2	He	70.323	1.0	46930	0.2	100	
Mg	24	2	He	5.239	15.1	1543	11.5	100	
Al	27	2	He	0.814	181.8	300	43.6	5	
K	39	2	He	29.316	39.6	50129	2.1	100	
Ca	43	2	He	-37.459	-51.6	3	173.2	100	
Ca	44	2	He	6.292	103.8	137	23.5	100	
V	51	2	He	1.300	8.7	4446	1.6	2.5	
Cr	52	2	He	-0.016	-840.8	347	42.0	2.5	
Mn	55	2	He	0.176	26.0	160	16.5	2.5	
Fe	56	2	He	1.344	14.3	3194	5.5	100	
Co	59	2	He	0.024	65.0	53	39.0	2.5	
Ni	60	2	He	-0.204	-13.5	10	100.0	2.5	

Continuing Calibration Blank (CCB) Report

Cu	63	2	He	-0.479	-15.9	607	11.6	2.5	
Zn	66	2	He	-0.432	-25.9	33	62.4	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
As	75	2	He	0.020	527.2	300	2.9	2.5	
Sb	121	2	He	-0.035	-160.1	20	100.0	2.5	
Se	78	2	He	0.349	315.8	7	95.8	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	1	nogas	367266	0.79	354717	103.54	70	125	
In	115	1	nogas	317096	0.89	300202	105.63	70	125	
Li	6	1	nogas	912825	1.67	924026	98.79	70	125	
Bi	209	1	nogas	429554	2.46	402947	106.60	70	125	
Ge	72	2	He	71159	0.48	65798	108.15	70	125	

Tune Report

Batch Folder C:\Agilent\ICPMH\1\DATA\083118A.b
Report Comment
Instrument Name G3281A JP09420132

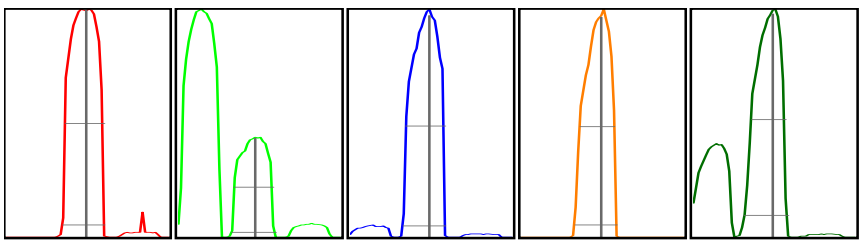
[nogas]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
9		22075				NaN	-	
24		32630				NaN	-	
59		18723				NaN	-	
115		17449				NaN	-	
208		15371				NaN	-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)	Background (Actual)	Background (Required)	Background (Flag)
9	0.24	5.00				
24	0.37	5.00				
59	0.55	5.00				
115	0.35	5.00				
208	1.16	5.00				

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	22123	21999	22107	22107	22039
24	32564	32452	32717	32673	32745
59	18650	18846	18807	18600	18713
115	17469	17514	17376	17393	17495
208	15496	15399	15164	15583	15215

Integration Time [sec] 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-X% (Actual)	W-X% (Required)	W-X% (Flag)
9	3400.51	9.00	8.9 - 9.1		0.68	0.768		
24	5120.20	23.95	23.9 - 24.1		0.68	0.787		
59	3027.26	59.00	58.9 - 59.1		0.67	0.773		
115	2962.83	115.00	114.9 - 115.1		0.63	0.777		
208	2665.17	208.00	207.9 - 208.1		0.59	0.775		

X = 5 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 168.5 **Y Axis** Linear

Tune Parameters
Plasma Paramters

RF Power	1600 W	Carrier Gas	0.50 L/min	S/C Temp	2 ℃
RF Matching	1.70 V	Option Gas	0.0 %	Makeup/Dilution Gas	0.45 L/min
Smpl Depth	6.0 mm	Nebulizer Pump	0.10 rps	Gas Switch	Dilution Gas

Lenses Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	15.0 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-50 V
Omega Bias	-100 V	Cell Exit	-58 V		

Cell Parameters

OctP Bias	-8.0 V	He Flow	0.0 mL/min	Energy Discrimination	5.0 V
OctP RF	190 V	H2 Flow	0.0 mL/min		
Use Gas	true	3rd Gas Flow	0 %		

[He]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
9		318				NaN	-	
24		1653				NaN	-	
59		6992				NaN	-	

Tune Report

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)	Background (Actual)	Background (Required)	Background (Flag)
9	4.02	5.00				
24	2.89	5.00				
59	2.33	5.00				

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	326	327	327	313	298
24	1629	1677	1680	1699	1581
59	6805	6941	7012	7250	6954

Integration Time [sec] 0.1

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-X% (Actual)	W-X% (Required)	W-X% (Flag)
9	50.40	8.90	8.9 - 9.1		0.67	0.771		
24	276.91	24.00	23.9 - 24.1		0.65	0.777		
59	1155.63	59.00	58.9 - 59.1		0.65	0.755		

X = 5 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 100.6 **Y Axis** Linear

Tune Parameters

Plasma Paramters

RF Power	1600 W	Carrier Gas	0.50 L/min	S/C Temp	2 ℃		
RF Matching	1.70 V	Option Gas	0.0 %	Makeup/Dilution Gas	0.45 L/min		
Smpl Depth	8.0 mm	Nebulizer Pump	0.10 rps	Gas Switch	Dilution Gas		

Lenses Parameters

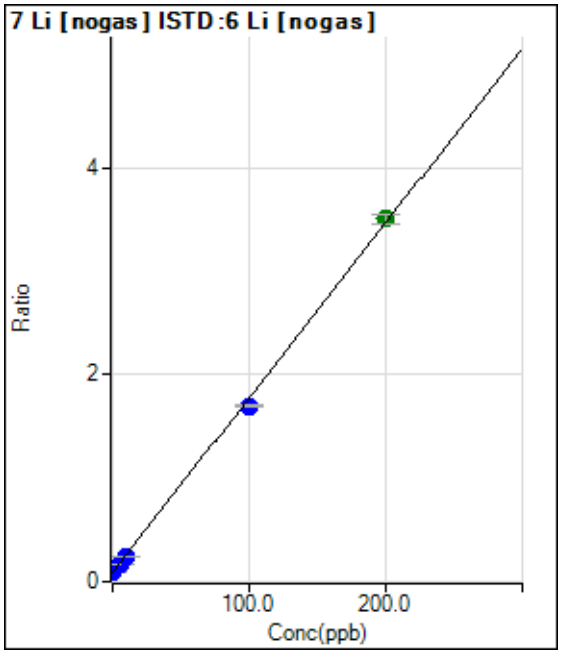
Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	2.0 V
Extract 2	-200.0 V	Cell Entrance	-32 V	Plate Bias	-60 V
Omega Bias	-100 V	Cell Exit	-70 V		

Cell Parameters

OctP Bias	-18.0 V	He Flow	4.0 mL/min	Energy Discrimination	5.0 V
OctP RF	190 V	H2 Flow	0.0 mL/min		
Use Gas	true	3rd Gas Flow	0 %		

Batch Folder: C:\Agilent\ICPMH\1\DATA\083018A.b\
Analysis File: 083018A.batch.bin
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Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

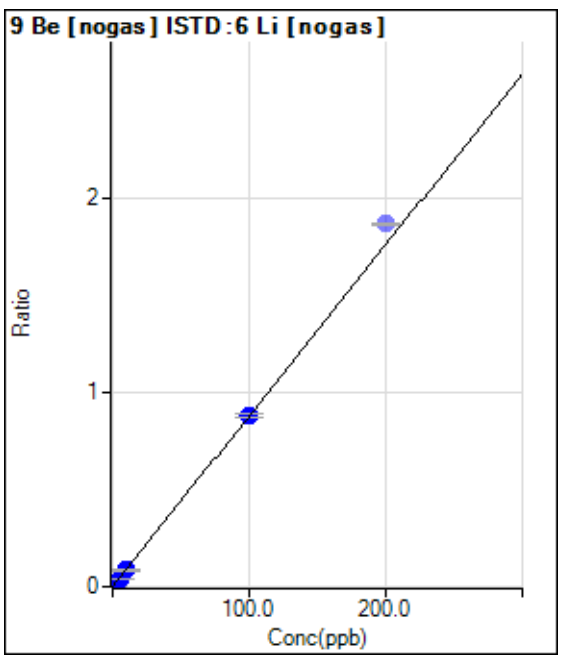
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2	006CALS.d	2/10/200	2018-08-30 10:39:55
3	007CALS.d	5/25/500	2018-08-30 10:41:55
4	008CALS.d	10/50/1000	2018-08-30 10:43:55
5	009CALS.d	100/500/10K	2018-08-30 10:45:56
6	010CALS.d	200/1000/20K	2018-08-30 10:47:55
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	54116.37	0.0901	P	1.4
2	☐	2.000	1.925	72814.20	0.1226	P	1.2
3	☐	5.000	4.455	96818.74	0.1653	P	1.4
4	☐	10.000	9.280	142467.11	0.2467	P	1.2
5	☐	100.000	95.261	898172.10	1.6975	P	0.5
6	☐	200.000	202.420	1701816.02	3.5057	A	2.7
7	☐	1.000					

y = 0.0169 * x + 0.0901
R = 0.9996
DL = 0.2239
BEC = 5.34

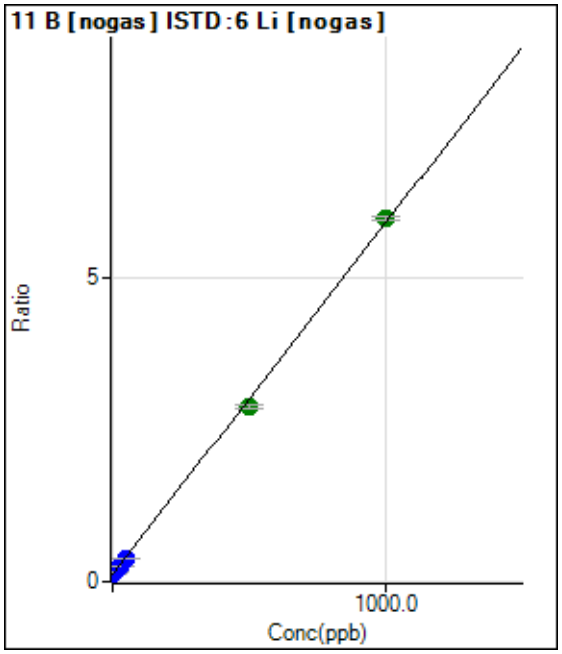
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	43.33	0.0001	P	35.7
2	☐	2.000	1.854	9739.25	0.0164	P	3.0
3	☐	5.000	4.729	24435.86	0.0417	P	1.7
4	☐	10.000	9.594	48808.61	0.0846	P	3.4
5	☐	100.000	100.057	466213.24	0.8811	P	1.8
6	☑	200.000		907698.09	1.8699	P	0.7
7	☐	1.000					

y = 0.0088 * x + 7.2266E-005
R = 1.0000
DL = 0.0088
BEC = 0.008207

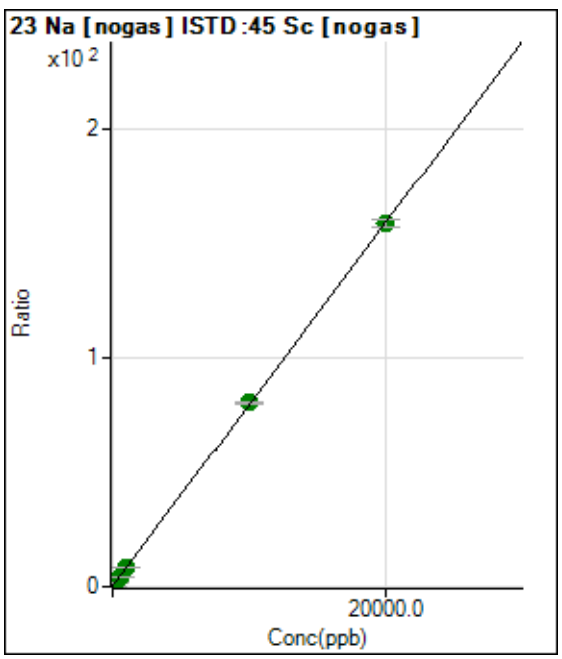
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	72272.40	0.1203	P	1.4
2	☐	10.000	7.868	98524.65	0.1659	P	3.8
3	☐	25.000	21.711	144173.06	0.2461	P	1.8
4	☐	50.000	43.680	215538.30	0.3734	P	2.8
5	☐	500.000	477.181	1526450.29	2.8850	A	1.2
6	☐	1000.000	1011.829	2904080.58	5.9826	A	0.9
7	☐	5.000					

y = 0.0058 * x + 0.1203
R = 0.9997
DL = 0.8668
BEC = 20.77

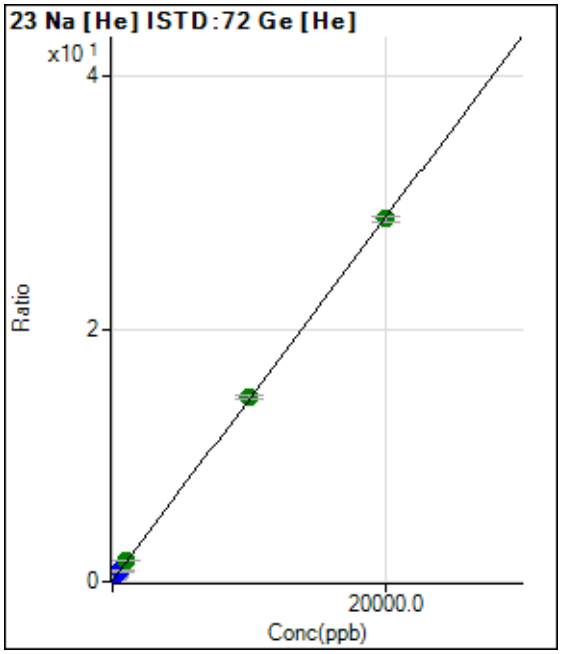
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	678686.44	0.2516	P	0.8
2	☐	200.000	209.862	5111751.68	1.9196	A	4.6
3	☐	500.000	533.145	11860324.48	4.4890	A	4.8
4	☐	1000.000	1051.862	22956942.18	8.6116	A	1.4
5	☐	10000.00	10085.932	209411179.6	80.4127	A	0.6
6	☐	20000.00	19953.514	407623209.1	158.838	A	2.1
7	☐	100.000					

y = 0.0079 * x + 0.2516
R = 1.0000
DL = 0.7589
BEC = 31.66

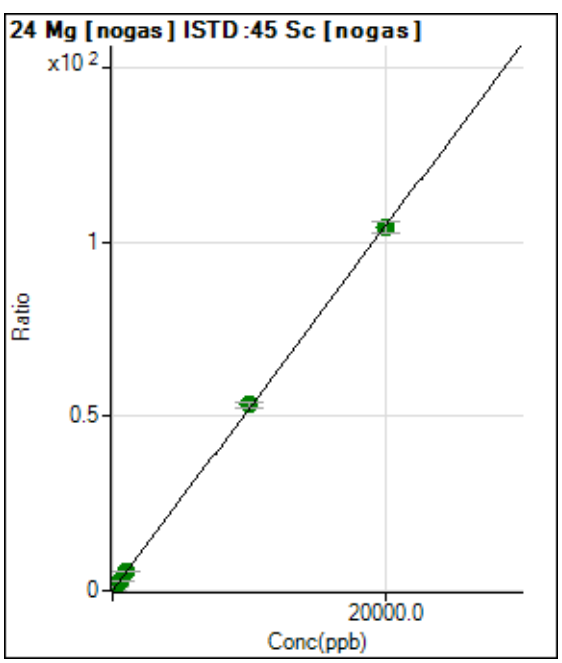
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	87450.07	0.0801	P	0.8
2	☐	200.000	209.645	419613.18	0.3817	P	0.4
3	☐	500.000	530.885	916345.07	0.8439	P	1.5
4	☐	1000.000	1066.996	1735789.09	1.6152	A	1.7
5	☐	10000.00	10137.583	15356779.77	14.6649	A	2.3
6	☐	20000.00	19926.990	29582022.06	28.7489	A	1.4
7	☐	100.000					

y = 0.0014 * x + 0.0801
R = 1.0000
DL = 1.261
BEC = 55.67

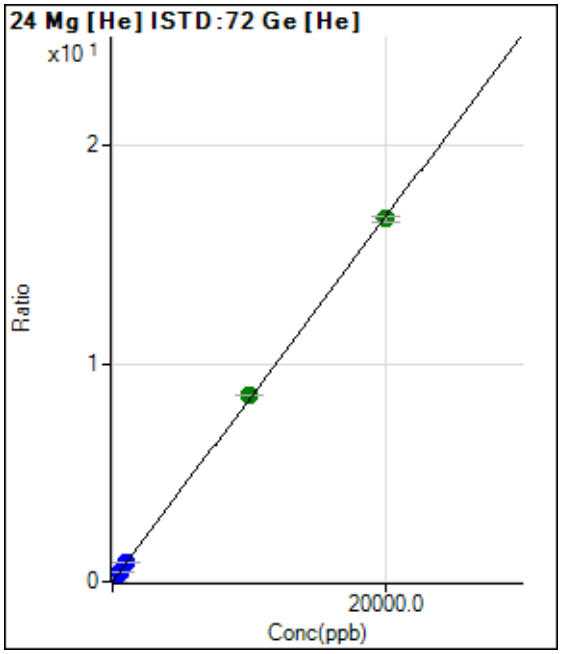
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6435.53	0.0024	P	7.9
2	☐	200.000	215.762	3016179.56	1.1324	A	2.4
3	☐	500.000	544.702	7548083.50	2.8552	A	1.9
4	☐	1000.000	1078.282	15057989.40	5.6498	A	2.0
5	☐	10000.00	10186.327	138948594.7	53.3524	A	2.5
6	☐	20000.00	19901.647	267463014.3	104.235	A	3.3
7	☐	100.000					

y = 0.0052 * x + 0.0024
R = 0.9999
DL = 0.1083
BEC = 0.4556

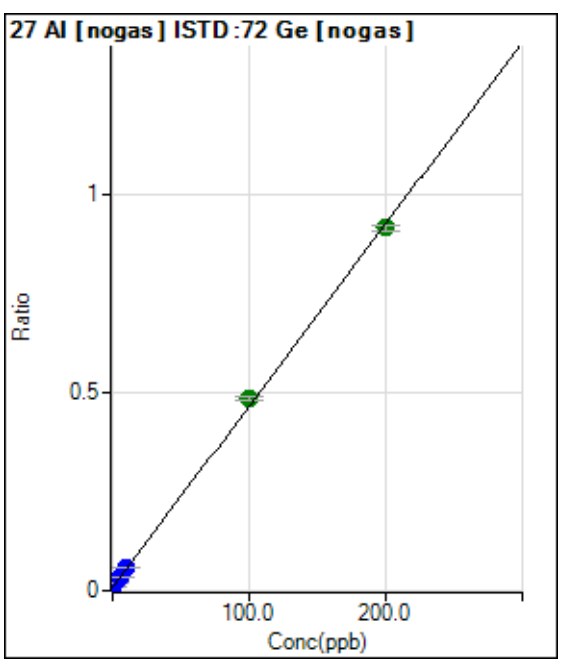
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	696.69	0.0006	P	9.4
2	☐	200.000	206.825	190696.95	0.1735	P	1.7
3	☐	500.000	527.091	478946.42	0.4411	P	0.8
4	☐	1000.000	1050.212	943726.29	0.8782	P	1.3
5	☐	10000.00	10200.221	8926779.66	8.5239	A	0.2
6	☐	20000.00	19896.633	17108008.91	16.6262	A	1.3
7	☐	100.000					

y = 8.3559E-004 * x + 6.3835E-004
R = 0.9999
DL = 0.2146
BEC = 0.7639

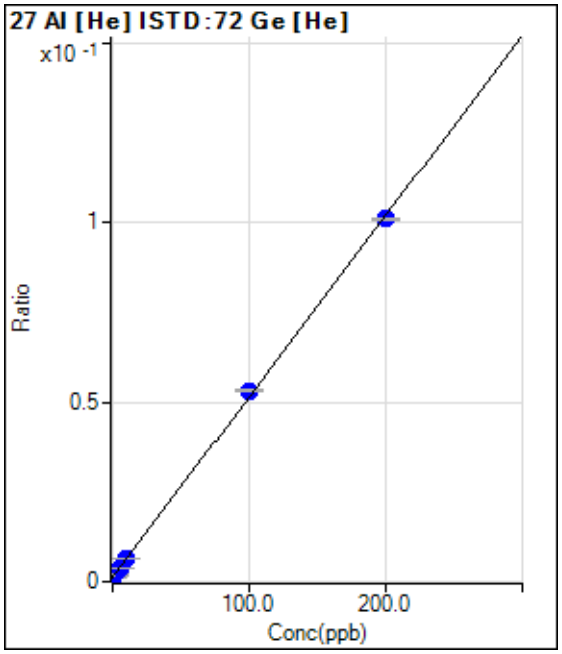
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	29006.53	0.0074	P	1.0
2	☐	2.000	2.239	69135.88	0.0177	P	2.5
3	☐	5.000	5.450	126848.71	0.0324	P	2.8
4	☐	10.000	10.995	229568.08	0.0578	P	2.7
5	☐	100.000	103.893	1821846.07	0.4837	A	1.7
6	☐	200.000	197.990	3470366.20	0.9151	A	1.6
7	☐	1.000					

y = 0.0046 * x + 0.0074
R = 0.9997
DL = 0.04705
BEC = 1.619

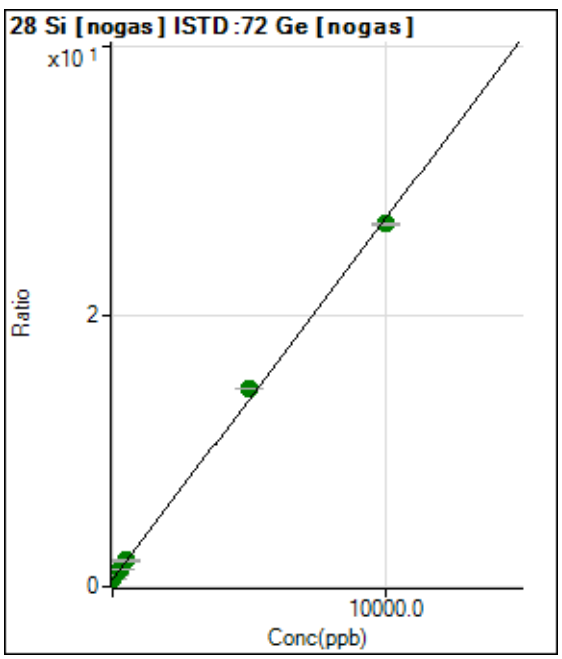
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.713	1000.04	0.0009	P	10.5
2	☐	2.000	1.201	2063.49	0.0019	P	4.4
3	☐	5.000	4.754	3977.16	0.0037	P	6.6
4	☐	10.000	10.165	6858.00	0.0064	P	6.4
5	☐	100.000	103.174	55645.15	0.0531	P	1.3
6	☐	200.000	198.419	103939.95	0.1010	P	0.6
7	☐	1.000					

y = 5.0266E-004 * x + 0.0013
R = 0.9998
DL = 0.5742
BEC = 2.533

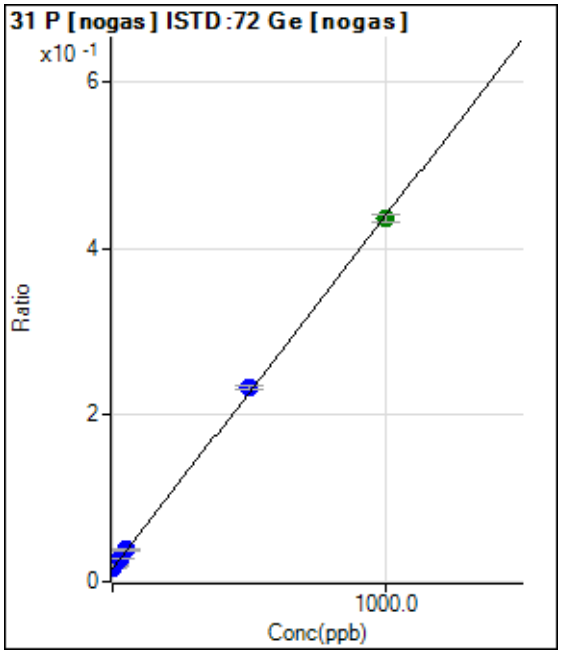
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2105838.82	0.5387	A	2.3
2	☐	100.000	106.287	3214561.72	0.8225	A	0.8
3	☐	250.000	256.703	4790833.37	1.2240	A	0.8
4	☐	500.000	518.340	7632826.55	1.9224	A	1.6
5	☐	5000.000	5287.330	55196162.51	14.6528	A	0.2
6	☐	10000.00	9855.187	101821678.4	26.8463	A	0.7
7	☐	5.000					

y = 0.0027 * x + 0.5387
R = 0.9994
DL = 14.19
BEC = 201.8

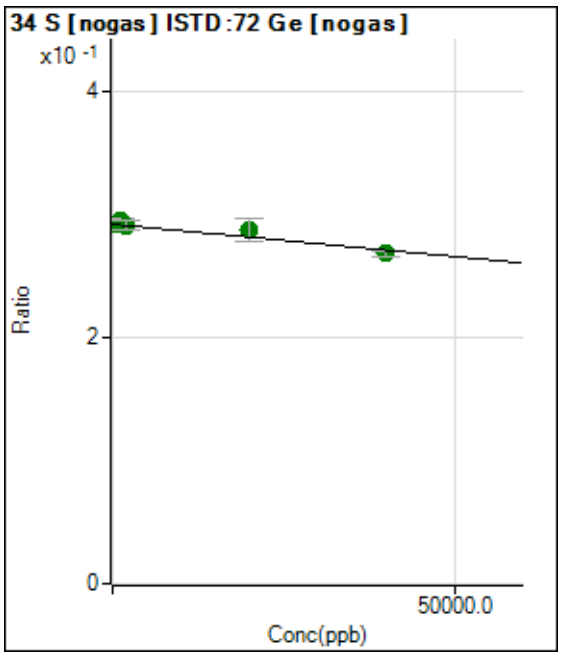
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	60185.92	0.0154	P	1.6
2	☐	10.000	10.048	76858.68	0.0197	P	1.7
3	☐	25.000	26.853	104878.78	0.0268	P	0.9
4	☐	50.000	53.751	151665.88	0.0382	P	2.1
5	☐	500.000	516.047	882354.57	0.2343	P	1.9
6	☐	1000.000	991.742	1653646.07	0.4360	A	2.0
7	☐	5.000					

y = 4.2414E-004 * x + 0.0154
R = 0.9998
DL = 1.757
BEC = 36.32

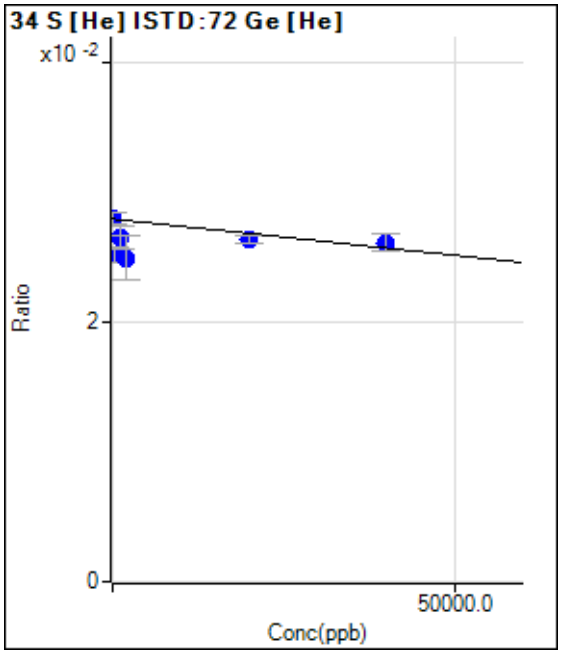
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1140973.40	0.2920	A	1.6
2	☐	400.000	-1333.645	1143997.71	0.2927	A	0.7
3	☐	1000.000	-5064.390	1153365.16	0.2947	A	1.5
4	☐	2000.000	2617.324	1153688.40	0.2906	A	2.8
5	☐	20000.00	8870.583	1081794.62	0.2873	A	6.7
6	☐	40000.00	45702.788	1016279.81	0.2680	A	1.8
7	☐	100.000					

y = -5.2528E-007 * x + 0.2920
R = -0.9547
DL = -2.657E+04
BEC = -5.559E+05

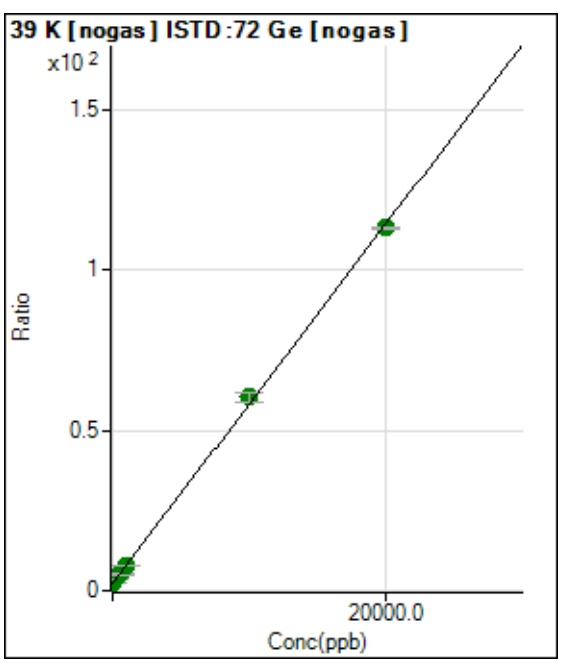
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30464.87	0.0279	P	3.1
2	☐	400.000	50330.645	27591.47	0.0251	P	4.7
3	☐	1000.000	25531.407	28759.19	0.0265	P	6.4
4	☐	2000.000	53493.900	26790.85	0.0249	P	13.1
5	☐	20000.00	27912.039	27590.88	0.0263	P	2.0
6	☐	40000.00	32356.694	26858.43	0.0261	P	5.5
7	☐	100.000					

y = -5.5832E-008 * x + 0.0279
R = -0.0009
DL = -4.615E+04
BEC = -4.998E+05

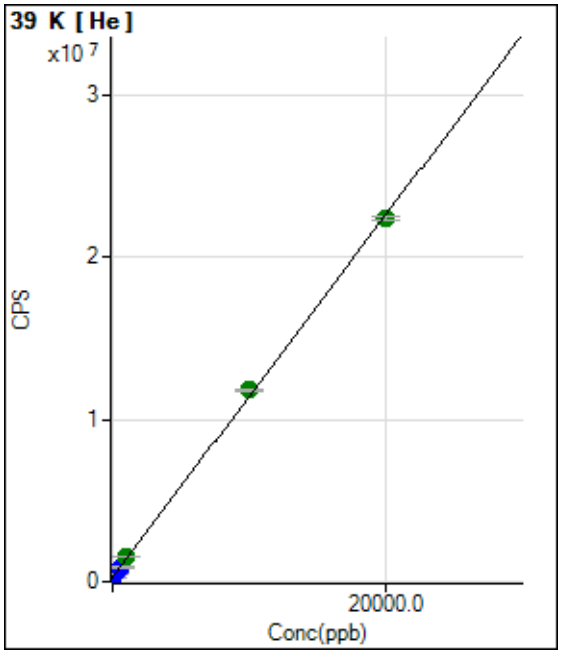
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	8581913.21	2.1966	A	2.8
2	☐	200.000	207.184	13118666.18	3.3565	A	0.5
3	☐	500.000	520.066	19993866.07	5.1081	A	0.7
4	☐	1000.000	1033.801	31700684.04	7.9842	A	1.7
5	☐	10000.00	10372.373	226915471.7	60.2650	A	4.1
6	☐	20000.00	19811.550	428982559.5	113.109	A	0.4
7	☐	100.000					

y = 0.0056 * x + 2.1966
R = 0.9998
DL = 32.94
BEC = 392.4

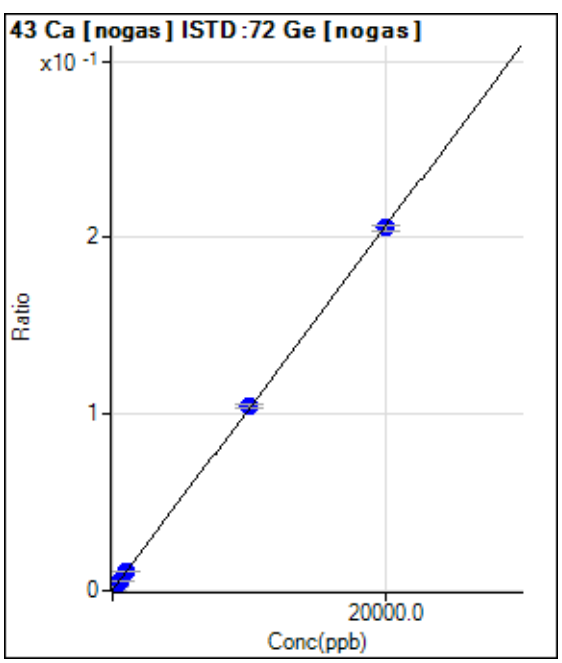
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	273773.31		P	0.3
2	☐	200.000	221.317	520561.40		P	0.8
3	☐	500.000	548.665	885582.59		P	0.9
4	☐	1000.000	1140.774	1545834.61		A	2.3
5	☐	10000.00	10363.678	11830170.66		A	0.7
6	☐	20000.00	19809.693	22363293.83		A	1.2
7	☐	100.000					

y = 1115.0865 * x + 273773.3067
R = 0.9998
DL = 2.433
BEC = 245.5

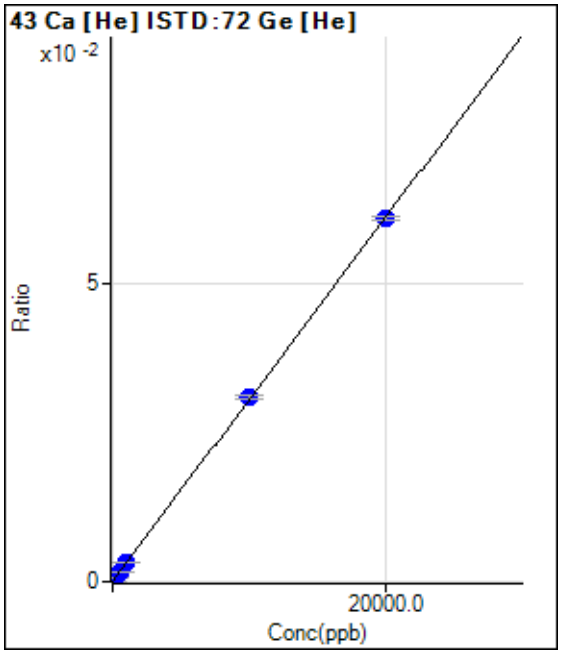
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	813.36	0.0002	P	20.5
2	☐	200.000	214.062	9432.50	0.0024	P	2.1
3	☐	500.000	529.730	22176.82	0.0057	P	0.9
4	☐	1000.000	1057.859	44098.86	0.0111	P	1.4
5	☐	10000.00	10141.628	394304.62	0.1047	P	1.4
6	☐	20000.00	19925.409	779261.55	0.2055	P	1.6
7	☐	100.000					

y = 1.0302E-005 * x + 2.0799E-004
R = 1.0000
DL = 12.41
BEC = 20.19

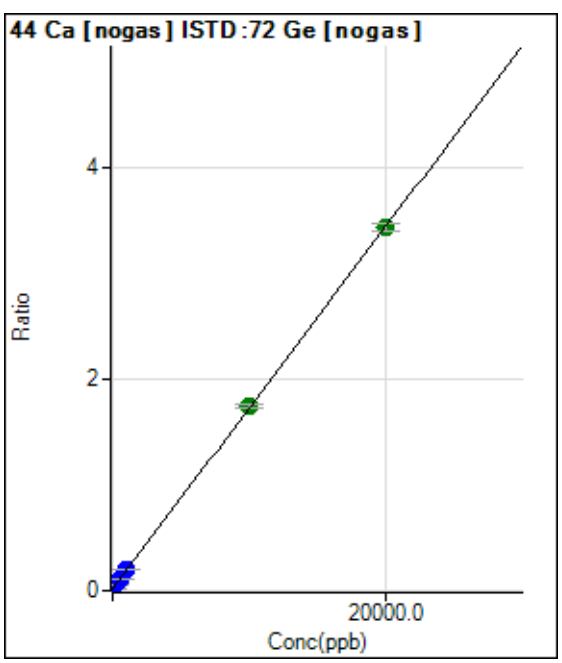
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	46.67	0.0000	P	89.5
2	☐	200.000	204.836	733.36	0.0007	P	9.4
3	☐	500.000	523.523	1780.12	0.0016	P	10.5
4	☐	1000.000	1065.373	3537.06	0.0033	P	3.0
5	☐	10000.00	10134.382	32405.04	0.0309	P	2.1
6	☐	20000.00	19928.904	62575.10	0.0608	P	1.0
7	☐	100.000					

y = 3.0493E-006 * x + 4.2642E-005
R = 1.0000
DL = 37.55
BEC = 13.98

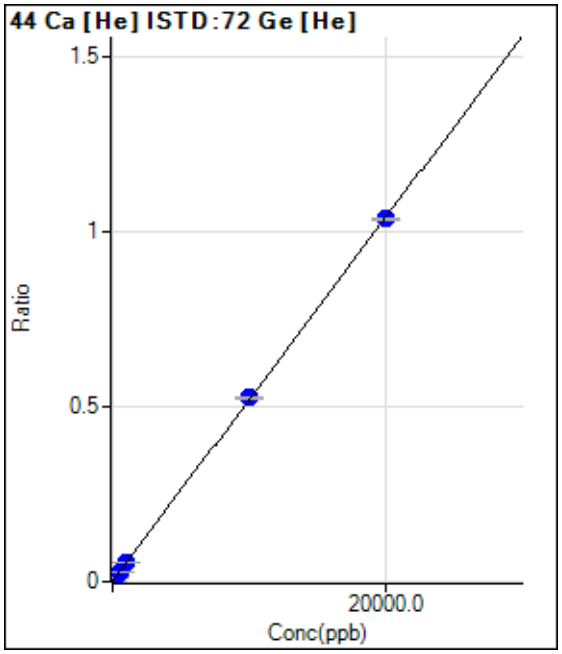
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	59106.74	0.0151	P	0.9
2	☐	200.000	210.325	199668.97	0.0511	P	0.7
3	☐	500.000	512.019	401853.39	0.1027	P	1.8
4	☐	1000.000	1046.066	770141.68	0.1940	P	2.2
5	☐	10000.00	10111.223	6567787.19	1.7440	A	2.7
6	☐	20000.00	19941.682	12987726.89	3.4249	A	2.2
7	☐	100.000					

y = 1.7099E-004 * x + 0.0151
R = 1.0000
DL = 2.35
BEC = 88.45

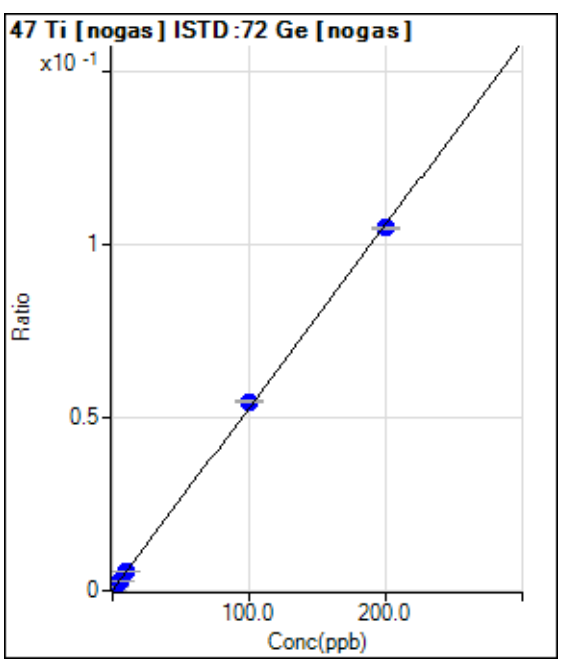
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1270.07	0.0012	P	12.6
2	☐	200.000	214.807	13521.71	0.0123	P	5.4
3	☐	500.000	527.540	30955.96	0.0285	P	4.1
4	☐	1000.000	1080.683	61454.21	0.0572	P	0.9
5	☐	10000.00	10113.056	550238.76	0.5254	P	1.4
6	☐	20000.00	19938.601	1064785.17	1.0348	P	0.3
7	☐	100.000					

y = 5.1840E-005 * x + 0.0012
R = 1.0000
DL = 8.455
BEC = 22.45

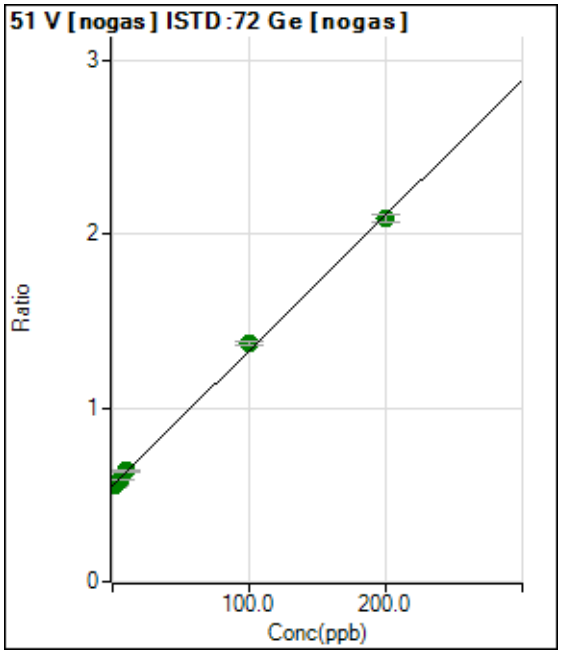
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	283.34	0.0001	P	13.6
2	☐	2.000	2.000	4413.92	0.0011	P	6.2
3	☐	5.000	5.213	11066.88	0.0028	P	3.6
4	☐	10.000	10.633	22600.59	0.0057	P	2.1
5	☐	100.000	103.191	205684.69	0.0546	P	0.8
6	☐	200.000	198.367	397829.01	0.1049	P	0.7
7	☐	1.000					

y = 5.2845E-004 * x + 7.2469E-005
R = 0.9998
DL = 0.05597
BEC = 0.1371

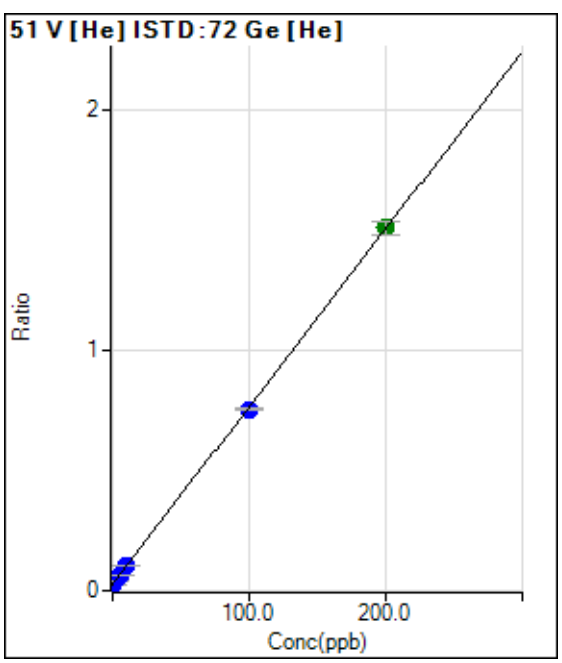
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2154977.59	0.5516	A	3.4
2	☐	2.000	0.543	2172533.65	0.5559	A	0.7
3	☐	5.000	4.823	2306455.26	0.5893	A	0.5
4	☐	10.000	11.221	2537870.37	0.6392	A	2.4
5	☐	100.000	105.830	5188799.73	1.3776	A	1.6
6	☐	200.000	197.043	7923816.06	2.0895	A	2.3
7	☐	1.000					

y = 0.0078 * x + 0.5516
R = 0.9993
DL = 7.105
BEC = 70.68

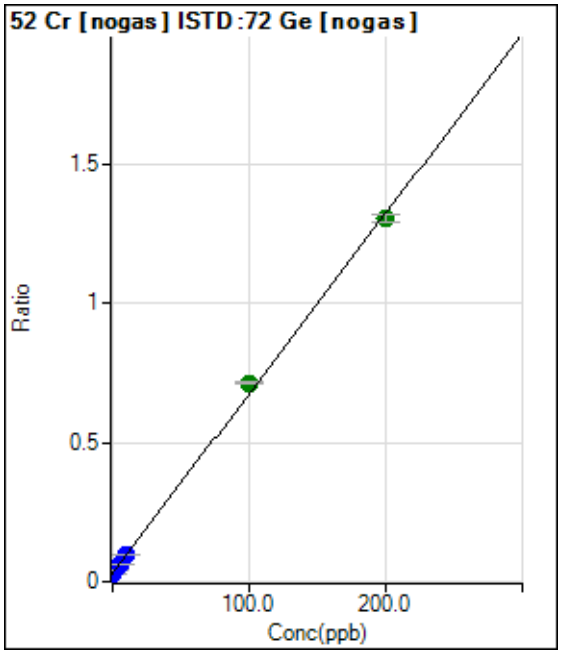
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.048	29768.34	0.0273	P	2.1
2	☐	2.000	1.942	45328.06	0.0412	P	0.3
3	☐	5.000	5.206	70925.80	0.0653	P	0.5
4	☐	10.000	10.559	112618.12	0.1048	P	1.6
5	☐	100.000	98.555	789568.94	0.7540	P	0.9
6	☐	200.000	200.690	1551093.13	1.5074	A	3.8
7	☐	1.000					

y = 0.0074 * x + 0.0269
R = 1.0000
DL = 0.2372
BEC = 3.648

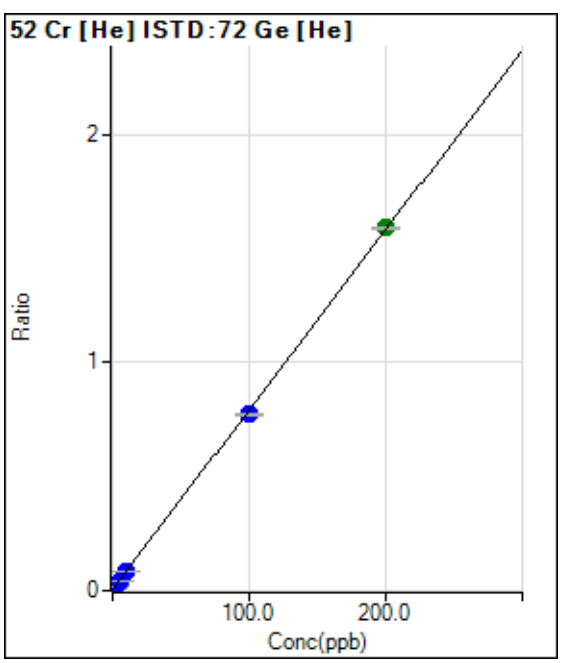
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	117846.82	0.0302	P	1.4
2	☐	2.000	1.945	167022.97	0.0427	P	1.4
3	☐	5.000	5.183	249208.36	0.0637	P	0.9
4	☐	10.000	10.363	385764.60	0.0972	P	2.1
5	☐	100.000	105.787	2690330.17	0.7141	A	0.4
6	☐	200.000	197.085	4946753.78	1.3045	A	2.1
7	☐	1.000					

y = 0.0065 * x + 0.0302
R = 0.9994
DL = 0.2012
BEC = 4.664

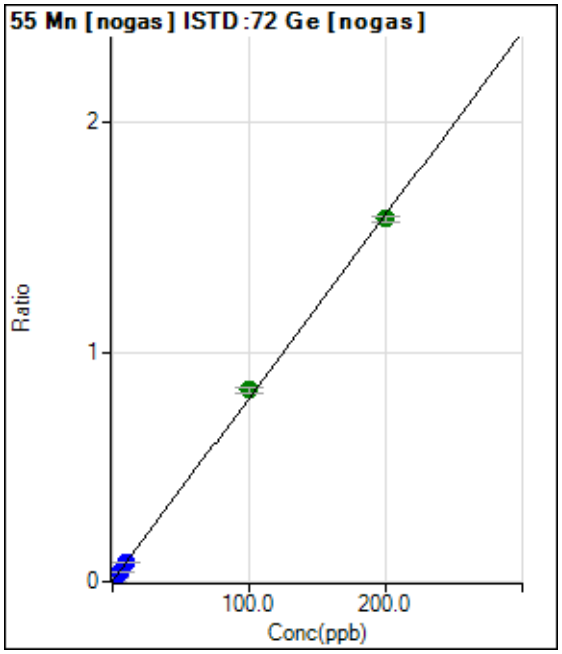
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5587.59	0.0051	P	6.1
2	☐	2.000	1.913	22186.93	0.0202	P	2.8
3	☐	5.000	4.923	47644.87	0.0439	P	4.2
4	☐	10.000	10.309	92724.49	0.0863	P	0.6
5	☐	100.000	97.473	809069.26	0.7726	P	1.1
6	☐	200.000	201.251	1635728.52	1.5896	A	0.9
7	☐	1.000					

y = 0.0079 * x + 0.0051
R = 0.9999
DL = 0.1186
BEC = 0.6502

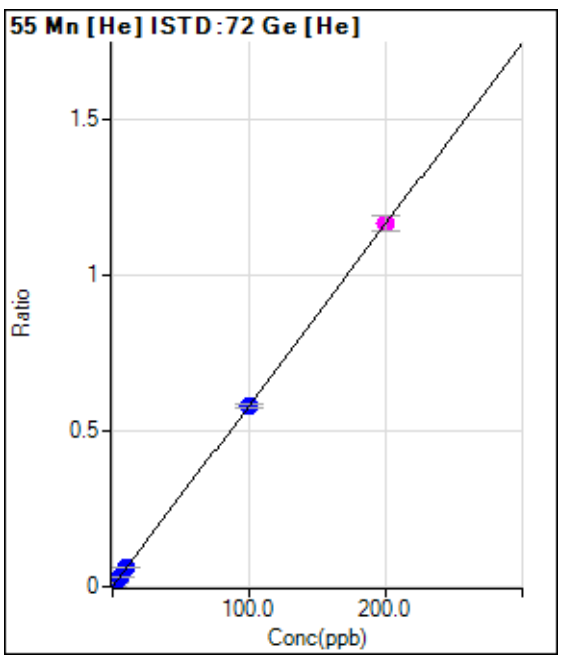
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	11560.46	0.0030	P	5.7
2	☐	2.000	2.127	77843.33	0.0199	P	0.7
3	☐	5.000	5.282	176458.54	0.0451	P	0.8
4	☐	10.000	10.464	342991.88	0.0864	P	2.8
5	☐	100.000	104.295	3143129.96	0.8346	A	2.5
6	☐	200.000	197.821	5993344.91	1.5804	A	1.7
7	☐	1.000					

y = 0.0080 * x + 0.0030
R = 0.9997
DL = 0.06309
BEC = 0.3712

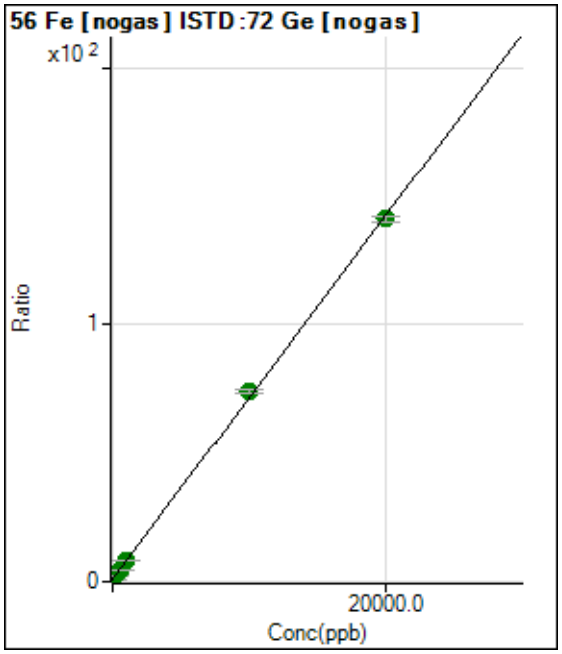
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	306.67	0.0003	P	28.1
2	☐	2.000	2.047	13425.08	0.0122	P	5.5
3	☐	5.000	4.943	31587.25	0.0291	P	3.7
4	☐	10.000	10.383	65348.73	0.0608	P	1.3
5	☐	100.000	99.653	608644.76	0.5812	P	1.3
6	☐	200.000	200.155	1200929.80	1.1670	M	4.3
7	☐	1.000					

y = 0.0058 * x + 2.8137E-004
R = 1.0000
DL = 0.0407
BEC = 0.04827

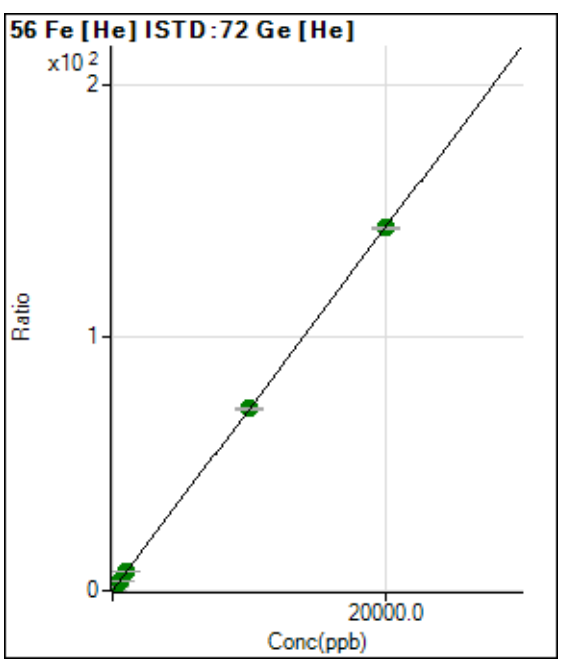
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3659828.34	0.9368	A	3.2
2	☐	200.000	212.966	9548328.34	2.4430	A	1.8
3	☐	500.000	520.429	18074691.55	4.6175	A	1.5
4	☐	1000.000	1030.474	32654151.77	8.2248	A	2.0
5	☐	10000.00	10318.185	278374972.8	73.9115	A	1.6
6	☐	20000.00	19838.743	535652645.3	141.245	A	1.6
7	☐	100.000					

y = 0.0071 * x + 0.9368
R = 0.9998
DL = 12.67
BEC = 132.5

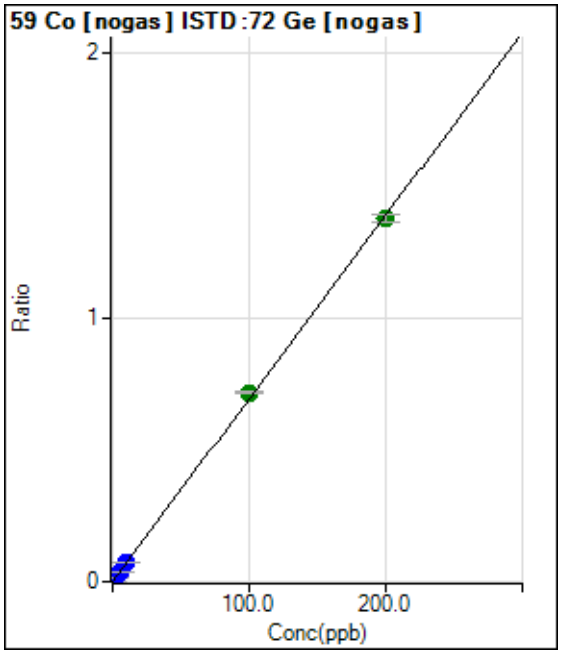
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	19513.83	0.0179	P	1.9
2	☐	200.000	202.617	1616075.76	1.4701	A	0.9
3	☐	500.000	507.037	3965416.71	3.6520	A	1.7
4	☐	1000.000	1041.728	8043133.00	7.4843	A	0.8
5	☐	10000.00	10040.320	75382890.54	71.9801	A	1.1
6	☐	20000.00	19977.552	147355754.4	143.203	A	0.4
7	☐	100.000					

y = 0.0072 * x + 0.0179
R = 1.0000
DL = 0.142
BEC = 2.494

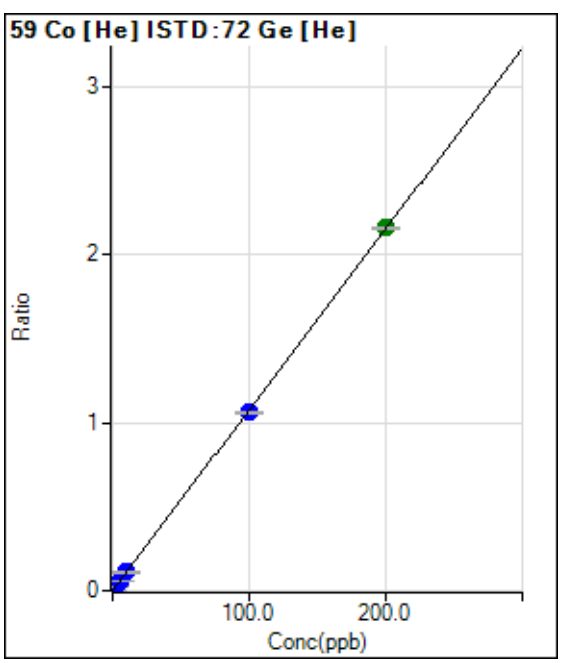
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	370.01	0.0001	P	12.2
2	☐	2.000	2.138	58279.03	0.0149	P	3.5
3	☐	5.000	5.263	143118.57	0.0366	P	1.2
4	☐	10.000	10.468	288302.67	0.0726	P	2.5
5	☐	100.000	103.430	2699994.96	0.7167	A	0.4
6	☐	200.000	198.254	5209475.55	1.3738	A	2.2
7	☐	1.000					

y = 0.0069 * x + 9.4784E-005
R = 0.9998
DL = 0.004988
BEC = 0.01368

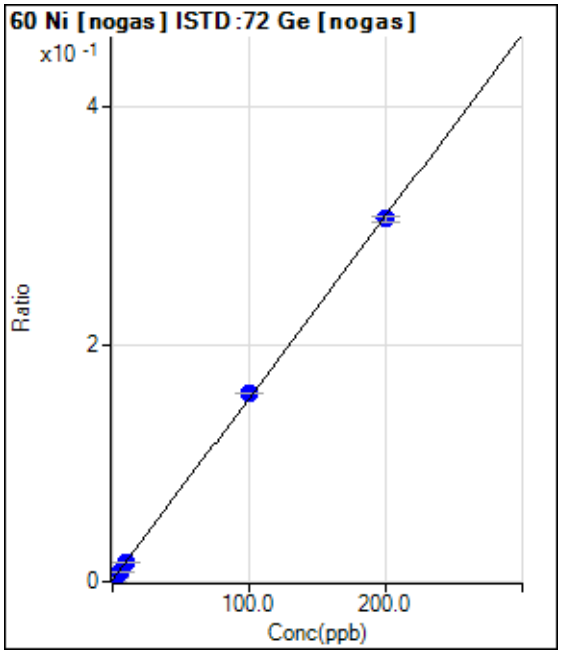
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	93.33	0.0001	P	33.5
2	☐	2.000	1.949	23164.77	0.0211	P	3.0
3	☐	5.000	5.051	59144.70	0.0545	P	0.9
4	☐	10.000	10.120	117187.27	0.1090	P	1.1
5	☐	100.000	98.559	1111385.46	1.0612	P	0.6
6	☐	200.000	200.714	2223735.02	2.1611	A	0.8
7	☐	1.000					

y = 0.0108 * x + 8.5661E-005
R = 1.0000
DL = 0.007994
BEC = 0.007956

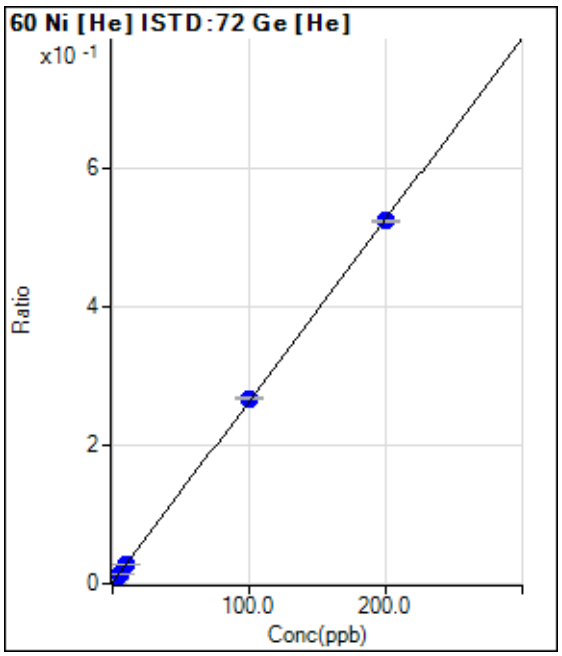
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.705	983.37	0.0003	P	7.8
2	☐	2.000	1.444	13855.39	0.0035	P	0.2
3	☐	5.000	4.743	33664.39	0.0086	P	1.4
4	☐	10.000	10.024	66266.11	0.0167	P	2.9
5	☐	100.000	102.966	599410.10	0.1591	P	0.1
6	☐	200.000	198.528	1158860.50	0.3056	P	1.4
7	☐	1.000					

y = 0.0015 * x + 0.0013
R = 0.9998
DL = 0.0386
BEC = 0.8691

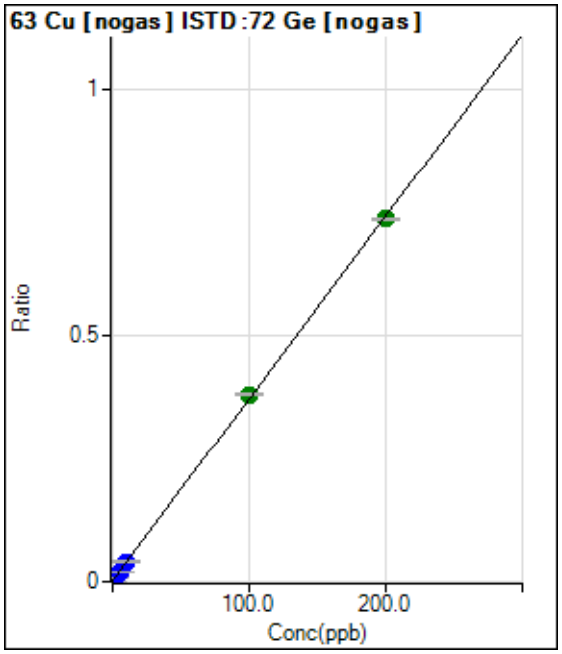
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.380	353.34	0.0003	P	12.8
2	☐	2.000	1.701	6367.86	0.0058	P	7.0
3	☐	5.000	4.904	15433.35	0.0142	P	1.1
4	☐	10.000	10.019	29721.00	0.0277	P	2.7
5	☐	100.000	101.504	280788.20	0.2681	P	1.4
6	☐	200.000	199.253	540287.37	0.5251	P	0.6
7	☐	1.000					

y = 0.0026 * x + 0.0013
R = 1.0000
DL = 0.04713
BEC = 0.5031

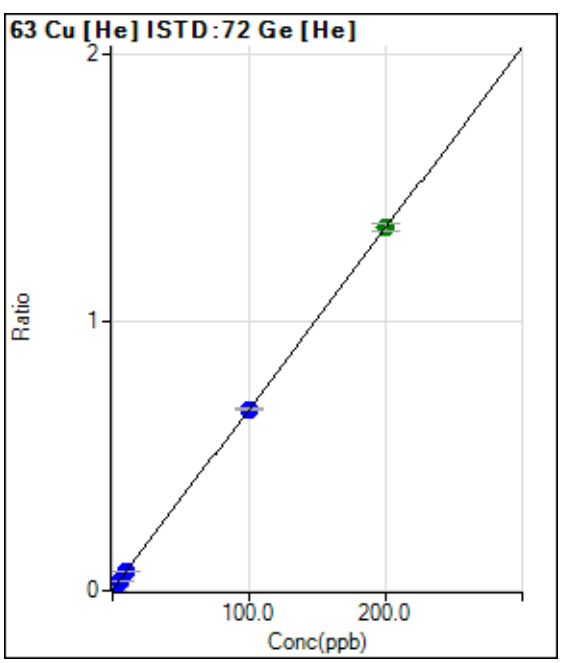
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6924.74	0.0018	P	7.4
2	☐	2.000	2.142	37855.93	0.0097	P	2.6
3	☐	5.000	5.224	82471.41	0.0211	P	1.9
4	☐	10.000	10.558	161911.55	0.0408	P	2.2
5	☐	100.000	102.394	1431703.83	0.3801	A	1.6
6	☐	200.000	198.768	2792009.96	0.7362	A	0.6
7	☐	1.000					

y = 0.0037 * x + 0.0018
R = 0.9999
DL = 0.1069
BEC = 0.4793

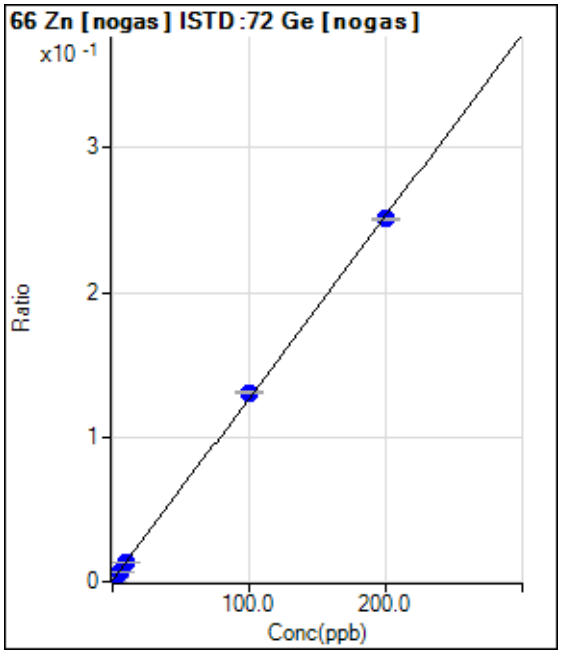
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.105	2903.61	0.0027	P	2.9
2	☐	2.000	1.937	18049.04	0.0164	P	4.8
3	☐	5.000	4.983	40120.78	0.0369	P	1.3
4	☐	10.000	10.330	78427.38	0.0730	P	3.0
5	☐	100.000	99.742	707431.66	0.6755	P	1.4
6	☐	200.000	200.114	1391230.55	1.3519	A	2.2
7	☐	1.000					

y = 0.0067 * x + 0.0034
R = 1.0000
DL = 0.03425
BEC = 0.4999

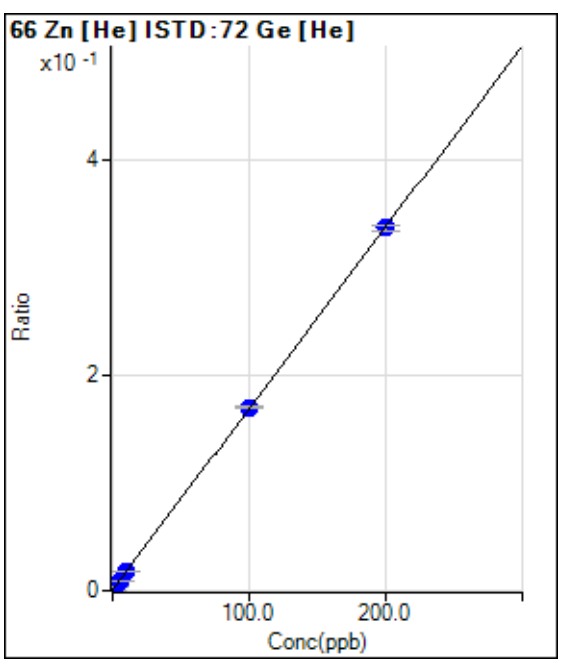
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.574	883.37	0.0002	P	7.0
2	☐	2.000	1.567	11413.69	0.0029	P	2.1
3	☐	5.000	4.610	26422.61	0.0068	P	2.4
4	☐	10.000	9.891	53194.04	0.0134	P	2.3
5	☐	100.000	102.972	491820.81	0.1306	P	1.0
6	☐	200.000	198.534	951338.48	0.2508	P	0.5
7	☐	1.000					

y = 0.0013 * x + 9.4793E-004
R = 0.9998
DL = 0.03759
BEC = 0.7531

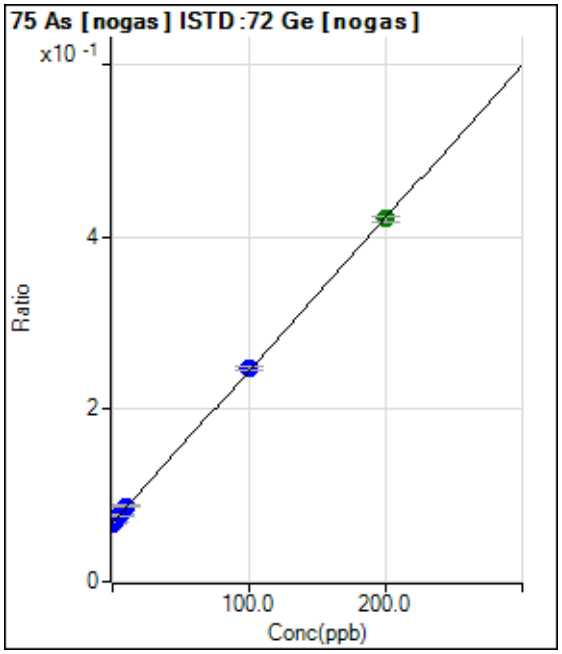
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.324	223.34	0.0002	P	37.2
2	☐	2.000	1.797	4153.86	0.0038	P	6.5
3	☐	5.000	4.963	9892.82	0.0091	P	4.2
4	☐	10.000	10.213	19293.70	0.0180	P	2.2
5	☐	100.000	100.716	178459.59	0.1704	P	0.7
6	☐	200.000	199.634	346818.19	0.3370	P	1.4
7	☐	1.000					

y = 0.0017 * x + 7.5078E-004
R = 1.0000
DL = 0.1357
BEC = 0.4457

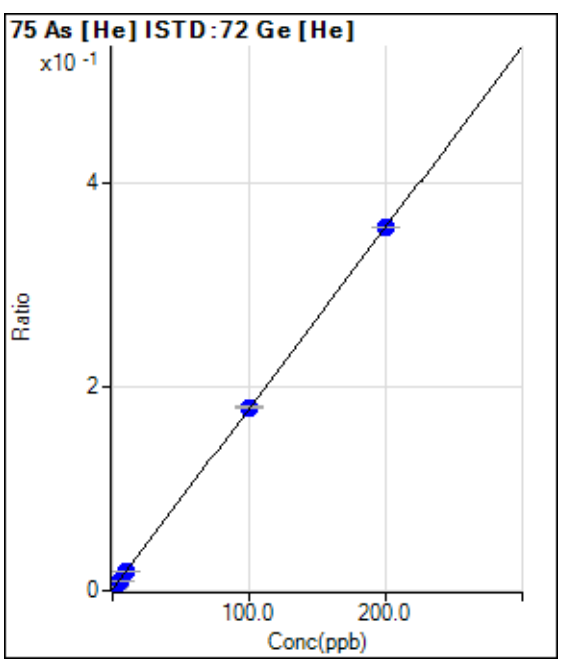
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.328	264157.69	0.0676	P	2.9
2	☐	2.000	0.389	269233.15	0.0689	P	1.4
3	☐	5.000	5.092	302274.66	0.0772	P	1.1
4	☐	10.000	11.180	349507.46	0.0880	P	1.5
5	☐	100.000	101.423	934034.20	0.2480	P	1.4
6	☐	200.000	199.243	1598093.73	0.4214	A	1.6
7	☐	1.000					

y = 0.0018 * x + 0.0682
R = 0.9999
DL = 3.336
BEC = 38.47

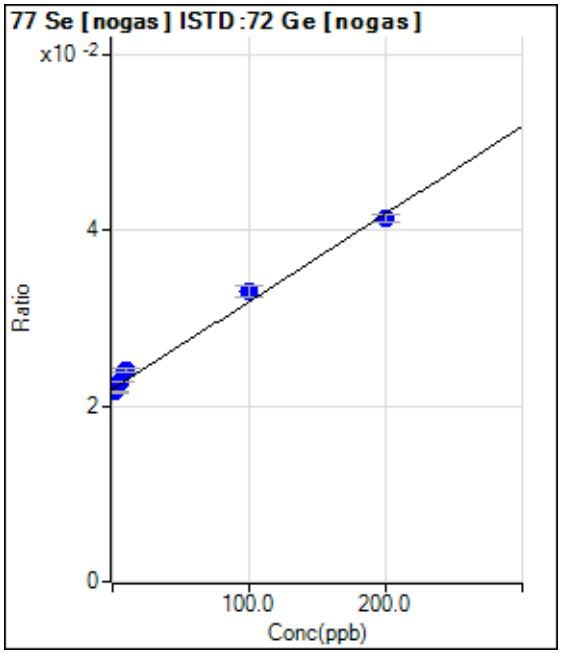
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1166.71	0.0011	P	12.2
2	☐	2.000	1.978	5031.82	0.0046	P	4.4
3	☐	5.000	5.076	10938.86	0.0101	P	3.3
4	☐	10.000	10.266	20720.66	0.0193	P	1.1
5	☐	100.000	100.424	187679.35	0.1792	P	1.2
6	☐	200.000	199.773	365767.23	0.3555	P	0.2
7	☐	1.000					

y = 0.0018 * x + 0.0011
R = 1.0000
DL = 0.2214
BEC = 0.6027

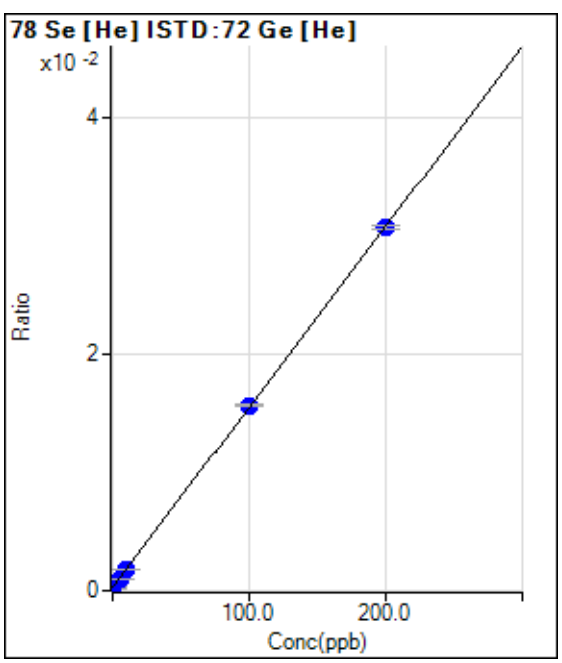
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	85607.60	0.0219	P	2.8
2	☐	2.000	-3.699	84197.22	0.0215	P	0.8
3	☐	5.000	8.734	89174.19	0.0228	P	0.6
4	☐	10.000	21.346	95462.63	0.0240	P	1.9
5	☐	100.000	110.718	124086.65	0.0330	P	3.9
6	☐	200.000	194.038	156472.21	0.0413	P	2.3
7	☐	1.000					

y = 9.9727E-005 * x + 0.0219
R = 0.9957
DL = 18.52
BEC = 219.7

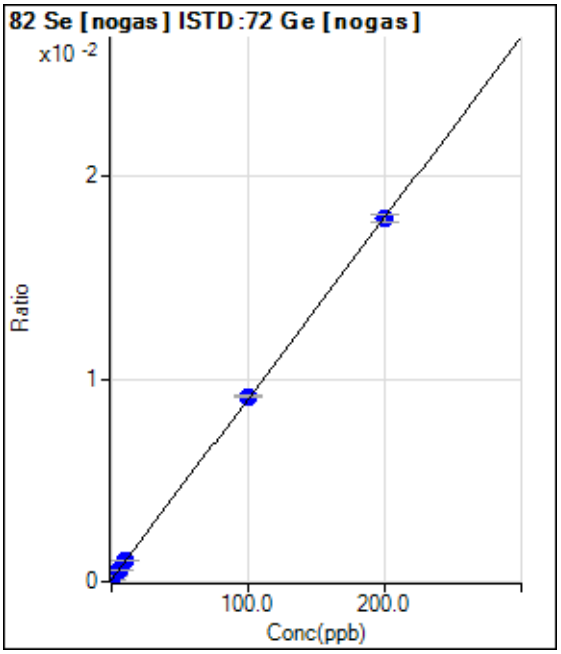
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.356	264.00	0.0002	P	5.0
2	☐	2.000	1.896	642.68	0.0006	P	3.0
3	☐	5.000	4.907	1132.71	0.0010	P	2.4
4	☐	10.000	10.018	1956.78	0.0018	P	4.7
5	☐	100.000	101.066	16422.73	0.0157	P	1.4
6	☐	200.000	199.470	31551.88	0.0307	P	1.0
7	☐	1.000					

y = 1.5224E-004 * x + 2.9596E-004
R = 1.0000
DL = 0.2386
BEC = 1.944

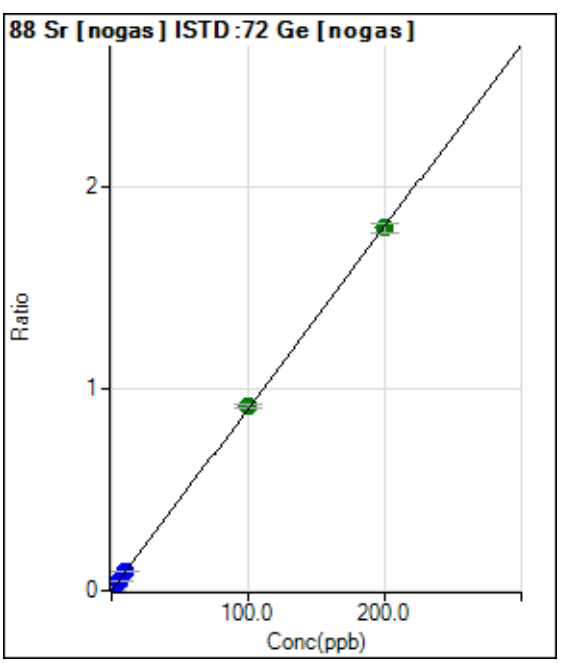
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	403.34	0.0001	P	20.1
2	☐	2.000	2.644	1326.74	0.0003	P	18.5
3	☐	5.000	5.454	2310.18	0.0006	P	7.8
4	☐	10.000	10.350	4080.54	0.0010	P	0.6
5	☐	100.000	101.100	34389.47	0.0091	P	1.1
6	☐	200.000	199.415	67914.03	0.0179	P	2.2
7	☐	1.000					

y = 8.9285E-005 * x + 1.0338E-004
R = 1.0000
DL = 0.6979
BEC = 1.158

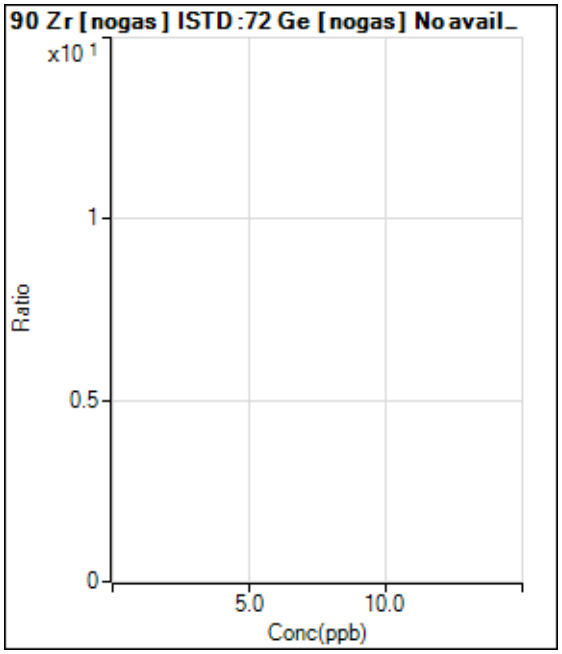
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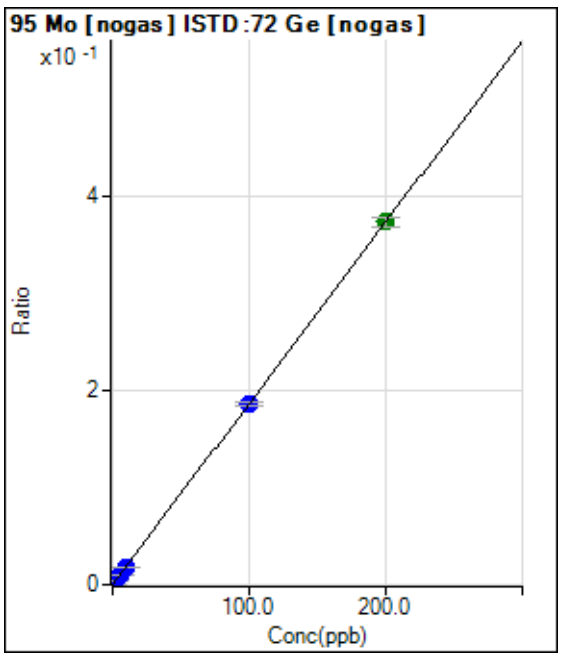
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1643.44	0.0004	P	5.8
2	☐	2.000	2.048	73710.99	0.0189	P	1.0
3	☐	5.000	5.102	181466.12	0.0464	P	0.8
4	☐	10.000	10.275	369034.58	0.0929	P	1.7
5	☐	100.000	101.173	3432548.49	0.9114	A	2.3
6	☐	200.000	199.397	6810783.44	1.7959	A	2.3
7	☐	1.000					

y = 0.0090 * x + 4.2035E-004
R = 1.0000
DL = 0.008108
BEC = 0.04668

Weight: <None>
Min Conc: <None>



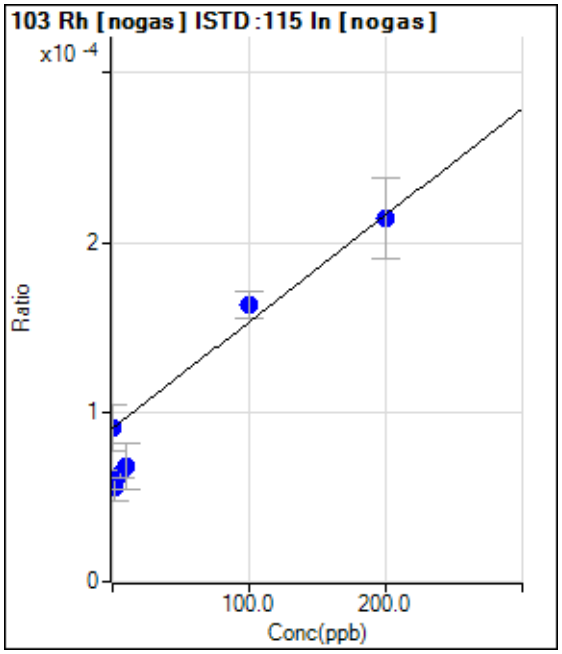
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	153.33	0.0000	P	47.2
2	☐	2.000	1.977	14542.82	0.0037	P	1.1
3	☐	5.000	4.859	35585.69	0.0091	P	3.6
4	☐	10.000	9.816	72764.95	0.0183	P	1.5
5	☐	100.000	99.508	698217.75	0.1854	P	2.4
6	☐	200.000	200.259	1414888.16	0.3731	A	2.4
7	☐	1.000					

y = 0.0019 * x + 3.9062E-005
R = 1.0000
DL = 0.0297
BEC = 0.02097

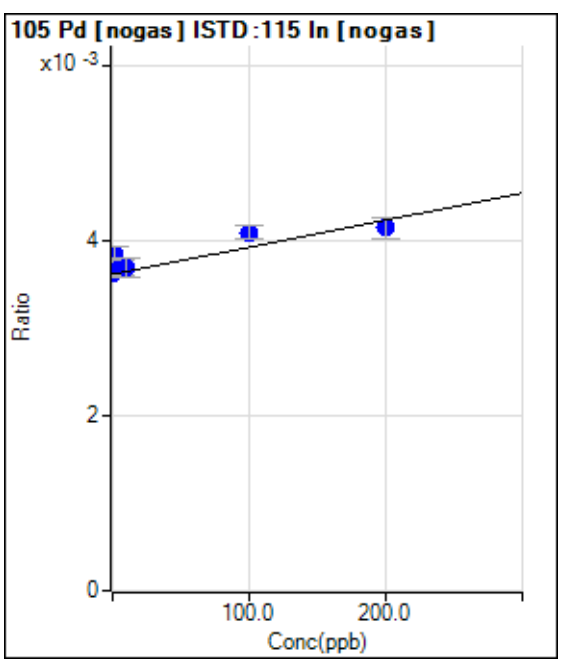
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	333.34	0.0001	P	30.4
2	☐	2.000	-55.774	203.33	0.0001	P	29.3
3	☐	5.000	-43.042	236.67	0.0001	P	7.7
4	☐	10.000	-35.390	246.67	0.0001	P	40.4
5	☐	100.000	115.448	573.35	0.0002	P	10.1
6	☐	200.000	196.324	750.03	0.0002	P	22.3
7	☐	1.000					

y = 6.2886E-007 * x + 9.0471E-005
R = 0.9703
DL = 131.2
BEC = 143.9

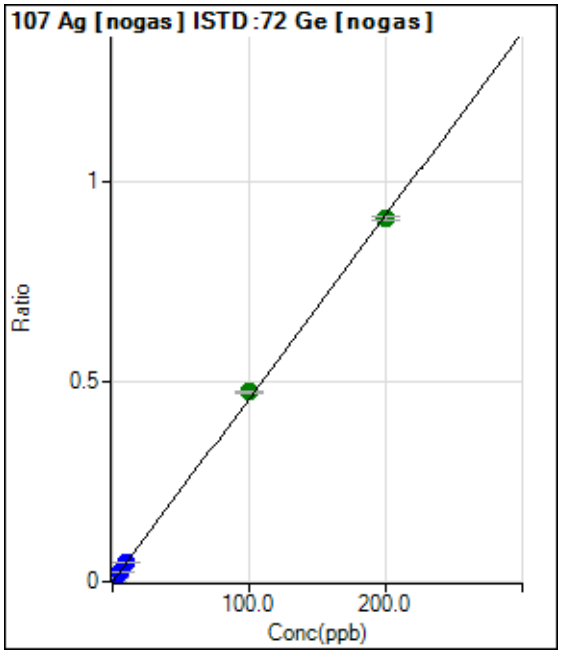
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13338.60	0.0036	P	1.1
2	☐	2.000	72.571	14115.83	0.0038	P	4.9
3	☐	5.000	22.883	13735.54	0.0037	P	5.0
4	☐	10.000	23.643	13375.28	0.0037	P	5.5
5	☐	100.000	154.168	14379.44	0.0041	P	3.5
6	☐	200.000	171.081	14549.52	0.0041	P	5.6
7	☐	1.000					

y = 3.0796E-006 * x + 0.0036
R = 0.8965
DL = 39.45
BEC = 1173

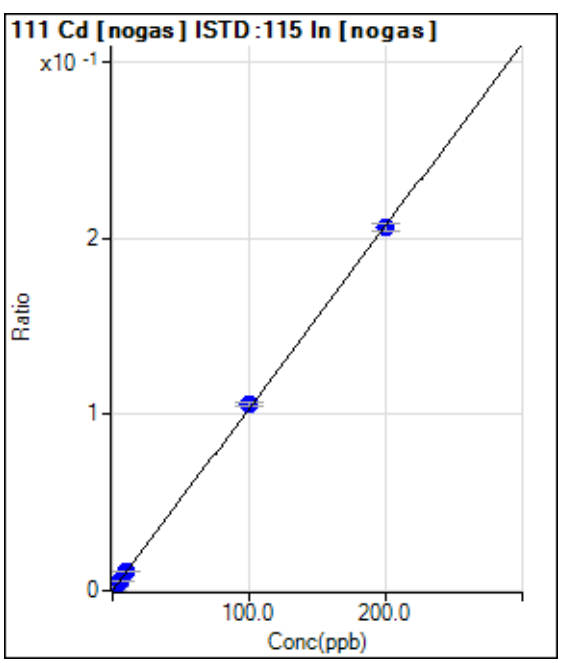
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	380.01	0.0001	P	30.0
2	☐	2.000	2.092	37733.75	0.0097	P	1.4
3	☐	5.000	5.091	91421.88	0.0234	P	1.5
4	☐	10.000	10.315	187451.90	0.0472	P	2.9
5	☐	100.000	103.589	1782881.17	0.4733	A	1.1
6	☐	200.000	198.187	3434215.99	0.9055	A	1.2
7	☐	1.000					

y = 0.0046 * x + 9.7517E-005
R = 0.9998
DL = 0.01921
BEC = 0.02135

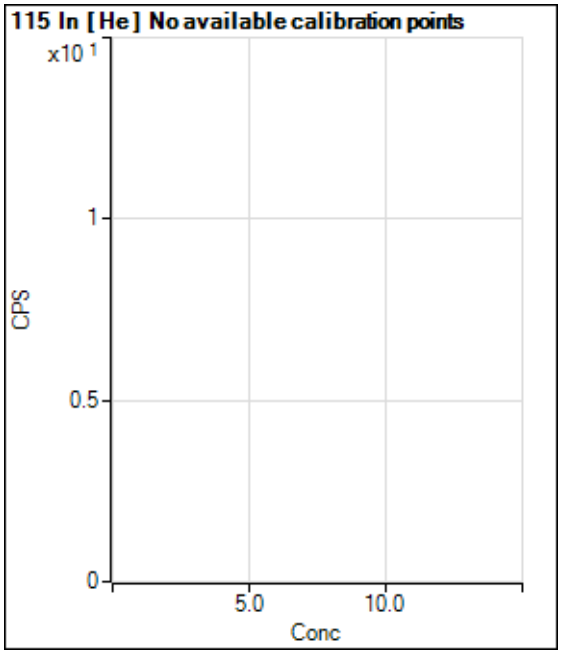
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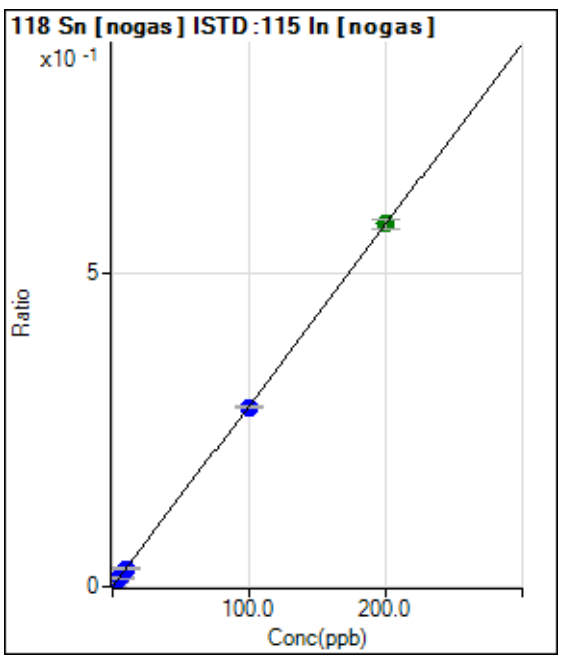
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36.67	0.0000	P	31.7
2	☐	2.000	1.905	7291.61	0.0020	P	6.1
3	☐	5.000	4.949	19133.98	0.0051	P	1.2
4	☐	10.000	10.367	38953.50	0.0107	P	2.6
5	☐	100.000	101.992	371070.84	0.1055	P	2.0
6	☐	200.000	198.988	723780.43	0.2058	P	2.2
7	☐	1.000					

y = 0.0010 * x + 9.9356E-006
R = 0.9999
DL = 0.009138
BEC = 0.009608

Weight: <None>
Min Conc: <None>



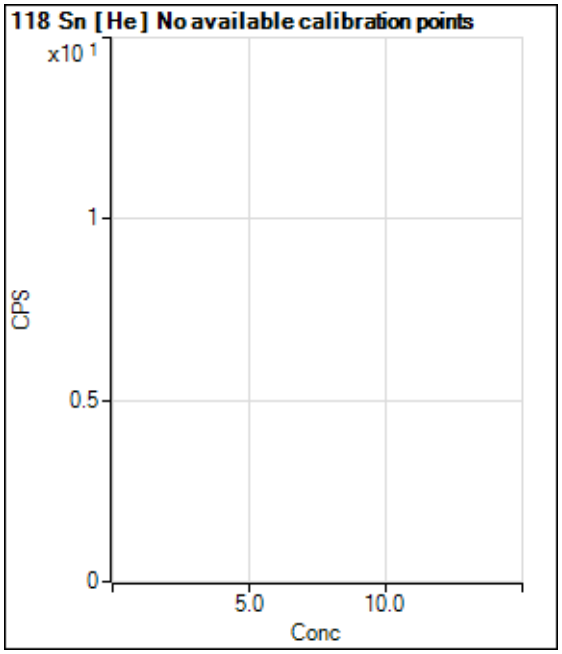
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			1480690.66		A	1.7
2	☐			1472384.85		A	1.4
3	☐			1451834.00		A	1.4
4	☐			1474085.17		A	1.7
5	☐			1380775.72		A	1.2
6	☐			1328616.35		A	2.2
7	☐						



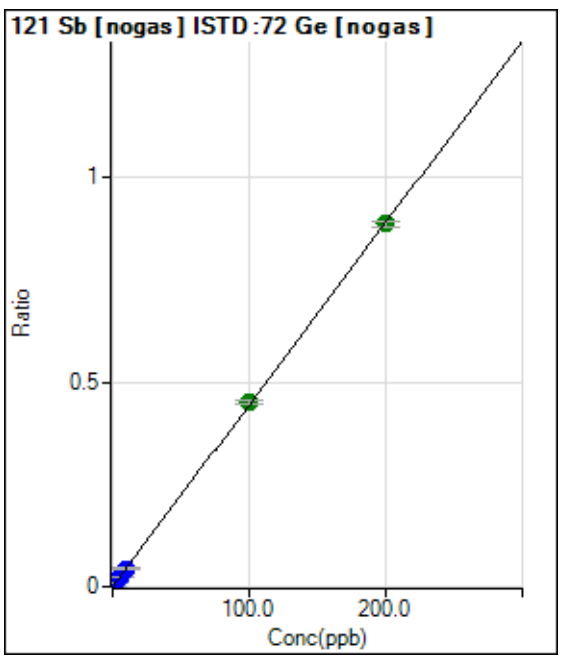
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	796.70	0.0002	P	2.7
2	☐	2.000	1.902	20982.79	0.0057	P	1.0
3	☐	5.000	4.811	52532.50	0.0141	P	5.9
4	☐	10.000	10.002	105508.98	0.0291	P	2.5
5	☐	100.000	99.262	1008016.84	0.2865	P	1.5
6	☐	200.000	200.375	2033947.99	0.5781	A	2.6
7	☐	1.000					

y = 0.0029 * x + 2.1572E-004
R = 1.0000
DL = 0.005999
BEC = 0.07479

Weight: <None>
Min Conc: <None>



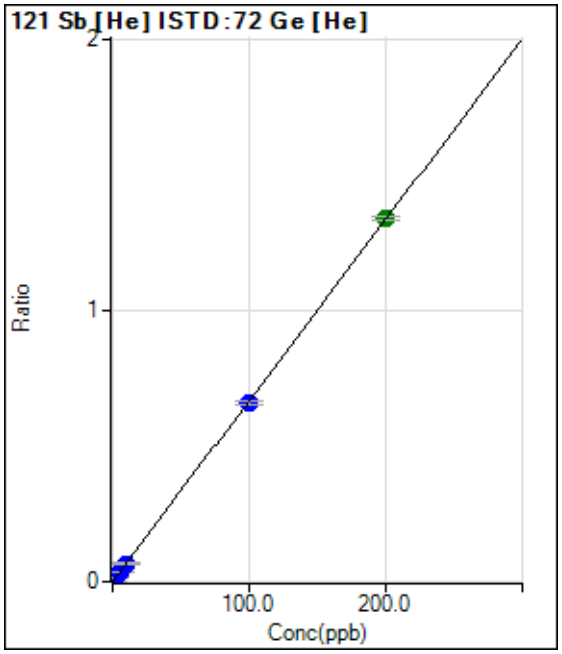
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			326.68		P	15.7
2	☐			9239.25		P	2.7
3	☐			22257.72		P	3.8
4	☐			45395.75		P	0.7
5	☐			420337.61		P	0.6
6	☐			823377.20		P	0.6
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	233.34	0.0001	P	17.1
2	☐	2.000	2.310	40376.63	0.0103	P	2.1
3	☐	5.000	4.836	84389.45	0.0216	P	0.9
4	☐	10.000	10.001	176767.43	0.0445	P	3.1
5	☐	100.000	101.098	1693140.34	0.4496	A	2.3
6	☐	200.000	199.452	3363586.51	0.8868	A	1.5
7	☐	1.000					

y = 0.0044 * x + 5.9772E-005
R = 1.0000
DL = 0.006882
BEC = 0.01344

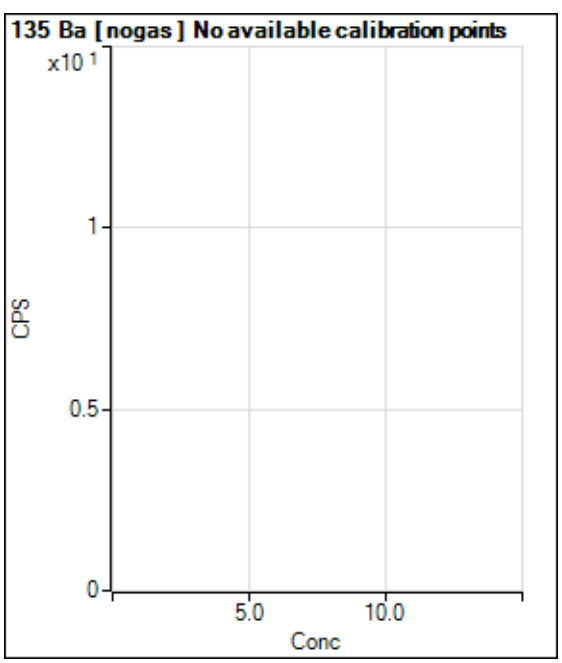
Weight: <None>
Min Conc: <None>



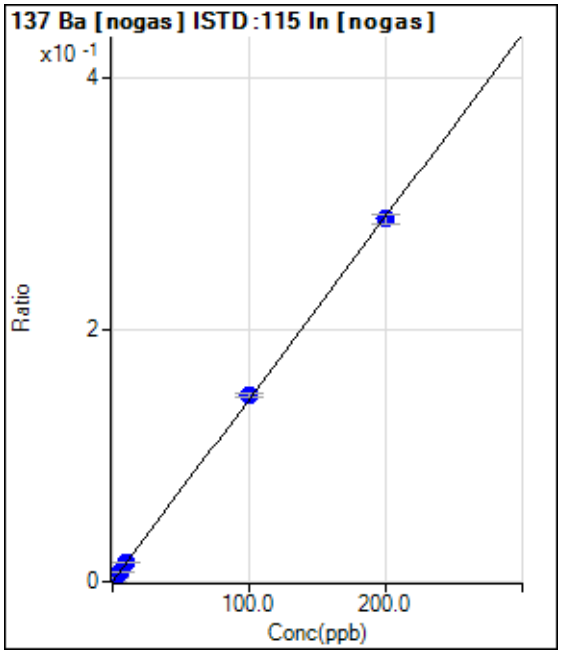
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	143.33	0.0001	P	21.2
2	☐	2.000	2.295	17001.83	0.0155	P	2.3
3	☐	5.000	4.929	35907.18	0.0331	P	1.6
4	☐	10.000	10.044	72282.56	0.0673	P	0.9
5	☐	100.000	98.979	692846.53	0.6616	P	1.7
6	☐	200.000	200.507	1378972.63	1.3401	A	1.1
7	☐	1.000					

y = 0.0067 * x + 1.3122E-004
R = 1.0000
DL = 0.01246
BEC = 0.01963

Weight: <None>
Min Conc: <None>



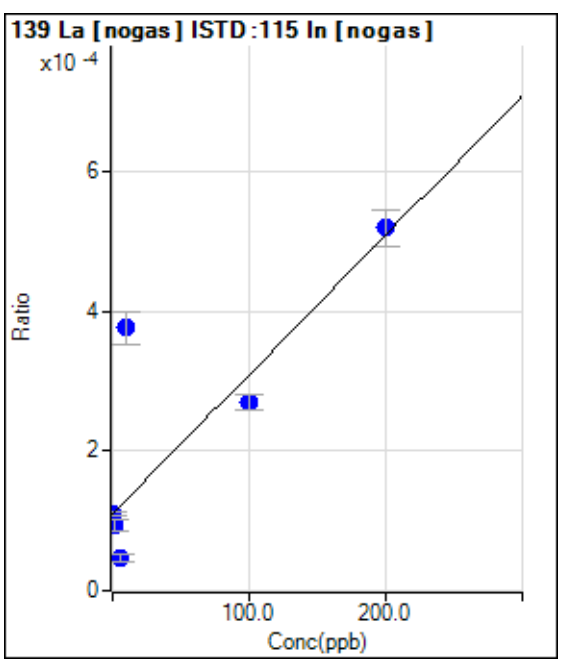
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			223.34		P	40.1
2	☐			6591.36		P	4.1
3	☐			15880.85		P	2.2
4	☐			31686.19		P	1.9
5	☐			300462.93		P	1.4
6	☐			582927.06		P	0.4
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	303.34	0.0001	P	22.1
2	☐	2.000	2.138	11714.20	0.0032	P	0.8
3	☐	5.000	4.996	27338.56	0.0073	P	2.1
4	☐	10.000	10.334	54690.11	0.0151	P	3.7
5	☐	100.000	102.356	522395.94	0.1485	P	2.5
6	☐	200.000	198.804	1014223.97	0.2884	P	2.5
7	☐	1.000					

y = 0.0015 * x + 8.2017E-005
R = 0.9999
DL = 0.03743
BEC = 0.05656

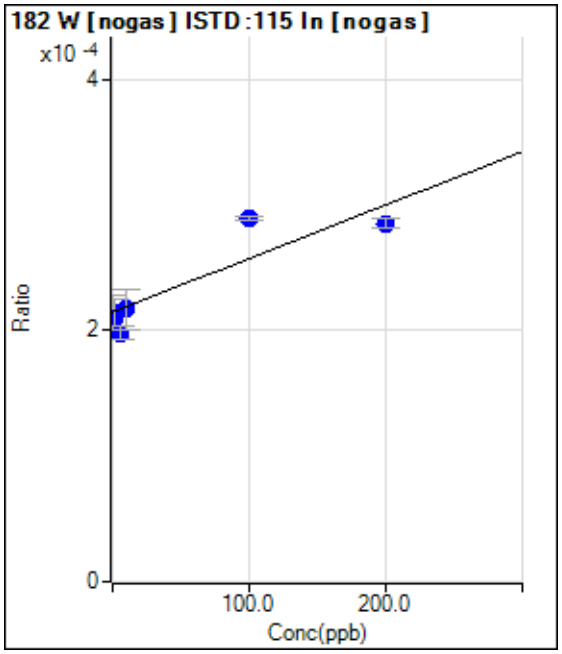
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	406.68	0.0001	P	3.4
2	☐	2.000	-7.918	346.68	0.0001	P	17.8
3	☐	5.000	-31.434	176.67	0.0000	P	21.4
4	☐	10.000	133.357	1370.07	0.0004	P	12.2
5	☐	100.000	79.553	946.70	0.0003	P	8.2
6	☐	200.000	205.066	1826.80	0.0005	P	10.2
7	☐	1.000					

y = 1.9997E-006 * x + 1.1014E-004
R = 0.7922
DL = 5.639
BEC = 55.08

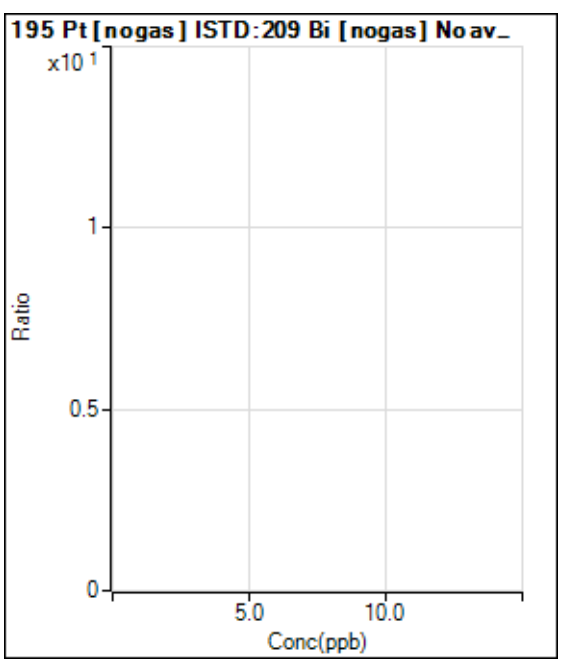
Weight: <None>
Min Conc: <None>



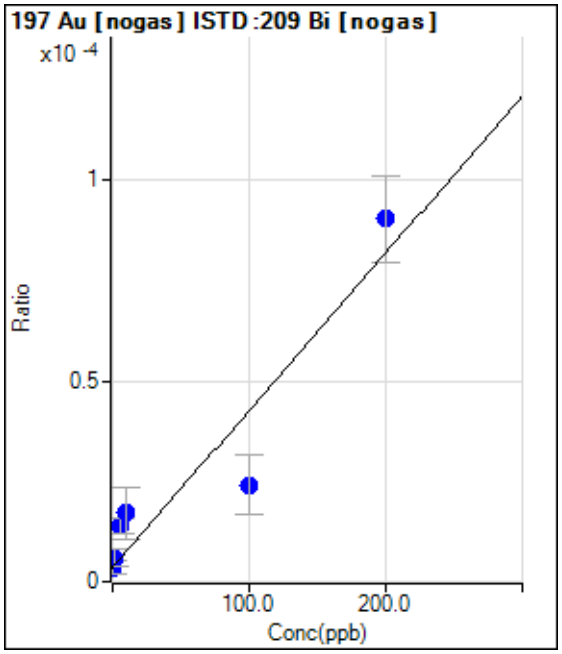
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	793.37	0.0002	P	11.9
2	☐	2.000	-12.554	770.03	0.0002	P	15.3
3	☐	5.000	-40.446	736.70	0.0002	P	5.4
4	☐	10.000	4.715	786.70	0.0002	P	14.7
5	☐	100.000	173.837	1016.72	0.0003	P	1.1
6	☐	200.000	164.628	1003.38	0.0003	P	2.7
7	☐	1.000					

y = 4.2614E-007 * x + 2.1487E-004
R = 0.8968
DL = 179.7
BEC = 504.2

Weight: <None>
Min Conc: <None>



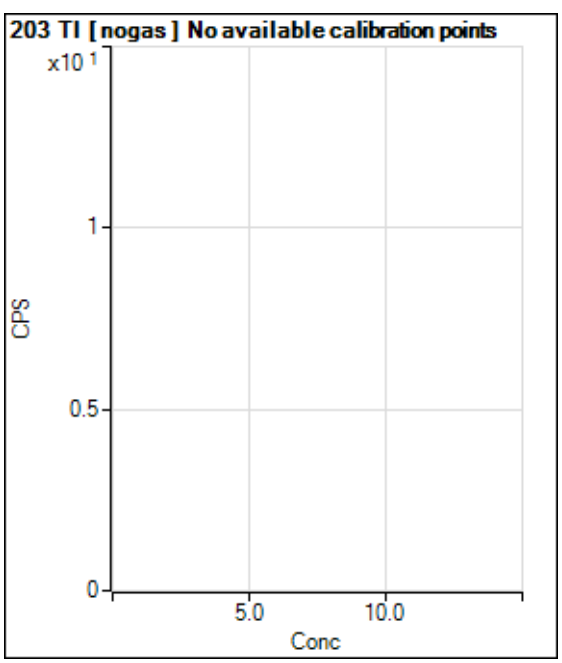
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



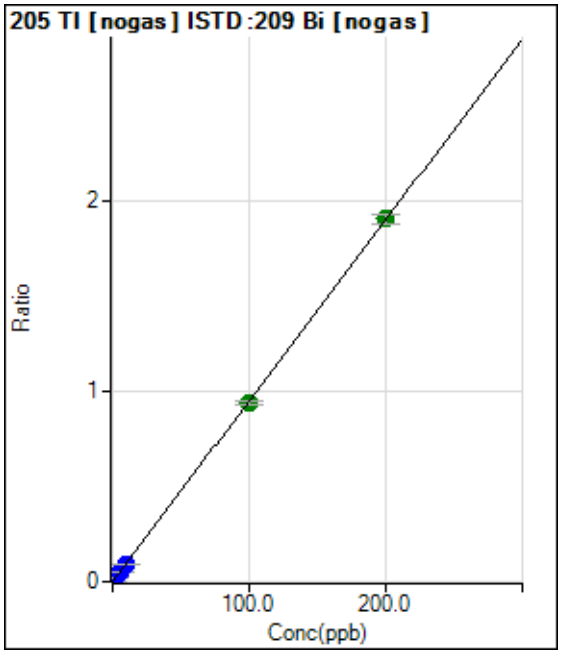
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10.00	0.0000	P	99.5
2	☐	2.000	6.042	16.67	0.0000	P	70.1
3	☐	5.000	26.851	40.00	0.0000	P	26.5
4	☐	10.000	34.451	50.00	0.0000	P	78.3
5	☐	100.000	52.760	66.67	0.0000	P	60.0
6	☐	200.000	221.811	240.01	0.0001	P	24.2
7	☐	1.000					

y = 3.9200E-007 * x + 3.5353E-006
R = 0.9456
DL = 26.93
BEC = 9.019

Weight: <None>
Min Conc: <None>



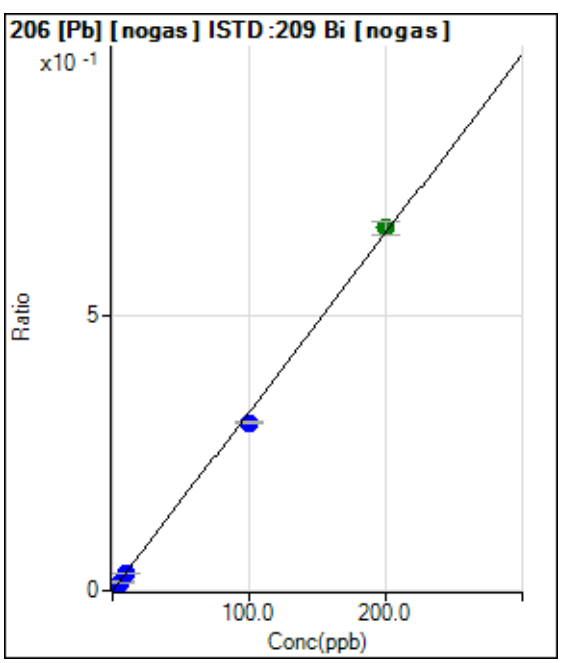
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			110.00		P	59.6
2	☐			21304.13		P	3.0
3	☐			54858.81		P	2.3
4	☐			112414.85		P	1.0
5	☐			1044470.16		P	1.2
6	☐			2135350.96		A	2.2
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	293.34	0.0001	P	16.4
2	☐	2.000	1.910	51571.92	0.0182	P	5.1
3	☐	5.000	4.847	131257.73	0.0460	P	2.4
4	☐	10.000	9.768	268117.75	0.0927	P	3.8
5	☐	100.000	98.656	2567692.36	0.9351	A	2.7
6	☐	200.000	200.688	5035641.59	1.9021	A	2.6
7	☐	1.000					

y = 0.0095 * x + 1.0554E-004
R = 1.0000
DL = 0.005481
BEC = 0.01114

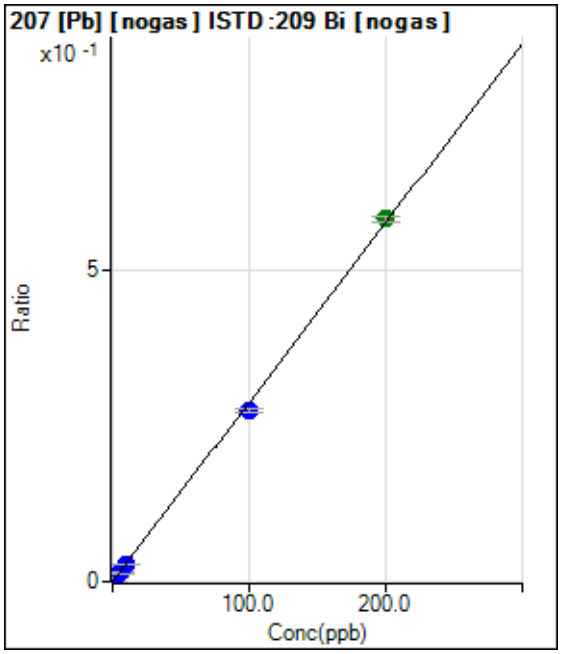
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	260.01	0.0001	P	39.6
2	☐	2.000	1.906	17796.65	0.0063	P	1.9
3	☐	5.000	4.721	43949.45	0.0154	P	4.5
4	☐	10.000	9.624	90675.58	0.0313	P	3.8
5	☐	100.000	94.114	839429.49	0.3057	P	0.9
6	☐	200.000	202.970	1744815.81	0.6592	A	3.7
7	☐	1.000					

y = 0.0032 * x + 9.3478E-005
R = 0.9994
DL = 0.03422
BEC = 0.02879

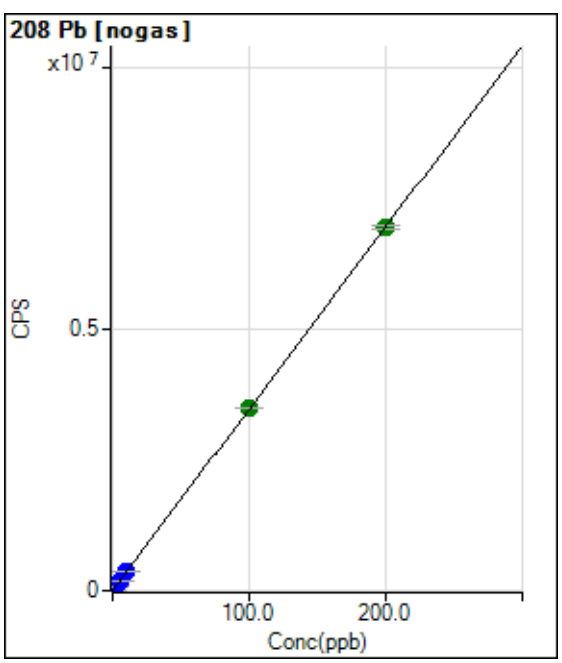
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	243.34	0.0001	P	7.8
2	☐	2.000	1.968	16281.75	0.0057	P	4.0
3	☐	5.000	4.826	39799.07	0.0140	P	6.3
4	☐	10.000	9.601	80140.70	0.0277	P	4.0
5	☐	100.000	95.439	754047.18	0.2746	P	1.4
6	☐	200.000	202.305	1541046.96	0.5820	A	1.4
7	☐	1.000					

y = 0.0029 * x + 8.7440E-005
R = 0.9996
DL = 0.007146
BEC = 0.0304

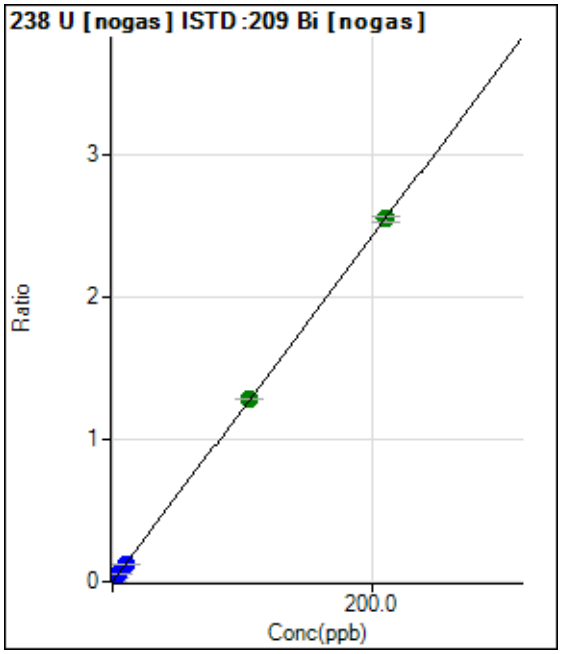
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1066.70		P	14.6
2	☐	2.000	2.073	72941.75		P	0.9
3	☐	5.000	5.109	178224.56		P	1.4
4	☐	10.000	10.439	363060.87		P	1.0
5	☐	100.000	100.669	3491801.43		A	0.4
6	☐	200.000	199.640	6923702.92		A	1.1
7	☐	1.000					

y = 34675.5410 * x + 1066.7033
R = 1.0000
DL = 0.01344
BEC = 0.03076

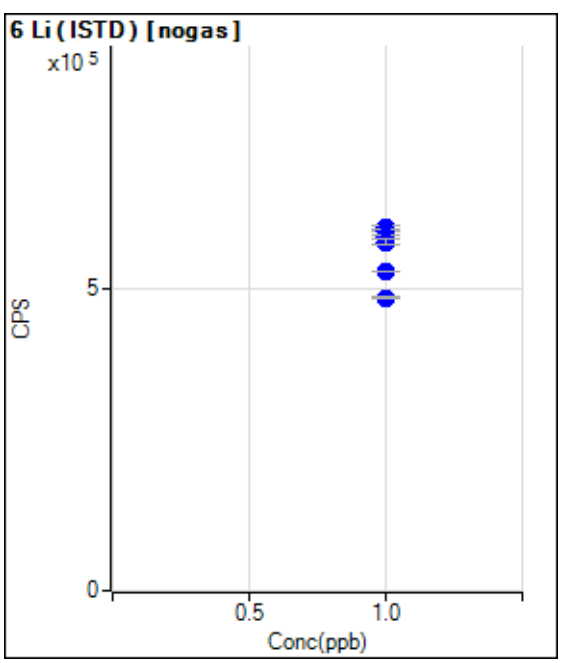
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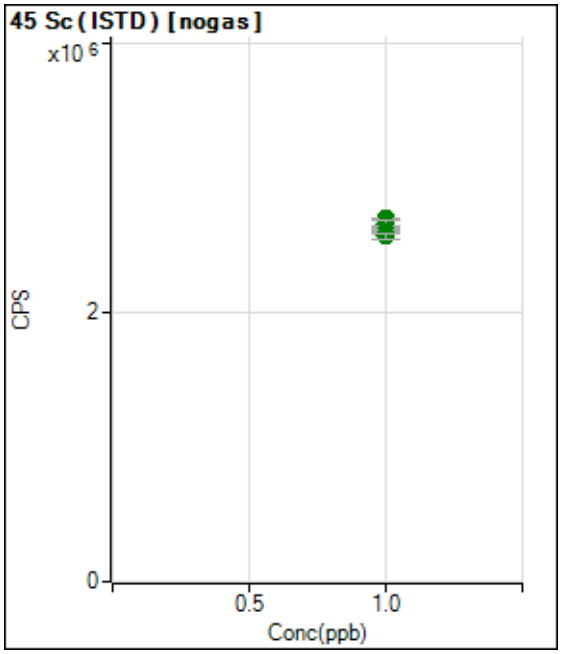
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	220.00	0.0001	P	30.4
2	☐	2.000	1.987	68567.22	0.0242	P	0.8
3	☐	5.000	4.944	171423.45	0.0601	P	1.6
4	☐	10.000	9.926	349145.46	0.1206	P	0.4
5	☐	105.000	105.189	3507597.87	1.2774	A	0.0
6	☐	210.000	209.910	6749245.11	2.5490	A	1.8
7	☐	1.000					

y = 0.0121 * x + 7.8775E-005
R = 1.0000
DL = 0.00592
BEC = 0.006487

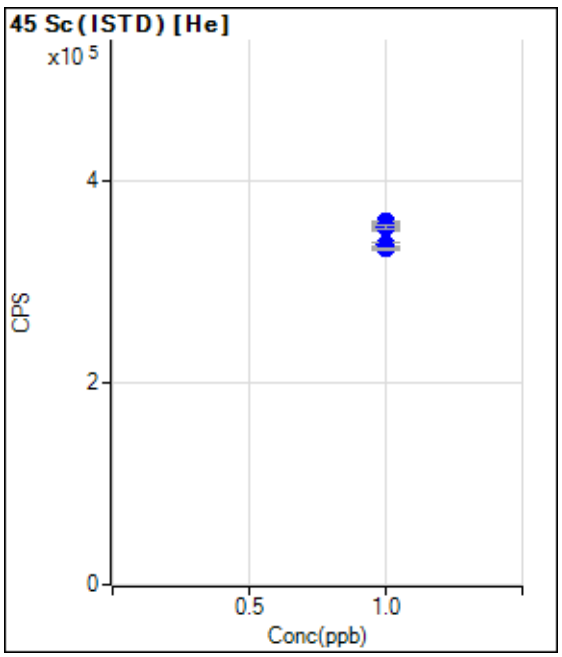
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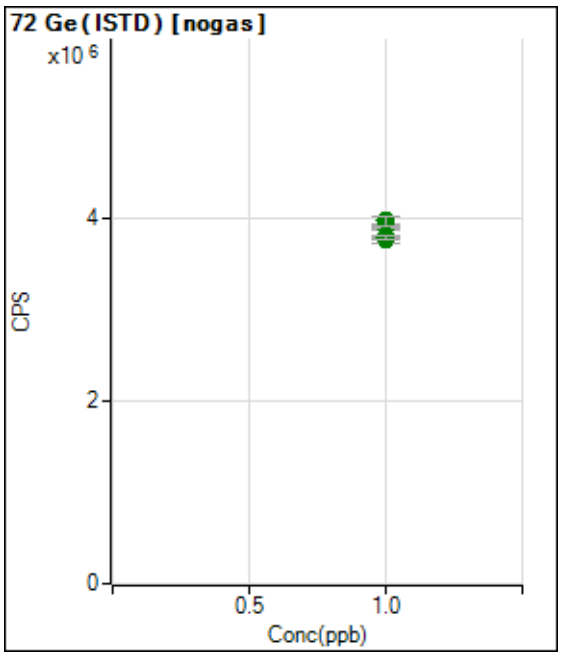
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2	☐	1.000		594038.85		P	1.7
3	☐	1.000		585808.11		P	0.8
4	☐	1.000		577420.17		P	2.0
5	☐	1.000		529116.47		P	0.4
6	☐	1.000		485429.14		P	0.3
7	☐	1.000					



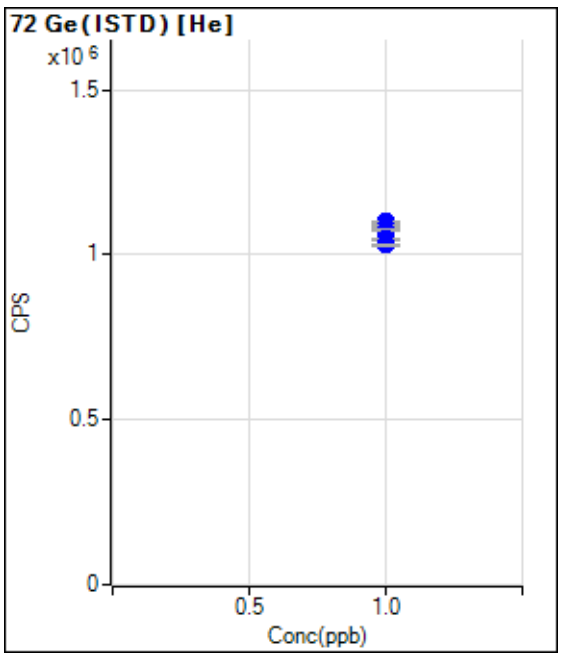
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2697181.42		A	0.9
2	☐	1.000		2664019.28		A	2.6
3	☐	1.000		2644669.13		A	3.2
4	☐	1.000		2665786.94		A	1.7
5	☐	1.000		2604150.85		A	0.6
6	☐	1.000		2566847.62		A	1.6
7	☐	1.000					



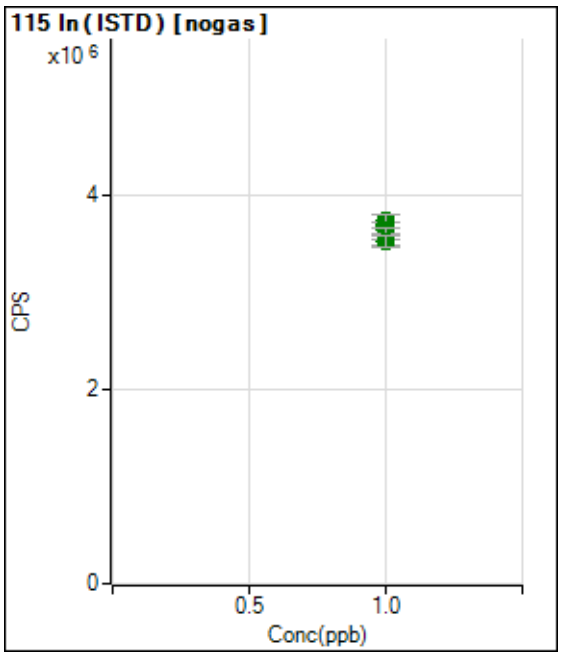
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		353672.52		P	1.5
2	☐	1.000		354538.65		P	0.8
3	☐	1.000		359017.39		P	0.7
4	☐	1.000		353585.43		P	1.2
5	☐	1.000		336734.68		P	1.1
6	☐	1.000		332624.02		P	0.7
7	☐	1.000					



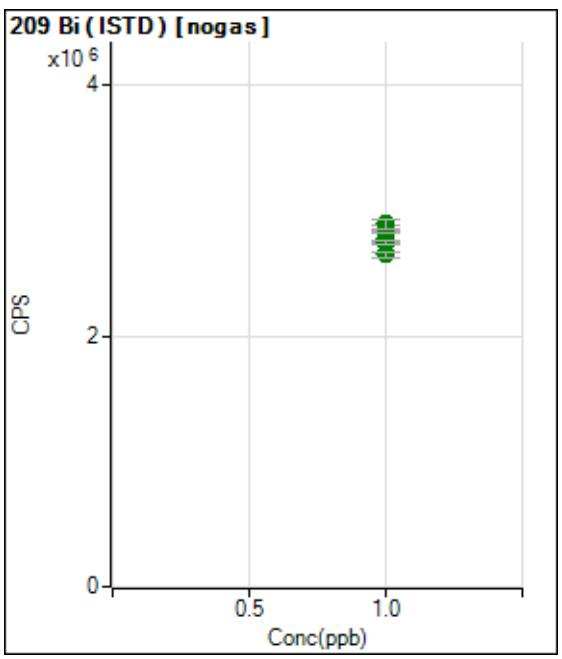
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1	☐	1.000		3907911.82		A	1.4
2	☐	1.000		3908452.96		A	0.3
3	☐	1.000		3914265.77		A	0.9
4	☐	1.000		3971424.63		A	2.3
5	☐	1.000		3767023.90		A	1.7
6	☐	1.000		3792626.19		A	0.9
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1091914.88		P	1.0
2	☐	1.000		1099325.92		P	0.4
3	☐	1.000		1085883.89		P	0.5
4	☐	1.000		1074668.89		P	0.5
5	☐	1.000		1047274.67		P	0.6
6	☐	1.000		1029005.14		P	0.4
7	☐	1.000					



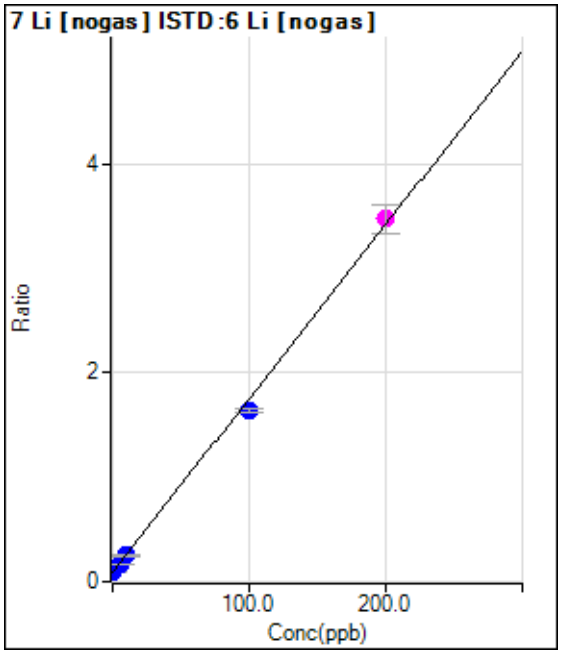
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1	☐	1.000		3692400.35		A	1.7
2	☐	1.000		3681080.14		A	1.6
3	☐	1.000		3731994.07		A	3.4
4	☐	1.000		3631188.65		A	1.7
5	☐	1.000		3518669.48		A	1.8
6	☐	1.000		3518897.38		A	3.4
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2779451.63		A	2.8
2	☐	1.000		2832978.60		A	0.8
3	☐	1.000		2851421.83		A	2.0
4	☐	1.000		2894767.14		A	2.7
5	☐	1.000		2745937.77		A	0.7
6	☐	1.000		2648069.91		A	1.8
7	☐	1.000					

Batch Folder: C:\Agilent\ICPMH\1\DATA\083018A.b\
Analysis File: 083018A.batch.bin
DA Date-Time: 2018-08-30 23:12:17
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

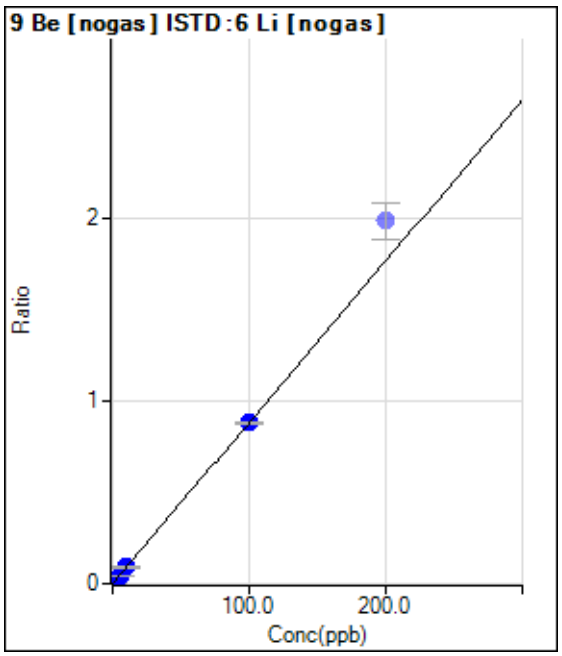
Level	Standard Data File	Sample Name	Acq. Date-Time
1	137CALB.d	CAL BLK	2018-08-30 21:36:28
2	138CALS.d	2/10/200	2018-08-30 21:38:28
3	139CALS.d	5/25/500	2018-08-30 21:40:28
4	140CALS.d	10/50/1000	2018-08-30 21:42:28
5	141CALS.d	100/500/10K	2018-08-30 21:44:26
6	142CALS.d	200/1000/20K	2018-08-30 21:46:24
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	33275.95	0.0897	P	1.7
2	☐	2.000	1.988	43583.21	0.1227	P	2.5
3	☐	5.000	4.749	58426.88	0.1687	P	3.4
4	☐	10.000	9.603	82605.42	0.2495	P	2.9
5	☐	100.000	93.173	525203.10	1.6404	P	2.3
6	☐	200.000	203.440	982221.18	3.4757	M	8.0
7	☐	1.000					

y = 0.0166 * x + 0.0897
R = 0.9992
DL = 0.2715
BEC = 5.387

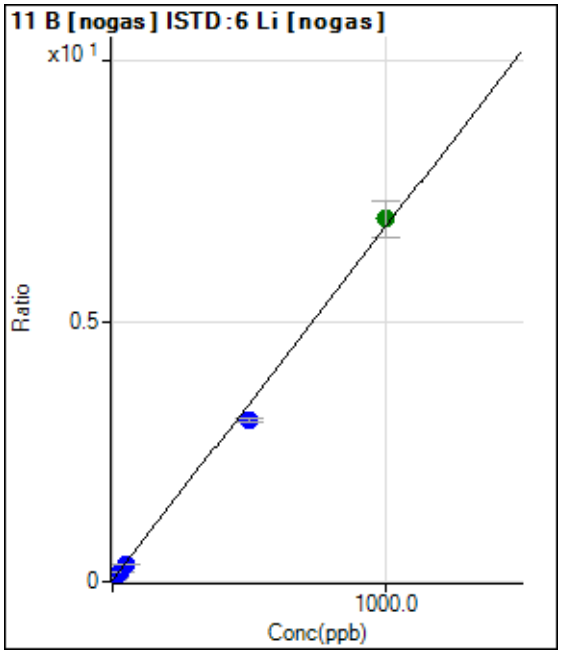
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1	☐	0.000	0.000	16.67	0.0000	P	35.6
2	☐	2.000	1.888	5934.37	0.0167	P	6.0
3	☐	5.000	4.583	14022.02	0.0405	P	7.4
4	☐	10.000	10.321	30204.24	0.0912	P	4.1
5	☐	100.000	99.991	282880.78	0.8835	P	1.5
6	☑	200.000		561167.70	1.9879	P	9.9
7	☐	1.000					

y = 0.0088 * x + 4.5043E-005
R = 1.0000
DL = 0.005446
BEC = 0.005098

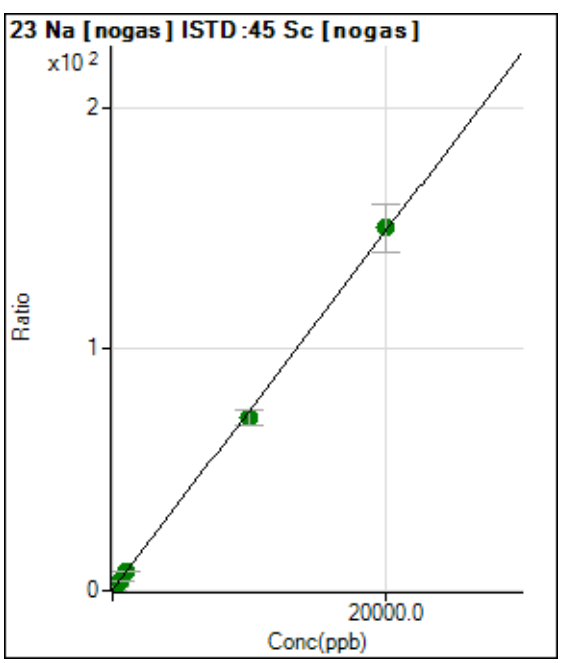
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	11046.72	0.0298	P	5.7
2	☐	10.000	8.668	31412.91	0.0885	P	4.4
3	☐	25.000	21.035	59636.87	0.1723	P	5.8
4	☐	50.000	47.151	115689.08	0.3493	P	0.7
5	☐	500.000	453.880	994459.28	3.1059	P	1.9
6	☐	1000.000	1023.315	1965843.36	6.9652	A	10.3
7	☐	5.000					

y = 0.0068 * x + 0.0298
R = 0.9986
DL = 0.7519
BEC = 4.393

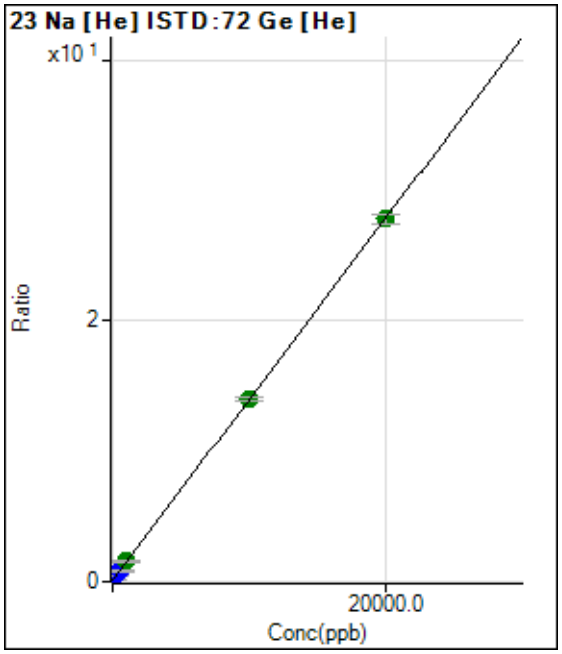
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	676710.71	0.2634	P	1.0
2	☐	200.000	197.203	4223371.71	1.7269	A	6.5
3	☐	500.000	522.505	9628925.22	4.1410	A	7.4
4	☐	1000.000	1037.498	18725497.29	7.9629	A	9.1
5	☐	10000.00	9589.342	166151737.0	71.4274	A	8.8
6	☐	20000.00	20202.920	326018457.2	150.192	A	13.4
7	☐	100.000					

y = 0.0074 * x + 0.2634
R = 0.9997
DL = 1.028
BEC = 35.5

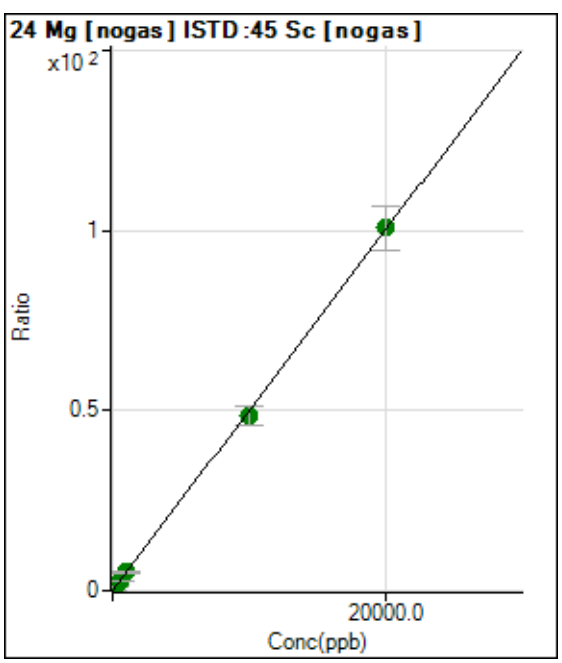
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	86512.50	0.0879	P	2.9
2	☐	200.000	211.127	381318.94	0.3812	P	1.2
3	☐	500.000	524.019	814871.60	0.8159	P	2.6
4	☐	1000.000	1063.050	1562098.98	1.5647	A	2.0
5	☐	10000.00	10039.880	13835338.54	14.0353	A	2.5
6	☐	20000.00	19976.196	26645192.10	27.8389	A	2.5
7	☐	100.000					

y = 0.0014 * x + 0.0879
R = 1.0000
DL = 5.584
BEC = 63.29

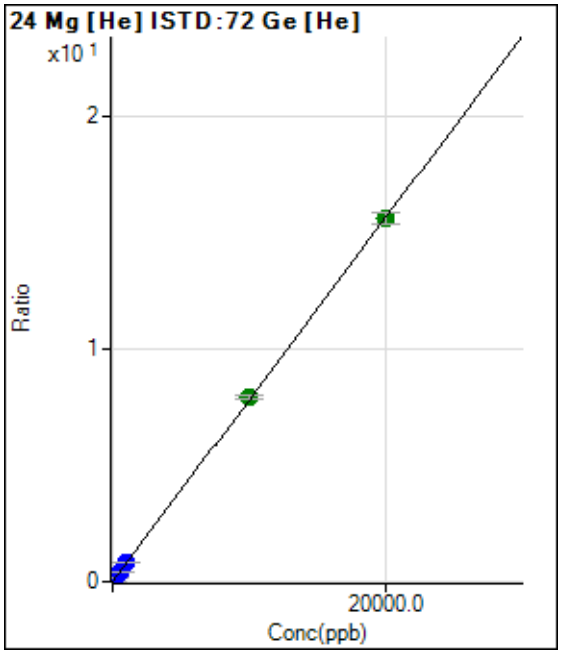
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15075.28	0.0059	P	15.9
2	☐	200.000	197.768	2433333.45	0.9951	A	6.9
3	☐	500.000	521.205	6070992.84	2.6130	A	9.0
4	☐	1000.000	1042.788	12282477.88	5.2219	A	8.8
5	☐	10000.00	9742.808	113277223.3	48.7399	A	10.6
6	☐	20000.00	20125.949	218705229.8	100.676	A	12.3
7	☐	100.000					

y = 0.0050 * x + 0.0059
R = 0.9999
DL = 0.5605
BEC = 1.173

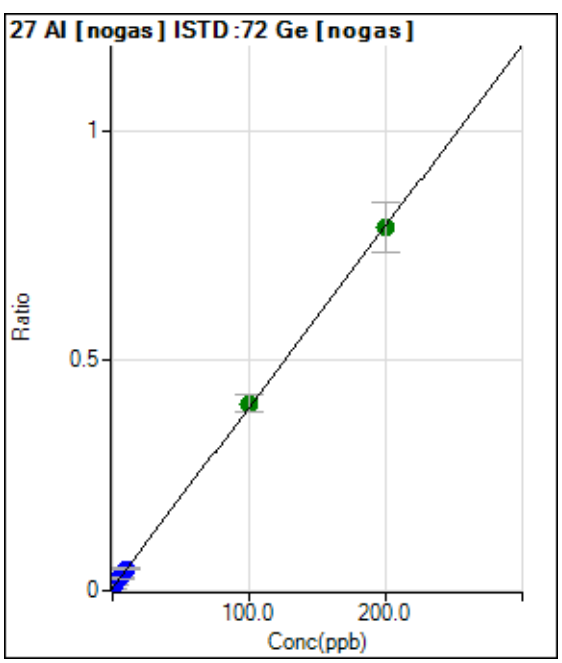
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1286.73	0.0013	P	8.7
2	☐	200.000	208.061	164021.51	0.1640	P	2.8
3	☐	500.000	525.673	411808.87	0.4123	P	2.3
4	☐	1000.000	1055.269	825025.19	0.8264	P	1.7
5	☐	10000.00	10103.557	7788561.55	7.9010	A	2.1
6	☐	20000.00	19944.736	14926138.53	15.5956	A	3.1
7	☐	100.000					

y = 7.8188E-004 * x + 0.0013
R = 1.0000
DL = 0.439
BEC = 1.674

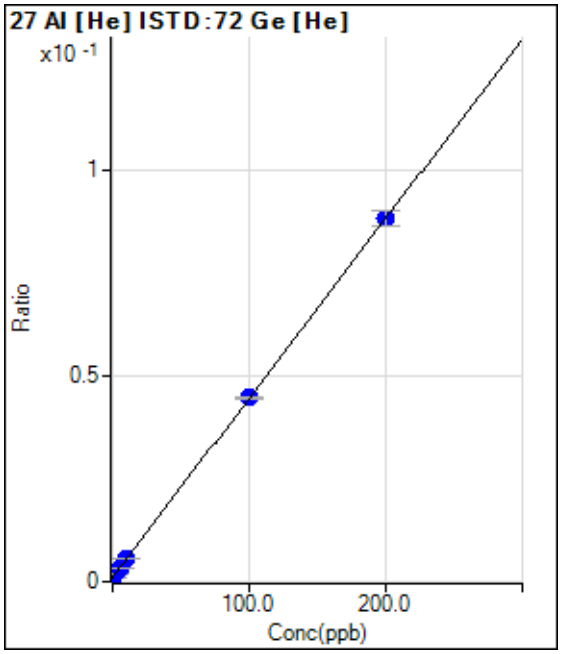
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	23628.43	0.0059	P	1.4
2	☐	2.000	2.142	56190.59	0.0144	P	2.2
3	☐	5.000	5.455	102051.71	0.0274	P	7.1
4	☐	10.000	10.544	179778.30	0.0474	P	4.0
5	☐	100.000	101.932	1494937.27	0.4070	A	9.2
6	☐	200.000	198.994	2814812.66	0.7889	A	13.9
7	☐	1.000					

y = 0.0039 * x + 0.0059
R = 0.9999
DL = 0.06172
BEC = 1.511

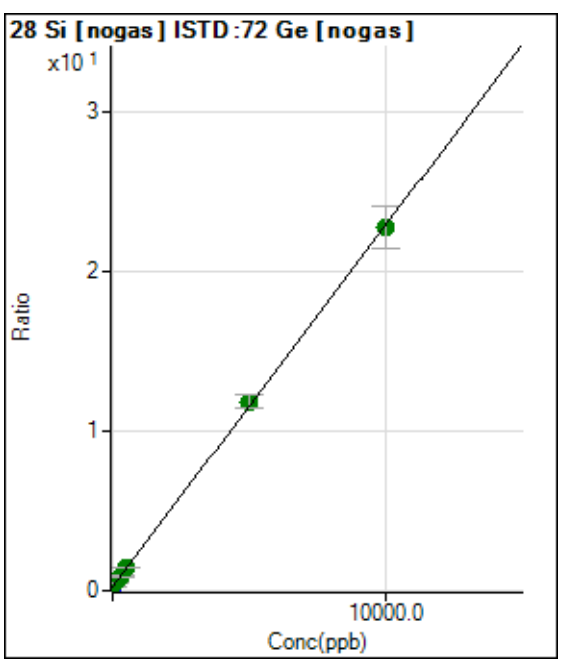
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.508	796.69	0.0008	P	14.9
2	☐	2.000	1.770	1800.12	0.0018	P	7.9
3	☐	5.000	4.916	3166.99	0.0032	P	5.1
4	☐	10.000	10.817	5730.97	0.0057	P	2.8
5	☐	100.000	100.082	43981.59	0.0446	P	1.6
6	☐	200.000	199.922	84287.05	0.0881	P	4.2
7	☐	1.000					

y = 4.3539E-004 * x + 0.0010
R = 1.0000
DL = 0.8299
BEC = 2.366

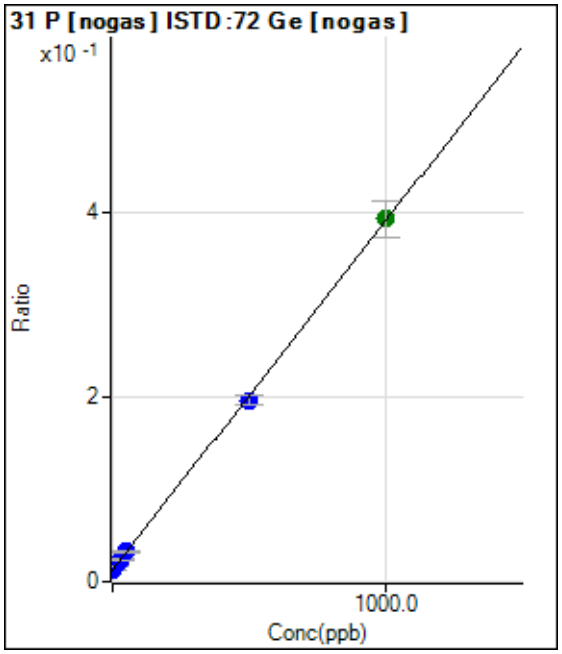
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	971079.78	0.2445	P	2.9
2	☐	100.000	119.486	2014476.58	0.5152	A	1.5
3	☐	250.000	283.461	3301557.35	0.8868	A	7.3
4	☐	500.000	528.157	5458554.29	1.4412	A	5.9
5	☐	5000.000	5131.341	43628434.35	11.8714	A	7.5
6	☐	10000.00	9931.890	81264535.46	22.7488	A	11.7
7	☐	5.000					

y = 0.0023 * x + 0.2445
R = 0.9999
DL = 9.485
BEC = 107.9

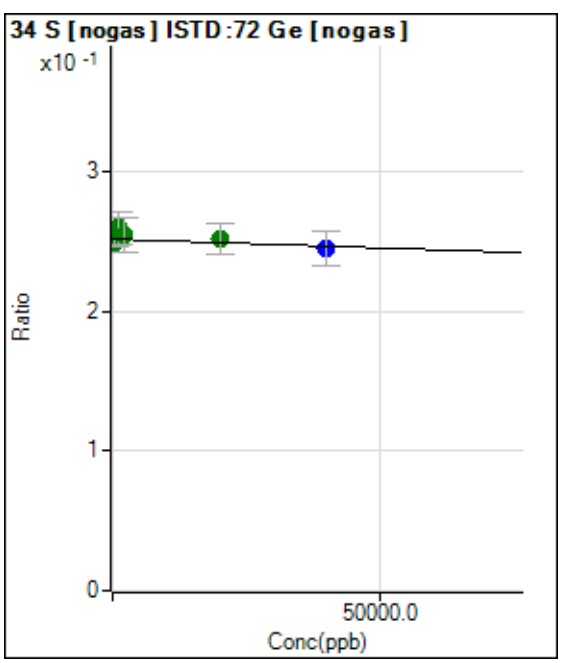
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	50487.85	0.0127	P	6.0
2	☐	10.000	9.716	64008.61	0.0164	P	3.1
3	☐	25.000	27.981	86571.31	0.0233	P	8.8
4	☐	50.000	52.983	123843.71	0.0327	P	5.8
5	☐	500.000	486.844	721915.69	0.1963	P	5.1
6	☐	1000.000	1006.357	1402733.73	0.3923	A	10.1
7	☐	5.000					

y = 3.7717E-004 * x + 0.0127
R = 0.9999
DL = 6.02
BEC = 33.71

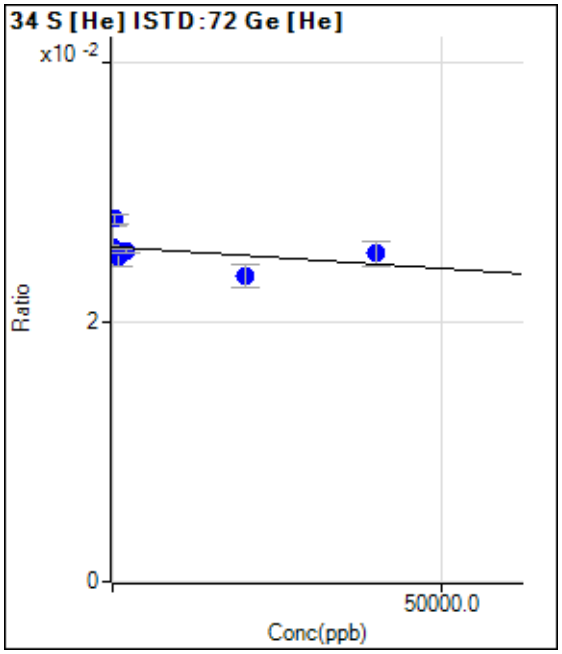
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	999380.30	0.2516	A	3.9
2	☐	400.000	22244.776	972531.47	0.2488	A	1.9
3	☐	1000.000	-63109.08	966105.69	0.2596	A	9.0
4	☐	2000.000	-21975.51	962301.98	0.2544	A	9.7
5	☐	20000.00	-465.346	924860.86	0.2517	A	8.8
6	☐	40000.00	52815.728	875764.47	0.2449	P	10.1
7	☐	100.000					

y = -1.2662E-007 * x + 0.2516
R = -0.6586
DL = -2.302E+05
BEC = -1.987E+06

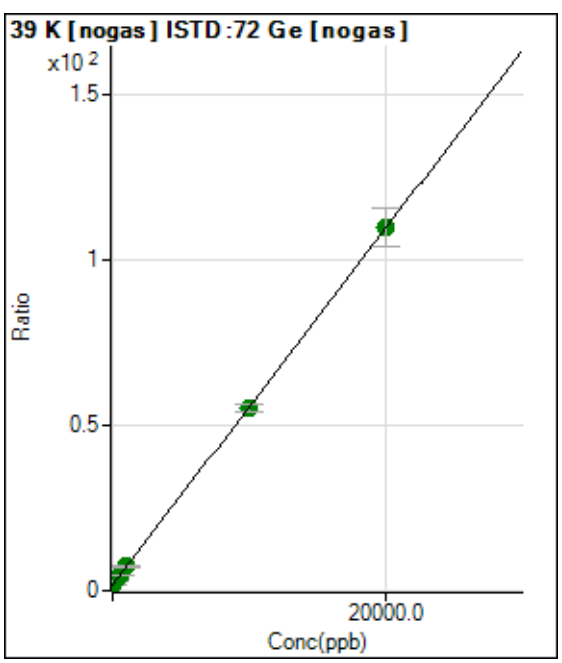
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	25355.07	0.0258	P	12.2
2	☐	400.000	-63732.20	27959.50	0.0279	P	2.9
3	☐	1000.000	21177.274	25054.71	0.0251	P	6.7
4	☐	2000.000	9236.873	25454.08	0.0255	P	1.6
5	☐	20000.00	67786.548	23185.35	0.0235	P	7.2
6	☐	40000.00	15881.772	24187.15	0.0253	P	8.1
7	☐	100.000					

y = -3.3558E-008 * x + 0.0258
R = -0.4245
DL = -2.82E+05
BEC = -7.689E+05

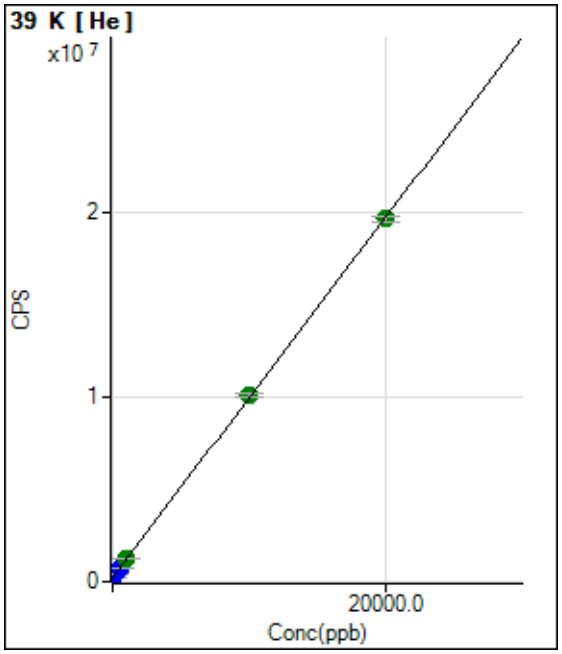
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6865873.59	1.7287	A	3.2
2	☐	200.000	200.891	10981779.41	2.8098	A	2.4
3	☐	500.000	529.658	17044422.25	4.5789	A	7.8
4	☐	1000.000	1055.643	28051992.30	7.4094	A	7.2
5	☐	10000.00	9917.419	202643625.3	55.0967	A	4.1
6	☐	20000.00	20037.758	391593833.7	109.556	A	10.7
7	☐	100.000					

y = 0.0054 * x + 1.7287
R = 1.0000
DL = 31.16
BEC = 321.2

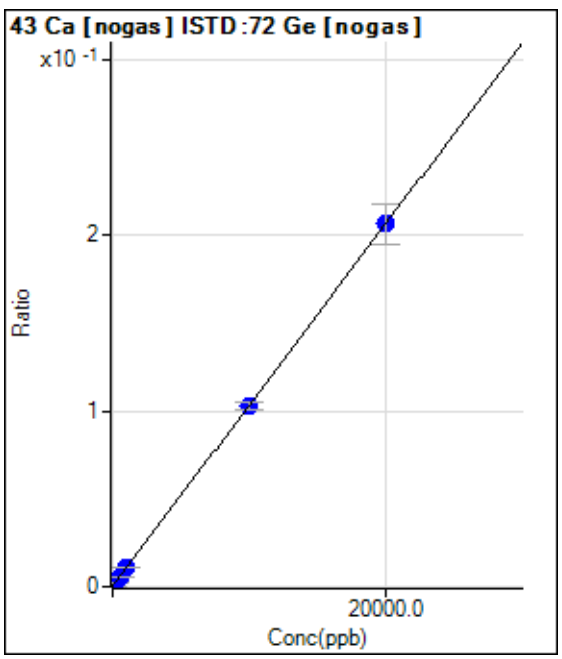
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	206526.27		P	0.3
2	☐	200.000	210.934	412606.14		P	1.7
3	☐	500.000	522.027	716539.81		P	0.5
4	☐	1000.000	1100.101	1281311.13		A	1.3
5	☐	10000.00	10139.630	10112820.68		A	1.2
6	☐	20000.00	19924.520	19672538.04		A	1.8
7	☐	100.000					

y = 976.9877 * x + 206526.2733
R = 1.0000
DL = 1.752
BEC = 211.4

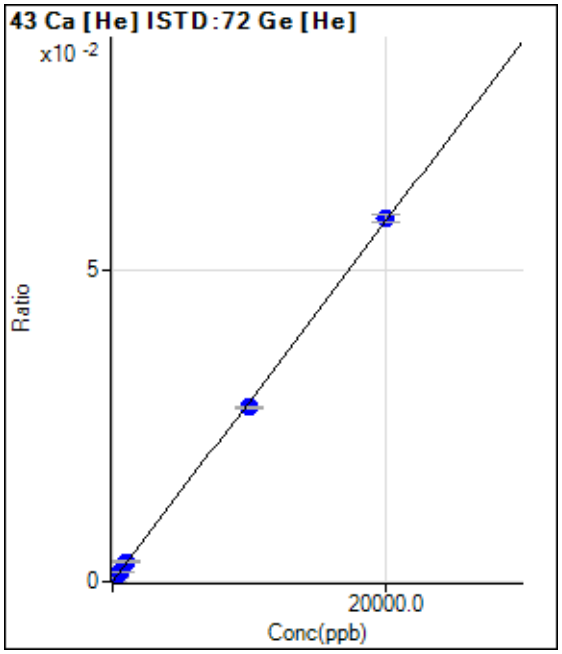
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	716.69	0.0002	P	13.9
2	☐	200.000	200.424	8792.22	0.0022	P	2.4
3	☐	500.000	522.717	20745.26	0.0056	P	7.7
4	☐	1000.000	1045.950	41509.95	0.0110	P	8.7
5	☐	10000.00	9968.987	378929.56	0.1030	P	3.9
6	☐	20000.00	20012.637	738359.44	0.2066	P	11.2
7	☐	100.000					

y = 1.0317E-005 * x + 1.8048E-004
R = 1.0000
DL = 7.269
BEC = 17.49

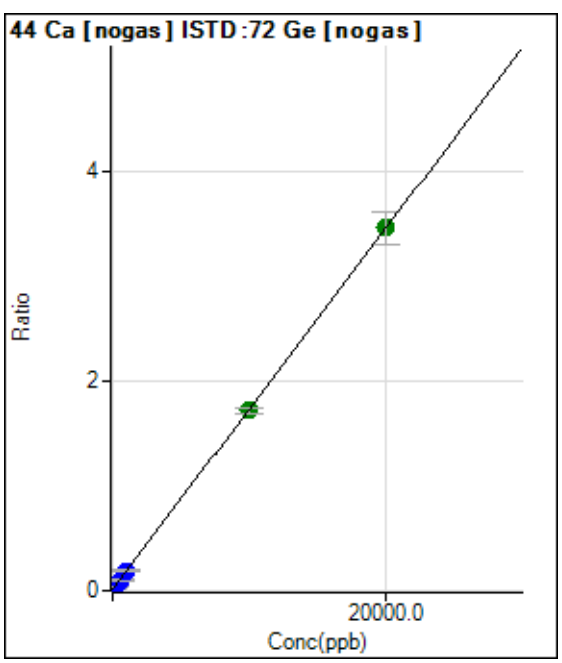
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.
2	☐	200.000	221.035	640.02	0.0006	P	3.8
3	☐	500.000	524.009	1510.09	0.0015	P	7.3
4	☐	1000.000	1083.463	3116.97	0.0031	P	10.7
5	☐	10000.00	9672.514	27467.15	0.0279	P	0.1
6	☐	20000.00	20158.759	55569.82	0.0581	P	2.1
7	☐	100.000					

y = 2.8799E-006 * x + 3.4184E-006
R = 0.9998
DL = 6.168
BEC = 1.187

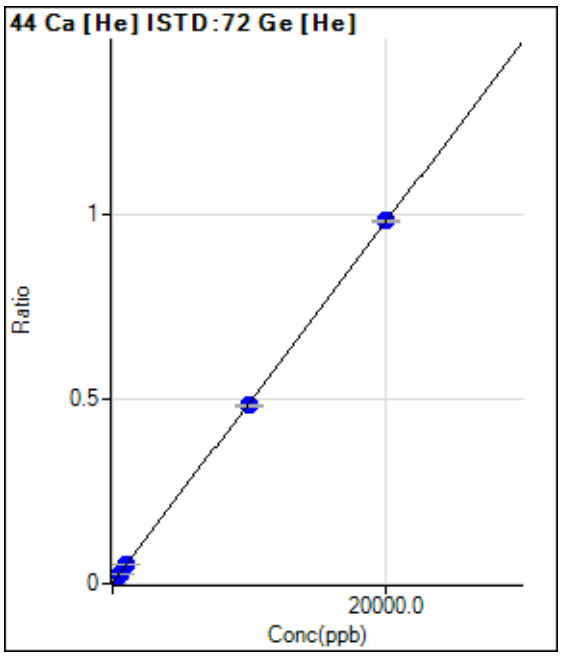
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37344.19	0.0094	P	0.9
2	☐	200.000	193.589	167262.60	0.0428	P	3.7
3	☐	500.000	513.838	365230.64	0.0981	P	6.4
4	☐	1000.000	1035.600	712508.19	0.1881	P	5.5
5	☐	10000.00	9922.142	6332173.45	1.7215	A	3.7
6	☐	20000.00	20036.867	12403454.40	3.4669	A	9.1
7	☐	100.000					

y = 1.7256E-004 * x + 0.0094
R = 1.0000
DL = 1.552
BEC = 54.45

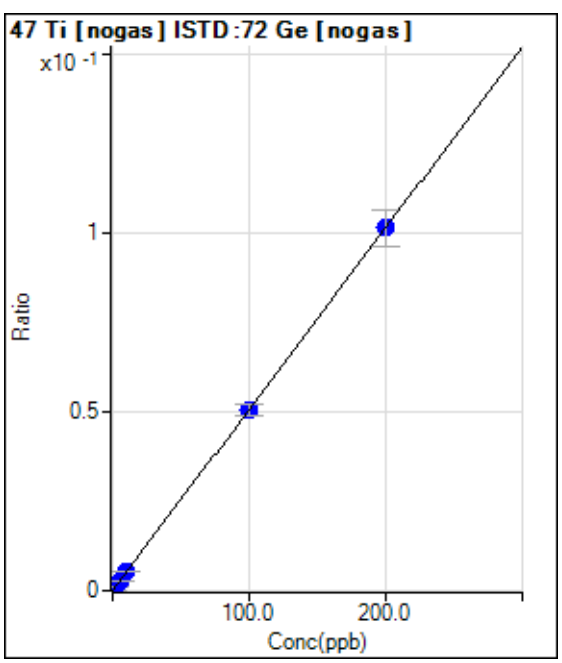
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1043.39	0.0011	P	12.6
2	☐	200.000	211.490	11390.31	0.0114	P	2.3
3	☐	500.000	499.474	25424.33	0.0255	P	0.7
4	☐	1000.000	1024.158	50993.45	0.0511	P	1.4
5	☐	10000.00	9845.532	475035.06	0.4819	P	1.4
6	☐	20000.00	20075.925	939556.05	0.9815	P	0.4
7	☐	100.000					

y = 4.8834E-005 * x + 0.0011
R = 1.0000
DL = 8.246
BEC = 21.73

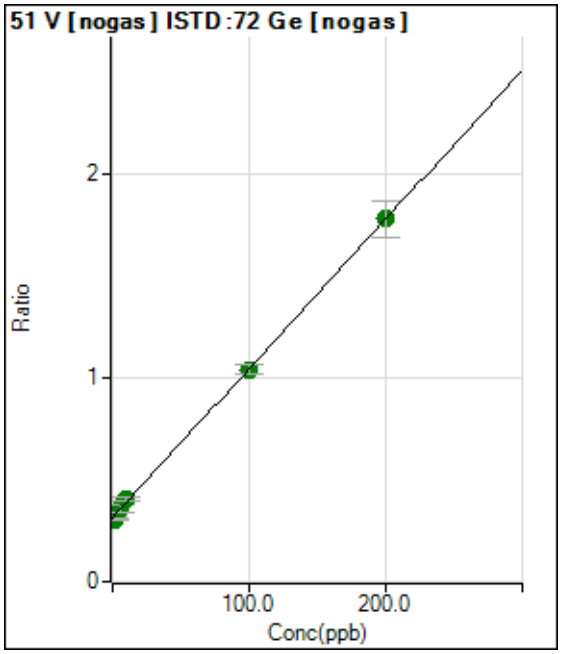
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	140.00	0.0000	P	22.7
2	☐	2.000	2.077	4253.89	0.0011	P	9.9
3	☐	5.000	5.101	9786.09	0.0026	P	3.0
4	☐	10.000	10.510	20331.37	0.0054	P	6.2
5	☐	100.000	99.730	186153.13	0.0506	P	6.3
6	☐	200.000	200.106	363153.45	0.1016	P	10.2
7	☐	1.000					

y = 5.0744E-004 * x + 3.5321E-005
R = 1.0000
DL = 0.04734
BEC = 0.0696

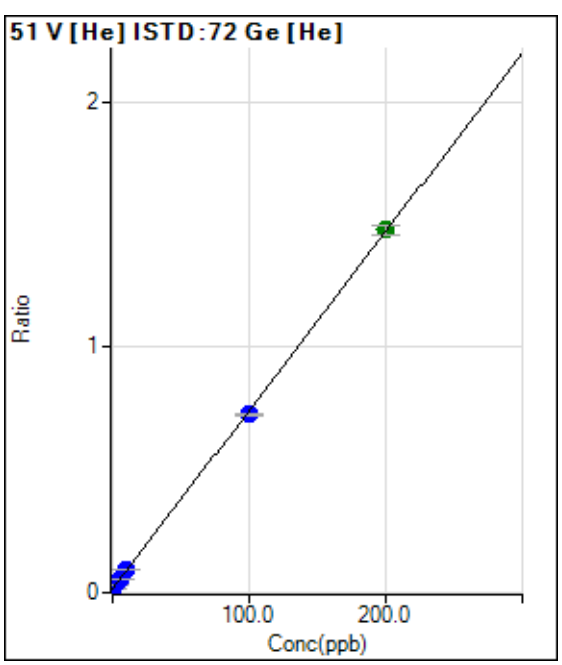
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1251564.02	0.3151	A	2.4
2	☐	2.000	-1.316	1193852.14	0.3054	A	1.5
3	☐	5.000	6.322	1344560.06	0.3614	A	9.2
4	☐	10.000	12.501	1542333.63	0.4068	A	3.1
5	☐	100.000	99.412	3840915.97	1.0442	A	3.8
6	☐	200.000	200.169	6376773.97	1.7833	A	9.9
7	☐	1.000					

y = 0.0073 * x + 0.3151
R = 0.9997
DL = 3.054
BEC = 42.95

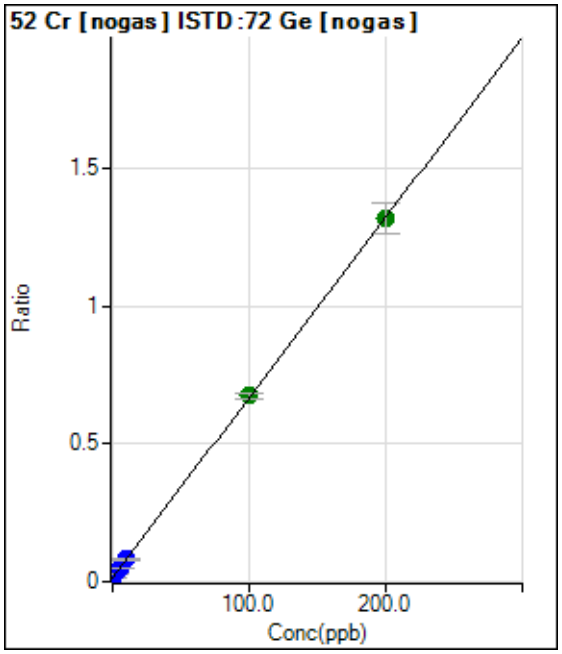
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.280	16855.61	0.0171	P	3.5
2	☐	2.000	2.175	30932.24	0.0309	P	3.1
3	☐	5.000	5.232	53121.30	0.0532	P	2.7
4	☐	10.000	10.468	91164.56	0.0913	P	0.3
5	☐	100.000	97.754	716527.29	0.7268	P	1.2
6	☐	200.000	201.092	1415741.21	1.4792	A	2.7
7	☐	1.000					

y = 0.0073 * x + 0.0151
R = 0.9999
DL = 0.2498
BEC = 2.073

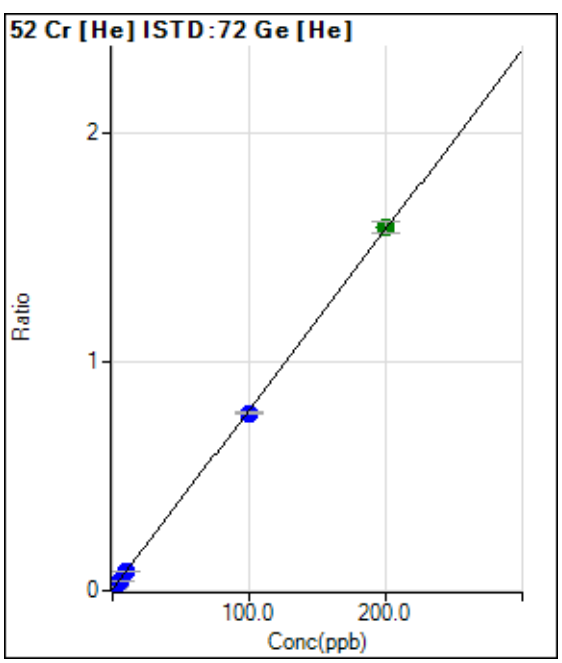
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	59733.00	0.0150	P	1.8
2	☐	2.000	1.848	106005.12	0.0271	P	1.8
3	☐	5.000	5.212	182777.35	0.0491	P	8.4
4	☐	10.000	10.306	312147.48	0.0824	P	6.4
5	☐	100.000	101.337	2493013.45	0.6776	A	3.1
6	☐	200.000	199.312	4718238.37	1.3182	A	8.5
7	☐	1.000					

y = 0.0065 * x + 0.0150
R = 1.0000
DL = 0.1235
BEC = 2.3

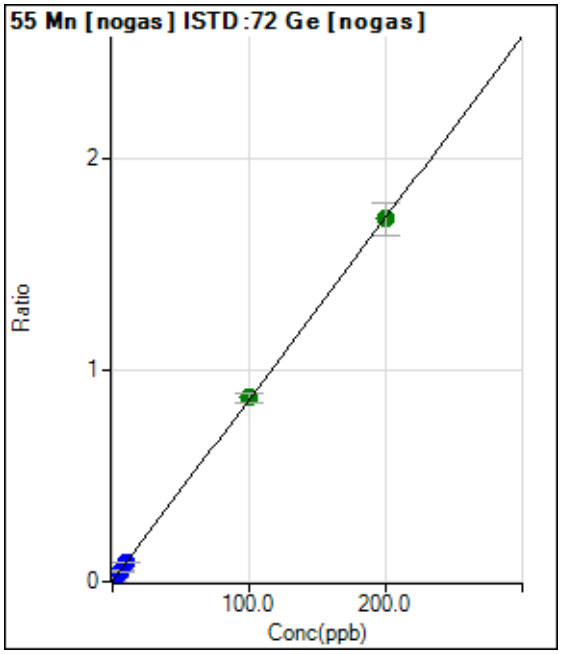
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4517.30	0.0046	P	7.6
2	☐	2.000	1.971	20121.22	0.0201	P	1.6
3	☐	5.000	5.075	44503.83	0.0445	P	1.8
4	☐	10.000	9.946	82774.72	0.0829	P	2.2
5	☐	100.000	98.004	765266.42	0.7763	P	1.4
6	☐	200.000	200.999	1519192.84	1.5872	A	3.2
7	☐	1.000					

y = 0.0079 * x + 0.0046
R = 0.9999
DL = 0.1338
BEC = 0.5832

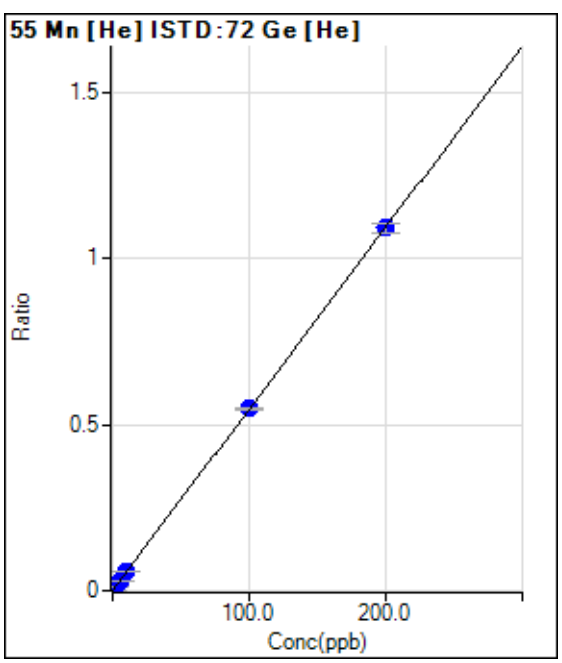
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13441.68	0.0034	P	3.0
2	☐	2.000	1.947	78519.83	0.0201	P	1.8
3	☐	5.000	5.266	180874.66	0.0486	P	7.1
4	☐	10.000	10.218	344799.50	0.0911	P	7.1
5	☐	100.000	101.036	3202184.64	0.8704	A	5.2
6	☐	200.000	199.465	6137082.20	1.7151	A	8.7
7	☐	1.000					

y = 0.0086 * x + 0.0034
R = 1.0000
DL = 0.03499
BEC = 0.3943

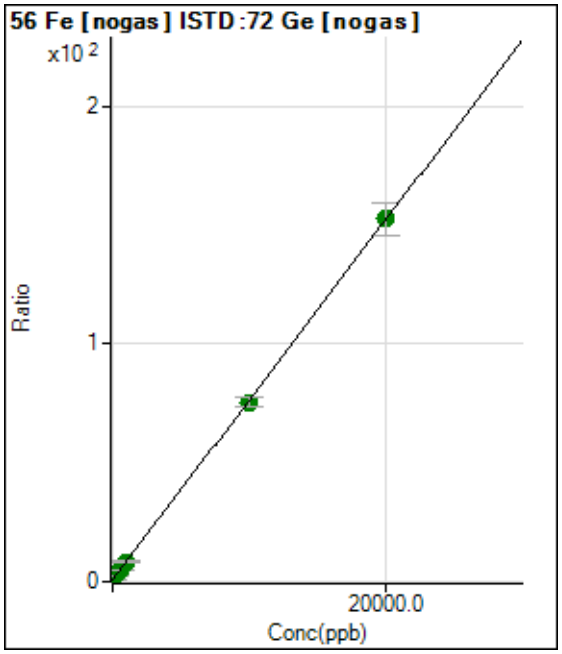
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	293.34	0.0003	P	22.2
2	☐	2.000	2.097	11777.27	0.0118	P	2.8
3	☐	5.000	5.228	28862.91	0.0289	P	2.9
4	☐	10.000	10.509	57690.36	0.0578	P	2.4
5	☐	100.000	100.168	540447.41	0.5482	P	1.1
6	☐	200.000	199.884	1046805.53	1.0936	P	2.5
7	☐	1.000					

y = 0.0055 * x + 2.9870E-004
R = 1.0000
DL = 0.0364
BEC = 0.05461

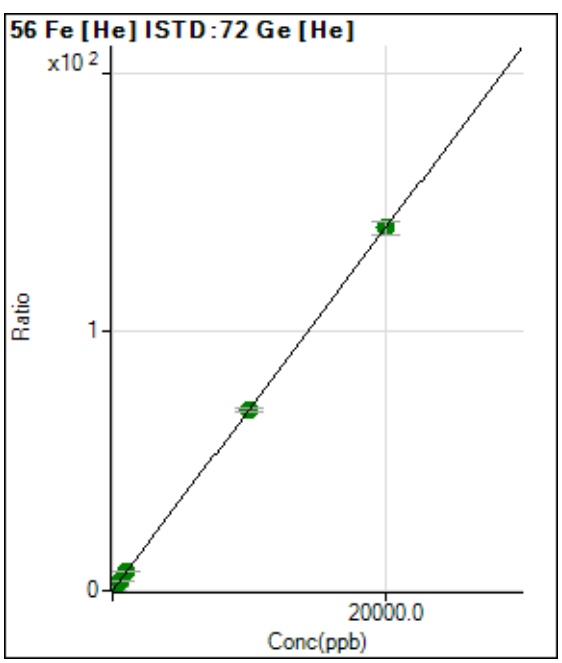
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2919480.92	0.7350	A	2.5
2	☐	200.000	196.357	8677955.66	2.2200	A	1.4
3	☐	500.000	529.541	17652821.75	4.7399	A	6.8
4	☐	1000.000	1012.890	31785337.17	8.3955	A	7.0
5	☐	10000.00	9865.858	277094897.8	75.3502	A	5.2
6	☐	20000.00	20065.725	545637262.1	152.491	A	9.0
7	☐	100.000					

y = 0.0076 * x + 0.7350
R = 1.0000
DL = 7.365
BEC = 97.18

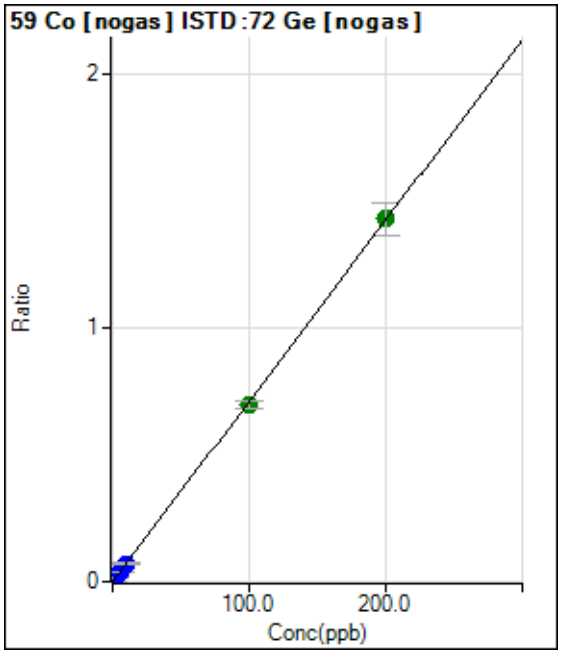
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17251.61	0.0175	P	1.7
2	☐	200.000	217.710	1541386.49	1.5409	A	1.1
3	☐	500.000	524.895	3686090.57	3.6904	A	1.2
4	☐	1000.000	1044.877	7317022.60	7.3289	A	1.0
5	☐	10000.00	9970.937	68796832.31	69.7878	A	1.7
6	☐	20000.00	20011.488	134039338.0	140.045	A	3.4
7	☐	100.000					

y = 0.0070 * x + 0.0175
R = 1.0000
DL = 0.1299
BEC = 2.505

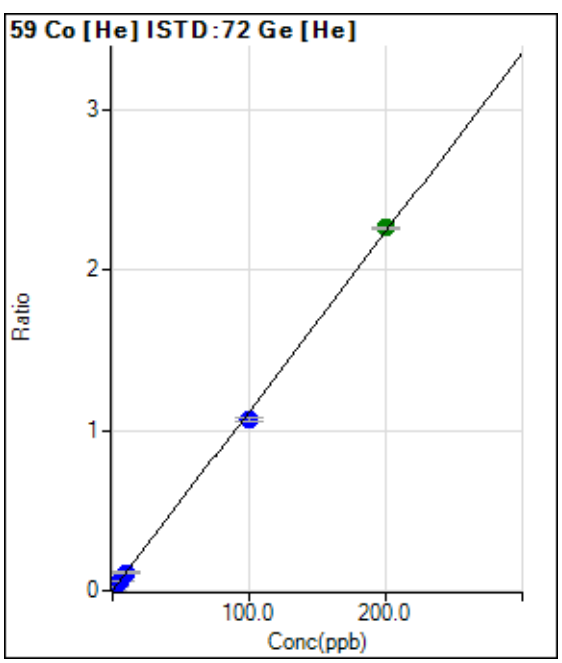
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	363.34	0.0001	P	18.2
2	☐	2.000	1.949	54427.56	0.0139	P	5.4
3	☐	5.000	5.030	133301.74	0.0358	P	7.4
4	☐	10.000	9.935	267441.65	0.0706	P	6.5
5	☐	100.000	98.045	2560936.99	0.6962	A	3.9
6	☐	200.000	200.981	5104446.49	1.4270	A	9.3
7	☐	1.000					

y = 0.0071 * x + 9.1492E-005
R = 0.9999
DL = 0.007024
BEC = 0.01289

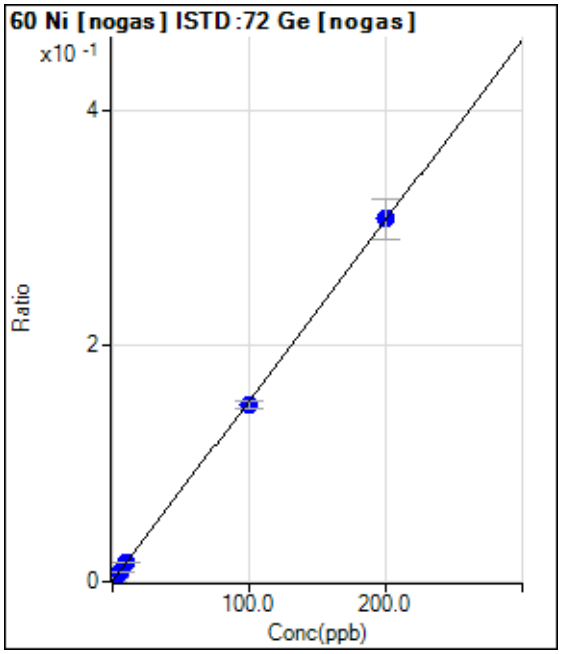
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	86.67	0.0001	P	8.9
2	☐	2.000	2.023	22700.94	0.0227	P	1.0
3	☐	5.000	4.952	55366.82	0.0554	P	3.1
4	☐	10.000	10.155	113390.98	0.1136	P	1.9
5	☐	100.000	95.278	1049814.86	1.0650	P	1.9
6	☐	200.000	202.354	2164991.69	2.2617	A	0.9
7	☐	1.000					

y = 0.0112 * x + 8.8161E-005
R = 0.9996
DL = 0.0021
BEC = 0.007888

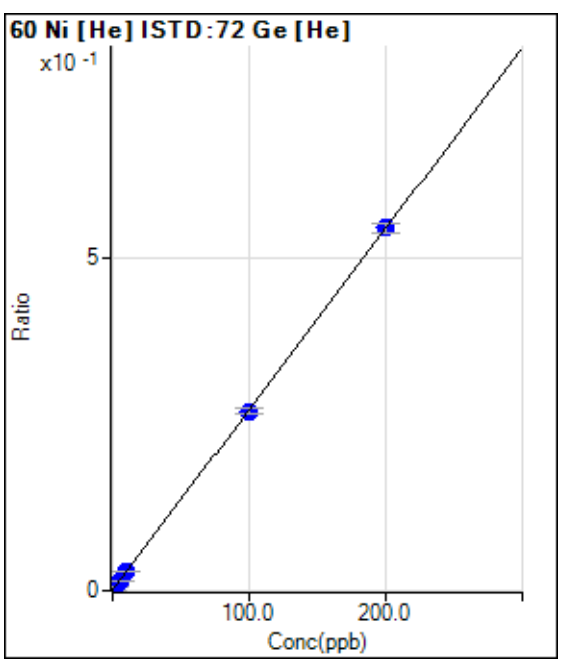
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.054	1433.42	0.0004	P	10.8
2	☐	2.000	2.071	13475.14	0.0034	P	4.5
3	☐	5.000	5.348	31514.03	0.0085	P	7.5
4	☐	10.000	10.598	62516.37	0.0165	P	5.3
5	☐	100.000	97.937	552367.24	0.1502	P	4.6
6	☐	200.000	200.992	1100351.91	0.3080	P	11.3
7	☐	1.000					

y = 0.0015 * x + 2.7787E-004
R = 0.9999
DL = 0.07604
BEC = 0.1815

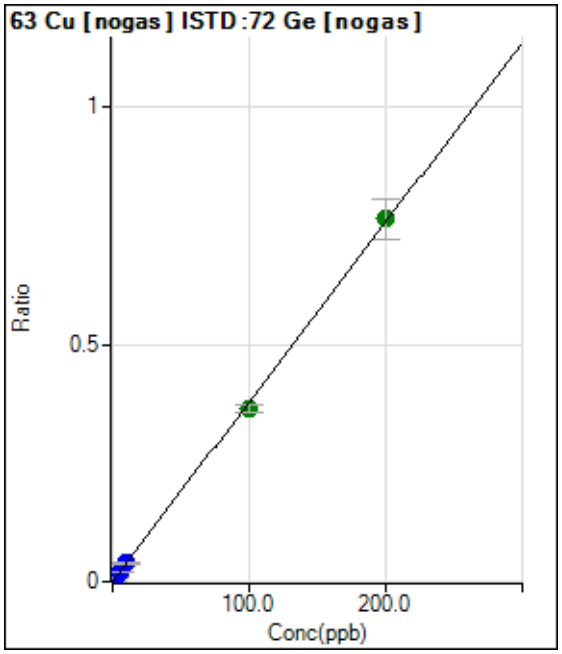
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.128	500.01	0.0005	P	4.1
2	☐	2.000	1.970	6207.81	0.0062	P	5.2
3	☐	5.000	4.984	14382.49	0.0144	P	5.5
4	☐	10.000	10.658	29774.45	0.0298	P	1.0
5	☐	100.000	99.097	266324.02	0.2702	P	3.4
6	☐	200.000	200.419	522171.69	0.5456	P	2.7
7	☐	1.000					

y = 0.0027 * x + 8.5610E-004
R = 1.0000
DL = 0.02273
BEC = 0.315

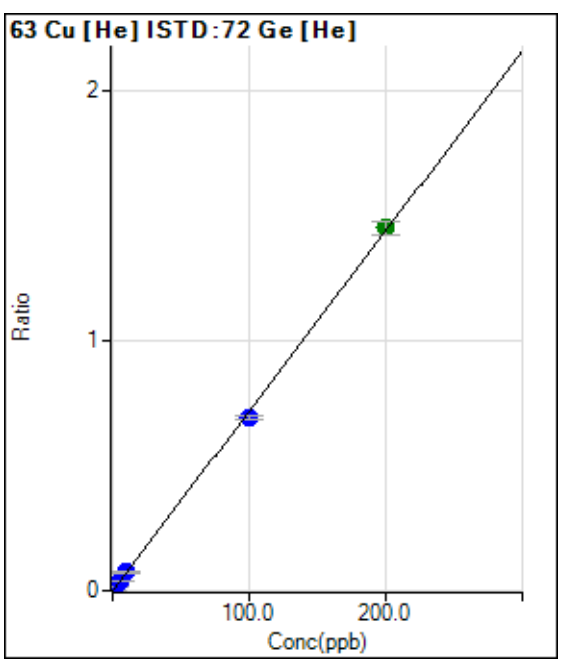
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2433.53	0.0006	P	8.4
2	☐	2.000	1.957	31280.33	0.0080	P	5.0
3	☐	5.000	5.084	73778.77	0.0198	P	8.4
4	☐	10.000	10.326	150083.09	0.0396	P	6.4
5	☐	100.000	95.993	1337624.54	0.3634	A	4.1
6	☐	200.000	201.986	2729914.13	0.7639	A	11.1
7	☐	1.000					

y = 0.0038 * x + 6.1234E-004
R = 0.9997
DL = 0.04094
BEC = 0.162

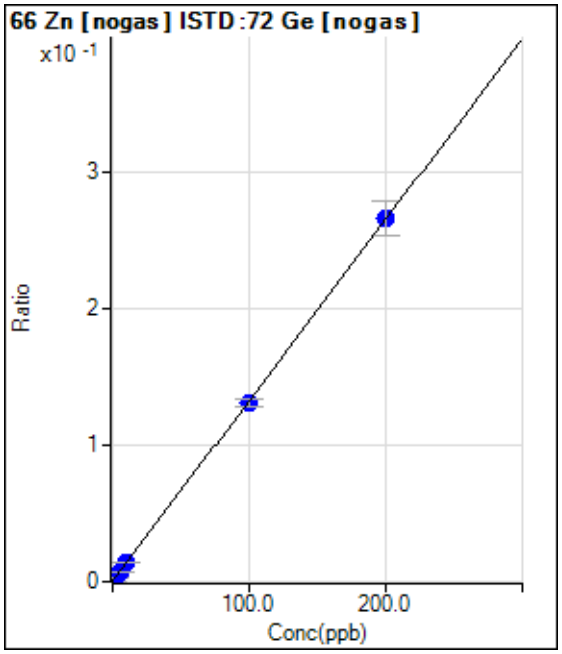
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.476	1043.38	0.0011	P	12.1
2	☐	2.000	2.444	15219.85	0.0152	P	6.0
3	☐	5.000	5.355	36135.86	0.0362	P	2.6
4	☐	10.000	10.571	73611.18	0.0737	P	2.1
5	☐	100.000	96.394	681716.55	0.6915	P	1.7
6	☐	200.000	201.761	1387700.55	1.4500	A	3.8
7	☐	1.000					

y = 0.0072 * x - 0.0024
R = 0.9997
DL = 0.05354
BEC = -0.3285

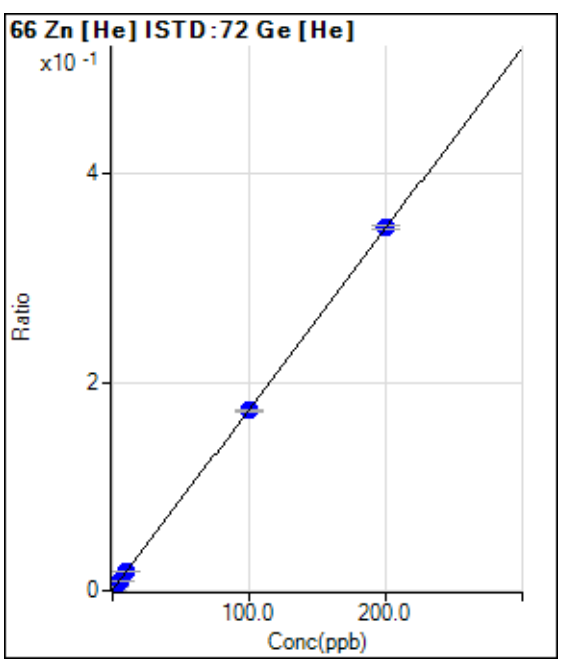
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.083	750.03	0.0002	P	8.5
2	☐	2.000	1.965	11343.66	0.0029	P	1.3
3	☐	5.000	5.218	26849.99	0.0072	P	7.2
4	☐	10.000	10.413	53321.39	0.0141	P	9.3
5	☐	100.000	99.026	483504.86	0.1315	P	4.6
6	☐	200.000	200.461	950860.38	0.2658	P	9.4
7	☐	1.000					

y = 0.0013 * x + 2.9882E-004
R = 1.0000
DL = 0.0363
BEC = 0.2256

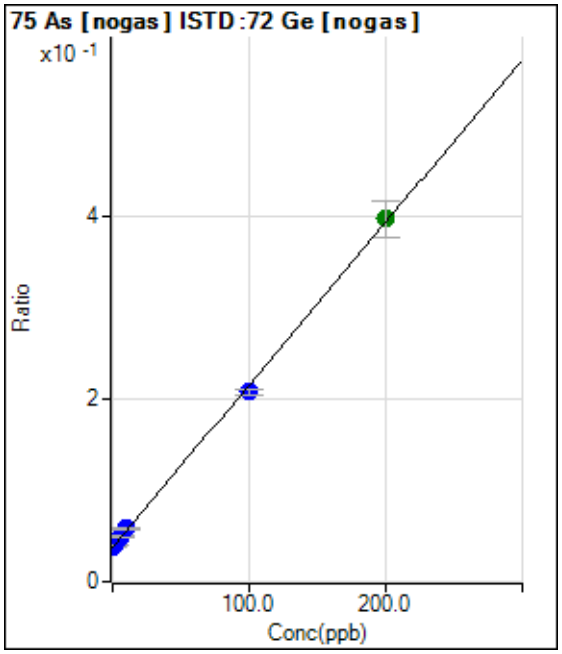
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.113	276.68	0.0003	P	7.2
2	☐	2.000	1.938	3845.47	0.0038	P	7.5
3	☐	5.000	5.074	9275.82	0.0093	P	3.5
4	☐	10.000	10.482	18649.73	0.0187	P	4.2
5	☐	100.000	99.287	170414.27	0.1729	P	1.0
6	☐	200.000	200.331	333392.03	0.3483	P	1.0
7	☐	1.000					

y = 0.0017 * x + 4.7761E-004
R = 1.0000
DL = 0.03479
BEC = 0.2751

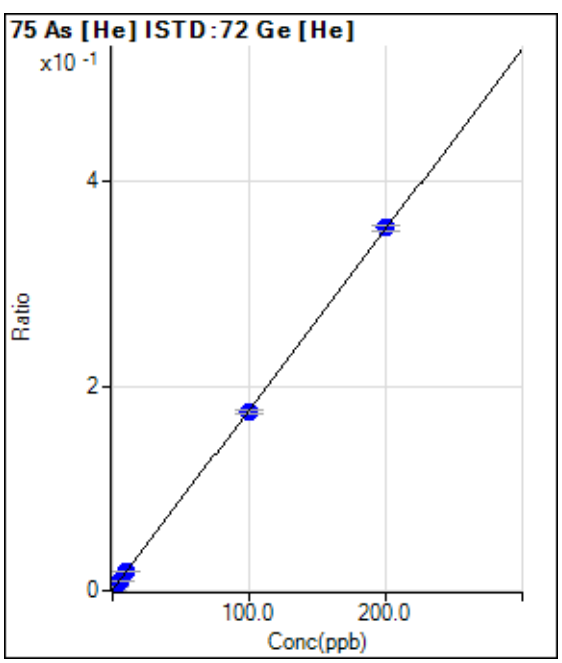
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.274	147581.83	0.0371	P	0.5
2	☐	2.000	1.467	157315.08	0.0402	P	1.3
3	☐	5.000	6.379	182657.97	0.0490	P	4.2
4	☐	10.000	11.795	222237.71	0.0587	P	4.8
5	☐	100.000	95.503	764698.66	0.2078	P	2.6
6	☐	200.000	202.129	1422751.33	0.3979	A	10.0
7	☐	1.000					

y = 0.0018 * x + 0.0376
R = 0.9995
DL = 0.3032
BEC = 21.11

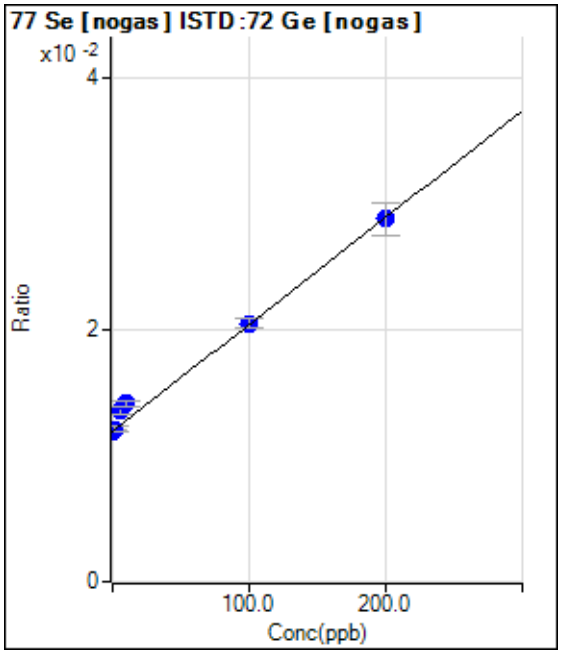
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	727.80	0.0007	P	9.9
2	☐	2.000	1.917	4116.04	0.0041	P	3.2
3	☐	5.000	4.949	9446.91	0.0095	P	1.5
4	☐	10.000	10.194	18667.39	0.0187	P	2.0
5	☐	100.000	98.382	171586.39	0.1741	P	2.2
6	☐	200.000	200.801	339338.08	0.3545	P	1.3
7	☐	1.000					

y = 0.0018 * x + 7.3930E-004
R = 1.0000
DL = 0.1242
BEC = 0.4196

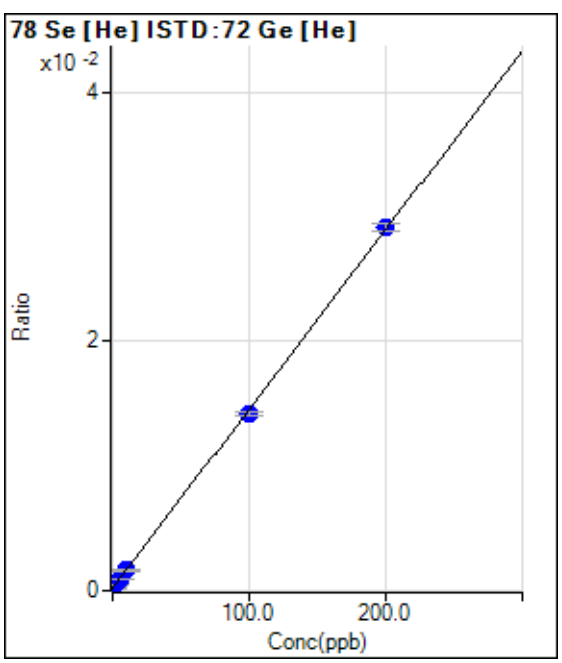
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	47472.00	0.0119	P	0.9
2	☐	2.000	1.666	47254.86	0.0121	P	3.3
3	☐	5.000	18.691	50433.34	0.0135	P	4.7
4	☐	10.000	25.834	53588.73	0.0141	P	3.7
5	☐	100.000	100.623	75312.00	0.0205	P	3.8
6	☐	200.000	198.558	102935.77	0.0288	P	9.3
7	☐	1.000					

y = 8.4763E-005 * x + 0.0119
R = 0.9961
DL = 3.937
BEC = 140.9

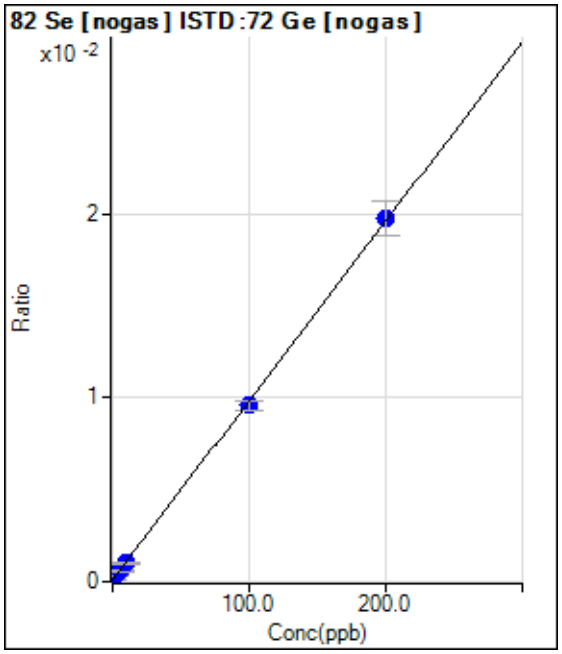
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.342	236.67	0.0002	P	16.0
2	☐	2.000	2.330	526.01	0.0005	P	0.9
3	☐	5.000	5.452	973.36	0.0010	P	5.1
4	☐	10.000	10.061	1634.74	0.0016	P	3.5
5	☐	100.000	97.663	14034.74	0.0142	P	2.0
6	☐	200.000	201.151	27867.26	0.0291	P	2.1
7	☐	1.000					

y = 1.4379E-004 * x + 1.9075E-004
R = 0.9999
DL = 0.8009
BEC = 1.327

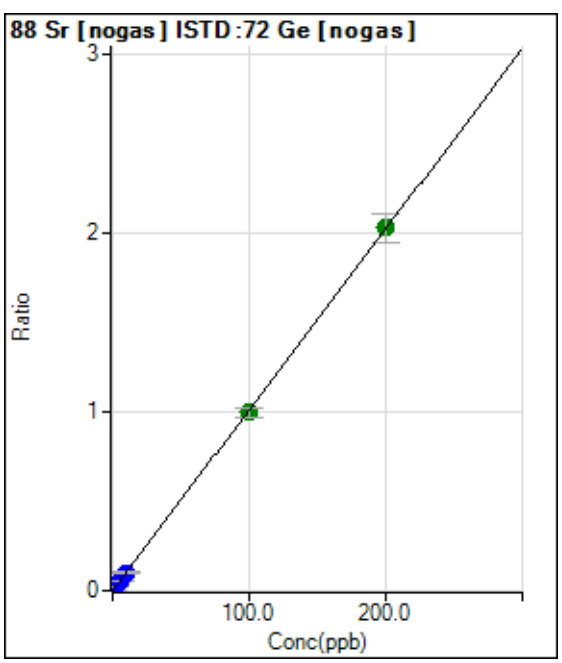
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	403.34	0.0001	P	7.7
2	☐	2.000	1.860	1103.38	0.0003	P	9.7
3	☐	5.000	4.977	2176.83	0.0006	P	12.9
4	☐	10.000	9.227	3797.14	0.0010	P	5.6
5	☐	100.000	97.201	35157.81	0.0096	P	5.3
6	☐	200.000	201.440	70483.77	0.0197	P	9.6
7	☐	1.000					

y = 9.7329E-005 * x + 1.0139E-004
R = 0.9999
DL = 0.2395
BEC = 1.042

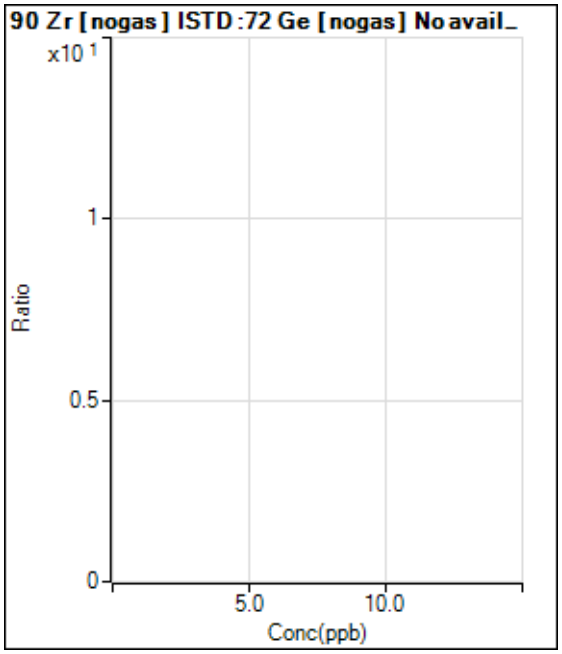
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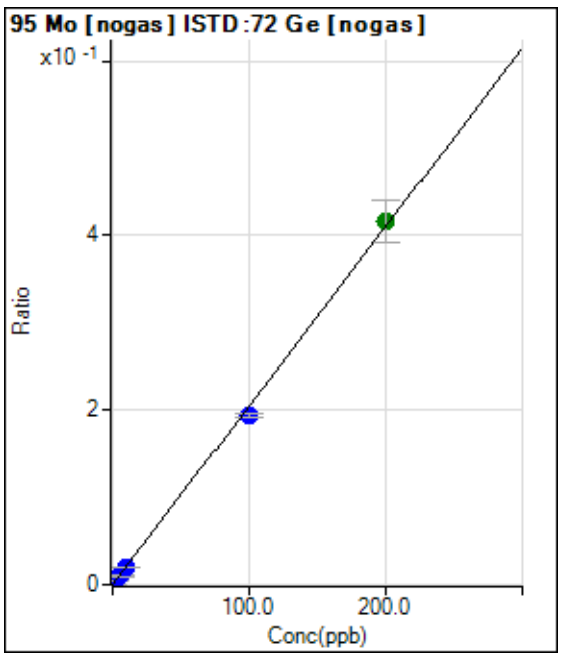
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2036.81	0.0005	P	9.5
2	☐	2.000	1.947	78846.58	0.0202	P	2.4
3	☐	5.000	4.945	187873.15	0.0504	P	6.3
4	☐	10.000	9.992	384261.86	0.1014	P	4.4
5	☐	100.000	98.432	3656906.09	0.9943	A	5.1
6	☐	200.000	200.786	7257258.64	2.0277	A	8.3
7	☐	1.000					

y = 0.0101 * x + 5.1338E-004
R = 1.0000
DL = 0.01453
BEC = 0.05085

Weight: <None>
Min Conc: <None>



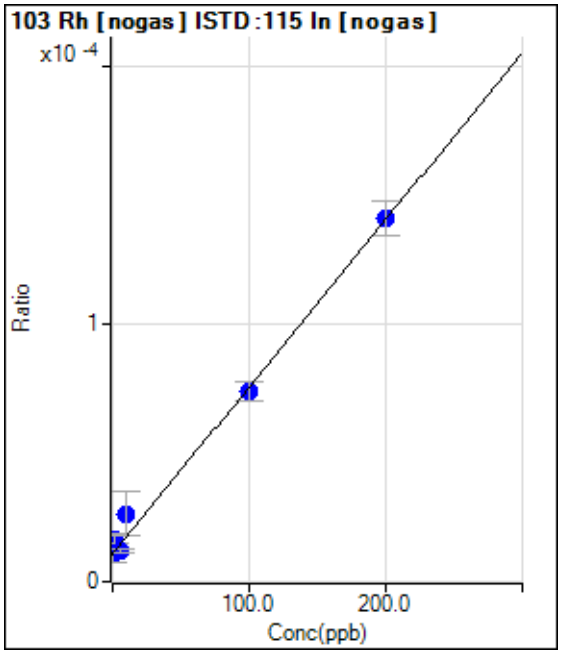
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	106.67	0.0000	P	25.0
2	☐	2.000	1.809	14592.81	0.0037	P	0.8
3	☐	5.000	4.871	37276.24	0.0100	P	6.5
4	☐	10.000	9.567	74328.06	0.0196	P	7.0
5	☐	100.000	94.445	712183.77	0.1935	P	2.3
6	☐	200.000	202.804	1484763.15	0.4156	A	11.6
7	☐	1.000					

y = 0.0020 * x + 2.6926E-005
R = 0.9995
DL = 0.009839
BEC = 0.01314

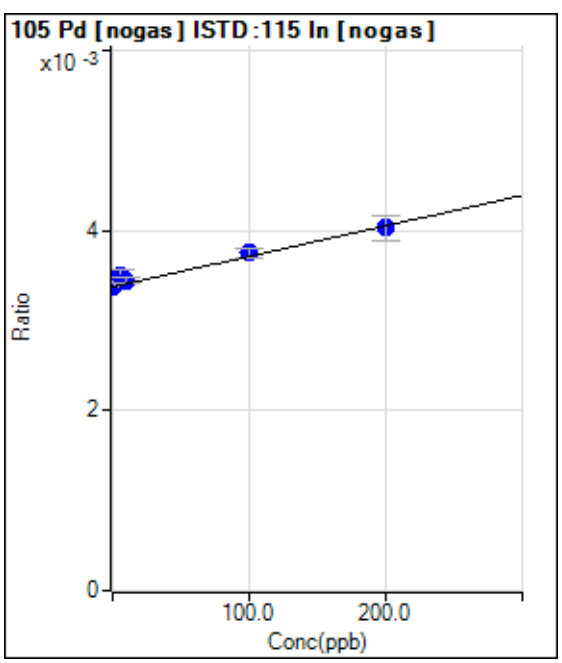
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	43.33	0.0000	P	58.4
2	☐	2.000	9.154	66.67	0.0000	P	23.4
3	☐	5.000	1.431	43.33	0.0000	P	10.9
4	☐	10.000	23.910	100.00	0.0000	P	64.6
5	☐	100.000	97.490	270.01	0.0001	P	9.9
6	☐	200.000	200.577	480.01	0.0001	P	9.7
7	☐	1.000					

y = 6.4719E-007 * x + 1.0750E-005
R = 0.9968
DL = 29.12
BEC = 16.61

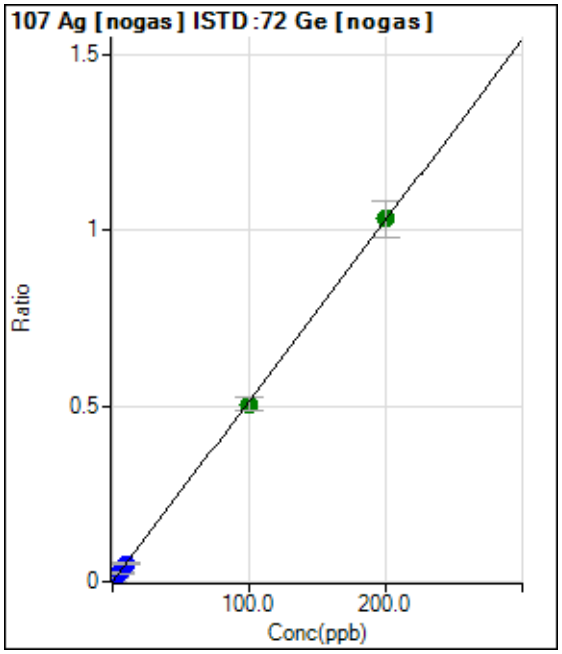
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13628.79	0.0034	P	1.9
2	☐	2.000	9.567	13625.47	0.0034	P	1.8
3	☐	5.000	35.091	12931.59	0.0035	P	4.1
4	☐	10.000	18.918	12828.25	0.0034	P	1.9
5	☐	100.000	111.434	13732.24	0.0037	P	2.7
6	☐	200.000	193.009	13772.36	0.0040	P	6.5
7	☐	1.000					

y = 3.3870E-006 * x + 0.0034
R = 0.9900
DL = 56.63
BEC = 995.7

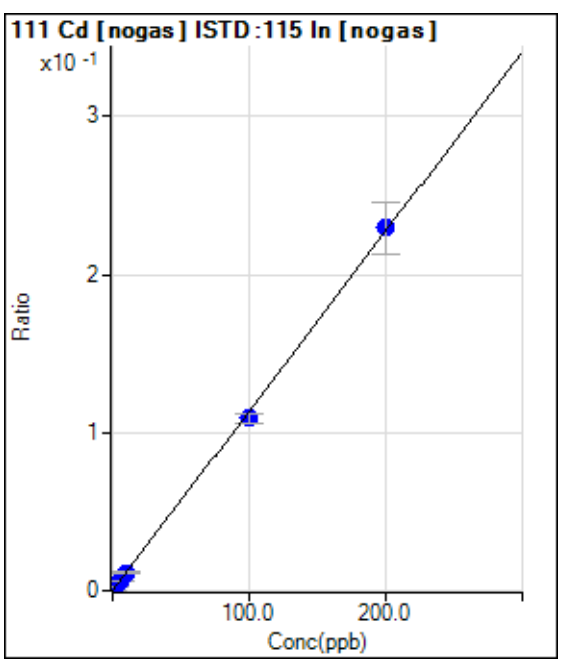
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	340.01	0.0001	P	20.4
2	☐	2.000	1.903	38579.12	0.0099	P	1.7
3	☐	5.000	4.912	94400.91	0.0253	P	5.7
4	☐	10.000	9.960	194206.43	0.0513	P	6.6
5	☐	100.000	98.424	1862229.29	0.5061	A	7.3
6	☐	200.000	200.793	3691640.57	1.0324	A	10.0
7	☐	1.000					

y = 0.0051 * x + 8.5729E-005
R = 1.0000
DL = 0.01018
BEC = 0.01667

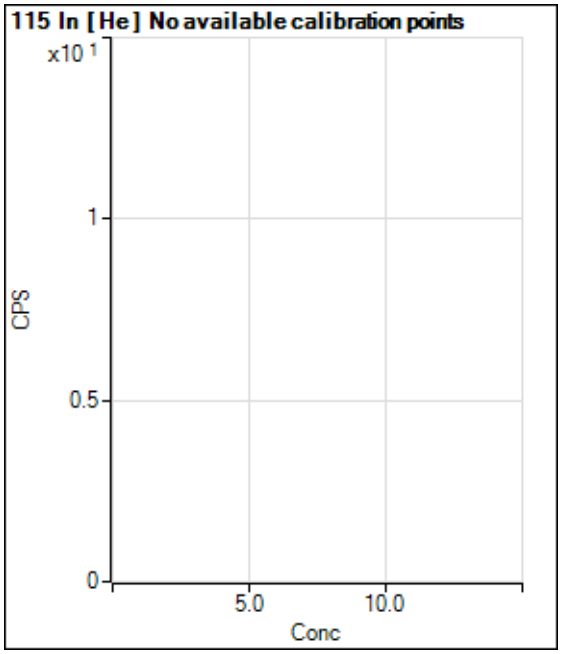
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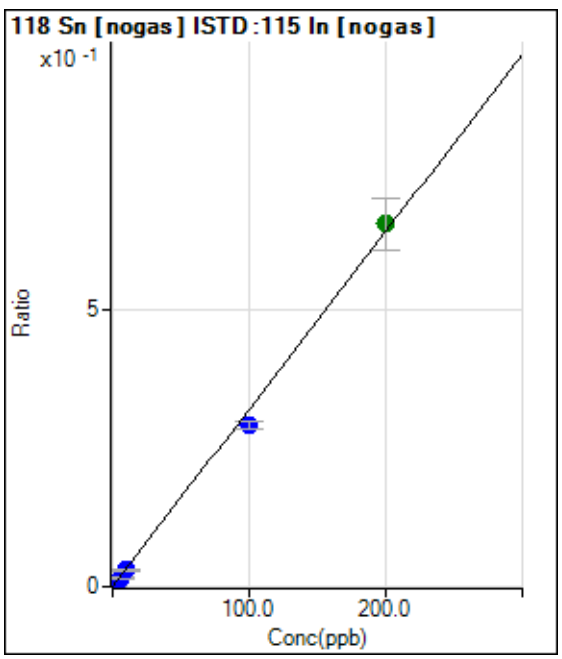
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13.33	0.0000	P	44.0
2	☐	2.000	1.771	8065.28	0.0020	P	3.5
3	☐	5.000	4.938	20795.88	0.0056	P	3.7
4	☐	10.000	9.870	41606.24	0.0112	P	9.7
5	☐	100.000	95.951	398703.95	0.1090	P	6.3
6	☐	200.000	202.035	778190.45	0.2295	P	14.3
7	☐	1.000					

y = 0.0011 * x + 3.3053E-006
R = 0.9997
DL = 0.003842
BEC = 0.00291

Weight: <None>
Min Conc: <None>



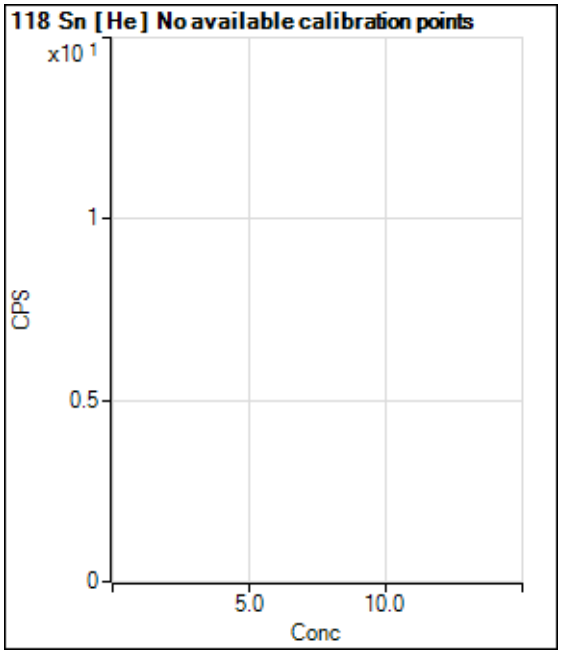
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			1372828.18		A	2.8
2	☐			1331070.40		A	1.5
3	☐			1383669.84		A	1.8
4	☐			1290340.87		M	6.1
5	☐			1284109.94		M	3.9
6	☐			1229019.28		M	4.9
7	☐						



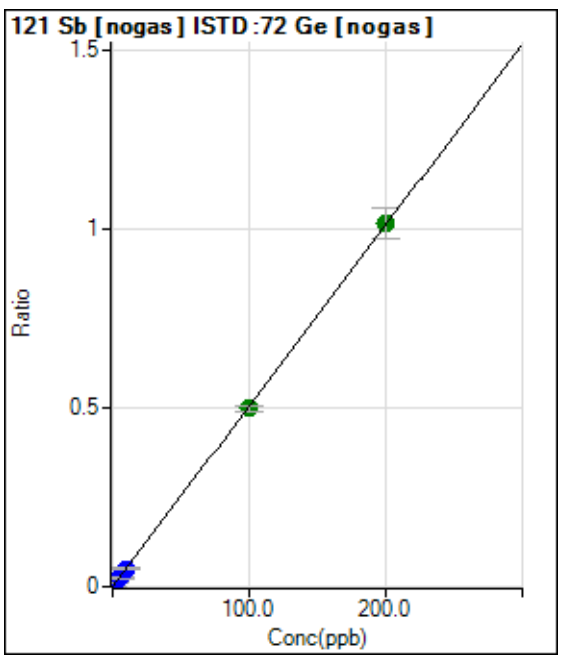
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	950.05	0.0002	P	10.3
2	☐	2.000	1.765	23576.18	0.0059	P	4.7
3	☐	5.000	4.650	55952.61	0.0151	P	8.5
4	☐	10.000	9.477	113549.31	0.0306	P	9.2
5	☐	100.000	91.157	1069873.66	0.2924	P	5.1
6	☐	200.000	204.459	2221966.11	0.6555	A	14.6
7	☐	1.000					

y = 0.0032 * x + 2.3517E-004
R = 0.9987
DL = 0.0226
BEC = 0.07338

Weight: <None>
Min Conc: <None>



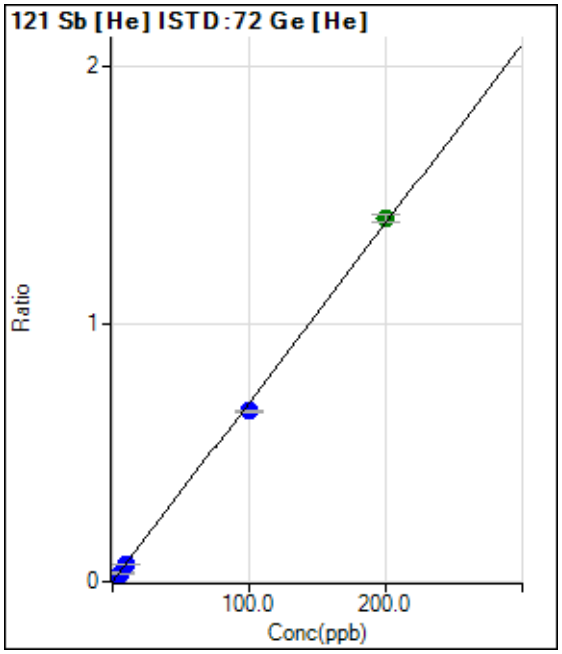
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			363.34		P	19.5
2	☐			8435.50		P	2.6
3	☐			21747.11		P	3.0
4	☐			42568.80		P	2.1
5	☐			400979.13		P	0.3
6	☐			796536.00		P	1.6
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	293.34	0.0001	P	9.1
2	☐	2.000	2.157	42952.85	0.0110	P	1.8
3	☐	5.000	4.902	92608.20	0.0249	P	7.6
4	☐	10.000	9.834	188680.02	0.0498	P	6.6
5	☐	100.000	98.456	1832723.62	0.4982	A	3.7
6	☐	200.000	200.781	3635889.84	1.0159	A	8.3
7	☐	1.000					

y = 0.0051 * x + 7.3921E-005
R = 1.0000
DL = 0.003989
BEC = 0.01461

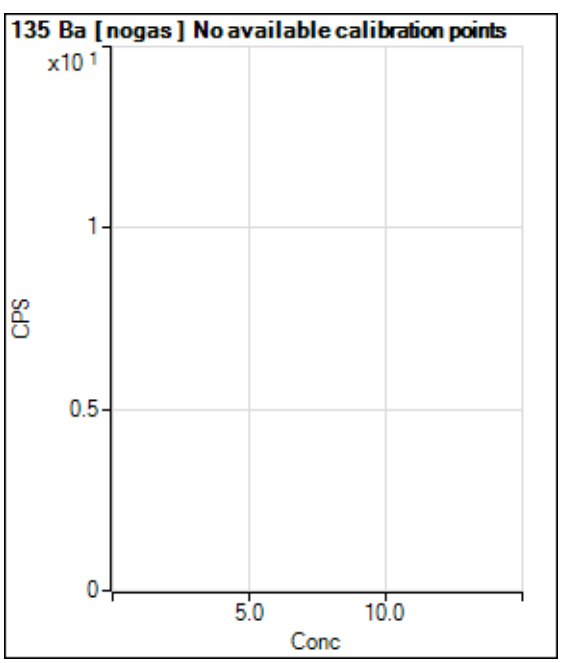
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Min Conc: <None>



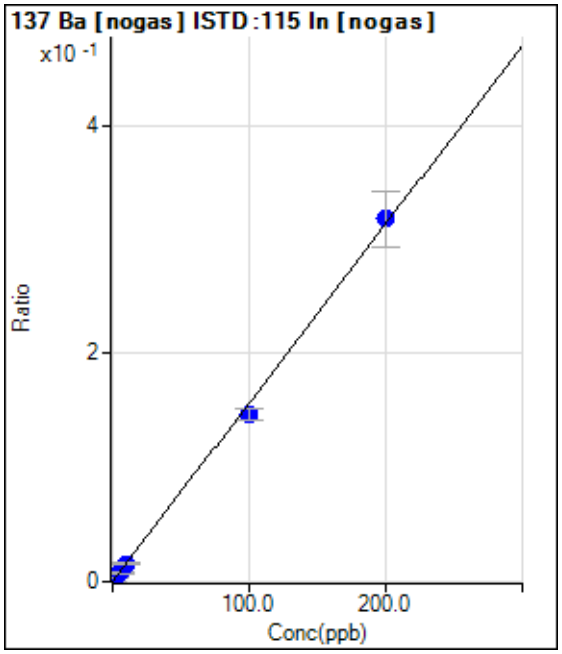
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	160.00	0.0002	P	26.4
2	☐	2.000	2.337	16431.26	0.0164	P	3.1
3	☐	5.000	4.721	32964.76	0.0330	P	4.1
4	☐	10.000	9.743	67838.20	0.0679	P	0.7
5	☐	100.000	95.036	651997.86	0.6614	P	1.4
6	☐	200.000	202.499	1349061.23	1.4090	A	2.0
7	☐	1.000					

y = 0.0070 * x + 1.6221E-004
R = 0.9996
DL = 0.01846
BEC = 0.02331

Weight: <None>
Min Conc: <None>



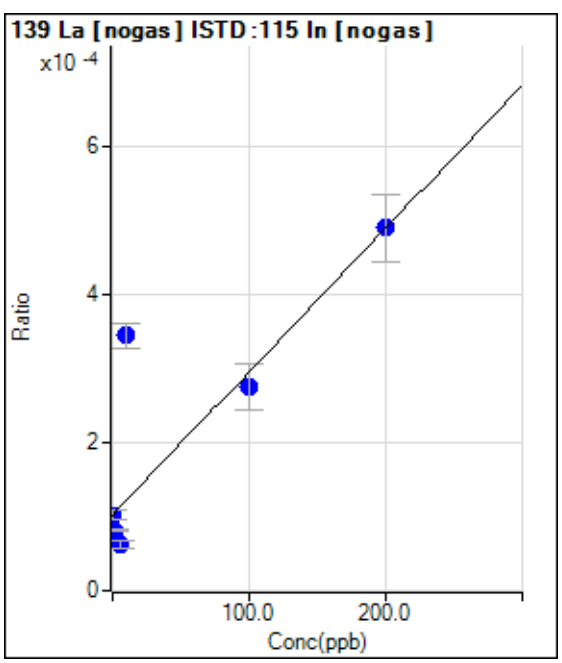
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			210.00		P	21.8
2	☐			6834.81		P	4.5
3	☐			17102.04		P	1.7
4	☐			33900.20		P	3.7
5	☐			313082.18		P	0.6
6	☐			618673.93		P	1.3
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	456.68	0.0001	P	11.4
2	☐	2.000	1.845	12021.04	0.0030	P	3.2
3	☐	5.000	4.911	28867.77	0.0078	P	7.8
4	☐	10.000	10.121	59151.79	0.0160	P	12.1
5	☐	100.000	93.877	538239.24	0.1472	P	7.1
6	☐	200.000	203.059	1078238.58	0.3183	P	15.2
7	☐	1.000					

y = 0.0016 * x + 1.1291E-004
R = 0.9993
DL = 0.02471
BEC = 0.07207

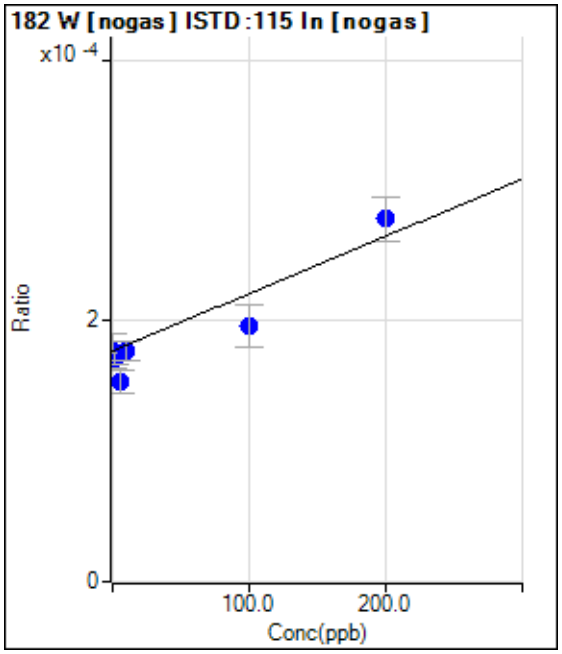
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	413.35	0.0001	P	13.3
2	☐	2.000	-10.672	326.68	0.0001	P	1.6
3	☐	5.000	-21.185	226.67	0.0001	P	16.8
4	☐	10.000	125.026	1276.74	0.0003	P	9.3
5	☐	100.000	89.587	1003.38	0.0003	P	22.5
6	☐	200.000	200.237	1653.44	0.0005	P	18.6
7	☐	1.000					

y = 1.9335E-006 * x + 1.0227E-004
R = 0.8195
DL = 21.11
BEC = 52.89

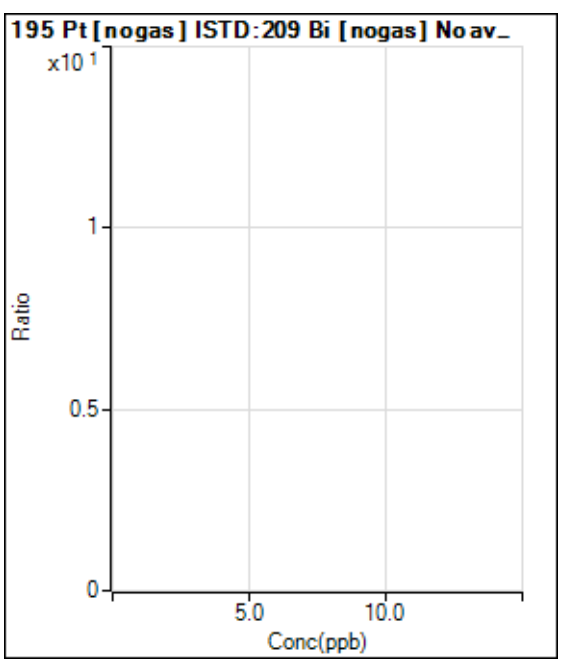
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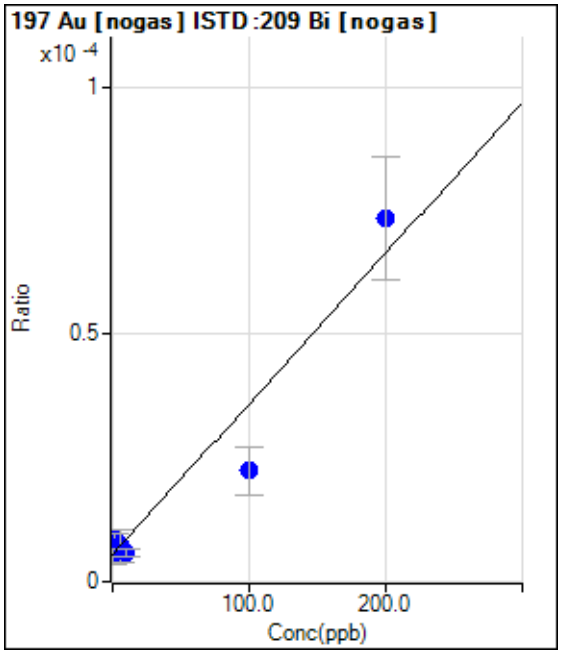
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	716.69	0.0002	P	15.1
2	☐	2.000	-14.620	683.36	0.0002	P	5.5
3	☐	5.000	-53.875	566.69	0.0002	P	11.0
4	☐	10.000	-0.652	656.69	0.0002	P	8.4
5	☐	100.000	44.113	716.69	0.0002	P	16.5
6	☐	200.000	230.114	946.71	0.0003	P	12.5
7	☐	1.000					

y = 4.4013E-007 * x + 1.7717E-004
R = 0.9523
DL = 182.7
BEC = 402.5

Weight: <None>
Min Conc: <None>



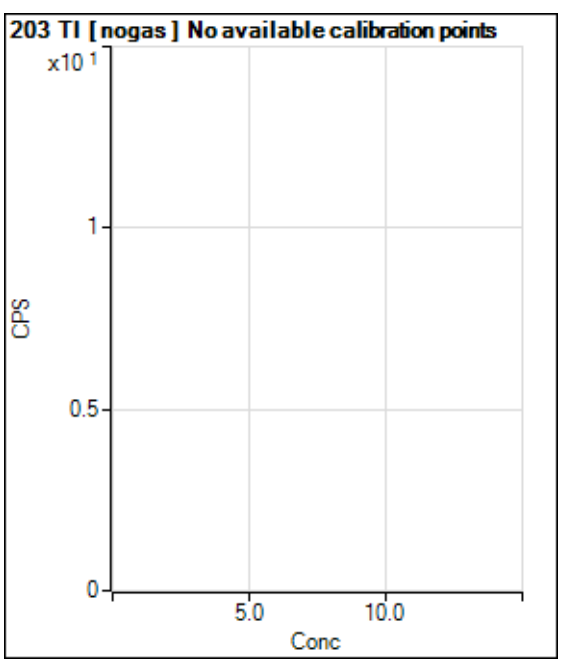
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



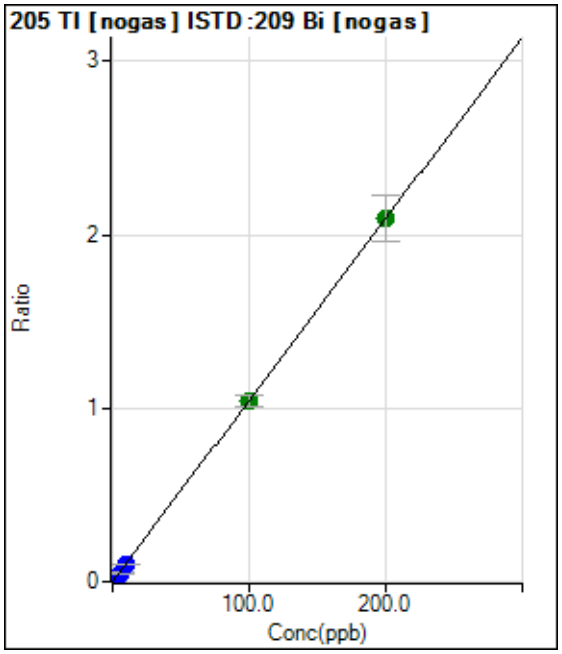
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16.67	0.0000	P	67.8
2	☐	2.000	10.854	26.67	0.0000	P	21.3
3	☐	5.000	5.574	20.00	0.0000	P	92.5
4	☐	10.000	1.012	16.67	0.0000	P	29.9
5	☐	100.000	55.272	60.00	0.0000	P	42.4
6	☐	200.000	222.710	186.67	0.0001	P	34.0
7	☐	1.000					

y = 3.0424E-007 * x + 5.5293E-006
R = 0.9660
DL = 36.98
BEC = 18.17

Weight: <None>
Min Conc: <None>



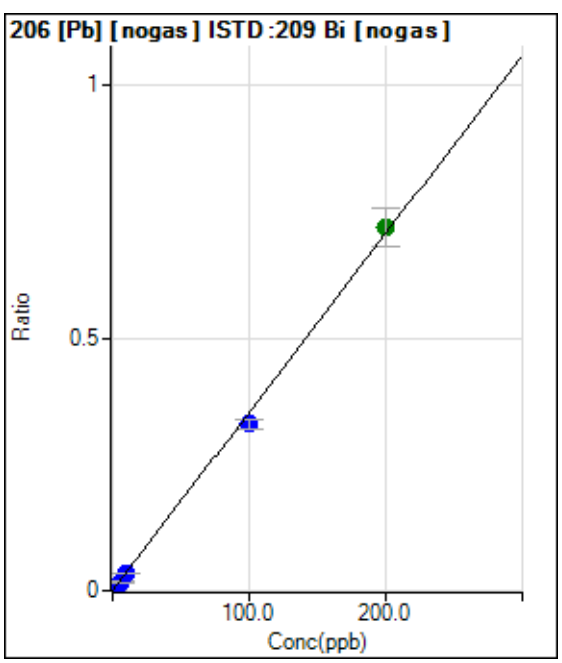
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			100.00		P	52.0
2	☐			23136.61		P	1.6
3	☐			56511.32		P	0.6
4	☐			116059.98		P	1.4
5	☐			1106955.58		P	1.2
6	☐			2299684.18		A	0.4
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	176.67	0.0001	P	20.9
2	☐	2.000	1.702	53862.47	0.0179	P	3.7
3	☐	5.000	4.605	138029.86	0.0482	P	7.9
4	☐	10.000	9.609	282821.86	0.1005	P	5.6
5	☐	100.000	100.021	2788828.92	1.0458	A	6.3
6	☐	200.000	200.022	5411717.84	2.0913	A	12.8
7	☐	1.000					

y = 0.0105 * x + 5.8936E-005
R = 1.0000
DL = 0.003536
BEC = 0.005637

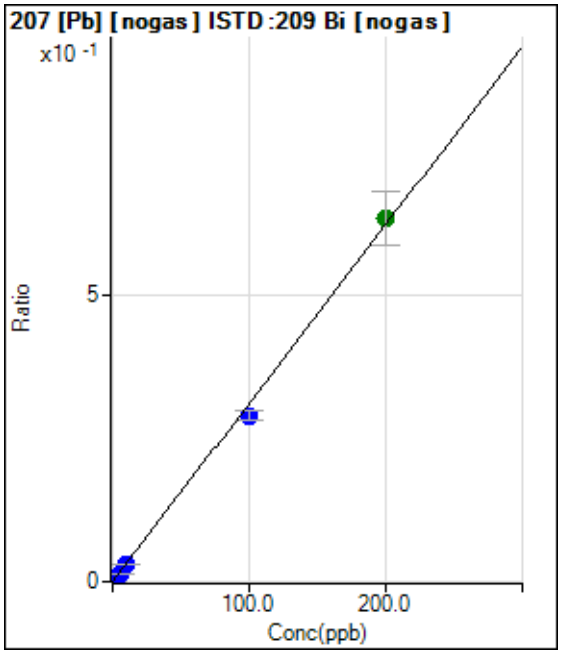
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	226.67	0.0001	P	4.0
2	☐	2.000	1.792	19315.10	0.0064	P	5.1
3	☐	5.000	4.654	47291.95	0.0165	P	7.5
4	☐	10.000	9.713	96766.03	0.0344	P	4.2
5	☐	100.000	93.381	879415.38	0.3298	P	5.7
6	☐	200.000	203.335	1861264.19	0.7181	A	10.7
7	☐	1.000					

y = 0.0035 * x + 7.5634E-005
R = 0.9992
DL = 0.002595
BEC = 0.02142

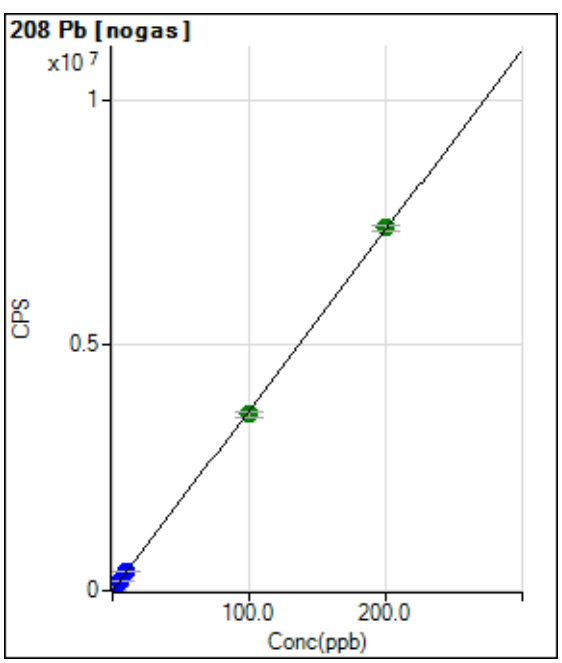
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	206.67	0.0001	P	20.5
2	☐	2.000	1.738	16548.61	0.0055	P	2.3
3	☐	5.000	4.491	40273.45	0.0141	P	7.9
4	☐	10.000	9.678	85062.04	0.0302	P	5.3
5	☐	100.000	93.189	774674.73	0.2905	P	5.0
6	☐	200.000	203.437	1638273.88	0.6340	A	14.7
7	☐	1.000					

y = 0.0031 * x + 6.9161E-005
R = 0.9992
DL = 0.01366
BEC = 0.02219

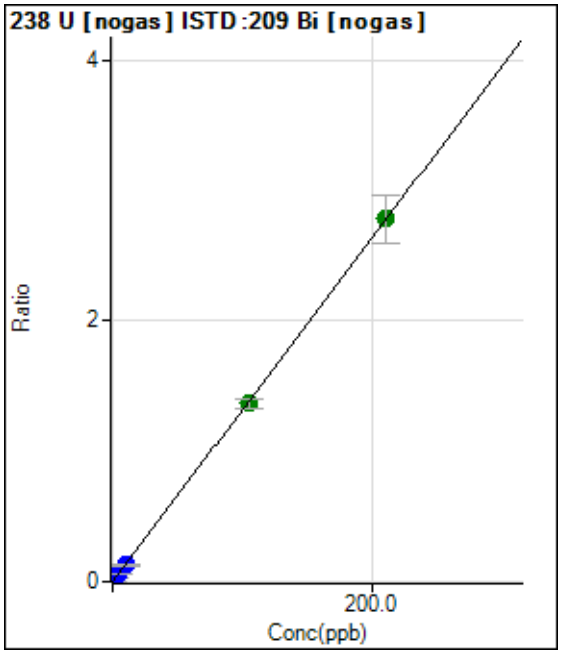
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	850.02		P	2.4
2	☐	2.000	2.044	75983.23		P	1.6
3	☐	5.000	5.062	186924.53		P	0.9
4	☐	10.000	10.454	385131.18		P	1.3
5	☐	100.000	97.582	3587874.71		A	3.0
6	☐	200.000	201.184	7396178.02		A	1.8
7	☐	1.000					

y = 36758.9922 * x + 850.0167
R = 0.9999
DL = 0.001632
BEC = 0.02312

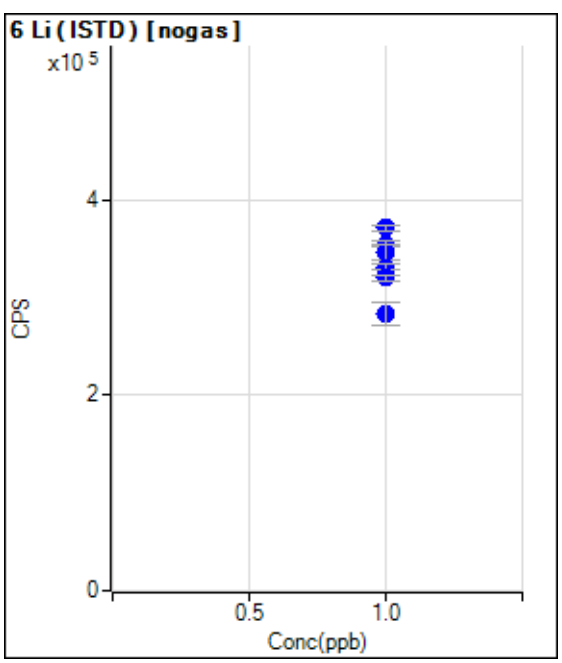
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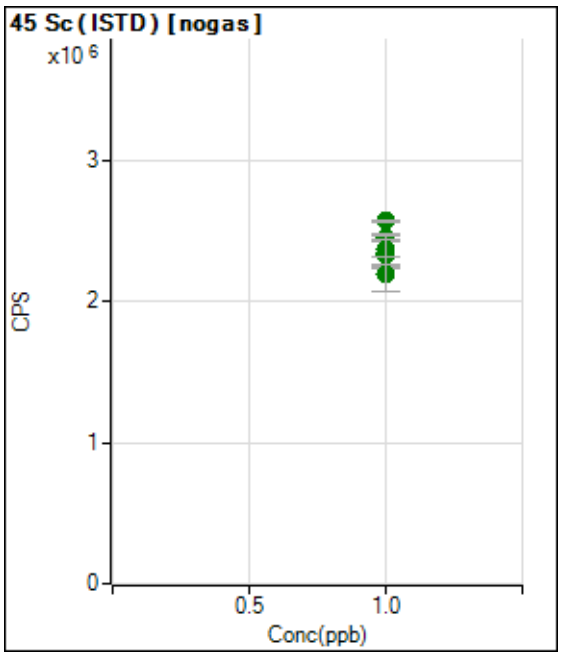
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1	☐	0.000	0.000	76.67	0.0000	P	42.1
2	☐	2.000	1.729	68956.48	0.0228	P	1.3
3	☐	5.000	4.569	172990.85	0.0603	P	5.3
4	☐	10.000	9.626	357309.03	0.1271	P	7.7
5	☐	105.000	103.609	3648052.55	1.3679	A	5.5
6	☐	210.000	210.726	7198530.10	2.7820	A	13.1
7	☐	1.000					

y = 0.0132 * x + 2.5623E-005
R = 1.0000
DL = 0.002449
BEC = 0.001941

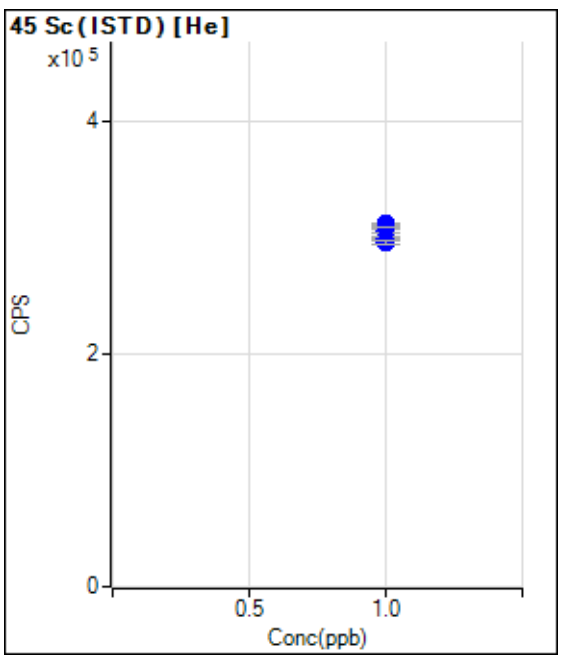
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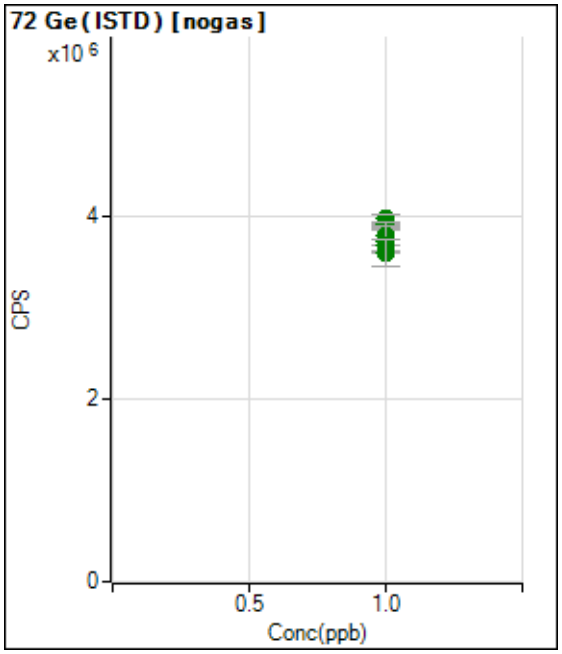
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2	☐	1.000		354978.63		P	1.4
3	☐	1.000		346639.16		P	4.5
4	☐	1.000		331194.47		P	1.8
5	☐	1.000		320240.03		P	1.8
6	☐	1.000		283789.22		P	8.0
7	☐	1.000					



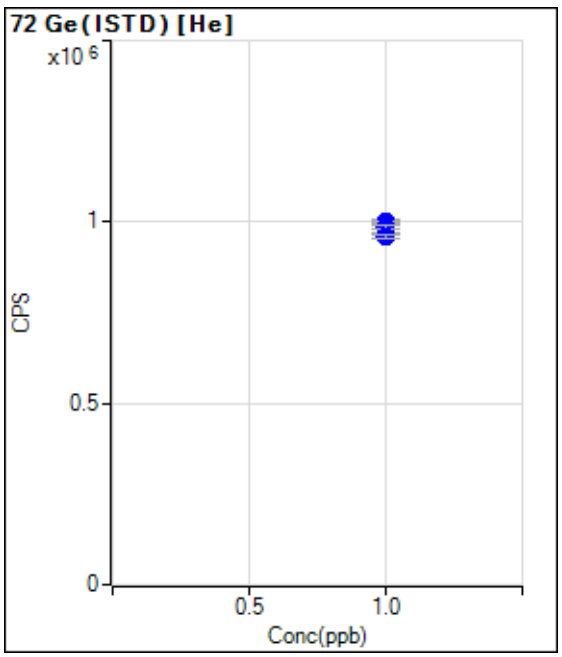
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2568842.46		A	0.4
2	☐	1.000		2448002.77		A	2.5
3	☐	1.000		2333809.50		A	7.4
4	☐	1.000		2364331.63		A	8.9
5	☐	1.000		2337772.88		A	8.5
6	☐	1.000		2192871.37		A	11.4
7	☐	1.000					



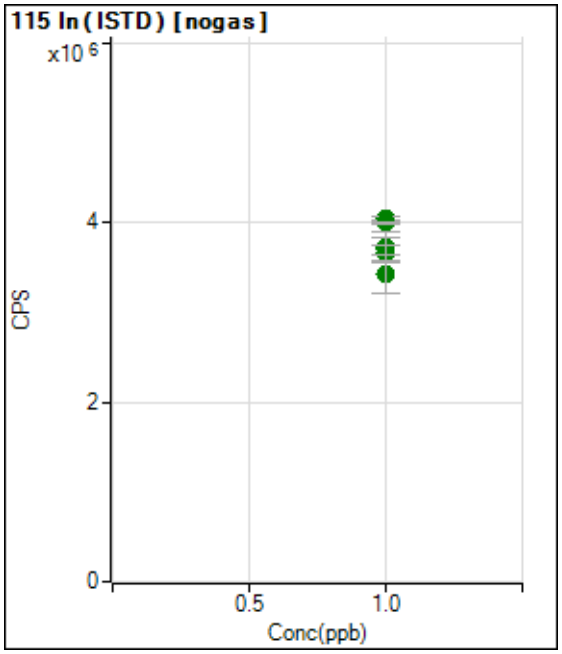
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		311697.18		P	0.9
2	☐	1.000		308494.47		P	0.4
3	☐	1.000		305213.69		P	2.6
4	☐	1.000		301495.15		P	2.2
5	☐	1.000		298915.32		P	0.7
6	☐	1.000		295268.31		P	1.0
7	☐	1.000					



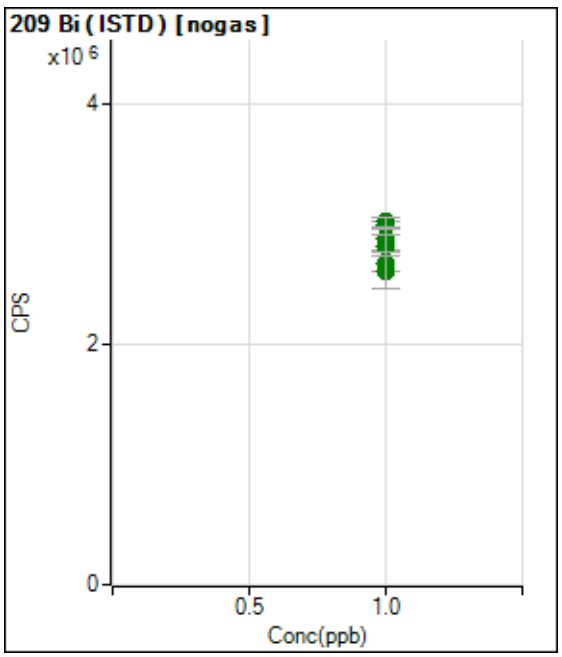
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		3973785.15		A	2.5
2	☐	1.000		3909633.17		A	2.0
3	☐	1.000		3734366.61		A	6.2
4	☐	1.000		3795643.38		A	5.5
5	☐	1.000		3681751.09		A	3.9
6	☐	1.000		3595688.59		A	8.4
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		984414.67		P	2.4
2	☐	1.000		1000345.22		P	1.8
3	☐	1.000		998915.04		P	1.0
4	☐	1.000		998430.45		P	0.8
5	☐	1.000		985932.69		P	1.2
6	☐	1.000		957296.34		P	1.1
7	☐	1.000					



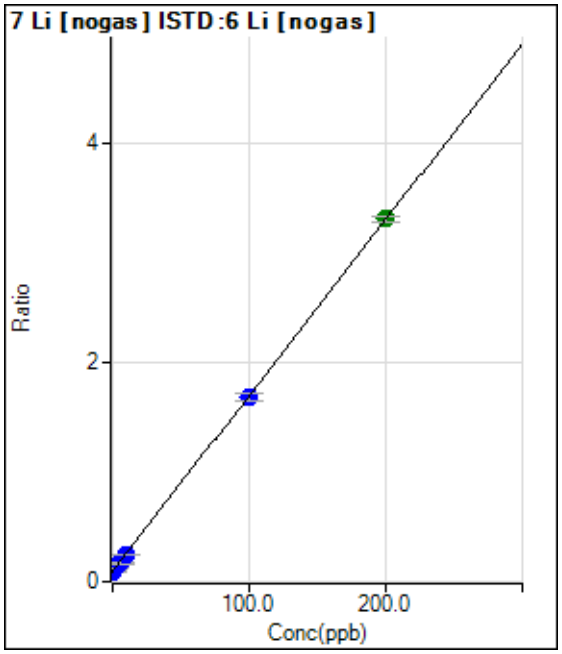
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		4041602.47		A	1.0
2	☐	1.000		4001685.60		A	0.6
3	☐	1.000		3710732.75		A	6.8
4	☐	1.000		3730260.46		A	8.9
5	☐	1.000		3665381.72		A	5.1
6	☐	1.000		3432111.69		A	12.7
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2996456.83		A	2.1
2	☐	1.000		3018281.83		A	2.4
3	☐	1.000		2872466.73		A	5.9
4	☐	1.000		2820061.05		A	6.3
5	☐	1.000		2671761.00		A	5.3
6	☐	1.000		2613132.52		A	11.4
7	☐	1.000					

Batch Folder: C:\Agilent\ICPMH\1\DATA\083018A.b\
Analysis File: 083018A.batch.bin
DA Date-Time: 2018-08-30 23:17:31
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

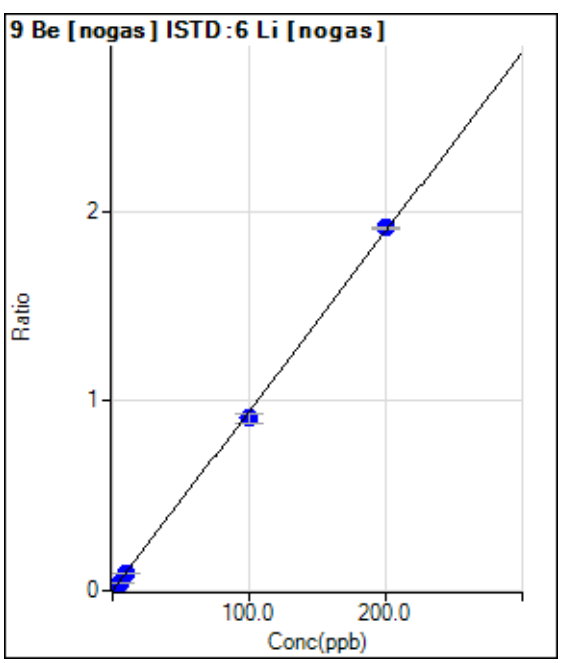
Level	Standard Data File	Sample Name	Acq. Date-Time
1	172CALB.d	CAL BLK	2018-08-30 22:56:45
2	173CALS.d	2/10/200	2018-08-30 22:58:45
3	174CALS.d	5/25/500	2018-08-30 23:00:44
4	175CALS.d	10/50/1000	2018-08-30 23:02:44
5	180CALS.d	100/500/10K	2018-08-30 23:12:40
6	181CALS.d	200/1000/20K	2018-08-30 23:14:38
7			



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	39384.36	0.0961	P	3.6
2	☐	2.000	1.921	52188.22	0.1269	P	2.9
3	☐	5.000	4.478	65716.87	0.1680	P	2.0
4	☐	10.000	9.568	94392.55	0.2497	P	2.4
5	☐	100.000	98.994	577093.15	1.6856	P	4.0
6	☐	200.000	200.539	1039888.45	3.3160	A	1.7
7	☐	1.000					

y = 0.0161 * x + 0.0961
R = 1.0000
DL = 0.6381
BEC = 5.984

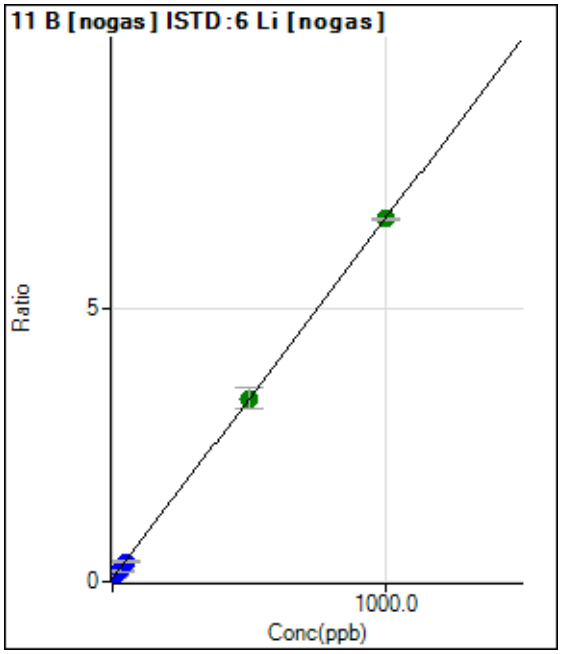
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	93.33	0.0002	P	40.6
2	☐	2.000	1.790	7068.07	0.0172	P	2.0
3	☐	5.000	4.509	16794.28	0.0429	P	6.3
4	☐	10.000	9.469	33993.98	0.0899	P	3.4
5	☐	100.000	95.926	311077.72	0.9090	P	5.5
6	☐	200.000	202.078	600529.68	1.9147	P	0.4
7	☐	1.000					

y = 0.0095 * x + 2.2971E-004
R = 0.9997
DL = 0.02954
BEC = 0.02425

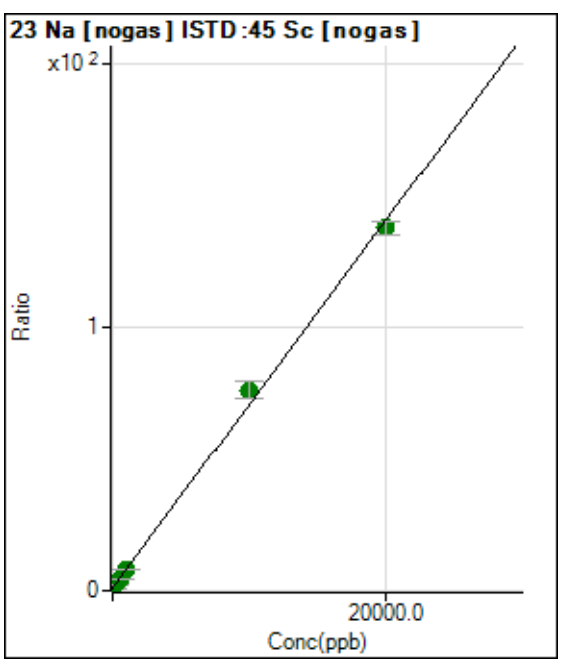
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	22944.07	0.0560	P	6.1
2	☐	10.000	7.623	43680.27	0.1063	P	3.8
3	☐	25.000	21.296	76734.76	0.1964	P	5.2
4	☐	50.000	47.210	138828.00	0.3673	P	2.9
5	☐	500.000	501.480	1150516.23	3.3626	A	12.1
6	☐	1000.000	999.516	2084702.42	6.6464	A	0.5
7	☐	5.000					

y = 0.0066 * x + 0.0560
R = 1.0000
DL = 1.547
BEC = 8.492

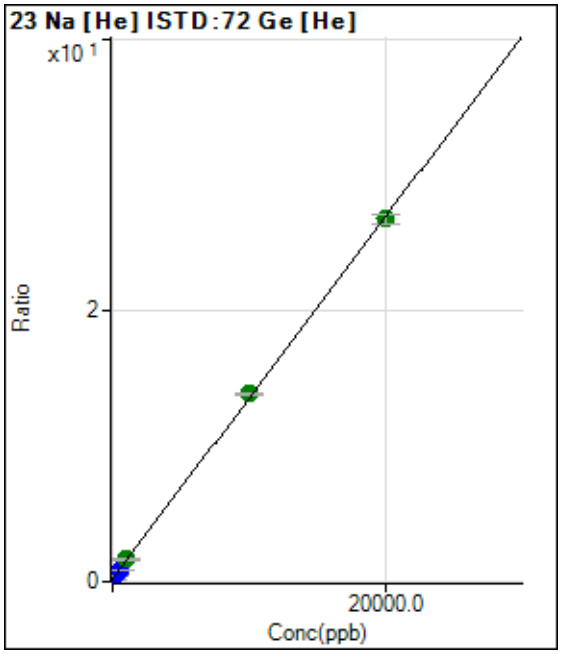
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2660283.91	1.0336	A	6.7
2	☐	200.000	177.249	6270826.96	2.2684	A	3.5
3	☐	500.000	482.641	11662005.99	4.3961	A	1.7
4	☐	1000.000	1004.469	21696059.34	8.0317	A	0.5
5	☐	10000.00	10763.885	181391279.0	76.0251	A	8.7
6	☐	20000.00	19618.495	350372574.5	137.714	A	3.5
7	☐	100.000					

y = 0.0070 * x + 1.0336
R = 0.9989
DL = 29.86
BEC = 148.4

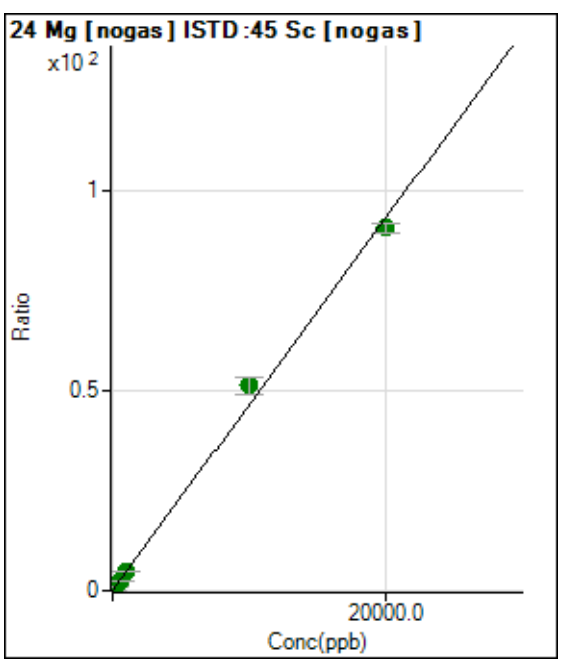
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	231917.97	0.2085	P	2.0
2	☐	200.000	201.936	523881.70	0.4780	P	2.5
3	☐	500.000	523.843	990510.51	0.9078	P	1.2
4	☐	1000.000	1071.094	1785816.85	1.6383	A	1.0
5	☐	10000.00	10214.034	14795333.11	13.8435	A	1.5
6	☐	20000.00	19888.813	28690174.57	26.7587	A	2.4
7	☐	100.000					

y = 0.0013 * x + 0.2085
R = 0.9999
DL = 9.497
BEC = 156.2

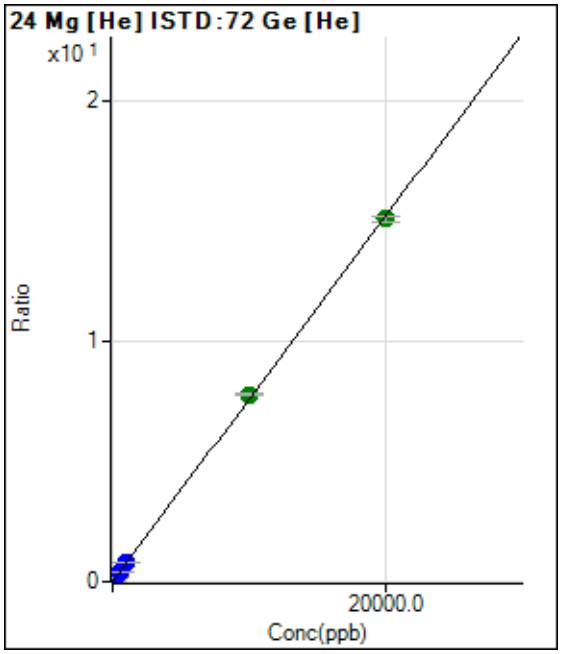
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36507.46	0.0141	P	7.5
2	☐	200.000	217.879	2843756.64	1.0288	A	4.9
3	☐	500.000	527.647	6556869.29	2.4713	A	0.4
4	☐	1000.000	1063.966	13416089.88	4.9689	A	3.0
5	☐	10000.00	11003.803	122304915.2	51.2576	A	8.6
6	☐	20000.00	19494.030	231045471.8	90.7956	A	2.6
7	☐	100.000					

y = 0.0047 * x + 0.0141
R = 0.9982
DL = 0.6808
BEC = 3.039

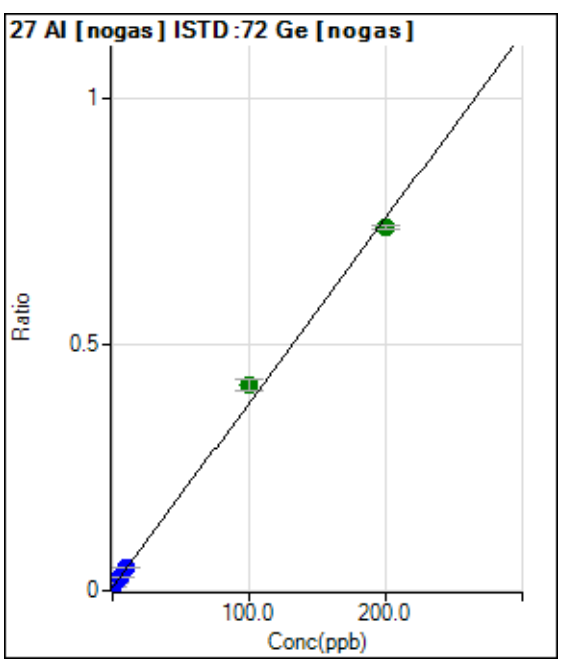
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2550.21	0.0023	P	3.1
2	☐	200.000	216.845	182736.63	0.1668	P	3.8
3	☐	500.000	535.802	446020.97	0.4088	P	0.7
4	☐	1000.000	1085.934	900234.36	0.8261	P	1.3
5	☐	10000.00	10258.886	8322665.71	7.7848	A	0.2
6	☐	20000.00	19865.197	16160656.43	15.0723	A	1.3
7	☐	100.000					

y = 7.5861E-004 * x + 0.0023
R = 0.9999
DL = 0.2823
BEC = 3.022

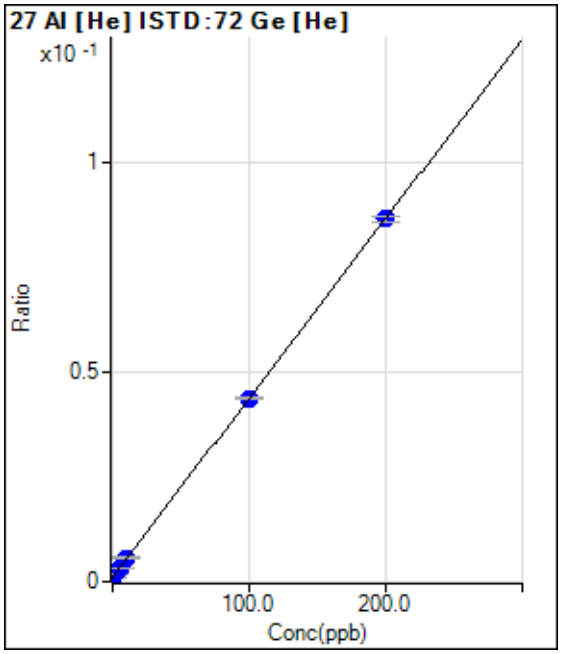
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27196.68	0.0065	P	0.7
2	☐	2.000	2.209	64055.75	0.0148	P	3.1
3	☐	5.000	5.453	111555.44	0.0269	P	3.1
4	☐	10.000	11.053	203753.05	0.0480	P	2.3
5	☐	100.000	110.164	1717832.37	0.4202	A	5.8
6	☐	200.000	194.852	3030994.85	0.7382	A	0.9
7	☐	1.000					

y = 0.0038 * x + 0.0065
R = 0.9982
DL = 0.03549
BEC = 1.723

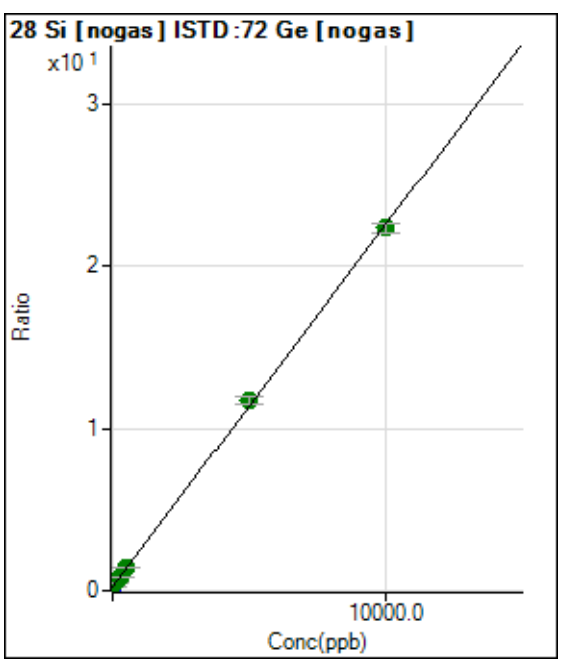
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.676	810.03	0.0007	P	7.9
2	☐	2.000	1.951	2030.15	0.0019	P	3.7
3	☐	5.000	5.029	3460.37	0.0032	P	4.6
4	☐	10.000	10.743	6124.41	0.0056	P	6.1
5	☐	100.000	99.983	46871.60	0.0438	P	1.6
6	☐	200.000	199.971	92877.80	0.0866	P	1.3
7	☐	1.000					

y = 4.2809E-004 * x + 0.0010
R = 1.0000
DL = 0.4044
BEC = 2.378

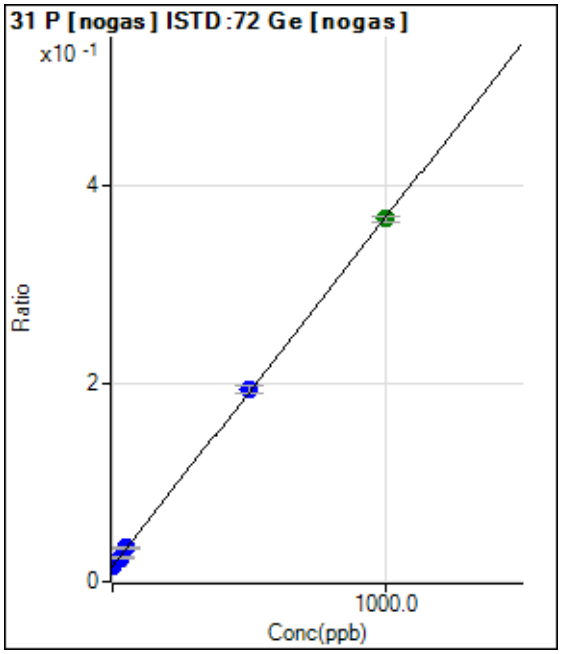
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	975284.02	0.2321	P	2.4
2	☐	100.000	115.966	2127709.29	0.4905	A	5.0
3	☐	250.000	273.676	3485828.49	0.8419	A	1.6
4	☐	500.000	537.152	6069410.12	1.4289	A	1.7
5	☐	5000.000	5156.400	47868634.29	11.7209	A	4.5
6	☐	10000.00	9919.191	91687485.30	22.3327	A	2.5
7	☐	5.000					

y = 0.0022 * x + 0.2321
R = 0.9998
DL = 7.508
BEC = 104.2

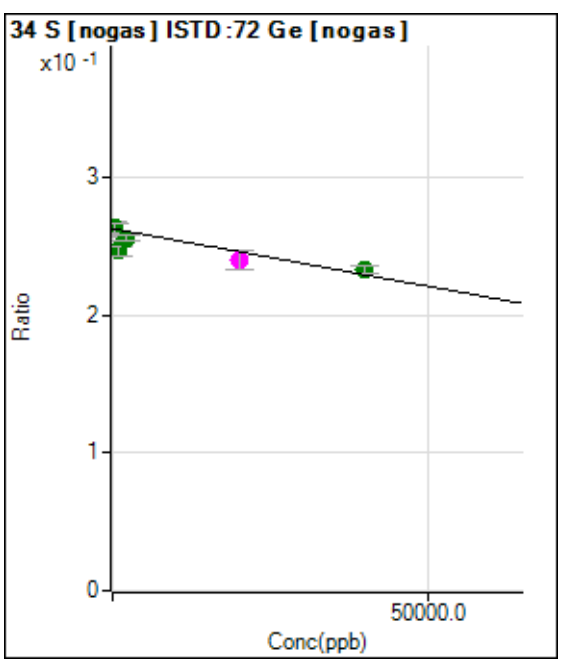
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	65085.28	0.0155	P	3.4
2	☐	10.000	9.592	81867.68	0.0189	P	2.8
3	☐	25.000	24.542	99953.53	0.0241	P	3.6
4	☐	50.000	52.769	144726.30	0.0341	P	1.6
5	☐	500.000	506.752	792120.33	0.1939	P	4.3
6	☐	1000.000	996.501	1504430.34	0.3664	A	1.4
7	☐	5.000					

y = 3.5215E-004 * x + 0.0155
R = 1.0000
DL = 4.457
BEC = 43.99

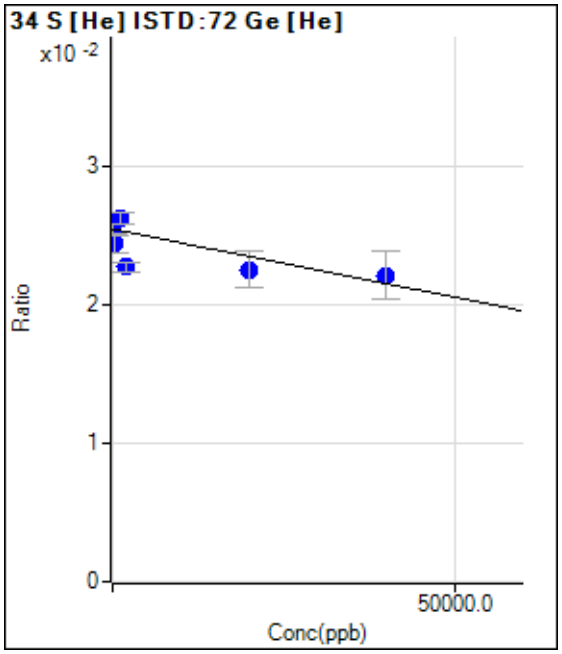
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1104469.72	0.2629	A	4.2
2	☐	400.000	-567.969	1142833.98	0.2634	A	2.4
3	☐	1000.000	19623.975	1020503.80	0.2464	A	3.0
4	☐	2000.000	8344.309	1086873.43	0.2559	A	1.9
5	☐	20000.00	27579.097	978733.00	0.2398	M	5.9
6	☐	40000.00	35437.316	957255.46	0.2332	A	2.0
7	☐	100.000					

y = -8.3942E-007 * x + 0.2629
R = -0.8627
DL = -3.945E+04
BEC = -3.132E+05

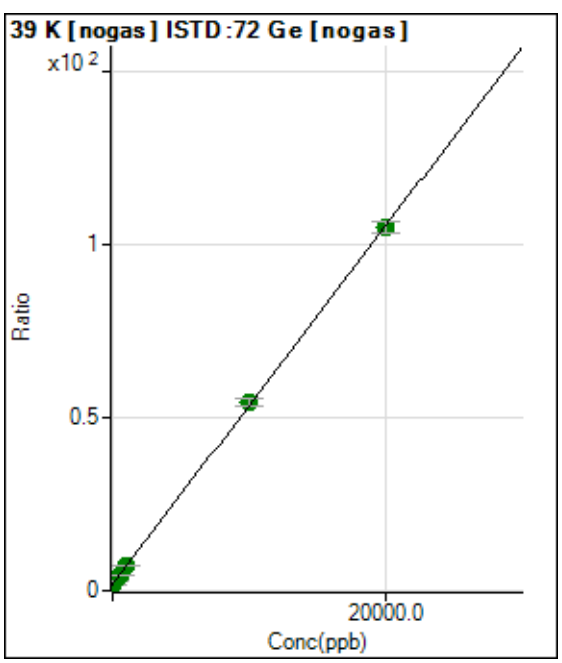
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	28392.07	0.0255	P	2.6
2	☐	400.000	10984.874	26824.03	0.0244	P	5.4
3	☐	1000.000	-7520.325	28660.30	0.0263	P	3.1
4	☐	2000.000	27965.463	24820.76	0.0228	P	2.8
5	☐	20000.00	29896.247	24120.30	0.0226	P	11.6
6	☐	40000.00	33860.763	23752.54	0.0222	P	15.8
7	☐	100.000					

y = -9.8493E-008 * x + 0.0255
R = -0.7086
DL = -2.019E+04
BEC = -2.591E+05

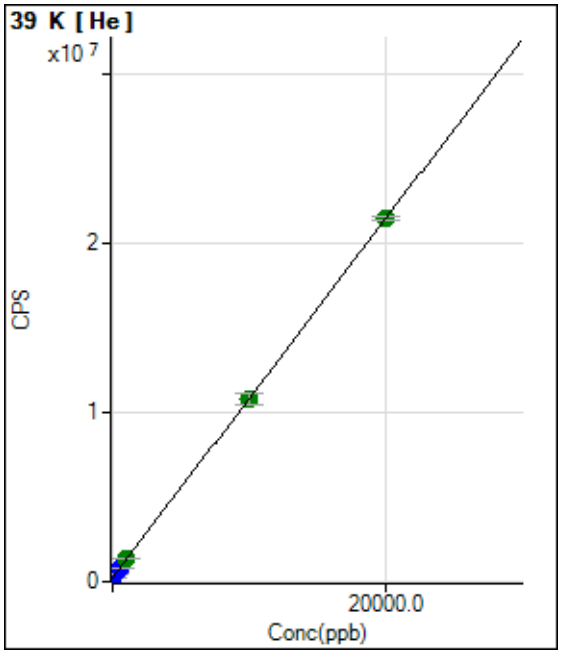
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7795319.18	1.8556	A	2.8
2	☐	200.000	200.838	12556036.74	2.8938	A	2.9
3	☐	500.000	515.987	18730205.11	4.5230	A	3.3
4	☐	1000.000	1055.362	31050681.94	7.3113	A	0.5
5	☐	10000.00	10185.357	222678304.9	54.5088	A	4.1
6	☐	20000.00	19904.145	430109009.6	104.750	A	3.3
7	☐	100.000					

y = 0.0052 * x + 1.8556
R = 0.9999
DL = 30.41
BEC = 358.9

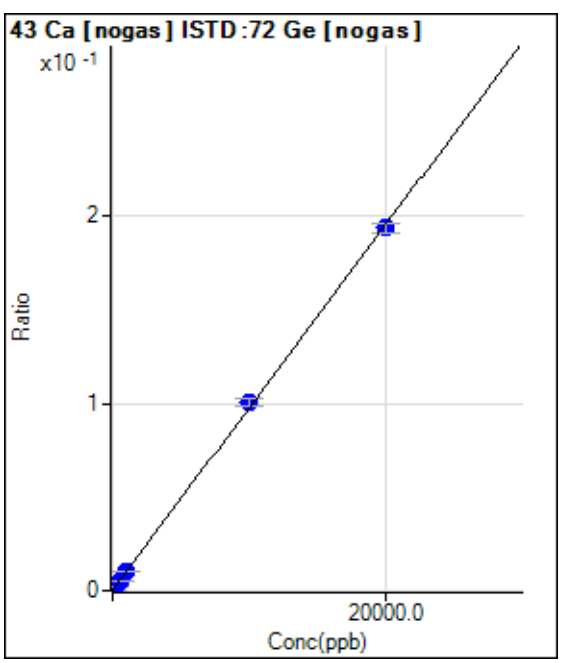
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	231022.35		P	0.3
2	☐	200.000	209.694	452992.05		P	1.9
3	☐	500.000	521.288	782827.12		P	0.5
4	☐	1000.000	1100.324	1395761.75		A	1.4
5	☐	10000.00	9983.222	10798681.51		A	6.2
6	☐	20000.00	20002.744	21404764.68		A	1.1
7	☐	100.000					

y = 1058.5419 * x + 231022.3467
R = 1.0000
DL = 1.828
BEC = 218.2

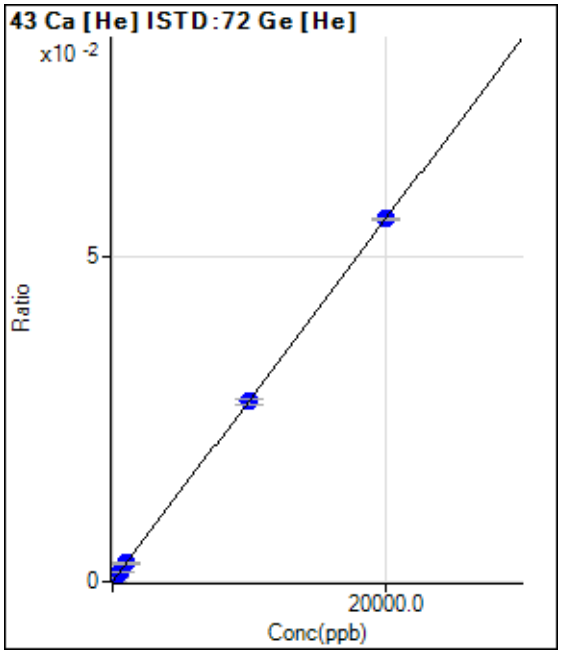
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	770.03	0.0002	P	10.1
2	☐	200.000	208.097	9612.65	0.0022	P	4.4
3	☐	500.000	521.184	21819.71	0.0053	P	3.2
4	☐	1000.000	1062.879	44810.75	0.0106	P	1.4
5	☐	10000.00	10303.982	411346.87	0.1007	P	4.4
6	☐	20000.00	19844.255	795592.54	0.1938	P	2.4
7	☐	100.000					

y = 9.7554E-006 * x + 1.8344E-004
R = 0.9998
DL = 5.686
BEC = 18.8

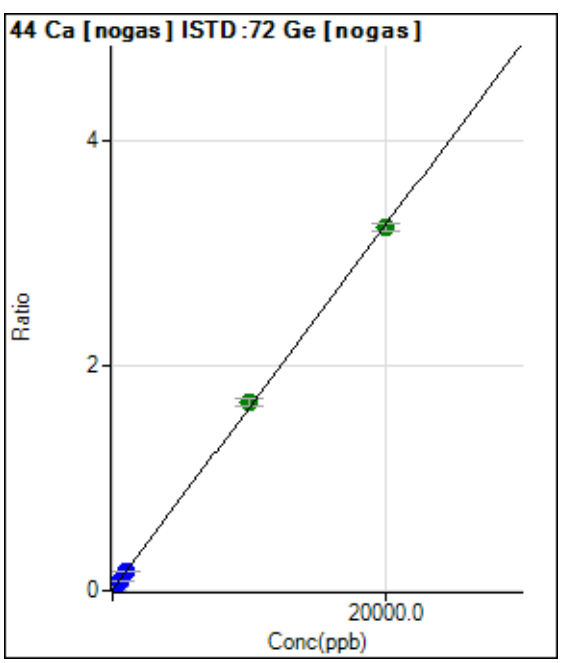
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36.67	0.0000	P	42.5
2	☐	200.000	196.100	636.69	0.0006	P	7.2
3	☐	500.000	531.335	1653.43	0.0015	P	6.9
4	☐	1000.000	1026.614	3160.32	0.0029	P	6.1
5	☐	10000.00	9941.798	29667.25	0.0278	P	3.0
6	☐	20000.00	20027.026	59926.33	0.0559	P	0.3
7	☐	100.000					

y = 2.7895E-006 * x + 3.3042E-005
R = 1.0000
DL = 15.09
BEC = 11.85

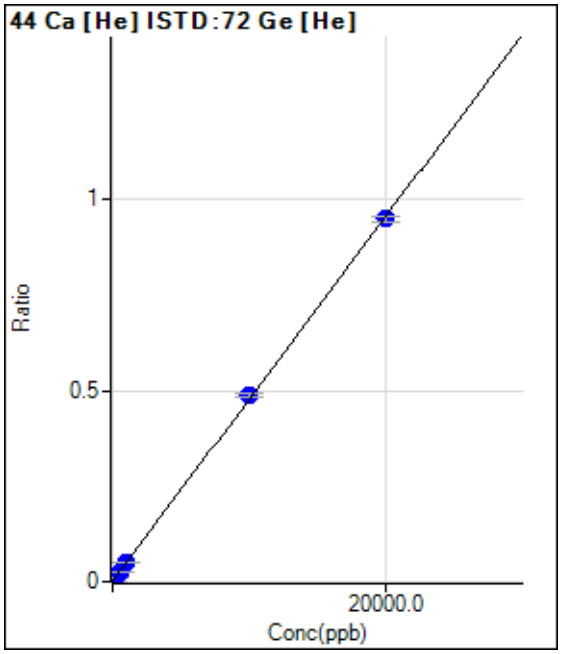
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30875.73	0.0073	P	1.8
2	☐	200.000	207.250	177847.48	0.0410	P	0.6
3	☐	500.000	520.209	379842.66	0.0917	P	0.2
4	☐	1000.000	1053.680	757116.60	0.1783	P	1.2
5	☐	10000.00	10277.173	6841492.40	1.6746	A	3.5
6	☐	20000.00	19858.152	13257458.55	3.2290	A	2.1
7	☐	100.000					

y = 1.6223E-004 * x + 0.0073
R = 0.9999
DL = 2.396
BEC = 45.29

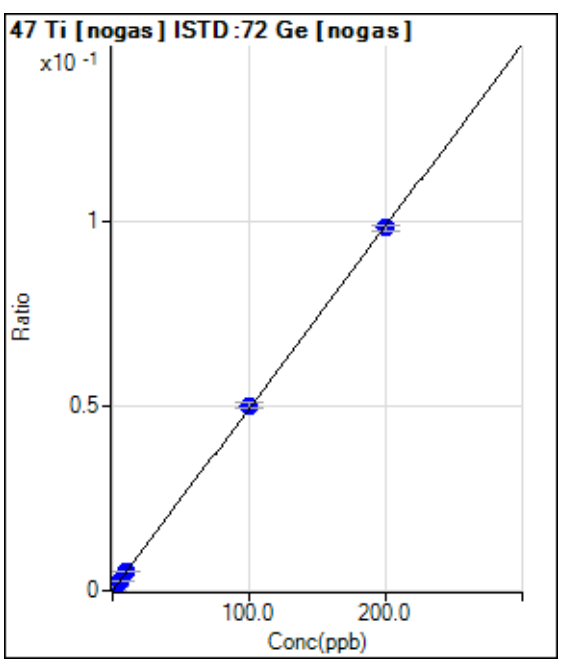
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1010.05	0.0009	P	9.7
2	☐	200.000	212.835	12130.79	0.0111	P	1.1
3	☐	500.000	526.655	28418.47	0.0260	P	1.7
4	☐	1000.000	1063.962	56355.15	0.0517	P	2.8
5	☐	10000.00	10207.451	521664.09	0.4881	P	1.7
6	☐	20000.00	19892.282	1018834.47	0.9504	P	1.3
7	☐	100.000					

y = 4.7733E-005 * x + 9.0788E-004
R = 0.9999
DL = 5.514
BEC = 19.02

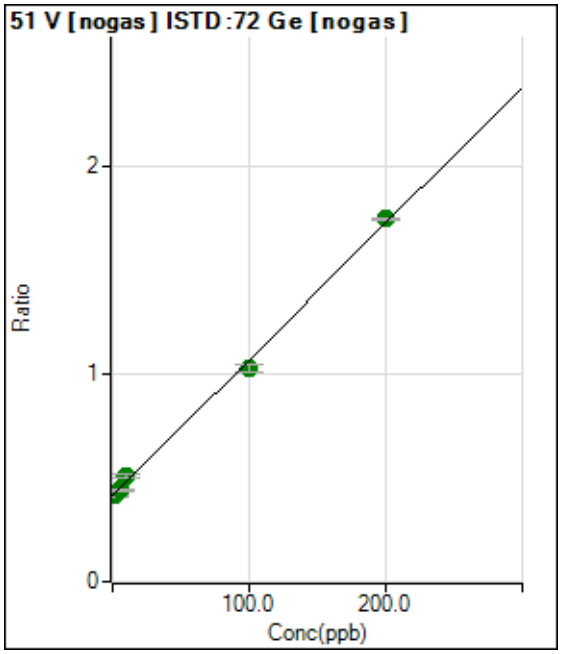
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	153.33	0.0000	P	8.0
2	☐	2.000	2.212	4894.07	0.0011	P	8.3
3	☐	5.000	5.249	10866.68	0.0026	P	1.9
4	☐	10.000	10.583	22327.05	0.0053	P	2.0
5	☐	100.000	101.708	205056.01	0.0502	P	3.5
6	☐	200.000	199.108	403422.16	0.0982	P	1.5
7	☐	1.000					

y = 4.9321E-004 * x + 3.6448E-005
R = 1.0000
DL = 0.01766
BEC = 0.0739

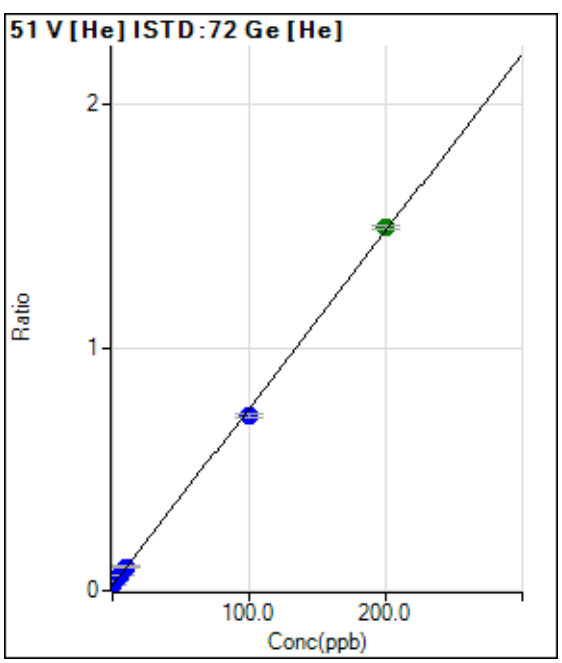
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1746595.61	0.4157	A	1.7
2	☐	2.000	-0.209	1798752.13	0.4143	A	1.5
3	☐	5.000	3.905	1827853.17	0.4413	A	3.0
4	☐	10.000	14.551	2170964.24	0.5112	A	2.4
5	☐	100.000	93.362	4202675.36	1.0289	A	3.4
6	☐	200.000	203.141	7185634.79	1.7499	A	0.7
7	☐	1.000					

y = 0.0066 * x + 0.4157
R = 0.9988
DL = 3.236
BEC = 63.29

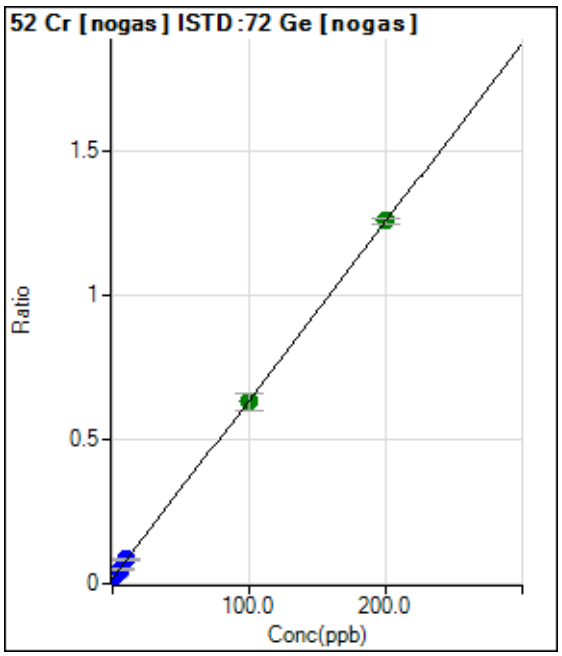
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.473	26944.71	0.0242	P	0.9
2	☐	2.000	2.406	41984.97	0.0383	P	2.0
3	☐	5.000	5.454	66027.48	0.0605	P	1.3
4	☐	10.000	10.654	107230.75	0.0984	P	1.6
5	☐	100.000	96.123	770868.34	0.7213	P	1.5
6	☐	200.000	201.890	1599699.79	1.4921	A	0.9
7	☐	1.000					

y = 0.0073 * x + 0.0208
R = 0.9997
DL = 0.08852
BEC = 2.85

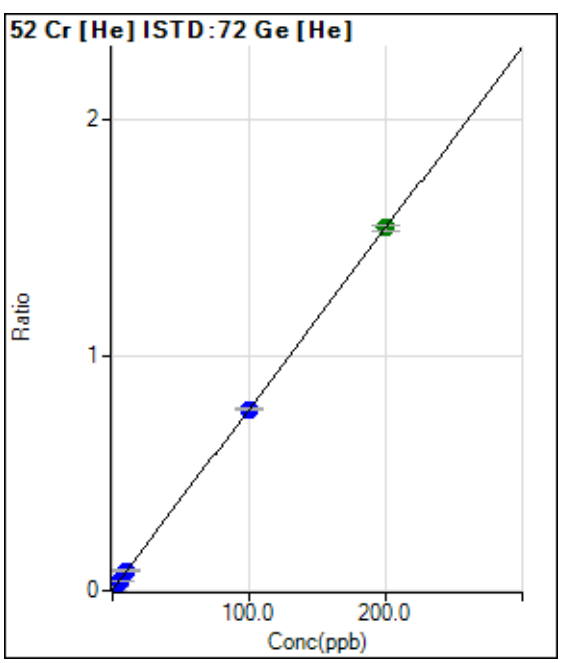
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	76781.90	0.0183	P	1.0
2	☐	2.000	1.864	129371.88	0.0298	P	1.9
3	☐	5.000	5.094	206286.94	0.0498	P	1.3
4	☐	10.000	10.577	355791.24	0.0838	P	1.8
5	☐	100.000	98.985	2576512.78	0.6314	A	9.3
6	☐	200.000	200.477	5173900.34	1.2600	A	1.8
7	☐	1.000					

y = 0.0062 * x + 0.0183
R = 1.0000
DL = 0.08838
BEC = 2.949

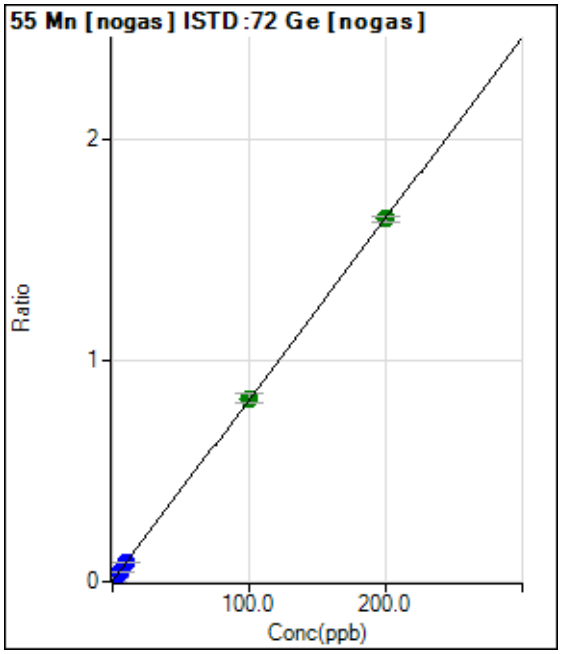
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3680.42	0.0033	P	3.7
2	☐	2.000	2.133	21599.57	0.0197	P	3.8
3	☐	5.000	5.169	46983.21	0.0431	P	1.7
4	☐	10.000	10.598	92384.68	0.0848	P	3.2
5	☐	100.000	99.735	823284.31	0.7702	P	1.1
6	☐	200.000	200.097	1653039.66	1.5419	A	1.6
7	☐	1.000					

y = 0.0077 * x + 0.0033
R = 1.0000
DL = 0.04812
BEC = 0.4303

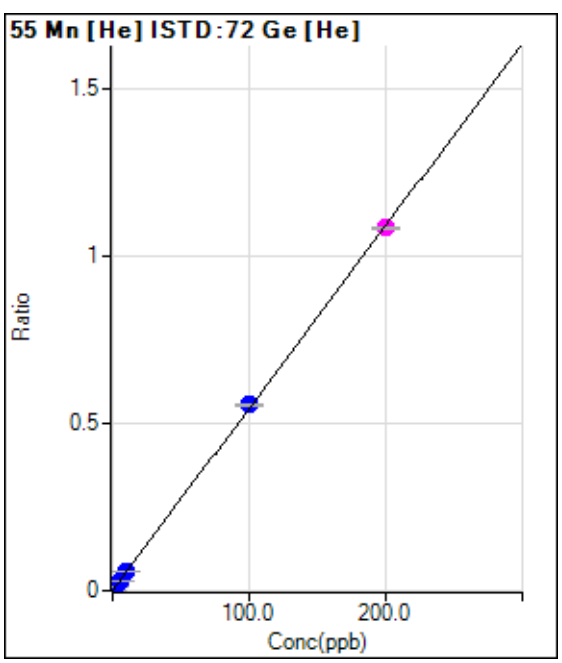
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15339.90	0.0036	P	1.9
2	☐	2.000	2.011	87218.49	0.0201	P	2.3
3	☐	5.000	5.147	189442.12	0.0458	P	3.1
4	☐	10.000	10.447	378369.49	0.0891	P	2.1
5	☐	100.000	100.498	3371620.58	0.8257	A	5.0
6	☐	200.000	199.725	6723279.27	1.6374	A	1.9
7	☐	1.000					

y = 0.0082 * x + 0.0036
R = 1.0000
DL = 0.02572
BEC = 0.4462

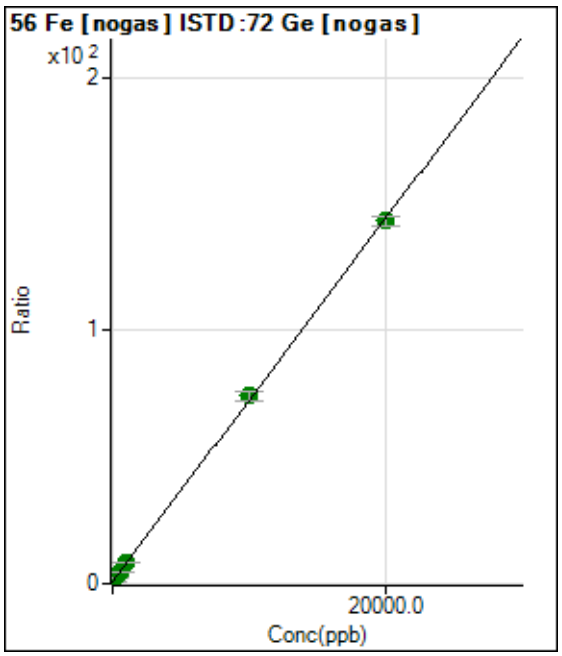
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	420.01	0.0004	P	11.4
2	☐	2.000	2.149	13251.65	0.0121	P	5.5
3	☐	5.000	5.322	32068.31	0.0294	P	0.4
4	☐	10.000	10.825	64720.31	0.0594	P	1.7
5	☐	100.000	101.979	594653.05	0.5563	P	0.7
6	☐	200.000	198.959	1163171.65	1.0850	M	0.6
7	☐	1.000					

y = 0.0055 * x + 3.7775E-004
R = 0.9999
DL = 0.02368
BEC = 0.0693

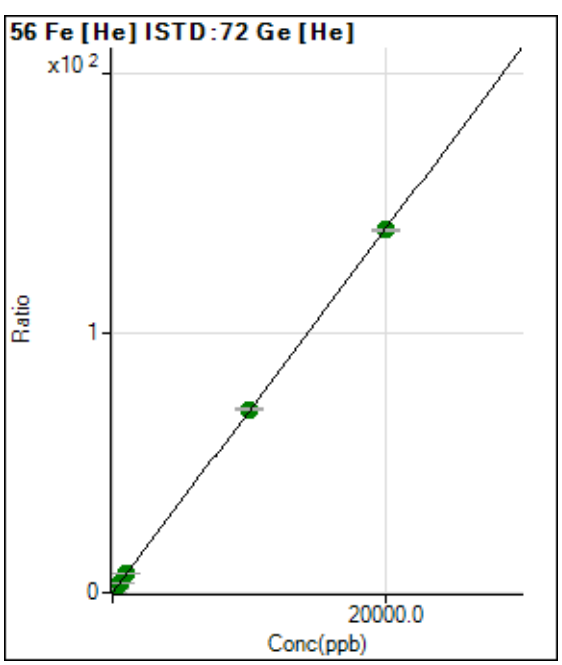
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3382096.69	0.8050	A	2.6
2	☐	200.000	204.268	9858180.43	2.2707	A	0.8
3	☐	500.000	510.316	18494315.52	4.4668	A	3.4
4	☐	1000.000	1038.622	35059910.16	8.2576	A	3.2
5	☐	10000.00	10248.281	303543381.7	74.3411	A	4.8
6	☐	20000.00	19873.628	588876646.4	143.407	A	3.0
7	☐	100.000					

y = 0.0072 * x + 0.8050
R = 0.9999
DL = 8.7
BEC = 112.2

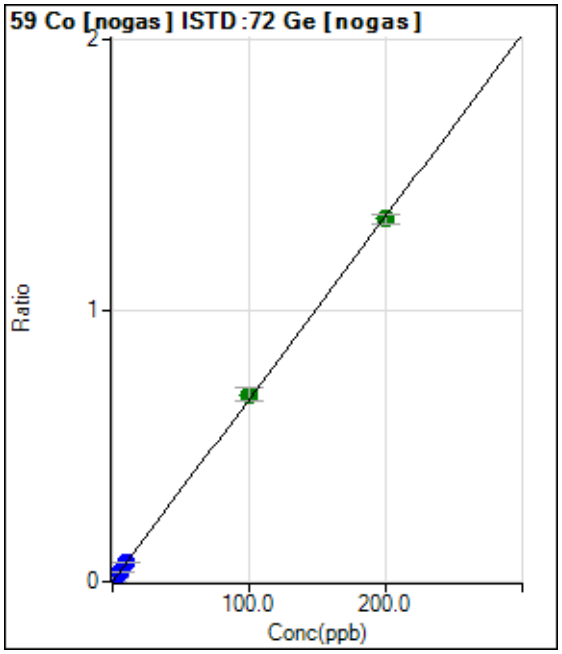
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21028.82	0.0189	P	2.6
2	☐	200.000	213.044	1654913.20	1.5105	A	5.0
3	☐	500.000	532.139	4086200.15	3.7446	A	1.9
4	☐	1000.000	1060.036	8110281.96	7.4405	A	0.6
5	☐	10000.00	10080.015	75463092.21	70.5919	A	1.3
6	☐	20000.00	19956.057	149810487.7	139.736	A	0.3
7	☐	100.000					

y = 0.0070 * x + 0.0189
R = 1.0000
DL = 0.2108
BEC = 2.7

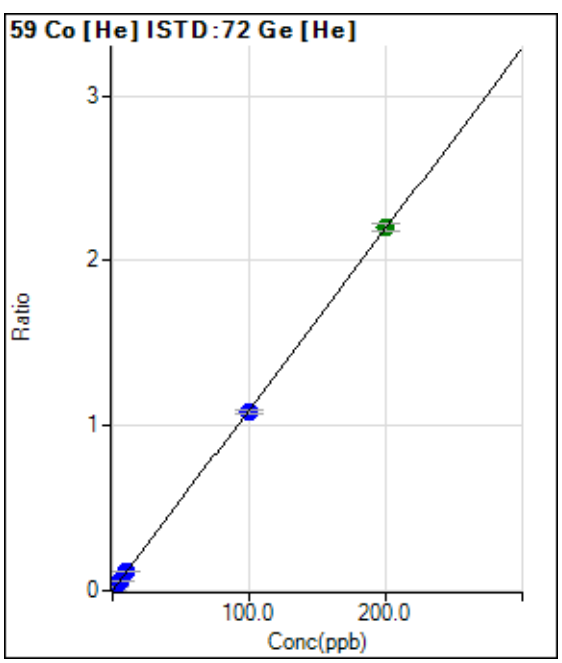
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	480.01	0.0001	P	17.1
2	☐	2.000	2.060	60626.96	0.0140	P	1.8
3	☐	5.000	5.223	145935.26	0.0352	P	4.7
4	☐	10.000	10.389	297173.09	0.0700	P	1.6
5	☐	100.000	102.444	2811705.06	0.6891	A	7.6
6	☐	200.000	198.752	5488732.84	1.3368	A	2.6
7	☐	1.000					

y = 0.0067 * x + 1.1384E-004
R = 0.9999
DL = 0.008663
BEC = 0.01693

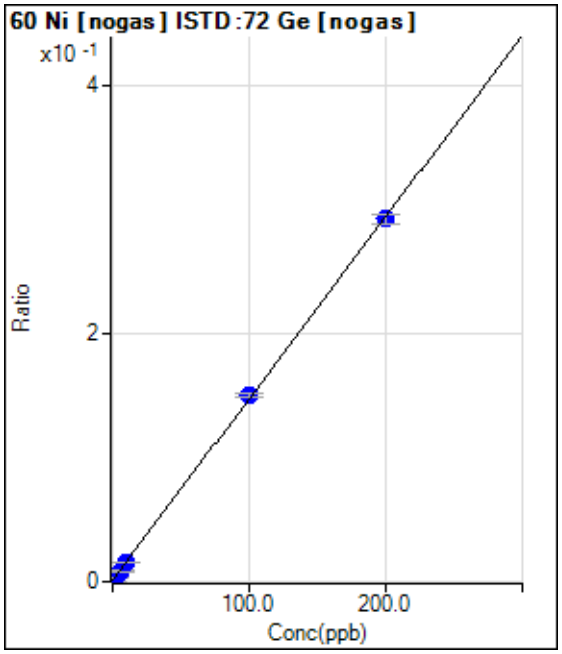
Weight: <None>
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	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	130.00	0.0001	P	22.5
2	☐	2.000	2.046	24710.29	0.0225	P	4.3
3	☐	5.000	5.188	62191.96	0.0570	P	1.7
4	☐	10.000	10.254	122634.67	0.1125	P	1.1
5	☐	100.000	98.848	1158318.86	1.0839	P	1.6
6	☐	200.000	200.558	2357674.76	2.1990	A	2.1
7	☐	1.000					

y = 0.0110 * x + 1.1672E-004
R = 1.0000
DL = 0.007185
BEC = 0.01065

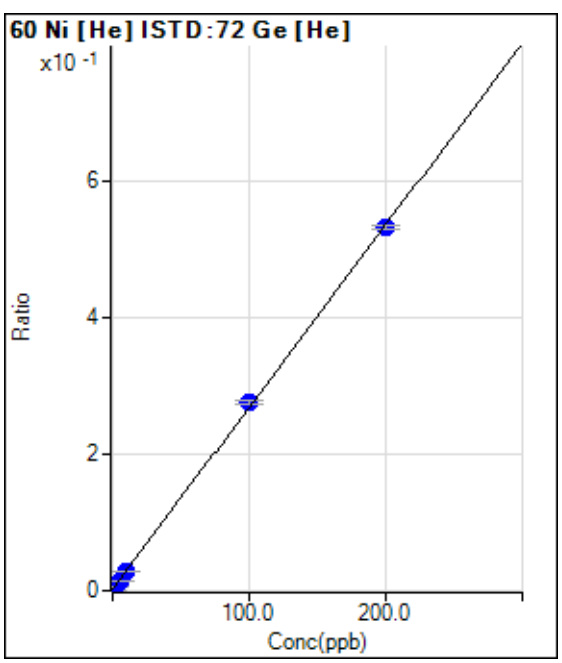
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.519	1596.77	0.0004	P	12.8
2	☐	2.000	1.606	15116.46	0.0035	P	2.8
3	☐	5.000	4.910	34426.23	0.0083	P	5.5
4	☐	10.000	10.010	66942.51	0.0158	P	2.0
5	☐	100.000	101.975	613494.57	0.1502	P	2.6
6	☐	200.000	199.018	1198880.53	0.2920	P	2.4
7	☐	1.000					

y = 0.0015 * x + 0.0011
R = 0.9999
DL = 0.1
BEC = 0.7782

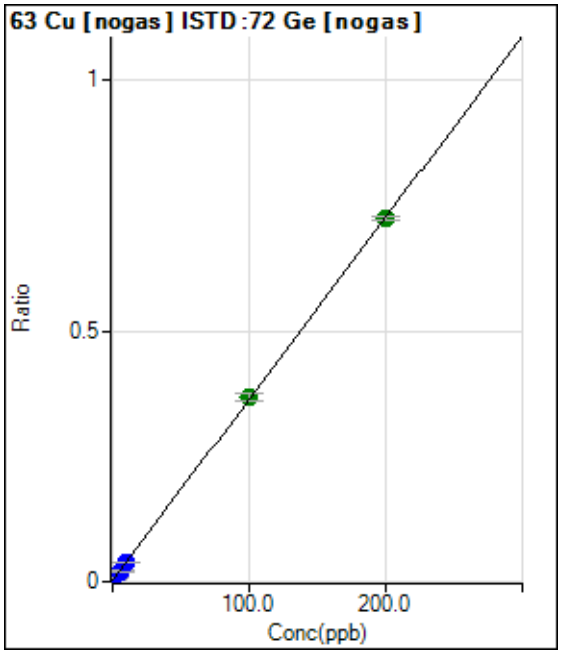
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.620	566.69	0.0005	P	22.3
2	☐	2.000	1.518	6801.36	0.0062	P	2.1
3	☐	5.000	4.665	15917.18	0.0146	P	2.2
4	☐	10.000	9.928	31156.85	0.0286	P	4.4
5	☐	100.000	102.983	295507.20	0.2765	P	1.9
6	☐	200.000	198.525	569308.21	0.5310	P	1.2
7	☐	1.000					

y = 0.0027 * x + 0.0022
R = 0.9998
DL = 0.1277
BEC = 0.8108

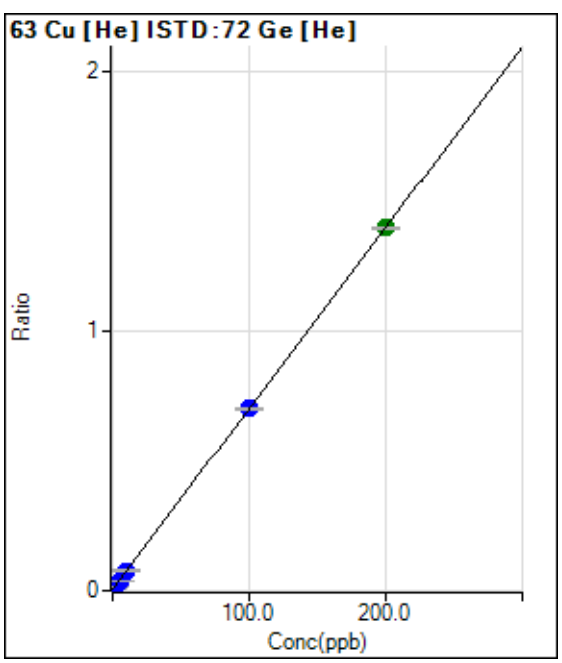
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	9792.76	0.0023	P	8.1
2	☐	2.000	2.028	41968.17	0.0097	P	5.8
3	☐	5.000	5.177	87307.75	0.0211	P	3.0
4	☐	10.000	10.405	169943.47	0.0400	P	1.2
5	☐	100.000	101.365	1509289.35	0.3695	A	4.6
6	☐	200.000	199.293	2973251.42	0.7241	A	1.2
7	☐	1.000					

y = 0.0036 * x + 0.0023
R = 1.0000
DL = 0.1574
BEC = 0.6441

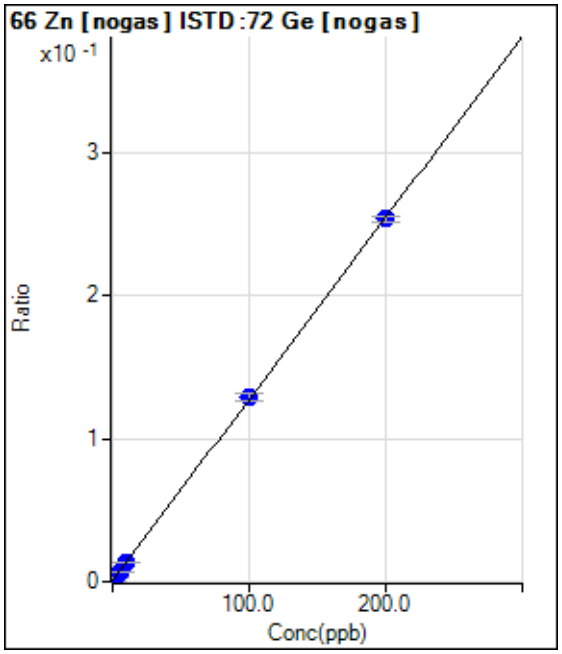
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.179	4420.60	0.0040	P	6.8
2	☐	2.000	1.869	20001.08	0.0182	P	0.8
3	☐	5.000	5.005	43752.62	0.0401	P	1.2
4	☐	10.000	10.298	83861.23	0.0770	P	3.0
5	☐	100.000	100.040	750748.40	0.7023	P	1.3
6	☐	200.000	199.966	1499542.79	1.3986	A	0.8
7	☐	1.000					

y = 0.0070 * x + 0.0052
R = 1.0000
DL = 0.1164
BEC = 0.7493

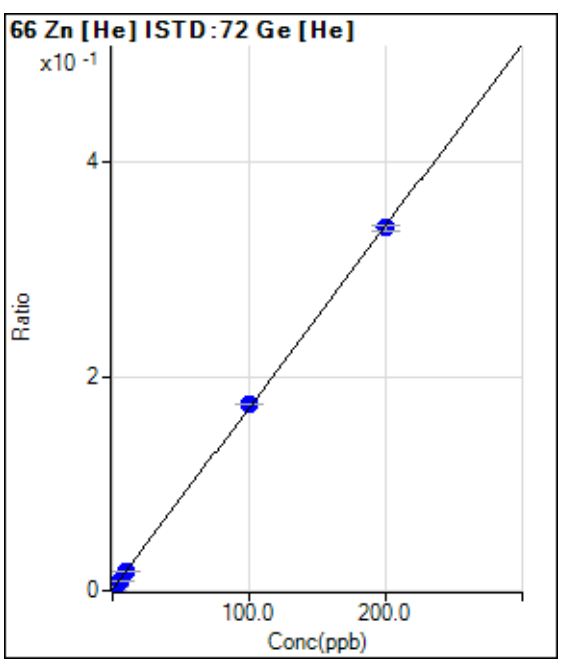
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.307	1190.06	0.0003	P	5.1
2	☐	2.000	1.762	12634.56	0.0029	P	3.0
3	☐	5.000	4.878	28449.15	0.0069	P	2.5
4	☐	10.000	10.125	57483.95	0.0135	P	0.2
5	☐	100.000	101.085	527134.63	0.1291	P	4.2
6	☐	200.000	199.457	1042963.27	0.2540	P	1.9
7	☐	1.000					

y = 0.0013 * x + 6.7362E-004
R = 1.0000
DL = 0.03396
BEC = 0.5303

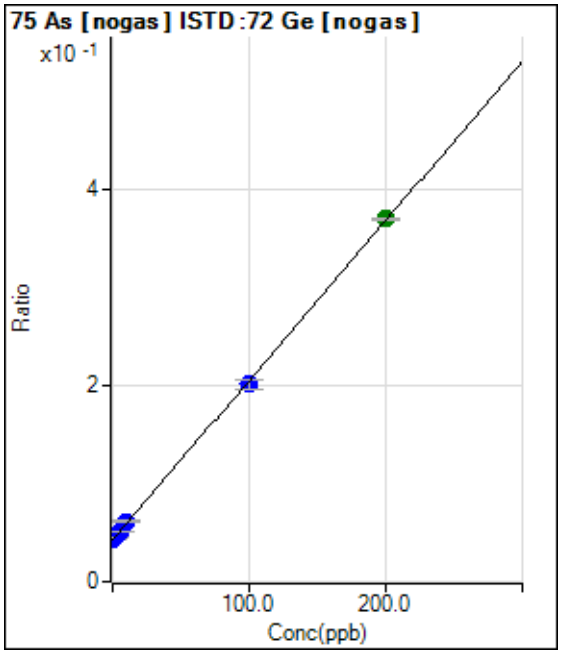
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.547	343.34	0.0003	P	16.4
2	☐	2.000	1.716	4543.97	0.0041	P	2.9
3	☐	5.000	4.590	9842.80	0.0090	P	5.0
4	☐	10.000	10.190	20174.75	0.0185	P	2.8
5	☐	100.000	102.096	186375.47	0.1744	P	0.7
6	☐	200.000	198.956	363057.00	0.3386	P	1.8
7	☐	1.000					

y = 0.0017 * x + 0.0012
R = 0.9999
DL = 0.08942
BEC = 0.7291

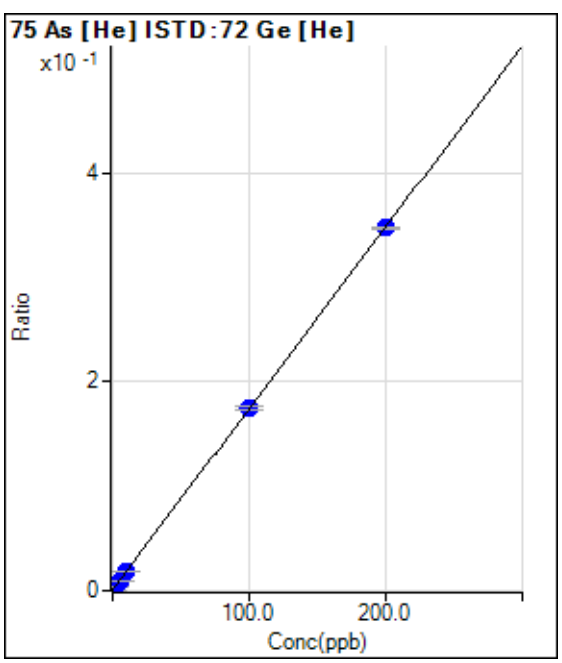
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.470	182472.46	0.0434	P	1.0
2	☐	2.000	1.118	193026.19	0.0445	P	0.7
3	☐	5.000	5.249	211987.83	0.0512	P	2.4
4	☐	10.000	11.535	260902.99	0.0614	P	1.4
5	☐	100.000	97.406	821954.70	0.2013	P	4.7
6	☐	200.000	201.223	1520963.31	0.3704	A	0.7
7	☐	1.000					

y = 0.0016 * x + 0.0427
R = 0.9998
DL = 0.7739
BEC = 26.19

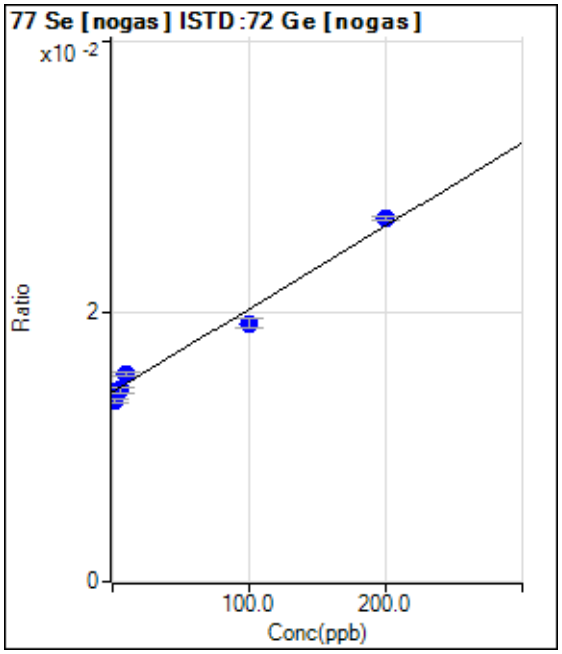
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	844.47	0.0008	P	4.2
2	☐	2.000	2.110	4842.88	0.0044	P	1.9
3	☐	5.000	4.995	10280.71	0.0094	P	1.9
4	☐	10.000	10.432	20547.17	0.0189	P	1.0
5	☐	100.000	100.620	187342.01	0.1753	P	1.7
6	☐	200.000	199.667	372065.11	0.3471	P	0.4
7	☐	1.000					

y = 0.0017 * x + 7.5896E-004
R = 1.0000
DL = 0.05508
BEC = 0.4376

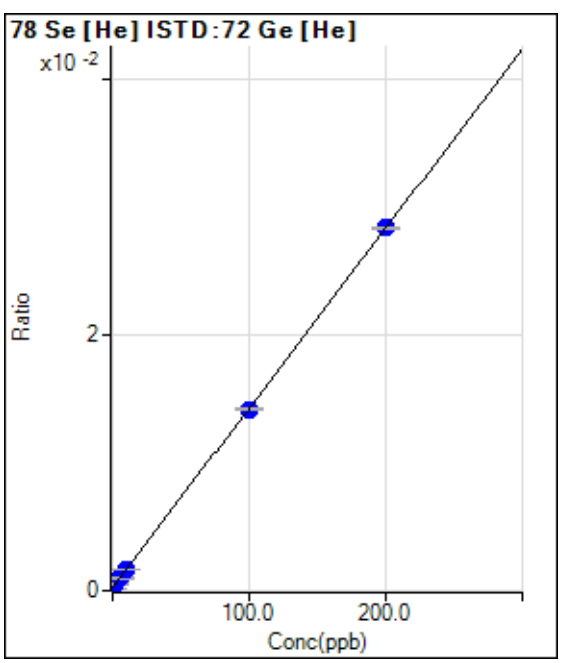
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	59139.44	0.0141	P	2.1
2	☐	2.000	-10.391	58266.56	0.0134	P	1.9
3	☐	5.000	1.851	58701.19	0.0142	P	2.1
4	☐	10.000	21.206	65259.99	0.0154	P	1.7
5	☐	100.000	82.694	78217.54	0.0191	P	3.5
6	☐	200.000	208.295	110336.06	0.0269	P	1.1
7	☐	1.000					

y = 6.1489E-005 * x + 0.0141
R = 0.9913
DL = 14.51
BEC = 228.7

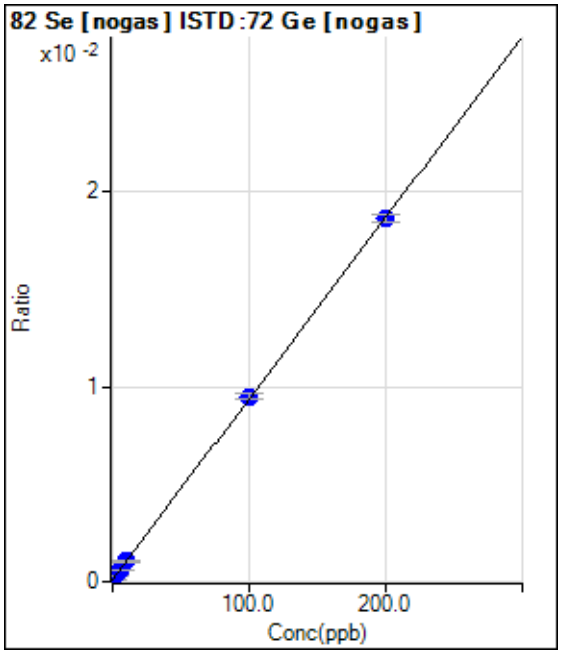
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.157	235.33	0.0002	P	8.5
2	☐	2.000	1.948	555.34	0.0005	P	11.3
3	☐	5.000	5.300	1066.70	0.0010	P	7.6
4	☐	10.000	10.314	1832.76	0.0017	P	2.5
5	☐	100.000	99.236	15150.31	0.0142	P	0.8
6	☐	200.000	200.359	30409.30	0.0284	P	0.8
7	☐	1.000					

y = 1.4041E-004 * x + 2.3354E-004
R = 1.0000
DL = 0.3826
BEC = 1.663

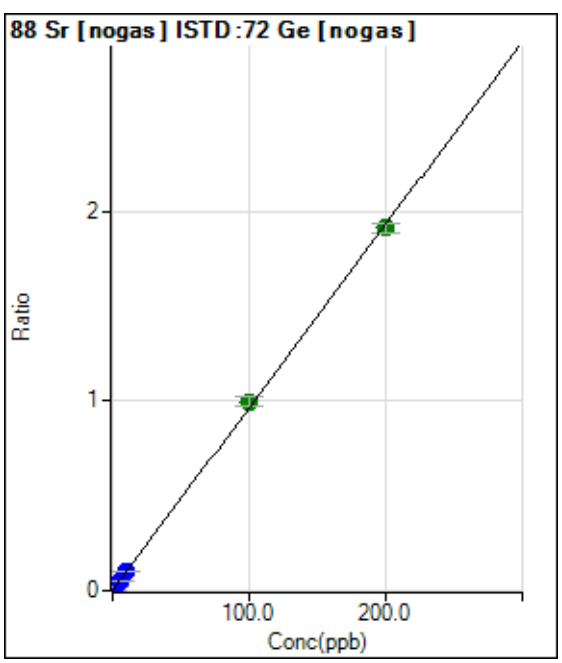
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	426.68	0.0001	P	5.6
2	☐	2.000	1.844	1183.39	0.0003	P	7.5
3	☐	5.000	5.238	2430.20	0.0006	P	8.2
4	☐	10.000	10.177	4443.95	0.0010	P	7.2
5	☐	100.000	101.271	38818.68	0.0095	P	3.3
6	☐	200.000	199.351	76401.79	0.0186	P	2.1
7	☐	1.000					

y = 9.2810E-005 * x + 1.0141E-004
R = 1.0000
DL = 0.1825
BEC = 1.093

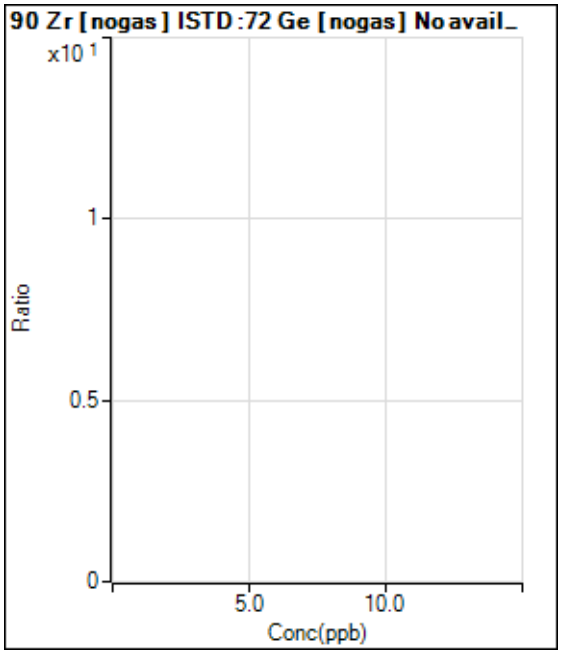
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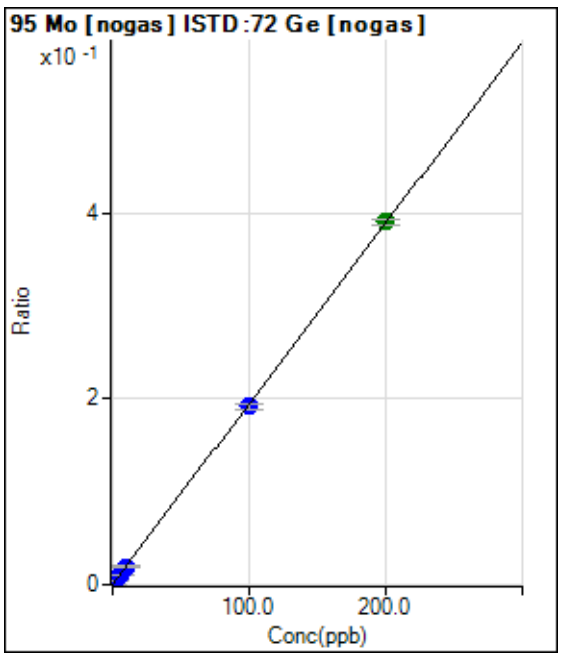
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5444.22	0.0013	P	5.7
2	☐	2.000	1.911	85570.31	0.0197	P	2.7
3	☐	5.000	5.066	207692.29	0.0502	P	3.6
4	☐	10.000	10.059	417424.64	0.0983	P	3.0
5	☐	100.000	103.416	4079629.10	0.9987	A	4.6
6	☐	200.000	198.288	7858443.84	1.9137	A	2.7
7	☐	1.000					

y = 0.0096 * x + 0.0013
R = 0.9998
DL = 0.02304
BEC = 0.1344

Weight: <None>
Min Conc: <None>



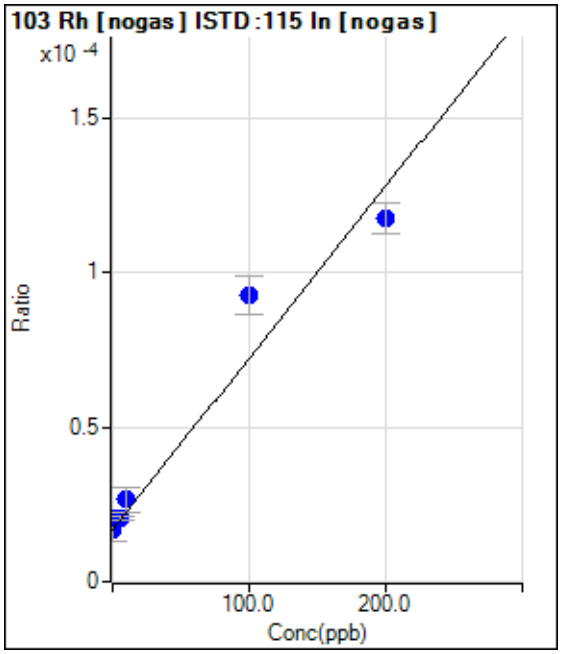
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1313.40	0.0003	P	6.1
2	☐	2.000	1.826	16774.79	0.0039	P	1.5
3	☐	5.000	4.713	39277.12	0.0095	P	1.3
4	☐	10.000	9.825	82511.39	0.0194	P	2.8
5	☐	100.000	98.542	784815.98	0.1921	P	2.9
6	☐	200.000	200.746	1605716.90	0.3910	A	1.4
7	☐	1.000					

y = 0.0019 * x + 3.1262E-004
R = 1.0000
DL = 0.0293
BEC = 0.1606

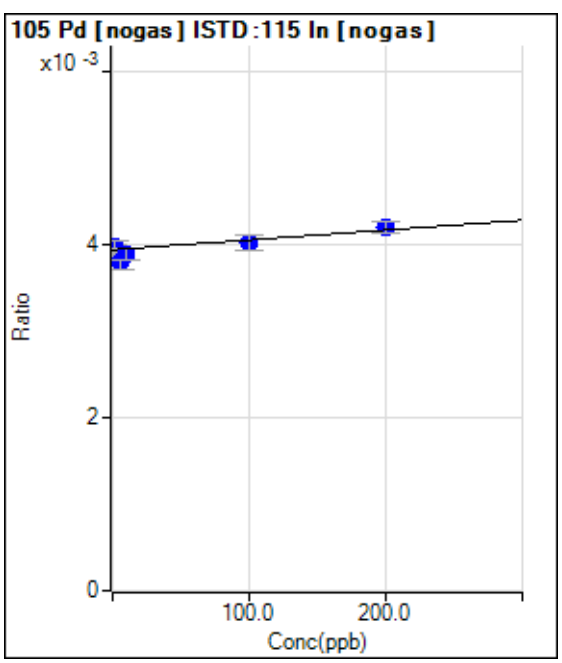
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	66.67	0.0000	P	43.1
2	☐	2.000	6.156	86.67	0.0000	P	12.4
3	☐	5.000	6.263	83.33	0.0000	P	6.1
4	☐	10.000	17.620	113.33	0.0000	P	30.2
5	☐	100.000	136.898	370.01	0.0001	P	13.2
6	☐	200.000	181.097	480.02	0.0001	P	8.5
7	☐	1.000					

y = 5.5484E-007 * x + 1.6807E-005
R = 0.9752
DL = 39.13
BEC = 30.29

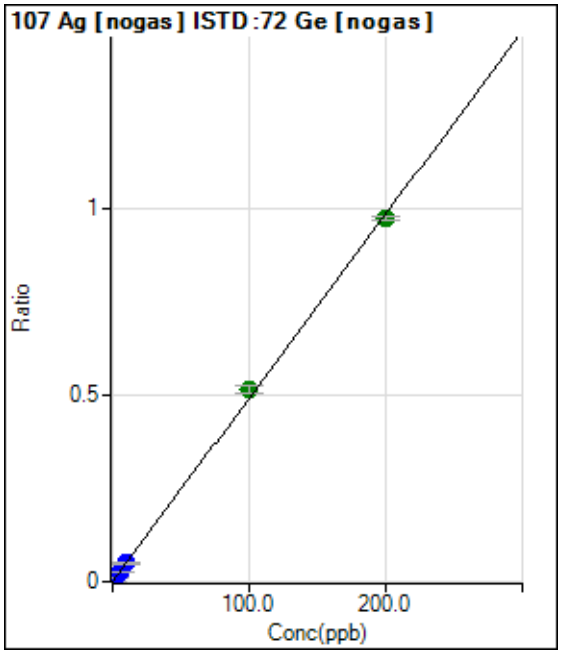
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15910.93	0.0039	P	3.5
2	☐	2.000	34.565	17045.16	0.0040	P	3.1
3	☐	5.000	-125.776	15613.82	0.0038	P	4.5
4	☐	10.000	-42.036	16584.66	0.0039	P	3.5
5	☐	100.000	68.707	16071.05	0.0040	P	4.1
6	☐	200.000	221.192	17111.87	0.0042	P	3.2
7	☐	1.000					

y = 1.1408E-006 * x + 0.0039
R = 0.8763
DL = 362
BEC = 3455

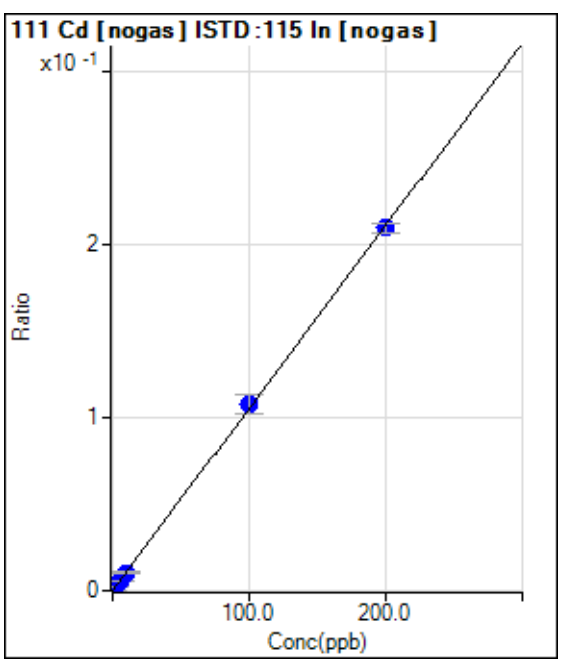
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Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	436.68	0.0001	P	11.2
2	☐	2.000	1.970	42468.12	0.0098	P	1.2
3	☐	5.000	4.984	101866.62	0.0246	P	2.9
4	☐	10.000	9.974	208624.65	0.0491	P	1.7
5	☐	100.000	104.773	2103350.07	0.5151	A	4.5
6	☐	200.000	197.616	3989197.86	0.9714	A	1.0
7	☐	1.000					

y = 0.0049 * x + 1.0381E-004
R = 0.9996
DL = 0.00708
BEC = 0.02112

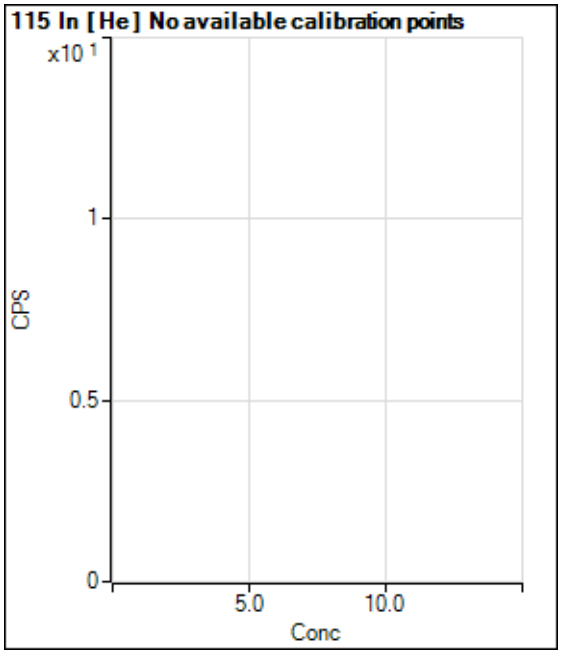
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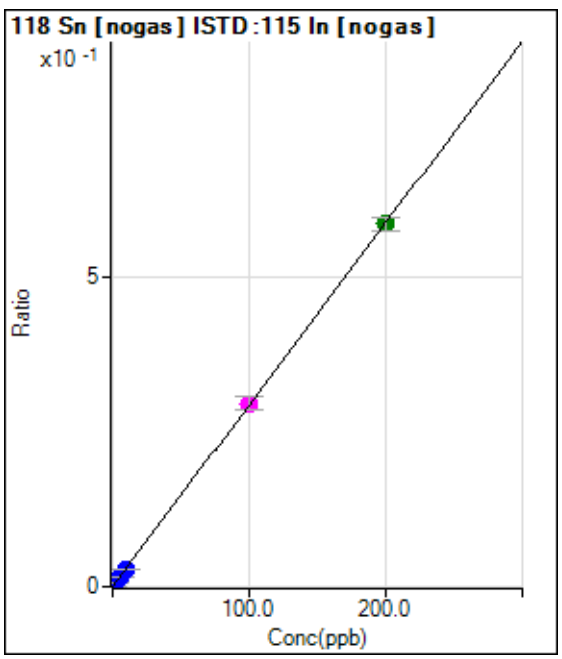
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26.67	0.0000	P	25.4
2	☐	2.000	1.956	8875.74	0.0021	P	4.3
3	☐	5.000	4.954	21530.00	0.0052	P	2.7
4	☐	10.000	9.814	44155.69	0.0104	P	4.2
5	☐	100.000	102.283	430656.37	0.1080	P	9.6
6	☐	200.000	198.870	856733.79	0.2100	P	2.6
7	☐	1.000					

y = 0.0011 * x + 6.6677E-006
R = 0.9999
DL = 0.004808
BEC = 0.006314

Weight: <None>
Min Conc: <None>



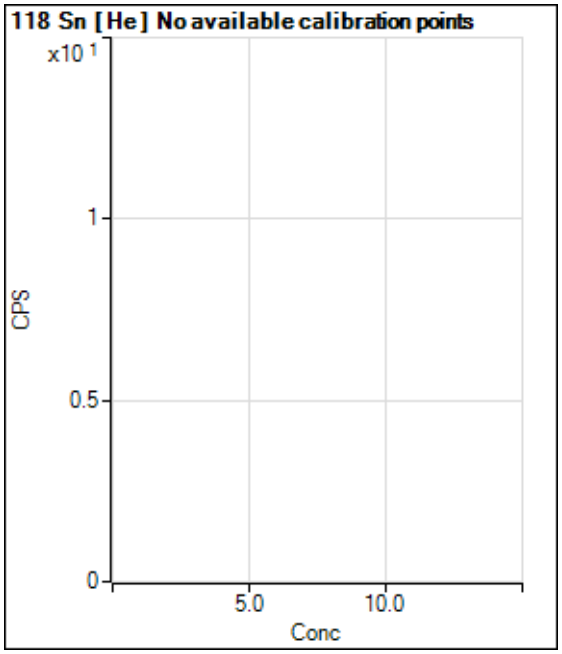
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			1497556.02		A	1.9
2	☐			1520435.59		A	2.9
3	☐			1480802.22		A	0.6
4	☐			1509852.42		A	1.6
5	☐			1400854.67		M	9.3
6	☐			1421867.40		A	4.8
7	☐						



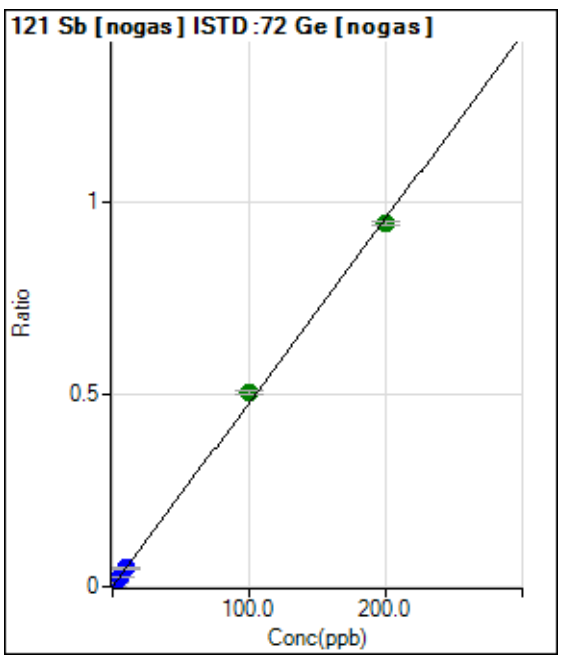
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1040.04	0.0003	P	4.7
2	☐	2.000	1.888	24751.26	0.0058	P	5.0
3	☐	5.000	4.804	58809.06	0.0143	P	2.5
4	☐	10.000	9.729	122353.31	0.0287	P	1.4
5	☐	100.000	100.857	1178526.18	0.2954	M	8.0
6	☐	200.000	199.591	2383036.79	0.5843	A	3.6
7	☐	1.000					

y = 0.0029 * x + 2.5848E-004
R = 1.0000
DL = 0.01245
BEC = 0.08833

Weight: <None>
Min Conc: <None>



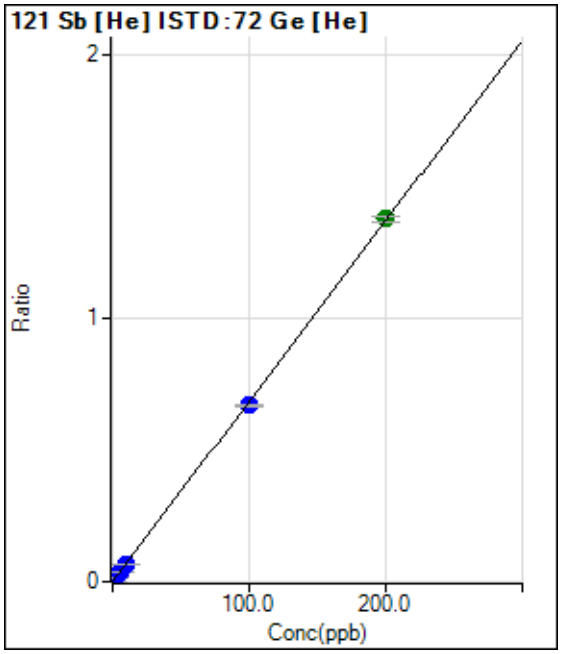
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			416.68		P	9.1
2	☐			9249.26		P	2.6
3	☐			23419.31		P	2.1
4	☐			46987.02		P	2.5
5	☐			438653.12		P	3.7
6	☐			875351.55		P	1.5
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	556.68	0.0001	P	5.4
2	☐	2.000	2.257	47384.75	0.0109	P	1.2
3	☐	5.000	4.813	95798.50	0.0231	P	1.9
4	☐	10.000	9.902	201535.23	0.0475	P	1.5
5	☐	100.000	105.700	2064982.89	0.5053	A	2.2
6	☐	200.000	197.157	3870341.61	0.9424	A	1.2
7	☐	1.000					

y = 0.0048 * x + 1.3231E-004
R = 0.9994
DL = 0.004499
BEC = 0.02768

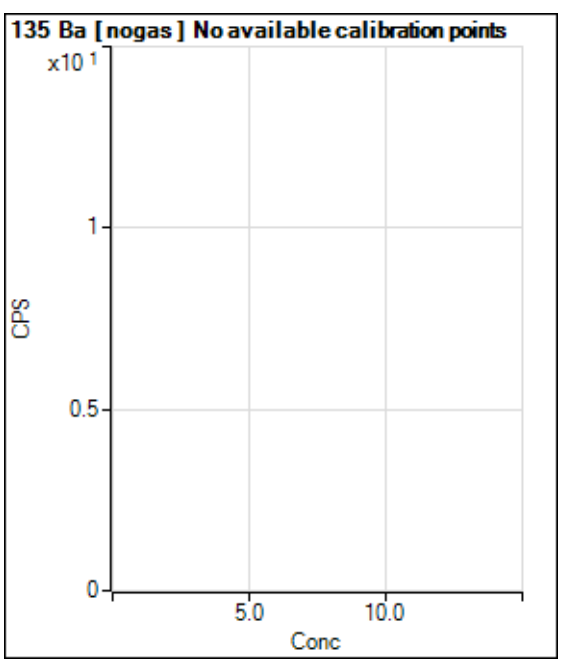
Weight: <None>
Min Conc: <None>



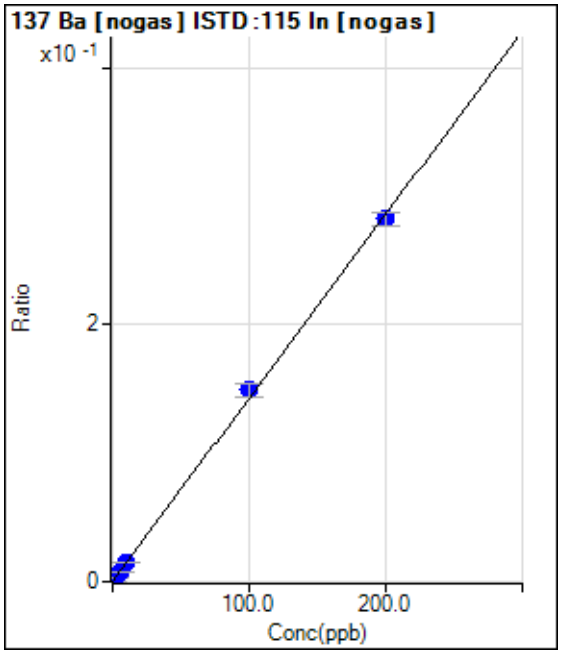
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	110.00	0.0001	P	71.9
2	☐	2.000	2.309	17452.30	0.0159	P	0.4
3	☐	5.000	4.965	37223.37	0.0341	P	1.6
4	☐	10.000	9.970	74542.06	0.0684	P	1.7
5	☐	100.000	97.865	716831.66	0.6706	P	1.0
6	☐	200.000	201.067	1477260.55	1.3777	A	1.8
7	☐	1.000					

y = 0.0069 * x + 9.8667E-005
R = 0.9999
DL = 0.03108
BEC = 0.0144

Weight: <None>
Min Conc: <None>



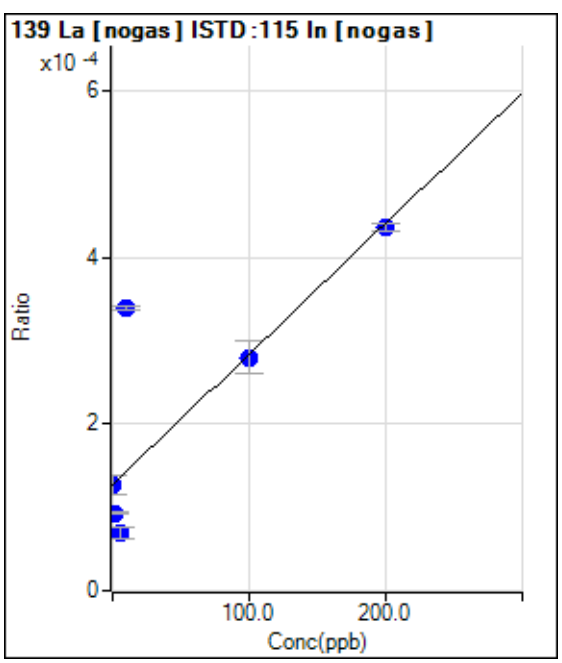
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			313.34		P	8.0
2	☐			7515.08		P	7.6
3	☐			17989.57		P	1.4
4	☐			36438.78		P	2.0
5	☐			341058.39		P	1.8
6	☐			655038.27		P	3.3
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	593.36	0.0001	P	26.7
2	☐	2.000	2.067	13261.94	0.0031	P	4.0
3	☐	5.000	5.120	30627.57	0.0075	P	1.4
4	☐	10.000	10.388	63758.43	0.0150	P	2.8
5	☐	100.000	104.582	596379.80	0.1494	P	6.7
6	☐	200.000	197.686	1151115.61	0.2823	P	3.8
7	☐	1.000					

y = 0.0014 * x + 1.4880E-004
R = 0.9996
DL = 0.08353
BEC = 0.1043

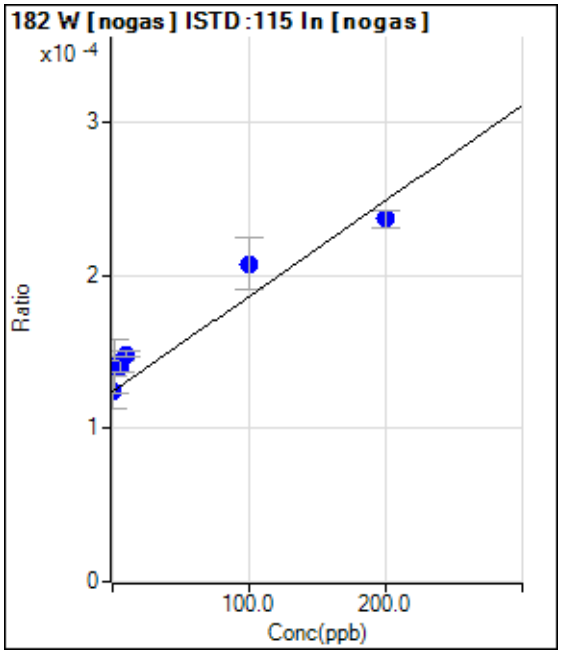
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	516.68	0.0001	P	17.2
2	☐	2.000	-22.276	396.68	0.0001	P	2.5
3	☐	5.000	-37.463	283.34	0.0001	P	19.2
4	☐	10.000	135.489	1450.09	0.0003	P	1.1
5	☐	100.000	97.251	1123.39	0.0003	P	13.8
6	☐	200.000	196.404	1780.13	0.0004	P	2.1
7	☐	1.000					

y = 1.5710E-006 * x + 1.2762E-004
R = 0.7851
DL = 42.01
BEC = 81.23

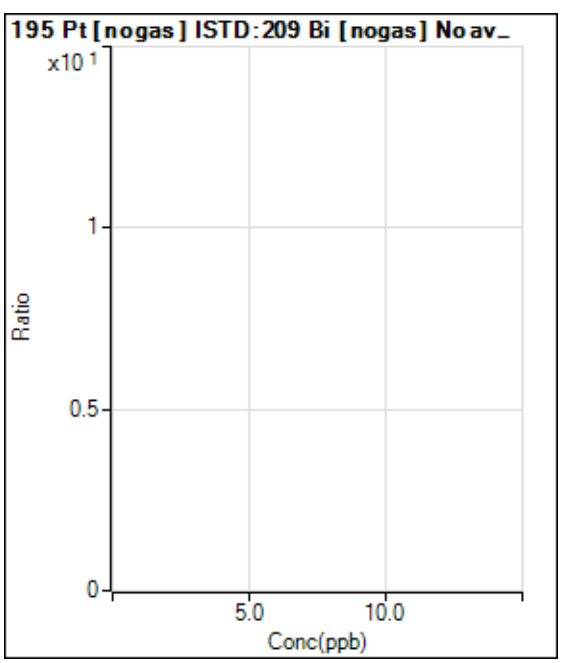
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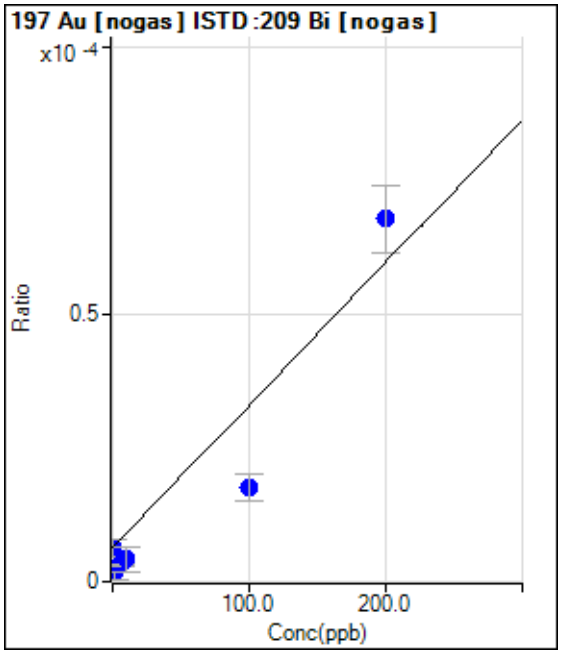
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	500.01	0.0001	P	17.1
2	☐	2.000	26.542	603.36	0.0001	P	25.5
3	☐	5.000	25.955	576.69	0.0001	P	5.8
4	☐	10.000	39.392	633.36	0.0001	P	2.4
5	☐	100.000	133.823	826.70	0.0002	P	16.2
6	☐	200.000	180.850	966.71	0.0002	P	4.5
7	☐	1.000					

y = 6.2328E-007 * x + 1.2418E-004
R = 0.9725
DL = 102.1
BEC = 199.2

Weight: <None>
Min Conc: <None>



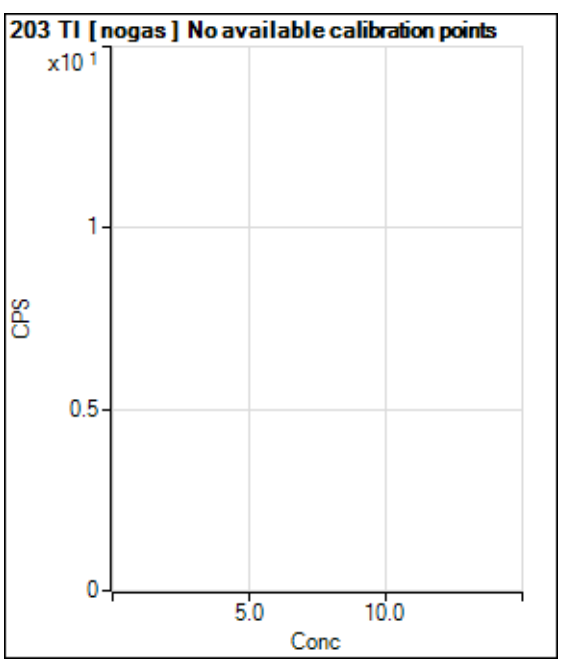
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



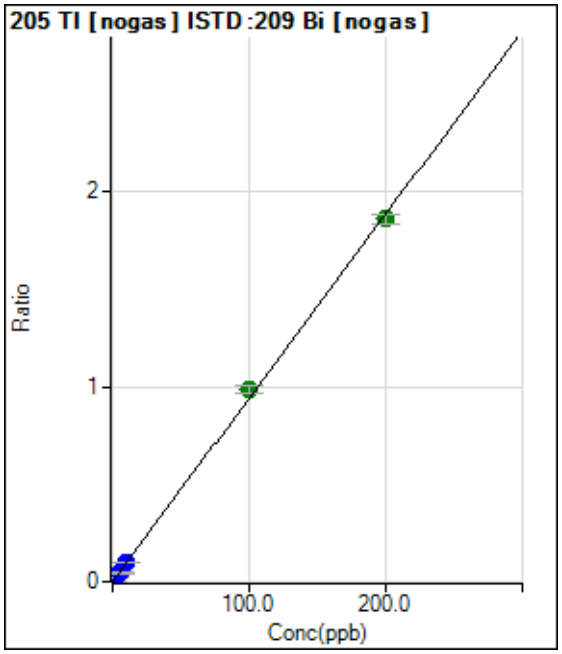
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20.00	0.0000	P	47.2
2	☐	2.000	-16.355	6.67	0.0000	P	173.
3	☐	5.000	-12.080	10.00	0.0000	P	3.5
4	☐	10.000	-7.918	13.33	0.0000	P	114.
5	☐	100.000	42.254	53.33	0.0000	P	26.8
6	☐	200.000	230.379	213.34	0.0001	P	18.9
7	☐	1.000					

y = 2.6722E-007 * x + 6.3292E-006
R = 0.9604
DL = 33.57
BEC = 23.69

Weight: <None>
Min Conc: <None>



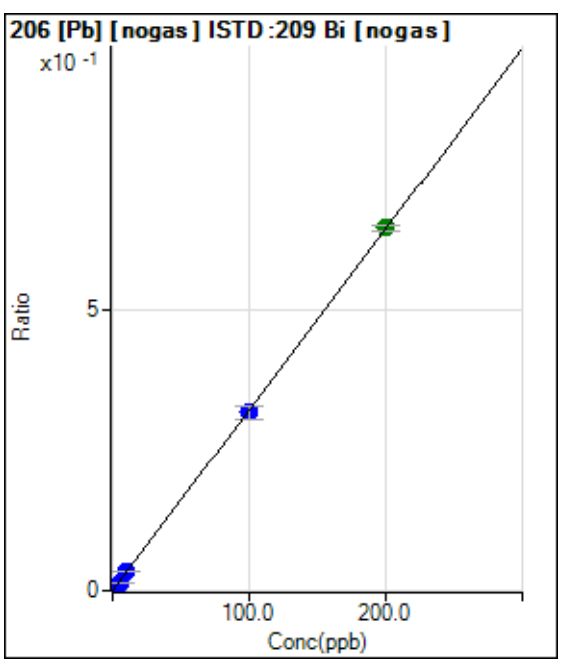
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			150.00		P	35.3
2	☐			24999.49		P	3.3
3	☐			60867.18		P	4.4
4	☐			124953.17		P	1.7
5	☐			1194510.24		P	0.7
6	☐			2459059.81		A	3.5
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	400.01	0.0001	P	9.8
2	☐	2.000	1.890	60117.85	0.0179	P	3.3
3	☐	5.000	4.773	145230.33	0.0450	P	3.1
4	☐	10.000	10.239	304887.12	0.0965	P	1.3
5	☐	100.000	104.785	3013641.10	0.9860	A	3.4
6	☐	200.000	197.602	5853210.95	1.8593	A	2.5
7	☐	1.000					

y = 0.0094 * x + 1.2706E-004
R = 0.9996
DL = 0.003966
BEC = 0.0135

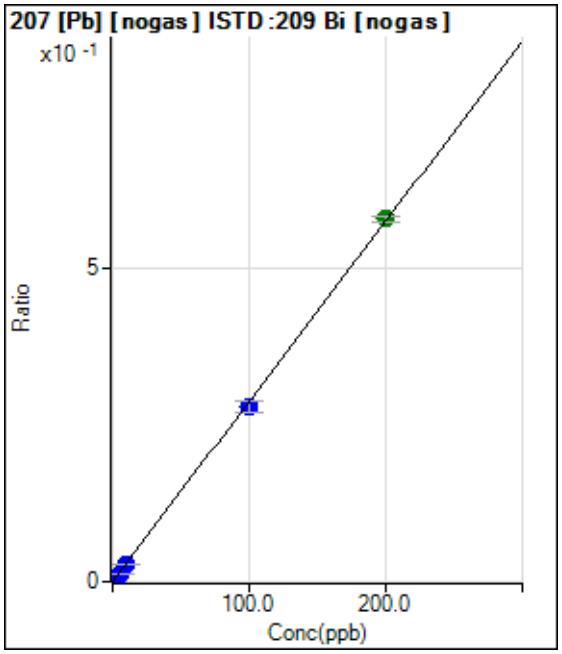
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	196.67	0.0001	P	24.7
2	☐	2.000	1.911	20860.40	0.0062	P	4.1
3	☐	5.000	4.681	48786.98	0.0151	P	3.7
4	☐	10.000	10.340	105389.11	0.0333	P	1.7
5	☐	100.000	98.470	967014.18	0.3170	P	7.7
6	☐	200.000	200.757	2033657.21	0.6462	A	1.3
7	☐	1.000					

y = 0.0032 * x + 6.2994E-005
R = 1.0000
DL = 0.01449
BEC = 0.01957

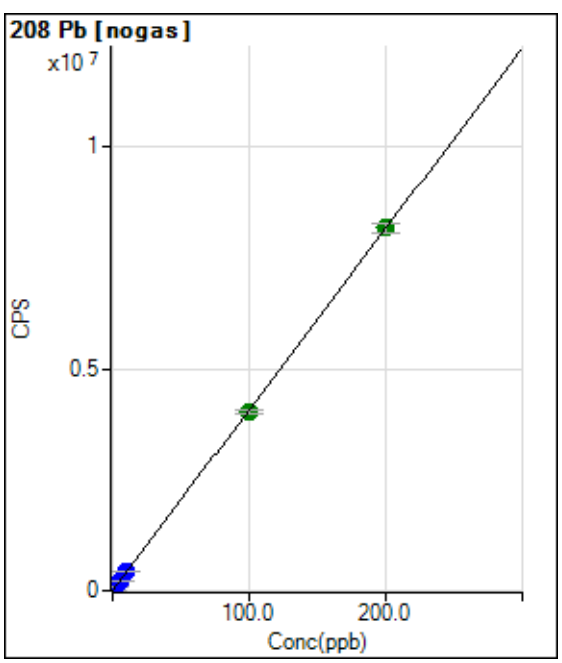
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	123.33	0.0000	P	23.1
2	☐	2.000	1.884	18310.49	0.0055	P	2.7
3	☐	5.000	4.670	43391.63	0.0135	P	5.1
4	☐	10.000	9.877	89847.78	0.0284	P	0.9
5	☐	100.000	97.259	853125.35	0.2796	P	6.9
6	☐	200.000	201.386	1822159.82	0.5788	A	1.8
7	☐	1.000					

y = 0.0029 * x + 3.8845E-005
R = 0.9999
DL = 0.00937
BEC = 0.01352

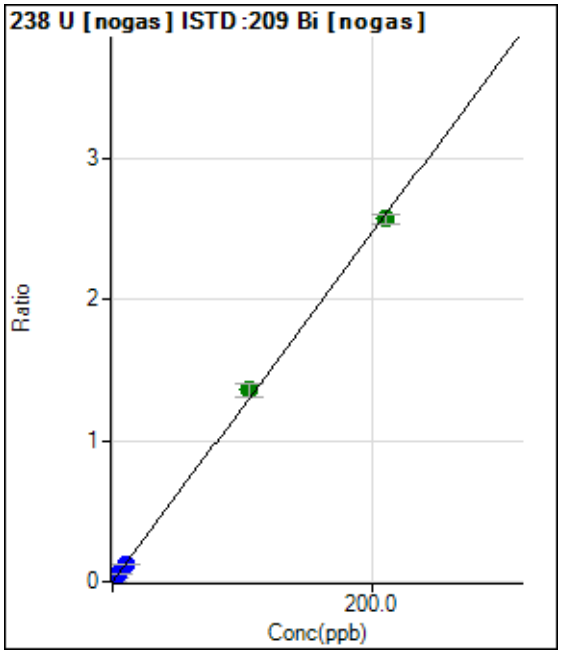
Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	660.01		P	9.9
2	☐	2.000	2.052	84300.57		P	0.8
3	☐	5.000	4.870	199156.50		P	0.8
4	☐	10.000	10.137	413880.09		P	1.0
5	☐	100.000	98.834	4029332.41		A	1.4
6	☐	200.000	200.579	8176661.23		A	2.4
7	☐	1.000					

y = 40762.0229 * x + 660.0133
R = 1.0000
DL = 0.004826
BEC = 0.01619

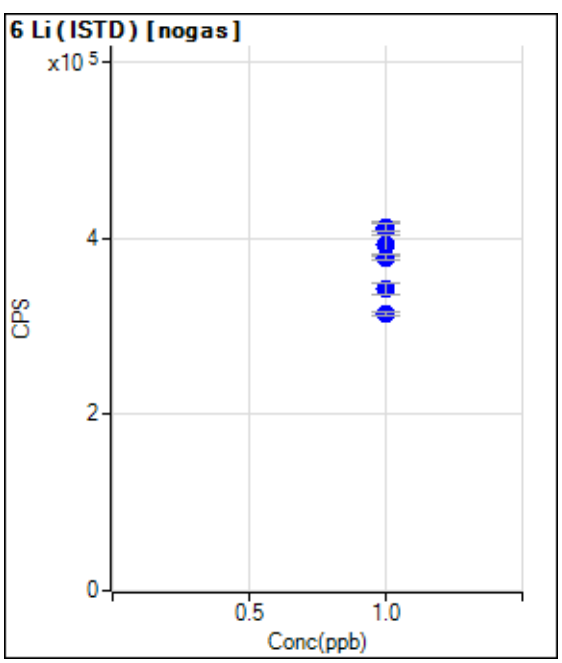
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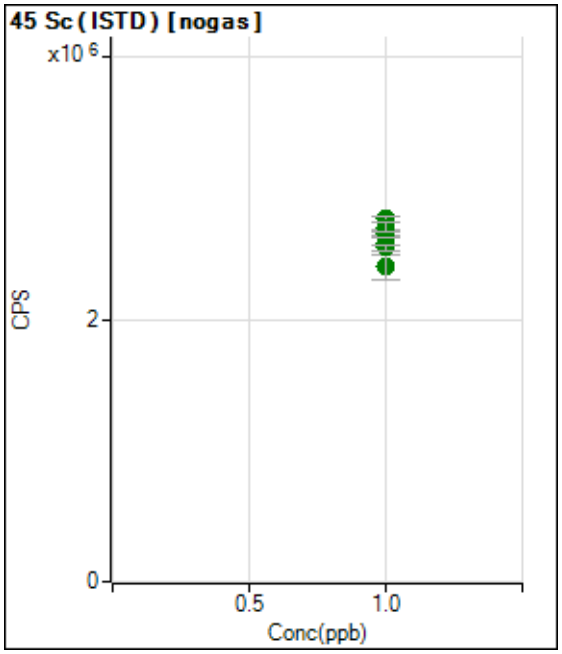
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	130.00	0.0000	P	17.6
2	☐	2.000	1.875	78136.28	0.0233	P	3.7
3	☐	5.000	4.810	192470.91	0.0597	P	2.7
4	☐	10.000	10.092	395424.94	0.1251	P	1.1
5	☐	105.000	109.606	4146278.48	1.3583	A	6.3
6	☐	210.000	207.699	8098373.84	2.5740	A	2.9
7	☐	1.000					

y = 0.0124 * x + 4.1021E-005
R = 0.9997
DL = 0.001749
BEC = 0.00331

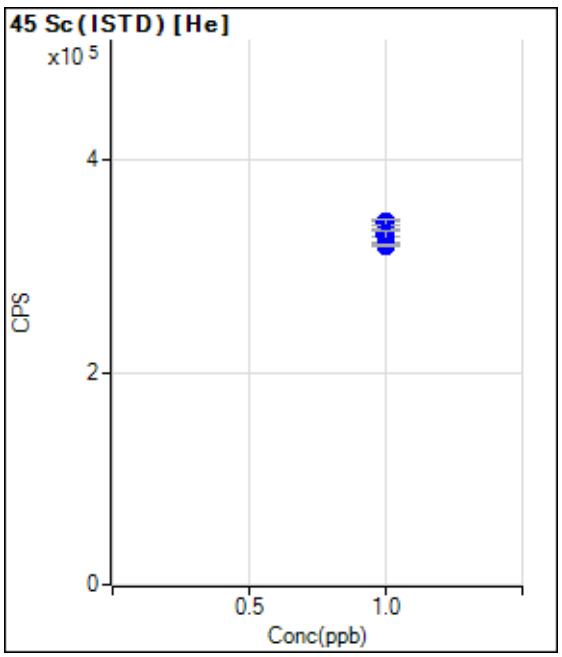
Weight: <None>
Min Conc: <None>



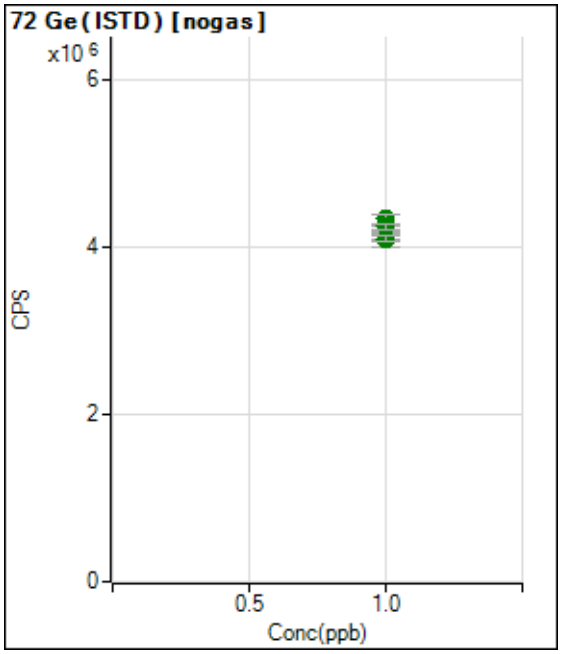
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		410294.67		P	3.9
2	☐	1.000		411283.62		P	2.1
3	☐	1.000		391553.82		P	6.4
4	☐	1.000		378100.04		P	1.5
5	☐	1.000		342684.90		P	3.9
6	☐	1.000		313644.38		P	1.5
7	☐	1.000					



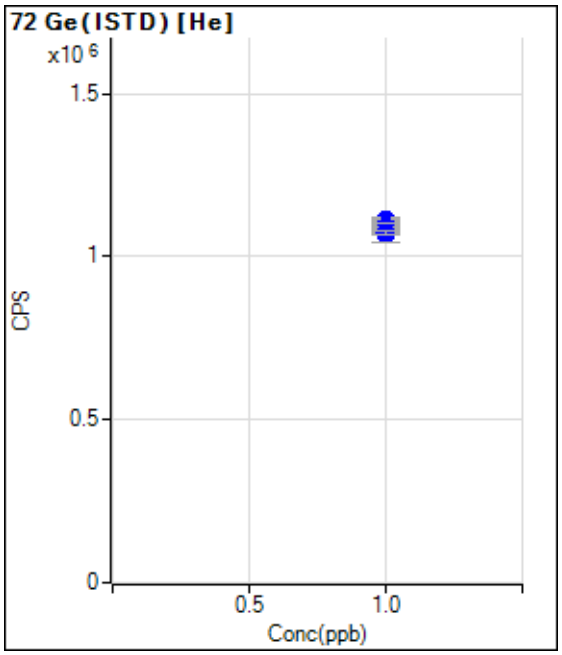
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2579026.89		A	4.6
2	☐	1.000		2765239.65		A	1.5
3	☐	1.000		2653027.20		A	2.0
4	☐	1.000		2701541.31		A	2.8
5	☐	1.000		2396948.77		A	7.9
6	☐	1.000		2545300.79		A	1.9
7	☐	1.000					



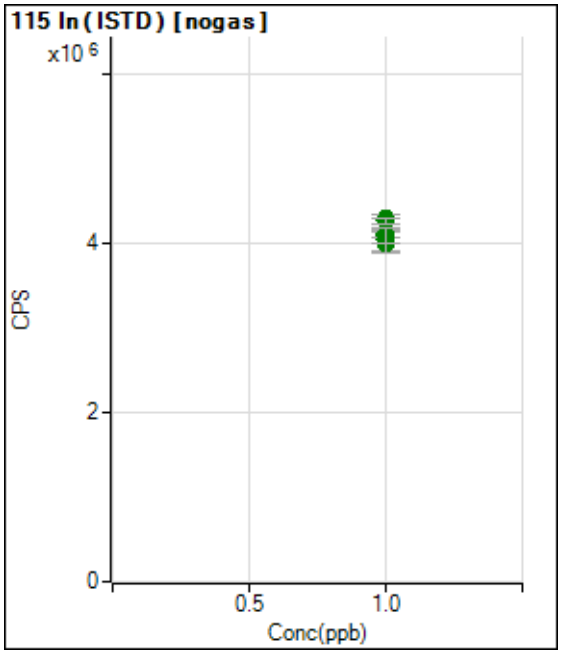
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		340622.52		P	1.1
2	☐	1.000		341939.72		P	1.9
3	☐	1.000		331045.30		P	1.3
4	☐	1.000		329119.39		P	4.1
5	☐	1.000		328147.55		P	3.2
6	☐	1.000		319781.64		P	0.7
7	☐	1.000					



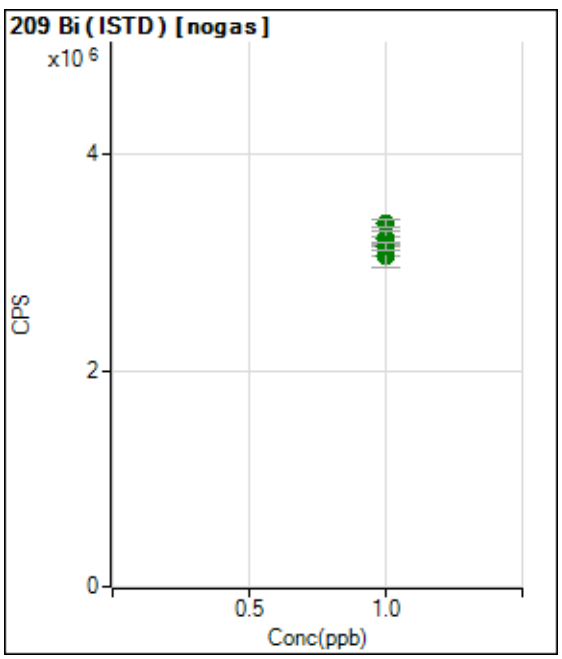
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		4203246.81		A	2.8
2	☐	1.000		4340815.66		A	2.5
3	☐	1.000		4140390.67		A	2.0
4	☐	1.000		4247085.98		A	1.5
5	☐	1.000		4088467.23		A	4.1
6	☐	1.000		4106437.75		A	1.7
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1112673.84		P	1.0
2	☐	1.000		1096352.38		P	3.2
3	☐	1.000		1091143.76		P	0.8
4	☐	1.000		1089921.68		P	2.5
5	☐	1.000		1069169.33		P	4.4
6	☐	1.000		1072090.79		P	1.4
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		4030823.92		A	6.1
2	☐	1.000		4283392.27		A	2.4
3	☐	1.000		4108506.61		A	2.7
4	☐	1.000		4259323.03		A	1.5
5	☐	1.000		4003400.36		A	6.5
6	☐	1.000		4082688.57		A	4.7
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		3148066.83		A	5.8
2	☐	1.000		3359070.68		A	2.3
3	☐	1.000		3227384.01		A	3.6
4	☐	1.000		3160751.31		A	0.4
5	☐	1.000		3061178.70		A	6.8
6	☐	1.000		3147196.72		A	2.1
7	☐	1.000					

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	005CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T10:37:55-05:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	43	81.35
Na	23	1	nogas	678686	0.00
Mg	24	1	nogas	6436	0.12
Al	27	1	nogas	29007	0.00
K	39	1	nogas	8581913	0.00
Ti	47	1	nogas	283	5.03
V	51	1	nogas	2154978	0.00
Cr	52	1	nogas	117847	0.00
Mn	55	1	nogas	11560	0.04
Co	59	1	nogas	370	2.92
Ni	60	1	nogas	983	0.88
Cu	63	1	nogas	6925	0.12
Zn	66	1	nogas	883	0.94
As	75	1	nogas	264158	0.00
Sr	88	1	nogas	1643	0.43
Ag	107	1	nogas	380	7.49
Cd	111	1	nogas	37	85.89
Sb	121	1	nogas	233	6.95
Tl	205	1	nogas	293	5.73
Pb	208	1	nogas	1067	1.37
[Pb]	206	1	nogas	260	15.59
[Pb]	207	1	nogas	243	4.25
Na	23	2	He	87450	0.00
Mg	24	2	He	697	1.24
Al	27	2	He	1000	1.15
K	39	2	He	273773	0.00
Ca	43	2	He	47	191.17
Ca	44	2	He	1270	0.93
V	51	2	He	29768	0.01
Cr	52	2	He	5588	0.09
Mn	55	2	He	307	8.92
Fe	56	2	He	19514	0.01
Co	59	2	He	93	35.07
Ni	60	2	He	353	3.70
Cu	63	2	He	2904	0.08
Zn	66	2	He	223	16.33
As	75	2	He	1167	0.99
Se	78	2	He	264	2.28
B	11	1	nogas	72272	0.00
Si	28	1	nogas	2105839	0.00
Ca	43	1	nogas	813	2.60
Ca	44	1	nogas	59107	0.00

Calibration Blank Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	3659828	0.00
Se	77	1	nogas	85608	0.00
Se	82	1	nogas	403	4.69
Mo	95	1	nogas	153	31.35
Sn	118	1	nogas	797	0.51
Ba	137	1	nogas	303	7.71
Sb	121	2	He	143	14.87
Li	7	1	nogas	54116	0.00
P	31	1	nogas	60186	0.00
La	139	1	nogas	407	0.92

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	6	1	nogas	600627	1.29
Ge	72	1	nogas	3907912	1.44
In	115	1	nogas	3692400	1.69
Bi	209	1	nogas	2779452	2.76
Ge	72	2	He	1091915	0.98

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	006CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T10:39:55-05:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	9739	0.01
Na	23	1	nogas	5111752	0.00
Mg	24	1	nogas	3016180	0.00
Al	27	1	nogas	69136	0.00
K	39	1	nogas	13118666	0.00
Ti	47	1	nogas	4414	0.14
V	51	1	nogas	2172534	0.00
Cr	52	1	nogas	167023	0.00
Mn	55	1	nogas	77843	0.00
Co	59	1	nogas	58279	0.01
Ni	60	1	nogas	13855	0.00
Cu	63	1	nogas	37856	0.01
Zn	66	1	nogas	11414	0.02
As	75	1	nogas	269233	0.00
Sr	88	1	nogas	73711	0.00
Ag	107	1	nogas	37734	0.00
Cd	111	1	nogas	7292	0.10
Sb	121	1	nogas	40377	0.00
Tl	205	1	nogas	51572	0.01
Pb	208	1	nogas	72942	0.00
[Pb]	206	1	nogas	17797	0.01
[Pb]	207	1	nogas	16282	0.03
Na	23	2	He	419613	0.00
Mg	24	2	He	190697	0.00
Al	27	2	He	2063	0.22
K	39	2	He	520561	0.00
Ca	43	2	He	733	1.24
Ca	44	2	He	13522	0.04
V	51	2	He	45328	0.00
Cr	52	2	He	22187	0.01
Mn	55	2	He	13425	0.04
Fe	56	2	He	1616076	0.00
Co	59	2	He	23165	0.01
Ni	60	2	He	6368	0.11
Cu	63	2	He	18049	0.02
Zn	66	2	He	4154	0.16
As	75	2	He	5032	0.08
Se	78	2	He	643	0.46
B	11	1	nogas	98525	0.00
Si	28	1	nogas	3214562	0.00

Calibration Standard Report

Ca	43	1	nogas	9433	0.02
Ca	44	1	nogas	199669	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	9548328	0.00
Se	77	1	nogas	84197	0.00
Se	82	1	nogas	1327	1.40
Mo	95	1	nogas	14543	0.01
Sn	118	1	nogas	20983	0.00
Ba	137	1	nogas	11714	0.01
Sb	121	2	He	17002	0.01
P	31	1	nogas	76859	0.00
La	139	1	nogas	347	4.88

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	594039	1.69	600627	98.90	70	125	
Ge	72	1	nogas	3908453	0.31	3907912	100.01	70	125	
In	115	1	nogas	3681080	1.57	3692400	99.69	70	125	
Bi	209	1	nogas	2832979	0.75	2779452	101.93	70	125	
Ge	72	2	He	1099326	0.37	1091915	100.68	70	125	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	007CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T10:41:55-05:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	24436	0.01
Na	23	1	nogas	11860324	0.00
Mg	24	1	nogas	7548084	0.00
Al	27	1	nogas	126849	0.00
K	39	1	nogas	19993866	0.00
Ti	47	1	nogas	11067	0.03
V	51	1	nogas	2306455	0.00
Cr	52	1	nogas	249208	0.00
Mn	55	1	nogas	176459	0.00
Co	59	1	nogas	143119	0.00
Ni	60	1	nogas	33664	0.00
Cu	63	1	nogas	82471	0.00
Zn	66	1	nogas	26423	0.01
As	75	1	nogas	302275	0.00
Sr	88	1	nogas	181466	0.00
Ag	107	1	nogas	91422	0.00
Cd	111	1	nogas	19134	0.02
Sb	121	1	nogas	84389	0.00
Tl	205	1	nogas	131258	0.00
Pb	208	1	nogas	178225	0.00
[Pb]	206	1	nogas	43949	0.01
[Pb]	207	1	nogas	39799	0.01
Na	23	2	He	916345	0.00
Mg	24	2	He	478946	0.00
Al	27	2	He	3977	0.16
K	39	2	He	885583	0.00
Ca	43	2	He	1780	0.60
Ca	44	2	He	30956	0.01
V	51	2	He	70926	0.00
Cr	52	2	He	47645	0.01
Mn	55	2	He	31587	0.01
Fe	56	2	He	3965417	0.00
Co	59	2	He	59145	0.00
Ni	60	2	He	15433	0.01
Cu	63	2	He	40121	0.00
Zn	66	2	He	9893	0.04
As	75	2	He	10939	0.03
Se	78	2	He	1133	0.25
B	11	1	nogas	144173	0.00
Si	28	1	nogas	4790833	0.00

Calibration Standard Report

Ca	43	1	nogas	22177	0.01
Ca	44	1	nogas	401853	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	18074692	0.00
Se	77	1	nogas	89174	0.00
Se	82	1	nogas	2310	0.32
Mo	95	1	nogas	35586	0.01
Sn	118	1	nogas	52532	0.01
Ba	137	1	nogas	27339	0.01
Sb	121	2	He	35907	0.00
P	31	1	nogas	104879	0.00
La	139	1	nogas	177	12.95

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	585808	0.77	600627	97.53	70	125	
Ge	72	1	nogas	3914266	0.86	3907912	100.16	70	125	
In	115	1	nogas	3731994	3.38	3692400	101.07	70	125	
Bi	209	1	nogas	2851422	2.02	2779452	102.59	70	125	
Ge	72	2	He	1085884	0.49	1091915	99.45	70	125	

Calibration Standard Report

Sample Table

Sample Name	10/50/1000
Data File Name	008CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T10:43:55-05:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	48809	0.00
Na	23	1	nogas	22956942	0.00
Mg	24	1	nogas	15057989	0.00
Al	27	1	nogas	229568	0.00
K	39	1	nogas	31700684	0.00
Ti	47	1	nogas	22601	0.01
V	51	1	nogas	2537870	0.00
Cr	52	1	nogas	385765	0.00
Mn	55	1	nogas	342992	0.00
Co	59	1	nogas	288303	0.00
Ni	60	1	nogas	66266	0.00
Cu	63	1	nogas	161912	0.00
Zn	66	1	nogas	53194	0.00
As	75	1	nogas	349507	0.00
Sr	88	1	nogas	369035	0.00
Ag	107	1	nogas	187452	0.00
Cd	111	1	nogas	38954	0.00
Sb	121	1	nogas	176767	0.00
Tl	205	1	nogas	268118	0.00
Pb	208	1	nogas	363061	0.00
[Pb]	206	1	nogas	90676	0.00
[Pb]	207	1	nogas	80141	0.00
Na	23	2	He	1735789	0.00
Mg	24	2	He	943726	0.00
Al	27	2	He	6858	0.09
K	39	2	He	1545835	0.00
Ca	43	2	He	3537	0.09
Ca	44	2	He	61454	0.00
V	51	2	He	112618	0.00
Cr	52	2	He	92724	0.00
Mn	55	2	He	65349	0.00
Fe	56	2	He	8043133	0.00
Co	59	2	He	117187	0.00
Ni	60	2	He	29721	0.01
Cu	63	2	He	78427	0.00
Zn	66	2	He	19294	0.01
As	75	2	He	20721	0.01
Se	78	2	He	1957	0.22
B	11	1	nogas	215538	0.00
Si	28	1	nogas	7632827	0.00

Calibration Standard Report

Ca	43	1	nogas	44099	0.00
Ca	44	1	nogas	770142	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	32654152	0.00
Se	77	1	nogas	95463	0.00
Se	82	1	nogas	4081	0.06
Mo	95	1	nogas	72765	0.00
Sn	118	1	nogas	105509	0.00
Ba	137	1	nogas	54690	0.00
Sb	121	2	He	72283	0.00
P	31	1	nogas	151666	0.00
La	139	1	nogas	1370	1.01

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	577420	2.01	600627	96.14	70	125	
Ge	72	1	nogas	3971425	2.30	3907912	101.63	70	125	
In	115	1	nogas	3631189	1.65	3692400	98.34	70	125	
Bi	209	1	nogas	2894767	2.66	2779452	104.15	70	125	
Ge	72	2	He	1074669	0.54	1091915	98.42	70	125	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	009CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T10:45:56-05:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	466213	0.00
Na	23	1	nogas	209411180	0.00
Mg	24	1	nogas	138948595	0.00
Al	27	1	nogas	1821846	0.00
K	39	1	nogas	226915472	0.00
Ti	47	1	nogas	205685	0.00
V	51	1	nogas	5188800	0.00
Cr	52	1	nogas	2690330	0.00
Mn	55	1	nogas	3143130	0.00
Co	59	1	nogas	2699995	0.00
Ni	60	1	nogas	599410	0.00
Cu	63	1	nogas	1431704	0.00
Zn	66	1	nogas	491821	0.00
As	75	1	nogas	934034	0.00
Sr	88	1	nogas	3432548	0.00
Ag	107	1	nogas	1782881	0.00
Cd	111	1	nogas	371071	0.00
Sb	121	1	nogas	1693140	0.00
Tl	205	1	nogas	2567692	0.00
Pb	208	1	nogas	3491801	0.00
[Pb]	206	1	nogas	839429	0.00
[Pb]	207	1	nogas	754047	0.00
Na	23	2	He	15356780	0.00
Mg	24	2	He	8926780	0.00
Al	27	2	He	55645	0.00
K	39	2	He	11830171	0.00
Ca	43	2	He	32405	0.00
Ca	44	2	He	550239	0.00
V	51	2	He	789569	0.00
Cr	52	2	He	809069	0.00
Mn	55	2	He	608645	0.00
Fe	56	2	He	75382891	0.00
Co	59	2	He	1111385	0.00
Ni	60	2	He	280788	0.00
Cu	63	2	He	707432	0.00
Zn	66	2	He	178460	0.00
As	75	2	He	187679	0.00
Se	78	2	He	16423	0.01
B	11	1	nogas	1526450	0.00
Si	28	1	nogas	55196163	0.00

Calibration Standard Report

Ca	43	1	nogas	394305	0.00
Ca	44	1	nogas	6567787	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	278374973	0.00
Se	77	1	nogas	124087	0.00
Se	82	1	nogas	34389	0.00
Mo	95	1	nogas	698218	0.00
Sn	118	1	nogas	1008017	0.00
Ba	137	1	nogas	522396	0.00
Sb	121	2	He	692847	0.00
P	31	1	nogas	882355	0.00
La	139	1	nogas	947	0.74

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	529116	0.36	600627	88.09	70	125	
Ge	72	1	nogas	3767024	1.71	3907912	96.39	70	125	
In	115	1	nogas	3518669	1.80	3692400	95.29	70	125	
Bi	209	1	nogas	2745938	0.68	2779452	98.79	70	125	
Ge	72	2	He	1047275	0.63	1091915	95.91	70	125	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	010CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T10:47:55-05:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	907698	0.00
Na	23	1	nogas	407623209	0.00
Mg	24	1	nogas	267463014	0.00
Al	27	1	nogas	3470366	0.00
K	39	1	nogas	428982560	0.00
Ti	47	1	nogas	397829	0.00
V	51	1	nogas	7923816	0.00
Cr	52	1	nogas	4946754	0.00
Mn	55	1	nogas	5993345	0.00
Co	59	1	nogas	5209476	0.00
Ni	60	1	nogas	1158861	0.00
Cu	63	1	nogas	2792010	0.00
Zn	66	1	nogas	951338	0.00
As	75	1	nogas	1598094	0.00
Sr	88	1	nogas	6810783	0.00
Ag	107	1	nogas	3434216	0.00
Cd	111	1	nogas	723780	0.00
Sb	121	1	nogas	3363587	0.00
Tl	205	1	nogas	5035642	0.00
Pb	208	1	nogas	6923703	0.00
[Pb]	206	1	nogas	1744816	0.00
[Pb]	207	1	nogas	1541047	0.00
Na	23	2	He	29582022	0.00
Mg	24	2	He	17108009	0.00
Al	27	2	He	103940	0.00
K	39	2	He	22363294	0.00
Ca	43	2	He	62575	0.00
Ca	44	2	He	1064785	0.00
V	51	2	He	1551093	0.00
Cr	52	2	He	1635729	0.00
Mn	55	2	He	1200930	0.00
Fe	56	2	He	147355754	0.00
Co	59	2	He	2223735	0.00
Ni	60	2	He	540287	0.00
Cu	63	2	He	1391231	0.00
Zn	66	2	He	346818	0.00
As	75	2	He	365767	0.00
Se	78	2	He	31552	0.00
B	11	1	nogas	2904081	0.00
Si	28	1	nogas	101821678	0.00

Calibration Standard Report

Ca	43	1	nogas	779262	0.00
Ca	44	1	nogas	12987727	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	535652645	0.00
Se	77	1	nogas	156472	0.00
Se	82	1	nogas	67914	0.00
Mo	95	1	nogas	1414888	0.00
Sn	118	1	nogas	2033948	0.00
Ba	137	1	nogas	1014224	0.00
Sb	121	2	He	1378973	0.00
P	31	1	nogas	1653646	0.00
La	139	1	nogas	1827	0.41

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	485429	0.34	600627	80.82	70	125	
Ge	72	1	nogas	3792626	0.85	3907912	97.05	70	125	
In	115	1	nogas	3518897	3.41	3692400	95.30	70	125	
Bi	209	1	nogas	2648070	1.85	2779452	95.27	70	125	
Ge	72	2	He	1029005	0.39	1091915	94.24	70	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	012_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T10:51:54-05:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	95.138	1.854	448582	0.75	100	95.1	90	110	
Na	23	1	nogas	9724.924	2.254	205675780	0.59	10000	97.2	90	110	
Mg	24	1	nogas	9738.937	2.331	135298932	1.10	10000	97.4	90	110	
Al	27	1	nogas	98.331	3.924	1767985	2.54	100	98.3	90	110	
K	39	1	nogas	9710.133	3.143	218274230	2.74	10000	97.1	90	110	
Ti	47	1	nogas	99.257	2.012	202697	0.67	100	99.3	90	110	
V	51	1	nogas	83.162	4.375	4633266	0.52	100	83.2	90	110	ICV Main CR1 Failed
Cr	52	1	nogas	97.507	1.201	2549613	0.99	100	97.5	90	110	
Mn	55	1	nogas	97.118	1.402	3000309	1.47	100	97.1	90	110	
Co	59	1	nogas	97.158	3.092	2597881	1.34	100	97.2	90	110	
Ni	60	1	nogas	97.345	2.502	580780	0.57	100	97.3	90	110	
Cu	63	1	nogas	99.372	3.696	1423983	3.88	100	99.4	90	110	
Zn	66	1	nogas	97.654	2.107	478000	0.29	100	97.7	90	110	
As	75	1	nogas	87.312	2.295	860518	0.56	100	87.3	90	110	ICV Main CR1 Failed
Sr	88	1	nogas	99.168	2.492	3447456	0.68	100	99.2	90	110	
Ag	107	1	nogas	98.184	0.753	1731751	1.80	100	98.2	90	110	
Cd	111	1	nogas	97.700	2.953	359983	1.47	100	97.7	90	110	
Sb	121	1	nogas	95.408	2.579	1637126	1.00	100	95.4	90	110	
Tl	205	1	nogas	96.844	4.145	2572166	4.24	100	96.8	90	110	
Pb	208	1	nogas	96.550	0.514	3348995	0.51	100	96.6	90	110	
U	238	1	nogas	97.093	4.630	3302846	3.48	100	97.1	90	110	
[Pb]	206	1	nogas	91.928	0.815	836730	0.64	100	91.9	90	110	
[Pb]	207	1	nogas	88.074	2.192	710073	1.47	100	88.1	90	110	ICV Main CR1 Failed
Na	23	2	He	9660.094	2.447	14853649	0.89	10000	96.6	90	110	
Mg	24	2	He	9648.927	2.574	8568363	1.22	10000	96.5	90	110	
Al	27	2	He	95.623	2.683	52429	1.00	100	95.6	90	110	
K	39	2	He	10078.497	2.437	11512169	2.38	10000	100.8	90	110	
Ca	43	2	He	9595.884	1.502	31143	1.18	10000	96.0	90	110	
Ca	44	2	He	9688.371	0.871	535065	1.62	10000	96.9	90	110	
V	51	2	He	93.791	3.495	763771	1.82	100	93.8	90	110	
Cr	52	2	He	92.599	1.567	780406	2.49	100	92.6	90	110	
Mn	55	2	He	95.104	0.270	589544	1.56	100	95.1	90	110	
Fe	56	2	He	9436.442	1.509	71898786	0.92	10000	94.4	90	110	
Co	59	2	He	94.258	2.652	1078479	1.01	100	94.3	90	110	
Ni	60	2	He	97.913	3.115	274873	1.50	100	97.9	90	110	
Cu	63	2	He	96.556	0.798	695161	0.93	100	96.6	90	110	
Zn	66	2	He	96.847	2.079	174166	0.83	100	96.8	90	110	
As	75	2	He	96.823	2.280	183661	0.83	100	96.8	90	110	
Se	78	2	He	94.797	0.857	15655	1.92	100	94.8	90	110	
B	11	1	nogas	474.354	1.306	1463875	0.67	500	94.9	90	110	
Si	28	1	nogas	513.266	2.475	7366797	0.95	5000	10.3	90	110	ICV Main CR1 Failed
Ca	43	1	nogas	9753.404	1.723	388609	1.52	10000	97.5	90	110	
Ca	44	1	nogas	9769.714	3.413	6503733	1.57	10000	97.7	90	110	
Fe	56	1	nogas	9561.177	2.288	264565889	1.10	10000	95.6	90	110	
Se	77	1	nogas	58.331	15.916	106989	1.63	100	58.3	90	110	ICV Main CR1 Failed
Se	82	1	nogas	98.719	0.535	34420	1.50	100	98.7	90	110	
Mo	95	1	nogas	94.688	2.455	680754	0.58	100	94.7	90	110	
Sn	118	1	nogas	94.282	0.106	969864	1.61	100	94.3	90	110	
Ba	137	1	nogas	99.413	2.069	513922	0.62	100	99.4	90	110	
Sb	121	2	He	93.889	3.248	666854	1.60	100	93.9	90	110	
Li	7	1	nogas	97.378	1.520	884499	1.19	100	97.4	90	110	
P	31	1	nogas	494.201	2.299	868323	0.42	500	98.8	90	110	
La	139	1	nogas	94.900	19.483	1070	13.83	100	94.9	90	110	
Au	197	1	nogas	66.753	14.250	83	13.86	100	66.8	90	110	ICV 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	nogas	510356	1.29	600627	84.97	70	125	
Ge	72	1	nogas	3860017	1.94	3907912	98.77	70	125	
In	115	1	nogas	3563739	1.51	3692400	96.52	70	125	
Bi	209	1	nogas	2802291	1.43	2779452	100.82	70	125	

Initial Calibration Verification (ICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	1062920	1.62	1091915	97.34	70	125	

Sample Report

Sample Table

Sample Name	LLICV2
Data File Name	013SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T10:53:53-05:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	005CALB.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
Be	9	1	nogas	1.755	1.755	3.84	9506	0.02	2000	
Na	23	1	nogas	211.962	211.962	2.55	5083830	0.00	200000	
Mg	24	1	nogas	213.643	213.643	1.11	2944596	0.01	200000	
Al	27	1	nogas	2.268	2.268	2.49	69186	0.00	2000	
K	39	1	nogas	200.447	200.447	4.93	12881779	0.00	200000	
Ti	47	1	nogas	2.065	2.065	6.07	4517	0.05	2000	
V	51	1	nogas	-3.888	-3.888	-55.59	2022969	0.00	2000	
Cr	52	1	nogas	1.546	1.546	11.31	155841	0.00	2000	
Mn	55	1	nogas	2.116	2.116	0.96	76986	0.00	2000	
Co	59	1	nogas	2.118	2.118	3.02	57313	0.00	2000	
Ni	60	1	nogas	1.545	1.545	4.66	14359	0.01	2000	
Cu	63	1	nogas	1.966	1.966	2.60	35070	0.01	2000	
Zn	66	1	nogas	1.558	1.558	5.63	11294	0.01	2000	
As	75	1	nogas	-0.778	-0.778	-119.29	259326	0.00	2000	
Sr	88	1	nogas	2.088	2.088	3.72	74588	0.00	2000	
Ag	107	1	nogas	2.067	2.067	2.57	37032	0.01	2000	
Cd	111	1	nogas	1.967	1.967	5.25	7638	0.03	2000	
Sb	121	1	nogas	2.370	2.370	2.66	41135	0.01	2000	
Tl	205	1	nogas	2.236	2.236	3.83	59860	0.00	2000	
Pb	208	1	nogas	2.093	2.093	1.22	73657	0.00	2000	
U	238	1	nogas	2.080	2.080	0.44	71210	0.00	2000	
[Pb]	206	1	nogas	1.984	1.984	4.84	18371	0.01	2000	
[Pb]	207	1	nogas	1.911	1.911	2.98	15691	0.01	2000	
Na	23	2	He	220.359	220.359	2.53	421420	0.05	200000	
Mg	24	2	He	211.919	211.919	2.97	188576	0.11	200000	
Al	27	2	He	1.407	1.407	24.37	2100	0.07	2000	
K	39	2	He	204.052	204.052	2.23	501309	0.04	200000	
Ca	43	2	He	222.494	222.494	13.98	767	29.02	200000	
Ca	44	2	He	205.583	205.583	2.85	12544	1.64	200000	
V	51	2	He	2.043	2.043	2.38	44556	0.00	2000	
Cr	52	2	He	1.884	1.884	4.76	21172	0.01	2000	
Mn	55	2	He	2.086	2.086	4.35	13208	0.02	2000	
Fe	56	2	He	216.464	216.464	3.40	1665148	0.01	200000	
Co	59	2	He	2.061	2.061	2.78	23642	0.01	2000	
Ni	60	2	He	1.623	1.623	7.59	5928	0.03	2000	
Cu	63	2	He	1.892	1.892	5.25	17102	0.01	2000	
Zn	66	2	He	1.832	1.832	5.80	4071	0.05	2000	
As	75	2	He	2.017	2.017	2.76	4932	0.04	2000	
Se	78	2	He	1.755	1.755	16.23	597	0.29	2000	
B	11	1	nogas	7.879	7.879	16.32	96846	0.01	2000	
Si	28	1	nogas	94.685	94.685	3.24	3072296	0.00	2000	
Ca	43	1	nogas	210.358	210.358	2.56	9219	2.28	200000	

Sample Report

Ca	44	1	nogas	202.853	202.853	3.29	193319	0.10	200000	
Fe	56	1	nogas	181.543	181.543	3.51	8619220	0.00	200000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Se	77	1	nogas	-10.455	-10.455	-25.74	81003	-0.01	2000	
Se	82	1	nogas	1.735	1.735	17.47	1003	0.17	2000	
Mo	95	1	nogas	2.112	2.112	2.85	15417	0.01	2000	
Sn	118	1	nogas	2.062	2.062	1.36	23032	0.01	2000	
Ba	137	1	nogas	2.055	2.055	4.45	11444	0.02	2000	
Sb	121	2	He	2.364	2.364	2.77	16912	0.01	2000	
La	139	1	nogas	-26.059	-26.059	-20.54	217	-12.03	2000	
Au	197	1	nogas	12.466	12.466	238.77	23	53.43	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	583636	1.27	600627	97.17	70	125	
Ge	72	1	nogas	3881999	1.50	3907912	99.34	70	125	
In	115	1	nogas	3737908	0.95	3692400	101.23	70	125	
Bi	209	1	nogas	2810436	1.56	2779452	101.11	70	125	
Ge	72	2	He	1061483	1.92	1091915	97.21	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICV5
Data File Name	014LICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T10:55:53-05:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	4.573	1.338	23902	0.45	5	91.5	70	130	
Na	23	1	nogas	513.874	6.271	11563738	2.35	500	102.8	70	130	
Mg	24	1	nogas	530.851	6.516	7419771	2.39	500	106.2	70	130	
Al	27	1	nogas	5.298	1.486	122340	1.75	5	106.0	70	130	
K	39	1	nogas	507.367	3.480	19428746	1.17	500	101.5	70	130	
Ti	47	1	nogas	5.210	6.792	10897	5.96	5	104.2	70	130	
V	51	1	nogas	4.132	106.474	2251160	4.45	5	82.6	70	130	
Cr	52	1	nogas	5.093	4.351	243344	1.50	5	101.9	70	130	
Mn	55	1	nogas	5.263	1.167	173305	0.69	5	105.3	70	130	
Co	59	1	nogas	5.179	2.313	138780	1.42	5	103.6	70	130	
Ni	60	1	nogas	4.792	4.310	33461	2.78	5	95.8	70	130	
Cu	63	1	nogas	5.320	3.451	82645	1.94	5	106.4	70	130	
Zn	66	1	nogas	4.579	1.914	25895	2.95	5	91.6	70	130	
As	75	1	nogas	5.390	30.448	299836	2.28	5	107.8	70	130	
Sr	88	1	nogas	5.064	2.983	177495	1.49	5	101.3	70	130	
Ag	107	1	nogas	5.248	2.168	92863	1.68	5	105.0	70	130	
Cd	111	1	nogas	4.843	2.252	18533	1.48	5	96.9	70	130	
Sb	121	1	nogas	4.953	2.575	85163	1.61	5	99.1	70	130	
Tl	205	1	nogas	4.850	3.097	131788	2.08	5	97.0	70	130	
Pb	208	1	nogas	5.083	2.341	177310	2.33	5	101.7	70	130	
U	238	1	nogas	4.908	0.515	170763	2.09	5	98.2	70	130	
[Pb]	206	1	nogas	4.636	1.539	43341	1.44	5	92.7	70	130	
[Pb]	207	1	nogas	4.729	2.557	39171	2.04	5	94.6	70	130	
Na	23	2	He	530.080	0.575	896363	0.20	500	106.0	70	130	
Mg	24	2	He	523.282	0.385	465773	0.18	500	104.7	70	130	
Al	27	2	He	4.107	3.602	3550	1.97	5	82.1	70	130	
K	39	2	He	519.295	0.888	852833	0.60	500	103.9	70	130	
Ca	43	2	He	524.676	7.254	1747	6.64	500	104.9	70	130	
Ca	44	2	He	523.932	0.679	30128	0.78	500	104.8	70	130	
V	51	2	He	5.188	2.480	69331	1.23	5	103.8	70	130	
Cr	52	2	He	4.863	1.214	46171	0.94	5	97.3	70	130	
Mn	55	2	He	5.161	2.274	32302	2.40	5	103.2	70	130	
Fe	56	2	He	521.797	0.982	3996965	0.54	500	104.4	70	130	
Co	59	2	He	5.147	0.846	59038	1.03	5	102.9	70	130	
Ni	60	2	He	4.818	0.392	14876	0.84	5	96.4	70	130	
Cu	63	2	He	4.892	3.051	38651	2.37	5	97.8	70	130	
Zn	66	2	He	4.677	1.987	9179	1.69	5	93.5	70	130	
As	75	2	He	4.905	1.530	10393	0.93	5	98.1	70	130	
Se	78	2	He	5.027	7.627	1129	4.99	5	100.5	70	130	
B	11	1	nogas	20.750	2.987	135857	0.45	25	83.0	70	130	
Si	28	1	nogas	250.484	4.947	4656808	1.71	25	1001.9	70	130	LLICV Main CR1 Failed
Ca	43	1	nogas	530.139	4.993	21863	3.63	500	106.0	70	130	
Ca	44	1	nogas	511.527	3.873	395642	2.03	500	102.3	70	130	
Fe	56	1	nogas	495.426	2.240	17128106	0.45	500	99.1	70	130	
Se	77	1	nogas	9.601	98.748	88190	2.86	5	192.0	70	130	LLICV Main CR1 Failed
Se	82	1	nogas	4.613	7.235	1987	4.84	5	92.3	70	130	
Mo	95	1	nogas	4.935	2.921	35606	1.62	5	98.7	70	130	
Sn	118	1	nogas	4.775	0.205	51680	3.19	5	95.5	70	130	
Ba	137	1	nogas	4.973	5.878	26918	3.61	5	99.5	70	130	
Sb	121	2	He	4.918	1.172	35095	0.66	5	98.4	70	130	
Li	7	1	nogas	4.835	1.849	96966	0.37	5	96.7	70	130	
P	31	1	nogas	26.899	5.653	103415	1.30	25	107.6	70	130	
La	139	1	nogas	-25.304	-18.000	220	15.75	5	-506.1	70	130	LLICV Main CR1 Failed
Au	197	1	nogas	8.894	200.181	20	100.00	5	177.9	70	130	LLICV 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	nogas	564821	1.23	600627	94.04	70	125	
Ge	72	1	nogas	3857763	1.48	3907912	98.72	70	125	
In	115	1	nogas	3694883	3.01	3692400	100.07	70	125	
Bi	209	1	nogas	2861469	1.59	2779452	102.95	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	1063689	0.51	1091915	97.41	70	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	015_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T10:57:50-05:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	0.028	18.2	190	13.9	1	
Na	23	1	nogas	2.728	18.8	751327	0.6	100	
Mg	24	1	nogas	1.566	5.0	29127	5.9	100	
Al	27	1	nogas	0.536	16.5	39533	4.1	5	
K	39	1	nogas	-20.039	-8.6	8339458	0.7	100	
Ti	47	1	nogas	0.043	77.9	380	18.2	2.5	
V	51	1	nogas	-2.094	-129.6	2141640	4.2	2.5	
Cr	52	1	nogas	-0.565	-8.7	106037	1.2	2.5	
Mn	55	1	nogas	0.076	18.3	14256	3.4	2.5	
Co	59	1	nogas	0.017	16.0	837	8.4	2.5	
Ni	60	1	nogas	-0.646	-2.1	1370	6.4	2.5	
Cu	63	1	nogas	-0.147	-7.5	4914	3.5	2.5	
Zn	66	1	nogas	-0.203	-11.7	2770	3.9	2.5	
As	75	1	nogas	-3.040	-15.2	251283	1.4	2.5	
Sr	88	1	nogas	0.022	6.9	2457	2.5	2.5	
Ag	107	1	nogas	0.007	58.3	513	14.4	2.5	
Cd	111	1	nogas	0.009	109.6	70	51.5	1	
Sb	121	1	nogas	0.035	16.7	870	12.2	2.5	
Tl	205	1	nogas	0.045	23.0	1520	21.4	1	
Pb	208	1	nogas	0.012	8.2	1490	2.3	2.5	
U	238	1	nogas	0.009	18.8	523	12.7	2.5	
[Pb]	206	1	nogas	0.008	54.7	340	16.4	2.5	
[Pb]	207	1	nogas	0.011	62.7	337	12.4	2.5	
Na	23	2	He	3.316	20.9	91097	0.7	100	
Mg	24	2	He	1.303	11.2	1853	6.4	100	
Al	27	2	He	-0.210	-76.5	1253	6.4	5	
K	39	2	He	-7.339	-37.1	265590	1.1	100	
Ca	43	2	He	13.493	21.1	90	11.1	100	
Ca	44	2	He	7.501	24.9	1667	5.8	100	
V	51	2	He	0.030	175.4	29127	2.2	2.5	
Cr	52	2	He	-0.084	-18.5	4784	2.2	2.5	
Mn	55	2	He	0.060	17.5	680	9.2	2.5	
Fe	56	2	He	1.334	9.0	29457	3.9	100	
Co	59	2	He	0.010	14.3	203	7.5	2.5	
Ni	60	2	He	-0.337	-7.6	470	16.1	2.5	
Cu	63	2	He	-0.231	-8.4	1947	6.5	2.5	
Zn	66	2	He	0.100	39.2	987	7.7	2.5	
As	75	2	He	-0.009	-78.7	1130	0.8	2.5	
Se	78	2	He	-0.166	-175.2	291	16.7	2.5	
B	11	1	nogas	-3.234	-10.1	58586	1.3	10	
Si	28	1	nogas	-9.479	-127.5	2054409	6.6	5	
Ca	43	1	nogas	7.148	18.5	1127	4.9	100	
Ca	44	1	nogas	-3.654	-44.4	58010	1.9	100	
Fe	56	1	nogas	-21.482	-10.4	3140036	2.0	100	

Initial Calibration Blank (ICB) Report

Se	77	1	nogas	-14.053	-25.6	82058	1.9	2.5	
Se	82	1	nogas	0.121	151.7	457	14.2	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Mo	95	1	nogas	0.028	39.2	367	22.0	2.5	
Sn	118	1	nogas	0.051	6.9	1350	1.5	5	
Ba	137	1	nogas	0.027	27.7	450	10.2	2.5	
Sb	121	2	He	0.031	94.6	363	57.4	2.5	
P	31	1	nogas	-1.668	-22.7	58795	0.9	10	
La	139	1	nogas	86.363	19.8	1050	12.4	2.5	ICB Main CR1 Failed
Au	197	1	nogas	0.619	2696.9	10	173.2	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	576633	0.67	600627	96.01	70	125	
Ge	72	1	nogas	4000790	0.41	3907912	102.38	70	125	
In	115	1	nogas	3711722	1.40	3692400	100.52	70	125	
Bi	209	1	nogas	2832943	5.71	2779452	101.92	70	125	
Ge	72	2	He	1073604	0.77	1091915	98.32	70	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	016ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T11:03:14-05:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	0.002	278.8	47	53.9	0	ICSA Main CR1 Failed
Na	23	1	nogas	99676.938	0.9	1949926310	2.0	0	
Mg	24	1	nogas	100249.229	0.7	1291800729	0.8	0	
Al	27	1	nogas	95214.108	1.5	1583808136	1.1	0	
K	39	1	nogas	98756.179	1.3	2013996245	0.7	0	
Ti	47	1	nogas	2118.685	2.4	4063743	3.5	0	
V	51	1	nogas	-8.109	-9.0	1772132	2.3	0	ICSA Main CR1 Failed
Cr	52	1	nogas	0.547	7.6	122255	0.5	0	ICSA Main CR1 Failed
Mn	55	1	nogas	0.415	2.1	22758	2.1	0	ICSA Main CR1 Failed
Co	59	1	nogas	0.226	1.4	6024	1.2	0	ICSA Main CR1 Failed
Ni	60	1	nogas	0.448	14.3	7322	3.7	0	ICSA Main CR1 Failed
Cu	63	1	nogas	1.300	7.6	23859	5.8	0	ICSA Main CR1 Failed
Zn	66	1	nogas	1.468	5.0	10146	4.4	0	ICSA Main CR1 Failed
As	75	1	nogas	-0.275	-245.6	245683	1.8	0	ICSA Main CR1 Failed
Sr	88	1	nogas	0.968	0.2	33151	1.0	0	ICSA Main CR1 Failed
Ag	107	1	nogas	0.068	3.2	1483	3.2	0	ICSA Main CR1 Failed
Cd	111	1	nogas	2.126	2.7	7235	4.0	0	
Sb	121	1	nogas	0.044	10.5	933	8.0	0	ICSA Main CR1 Failed
Tl	205	1	nogas	0.018	32.7	700	21.0	0	ICSA Main CR1 Failed
Pb	208	1	nogas	0.094	2.8	4317	2.1	0	ICSA Main CR1 Failed
[Pb]	206	1	nogas	0.106	12.0	1120	8.5	0	ICSA Main CR1 Failed
[Pb]	207	1	nogas	0.091	21.1	890	12.5	0	ICSA Main CR1 Failed
Na	23	2	He	95990.000	1.3	141157578	1.0	0	
Mg	24	2	He	95001.885	1.0	81094949	0.7	0	
Al	27	2	He	92768.535	1.4	47637388	1.0	0	
K	39	2	He	95664.647	0.5	106948128	0.5	0	
Ca	43	2	He	92109.937	1.2	286977	1.5	0	
Ca	44	2	He	91822.954	3.4	4863857	3.3	0	
V	51	2	He	-0.053	-106.9	27086	1.7	0	ICSA Main CR1 Failed
Cr	52	2	He	0.182	36.0	6698	8.2	0	ICSA Main CR1 Failed
Mn	55	2	He	0.377	5.0	2534	4.3	0	ICSA Main CR1 Failed
Fe	56	2	He	92924.582	0.8	680404443	0.7	0	
Co	59	2	He	0.034	20.9	467	17.2	0	ICSA Main CR1 Failed
Ni	60	2	He	-0.187	-34.5	850	20.4	0	ICSA Main CR1 Failed
Cu	63	2	He	0.192	34.1	4761	9.1	0	ICSA Main CR1 Failed
Zn	66	2	He	0.591	13.7	1783	7.5	0	ICSA Main CR1 Failed
As	75	2	He	0.121	17.4	1311	2.9	0	ICSA Main CR1 Failed
Se	78	2	He	-0.199	-129.1	271	14.4	0	ICSA Main CR1 Failed
B	11	1	nogas	-2.595	-12.3	54825	3.2	0	ICSA Main CR1 Failed
Si	28	1	nogas	57.370	13.3	2510073	1.8	0	
Ca	43	1	nogas	97094.721	0.4	3630416	0.9	0	
Ca	44	1	nogas	98622.996	0.5	61244164	0.9	0	
Fe	56	1	nogas	98238.550	1.4	2524293056	0.4	0	
Se	77	1	nogas	2.627	12.6	80461	1.2	0	ICSA Main CR1 Failed
Se	82	1	nogas	0.295	104.2	470	20.3	0	ICSA Main CR1 Failed
Mo	95	1	nogas	1989.357	0.5	13446165	0.8	0	
Sn	118	1	nogas	0.067	4.4	1337	2.3	0	ICSA Main CR1 Failed
Ba	137	1	nogas	0.109	5.5	787	1.9	0	ICSA Main CR1 Failed
Sb	121	2	He	0.038	11.4	397	7.7	0	ICSA Main CR1 Failed

Interference Check Solution A (ICS-A) Report

P	31	1	nogas	98941.759	0.2	152337254	1.4	0	
La	139	1	nogas	33.561	27.3	580	8.6	0	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	520558	1.71	600627	86.67	70	125	
Ge	72	1	nogas	3628683	1.19	3907912	92.85	70	125	
In	115	1	nogas	3276094	1.71	3692400	88.73	70	125	
Bi	209	1	nogas	2552758	3.24	2779452	91.84	70	125	
Ge	72	2	He	1021578	0.34	1091915	93.56	70	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	017ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T11:05:17-05:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	91.202	1.347	409656	1.24	100	91.2	80	120	
Na	23	1	nogas	109881.973	2.984	2173988515	1.44	100	109882.0	80	120	
Mg	24	1	nogas	111410.346	2.496	1452188366	0.93	100	111410.3	80	120	
Al	27	1	nogas	95603.891	1.372	1634643922	0.64	100	95603.9	80	120	ICSB Main CR1 Failed
K	39	1	nogas	110202.637	1.798	2309277652	1.72	100	110202.6	80	120	
Ti	47	1	nogas	2302.501	3.108	4537696	2.12	100	2302.5	80	120	ICSB Main CR1 Failed
V	51	1	nogas	93.696	4.796	4784395	2.03	100	93.7	80	120	
Cr	52	1	nogas	98.926	0.859	2498123	0.61	100	98.9	80	120	
Mn	55	1	nogas	99.124	2.244	2958806	1.55	100	99.1	80	120	
Co	59	1	nogas	96.931	1.858	2505099	0.89	100	96.9	80	120	
Ni	60	1	nogas	96.543	3.655	556674	2.75	100	96.5	80	120	
Cu	63	1	nogas	98.392	2.699	1362351	1.85	100	98.4	80	120	
Zn	66	1	nogas	98.244	1.447	464763	1.45	100	98.2	80	120	
As	75	1	nogas	94.552	1.259	879499	0.33	100	94.6	80	120	
Sr	88	1	nogas	97.186	4.309	3264843	3.37	100	97.2	80	120	
Ag	107	1	nogas	93.840	0.948	1599393	1.28	100	93.8	80	120	
Cd	111	1	nogas	101.703	1.710	350675	0.68	100	101.7	80	120	
Sb	121	1	nogas	95.922	1.793	1590764	0.84	100	95.9	80	120	
Tl	205	1	nogas	97.227	2.090	2331327	2.15	100	97.2	80	120	
Pb	208	1	nogas	90.248	1.465	3130475	1.46	100	90.2	80	120	
U	238	1	nogas	106.565	2.696	3273733	2.73	100	106.6	80	120	
[Pb]	206	1	nogas	92.524	2.345	760309	2.34	100	92.5	80	120	
[Pb]	207	1	nogas	91.634	1.682	667020	1.73	100	91.6	80	120	
Na	23	2	He	109997.299	2.696	160158574	1.73	100	109997.3	80	120	ICSB Main CR1 Failed
Mg	24	2	He	110329.607	2.443	93256555	1.45	100	110329.6	80	120	ICSB Main CR1 Failed
Al	27	2	He	96793.483	2.489	49215323	0.90	100	96793.5	80	120	ICSB Main CR1 Failed
K	39	2	He	109278.131	0.787	122128342	0.78	100	109278.1	80	120	ICSB Main CR1 Failed
Ca	43	2	He	106889.709	1.117	329774	0.55	100	106889.7	80	120	ICSB Main CR1 Failed
Ca	44	2	He	109439.515	1.624	5740811	1.73	100	109439.5	80	120	ICSB Main CR1 Failed
V	51	2	He	96.666	3.119	748523	1.80	100	96.7	80	120	
Cr	52	2	He	94.746	2.283	759743	0.80	100	94.7	80	120	
Mn	55	2	He	95.115	1.354	561182	1.11	100	95.1	80	120	
Fe	56	2	He	108863.973	1.031	789471108	1.98	100	108864.0	80	120	ICSB Main CR1 Failed
Co	59	2	He	95.516	1.653	1040386	0.04	100	95.5	80	120	
Ni	60	2	He	97.639	3.726	260903	2.19	100	97.6	80	120	
Cu	63	2	He	96.232	2.006	659415	0.61	100	96.2	80	120	
Zn	66	2	He	99.489	1.437	170302	0.99	100	99.5	80	120	
As	75	2	He	98.500	3.121	177816	1.62	100	98.5	80	120	
Se	78	2	He	99.289	1.871	15590	0.39	100	99.3	80	120	
B	11	1	nogas	451.144	3.774	1329061	3.48	100	451.1	80	120	
Si	28	1	nogas	4858.358	2.026	50376929	1.24	100	4858.4	80	120	ICSB Main CR1 Failed
Ca	43	1	nogas	106902.980	0.610	4108540	0.62	100	106903.0	80	120	
Ca	44	1	nogas	106312.656	1.199	67853092	0.30	100	106312.7	80	120	ICSB Main CR1 Failed
Fe	56	1	nogas	110381.498	3.272	2914755465	2.49	100	110381.5	80	120	ICSB Main CR1 Failed
Se	77	1	nogas	101.371	10.105	119415	2.54	100	101.4	80	120	
Se	82	1	nogas	98.621	2.358	33224	1.45	100	98.6	80	120	
Mo	95	1	nogas	2056.806	1.836	14288985	1.27	100	2056.8	80	120	ICSB Main CR1 Failed
Sn	118	1	nogas	95.588	1.624	919881	0.47	100	95.6	80	120	
Ba	137	1	nogas	100.252	2.663	484901	1.42	100	100.3	80	120	
Sb	121	2	He	95.811	1.243	647899	0.43	100	95.8	80	120	
La	139	1	nogas	210.859	3.834	1773	3.75	100	210.9	80	120	ICSB 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	nogas	486115	0.13	600627	80.93	70	125	
Ge	72	1	nogas	3729894	0.99	3907912	95.44	70	125	
In	115	1	nogas	3334439	1.30	3692400	90.31	70	125	
Bi	209	1	nogas	2529758	0.10	2779452	91.02	70	125	
Ge	72	2	He	1011770	1.62	1091915	92.66	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	029_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T11:35:20-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	94.089	1.358	414961	0.59	100	94.1	90	110	
Na	23	1	nogas	9552.022	2.379	199013475	1.39	10000	95.5	90	110	
Mg	24	1	nogas	9927.988	2.232	135856924	0.22	10000	99.3	90	110	
Al	27	1	nogas	97.303	1.901	1732528	2.89	100	97.3	90	110	
K	39	1	nogas	9982.799	3.366	221823697	2.10	10000	99.8	90	110	
Ti	47	1	nogas	101.198	1.239	204541	0.10	100	101.2	90	110	
V	51	1	nogas	96.858	3.128	4994225	0.68	100	96.9	90	110	
Cr	52	1	nogas	101.283	4.833	2615847	3.49	100	101.3	90	110	
Mn	55	1	nogas	103.006	4.345	3147837	3.22	100	103.0	90	110	
Co	59	1	nogas	101.874	3.118	2696132	2.14	100	101.9	90	110	
Ni	60	1	nogas	99.982	0.921	590351	0.91	100	100.0	90	110	
Cu	63	1	nogas	103.082	2.853	1461444	2.19	100	103.1	90	110	
Zn	66	1	nogas	101.409	1.725	491156	0.60	100	101.4	90	110	
As	75	1	nogas	93.369	2.017	892748	1.61	100	93.4	90	110	
Sr	88	1	nogas	104.416	2.110	3593357	2.56	100	104.4	90	110	
Ag	107	1	nogas	103.077	1.487	1799249	1.96	100	103.1	90	110	
Cd	111	1	nogas	99.751	0.891	376590	1.71	100	99.8	90	110	
Sb	121	1	nogas	102.618	2.437	1743194	3.00	100	102.6	90	110	
Tl	205	1	nogas	102.274	3.044	2673953	1.51	100	102.3	90	110	
Pb	208	1	nogas	101.588	0.581	3523702	0.58	100	101.6	90	110	
U	238	1	nogas	106.792	0.795	3578950	2.93	100	106.8	90	110	
[Pb]	206	1	nogas	94.999	4.929	850813	1.91	100	95.0	90	110	
[Pb]	207	1	nogas	95.701	4.437	759324	1.67	100	95.7	90	110	
Na	23	2	He	9941.348	1.563	14844981	0.55	10000	99.4	90	110	
Mg	24	2	He	9863.680	2.146	8507085	0.70	10000	98.6	90	110	
Al	27	2	He	94.267	3.197	50227	3.20	100	94.3	90	110	
K	39	2	He	9708.638	2.761	11099745	2.69	10000	97.1	90	110	
Ca	43	2	He	9723.593	2.958	30645	2.27	10000	97.2	90	110	
Ca	44	2	He	9885.002	1.970	530087	0.71	10000	98.9	90	110	
V	51	2	He	95.918	1.204	758156	0.98	100	95.9	90	110	
Cr	52	2	He	97.319	1.609	796126	0.32	100	97.3	90	110	
Mn	55	2	He	96.841	0.721	582971	0.81	100	96.8	90	110	
Fe	56	2	He	9875.375	2.244	73069916	1.13	10000	98.8	90	110	
Co	59	2	He	98.899	1.946	1099148	1.46	100	98.9	90	110	
Ni	60	2	He	101.637	1.880	277105	1.11	100	101.6	90	110	
Cu	63	2	He	99.880	2.215	698160	0.75	100	99.9	90	110	
Zn	66	2	He	100.393	2.600	175314	1.70	100	100.4	90	110	
As	75	2	He	99.269	0.853	182877	0.80	100	99.3	90	110	
Se	78	2	He	94.069	0.876	15090	2.31	100	94.1	90	110	
B	11	1	nogas	475.436	3.185	1372498	3.86	500	95.1	90	110	
Si	28	1	nogas	4801.943	1.830	51016789	0.62	5000	96.0	90	110	
Ca	43	1	nogas	10243.916	0.642	403945	1.56	10000	102.4	90	110	
Ca	44	1	nogas	10162.668	0.843	6695991	1.93	10000	101.6	90	110	
Fe	56	1	nogas	9991.652	0.700	273502439	0.47	10000	99.9	90	110	
Se	77	1	nogas	77.537	2.804	113232	0.46	100	77.5	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	102.738	0.401	35435	1.14	100	102.7	90	110	
Mo	95	1	nogas	98.462	1.876	700652	0.74	100	98.5	90	110	
Sn	118	1	nogas	97.126	1.227	1023351	1.62	100	97.1	90	110	
Ba	137	1	nogas	99.629	2.198	527617	1.91	100	99.6	90	110	
Sb	121	2	He	98.600	1.568	680269	0.35	100	98.6	90	110	
Li	7	1	nogas	95.659	2.186	813379	0.93	100	95.7	90	110	
P	31	1	nogas	483.174	2.590	841531	1.38	500	96.6	90	110	
La	139	1	nogas	109.662	14.625	1203	10.85	100	109.7	90	110	
Au	197	1	nogas	167.405	27.253	190	22.94	100	167.4	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	nogas	477343	1.13	600627	79.47	70	125	
Ge	72	1	nogas	3819950	1.14	3907912	97.75	70	125	
In	115	1	nogas	3650329	1.12	3692400	98.86	70	125	
Bi	209	1	nogas	2760093	3.43	2779452	99.30	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	1032294	1.47	1091915	94.54	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	030_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T11:37:19-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	0.066	40.3	347	36.5	1	
Na	23	1	nogas	34.585	26.4	1392766	7.4	100	
Mg	24	1	nogas	6.158	19.5	91706	14.6	100	
Al	27	1	nogas	1.865	13.6	63279	2.0	5	
K	39	1	nogas	-18.631	-58.3	8303064	2.9	100	
Ti	47	1	nogas	0.048	96.9	387	23.2	2.5	
V	51	1	nogas	-2.615	-36.3	2111562	7.3	2.5	
Cr	52	1	nogas	-0.921	-24.2	95937	0.3	2.5	
Mn	55	1	nogas	0.294	9.8	21056	3.3	2.5	
Co	59	1	nogas	0.054	16.0	1867	13.1	2.5	
Ni	60	1	nogas	-0.619	-1.0	1520	5.4	2.5	
Cu	63	1	nogas	-0.055	-68.6	6214	3.1	2.5	
Zn	66	1	nogas	-0.409	-9.0	1717	7.8	2.5	
As	75	1	nogas	-1.936	-118.8	256685	1.4	2.5	
Sr	88	1	nogas	0.110	5.1	5601	2.3	2.5	
Ag	107	1	nogas	0.029	8.1	910	2.2	2.5	
Cd	111	1	nogas	0.057	31.8	253	24.1	1	
Sb	121	1	nogas	0.139	4.8	2697	6.6	2.5	
Tl	205	1	nogas	0.292	42.2	8353	43.8	1	
Pb	208	1	nogas	0.067	29.0	3404	19.9	2.5	
U	238	1	nogas	0.073	32.2	2794	33.1	2.5	
[Pb]	206	1	nogas	0.059	31.7	833	27.1	2.5	
[Pb]	207	1	nogas	0.062	42.6	773	30.0	2.5	
Na	23	2	He	30.432	3.3	129641	1.2	100	
Mg	24	2	He	4.847	4.9	4907	4.2	100	
Al	27	2	He	1.212	43.2	1970	13.9	5	
K	39	2	He	-11.830	-16.6	260582	0.8	100	
Ca	43	2	He	25.703	67.1	127	43.5	100	
Ca	44	2	He	16.072	12.9	2090	5.3	100	
V	51	2	He	0.403	9.6	31277	0.9	2.5	
Cr	52	2	He	-0.092	-44.4	4597	7.3	2.5	
Mn	55	2	He	0.130	14.0	1087	10.2	2.5	
Fe	56	2	He	5.197	2.5	57690	1.7	100	
Co	59	2	He	0.040	5.9	540	4.9	2.5	
Ni	60	2	He	-0.353	-6.0	413	14.2	2.5	
Cu	63	2	He	-0.171	-12.7	2320	6.6	2.5	
Zn	66	2	He	-0.175	-34.3	477	22.2	2.5	
As	75	2	He	0.047	61.1	1207	4.4	2.5	
Se	78	2	He	-0.162	-93.5	284	8.5	2.5	
B	11	1	nogas	-1.641	-37.0	56544	2.8	10	
Si	28	1	nogas	-35.454	-46.9	1765462	12.4	5	
Ca	43	1	nogas	17.801	20.7	1550	6.2	100	
Ca	44	1	nogas	-4.632	-113.6	56806	1.9	100	
Fe	56	1	nogas	-15.284	-12.2	3290483	4.5	100	
Se	77	1	nogas	-9.191	-144.3	83226	2.6	2.5	
Se	82	1	nogas	0.069	216.6	433	8.1	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.215	27.8	1750	26.0	2.5	
Sn	118	1	nogas	0.215	15.4	3080	8.7	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.117	12.2	930	5.7	2.5	
Sb	121	2	He	0.104	14.4	863	12.2	2.5	
P	31	1	nogas	-0.061	-3321.5	60962	0.9	10	
La	139	1	nogas	-1.299	-773.8	397	16.2	2.5	
Au	197	1	nogas	11.836	92.0	23	49.5	2.5	CCB 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	nogas	510224	0.87	600627	84.95	70	125	
Ge	72	1	nogas	3972845	5.87	3907912	101.66	70	125	
In	115	1	nogas	3699781	3.57	3692400	100.20	70	125	
Bi	209	1	nogas	2900508	7.31	2779452	104.36	70	125	
Ge	72	2	He	1046602	0.06	1091915	95.85	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	041_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T11:59:25-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	97.244	5.659	381256	0.92	100	97.2	90	110	
Na	23	1	nogas	10790.436	5.109	190577888	1.03	10000	107.9	90	110	
Mg	24	1	nogas	10615.429	8.150	123043707	2.25	10000	106.2	90	110	
Al	27	1	nogas	99.703	11.896	1570631	4.53	100	99.7	90	110	
K	39	1	nogas	10214.306	7.333	201211450	0.63	10000	102.1	90	110	
Ti	47	1	nogas	102.651	6.635	184099	0.97	100	102.7	90	110	
V	51	1	nogas	88.354	12.010	4206648	0.89	100	88.4	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	104.169	8.713	2383190	1.96	100	104.2	90	110	
Mn	55	1	nogas	106.950	7.422	2899411	0.99	100	107.0	90	110	
Co	59	1	nogas	103.007	7.106	2418745	0.63	100	103.0	90	110	
Ni	60	1	nogas	101.449	7.741	531171	0.98	100	101.4	90	110	
Cu	63	1	nogas	102.082	5.911	1284856	2.00	100	102.1	90	110	
Zn	66	1	nogas	102.927	6.485	442340	0.70	100	102.9	90	110	
As	75	1	nogas	89.864	9.186	771112	0.70	100	89.9	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	104.412	4.655	3190830	2.42	100	104.4	90	110	
Ag	107	1	nogas	104.475	6.496	1618091	0.71	100	104.5	90	110	
Cd	111	1	nogas	106.215	10.612	340993	1.06	100	106.2	90	110	
Sb	121	1	nogas	101.880	5.580	1536207	1.90	100	101.9	90	110	
Tl	205	1	nogas	108.263	6.697	2439226	0.99	100	108.3	90	110	
Pb	208	1	nogas	94.184	2.557	3266933	2.56	100	94.2	90	110	
U	238	1	nogas	114.433	7.302	3302232	0.42	100	114.4	90	110	CCV Main CR1-2 Failed
[Pb]	206	1	nogas	101.051	7.146	780066	0.52	100	101.1	90	110	
[Pb]	207	1	nogas	102.721	7.038	702448	0.62	100	102.7	90	110	
Na	23	2	He	10186.958	3.820	13513551	1.33	10000	101.9	90	110	
Mg	24	2	He	9777.242	4.119	7491770	0.90	10000	97.8	90	110	
Al	27	2	He	96.695	7.290	45689	2.15	100	96.7	90	110	
K	39	2	He	8669.971	0.516	9941541	0.50	10000	86.7	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	9815.932	5.573	27471	0.64	10000	98.2	90	110	
Ca	44	2	He	9835.368	6.063	468275	1.18	10000	98.4	90	110	
V	51	2	He	96.726	5.725	678636	0.66	100	96.7	90	110	
Cr	52	2	He	98.381	5.112	714732	0.92	100	98.4	90	110	
Mn	55	2	He	98.815	6.573	528005	2.01	100	98.8	90	110	
Fe	56	2	He	9966.848	5.458	65494861	1.63	10000	99.7	90	110	
Co	59	2	He	97.997	4.396	967459	0.85	100	98.0	90	110	
Ni	60	2	He	100.858	4.487	244270	0.57	100	100.9	90	110	
Cu	63	2	He	101.388	5.640	629279	0.95	100	101.4	90	110	
Zn	66	2	He	101.666	5.699	157642	1.29	100	101.7	90	110	
As	75	2	He	98.618	4.979	161349	0.41	100	98.6	90	110	
Se	78	2	He	95.642	4.377	13622	0.82	100	95.6	90	110	
B	11	1	nogas	478.114	3.475	1227371	2.01	500	95.6	90	110	
Si	28	1	nogas	5029.127	9.637	47268473	2.24	5000	100.6	90	110	
Ca	43	1	nogas	10461.422	8.486	365703	2.07	10000	104.6	90	110	
Ca	44	1	nogas	10496.069	7.777	6130860	1.20	10000	105.0	90	110	
Fe	56	1	nogas	10437.912	8.377	253183122	1.48	10000	104.4	90	110	
Se	77	1	nogas	56.201	25.581	93318	1.82	100	56.2	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	101.136	8.039	30937	1.23	100	101.1	90	110	
Mo	95	1	nogas	99.263	7.347	626610	1.37	100	99.3	90	110	
Sn	118	1	nogas	103.127	9.320	924725	0.92	100	103.1	90	110	
Ba	137	1	nogas	105.863	10.980	476658	1.11	100	105.9	90	110	
Sb	121	2	He	99.623	4.292	610593	1.24	100	99.6	90	110	
Li	7	1	nogas	99.472	4.703	750691	0.36	100	99.5	90	110	
P	31	1	nogas	497.591	8.255	767118	0.81	500	99.5	90	110	
La	139	1	nogas	124.318	25.657	1110	10.23	100	124.3	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	202.749	22.421	200	27.84	100	202.7	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	nogas	425047	4.63	600627	70.77	70	125	
Ge	72	1	nogas	3399426	6.82	3907912	86.99	70	125	
In	115	1	nogas	3124875	9.38	3692400	84.63	70	125	
Bi	209	1	nogas	2384927	7.38	2779452	85.81	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	918221	5.10	1091915	84.09	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	042_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T12:01:22-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	0.064	22.7	317	19.3	1	
Na	23	1	nogas	108.395	15.0	2684369	6.5	100	CCB Main CR1 Failed
Mg	24	1	nogas	6.931	13.5	93350	9.1	100	
Al	27	1	nogas	1.899	5.1	58189	0.5	5	
K	39	1	nogas	-14.102	-84.3	7640133	0.1	100	
Ti	47	1	nogas	0.023	79.8	307	13.2	2.5	
V	51	1	nogas	-9.718	-39.4	1719610	9.2	2.5	
Cr	52	1	nogas	-1.319	-4.9	78067	1.4	2.5	
Mn	55	1	nogas	0.352	5.5	20829	3.9	2.5	
Co	59	1	nogas	0.060	19.6	1843	15.5	2.5	
Ni	60	1	nogas	-0.558	-4.3	1720	7.3	2.5	
Cu	63	1	nogas	0.040	61.5	6925	2.2	2.5	
Zn	66	1	nogas	-0.263	-24.9	2224	11.3	2.5	
As	75	1	nogas	-5.755	-15.6	209264	1.4	2.5	
Sr	88	1	nogas	0.127	6.3	5651	4.4	2.5	
Ag	107	1	nogas	0.099	26.0	1993	23.1	2.5	
Cd	111	1	nogas	0.043	37.4	180	25.5	1	
Sb	121	1	nogas	0.101	16.0	1843	13.4	2.5	
Tl	205	1	nogas	0.298	39.0	7335	41.3	1	
Pb	208	1	nogas	0.070	17.9	3494	12.4	2.5	
U	238	1	nogas	0.092	27.7	2980	30.4	2.5	
[Pb]	206	1	nogas	0.081	4.7	890	9.0	2.5	
[Pb]	207	1	nogas	0.084	2.7	817	7.5	2.5	
Na	23	2	He	104.554	0.9	216611	1.5	100	CCB Main CR1 Failed
Mg	24	2	He	5.890	10.7	5221	8.2	100	
Al	27	2	He	1.159	10.3	1743	1.4	5	
K	39	2	He	-34.711	-5.1	235068	0.8	100	
Ca	43	2	He	10.623	184.3	70	79.5	100	
Ca	44	2	He	20.896	24.0	2110	10.7	100	
V	51	2	He	-0.271	-25.4	23402	0.3	2.5	
Cr	52	2	He	-0.130	-11.0	3850	4.4	2.5	
Mn	55	2	He	0.235	4.4	1553	5.4	2.5	
Fe	56	2	He	5.705	1.3	55216	1.0	100	
Co	59	2	He	0.048	11.8	563	10.7	2.5	
Ni	60	2	He	-0.372	-1.9	323	3.6	2.5	
Cu	63	2	He	-0.105	-24.3	2504	6.3	2.5	
Zn	66	2	He	-0.003	-2009.3	700	13.8	2.5	
As	75	2	He	-0.030	-109.7	954	7.1	2.5	
Se	78	2	He	-0.237	-78.3	244	9.7	2.5	
B	11	1	nogas	-3.048	-33.9	49394	4.9	10	
Si	28	1	nogas	-31.828	-62.1	1634120	8.6	5	
Ca	43	1	nogas	19.776	18.7	1483	6.1	100	
Ca	44	1	nogas	1.727	272.3	55606	2.0	100	
Fe	56	1	nogas	-17.516	-18.9	2936704	6.2	100	
Se	77	1	nogas	-28.797	-19.4	68713	2.8	2.5	
Se	82	1	nogas	0.361	39.9	490	11.4	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.178	18.1	1333	13.4	2.5	
Sn	118	1	nogas	0.203	18.4	2670	13.0	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.131	19.1	907	8.3	2.5	
Sb	121	2	He	0.072	38.7	577	32.2	2.5	
P	31	1	nogas	0.192	722.2	55863	1.5	10	
La	139	1	nogas	-8.384	-205.0	310	35.5	2.5	
Au	197	1	nogas	8.208	257.2	17	124.9	2.5	CCB 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	nogas	481215	1.01	600627	80.12	70	125	
Ge	72	1	nogas	3610278	3.29	3907912	92.38	70	125	
In	115	1	nogas	3343331	5.07	3692400	90.55	70	125	
Bi	209	1	nogas	2485632	5.60	2779452	89.43	70	125	
Ge	72	2	He	939763	1.82	1091915	86.07	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	050_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T12:17:18-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	94.180	3.649	396986	0.48	100	94.2	90	110	
Na	23	1	nogas	10131.182	3.009	189160946	0.76	10000	101.3	90	110	
Mg	24	1	nogas	10285.268	2.290	126194990	2.27	10000	102.9	90	110	
Al	27	1	nogas	98.766	3.176	1632670	2.57	100	98.8	90	110	
K	39	1	nogas	10082.454	1.769	208056796	1.25	10000	100.8	90	110	
Ti	47	1	nogas	99.407	1.127	186657	1.86	100	99.4	90	110	
V	51	1	nogas	98.070	5.146	4671792	1.24	100	98.1	90	110	
Cr	52	1	nogas	99.593	1.970	2391482	0.19	100	99.6	90	110	
Mn	55	1	nogas	103.290	2.926	2932156	1.37	100	103.3	90	110	
Co	59	1	nogas	101.217	1.139	2488875	2.06	100	101.2	90	110	
Ni	60	1	nogas	98.705	1.489	541401	1.22	100	98.7	90	110	
Cu	63	1	nogas	101.190	0.073	1332973	1.79	100	101.2	90	110	
Zn	66	1	nogas	100.648	1.379	452877	1.76	100	100.6	90	110	
As	75	1	nogas	93.807	2.070	831934	0.56	100	93.8	90	110	
Sr	88	1	nogas	103.582	2.162	3310667	1.63	100	103.6	90	110	
Ag	107	1	nogas	108.128	1.951	1752962	1.50	100	108.1	90	110	
Cd	111	1	nogas	101.120	2.169	353291	0.64	100	101.1	90	110	
Sb	121	1	nogas	102.617	1.997	1619538	3.71	100	102.6	90	110	
Tl	205	1	nogas	102.144	4.704	2524410	0.49	100	102.1	90	110	
Pb	208	1	nogas	96.603	3.775	3350841	3.77	100	96.6	90	110	
U	238	1	nogas	107.531	2.017	3407602	2.53	100	107.5	90	110	
[Pb]	206	1	nogas	94.890	3.656	803986	1.44	100	94.9	90	110	
[Pb]	207	1	nogas	94.031	2.634	705978	2.39	100	94.0	90	110	
Na	23	2	He	10270.781	0.677	13948759	0.66	10000	102.7	90	110	
Mg	24	2	He	9965.940	0.412	7819399	0.88	10000	99.7	90	110	
Al	27	2	He	96.624	2.477	46805	3.25	100	96.6	90	110	
K	39	2	He	9179.154	0.400	10509324	0.39	10000	91.8	90	110	
Ca	43	2	He	9944.356	1.100	28512	1.85	10000	99.4	90	110	
Ca	44	2	He	9950.717	0.750	485414	0.76	10000	99.5	90	110	
V	51	2	He	98.661	0.733	708622	0.90	100	98.7	90	110	
Cr	52	2	He	99.066	1.355	737096	0.85	100	99.1	90	110	
Mn	55	2	He	98.722	1.238	540541	0.66	100	98.7	90	110	
Fe	56	2	He	10088.909	1.430	67905562	0.80	10000	100.9	90	110	
Co	59	2	He	100.260	1.625	1013566	1.51	100	100.3	90	110	
Ni	60	2	He	103.901	3.223	257645	2.97	100	103.9	90	110	
Cu	63	2	He	102.031	1.439	648706	0.74	100	102.0	90	110	
Zn	66	2	He	102.112	1.139	162205	1.33	100	102.1	90	110	
As	75	2	He	100.323	1.964	168099	2.02	100	100.3	90	110	
Se	78	2	He	97.745	1.669	14248	0.77	100	97.7	90	110	
B	11	1	nogas	484.673	8.030	1334688	4.34	500	96.9	90	110	
Si	28	1	nogas	4909.162	1.148	48410594	1.74	5000	98.2	90	110	
Ca	43	1	nogas	10084.127	3.457	369277	2.52	10000	100.8	90	110	
Ca	44	1	nogas	10019.288	4.013	6130886	3.17	10000	100.2	90	110	
Fe	56	1	nogas	10137.447	3.700	257624172	1.91	10000	101.4	90	110	
Se	77	1	nogas	86.509	0.498	108364	1.65	100	86.5	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	100.198	1.665	32109	1.72	100	100.2	90	110	
Mo	95	1	nogas	96.271	2.034	636349	1.33	100	96.3	90	110	
Sn	118	1	nogas	95.592	0.111	932423	2.36	100	95.6	90	110	
Ba	137	1	nogas	100.362	2.026	491920	0.44	100	100.4	90	110	
Sb	121	2	He	99.680	1.443	625555	0.71	100	99.7	90	110	
Li	7	1	nogas	95.651	2.923	777551	1.26	100	95.7	90	110	
P	31	1	nogas	486.656	2.710	786873	1.02	500	97.3	90	110	
La	139	1	nogas	87.218	16.115	960	7.51	100	87.2	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	148.513	30.113	160	25.00	100	148.5	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	nogas	456546	3.31	600627	76.01	70	125	
Ge	72	1	nogas	3548451	1.79	3907912	90.80	70	125	
In	115	1	nogas	3379364	2.47	3692400	91.52	70	125	
Bi	209	1	nogas	2611174	4.58	2779452	93.95	70	125	

Ge	72	2	He	938919	0.86	1091915	85.99	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	051_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T12:19:17-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	0.071	14.3	360	12.1	1	
Na	23	1	nogas	28.079	6.6	1177852	3.0	100	
Mg	24	1	nogas	6.203	12.2	86545	11.8	100	
Al	27	1	nogas	1.954	8.6	58564	2.5	5	
K	39	1	nogas	18.327	39.0	8222726	0.5	100	
Ti	47	1	nogas	0.058	34.7	370	12.4	2.5	
V	51	1	nogas	-2.949	-85.3	1890192	2.7	2.5	
Cr	52	1	nogas	-0.886	-11.1	87358	1.4	2.5	
Mn	55	1	nogas	0.358	4.1	20792	2.1	2.5	
Co	59	1	nogas	0.059	7.0	1790	6.4	2.5	
Ni	60	1	nogas	-0.687	-2.6	1000	9.5	2.5	
Cu	63	1	nogas	-0.096	-25.5	5067	5.2	2.5	
Zn	66	1	nogas	-0.335	-23.4	1883	19.3	2.5	
As	75	1	nogas	-0.911	-134.3	238090	2.1	2.5	
Sr	88	1	nogas	0.102	17.1	4797	12.6	2.5	
Ag	107	1	nogas	0.096	14.9	1913	13.6	2.5	
Cd	111	1	nogas	0.057	15.4	247	13.0	1	
Sb	121	1	nogas	0.086	28.4	1587	24.9	2.5	
Tl	205	1	nogas	0.252	43.1	6878	41.8	1	
Pb	208	1	nogas	0.055	16.7	2973	10.7	2.5	
U	238	1	nogas	0.077	28.9	2780	27.1	2.5	
[Pb]	206	1	nogas	0.053	18.8	730	12.6	2.5	
[Pb]	207	1	nogas	0.058	38.8	700	26.0	2.5	
Na	23	2	He	30.563	7.6	116738	2.1	100	
Mg	24	2	He	5.331	0.6	4797	5.1	100	
Al	27	2	He	0.932	35.3	1637	6.4	5	
K	39	2	He	-7.981	-22.2	264874	0.7	100	
Ca	43	2	He	15.345	66.1	83	30.2	100	
Ca	44	2	He	14.195	11.4	1787	0.9	100	
V	51	2	He	0.308	64.2	27439	1.8	2.5	
Cr	52	2	He	-0.107	-69.4	4014	10.7	2.5	
Mn	55	2	He	0.152	11.1	1100	8.7	2.5	
Fe	56	2	He	5.248	4.0	52214	2.6	100	
Co	59	2	He	0.047	13.8	560	7.8	2.5	
Ni	60	2	He	-0.377	-5.6	310	14.8	2.5	
Cu	63	2	He	-0.182	-19.2	2023	15.3	2.5	
Zn	66	2	He	-0.077	-87.5	587	21.4	2.5	
As	75	2	He	0.101	111.4	1170	11.5	2.5	
Se	78	2	He	-0.005	-5041.3	277	10.6	2.5	
B	11	1	nogas	-6.006	-13.5	42548	6.1	10	
Si	28	1	nogas	-24.368	-8.7	1694337	1.7	5	
Ca	43	1	nogas	18.847	19.1	1437	7.2	100	
Ca	44	1	nogas	-4.351	-57.7	51448	4.1	100	
Fe	56	1	nogas	-15.848	-22.5	2948862	0.9	100	
Se	77	1	nogas	-2.537	-207.8	77461	2.1	2.5	
Se	82	1	nogas	0.332	63.0	477	15.9	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.173	41.8	1297	37.9	2.5	
Sn	118	1	nogas	0.195	22.9	2767	16.1	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.095	10.5	783	5.2	2.5	
Sb	121	2	He	0.070	30.2	563	21.9	2.5	
P	31	1	nogas	2.331	65.7	58608	2.1	10	
La	139	1	nogas	-9.029	-161.0	327	30.8	2.5	
Au	197	1	nogas	12.682	184.5	23	107.9	2.5	CCB 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	nogas	497340	2.08	600627	82.80	70	125	
Ge	72	1	nogas	3577177	2.13	3907912	91.54	70	125	
In	115	1	nogas	3555643	1.45	3692400	96.30	70	125	
Bi	209	1	nogas	2749822	0.47	2779452	98.93	70	125	
Ge	72	2	He	941789	4.73	1091915	86.25	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	062_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T12:44:51-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	94.452	0.293	406026	1.41	100	94.5	90	110	
Na	23	1	nogas	9732.548	3.234	205261692	2.87	10000	97.3	90	110	
Mg	24	1	nogas	9768.629	2.307	135325899	1.47	10000	97.7	90	110	
Al	27	1	nogas	95.988	1.189	1703710	2.83	100	96.0	90	110	
K	39	1	nogas	10138.896	1.576	224420547	1.03	10000	101.4	90	110	
Ti	47	1	nogas	98.885	2.551	199149	0.25	100	98.9	90	110	
V	51	1	nogas	100.337	1.578	5080995	1.38	100	100.3	90	110	
Cr	52	1	nogas	103.379	4.918	2657998	2.85	100	103.4	90	110	
Mn	55	1	nogas	106.421	1.778	3242055	2.86	100	106.4	90	110	
Co	59	1	nogas	100.692	1.153	2656124	1.16	100	100.7	90	110	
Ni	60	1	nogas	101.266	1.672	595768	1.02	100	101.3	90	110	
Cu	63	1	nogas	102.719	0.776	1451633	2.12	100	102.7	90	110	
Zn	66	1	nogas	101.147	2.401	488224	2.00	100	101.1	90	110	
As	75	1	nogas	92.200	0.699	881887	2.10	100	92.2	90	110	
Sr	88	1	nogas	104.939	3.320	3601108	5.60	100	104.9	90	110	
Ag	107	1	nogas	108.300	1.292	1884363	3.30	100	108.3	90	110	
Cd	111	1	nogas	100.812	2.641	384053	3.76	100	100.8	90	110	
Sb	121	1	nogas	101.834	1.692	1724426	3.85	100	101.8	90	110	
Tl	205	1	nogas	101.164	2.194	2675540	3.38	100	101.2	90	110	
Pb	208	1	nogas	102.461	1.820	3553972	1.82	100	102.5	90	110	
U	238	1	nogas	104.864	1.121	3553160	2.66	100	104.9	90	110	
[Pb]	206	1	nogas	95.219	1.417	862885	1.79	100	95.2	90	110	
[Pb]	207	1	nogas	95.131	2.034	763643	2.25	100	95.1	90	110	
Na	23	2	He	10220.192	1.755	15321009	0.95	10000	102.2	90	110	
Mg	24	2	He	9745.158	2.568	8438940	1.52	10000	97.5	90	110	
Al	27	2	He	93.776	1.537	50180	2.44	100	93.8	90	110	
K	39	2	He	9649.060	0.723	11033310	0.71	10000	96.5	90	110	
Ca	43	2	He	9572.485	2.895	30292	2.01	10000	95.7	90	110	
Ca	44	2	He	9779.864	1.940	526627	1.57	10000	97.8	90	110	
V	51	2	He	95.843	1.390	760697	1.67	100	95.8	90	110	
Cr	52	2	He	96.326	1.434	791309	1.19	100	96.3	90	110	
Mn	55	2	He	96.973	0.430	586191	1.73	100	97.0	90	110	
Fe	56	2	He	9950.129	0.601	73936624	1.62	10000	99.5	90	110	
Co	59	2	He	98.019	1.086	1093842	1.02	100	98.0	90	110	
Ni	60	2	He	100.240	2.824	274395	1.54	100	100.2	90	110	
Cu	63	2	He	98.719	3.547	692972	3.44	100	98.7	90	110	
Zn	66	2	He	99.474	3.187	174420	2.45	100	99.5	90	110	
As	75	2	He	99.807	1.234	184607	1.15	100	99.8	90	110	
Se	78	2	He	94.898	1.146	15282	2.43	100	94.9	90	110	
B	11	1	nogas	478.430	4.013	1345887	4.94	500	95.7	90	110	
Si	28	1	nogas	4973.747	1.388	52594703	1.95	5000	99.5	90	110	
Ca	43	1	nogas	10290.901	0.464	404457	2.62	10000	102.9	90	110	
Ca	44	1	nogas	10175.996	0.781	6681482	1.80	10000	101.8	90	110	
Fe	56	1	nogas	10481.446	1.230	285793023	2.51	10000	104.8	90	110	
Se	77	1	nogas	72.224	4.413	110828	1.31	100	72.2	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	103.767	0.451	35665	1.89	100	103.8	90	110	
Mo	95	1	nogas	96.688	0.773	685765	1.53	100	96.7	90	110	
Sn	118	1	nogas	95.018	2.941	1009828	1.60	100	95.0	90	110	
Ba	137	1	nogas	97.783	2.200	522490	2.34	100	97.8	90	110	
Sb	121	2	He	98.194	1.963	680266	1.94	100	98.2	90	110	
Li	7	1	nogas	96.331	1.674	798090	1.75	100	96.3	90	110	
P	31	1	nogas	489.739	1.317	849506	2.74	500	97.9	90	110	
La	139	1	nogas	96.295	10.832	1117	9.82	100	96.3	90	110	
Au	197	1	nogas	164.554	28.762	190	27.85	100	164.6	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	nogas	465215	1.12	600627	77.45	70	125	
Ge	72	1	nogas	3807278	2.29	3907912	97.42	70	125	
In	115	1	nogas	3685192	4.53	3692400	99.80	70	125	
Bi	209	1	nogas	2790073	2.00	2779452	100.38	70	125	

Ge	72	2	He	1036515	1.72	1091915	94.93	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	063_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T12:46:51-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	0.076	36.2	393	31.8	1	
Na	23	1	nogas	243.358	9.5	5890731	2.8	100	CCB Main CR1 Failed
Mg	24	1	nogas	8.521	16.4	126383	10.4	100	
Al	27	1	nogas	1.973	9.4	66438	2.9	5	
K	39	1	nogas	3.338	374.2	8938799	0.6	100	
Ti	47	1	nogas	0.095	57.8	493	22.3	2.5	
V	51	1	nogas	-0.659	-132.0	2206399	3.3	2.5	
Cr	52	1	nogas	-0.933	-4.7	97455	4.7	2.5	
Mn	55	1	nogas	0.326	4.3	22440	2.1	2.5	
Co	59	1	nogas	0.065	17.3	2187	11.0	2.5	
Ni	60	1	nogas	-0.501	-5.2	2277	5.3	2.5	
Cu	63	1	nogas	0.096	31.5	8572	2.8	2.5	
Zn	66	1	nogas	-0.349	-15.1	2047	10.4	2.5	
As	75	1	nogas	-3.974	-12.7	246897	3.2	2.5	
Sr	88	1	nogas	0.197	10.7	8856	5.3	2.5	
Ag	107	1	nogas	0.092	28.2	2087	19.7	2.5	
Cd	111	1	nogas	0.046	24.0	220	20.8	1	
Sb	121	1	nogas	0.088	9.0	1823	4.4	2.5	
Tl	205	1	nogas	0.257	36.7	7469	30.5	1	
Pb	208	1	nogas	0.058	36.7	3077	24.0	2.5	
U	238	1	nogas	0.078	25.7	3007	18.2	2.5	
[Pb]	206	1	nogas	0.044	31.5	700	13.6	2.5	
[Pb]	207	1	nogas	0.055	50.4	720	28.2	2.5	
Na	23	2	He	234.715	5.7	447275	1.8	100	CCB Main CR1 Failed
Mg	24	2	He	7.338	7.6	7245	3.9	100	
Al	27	2	He	1.139	3.2	1980	6.6	5	
K	39	2	He	8.380	9.4	283118	0.3	100	
Ca	43	2	He	38.714	25.3	173	23.3	100	
Ca	44	2	He	21.350	12.6	2430	2.9	100	
V	51	2	He	0.528	49.4	32959	0.2	2.5	
Cr	52	2	He	-0.163	-37.1	4097	7.1	2.5	
Mn	55	2	He	0.158	13.3	1283	6.1	2.5	
Fe	56	2	He	5.658	6.8	62553	2.4	100	
Co	59	2	He	0.041	32.0	560	26.7	2.5	
Ni	60	2	He	-0.358	-5.9	407	9.9	2.5	
Cu	63	2	He	0.008	460.3	3660	4.2	2.5	
Zn	66	2	He	-0.130	-46.1	570	18.5	2.5	
As	75	2	He	0.024	268.7	1188	4.5	2.5	
Se	78	2	He	-0.309	-54.6	266	6.0	2.5	
B	11	1	nogas	7.143	21.6	81858	3.4	10	
Si	28	1	nogas	-43.653	-9.2	1704023	1.8	5	
Ca	43	1	nogas	28.021	20.0	2000	8.3	100	
Ca	44	1	nogas	-1.208	-311.9	60177	0.9	100	
Fe	56	1	nogas	5.633	50.8	3941736	1.6	100	
Se	77	1	nogas	-18.957	-2.4	80842	3.4	2.5	
Se	82	1	nogas	0.278	44.2	517	5.6	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.167	28.5	1403	22.2	2.5	
Sn	118	1	nogas	0.197	13.4	2994	6.2	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.104	23.1	887	11.8	2.5	
Sb	121	2	He	0.067	24.7	620	18.6	2.5	
P	31	1	nogas	4.223	23.7	69391	1.1	10	
La	139	1	nogas	-1.259	-1613.9	410	36.1	2.5	
Au	197	1	nogas	5.197	333.4	17	124.9	2.5	CCB 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	nogas	506530	2.08	600627	84.33	70	125	
Ge	72	1	nogas	4038000	3.57	3907912	103.33	70	125	
In	115	1	nogas	3829521	3.42	3692400	103.71	70	125	
Bi	209	1	nogas	2966944	5.03	2779452	106.75	70	125	
Ge	72	2	He	1072684	6.34	1091915	98.24	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	074_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T13:08:45-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	99.909	2.211	423914	2.05	100	99.9	90	110	
Na	23	1	nogas	10148.437	12.302	210455730	1.46	10000	101.5	90	110	
Mg	24	1	nogas	10209.330	12.022	139112378	1.76	10000	102.1	90	110	
Al	27	1	nogas	97.365	6.219	1773091	3.14	100	97.4	90	110	
K	39	1	nogas	10376.658	4.491	235661172	1.43	10000	103.8	90	110	
Ti	47	1	nogas	102.533	5.940	212005	2.87	100	102.5	90	110	
V	51	1	nogas	96.841	8.705	5109598	1.69	100	96.8	90	110	
Cr	52	1	nogas	106.072	1.856	2800302	1.84	100	106.1	90	110	
Mn	55	1	nogas	109.469	2.878	3425122	2.10	100	109.5	90	110	
Co	59	1	nogas	108.407	3.671	2939297	5.06	100	108.4	90	110	
Ni	60	1	nogas	103.528	4.195	625360	0.93	100	103.5	90	110	
Cu	63	1	nogas	107.411	3.523	1559151	3.65	100	107.4	90	110	
Zn	66	1	nogas	103.559	3.817	513279	0.77	100	103.6	90	110	
As	75	1	nogas	92.267	4.655	906101	0.47	100	92.3	90	110	
Sr	88	1	nogas	107.222	4.316	3776405	2.70	100	107.2	90	110	
Ag	107	1	nogas	108.472	5.316	1938398	5.03	100	108.5	90	110	
Cd	111	1	nogas	104.552	5.946	400395	0.84	100	104.6	90	110	
Sb	121	1	nogas	106.479	4.631	1852364	5.47	100	106.5	90	110	
Tl	205	1	nogas	112.260	2.612	2911128	2.18	100	112.3	90	110	CCV Main CR1-2 Failed
Pb	208	1	nogas	110.495	2.669	3832535	2.67	100	110.5	90	110	CCV Main CR1-2 Failed
U	238	1	nogas	109.661	6.884	3640501	4.52	100	109.7	90	110	
[Pb]	206	1	nogas	104.738	2.669	930872	2.71	100	104.7	90	110	
[Pb]	207	1	nogas	103.737	3.052	816576	2.29	100	103.7	90	110	
Na	23	2	He	10144.243	1.207	15851019	0.89	10000	101.4	90	110	
Mg	24	2	He	9752.565	0.916	8803405	0.89	10000	97.5	90	110	
Al	27	2	He	92.148	0.871	51410	0.97	100	92.1	90	110	
K	39	2	He	9962.859	0.983	11383222	0.96	10000	99.6	90	110	
Ca	43	2	He	9734.290	3.697	32105	3.12	10000	97.3	90	110	
Ca	44	2	He	9742.015	1.754	546757	1.35	10000	97.4	90	110	
V	51	2	He	96.512	0.728	798145	0.88	100	96.5	90	110	
Cr	52	2	He	97.658	4.286	835850	3.11	100	97.7	90	110	
Mn	55	2	He	96.582	3.080	608331	2.08	100	96.6	90	110	
Fe	56	2	He	9813.449	2.250	75986797	1.16	10000	98.1	90	110	
Co	59	2	He	97.395	1.024	1132794	0.79	100	97.4	90	110	
Ni	60	2	He	100.449	1.674	286614	0.72	100	100.4	90	110	
Cu	63	2	He	99.615	2.193	728698	1.00	100	99.6	90	110	
Zn	66	2	He	101.966	1.412	186337	0.41	100	102.0	90	110	
As	75	2	He	99.032	0.710	190931	1.33	100	99.0	90	110	
Se	78	2	He	96.919	2.236	16257	1.93	100	96.9	90	110	
B	11	1	nogas	494.041	4.586	1368935	1.87	500	98.8	90	110	
Si	28	1	nogas	4960.105	4.881	53858098	1.83	5000	99.2	90	110	
Ca	43	1	nogas	10416.681	1.692	420629	3.13	10000	104.2	90	110	
Ca	44	1	nogas	10374.194	3.794	6995070	2.60	10000	103.7	90	110	
Fe	56	1	nogas	10709.538	3.321	299791465	0.46	10000	107.1	90	110	
Se	77	1	nogas	60.421	13.410	109235	0.72	100	60.4	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	105.255	1.649	37162	2.14	100	105.3	90	110	
Mo	95	1	nogas	101.575	2.413	740024	0.99	100	101.6	90	110	
Sn	118	1	nogas	101.548	3.866	1086135	1.55	100	101.5	90	110	
Ba	137	1	nogas	103.734	6.696	557157	1.27	100	103.7	90	110	
Sb	121	2	He	99.595	1.586	719072	0.60	100	99.6	90	110	
Li	7	1	nogas	98.873	2.010	807497	1.93	100	98.9	90	110	
P	31	1	nogas	503.664	4.464	895239	0.81	500	100.7	90	110	
La	139	1	nogas	116.411	10.178	1270	4.17	100	116.4	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	156.658	30.183	177	25.52	100	156.7	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	nogas	459347	3.07	600627	76.48	70	125	
Ge	72	1	nogas	3912597	3.45	3907912	100.12	70	125	
In	115	1	nogas	3710784	5.35	3692400	100.50	70	125	
Bi	209	1	nogas	2737084	3.23	2779452	98.48	70	125	

Ge	72	2	He	1080256	1.28	1091915	98.93	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	075_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T13:10:46-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	0.079	30.2	403	25.1	1	
Na	23	1	nogas	134.381	14.0	3506962	5.0	100	CCB Main CR1 Failed
Mg	24	1	nogas	7.385	20.8	108766	13.3	100	
Al	27	1	nogas	1.914	11.7	67332	2.1	5	
K	39	1	nogas	-12.762	-132.3	8839402	0.7	100	
Ti	47	1	nogas	0.076	50.7	470	21.0	2.5	
V	51	1	nogas	-11.006	-10.3	1938779	3.3	2.5	
Cr	52	1	nogas	-1.366	-5.2	88751	2.2	2.5	
Mn	55	1	nogas	0.292	5.9	22003	1.8	2.5	
Co	59	1	nogas	0.062	16.6	2187	9.2	2.5	
Ni	60	1	nogas	-0.587	-1.4	1800	6.8	2.5	
Cu	63	1	nogas	-0.093	-45.6	5924	7.0	2.5	
Zn	66	1	nogas	-0.416	-10.5	1760	9.9	2.5	
As	75	1	nogas	-8.129	-8.5	223854	2.1	2.5	
Sr	88	1	nogas	0.137	14.5	6855	6.4	2.5	
Ag	107	1	nogas	0.100	28.6	2287	19.1	2.5	
Cd	111	1	nogas	0.066	15.7	310	14.1	1	
Sb	121	1	nogas	0.239	13.7	4651	9.5	2.5	
Tl	205	1	nogas	0.253	36.4	7689	31.1	1	
Pb	208	1	nogas	0.063	16.7	3240	11.2	2.5	
U	238	1	nogas	0.081	20.6	3254	15.3	2.5	
[Pb]	206	1	nogas	0.061	34.1	897	20.0	2.5	
[Pb]	207	1	nogas	0.038	26.1	603	13.4	2.5	
Na	23	2	He	125.119	2.3	285491	0.8	100	CCB Main CR1 Failed
Mg	24	2	He	6.043	1.1	6244	1.7	100	
Al	27	2	He	1.039	31.2	1970	8.4	5	
K	39	2	He	3.611	50.6	277800	0.7	100	
Ca	43	2	He	23.760	67.4	127	43.5	100	
Ca	44	2	He	19.492	21.3	2387	9.8	100	
V	51	2	He	-0.183	-35.5	28056	0.9	2.5	
Cr	52	2	He	-0.167	-5.0	4174	2.6	2.5	
Mn	55	2	He	0.144	3.7	1233	3.1	2.5	
Fe	56	2	He	5.783	3.9	65108	1.9	100	
Co	59	2	He	0.047	7.7	653	7.6	2.5	
Ni	60	2	He	-0.352	-0.6	437	1.3	2.5	
Cu	63	2	He	-0.207	-5.6	2167	4.5	2.5	
Zn	66	2	He	-0.155	-37.9	537	19.4	2.5	
As	75	2	He	-0.014	-276.1	1147	7.1	2.5	
Se	78	2	He	-0.234	-116.6	286	17.0	2.5	
B	11	1	nogas	6.154	20.1	78507	2.7	10	
Si	28	1	nogas	-56.365	-13.4	1614649	0.9	5	
Ca	43	1	nogas	19.272	28.8	1690	13.2	100	
Ca	44	1	nogas	-14.181	-23.5	52821	0.3	100	
Fe	56	1	nogas	-9.843	-21.2	3609797	2.8	100	
Se	77	1	nogas	-44.558	-7.5	72721	3.5	2.5	
Se	82	1	nogas	0.150	77.8	487	11.3	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.180	22.8	1547	16.7	2.5	
Sn	118	1	nogas	0.237	4.3	3547	2.6	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.090	19.8	840	11.4	2.5	
Sb	121	2	He	0.227	5.9	1810	5.8	2.5	
P	31	1	nogas	3.984	30.5	71127	1.7	10	
La	139	1	nogas	3.088	255.7	460	15.2	2.5	CCB Main CR1 Failed
Au	197	1	nogas	26.551	32.2	43	26.6	2.5	CCB 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	nogas	503576	2.45	600627	83.84	70	125	
Ge	72	1	nogas	4164502	4.22	3907912	106.57	70	125	
In	115	1	nogas	3949372	1.82	3692400	106.96	70	125	
Bi	209	1	nogas	3092064	3.58	2779452	111.25	70	125	
Ge	72	2	He	1097759	0.94	1091915	100.54	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	087_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T13:35:06-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	96.381	1.082	405646	2.31	100	96.4	90	110	
Na	23	1	nogas	10381.259	2.134	216909497	2.59	10000	103.8	90	110	
Mg	24	1	nogas	9991.392	3.390	137123753	2.45	10000	99.9	90	110	
Al	27	1	nogas	93.913	6.365	1795564	3.49	100	93.9	90	110	
K	39	1	nogas	9716.196	2.647	232191780	1.24	10000	97.2	90	110	
Ti	47	1	nogas	97.423	3.047	211502	0.71	100	97.4	90	110	
V	51	1	nogas	89.206	4.161	5120227	1.54	100	89.2	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	94.928	2.486	2643131	3.59	100	94.9	90	110	
Mn	55	1	nogas	99.470	0.573	3268688	4.00	100	99.5	90	110	
Co	59	1	nogas	98.332	1.083	2798290	4.79	100	98.3	90	110	
Ni	60	1	nogas	94.793	2.587	601557	2.27	100	94.8	90	110	
Cu	63	1	nogas	99.029	3.592	1510850	7.45	100	99.0	90	110	
Zn	66	1	nogas	97.857	2.487	509383	2.81	100	97.9	90	110	
As	75	1	nogas	87.897	2.636	919325	2.33	100	87.9	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	103.963	1.528	3845618	4.47	100	104.0	90	110	
Ag	107	1	nogas	104.789	3.494	1966459	5.95	100	104.8	90	110	
Cd	111	1	nogas	98.858	0.167	398276	2.82	100	98.9	90	110	
Sb	121	1	nogas	105.863	0.904	1932626	3.84	100	105.9	90	110	
Tl	205	1	nogas	100.761	1.166	2847818	2.18	100	100.8	90	110	
Pb	208	1	nogas	107.825	1.281	3739967	1.28	100	107.8	90	110	
U	238	1	nogas	104.308	1.722	3777216	2.75	100	104.3	90	110	
[Pb]	206	1	nogas	92.014	1.594	891136	1.43	100	92.0	90	110	
[Pb]	207	1	nogas	91.983	2.182	789086	1.78	100	92.0	90	110	
Na	23	2	He	10194.445	0.836	15675518	1.43	10000	101.9	90	110	
Mg	24	2	He	9694.698	1.388	8611612	1.70	10000	96.9	90	110	
Al	27	2	He	92.737	3.275	50912	3.98	100	92.7	90	110	
K	39	2	He	9834.248	0.343	11239811	0.33	10000	98.3	90	110	
Ca	43	2	He	9302.824	3.204	30191	2.06	10000	93.0	90	110	
Ca	44	2	He	9653.616	1.889	533118	0.73	10000	96.5	90	110	
V	51	2	He	96.821	0.235	787858	1.37	100	96.8	90	110	
Cr	52	2	He	95.658	1.193	806113	2.51	100	95.7	90	110	
Mn	55	2	He	95.832	0.230	594113	1.57	100	95.8	90	110	
Fe	56	2	He	9882.745	1.368	75314421	1.94	10000	98.8	90	110	
Co	59	2	He	98.871	1.380	1131519	0.22	100	98.9	90	110	
Ni	60	2	He	101.030	1.463	283656	0.02	100	101.0	90	110	
Cu	63	2	He	99.932	0.837	719418	0.94	100	99.9	90	110	
Zn	66	2	He	99.707	1.641	179316	1.10	100	99.7	90	110	
As	75	2	He	99.069	1.969	187926	1.23	100	99.1	90	110	
Se	78	2	He	94.774	0.771	15651	1.14	100	94.8	90	110	
B	11	1	nogas	523.982	1.940	1437405	1.91	500	104.8	90	110	
Si	28	1	nogas	4673.628	2.426	53401113	1.44	5000	93.5	90	110	
Ca	43	1	nogas	9827.127	1.553	416566	4.57	10000	98.3	90	110	
Ca	44	1	nogas	9818.722	2.288	6952053	2.73	10000	98.2	90	110	
Fe	56	1	nogas	9809.923	0.487	288668040	3.49	10000	98.1	90	110	
Se	77	1	nogas	57.629	10.219	113511	2.69	100	57.6	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	100.985	3.180	37472	7.02	100	101.0	90	110	
Mo	95	1	nogas	97.431	1.692	744951	2.10	100	97.4	90	110	
Sn	118	1	nogas	98.139	3.161	1102972	2.06	100	98.1	90	110	
Ba	137	1	nogas	97.861	1.873	553165	3.77	100	97.9	90	110	
Sb	121	2	He	99.165	2.013	704542	1.59	100	99.2	90	110	
Li	7	1	nogas	94.251	1.357	765396	2.00	100	94.3	90	110	
P	31	1	nogas	460.645	1.261	865207	3.09	500	92.1	90	110	
La	139	1	nogas	89.515	4.216	1127	4.89	100	89.5	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	165.020	12.473	203	11.36	100	165.0	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	nogas	455583	3.20	600627	75.85	70	125	
Ge	72	1	nogas	4105595	3.82	3907912	105.06	70	125	
In	115	1	nogas	3895601	2.95	3692400	105.50	70	125	
Bi	209	1	nogas	2981628	1.02	2779452	107.27	70	125	

Ge	72	2	He	1063009	1.45	1091915	97.35	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	088_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T13:37:06-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	0.108	4.0	553	4.5	1	
Na	23	1	nogas	206.236	8.3	5363001	5.6	100	CCB Main CR1 Failed
Mg	24	1	nogas	6.916	11.4	109502	9.5	100	
Al	27	1	nogas	1.712	2.3	66075	0.9	5	
K	39	1	nogas	-13.154	-27.0	9185815	0.4	100	
Ti	47	1	nogas	0.060	13.6	450	4.4	2.5	
V	51	1	nogas	-3.354	-69.3	2273252	2.8	2.5	
Cr	52	1	nogas	-1.164	-8.0	97914	2.1	2.5	
Mn	55	1	nogas	0.279	1.9	22451	1.4	2.5	
Co	59	1	nogas	0.063	18.9	2294	16.2	2.5	
Ni	60	1	nogas	-0.492	-3.7	2500	5.0	2.5	
Cu	63	1	nogas	-0.010	-314.2	7502	7.5	2.5	
Zn	66	1	nogas	-0.366	-9.1	2110	9.1	2.5	
As	75	1	nogas	-5.984	-11.2	249162	1.5	2.5	
Sr	88	1	nogas	0.137	2.1	7168	2.1	2.5	
Ag	107	1	nogas	0.072	26.0	1850	20.7	2.5	
Cd	111	1	nogas	0.067	28.0	333	26.2	1	
Sb	121	1	nogas	0.109	23.7	2360	21.7	2.5	
Tl	205	1	nogas	0.289	45.2	9043	43.9	1	
Pb	208	1	nogas	0.073	28.9	3597	20.3	2.5	
U	238	1	nogas	0.084	28.0	3474	26.5	2.5	
[Pb]	206	1	nogas	0.067	38.4	990	26.9	2.5	
[Pb]	207	1	nogas	0.057	22.1	793	15.1	2.5	
Na	23	2	He	192.734	3.6	402785	1.6	100	CCB Main CR1 Failed
Mg	24	2	He	5.340	8.5	5744	5.1	100	
Al	27	2	He	0.832	9.6	1907	2.6	5	
K	39	2	He	9.271	20.0	284111	0.7	100	
Ca	43	2	He	30.744	27.1	153	16.4	100	
Ca	44	2	He	15.110	15.0	2194	3.9	100	
V	51	2	He	0.251	64.9	32402	1.8	2.5	
Cr	52	2	He	-0.188	-18.2	4104	6.1	2.5	
Mn	55	2	He	0.174	12.9	1457	7.7	2.5	
Fe	56	2	He	5.358	6.2	63436	4.2	100	
Co	59	2	He	0.051	17.5	717	15.4	2.5	
Ni	60	2	He	-0.297	-12.5	610	17.3	2.5	
Cu	63	2	He	-0.121	-11.7	2880	5.4	2.5	
Zn	66	2	He	-0.200	-7.0	467	8.1	2.5	
As	75	2	He	-0.005	-617.7	1194	2.9	2.5	
Se	78	2	He	-0.295	-65.1	283	12.7	2.5	
B	11	1	nogas	2.312	19.8	69011	0.5	10	
Si	28	1	nogas	-57.078	-5.6	1672011	2.8	5	
Ca	43	1	nogas	19.232	14.0	1757	6.3	100	
Ca	44	1	nogas	-13.509	-2.5	55449	0.8	100	
Fe	56	1	nogas	-13.248	-16.9	3647812	1.3	100	
Se	77	1	nogas	-33.973	-10.6	80146	1.5	2.5	
Se	82	1	nogas	0.059	205.8	470	9.8	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.188	24.3	1683	22.5	2.5	
Sn	118	1	nogas	0.913	5.2	12018	3.0	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.115	28.9	1053	19.9	2.5	
Sb	121	2	He	0.073	9.0	697	5.8	2.5	
P	31	1	nogas	3.169	8.6	72465	0.5	10	
La	139	1	nogas	-2.565	-192.4	443	10.2	2.5	
Au	197	1	nogas	15.374	191.6	30	120.2	2.5	CCB 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	nogas	516182	2.44	600627	85.94	70	125	
Ge	72	1	nogas	4327007	0.63	3907912	110.72	70	125	
In	115	1	nogas	4220559	1.87	3692400	114.30	70	125	
Bi	209	1	nogas	3171193	1.33	2779452	114.09	70	125	
Ge	72	2	He	1127515	2.54	1091915	103.26	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	099_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T13:58:59-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	97.092	1.976	374000	0.90	100	97.1	90	110	
Na	23	1	nogas	9749.329	6.297	197095084	1.59	10000	97.5	90	110	
Mg	24	1	nogas	9784.611	6.889	129892174	0.85	10000	97.8	90	110	
Al	27	1	nogas	100.824	3.011	1860418	3.67	100	100.8	90	110	
K	39	1	nogas	9721.882	1.156	224268663	0.82	10000	97.2	90	110	
Ti	47	1	nogas	96.268	3.775	201715	2.00	100	96.3	90	110	
V	51	1	nogas	83.040	10.052	4749421	3.68	100	83.0	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	93.647	6.930	2515955	4.79	100	93.6	90	110	
Mn	55	1	nogas	99.725	4.460	3160306	3.20	100	99.7	90	110	
Co	59	1	nogas	94.798	6.031	2600998	5.10	100	94.8	90	110	
Ni	60	1	nogas	97.199	2.498	595133	0.60	100	97.2	90	110	
Cu	63	1	nogas	94.305	8.330	1387756	9.05	100	94.3	90	110	
Zn	66	1	nogas	98.712	1.808	495844	0.82	100	98.7	90	110	
As	75	1	nogas	84.715	3.852	864816	1.80	100	84.7	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	101.139	1.804	3609011	2.12	100	101.1	90	110	
Ag	107	1	nogas	101.239	3.417	1832983	4.73	100	101.2	90	110	
Cd	111	1	nogas	102.510	3.745	392017	3.01	100	102.5	90	110	
Sb	121	1	nogas	103.850	7.049	1830596	8.57	100	103.9	90	110	
Tl	205	1	nogas	95.773	3.160	2700902	6.98	100	95.8	90	110	
Pb	208	1	nogas	105.196	4.327	3648795	4.33	100	105.2	90	110	
U	238	1	nogas	106.525	4.300	3844015	4.38	100	106.5	90	110	
[Pb]	206	1	nogas	91.906	7.081	885742	1.76	100	91.9	90	110	
[Pb]	207	1	nogas	91.945	7.471	784758	1.36	100	91.9	90	110	
Na	23	2	He	9940.966	2.059	14880624	1.13	10000	99.4	90	110	
Mg	24	2	He	9674.758	3.678	8364150	2.68	10000	96.7	90	110	
Al	27	2	He	93.084	1.689	49732	1.30	100	93.1	90	110	
K	39	2	He	9429.935	0.214	10788966	0.21	10000	94.3	90	110	
Ca	43	2	He	9499.359	4.629	30021	5.04	10000	95.0	90	110	
Ca	44	2	He	9558.367	0.439	513965	1.44	10000	95.6	90	110	
V	51	2	He	97.966	0.469	775668	0.56	100	98.0	90	110	
Cr	52	2	He	97.620	1.699	800664	2.19	100	97.6	90	110	
Mn	55	2	He	97.058	2.073	585675	1.47	100	97.1	90	110	
Fe	56	2	He	9913.954	2.572	73538611	1.97	10000	99.1	90	110	
Co	59	2	He	98.692	2.986	1099423	1.97	100	98.7	90	110	
Ni	60	2	He	102.860	3.132	281090	2.19	100	102.9	90	110	
Cu	63	2	He	103.084	1.715	722282	1.05	100	103.1	90	110	
Zn	66	2	He	101.617	0.632	177906	1.05	100	101.6	90	110	
As	75	2	He	98.834	0.977	182526	0.67	100	98.8	90	110	
Se	78	2	He	94.686	1.841	15221	0.80	100	94.7	90	110	
B	11	1	nogas	530.249	11.562	1330508	10.61	500	106.0	90	110	
Si	28	1	nogas	4585.039	1.965	50605518	0.16	5000	91.7	90	110	
Ca	43	1	nogas	9736.372	1.208	398105	0.69	10000	97.4	90	110	
Ca	44	1	nogas	9773.256	5.203	6678123	4.89	10000	97.7	90	110	
Fe	56	1	nogas	10220.597	1.730	289987990	0.49	10000	102.2	90	110	
Se	77	1	nogas	38.556	14.797	102000	0.58	100	38.6	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	99.386	4.340	35542	2.46	100	99.4	90	110	
Mo	95	1	nogas	97.427	2.436	718829	0.85	100	97.4	90	110	
Sn	118	1	nogas	98.577	1.472	1052224	0.70	100	98.6	90	110	
Ba	137	1	nogas	102.240	0.502	548595	0.51	100	102.2	90	110	
Sb	121	2	He	99.622	1.828	689004	0.92	100	99.6	90	110	
Li	7	1	nogas	95.726	0.503	711132	2.37	100	95.7	90	110	
P	31	1	nogas	456.428	1.911	827696	0.39	500	91.3	90	110	
La	139	1	nogas	74.709	15.127	960	9.08	100	74.7	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	124.033	29.072	153	19.92	100	124.0	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	nogas	416980	2.05	600627	69.42	70	125	ISTD Failed
Ge	72	1	nogas	3961246	1.87	3907912	101.36	70	125	
In	115	1	nogas	3698364	0.78	3692400	100.16	70	125	
Bi	209	1	nogas	2978776	8.46	2779452	107.17	70	125	

Ge	72	2	He	1034800	1.01	1091915	94.77	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	100_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T14:00:59-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	0.094	17.1	433	13.9	1	
Na	23	1	nogas	96.549	10.0	2753785	5.5	100	
Mg	24	1	nogas	6.534	17.1	98813	13.8	100	
Al	27	1	nogas	1.644	4.1	60567	0.9	5	
K	39	1	nogas	-29.423	-19.4	8227398	0.4	100	
Ti	47	1	nogas	0.055	65.9	410	17.6	2.5	
V	51	1	nogas	-13.252	-11.3	1815177	3.4	2.5	
Cr	52	1	nogas	-1.677	-4.5	78224	2.6	2.5	
Mn	55	1	nogas	0.278	7.1	20965	2.7	2.5	
Co	59	1	nogas	0.056	11.6	1947	8.2	2.5	
Ni	60	1	nogas	-0.461	-7.8	2534	8.1	2.5	
Cu	63	1	nogas	-0.059	-45.6	6281	5.5	2.5	
Zn	66	1	nogas	-0.406	-6.6	1767	7.3	2.5	
As	75	1	nogas	-9.541	-4.4	207696	2.5	2.5	
Sr	88	1	nogas	0.139	6.4	6755	4.7	2.5	
Ag	107	1	nogas	0.089	30.8	2030	23.6	2.5	
Cd	111	1	nogas	0.068	14.7	323	12.9	1	
Sb	121	1	nogas	0.088	25.6	1830	21.0	2.5	
Tl	205	1	nogas	0.312	48.4	9337	47.9	1	
Pb	208	1	nogas	0.070	13.2	3500	9.2	2.5	
U	238	1	nogas	0.078	26.2	3107	25.3	2.5	
[Pb]	206	1	nogas	0.067	5.8	943	5.8	2.5	
[Pb]	207	1	nogas	0.055	17.8	750	13.1	2.5	
Na	23	2	He	97.406	2.1	234312	0.5	100	
Mg	24	2	He	5.612	9.3	5671	8.8	100	
Al	27	2	He	0.894	39.0	1833	10.3	5	
K	39	2	He	-17.271	-18.1	254514	1.4	100	
Ca	43	2	He	19.953	32.3	110	18.2	100	
Ca	44	2	He	16.523	5.0	2150	2.9	100	
V	51	2	He	-0.304	-8.1	26242	0.5	2.5	
Cr	52	2	He	-0.212	-12.5	3674	6.0	2.5	
Mn	55	2	He	0.159	1.5	1287	2.0	2.5	
Fe	56	2	He	5.215	4.7	58781	2.8	100	
Co	59	2	He	0.053	9.6	697	8.7	2.5	
Ni	60	2	He	-0.249	-24.0	710	23.3	2.5	
Cu	63	2	He	-0.159	-11.4	2444	4.5	2.5	
Zn	66	2	He	-0.174	-27.8	487	17.5	2.5	
As	75	2	He	-0.038	-84.3	1066	6.4	2.5	
Se	78	2	He	-0.253	-81.2	274	12.5	2.5	
B	11	1	nogas	0.415	106.0	56861	0.2	10	
Si	28	1	nogas	-60.991	-4.1	1522189	0.6	5	
Ca	43	1	nogas	19.525	5.0	1657	2.4	100	
Ca	44	1	nogas	-15.435	-14.4	50548	1.8	100	
Fe	56	1	nogas	-20.310	-9.3	3211537	0.5	100	
Se	77	1	nogas	-53.974	-2.5	66939	2.0	2.5	
Se	82	1	nogas	0.271	27.1	517	5.6	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.197	29.3	1643	25.2	2.5	
Sn	118	1	nogas	0.306	10.7	4417	8.6	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.118	6.0	1017	4.0	2.5	
Sb	121	2	He	0.080	8.3	710	7.0	2.5	
P	31	1	nogas	1.067	52.6	64202	0.4	10	
La	139	1	nogas	4.677	142.0	480	11.0	2.5	CCB Main CR1 Failed
Au	197	1	nogas	10.535	44.0	23	24.7	2.5	CCB 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	nogas	463380	2.17	600627	77.15	70	125	
Ge	72	1	nogas	4049616	1.19	3907912	103.63	70	125	
In	115	1	nogas	4017325	0.09	3692400	108.80	70	125	
Bi	209	1	nogas	3039945	1.84	2779452	109.37	70	125	
Ge	72	2	He	1064056	0.82	1091915	97.45	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	106_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T14:12:57-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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	Upper Limit	QC Flag
Be	9	1	nogas	0.099	21.5	453	17.8	1	
Na	23	1	nogas	92.462	9.0	2628381	7.2	100	
Mg	24	1	nogas	6.896	13.7	102532	12.7	100	
Al	27	1	nogas	1.599	5.1	60162	1.4	5	
K	39	1	nogas	-33.488	-16.1	8193883	0.7	100	
Ti	47	1	nogas	0.035	40.9	370	7.2	2.5	
V	51	1	nogas	-20.916	-6.1	1583672	0.9	2.5	
Cr	52	1	nogas	-1.953	-4.5	71474	1.5	2.5	
Mn	55	1	nogas	0.249	1.7	20175	1.7	2.5	
Co	59	1	nogas	0.061	5.4	2103	4.8	2.5	
Ni	60	1	nogas	-0.454	-1.8	2597	1.6	2.5	
Cu	63	1	nogas	-0.057	-28.9	6365	5.6	2.5	
Zn	66	1	nogas	-0.419	-5.3	1717	8.2	2.5	
As	75	1	nogas	-13.158	-5.3	182974	1.5	2.5	
Sr	88	1	nogas	0.135	9.9	6678	7.8	2.5	
Ag	107	1	nogas	0.082	22.3	1923	18.8	2.5	
Cd	111	1	nogas	0.046	10.0	230	7.5	1	
Sb	121	1	nogas	0.318	3.3	6011	4.0	2.5	
Tl	205	1	nogas	0.308	45.2	9160	44.6	1	
Pb	208	1	nogas	0.068	22.9	3417	15.7	2.5	
U	238	1	nogas	0.086	26.8	3394	25.9	2.5	
[Pb]	206	1	nogas	0.065	14.8	920	10.4	2.5	
[Pb]	207	1	nogas	0.053	22.7	730	15.4	2.5	
Na	23	2	He	90.932	1.7	222035	1.2	100	
Mg	24	2	He	5.994	6.2	5944	5.3	100	
Al	27	2	He	0.874	12.6	1803	3.4	5	
K	39	2	He	-18.920	-8.0	252676	0.7	100	
Ca	43	2	He	17.169	36.4	100	20.0	100	
Ca	44	2	He	13.649	16.9	1970	6.3	100	
V	51	2	He	-0.678	-1.5	23066	0.2	2.5	
Cr	52	2	He	-0.211	-8.3	3637	3.9	2.5	
Mn	55	2	He	0.170	17.8	1337	13.9	2.5	
Fe	56	2	He	5.615	2.2	61185	1.6	100	
Co	59	2	He	0.054	12.2	707	10.8	2.5	
Ni	60	2	He	-0.198	-10.6	843	6.8	2.5	
Cu	63	2	He	-0.164	-14.8	2384	7.4	2.5	
Zn	66	2	He	-0.184	-18.4	463	13.0	2.5	
As	75	2	He	-0.086	-6.3	966	1.1	2.5	
Se	78	2	He	-0.238	-50.5	273	6.9	2.5	
B	11	1	nogas	0.305	216.2	56397	4.1	10	

Continuing Calibration Blank (CCB) Report

Si	28	1	nogas	-63.670	-1.6	1504374	2.4	5	
Ca	43	1	nogas	19.219	8.1	1657	5.7	100	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ca	44	1	nogas	-15.717	-6.4	50722	0.6	100	
Fe	56	1	nogas	-23.686	-11.2	3136935	0.7	100	
Se	77	1	nogas	-76.169	-8.3	58370	3.4	2.5	
Se	82	1	nogas	0.103	212.1	460	18.8	2.5	
Mo	95	1	nogas	0.270	22.1	2214	21.6	2.5	
Sn	118	1	nogas	0.276	6.8	4077	5.5	5	
Ba	137	1	nogas	0.147	31.7	1183	20.9	2.5	
Sb	121	2	He	0.299	5.5	2240	5.1	2.5	
P	31	1	nogas	0.266	557.5	63262	2.5	10	
La	139	1	nogas	-2.558	-166.2	423	9.5	2.5	
Au	197	1	nogas	2.233	219.0	13	43.3	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	461820	2.13	600627	76.89	70	125	
Ge	72	1	nogas	4078972	1.79	3907912	104.38	70	125	
In	115	1	nogas	4027910	2.33	3692400	109.09	70	125	
Bi	209	1	nogas	3024364	1.01	2779452	108.81	70	125	
Ge	72	2	He	1052745	0.15	1091915	96.41	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	108_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T14:17:01-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	99.535	6.078	353393	0.71	100	99.5	90	110	
Na	23	1	nogas	9354.452	9.006	188039471	1.83	10000	93.5	90	110	
Mg	24	1	nogas	9537.846	10.436	125798661	0.81	10000	95.4	90	110	
Al	27	1	nogas	101.576	5.438	1720893	6.95	100	101.6	90	110	
K	39	1	nogas	10574.739	5.630	222996363	1.60	10000	105.7	90	110	
Ti	47	1	nogas	103.842	6.638	199477	1.97	100	103.8	90	110	
V	51	1	nogas	89.381	9.626	4536916	0.84	100	89.4	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	103.279	6.470	2534371	2.56	100	103.3	90	110	
Mn	55	1	nogas	108.133	6.843	3141192	3.08	100	108.1	90	110	
Co	59	1	nogas	101.795	7.420	2560735	3.83	100	101.8	90	110	
Ni	60	1	nogas	104.760	4.112	588152	1.38	100	104.8	90	110	
Cu	63	1	nogas	99.433	9.390	1339174	5.29	100	99.4	90	110	
Zn	66	1	nogas	108.483	5.398	499404	1.65	100	108.5	90	110	
As	75	1	nogas	88.389	6.271	816989	0.39	100	88.4	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	109.129	5.323	3570662	1.64	100	109.1	90	110	
Ag	107	1	nogas	106.239	7.119	1762081	2.49	100	106.2	90	110	
Cd	111	1	nogas	109.612	9.044	390797	1.67	100	109.6	90	110	
Sb	121	1	nogas	105.550	6.776	1704000	2.67	100	105.6	90	110	
Tl	205	1	nogas	104.738	4.310	2622531	0.64	100	104.7	90	110	
Pb	208	1	nogas	102.807	2.837	3565971	2.84	100	102.8	90	110	
U	238	1	nogas	116.794	5.674	3745655	2.24	100	116.8	90	110	CCV Main CR1-2 Failed
[Pb]	206	1	nogas	103.244	3.875	886085	1.48	100	103.2	90	110	
[Pb]	207	1	nogas	104.493	4.909	794116	0.94	100	104.5	90	110	
Na	23	2	He	9681.660	1.314	14234079	1.72	10000	96.8	90	110	
Mg	24	2	He	9376.416	0.544	7961424	1.26	10000	93.8	90	110	
Al	27	2	He	90.136	1.311	47326	0.60	100	90.1	90	110	
K	39	2	He	9448.325	1.420	10809473	1.38	10000	94.5	90	110	
Ca	43	2	He	9286.971	2.126	28819	2.92	10000	92.9	90	110	
Ca	44	2	He	9460.365	1.526	499505	2.21	10000	94.6	90	110	
V	51	2	He	95.230	0.554	741113	0.43	100	95.2	90	110	
Cr	52	2	He	97.134	1.143	782194	0.35	100	97.1	90	110	
Mn	55	2	He	95.444	1.875	565515	1.27	100	95.4	90	110	
Fe	56	2	He	9740.308	1.235	70945811	0.52	10000	97.4	90	110	
Co	59	2	He	97.843	2.164	1070335	1.61	100	97.8	90	110	
Ni	60	2	He	101.948	2.142	273592	1.65	100	101.9	90	110	
Cu	63	2	He	101.169	1.464	696196	2.20	100	101.2	90	110	
Zn	66	2	He	100.248	0.853	172342	1.35	100	100.2	90	110	
As	75	2	He	98.605	0.612	178809	0.21	100	98.6	90	110	
Se	78	2	He	93.375	1.716	14745	2.41	100	93.4	90	110	
B	11	1	nogas	499.845	11.876	1156957	6.10	500	100.0	90	110	
Si	28	1	nogas	4747.807	5.072	47994159	0.87	5000	95.0	90	110	
Ca	43	1	nogas	10542.841	4.448	395369	1.62	10000	105.4	90	110	
Ca	44	1	nogas	10723.958	6.191	6714232	3.10	10000	107.2	90	110	
Fe	56	1	nogas	10868.074	6.985	282417365	2.40	10000	108.7	90	110	
Se	77	1	nogas	32.230	30.473	91294	1.05	100	32.2	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	106.719	5.487	34981	1.27	100	106.7	90	110	
Mo	95	1	nogas	106.620	4.417	721661	1.16	100	106.6	90	110	
Sn	118	1	nogas	105.476	7.105	1050443	0.68	100	105.5	90	110	
Ba	137	1	nogas	108.626	8.730	543366	1.41	100	108.6	90	110	
Sb	121	2	He	99.465	1.881	675511	1.84	100	99.5	90	110	
Li	7	1	nogas	97.011	6.936	663495	1.21	100	97.0	90	110	
P	31	1	nogas	488.290	5.343	808209	0.68	500	97.7	90	110	
La	139	1	nogas	96.204	19.138	1047	13.92	100	96.2	90	110	
Au	197	1	nogas	110.913	64.356	123	56.95	100	110.9	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	nogas	385075	5.35	600627	64.11	70	125	ISTD Failed
Ge	72	1	nogas	3638010	4.81	3907912	93.09	70	125	
In	115	1	nogas	3462682	7.42	3692400	93.78	70	125	
Bi	209	1	nogas	2644688	3.96	2779452	95.15	70	125	

Ge	72	2	He	1016046	0.80	1091915	93.05	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	118_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T14:36:56-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	96.813	3.442	385991	1.15	100	96.8	90	110	
Na	23	1	nogas	9917.747	2.281	213017942	1.46	10000	99.2	90	110	
Mg	24	1	nogas	9703.470	3.662	136889199	2.38	10000	97.0	90	110	
Al	27	1	nogas	96.387	8.147	1831595	5.41	100	96.4	90	110	
K	39	1	nogas	9888.592	2.854	234852430	0.60	10000	98.9	90	110	
Ti	47	1	nogas	99.049	4.374	213857	3.07	100	99.0	90	110	
V	51	1	nogas	105.801	6.661	5619407	2.12	100	105.8	90	110	
Cr	52	1	nogas	99.544	2.965	2751359	4.81	100	99.5	90	110	
Mn	55	1	nogas	102.600	4.634	3353100	6.18	100	102.6	90	110	
Co	59	1	nogas	101.487	0.871	2870984	2.79	100	101.5	90	110	
Ni	60	1	nogas	100.275	4.248	632259	1.21	100	100.3	90	110	
Cu	63	1	nogas	101.523	2.878	1539529	5.93	100	101.5	90	110	
Zn	66	1	nogas	99.948	4.644	517051	2.25	100	99.9	90	110	
As	75	1	nogas	93.937	3.804	957746	0.44	100	93.9	90	110	
Sr	88	1	nogas	104.778	1.786	3853778	3.69	100	104.8	90	110	
Ag	107	1	nogas	104.806	1.237	1955675	4.31	100	104.8	90	110	
Cd	111	1	nogas	100.552	4.276	402583	1.19	100	100.6	90	110	
Sb	121	1	nogas	104.412	4.175	1894585	3.40	100	104.4	90	110	
Tl	205	1	nogas	99.302	3.647	2788964	4.84	100	99.3	90	110	
Pb	208	1	nogas	108.676	0.927	3769456	0.93	100	108.7	90	110	
U	238	1	nogas	105.497	3.428	3794026	2.30	100	105.5	90	110	
[Pb]	206	1	nogas	94.963	2.567	913652	2.03	100	95.0	90	110	
[Pb]	207	1	nogas	94.891	3.489	808625	2.52	100	94.9	90	110	
Na	23	2	He	9991.710	2.922	15752030	1.47	10000	99.9	90	110	
Mg	24	2	He	9381.659	2.806	8543690	1.70	10000	93.8	90	110	
Al	27	2	He	90.941	4.902	51213	4.83	100	90.9	90	110	
K	39	2	He	10187.874	0.668	11634134	0.65	10000	101.9	90	110	
Ca	43	2	He	9636.674	3.392	32068	2.34	10000	96.4	90	110	
Ca	44	2	He	9682.777	0.962	548416	1.86	10000	96.8	90	110	
V	51	2	He	97.231	1.149	811097	0.34	100	97.2	90	110	
Cr	52	2	He	96.124	0.534	830501	1.15	100	96.1	90	110	
Mn	55	2	He	95.562	1.104	607431	0.63	100	95.6	90	110	
Fe	56	2	He	9734.921	0.851	76068767	0.84	10000	97.3	90	110	
Co	59	2	He	97.526	1.763	1144466	0.53	100	97.5	90	110	
Ni	60	2	He	100.337	3.550	288828	2.14	100	100.3	90	110	
Cu	63	2	He	99.240	2.759	732481	1.44	100	99.2	90	110	
Zn	66	2	He	100.681	1.596	185677	1.84	100	100.7	90	110	
As	75	2	He	96.974	1.125	188662	0.66	100	97.0	90	110	
Se	78	2	He	92.919	2.272	15739	0.98	100	92.9	90	110	
B	11	1	nogas	563.335	7.930	1459247	5.25	500	112.7	90	110	CCV Main CR1-2 Failed
Si	28	1	nogas	4693.478	3.250	53319426	1.37	5000	93.9	90	110	
Ca	43	1	nogas	10095.670	3.935	425137	0.99	10000	101.0	90	110	
Ca	44	1	nogas	10043.066	5.865	7064181	2.87	10000	100.4	90	110	
Fe	56	1	nogas	10266.765	3.508	300080740	1.64	10000	102.7	90	110	
Se	77	1	nogas	80.259	15.307	122036	1.54	100	80.3	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	103.072	3.174	37970	0.80	100	103.1	90	110	
Mo	95	1	nogas	99.763	1.806	758555	1.26	100	99.8	90	110	
Sn	118	1	nogas	97.130	4.280	1085321	0.96	100	97.1	90	110	
Ba	137	1	nogas	103.092	3.892	579074	0.36	100	103.1	90	110	
Sb	121	2	He	97.185	3.339	707885	1.92	100	97.2	90	110	
Li	7	1	nogas	94.562	2.196	727644	2.22	100	94.6	90	110	
P	31	1	nogas	468.300	3.095	873286	0.21	500	93.7	90	110	
La	139	1	nogas	102.035	4.208	1217	1.26	100	102.0	90	110	
Au	197	1	nogas	105.842	5.687	133	4.33	100	105.8	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	nogas	431750	2.78	600627	71.88	70	125	
Ge	72	1	nogas	4082628	3.08	3907912	104.47	70	125	
In	115	1	nogas	3875424	3.91	3692400	104.96	70	125	
Bi	209	1	nogas	2962297	1.18	2779452	106.58	70	125	

Ge	72	2	He	1090025	1.44	1091915	99.83	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	119_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T14:38:55-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	0.095	9.0	447	9.3	1	
Na	23	1	nogas	322.659	14.8	7716353	5.1	100	CCB Main CR1 Failed
Mg	24	1	nogas	9.327	19.8	140008	10.7	100	
Al	27	1	nogas	1.806	13.7	66779	3.7	5	
K	39	1	nogas	-21.075	-55.2	8847608	1.3	100	
Ti	47	1	nogas	0.049	29.9	420	10.4	2.5	
V	51	1	nogas	0.971	103.8	2381143	2.5	2.5	
Cr	52	1	nogas	-1.140	-12.5	96962	0.6	2.5	
Mn	55	1	nogas	0.279	13.2	22070	3.0	2.5	
Co	59	1	nogas	0.065	18.1	2307	11.4	2.5	
Ni	60	1	nogas	-0.319	-16.8	3584	6.5	2.5	
Cu	63	1	nogas	0.224	49.8	11047	13.6	2.5	
Zn	66	1	nogas	-0.357	-2.9	2120	1.2	2.5	
As	75	1	nogas	-5.720	-18.6	247151	2.6	2.5	
Sr	88	1	nogas	0.227	5.2	10497	1.7	2.5	
Ag	107	1	nogas	0.047	23.2	1337	14.4	2.5	
Cd	111	1	nogas	0.061	44.6	287	32.4	1	
Sb	121	1	nogas	0.102	13.0	2177	8.5	2.5	
Tl	205	1	nogas	0.251	38.6	7439	32.9	1	
Pb	208	1	nogas	0.070	21.5	3484	14.9	2.5	
U	238	1	nogas	0.076	26.2	3020	20.0	2.5	
[Pb]	206	1	nogas	0.067	38.0	937	25.2	2.5	
[Pb]	207	1	nogas	0.064	41.8	820	26.5	2.5	
Na	23	2	He	328.519	0.8	606567	0.3	100	CCB Main CR1 Failed
Mg	24	2	He	7.856	0.9	7905	1.1	100	
Al	27	2	He	1.038	10.7	1970	3.3	5	
K	39	2	He	-0.955	-433.6	272708	1.7	100	
Ca	43	2	He	16.865	86.7	103	47.7	100	
Ca	44	2	He	15.401	7.3	2153	3.0	100	
V	51	2	He	0.579	11.8	34215	1.6	2.5	
Cr	52	2	He	-0.189	-2.9	3984	1.3	2.5	
Mn	55	2	He	0.166	10.3	1373	8.0	2.5	
Fe	56	2	He	5.554	3.5	63302	2.6	100	
Co	59	2	He	0.048	16.5	667	14.4	2.5	
Ni	60	2	He	-0.163	-30.4	980	14.7	2.5	
Cu	63	2	He	-0.003	-828.3	3674	5.7	2.5	
Zn	66	2	He	-0.083	-35.6	670	7.9	2.5	
As	75	2	He	0.012	273.6	1196	4.8	2.5	
Se	78	2	He	-0.276	-18.6	279	2.9	2.5	
B	11	1	nogas	40.762	5.1	167655	2.1	10	CCB Main CR1 Failed
Si	28	1	nogas	-61.469	-13.3	1593680	2.4	5	
Ca	43	1	nogas	34.344	8.1	2390	1.9	100	
Ca	44	1	nogas	-14.155	-13.8	54078	0.9	100	
Fe	56	1	nogas	-7.325	-62.3	3766331	0.8	100	
Se	77	1	nogas	-31.784	-10.2	79807	2.8	2.5	
Se	82	1	nogas	0.204	144.9	517	20.1	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.155	15.5	1393	11.8	2.5	
Sn	118	1	nogas	0.216	11.9	3354	3.0	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.145	19.3	1173	14.6	2.5	
Sb	121	2	He	0.068	9.6	640	7.2	2.5	
P	31	1	nogas	3.168	35.1	71285	0.7	10	
La	139	1	nogas	-8.275	-100.1	377	21.6	2.5	
Au	197	1	nogas	24.853	67.3	40	50.0	2.5	CCB 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	nogas	470433	1.64	600627	78.32	70	125	
Ge	72	1	nogas	4259306	3.48	3907912	108.99	70	125	
In	115	1	nogas	4011373	5.75	3692400	108.64	70	125	
Bi	209	1	nogas	3020596	3.98	2779452	108.68	70	125	
Ge	72	2	He	1097434	0.39	1091915	100.51	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	130_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T15:03:52-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	005CALB.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
Be	9	1	nogas	0.101	21.3	473	17.2	1	
Na	23	1	nogas	266.591	12.0	6597896	6.2	100	CCB Main CR1 Failed
Mg	24	1	nogas	9.327	11.2	142619	6.3	100	
Al	27	1	nogas	1.673	11.9	66012	2.3	5	
K	39	1	nogas	-24.549	-62.3	9011673	0.3	100	
Ti	47	1	nogas	0.046	120.0	420	26.5	2.5	
V	51	1	nogas	1.764	161.3	2474483	0.5	2.5	
Cr	52	1	nogas	-1.017	-5.6	103272	2.5	2.5	
Mn	55	1	nogas	0.264	11.9	22150	1.0	2.5	
Co	59	1	nogas	0.072	15.6	2597	9.3	2.5	
Ni	60	1	nogas	-0.240	-12.0	4221	4.8	2.5	
Cu	63	1	nogas	0.168	44.4	10440	7.7	2.5	
Zn	66	1	nogas	-0.393	-8.3	1983	8.4	2.5	
As	75	1	nogas	-5.341	-15.8	257130	1.5	2.5	
Sr	88	1	nogas	0.249	11.2	11637	6.1	2.5	
Ag	107	1	nogas	0.040	35.2	1230	19.5	2.5	
Cd	111	1	nogas	0.062	43.2	300	30.0	1	
Sb	121	1	nogas	0.096	16.2	2130	12.2	2.5	
Tl	205	1	nogas	0.251	42.3	7679	36.7	1	
Pb	208	1	nogas	0.071	16.5	3524	11.5	2.5	
U	238	1	nogas	0.077	20.5	3157	15.1	2.5	
[Pb]	206	1	nogas	0.065	19.7	943	10.6	2.5	
[Pb]	207	1	nogas	0.060	39.5	807	22.5	2.5	
Na	23	2	He	249.660	1.3	509151	0.9	100	CCB Main CR1 Failed
Mg	24	2	He	7.931	2.7	8422	2.7	100	
Al	27	2	He	0.899	15.7	2000	4.1	5	
K	39	2	He	0.020	10143.1	273796	0.8	100	
Ca	43	2	He	13.445	76.6	97	36.3	100	
Ca	44	2	He	12.514	20.0	2100	6.2	100	
V	51	2	He	0.679	11.0	36989	0.3	2.5	
Cr	52	2	He	-0.172	-27.9	4364	10.1	2.5	
Mn	55	2	He	0.182	4.1	1553	2.9	2.5	
Fe	56	2	He	5.906	3.7	69771	1.3	100	
Co	59	2	He	0.057	9.8	817	9.9	2.5	
Ni	60	2	He	-0.058	-72.0	1357	10.7	2.5	
Cu	63	2	He	0.020	270.5	4057	9.0	2.5	
Zn	66	2	He	-0.105	-51.3	667	16.9	2.5	
As	75	2	He	0.030	77.8	1301	5.0	2.5	
Se	78	2	He	-0.404	-58.1	271	13.7	2.5	
B	11	1	nogas	44.220	7.3	177835	2.1	10	CCB Main CR1 Failed
Si	28	1	nogas	-59.497	-11.9	1663311	4.3	5	
Ca	43	1	nogas	42.639	13.8	2830	6.9	100	
Ca	44	1	nogas	-13.910	-21.3	55790	1.7	100	
Fe	56	1	nogas	-12.139	-50.7	3723374	1.9	100	
Se	77	1	nogas	-30.847	-19.5	82456	1.6	2.5	
Se	82	1	nogas	0.134	97.1	507	14.3	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.162	19.6	1487	13.8	2.5	
Sn	118	1	nogas	0.225	12.1	3570	1.3	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.109	20.8	990	11.6	2.5	
Sb	121	2	He	0.063	13.7	637	10.2	2.5	
P	31	1	nogas	3.579	59.3	74032	1.6	10	
La	139	1	nogas	3.084	174.1	483	13.8	2.5	CCB Main CR1 Failed
Au	197	1	nogas	1.635	744.0	13	114.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	472760	3.04	600627	78.71	70	125	
Ge	72	1	nogas	4381256	4.07	3907912	112.11	70	125	
In	115	1	nogas	4150755	7.62	3692400	112.41	70	125	
Bi	209	1	nogas	3121541	3.54	2779452	112.31	70	125	
Ge	72	2	He	1159186	1.47	1091915	106.16	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	131_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T15:05:51-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	005CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	100.620	8.163	385130	4.23	100	100.6	90	110	
Na	23	1	nogas	9841.446	6.070	214934305	1.41	10000	98.4	90	110	
Mg	24	1	nogas	9678.061	5.199	138888207	1.08	10000	96.8	90	110	
Al	27	1	nogas	98.850	2.553	1875841	5.81	100	98.8	90	110	
K	39	1	nogas	10089.153	4.546	238646480	2.17	10000	100.9	90	110	
Ti	47	1	nogas	101.909	4.539	219287	1.43	100	101.9	90	110	
V	51	1	nogas	91.358	7.072	5143506	1.64	100	91.4	90	110	
Cr	52	1	nogas	100.749	7.429	2769836	3.50	100	100.7	90	110	
Mn	55	1	nogas	105.561	4.680	3434770	1.49	100	105.6	90	110	
Co	59	1	nogas	102.151	8.013	2876164	4.45	100	102.2	90	110	
Ni	60	1	nogas	101.517	4.302	638052	0.74	100	101.5	90	110	
Cu	63	1	nogas	95.502	8.981	1440873	5.95	100	95.5	90	110	
Zn	66	1	nogas	103.447	3.666	533452	0.88	100	103.4	90	110	
As	75	1	nogas	87.783	5.825	910179	0.51	100	87.8	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	103.969	5.025	3808478	2.13	100	104.0	90	110	
Ag	107	1	nogas	103.028	7.917	1912886	4.39	100	103.0	90	110	
Cd	111	1	nogas	107.286	5.949	421203	1.13	100	107.3	90	110	
Sb	121	1	nogas	102.918	6.672	1860819	4.89	100	102.9	90	110	
Tl	205	1	nogas	102.105	7.580	2823864	3.12	100	102.1	90	110	
Pb	208	1	nogas	108.101	1.783	3749516	1.78	100	108.1	90	110	
U	238	1	nogas	106.888	2.579	3794577	4.05	100	106.9	90	110	
[Pb]	206	1	nogas	102.304	5.668	970201	1.61	100	102.3	90	110	
[Pb]	207	1	nogas	97.230	5.288	816903	1.50	100	97.2	90	110	
Na	23	2	He	9615.235	1.187	15905282	0.81	10000	96.2	90	110	
Mg	24	2	He	9285.345	0.769	8870573	0.96	10000	92.9	90	110	
Al	27	2	He	87.072	2.734	51490	2.63	100	87.1	90	110	CCV Main CR1-2 Failed
K	39	2	He	10168.934	3.214	11613014	3.14	10000	101.7	90	110	
Ca	43	2	He	9077.112	2.326	31694	2.95	10000	90.8	90	110	
Ca	44	2	He	9061.496	1.297	538335	1.27	10000	90.6	90	110	
V	51	2	He	92.901	1.503	814201	1.01	100	92.9	90	110	
Cr	52	2	He	93.634	2.130	848541	1.27	100	93.6	90	110	
Mn	55	2	He	93.472	1.786	623158	1.29	100	93.5	90	110	
Fe	56	2	He	9471.250	0.620	77623754	0.53	10000	94.7	90	110	
Co	59	2	He	96.587	0.670	1188903	0.39	100	96.6	90	110	
Ni	60	2	He	99.829	1.266	301479	0.90	100	99.8	90	110	
Cu	63	2	He	95.905	2.195	742714	2.28	100	95.9	90	110	
Zn	66	2	He	96.822	2.024	187310	2.05	100	96.8	90	110	
As	75	2	He	95.927	0.889	195754	0.10	100	95.9	90	110	
Se	78	2	He	91.071	1.564	16187	0.78	100	91.1	90	110	
B	11	1	nogas	555.244	5.258	1384893	5.69	500	111.0	90	110	CCV Main CR1-2 Failed
Si	28	1	nogas	459.515	3.426	7183081	2.30	5000	9.2	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	9975.345	5.348	418657	1.80	10000	99.8	90	110	
Ca	44	1	nogas	10011.934	4.561	7022748	1.25	10000	100.1	90	110	
Fe	56	1	nogas	10599.285	2.622	308777749	1.34	10000	106.0	90	110	
Se	77	1	nogas	31.638	19.687	101977	1.05	100	31.6	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	104.562	4.397	38384	0.81	100	104.6	90	110	
Mo	95	1	nogas	102.160	2.845	774258	0.74	100	102.2	90	110	
Sn	118	1	nogas	104.593	7.166	1145452	1.66	100	104.6	90	110	
Ba	137	1	nogas	108.004	5.408	594951	1.04	100	108.0	90	110	
Sb	121	2	He	93.516	0.317	714622	0.68	100	93.5	90	110	
Li	7	1	nogas	100.046	6.844	736933	2.53	100	100.0	90	110	
P	31	1	nogas	484.634	4.115	898624	0.38	500	96.9	90	110	
La	139	1	nogas	88.083	13.293	1090	11.12	100	88.1	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	55.305	17.041	73	7.87	100	55.3	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	nogas	415107	3.88	600627	69.11	70	125	ISTD Failed
Ge	72	1	nogas	4070559	3.47	3907912	104.16	70	125	
In	115	1	nogas	3804032	5.33	3692400	103.02	70	125	
Bi	209	1	nogas	2926415	6.32	2779452	105.29	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	1143217	0.87	1091915	104.70	70	125	

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	137CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T21:36:28-05:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	17	207.85
Na	23	1	nogas	676711	0.00
Mg	24	1	nogas	15075	0.10
Al	27	1	nogas	23628	0.01
K	39	1	nogas	6865874	0.00
Ti	47	1	nogas	140	15.31
V	51	1	nogas	1251564	0.00
Cr	52	1	nogas	59733	0.00
Mn	55	1	nogas	13442	0.01
Co	59	1	nogas	363	4.87
Ni	60	1	nogas	1433	0.93
Cu	63	1	nogas	2434	0.37
Zn	66	1	nogas	750	1.39
As	75	1	nogas	147582	0.00
Sr	88	1	nogas	2037	0.35
Ag	107	1	nogas	340	5.67
Cd	111	1	nogas	13	324.76
Sb	121	1	nogas	293	2.42
Tl	205	1	nogas	177	12.13
Pb	208	1	nogas	850	0.28
[Pb]	206	1	nogas	227	2.25
[Pb]	207	1	nogas	207	8.87
Na	23	2	He	86512	0.00
Mg	24	2	He	1287	0.51
Al	27	2	He	797	1.90
K	39	2	He	206526	0.00
Ca	43	2	He	3	5196.15
Ca	44	2	He	1043	1.10
V	51	2	He	16856	0.01
Cr	52	2	He	4517	0.15
Mn	55	2	He	293	7.10
Fe	56	2	He	17252	0.01
Co	59	2	He	87	7.69
Ni	60	2	He	500	0.40
Cu	63	2	He	1043	1.38
Zn	66	2	He	277	3.02
As	75	2	He	728	1.39
Se	78	2	He	237	7.53
B	11	1	nogas	11047	0.04
Si	28	1	nogas	971080	0.00
Ca	43	1	nogas	717	1.84
Ca	44	1	nogas	37344	0.01

Calibration Blank Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	2919481	0.00
Se	77	1	nogas	47472	0.01
Se	82	1	nogas	403	2.48
Mo	95	1	nogas	107	22.12
Sn	118	1	nogas	950	1.02
Ba	137	1	nogas	457	2.73
Sb	121	2	He	160	17.03
Li	7	1	nogas	33276	0.00
P	31	1	nogas	50488	0.01
La	139	1	nogas	413	3.22

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	6	1	nogas	371207	1.79
Ge	72	1	nogas	3973785	2.54
In	115	1	nogas	4041602	0.99
Bi	209	1	nogas	2996457	2.08
Ge	72	2	He	984415	2.37

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	138CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T21:38:28-05:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	137CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	5934	0.08
Na	23	1	nogas	4223372	0.00
Mg	24	1	nogas	2433333	0.00
Al	27	1	nogas	56191	0.00
K	39	1	nogas	10981779	0.00
Ti	47	1	nogas	4254	0.19
V	51	1	nogas	1193852	0.00
Cr	52	1	nogas	106005	0.00
Mn	55	1	nogas	78520	0.00
Co	59	1	nogas	54428	0.01
Ni	60	1	nogas	13475	0.02
Cu	63	1	nogas	31280	0.01
Zn	66	1	nogas	11344	0.01
As	75	1	nogas	157315	0.00
Sr	88	1	nogas	78847	0.00
Ag	107	1	nogas	38579	0.00
Cd	111	1	nogas	8065	0.04
Sb	121	1	nogas	42953	0.00
Tl	205	1	nogas	53862	0.00
Pb	208	1	nogas	75983	0.00
[Pb]	206	1	nogas	19315	0.02
[Pb]	207	1	nogas	16549	0.01
Na	23	2	He	381319	0.00
Mg	24	2	He	164022	0.00
Al	27	2	He	1800	0.35
K	39	2	He	412606	0.00
Ca	43	2	He	640	0.49
Ca	44	2	He	11390	0.01
V	51	2	He	30932	0.01
Cr	52	2	He	20121	0.01
Mn	55	2	He	11777	0.04
Fe	56	2	He	1541386	0.00
Co	59	2	He	22701	0.00
Ni	60	2	He	6208	0.06
Cu	63	2	He	15220	0.03
Zn	66	2	He	3845	0.21
As	75	2	He	4116	0.05
Se	78	2	He	526	0.33
B	11	1	nogas	31413	0.01
Si	28	1	nogas	2014477	0.00

Calibration Standard Report

Ca	43	1	nogas	8792	0.05
Ca	44	1	nogas	167263	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	8677956	0.00
Se	77	1	nogas	47255	0.01
Se	82	1	nogas	1103	0.82
Mo	95	1	nogas	14593	0.01
Sn	118	1	nogas	23576	0.02
Ba	137	1	nogas	12021	0.03
Sb	121	2	He	16431	0.02
P	31	1	nogas	64009	0.00
La	139	1	nogas	327	0.54

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	354979	1.37	371207	95.63	70	125	
Ge	72	1	nogas	3909633	1.97	3973785	98.39	70	125	
In	115	1	nogas	4001686	0.62	4041602	99.01	70	125	
Bi	209	1	nogas	3018282	2.40	2996457	100.73	70	125	
Ge	72	2	He	1000345	1.75	984415	101.62	70	125	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	139CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T21:40:28-05:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	137CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	14022	0.02
Na	23	1	nogas	9628925	0.00
Mg	24	1	nogas	6070993	0.00
Al	27	1	nogas	102052	0.00
K	39	1	nogas	17044422	0.00
Ti	47	1	nogas	9786	0.04
V	51	1	nogas	1344560	0.00
Cr	52	1	nogas	182777	0.00
Mn	55	1	nogas	180875	0.00
Co	59	1	nogas	133302	0.00
Ni	60	1	nogas	31514	0.00
Cu	63	1	nogas	73779	0.00
Zn	66	1	nogas	26850	0.00
As	75	1	nogas	182658	0.00
Sr	88	1	nogas	187873	0.00
Ag	107	1	nogas	94401	0.00
Cd	111	1	nogas	20796	0.02
Sb	121	1	nogas	92608	0.00
Tl	205	1	nogas	138030	0.00
Pb	208	1	nogas	186925	0.00
[Pb]	206	1	nogas	47292	0.01
[Pb]	207	1	nogas	40273	0.00
Na	23	2	He	814872	0.00
Mg	24	2	He	411809	0.00
Al	27	2	He	3167	0.15
K	39	2	He	716540	0.00
Ca	43	2	He	1510	0.42
Ca	44	2	He	25424	0.00
V	51	2	He	53121	0.00
Cr	52	2	He	44504	0.01
Mn	55	2	He	28863	0.01
Fe	56	2	He	3686091	0.00
Co	59	2	He	55367	0.00
Ni	60	2	He	14382	0.03
Cu	63	2	He	36136	0.01
Zn	66	2	He	9276	0.03
As	75	2	He	9447	0.01
Se	78	2	He	973	0.42
B	11	1	nogas	59637	0.00
Si	28	1	nogas	3301557	0.00

Calibration Standard Report

Ca	43	1	nogas	20745	0.01
Ca	44	1	nogas	365231	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	17652822	0.00
Se	77	1	nogas	50433	0.00
Se	82	1	nogas	2177	0.36
Mo	95	1	nogas	37276	0.01
Sn	118	1	nogas	55953	0.00
Ba	137	1	nogas	28868	0.00
Sb	121	2	He	32965	0.01
P	31	1	nogas	86571	0.00
La	139	1	nogas	227	6.84

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	346639	4.49	371207	93.38	70	125	
Ge	72	1	nogas	3734367	6.23	3973785	93.98	70	125	
In	115	1	nogas	3710733	6.78	4041602	91.81	70	125	
Bi	209	1	nogas	2872467	5.90	2996457	95.86	70	125	
Ge	72	2	He	998915	1.04	984415	101.47	70	125	

Calibration Standard Report

Sample Table

Sample Name	10/50/1000
Data File Name	140CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T21:42:28-05:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	137CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	30204	0.01
Na	23	1	nogas	18725497	0.00
Mg	24	1	nogas	12282478	0.00
Al	27	1	nogas	179778	0.00
K	39	1	nogas	28051992	0.00
Ti	47	1	nogas	20331	0.00
V	51	1	nogas	1542334	0.00
Cr	52	1	nogas	312147	0.00
Mn	55	1	nogas	344800	0.00
Co	59	1	nogas	267442	0.00
Ni	60	1	nogas	62516	0.00
Cu	63	1	nogas	150083	0.00
Zn	66	1	nogas	53321	0.01
As	75	1	nogas	222238	0.00
Sr	88	1	nogas	384262	0.00
Ag	107	1	nogas	194206	0.00
Cd	111	1	nogas	41606	0.01
Sb	121	1	nogas	188680	0.00
Tl	205	1	nogas	282822	0.00
Pb	208	1	nogas	385131	0.00
[Pb]	206	1	nogas	96766	0.00
[Pb]	207	1	nogas	85062	0.00
Na	23	2	He	1562099	0.00
Mg	24	2	He	825025	0.00
Al	27	2	He	5731	0.05
K	39	2	He	1281311	0.00
Ca	43	2	He	3117	0.32
Ca	44	2	He	50993	0.00
V	51	2	He	91165	0.00
Cr	52	2	He	82775	0.00
Mn	55	2	He	57690	0.00
Fe	56	2	He	7317023	0.00
Co	59	2	He	113391	0.00
Ni	60	2	He	29774	0.00
Cu	63	2	He	73611	0.00
Zn	66	2	He	18650	0.03
As	75	2	He	18667	0.01
Se	78	2	He	1635	0.19
B	11	1	nogas	115689	0.00
Si	28	1	nogas	5458554	0.00

Calibration Standard Report

Ca	43	1	nogas	41510	0.01
Ca	44	1	nogas	712508	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	31785337	0.00
Se	77	1	nogas	53589	0.00
Se	82	1	nogas	3797	0.24
Mo	95	1	nogas	74328	0.00
Sn	118	1	nogas	113549	0.00
Ba	137	1	nogas	59152	0.01
Sb	121	2	He	67838	0.00
P	31	1	nogas	123844	0.00
La	139	1	nogas	1277	0.26

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	331194	1.76	371207	89.22	70	125	
Ge	72	1	nogas	3795643	5.50	3973785	95.52	70	125	
In	115	1	nogas	3730260	8.92	4041602	92.30	70	125	
Bi	209	1	nogas	2820061	6.26	2996457	94.11	70	125	
Ge	72	2	He	998430	0.83	984415	101.42	70	125	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	141CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T21:44:26-05:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	137CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	282881	0.00
Na	23	1	nogas	166151737	0.00
Mg	24	1	nogas	113277223	0.00
Al	27	1	nogas	1494937	0.00
K	39	1	nogas	202643625	0.00
Ti	47	1	nogas	186153	0.00
V	51	1	nogas	3840916	0.00
Cr	52	1	nogas	2493013	0.00
Mn	55	1	nogas	3202185	0.00
Co	59	1	nogas	2560937	0.00
Ni	60	1	nogas	552367	0.00
Cu	63	1	nogas	1337625	0.00
Zn	66	1	nogas	483505	0.00
As	75	1	nogas	764699	0.00
Sr	88	1	nogas	3656906	0.00
Ag	107	1	nogas	1862229	0.00
Cd	111	1	nogas	398704	0.00
Sb	121	1	nogas	1832724	0.00
Tl	205	1	nogas	2788829	0.00
Pb	208	1	nogas	3587875	0.00
[Pb]	206	1	nogas	879415	0.00
[Pb]	207	1	nogas	774675	0.00
Na	23	2	He	13835339	0.00
Mg	24	2	He	7788562	0.00
Al	27	2	He	43982	0.01
K	39	2	He	10112821	0.00
Ca	43	2	He	27467	0.00
Ca	44	2	He	475035	0.00
V	51	2	He	716527	0.00
Cr	52	2	He	765266	0.00
Mn	55	2	He	540447	0.00
Fe	56	2	He	68796832	0.00
Co	59	2	He	1049815	0.00
Ni	60	2	He	266324	0.00
Cu	63	2	He	681717	0.00
Zn	66	2	He	170414	0.00
As	75	2	He	171586	0.00
Se	78	2	He	14035	0.02
B	11	1	nogas	994459	0.00
Si	28	1	nogas	43628434	0.00

Calibration Standard Report

Ca	43	1	nogas	378930	0.00
Ca	44	1	nogas	6332173	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	277094898	0.00
Se	77	1	nogas	75312	0.00
Se	82	1	nogas	35158	0.01
Mo	95	1	nogas	712184	0.00
Sn	118	1	nogas	1069874	0.00
Ba	137	1	nogas	538239	0.00
Sb	121	2	He	651998	0.00
P	31	1	nogas	721916	0.00
La	139	1	nogas	1003	1.79

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	320240	1.78	371207	86.27	70	125	
Ge	72	1	nogas	3681751	3.90	3973785	92.65	70	125	
In	115	1	nogas	3665382	5.08	4041602	90.69	70	125	
Bi	209	1	nogas	2671761	5.31	2996457	89.16	70	125	
Ge	72	2	He	985933	1.23	984415	100.15	70	125	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	142CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T21:46:24-05:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	137CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	561168	0.00
Na	23	1	nogas	326018457	0.00
Mg	24	1	nogas	218705230	0.00
Al	27	1	nogas	2814813	0.00
K	39	1	nogas	391593834	0.00
Ti	47	1	nogas	363153	0.00
V	51	1	nogas	6376774	0.00
Cr	52	1	nogas	4718238	0.00
Mn	55	1	nogas	6137082	0.00
Co	59	1	nogas	5104446	0.00
Ni	60	1	nogas	1100352	0.00
Cu	63	1	nogas	2729914	0.00
Zn	66	1	nogas	950860	0.00
As	75	1	nogas	1422751	0.00
Sr	88	1	nogas	7257259	0.00
Ag	107	1	nogas	3691641	0.00
Cd	111	1	nogas	778190	0.00
Sb	121	1	nogas	3635890	0.00
Tl	205	1	nogas	5411718	0.00
Pb	208	1	nogas	7396178	0.00
[Pb]	206	1	nogas	1861264	0.00
[Pb]	207	1	nogas	1638274	0.00
Na	23	2	He	26645192	0.00
Mg	24	2	He	14926139	0.00
Al	27	2	He	84287	0.00
K	39	2	He	19672538	0.00
Ca	43	2	He	55570	0.00
Ca	44	2	He	939556	0.00
V	51	2	He	1415741	0.00
Cr	52	2	He	1519193	0.00
Mn	55	2	He	1046806	0.00
Fe	56	2	He	134039338	0.00
Co	59	2	He	2164992	0.00
Ni	60	2	He	522172	0.00
Cu	63	2	He	1387701	0.00
Zn	66	2	He	333392	0.00
As	75	2	He	339338	0.00
Se	78	2	He	27867	0.00
B	11	1	nogas	1965843	0.00
Si	28	1	nogas	81264535	0.00

Calibration Standard Report

Ca	43	1	nogas	738359	0.00
Ca	44	1	nogas	12403454	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	545637262	0.00
Se	77	1	nogas	102936	0.00
Se	82	1	nogas	70484	0.00
Mo	95	1	nogas	1484763	0.00
Sn	118	1	nogas	2221966	0.00
Ba	137	1	nogas	1078239	0.00
Sb	121	2	He	1349061	0.00
P	31	1	nogas	1402734	0.00
La	139	1	nogas	1653	0.30

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	283789	8.01	371207	76.45	70	125	
Ge	72	1	nogas	3595689	8.40	3973785	90.49	70	125	
In	115	1	nogas	3432112	12.70	4041602	84.92	70	125	
Bi	209	1	nogas	2613133	11.38	2996457	87.21	70	125	
Ge	72	2	He	957296	1.15	984415	97.25	70	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICCV
Data File Name	143_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T21:48:24-05:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	137CALB.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
Be	9	1	nogas	89.622	4.394	278139	1.24	100	89.6	90	110	ICV Main CR1 Failed
Na	23	1	nogas	9437.426	5.038	161988849	2.24	10000	94.4	90	110	
Mg	24	1	nogas	9514.597	5.779	109636548	1.41	10000	95.1	90	110	
Al	27	1	nogas	98.718	5.085	1497900	5.27	100	98.7	90	110	
K	39	1	nogas	9572.694	7.971	201897642	3.31	10000	95.7	90	110	
Ti	47	1	nogas	98.523	5.004	189882	1.90	100	98.5	90	110	
V	51	1	nogas	84.287	12.371	3539147	4.40	100	84.3	90	110	ICV Main CR1 Failed
Cr	52	1	nogas	94.551	8.642	2401806	5.42	100	94.6	90	110	
Mn	55	1	nogas	97.954	6.374	3201800	2.41	100	98.0	90	110	
Co	59	1	nogas	93.710	8.550	2522746	4.10	100	93.7	90	110	
Ni	60	1	nogas	93.316	6.609	542939	2.18	100	93.3	90	110	
Cu	63	1	nogas	94.088	7.061	1350957	3.21	100	94.1	90	110	
Zn	66	1	nogas	94.721	6.142	477154	1.77	100	94.7	90	110	
As	75	1	nogas	86.499	5.834	727914	0.32	100	86.5	90	110	ICV Main CR1 Failed
Sr	88	1	nogas	95.406	4.999	3657484	0.98	100	95.4	90	110	
Ag	107	1	nogas	93.392	3.547	1823802	3.20	100	93.4	90	110	
Cd	111	1	nogas	94.439	6.165	396479	1.24	100	94.4	90	110	
Sb	121	1	nogas	94.413	5.228	1813266	2.58	100	94.4	90	110	
Tl	205	1	nogas	95.273	5.381	2834092	0.56	100	95.3	90	110	
Pb	208	1	nogas	98.433	1.442	3619166	1.44	100	98.4	90	110	
U	238	1	nogas	97.235	5.462	3652298	1.19	100	97.2	90	110	
[Pb]	206	1	nogas	88.497	5.654	889202	0.75	100	88.5	90	110	ICV Main CR1 Failed
[Pb]	207	1	nogas	84.180	5.520	746506	0.87	100	84.2	90	110	ICV Main CR1 Failed
Na	23	2	He	9839.503	2.645	13504216	1.02	10000	98.4	90	110	
Mg	24	2	He	9937.410	3.100	7628019	1.59	10000	99.4	90	110	
Al	27	2	He	97.987	1.701	42896	0.83	100	98.0	90	110	
K	39	2	He	9909.975	0.726	9888450	0.71	10000	99.1	90	110	
Ca	43	2	He	9741.938	2.371	27544	0.60	10000	97.4	90	110	
Ca	44	2	He	9555.152	2.908	459120	2.09	10000	95.6	90	110	
V	51	2	He	95.220	2.644	695347	0.69	100	95.2	90	110	
Cr	52	2	He	95.498	1.819	742705	0.36	100	95.5	90	110	
Mn	55	2	He	101.373	1.533	544708	1.48	100	101.4	90	110	
Fe	56	2	He	9836.468	1.868	67602881	2.63	10000	98.4	90	110	
Co	59	2	He	93.977	1.088	1031328	1.26	100	94.0	90	110	
Ni	60	2	He	97.407	1.885	260744	0.76	100	97.4	90	110	
Cu	63	2	He	94.065	2.836	662356	1.32	100	94.1	90	110	
Zn	66	2	He	96.641	2.185	165178	0.27	100	96.6	90	110	
As	75	2	He	97.658	2.140	169628	0.71	100	97.7	90	110	
Se	78	2	He	96.059	2.372	13747	1.39	100	96.1	90	110	
B	11	1	nogas	448.788	2.875	981340	0.67	500	89.8	90	110	ICV Main CR1 Failed
Si	28	1	nogas	550.882	4.128	5668332	2.50	5000	11.0	90	110	ICV Main CR1 Failed
Ca	43	1	nogas	9363.728	6.309	367181	2.47	10000	93.6	90	110	
Ca	44	1	nogas	9338.996	5.785	6151178	2.79	10000	93.4	90	110	
Fe	56	1	nogas	9533.228	6.011	276333231	1.59	10000	95.3	90	110	
Se	77	1	nogas	58.210	14.499	64080	1.19	100	58.2	90	110	ICV Main CR1 Failed
Se	82	1	nogas	92.870	2.799	34710	1.73	100	92.9	90	110	
Mo	95	1	nogas	90.397	7.167	702596	2.75	100	90.4	90	110	
Sn	118	1	nogas	88.957	9.407	1052846	2.71	100	89.0	90	110	ICV Main CR1 Failed
Ba	137	1	nogas	93.292	7.301	540282	0.80	100	93.3	90	110	
Sb	121	2	He	93.517	1.010	638984	1.24	100	93.5	90	110	
Li	7	1	nogas	95.093	4.944	534121	1.25	100	95.1	90	110	
P	31	1	nogas	476.266	5.617	729929	1.47	500	95.3	90	110	
La	139	1	nogas	113.128	18.712	1183	7.04	100	113.1	90	110	ICV Main CR1 Failed
Au	197	1	nogas	32.467	63.344	43	35.25	100	32.5	90	110	ICV 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	nogas	319719	3.48	371207	86.13	70	125	
Ge	72	1	nogas	3800391	4.26	3973785	95.64	70	125	
In	115	1	nogas	3705938	6.95	4041602	91.69	70	125	
Bi	209	1	nogas	2850238	5.05	2996457	95.12	70	125	

Initial Calibration Verification (ICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	981945	1.94	984415	99.75	70	125	

Sample Report

Sample Table

Sample Name	LLCCV2
Data File Name	144SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T21:50:22-05:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	137CALB.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
Be	9	1	nogas	2.077	2.077	11.07	6218	0.03	2000	
Na	23	1	nogas	205.678	205.678	6.82	4298686	0.00	200000	
Mg	24	1	nogas	207.046	207.046	2.24	2503700	0.01	200000	
Al	27	1	nogas	2.149	2.149	3.35	55435	0.00	2000	
K	39	1	nogas	203.747	203.747	4.09	10875046	0.00	200000	
Ti	47	1	nogas	2.101	2.101	4.11	4241	0.05	2000	
V	51	1	nogas	-10.526	-10.526	-3.68	915603	0.00	2000	
Cr	52	1	nogas	1.579	1.579	3.54	97622	0.00	2000	
Mn	55	1	nogas	1.997	1.997	1.50	78985	0.00	2000	
Co	59	1	nogas	1.986	1.986	1.68	54632	0.00	2000	
Ni	60	1	nogas	2.132	2.132	3.78	13632	0.02	2000	
Cu	63	1	nogas	2.028	2.028	0.65	31865	0.01	2000	
Zn	66	1	nogas	2.052	2.052	1.89	11614	0.02	2000	
As	75	1	nogas	-2.421	-2.421	-12.98	128244	0.00	2000	
Sr	88	1	nogas	1.957	1.957	2.75	78016	0.00	2000	
Ag	107	1	nogas	1.970	1.970	2.65	39311	0.01	2000	
Cd	111	1	nogas	1.903	1.903	4.07	8252	0.02	2000	
Sb	121	1	nogas	2.294	2.294	1.76	44958	0.01	2000	
Tl	205	1	nogas	1.992	1.992	6.29	64331	0.00	2000	
Pb	208	1	nogas	2.154	2.154	0.63	80035	0.00	2000	
U	238	1	nogas	1.801	1.801	3.46	73253	0.00	2000	
[Pb]	206	1	nogas	1.847	1.847	2.89	20309	0.01	2000	
[Pb]	207	1	nogas	1.775	1.775	4.73	17236	0.01	2000	
Na	23	2	He	217.049	217.049	1.46	385481	0.06	200000	
Mg	24	2	He	211.476	211.476	2.05	164954	0.13	200000	
Al	27	2	He	1.895	1.895	28.53	1837	0.10	2000	
K	39	2	He	207.544	207.544	2.50	409294	0.05	200000	
Ca	43	2	He	177.911	177.911	17.11	510	34.88	200000	
Ca	44	2	He	211.218	211.218	3.07	11260	1.88	200000	
V	51	2	He	1.858	1.858	2.48	28332	0.01	2000	
Cr	52	2	He	1.919	1.919	4.36	19504	0.01	2000	
Mn	55	2	He	2.126	2.126	0.93	11804	0.02	2000	
Fe	56	2	He	220.339	220.339	2.85	1543275	0.01	200000	
Co	59	2	He	2.078	2.078	2.77	23068	0.01	2000	
Ni	60	2	He	1.985	1.985	7.15	6184	0.03	2000	
Cu	63	2	He	2.495	2.495	4.08	15430	0.02	2000	
Zn	66	2	He	2.043	2.043	5.31	3984	0.05	2000	
As	75	2	He	1.914	1.914	7.11	4069	0.05	2000	
Se	78	2	He	2.710	2.710	3.13	575	0.47	2000	
B	11	1	nogas	17.484	17.484	3.27	46460	0.04	2000	
Si	28	1	nogas	127.341	127.341	3.52	2051831	0.01	2000	
Ca	43	1	nogas	204.729	204.729	1.27	8826	2.32	200000	

Sample Report

Ca	44	1	nogas	204.364	204.364	1.59	171925	0.12	200000	
Fe	56	1	nogas	181.739	181.739	3.25	8120678	0.00	200000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Se	77	1	nogas	-26.779	-26.779	-14.83	37249	-0.07	2000	
Se	82	1	nogas	1.743	1.743	9.17	1043	0.17	2000	
Mo	95	1	nogas	2.021	2.021	6.20	16044	0.01	2000	
Sn	118	1	nogas	2.011	2.011	8.23	25415	0.01	2000	
Ba	137	1	nogas	2.046	2.046	8.33	12628	0.02	2000	
Sb	121	2	He	2.376	2.376	5.37	16518	0.01	2000	
La	139	1	nogas	2.876	2.876	211.41	410	0.70	2000	
Au	197	1	nogas	3.380	3.380	649.42	20	16.90	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	338339	2.23	371207	91.15	70	125	
Ge	72	1	nogas	3849528	0.34	3973785	96.87	70	125	
In	115	1	nogas	3815397	4.92	4041602	94.40	70	125	
Bi	209	1	nogas	3079210	2.70	2996457	102.76	70	125	
Ge	72	2	He	989887	1.03	984415	100.56	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLCCV5
Data File Name	145LICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T21:52:21-05:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	137CALB.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
Be	9	1	nogas	4.802	3.001	14282	2.74	5	96.0	70	130	
Na	23	1	nogas	499.082	7.802	9358679	1.50	500	99.8	70	130	
Mg	24	1	nogas	503.468	9.382	5950295	3.63	500	100.7	70	130	
Al	27	1	nogas	4.994	2.942	99243	1.05	5	99.9	70	130	
K	39	1	nogas	493.910	7.698	17000434	1.51	500	98.8	70	130	
Ti	47	1	nogas	4.865	3.624	9713	4.53	5	97.3	70	130	
V	51	1	nogas	-2.605	-34.599	1147851	2.98	5	-52.1	70	130	LLICV Main CR1 Failed
Cr	52	1	nogas	4.606	2.846	175121	2.12	5	92.1	70	130	
Mn	55	1	nogas	4.800	3.904	172836	2.55	5	96.0	70	130	
Co	59	1	nogas	4.670	3.713	128889	1.33	5	93.4	70	130	
Ni	60	1	nogas	4.902	5.943	30152	2.74	5	98.0	70	130	
Cu	63	1	nogas	4.820	4.275	72972	1.20	5	96.4	70	130	
Zn	66	1	nogas	4.914	1.232	26409	3.27	5	98.3	70	130	
As	75	1	nogas	1.584	45.732	156854	2.43	5	31.7	70	130	LLICV Main CR1 Failed
Sr	88	1	nogas	4.730	1.709	187193	1.61	5	94.6	70	130	
Ag	107	1	nogas	4.715	3.626	94318	2.16	5	94.3	70	130	
Cd	111	1	nogas	4.578	5.446	20559	4.07	5	91.6	70	130	
Sb	121	1	nogas	4.651	3.070	91512	0.60	5	93.0	70	130	
Tl	205	1	nogas	4.243	1.346	137803	1.88	5	84.9	70	130	
Pb	208	1	nogas	5.115	2.169	188867	2.16	5	102.3	70	130	
U	238	1	nogas	4.407	1.782	180546	1.45	5	88.1	70	130	
[Pb]	206	1	nogas	4.244	0.421	46728	2.97	5	84.9	70	130	
[Pb]	207	1	nogas	4.236	2.209	41159	0.96	5	84.7	70	130	
Na	23	2	He	523.088	1.826	813790	0.51	500	104.6	70	130	
Mg	24	2	He	521.417	2.521	408563	1.45	500	104.3	70	130	
Al	27	2	He	5.372	25.810	3371	19.12	5	107.4	70	130	
K	39	2	He	518.892	0.548	713478	0.39	500	103.8	70	130	
Ca	43	2	He	472.790	12.883	1363	12.48	500	94.6	70	130	
Ca	44	2	He	503.041	3.980	25605	3.95	500	100.6	70	130	
V	51	2	He	4.787	3.026	49898	1.07	5	95.7	70	130	
Cr	52	2	He	4.801	4.386	42349	3.06	5	96.0	70	130	
Mn	55	2	He	5.096	2.137	28145	1.79	5	101.9	70	130	
Fe	56	2	He	523.471	0.715	3677069	0.43	500	104.7	70	130	
Co	59	2	He	5.025	1.936	56193	1.20	5	100.5	70	130	
Ni	60	2	He	5.243	3.128	15090	2.02	5	104.9	70	130	
Cu	63	2	He	5.754	3.252	39015	2.65	5	115.1	70	130	
Zn	66	2	He	5.036	4.484	9212	4.33	5	100.7	70	130	
As	75	2	He	4.921	1.633	9399	0.44	5	98.4	70	130	
Se	78	2	He	5.210	7.252	939	4.69	5	104.2	70	130	
B	11	1	nogas	28.411	2.379	68794	1.30	25	113.6	70	130	
Si	28	1	nogas	268.647	5.149	3307341	0.46	25	1074.6	70	130	LLICV Main CR1 Failed
Ca	43	1	nogas	476.175	8.017	19727	4.81	500	95.2	70	130	
Ca	44	1	nogas	486.269	3.538	361731	0.70	500	97.3	70	130	
Fe	56	1	nogas	460.478	2.295	16355188	1.39	500	92.1	70	130	
Se	77	1	nogas	-15.997	-23.167	41073	3.10	5	-319.9	70	130	LLICV Main CR1 Failed
Se	82	1	nogas	4.631	13.198	2137	7.61	5	92.6	70	130	
Mo	95	1	nogas	4.702	5.467	37440	2.39	5	94.0	70	130	
Sn	118	1	nogas	4.349	2.823	56010	1.65	5	87.0	70	130	
Ba	137	1	nogas	4.629	5.166	29098	3.75	5	92.6	70	130	
Sb	121	2	He	4.860	1.642	33940	1.06	5	97.2	70	130	
Li	7	1	nogas	4.832	1.705	57196	1.38	5	96.6	70	130	
P	31	1	nogas	27.126	4.982	88969	1.10	25	108.5	70	130	
La	139	1	nogas	-20.645	-39.549	247	26.06	5	-412.9	70	130	LLICV Main CR1 Failed
Au	197	1	nogas	-4.207	-287.744	13	86.60	5	-84.1	70	130	LLICV 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	nogas	336277	0.74	371207	90.59	70	125	
Ge	72	1	nogas	3879452	3.27	3973785	97.63	70	125	
In	115	1	nogas	3952460	1.41	4041602	97.79	70	125	
Bi	209	1	nogas	3102882	3.18	2996457	103.55	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	999136	1.14	984415	101.50	70	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICCB
Data File Name	146_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T21:54:21-05:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	137CALB.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
Be	9	1	nogas	0.038	46.4	130	40.7	1	
Na	23	1	nogas	2.863	42.2	718293	1.3	100	
Mg	24	1	nogas	1.555	6.1	34437	1.3	100	
Al	27	1	nogas	0.629	12.2	32552	3.3	5	
K	39	1	nogas	5.335	136.8	6792009	0.6	100	
Ti	47	1	nogas	0.035	72.9	207	26.7	2.5	
V	51	1	nogas	-7.691	-40.3	1001232	11.0	2.5	
Cr	52	1	nogas	-0.313	-4.8	50221	1.9	2.5	
Mn	55	1	nogas	0.076	7.6	15593	1.1	2.5	
Co	59	1	nogas	0.022	27.5	947	16.7	2.5	
Ni	60	1	nogas	0.114	29.7	1753	13.6	2.5	
Cu	63	1	nogas	0.006	90.7	2450	5.2	2.5	
Zn	66	1	nogas	0.235	10.8	2360	7.6	2.5	
As	75	1	nogas	-3.802	-4.4	119294	3.2	2.5	
Sr	88	1	nogas	0.038	12.0	3470	3.5	2.5	
Ag	107	1	nogas	0.018	38.2	697	18.3	2.5	
Cd	111	1	nogas	0.012	3.5	70	0.0	1	
Sb	121	1	nogas	0.036	24.4	993	15.1	2.5	
Tl	205	1	nogas	0.053	22.7	1837	22.8	1	
Pb	208	1	nogas	0.013	16.7	1337	6.1	2.5	
U	238	1	nogas	0.014	14.0	640	12.4	2.5	
[Pb]	206	1	nogas	0.007	44.3	300	8.8	2.5	
[Pb]	207	1	nogas	0.011	55.7	307	21.2	2.5	
Na	23	2	He	-0.390	-301.0	86727	2.2	100	
Mg	24	2	He	1.758	9.4	2664	4.9	100	
Al	27	2	He	0.209	110.1	1113	9.7	5	
K	39	2	He	-1.390	-181.0	205169	1.2	100	
Ca	43	2	He	17.453	64.0	53	60.3	100	
Ca	44	2	He	5.985	32.6	1343	7.2	100	
V	51	2	He	-0.100	-21.0	14259	0.4	2.5	
Cr	52	2	He	-0.094	-11.3	3820	2.0	2.5	
Mn	55	2	He	0.085	13.9	760	8.6	2.5	
Fe	56	2	He	1.531	5.8	28032	2.5	100	
Co	59	2	He	0.016	52.0	267	34.6	2.5	
Ni	60	2	He	-0.052	-49.9	710	9.9	2.5	
Cu	63	2	He	0.482	2.1	1093	6.0	2.5	
Zn	66	2	He	0.218	31.6	850	14.5	2.5	
As	75	2	He	-0.063	-61.1	624	11.3	2.5	
Se	78	2	He	0.408	57.0	247	12.6	2.5	
B	11	1	nogas	2.988	20.7	16434	4.7	10	
Si	28	1	nogas	0.590	445.6	950025	0.2	5	
Ca	43	1	nogas	5.098	39.4	900	6.9	100	
Ca	44	1	nogas	9.989	10.3	42980	0.6	100	
Fe	56	1	nogas	-12.640	-9.7	2471763	2.3	100	

Initial Calibration Blank (ICB) Report

Se	77	1	nogas	-25.471	-8.0	37830	0.7	2.5	
Se	82	1	nogas	0.039	177.4	407	7.5	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Mo	95	1	nogas	0.026	38.6	310	24.4	2.5	
Sn	118	1	nogas	0.054	31.7	1657	15.8	5	
Ba	137	1	nogas	0.049	16.5	763	5.0	2.5	
Sb	121	2	He	0.028	39.7	357	21.0	2.5	
P	31	1	nogas	3.361	34.9	54041	3.1	10	
La	139	1	nogas	84.102	3.9	1070	1.6	2.5	ICB Main CR1 Failed
Au	197	1	nogas	11.165	202.0	27	78.1	2.5	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	nogas	341847	3.61	371207	92.09	70	125	
Ge	72	1	nogas	3865990	2.24	3973785	97.29	70	125	
In	115	1	nogas	4041260	2.82	4041602	99.99	70	125	
Bi	209	1	nogas	2987388	3.50	2996457	99.70	70	125	
Ge	72	2	He	992530	0.81	984415	100.82	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	152_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T22:06:16-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	137CALB.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
Be	9	1	nogas	103.395	2.282	275336	2.24	100	103.4	90	110	
Na	23	1	nogas	8937.287	6.073	160687074	2.84	10000	89.4	90	110	CCV Main CR1-2 Failed
Mg	24	1	nogas	8921.899	3.965	107754586	0.89	10000	89.2	90	110	CCV Main CR1-2 Failed
Al	27	1	nogas	94.486	2.098	1425169	1.02	100	94.5	90	110	
K	39	1	nogas	9685.683	3.470	203163825	2.20	10000	96.9	90	110	
Ti	47	1	nogas	96.087	2.980	184094	1.84	100	96.1	90	110	
V	51	1	nogas	91.914	7.178	3731237	3.26	100	91.9	90	110	
Cr	52	1	nogas	96.930	2.553	2447907	0.89	100	96.9	90	110	
Mn	55	1	nogas	96.819	3.513	3147007	1.58	100	96.8	90	110	
Co	59	1	nogas	94.354	2.972	2527628	1.00	100	94.4	90	110	
Ni	60	1	nogas	95.338	2.072	551725	0.49	100	95.3	90	110	
Cu	63	1	nogas	93.563	2.791	1336256	1.51	100	93.6	90	110	
Zn	66	1	nogas	96.101	1.835	481478	1.25	100	96.1	90	110	
As	75	1	nogas	88.611	2.189	737880	0.65	100	88.6	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	93.740	3.122	3572307	1.07	100	93.7	90	110	
Ag	107	1	nogas	93.898	3.838	1821599	2.79	100	93.9	90	110	
Cd	111	1	nogas	91.622	0.840	381515	1.29	100	91.6	90	110	
Sb	121	1	nogas	94.035	1.998	1795957	3.19	100	94.0	90	110	
Tl	205	1	nogas	93.235	6.165	2693183	2.29	100	93.2	90	110	
Pb	208	1	nogas	99.415	0.817	3655230	0.82	100	99.4	90	110	
U	238	1	nogas	97.589	1.087	3564488	3.16	100	97.6	90	110	
[Pb]	206	1	nogas	91.120	5.536	889287	1.71	100	91.1	90	110	
[Pb]	207	1	nogas	91.871	4.469	791507	0.68	100	91.9	90	110	
Na	23	2	He	9887.668	5.173	13652237	5.16	10000	98.9	90	110	
Mg	24	2	He	9717.728	3.452	7504537	3.18	10000	97.2	90	110	
Al	27	2	He	98.140	2.481	43213	1.87	100	98.1	90	110	
K	39	2	He	10005.475	0.656	9981753	0.64	10000	100.1	90	110	
Ca	43	2	He	9596.230	5.583	27290	4.97	10000	96.0	90	110	
Ca	44	2	He	9658.004	1.541	466846	1.75	10000	96.6	90	110	
V	51	2	He	97.165	1.354	713535	0.83	100	97.2	90	110	
Cr	52	2	He	96.240	0.654	752922	0.77	100	96.2	90	110	
Mn	55	2	He	99.306	2.115	536736	1.98	100	99.3	90	110	
Fe	56	2	He	9856.252	1.048	68129131	1.13	10000	98.6	90	110	
Co	59	2	He	94.620	1.749	1044416	1.31	100	94.6	90	110	
Ni	60	2	He	99.467	2.885	267799	2.19	100	99.5	90	110	
Cu	63	2	He	95.995	1.504	680075	0.88	100	96.0	90	110	
Zn	66	2	He	99.322	0.606	170777	1.24	100	99.3	90	110	
As	75	2	He	99.430	0.343	173731	0.69	100	99.4	90	110	
Se	78	2	He	96.305	1.145	13864	0.53	100	96.3	90	110	
B	11	1	nogas	520.846	0.926	974905	0.74	500	104.2	90	110	
Si	28	1	nogas	4783.194	4.091	41803120	1.78	5000	95.7	90	110	
Ca	43	1	nogas	9474.318	0.574	369553	1.70	10000	94.7	90	110	
Ca	44	1	nogas	9619.182	4.219	6296272	1.99	10000	96.2	90	110	
Fe	56	1	nogas	9483.722	2.778	273368606	0.59	10000	94.8	90	110	
Se	77	1	nogas	70.991	3.308	67799	2.38	100	71.0	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	93.760	3.046	34810	1.25	100	93.8	90	110	
Mo	95	1	nogas	90.981	2.081	703473	0.20	100	91.0	90	110	
Sn	118	1	nogas	89.912	0.942	1056972	0.79	100	89.9	90	110	CCV Main CR1-2 Failed
Ba	137	1	nogas	94.881	1.604	545224	0.66	100	94.9	90	110	
Sb	121	2	He	96.128	2.598	660613	2.05	100	96.1	90	110	
Li	7	1	nogas	94.181	1.526	499456	1.26	100	94.2	90	110	
P	31	1	nogas	466.003	2.178	711129	0.31	500	93.2	90	110	
La	139	1	nogas	101.942	26.533	1097	16.97	100	101.9	90	110	
Au	197	1	nogas	93.112	22.665	93	16.37	100	93.1	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	nogas	301387	0.22	371207	81.19	70	125	
Ge	72	1	nogas	3774221	2.24	3973785	94.98	70	125	
In	115	1	nogas	3665311	0.95	4041602	90.69	70	125	
Bi	209	1	nogas	2767350	4.08	2996457	92.35	70	125	

Ge	72	2	He	987598	0.68	984415	100.32	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	153_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T22:08:14-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	137CALB.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
Be	9	1	nogas	0.103	12.1	323	10.9	1	
Na	23	1	nogas	32.007	33.0	1210585	11.1	100	
Mg	24	1	nogas	7.478	16.5	104605	9.7	100	
Al	27	1	nogas	2.039	4.8	53790	2.8	5	
K	39	1	nogas	17.256	24.0	7014337	0.7	100	
Ti	47	1	nogas	0.128	27.8	387	17.6	2.5	
V	51	1	nogas	-6.358	-53.3	1034430	10.4	2.5	
Cr	52	1	nogas	-0.243	-20.6	51776	2.8	2.5	
Mn	55	1	nogas	0.177	8.6	18883	3.1	2.5	
Co	59	1	nogas	0.072	13.1	2327	10.1	2.5	
Ni	60	1	nogas	0.301	10.0	2844	5.2	2.5	
Cu	63	1	nogas	0.125	13.6	4171	4.9	2.5	
Zn	66	1	nogas	0.122	47.4	1770	15.4	2.5	
As	75	1	nogas	-4.010	-7.9	117398	2.7	2.5	
Sr	88	1	nogas	0.140	7.8	7415	6.3	2.5	
Ag	107	1	nogas	0.057	14.0	1460	10.6	2.5	
Cd	111	1	nogas	0.063	21.7	300	20.8	1	
Sb	121	1	nogas	0.100	13.3	2237	10.5	2.5	
Tl	205	1	nogas	0.312	41.4	10207	44.5	1	
Pb	208	1	nogas	0.078	15.5	3710	11.9	2.5	
U	238	1	nogas	0.086	18.0	3557	21.1	2.5	
[Pb]	206	1	nogas	0.065	5.2	933	7.6	2.5	
[Pb]	207	1	nogas	0.064	10.0	823	9.9	2.5	
Na	23	2	He	24.228	6.4	121926	0.6	100	
Mg	24	2	He	6.712	4.5	6575	2.5	100	
Al	27	2	He	1.469	32.3	1673	11.1	5	
K	39	2	He	11.061	17.2	217333	0.9	100	
Ca	43	2	He	28.782	24.3	87	24.0	100	
Ca	44	2	He	19.311	6.7	2010	3.3	100	
V	51	2	He	0.028	118.1	15344	0.8	2.5	
Cr	52	2	He	-0.029	-107.0	4374	6.2	2.5	
Mn	55	2	He	0.200	10.5	1397	7.3	2.5	
Fe	56	2	He	7.390	2.7	69437	1.2	100	
Co	59	2	He	0.062	9.4	787	7.0	2.5	
Ni	60	2	He	0.065	72.5	1037	12.8	2.5	
Cu	63	2	He	0.600	1.6	1960	4.7	2.5	
Zn	66	2	He	0.100	70.4	653	19.5	2.5	
As	75	2	He	0.017	132.1	771	4.2	2.5	
Se	78	2	He	0.328	11.5	239	2.7	2.5	
B	11	1	nogas	5.823	8.6	22243	5.5	10	
Si	28	1	nogas	5.631	41.0	990514	0.9	5	CCB Main CR1 Failed
Ca	43	1	nogas	21.354	3.1	1543	2.1	100	
Ca	44	1	nogas	22.336	9.9	51016	1.6	100	
Fe	56	1	nogas	-7.727	-20.1	2605453	2.2	100	
Se	77	1	nogas	-24.915	-18.8	37880	4.7	2.5	
Se	82	1	nogas	0.017	696.1	397	10.5	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.196	22.3	1650	19.5	2.5	
Sn	118	1	nogas	0.191	33.6	3377	20.9	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.108	19.6	1123	9.4	2.5	
Sb	121	2	He	0.080	13.2	723	9.0	2.5	
P	31	1	nogas	3.828	7.8	54516	0.6	10	
La	139	1	nogas	6.313	122.6	457	9.9	2.5	CCB Main CR1 Failed
Au	197	1	nogas	3.162	315.8	20	50.0	2.5	CCB 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	nogas	338965	0.85	371207	91.31	70	125	
Ge	72	1	nogas	3851010	1.22	3973785	96.91	70	125	
In	115	1	nogas	4000497	3.25	4041602	98.98	70	125	
Bi	209	1	nogas	3047212	3.71	2996457	101.69	70	125	
Ge	72	2	He	1003016	1.29	984415	101.89	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	160_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T22:22:08-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	137CALB.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
Be	9	1	nogas	0.115	19.8	487	18.0	1	
Na	23	1	nogas	194.955	13.4	4455262	6.7	100	CCB Main CR1 Failed
Mg	24	1	nogas	10.485	14.6	151825	8.3	100	
Al	27	1	nogas	2.420	1.6	62157	4.7	5	
K	39	1	nogas	42.588	34.6	7858763	0.4	100	
Ti	47	1	nogas	0.167	31.8	483	25.5	2.5	
V	51	1	nogas	12.127	7.5	1622710	2.5	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.310	50.8	68466	2.3	2.5	
Mn	55	1	nogas	0.162	23.3	19140	3.0	2.5	
Co	59	1	nogas	0.065	14.5	2224	8.9	2.5	
Ni	60	1	nogas	0.236	17.6	2560	6.5	2.5	
Cu	63	1	nogas	0.990	15.8	17435	9.9	2.5	
Zn	66	1	nogas	0.326	19.0	2927	7.6	2.5	
As	75	1	nogas	2.393	16.2	168264	2.2	2.5	
Sr	88	1	nogas	0.232	4.4	11481	1.2	2.5	
Ag	107	1	nogas	0.057	7.5	1510	2.3	2.5	
Cd	111	1	nogas	0.073	52.1	333	52.9	1	
Sb	121	1	nogas	0.263	8.0	5641	5.6	2.5	
Tl	205	1	nogas	0.281	32.0	8763	30.1	1	
Pb	208	1	nogas	0.080	9.5	3790	7.3	2.5	
U	238	1	nogas	0.085	16.4	3347	14.5	2.5	
[Pb]	206	1	nogas	0.071	0.2	957	2.2	2.5	
[Pb]	207	1	nogas	0.069	11.0	830	6.4	2.5	
Na	23	2	He	182.121	1.1	352147	0.9	100	CCB Main CR1 Failed
Mg	24	2	He	9.866	4.4	9319	3.5	100	
Al	27	2	He	1.667	29.1	1813	11.7	5	
K	39	2	He	31.194	9.9	237003	1.3	100	
Ca	43	2	He	41.440	46.5	127	44.9	100	
Ca	44	2	He	29.811	9.0	2600	5.7	100	
V	51	2	He	1.060	1.7	23567	0.2	2.5	
Cr	52	2	He	-0.092	-29.7	3997	5.9	2.5	
Mn	55	2	He	0.174	19.2	1290	15.0	2.5	
Fe	56	2	He	6.396	2.2	64332	1.4	100	
Co	59	2	He	0.061	9.2	797	8.2	2.5	
Ni	60	2	He	-0.049	-41.5	747	8.1	2.5	
Cu	63	2	He	1.267	4.4	6975	6.0	2.5	
Zn	66	2	He	0.145	31.0	753	10.6	2.5	
As	75	2	He	0.101	34.4	947	6.3	2.5	
Se	78	2	He	0.447	28.7	263	7.1	2.5	
B	11	1	nogas	13.506	7.1	51841	3.6	10	CCB Main CR1 Failed
Si	28	1	nogas	46.593	16.2	1404830	1.2	5	CCB Main CR1 Failed
Ca	43	1	nogas	36.547	9.0	2244	9.8	100	
Ca	44	1	nogas	24.409	21.4	54587	2.9	100	
Fe	56	1	nogas	6.622	58.8	3151436	0.3	100	
Se	77	1	nogas	21.227	15.0	55204	1.8	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.071	300.5	433	15.7	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	1.168	4.6	9713	2.3	2.5	
Sn	118	1	nogas	0.189	24.3	3247	11.5	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.196	15.0	1627	4.0	2.5	
Sb	121	2	He	0.242	1.9	1907	1.3	2.5	
P	31	1	nogas	7.843	13.4	62931	1.8	10	
La	139	1	nogas	6.337	88.2	443	4.7	2.5	CCB Main CR1 Failed
Au	197	1	nogas	7.909	73.5	23	24.7	2.5	CCB 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	nogas	459500	1.58	371207	123.79	70	125	
Ge	72	1	nogas	4017961	3.78	3973785	101.11	70	125	
In	115	1	nogas	3886293	6.95	4041602	96.16	70	125	
Bi	209	1	nogas	2930613	2.30	2996457	97.80	70	125	
Ge	72	2	He	1032922	0.46	984415	104.93	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	162_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T22:36:51-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	137CALB.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
Be	9	1	nogas	97.668	4.755	316582	0.81	100	97.7	90	110	
Na	23	1	nogas	10671.385	13.458	180541571	0.67	10000	106.7	90	110	
Mg	24	1	nogas	10681.978	13.276	121434874	0.45	10000	106.8	90	110	
Al	27	1	nogas	114.542	11.482	1706870	4.52	100	114.5	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10485.067	6.962	217799413	0.38	10000	104.9	90	110	
Ti	47	1	nogas	103.825	9.767	197210	3.15	100	103.8	90	110	
V	51	1	nogas	108.723	6.746	4170685	2.58	100	108.7	90	110	
Cr	52	1	nogas	100.105	2.997	2512083	3.88	100	100.1	90	110	
Mn	55	1	nogas	100.114	4.145	3234161	2.72	100	100.1	90	110	
Co	59	1	nogas	100.738	4.889	2682199	3.74	100	100.7	90	110	
Ni	60	1	nogas	101.749	8.825	583987	2.97	100	101.7	90	110	
Cu	63	1	nogas	100.757	2.778	1430783	3.81	100	100.8	90	110	
Zn	66	1	nogas	101.716	8.055	505517	1.89	100	101.7	90	110	
As	75	1	nogas	98.720	9.142	799665	1.24	100	98.7	90	110	
Sr	88	1	nogas	99.450	8.750	3759409	2.28	100	99.5	90	110	
Ag	107	1	nogas	100.707	5.580	1940506	1.09	100	100.7	90	110	
Cd	111	1	nogas	98.402	8.224	407978	1.09	100	98.4	90	110	
Sb	121	1	nogas	101.298	13.155	1914544	6.36	100	101.3	90	110	
Tl	205	1	nogas	97.759	2.819	2878442	1.12	100	97.8	90	110	
Pb	208	1	nogas	103.852	2.056	3818358	2.06	100	103.9	90	110	
U	238	1	nogas	105.536	7.221	3920209	4.18	100	105.5	90	110	
[Pb]	206	1	nogas	92.799	3.456	922976	2.04	100	92.8	90	110	
[Pb]	207	1	nogas	91.710	3.378	804953	1.47	100	91.7	90	110	
Na	23	2	He	10016.653	2.002	14227281	1.42	10000	100.2	90	110	
Mg	24	2	He	9969.642	1.266	7921597	1.14	10000	99.7	90	110	
Al	27	2	He	101.901	0.525	46127	0.25	100	101.9	90	110	
K	39	2	He	10530.244	0.992	10494446	0.97	10000	105.3	90	110	
Ca	43	2	He	10049.914	1.677	29410	1.35	10000	100.5	90	110	
Ca	44	2	He	10052.829	1.625	499868	0.97	10000	100.5	90	110	
V	51	2	He	99.140	1.053	748735	0.37	100	99.1	90	110	
Cr	52	2	He	96.756	0.700	778761	0.59	100	96.8	90	110	
Mn	55	2	He	101.558	1.247	564727	0.77	100	101.6	90	110	
Fe	56	2	He	9971.006	0.918	70910517	0.95	10000	99.7	90	110	
Co	59	2	He	95.201	0.577	1081226	0.94	100	95.2	90	110	
Ni	60	2	He	99.201	0.390	274828	0.82	100	99.2	90	110	
Cu	63	2	He	97.136	1.012	708055	0.45	100	97.1	90	110	
Zn	66	2	He	100.020	0.975	176926	0.69	100	100.0	90	110	
As	75	2	He	98.908	0.914	177802	0.35	100	98.9	90	110	
Se	78	2	He	97.739	0.424	14474	0.95	100	97.7	90	110	
B	11	1	nogas	473.465	5.273	1079940	3.37	500	94.7	90	110	
Si	28	1	nogas	5452.101	6.742	47188448	0.59	5000	109.0	90	110	
Ca	43	1	nogas	10269.667	7.100	397438	0.74	10000	102.7	90	110	
Ca	44	1	nogas	10211.122	9.473	6627383	2.98	10000	102.1	90	110	
Fe	56	1	nogas	10040.801	8.041	287020840	1.26	10000	100.4	90	110	
Se	77	1	nogas	116.923	15.614	81853	0.49	100	116.9	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	97.397	7.277	35886	2.94	100	97.4	90	110	
Mo	95	1	nogas	96.023	6.975	736995	1.68	100	96.0	90	110	
Sn	118	1	nogas	93.797	9.396	1097173	0.81	100	93.8	90	110	
Ba	137	1	nogas	98.248	9.779	561741	1.80	100	98.2	90	110	
Sb	121	2	He	96.268	1.720	680682	1.20	100	96.3	90	110	
Li	7	1	nogas	91.973	3.386	594822	2.49	100	92.0	90	110	
P	31	1	nogas	514.590	7.558	774432	0.64	500	102.9	90	110	
La	139	1	nogas	104.538	22.058	1110	11.07	100	104.5	90	110	
Au	197	1	nogas	133.906	13.199	130	7.69	100	133.9	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	nogas	367423	4.97	371207	98.98	70	125	
Ge	72	1	nogas	3756250	6.43	3973785	94.53	70	125	
In	115	1	nogas	3666965	8.71	4041602	90.73	70	125	
Bi	209	1	nogas	2818204	3.93	2996457	94.05	70	125	

Ge	72	2	He	1016094	0.67	984415	103.22	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	167_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T22:46:48-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	137CALB.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
Be	9	1	nogas	92.301	4.153	346996	1.81	100	92.3	90	110	
Na	23	1	nogas	10107.679	4.817	201455867	1.63	10000	101.1	90	110	
Mg	24	1	nogas	9498.791	2.041	127255678	1.66	10000	95.0	90	110	
Al	27	1	nogas	111.401	8.816	1647558	5.71	100	111.4	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10702.489	1.769	220303997	1.85	10000	107.0	90	110	
Ti	47	1	nogas	106.355	1.844	200549	1.53	100	106.4	90	110	
V	51	1	nogas	133.615	4.923	4807967	2.01	100	133.6	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	107.858	3.889	2674713	3.67	100	107.9	90	110	
Mn	55	1	nogas	100.485	2.458	3216252	4.31	100	100.5	90	110	
Co	59	1	nogas	101.785	2.510	2684482	3.30	100	101.8	90	110	
Ni	60	1	nogas	103.903	4.038	591440	1.04	100	103.9	90	110	
Cu	63	1	nogas	95.980	7.689	1350968	9.93	100	96.0	90	110	
Zn	66	1	nogas	99.363	3.073	489762	0.10	100	99.4	90	110	
As	75	1	nogas	103.782	4.677	826254	0.88	100	103.8	90	110	
Sr	88	1	nogas	93.911	1.746	3524935	4.40	100	93.9	90	110	
Ag	107	1	nogas	90.180	7.141	1724588	9.68	100	90.2	90	110	
Cd	111	1	nogas	96.528	2.467	391879	0.77	100	96.5	90	110	
Sb	121	1	nogas	88.092	4.358	1655843	5.19	100	88.1	90	110	CCV Main CR1-2 Failed
Tl	205	1	nogas	94.155	7.134	2612320	5.68	100	94.2	90	110	
Pb	208	1	nogas	94.350	0.488	3469048	0.49	100	94.3	90	110	
U	238	1	nogas	101.904	2.724	3573458	4.12	100	101.9	90	110	
[Pb]	206	1	nogas	93.857	3.085	879994	1.25	100	93.9	90	110	
[Pb]	207	1	nogas	93.861	2.530	776747	1.58	100	93.9	90	110	
Na	23	2	He	10377.527	1.792	15040362	1.76	10000	103.8	90	110	
Mg	24	2	He	10182.717	1.546	8257056	1.37	10000	101.8	90	110	
Al	27	2	He	105.994	1.675	48923	1.78	100	106.0	90	110	
K	39	2	He	10946.367	1.854	10900992	1.82	10000	109.5	90	110	
Ca	43	2	He	9942.019	3.868	29694	3.97	10000	99.4	90	110	
Ca	44	2	He	9881.927	1.355	501508	1.24	10000	98.8	90	110	
V	51	2	He	100.312	1.064	772997	1.15	100	100.3	90	110	
Cr	52	2	He	97.712	1.091	802564	0.92	100	97.7	90	110	
Mn	55	2	He	102.362	0.580	580910	0.40	100	102.4	90	110	
Fe	56	2	He	9986.919	0.147	72482846	0.19	10000	99.9	90	110	
Co	59	2	He	94.898	0.446	1099906	0.36	100	94.9	90	110	
Ni	60	2	He	97.435	1.175	275495	1.31	100	97.4	90	110	
Cu	63	2	He	95.122	0.707	707596	0.79	100	95.1	90	110	
Zn	66	2	He	97.783	1.129	176539	1.30	100	97.8	90	110	
As	75	2	He	98.413	0.563	180555	0.42	100	98.4	90	110	
Se	78	2	He	97.103	0.408	14677	0.57	100	97.1	90	110	
B	11	1	nogas	394.100	4.136	1044831	3.69	500	78.8	90	110	CCV Main CR1-2 Failed
Si	28	1	nogas	5677.448	4.215	48659103	1.73	5000	113.5	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	10388.999	4.181	398493	1.28	10000	103.9	90	110	
Ca	44	1	nogas	10515.971	5.464	6768564	2.41	10000	105.2	90	110	
Fe	56	1	nogas	10055.942	2.983	285089131	0.81	10000	100.6	90	110	
Se	77	1	nogas	153.847	6.980	92758	1.10	100	153.8	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	94.672	1.167	34603	2.77	100	94.7	90	110	
Mo	95	1	nogas	102.886	2.044	782914	0.98	100	102.9	90	110	
Sn	118	1	nogas	91.680	2.626	1050845	1.77	100	91.7	90	110	
Ba	137	1	nogas	97.603	3.676	546778	1.86	100	97.6	90	110	
Sb	121	2	He	94.203	0.864	679806	0.83	100	94.2	90	110	
Li	7	1	nogas	88.561	1.836	665556	0.73	100	88.6	90	110	CCV Main CR1-2 Failed
P	31	1	nogas	531.421	2.741	791399	0.59	500	106.3	90	110	
La	139	1	nogas	111.183	6.817	1133	2.84	100	111.2	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	104.274	81.570	100	70.00	100	104.3	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	nogas	425753	2.43	371207	114.69	70	125	
Ge	72	1	nogas	3714773	2.95	3973785	93.48	70	125	
In	115	1	nogas	3574558	1.81	4041602	88.44	70	125	
Bi	209	1	nogas	2655928	2.57	2996457	88.64	70	125	

Ge	72	2	He	1036957	0.18	984415	105.34	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	168_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T22:48:48-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	137CALB.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
Be	9	1	nogas	0.104	19.9	433	17.3	1	
Na	23	1	nogas	220.542	8.3	5056470	4.3	100	CCB Main CR1 Failed
Mg	24	1	nogas	8.706	16.8	131341	12.0	100	
Al	27	1	nogas	2.434	6.3	62444	3.9	5	
K	39	1	nogas	48.272	6.5	7999795	0.4	100	
Ti	47	1	nogas	0.135	12.2	417	7.7	2.5	
V	51	1	nogas	16.817	8.8	1763623	1.9	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.526	3.7	74318	0.8	2.5	
Mn	55	1	nogas	0.183	7.6	19938	2.7	2.5	
Co	59	1	nogas	0.069	20.8	2337	18.4	2.5	
Ni	60	1	nogas	0.340	15.5	3214	10.4	2.5	
Cu	63	1	nogas	0.890	7.1	15997	5.9	2.5	
Zn	66	1	nogas	0.247	7.3	2517	4.8	2.5	
As	75	1	nogas	4.532	18.1	183852	2.3	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.210	1.6	10613	2.3	2.5	
Ag	107	1	nogas	0.056	17.0	1497	14.1	2.5	
Cd	111	1	nogas	0.066	27.5	320	24.4	1	
Sb	121	1	nogas	0.111	8.4	2554	8.4	2.5	
Tl	205	1	nogas	0.288	45.2	9630	45.0	1	
Pb	208	1	nogas	0.078	24.0	3734	18.5	2.5	
U	238	1	nogas	0.087	29.0	3671	28.8	2.5	
[Pb]	206	1	nogas	0.070	38.9	1007	30.7	2.5	
[Pb]	207	1	nogas	0.068	33.3	877	25.7	2.5	
Na	23	2	He	208.573	1.3	395245	1.2	100	CCB Main CR1 Failed
Mg	24	2	He	8.094	2.0	7995	3.3	100	
Al	27	2	He	1.651	6.2	1830	1.4	5	
K	39	2	He	32.489	1.6	238268	0.2	100	
Ca	43	2	He	33.193	32.0	103	29.6	100	
Ca	44	2	He	19.279	9.8	2097	6.0	100	
V	51	2	He	1.231	4.5	25181	1.4	2.5	
Cr	52	2	He	-0.068	-17.2	4244	1.4	2.5	
Mn	55	2	He	0.193	26.7	1413	20.3	2.5	
Fe	56	2	He	6.485	4.2	65830	3.1	100	
Co	59	2	He	0.061	11.1	803	10.4	2.5	
Ni	60	2	He	0.019	259.2	950	15.5	2.5	
Cu	63	2	He	1.210	2.3	6638	1.5	2.5	
Zn	66	2	He	0.114	12.3	707	4.1	2.5	
As	75	2	He	0.077	40.6	916	5.3	2.5	
Se	78	2	He	0.641	21.1	296	5.9	2.5	
B	11	1	nogas	9.050	7.6	38426	3.0	10	
Si	28	1	nogas	29.363	48.6	1251249	10.3	5	CCB Main CR1 Failed
Ca	43	1	nogas	24.158	21.7	1730	13.5	100	
Ca	44	1	nogas	15.219	7.8	48369	1.9	100	
Fe	56	1	nogas	10.738	8.9	3283822	1.4	100	
Se	77	1	nogas	32.721	12.6	59216	1.7	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.236	43.8	500	7.2	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.985	12.5	8229	13.1	2.5	
Sn	118	1	nogas	0.173	14.6	3240	8.0	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.122	7.3	1250	3.5	2.5	
Sb	121	2	He	0.091	13.3	833	10.9	2.5	
P	31	1	nogas	9.117	9.6	64975	1.0	10	
La	139	1	nogas	3.991	172.0	453	14.4	2.5	CCB Main CR1 Failed
Au	197	1	nogas	3.021	618.0	20	86.6	2.5	CCB 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	nogas	449905	1.95	371207	121.20	70	125	
Ge	72	1	nogas	4023295	1.09	3973785	101.25	70	125	
In	115	1	nogas	4114346	2.29	4041602	101.80	70	125	
Bi	209	1	nogas	3128825	1.49	2996457	104.42	70	125	
Ge	72	2	He	1046617	1.69	984415	106.32	70	125	

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	172CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T22:56:45-05:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	93	40.32
Na	23	1	nogas	2660284	0.00
Mg	24	1	nogas	36507	0.03
Al	27	1	nogas	27197	0.01
K	39	1	nogas	7795319	0.00
Ti	47	1	nogas	153	6.50
V	51	1	nogas	1746596	0.00
Cr	52	1	nogas	76782	0.00
Mn	55	1	nogas	15340	0.02
Co	59	1	nogas	480	4.14
Ni	60	1	nogas	1597	0.97
Cu	63	1	nogas	9793	0.06
Zn	66	1	nogas	1190	0.31
As	75	1	nogas	182472	0.00
Sr	88	1	nogas	5444	0.09
Ag	107	1	nogas	437	2.89
Cd	111	1	nogas	27	81.19
Sb	121	1	nogas	557	1.46
Tl	205	1	nogas	400	2.86
Pb	208	1	nogas	660	1.51
[Pb]	206	1	nogas	197	10.45
[Pb]	207	1	nogas	123	23.09
Na	23	2	He	231918	0.00
Mg	24	2	He	2550	0.08
Al	27	2	He	810	0.85
K	39	2	He	231022	0.00
Ca	43	2	He	37	113.62
Ca	44	2	He	1010	0.95
V	51	2	He	26945	0.01
Cr	52	2	He	3680	0.07
Mn	55	2	He	420	2.47
Fe	56	2	He	21029	0.01
Co	59	2	He	130	17.75
Ni	60	2	He	567	3.89
Cu	63	2	He	4421	0.14
Zn	66	2	He	343	4.97
As	75	2	He	844	0.51
Se	78	2	He	235	3.83
B	11	1	nogas	22944	0.02
Si	28	1	nogas	975284	0.00
Ca	43	1	nogas	770	1.11
Ca	44	1	nogas	30876	0.01

Calibration Blank Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	3382097	0.00
Se	77	1	nogas	59139	0.01
Se	82	1	nogas	427	1.93
Mo	95	1	nogas	1313	0.42
Sn	118	1	nogas	1040	0.24
Ba	137	1	nogas	593	3.36
Sb	121	2	He	110	65.60
Li	7	1	nogas	39384	0.00
P	31	1	nogas	65085	0.00
La	139	1	nogas	517	4.13

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	6	1	nogas	410295	3.94
Ge	72	1	nogas	4203247	2.80
In	115	1	nogas	4030824	6.07
Bi	209	1	nogas	3148067	5.82
Ge	72	2	He	1112674	1.03

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	173CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T22:58:45-05:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	172CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	7068	0.01
Na	23	1	nogas	6270827	0.00
Mg	24	1	nogas	2843757	0.00
Al	27	1	nogas	64056	0.00
K	39	1	nogas	12556037	0.00
Ti	47	1	nogas	4894	0.17
V	51	1	nogas	1798752	0.00
Cr	52	1	nogas	129372	0.00
Mn	55	1	nogas	87218	0.00
Co	59	1	nogas	60627	0.01
Ni	60	1	nogas	15116	0.00
Cu	63	1	nogas	41968	0.01
Zn	66	1	nogas	12635	0.00
As	75	1	nogas	193026	0.00
Sr	88	1	nogas	85570	0.00
Ag	107	1	nogas	42468	0.00
Cd	111	1	nogas	8876	0.06
Sb	121	1	nogas	47385	0.00
Tl	205	1	nogas	60118	0.00
Pb	208	1	nogas	84301	0.00
[Pb]	206	1	nogas	20860	0.01
[Pb]	207	1	nogas	18310	0.01
Na	23	2	He	523882	0.00
Mg	24	2	He	182737	0.00
Al	27	2	He	2030	0.06
K	39	2	He	452992	0.00
Ca	43	2	He	637	1.57
Ca	44	2	He	12131	0.02
V	51	2	He	41985	0.01
Cr	52	2	He	21600	0.01
Mn	55	2	He	13252	0.04
Fe	56	2	He	1654913	0.00
Co	59	2	He	24710	0.01
Ni	60	2	He	6801	0.05
Cu	63	2	He	20001	0.01
Zn	66	2	He	4544	0.04
As	75	2	He	4843	0.03
Se	78	2	He	555	1.81
B	11	1	nogas	43680	0.01
Si	28	1	nogas	2127709	0.00

Calibration Standard Report

Ca	43	1	nogas	9613	0.06
Ca	44	1	nogas	177847	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	9858180	0.00
Se	77	1	nogas	58267	0.00
Se	82	1	nogas	1183	0.68
Mo	95	1	nogas	16775	0.01
Sn	118	1	nogas	24751	0.01
Ba	137	1	nogas	13262	0.01
Sb	121	2	He	17452	0.02
P	31	1	nogas	81868	0.00
La	139	1	nogas	397	0.73

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	411284	2.10	410295	100.24	70	125	
Ge	72	1	nogas	4340816	2.54	4203247	103.27	70	125	
In	115	1	nogas	4283392	2.40	4030824	106.27	70	125	
Bi	209	1	nogas	3359071	2.28	3148067	106.70	70	125	
Ge	72	2	He	1096352	3.18	1112674	98.53	70	125	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	174CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:00:44-05:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	172CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	16794	0.04
Na	23	1	nogas	11662006	0.00
Mg	24	1	nogas	6556869	0.00
Al	27	1	nogas	111555	0.00
K	39	1	nogas	18730205	0.00
Ti	47	1	nogas	10867	0.00
V	51	1	nogas	1827853	0.00
Cr	52	1	nogas	206287	0.00
Mn	55	1	nogas	189442	0.00
Co	59	1	nogas	145935	0.00
Ni	60	1	nogas	34426	0.02
Cu	63	1	nogas	87308	0.01
Zn	66	1	nogas	28449	0.01
As	75	1	nogas	211988	0.00
Sr	88	1	nogas	207692	0.00
Ag	107	1	nogas	101867	0.00
Cd	111	1	nogas	21530	0.02
Sb	121	1	nogas	95799	0.00
Tl	205	1	nogas	145230	0.00
Pb	208	1	nogas	199156	0.00
[Pb]	206	1	nogas	48787	0.00
[Pb]	207	1	nogas	43392	0.01
Na	23	2	He	990511	0.00
Mg	24	2	He	446021	0.00
Al	27	2	He	3460	0.15
K	39	2	He	782827	0.00
Ca	43	2	He	1653	0.43
Ca	44	2	He	28418	0.00
V	51	2	He	66027	0.00
Cr	52	2	He	46983	0.01
Mn	55	2	He	32068	0.00
Fe	56	2	He	4086200	0.00
Co	59	2	He	62192	0.00
Ni	60	2	He	15917	0.02
Cu	63	2	He	43753	0.00
Zn	66	2	He	9843	0.06
As	75	2	He	10281	0.02
Se	78	2	He	1067	0.71
B	11	1	nogas	76735	0.00
Si	28	1	nogas	3485828	0.00

Calibration Standard Report

Ca	43	1	nogas	21820	0.02
Ca	44	1	nogas	379843	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	18494316	0.00
Se	77	1	nogas	58701	0.00
Se	82	1	nogas	2430	0.27
Mo	95	1	nogas	39277	0.01
Sn	118	1	nogas	58809	0.00
Ba	137	1	nogas	30628	0.01
Sb	121	2	He	37223	0.00
P	31	1	nogas	99954	0.01
La	139	1	nogas	283	7.51

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	391554	6.42	410295	95.43	70	125	
Ge	72	1	nogas	4140391	1.95	4203247	98.50	70	125	
In	115	1	nogas	4108507	2.71	4030824	101.93	70	125	
Bi	209	1	nogas	3227384	3.59	3148067	102.52	70	125	
Ge	72	2	He	1091144	0.77	1112674	98.07	70	125	

Calibration Standard Report

Sample Table

Sample Name	10/50/1000
Data File Name	175CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:02:44-05:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	172CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	33994	0.01
Na	23	1	nogas	21696059	0.00
Mg	24	1	nogas	13416090	0.00
Al	27	1	nogas	203753	0.00
K	39	1	nogas	31050682	0.00
Ti	47	1	nogas	22327	0.01
V	51	1	nogas	2170964	0.00
Cr	52	1	nogas	355791	0.00
Mn	55	1	nogas	378369	0.00
Co	59	1	nogas	297173	0.00
Ni	60	1	nogas	66943	0.00
Cu	63	1	nogas	169943	0.00
Zn	66	1	nogas	57484	0.00
As	75	1	nogas	260903	0.00
Sr	88	1	nogas	417425	0.00
Ag	107	1	nogas	208625	0.00
Cd	111	1	nogas	44156	0.01
Sb	121	1	nogas	201535	0.00
Tl	205	1	nogas	304887	0.00
Pb	208	1	nogas	413880	0.00
[Pb]	206	1	nogas	105389	0.00
[Pb]	207	1	nogas	89848	0.00
Na	23	2	He	1785817	0.00
Mg	24	2	He	900234	0.00
Al	27	2	He	6124	0.12
K	39	2	He	1395762	0.00
Ca	43	2	He	3160	0.27
Ca	44	2	He	56355	0.01
V	51	2	He	107231	0.00
Cr	52	2	He	92385	0.00
Mn	55	2	He	64720	0.00
Fe	56	2	He	8110282	0.00
Co	59	2	He	122635	0.00
Ni	60	2	He	31157	0.01
Cu	63	2	He	83861	0.00
Zn	66	2	He	20175	0.01
As	75	2	He	20547	0.01
Se	78	2	He	1833	0.15
B	11	1	nogas	138828	0.00
Si	28	1	nogas	6069410	0.00

Calibration Standard Report

Ca	43	1	nogas	44811	0.00
Ca	44	1	nogas	757117	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	35059910	0.00
Se	77	1	nogas	65260	0.00
Se	82	1	nogas	4444	0.18
Mo	95	1	nogas	82511	0.00
Sn	118	1	nogas	122353	0.00
Ba	137	1	nogas	63758	0.00
Sb	121	2	He	74542	0.00
P	31	1	nogas	144726	0.00
La	139	1	nogas	1450	0.08

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	378100	1.46	410295	92.15	70	125	
Ge	72	1	nogas	4247086	1.47	4203247	101.04	70	125	
In	115	1	nogas	4259323	1.52	4030824	105.67	70	125	
Bi	209	1	nogas	3160751	0.41	3148067	100.40	70	125	
Ge	72	2	He	1089922	2.54	1112674	97.96	70	125	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	180CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:12:40-05:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	172CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	311078	0.00
Na	23	1	nogas	181391279	0.00
Mg	24	1	nogas	122304915	0.00
Al	27	1	nogas	1717832	0.00
K	39	1	nogas	222678305	0.00
Ti	47	1	nogas	205056	0.00
V	51	1	nogas	4202675	0.00
Cr	52	1	nogas	2576513	0.00
Mn	55	1	nogas	3371621	0.00
Co	59	1	nogas	2811705	0.00
Ni	60	1	nogas	613495	0.00
Cu	63	1	nogas	1509289	0.00
Zn	66	1	nogas	527135	0.00
As	75	1	nogas	821955	0.00
Sr	88	1	nogas	4079629	0.00
Ag	107	1	nogas	2103350	0.00
Cd	111	1	nogas	430656	0.00
Sb	121	1	nogas	2064983	0.00
Tl	205	1	nogas	3013641	0.00
Pb	208	1	nogas	4029332	0.00
[Pb]	206	1	nogas	967014	0.00
[Pb]	207	1	nogas	853125	0.00
Na	23	2	He	14795333	0.00
Mg	24	2	He	8322666	0.00
Al	27	2	He	46872	0.01
K	39	2	He	10798682	0.00
Ca	43	2	He	29667	0.01
Ca	44	2	He	521664	0.00
V	51	2	He	770868	0.00
Cr	52	2	He	823284	0.00
Mn	55	2	He	594653	0.00
Fe	56	2	He	75463092	0.00
Co	59	2	He	1158319	0.00
Ni	60	2	He	295507	0.00
Cu	63	2	He	750748	0.00
Zn	66	2	He	186375	0.00
As	75	2	He	187342	0.00
Se	78	2	He	15150	0.03
B	11	1	nogas	1150516	0.00
Si	28	1	nogas	47868634	0.00

Calibration Standard Report

Ca	43	1	nogas	411347	0.00
Ca	44	1	nogas	6841492	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	303543382	0.00
Se	77	1	nogas	78218	0.00
Se	82	1	nogas	38819	0.01
Mo	95	1	nogas	784816	0.00
Sn	118	1	nogas	1178526	0.00
Ba	137	1	nogas	596380	0.00
Sb	121	2	He	716832	0.00
P	31	1	nogas	792120	0.00
La	139	1	nogas	1123	1.44

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	342685	3.86	410295	83.52	70	125	
Ge	72	1	nogas	4088467	4.09	4203247	97.27	70	125	
In	115	1	nogas	4003400	6.45	4030824	99.32	70	125	
Bi	209	1	nogas	3061179	6.81	3148067	97.24	70	125	
Ge	72	2	He	1069169	4.43	1112674	96.09	70	125	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	181CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:14:38-05:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	172CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	600530	0.00
Na	23	1	nogas	350372575	0.00
Mg	24	1	nogas	231045472	0.00
Al	27	1	nogas	3030995	0.00
K	39	1	nogas	430109010	0.00
Ti	47	1	nogas	403422	0.00
V	51	1	nogas	7185635	0.00
Cr	52	1	nogas	5173900	0.00
Mn	55	1	nogas	6723279	0.00
Co	59	1	nogas	5488733	0.00
Ni	60	1	nogas	1198881	0.00
Cu	63	1	nogas	2973251	0.00
Zn	66	1	nogas	1042963	0.00
As	75	1	nogas	1520963	0.00
Sr	88	1	nogas	7858444	0.00
Ag	107	1	nogas	3989198	0.00
Cd	111	1	nogas	856734	0.00
Sb	121	1	nogas	3870342	0.00
Tl	205	1	nogas	5853211	0.00
Pb	208	1	nogas	8176661	0.00
[Pb]	206	1	nogas	2033657	0.00
[Pb]	207	1	nogas	1822160	0.00
Na	23	2	He	28690175	0.00
Mg	24	2	He	16160656	0.00
Al	27	2	He	92878	0.00
K	39	2	He	21404765	0.00
Ca	43	2	He	59926	0.00
Ca	44	2	He	1018834	0.00
V	51	2	He	1599700	0.00
Cr	52	2	He	1653040	0.00
Mn	55	2	He	1163172	0.00
Fe	56	2	He	149810488	0.00
Co	59	2	He	2357675	0.00
Ni	60	2	He	569308	0.00
Cu	63	2	He	1499543	0.00
Zn	66	2	He	363057	0.00
As	75	2	He	372065	0.00
Se	78	2	He	30409	0.00
B	11	1	nogas	2084702	0.00
Si	28	1	nogas	91687485	0.00

Calibration Standard Report

Ca	43	1	nogas	795593	0.00
Ca	44	1	nogas	13257459	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	588876646	0.00
Se	77	1	nogas	110336	0.00
Se	82	1	nogas	76402	0.00
Mo	95	1	nogas	1605717	0.00
Sn	118	1	nogas	2383037	0.00
Ba	137	1	nogas	1151116	0.00
Sb	121	2	He	1477261	0.00
P	31	1	nogas	1504430	0.00
La	139	1	nogas	1780	0.22

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	313644	1.45	410295	76.44	70	125	
Ge	72	1	nogas	4106438	1.74	4203247	97.70	70	125	
In	115	1	nogas	4082689	4.68	4030824	101.29	70	125	
Bi	209	1	nogas	3147197	2.10	3148067	99.97	70	125	
Ge	72	2	He	1072091	1.35	1112674	96.35	70	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICCV
Data File Name	182_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:16:36-05:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	172CALB.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
Be	9	1	nogas	96.282	1.784	304043	2.03	100	96.3	90	110	
Na	23	1	nogas	10051.883	7.174	181414333	0.84	10000	100.5	90	110	
Mg	24	1	nogas	10184.256	7.881	121095503	2.84	10000	101.8	90	110	
Al	27	1	nogas	100.914	1.022	1610554	1.33	100	100.9	90	110	
K	39	1	nogas	10063.666	1.197	225138705	1.20	10000	100.6	90	110	
Ti	47	1	nogas	100.902	3.012	208092	2.77	100	100.9	90	110	
V	51	1	nogas	80.707	6.533	3951189	2.94	100	80.7	90	110	ICV Main CR1 Failed
Cr	52	1	nogas	100.933	3.862	2687854	2.22	100	100.9	90	110	
Mn	55	1	nogas	98.829	5.375	3391442	3.52	100	98.8	90	110	
Co	59	1	nogas	102.334	1.774	2876173	1.48	100	102.3	90	110	
Ni	60	1	nogas	100.993	3.296	621252	1.13	100	101.0	90	110	
Cu	63	1	nogas	101.863	3.435	1550925	2.02	100	101.9	90	110	
Zn	66	1	nogas	98.755	3.480	526799	1.36	100	98.8	90	110	
As	75	1	nogas	89.149	2.934	784825	0.73	100	89.1	90	110	ICV Main CR1 Failed
Sr	88	1	nogas	101.708	0.009	4104795	2.15	100	101.7	90	110	
Ag	107	1	nogas	101.076	3.150	2077018	4.51	100	101.1	90	110	
Cd	111	1	nogas	99.251	4.858	424944	0.80	100	99.3	90	110	
Sb	121	1	nogas	100.311	2.593	2003743	2.26	100	100.3	90	110	
Tl	205	1	nogas	107.034	4.833	3104249	3.46	100	107.0	90	110	
Pb	208	1	nogas	98.936	3.042	4033502	3.04	100	98.9	90	110	
U	238	1	nogas	101.097	5.373	3860338	2.54	100	101.1	90	110	
[Pb]	206	1	nogas	99.268	5.898	984294	1.91	100	99.3	90	110	
[Pb]	207	1	nogas	92.702	4.162	821402	3.00	100	92.7	90	110	
Na	23	2	He	9499.178	1.239	14377926	0.73	10000	95.0	90	110	
Mg	24	2	He	9681.064	1.193	8195065	0.90	10000	96.8	90	110	
Al	27	2	He	94.460	1.041	46244	0.49	100	94.5	90	110	
K	39	2	He	10030.372	0.516	10848591	0.50	10000	100.3	90	110	
Ca	43	2	He	9374.075	3.339	29203	2.71	10000	93.7	90	110	
Ca	44	2	He	9740.173	2.037	519681	2.32	10000	97.4	90	110	
V	51	2	He	92.118	1.183	772037	0.91	100	92.1	90	110	
Cr	52	2	He	93.916	1.062	809227	0.25	100	93.9	90	110	
Mn	55	2	He	96.578	1.180	587752	1.68	100	96.6	90	110	
Fe	56	2	He	9518.733	1.969	74367411	2.28	10000	95.2	90	110	
Co	59	2	He	93.113	3.245	1139029	3.58	100	93.1	90	110	
Ni	60	2	He	96.396	2.356	288899	2.78	100	96.4	90	110	
Cu	63	2	He	95.264	1.177	746391	1.97	100	95.3	90	110	
Zn	66	2	He	98.184	1.119	187110	1.92	100	98.2	90	110	
As	75	2	He	96.411	1.422	187383	1.69	100	96.4	90	110	
Se	78	2	He	95.840	0.500	15272	0.56	100	95.8	90	110	
B	11	1	nogas	475.554	5.979	1062696	3.16	500	95.1	90	110	
Si	28	1	nogas	553.875	5.211	6123708	2.22	5000	11.1	90	110	ICV Main CR1 Failed
Ca	43	1	nogas	9853.180	0.724	402498	2.62	10000	98.5	90	110	
Ca	44	1	nogas	9798.802	1.830	6672573	0.52	10000	98.0	90	110	
Fe	56	1	nogas	9699.803	3.113	294116507	1.34	10000	97.0	90	110	
Se	77	1	nogas	34.267	12.534	67592	3.31	100	34.3	90	110	ICV Main CR1 Failed
Se	82	1	nogas	96.732	1.972	37933	0.73	100	96.7	90	110	
Mo	95	1	nogas	94.305	1.264	768154	1.67	100	94.3	90	110	
Sn	118	1	nogas	97.210	6.221	1153772	1.03	100	97.2	90	110	
Ba	137	1	nogas	103.771	6.397	600699	1.61	100	103.8	90	110	
Sb	121	2	He	93.165	1.649	712224	2.11	100	93.2	90	110	
Li	7	1	nogas	100.304	2.961	568551	0.81	100	100.3	90	110	
P	31	1	nogas	503.414	2.599	805347	0.30	500	100.7	90	110	
La	139	1	nogas	94.153	4.797	1120	7.94	100	94.2	90	110	
Au	197	1	nogas	48.864	19.710	60	16.67	100	48.9	90	110	ICV 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	nogas	333371	3.55	410295	81.25	70	125	
Ge	72	1	nogas	4179180	2.15	4203247	99.43	70	125	
In	115	1	nogas	4061366	5.49	4030824	100.76	70	125	
Bi	209	1	nogas	3088431	6.94	3148067	98.11	70	125	

Initial Calibration Verification (ICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	1115560	0.82	1112674	100.26	70	125	

Sample Report

Sample Table

Sample Name	LLCCV2
Data File Name	183SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:18:37-05:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	1.886	1.886	3.15	6661	0.03	2000	
Na	23	1	nogas	119.686	119.686	3.94	5029639	0.00	200000	
Mg	24	1	nogas	212.678	212.678	2.56	2705610	0.01	200000	
Al	27	1	nogas	2.103	2.103	3.10	61601	0.00	2000	
K	39	1	nogas	197.933	197.933	5.32	12345044	0.00	200000	
Ti	47	1	nogas	2.174	2.174	6.98	4752	0.05	2000	
V	51	1	nogas	-21.047	-21.047	-3.65	1189982	0.00	2000	
Cr	52	1	nogas	1.201	1.201	5.51	110230	0.00	2000	
Mn	55	1	nogas	2.045	2.045	2.04	87380	0.00	2000	
Co	59	1	nogas	2.103	2.103	2.09	61145	0.00	2000	
Ni	60	1	nogas	1.601	1.601	2.96	14910	0.01	2000	
Cu	63	1	nogas	1.775	1.775	4.43	37569	0.00	2000	
Zn	66	1	nogas	1.748	1.748	7.90	12408	0.01	2000	
As	75	1	nogas	-6.413	-6.413	-7.54	138128	0.00	2000	
Sr	88	1	nogas	2.075	2.075	2.04	91351	0.00	2000	
Ag	107	1	nogas	2.048	2.048	0.37	43608	0.00	2000	
Cd	111	1	nogas	1.993	1.993	3.59	8922	0.02	2000	
Sb	121	1	nogas	2.353	2.353	0.37	48788	0.00	2000	
Tl	205	1	nogas	2.344	2.344	5.55	72739	0.00	2000	
Pb	208	1	nogas	2.143	2.143	1.47	88001	0.00	2000	
U	238	1	nogas	2.046	2.046	3.79	83278	0.00	2000	
[Pb]	206	1	nogas	2.091	2.091	0.65	22272	0.01	2000	
[Pb]	207	1	nogas	2.002	2.002	2.00	19001	0.01	2000	
Na	23	2	He	139.281	139.281	1.26	436199	0.03	200000	
Mg	24	2	He	211.507	211.507	0.90	180003	0.12	200000	
Al	27	2	He	1.368	1.368	21.92	1773	0.08	2000	
K	39	2	He	210.280	210.280	1.15	453612	0.05	200000	
Ca	43	2	He	232.377	232.377	8.02	753	30.85	200000	
Ca	44	2	He	208.305	208.305	1.52	12001	1.74	200000	
V	51	2	He	1.253	1.253	3.56	33073	0.00	2000	
Cr	52	2	He	2.123	2.123	2.80	21720	0.01	2000	
Mn	55	2	He	2.142	2.142	3.30	13332	0.02	2000	
Fe	56	2	He	216.651	216.651	1.52	1698507	0.01	200000	
Co	59	2	He	2.100	2.100	5.97	25592	0.01	2000	
Ni	60	2	He	1.520	1.520	7.41	6868	0.02	2000	
Cu	63	2	He	1.647	1.647	5.28	18466	0.01	2000	
Zn	66	2	He	1.791	1.791	6.43	4727	0.04	2000	
As	75	2	He	1.955	1.955	1.13	4589	0.04	2000	
Se	78	2	He	2.312	2.312	1.01	617	0.37	2000	
B	11	1	nogas	15.899	15.899	7.50	59176	0.03	2000	
Si	28	1	nogas	113.165	113.165	0.83	2076971	0.01	2000	
Ca	43	1	nogas	221.847	221.847	8.88	10063	2.20	200000	

Sample Report

Ca	44	1	nogas	216.456	216.456	4.46	182061	0.12	200000	
Fe	56	1	nogas	188.745	188.745	3.40	9259408	0.00	200000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Se	77	1	nogas	-73.128	-73.128	-0.61	41033	-0.18	2000	
Se	82	1	nogas	2.082	2.082	3.03	1263	0.16	2000	
Mo	95	1	nogas	2.077	2.077	5.58	18663	0.01	2000	
Sn	118	1	nogas	2.157	2.157	2.09	27766	0.01	2000	
Ba	137	1	nogas	2.190	2.190	1.95	13832	0.02	2000	
Sb	121	2	He	2.375	2.375	4.30	18103	0.01	2000	
La	139	1	nogas	-29.021	-29.021	-20.63	347	-8.37	2000	
Au	197	1	nogas	-12.369	-12.369	-91.07	10	-123.69	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	367985	2.44	410295	89.69	70	125	
Ge	72	1	nogas	4288724	1.26	4203247	102.03	70	125	
In	115	1	nogas	4226359	2.18	4030824	104.85	70	125	
Bi	209	1	nogas	3279619	1.26	3148067	104.18	70	125	
Ge	72	2	He	1106013	0.56	1112674	99.40	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLCCV5
Data File Name	184LICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:20:35-05:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	172CALB.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
Be	9	1	nogas	5.003	7.659	16464	4.84	5	100.1	70	130	
Na	23	1	nogas	436.062	10.675	10255968	1.65	500	87.2	70	130	
Mg	24	1	nogas	543.950	9.090	6413486	2.74	500	108.8	70	130	
Al	27	1	nogas	5.532	12.244	107774	3.16	5	110.6	70	130	
K	39	1	nogas	569.025	15.119	18973394	2.29	500	113.8	70	130	
Ti	47	1	nogas	5.539	9.155	10950	2.28	5	110.8	70	130	
V	51	1	nogas	-11.841	-38.698	1337100	3.66	5	-236.8	70	130	LLICV Main CR1 Failed
Cr	52	1	nogas	4.874	14.552	191673	2.16	5	97.5	70	130	
Mn	55	1	nogas	5.525	8.550	193353	2.60	5	110.5	70	130	
Co	59	1	nogas	5.490	8.119	146597	2.57	5	109.8	70	130	
Ni	60	1	nogas	5.150	10.093	34279	3.35	5	103.0	70	130	
Cu	63	1	nogas	5.214	7.775	84015	1.39	5	104.3	70	130	
Zn	66	1	nogas	5.247	8.258	29047	0.96	5	104.9	70	130	
As	75	1	nogas	-0.218	-681.068	167562	1.43	5	-4.4	70	130	LLICV Main CR1 Failed
Sr	88	1	nogas	5.412	8.799	211651	1.66	5	108.2	70	130	
Ag	107	1	nogas	5.281	6.067	103224	1.29	5	105.6	70	130	
Cd	111	1	nogas	5.198	7.149	22007	3.66	5	104.0	70	130	
Sb	121	1	nogas	5.137	8.164	97696	2.35	5	102.7	70	130	
Tl	205	1	nogas	5.345	7.649	153471	0.43	5	106.9	70	130	
Pb	208	1	nogas	4.977	0.965	203542	0.96	5	99.5	70	130	
U	238	1	nogas	5.283	6.994	199616	3.84	5	105.7	70	130	
[Pb]	206	1	nogas	5.162	8.847	50736	0.88	5	103.2	70	130	
[Pb]	207	1	nogas	5.119	11.241	44826	3.30	5	102.4	70	130	
Na	23	2	He	454.609	3.798	874488	1.77	500	90.9	70	130	
Mg	24	2	He	530.628	4.411	434164	3.43	500	106.1	70	130	
Al	27	2	He	5.398	6.235	3570	3.97	5	108.0	70	130	
K	39	2	He	492.852	0.499	752727	0.35	500	98.6	70	130	
Ca	43	2	He	507.189	6.051	1553	6.35	500	101.4	70	130	
Ca	44	2	He	517.944	3.721	27494	3.36	500	103.6	70	130	
V	51	2	He	4.315	2.745	56013	0.93	5	86.3	70	130	
Cr	52	2	He	5.080	3.672	45443	2.71	5	101.6	70	130	
Mn	55	2	He	5.357	1.415	31734	1.61	5	107.1	70	130	
Fe	56	2	He	518.181	2.106	3911941	1.86	500	103.6	70	130	
Co	59	2	He	5.032	4.732	59293	3.84	5	100.6	70	130	
Ni	60	2	He	4.666	4.165	15647	2.50	5	93.3	70	130	
Cu	63	2	He	4.807	1.014	41534	1.10	5	96.1	70	130	
Zn	66	2	He	4.525	2.781	9559	3.48	5	90.5	70	130	
As	75	2	He	4.980	2.415	10078	1.52	5	99.6	70	130	
Se	78	2	He	5.441	9.316	1070	6.98	5	108.8	70	130	
B	11	1	nogas	28.316	3.339	83967	0.82	25	113.3	70	130	
Si	28	1	nogas	297.625	15.843	3536970	4.69	25	1190.5	70	130	LLICV Main CR1 Failed
Ca	43	1	nogas	576.126	8.561	22964	1.46	500	115.2	70	130	
Ca	44	1	nogas	551.072	7.538	383052	0.55	500	110.2	70	130	
Fe	56	1	nogas	537.020	9.738	18435139	1.37	500	107.4	70	130	
Se	77	1	nogas	-46.673	-29.335	44314	1.45	5	-933.5	70	130	LLICV Main CR1 Failed
Se	82	1	nogas	5.578	9.196	2454	6.32	5	111.6	70	130	
Mo	95	1	nogas	5.111	7.416	40620	2.92	5	102.2	70	130	
Sn	118	1	nogas	5.170	11.139	61448	0.87	5	103.4	70	130	
Ba	137	1	nogas	5.400	9.800	31399	1.53	5	108.0	70	130	
Sb	121	2	He	4.840	1.685	35680	1.27	5	96.8	70	130	
Li	7	1	nogas	4.857	7.335	60216	0.63	5	97.1	70	130	
P	31	1	nogas	29.535	24.305	102390	3.03	25	118.1	70	130	
La	139	1	nogas	-29.987	-38.712	320	17.40	5	-599.7	70	130	LLICV Main CR1 Failed
Au	197	1	nogas	21.095	183.876	37	87.67	5	421.9	70	130	LLICV 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	nogas	346138	2.82	410295	84.36	70	125	
Ge	72	1	nogas	3971868	6.87	4203247	94.50	70	125	
In	115	1	nogas	4022378	9.80	4030824	99.79	70	125	
Bi	209	1	nogas	3056736	7.94	3148067	97.10	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	1072769	1.07	1112674	96.41	70	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICCB
Data File Name	185_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:22:34-05:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	172CALB.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
Be	9	1	nogas	0.054	29.0	240	15.0	1	
Na	23	1	nogas	-87.160	-9.2	1002387	2.6	100	
Mg	24	1	nogas	1.399	59.2	48435	8.8	100	
Al	27	1	nogas	0.747	61.8	34641	6.3	5	
K	39	1	nogas	6.241	780.4	7079598	1.1	100	
Ti	47	1	nogas	0.076	80.1	287	49.6	2.5	
V	51	1	nogas	-20.315	-12.4	1064577	6.1	2.5	
Cr	52	1	nogas	-0.757	-35.4	50957	0.3	2.5	
Mn	55	1	nogas	0.060	141.8	15473	5.1	2.5	
Co	59	1	nogas	0.031	23.8	1200	4.3	2.5	
Ni	60	1	nogas	-0.406	-6.7	2057	10.0	2.5	
Cu	63	1	nogas	-0.256	-14.8	5291	4.2	2.5	
Zn	66	1	nogas	0.061	89.7	2827	3.6	2.5	
As	75	1	nogas	-6.561	-33.1	120086	1.2	2.5	
Sr	88	1	nogas	0.026	120.6	5771	7.0	2.5	
Ag	107	1	nogas	0.016	56.5	680	12.6	2.5	
Cd	111	1	nogas	0.009	96.8	60	57.7	1	
Sb	121	1	nogas	0.039	8.6	1210	15.8	2.5	
Tl	205	1	nogas	0.063	23.2	2027	11.3	1	
Pb	208	1	nogas	0.016	10.1	1317	5.1	2.5	
U	238	1	nogas	0.017	29.3	723	17.3	2.5	
[Pb]	206	1	nogas	0.014	24.2	313	15.7	2.5	
[Pb]	207	1	nogas	0.021	35.5	280	14.3	2.5	
Na	23	2	He	-79.499	-2.1	110461	0.7	100	
Mg	24	2	He	1.434	16.3	3647	2.8	100	
Al	27	2	He	-0.083	-215.1	1060	7.1	5	
K	39	2	He	-10.861	-52.5	219525	2.8	100	
Ca	43	2	He	18.022	35.6	90	22.2	100	
Ca	44	2	He	6.966	64.8	1340	18.1	100	
V	51	2	He	-0.707	-6.3	16862	1.7	2.5	
Cr	52	2	He	-0.015	-220.2	3447	9.3	2.5	
Mn	55	2	He	0.082	27.3	887	14.1	2.5	
Fe	56	2	He	1.644	6.4	32826	0.6	100	
Co	59	2	He	0.022	36.1	383	24.2	2.5	
Ni	60	2	He	-0.479	-5.0	957	9.9	2.5	
Cu	63	2	He	-0.377	-8.0	2797	5.4	2.5	
Zn	66	2	He	-0.189	-17.5	990	7.9	2.5	
As	75	2	He	-0.085	-34.5	660	9.5	2.5	
Se	78	2	He	0.054	307.0	260	7.4	2.5	
B	11	1	nogas	4.998	36.1	28892	3.5	10	
Si	28	1	nogas	8.930	161.0	945585	0.4	5	ICB Main CR1 Failed
Ca	43	1	nogas	13.012	53.5	1157	9.7	100	
Ca	44	1	nogas	14.904	44.2	36690	1.4	100	
Fe	56	1	nogas	-14.374	-82.5	2634587	0.2	100	

Initial Calibration Blank (ICB) Report

Se	77	1	nogas	-60.672	-32.2	38812	2.4	2.5	
Se	82	1	nogas	0.204	50.8	453	4.6	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Mo	95	1	nogas	-0.069	-7.2	673	13.5	2.5	
Sn	118	1	nogas	0.082	28.1	1850	3.7	5	
Ba	137	1	nogas	0.050	53.1	817	6.7	2.5	
Sb	121	2	He	0.038	22.9	383	14.8	2.5	
P	31	1	nogas	0.128	5228.1	58177	2.9	10	
La	139	1	nogas	132.371	0.2	1257	10.4	2.5	ICB Main CR1 Failed
Au	197	1	nogas	-1.825	-1060.6	17	91.7	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	327573	9.40	410295	79.84	70	125	
Ge	72	1	nogas	3789077	11.59	4203247	90.15	70	125	
In	115	1	nogas	3744755	10.29	4030824	92.90	70	125	
Bi	209	1	nogas	2858482	8.02	3148067	90.80	70	125	
Ge	72	2	He	1079812	2.73	1112674	97.05	70	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	186ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:24:34-05:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	172CALB.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
Be	9	1	nogas	0.017	65.7	127	24.1	0	ICSA Main CR1 Failed
Na	23	1	nogas	95185.919	0.7	1689497504	0.7	0	
Mg	24	1	nogas	95437.207	0.5	1130582025	1.0	0	
Al	27	1	nogas	92649.132	0.5	1432608885	1.9	0	
K	39	1	nogas	96460.020	2.5	2060689246	2.6	0	
Ti	47	1	nogas	2046.190	1.9	4154957	1.4	0	
V	51	1	nogas	-28.531	-2.6	939680	0.7	0	ICSA Main CR1 Failed
Cr	52	1	nogas	0.226	23.2	80946	0.8	0	ICSA Main CR1 Failed
Mn	55	1	nogas	0.263	8.8	23879	2.9	0	ICSA Main CR1 Failed
Co	59	1	nogas	0.178	6.3	5404	4.2	0	ICSA Main CR1 Failed
Ni	60	1	nogas	0.475	10.1	7545	4.7	0	ICSA Main CR1 Failed
Cu	63	1	nogas	1.201	6.4	27501	3.4	0	ICSA Main CR1 Failed
Zn	66	1	nogas	1.182	2.6	8959	3.3	0	ICSA Main CR1 Failed
As	75	1	nogas	-6.419	-3.7	132555	0.4	0	ICSA Main CR1 Failed
Sr	88	1	nogas	0.858	6.1	39377	4.4	0	ICSA Main CR1 Failed
Ag	107	1	nogas	0.072	5.2	1890	5.5	0	ICSA Main CR1 Failed
Cd	111	1	nogas	1.867	4.7	7869	3.3	0	ICSA Main CR1 Failed
Sb	121	1	nogas	0.038	17.7	1287	10.9	0	ICSA Main CR1 Failed
Tl	205	1	nogas	0.020	29.8	937	16.7	0	ICSA Main CR1 Failed
Pb	208	1	nogas	0.083	1.2	4037	1.0	0	ICSA Main CR1 Failed
[Pb]	206	1	nogas	0.098	10.2	1107	7.3	0	ICSA Main CR1 Failed
[Pb]	207	1	nogas	0.084	11.3	820	10.0	0	ICSA Main CR1 Failed
Na	23	2	He	97710.252	2.2	138174111	2.5	0	
Mg	24	2	He	97010.646	0.7	77833089	0.3	0	
Al	27	2	He	96549.650	1.3	43714881	1.7	0	
K	39	2	He	97313.791	0.4	103241748	0.4	0	
Ca	43	2	He	94747.982	0.2	279558	0.7	0	
Ca	44	2	He	96928.215	0.6	4894261	1.1	0	
V	51	2	He	-0.674	-2.7	16771	0.7	0	ICSA Main CR1 Failed
Cr	52	2	He	0.258	4.2	5598	2.1	0	ICSA Main CR1 Failed
Mn	55	2	He	0.336	13.5	2337	11.2	0	ICSA Main CR1 Failed
Fe	56	2	He	98325.114	1.4	728091402	1.7	0	
Co	59	2	He	0.026	9.6	430	7.0	0	ICSA Main CR1 Failed
Ni	60	2	He	-0.431	-8.1	1070	8.9	0	ICSA Main CR1 Failed
Cu	63	2	He	0.411	9.2	8552	3.2	0	ICSA Main CR1 Failed
Zn	66	2	He	0.039	411.3	1377	20.4	0	ICSA Main CR1 Failed
As	75	2	He	0.036	25.8	869	2.5	0	ICSA Main CR1 Failed
Se	78	2	He	0.334	118.6	297	19.9	0	ICSA Main CR1 Failed
B	11	1	nogas	3.316	9.0	25534	0.3	0	ICSA Main CR1 Failed
Si	28	1	nogas	64.352	3.9	1545930	0.5	0	
Ca	43	1	nogas	94423.122	1.9	3792719	0.4	0	
Ca	44	1	nogas	92944.078	1.0	62108976	0.7	0	
Fe	56	1	nogas	96256.288	3.0	2846318530	1.5	0	
Se	77	1	nogas	-55.958	-9.0	43729	1.5	0	ICSA Main CR1 Failed
Se	82	1	nogas	0.157	122.7	477	14.0	0	ICSA Main CR1 Failed
Mo	95	1	nogas	1892.632	1.8	15163059	0.2	0	
Sn	118	1	nogas	0.068	15.3	1813	5.0	0	ICSA Main CR1 Failed
Ba	137	1	nogas	0.091	19.4	1110	10.2	0	ICSA Main CR1 Failed
Sb	121	2	He	0.053	17.9	487	14.0	0	ICSA Main CR1 Failed

Interference Check Solution A (ICS-A) Report

P	31	1	nogas	97254.844	1.1	141064531	0.5	0	
La	139	1	nogas	26.997	22.3	677	6.2	0	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	328124	2.75	410295	79.97	70	125	
Ge	72	1	nogas	4117451	1.57	4203247	97.96	70	125	
In	115	1	nogas	3979251	1.69	4030824	98.72	70	125	
Bi	209	1	nogas	2934740	1.35	3148067	93.22	70	125	
Ge	72	2	He	1057603	0.59	1112674	95.05	70	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	187ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:26:39-05:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	172CALB.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
Be	9	1	nogas	100.138	0.768	287285	0.59	100	100.1	80	120	
Na	23	1	nogas	104876.741	0.782	1854053908	0.52	100	104876.7	80	120	
Mg	24	1	nogas	107535.072	1.985	1269247862	3.26	100	107535.1	80	120	ICSB Main CR1 Failed
Al	27	1	nogas	92914.790	2.113	1430037525	1.86	100	92914.8	80	120	ICSB Main CR1 Failed
K	39	1	nogas	109302.034	2.138	2323342785	1.83	100	109302.0	80	120	ICSB Main CR1 Failed
Ti	47	1	nogas	2242.677	1.454	4533521	1.17	100	2242.7	80	120	ICSB Main CR1 Failed
V	51	1	nogas	82.628	2.727	3927694	0.82	100	82.6	80	120	
Cr	52	1	nogas	95.238	0.835	2492857	1.81	100	95.2	80	120	
Mn	55	1	nogas	93.993	3.691	3165283	2.31	100	94.0	80	120	
Co	59	1	nogas	94.457	1.122	2604132	1.26	100	94.5	80	120	
Ni	60	1	nogas	94.069	1.351	568061	0.89	100	94.1	80	120	
Cu	63	1	nogas	94.738	0.569	1416033	1.98	100	94.7	80	120	
Zn	66	1	nogas	96.727	0.690	506358	1.43	100	96.7	80	120	
As	75	1	nogas	93.661	1.270	800082	1.62	100	93.7	80	120	
Sr	88	1	nogas	94.444	1.985	3739150	3.06	100	94.4	80	120	
Ag	107	1	nogas	93.422	1.596	1882694	2.83	100	93.4	80	120	
Cd	111	1	nogas	99.455	1.738	414031	1.50	100	99.5	80	120	
Sb	121	1	nogas	94.985	2.810	1860884	1.82	100	95.0	80	120	
Tl	205	1	nogas	100.020	2.140	2690897	2.07	100	100.0	80	120	
Pb	208	1	nogas	89.264	1.390	3639260	1.39	100	89.3	80	120	
U	238	1	nogas	103.567	0.749	3669741	0.85	100	103.6	80	120	
[Pb]	206	1	nogas	95.416	2.076	878189	1.85	100	95.4	80	120	
[Pb]	207	1	nogas	94.806	1.159	779153	1.00	100	94.8	80	120	
Na	23	2	He	109907.326	2.894	157593931	1.96	100	109907.3	80	120	ICSB Main CR1 Failed
Mg	24	2	He	108381.061	2.500	88192762	1.58	100	108381.1	80	120	
Al	27	2	He	97813.579	0.465	44922601	1.23	100	97813.6	80	120	ICSB Main CR1 Failed
K	39	2	He	110792.454	2.148	117509478	2.14	100	110792.5	80	120	ICSB Main CR1 Failed
Ca	43	2	He	106979.461	0.802	320174	1.16	100	106979.5	80	120	ICSB Main CR1 Failed
Ca	44	2	He	110664.480	2.165	5667745	2.22	100	110664.5	80	120	ICSB Main CR1 Failed
V	51	2	He	95.214	1.277	766619	0.31	100	95.2	80	120	
Cr	52	2	He	96.579	1.462	800148	0.83	100	96.6	80	120	
Mn	55	2	He	98.673	1.510	577412	0.92	100	98.7	80	120	
Fe	56	2	He	109915.826	1.934	825517828	1.44	100	109915.8	80	120	
Co	59	2	He	95.263	1.818	1120477	1.11	100	95.3	80	120	
Ni	60	2	He	96.717	0.425	278718	0.57	100	96.7	80	120	
Cu	63	2	He	94.095	0.534	708997	1.13	100	94.1	80	120	
Zn	66	2	He	97.706	1.792	179045	1.42	100	97.7	80	120	
As	75	2	He	99.926	1.401	186723	0.49	100	99.9	80	120	
Se	78	2	He	99.981	0.157	15311	0.95	100	100.0	80	120	
B	11	1	nogas	473.609	0.144	962403	0.74	100	473.6	80	120	
Si	28	1	nogas	4759.691	2.635	44412314	2.03	100	4759.7	80	120	ICSB Main CR1 Failed
Ca	43	1	nogas	106873.395	1.662	4274273	2.37	100	106873.4	80	120	ICSB Main CR1 Failed
Ca	44	1	nogas	107561.801	0.742	71549791	0.69	100	107561.8	80	120	ICSB Main CR1 Failed
Fe	56	1	nogas	107422.245	0.647	3162499737	0.78	100	107422.2	80	120	
Se	77	1	nogas	74.581	10.171	76427	1.13	100	74.6	80	120	ICSB Main CR1 Failed
Se	82	1	nogas	97.035	2.630	37325	2.43	100	97.0	80	120	
Mo	95	1	nogas	2023.251	0.836	16138591	1.32	100	2023.3	80	120	ICSB Main CR1 Failed
Sn	118	1	nogas	94.541	2.234	1091466	0.97	100	94.5	80	120	
Ba	137	1	nogas	97.277	2.733	547705	0.45	100	97.3	80	120	
Sb	121	2	He	93.641	2.730	688291	1.94	100	93.6	80	120	
La	139	1	nogas	214.684	9.467	1833	7.72	100	214.7	80	120	ICSB 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	nogas	302755	0.60	410295	73.79	70	125	
Ge	72	1	nogas	4098832	1.43	4203247	97.52	70	125	
In	115	1	nogas	3943321	3.14	4030824	97.83	70	125	
Bi	209	1	nogas	2859137	0.25	3148067	90.82	70	125	
Ge	72	2	He	1072792	0.95	1112674	96.42	70	125	

Sample Report

Sample Table

Sample Name	MBLK-132005
Data File Name	189SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:30:39-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	0.028	0.028	85.85	180	0.02	2000	
Na	23	1	nogas	-83.100	-83.100	-1.61	1319464	-0.01	200000	
Mg	24	1	nogas	20.494	20.494	2.68	318080	0.01	200000	
Al	27	1	nogas	12.429	12.429	5.78	237002	0.01	2000	
K	39	1	nogas	-19.368	-19.368	-33.25	7832592	0.00	200000	
Ti	47	1	nogas	0.328	0.328	15.76	883	0.04	2000	
V	51	1	nogas	-19.660	-19.660	-4.28	1278494	0.00	2000	
Cr	52	1	nogas	-0.784	-0.784	-7.38	59833	0.00	2000	
Mn	55	1	nogas	0.109	0.109	16.03	20265	0.00	2000	
Co	59	1	nogas	0.016	0.016	25.19	987	0.00	2000	
Ni	60	1	nogas	-0.300	-0.300	-7.60	3124	-0.01	2000	
Cu	63	1	nogas	-0.256	-0.256	-8.07	6261	0.00	2000	
Zn	66	1	nogas	2.700	2.700	1.27	18313	0.01	2000	
As	75	1	nogas	-7.482	-7.482	-2.49	135969	-0.01	2000	
Sr	88	1	nogas	0.018	0.018	7.86	6538	0.00	2000	
Ag	107	1	nogas	0.006	0.006	94.81	583	0.00	2000	
Cd	111	1	nogas	0.009	0.009	25.66	73	0.01	2000	
Sb	121	1	nogas	0.029	0.029	3.74	1210	0.00	2000	
Tl	205	1	nogas	0.021	0.021	36.99	1077	0.00	2000	
Pb	208	1	nogas	0.021	0.021	14.40	1530	0.00	2000	
U	238	1	nogas	0.008	0.008	24.55	467	0.00	2000	
[Pb]	206	1	nogas	0.019	0.019	45.80	417	0.00	2000	
[Pb]	207	1	nogas	0.014	0.014	41.89	267	0.01	2000	
Na	23	2	He	-66.850	-66.850	-1.01	133580	-0.05	200000	
Mg	24	2	He	20.737	20.737	0.70	20194	0.10	200000	
Al	27	2	He	10.892	10.892	9.45	6368	0.17	2000	
K	39	2	He	8.536	8.536	38.14	240058	0.00	200000	
Ca	43	2	He	27.571	27.571	27.93	123	22.35	200000	
Ca	44	2	He	20.680	20.680	27.98	2123	0.97	200000	
V	51	2	He	-0.627	-0.627	-6.71	18145	0.00	2000	
Cr	52	2	He	0.078	0.078	24.57	4381	0.00	2000	
Mn	55	2	He	0.332	0.332	4.52	2450	0.01	2000	
Fe	56	2	He	11.598	11.598	2.12	112165	0.01	200000	
Co	59	2	He	0.008	0.008	62.14	227	0.00	2000	
Ni	60	2	He	-0.402	-0.402	-6.81	1220	-0.03	2000	
Cu	63	2	He	-0.434	-0.434	-4.94	2464	-0.02	2000	
Zn	66	2	He	2.613	2.613	8.38	6351	0.04	2000	
As	75	2	He	-0.097	-0.097	-21.31	662	-0.01	2000	
Se	78	2	He	0.082	0.082	194.96	275	0.03	2000	
B	11	1	nogas	0.562	0.562	67.06	21973	0.00	2000	

Sample Report

Si	28	1	nogas	88.776	88.776	7.09	1918411	0.00	2000	
Ca	43	1	nogas	20.755	20.755	16.54	1720	1.21	200000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ca	44	1	nogas	19.596	19.596	5.89	46973	0.04	200000	
Fe	56	1	nogas	-15.447	-15.447	-19.14	3096806	0.00	200000	
Se	77	1	nogas	-68.622	-68.622	-3.12	43933	-0.16	2000	
Se	82	1	nogas	-0.101	-0.101	-142.58	410	-0.02	2000	
Mo	95	1	nogas	0.213	0.213	24.78	3237	0.01	2000	
Sn	118	1	nogas	0.006	0.006	209.51	1250	0.00	2000	
Ba	137	1	nogas	-0.025	-0.025	-31.88	510	0.00	2000	
Sb	121	2	He	0.037	0.037	9.48	393	0.01	2000	
La	139	1	nogas	-50.767	-50.767	-18.40	217	-23.43	2000	
Au	197	1	nogas	-20.011	-20.011	-31.80	3	-600.33	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	368315	2.44	410295	89.77	70	125	
Ge	72	1	nogas	4463147	2.29	4203247	106.18	70	125	
In	115	1	nogas	4526948	0.86	4030824	112.31	70	125	
Bi	209	1	nogas	3350925	1.15	3148067	106.44	70	125	
Ge	72	2	He	1120419	0.99	1112674	100.70	70	125	

Sample Report

Sample Table

Sample Name	LCS-132005
Data File Name	190SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:32:37-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	48.812	48.812	3.62	150478	0.03	2000	
Na	23	1	nogas	4675.141	4675.141	3.18	91662319	0.01	200000	
Mg	24	1	nogas	4857.538	4857.538	3.03	61745660	0.01	200000	
Al	27	1	nogas	104.733	104.733	1.75	1756116	0.01	2000	
K	39	1	nogas	4769.516	4769.516	1.03	116448511	0.00	200000	
Ti	47	1	nogas	142.441	142.441	0.61	308751	0.05	2000	
V	51	1	nogas	28.928	28.928	5.69	2660509	0.00	2000	
Cr	52	1	nogas	46.460	46.460	3.67	1344311	0.00	2000	
Mn	55	1	nogas	47.854	47.854	0.44	1735421	0.00	2000	
Co	59	1	nogas	49.574	49.574	1.54	1464907	0.00	2000	
Ni	60	1	nogas	48.035	48.035	0.60	313331	0.02	2000	
Cu	63	1	nogas	46.678	46.678	0.77	752855	0.01	2000	
Zn	66	1	nogas	48.959	48.959	1.37	276131	0.02	2000	
As	75	1	nogas	39.228	39.228	0.97	467979	0.01	2000	
Sr	88	1	nogas	93.016	93.016	3.11	3945720	0.00	2000	
Ag	107	1	nogas	46.105	46.105	1.24	995800	0.00	2000	
Cd	111	1	nogas	48.396	48.396	1.90	218317	0.02	2000	
Sb	121	1	nogas	45.574	45.574	1.42	957359	0.00	2000	
Tl	205	1	nogas	49.444	49.444	1.74	1489044	0.00	2000	
Pb	208	1	nogas	47.827	47.827	1.52	1950202	0.00	2000	
U	238	1	nogas	99.149	99.149	0.75	3932521	0.00	2000	
[Pb]	206	1	nogas	47.034	47.034	0.85	484688	0.01	2000	
[Pb]	207	1	nogas	46.446	46.446	0.49	427358	0.01	2000	
Na	23	2	He	4698.496	4698.496	2.62	7300365	0.06	200000	
Mg	24	2	He	4821.378	4821.378	2.69	4122716	0.12	200000	
Al	27	2	He	102.152	102.152	2.34	50410	0.20	2000	
K	39	2	He	5038.359	5038.359	1.11	5564337	0.09	200000	
Ca	43	2	He	5006.045	5006.045	2.52	15767	31.75	200000	
Ca	44	2	He	4832.276	4832.276	1.44	260853	1.85	200000	
V	51	2	He	46.280	46.280	0.63	403318	0.01	2000	
Cr	52	2	He	48.393	48.393	0.87	422884	0.01	2000	
Mn	55	2	He	48.842	48.842	0.75	300359	0.02	2000	
Fe	56	2	He	4769.426	4769.426	1.51	37637709	0.01	200000	
Co	59	2	He	47.974	47.974	0.65	592631	0.01	2000	
Ni	60	2	He	49.602	49.602	1.99	151289	0.03	2000	
Cu	63	2	He	49.098	49.098	2.01	391270	0.01	2000	
Zn	66	2	He	49.897	49.897	1.28	96698	0.05	2000	
As	75	2	He	48.510	48.510	1.70	95631	0.05	2000	
Se	78	2	He	49.386	49.386	0.43	8074	0.61	2000	
B	11	1	nogas	486.445	486.445	5.47	1061002	0.05	2000	
Si	28	1	nogas	4713.917	4713.917	2.30	47152644	0.01	2000	>LDR
Ca	43	1	nogas	4795.315	4795.315	1.13	206273	2.32	200000	
Ca	44	1	nogas	4828.780	4828.780	3.32	3473023	0.14	200000	
Fe	56	1	nogas	4610.011	4610.011	1.08	148841478	0.00	200000	

Sample Report

Se	77	1	nogas	-18.725	-18.725	-19.14	56715	-0.03	2000	
Se	82	1	nogas	46.897	46.897	2.97	19561	0.24	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	44.373	44.373	1.83	380659	0.01	2000	
Sn	118	1	nogas	91.707	91.707	0.94	1147485	0.01	2000	
Ba	137	1	nogas	50.082	50.082	1.17	305925	0.02	2000	
Sb	121	2	He	46.601	46.601	1.86	359772	0.01	2000	
La	139	1	nogas	37.928	37.928	32.00	800	4.74	2000	
Au	197	1	nogas	11.340	11.340	100.28	30	37.80	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	325516	3.50	410295	79.34	70	125	
Ge	72	1	nogas	4392455	0.84	4203247	104.50	70	125	
In	115	1	nogas	4271928	1.59	4030824	105.98	70	125	
Bi	209	1	nogas	3200527	1.36	3148067	101.67	70	125	
Ge	72	2	He	1126483	0.44	1112674	101.24	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	195_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:42:33-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	172CALB.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
Be	9	1	nogas	102.380	1.374	278827	1.37	100	102.4	90	110	
Na	23	1	nogas	10238.079	6.547	164096954	0.87	10000	102.4	90	110	
Mg	24	1	nogas	10410.495	8.209	109899677	2.52	10000	104.1	90	110	
Al	27	1	nogas	105.442	7.364	1495032	3.16	100	105.4	90	110	
K	39	1	nogas	10450.332	5.625	207700646	1.67	10000	104.5	90	110	
Ti	47	1	nogas	103.894	7.612	190542	4.49	100	103.9	90	110	
V	51	1	nogas	113.736	9.578	4320851	2.22	100	113.7	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	104.349	6.136	2470796	3.59	100	104.3	90	110	
Mn	55	1	nogas	103.718	4.165	3168601	2.09	100	103.7	90	110	
Co	59	1	nogas	106.111	5.754	2652849	2.03	100	106.1	90	110	
Ni	60	1	nogas	103.049	6.927	563725	2.80	100	103.0	90	110	
Cu	63	1	nogas	101.892	3.665	1381464	3.07	100	101.9	90	110	
Zn	66	1	nogas	100.798	6.542	478326	3.04	100	100.8	90	110	
As	75	1	nogas	103.492	5.201	785358	0.75	100	103.5	90	110	
Sr	88	1	nogas	104.630	1.678	3759889	3.09	100	104.6	90	110	
Ag	107	1	nogas	104.178	1.937	1905510	2.43	100	104.2	90	110	
Cd	111	1	nogas	101.302	7.728	395427	0.48	100	101.3	90	110	
Sb	121	1	nogas	104.643	4.157	1860314	1.77	100	104.6	90	110	
Tl	205	1	nogas	106.878	7.942	2774835	5.29	100	106.9	90	110	
Pb	208	1	nogas	90.861	1.611	3704344	1.61	100	90.9	90	110	
U	238	1	nogas	110.857	8.033	3789772	4.30	100	110.9	90	110	CCV Main CR1-2 Failed
[Pb]	206	1	nogas	99.264	7.645	881211	2.46	100	99.3	90	110	
[Pb]	207	1	nogas	99.667	7.325	790076	0.70	100	99.7	90	110	
Na	23	2	He	9974.333	0.346	13416462	0.60	10000	99.7	90	110	
Mg	24	2	He	10033.338	0.272	7553411	0.52	10000	100.3	90	110	
Al	27	2	He	99.801	2.655	43397	2.84	100	99.8	90	110	
K	39	2	He	9407.907	1.109	10189686	1.08	10000	94.1	90	110	
Ca	43	2	He	10455.333	1.535	28966	1.32	10000	104.6	90	110	
Ca	44	2	He	10246.886	0.873	486149	1.12	10000	102.5	90	110	
V	51	2	He	98.012	0.257	729223	0.41	100	98.0	90	110	
Cr	52	2	He	101.098	1.573	774479	1.59	100	101.1	90	110	
Mn	55	2	He	102.748	2.404	556051	2.48	100	102.7	90	110	
Fe	56	2	He	10050.686	2.463	69829317	2.51	10000	100.5	90	110	
Co	59	2	He	98.488	0.984	1071348	0.98	100	98.5	90	110	
Ni	60	2	He	101.696	1.603	270908	1.42	100	101.7	90	110	
Cu	63	2	He	99.349	1.335	691980	1.52	100	99.3	90	110	
Zn	66	2	He	101.044	0.610	171202	0.85	100	101.0	90	110	
As	75	2	He	101.295	1.289	175043	1.22	100	101.3	90	110	
Se	78	2	He	99.301	2.549	14065	2.70	100	99.3	90	110	
B	11	1	nogas	498.166	0.761	960129	0.51	500	99.6	90	110	
Si	28	1	nogas	4999.296	4.281	42280737	0.96	5000	100.0	90	110	
Ca	43	1	nogas	10271.402	5.541	373115	1.52	10000	102.7	90	110	
Ca	44	1	nogas	10351.910	6.396	6268206	2.49	10000	103.5	90	110	
Fe	56	1	nogas	10280.158	5.318	277194898	1.70	10000	102.8	90	110	
Se	77	1	nogas	134.855	9.507	83142	0.77	100	134.9	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	101.397	5.341	35375	4.01	100	101.4	90	110	
Mo	95	1	nogas	100.127	4.645	725562	0.96	100	100.1	90	110	
Sn	118	1	nogas	100.409	9.626	1085929	1.45	100	100.4	90	110	
Ba	137	1	nogas	103.933	9.841	548206	2.00	100	103.9	90	110	
Sb	121	2	He	97.980	1.712	666107	1.88	100	98.0	90	110	
Li	7	1	nogas	102.915	2.149	502516	1.82	100	102.9	90	110	
P	31	1	nogas	499.854	5.132	712003	0.84	500	100.0	90	110	
La	139	1	nogas	106.492	10.348	1093	8.30	100	106.5	90	110	
Au	197	1	nogas	168.702	20.814	143	24.50	100	168.7	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	nogas	287407	0.50	410295	70.05	70	125	
Ge	72	1	nogas	3722582	4.22	4203247	88.56	70	125	
In	115	1	nogas	3711021	7.78	4030824	92.07	70	125	
Bi	209	1	nogas	2766723	6.64	3148067	87.89	70	125	

Ge	72	2	He	992077	0.26	1112674	89.16	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	196_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:44:34-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	172CALB.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	Upper Limit	QC Flag
Be	9	1	nogas	0.088	56.4	357	42.9	1	
Na	23	1	nogas	-67.829	-3.3	1392045	0.4	100	
Mg	24	1	nogas	7.078	12.0	116844	6.9	100	
Al	27	1	nogas	1.151	3.0	42675	1.0	5	
K	39	1	nogas	-0.884	-1199.6	7318227	1.7	100	
Ti	47	1	nogas	0.137	21.3	410	12.2	2.5	
V	51	1	nogas	-13.721	-4.5	1287325	1.2	2.5	
Cr	52	1	nogas	-0.665	-12.4	55918	1.7	2.5	
Mn	55	1	nogas	0.038	72.9	15653	4.6	2.5	
Co	59	1	nogas	0.063	20.7	2130	17.5	2.5	
Ni	60	1	nogas	-0.151	-29.3	3624	5.6	2.5	
Cu	63	1	nogas	-0.261	-10.0	5484	7.4	2.5	
Zn	66	1	nogas	-0.139	-1.7	1967	1.6	2.5	
As	75	1	nogas	-5.499	-11.8	133209	1.3	2.5	
Sr	88	1	nogas	0.063	17.3	7545	5.9	2.5	
Ag	107	1	nogas	0.038	35.4	1160	23.8	2.5	
Cd	111	1	nogas	0.057	39.9	270	37.0	1	
Sb	121	1	nogas	0.075	11.9	1937	7.9	2.5	
Tl	205	1	nogas	0.300	58.1	9093	55.3	1	
Pb	208	1	nogas	0.062	21.8	3187	17.3	2.5	
U	238	1	nogas	0.073	34.7	2917	33.0	2.5	
[Pb]	206	1	nogas	0.057	23.6	760	17.2	2.5	
[Pb]	207	1	nogas	0.064	31.4	690	25.1	2.5	
Na	23	2	He	-60.890	-3.2	133396	2.2	100	
Mg	24	2	He	5.992	4.3	7171	1.9	100	
Al	27	2	He	0.591	27.0	1333	6.4	5	
K	39	2	He	-8.199	-18.6	222343	0.7	100	
Ca	43	2	He	20.086	27.3	93	16.4	100	
Ca	44	2	He	13.246	50.8	1613	20.0	100	
V	51	2	He	-0.143	-39.7	20692	1.1	2.5	
Cr	52	2	He	-0.004	-563.9	3440	5.8	2.5	
Mn	55	2	He	0.111	6.6	1033	4.9	2.5	
Fe	56	2	He	5.355	2.6	59154	2.7	100	
Co	59	2	He	0.041	40.5	597	31.9	2.5	
Ni	60	2	He	-0.293	-14.0	1447	9.2	2.5	
Cu	63	2	He	-0.437	-5.6	2287	9.0	2.5	
Zn	66	2	He	-0.399	-1.0	587	1.0	2.5	
As	75	2	He	-0.056	-40.3	694	5.3	2.5	
Se	78	2	He	-0.014	-1705.1	243	13.2	2.5	
B	11	1	nogas	4.610	17.0	29143	5.9	10	

Continuing Calibration Blank (CCB) Report

Si	28	1	nogas	4.664	34.1	959017	1.1	5	
Ca	43	1	nogas	18.235	12.3	1430	7.9	100	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ca	44	1	nogas	17.475	10.6	40257	1.1	100	
Fe	56	1	nogas	-10.447	-43.9	2886920	4.5	100	
Se	77	1	nogas	-46.925	-11.4	44197	1.5	2.5	
Se	82	1	nogas	-0.014	-2068.6	397	27.2	2.5	
Mo	95	1	nogas	0.068	76.8	1760	23.9	2.5	
Sn	118	1	nogas	0.165	36.3	2980	25.0	5	
Ba	137	1	nogas	0.052	15.0	893	5.2	2.5	
Sb	121	2	He	0.059	27.6	530	21.4	2.5	
P	31	1	nogas	-8.055	-6.7	50040	1.3	10	
La	139	1	nogas	-32.468	-33.7	307	21.2	2.5	
Au	197	1	nogas	-3.499	-199.2	17	34.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	337381	1.20	410295	82.23	70	125	
Ge	72	1	nogas	3954892	1.89	4203247	94.09	70	125	
In	115	1	nogas	4011136	1.36	4030824	99.51	70	125	
Bi	209	1	nogas	3088601	1.13	3148067	98.11	70	125	
Ge	72	2	He	1048934	1.27	1112674	94.27	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01SD
Data File Name	198SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:48:33-05:00
Sample Type	Sample
Dilution	5
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	0.028	0.140	18.86	157	0.02	2000	
Na	23	1	nogas	9863.542	49317.712	0.61	177489312	0.01	200000	
Mg	24	1	nogas	4088.075	20440.377	0.90	48472606	0.01	200000	
Al	27	1	nogas	167.090	835.449	9.10	2550133	0.01	2000	
K	39	1	nogas	168.966	844.830	3.60	10980503	0.00	200000	
Ti	47	1	nogas	3.057	15.284	5.05	6211	0.05	2000	
V	51	1	nogas	-14.236	-71.181	-23.11	1295803	0.00	2000	
Cr	52	1	nogas	57.215	286.077	3.52	1499568	0.00	2000	
Mn	55	1	nogas	10.258	51.289	2.58	352250	0.00	2000	
Co	59	1	nogas	0.860	4.300	3.11	23729	0.00	2000	
Ni	60	1	nogas	199.228	996.139	0.49	1175975	0.02	2000	
Cu	63	1	nogas	1.385	6.925	4.62	29574	0.00	2000	
Zn	66	1	nogas	1.520	7.599	3.82	10480	0.01	2000	
As	75	1	nogas	-4.831	-24.155	-8.02	139942	0.00	2000	
Sr	88	1	nogas	40.244	201.218	1.92	1566736	0.00	2000	
Ag	107	1	nogas	-0.009	-0.046	-43.88	237	0.00	2000	
Cd	111	1	nogas	0.007	0.035	47.87	57	0.01	2000	
Sb	121	1	nogas	0.043	0.213	2.84	1350	0.00	2000	
Tl	205	1	nogas	0.014	0.068	26.03	777	0.00	2000	
Pb	208	1	nogas	0.101	0.503	2.75	4760	0.00	2000	
U	238	1	nogas	0.307	1.534	1.61	11661	0.00	2000	
[Pb]	206	1	nogas	0.101	0.504	9.94	1173	0.01	2000	
[Pb]	207	1	nogas	0.107	0.533	9.23	1047	0.01	2000	
Na	23	2	He	10406.138	52030.692	1.08	14655547	0.07	200000	
Mg	24	2	He	4220.082	21100.410	2.89	3329335	0.13	200000	
Al	27	2	He	162.806	814.028	3.54	73483	0.22	2000	
K	39	2	He	164.726	823.631	1.37	405392	0.04	200000	
Ca	43	2	He	14643.197	73215.986	2.61	42499	34.46	200000	
Ca	44	2	He	14675.773	73378.867	1.13	729082	2.01	200000	
V	51	2	He	1.231	6.154	4.54	30910	0.00	2000	
Cr	52	2	He	58.646	293.231	1.10	472146	0.01	2000	
Mn	55	2	He	10.753	53.765	2.26	61330	0.02	2000	
Fe	56	2	He	1534.740	7673.698	1.52	11189142	0.01	200000	
Co	59	2	He	0.855	4.275	4.38	9863	0.01	2000	
Ni	60	2	He	199.208	996.041	2.04	553835	0.04	2000	
Cu	63	2	He	1.171	5.855	5.64	13906	0.01	2000	
Zn	66	2	He	1.335	6.677	8.65	3637	0.04	2000	
As	75	2	He	0.166	0.828	25.72	1087	0.02	2000	
Se	78	2	He	0.161	0.805	190.93	267	0.06	2000	
B	11	1	nogas	9.405	47.025	2.78	37384	0.03	2000	
Si	28	1	nogas	3497.706	17488.532	2.93	32287115	0.01	2000	>LDR
Ca	43	1	nogas	15318.710	76593.550	0.93	602022	2.54	200000	
Ca	44	1	nogas	15442.312	77211.558	2.44	10109522	0.15	200000	
Fe	56	1	nogas	1506.222	7531.112	5.02	46714629	0.00	200000	

Sample Report

Se	77	1	nogas	-47.525	-237.624	-4.70	44829	-0.11	2000	
Se	82	1	nogas	-0.138	-0.692	-175.98	357	-0.04	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	0.714	3.568	1.64	6845	0.01	2000	
Sn	118	1	nogas	0.036	0.182	28.65	1473	0.00	2000	
Ba	137	1	nogas	83.129	415.643	1.71	479012	0.02	2000	
Sb	121	2	He	0.050	0.251	13.48	460	0.01	2000	
La	139	1	nogas	1274.037	6370.183	2.49	8589	14.83	2000	
Au	197	1	nogas	-3.251	-16.256	-581.38	17	-19.51	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	316813	0.68	410295	77.22	70	125	
Ge	72	1	nogas	4023587	0.76	4203247	95.73	70	125	
In	115	1	nogas	4033008	2.14	4030824	100.05	70	125	
Bi	209	1	nogas	3033729	2.47	3148067	96.37	70	125	
Ge	72	2	He	1039499	1.41	1112674	93.42	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01SD
Data File Name	198SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:48:33-05:00
Sample Type	Sample
Dilution	5
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	0.028	0.140	18.86	157	0.02	2000	
Na	23	1	nogas	9863.542	49317.712	0.61	177489312	0.01	200000	
Mg	24	1	nogas	4088.075	20440.377	0.90	48472606	0.01	200000	
Al	27	1	nogas	167.090	835.449	9.10	2550133	0.01	2000	
K	39	1	nogas	168.966	844.830	3.60	10980503	0.00	200000	
Ti	47	1	nogas	3.057	15.284	5.05	6211	0.05	2000	
V	51	1	nogas	-14.236	-71.181	-23.11	1295803	0.00	2000	
Cr	52	1	nogas	57.215	286.077	3.52	1499568	0.00	2000	
Mn	55	1	nogas	10.258	51.289	2.58	352250	0.00	2000	
Co	59	1	nogas	0.860	4.300	3.11	23729	0.00	2000	
Ni	60	1	nogas	199.228	996.139	0.49	1175975	0.02	2000	
Cu	63	1	nogas	1.385	6.925	4.62	29574	0.00	2000	
Zn	66	1	nogas	1.520	7.599	3.82	10480	0.01	2000	
As	75	1	nogas	-4.831	-24.155	-8.02	139942	0.00	2000	
Sr	88	1	nogas	40.244	201.218	1.92	1566736	0.00	2000	
Ag	107	1	nogas	-0.009	-0.046	-43.88	237	0.00	2000	
Cd	111	1	nogas	0.007	0.035	47.87	57	0.01	2000	
Sb	121	1	nogas	0.043	0.213	2.84	1350	0.00	2000	
Tl	205	1	nogas	0.014	0.068	26.03	777	0.00	2000	
Pb	208	1	nogas	0.101	0.503	2.75	4760	0.00	2000	
U	238	1	nogas	0.307	1.534	1.61	11661	0.00	2000	
[Pb]	206	1	nogas	0.101	0.504	9.94	1173	0.01	2000	
[Pb]	207	1	nogas	0.107	0.533	9.23	1047	0.01	2000	
Na	23	2	He	10406.138	52030.692	1.08	14655547	0.07	200000	
Mg	24	2	He	4220.082	21100.410	2.89	3329335	0.13	200000	
Al	27	2	He	162.806	814.028	3.54	73483	0.22	2000	
K	39	2	He	164.726	823.631	1.37	405392	0.04	200000	
Ca	43	2	He	14643.197	73215.986	2.61	42499	34.46	200000	
Ca	44	2	He	14675.773	73378.867	1.13	729082	2.01	200000	
V	51	2	He	1.231	6.154	4.54	30910	0.00	2000	
Cr	52	2	He	58.646	293.231	1.10	472146	0.01	2000	
Mn	55	2	He	10.753	53.765	2.26	61330	0.02	2000	
Fe	56	2	He	1534.740	7673.698	1.52	11189142	0.01	200000	
Co	59	2	He	0.855	4.275	4.38	9863	0.01	2000	
Ni	60	2	He	199.208	996.041	2.04	553835	0.04	2000	
Cu	63	2	He	1.171	5.855	5.64	13906	0.01	2000	
Zn	66	2	He	1.335	6.677	8.65	3637	0.04	2000	
As	75	2	He	0.166	0.828	25.72	1087	0.02	2000	
Se	78	2	He	0.161	0.805	190.93	267	0.06	2000	
B	11	1	nogas	9.405	47.025	2.78	37384	0.03	2000	
Si	28	1	nogas	3497.706	17488.532	2.93	32287115	0.01	2000	>LDR
Ca	43	1	nogas	15318.710	76593.550	0.93	602022	2.54	200000	
Ca	44	1	nogas	15442.312	77211.558	2.44	10109522	0.15	200000	
Fe	56	1	nogas	1506.222	7531.112	5.02	46714629	0.00	200000	

Sample Report

Se	77	1	nogas	-47.525	-237.624	-4.70	44829	-0.11	2000	
Se	82	1	nogas	-0.138	-0.692	-175.98	357	-0.04	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	0.714	3.568	1.64	6845	0.01	2000	
Sn	118	1	nogas	0.036	0.182	28.65	1473	0.00	2000	
Ba	137	1	nogas	83.129	415.643	1.71	479012	0.02	2000	
Sb	121	2	He	0.050	0.251	13.48	460	0.01	2000	
La	139	1	nogas	1274.037	6370.183	2.49	8589	14.83	2000	
Au	197	1	nogas	-3.251	-16.256	-581.38	17	-19.51	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	316813	0.68	410295	77.22	70	125	
Ge	72	1	nogas	4023587	0.76	4203247	95.73	70	125	
In	115	1	nogas	4033008	2.14	4030824	100.05	70	125	
Bi	209	1	nogas	3033729	2.47	3148067	96.37	70	125	
Ge	72	2	He	1039499	1.41	1112674	93.42	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01SD
Data File Name	198SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:48:33-05:00
Sample Type	Sample
Dilution	5
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	0.028	0.140	18.86	157	0.02	2000	
Na	23	1	nogas	9863.542	49317.712	0.61	177489312	0.01	200000	
Mg	24	1	nogas	4088.075	20440.377	0.90	48472606	0.01	200000	
Al	27	1	nogas	167.090	835.449	9.10	2550133	0.01	2000	
K	39	1	nogas	168.966	844.830	3.60	10980503	0.00	200000	
Ti	47	1	nogas	3.057	15.284	5.05	6211	0.05	2000	
V	51	1	nogas	-14.236	-71.181	-23.11	1295803	0.00	2000	
Cr	52	1	nogas	57.215	286.077	3.52	1499568	0.00	2000	
Mn	55	1	nogas	10.258	51.289	2.58	352250	0.00	2000	
Co	59	1	nogas	0.860	4.300	3.11	23729	0.00	2000	
Ni	60	1	nogas	199.228	996.139	0.49	1175975	0.02	2000	
Cu	63	1	nogas	1.385	6.925	4.62	29574	0.00	2000	
Zn	66	1	nogas	1.520	7.599	3.82	10480	0.01	2000	
As	75	1	nogas	-4.831	-24.155	-8.02	139942	0.00	2000	
Sr	88	1	nogas	40.244	201.218	1.92	1566736	0.00	2000	
Ag	107	1	nogas	-0.009	-0.046	-43.88	237	0.00	2000	
Cd	111	1	nogas	0.007	0.035	47.87	57	0.01	2000	
Sb	121	1	nogas	0.043	0.213	2.84	1350	0.00	2000	
Tl	205	1	nogas	0.014	0.068	26.03	777	0.00	2000	
Pb	208	1	nogas	0.101	0.503	2.75	4760	0.00	2000	
U	238	1	nogas	0.307	1.534	1.61	11661	0.00	2000	
[Pb]	206	1	nogas	0.101	0.504	9.94	1173	0.01	2000	
[Pb]	207	1	nogas	0.107	0.533	9.23	1047	0.01	2000	
Na	23	2	He	10406.138	52030.692	1.08	14655547	0.07	200000	
Mg	24	2	He	4220.082	21100.410	2.89	3329335	0.13	200000	
Al	27	2	He	162.806	814.028	3.54	73483	0.22	2000	
K	39	2	He	164.726	823.631	1.37	405392	0.04	200000	
Ca	43	2	He	14643.197	73215.986	2.61	42499	34.46	200000	
Ca	44	2	He	14675.773	73378.867	1.13	729082	2.01	200000	
V	51	2	He	1.231	6.154	4.54	30910	0.00	2000	
Cr	52	2	He	58.646	293.231	1.10	472146	0.01	2000	
Mn	55	2	He	10.753	53.765	2.26	61330	0.02	2000	
Fe	56	2	He	1534.740	7673.698	1.52	11189142	0.01	200000	
Co	59	2	He	0.855	4.275	4.38	9863	0.01	2000	
Ni	60	2	He	199.208	996.041	2.04	553835	0.04	2000	
Cu	63	2	He	1.171	5.855	5.64	13906	0.01	2000	
Zn	66	2	He	1.335	6.677	8.65	3637	0.04	2000	
As	75	2	He	0.166	0.828	25.72	1087	0.02	2000	
Se	78	2	He	0.161	0.805	190.93	267	0.06	2000	
B	11	1	nogas	9.405	47.025	2.78	37384	0.03	2000	
Si	28	1	nogas	3497.706	17488.532	2.93	32287115	0.01	2000	>LDR
Ca	43	1	nogas	15318.710	76593.550	0.93	602022	2.54	200000	
Ca	44	1	nogas	15442.312	77211.558	2.44	10109522	0.15	200000	
Fe	56	1	nogas	1506.222	7531.112	5.02	46714629	0.00	200000	

Sample Report

Se	77	1	nogas	-47.525	-237.624	-4.70	44829	-0.11	2000	
Se	82	1	nogas	-0.138	-0.692	-175.98	357	-0.04	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	0.714	3.568	1.64	6845	0.01	2000	
Sn	118	1	nogas	0.036	0.182	28.65	1473	0.00	2000	
Ba	137	1	nogas	83.129	415.643	1.71	479012	0.02	2000	
Sb	121	2	He	0.050	0.251	13.48	460	0.01	2000	
La	139	1	nogas	1274.037	6370.183	2.49	8589	14.83	2000	
Au	197	1	nogas	-3.251	-16.256	-581.38	17	-19.51	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	316813	0.68	410295	77.22	70	125	
Ge	72	1	nogas	4023587	0.76	4203247	95.73	70	125	
In	115	1	nogas	4033008	2.14	4030824	100.05	70	125	
Bi	209	1	nogas	3033729	2.47	3148067	96.37	70	125	
Ge	72	2	He	1039499	1.41	1112674	93.42	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01SD
Data File Name	198SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:48:33-05:00
Sample Type	Sample
Dilution	5
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	0.028	0.140	18.86	157	0.02	2000	
Na	23	1	nogas	9863.542	49317.712	0.61	177489312	0.01	200000	
Mg	24	1	nogas	4088.075	20440.377	0.90	48472606	0.01	200000	
Al	27	1	nogas	167.090	835.449	9.10	2550133	0.01	2000	
K	39	1	nogas	168.966	844.830	3.60	10980503	0.00	200000	
Ti	47	1	nogas	3.057	15.284	5.05	6211	0.05	2000	
V	51	1	nogas	-14.236	-71.181	-23.11	1295803	0.00	2000	
Cr	52	1	nogas	57.215	286.077	3.52	1499568	0.00	2000	
Mn	55	1	nogas	10.258	51.289	2.58	352250	0.00	2000	
Co	59	1	nogas	0.860	4.300	3.11	23729	0.00	2000	
Ni	60	1	nogas	199.228	996.139	0.49	1175975	0.02	2000	
Cu	63	1	nogas	1.385	6.925	4.62	29574	0.00	2000	
Zn	66	1	nogas	1.520	7.599	3.82	10480	0.01	2000	
As	75	1	nogas	-4.831	-24.155	-8.02	139942	0.00	2000	
Sr	88	1	nogas	40.244	201.218	1.92	1566736	0.00	2000	
Ag	107	1	nogas	-0.009	-0.046	-43.88	237	0.00	2000	
Cd	111	1	nogas	0.007	0.035	47.87	57	0.01	2000	
Sb	121	1	nogas	0.043	0.213	2.84	1350	0.00	2000	
Tl	205	1	nogas	0.014	0.068	26.03	777	0.00	2000	
Pb	208	1	nogas	0.101	0.503	2.75	4760	0.00	2000	
U	238	1	nogas	0.307	1.534	1.61	11661	0.00	2000	
[Pb]	206	1	nogas	0.101	0.504	9.94	1173	0.01	2000	
[Pb]	207	1	nogas	0.107	0.533	9.23	1047	0.01	2000	
Na	23	2	He	10406.138	52030.692	1.08	14655547	0.07	200000	
Mg	24	2	He	4220.082	21100.410	2.89	3329335	0.13	200000	
Al	27	2	He	162.806	814.028	3.54	73483	0.22	2000	
K	39	2	He	164.726	823.631	1.37	405392	0.04	200000	
Ca	43	2	He	14643.197	73215.986	2.61	42499	34.46	200000	
Ca	44	2	He	14675.773	73378.867	1.13	729082	2.01	200000	
V	51	2	He	1.231	6.154	4.54	30910	0.00	2000	
Cr	52	2	He	58.646	293.231	1.10	472146	0.01	2000	
Mn	55	2	He	10.753	53.765	2.26	61330	0.02	2000	
Fe	56	2	He	1534.740	7673.698	1.52	11189142	0.01	200000	
Co	59	2	He	0.855	4.275	4.38	9863	0.01	2000	
Ni	60	2	He	199.208	996.041	2.04	553835	0.04	2000	
Cu	63	2	He	1.171	5.855	5.64	13906	0.01	2000	
Zn	66	2	He	1.335	6.677	8.65	3637	0.04	2000	
As	75	2	He	0.166	0.828	25.72	1087	0.02	2000	
Se	78	2	He	0.161	0.805	190.93	267	0.06	2000	
B	11	1	nogas	9.405	47.025	2.78	37384	0.03	2000	
Si	28	1	nogas	3497.706	17488.532	2.93	32287115	0.01	2000	>LDR
Ca	43	1	nogas	15318.710	76593.550	0.93	602022	2.54	200000	
Ca	44	1	nogas	15442.312	77211.558	2.44	10109522	0.15	200000	
Fe	56	1	nogas	1506.222	7531.112	5.02	46714629	0.00	200000	

Sample Report

Se	77	1	nogas	-47.525	-237.624	-4.70	44829	-0.11	2000	
Se	82	1	nogas	-0.138	-0.692	-175.98	357	-0.04	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	0.714	3.568	1.64	6845	0.01	2000	
Sn	118	1	nogas	0.036	0.182	28.65	1473	0.00	2000	
Ba	137	1	nogas	83.129	415.643	1.71	479012	0.02	2000	
Sb	121	2	He	0.050	0.251	13.48	460	0.01	2000	
La	139	1	nogas	1274.037	6370.183	2.49	8589	14.83	2000	
Au	197	1	nogas	-3.251	-16.256	-581.38	17	-19.51	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	316813	0.68	410295	77.22	70	125	
Ge	72	1	nogas	4023587	0.76	4203247	95.73	70	125	
In	115	1	nogas	4033008	2.14	4030824	100.05	70	125	
Bi	209	1	nogas	3033729	2.47	3148067	96.37	70	125	
Ge	72	2	He	1039499	1.41	1112674	93.42	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MS
Data File Name	199SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:50:33-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	48.371	48.371	3.03	131365	0.04	2000	
Na	23	1	nogas	51383.082	51383.082	2.50	932781021	0.01	200000	
Mg	24	1	nogas	22761.198	22761.198	2.32	275431081	0.01	200000	
Al	27	1	nogas	1763.192	1763.192	1.18	26308168	0.01	2000	
K	39	1	nogas	5465.899	5465.899	0.84	119524428	0.00	200000	
Ti	47	1	nogas	168.952	168.952	3.41	330911	0.05	2000	
V	51	1	nogas	35.603	35.603	6.99	2578117	0.00	2000	
Cr	52	1	nogas	370.947	370.947	0.65	9192876	0.00	2000	
Mn	55	1	nogas	100.275	100.275	0.87	3270373	0.00	2000	
Co	59	1	nogas	52.096	52.096	1.71	1391198	0.00	2000	
Ni	60	1	nogas	997.861	997.861	1.16	5792704	0.02	2000	
Cu	63	1	nogas	53.333	53.333	2.66	775991	0.01	2000	
Zn	66	1	nogas	54.863	54.863	3.20	279291	0.02	2000	
As	75	1	nogas	41.195	41.195	0.39	435629	0.01	2000	
Sr	88	1	nogas	284.763	284.763	1.02	10906484	0.00	2000	
Ag	107	1	nogas	44.562	44.562	1.32	869820	0.01	2000	
Cd	111	1	nogas	46.895	46.895	0.60	196492	0.02	2000	
Sb	121	1	nogas	46.165	46.165	0.64	876329	0.01	2000	
Tl	205	1	nogas	47.747	47.747	1.02	1314177	0.00	2000	
Pb	208	1	nogas	42.968	42.968	0.30	1752114	0.00	2000	
U	238	1	nogas	98.997	98.997	1.25	3588272	0.00	2000	
[Pb]	206	1	nogas	46.313	46.313	3.39	435986	0.01	2000	
[Pb]	207	1	nogas	45.621	45.621	2.17	383500	0.01	2000	
Na	23	2	He	55404.702	55404.702	1.79	76832916	0.07	200000	
Mg	24	2	He	25290.418	25290.418	2.88	19875310	0.13	200000	
Al	27	2	He	1863.333	1863.333	2.01	827430	0.23	2000	>LDR
K	39	2	He	5377.365	5377.365	2.45	5923188	0.09	200000	
Ca	43	2	He	76970.064	76970.064	1.42	222462	34.60	200000	
Ca	44	2	He	79266.853	79266.853	1.25	3920728	2.02	200000	
V	51	2	He	53.285	53.285	1.97	423776	0.01	2000	
Cr	52	2	He	380.378	380.378	1.68	3033360	0.01	2000	
Mn	55	2	He	101.243	101.243	1.77	572122	0.02	2000	
Fe	56	2	He	12630.152	12630.152	2.13	91625849	0.01	200000	
Co	59	2	He	49.617	49.617	3.13	563615	0.01	2000	
Ni	60	2	He	1016.532	1016.532	2.73	2807322	0.04	2000	
Cu	63	2	He	53.394	53.394	1.99	390859	0.01	2000	
Zn	66	2	He	54.342	54.342	1.37	96751	0.06	2000	
As	75	2	He	48.275	48.275	1.96	87518	0.06	2000	
Se	78	2	He	47.546	47.546	2.91	7157	0.66	2000	
B	11	1	nogas	518.094	518.094	1.95	994890	0.05	2000	
Si	28	1	nogas	23174.473	23174.473	2.21	205883530	0.01	2000	>LDR
Ca	43	1	nogas	78559.082	78559.082	3.42	3042708	2.58	200000	
Ca	44	1	nogas	79548.585	79548.585	2.87	51255973	0.16	200000	
Fe	56	1	nogas	12591.395	12591.395	1.21	361827391	0.00	200000	

Sample Report

Se	77	1	nogas	-6.414	-6.414	-51.24	54261	-0.01	2000	
Se	82	1	nogas	47.347	47.347	2.59	17846	0.27	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	48.989	48.989	1.85	379638	0.01	2000	
Sn	118	1	nogas	89.756	89.756	1.31	1043028	0.01	2000	
Ba	137	1	nogas	478.450	478.450	2.40	2709525	0.02	2000	
Sb	121	2	He	45.839	45.839	2.54	325431	0.01	2000	
La	139	1	nogas	8012.441	8012.441	2.43	50445	15.88	2000	>LDR
Au	197	1	nogas	14.939	14.939	300.11	30	49.80	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	286592	1.51	410295	69.85	70	125	ISTD Failed
Ge	72	1	nogas	3969393	0.20	4203247	94.44	70	125	
In	115	1	nogas	3967357	0.77	4030824	98.43	70	125	
Bi	209	1	nogas	2924504	1.24	3148067	92.90	70	125	
Ge	72	2	He	1036049	1.19	1112674	93.11	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MS
Data File Name	199SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:50:33-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	48.371	48.371	3.03	131365	0.04	2000	
Na	23	1	nogas	51383.082	51383.082	2.50	932781021	0.01	200000	
Mg	24	1	nogas	22761.198	22761.198	2.32	275431081	0.01	200000	
Al	27	1	nogas	1763.192	1763.192	1.18	26308168	0.01	2000	
K	39	1	nogas	5465.899	5465.899	0.84	119524428	0.00	200000	
Ti	47	1	nogas	168.952	168.952	3.41	330911	0.05	2000	
V	51	1	nogas	35.603	35.603	6.99	2578117	0.00	2000	
Cr	52	1	nogas	370.947	370.947	0.65	9192876	0.00	2000	
Mn	55	1	nogas	100.275	100.275	0.87	3270373	0.00	2000	
Co	59	1	nogas	52.096	52.096	1.71	1391198	0.00	2000	
Ni	60	1	nogas	997.861	997.861	1.16	5792704	0.02	2000	
Cu	63	1	nogas	53.333	53.333	2.66	775991	0.01	2000	
Zn	66	1	nogas	54.863	54.863	3.20	279291	0.02	2000	
As	75	1	nogas	41.195	41.195	0.39	435629	0.01	2000	
Sr	88	1	nogas	284.763	284.763	1.02	10906484	0.00	2000	
Ag	107	1	nogas	44.562	44.562	1.32	869820	0.01	2000	
Cd	111	1	nogas	46.895	46.895	0.60	196492	0.02	2000	
Sb	121	1	nogas	46.165	46.165	0.64	876329	0.01	2000	
Tl	205	1	nogas	47.747	47.747	1.02	1314177	0.00	2000	
Pb	208	1	nogas	42.968	42.968	0.30	1752114	0.00	2000	
U	238	1	nogas	98.997	98.997	1.25	3588272	0.00	2000	
[Pb]	206	1	nogas	46.313	46.313	3.39	435986	0.01	2000	
[Pb]	207	1	nogas	45.621	45.621	2.17	383500	0.01	2000	
Na	23	2	He	55404.702	55404.702	1.79	76832916	0.07	200000	
Mg	24	2	He	25290.418	25290.418	2.88	19875310	0.13	200000	
Al	27	2	He	1863.333	1863.333	2.01	827430	0.23	2000	>LDR
K	39	2	He	5377.365	5377.365	2.45	5923188	0.09	200000	
Ca	43	2	He	76970.064	76970.064	1.42	222462	34.60	200000	
Ca	44	2	He	79266.853	79266.853	1.25	3920728	2.02	200000	
V	51	2	He	53.285	53.285	1.97	423776	0.01	2000	
Cr	52	2	He	380.378	380.378	1.68	3033360	0.01	2000	
Mn	55	2	He	101.243	101.243	1.77	572122	0.02	2000	
Fe	56	2	He	12630.152	12630.152	2.13	91625849	0.01	200000	
Co	59	2	He	49.617	49.617	3.13	563615	0.01	2000	
Ni	60	2	He	1016.532	1016.532	2.73	2807322	0.04	2000	
Cu	63	2	He	53.394	53.394	1.99	390859	0.01	2000	
Zn	66	2	He	54.342	54.342	1.37	96751	0.06	2000	
As	75	2	He	48.275	48.275	1.96	87518	0.06	2000	
Se	78	2	He	47.546	47.546	2.91	7157	0.66	2000	
B	11	1	nogas	518.094	518.094	1.95	994890	0.05	2000	
Si	28	1	nogas	23174.473	23174.473	2.21	205883530	0.01	2000	>LDR
Ca	43	1	nogas	78559.082	78559.082	3.42	3042708	2.58	200000	
Ca	44	1	nogas	79548.585	79548.585	2.87	51255973	0.16	200000	
Fe	56	1	nogas	12591.395	12591.395	1.21	361827391	0.00	200000	

Sample Report

Se	77	1	nogas	-6.414	-6.414	-51.24	54261	-0.01	2000	
Se	82	1	nogas	47.347	47.347	2.59	17846	0.27	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	48.989	48.989	1.85	379638	0.01	2000	
Sn	118	1	nogas	89.756	89.756	1.31	1043028	0.01	2000	
Ba	137	1	nogas	478.450	478.450	2.40	2709525	0.02	2000	
Sb	121	2	He	45.839	45.839	2.54	325431	0.01	2000	
La	139	1	nogas	8012.441	8012.441	2.43	50445	15.88	2000	>LDR
Au	197	1	nogas	14.939	14.939	300.11	30	49.80	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	286592	1.51	410295	69.85	70	125	ISTD Failed
Ge	72	1	nogas	3969393	0.20	4203247	94.44	70	125	
In	115	1	nogas	3967357	0.77	4030824	98.43	70	125	
Bi	209	1	nogas	2924504	1.24	3148067	92.90	70	125	
Ge	72	2	He	1036049	1.19	1112674	93.11	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MS
Data File Name	199SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:50:33-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	48.371	48.371	3.03	131365	0.04	2000	
Na	23	1	nogas	51383.082	51383.082	2.50	932781021	0.01	200000	
Mg	24	1	nogas	22761.198	22761.198	2.32	275431081	0.01	200000	
Al	27	1	nogas	1763.192	1763.192	1.18	26308168	0.01	2000	
K	39	1	nogas	5465.899	5465.899	0.84	119524428	0.00	200000	
Ti	47	1	nogas	168.952	168.952	3.41	330911	0.05	2000	
V	51	1	nogas	35.603	35.603	6.99	2578117	0.00	2000	
Cr	52	1	nogas	370.947	370.947	0.65	9192876	0.00	2000	
Mn	55	1	nogas	100.275	100.275	0.87	3270373	0.00	2000	
Co	59	1	nogas	52.096	52.096	1.71	1391198	0.00	2000	
Ni	60	1	nogas	997.861	997.861	1.16	5792704	0.02	2000	
Cu	63	1	nogas	53.333	53.333	2.66	775991	0.01	2000	
Zn	66	1	nogas	54.863	54.863	3.20	279291	0.02	2000	
As	75	1	nogas	41.195	41.195	0.39	435629	0.01	2000	
Sr	88	1	nogas	284.763	284.763	1.02	10906484	0.00	2000	
Ag	107	1	nogas	44.562	44.562	1.32	869820	0.01	2000	
Cd	111	1	nogas	46.895	46.895	0.60	196492	0.02	2000	
Sb	121	1	nogas	46.165	46.165	0.64	876329	0.01	2000	
Tl	205	1	nogas	47.747	47.747	1.02	1314177	0.00	2000	
Pb	208	1	nogas	42.968	42.968	0.30	1752114	0.00	2000	
U	238	1	nogas	98.997	98.997	1.25	3588272	0.00	2000	
[Pb]	206	1	nogas	46.313	46.313	3.39	435986	0.01	2000	
[Pb]	207	1	nogas	45.621	45.621	2.17	383500	0.01	2000	
Na	23	2	He	55404.702	55404.702	1.79	76832916	0.07	200000	
Mg	24	2	He	25290.418	25290.418	2.88	19875310	0.13	200000	
Al	27	2	He	1863.333	1863.333	2.01	827430	0.23	2000	>LDR
K	39	2	He	5377.365	5377.365	2.45	5923188	0.09	200000	
Ca	43	2	He	76970.064	76970.064	1.42	222462	34.60	200000	
Ca	44	2	He	79266.853	79266.853	1.25	3920728	2.02	200000	
V	51	2	He	53.285	53.285	1.97	423776	0.01	2000	
Cr	52	2	He	380.378	380.378	1.68	3033360	0.01	2000	
Mn	55	2	He	101.243	101.243	1.77	572122	0.02	2000	
Fe	56	2	He	12630.152	12630.152	2.13	91625849	0.01	200000	
Co	59	2	He	49.617	49.617	3.13	563615	0.01	2000	
Ni	60	2	He	1016.532	1016.532	2.73	2807322	0.04	2000	
Cu	63	2	He	53.394	53.394	1.99	390859	0.01	2000	
Zn	66	2	He	54.342	54.342	1.37	96751	0.06	2000	
As	75	2	He	48.275	48.275	1.96	87518	0.06	2000	
Se	78	2	He	47.546	47.546	2.91	7157	0.66	2000	
B	11	1	nogas	518.094	518.094	1.95	994890	0.05	2000	
Si	28	1	nogas	23174.473	23174.473	2.21	205883530	0.01	2000	>LDR
Ca	43	1	nogas	78559.082	78559.082	3.42	3042708	2.58	200000	
Ca	44	1	nogas	79548.585	79548.585	2.87	51255973	0.16	200000	
Fe	56	1	nogas	12591.395	12591.395	1.21	361827391	0.00	200000	

Sample Report

Se	77	1	nogas	-6.414	-6.414	-51.24	54261	-0.01	2000	
Se	82	1	nogas	47.347	47.347	2.59	17846	0.27	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	48.989	48.989	1.85	379638	0.01	2000	
Sn	118	1	nogas	89.756	89.756	1.31	1043028	0.01	2000	
Ba	137	1	nogas	478.450	478.450	2.40	2709525	0.02	2000	
Sb	121	2	He	45.839	45.839	2.54	325431	0.01	2000	
La	139	1	nogas	8012.441	8012.441	2.43	50445	15.88	2000	>LDR
Au	197	1	nogas	14.939	14.939	300.11	30	49.80	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	286592	1.51	410295	69.85	70	125	ISTD Failed
Ge	72	1	nogas	3969393	0.20	4203247	94.44	70	125	
In	115	1	nogas	3967357	0.77	4030824	98.43	70	125	
Bi	209	1	nogas	2924504	1.24	3148067	92.90	70	125	
Ge	72	2	He	1036049	1.19	1112674	93.11	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MS
Data File Name	199SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:50:33-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	48.371	48.371	3.03	131365	0.04	2000	
Na	23	1	nogas	51383.082	51383.082	2.50	932781021	0.01	200000	
Mg	24	1	nogas	22761.198	22761.198	2.32	275431081	0.01	200000	
Al	27	1	nogas	1763.192	1763.192	1.18	26308168	0.01	2000	
K	39	1	nogas	5465.899	5465.899	0.84	119524428	0.00	200000	
Ti	47	1	nogas	168.952	168.952	3.41	330911	0.05	2000	
V	51	1	nogas	35.603	35.603	6.99	2578117	0.00	2000	
Cr	52	1	nogas	370.947	370.947	0.65	9192876	0.00	2000	
Mn	55	1	nogas	100.275	100.275	0.87	3270373	0.00	2000	
Co	59	1	nogas	52.096	52.096	1.71	1391198	0.00	2000	
Ni	60	1	nogas	997.861	997.861	1.16	5792704	0.02	2000	
Cu	63	1	nogas	53.333	53.333	2.66	775991	0.01	2000	
Zn	66	1	nogas	54.863	54.863	3.20	279291	0.02	2000	
As	75	1	nogas	41.195	41.195	0.39	435629	0.01	2000	
Sr	88	1	nogas	284.763	284.763	1.02	10906484	0.00	2000	
Ag	107	1	nogas	44.562	44.562	1.32	869820	0.01	2000	
Cd	111	1	nogas	46.895	46.895	0.60	196492	0.02	2000	
Sb	121	1	nogas	46.165	46.165	0.64	876329	0.01	2000	
Tl	205	1	nogas	47.747	47.747	1.02	1314177	0.00	2000	
Pb	208	1	nogas	42.968	42.968	0.30	1752114	0.00	2000	
U	238	1	nogas	98.997	98.997	1.25	3588272	0.00	2000	
[Pb]	206	1	nogas	46.313	46.313	3.39	435986	0.01	2000	
[Pb]	207	1	nogas	45.621	45.621	2.17	383500	0.01	2000	
Na	23	2	He	55404.702	55404.702	1.79	76832916	0.07	200000	
Mg	24	2	He	25290.418	25290.418	2.88	19875310	0.13	200000	
Al	27	2	He	1863.333	1863.333	2.01	827430	0.23	2000	>LDR
K	39	2	He	5377.365	5377.365	2.45	5923188	0.09	200000	
Ca	43	2	He	76970.064	76970.064	1.42	222462	34.60	200000	
Ca	44	2	He	79266.853	79266.853	1.25	3920728	2.02	200000	
V	51	2	He	53.285	53.285	1.97	423776	0.01	2000	
Cr	52	2	He	380.378	380.378	1.68	3033360	0.01	2000	
Mn	55	2	He	101.243	101.243	1.77	572122	0.02	2000	
Fe	56	2	He	12630.152	12630.152	2.13	91625849	0.01	200000	
Co	59	2	He	49.617	49.617	3.13	563615	0.01	2000	
Ni	60	2	He	1016.532	1016.532	2.73	2807322	0.04	2000	
Cu	63	2	He	53.394	53.394	1.99	390859	0.01	2000	
Zn	66	2	He	54.342	54.342	1.37	96751	0.06	2000	
As	75	2	He	48.275	48.275	1.96	87518	0.06	2000	
Se	78	2	He	47.546	47.546	2.91	7157	0.66	2000	
B	11	1	nogas	518.094	518.094	1.95	994890	0.05	2000	
Si	28	1	nogas	23174.473	23174.473	2.21	205883530	0.01	2000	>LDR
Ca	43	1	nogas	78559.082	78559.082	3.42	3042708	2.58	200000	
Ca	44	1	nogas	79548.585	79548.585	2.87	51255973	0.16	200000	
Fe	56	1	nogas	12591.395	12591.395	1.21	361827391	0.00	200000	

Sample Report

Se	77	1	nogas	-6.414	-6.414	-51.24	54261	-0.01	2000	
Se	82	1	nogas	47.347	47.347	2.59	17846	0.27	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	48.989	48.989	1.85	379638	0.01	2000	
Sn	118	1	nogas	89.756	89.756	1.31	1043028	0.01	2000	
Ba	137	1	nogas	478.450	478.450	2.40	2709525	0.02	2000	
Sb	121	2	He	45.839	45.839	2.54	325431	0.01	2000	
La	139	1	nogas	8012.441	8012.441	2.43	50445	15.88	2000	>LDR
Au	197	1	nogas	14.939	14.939	300.11	30	49.80	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	286592	1.51	410295	69.85	70	125	ISTD Failed
Ge	72	1	nogas	3969393	0.20	4203247	94.44	70	125	
In	115	1	nogas	3967357	0.77	4030824	98.43	70	125	
Bi	209	1	nogas	2924504	1.24	3148067	92.90	70	125	
Ge	72	2	He	1036049	1.19	1112674	93.11	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MSD
Data File Name	200SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:52:34-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	52.384	52.384	2.22	138199	0.04	2000	
Na	23	1	nogas	53104.786	53104.786	3.27	951444321	0.01	200000	
Mg	24	1	nogas	24253.190	24253.190	2.56	289689290	0.01	200000	
Al	27	1	nogas	1925.144	1925.144	1.71	29124205	0.01	2000	>LDR
K	39	1	nogas	5510.957	5510.957	3.04	122095403	0.00	200000	
Ti	47	1	nogas	164.678	164.678	2.46	327202	0.05	2000	
V	51	1	nogas	32.334	32.334	1.23	2528204	0.00	2000	
Cr	52	1	nogas	410.418	410.418	1.79	10305144	0.00	2000	
Mn	55	1	nogas	99.671	99.671	2.88	3295207	0.00	2000	
Co	59	1	nogas	51.542	51.542	1.80	1395439	0.00	2000	
Ni	60	1	nogas	1003.002	1003.002	2.92	5902105	0.02	2000	
Cu	63	1	nogas	53.100	53.100	4.26	783106	0.01	2000	
Zn	66	1	nogas	53.945	53.945	3.90	278466	0.02	2000	
As	75	1	nogas	39.759	39.759	1.53	432317	0.01	2000	
Sr	88	1	nogas	287.351	287.351	1.80	11157865	0.00	2000	
Ag	107	1	nogas	45.813	45.813	2.10	906546	0.01	2000	
Cd	111	1	nogas	47.948	47.948	1.93	194245	0.02	2000	
Sb	121	1	nogas	46.677	46.677	3.00	898136	0.01	2000	
Tl	205	1	nogas	48.224	48.224	1.55	1343020	0.00	2000	
Pb	208	1	nogas	43.810	43.810	1.13	1786429	0.00	2000	
U	238	1	nogas	97.280	97.280	1.21	3567848	0.00	2000	
[Pb]	206	1	nogas	46.606	46.606	2.17	444046	0.01	2000	
[Pb]	207	1	nogas	46.095	46.095	1.79	392149	0.01	2000	
Na	23	2	He	56584.525	56584.525	0.78	78065064	0.07	200000	
Mg	24	2	He	25736.380	25736.380	0.52	20123675	0.13	200000	
Al	27	2	He	1984.267	1984.267	3.10	876446	0.23	2000	>LDR
K	39	2	He	5480.833	5480.833	3.47	6032714	0.09	200000	
Ca	43	2	He	80353.344	80353.344	2.55	231027	34.78	200000	
Ca	44	2	He	83115.683	83115.683	2.43	4089612	2.03	200000	
V	51	2	He	54.157	54.157	0.52	428170	0.01	2000	
Cr	52	2	He	421.794	421.794	0.97	3345846	0.01	2000	
Mn	55	2	He	104.893	104.893	0.95	589687	0.02	2000	
Fe	56	2	He	13231.562	13231.562	1.23	95492505	0.01	200000	
Co	59	2	He	51.006	51.006	1.87	576426	0.01	2000	
Ni	60	2	He	1049.915	1049.915	2.07	2884664	0.04	2000	
Cu	63	2	He	55.005	55.005	3.01	400367	0.01	2000	
Zn	66	2	He	55.401	55.401	2.97	98082	0.06	2000	
As	75	2	He	49.196	49.196	2.07	88715	0.06	2000	
Se	78	2	He	47.473	47.473	1.31	7111	0.67	2000	
B	11	1	nogas	553.627	553.627	2.30	1031439	0.05	2000	
Si	28	1	nogas	24312.344	24312.344	1.10	218969550	0.01	2000	>LDR
Ca	43	1	nogas	78668.080	78668.080	3.21	3088796	2.55	200000	
Ca	44	1	nogas	78391.865	78391.865	2.32	51206748	0.15	200000	
Fe	56	1	nogas	12802.928	12802.928	2.17	372935525	0.00	200000	

Sample Report

Se	77	1	nogas	-21.164	-21.164	-22.37	51363	-0.04	2000	
Se	82	1	nogas	45.968	45.968	3.48	17575	0.26	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	49.419	49.419	2.43	388229	0.01	2000	
Sn	118	1	nogas	93.672	93.672	1.30	1052582	0.01	2000	
Ba	137	1	nogas	515.218	515.218	1.46	2821528	0.02	2000	
Sb	121	2	He	46.962	46.962	0.25	331712	0.01	2000	
La	139	1	nogas	8839.922	8839.922	1.89	53761	16.44	2000	>LDR
Au	197	1	nogas	1.606	1.606	20.44	20	8.03	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	278351	1.57	410295	67.84	70	125	ISTD Failed
Ge	72	1	nogas	4025540	2.52	4203247	95.77	70	125	
In	115	1	nogas	3837359	3.15	4030824	95.20	70	125	
Bi	209	1	nogas	2959588	1.31	3148067	94.01	70	125	
Ge	72	2	He	1030611	0.36	1112674	92.62	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MSD
Data File Name	200SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:52:34-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	52.384	52.384	2.22	138199	0.04	2000	
Na	23	1	nogas	53104.786	53104.786	3.27	951444321	0.01	200000	
Mg	24	1	nogas	24253.190	24253.190	2.56	289689290	0.01	200000	
Al	27	1	nogas	1925.144	1925.144	1.71	29124205	0.01	2000	>LDR
K	39	1	nogas	5510.957	5510.957	3.04	122095403	0.00	200000	
Ti	47	1	nogas	164.678	164.678	2.46	327202	0.05	2000	
V	51	1	nogas	32.334	32.334	1.23	2528204	0.00	2000	
Cr	52	1	nogas	410.418	410.418	1.79	10305144	0.00	2000	
Mn	55	1	nogas	99.671	99.671	2.88	3295207	0.00	2000	
Co	59	1	nogas	51.542	51.542	1.80	1395439	0.00	2000	
Ni	60	1	nogas	1003.002	1003.002	2.92	5902105	0.02	2000	
Cu	63	1	nogas	53.100	53.100	4.26	783106	0.01	2000	
Zn	66	1	nogas	53.945	53.945	3.90	278466	0.02	2000	
As	75	1	nogas	39.759	39.759	1.53	432317	0.01	2000	
Sr	88	1	nogas	287.351	287.351	1.80	11157865	0.00	2000	
Ag	107	1	nogas	45.813	45.813	2.10	906546	0.01	2000	
Cd	111	1	nogas	47.948	47.948	1.93	194245	0.02	2000	
Sb	121	1	nogas	46.677	46.677	3.00	898136	0.01	2000	
Tl	205	1	nogas	48.224	48.224	1.55	1343020	0.00	2000	
Pb	208	1	nogas	43.810	43.810	1.13	1786429	0.00	2000	
U	238	1	nogas	97.280	97.280	1.21	3567848	0.00	2000	
[Pb]	206	1	nogas	46.606	46.606	2.17	444046	0.01	2000	
[Pb]	207	1	nogas	46.095	46.095	1.79	392149	0.01	2000	
Na	23	2	He	56584.525	56584.525	0.78	78065064	0.07	200000	
Mg	24	2	He	25736.380	25736.380	0.52	20123675	0.13	200000	
Al	27	2	He	1984.267	1984.267	3.10	876446	0.23	2000	>LDR
K	39	2	He	5480.833	5480.833	3.47	6032714	0.09	200000	
Ca	43	2	He	80353.344	80353.344	2.55	231027	34.78	200000	
Ca	44	2	He	83115.683	83115.683	2.43	4089612	2.03	200000	
V	51	2	He	54.157	54.157	0.52	428170	0.01	2000	
Cr	52	2	He	421.794	421.794	0.97	3345846	0.01	2000	
Mn	55	2	He	104.893	104.893	0.95	589687	0.02	2000	
Fe	56	2	He	13231.562	13231.562	1.23	95492505	0.01	200000	
Co	59	2	He	51.006	51.006	1.87	576426	0.01	2000	
Ni	60	2	He	1049.915	1049.915	2.07	2884664	0.04	2000	
Cu	63	2	He	55.005	55.005	3.01	400367	0.01	2000	
Zn	66	2	He	55.401	55.401	2.97	98082	0.06	2000	
As	75	2	He	49.196	49.196	2.07	88715	0.06	2000	
Se	78	2	He	47.473	47.473	1.31	7111	0.67	2000	
B	11	1	nogas	553.627	553.627	2.30	1031439	0.05	2000	
Si	28	1	nogas	24312.344	24312.344	1.10	218969550	0.01	2000	>LDR
Ca	43	1	nogas	78668.080	78668.080	3.21	3088796	2.55	200000	
Ca	44	1	nogas	78391.865	78391.865	2.32	51206748	0.15	200000	
Fe	56	1	nogas	12802.928	12802.928	2.17	372935525	0.00	200000	

Sample Report

Se	77	1	nogas	-21.164	-21.164	-22.37	51363	-0.04	2000	
Se	82	1	nogas	45.968	45.968	3.48	17575	0.26	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	49.419	49.419	2.43	388229	0.01	2000	
Sn	118	1	nogas	93.672	93.672	1.30	1052582	0.01	2000	
Ba	137	1	nogas	515.218	515.218	1.46	2821528	0.02	2000	
Sb	121	2	He	46.962	46.962	0.25	331712	0.01	2000	
La	139	1	nogas	8839.922	8839.922	1.89	53761	16.44	2000	>LDR
Au	197	1	nogas	1.606	1.606	20.44	20	8.03	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	278351	1.57	410295	67.84	70	125	ISTD Failed
Ge	72	1	nogas	4025540	2.52	4203247	95.77	70	125	
In	115	1	nogas	3837359	3.15	4030824	95.20	70	125	
Bi	209	1	nogas	2959588	1.31	3148067	94.01	70	125	
Ge	72	2	He	1030611	0.36	1112674	92.62	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MSD
Data File Name	200SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:52:34-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	52.384	52.384	2.22	138199	0.04	2000	
Na	23	1	nogas	53104.786	53104.786	3.27	951444321	0.01	200000	
Mg	24	1	nogas	24253.190	24253.190	2.56	289689290	0.01	200000	
Al	27	1	nogas	1925.144	1925.144	1.71	29124205	0.01	2000	>LDR
K	39	1	nogas	5510.957	5510.957	3.04	122095403	0.00	200000	
Ti	47	1	nogas	164.678	164.678	2.46	327202	0.05	2000	
V	51	1	nogas	32.334	32.334	1.23	2528204	0.00	2000	
Cr	52	1	nogas	410.418	410.418	1.79	10305144	0.00	2000	
Mn	55	1	nogas	99.671	99.671	2.88	3295207	0.00	2000	
Co	59	1	nogas	51.542	51.542	1.80	1395439	0.00	2000	
Ni	60	1	nogas	1003.002	1003.002	2.92	5902105	0.02	2000	
Cu	63	1	nogas	53.100	53.100	4.26	783106	0.01	2000	
Zn	66	1	nogas	53.945	53.945	3.90	278466	0.02	2000	
As	75	1	nogas	39.759	39.759	1.53	432317	0.01	2000	
Sr	88	1	nogas	287.351	287.351	1.80	11157865	0.00	2000	
Ag	107	1	nogas	45.813	45.813	2.10	906546	0.01	2000	
Cd	111	1	nogas	47.948	47.948	1.93	194245	0.02	2000	
Sb	121	1	nogas	46.677	46.677	3.00	898136	0.01	2000	
Tl	205	1	nogas	48.224	48.224	1.55	1343020	0.00	2000	
Pb	208	1	nogas	43.810	43.810	1.13	1786429	0.00	2000	
U	238	1	nogas	97.280	97.280	1.21	3567848	0.00	2000	
[Pb]	206	1	nogas	46.606	46.606	2.17	444046	0.01	2000	
[Pb]	207	1	nogas	46.095	46.095	1.79	392149	0.01	2000	
Na	23	2	He	56584.525	56584.525	0.78	78065064	0.07	200000	
Mg	24	2	He	25736.380	25736.380	0.52	20123675	0.13	200000	
Al	27	2	He	1984.267	1984.267	3.10	876446	0.23	2000	>LDR
K	39	2	He	5480.833	5480.833	3.47	6032714	0.09	200000	
Ca	43	2	He	80353.344	80353.344	2.55	231027	34.78	200000	
Ca	44	2	He	83115.683	83115.683	2.43	4089612	2.03	200000	
V	51	2	He	54.157	54.157	0.52	428170	0.01	2000	
Cr	52	2	He	421.794	421.794	0.97	3345846	0.01	2000	
Mn	55	2	He	104.893	104.893	0.95	589687	0.02	2000	
Fe	56	2	He	13231.562	13231.562	1.23	95492505	0.01	200000	
Co	59	2	He	51.006	51.006	1.87	576426	0.01	2000	
Ni	60	2	He	1049.915	1049.915	2.07	2884664	0.04	2000	
Cu	63	2	He	55.005	55.005	3.01	400367	0.01	2000	
Zn	66	2	He	55.401	55.401	2.97	98082	0.06	2000	
As	75	2	He	49.196	49.196	2.07	88715	0.06	2000	
Se	78	2	He	47.473	47.473	1.31	7111	0.67	2000	
B	11	1	nogas	553.627	553.627	2.30	1031439	0.05	2000	
Si	28	1	nogas	24312.344	24312.344	1.10	218969550	0.01	2000	>LDR
Ca	43	1	nogas	78668.080	78668.080	3.21	3088796	2.55	200000	
Ca	44	1	nogas	78391.865	78391.865	2.32	51206748	0.15	200000	
Fe	56	1	nogas	12802.928	12802.928	2.17	372935525	0.00	200000	

Sample Report

Se	77	1	nogas	-21.164	-21.164	-22.37	51363	-0.04	2000	
Se	82	1	nogas	45.968	45.968	3.48	17575	0.26	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	49.419	49.419	2.43	388229	0.01	2000	
Sn	118	1	nogas	93.672	93.672	1.30	1052582	0.01	2000	
Ba	137	1	nogas	515.218	515.218	1.46	2821528	0.02	2000	
Sb	121	2	He	46.962	46.962	0.25	331712	0.01	2000	
La	139	1	nogas	8839.922	8839.922	1.89	53761	16.44	2000	>LDR
Au	197	1	nogas	1.606	1.606	20.44	20	8.03	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	278351	1.57	410295	67.84	70	125	ISTD Failed
Ge	72	1	nogas	4025540	2.52	4203247	95.77	70	125	
In	115	1	nogas	3837359	3.15	4030824	95.20	70	125	
Bi	209	1	nogas	2959588	1.31	3148067	94.01	70	125	
Ge	72	2	He	1030611	0.36	1112674	92.62	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01MSD
Data File Name	200SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:52:34-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	52.384	52.384	2.22	138199	0.04	2000	
Na	23	1	nogas	53104.786	53104.786	3.27	951444321	0.01	200000	
Mg	24	1	nogas	24253.190	24253.190	2.56	289689290	0.01	200000	
Al	27	1	nogas	1925.144	1925.144	1.71	29124205	0.01	2000	>LDR
K	39	1	nogas	5510.957	5510.957	3.04	122095403	0.00	200000	
Ti	47	1	nogas	164.678	164.678	2.46	327202	0.05	2000	
V	51	1	nogas	32.334	32.334	1.23	2528204	0.00	2000	
Cr	52	1	nogas	410.418	410.418	1.79	10305144	0.00	2000	
Mn	55	1	nogas	99.671	99.671	2.88	3295207	0.00	2000	
Co	59	1	nogas	51.542	51.542	1.80	1395439	0.00	2000	
Ni	60	1	nogas	1003.002	1003.002	2.92	5902105	0.02	2000	
Cu	63	1	nogas	53.100	53.100	4.26	783106	0.01	2000	
Zn	66	1	nogas	53.945	53.945	3.90	278466	0.02	2000	
As	75	1	nogas	39.759	39.759	1.53	432317	0.01	2000	
Sr	88	1	nogas	287.351	287.351	1.80	11157865	0.00	2000	
Ag	107	1	nogas	45.813	45.813	2.10	906546	0.01	2000	
Cd	111	1	nogas	47.948	47.948	1.93	194245	0.02	2000	
Sb	121	1	nogas	46.677	46.677	3.00	898136	0.01	2000	
Tl	205	1	nogas	48.224	48.224	1.55	1343020	0.00	2000	
Pb	208	1	nogas	43.810	43.810	1.13	1786429	0.00	2000	
U	238	1	nogas	97.280	97.280	1.21	3567848	0.00	2000	
[Pb]	206	1	nogas	46.606	46.606	2.17	444046	0.01	2000	
[Pb]	207	1	nogas	46.095	46.095	1.79	392149	0.01	2000	
Na	23	2	He	56584.525	56584.525	0.78	78065064	0.07	200000	
Mg	24	2	He	25736.380	25736.380	0.52	20123675	0.13	200000	
Al	27	2	He	1984.267	1984.267	3.10	876446	0.23	2000	>LDR
K	39	2	He	5480.833	5480.833	3.47	6032714	0.09	200000	
Ca	43	2	He	80353.344	80353.344	2.55	231027	34.78	200000	
Ca	44	2	He	83115.683	83115.683	2.43	4089612	2.03	200000	
V	51	2	He	54.157	54.157	0.52	428170	0.01	2000	
Cr	52	2	He	421.794	421.794	0.97	3345846	0.01	2000	
Mn	55	2	He	104.893	104.893	0.95	589687	0.02	2000	
Fe	56	2	He	13231.562	13231.562	1.23	95492505	0.01	200000	
Co	59	2	He	51.006	51.006	1.87	576426	0.01	2000	
Ni	60	2	He	1049.915	1049.915	2.07	2884664	0.04	2000	
Cu	63	2	He	55.005	55.005	3.01	400367	0.01	2000	
Zn	66	2	He	55.401	55.401	2.97	98082	0.06	2000	
As	75	2	He	49.196	49.196	2.07	88715	0.06	2000	
Se	78	2	He	47.473	47.473	1.31	7111	0.67	2000	
B	11	1	nogas	553.627	553.627	2.30	1031439	0.05	2000	
Si	28	1	nogas	24312.344	24312.344	1.10	218969550	0.01	2000	>LDR
Ca	43	1	nogas	78668.080	78668.080	3.21	3088796	2.55	200000	
Ca	44	1	nogas	78391.865	78391.865	2.32	51206748	0.15	200000	
Fe	56	1	nogas	12802.928	12802.928	2.17	372935525	0.00	200000	

Sample Report

Se	77	1	nogas	-21.164	-21.164	-22.37	51363	-0.04	2000	
Se	82	1	nogas	45.968	45.968	3.48	17575	0.26	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	49.419	49.419	2.43	388229	0.01	2000	
Sn	118	1	nogas	93.672	93.672	1.30	1052582	0.01	2000	
Ba	137	1	nogas	515.218	515.218	1.46	2821528	0.02	2000	
Sb	121	2	He	46.962	46.962	0.25	331712	0.01	2000	
La	139	1	nogas	8839.922	8839.922	1.89	53761	16.44	2000	>LDR
Au	197	1	nogas	1.606	1.606	20.44	20	8.03	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	278351	1.57	410295	67.84	70	125	ISTD Failed
Ge	72	1	nogas	4025540	2.52	4203247	95.77	70	125	
In	115	1	nogas	3837359	3.15	4030824	95.20	70	125	
Bi	209	1	nogas	2959588	1.31	3148067	94.01	70	125	
Ge	72	2	He	1030611	0.36	1112674	92.62	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01PDS
Data File Name	201SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:54:33-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	94.667	94.667	3.11	272409	0.03	2000	
Na	23	1	nogas	54512.936	54512.936	1.74	978952322	0.01	200000	
Mg	24	1	nogas	27980.658	27980.658	3.10	334919682	0.01	200000	
Al	27	1	nogas	889.158	889.158	3.39	13190470	0.01	2000	
K	39	1	nogas	10330.599	10330.599	0.45	217891372	0.00	200000	
Ti	47	1	nogas	119.705	119.705	1.61	232927	0.05	2000	
V	51	1	nogas	82.955	82.955	3.91	3787022	0.00	2000	
Cr	52	1	nogas	364.637	364.637	2.82	8976865	0.00	2000	
Mn	55	1	nogas	142.135	142.135	3.74	4598136	0.00	2000	
Co	59	1	nogas	97.729	97.729	2.27	2591867	0.00	2000	
Ni	60	1	nogas	1020.518	1020.518	0.84	5884669	0.02	2000	
Cu	63	1	nogas	101.033	101.033	1.86	1452091	0.01	2000	
Zn	66	1	nogas	99.262	99.262	2.42	499856	0.02	2000	
As	75	1	nogas	87.774	87.774	0.73	731873	0.01	2000	
Sr	88	1	nogas	189.887	189.887	1.79	7225639	0.00	2000	
Ag	107	1	nogas	93.514	93.514	2.13	1812578	0.01	2000	
Cd	111	1	nogas	94.565	94.565	0.82	386438	0.02	2000	
Sb	121	1	nogas	96.760	96.760	0.66	1823971	0.01	2000	
Tl	205	1	nogas	95.996	95.996	2.58	2633620	0.00	2000	
Pb	208	1	nogas	87.331	87.331	3.60	3560428	0.00	2000	
U	238	1	nogas	1.566	1.566	1.46	56698	0.00	2000	
[Pb]	206	1	nogas	92.322	92.322	1.36	866707	0.01	2000	
[Pb]	207	1	nogas	90.313	90.313	0.57	757296	0.01	2000	
Na	23	2	He	59327.430	59327.430	0.64	80701837	0.07	200000	
Mg	24	2	He	29258.598	29258.598	1.16	22560943	0.13	200000	
Al	27	2	He	979.250	979.250	3.31	427089	0.23	2000	
K	39	2	He	9893.516	9893.516	1.36	10703723	0.09	200000	
Ca	43	2	He	80929.364	80929.364	1.32	229464	35.27	200000	
Ca	44	2	He	83442.676	83442.676	1.13	4048837	2.06	200000	
V	51	2	He	99.990	99.990	0.86	761706	0.01	2000	
Cr	52	2	He	372.776	372.776	1.49	2916404	0.01	2000	
Mn	55	2	He	145.793	145.793	1.79	808141	0.02	2000	
Fe	56	2	He	16909.751	16909.751	1.83	120344722	0.01	200000	
Co	59	2	He	97.631	97.631	1.60	1088014	0.01	2000	
Ni	60	2	He	1059.777	1059.777	1.94	2871500	0.04	2000	
Cu	63	2	He	100.282	100.282	1.11	715484	0.01	2000	
Zn	66	2	He	101.265	101.265	2.82	175760	0.06	2000	
As	75	2	He	97.967	97.967	0.57	173455	0.06	2000	
Se	78	2	He	95.668	95.668	1.34	13889	0.69	2000	
B	11	1	nogas	1001.018	1001.018	3.29	2021987	0.05	2000	
Si	28	1	nogas	25695.406	25695.406	1.20	226652677	0.01	2000	>LDR
Ca	43	1	nogas	82715.968	82715.968	2.92	3182770	2.60	200000	
Ca	44	1	nogas	83064.253	83064.253	2.97	53169604	0.16	200000	
Fe	56	1	nogas	16668.312	16668.312	1.46	474748661	0.00	200000	

Sample Report

Se	77	1	nogas	34.718	34.718	6.39	63875	0.05	2000	
Se	82	1	nogas	92.818	92.818	0.95	34366	0.27	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	96.599	96.599	1.62	742426	0.01	2000	
Sn	118	1	nogas	0.411	0.411	7.91	5658	0.01	2000	
Ba	137	1	nogas	519.716	519.716	2.48	2870360	0.02	2000	
Sb	121	2	He	94.377	94.377	1.81	657288	0.01	2000	
La	139	1	nogas	7002.765	7002.765	2.27	43061	16.26	2000	>LDR
Au	197	1	nogas	18.623	18.623	214.38	33	55.87	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	303774	1.84	410295	74.04	70	125	
Ge	72	1	nogas	3943018	0.56	4203247	93.81	70	125	
In	115	1	nogas	3869371	0.53	4030824	95.99	70	125	
Bi	209	1	nogas	2916843	2.73	3148067	92.66	70	125	
Ge	72	2	He	1016327	0.37	1112674	91.34	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01PDS
Data File Name	201SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:54:33-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	94.667	94.667	3.11	272409	0.03	2000	
Na	23	1	nogas	54512.936	54512.936	1.74	978952322	0.01	200000	
Mg	24	1	nogas	27980.658	27980.658	3.10	334919682	0.01	200000	
Al	27	1	nogas	889.158	889.158	3.39	13190470	0.01	2000	
K	39	1	nogas	10330.599	10330.599	0.45	217891372	0.00	200000	
Ti	47	1	nogas	119.705	119.705	1.61	232927	0.05	2000	
V	51	1	nogas	82.955	82.955	3.91	3787022	0.00	2000	
Cr	52	1	nogas	364.637	364.637	2.82	8976865	0.00	2000	
Mn	55	1	nogas	142.135	142.135	3.74	4598136	0.00	2000	
Co	59	1	nogas	97.729	97.729	2.27	2591867	0.00	2000	
Ni	60	1	nogas	1020.518	1020.518	0.84	5884669	0.02	2000	
Cu	63	1	nogas	101.033	101.033	1.86	1452091	0.01	2000	
Zn	66	1	nogas	99.262	99.262	2.42	499856	0.02	2000	
As	75	1	nogas	87.774	87.774	0.73	731873	0.01	2000	
Sr	88	1	nogas	189.887	189.887	1.79	7225639	0.00	2000	
Ag	107	1	nogas	93.514	93.514	2.13	1812578	0.01	2000	
Cd	111	1	nogas	94.565	94.565	0.82	386438	0.02	2000	
Sb	121	1	nogas	96.760	96.760	0.66	1823971	0.01	2000	
Tl	205	1	nogas	95.996	95.996	2.58	2633620	0.00	2000	
Pb	208	1	nogas	87.331	87.331	3.60	3560428	0.00	2000	
U	238	1	nogas	1.566	1.566	1.46	56698	0.00	2000	
[Pb]	206	1	nogas	92.322	92.322	1.36	866707	0.01	2000	
[Pb]	207	1	nogas	90.313	90.313	0.57	757296	0.01	2000	
Na	23	2	He	59327.430	59327.430	0.64	80701837	0.07	200000	
Mg	24	2	He	29258.598	29258.598	1.16	22560943	0.13	200000	
Al	27	2	He	979.250	979.250	3.31	427089	0.23	2000	
K	39	2	He	9893.516	9893.516	1.36	10703723	0.09	200000	
Ca	43	2	He	80929.364	80929.364	1.32	229464	35.27	200000	
Ca	44	2	He	83442.676	83442.676	1.13	4048837	2.06	200000	
V	51	2	He	99.990	99.990	0.86	761706	0.01	2000	
Cr	52	2	He	372.776	372.776	1.49	2916404	0.01	2000	
Mn	55	2	He	145.793	145.793	1.79	808141	0.02	2000	
Fe	56	2	He	16909.751	16909.751	1.83	120344722	0.01	200000	
Co	59	2	He	97.631	97.631	1.60	1088014	0.01	2000	
Ni	60	2	He	1059.777	1059.777	1.94	2871500	0.04	2000	
Cu	63	2	He	100.282	100.282	1.11	715484	0.01	2000	
Zn	66	2	He	101.265	101.265	2.82	175760	0.06	2000	
As	75	2	He	97.967	97.967	0.57	173455	0.06	2000	
Se	78	2	He	95.668	95.668	1.34	13889	0.69	2000	
B	11	1	nogas	1001.018	1001.018	3.29	2021987	0.05	2000	
Si	28	1	nogas	25695.406	25695.406	1.20	226652677	0.01	2000	>LDR
Ca	43	1	nogas	82715.968	82715.968	2.92	3182770	2.60	200000	
Ca	44	1	nogas	83064.253	83064.253	2.97	53169604	0.16	200000	
Fe	56	1	nogas	16668.312	16668.312	1.46	474748661	0.00	200000	

Sample Report

Se	77	1	nogas	34.718	34.718	6.39	63875	0.05	2000	
Se	82	1	nogas	92.818	92.818	0.95	34366	0.27	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	96.599	96.599	1.62	742426	0.01	2000	
Sn	118	1	nogas	0.411	0.411	7.91	5658	0.01	2000	
Ba	137	1	nogas	519.716	519.716	2.48	2870360	0.02	2000	
Sb	121	2	He	94.377	94.377	1.81	657288	0.01	2000	
La	139	1	nogas	7002.765	7002.765	2.27	43061	16.26	2000	>LDR
Au	197	1	nogas	18.623	18.623	214.38	33	55.87	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	303774	1.84	410295	74.04	70	125	
Ge	72	1	nogas	3943018	0.56	4203247	93.81	70	125	
In	115	1	nogas	3869371	0.53	4030824	95.99	70	125	
Bi	209	1	nogas	2916843	2.73	3148067	92.66	70	125	
Ge	72	2	He	1016327	0.37	1112674	91.34	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01PDS
Data File Name	201SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:54:33-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	94.667	94.667	3.11	272409	0.03	2000	
Na	23	1	nogas	54512.936	54512.936	1.74	978952322	0.01	200000	
Mg	24	1	nogas	27980.658	27980.658	3.10	334919682	0.01	200000	
Al	27	1	nogas	889.158	889.158	3.39	13190470	0.01	2000	
K	39	1	nogas	10330.599	10330.599	0.45	217891372	0.00	200000	
Ti	47	1	nogas	119.705	119.705	1.61	232927	0.05	2000	
V	51	1	nogas	82.955	82.955	3.91	3787022	0.00	2000	
Cr	52	1	nogas	364.637	364.637	2.82	8976865	0.00	2000	
Mn	55	1	nogas	142.135	142.135	3.74	4598136	0.00	2000	
Co	59	1	nogas	97.729	97.729	2.27	2591867	0.00	2000	
Ni	60	1	nogas	1020.518	1020.518	0.84	5884669	0.02	2000	
Cu	63	1	nogas	101.033	101.033	1.86	1452091	0.01	2000	
Zn	66	1	nogas	99.262	99.262	2.42	499856	0.02	2000	
As	75	1	nogas	87.774	87.774	0.73	731873	0.01	2000	
Sr	88	1	nogas	189.887	189.887	1.79	7225639	0.00	2000	
Ag	107	1	nogas	93.514	93.514	2.13	1812578	0.01	2000	
Cd	111	1	nogas	94.565	94.565	0.82	386438	0.02	2000	
Sb	121	1	nogas	96.760	96.760	0.66	1823971	0.01	2000	
Tl	205	1	nogas	95.996	95.996	2.58	2633620	0.00	2000	
Pb	208	1	nogas	87.331	87.331	3.60	3560428	0.00	2000	
U	238	1	nogas	1.566	1.566	1.46	56698	0.00	2000	
[Pb]	206	1	nogas	92.322	92.322	1.36	866707	0.01	2000	
[Pb]	207	1	nogas	90.313	90.313	0.57	757296	0.01	2000	
Na	23	2	He	59327.430	59327.430	0.64	80701837	0.07	200000	
Mg	24	2	He	29258.598	29258.598	1.16	22560943	0.13	200000	
Al	27	2	He	979.250	979.250	3.31	427089	0.23	2000	
K	39	2	He	9893.516	9893.516	1.36	10703723	0.09	200000	
Ca	43	2	He	80929.364	80929.364	1.32	229464	35.27	200000	
Ca	44	2	He	83442.676	83442.676	1.13	4048837	2.06	200000	
V	51	2	He	99.990	99.990	0.86	761706	0.01	2000	
Cr	52	2	He	372.776	372.776	1.49	2916404	0.01	2000	
Mn	55	2	He	145.793	145.793	1.79	808141	0.02	2000	
Fe	56	2	He	16909.751	16909.751	1.83	120344722	0.01	200000	
Co	59	2	He	97.631	97.631	1.60	1088014	0.01	2000	
Ni	60	2	He	1059.777	1059.777	1.94	2871500	0.04	2000	
Cu	63	2	He	100.282	100.282	1.11	715484	0.01	2000	
Zn	66	2	He	101.265	101.265	2.82	175760	0.06	2000	
As	75	2	He	97.967	97.967	0.57	173455	0.06	2000	
Se	78	2	He	95.668	95.668	1.34	13889	0.69	2000	
B	11	1	nogas	1001.018	1001.018	3.29	2021987	0.05	2000	
Si	28	1	nogas	25695.406	25695.406	1.20	226652677	0.01	2000	>LDR
Ca	43	1	nogas	82715.968	82715.968	2.92	3182770	2.60	200000	
Ca	44	1	nogas	83064.253	83064.253	2.97	53169604	0.16	200000	
Fe	56	1	nogas	16668.312	16668.312	1.46	474748661	0.00	200000	

Sample Report

Se	77	1	nogas	34.718	34.718	6.39	63875	0.05	2000	
Se	82	1	nogas	92.818	92.818	0.95	34366	0.27	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	96.599	96.599	1.62	742426	0.01	2000	
Sn	118	1	nogas	0.411	0.411	7.91	5658	0.01	2000	
Ba	137	1	nogas	519.716	519.716	2.48	2870360	0.02	2000	
Sb	121	2	He	94.377	94.377	1.81	657288	0.01	2000	
La	139	1	nogas	7002.765	7002.765	2.27	43061	16.26	2000	>LDR
Au	197	1	nogas	18.623	18.623	214.38	33	55.87	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	303774	1.84	410295	74.04	70	125	
Ge	72	1	nogas	3943018	0.56	4203247	93.81	70	125	
In	115	1	nogas	3869371	0.53	4030824	95.99	70	125	
Bi	209	1	nogas	2916843	2.73	3148067	92.66	70	125	
Ge	72	2	He	1016327	0.37	1112674	91.34	70	125	

Sample Report

Sample Table

Sample Name	HS18081423-01PDS
Data File Name	201SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:54:33-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	94.667	94.667	3.11	272409	0.03	2000	
Na	23	1	nogas	54512.936	54512.936	1.74	978952322	0.01	200000	
Mg	24	1	nogas	27980.658	27980.658	3.10	334919682	0.01	200000	
Al	27	1	nogas	889.158	889.158	3.39	13190470	0.01	2000	
K	39	1	nogas	10330.599	10330.599	0.45	217891372	0.00	200000	
Ti	47	1	nogas	119.705	119.705	1.61	232927	0.05	2000	
V	51	1	nogas	82.955	82.955	3.91	3787022	0.00	2000	
Cr	52	1	nogas	364.637	364.637	2.82	8976865	0.00	2000	
Mn	55	1	nogas	142.135	142.135	3.74	4598136	0.00	2000	
Co	59	1	nogas	97.729	97.729	2.27	2591867	0.00	2000	
Ni	60	1	nogas	1020.518	1020.518	0.84	5884669	0.02	2000	
Cu	63	1	nogas	101.033	101.033	1.86	1452091	0.01	2000	
Zn	66	1	nogas	99.262	99.262	2.42	499856	0.02	2000	
As	75	1	nogas	87.774	87.774	0.73	731873	0.01	2000	
Sr	88	1	nogas	189.887	189.887	1.79	7225639	0.00	2000	
Ag	107	1	nogas	93.514	93.514	2.13	1812578	0.01	2000	
Cd	111	1	nogas	94.565	94.565	0.82	386438	0.02	2000	
Sb	121	1	nogas	96.760	96.760	0.66	1823971	0.01	2000	
Tl	205	1	nogas	95.996	95.996	2.58	2633620	0.00	2000	
Pb	208	1	nogas	87.331	87.331	3.60	3560428	0.00	2000	
U	238	1	nogas	1.566	1.566	1.46	56698	0.00	2000	
[Pb]	206	1	nogas	92.322	92.322	1.36	866707	0.01	2000	
[Pb]	207	1	nogas	90.313	90.313	0.57	757296	0.01	2000	
Na	23	2	He	59327.430	59327.430	0.64	80701837	0.07	200000	
Mg	24	2	He	29258.598	29258.598	1.16	22560943	0.13	200000	
Al	27	2	He	979.250	979.250	3.31	427089	0.23	2000	
K	39	2	He	9893.516	9893.516	1.36	10703723	0.09	200000	
Ca	43	2	He	80929.364	80929.364	1.32	229464	35.27	200000	
Ca	44	2	He	83442.676	83442.676	1.13	4048837	2.06	200000	
V	51	2	He	99.990	99.990	0.86	761706	0.01	2000	
Cr	52	2	He	372.776	372.776	1.49	2916404	0.01	2000	
Mn	55	2	He	145.793	145.793	1.79	808141	0.02	2000	
Fe	56	2	He	16909.751	16909.751	1.83	120344722	0.01	200000	
Co	59	2	He	97.631	97.631	1.60	1088014	0.01	2000	
Ni	60	2	He	1059.777	1059.777	1.94	2871500	0.04	2000	
Cu	63	2	He	100.282	100.282	1.11	715484	0.01	2000	
Zn	66	2	He	101.265	101.265	2.82	175760	0.06	2000	
As	75	2	He	97.967	97.967	0.57	173455	0.06	2000	
Se	78	2	He	95.668	95.668	1.34	13889	0.69	2000	
B	11	1	nogas	1001.018	1001.018	3.29	2021987	0.05	2000	
Si	28	1	nogas	25695.406	25695.406	1.20	226652677	0.01	2000	>LDR
Ca	43	1	nogas	82715.968	82715.968	2.92	3182770	2.60	200000	
Ca	44	1	nogas	83064.253	83064.253	2.97	53169604	0.16	200000	
Fe	56	1	nogas	16668.312	16668.312	1.46	474748661	0.00	200000	

Sample Report

Se	77	1	nogas	34.718	34.718	6.39	63875	0.05	2000	
Se	82	1	nogas	92.818	92.818	0.95	34366	0.27	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	96.599	96.599	1.62	742426	0.01	2000	
Sn	118	1	nogas	0.411	0.411	7.91	5658	0.01	2000	
Ba	137	1	nogas	519.716	519.716	2.48	2870360	0.02	2000	
Sb	121	2	He	94.377	94.377	1.81	657288	0.01	2000	
La	139	1	nogas	7002.765	7002.765	2.27	43061	16.26	2000	>LDR
Au	197	1	nogas	18.623	18.623	214.38	33	55.87	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	303774	1.84	410295	74.04	70	125	
Ge	72	1	nogas	3943018	0.56	4203247	93.81	70	125	
In	115	1	nogas	3869371	0.53	4030824	95.99	70	125	
Bi	209	1	nogas	2916843	2.73	3148067	92.66	70	125	
Ge	72	2	He	1016327	0.37	1112674	91.34	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	203_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-30T23:58:33-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	172CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	103.844	3.434	272302	1.85	100	103.8	90	110	
Na	23	1	nogas	10388.794	11.295	162765837	3.02	10000	103.9	90	110	
Mg	24	1	nogas	10446.216	11.422	107862573	2.94	10000	104.5	90	110	
Al	27	1	nogas	103.106	7.087	1474417	2.96	100	103.1	90	110	
K	39	1	nogas	10271.353	3.474	206042809	1.55	10000	102.7	90	110	
Ti	47	1	nogas	103.169	6.927	190709	2.19	100	103.2	90	110	
V	51	1	nogas	97.299	9.020	3952040	1.34	100	97.3	90	110	
Cr	52	1	nogas	104.614	6.644	2495856	2.71	100	104.6	90	110	
Mn	55	1	nogas	105.955	5.734	3260864	1.08	100	106.0	90	110	
Co	59	1	nogas	103.518	7.083	2607802	2.53	100	103.5	90	110	
Ni	60	1	nogas	103.163	7.431	568815	3.07	100	103.2	90	110	
Cu	63	1	nogas	105.928	8.083	1445084	3.50	100	105.9	90	110	
Zn	66	1	nogas	102.374	6.263	489641	1.48	100	102.4	90	110	
As	75	1	nogas	99.942	6.042	770067	2.62	100	99.9	90	110	
Sr	88	1	nogas	103.098	6.193	3729718	1.65	100	103.1	90	110	
Ag	107	1	nogas	105.165	6.820	1936269	2.10	100	105.2	90	110	
Cd	111	1	nogas	105.443	8.760	402282	0.70	100	105.4	90	110	
Sb	121	1	nogas	107.652	6.719	1927541	1.97	100	107.7	90	110	
Tl	205	1	nogas	110.777	6.446	2901105	0.87	100	110.8	90	110	CCV Main CR1-2 Failed
Pb	208	1	nogas	92.407	1.463	3767373	1.46	100	92.4	90	110	
U	238	1	nogas	108.718	8.379	3747082	2.51	100	108.7	90	110	
[Pb]	206	1	nogas	102.114	5.517	915181	0.52	100	102.1	90	110	
[Pb]	207	1	nogas	100.417	6.645	803252	0.58	100	100.4	90	110	
Na	23	2	He	9827.078	4.109	13402505	4.06	10000	98.3	90	110	
Mg	24	2	He	9771.229	2.565	7456292	2.09	10000	97.7	90	110	
Al	27	2	He	99.435	2.015	43831	1.89	100	99.4	90	110	
K	39	2	He	9276.026	1.001	10050084	0.98	10000	92.8	90	110	
Ca	43	2	He	9727.777	0.696	27324	1.39	10000	97.3	90	110	
Ca	44	2	He	9990.511	1.363	480474	0.84	10000	99.9	90	110	
V	51	2	He	97.150	0.697	732881	0.07	100	97.2	90	110	
Cr	52	2	He	99.311	1.735	771226	1.27	100	99.3	90	110	
Mn	55	2	He	99.980	1.631	548461	1.07	100	100.0	90	110	
Fe	56	2	He	9907.059	1.100	69775744	1.44	10000	99.1	90	110	
Co	59	2	He	95.786	2.172	1056286	2.54	100	95.8	90	110	
Ni	60	2	He	99.077	2.145	267586	1.50	100	99.1	90	110	
Cu	63	2	He	98.428	2.762	694908	2.02	100	98.4	90	110	
Zn	66	2	He	100.806	2.153	173127	1.60	100	100.8	90	110	
As	75	2	He	100.516	0.533	176088	1.17	100	100.5	90	110	
Se	78	2	He	98.239	0.515	14107	1.11	100	98.2	90	110	
B	11	1	nogas	515.899	5.035	956298	0.22	500	103.2	90	110	
Si	28	1	nogas	5094.502	6.064	43398869	2.12	5000	101.9	90	110	
Ca	43	1	nogas	10498.931	5.950	384395	1.31	10000	105.0	90	110	
Ca	44	1	nogas	10423.559	5.530	6363963	1.73	10000	104.2	90	110	
Fe	56	1	nogas	10459.008	4.680	284287373	0.17	10000	104.6	90	110	
Se	77	1	nogas	89.661	14.628	73387	0.93	100	89.7	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	101.213	3.884	35595	1.09	100	101.2	90	110	
Mo	95	1	nogas	99.972	4.804	730313	1.53	100	100.0	90	110	
Sn	118	1	nogas	103.487	9.186	1094682	0.82	100	103.5	90	110	
Ba	137	1	nogas	106.585	9.261	549880	0.33	100	106.6	90	110	
Sb	121	2	He	97.355	1.061	670901	0.92	100	97.4	90	110	
Li	7	1	nogas	105.325	3.576	494550	1.58	100	105.3	90	110	
P	31	1	nogas	501.274	5.158	719689	1.53	500	100.3	90	110	
La	139	1	nogas	105.454	23.825	1057	4.47	100	105.5	90	110	
Au	197	1	nogas	110.576	23.449	100	20.00	100	110.6	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	nogas	277003	4.68	410295	67.51	70	125	ISTD Failed
Ge	72	1	nogas	3753367	4.75	4203247	89.30	70	125	
In	115	1	nogas	3630504	8.49	4030824	90.07	70	125	
Bi	209	1	nogas	2790127	5.87	3148067	88.63	70	125	

Ge	72	2	He	1005680	0.74	1112674	90.38	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	204_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T00:00:31-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	172CALB.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
Be	9	1	nogas	0.116	23.4	433	17.3	1	
Na	23	1	nogas	-72.411	-6.6	1267926	2.3	100	
Mg	24	1	nogas	8.051	21.5	123452	11.4	100	
Al	27	1	nogas	1.233	13.5	44232	1.8	5	
K	39	1	nogas	-19.723	-73.8	6990226	0.4	100	
Ti	47	1	nogas	0.129	20.1	400	15.2	2.5	
V	51	1	nogas	-21.551	-6.4	1093151	2.4	2.5	
Cr	52	1	nogas	-0.901	-15.5	50519	3.0	2.5	
Mn	55	1	nogas	0.023	219.0	15287	6.8	2.5	
Co	59	1	nogas	0.067	22.6	2240	13.9	2.5	
Ni	60	1	nogas	-0.189	-28.8	3430	5.1	2.5	
Cu	63	1	nogas	-0.295	-14.4	5024	8.3	2.5	
Zn	66	1	nogas	-0.201	-23.9	1663	12.2	2.5	
As	75	1	nogas	-7.915	-2.8	118734	3.0	2.5	
Sr	88	1	nogas	0.066	32.5	7678	7.5	2.5	
Ag	107	1	nogas	0.044	26.5	1273	14.7	2.5	
Cd	111	1	nogas	0.063	13.1	287	5.3	1	
Sb	121	1	nogas	0.078	11.6	2003	5.8	2.5	
Tl	205	1	nogas	0.313	48.1	8673	40.3	1	
Pb	208	1	nogas	0.069	27.7	3460	22.4	2.5	
U	238	1	nogas	0.086	29.9	3154	23.2	2.5	
[Pb]	206	1	nogas	0.077	41.0	887	26.8	2.5	
[Pb]	207	1	nogas	0.080	25.2	770	16.3	2.5	
Na	23	2	He	-63.022	-9.9	126601	2.0	100	
Mg	24	2	He	6.896	1.8	7685	7.3	100	
Al	27	2	He	0.459	78.7	1237	10.9	5	
K	39	2	He	-14.856	-10.0	215296	0.7	100	
Ca	43	2	He	10.212	62.4	63	32.9	100	
Ca	44	2	He	14.248	36.5	1620	15.6	100	
V	51	2	He	-0.591	-32.8	16747	2.9	2.5	
Cr	52	2	He	0.014	252.4	3477	2.1	2.5	
Mn	55	2	He	0.121	22.7	1057	10.4	2.5	
Fe	56	2	He	5.666	11.6	59610	2.4	100	
Co	59	2	He	0.058	13.4	773	11.6	2.5	
Ni	60	2	He	-0.274	-22.5	1460	12.5	2.5	
Cu	63	2	He	-0.447	-7.9	2143	6.3	2.5	
Zn	66	2	He	-0.398	-24.0	573	28.2	2.5	
As	75	2	He	-0.061	-24.2	667	3.0	2.5	
Se	78	2	He	0.231	24.6	271	4.2	2.5	
B	11	1	nogas	7.522	17.4	34401	5.1	10	
Si	28	1	nogas	7.441	85.0	991069	1.7	5	CCB Main CR1 Failed
Ca	43	1	nogas	19.682	19.5	1497	9.4	100	
Ca	44	1	nogas	17.876	24.9	40821	3.1	100	
Fe	56	1	nogas	-15.068	-35.0	2777157	1.5	100	
Se	77	1	nogas	-75.379	-2.7	37619	3.0	2.5	
Se	82	1	nogas	-0.212	-26.0	327	9.8	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.045	132.6	1587	25.9	2.5	
Sn	118	1	nogas	0.178	23.0	3037	8.5	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.095	39.0	1107	11.8	2.5	
Sb	121	2	He	0.058	33.3	503	21.9	2.5	
P	31	1	nogas	-8.403	-18.7	49953	0.4	10	
La	139	1	nogas	-38.165	-19.8	267	20.7	2.5	
Au	197	1	nogas	-6.013	-255.3	13	86.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	326343	3.06	410295	79.54	70	125	
Ge	72	1	nogas	3990673	3.95	4203247	94.94	70	125	
In	115	1	nogas	3929108	6.71	4030824	97.48	70	125	
Bi	209	1	nogas	2871202	5.26	3148067	91.21	70	125	
Ge	72	2	He	1021322	7.08	1112674	91.79	70	125	

Sample Report

Sample Table

Sample Name	HS18081428-07
Data File Name	205SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T00:02:32-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	4.871	4.871	2.60	8329	0.06	2000	
Na	23	1	nogas	OR	OR	#VALUE!	OR	#VALUE!	200000	
Mg	24	1	nogas	370560.114	370560.114	1.62	4210192894	0.01	200000	>LDR
Al	27	1	nogas	5705.392	5705.392	2.37	76958289	0.01	2000	>LDR
K	39	1	nogas	13844.060	13844.060	1.80	263673306	0.01	200000	
Ti	47	1	nogas	68.575	68.575	4.06	121592	0.06	2000	
V	51	1	nogas	-22.400	-22.400	-6.59	964955	0.00	2000	
Cr	52	1	nogas	9.196	9.196	39.36	269113	0.00	2000	
Mn	55	1	nogas	13668.383	13668.383	0.96	401553514	0.00	2000	>LDR
Co	59	1	nogas	397.151	397.151	1.76	9593707	0.00	2000	
Ni	60	1	nogas	1115.842	1115.842	1.57	5861120	0.02	2000	
Cu	63	1	nogas	13.458	13.458	2.24	183401	0.01	2000	
Zn	66	1	nogas	1333.497	1333.497	2.51	6084530	0.02	2000	
As	75	1	nogas	-0.192	-0.192	-312.54	152098	0.00	2000	
Sr	88	1	nogas	4602.459	4602.459	4.04	159360848	0.00	2000	>LDR
Ag	107	1	nogas	0.041	0.041	19.71	1093	0.00	2000	
Cd	111	1	nogas	31.854	31.854	4.62	114788	0.03	2000	
Sb	121	1	nogas	0.294	0.294	3.72	5521	0.01	2000	
Tl	205	1	nogas	0.832	0.832	4.75	19699	0.00	2000	
Pb	208	1	nogas	3.227	3.227	0.83	132194	0.00	2000	
U	238	1	nogas	0.845	0.845	5.44	26048	0.00	2000	
[Pb]	206	1	nogas	4.304	4.304	2.74	34490	0.01	2000	
[Pb]	207	1	nogas	3.865	3.865	3.30	27617	0.01	2000	
Na	23	2	He	744848.439	744848.439	1.27	980969985	0.08	200000	>LDR
Mg	24	2	He	402447.692	402447.692	2.29	301134449	0.13	200000	>LDR
Al	27	2	He	6066.938	6066.938	2.02	2562848	0.24	2000	>LDR
K	39	2	He	13137.577	13137.577	2.67	14137698	0.09	200000	
Ca	43	2	He	440950.156	440950.156	2.45	1213287	36.34	200000	>LDR
Ca	44	2	He	443123.547	443123.547	1.93	20864643	2.12	200000	>LDR
V	51	2	He	5.680	5.680	0.77	61315	0.01	2000	
Cr	52	2	He	8.562	8.562	7.32	68189	0.01	2000	
Mn	55	2	He	14163.759	14163.759	1.40	76159362	0.02	2000	>LDR
Fe	56	2	He	11151.746	11151.746	2.76	77032276	0.01	200000	
Co	59	2	He	399.942	399.942	4.63	4325154	0.01	2000	
Ni	60	2	He	1130.076	1130.076	3.26	2971593	0.04	2000	
Cu	63	2	He	9.398	9.398	2.47	69746	0.01	2000	
Zn	66	2	He	1377.691	1377.691	0.72	2305435	0.06	2000	
As	75	2	He	2.194	2.194	3.47	4502	0.05	2000	
Se	78	2	He	1.899	1.899	7.95	493	0.38	2000	
B	11	1	nogas	413.659	413.659	4.61	499635	0.08	2000	
Si	28	1	nogas	29094.645	29094.645	1.46	233641763	0.01	2000	>LDR
Ca	43	1	nogas	435337.521	435337.521	2.81	15253257	2.85	200000	>LDR
Ca	44	1	nogas	437473.873	437473.873	3.20	254887036	0.17	200000	>LDR
Fe	56	1	nogas	10986.703	10986.703	1.08	286029606	0.00	200000	
Se	77	1	nogas	-23.879	-23.879	-14.92	45253	-0.05	2000	
Se	82	1	nogas	2.519	2.519	4.76	1203	0.21	2000	

Sample Report

Mo	95	1	nogas	0.313	0.313	3.05	3310	0.01	2000	
Sn	118	1	nogas	0.148	0.148	11.29	2354	0.01	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ba	137	1	nogas	25.496	25.496	6.33	124548	0.02	2000	
Sb	121	2	He	0.295	0.295	5.81	2093	0.01	2000	
La	139	1	nogas	668773.993	668773.993	2.60	3587424	18.64	2000	>LDR
Au	197	1	nogas	37.039	37.039	83.23	40	92.60	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	179726	4.27	410295	43.80	70	125	ISTD Failed
Ge	72	1	nogas	3591828	2.04	4203247	85.45	70	125	
In	115	1	nogas	3417340	5.75	4030824	84.78	70	125	
Bi	209	1	nogas	2479227	2.58	3148067	78.75	70	125	
Ge	72	2	He	986387	0.30	1112674	88.65	70	125	

Sample Report

Sample Table

Sample Name	HS18081428-08
Data File Name	206SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T00:04:31-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	0.071	0.071	41.40	270	0.03	2000	
Na	23	1	nogas	159513.854	159513.854	4.68	2891242198	0.01	200000	
Mg	24	1	nogas	104982.415	104982.415	4.96	1270540995	0.01	200000	
Al	27	1	nogas	58.612	58.612	7.23	887474	0.01	2000	
K	39	1	nogas	65005.030	65005.030	3.51	1324934030	0.00	200000	
Ti	47	1	nogas	3.872	3.872	31.58	7578	0.05	2000	
V	51	1	nogas	-20.689	-20.689	-12.14	1098341	0.00	2000	
Cr	52	1	nogas	39.789	39.789	2.55	1038101	0.00	2000	
Mn	55	1	nogas	1765.963	1765.963	2.87	56654717	0.00	2000	
Co	59	1	nogas	0.466	0.466	8.75	12711	0.00	2000	
Ni	60	1	nogas	3.590	3.590	6.82	25014	0.01	2000	
Cu	63	1	nogas	1.542	1.542	3.98	31043	0.00	2000	
Zn	66	1	nogas	3.075	3.075	8.58	17939	0.02	2000	
As	75	1	nogas	-5.344	-5.344	-11.32	133108	0.00	2000	
Sr	88	1	nogas	3028.820	3028.820	1.21	114592385	0.00	2000	>LDR
Ag	107	1	nogas	0.006	0.006	66.21	520	0.00	2000	
Cd	111	1	nogas	0.042	0.042	18.55	193	0.02	2000	
Sb	121	1	nogas	0.189	0.189	10.14	4051	0.00	2000	
Tl	205	1	nogas	0.015	0.015	23.76	743	0.00	2000	
Pb	208	1	nogas	0.111	0.111	2.55	5190	0.00	2000	
U	238	1	nogas	0.026	0.026	7.67	997	0.00	2000	
[Pb]	206	1	nogas	0.129	0.129	11.86	1307	0.01	2000	
[Pb]	207	1	nogas	0.114	0.114	10.09	1000	0.01	2000	
Na	23	2	He	169037.238	169037.238	0.26	229670077	0.07	200000	
Mg	24	2	He	112260.674	112260.674	1.74	86590175	0.13	200000	
Al	27	2	He	88.069	88.069	59.74	39506	0.22	2000	
K	39	2	He	61136.085	61136.085	1.14	64946131	0.09	200000	
Ca	43	2	He	181580.412	181580.412	0.70	515067	35.25	200000	>LDR
Ca	44	2	He	182366.349	182366.349	1.63	8852025	2.06	200000	>LDR
V	51	2	He	-0.326	-0.326	-11.51	18703	0.00	2000	
Cr	52	2	He	41.392	41.392	1.90	326959	0.01	2000	
Mn	55	2	He	1807.945	1807.945	2.89	10020555	0.02	2000	>LDR
Fe	56	2	He	25520.241	25520.241	2.20	181679991	0.01	200000	
Co	59	2	He	0.157	0.157	4.86	1867	0.01	2000	
Ni	60	2	He	1.258	1.258	7.44	5604	0.02	2000	
Cu	63	2	He	0.255	0.255	27.63	7115	0.00	2000	
Zn	66	2	He	1.866	1.866	2.97	4474	0.04	2000	
As	75	2	He	0.321	0.321	10.36	1338	0.02	2000	
Se	78	2	He	0.414	0.414	45.13	297	0.14	2000	
B	11	1	nogas	101.669	101.669	1.67	216289	0.05	2000	
Si	28	1	nogas	20473.881	20473.881	3.26	179786151	0.01	2000	>LDR
Ca	43	1	nogas	175601.159	175601.159	3.56	6717085	2.61	200000	
Ca	44	1	nogas	181157.808	181157.808	4.40	115224858	0.16	200000	>LDR
Fe	56	1	nogas	25401.076	25401.076	2.74	717885033	0.00	200000	

Sample Report

Se	77	1	nogas	-53.606	-53.606	-10.60	42219	-0.13	2000	
Se	82	1	nogas	1.256	1.256	13.09	857	0.15	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	0.526	0.526	6.98	5238	0.01	2000	
Sn	118	1	nogas	0.057	0.057	17.29	1603	0.00	2000	
Ba	137	1	nogas	57.743	57.743	3.42	311591	0.02	2000	
Sb	121	2	He	0.185	0.185	5.85	1387	0.01	2000	
La	139	1	nogas	703.498	703.498	15.79	4641	15.16	2000	
Au	197	1	nogas	25.497	25.497	127.97	37	69.54	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	297825	1.83	410295	72.59	70	125	
Ge	72	1	nogas	3923734	3.67	4203247	93.35	70	125	
In	115	1	nogas	3777485	3.72	4030824	93.71	70	125	
Bi	209	1	nogas	2735496	4.53	3148067	86.89	70	125	
Ge	72	2	He	1016845	0.91	1112674	91.39	70	125	

Sample Report

Sample Table

Sample Name	HS18081428-09
Data File Name	207SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T00:06:37-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.209	0.209	24.16	523	0.04	2000	
Na	23	1	nogas	OR	OR	#VALUE!	OR	#VALUE!	200000	
Mg	24	1	nogas	336299.299	336299.299	1.88	4008374756	0.01	200000	>LDR
Al	27	1	nogas	1223.254	1223.254	4.10	17970661	0.01	2000	
K	39	1	nogas	9383.006	9383.006	1.65	196869434	0.00	200000	
Ti	47	1	nogas	40.734	40.734	2.52	78681	0.05	2000	
V	51	1	nogas	-9.705	-9.705	-14.63	1376151	0.00	2000	
Cr	52	1	nogas	7.644	7.644	1.57	256503	0.00	2000	
Mn	55	1	nogas	3007.960	3007.960	2.04	96200442	0.00	2000	>LDR
Co	59	1	nogas	30.996	30.996	1.29	815430	0.00	2000	
Ni	60	1	nogas	51.236	51.236	0.35	297143	0.02	2000	
Cu	63	1	nogas	5.556	5.556	4.22	87729	0.01	2000	
Zn	66	1	nogas	80.700	80.700	1.78	403271	0.02	2000	
As	75	1	nogas	0.813	0.813	98.23	171966	0.00	2000	
Sr	88	1	nogas	5952.340	5952.340	1.28	224398450	0.00	2000	>LDR
Ag	107	1	nogas	0.031	0.031	3.83	1000	0.00	2000	
Cd	111	1	nogas	3.496	3.496	3.50	13856	0.03	2000	
Sb	121	1	nogas	0.233	0.233	9.21	4871	0.00	2000	
Tl	205	1	nogas	0.090	0.090	12.73	2640	0.00	2000	
Pb	208	1	nogas	0.884	0.884	3.86	36693	0.00	2000	
U	238	1	nogas	0.805	0.805	2.56	27067	0.00	2000	
[Pb]	206	1	nogas	1.091	1.091	2.95	9663	0.01	2000	
[Pb]	207	1	nogas	0.966	0.966	5.17	7602	0.01	2000	
Na	23	2	He	356935.950	356935.950	1.68	505601046	0.07	200000	>LDR
Mg	24	2	He	350414.294	350414.294	0.68	281990136	0.12	200000	>LDR
Al	27	2	He	1232.867	1232.867	1.73	560838	0.22	2000	
K	39	2	He	9359.820	9359.820	1.33	10138784	0.09	200000	
Ca	43	2	He	349090.422	349090.422	2.19	1032776	33.80	200000	>LDR
Ca	44	2	He	351397.933	351397.933	2.50	17788336	1.98	200000	>LDR
V	51	2	He	3.423	3.423	3.17	48488	0.01	2000	
Cr	52	2	He	8.153	8.153	1.85	69993	0.01	2000	
Mn	55	2	He	3034.968	3034.968	2.10	17547975	0.02	2000	>LDR
Fe	56	2	He	1661.688	1661.688	3.29	12356293	0.01	200000	
Co	59	2	He	29.983	29.983	0.34	348843	0.01	2000	
Ni	60	2	He	48.206	48.206	1.15	138514	0.03	2000	
Cu	63	2	He	3.518	3.518	2.24	31544	0.01	2000	
Zn	66	2	He	79.044	79.044	1.65	143460	0.06	2000	
As	75	2	He	1.059	1.059	4.09	2752	0.04	2000	
Se	78	2	He	0.598	0.598	54.04	336	0.18	2000	
B	11	1	nogas	199.145	199.145	2.07	324668	0.06	2000	
Si	28	1	nogas	15815.539	15815.539	0.35	138654225	0.01	2000	>LDR
Ca	43	1	nogas	340040.285	340040.285	1.90	12969359	2.62	200000	>LDR
Ca	44	1	nogas	345129.110	345129.110	1.54	218889910	0.16	200000	>LDR
Fe	56	1	nogas	1738.292	1738.292	1.93	51901887	0.00	200000	
Se	77	1	nogas	-3.607	-3.607	-168.17	54127	-0.01	2000	
Se	82	1	nogas	3.035	3.035	4.53	1497	0.20	2000	

Sample Report

Mo	95	1	nogas	0.207	0.207	5.20	2794	0.01	2000	
Sn	118	1	nogas	0.382	0.382	3.59	5151	0.01	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ba	137	1	nogas	44.629	44.629	2.88	238945	0.02	2000	
Sb	121	2	He	0.241	0.241	6.47	1857	0.01	2000	
La	139	1	nogas	25372.910	25372.910	0.68	149699	16.95	2000	>LDR
Au	197	1	nogas	4.219	4.219	884.83	20	21.09	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	237135	0.45	410295	57.80	70	125	ISTD Failed
Ge	72	1	nogas	3909039	2.33	4203247	93.00	70	125	
In	115	1	nogas	3743309	3.31	4030824	92.87	70	125	
Bi	209	1	nogas	2703364	2.84	3148067	85.87	70	125	
Ge	72	2	He	1060880	2.48	1112674	95.35	70	125	

Sample Report

Sample Table

Sample Name	HS18081428-10
Data File Name	208SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T00:08:33-05:00
Sample Type	Sample
Dilution	1
Comment	TW B132005
ISTD Ref FileName	172CALB.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
Be	9	1	nogas	0.039	0.039	67.38	193	0.02	2000	
Na	23	1	nogas	206806.311	206806.311	3.27	4138547426	0.00	200000	>LDR
Mg	24	1	nogas	103812.609	103812.609	1.27	1388363098	0.01	200000	
Al	27	1	nogas	116.882	116.882	7.84	1935604	0.01	2000	
K	39	1	nogas	3616.332	3616.332	2.37	89281194	0.00	200000	
Ti	47	1	nogas	4.616	4.616	19.60	10045	0.05	2000	
V	51	1	nogas	1.049	1.049	141.99	1835984	0.00	2000	
Cr	52	1	nogas	18.474	18.474	1.77	576535	0.00	2000	
Mn	55	1	nogas	77.603	77.603	0.90	2773967	0.00	2000	
Co	59	1	nogas	0.744	0.744	2.29	22237	0.00	2000	
Ni	60	1	nogas	81.205	81.205	1.38	520538	0.02	2000	
Cu	63	1	nogas	3.929	3.929	0.81	71968	0.01	2000	
Zn	66	1	nogas	9.289	9.289	1.73	54194	0.02	2000	
As	75	1	nogas	3.968	3.968	17.15	213402	0.00	2000	
Sr	88	1	nogas	2614.158	2614.158	1.44	109545872	0.00	2000	>LDR
Ag	107	1	nogas	0.061	0.061	3.52	1743	0.00	2000	
Cd	111	1	nogas	0.554	0.554	0.24	2450	0.02	2000	
Sb	121	1	nogas	0.267	0.267	7.25	6121	0.00	2000	
Tl	205	1	nogas	0.011	0.011	24.40	683	0.00	2000	
Pb	208	1	nogas	0.159	0.159	5.27	7131	0.00	2000	
U	238	1	nogas	2.764	2.764	1.61	102939	0.00	2000	
[Pb]	206	1	nogas	0.177	0.177	13.42	1897	0.01	2000	
[Pb]	207	1	nogas	0.169	0.169	11.58	1577	0.01	2000	
Na	23	2	He	226302.069	226302.069	1.37	334905142	0.07	200000	>LDR
Mg	24	2	He	112936.241	112936.241	2.10	94908685	0.12	200000	
Al	27	2	He	120.532	120.532	4.39	58287	0.21	2000	
K	39	2	He	3885.708	3885.708	2.14	4344207	0.09	200000	
Ca	43	2	He	170809.864	170809.864	1.23	528012	32.35	200000	
Ca	44	2	He	173239.122	173239.122	0.46	9163492	1.89	200000	
V	51	2	He	1.653	1.653	3.47	36356	0.00	2000	
Cr	52	2	He	19.487	19.487	1.80	169679	0.01	2000	
Mn	55	2	He	80.743	80.743	0.77	488090	0.02	2000	
Fe	56	2	He	511.253	511.253	1.69	3986190	0.01	200000	
Co	59	2	He	0.462	0.462	4.26	5741	0.01	2000	
Ni	60	2	He	81.117	81.117	1.52	241789	0.03	2000	
Cu	63	2	He	2.635	2.635	0.90	26125	0.01	2000	
Zn	66	2	He	8.682	8.682	1.33	17682	0.05	2000	
As	75	2	He	0.332	0.332	13.97	1479	0.02	2000	
Se	78	2	He	0.272	0.272	72.01	301	0.09	2000	
B	11	1	nogas	35.526	35.526	2.52	94714	0.04	2000	
Si	28	1	nogas	20511.991	20511.991	1.03	199575910	0.01	2000	>LDR
Ca	43	1	nogas	165080.532	165080.532	1.40	6997553	2.36	200000	
Ca	44	1	nogas	165901.258	165901.258	1.92	116966328	0.14	200000	
Fe	56	1	nogas	511.021	511.021	1.49	19429776	0.00	200000	

Sample Report

Se	77	1	nogas	27.123	27.123	50.97	68361	0.04	2000	
Se	82	1	nogas	1.436	1.436	34.99	1020	0.14	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	4.860	4.860	4.29	42448	0.01	2000	
Sn	118	1	nogas	0.088	0.088	4.49	2137	0.00	2000	
Ba	137	1	nogas	32.325	32.325	0.82	191586	0.02	2000	
Sb	121	2	He	0.297	0.297	9.00	2367	0.01	2000	
La	139	1	nogas	4791.782	4791.782	2.03	31686	15.12	2000	>LDR
Au	197	1	nogas	22.032	22.032	33.12	37	60.09	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	326431	2.62	410295	79.56	70	125	
Ge	72	1	nogas	4344818	0.49	4203247	103.37	70	125	
In	115	1	nogas	4139684	1.46	4030824	102.70	70	125	
Bi	209	1	nogas	3002171	0.48	3148067	95.37	70	125	
Ge	72	2	He	1107968	1.44	1112674	99.58	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	213_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\083
Acq Date Time	2018-08-31T00:18:30-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	172CALB.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
Be	9	1	nogas	93.758	5.600	321654	2.08	100	93.8	90	110	
Na	23	1	nogas	10132.576	6.986	188351096	1.39	10000	101.3	90	110	
Mg	24	1	nogas	10316.217	7.696	126357019	3.49	10000	103.2	90	110	
Al	27	1	nogas	124.852	6.313	2067466	3.79	100	124.9	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10182.600	3.222	237178472	2.03	10000	101.8	90	110	
Ti	47	1	nogas	99.833	3.441	214421	0.66	100	99.8	90	110	
V	51	1	nogas	98.737	6.611	4630307	1.49	100	98.7	90	110	
Cr	52	1	nogas	98.478	1.994	2734582	1.04	100	98.5	90	110	
Mn	55	1	nogas	99.783	2.082	3568807	1.68	100	99.8	90	110	
Co	59	1	nogas	101.968	0.697	2986908	3.50	100	102.0	90	110	
Ni	60	1	nogas	100.926	2.534	646860	0.76	100	100.9	90	110	
Cu	63	1	nogas	102.467	5.281	1627145	7.47	100	102.5	90	110	
Zn	66	1	nogas	99.389	3.154	552324	0.47	100	99.4	90	110	
As	75	1	nogas	96.312	3.789	868265	0.11	100	96.3	90	110	
Sr	88	1	nogas	100.157	0.589	4212151	3.47	100	100.2	90	110	
Ag	107	1	nogas	101.983	0.561	2183293	3.45	100	102.0	90	110	
Cd	111	1	nogas	98.636	3.397	446284	0.80	100	98.6	90	110	
Sb	121	1	nogas	102.109	1.946	2126005	4.26	100	102.1	90	110	
Tl	205	1	nogas	104.098	3.258	3129413	2.63	100	104.1	90	110	
Pb	208	1	nogas	101.283	0.549	4129174	0.55	100	101.3	90	110	
U	238	1	nogas	103.820	2.206	4111519	2.87	100	103.8	90	110	
[Pb]	206	1	nogas	96.721	1.947	994834	1.79	100	96.7	90	110	
[Pb]	207	1	nogas	95.884	2.347	880712	2.85	100	95.9	90	110	
Na	23	2	He	10201.019	4.507	15337342	3.17	10000	102.0	90	110	
Mg	24	2	He	10060.452	2.945	8470473	2.29	10000	100.6	90	110	
Al	27	2	He	113.608	2.491	55091	1.62	100	113.6	90	110	CCV Main CR1-2 Failed
K	39	2	He	10588.839	1.591	11439752	1.56	10000	105.9	90	110	
Ca	43	2	He	10213.960	2.587	31647	1.25	10000	102.1	90	110	
Ca	44	2	He	10344.870	1.872	549075	3.23	10000	103.4	90	110	
V	51	2	He	97.552	2.202	811822	0.93	100	97.6	90	110	
Cr	52	2	He	100.202	2.003	858519	0.65	100	100.2	90	110	
Mn	55	2	He	102.107	1.739	618041	1.21	100	102.1	90	110	
Fe	56	2	He	10030.643	1.499	77948991	1.48	10000	100.3	90	110	
Co	59	2	He	98.970	2.637	1203973	1.29	100	99.0	90	110	
Ni	60	2	He	102.879	1.607	306493	0.24	100	102.9	90	110	
Cu	63	2	He	100.219	2.588	780595	1.55	100	100.2	90	110	
Zn	66	2	He	100.474	1.626	190407	0.90	100	100.5	90	110	
As	75	2	He	100.699	0.425	194650	1.10	100	100.7	90	110	
Se	78	2	He	101.374	0.747	16054	0.94	100	101.4	90	110	
B	11	1	nogas	455.961	6.825	1108416	3.26	500	91.2	90	110	
Si	28	1	nogas	5051.213	2.021	49998126	1.16	5000	101.0	90	110	
Ca	43	1	nogas	10126.639	2.796	430727	0.09	10000	101.3	90	110	
Ca	44	1	nogas	10077.806	6.831	7142269	4.31	10000	100.8	90	110	
Fe	56	1	nogas	9914.795	2.944	313111624	0.29	10000	99.1	90	110	
Se	77	1	nogas	96.289	13.870	86957	1.78	100	96.3	90	110	
Se	82	1	nogas	98.345	5.320	40145	2.45	100	98.3	90	110	
Mo	95	1	nogas	94.526	1.380	802123	1.70	100	94.5	90	110	
Sn	118	1	nogas	94.761	2.759	1189288	0.56	100	94.8	90	110	
Ba	137	1	nogas	101.270	3.408	619820	0.82	100	101.3	90	110	
Sb	121	2	He	97.964	1.526	744889	1.08	100	98.0	90	110	
Li	7	1	nogas	96.902	3.511	598439	1.87	100	96.9	90	110	
P	31	1	nogas	490.539	2.932	819230	0.65	500	98.1	90	110	
La	139	1	nogas	209.463	6.062	1957	3.33	100	209.5	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	58.176	86.970	70	62.27	100	58.2	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	nogas	362497	3.46	410295	88.35	70	125	
Ge	72	1	nogas	4354340	2.90	4203247	103.59	70	125	
In	115	1	nogas	4286858	2.65	4030824	106.35	70	125	
Bi	209	1	nogas	3195234	0.67	3148067	101.50	70	125	

Ge	72	2	He	1109725	1.37	1112674	99.73	70	125	